ATEÏS

DELIVERING YOUR MESSAGE!

IDA8™ Global-Net

Highly Integrated, Networked
Public Address and Voice Alarm System

User Manual

Revision History
v3.30

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1 About This Manual

This manual is intended to provide with the necessary understanding of our system architecture as well as guide users through the configuration process. If you have any questions, feel free to contact us.

❖ Firmware version:

Version
v3.4.0.9

1.1 Safety Instructions

- Do not expose the device to extreme temperatures, direct sunlight, humidity, or dust, which could cause fire or electrical shock hazard.
- Keep away water or other liquids from the device. Otherwise fire or electrical shock may result.
- Connect the power cord only to an AC outlet of the type stated in this owner's manual or as marked on the unit. Otherwise fire and electrical shock hazard results.
- When disconnecting the power cord from an AC outlet always grab the plug. Never pull the cord. A damaged power cord is a potential risk of fire and electrical shock hazard.
- Avoid touching power plugs with wet hands. Doing so is a potential electrical shock hazard.
- Take care for correct polarity when operating the device from a DC power source. Reversed polarity may cause damage to the unit or the batteries.
- Avoid placing heavy objects on power cords. A damaged power cord is a fire and electrical shock hazard.
- Do not cut, scratch, bend, twist, pull, or heat the power cord. A damaged power cord is a fire and electrical shock hazard. Ask your ATEÏS dealer for replacement.
- Turn off the unit immediately, remove the power cord from the AC outlet and consult your ATEÏS dealer in any of the following circumstances, if you continue using the device, fire and electrical shock may result.
  - Smoke, odor, or noise getting out of the unit.
  - Foreign objects or liquids get inside the device.
  - The unit has been dropped or the shell is damaged.
  - The power cord is damaged.
- Do not drop or insert metallic objects or flammable materials into the unit as this may result in fire and electrical shock.
- Do not remove the device's cover, as there are exposed parts inside carrying high voltages that may cause an electrical shock. Contact your ATEÏS dealer if internal inspection, maintenance, or repair is necessary.
- Do not try to make any modifications to the device. This is a potential fire and electrical shock hazard.
- Avoid the device's ventilation slots to be blocked. Blocking the ventilation slots is a potential fire hazard.
- To prevent the unit from falling down and causing personal injury and/or property damage, avoid installing or mounting the unit in unstable locations.
- Leave enough space above and below the unit to provide good ventilation of the device. If the airflow is not adequate, the device will heat up inside and may cause a fire.
- Operate the device in an environment with a free-air temperature of between -5ºC ~ 55ºC (23ºF ~

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131ºF).

- Turn off all audio equipment when making any connections to the device, and make sure to use adequate cables.
- Do not use benzene, thinner, or chemicals to clean the device. Use only a soft, dry cloth.
- If the device is moved from a cold place (e.g., overnight in a car) to a warmer environment, condensation may form inside the unit, which may affect performance. Allow the device to acclimatize for about one hour before use.

1.2 System requirement

System Requirement	
Operating system	• Windows XP (32 or 64) • Windows 7 (32 or 64) • Windows 8 (32 or 64) • Windows 8.1 (32 or 64) • Windows 10 (32 or 64)
Memory	• At least 2GB RAM
Hard Disk	• Disk space required is 300MB

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2 System Overview

2.1 IDA8 PA/VA System

The IDA8 system offers a fully digital and networked PA/VA system which is EN54-16 and UL2572 certified and UL60065 listed. The IDA8C controller can be used in any installation size, whether is a small local system of 256 speaker zones or a big complex multi-zone and multi-input system of 8,192 zones. The IDA8 system has network redundancy on many levels, including the local/global network redundancy, back-up amplifier switching/sharing, system unit back-up redundancy.

2.2 EC Declaration of Conformity

Documentation CE marking. This needs to be added to each commercial/technical document

CE

###

EC DECLARATION OF CONFORMITY

Ateis, as manufacturer having sole responsibility, hereby declares that our delivered version of the following product complies with the applicable directives. In case of alterations of the product, not agreed upon by Ateis, this declaration is no longer valid.

EN54-16:2008
Voice Alarm Control and Indicating Equipment (VACIE)

Product: **IDA8 System VACIE**

Certified options:
Audible warning
Manual reset of the voice alarm condition
Voice alarm condition output
Indication of faults related to the transmission path of the CIE
Indication of faults related to voice alarm zones
Voice alarm manual control
Interface to external control device(s)
Emergency microphones
Redundant amplifiers

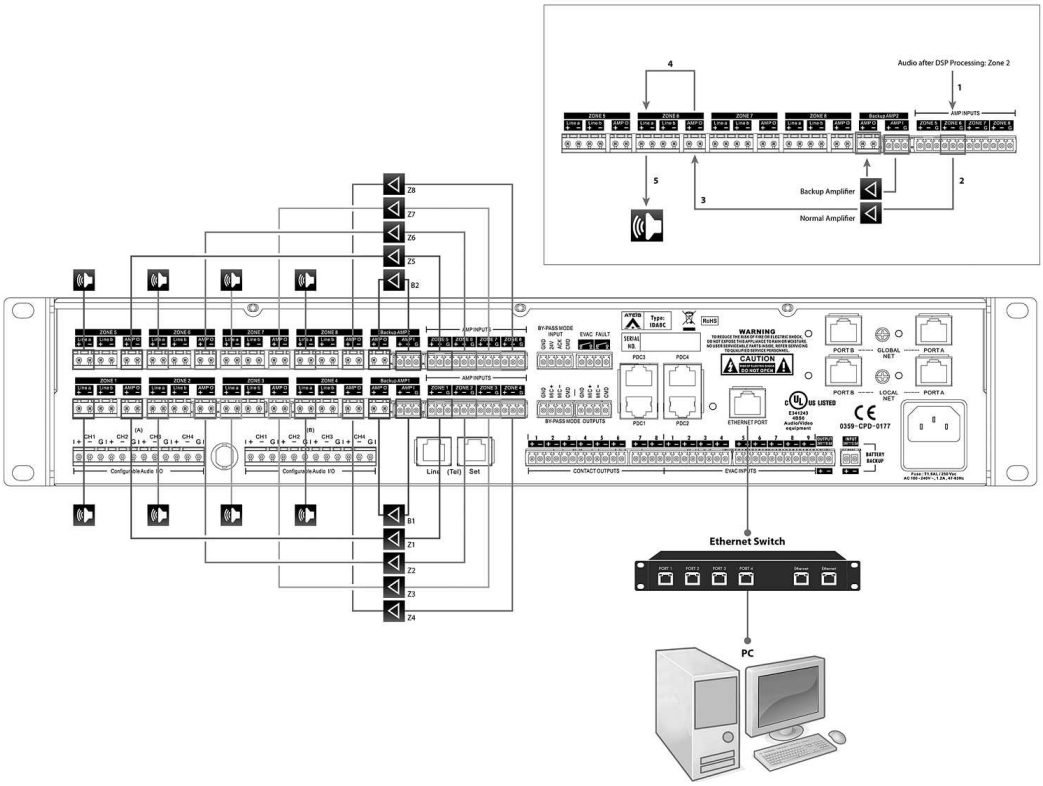
Ancillary functions:
Commercial paging
Backgroud music distribution
Audio and data networking

2.3 Quick Start

2.3.1 IDA8 System

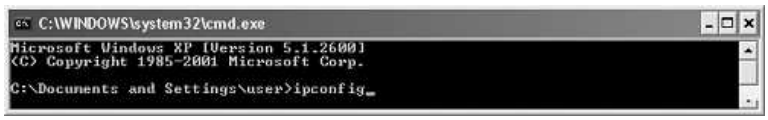
1. Connect the amplifiers and speakers on IDA8C, and configures the IDA8C via Ateis Studio software.

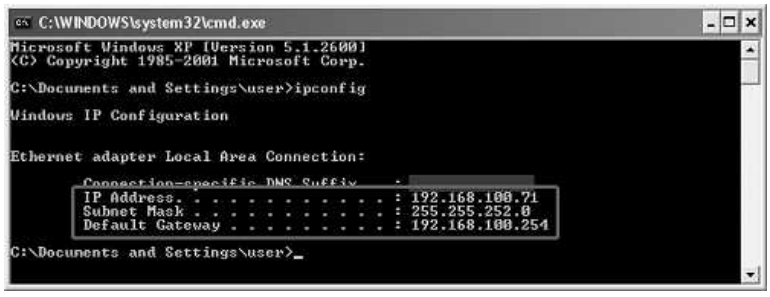
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2. Power on the IDA8C unit, and make sure its POWER LED lights up.
3. Set the IP, Subnet mask and gateway address from LCD touch panel of IDA8C. Or type "ipconfig" command in the cmd window, see the picture as below,

The default factory setting of the IP address is 192.168.100.236.





4. Now login the menu on IDA8C and set the IP/Subnet Mask/Gateway.

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- Click [SYSTEM SET] in [MAIN MENU] page.



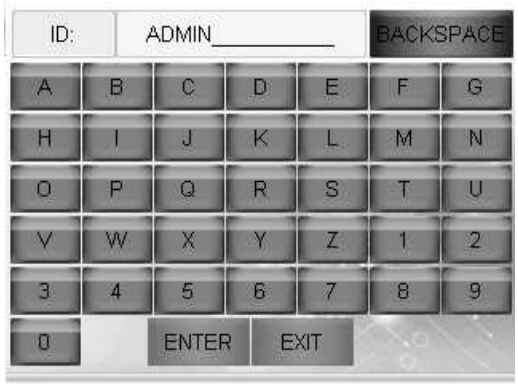
- Click [LOGIN] in [SYSTEM SET MENU-1] page.



- Click [USER NAME] in [LOGIN] page.

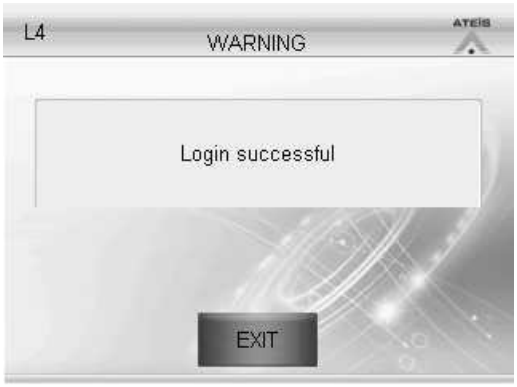


- Enter the ID "ADMIN" which is the default user ID of IDA8C, keep the password field empty and click "OK".

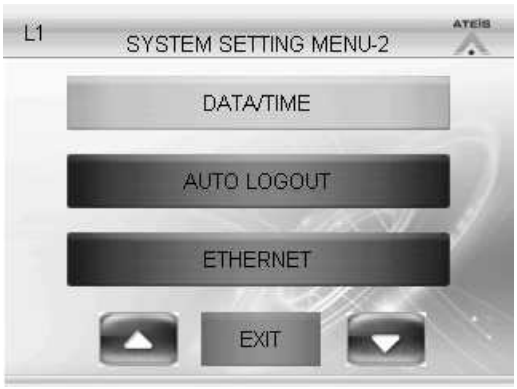


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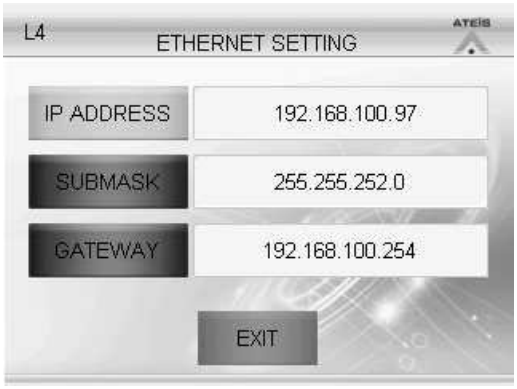
- And there will be a message indicates as "Login successful".

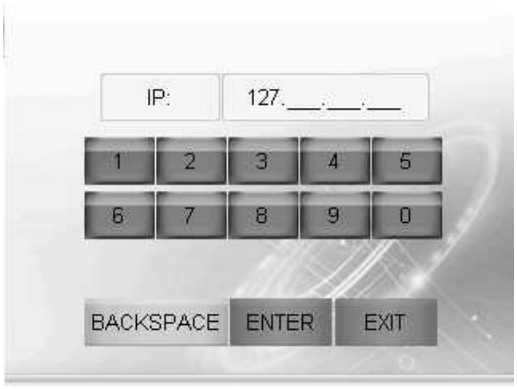


- Go back to [SYSTEM SET MENU-2] page and click [ETHERNET].



- There are three fields: [IP ADDRESS], [SUBMASK] and [GATEWAY]. Change the settings to fit your network. In this example, we changed the IDA8C's IP to 192.168.100.79.

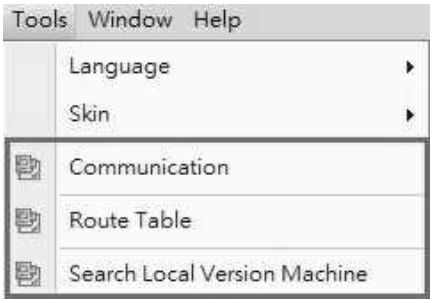




The settings will be applied after the rebooting the system.

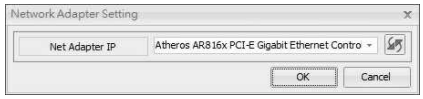
5. Install and operate the Ateis Studio software.
6. Set the Network settings on Ateis Studio.

- There may have more than one wired/wireless network adapter cards on your PC. Click [Tools > Communication] on Ateis Studio website, and open its setting window.

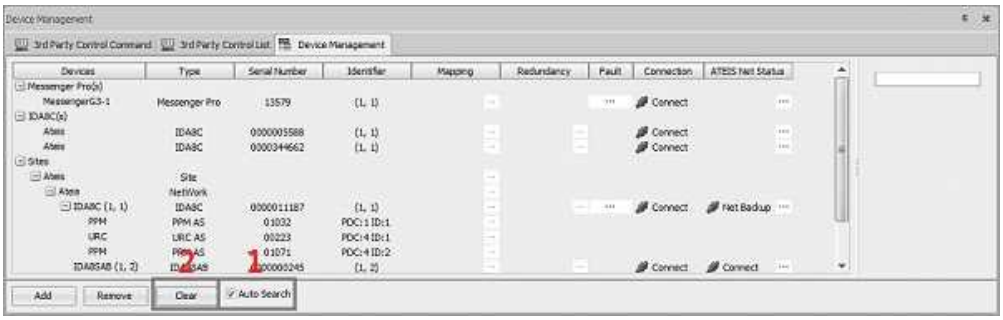


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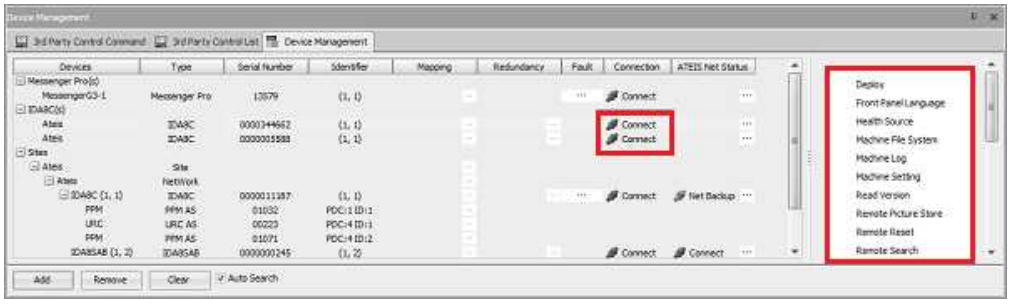
- Select the network adapter card which has been used for connecting the IDA8 devices to Ethernet. Then click [OK].



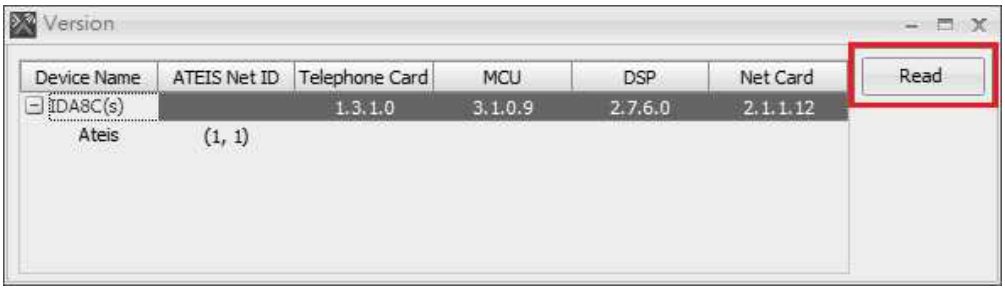
7. Search the Device and Connect to It.
   - Before searching the Ateis devices in LAN, the device list will be shown in blank.
   - Now click [Auto Search] button under the Devices tab, then click [Clear] button, the device list will appear after few seconds.



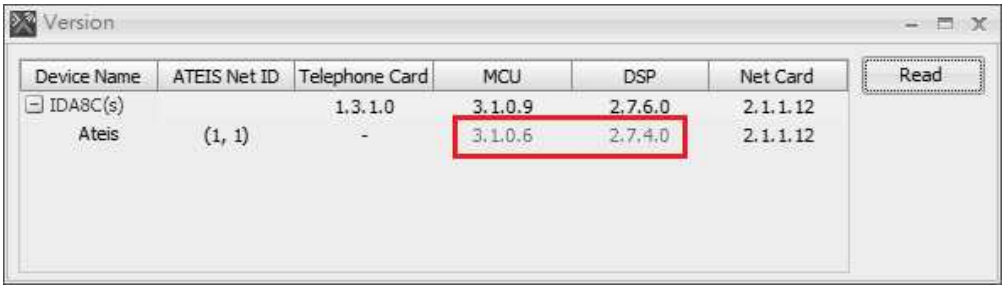
   - The gird on the left side shows which device has been connected, and the grid on the right side shows the system function items the user can configure.



8. Click [Read version] button to check the compatibility between IDA8C and Ateis Studio. Click [Read] to see the information about the firmware version.



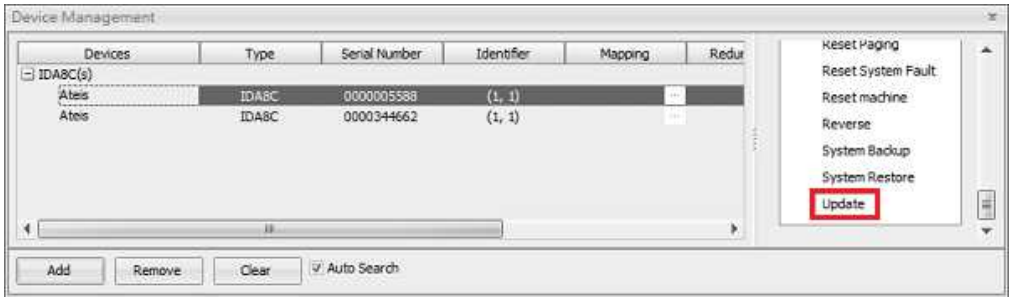
   - If all firmware units are compatible (shown in black text) with Ateis Studio, please go to step 10, otherwise go to step 9 to update the firmware. The figure below shows an incompatible version of the firmware which is marked in red.



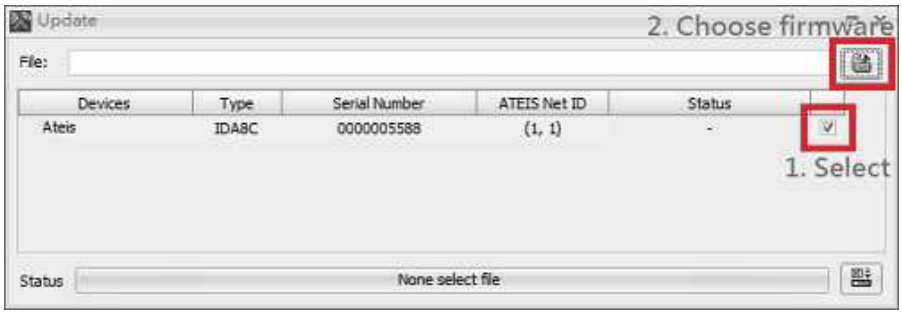
9. Update firmware

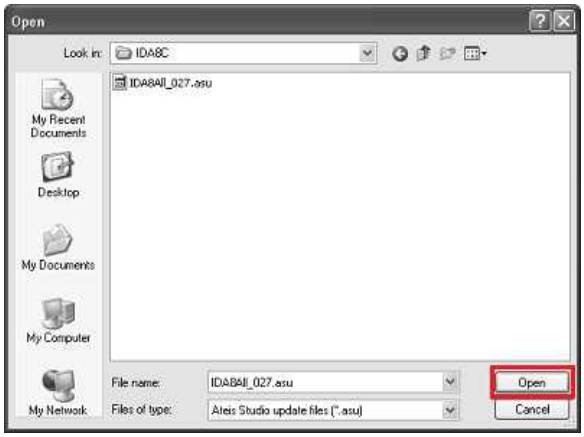
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- Go back to the [Device Management] window, and click [Update] button.



- After its setting window appears, select the IDA8 and choose the firmware .asu file from IDA8 directory. See the picture as below,

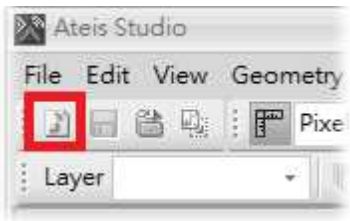




- When the Update process is done, please follow the indication on the pop-up window to reboot the IDA8, click [Yes] to restart the device. Check the device version using step 9 again, the version number should be in black which means it's now compatible.

10. Create a New file

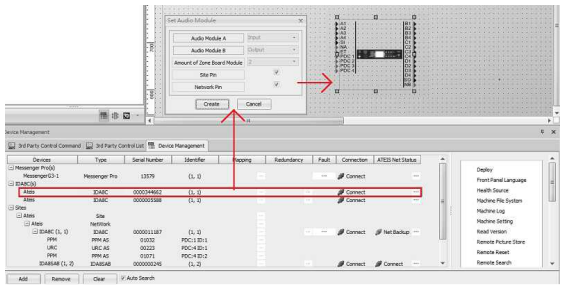
- Create a new file by clicking the button on the upper-left of the Ateis Studio software.



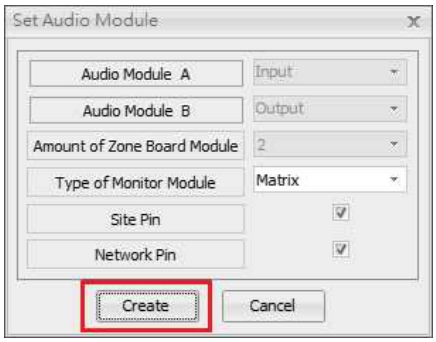
11. Connect the device and create an IDA8C block in the device editor window.

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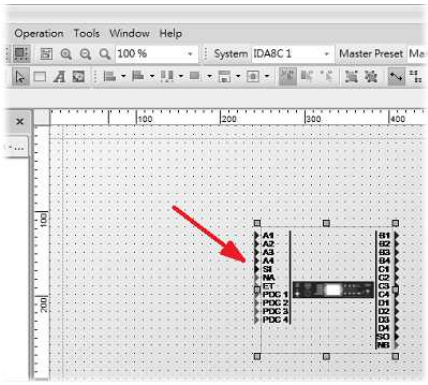
- Now 'Drag N Drop' the device/system into the configuration window.



- The [Set Audio Module] window will appear, click [Create] button to continue.

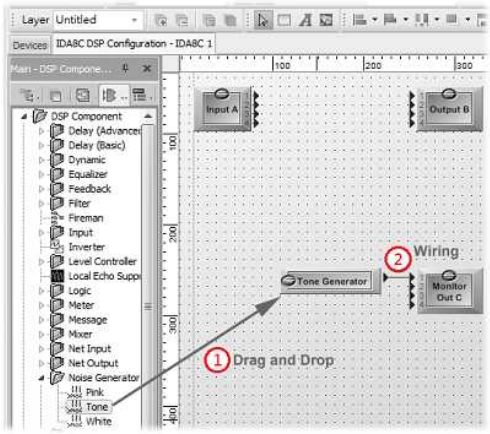


- Then a IDA8C block will be created.



12. Add a Tone component and connect it to the Output component.

- Double click the IDA8C icon to open the [IDA8C DSP Configuration - IDA8C1], allowing to edit the DSP configuration. The following example shows how to use the Tone Generator and the Output component.



13. Compile and Store

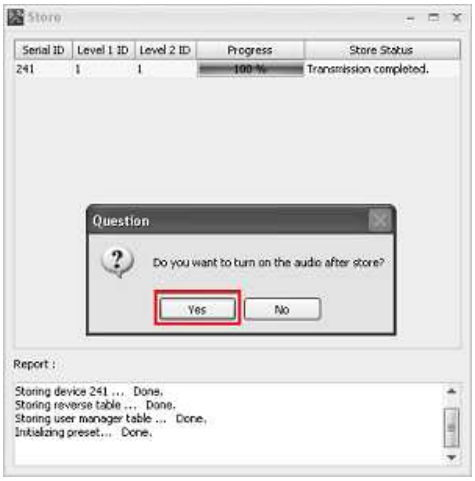
- Once the design is done, click [Compile All] icon, then the Compiling window will be appeared afterwards.



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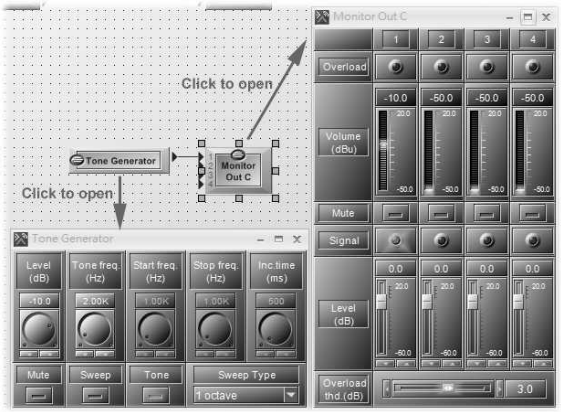
- Then, click [Store All] to store your design into the IDA8. Meanwhile, the system will ask you to turn on the audio, click [Yes].



14. Element Adjustment

- Set the element of Tone Generator as below,
  - Level (dB) = -10
  - Tone Button = On
  - Tone freq. (Hz) = 2.00k

- Now you can see the channel 1 meter and hear a 2k tone from the speaker connected to the Amplifier Zone Output(zone1) on the rear panel of the IDA8C.

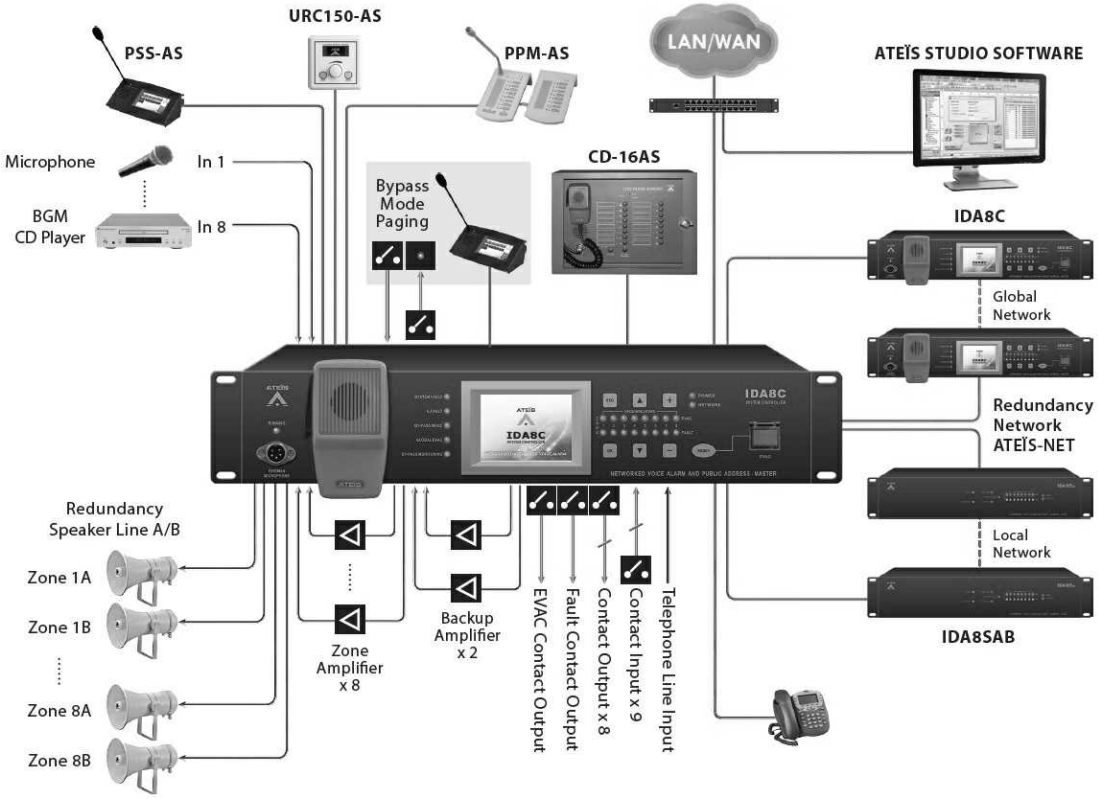


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3 System Products

3.1 IDA8 Audio Processor

3.1.1 IDA8C



The IDA8C controller houses advanced audio digital signal processing (DSP), matrix control functions and a digital message player, with front panel access for a fully monitored fireman's microphone and emergency trigger buttons. IDA8C also supports amplifier monitoring with hot-swap amplifiers and loudspeaker line impedance monitoring.

One IDA8C supports to connect to a maximum of 31 slave units via Ateis-Net. The slave units are available as single zone (IDA8S) or with A/B speaker line configurations (IDA8SAB), or for low-impedance monitoring (IDA8SL). The LCD touch screen panel on IDA8C gives the operators to see a detailed overview of the operational status of the entire systems.

❖ Security

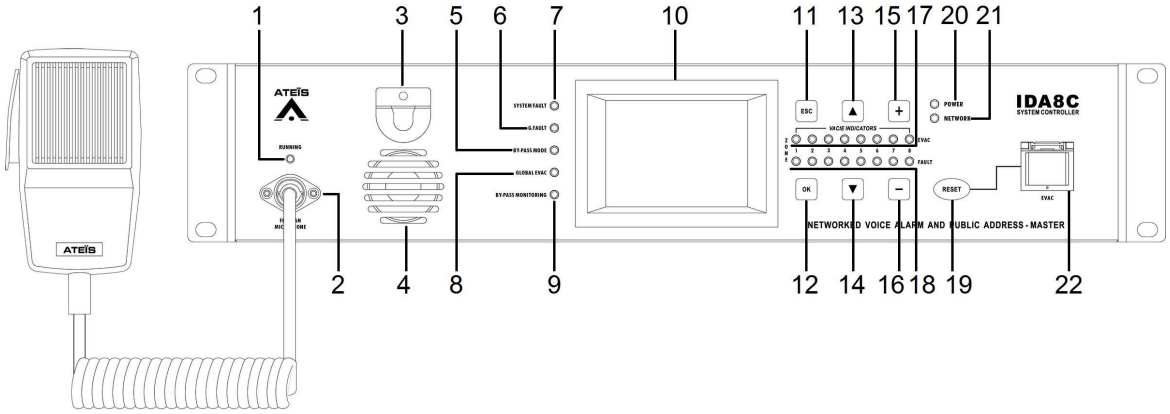
- In accordance with EN54-16 and BS5839/8, full monitored supervision from paging microphone capsule to the end of loudspeaker line.
- Enhanced loudspeaker line surveillance for A/B zone wiring.
- The IDA8C supports redundant network cabling, wired as a redundant loop.
- Reporting tools with events log and fault via LCD front panel or Ateis Studio.

❖ Connectivity

- Up to 48 simultaneous audio channels per local network.
- Up to 256 zones in a local network, and up to 8,192 zones in a global network.

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3.1.1.1 Front Panel



1. Running LED: Display the status of the fireman microphone, there are 3 types of LED states:

Status	Frequency	Activity
Permanent	●	Active, the fireman microphone is allowed to paging.
Blinking	● ° ● ° ●	Zones are busy, the fireman microphone is not allowed to paging.
Blinking	● ° ● °°° ● ° ●	Pre-chime is playing.

2. Fireman Microphone: A DIN connector for fireman microphone connection.
3. Fireman Microphone Hook: An U-shape hook to place the fireman microphone.
4. Supervised Speaker: A built-in speaker to play chime when paging or monitor the signal from main controller.

Function	Activity
Warning Tone	A buzzer sound is generated when some faults is detected in the system.
Source Monitoring	Monitor the audio sources of main controller. The monitored source can be selected via ATEIS web browser interface.

If a fault is detected when speaker is monitoring a source, then the source monitoring will be interrupted and play a buzzer sound for the fault.

5. Bypass Mode LED: This LED will light up if the IDA8C is in bypass mode or not.
6. G.Fault LED: This LED will light up when a global fault is detected.

Fault LED and system fault LED are exclusive. If system fault and global fault are detected at the same time, the system only light the system fault LED.

7. System Fault LED: This LED will light up when a system fault is detected.
8. Global EVAC LED: This LED will light up to indicate if any IDA8 processor is performing an EVAC paging under Ateis-Net.
9. Bypass Monitoring LED: This LED will light up if the monitoring of IDA8 is disabled by manual operation.
10. Touch Screen: A 3.5" color touch panel allows a graphical interface for users to control or read the status of system. Parameters or settings of the device can be adjusted from multiple layered on the menu.
11. ESC Button: Navigate as Prev/Back/Leave action.
12. OK Button: Navigate as Start/Next/Save action.
13. Up Button: Navigate as Up arrow control action.
14. Down Button: Navigate as Down arrow control action.

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15. Plus Button: Navigate as Volume Up action.
16. Down Button: Navigate as Volume Down action.

> To know more details about the LCD Front Panel Menu, see LCD Front Panel chapter.

17. Zone EVAC LEDs: To show the audio channel is in EVAC paging or not. Each LED corresponds to an output channel of Network Paging component. For example, 1st LED is for pin M1, 2nd LED for pin M2 and so on.

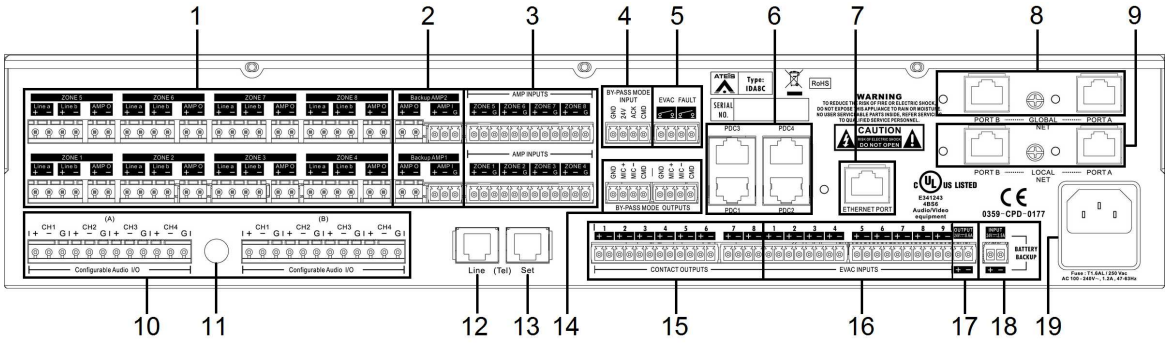
> We strongly recommend to connect the Monitor C component and Monitor D component connect to M1~M8 on Network Paging component, or it might cause the zone selection and its EVAC LED will not corresponded.

18. Zone Fault LEDs: This LED will light up if one of following faults is detected:

Normal AMP Error
Line A Error
Line B Error
Backup AMP Error
AMP Line Leakage Error

19. EVAC Reset Button: Cancel the event triggered by EVAC button.
20. Power LED: This LED will light up when the IDA8C is powered.
21. Network LED: This LED will light up if there are more than two deployed IDA8 processors in Ateis-Net.
22. EVAC Button: Click this button to trigger an EVAC event. The EVAC event needs to be pre-programmed on Ateis Studio software first.

3.1.1.2 Rear Panel



1. Speaker Zone Outputs: There are 8 zones for speaker & amplifier connections. Each zone consists of following connectors(from left to right):
   - Connector of line A speaker
   - Connector of line B speaker
   - Connector of 100V audio coming from amplifier

   The IDA8 output is exactly the same audio signal to line A and B. Two speakers can connect to one zone for redundancy purposes, one connects to line A, another connects to line B. Both speaker lines are monitored. That means if damage to a speaker is detected, a global fault "Line A/B Error" will be generated.

> ⚠ We recommend that the IDA8 controller connects to the floating output amplifier.
> - E.g. built-in transformer output for driving 70V and 100V loudspeakers such as BPA and DPA.

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- E.g. the amplifier module's AC/DC power supply and ground is floating ground from IDA8 .

If the IDA8 controller is connecting to non-floating output amplifier, please disable the leakage monitor function on Ateis Studio software > Monitoring > Global Setting > Enable Leakage.

2. Backup AMP1/Backup AMP2 I/O: Two backup amplifier connectors included 0 dB to amplifiers and 100V return from amplifiers.
3. Amp Inputs: Eight 0dB zone output to amplifiers.
4. Bypass Mode Input:
   - Contact input to engage the bypass mode paging (CMD).
   - Contact output to display the state of bypass mode paging (ACK).
5. EVAC Contact / Fault Contact:
   - EVAC Output Contact: this contact is closed if the system is under EVAC paging.
   - Fault Output Contact: this contact is open if a system or major fault is detected, see Fault Define chapter.
6. PDC (Peripherals Device Controller) Connectors: Four RJ-45 connectors are used to connect consoles or peripheral devices such as PSS-AS, URC-150AS and PPM-AS through Junction Box.
7. Ethernet Connector: Connect the IDAC8 to Ethernet network using CAT5/6 cable (RJ45 plug). The following end points are communicated with IDA8C thru ethernet networking:

Ateis Studio software
TERRACOM Devics
PPM-IT5
TerraManager
Syslog (Central Log)
3rd party devices
Voxnet Server
PMIP-D (thru Vox@Net)
VNB
Modbus Protocol
IGMP
SNMP
RTP
NTP
SIP

8. Global Net: The global network (redundant loops) is used for linking the IDA8C/IDA8C-SW controller to the next connected IDA8C/IDA8C-SW controller.
9. Local Net: The local Ateis network is used for linking the IDA8C controller and IDA8 slave units together.
10. Configurable Audio I/Os: Two configurable 0dB audio I/O port A and B. Each port is available to assemble an audio card. There are 4 channels on each audio I/O card.
11. BNC Connector: This BNC connector is for AES/EBU card only.
12. Telephone Line Input: A connector for a telephone signal coming from the telephone company (optional).

Interface:	a/b (analog), support 74 countries
Dialing modes:	vocal
Connection:	PABX
Supported Standards:	FSK and DTMF

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Interface:	a/b (analog), support 74 countries
Interface:	RJ11
Technology:	Noise Suppression, Line Echo Cancellation, Voice Enhance

13. Telephone Connector: This connector is used for external telephone connection (optional).
14. Bypass Mode Outputs: This port is used for sharing the bypass mode microphone signals through the IDA8C & IDA8S local network (only needed when using fiber optic network).
15. Contact Outputs: 8 logic outputs channels are used to close/open a circuit for an external device. This contact is normally open.
16. Evacuation Inputs: 9 evacuation contact inputs that allow the monitoring of external contact. They also can be used in UGA mode, trigger by a voltage polarization change.
17. 24VDC Output: Provide 24VDC power for external devices (max. 0.6A).
18. 24VDC Input: Connect the 24VDC battery charger for battery backup and power sharing (max. 2.5A).
19. AC Power Socket:
    - Main 110~240 V 1.2A, 47~63Hz AC power input with fuse. If the 24VDC and AC mains power input are present at the same time, the IDA8C will use the AC mains power first, and switch to DC power if there is no AC power input.
    - Fuse: T1.6AL / 250VAC

❖ Zone Boards

- Zone Board 1: The following I/Os belong to zone board1 in IDA8C: speaker zone output ch1~ch4, backup amplifier1, amplifier zone output ch1 ~ ch4.
- Zone Board 2: The following I/Os are belong to zone board2 in IDA8C: speaker zone output ch5~ch8, backup amplifier2, amplifier zone output ch5 ~ ch8.

3.1.1.3 Max. Peripherals for IDA8C

The following table list the peripherals supported by IDA8C.

Device	Connection	Max. Num per IDA8C	Function
Fireman MIC	Fireman MIC Input	1	Paging where operator is close to the IDA8C.
PPM-AS	PDC	Parallel Mode: 32 per PDC;128 per IDA8C Cascade mode**: 4 per PDC;16 per IDA8C	Remote console with paging ability.
PSS-AS	PDC	1 per PDC;4 per IDA8C	Remote console for Paging and Event Triggering(Element Control, Master/Sub Preset Control).
URC-150AS	PDC	32 per PDC;128 per IDA8C	Remote console for Master/Sub Preset Controlling and Element Controlling.
URGP32I	PDC	1 per PDC;4 per IDA8C	Evacuation Input extension.
URGP16I16O	PDC	1 per PDC;4 per IDA8C	Evacuation Input & output extension
DNM-485	PDC	10 per IDA8C	Auto noise gain for audio signals
DNM-ENET	Ethernet	20 per IDA8C	Ethernet type of auto noise gain for audio signals
NSM	Analog Audio	8 per IDA8C	Detect Background Noise
PPM-IT5	Ethernet	1~Eth. Limit*	Paging, Element Control and Master/Sub Preset Control.
URC-200AS	Ethernet	1~Eth. Limit*	Parameters Control and Master/Sub Preset Control.

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Device	Connection	Max. Num per IDA8C	Function
CD-8AS	PDC	32 per PDC;128 per IDA8C	Wall mounted cabinet remote paging console with 8 buttons/zones.
CD-16AS	PDC	32 per PDC;128 per IDA8C	Wall mounted cabinet remote paging console with 16 buttons/zones.
CD-TOUCHAS	PDC	1 per PDC;4 per IDA8C	Wall mounted cabinet remote paging console with touch screen and Fireman Microphone.
PCP	PDC	32 per PDC;128 per IDA8C	Wall mounted cabinet remote paging console with telephone styled microphone.
CDPM	PDC	Single Port: 1 per PDC;4 per IDA8C Dual Port***: 2 PDC for 1; 2 per IDA8C	Wall mounted cabinet remote paging console with 24 buttons/zones and 2 extra selectable microphone sources.
PSC-AS	PDC	Parallel Mode: 32 per PDC;128 per IDA8C Cascade mode**: 4 per PDC;16 per IDA8C	A grouped console is comprised of a pad with a monitoring speaker, a pad with a gooseneck and 8 buttons/zones, and two pads with 8 buttons/zones.
DIALER-DP	PDC	1 per PDC;4 per IDA8C	A remote dialer for making telephone calls via IDA8's telephone hardware.
DPWL	PDC	1 per PDC;4 per IDA8C	An RF transceiver to communication between DIALER-DP and IDA8, then the DIALER-DP can work without a physical connection.

- The max. number of peripherals through per PDC port/per IDA8C processor by using a PPM JB Junction Box.
  Take PPM-AS for example, up to 32 PPM-AS units can be connected to 1 PDC port of IDA8C by using the PPM JB junction boxes, and users can assign the device IDs in sequence for each PPM-AS unit from Ateis Studio software.
- When connecting to both Fireman Mic and other remote units, the priority status of Fireman Mic shall be higher than any other microphone remote units lining to PDC port.
- If a large number of remote units is required, simply add more slave units for the master unit.
- *Eth. Limit: The maximum number of IP that can be assigned over the network.
- **Cascade mode with PPM JB junction box can be applicable for PPM-AS and PSC-AS only.
- ***Dual Port: The purpose of dual port is using the RS485 (PDC port on IDA8) to fulfill the redundant loop in case of any failure with the cable connection. When detecting the failure of cable connection on one of the PDC port, the system will automatically switch to the redundant dual port.

3.1.1.4 3rd Party Control

The following table lists the 3rd Party Control protocols supported by IDA8C.

Protocol	Interface		Function
	Connection	Settings	
Ateis 3rd Party Protocol	Ethernet(UDP)	UDP Port = 19761	• Read/Write value of parameters. • Stepped adjustment for parameters. • Telephone card function
Modbus	Ethernet(TCP) PDC(RS485)	TCP Port = 502 PDC Port 1~ 4	• Level control • Paging • Read Monitoring Status • Read Evacuation Status • Play Message • Logic I/O Control

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3.1.1.5 LCD Menu

3.1.1.5.1 System Information

❖ Read the status information of the local IDA8C or all master/slave units in the IDA8 system.

- EVAC List:

  The master unit would be (n, 1), and slave units will be in sequence (n ,2), ID (n ,3).



- Fault List:

  Display the fault list, to know about more fault information, see Monitoring Fault chapter.



- Log List

  Display the log list, to know about more log information, see Log List chapter.



- Version Info List

  Display firmware version for MCU/DSP/ Netcard/Telephone chips.

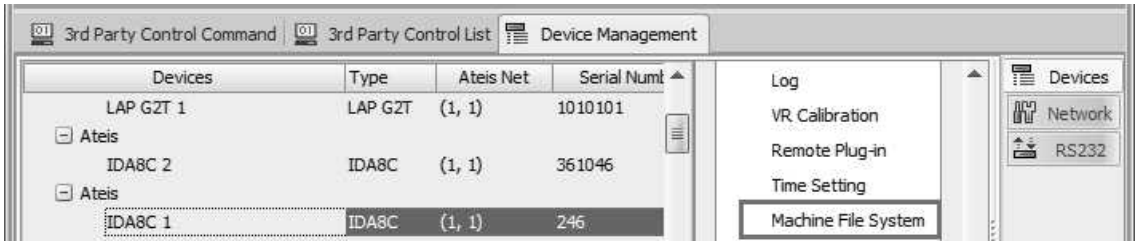


- Folder CRC:



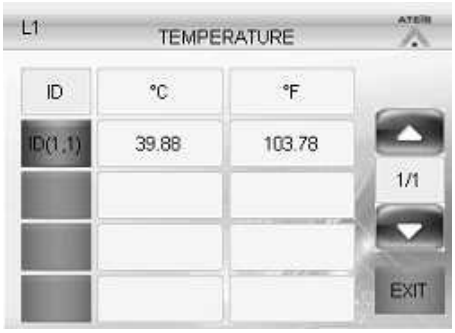
  - VER.: The last time of modification.
  - Folder name: Display the items in machine file system, see the picture below,

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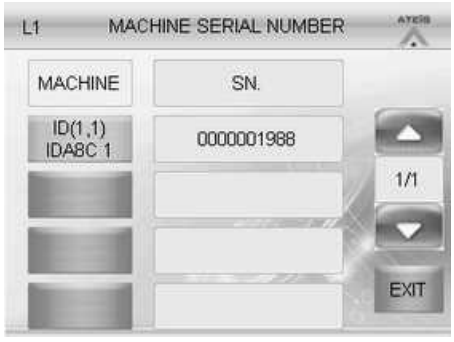


- CRC: The number here is between 0 to 65535, write down the unicode for check if the files are modified or not.

- Temperature:

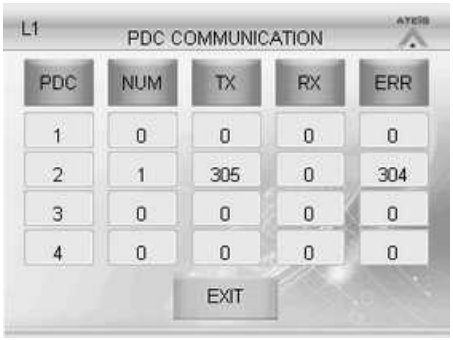


- Serial Number:



- PDC Communication

  Display the communication of PDC port, including transmit, receive and error rate.



3.1.1.5.2 System Setting

- Login: You need to set the accounts in Ateis Studio and store them into machine. The default user level is 1, and the highest is 4.
- Logout: Logout the accounts.

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- Monitoring:

  Check the following values through the front panel.



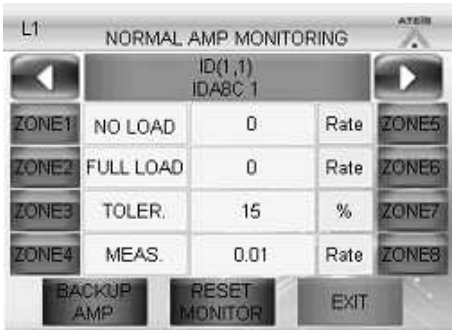
○ Leakage:

If the leakage value is too low, the fault list displays AMP Zone n Leakage (n=1~8).



○ Normal/Backup AMP Monitoring:

Here displays the info of Normal AMP monitoring.



- Backup AMP: Press to check the backup amplifier.
- Reset Monitor: Stop monitoring.

- Date/Time:Set the current time, changes in this area would affect the schedulers.
- Auto Logout: Set the auto logout time, the unit is minute.
- Ethernet: Set IDA8C's IP Address, Subnet and Gateway.
- Brightness: Set the touch screen's brightness.
- Menu Hold Time: Display the following pages after the menu hold time.
- The priority of the displaying: EVAC (If during paging) > Fault List (If any faults are detected) > IDA8 Logo.
- Warning Tone Level: Set the warning tone's level.
- Audio Board Monitoring: Detect the wiring problem with the audio sources.



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- Source Status: Here displays the audio source you choose.
- VOL: Adjust the volume of the speakers.

- Paging Reset: Cancel all paging in the system.
- System Fault Reset: Press to clean the system fault list, the System Fault LED will light off as well.
- LED Test: All of the LED will light up, press exit to end the test or wait for 60 seconds.
- LCD Test: The front panel will turn into test mode, press ESC to end the test or wait for 60 seconds.
- Language Setting: To switch to the language you have saved on the [Front Panel Language], please referred to Front Panel Language chapter.
- Font Setting: Select the *tif font you have saved on the [Machine File System].
- Touch Calibration Normal: Press to improve the accuracy of display positioning on LCD touch panel.
- Touch Calibration Special: If the [Touch Calibration Normal] function does not working well, please use the [Touch Calibration Special] function.

3.1.1.5.3 Paging

❖ Select the zone on the LCD front panel and start paging.

The paging route source (Fireman, Message Play, Music Paging etc.) setting must be set and save the parameters in Ateis Studio software first. Users need to compile and store their design into the audio processor before save parameters.



Once the paging setting in Ateis Studio has completed, you will find the paging route setting on the front panel.

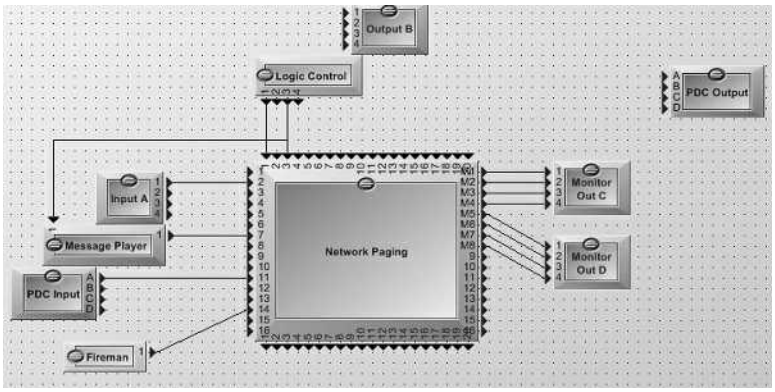
Follow the steps to start paging via the front panel.

1. Press the paging button (It's named in Ateis Studio as well.)
2. Select the zones.
3. Press Paging.

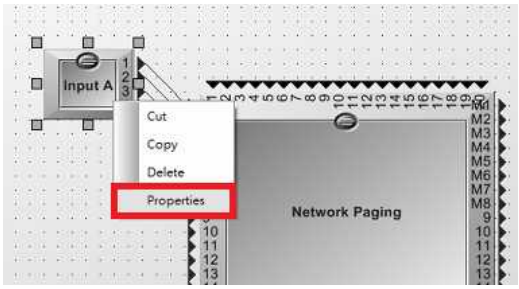
3.1.1.5.4 Audio Monitoring

❖ Switch the audio channel on Ateis Studio software and start monitoring from the front panel of IDA8 processor or PSS-AS device.

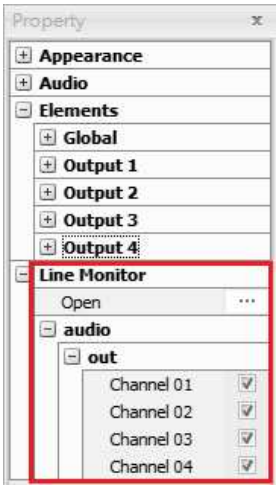
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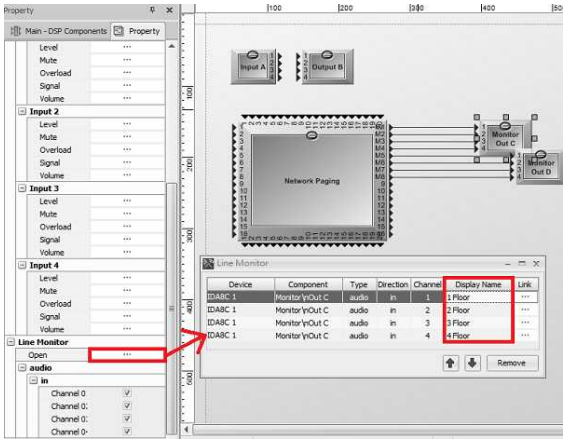
- Right click on the [Input A] component to open the [Property] window.



- Scroll down to the last option [Line Monitor], and select the channel(zone) you would like to monitor.



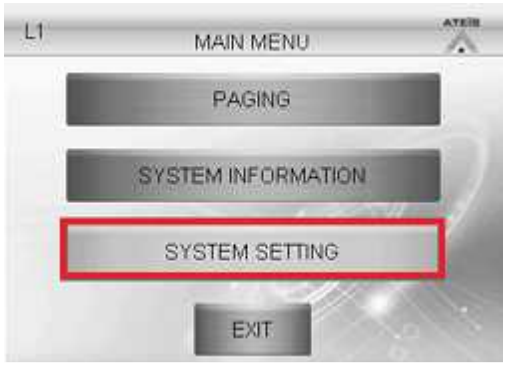
- To change the display name of Line Monitor, Click [...] button on Open grid, then enter the texts on [Display Name] column.
  After that, click Comply and Store to save the setting, see the picture as below.



❖ Follow the steps below to monitor the in/output channel from the IDA8 front panel.

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- Step 1: Select [System Setting].



- Step 2: Select [Audio Monitoring].



- Step 3: Choose the device.

Please switch to [Manual] mode first.



  - [Auto] Mode: The paging source will be automatically activate or depends on if there's any audio source is paging.
  - [Manual] Mode: Input & Output channel can be user-defined.

- Step 4: Choose the in/output channel.

  Press [ON] to activate the channel.



❖ Monitor the in/output channel from PSS-AS device.

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- Step 1: Select [Monitor].

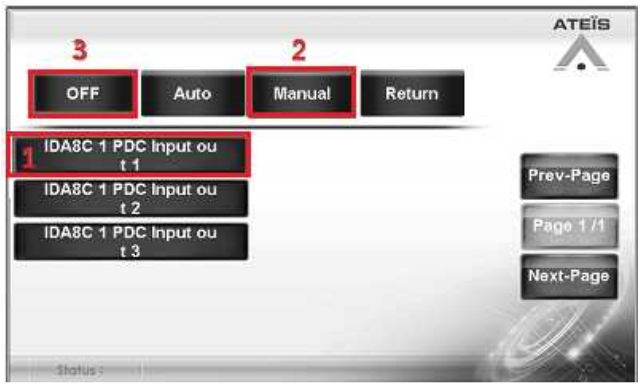


- Step 2: Choose the device.



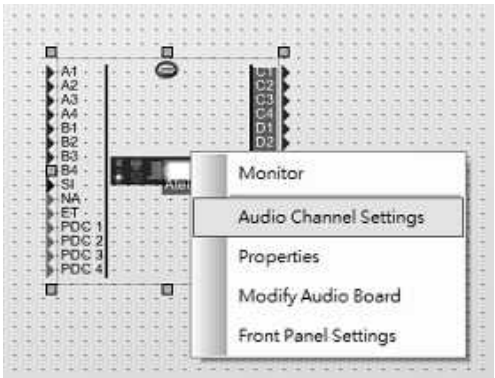
- Step 3: Choose the in/output channel.

  Please choose the channel first, then press [Manual] and press [ON/OFF] to activate the channel. See the picture as below,



3.1.1.6 Audio Channel Settings

- The IDA8 system supports a max. of up to 48 paging sources to page simultaneously via Ateis-Net.
  Users can decide to distribute the total paging sources either on Ateis Global-net card or Ateis Local-net card.



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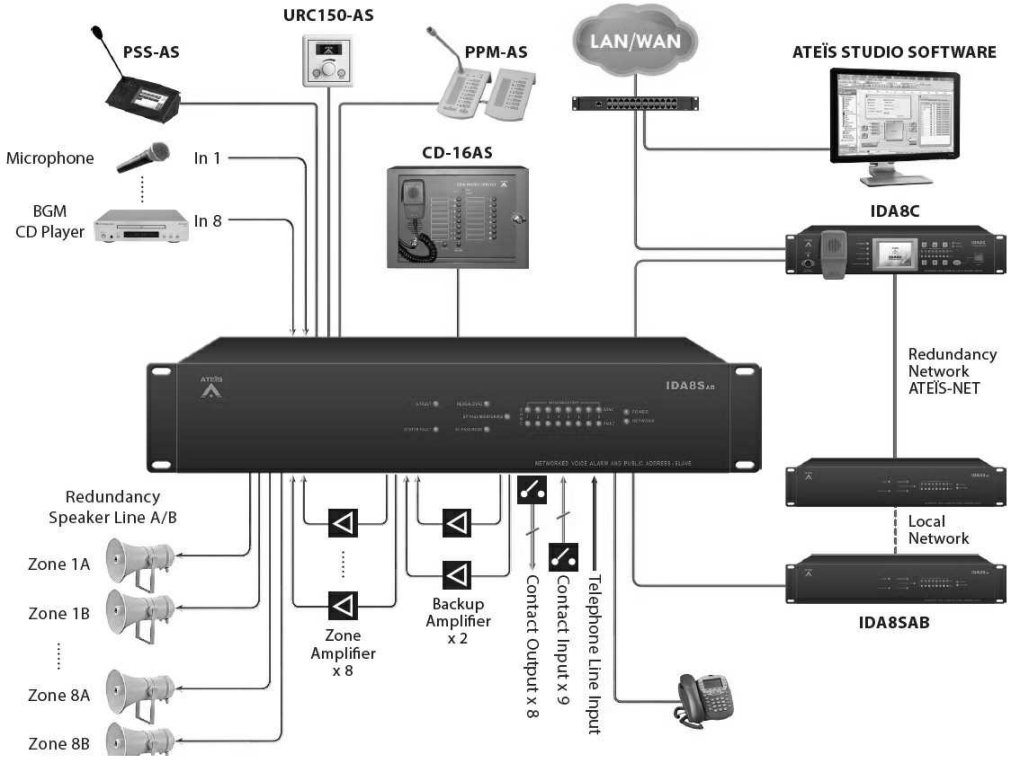
- Please right click on the IDA8C and open the [Audio Channel Settings] window, and then distribute the paging sources.
  After that, please proceed [Compile] and [Store] action to complete this process.



When the number of paging sources you set on the [Audio Channel Settings] window] are more than the actual number of paging sources in the IDA8 system, the sources which are not included will fail.

- Example 1 (using with Local-Net only):
  - Please adjust the number of paging channel that is using the Ateis Local-Net to a max. of number.
  - Set the number Global--Net channel as 0 and the Local-Net channel as 48.
- Example 2 (using with Global-Net only):
  - Please adjust the number of paging channel that is using the Ateis Global-Net to a max. of number.
  - Set the number Global-Net channel as 48 and the Local-Net channel as 0.
- Example 3 (using both Global-Net and Local-Net):
  - Please calculate the number of the paging channels that are under the Local & Global-Net in your design configuration. Normally users can set the amount to half of the max. in total.

3.1.2 IDA8SAB



The IDA8SAB slave unit houses advanced audio digital signal processing (DSP), matrix control functions and a digital message player, along with amplifier monitoring with hot-swap amplifiers and loudspeaker line-impedance line monitoring.

Each input and output channel is fitted with a wide range of pre-and post-processing devices such as

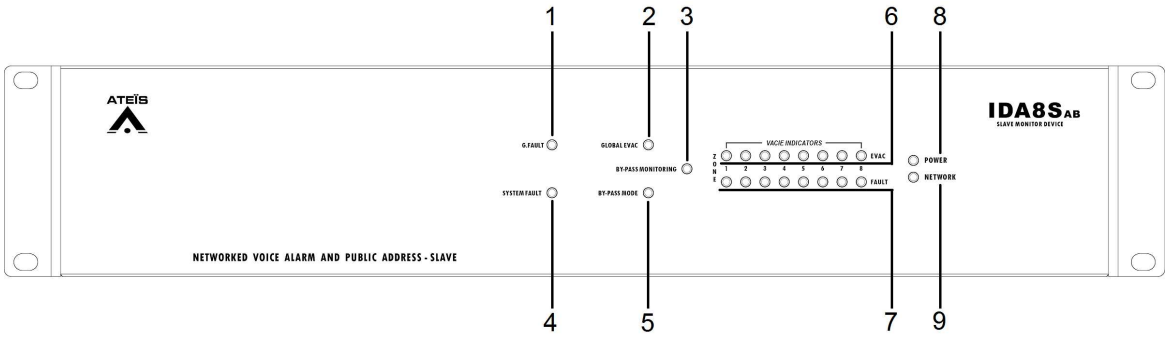
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volume controllers, routing mixers and switches, priority and paging components, equalizers, compressors, limiters and delay-lines.

❖ Security & Connectivity

- The IDA8SAB supports redundant loop network cabling.
- Enhanced loudspeaker line surveillance for A/B zone wiring.
- Up to 48 simultaneous audio channels per local network.
- Up to 256 zones in a local network.

3.1.2.1 Front Panel



1. G.Fault LED: This LED will light up when a global fault is detected.
2. Global EVAC LED: This LED will light up if the system is in EVAC paging state. This LED will light up if any of the IDA8 processor is performing the EVAC paging via Ateis-Net.

To learn more about how to configure an EVAC paging, see Network Paging Component chapter.

3. Bypass Monitoring LED: This LED will light up if the monitoring function is enabled. This LED will light up if monitoring of the IDA8 is disabled by manual operation.
4. System Fault LED: This LED will light up when a system fault fault is detected.
5. Bypass Mode LED: This LED will light up if the IDA8 is in bypass mode.

6~7.VACIE indicator LED:

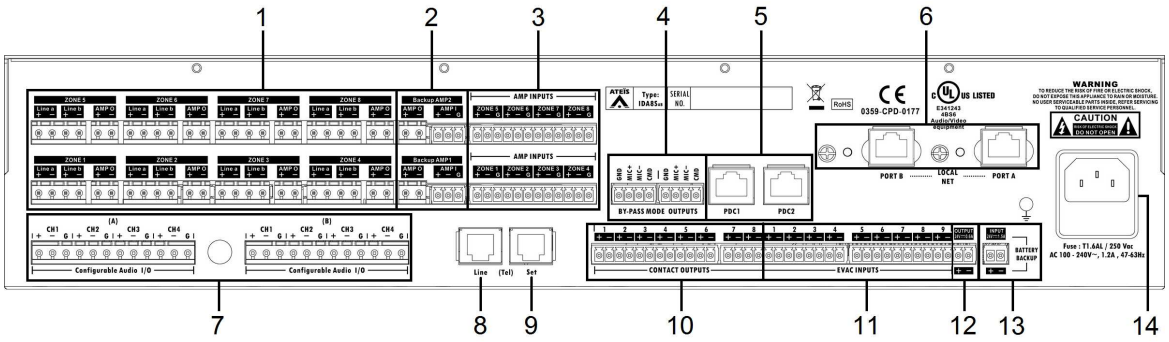
6. Zone EVAC LEDs: The LED will light up if the audio channel is in EVAC paging. Each LED corresponds to an output channel of a Network Paging component. For example, 1st LED is for pin M1, 2nd LED for pin M2 and so on.
7. Zone Fault LEDs: The LED will light up if one of following faults is detected:

Normal AMP Error
Line A Error
Line B Error
Backup AMP Error
AMP Line Leakage Error

8. Power LED: This LED will light up when the IDA8SAB is powered.
9. Network LED: This LED will light up if there are more than two deployed IDA8 processors in Ateis-Net.

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3.1.2.2 Rear Panel



1. Speaker Zone Outputs:

   There are 8 zones for speaker & amplifier connections. Each zone consists of following connectors (from left to right):

   - Connector of line A speaker.
   - Connector of line B speaker.
   - Connector of 100V audio coming from amplifier.

   The IDA8 output is exactly the same audio signal to line A and B. Two speakers can connect to one zone for redundancy purposes, one connects to line A, another connects to line B. Both speaker lines are monitored, meaning if damage to a speaker is detected, a global fault "Line A/ B Error" will be generated.

⚠ We recommend that the IDA8SAB unit connects to the floating output amplifier.

- E.g. built-in transformer output for driving 70V and 100V loudspeakers such as BPA and DPA.
- E.g. the amplifier module's power supply and ground is floating ground from IDA8SAB.

If the IDA8SAB unit is connecting to non-floating output amplifier, please disable the leakage monitor function on Ateis Studio software > Monitoring > Global Setting > Enable Leakage.

---

2. Backup AMP1/Backup AMP2 I/Os: Two backup amplifier connectors include 0 dB to amplifiers and 100V return from amplifiers.
3. Amplifier Inputs: Eight 0dB zone outputs to amplifiers.
4. Bypass Mode Outputs: This port is used for sharing the bypass mode microphone signals through the IDA8C & IDA8SAB local network (only needed when using a fiber optic network).
5. PDC (Peripherals Device Controller) Connectors: Two RJ-45 connectors are used to connect consoles or peripheral devices. For example, PSS-AS, URC-150AS, PPM-AS connect to the IDA8SAB via this connector.
6. Local Net: The local Ateis network is used for linking the IDA8C controller and IDA8SAB unit together.
7. Configurable Audio I/Os: Two configurable 0dB audio I/O port A and B. Each port is available to assemble an audio card. There are 4 channels on each audio I/O card.
8. Telephone Line Input: A connector for a telephone signal coming from telephone company (optional).

Interface:	a/b (analog), support 74 countries
Dialing modes:	vocal
Connection:	PABX
Supported Standards:	FSK and DTMF
Interface:	RJ11
Technology:	Noise Suppression, Line Echo Cancellation, Voice Enhance

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9. Telephone Connector: A connector for external telephone connection (optional).
10. Contact Outputs: 8 logic output channels to close/open circuit for an external device. This contact is normally open.
11. Evacuation Inputs: 9 evacuation contact inputs that allow the monitoring of external contact. They also can be used in UGA mode and are triggered by a voltage polarization change.
12. 24VDC Output: Provide 24VDC power for external devices (max. 0.6A).
13. 24VDC Input: Connect the 24VDC battery charger for battery backup and power sharing (max. 1.5A).
14. AC Power Socket:
    - Main 110~240 V 1.2A, 47~63Hz AC power input with fuse. If the 24VDC and AC mains power input are present at the same time, the IDA8SAB will use the AC power first, and switch to DC power if there is no AC power input.
    - Fuse: T1.6AL / 250VAC

3.1.2.3 Max. Peripherals for IDA8SAB

The following table list the peripherals supported by IDA8SAB.

Device	Connection	Max. Num per IDA8SAB	Function
PPM-AS	PDC	Parallel Mode: 32 per PDC;64 per IDA8SAB Cascade mode*: 4 per PDC;8 per IDA8SAB	Remote console with paging ability.
PSS-AS	PDC	1 per PDC;2 per IDA8SAB	Remote console for Paging and Event Triggering (Element Control, Master/Sub Preset Control).
URC-150AS	PDC	32 per PDC;64 per IDA8SAB	Remote console for Master/Sub Preset Controlling and Element Controlling.
URGP32I	PDC	1 per PDC;2 per IDA8SAB	Evacuation Input extension.
URGP16I16O	PDC	1 per PDC;2 per IDA8SAB	Evacuation Input & output extension
DNM-485	PDC	10 per IDA8SAB	Auto noise gain for audio signals
NSM	Analog Audio	8 per IDA8SAB	Detect Background Noise
CD-8AS	PDC	32 per PDC;64 per IDA8SAB	Wall mounted cabinet remote paging console with 8 buttons/zones.
CD-16AS	PDC	32 per PDC;64 per IDA8SAB	Wall mounted cabinet remote paging console with 16 buttons/zones.
CD-TOUCHAS	PDC	1 per PDC;2 per IDA8SAB	Wall mounted cabinet remote paging console with touch screen and Fireman Microphone.
PCP	PDC	32 per PDC;64 per IDA8SAB	Wall mounted cabinet remote paging console with telephone styled microphone.
CDPM	PDC	Single Port: 1 per PDC;4 per IDA8SAB Dual Port**: 2 PDC for 1; 2 per IDA8SAB	Wall mounted cabinet remote paging console with 24 buttons/zones and 2 extra selectable microphone sources.
PSC-AS	PDC	Parallel Mode: 32 per PDC;64 per IDA8SAB Cascade mode*: 4 per PDC;8 per IDA8SAB	A grouped console is comprised of a pad with a monitoring speaker, a pad with a gooseneck and 8 buttons/zones, and two pads with 8 buttons/zones.
DIALER-DP	PDC	1 per PDC;2 per IDA8SAB	A remote dialer for making telephone calls via IDA8's telephone hardware.

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Device	Connection	Max. Num per IDA8SAB	Function
DPWL	PDC	1 per PDC;2 per IDA8SAB	An RF transceiver to communication between DIALER-DP and IDA8, then the DIALER-DP can work without a physical connection.

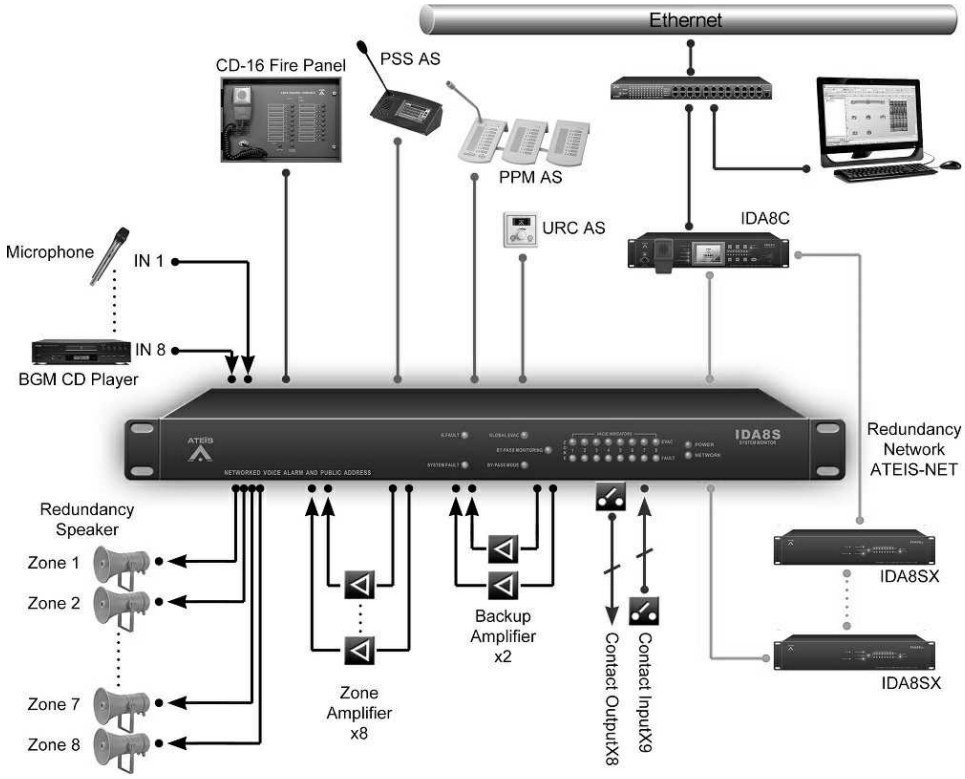
- The max. number of peripherals through per PDC port/per IDA8SAB processor by using a PPM JB Junction Box.
  Take PPM-AS for example, up to 32 PPM-AS units can be connected to 1 PDC port of IDA8C by using the PPM JB junction boxes, and users can assign the device IDs in sequence for each PPM-AS unit from Ateis Studio software.
- *Cascade mode with PPM JB junction box can be applicable for PPM-AS and PSC-AS only.
- **Dual Port: The purpose of dual port is using the RS485 (PDC port on IDA8) to fulfill the redundant loop in case of any failure with the cable connection. When detecting the failure of cable connection on one of the PDC port, the system will automatically switch to the redundant dual port.

3.1.2.4 3rd Party Control

The following table lists the 3rd Party Control protocols supported by IDA8SAB.

Protocol	Interface		Function
	Connection	Settings	
Ateis 3rd Party Protocol	Ethernet(UDP)	UDP Port = 19761	• Read/Write value of parameters. • Stepped adjustment for parameters.
Modbus	PDC(RS485)	PDC Port 1~ 2	• Level control • Paging • Read Monitoring Status • Read Evacuation Status • Play Message • Logic I/O Control

3.1.3 IDA8S



The IDA8S slave unit houses advanced audio digital signal processing (DSP), matrix control

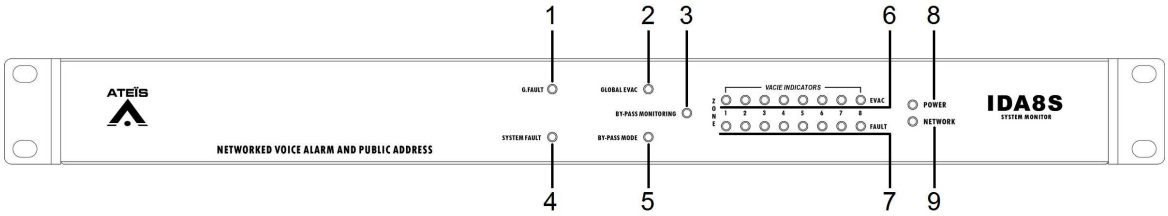
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functions and a digital message player, along with amplifier monitoring for hot-swap amplifiers and loudspeaker line impedance monitoring. Each input and output channel is fitted with a wide range of pre-and post-processing devices such as volume controllers, routing mixers and switches, priority and paging components, equalizers, compressors, limiters and delay-lines.

❖ Security & Connectivity

- In accordance with EN54-16 and BS5839/8, full monitored supervision from paging microphone capsule to the end of loudspeaker line.
- The IDA8S supports redundant loop network cabling.
- Up to 48 simultaneous audio channels per local network.
- Up to 256 zones in a local network.

3.1.3.1 Front Panel



1. G.Fault LED: This LED will light up when a global fault is detected.
2. Global EVAC LED: This LED will light up if the system is in EVAC paging state. This LED will light up if any of the IDA8 processor is performing the EVAC paging via Ateis-Net.

> To learn more about how to configure an EVAC paging, see Network Paging Component chapter.

3. Bypass Monitoring LED: This LED will light up if monitoring of the IDA8 is disabled by manual operation.
4. System Fault LED: This LED will light up when a system fault fault is detected.
5. Bypass Mode LED: This LED will light up if the IDA8 is in bypass mode.

6~7.VACIE indicator LED:

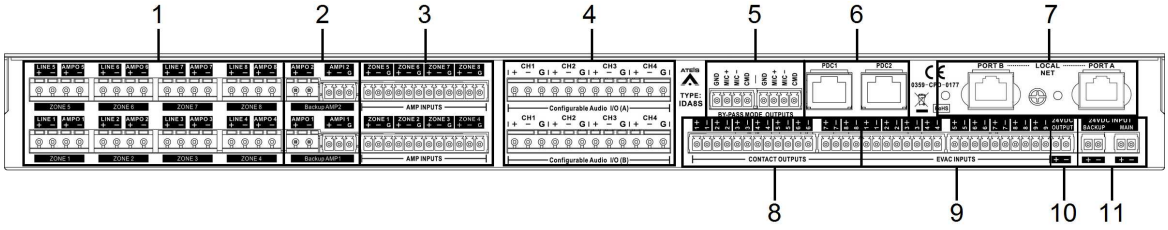
6. Zone EVAC LEDs: The LED will light up if the audio channel is in EVAC paging. Each LED corresponds to an output channel of a Network Paging component. For example, 1st LED is for pin M1, 2nd LED for pin M2 and so on.
7. Zone Fault LEDs: The LED will light up if one of following faults is detected:

Normal AMP Error
Line A Error
Line B Error
Backup AMP Error
AMP Line Leakage Error

8. Power LED: This LED will light up when the IDA8SAS is powered.
9. Network LED: This LED will light up if there are more than two deployed IDA8 processors in Ateis-Net.

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3.1.3.2 Rear Panel



1. Speaker Zone Outputs:

   There are 8 zones for speaker & amplifier connection. each zone consists of following connectors (from left to right):

   - Connector of line speaker.
   - Connector of 100V audio coming from amplifier.

⚠We recommend that the IDA8S unit connects to the floating output amplifier.
- E.g. built-in transformer output for driving 70V and 100V loudspeakers such as BPA and DPA.
- E.g. the amplifier module's power supply and ground is floating ground from IDA8S.

If the IDA8S unit is connecting to non-floating output amplifier, please disable the leakage monitor function on Ateis Studio software > Monitoring > Global Setting > Enable Leakage.

---

2. Backup AMP1/Backup AMP2 I/Os: Two backup amplifier connectors included 0 dB to amplifiers and 100V return from amplifiers.
3. Amplifier Inputs: Eight 0dB zone outputs to amplifiers.
4. Bypass Mode Outputs: This port is used for sharing the bypass mode microphone signals through the IDA8C & IDA8S local network (only needed when using fiber optic network).
5. PDC (Peripherals Device Controller) Connectors: Two RJ-45 connectors are used to connect the consoles or peripheral devices. For examples, PSS-AS, URC-150AS, PPM-AS etc. are connect to IDA8S via this connector.
6. Local Net: The local Ateis network is used for linking the IDA8C controller and IDA8S unit together.
7. Configurable Audio I/Os: Two configurable 0dB audio I/O port A and B. Each port is available to assemble an audio card. There are 4 channels on each audio I/O card.
8. Contact Outputs: 8 logic output channels to close/open circuits for an external device, this contact is normally open.
9. Evacuation Inputs: 9 evacuation contact inputs allow the monitoring of external contact. They also can be used in UGA mode and triggered by a voltage polarization change.

10. 24VDC Output: Provide 24VDC power for external devices.

11. 24VDC Input: Connect the 24VDC battery charger for battery backup and power sharing.

3.1.3.3 Max. Peripherals for IDA8S

The following table list the peripherals supported by IDA8S.

Device	Connection	Max. Num per IDA8S	Function
PPM-AS	PDC	Parallel Mode: 32 per PDC;64 per IDA8S Cascade mode*: 4 per PDC;8 per IDA8S	Remote console with paging ability.
PSS-AS	PDC	1 per PDC;2 per IDA8S	Remote console for Paging and Event Triggering (Element Control, Master/Sub Preset Control).

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Device	Connection	Max. Num per IDA8S	Function
URC-150AS	PDC	32 per PDC;64 per IDA8S	Remote console for Master/Sub Preset Controlling and Element Controlling.
URGP32I	PDC	1 per PDC;2 per IDA8S	Evacuation Input extension.
URGP16I16O	PDC	1 per PDC;2 per IDA8S	Evacuation Input & output extension
DNM-485	PDC	10 per IDA8S	Auto noise gain for audio signals
NSM	Analog Audio	8 per IDA8S	Detect Background Noise
CD-8AS	PDC	32 per PDC;64 per IDA8S	Wall mounted cabinet remote paging console with 8 buttons/zones.
CD-16AS	PDC	32 per PDC;64 per IDA8S	Wall mounted cabinet remote paging console with 16 buttons/zones.
CD-TOUCHAS	PDC	1 per PDC;2 per IDA8S	Wall mounted cabinet remote paging console with touch screen and Fireman Microphone.
PCP	PDC	32 per PDC;64 per IDA8S	Wall mounted cabinet remote paging console with telephone styled microphone.
CDPM	PDC	Single Port: 1 per PDC;2 per IDA8S Dual Port**: 2 PDC for 1; 2 per IDA8S	Wall mounted cabinet remote paging console with 24 buttons/zones and 2 extra selectable microphone sources.
PSC-AS	PDC	Parallel Mode: 32 per PDC;64 per IDA8S Cascade mode*: 4 per PDC;8 per IDA8S	A grouped console is comprised of a pad with a monitoring speaker, a pad with a gooseneck and 8 buttons/zones, and two pads with 8 buttons/zones.
DIALER-DP	PDC	1 per PDC;2 per IDA8S	A remote dialer for making telephone calls via IDA8's telephone hardware.
DPWL	PDC	1 per PDC;2 per IDA8S	An RF transceiver to communication between DIALER-DP and IDA8, then the DIALER-DP can work without a physical connection.

- The max. number of peripherals through per PDC port/per IDA8S processor by using a PPM JB Junction Box.
  Take PPM-AS for example, up to 32 PPM-AS units can be connected to 1 PDC port of IDA8C by using the PPM JB junction boxes, and users can assign the device IDs in sequence for each PPM-AS unit from Ateis Studio software.
- *Cascade mode with PPM JB junction box can be applicable for PPM-AS and PSC-AS only.
- **Dual Port: The purpose of dual port is using the RS485 (PDC port on IDA8) to fulfill the redundant loop in case of any failure with the cable connection. When detecting the failure of cable connection on one of the PDC port, the system will automatically switch to the redundant dual port.

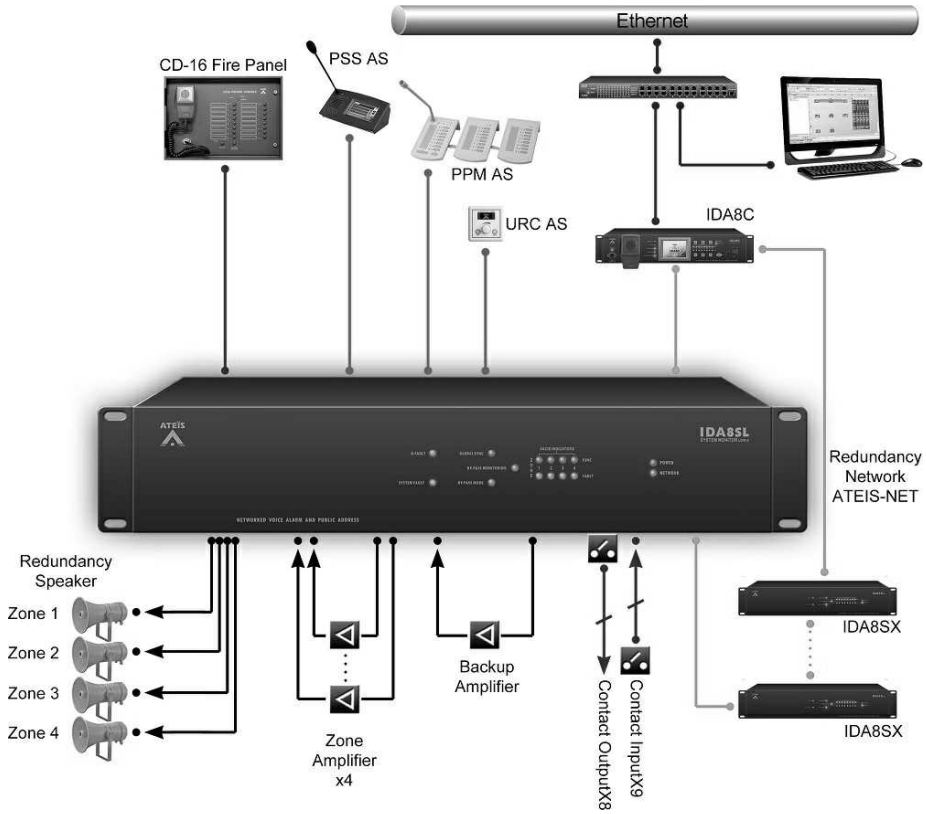
3.1.3.4 3rd Party Control

The following table lists the 3rd Party Control protocols supported by IDA8S.

Protocol	Interface		Function
	Connection	Settings	
Ateis 3rd Party Protocol	Ethernet(UDP)	UDP Port = 19761	• Read/Write value of parameters. • Stepped adjustment for parameters.
Modbus	PDC(RS485)	PDC Port 1~ 2	• Level control • Paging • Read Monitoring Status • Read Evacuation Status • Play Message • Logic I/O Control

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3.1.4 IDA8SL

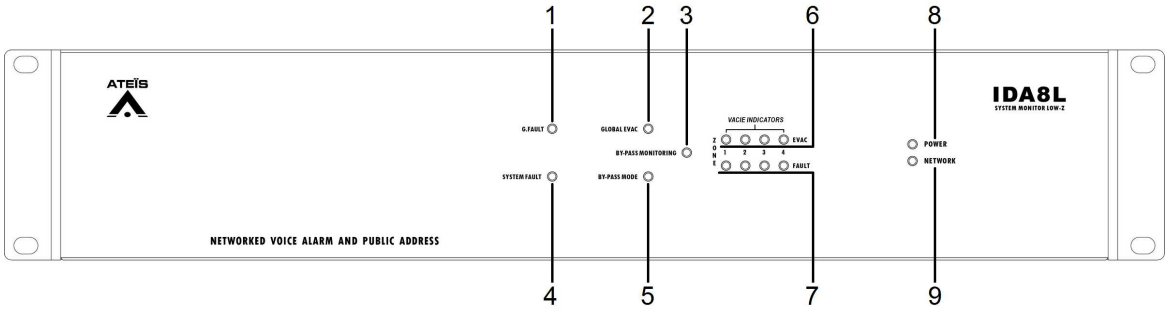


The IDA8SL Low-Impedance slave unit houses advanced audio digital signal processing (DSP), matrix control functions and a digital message player, along with amplifier monitoring with hot-swap amplifiers and low-impedance line monitoring. Each input and output channel is fitted with a wide range of pre-and post-processing devices such as volume controllers, routing mixers and switches, priority and paging components, equalizers, compressors, limiters and delay-lines.

❖ Security & Connectivity

- In accordance with EN54-16 and BS5839/8, full monitored supervision from paging microphone capsule to the end of loudspeaker line.
- The IDA8SL supports redundant loop network cabling.
- Up to 48 simultaneous audio channels per local network.
- Up to 256 zones in a local network.

3.1.4.1 Front Panel



1. G.Fault LED: This LED will light up when a global fault is detected.
2. Global EVAC LED: This LED will light up if the system is in EVAC paging state. This LED will light up if any of the IDA8 processor is performing the EVAC paging via Ateis-Net.

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To learn more about how to configure an EVAC paging, see Network Paging Component chapter.

3. Bypass Monitoring LED: This LED will light up if monitoring of the IDA8 is disabled by manual operation.
4. System Fault LED: This LED will light up when a system fault fault is detected.
5. Bypass Mode LED: This LED will light up if the IDA8 is in bypass mode.

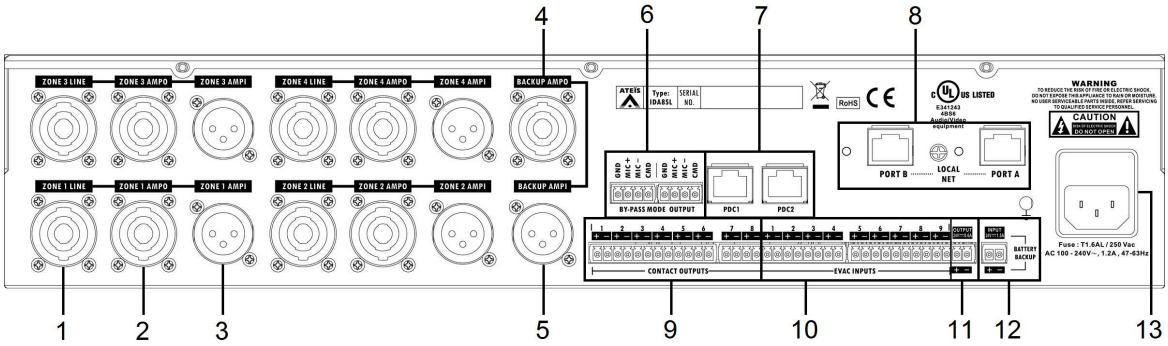
6~7.VACIE indicator LED:

6. Zone EVAC LEDs: The LED will light up if the audio channel is in EVAC paging. Each LED corresponds to an output channel of a Network Paging component. For example, 1st LED is for pin M1, 2nd LED for pin M2 and so on.
7. Zone Fault LEDs: The LED will light up if one of following faults is detected:

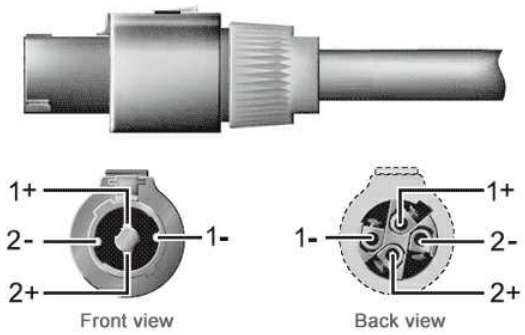
Normal AMP Error
Line A Error
Line B Error
Backup AMP Error
AMP Line Leakage Error

8. Power LED: This LED will light up when the IDA8SL is powered.
9. Network LED: This LED will light up if there are more than two deployed IDA8 processors in Ateis-Net.

3.1.4.2 Rear Panel



1. Zone1 Speaker Line Output: This connector is used for connecting the loudspeaker of zone1, the below picture shows how to connect the speaker.



1+, 2+ : Speaker +

1-, 2- : Speaker -

2. Zone1 Amplifier Output: This connector is used for connecting the output of the zone1 amplifier for receiving the audio signal powered by the amplifier.

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⚠We recommend that the IDA8SL unit connects to the floating output amplifier.

- E.g. built-in transformer output for driving 12~24V loudspeakers support up to 1000W.
- E.g. the amplifier module's power supply and ground is floating ground from IDA8SL.

If the IDA8SL unit is connecting to non-floating output amplifier, please disable the leakage monitor function on Ateis Studio software > Monitoring > Global Setting > Enable Leakage.

3. Zone1 Amplifier Input: This connector is used for connecting the input of the zone1 amplifier for transmitting 0dB audio signal to the amplifier.
4. Backup Amplifier Output: This connector connects to the output of the backup amplifier for receiving audio signal powered by the amplifier.
5. Backup Amplifier Input: This connector is used for connecting the input of the backup amplifier for transmitting 0dB audio signal to the amplifier.
6. Bypass Mode Outputs: This port is used for sharing the bypass mode microphone signals through the IDA8C & IDA8SL local network (only needed when using fiber optic network).
7. PDC (Peripherals Device Controller) Connectors: Two RJ-45 connectors are used to connect consoles or peripheral devices. For examples, PSS-AS, URC-150AS, PPM-AS connect to the IDA8SL via this connector.
8. Local Net: The local Ateis network is used for linking the IDA8C controller and IDA8SL unit together.
9. Contact Outputs: 8 logic output channels to close/open circuits for an external device, this contact is normally open.
10. Evacuation Inputs: 9 evacuation contact inputs allow the monitoring of external contact. They can also be used in UGA mode and triggered by a voltage polarization change.
11. 24VDC Output: Provide 24VDC power for external devices (max. 0.6A).
12. 24VDC Input: Connect the 24VDC battery charger for battery backup and power sharing (max. 1.5A).
13. AC Power Socket:
    - Main 110~240 V 1.2A, 47~63Hz AC power input with fuse. If the 24VDC and AC mains power input are present at the same time, the IDA8SL will use the AC power first, and switch to DC power if there is no AC power input.
    - Fuse: T1.6AL / 250VAC

3.1.4.3 Max. Peripherals for IDA8SL

The following table list the peripherals supported by IDA8SL.

Device	Connection	Max. Num per IDA8SL	Function
PPM-AS	PDC	Parallel Mode: 32 per PDC;64 per IDA8SL Cascade mode*: 4 per PDC;8 per IDA8SL	Remote console with paging ability.
PSS-AS	PDC	1 per PDC;2 per IDA8SL	Remote console for Paging and Event Triggering (Element Control, Master/Sub Preset Control).
URC-150AS	PDC	32 per PDC;64 per IDA8SL	Remote console for Master/Sub Preset Controlling and Element Controlling.
URGP32I	PDC	1 per PDC;2 per IDA8SL	Evacuation Input extension.
URGP16I16O	PDC	1 per PDC;2 per IDA8SL	Evacuation Input & output extension
DNM-485	PDC	10 per IDA8SL	Auto noise gain for audio signals
NSM	Analog Audio	8 per IDA8SL	Detect Background Noise
CD-8AS	PDC	32 per PDC;64 per IDA8SL	Wall mounted cabinet remote paging console with 8 buttons/zones.
CD-16AS	PDC	32 per PDC;64 per IDA8SL	Wall mounted cabinet remote paging

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Device	Connection	Max. Num per IDA8SL	Function
			console with 16 buttons/zones.
CD-TOUCHAS	PDC	1 per PDC;2 per IDA8SL	Wall mounted cabinet remote paging console with touch screen and Fireman Microphone.
PCP	PDC	32 per PDC;64 per IDA8SL	Wall mounted cabinet remote paging console with telephone styled microphone.
CDPM	PDC	Single Port: 1 per PDC;2 per IDA8SL Dual Port**: 2 PDC for 1; 2 per IDA8SL	Wall mounted cabinet remote paging console with 24 buttons/zones and 2 extra selectable microphone sources.
PSC-AS	PDC	Parallel Mode: 32 per PDC;64 per IDA8SL Cascade mode*: 4 per PDC;8 per IDA8SL	A grouped console is comprised of a pad with a monitoring speaker, a pad with a gooseneck and 8 buttons/zones, and two pads with 8 buttons/zones.
DIALER-DP	PDC	1 per PDC;2 per IDA8SL	A remote dialer for making telephone calls via IDA8's telephone hardware.
DPWL	PDC	1 per PDC;2 per IDA8SL	An RF transceiver to communication between DIALER-DP and IDA8, then the DIALER-DP can work without a physical connection.

- The max. number of peripherals through per PDC port/per IDA8SL processor by using a PPM JB Junction Box.
  Take PPM-AS for example, up to 32 PPM-AS units can be connected to 1 PDC port of IDA8C by using the PPM JB junction boxes, and users can assign the device IDs in sequence for each PPM-AS unit from Ateis Studio software.
- *Cascade mode with PPM JB junction box can be applicable for PPM-AS and PSC-AS only.
- **Dual Port: The purpose of dual port is using the RS485 (PDC port on IDA8) to fulfill the redundant loop in case of any failure with the cable connection. When detecting the failure of cable connection on one of the PDC port, the system will automatically switch to the redundant dual port.

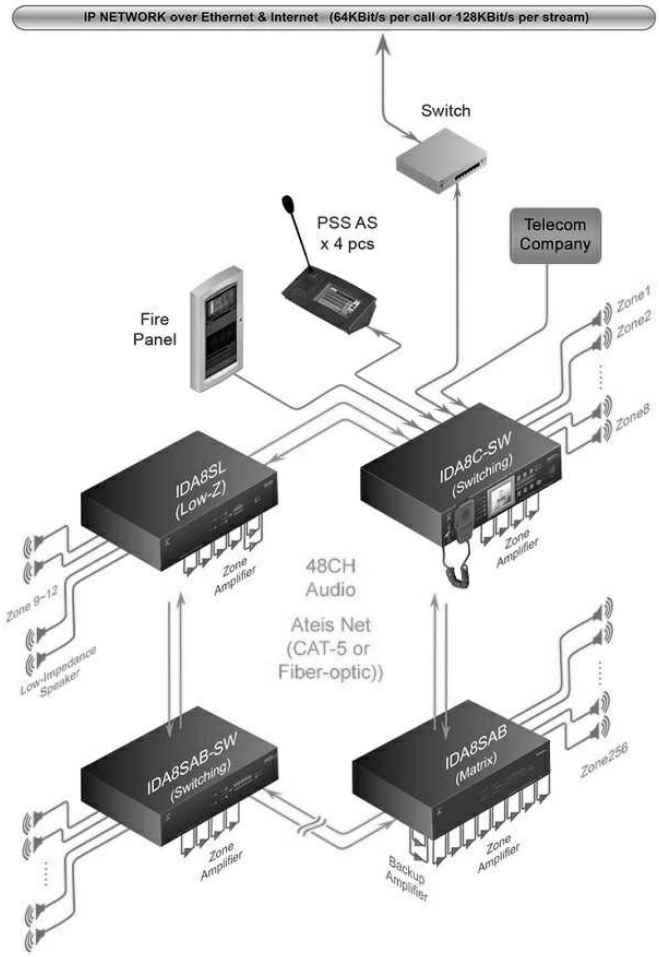
3.1.4.4 3rd Party Control

The following table lists the 3rd Party Control protocols supported by IDA8SL.

Protocol	Interface		Function
	Connection	Settings	
Ateis 3rd Party Protocol	Ethernet(UDP)	UDP Port = 19761	• Read/Write value of parameters. • Stepped adjustment for parameters.
Modbus	PDC(RS485)	PDC Port 1~ 2	• Level control • Paging • Read Monitoring Status • Read Evacuation Status • Play Message • Logic I/O Control

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3.1.5 IDA8C-SW



IDA8C (Switch Mode) controller requires less number of amplifiers with only 4 audio channels for 4 amplifiers and utilizes with a maximum capacity of 1000 W for each. The Ateïs local-net can be a network of one controller and a maximum up to 31 Slave units including IDA8C (Switch Mode) and IDA8C (Matrix Mode) in a local system.

IDA8C (Switch Mode) supports up to 4 sources including Evac/Voice/Music/Backup. Each zone can be routed to one of the system's audio channels. The four channels can be switched ON/OFF in each zone separately. In case of Evacuation, the three channels can be used as a second alarm channel. One IDA8C (Switch Mode) shall only require up to 4 channel amplifier and the amplifiers will act as a backup amplifier in case of other amplifiers break down.

❖ Security

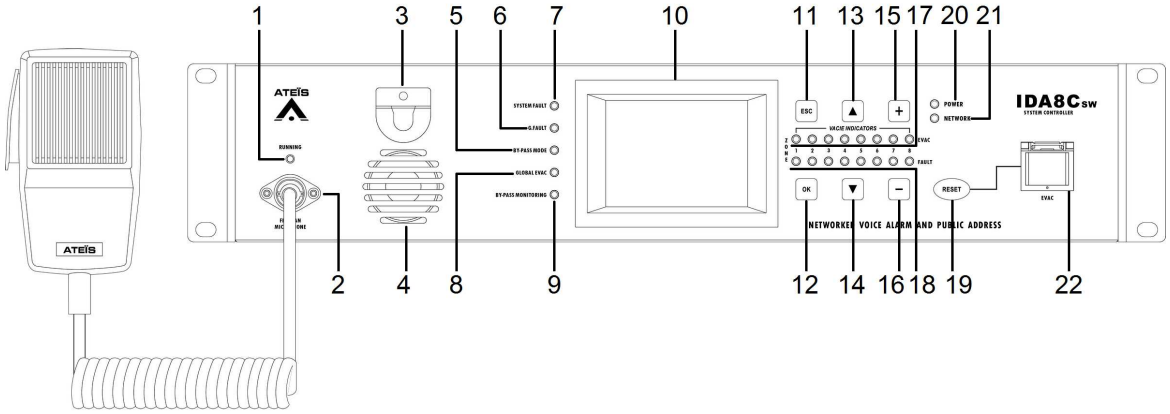
- In accordance with EN54-16 and BS5839/8, full monitored supervision from paging microphone capsule to the end of loudspeaker line.
- Enhanced loudspeaker line surveillance for A/B zone wiring.
- The IDA8C-SW supports redundant network cabling, wired as a redundant loop.

❖ Connectivity

- Up to 48 simultaneous audio channels per local network.
- Up to 256 zones in a local network, and up to 8,192 zones in a global network.
- 4 channel audio distribution for EVAC, Paging, BGM & Backup.

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3.1.5.1 Front Panel



1. Running LED: Display the status of the fireman microphone, there are 3 types of LED states:

Status	Frequency	Activity
Permanent		Active, Fireman microphone is allowed to paging.
Blinking	° °	Zones are busy, fireman microphone is not allowed to paging.
Blinking	° °°° ° °	Pre chime is playing.

2. Fireman Microphone: A DIN connector for fireman microphone connection.
3. Fireman Microphone Hook: An U-shape hook to place the fireman microphone.
4. Supervised Speaker: A built-in speaker to play chime when paging or monitor signal from main controller.

Function	Activity
Warning Tone	A buzzer sound is generated when some faults is detected in system.
Source Monitoring	Monitor audio sources of IDA8C. The source to be monitored can be selected via Ateis Studio software.

If a fault is detected when speaker is monitoring a source, then the source monitoring will be interrupted and play a buzzer sound for the fault.

5. Bypass Mode LED: This LED will light up if the IDA8C is in bypass mode or not.
6. G.Fault LED: This LED will light up when a global fault is detected.

Fault LED and system fault LED are exclusive. If system fault and global fault are detected at the same time, the system only light the system fault LED.

7. System Fault LED: This LED will light up when a system fault is detected.
8. Global EVAC LED: This LED will light up to indicate if any IDA8 processor is performing an EVAC paging under Ateis-Net.
9. Bypass Monitoring LED: This LED will light up if the monitoring of IDA8 is disabled by manual operation.
10. Touch Screen: A 3.5" color touch panel allows a graphical interface for users to control or read the status of system. Parameters or settings of the device can be adjusted from multiple layered on the menu.
11. ESC Button: Navigate as Prev/Back/Leave action.
12. OK Button: Navigate as Start/Next/Save action.
13. Up button: Navigate as Up arrow control action.
14. Down button: Navigate as Down arrow control action.

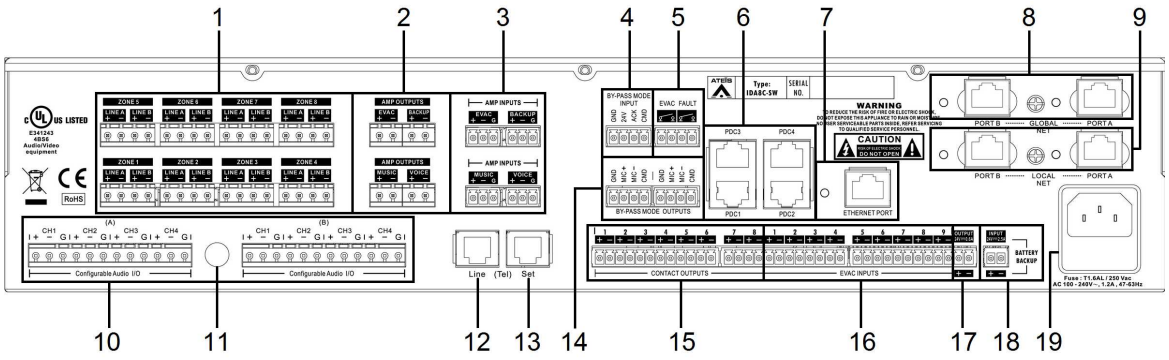
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15. Plus Button: Navigate as Volume Up action.
16. Down Button: Navigate as Volume Down action.
17. Zone EVAC LEDs: To show the audio channel is in EVAC paging or not. Each LED corresponds to an output channel of Network Paging component. For example, 1st LED is for pin M1, 2nd LED for pin M2 and so on.
18. Zone Fault LEDs: This LED will light up if one of following faults is detected:

Normal AMP Error
Line A Error
Line B Error
Backup AMP Error
AMP Line Leakage Error

19. EVAC Reset Button: Cancel the event triggered by EVAC button.
20. Power LED: This LED will light up when IDA8C-SW is powered.
21. Network LED: This LED will light up if there are more than two deployed IDA8 processors in Ateis-Net.
22. EVAC Button: Click this button to trigger an EVAC event. The EVAC event needs to be pre-programmed on Ateis Studio software first.

3.1.5.2 Rear Panel



1. Speaker Zone Outputs: There are 8 zones for speaker & amplifier connections. Each zone consists of following connectors (from left to right):
   - Connector of line A speaker
   - Connector of line B speaker
   - Connector of 100V audio coming from amplifier

   The IDA8 output is exactly the same audio signal to line A and B. Two speakers can connect to one zone for redundancy purposes, one connects to line A, another connects to line B. Both speaker lines are monitored. That means if damage to a speaker is detected, a global fault "Line A/B Error" will be generated.

⚠ We recommend that the IDA8C-SW controller connects to the floating output amplifier.
- E.g. built-in transformer output for driving 70V and 100V loudspeakers such as BPA and DPA.
- E.g. the amplifier module's power supply and ground is floating ground from IDA8C-SW.

If the IDA8C-SW controller is connecting to non-floating output amplifier, please disable the leakage monitor function on Ateis Studio software > Monitoring > Global Setting > Enable Leakage.

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2. AMP Outputs: 4 0dB zone outputs to amplifiers.

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3. AMP Inputs: 4 0dB zone inputs to amplifiers.
4. Bypass Mode Input:
   - Contact input to engage the bypass mode paging (CMD).
   - Contact output to display the state of bypass mode paging (ACK).
5. EVAC Outputs / Fault State Outputs:
   - EVAC Output Contact: this contact is closed if the system is under EVAC paging.
   - Fault Output Contact: this contact is open if a fault is detected.
6. PDC (Peripherals Device Controller) Connectors: Four RJ-45 connectors are used for connecting consoles or peripheral devices such as PSS-AS, URC-150AS and PPM-AS through Junction Box.
7. Ethernet Connector: RJ-45 connector to link the IDA8C on an ethernet network. The following end points are communicated with IDA8C through ethernet networking.

Ateis Studio software
TERRACOM Devics
PPM-IT5
TerraManager
Syslog (Central Log)
3rd party devices
Voxnet Server
PMIP-D (thru Vox@Net)
VNB
Modbus Protocol
IGMP
SNMP
RTP
NTP
SIP

8. Global Net: The global network (redundant loops) is used for linking the IDA8C/IDA8C-SW controller to the next connected IDA8C/IDA8C-SW controller.
9. Local Net: The local Ateis network is used for linking the IDA8C-SW controller and IDA8 slave units together.
10. Configurable Audio I/Os: Two configurable 0dB audio I/O port A and B. Each port is available to assemble an audio card. There are 4 channels on each audio I/O card.
11. BNC Connector: This BNC connector is for AES/EBU card only.
12. Telephone Line Input: A connector for a telephone signal coming from the telephone company (optional).

Interface:	a/b (analog), support 74 countries
Dialing modes:	vocal
Connection:	PABX
Supported Standards:	FSK and DTMF
Interface:	RJ11
Technology:	Noise Suppression, Line Echo Cancellation, Voice Enhance

13. Telephone Connector: This connector is used for external telephone connection (optional).
14. Bypass Mode Outputs: This port is used for sharing the bypass mode microphone signals through the IDA8C-SW & IDA8S local network (only needed when using fiber optic network).
15. Contact Outputs: 8 logic outputs channels are used to close/open a circuit for an external device. This contact is normally open.

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16. Evacuation Inputs: 9 evacuation contact inputs that allow the monitoring of external contact. They also can be used in UGA mode, trigger by a voltage polarization change.

17. 24VDC Output: Provide 24VDC power for external devices (max. 0.6A).

18. 24VDC Input: Connect the 24VDC battery charger for battery backup and power sharing (max. 2.5A).

19. AC Power Socket:

- Main 110~240 V 1.2A, 47~63Hz AC power input with fuse. If the 24VDC and AC mains power input are present at the same time, the IDA8C will use the AC mains power first, and switch to DC power if there is no AC power input.
- Fuse: T1.6AL / 250VAC

3.1.5.3 Installation Note

IDA8C (Switch Mode) system requires and processes four 0 dB audio inputs into only a 4-channel amplifier (Evacuation, Voice, Music or Backup), each input is also fitted with volume controls and equalizers.The four channels can be switched ON/OFF in each zone separately.

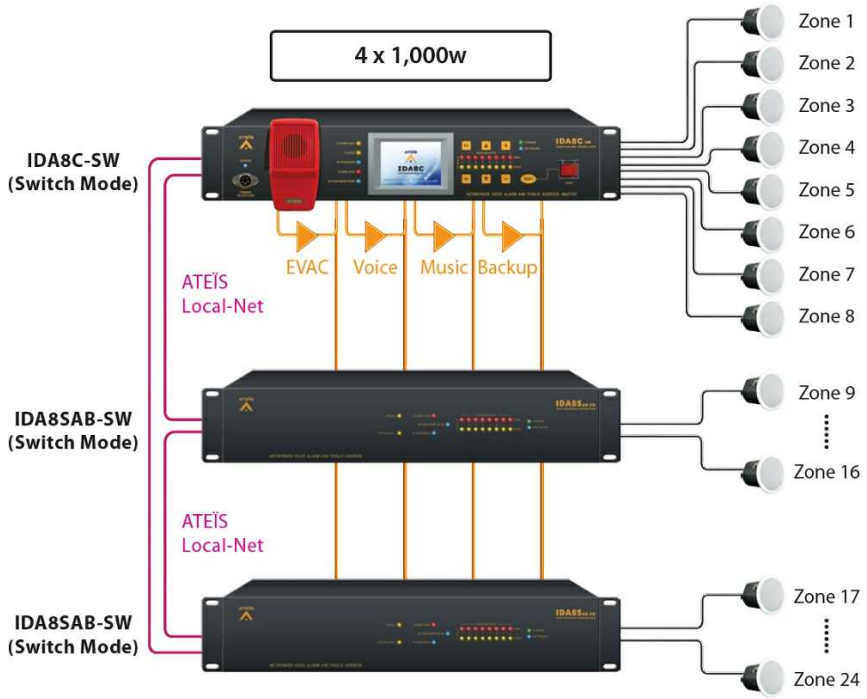
In case of evacuation, the three channels can be used as a second alarm channel. There are three types of mode (Equal Mode, Unequal Mode, Backup Sharing Mode) which provide users with a multi-functional combination for preference.

3.1.5.3.1 Equal Mode

- Equal Mode

The master unit IDA8C-SW is connected to IDA8SAB-SW slave units by Ateis Local-Net with full power back-up.

Each channel can handle up 1,000W wattage capacity and be supplied for the zones of controller and slave units. Each amp channel has the same wattage capacity, and the system will automatically use the amp channel which is currently available. The 4 sources with the highest priority can use the 4 amp channels.



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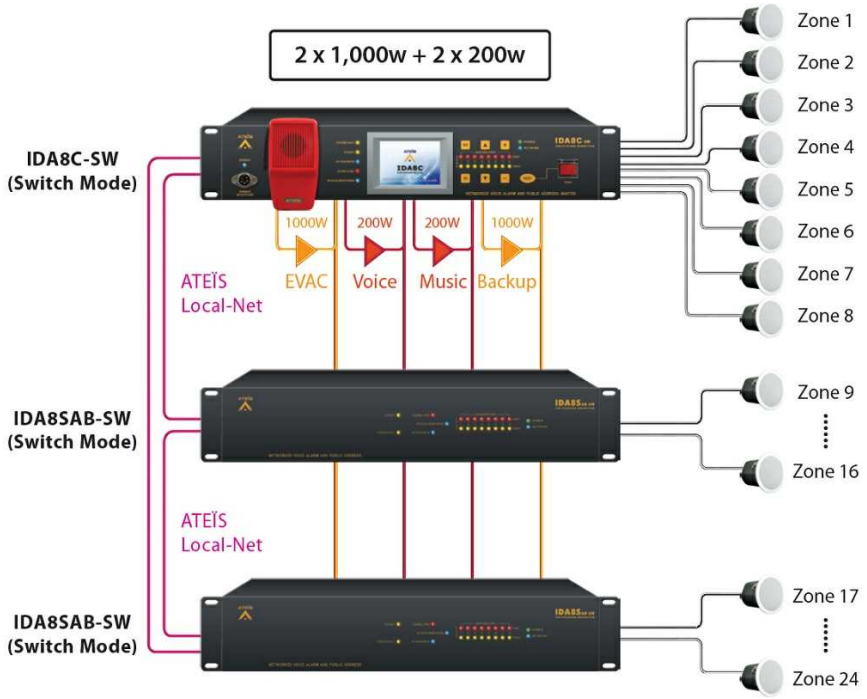
3.1.5.3.2 Unequal Mode

- Unequal Mode

The master unit IDA8C (Switch Mode) is connected to IDA8SAB (Switch Mode) slave units by Ateis Local-Net with full power back-up.

The system divides four channels into two groups and each two channels in a group (evac + backup and voice + music). The sources in priority 1 ~ 20 shall be used by the evac and backup channels; and sources in priority 21 ~ 99 shall be used by the voice and music channels. When the two amplifiers for voice and music channel are being occupied, the available amp for evac and backup channels will also be used for the sources with priority 21 ~ 99.

In case you might face the possibility when the two amplifiers for Voice and Music sources are been occupied, rest of the amplifiers for EVAC and Backup channels shall also be used as Voice and Music sources simultaneously with one condition that there are other vacant amplifiers for EVAC and Backup.



Make sure the wattage unit of each group must be in the same power capacity. See the picture above, the EVAC and Backup channel shall be put together in one group with the same watt (1000W). The Voice and Music channel shall be put together in the second group with the same watt (200 W).

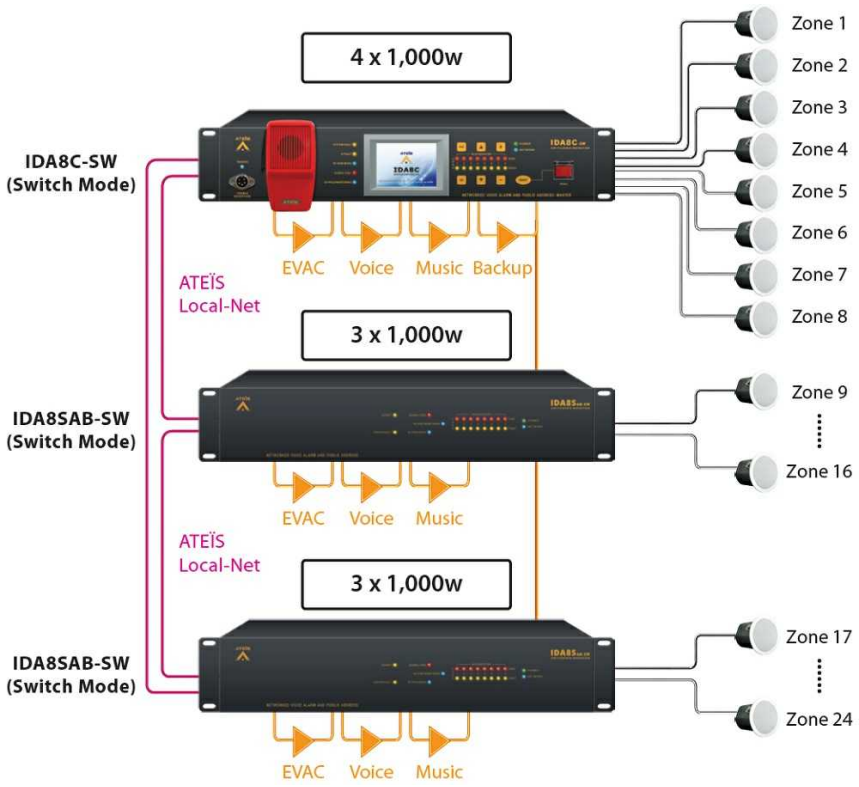
3.1.5.3.3 Backup Sharing Mode

- Backup Sharing Mode

The master unit IDA8C (Switch Mode) is connected to IDA8SAB-SW slave units by Ateis Local-Net with full power back-up.

The 9 amplifier channels are supplied for each zone individually, and one backup amplifier channel will act as backup for the 9 amplifiers once they break down.

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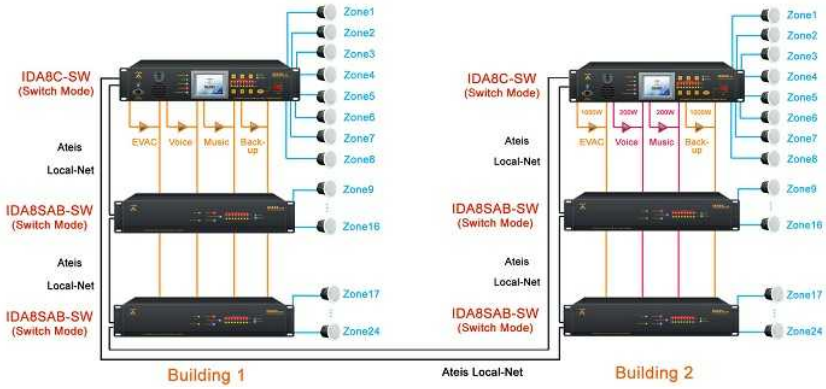
3.1.5.3.4 Application Examples

❖ Scenarios

One controller and a maximum up to 31 IDA8S/SAB/SL/SAB-SW slave units can be connected in Ateis local network. The following pictures below would give users a better understanding of how to combine the multiple installation modes together in two or more buildings.

- Scenario 1:

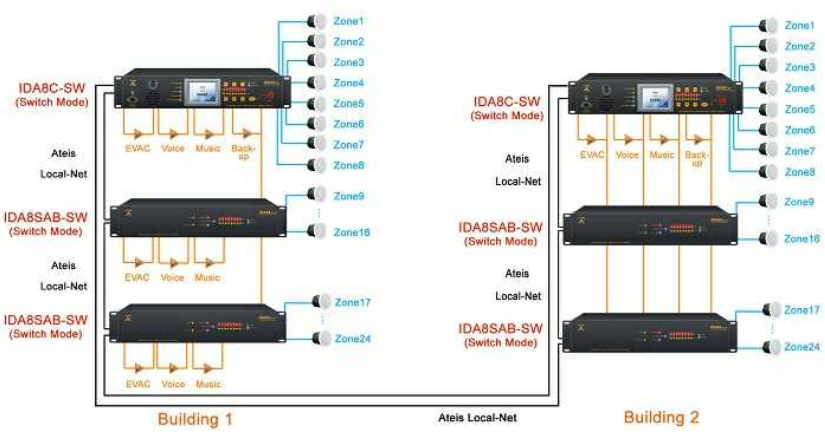
  Equal Mode+Unequal Mode



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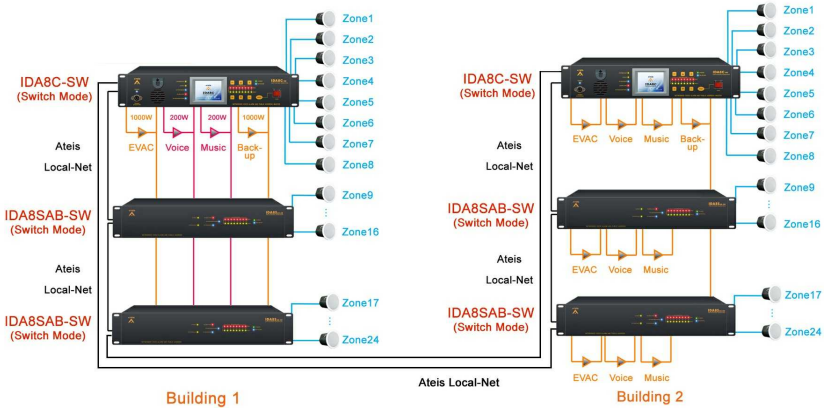
- Scenario 2:

  Backup Sharing Mode+Equal Mode



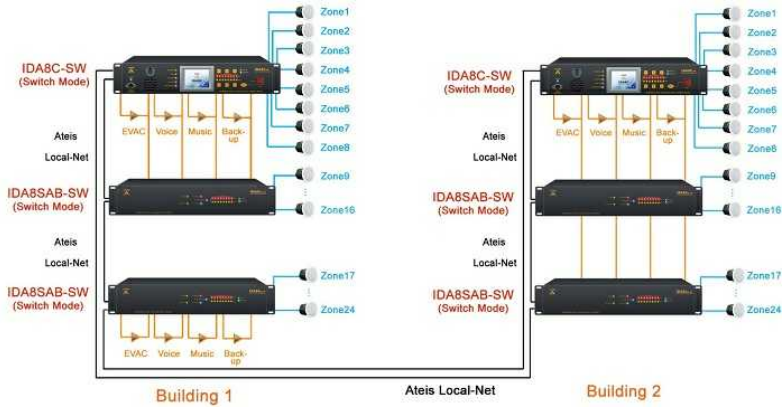
- Scenario 3:

  Unequal Mode + Backup Sharing Mode



- Scenario 4:

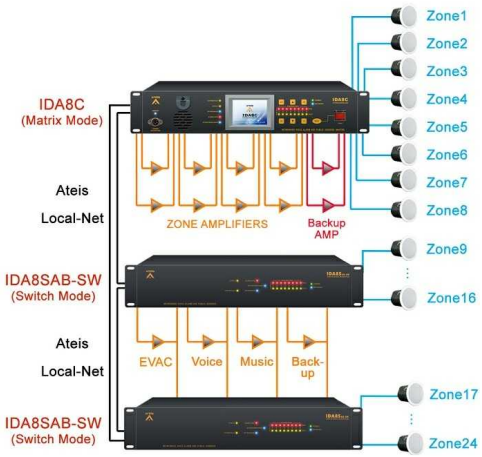
  Multiple wiring with 8 amplifiers + Equal Mode



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- Scenario 5:

  IDA8C (Matrix Mode) + IDA8C/IDA8SAB (Switch Mode)



3.1.5.3.5 Amplifier Wiring

❖ Amplifier Configuration [IDA8C/IDA8SAB-SW]

The figures below show the basic amplifier wiring of each mode (Equal, Unequal, Backup Sharing) with IDA8C/IDA8SAB-SW.

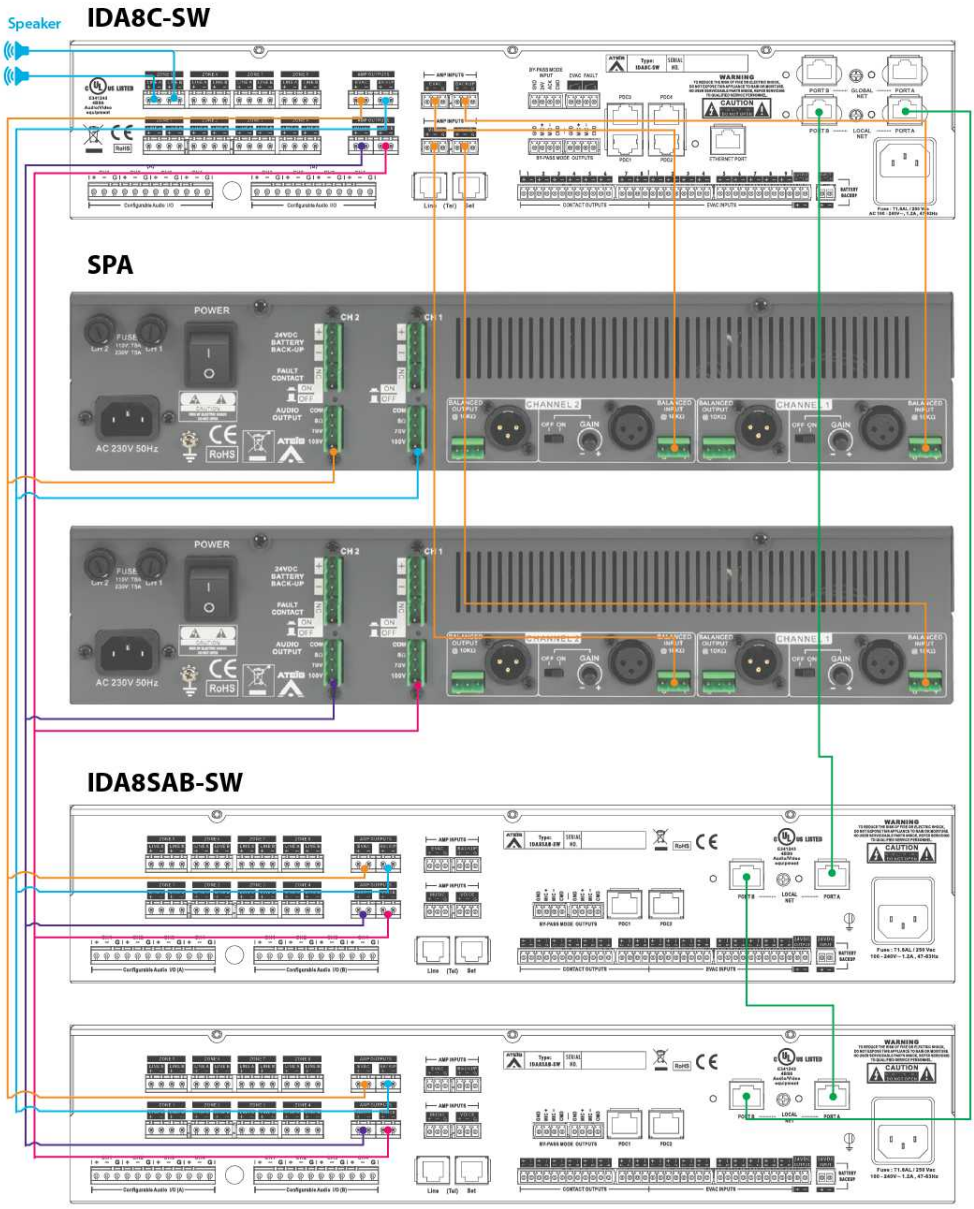
- Equal Mode/Unequal Mode

  In this figure of wiring, the four channels (Evacuation, Voice, Music or Backup) supply in each zone of IDA8C/IDA8SAB-SW simultaneously.

  The color of lines indicate the different channel referred to the amplifiers.

  1. Deep yellow: Indicate the signal output of the four channels from the master unit connect to the referred amplifier inputs.
  2. Orange/Blue/Purple/Pink: Indicate the signal input from the amplifiers inputs connect to the Amp Inputs of each master and slave units.
  3. Green: Indicate the link of the master unit and slave unit by using ATEÏS Local-Net.

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- Backup Sharing Mode:

  In this figure of wiring, the EVAC channel of IDA8C-SW (master unit) and IDA8SAB-SW (slave unit) is linked up with one amplifier individually and the backup amplifier shall be a backup for the three amplifiers once they break down and switch on the power supply automatically.

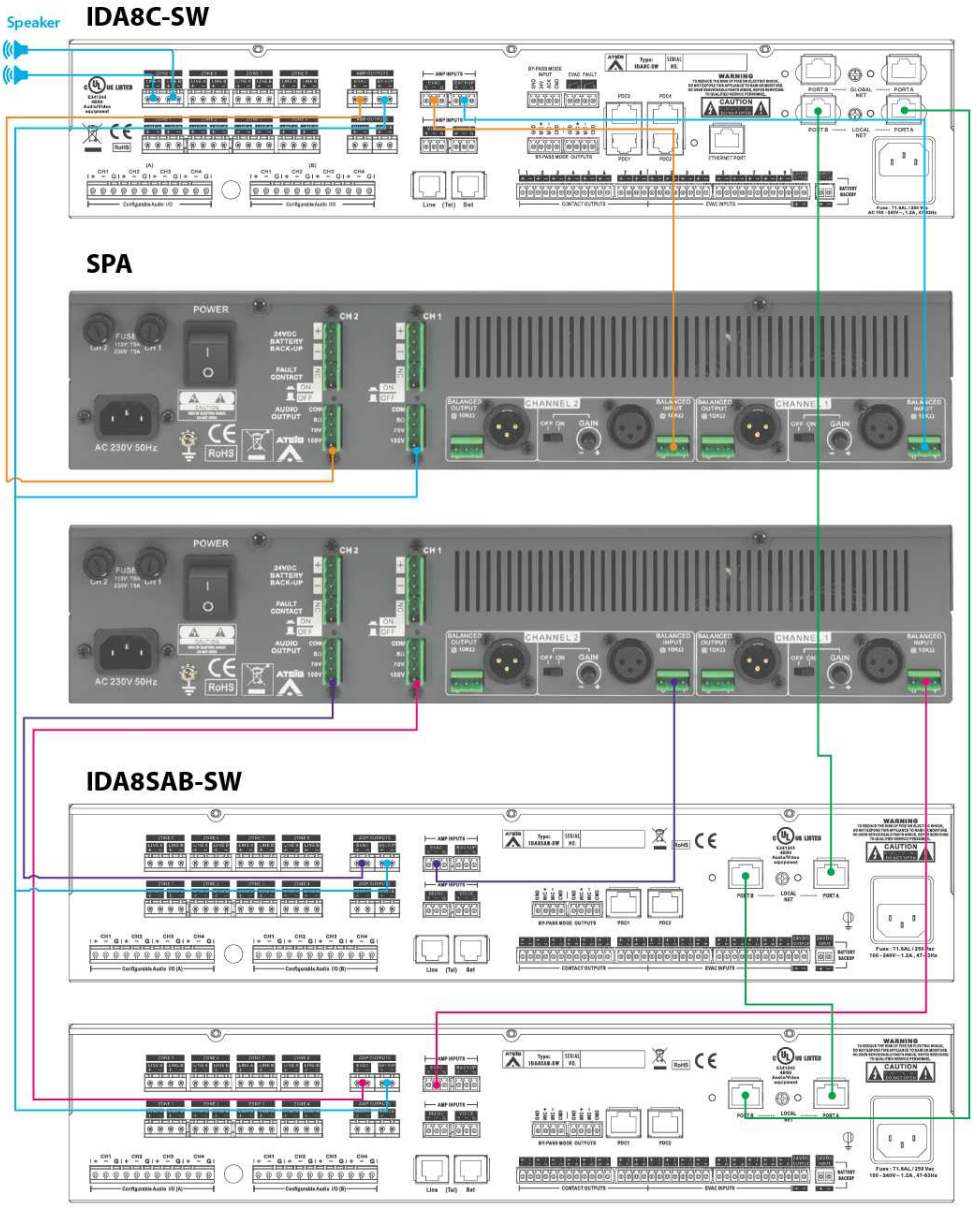
  The color of lines indicate the different channel referred to the amplifiers.

  1. Orange: Indicate the signal output of the EVAC channel from the master unit connect to the referred amplifier inputs and send the signal back from the amplifier to the Amp Inputs of the master unit.
  2. Purple/Pink: Indicate the signal output of the EVAC channel from the salve unit connect to the referred amplifier inputs and send the signal back from the amplifier to the Amp

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Inputs of the slave unit.

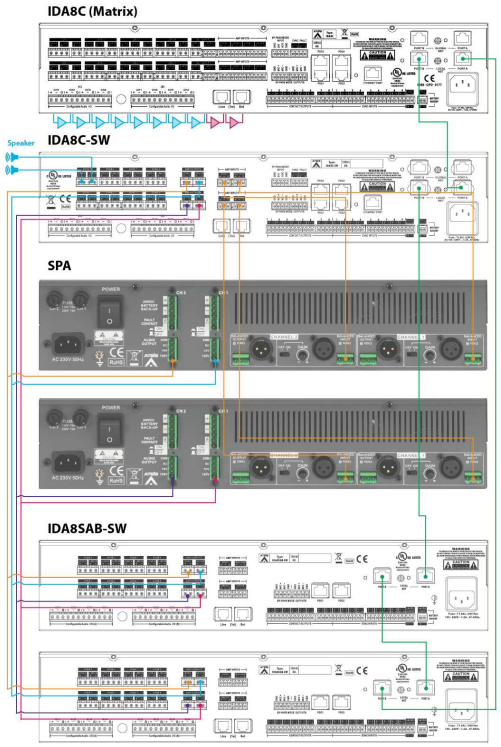
3. Blue: Indicate the signal output of the Backup channel from the master unit connect to the referred amplifier inputs and send the signal back from the amplifier to the Amp Inputs of each master and slave units.
4. Green: Indicate the link of the master unit and slave unit by using ATEÏS Local-Net.



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❖ Amplifier Configuration [IDA8C (Matrix Unit) and IDA8C-SW/IDA8SAB-SW (Switch Mode Unit)]:

- There are 8 zones for speaker & amplifier connection in IDA8C (Matrix Unit), plus 2 zones for backup amplifiers. The figure below shows the basic amplifier wiring of matrix unit and switch mode unit by using ATEÏS Local-Net (Green line).
  The Green line indicates the signal output (Port A) of IDA8C connects to (Port B) of IDA8C-SW, and send the signal back from (Port B) of IDA8C-SW to (Port A) of IDA8C via Local-Net.



3.1.5.4 Max. Peripherals for IDA8C-SW

The following table list the peripherals supported by IDA8C-SW.

Device	Connection	Max. Num per IDA8C-SW	Function
Fireman MIC	Fireman MIC Input	1	Paging where operator is close to the IDA8C-SW.
PPM-AS	PDC	Parallel Mode: 32 per PDC;128 per IDA8C-SW Cascade mode**: 4 per PDC;16 per IDA8C-SW	Remote console with paging ability.
PSS-AS	PDC	1 per PDC;4 per IDA8C-SW	Remote console for Paging and Event Triggering(Element Control, Master/Sub Preset Control).
URC-150AS	PDC	32 per PDC;128 per IDA8C-SW	Remote console for Master/Sub Preset Controlling and Element Controlling.
URGP32I	PDC	1 per PDC;4 per IDA8C-SW	Evacuation Input extension.
URGP16I16O	PDC	1 per PDC;4 per IDA8C-SW	Evacuation Input & output extension
DNM-485	PDC	10 per IDA8C-SW	Auto noise gain for audio signals
DNM-ENET	Ethernet	20 per IDA8C-SW	Ethernet type of auto noise gain for audio signals
NSM	Analog Audio	8 per IDA8C-SW	Detect Background Noise
PPM-IT5	Ethernet	1~Eth. Limit*	Paging, Element Control and Master/ Sub Preset Control.
URC-200AS	Ethernet	1~Eth. Limit*	Parameters Control and Master/Sub Preset Control.
CD-8AS	PDC	32 per PDC;128 per IDA8C-SW	Wall mounted cabinet remote paging console with 8 buttons/zones.
CD-16AS	PDC	32 per PDC;128 per IDA8C-SW	Wall mounted cabinet remote paging console with 16 buttons/zones.
CD-TOUCHAS	PDC	1 per PDC;4 per IDA8C-SW	Wall mounted cabinet remote paging console with touch screen and Fireman

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Device	Connection	Max. Num per IDA8C-SW	Function
			Microphone.
PCP	PDC	32 per PDC;128 per IDA8C-SW	Wall mounted cabinet remote paging console with telephone styled microphone.
CDPM	PDC	Single Port: 1 per PDC;4 per IDA8C-SW Dual Port***: 2 PDC for 1; 2 per IDA8C-SW	Wall mounted cabinet remote paging console with 24 buttons/zones and 2 extra selectable microphone sources.
PSC-AS	PDC	Parallel Mode: 32 per PDC;128 per IDA8C-SW Cascade mode**: 4 per PDC;16 per IDA8C-SW	A grouped console is comprised of a pad with a monitoring speaker, a pad with a gooseneck and 8 buttons/zones, and two pads with 8 buttons/zones.
DIALER-DP	PDC	1 per PDC;4 per IDA8C-SW	A remote dialer for making telephone calls via IDA8's telephone hardware.
DPWL	PDC	1 per PDC;4 per IDA8C-SW	An RF transceiver to communication between DIALER-DP and IDA8, then the DIALER-DP can work without a physical connection.

- The max. number of peripherals through per PDC port/per IDA8C-SW processor by using a PPM JB Junction Box.
  Take PPM-AS for example, up to 32 PPM-AS units can be connected to 1 PDC port of IDA8C by using the PPM JB junction boxes, and users can assign the device IDs in sequence for each PPM-AS unit from Ateis Studio software.
- When connecting to both Fireman Mic and other remote units, the priority status of Fireman Mic shall be higher than any other microphone remote units lining to PDC port.
- If a large number of remote units is required, simply add more slave units for the master unit.
- *Eth. Limit: The maximum number of IP that can be assigned over the network.
- **Cascade mode with PPM JB junction box can be applicable for PPM-AS and PSC-AS only.
- ***Dual Port: The purpose of dual port is using the RS485 (PDC port on IDA8) to fulfill the redundant loop in case of any failure with the cable connection. When detecting the failure of cable connection on one of the PDC port, the system will automatically switch to the redundant dual port.

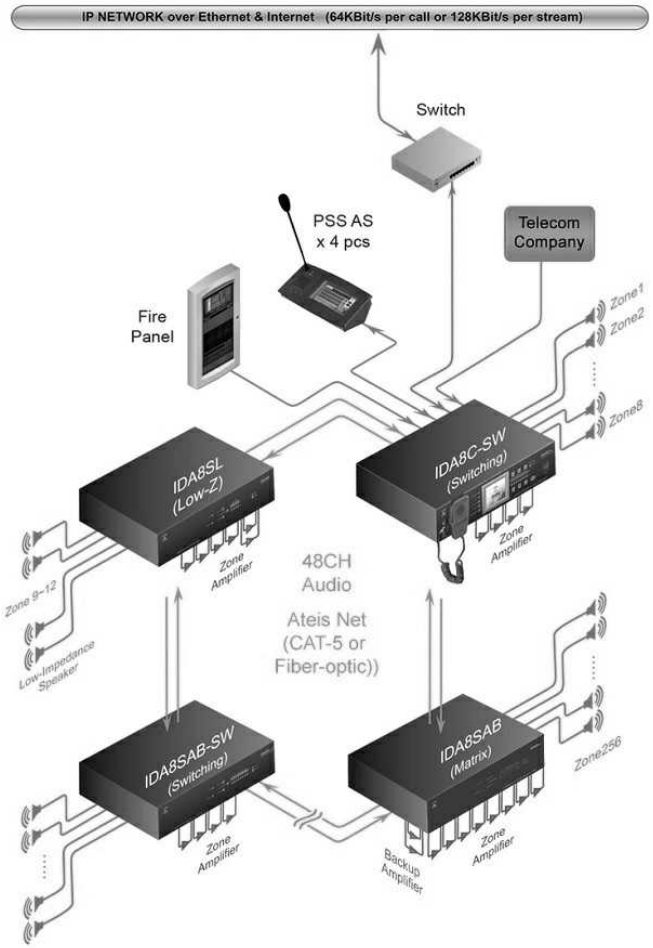
3.1.5.5 3rd Party Control

The following table lists the 3rd Party Control protocols supported by IDA8C-SW.

Protocol	Interface		Function
	Connection	Settings	
Ateis 3rd Party Protocol	Ethernet(UDP)	UDP Port = 19761	• Read/Write value of parameters. • Stepped adjustment for parameters. • Telephone card function
Modbus	Ethernet(TCP) PDC(RS485)	TCP Port = 502 PDC Port 1~ 4	• Level control • Paging • Read Monitoring Status • Read Evacuation Status • Play Message • Logic I/O Control

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3.1.6 IDA8SAB-SW



IDA8SAB (Switch Mode) provides the zones and audio in & out expansion using a secured 48-channel audio and data network over CAT5 or fiber optic. IDA8SAB (Switch Mode) requires less number of amplifiers with only 4 audio inputs/outputs from amplifier. The Ateïs local-net can be a network of one controller and a maximum up to 31 slave units including IDA8C (Switch Mode) and IDA8C (Matrix Mode) in a local system.

IDA8SAB (Switch Mode) supports up to 4 sources including Evac/ Voice/ Music/ Back up. Each zone can be routed to one of the system's audio channels. The four channels can be switched ON/ OFF in each zone separately. In case of Evacuation, the three channels can be used as a second alarm channel. IDA8SAB (Switch Mode) shall only require up to 4 channel amplifier and the amplifiers will act as a backup amplifier in case of other amplifiers break down.

❖ Security

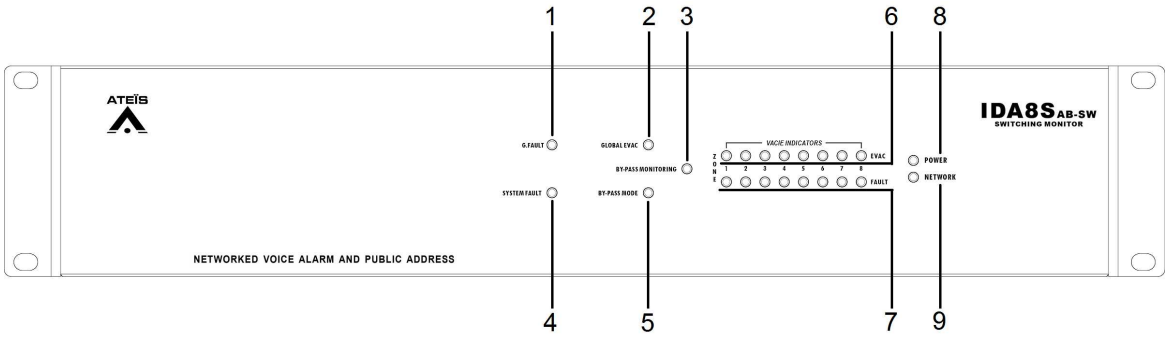
- In accordance with EN54-16 and BS5839/8, full monitored supervision from paging microphone capsule to the end of loudspeaker line.
- Enhanced loudspeaker line surveillance for A/B zone wiring.
- The IDA8SAB-SW supports redundant network cabling, wired as a redundant loop.

❖ Connectivity

- Up to 256 zones in a local network, and up to 8,192 zones in a global network.
- 4 x 1000 Watt maximum load
- 4 channel audio distribution for EVAC, Paging, BGM & Backup

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3.1.6.1 Front Panel



1. System Fault LED: This LED will light up when a system fault fault is detected.
2. G.Fault LED: This LED will light up when a global fault is detected.
3. Bypass Mode LED: This LED will light up if the IDA8C is in bypass mode.
4. Bypass Monitoring LED: This LED will light up if the monitoring function is enabled. This LED will light up if monitoring of the IDA8 is disabled by manual operation.
5. Global EVAC LED: This LED will light up if the system is in EVAC paging state. This LED will light up if any of the IDA8 processor is performing the EVAC paging via Ateis-Net.

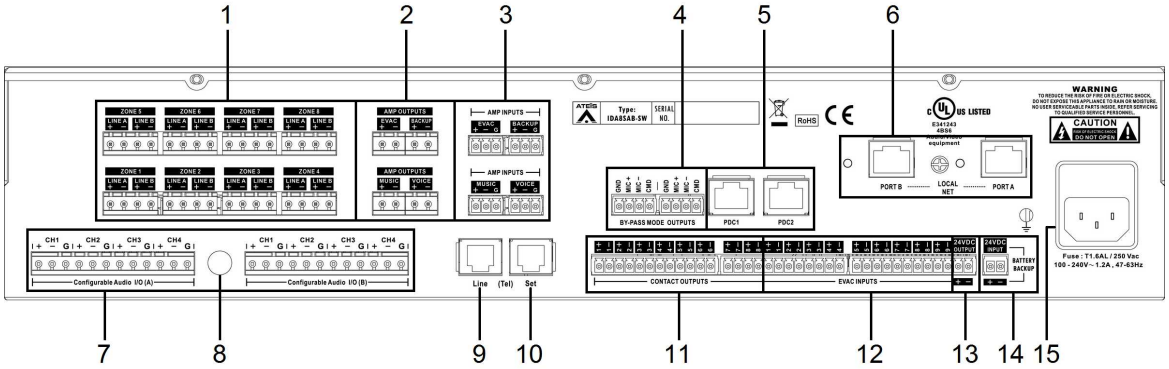
To learn more about how to configure an EVAC paging, see Network Paging Component chapter.

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6. Zone EVAC LEDs: The LED will light up if the audio channel is in EVAC paging. Each LED corresponds to an output channel of a Network Paging component. For example, 1st LED is for pin M1, 2nd LED for pin M2 and so on.
7. Power LED: This LED will light up when the IDA8SAB-SW is powered.
8. Network LED: This LED will light up if there are more than two deployed IDA8 processors in Ateis-Net.
9. Zone Fault LEDs: The LED will light up if one of following faults is detected:

Normal AMP Error
Line A Error
Line B Error
Backup AMP Error
AMP Line Leakage Error

3.1.6.2 Rear Panel



1. Speaker Zone Outputs: There are 8 zones for speaker & amplifier connections. Each zone consists of following connectors (from left to right):
   - Connector of line A speaker.

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- Connector of line B speaker.
- Connector of 100V audio coming from amplifier.

The IDA8 output is exactly the same audio signal to line A and B. Two speakers can connect to one zone for redundancy purposes, one connects to line A, another connects to line B. Both speaker lines are monitored, meaning if damage to a speaker is detected, a global fault "Line A/B Error" will be generated.

⚠We recommend that the IDA8SAB-SW unit connects to the floating output amplifier.

- E.g. built-in transformer output for driving 70V and 100V loudspeakers such as BPA and DPA.
- E.g. the amplifier module's power supply and ground is floating ground from IDA8SAB-SW.

If the IDA8SAB-SW unit is connecting to non-floating output amplifier, please disable the leakage monitor function on Ateis Studio software > Monitoring > Global Setting > Enable Leakage.

---

2. Amplifier Zone Outputs: 4 Zones 0dB output to amplifiers.
3. Amplifier Zone Inputs: 4 Zones 0dB input to amplifiers.
4. Bypass Mode Outputs: This port is used for sharing the bypass mode microphone signals through the IDA8C-IDA8S network (only needed when using a fiber optic network).
5. PDC (Peripherals Device Controller) Connectors: Two RJ-45 connectors are used for connecting consoles or peripheral devices. For example, PSS-AS, URC-150AS, PPM-AS connect to the IDA8SAB-SW via this connector.
6. Local Net: The local Ateis network is used for linking the IDA8C/IDA8C-SW controller and IDA8 slave units together.
7. Configurable Audio I/Os: Two configurable 0dB audio I/O port A and B. Each port is available to assemble an audio card. There are 4 channels on each audio I/O card.
8. BNC Connector: This BNC connector is for AES/EBU card only.
9. Telephone Line Input: A connector for a telephone signal coming from the telephone company (optional).

Interface:	a/b (analog), support 74 countries
Dialing modes:	vocal
Connection:	PABX
Supported Standards:	FSK and DTMF
Interface:	RJ11
Technology:	Noise Suppression, Line Echo Cancellation, Voice Enhance

10. Telephone Connector: This connector is used for external telephone connection (optional).
11. Contact Outputs: 8 logic output channels to close/open circuit for an external device. This contact is normally open.
12. Evacuation Inputs: 9 evacuation contact inputs that allow the monitoring of external contact. They also can be used in UGA mode and are triggered by a voltage polarization change.
13. 24VDC Output: Provide 24VDC power for external devices (max. 0.6A).
14. 24VDC Input: Connect the 24VDC battery charger for battery backup and power sharing (max. 1.5A).
15. AC Power Socket:
    - Main 110~240 V 1.2A, 47~63Hz AC power input with fuse. If the 24VDC and AC mains power input are present at the same time, the IDA8SAB will use the AC power first, and switch to

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DC power if there is no AC power input.

- Fuse: T1.6AL / 250VAC

3.1.6.3 Installation Note

IDA8C (Switch Mode) system requires and processes four 0 dB audio inputs into only a 4-channel amplifier (Evacuation, Voice, Music or Backup), each input is also fitted with volume controls and equalizers.The four channels can be switched ON/OFF in each zone separately.

In case of evacuation, the three channels can be used as a second alarm channel. There are three types of mode (Equal Mode, Unequal Mode, Backup Sharing Mode) which provide users with a multi-functional combination for preference.

3.1.6.3.1 Equal Mode

Please refer to IDA8C-SW > Installation Note > Equal Mode chapter.

3.1.6.3.2 Unequal Mode

Please refer to IDA8C-SW > Installation Note > Unequal Mode chapter.

3.1.6.3.3 Backup Sharing Mode

Please refer to IDA8C-SW > Installation Note > Backup Sharingl Mode chapter.

3.1.6.3.4 Application Examples

Please refer to IDA8C-SW > Installation Note > Application Examples chapter.

3.1.6.3.5 Amplifier Wiring

Please refer to IDA8C-SW > Installation Note > Amplifier Wiring chapter.

3.1.6.4 Max. Peripherals for IDA8SAB-SW

The following table list the peripherals supported by IDA8SAB-SW.

Device	Connection	Max. Num per IDA8SAB-SW	Function
PPM-AS	PDC	Parallel Mode: 32 per PDC;64 per IDA8SAB-SW Cascade mode*: 4 per PDC;8 per IDA8SAB-SW	Remote console with paging ability.
PSS-AS	PDC	1 per PDC;2 per IDA8SAB-SW	Remote console for Paging and Event Triggering (Element Control, Master/ Sub Preset Control).
URC-150AS	PDC	32 per PDC;64 per IDA8SAB-SW	Remote console for Master/Sub Preset Controlling and Element Controlling.
URGP32I	PDC	1 per PDC;2 per IDA8SAB-SW	Evacuation Input extension.
URGP16I16O	PDC	1 per PDC;2 per IDA8SAB-SW	Evacuation Input & output extension
DNM-485	PDC	10 per IDA8SAB-SW	Auto noise gain for audio signals
NSM	Analog Audio	8 per IDA8SAB-SW	Detect Background Noise
CD-8AS	PDC	32 per PDC;64 per IDA8SAB-SW	Wall mounted cabinet remote paging console with 8 buttons/zones.
CD-16AS	PDC	32 per PDC;64 per IDA8SAB-SW	Wall mounted cabinet remote paging console with 16 buttons/zones.
CD-TOUCHAS	PDC	1 per PDC;2 per IDA8SAB-SW	Wall mounted cabinet remote paging console with touch screen and Fireman Microphone.
PCP	PDC	32 per PDC;64 per IDA8SAB-SW	Wall mounted cabinet remote paging console with telephone styled microphone.

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Device	Connection	Max. Num per IDA8SAB-SW	Function
CDPM	PDC	Single Port: 1 per PDC;2 per IDA8SAB-SW Dual Port**: 2 PDC for 1; 2 per IDA8SAB-SW	Wall mounted cabinet remote paging console with 24 buttons/zones and 2 extra selectable microphone sources.
PSC-AS	PDC	Parallel Mode: 32 per PDC;64 per IDA8SAB-SW Cascade mode*: 4 per PDC;8 per IDA8SAB-SW	A grouped console is comprised of a pad with a monitoring speaker, a pad with a gooseneck and 8 buttons/ zones, and two pads with 8 buttons/ zones.
DIALER-DP	PDC	1 per PDC;2 per IDA8SAB-SW	A remote dialer for making telephone calls via IDA8's telephone hardware.
DPWL	PDC	1 per PDC;2 per IDA8SAB-SW	An RF transceiver to communication between DIALER-DP and IDA8, then the DIALER-DP can work without a physical connection.

- The max. number of peripherals through per PDC port/per IDA8SAB-SW processor by using a PPM JB Junction Box.
  Take PPM-AS for example, up to 32 PPM-AS units can be connected to 1 PDC port of IDA8C by using the PPM JB junction boxes, and users can assign the device IDs in sequence for each PPM-AS unit from Ateis Studio software.
- *Cascade mode with PPM JB junction box can be applicable for PPM-AS and PSC-AS only.
- **Dual Port: The purpose of dual port is using the RS485 (PDC port on IDA8) to fulfill the redundant loop in case of any failure with the cable connection. When detecting the failure of cable connection on one of the PDC port, the system will automatically switch to the redundant dual port.

3.1.6.5 3rd Party Control

The following table lists the 3rd Party Control protocols supported by IDA8SAB-SW.

Protocol	Interface		Function
	Connection	Settings	
Ateis 3rd Party Protocol	Ethernet(UDP)	UDP Port = 19761	• Read/Write value of parameters. • Stepped adjustment for parameters.
Modbus	PDC(RS485)	PDC Port 1~ 2	• Level control • Paging • Read Monitoring Status • Read Evacuation Status • Play Message • Logic I/O Control

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3.2 Consoles and Accessories

3.2.1 Paging Consoles

3.2.1.1 PPM-AS / PPM-SP Paging Console



PPM-AS is an unidirectional addressable condenser paging microphone for IDA8 system. In accordance with BS5839, it is monitored by using the RS485 protocol over STP CAT5/6 cable with metal shielded connector, and transmits both audio and power from the paging console to the system units. The PPM-AS has 8 zone buttons with a sleek gooseneck microphone, providing durability and aesthetics in a slim, stable chassis.

PPM-AS enables live announcement to any pre-assigned zones (an optional PPM-SP hardware version also allows for broadcasting the pre-recorded messages). The paging station has a gooseneck microphone, a push-to-talk button, zone selection keys and a monitor speaker. Buttons represent a single zone or a group of zones and be easily defined in the software using a simple matrix selection. All buttons can be programmed from ATEÏS Studio software and each button can be programmed for PTT (Push To Talk) or latching functionality.

In addition to the zone LEDs, “Hold” and “Busy” LED signals make PPM-AS an extremely user-friendly paging console. Thanks to the cardioids polar pick-up pattern, the unidirectional condenser microphone ensures the high-quality and directive signal pick-up with minimal interference from the surroundings.

The RS485 communication protocol allows daisy-chain wiring up to 300m on a single CAT5/6 cable (FTP/STP) and makes each station easy to connect by using standard RJ45 connectors. The junction box supplied with PPM-AS allows multiple peripherals such as PPM-AS, CD8-AS, CD16-AS, and URC-150AS to be cascaded with the distance of up to 300m between a peripheral and a junction box, and up to 10 peripherals can be connected via junction boxes on one processor. In addition, the junction box can be powered from the processor or 24VDC local power supply.

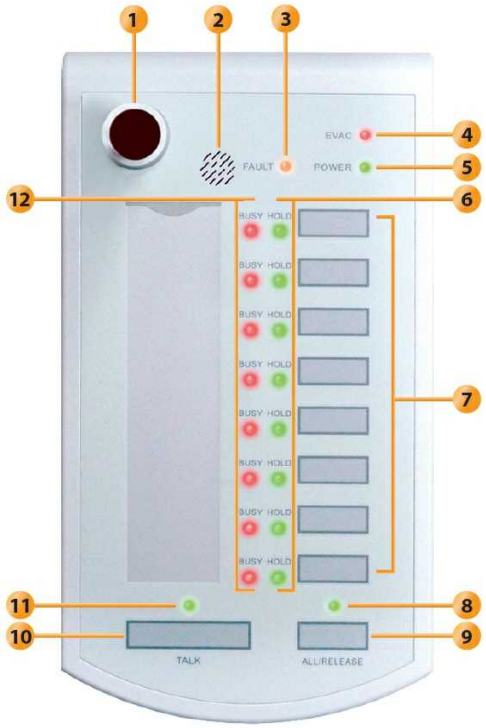
❖ Features

- Desktop enclosure
- Monitored CAT-5 link to controllers and slaves
- Supervision of microphone capsule (not on slave units)
- Automatic gain control on microphone input
- 8-zone selection keys (expandable with additional keypads)
- All-call key
- Power indicator
- EVAC indicator

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- Status and fault indicator
- Monitor speaker

3.2.1.1.1 Control Panel



1 Microphone:

The sleek condenser gooseneck microphone. This unidirectional condenser microphone warrants high quality directive signal pick up from the user and hence less interference from the surroundings.

2 Monitoring Speaker:

This embedded speaker to play chime when paging or monitor signal from audio processor, it needs to work with rs485 output component to get audio signal from other DSP components in audio processor.

3 Fault LED:

Display fault status of system. Following table list the states of fault:

Status	Frequency	Activity
Permanent	●	There are faults in audio processor.
Blinking	● ° ● ° ●	Lost communication with audio processor.

4 EVAC LED:

Status	Frequency	Activity
Permanent	●	System is under evacuation paging.
Blinking	● ° ● ° ●	PPM-AS does not do a "Plug-in" in Ateis Studio before using.

"Remote Plug-in" makes audio processor to recognize the peripheral devices.

5 Power LED:

Light up when the PPM-AS is powered on.

6 Hold LED:

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These LEDs Indicate which keys are selected.

⑦ Event Select Key:

These buttons are used to select keys, each key may link to an event for triggering actions like paging or adjust the value of parameters.

⑧ All/Release LED:

This indicator lights up if all keys are selected.

⑨ All/Release Button:

This button is used for selecting or deselect all keys.

⑩ Talk Key:

Push this key to request paging.

⑪ Talk Indicator:

Light up if PPM-AS is allowed to paging, on the other word, the paging request has been acknowledged.

Sometimes even the paging request is granted, zones under paging still can be occupied by other sources with higher priority. In the event of, the talk LED still lights up, you can check it from busy LEDs.

---

⑫ Busy LED:

Show the status of zone:

Color	Status	Frequency	Activity
Red	Permanent	●	Priority of the zone is lower than other sources.
Green	Blinking	● ° ● ° ●	The zone only desired for paging is not using by other sources.
Green	Permanent	●	Priority of the zone is higher than other sources.

3.2.1.1.2 Rear Panel



PPM-KP (Left) and PPM-AS (Right)

❖ PPM-AS:

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1 Volume Control:

Here you can use a cross-tip screwdriver to adjust the volume of the speaker, mic and chime of PPM-AS.

2 Terminator:

The terminator switch for Master-Slave connection with PPM JB junction boxes, see Connection with PPM JB Junction Box.

3 Keypad connector:

The keypad connector on PPM-AS for connecting to the PPM-KP keypad.

⚠ Please make sure the hardware version is matching. If connecting with the wrong hardware type, the circuit in the keypad will burn out.

Hardware Type	Keypad	Power Supply	Comment
PPM V2	PPM-KP	3.3VDC	-
PPM V3, V4	PPM-KP G2	24VDC	-

❖PPM-KP Keypad:

4 Keypad connector:

The PPM-KP keypad connector for connecting to the PPM-AS. Every keypad is shipped with one flexible flat cable.

5 Keypad connector:

The keypad connector for connecting to the next PPM-KP keypad, one PPM-AS can have 2 keypads for extending the keys.

6 RJ45 connector (PPM-AS):

The RJ45 connector for connecting to the PDC port on IDA8/ECS processor using metal shielded CAT5/6 cable.

When connected the PPM-AS to the PPM JB junction box, please note the master PPM should use the 10-pin CAT5 cable, and Slave PPM should use with 8-pin CAT5 cable. See Junction Box for details.

3.2.1.1.3 Connection with PPM JB Junction Box

The wiring examples of connecting the PPM-AS via PPM JB junction box on IDA8, ECS, LAPGT2 processor can be the points as below,

- Max. 32 CD-8AS units (parallel mode)
- Max. 4 CD-8AS units (cascade mode)
- Use metal shielded CAT5/6 cable.

Please refer to Connection with PPM-AS chapter.

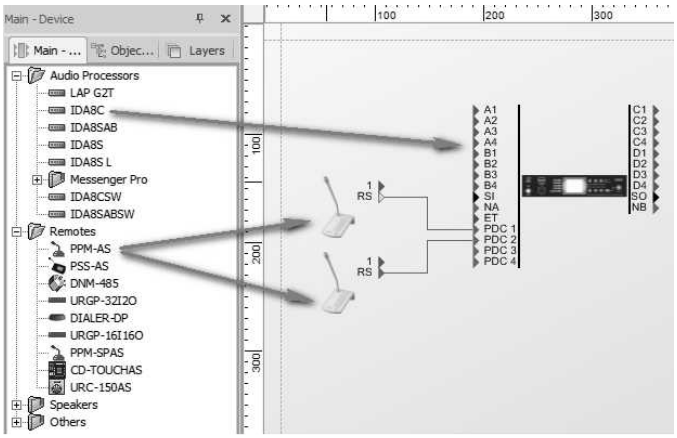
3.2.1.1.4 Configuration

The example here is the IDA8 system, the configuration is the same for ESC, LAPG2T and other Ateis Audio Processor.

❖Create PPM-AS Object

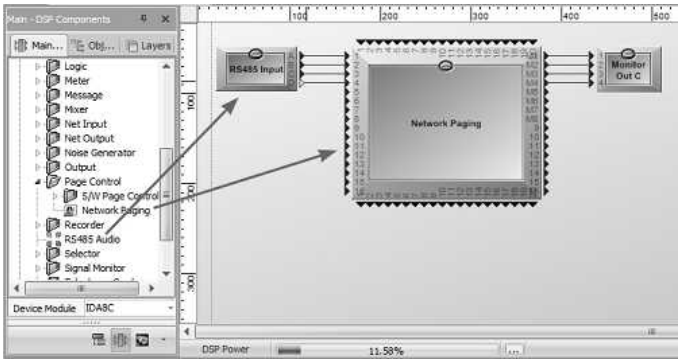
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1. Open or create a Ateis studio configuration file.
2. Drag IDA8C object to the design window to create an audio processor object.
3. Drag PPM-AS to the design window to create PPM-AS object.
4. Wiring to connect green pins between PPM-AS object and audio processor.



❖DSP Component Configuration

- The audio of PPM-AS needs to be routed from using the [Network Paging] component for paging processing. See the following example.



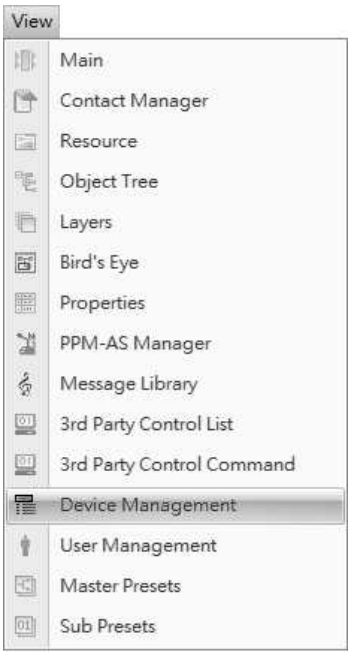
- Pin A~D of RS485 Input component is corresponds to PPM-AS 1~4 audio plugged in PDC1~4 respectively. Network Paging component process paging request coming from various sources, and to determine which source is allowed to paging to zones it desired. The zones are M1~M8 on Network Paging component.
- You need create an integration paging event to link with PPM-AS, See Network Paging chapter to know the paging settings.

❖PPM-AS Manager

- [PPM-AS Manager] is an unit of the software to manage settings about PPM-AS that connect to audio processors like IDA8 series.
- Click main menu of software [View > PPM-AS Manager] to open the [PPM-AS Manager] window.

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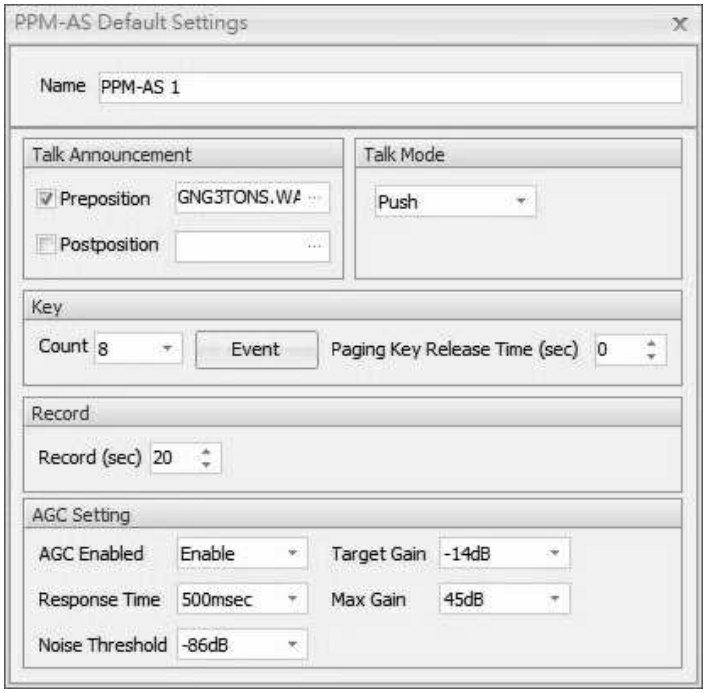
- Name: The name of PPM-AS object.
- RS485 Target: Indicate the connector on audio processor that the PPM-AS unit connected in the design window.
- Talk Mode: Specify the behavior of key pressing for paging. There are two modes:
- Push: Push and hold the key for paging request, release the key to end paging.
- Lock: First push for paging request, if request is grant then start paging, push again to end paging.
- Key Count: Specify how many keys in PPM-AS.
- Pre/Post-Announcement:
  - Enable: Tick/Untick the checkbox to enable/disable the pre/post-announcement chime playing.
  - Name: Display the name of the message.
- Enable: Tick/Untick the checkbox to enable/ disable the post-announcement chime playing.





3.2.1.1.4.1 Settings

Double click the PPM-AS object to open the window of PPM-AS Settings.



- Name: The name of PPM-AS.
- Talk Announcement: The settings window of announcement message.
  - Pre/Post-position: Enable or disable pre/post-announcement chime playing. Click the [...] to select the internal message file which stored in the audio processor.

The name of chime can not be more than 16 characters (including the characters of file

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format such as .wav or .g722). The name can be modified from Machine File System > Change File Name.

- Talk Mode: The behavior of key pressing (Push/Lock) when paging.
- Key Count: How many number of keys in PPM-AS.
- Key Event: Bind a paging event with PPM-AS for zone selection. See Network Paging component.
- Paging Key Release Time (sec): Set the release time for paging key. For example, when the release time is set for two seconds, the paging key will be automatic disable afterwards.

Set the release time as 0, this indicates not to activate this function.

- Record (sec.): The time for recording the audio message. Please note users need to enable the Record function on [PPM-AS Default Settings > Event] window first.
- AGC Setting: With this Automatic Gain Control (AGC), the input signal can be increased or decreased to a target level. You can adjust the gain of the source automatically by setting a target level. For example, without AGC the sound emitted from an AM radio receiver would vary to the extreme extent from a weak signal to a strong one. The AGC effectively reduces the volume if the signal is strong or raises the volume when it's weak.
  - AGC Enable: Enable or disable the AGC function.
  - Response Time: Set the attack time at 5(ms) indicating the time when the input level is once under the threshold value and the gain won't be applied.
  - Noise Threshold: To detect the audio input volume of AGC and meet the balance of each audio input level.

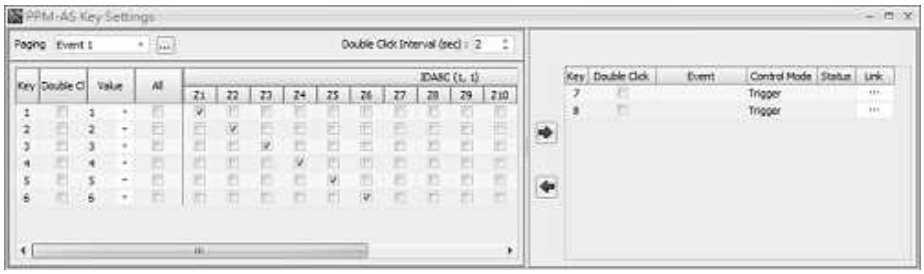
Don't set the level too low otherwise it will hear unexpected sounds such as breathing sounds or ambient noise.

  - Target Gain: The level will be increased up to target level when audio level is above the threshold value.
  - Max Gain: Set the Max Gain which indicates the gain can only be generated up to maximum dB.

Limit the max gain to keep a natural audio dynamic.

3.2.1.1.4.2 Key Settings

Click the PPM Event button to open the pop-up window.



❖ Left Window:

- Paging: Set the key which is corresponded to the zones on PPM-AS. Please create the Integration Event on Network Paging component first, then the event you created will be listed here.
- Double Click: Optional two modes (single click or double click) to activate buttons in PPM-AS.

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- Double Click Interval (sec.): Time interval when activating key buttons in PPM-AS.

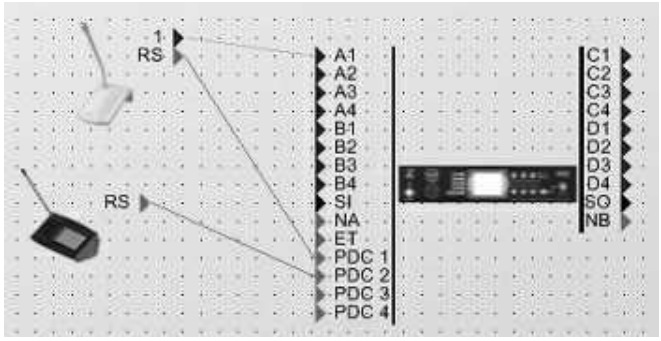
❖ Right Window:

- Event: Set the trigger event on IDA8 processor, ECS processor and LAPG2T processor. The event setting needs to be done on Event Manager first, see the details from the chapter link.
  - Control Mode: Choose the behavior of event.
  - Trigger: Enable the event as trigger mode to define the behavior as pressing the button once, and the button will be trigger once.
- Control: Enable the event as control mode to define the behavior as ON when pressing the button once, and OFF when pressing the button again.
- Status: The parameter value when under the Trigger mode.
- Link: Click [...] to link to the setting window of the selected event.

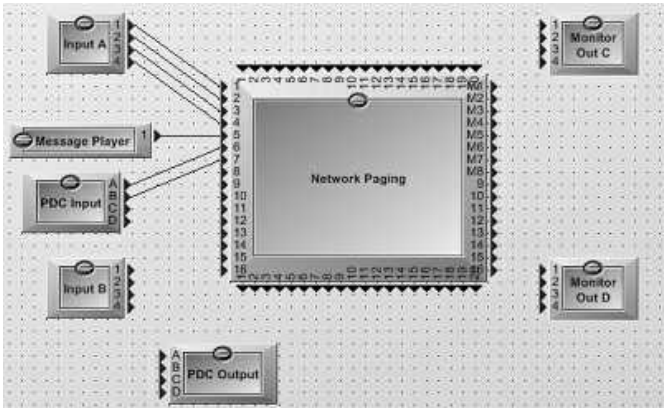
3.2.1.1.4.3 Recording

The IDA8 controller supports the recording and playback function via the PPM-AS and PSS-AS paging microphone. It forms an integration of overall security solutions for many applications-including banks, large retailers, railway stations, city centers, industrial facilities and office building. With recording function, you can get live and recorded audio from anywhere via Ateis network wherever they are on site or at a far distance and be capable to give you an quick access for monitoring over distributed networks.

- Drag PSS-AS & PPM-AS device on configuration window.



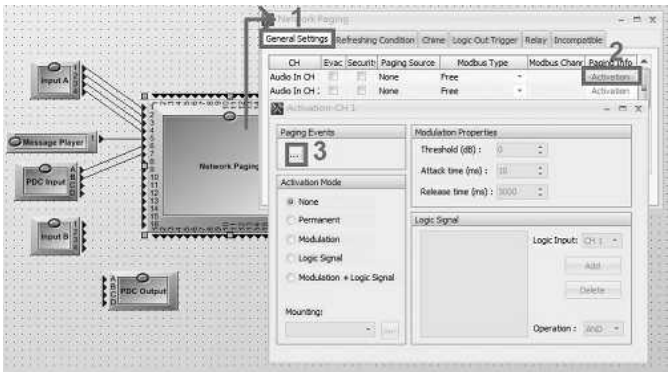
- Drag and connect to the [Network Paging], [Message Player] and [PDC Input] components as the picture below.



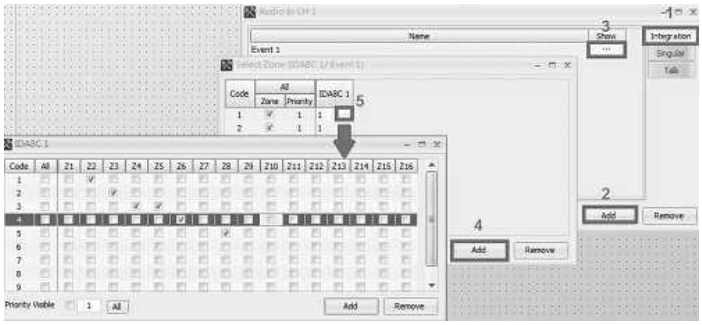
❖ Example via PPM-AS Device

- Create an [Event] on [Network Paging] component first by following the steps (1-3) below.

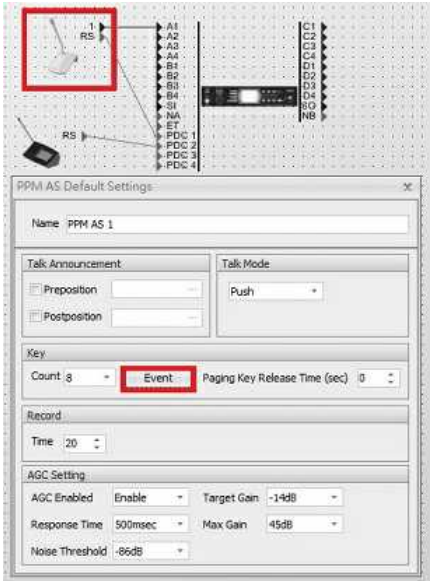
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- Step 1: Click [Integration].
- Step 2: Click [Add] to add a new event.
- Step 3: Click [...] to open the window of [Select Zone].
- Step 4: Click [Add] to add code for each distributed zone.
- Step 5: Click [...] to open the window of zone assignment.

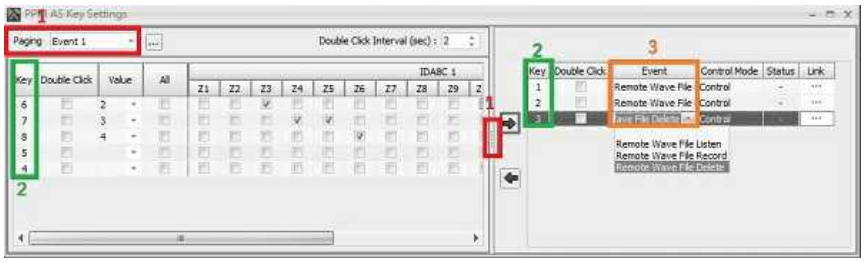


- Click PPM-AS icon to open the setting window, then click [Event].

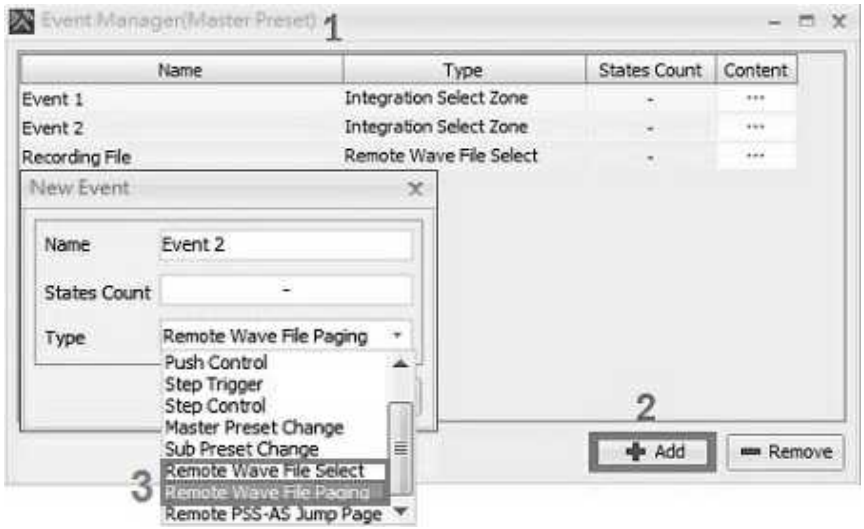


- Step 1: Select the [Event] first, then click interval to open the setting grid on the right.
- Step 2: Select the keys (1-8) for functions controlling on your PPM-AS and add them on the right grid.
- Step 3: Assign 3 types of event on each button.

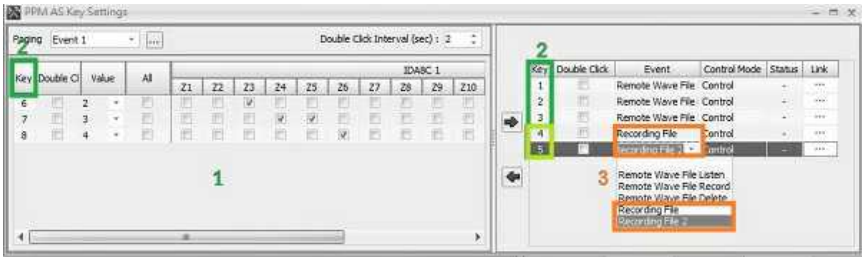
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- Step 1: Open the window of [Event Manager].
- Step 2: Click [Add] to create 2 types of new event.
- Step 3: Add 2 types of event: [Remote Wave File Select] [Remote Wave File Paging].



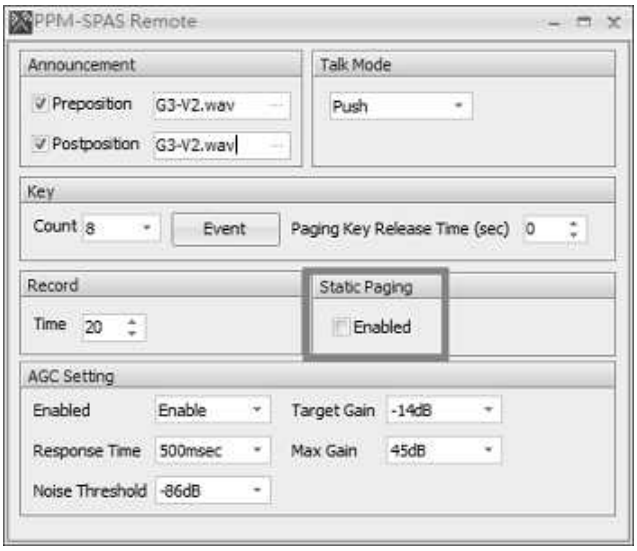
- Step 1: Go back to the window of [PPM-AS Key Setting].
- Step 2: Select 2 keys on the left grid and add them on the right grid.
- Step 3: Assign the 2 events you have create on [Event Manager] and apply to the 2 corresponded buttons.



3.2.1.1.4.4 Stack Paging (PPM-SPAS only)

The configuration of PPM-SPAS is almost similar to PPM-AS, please refer to PPM Configuration chapter.

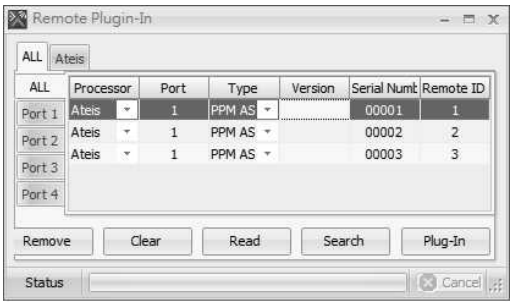
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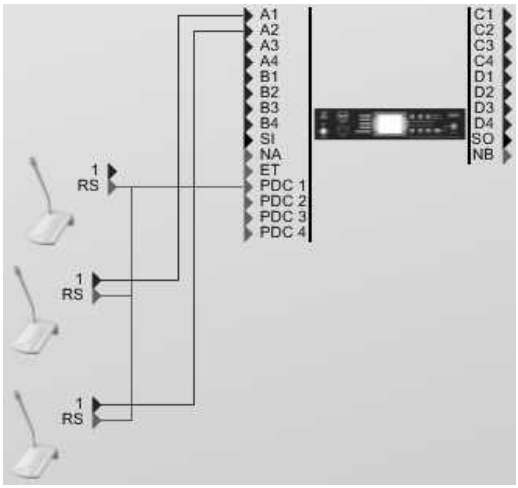
- Static Paging: If the selected zones are occupied by the source with higher priority and the user requests a paging, users can pre-record the paging message and temporarily save the message in PPM-SPAS, then the recorded messages can be played after the paging with higher priority has ended.

3.2.1.1.4.5 Parallel Mode

1. Install the hardware connection, please refer to Parallel with Multiple Devices wiring example.
2. Set the [Remote ID] of each PPM-AS from Device Management > Remote Search. See the picture below. After finished, click [Plug In].



3. Connect the audio pin of second and third PPM-AS devices to the A1 and A2 channel pin of IDA8C. See the picture below.



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4. Click the IDA8C icon to enter the DSP component block, and connect the pins as the picture below. The audio signal of the first PPM-AS comes from the CH1 of PDC Input component, and the signal of the second and third PPM-AS come from the CH1 and CH2 of PPM-AS.
5. Create the [Integration Event] on [Network Paging] component, and also apply the corresponded integration events on PPM-AS.



3.2.1.2 PSS-AS Touchscreen Paging Console



The PSS-AS paging console allows call-paging, message broadcasting and DSP matrix parameter control over a secured monitored bus. The backlit full-color touch screen is designed for user-friendly operation and offers a total of 168 software keys across 12 pages for zone or group of zones selections.

Each key contains a color-changing field indicating that the zone is occupied by a different process. Alongside the touch screen, three hardware keys are also provided for free assignment within the software. All paging parameters for site operation can be pre-programmed such as zones can be assigned, named, grouped to different buttons, message triggering, level control, setting of pre-call chime. The message and the chime can also be stored in the PSS-AS console. In addition, fader control, button control and event control can also be pre-configured.

The PSS-AS is powered with a distance of 300M via CAT5 cable, and can be extended to 600M by connected to the Junction Box. The ATEIS range of security systems complies with current architectural demands requiring IP and/or fiber-optic networking to cater for any possible PA/VA design as stated in EN54-16 and BS5839/8, with specific attributes for compliance in large installations.

❖ Features

- Secured CAT-5 link to controllers and slave units

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- Supervision of microphone capsule
- Monitoring loudspeaker
- 5” full color touch-screen, 800 x 480 pixels
- 14-pages x 12 keys
- Power, status and fault indicator
- Status information access from the touch screen panel
- EN54-16 certified

3.2.1.2.1 Control Panel



1 Microphone:

A 280mm flex microphone.

2 Power LED:

This LED lights up when the PSS-AS is powered on.

3 Fault LED:

To display fault status of system. Following table lists the states of fault:

Status	Frequency	Activity
Permanent	●	There are faults in audio processor.
Blinking	● ° ● ° ●	Lost communication with audio processor.

4 EVAC LED:

Light up when system is under evacuation paging.

Status	Frequency	Activity
Permanent	●	System is under evacuation paging.

5 Touch Screen:

A back-lit touch screen with 5" diagonal and 800 x 480 resolution contains 14 pages, 12 keys for each pages can freely config to paging or adjustment parameters in audio processor.

6 Left Button:

Press to increase the volume of built-in speaker.

7 Middle Button:

Press to decrease the volume of built-in speaker.

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8 Right Button:

Press and hold it for a while to calibrate the touch screen of PSS-AS.

9 Monitoring Speaker:

This embedded speaker to play chime when paging or monitor signal from audio processor, it needs to work with RS485 output component to get audio signal from other DSP components in audio processor.

3.2.1.2.2 Rear/Side Panel



1 Jack Audio Output:

External loudspeaker 1/8 inch jack output.

2 Jack Audio Input:

External microphone 1/8 inch jack input.

3 Telephone Input:

Allows the connection of a telephone type microphone.

4 PDC Connector:

The RJ45 connector is not link to the PDC port of IDA8 controller using metal shielded CAT5/6 cable.

3.2.1.2.3 Connection with PPM JB Junction Box

The wiring examples of connecting to PSS-AS via PPM JB junction box on IDA8, ECS, LAPGT2 processor can be the points as below,

- Connect with one PSS-AS with a distance of 300M.
- Connect with one PSS-AS with a distance of 600M.

Please refer to Connection with PSS-AS chapter.

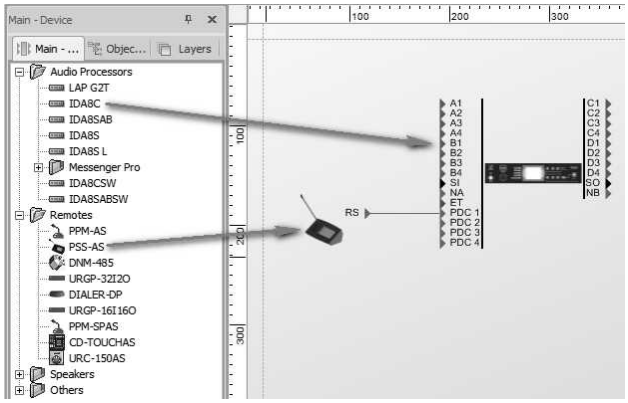
3.2.1.2.4 Configuration

❖ Create PSS-AS Object

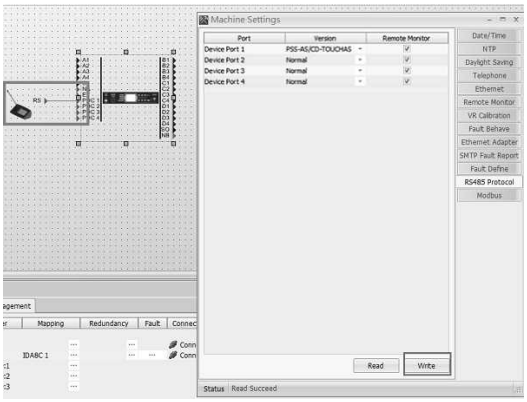
1. Open or create a Ateis studio configuration file.
2. Drag the audio processor to the design window to create the audio processor object.
3. Drag PSS-AS to the design window to create PPM-AS object.
4. Wiring to connect green pins between PSS-AS object and audio processor.
5. Go to [Machine Setting] on Device Management window and select the device port to [PSS-AS/CD-TOUCHAS] on [RS485 Protocol].
6. Then click [Write] button to complete this step. Please see the Picture 2 below.

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If the port the system is connect to is not the PSS-AS, please remember to reset to [Normal].



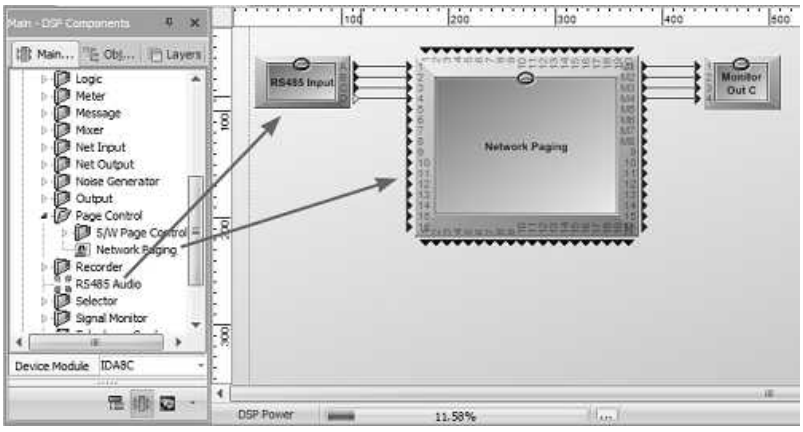
Picture 1



Picture 2

❖DSP Component Configuration

- The audio of PSS-AS needs to be routed from using the [Network Paging] component for paging processing. See the following example.



Pin A~D of RS485 Input component is corresponded to PPM-AS 1~4 audio plugged in PDC1~4 respectively. Network Paging component processes paging request coming from various sources, and determines which sources are allowed to paging to zones it desired. The zones are M1~M8 on Network Paging component. The integration paging event needs to be created and linked with PSS-AS, see DSP Components > Network Paging to know the paging settings.

❖Event Management

There are various types of events for controlling the Ateis devices, see Event Management to set up and adjust the elements which links with a controller.

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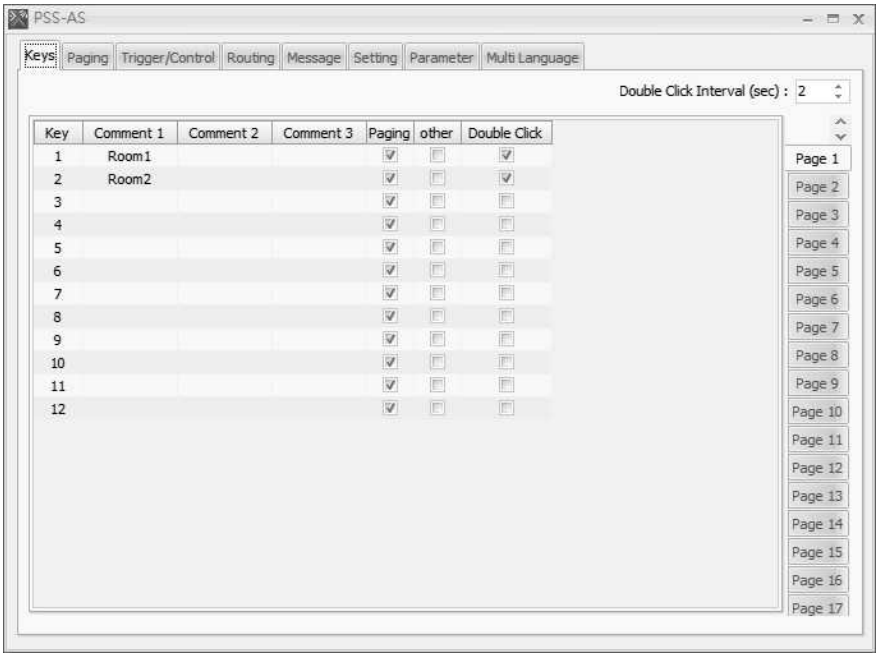


❖PSS-AS Settings

Double click PSS-AS object to open the settings window, there are 14 pages on the right of window, each or page is corresponds to a page on PSS-AS. There are five tabs on the top of window containing various settings of each. The following sections describe for each settings of tab.

3.2.1.2.4.1 Keys & Paging

❖Key: Allow to set the captions (names) for each key and the operation action.



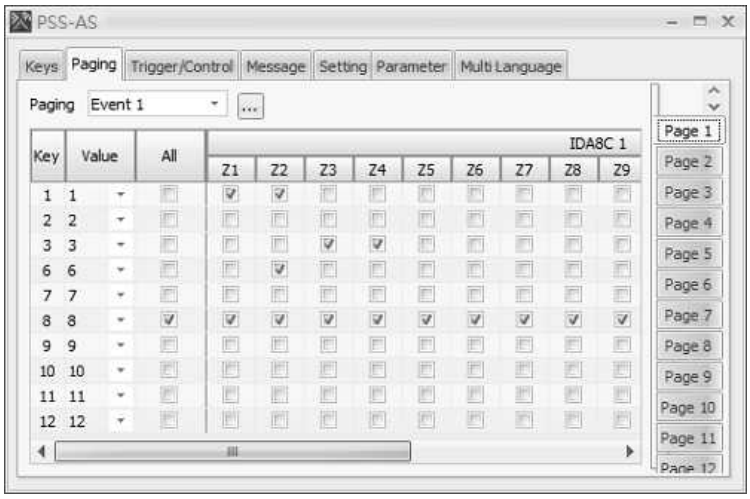
- Key: Refer to the key on the page of PSS-AS.
- Comment 1/2/3: The text displayed on the key, there are three rows on it Comment 1 is the first row and so on.
- Paging/Other: The check boxes for Paging and Others option are alternative. Choose one of them to determine the key used for paging or triggering an event.

The priority of paging zones is based on FIFO "first in first out" basis when under the same priority.

- Double Click: Optional two modes (Single or Double Click) to activate key buttons in PSS-AS.
- Double Click Interval (sec): Time interval when activating key buttons in PSS-AS.

❖Paging: Display the zone combination for each key which is configured as paging.

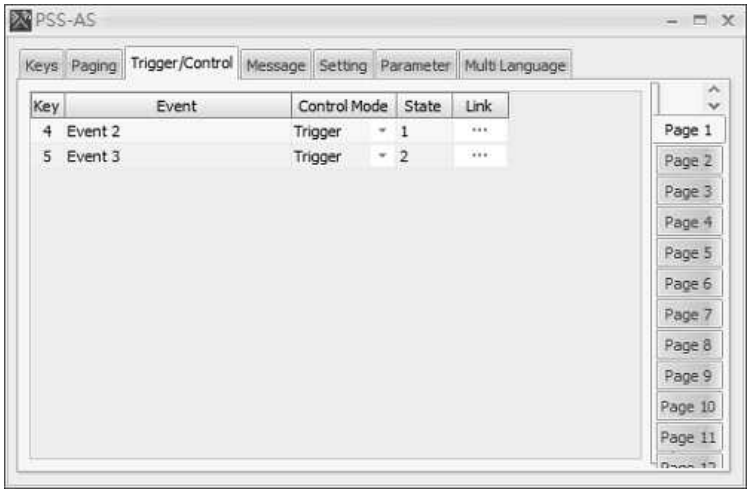
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- Value: To specify which code on the paging event of integration is bound with the key.
- All: Select all zones for the key.
- Zone Selection: The grid lists all zones of network paging component for all the audio processors. Tick the checkbox to select zones separately for the key.

3.2.1.2.4.2 Trigger/Control

❖ The settings to link to the event key which is triggered by using the PSS-AS.



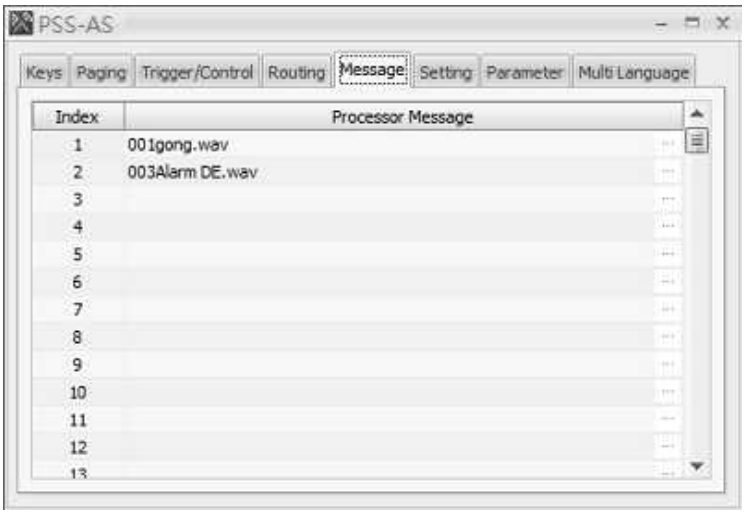
- Event: Select the event linked to the key.
  - Remote Wave File Listen: Trigger the message file which is stored in the IDA8 processor. Please note this event requires to work with Remote Wave File Select event button.
  - Remote Wave File Record: Record the message file by using the PSS-AS, and store the file into the IDA8 proceesor. Please note this event requires to work with Remote Wave File Select event button.
  - Remote Wave File Delete: Delete the message file which is store in the IDA8 processor. Please note this event requires to work with Remote Wave File Select event button.
  - Remote Modbus Record-Push: Record the message file by using Modbus protocol to send command and trigger the PSS-AS to record (push to talk).
  - Remote Modbus Record-Lock: Record the message file by using Modbus protocol to send command and trigger the PSS-AS to record (latching).
- Control Mode: Specify the control mode is Trigger or Control, see Device Management > Value Control , Value Trigger chapters for details.

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- State: Enter a value for the state that processed by event control procedure, each state number result different adjustment of system, see Event Management for details.
- Link: Open the settings window of event.

3.2.1.2.4.3 Message

❖ Set the message file which will displayed PSS-AS. Before selecting, you need to build a chime list which sets up on the Setting tab.



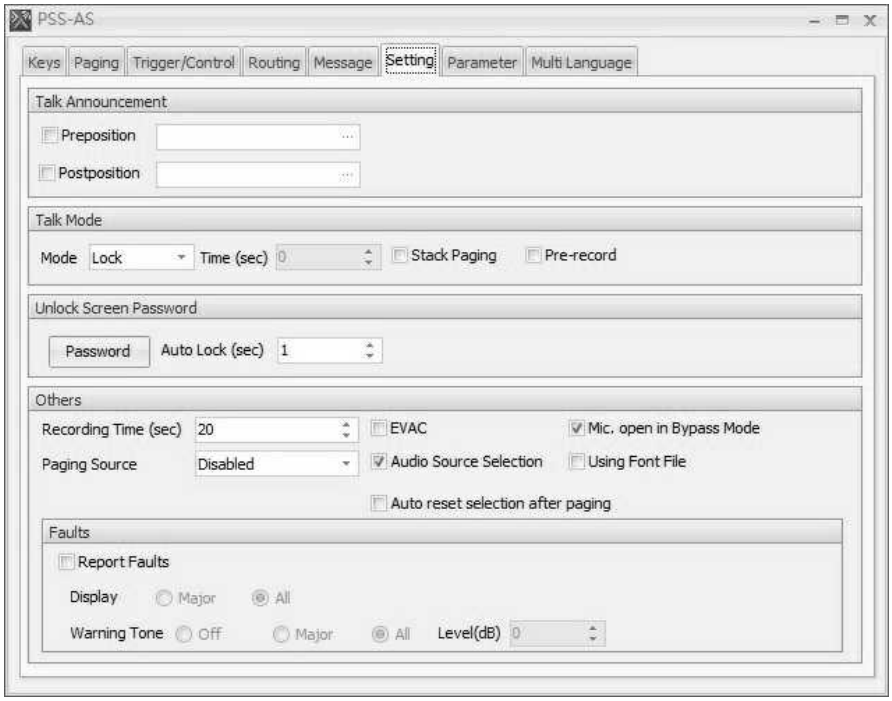
- Index: The index number for the message file.
- Processor Message: The index of message which belongs to the internal memory of the audio processor.

⚠ This message function needs to work with Message Player component and Network Paging component. The Message Player component can be connected to any channel on the Network Paging component. See the example as the picture below.



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3.2.1.2.4.4 Settings



- Talk Announcement (chimes settings):
  - Preposition: Enable or disable to play the chime message for pre-announcement.
  - Postposition: Enable or disable to play the chime message for post-announcement.
  - [...] Chime List: Open a setting window to build up list of message for selection.

The name of chime can not be more than 16 characters (including the characters of file format such as .wav or .g722). The name can be modified from Machine_File_System_> Change File Name.

- Talk Mode:
  - Lock: First push for paging request, if request is granted then start paging, push again to end paging.
  - Push: Push and hold the key for paging request, release the key to end paging.
  - Idle Lock: Set the time which the paging will automatically cancel once the microphone isn't in operation.
  - Time Limit: Set the time which the paging will automatically cancel even someone is still talking.
- Stack paging: When there are other paging sources with higher priority than PSS-AS during the paging status, tick the checkbox to play the recorded paging message after the paging of other sources end.
- Pre-record: Enable or disable to pre-record the audio message.
- Unlock Screen Password:
  - Password: Set the customized password on the screen unlock.
  - Auto Lock (sec): Set the time to auto lock the screen.
- Other:
  - Recording Time (sec): Time for recording the audio message.

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- Warning Tone Volume: Volume up/down for the warning tone.

Warning tone is a tone which warns users that the circuit is connected to or is not in condition for normal operation.

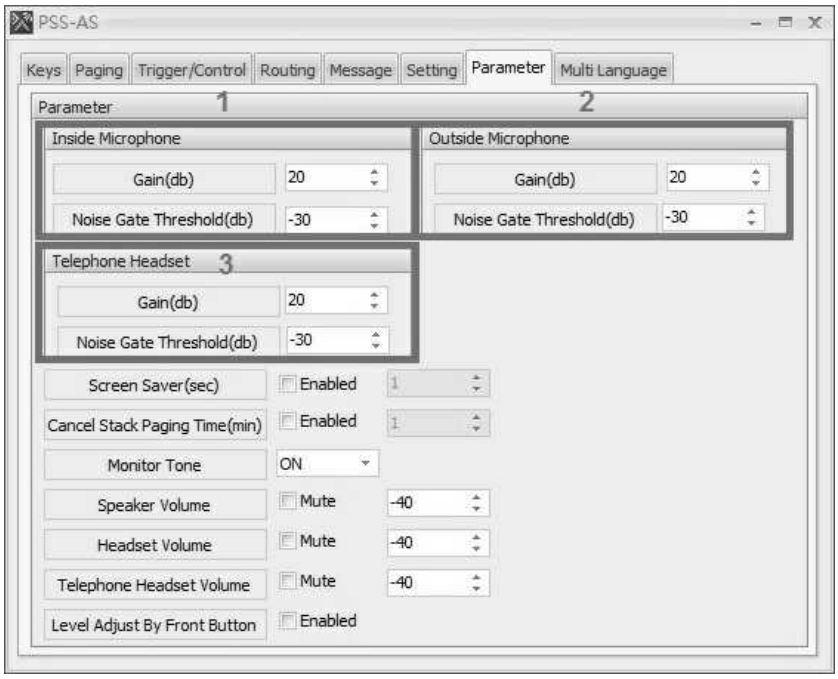
- EVAC: Enable to display the selected EVAC mode on the button of PSS-AS.
- Mic. open in Bypass Mode: Enable to be in bypass mode and trigger audio paging via microphone automatically.
- Paging Source: Enable or disable the paging source on the button of PSS-AS.
- Audio Source Selection: Enable to activate the Select Input & Output Source page on PSS-AS.
- Using Font File: Enable to activate the custom font setting.
- Auto reset selection after paging: Enable to deselect the zone buttons on PSS-AS panel after paging.
- Headphone audio detect: Enable this option to let the PSS-AS auto detect when an external headphone jack is connected on PSS-AS, and use it for speaker output.

- Faults:
  - Report Faults: Enable to display the fault status on the button of PSS-AS. Eg: error message.
  - Display:
    - Major: Only display the major faults on the button of PSS-AS.
    - All: Display all the faults on the button of PSS-AS.
  - Warning Tone:
    - Off: Disable the warning tone function on PSS-AS.
    - Major: Enable the warning tone function when major faults are detected on PSS-AS.
    - All: Enable the warning tone function when any of the fault is detected on PSS-AS.
    - Warning Tone Level (dB): Adjust the level of warning tone on PSS-AS.

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3.2.1.2.4.5 Parameter

❖ Allow to modify the parameters of PSS-AS.



1. Inside Microphone:
   - Gain (db): The audio volume of the gooseneck microphone.
   - Noise Gate Threshold (db): The level range of audio volume, this indicates to trigger it once the setting is beyond the range.
2. Outside Microphone:
   - Gain (db): The audio volume of the external microphone.
   - Noise Gate Threshold (db): The level range of audio volume, indicates to trigger it once the setting is beyond the range.
3. Telephone Headset:
   - Gain (db): The audio volume of the external telephone headset.
   - Noise Gate Threshold (db): The level range of audio volume, indicates to trigger it once the setting is beyond the range.
4. Screen Saver (sec): Set the time for screen to enter the sleep mode.
5. Cancel Stack Paging Time (min): Click Enable button, the audio paging will be canceled automatically within the setup time.
6. Monitor Tone: Set either on or off for the microphone of PSS-AS.
7. Speaker Volume: The audio volume of speaker.
8. Headset Volume: The audio volume of headset.
9. Telephone Headset Volume: The audio volume of telephone headset.
10. Level Adjust By Front Button: Enable or disable the volume increase/decrease function of built-in speaker on the two buttons (left button and middle button) of PSS-AS.

3.2.1.2.4.6 Multi Language

❖ Allow to customize the language preference on PSS-AS.

The left grid lists on the preset language on PSS-AS. The right grid lists the customized settings

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on PSS-AS.



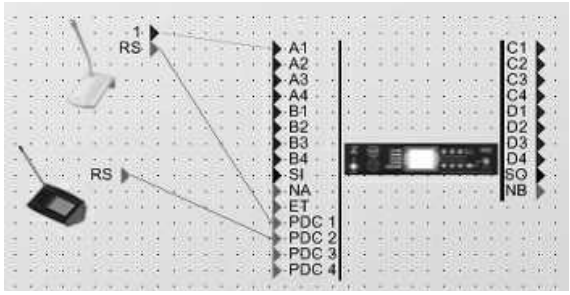
- Ch: The name of each channel.
- Local Message: Set the customized language settings.

When users leave empty field on specific buttons including the Chime, Talk, Reset, Routing, Monitoring buttons, these buttons will be disable on the LCD paenl of PSS-AS.

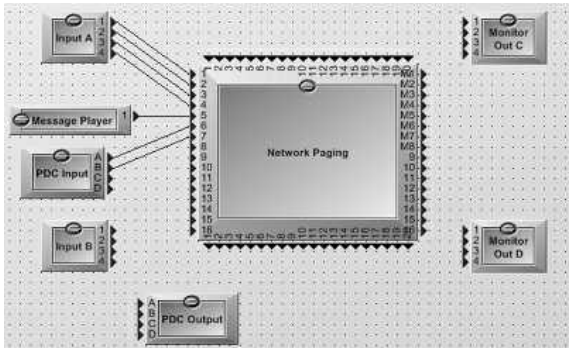
3.2.1.2.4.7 Recording Function

The IDA8 controller supports the recording and playback function via the PPM-AS and PSS-AS paging microphone. It forms an integration of overall security solutions for many applications-including banks, large retailers, railway stations, city centers, industrial facilities and office building. With recording function, you can get live and recorded audio from anywhere via Ateis network wherever they are on site or at a far distance and be capable to give you an quick access for monitoring over distributed networks.

- Drag PSS-AS & PPM-AS device on configuration window.



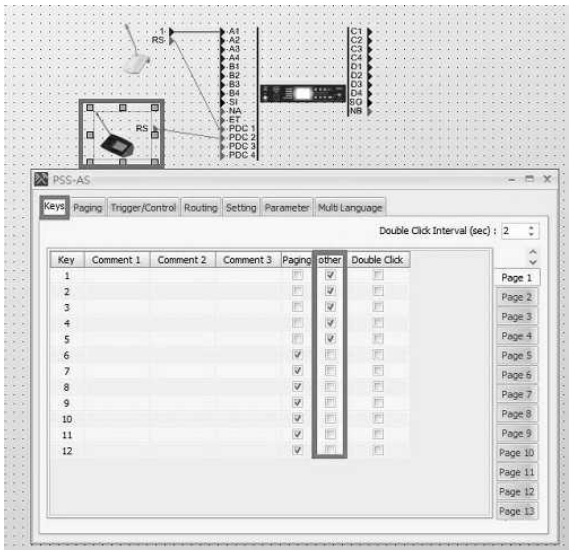
- Connect the [Input A], [Network Paging], [Message Player] and [PDC Input] component as the picture below.



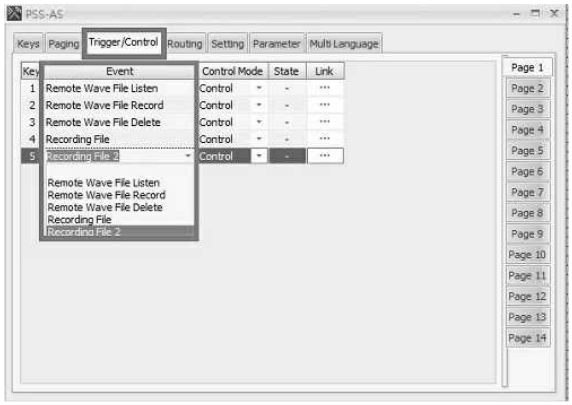
❖ Example via PSS-AS Device.

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- Click PPM-AS icon to open the setting window.
- Then click the keys (buttons) you want to assign action on [Other] grid.



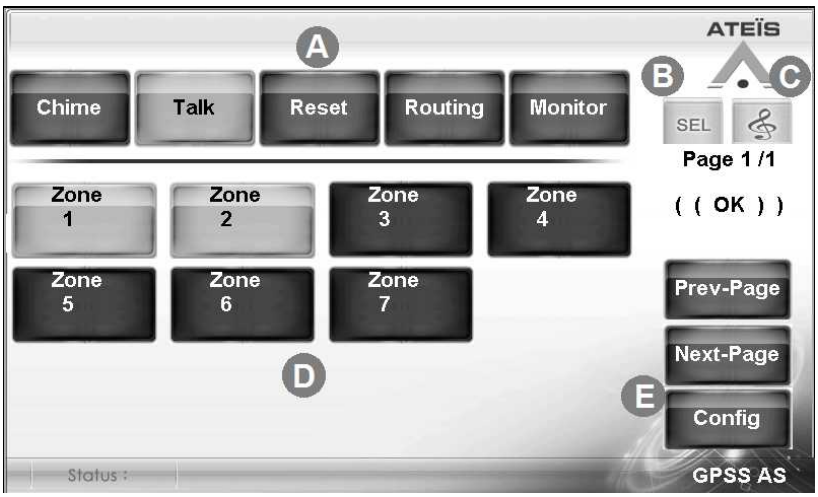
- Assign the events and apply to each of the corresponded buttons.



3.2.1.2.5 LCD Menu

All the buttons on LCD panel will be configured via ATEIS Studio, and used for displaying and operation. The PSS-AS supports multi-language, allowing to set the language shown on each button. The default language is English.

Before operating the PSS-AS, please note the LCD panel settings such as pre/post-announcement chime, Talk Mode (Lock/Push/Idle Lock/Time Limit), Screen Saver, Button Name, Event Key settings etc. should be configured on PSS-AS Configuration > Settings.



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A Menu:

- Chime: Press the pre/post-announcement chime before paging.
- Talk: Press to paging.
- Reset: Press to deselect all the zone buttons.
- Routing: Press to enter Routing & Message page, here you can audio routing/play the message to the selected zones.
- Monitor: Press to enter Monitor page, here you can monitor the paging channel of IDA8 through the internal speaker of PSS-AS.

B  SEL Setting: When the paging zone buttons have been pressed (selected), it will display  for indication, and display  when no zone buttons have been selected.

C  : Press to enter Select Input/Output Source page.

D Button/Event Key: Display the buttons/event keys which have configured in Ateis Studio. If you wish to display the zone information of Zone Fault, Zone Evac, Zone Paging Source on the zone buttons, please configure the settings on PSS-AS Configuration > Settings.

E Config: Enter the Config page, here you can view the information/properties of PSS-AS.

To paging, audio routing, message playing to the selected zones, see the steps of Chime Paging as below.

1) First, configure the chime files on Ateis Studio > PSS-AS Configuration > Setting > Talk Announcement.
2) Select the zone buttons you wish to paging via PSS-AS.
3) Press [Chime] button, and after the pre-announcement chime has ended, you can start paging using the PSS-AS.
4) To end the paging, press the [Chime] button again. Then a post-announcement chime will be played.

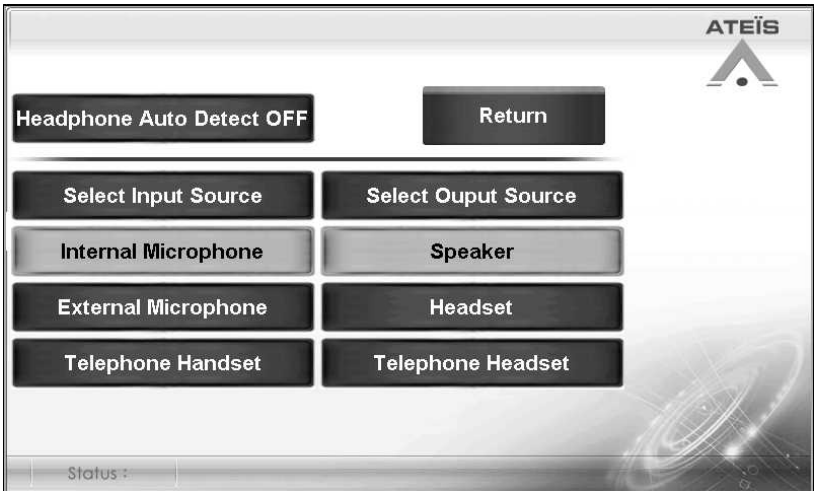
3.2.1.2.5.1 Select Input/Output Source

❖ Press  button and enter [Select Input & Output Source] page, and choose the in/out sources.

- Input Source: Internal microphone, external microphone and telephone headset (RJ9).
- Output Source: Speaker, headset, and telephone headset (RJ9).

❖ Headphone Auto Detect ON/OFF: Display whether the [Headphone Auto Detect] setting is enable (ON)/disable (OFF). This setting can be set from PSS-AS > Configuration > Settings.

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3.2.1.2.5.2 Routing & Message

❖ Audio Routing:

1) Select the zone buttons you wish to be routing on [Menu] page.

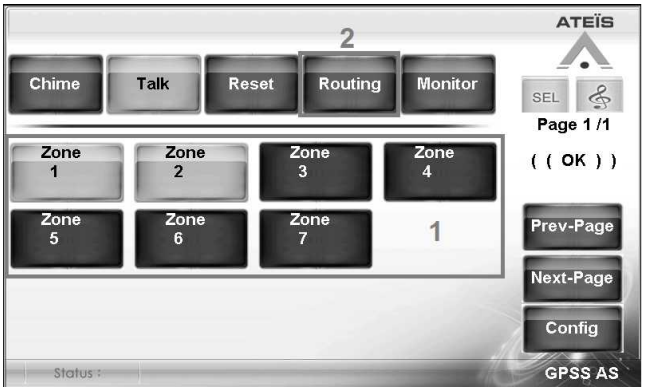
2) Press [Routing] button on [Menu] page to enter [Routing] page.

3) Press the Zone Paging Source button which have configured on Ateis Studio.

4) Press the Routing button on the left top to start routing.

5) If you wish to add or remove a zone button, go back to the [Menu] page, and select/deselect the zone button you wish to add/remove, and then go to [Routing] page again to press [Modify] button.

6) If you wish to cancel this audio routing, press [Delete] button on [Routing] page.





❖ Message Playing:

1) Select the zone buttons you wish to be played the message files on [Menu] page.

2) Press [Routing] button on [Menu] page to enter [Routing] page.

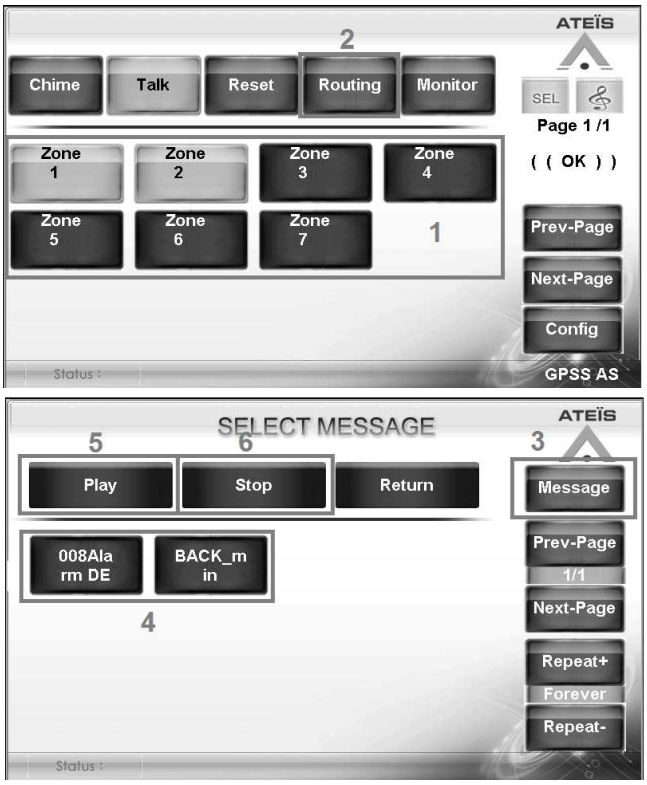
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3) Switch to Message page by pressing the Routing/Message button on the top right corner.

4) Press the message file button which have configured on Ateis Studio.

5) Press the Play button on the left top to start playing messages.

6) If you wish to cancel this message playing, press [Stop] button on [Message] page.



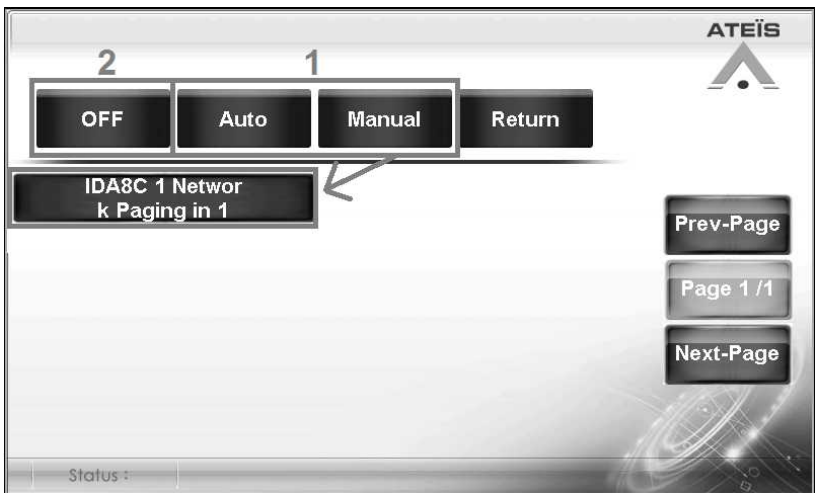
3.2.1.2.5.3 Monitor

❖ Monitor the paging channel of IDA8 through the internal speaker of PSS-AS.

1) Choose Auto or Manual mode first.

- Auto: Press [Auto] button to automatically monitor the paging channels of IDA8. The channel which is triggered at the last time will be monitored on PSS-AS.
- Manual: Press Manual button to select an assigned channel of IDA8. Then select the channel button listed below.

2) Press [ON] button to start the Monitor function. Press [OFF] button to stop the Monitor function.



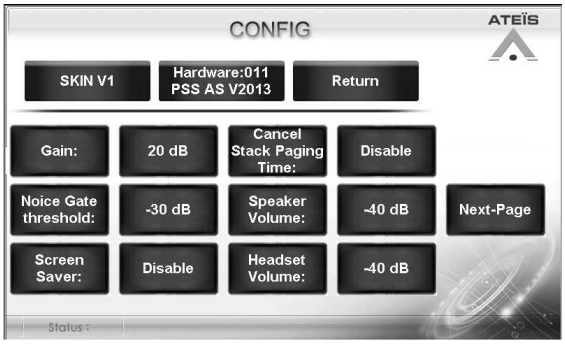
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3.2.1.2.5.4 Config

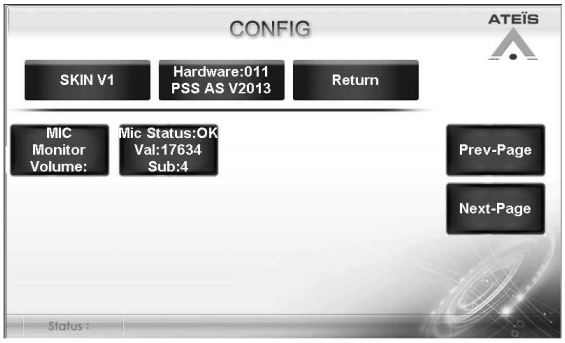
❖ View the information/properties of PSS-AS. The PSS-AS will request you to enter the password before entering the [Config] page.



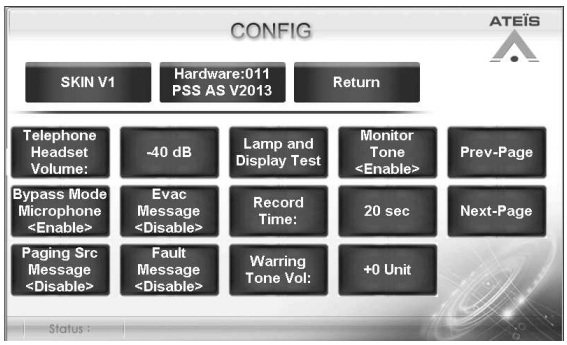
Entering password [0117] to start



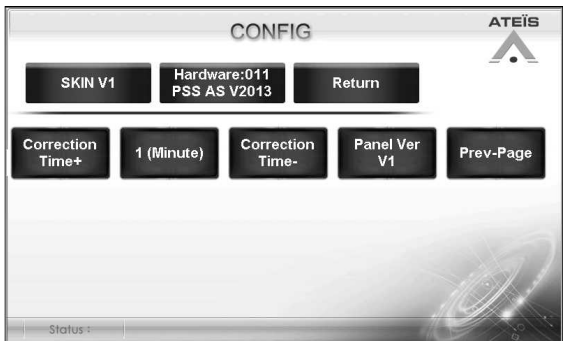
Page1



Page3



Page2



Page4

3.2.1.2.6 Troubleshooting

This chapter will help you to diagnose and solve the common problems with detailed explanation, any other information should be listed here as reference as well.

3.2.1.2.6.1 Fault LED

❖ Issue (the PSS-AS is unable to connect by ATEIS Studio software)

- The situation happens when the PSS-AS unit has lost communication with audio processor.
- Please follow the instruction in [How to Solve] chapter and check whether the solution meets your requirements.
- Either can users manually modified the problem or our technical personnel will aid you with service by checking and repairing the problem.

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❖ The LED indicators:

- When the FAULT LED blinks

  The FAULT LED blinks when the PSS-AS unit has lost communication with audio processor. First, check the information and diagnosed description displayed on [Status Bar] of PSS-AS, then move to the following steps listed below and find out the solution that meets your problem.

  1. Check whether the PSS-AS has been connected with audio processor in the configuration table.
  2. Check whether the RS485 protocol on [Machine Setting] function has been selected to [PSS/CD-TOUCHAS] option, and meets your installed port for PSS-AS (this setting is only for Ateis Global version software).
  3. If the device still cannot work with the audio processor, it might result from the broken device or cables. When facing this problem, please contact our Ateis Local personnel, see Contact Information.

3.2.1.2.6.2 No Connection via Ateis Studio/IDA8 & ECS & LAPG2T Controller

❖ Issue (the PSS-AS is unable to connect by Ateis Studio)

- This situations happen when the PSS-AS unit isn't been searched and listed on [Device Management] window or somehow the PSS-AS unit has no response on its front panel screen.
- Please follow the instruction in [How to Solve] chapter and check whether the solution meets your requirements.
- Either can users manually modified the problem or our technical personnel will aid you with service by checking and repairing the problem.

➢ Connection - PSS-AS and IDA8 controller

1. Check whether the Power LED on PSS-AS lights up or not.
2. Check whether the PSS-AS is connected to and powered by the external power supply (24VDC). An incorrect voltage could damage the equipment or cause an electric shock. Please note that different operating voltages require the use of different types of power cable and plugs.
3. Check whether the CAT5 cable comply with the existing RJ45 connector on IDA8 controller. The cable must be firmly connected.

- If the wiring between PSS-AS and IDA8 controller is correct, please continue moving to Step 2 - Software & Firmware Setting.
- If users cannot diagnose the connection problem, please move to Step 4 - Contact Service in order to prevent from causing any hazard personal incident or other uncertainty happen.

For your safety concern, please see Safety Declaration for details.

➢ Software Version

The different software and firmware version PSS-AS and Ateis Studio) shall also cause no signal response on PSS-AS.

- Check Software

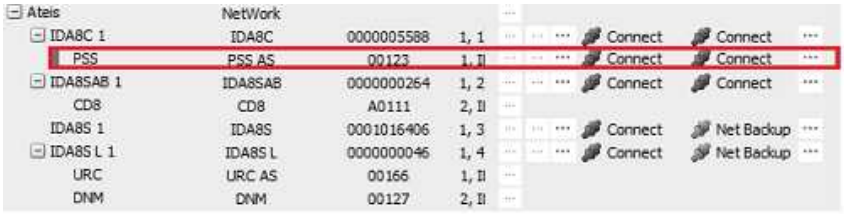
  Check the version of your PSS-AS and IDA8 by 2 types of the differentiation below.

  1. By Ateis Studio software > Device Management window

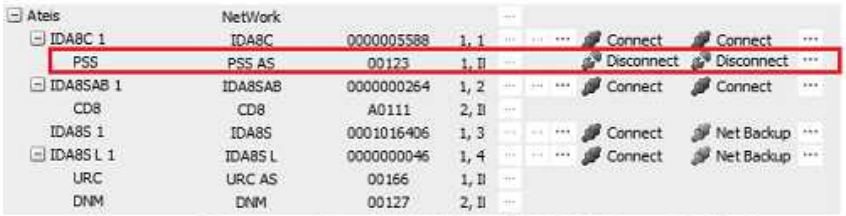
  Users can check whether the PSS-AS unit is well connected to IDA8 controller and

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searched via Ateis Studio software. If it's not under the normal connection, it's probably the version of your Ateis studio isn't match with your PSS-AS. See the picture below,



Normal Connection (PSS AS unit & IDA8 controller)



Abnormal Connection (PSS AS unit & IDA8 controller)

2. By front screen panel of PSS-AS unit

Users can also check by the color and the name of main function buttons on PSS-AS unit between Local and Global version have slightly different. See the picture below,



Local Version (1.X.X.XX)



Global Version (2.X.X.XX)

If your PSS-AS is match with the software, please move to Step 3 - Software Setting. If not, please continue the modification by the following solution below.

❖ Solution:

If your software version or firmware version for each device isn't match with the same version, update or rollback your software & firmware version (Local version <=> Global version). See the example below,

- Example (Software & Firmware):

If the current version of your IDA8 controller on Ateis Studio software is Global version (2.X.X.XX), yet PSS-AS unit is Local version (1.X.X.XX),

1) First, download the update code to rollback the global version of your IDA8 controller to local version for connecting with your PSS-AS unit functionally.

   [IDA8 controller: Global version (2.X.X.XX) => Local version (1.X.X.XX)]

2) Then, download the update code to update the local version of your PSS-AS unit to Global version.

   [PSS-AS unit: Local version (1.X.X.XX) => Global version (2.X.X.XX)]

3) Last, download the update code to update the local version of your IDA8 controller to global version for connecting with your PSS-AS unit.

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[IDA8 controller: Local version (1.X.X.XX) => Global version (2.X.X.XX)]

If users have the previous update code for local/global version matching with your software, simply open the files to update or rollback. If not, please move to Step 4 - Contact Service, and ask your authorized expert personnel for update code.

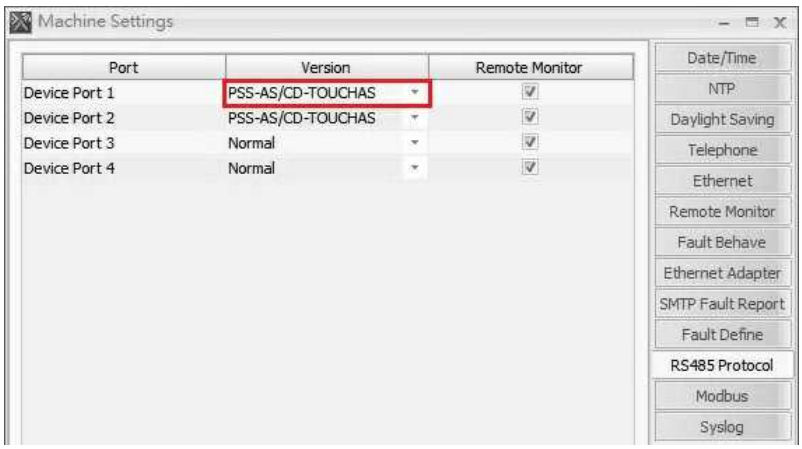
➢ Software Setting -- Check the RS485 protocol port for PSS-AS.

❖ Check whether any of the 4 device ports on [Machine Setting] window has been selected to [PSS/CD-TOUCHAS] option for connecting to the corresponded PSS-AS port. Please follow the steps below,

1. Open the Device Management Window.
2. Search and Connect to the device. See "Device Management >Search and Connect".
3. Select the device on the device list and click [Machine Setting window] button on the right grid.
4. After a pop-up window appears, click on the [RS485 Protocol] button on the right grid.
5. Select the [PSS/CD-TOUCHAS] option that meets your installed port for PSS-AS. See the pictures below.

If users cannot diagnose and fix the software problem, please move to Step 4 - Contact Service.





➢ Contact Service

- When none of the following steps cannot fulfill your troubleshooting in regard to PSS-AS, please contact our local Ateis technical personnel for further help.
- Click contact your local Ateis dealer.

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3.2.1.3 PPM-IT5 IP-Based Touchscreen Paging Console



The PPM-IT5 IP-based paging console allows call-paging and messages broadcasting. Its back-lit touch screen is designed for user-friendly operating. The 3 hardware keys can be freely assigned by software. All paging parameters are programmable: zones assigned to different buttons, name zones, group zones, messages triggering or event control. A total of 168 keys over 14 pages allow zone selections. The prerecorded messages and chime are stored in PPM-IT5 IP paging console. Thanks to the echo cancellation, the PPM-IT5 delivers full duplex crystal clear sound quality.

❖ Features

- 5” TFT LCD color touch panel.
- Full duplex intercom, zone paging, and control.
- High quality gooseneck microphone.
- Loudspeaker built-in.
- Ethernet interface including PoE (Power Over Ethernet).
- 24 VDC external power supply (if no PoE available).
- AGC(Automatic Gain Control) function.
- Noise Reduction and Acoustic Echo Cancellation.
- G.711/G.722/G.726/G.727/G.729/MP3 audio encoding/decoding and AAC+ decider.
- SNMP (Simple Network Management Protocol).
- Full duplex audio.
- Memory for message recording and playback.
- POWER/FAULT EVAC LEDs.
- RJ 9 for optional telephone headset, 3.5mm socket for Earphone-Mic headset.
- 2 mini-jack plugs for optional headsets.

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3.2.1.3.1 Control Panel



A Microphone:

A 280mm flex microphone.

B Power LED:

This LED lights up when the PPM-IT5 is powered on.

C Fault LED:

To display fault status of system, this LED will light up permanently if a fault state in the VACIE system has been engaged.

D EVAC LED:

This LED lights up when system is under evacuation paging, this LED will light up permanently if a evacuation state in the VACIE system has been engaged.

Status	Frequency	Activity
Permanent		System is under evacuation paging.

E F G Left/Middle/Right Button:

Push the button during the half-duplex conversation to activate the following commands below, this can be programmed via web interface.

- Audio Source Select
- Audio Level -
- Audio Level +
- Push To Talk (Intercom)
- Push To Talk (Paging)
- Push To Talk (Evac Announce)

H Monitoring Speaker:

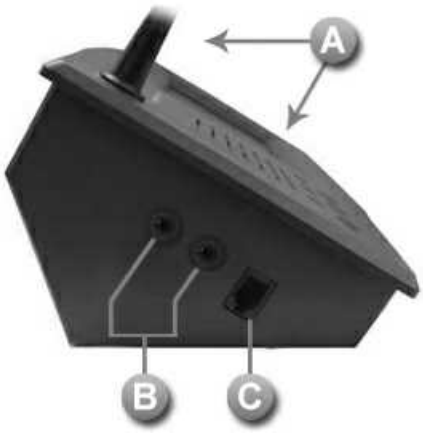
A monitoring loudspeaker to play chime when paging or monitor the signal from audio processor.

I Touch Screen:

A back-lit touch screen with 5" diagonal and 800 x 480 resolution, each buttons in the PPM-IT5 can be freely configured as a zone paging button or parameter adjustment in audio processor such as IDA8.

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3.2.1.3.2 Side Panel



A Microphone and Loudspeaker:

Use the internal speaker and microphone of PPM-IT5.

B Phone Jack:

3.5mm headphone jack: To connect to a external headphone output.

3.5mm mic port (close to RJ9 connector): To connect to an external microphone input.

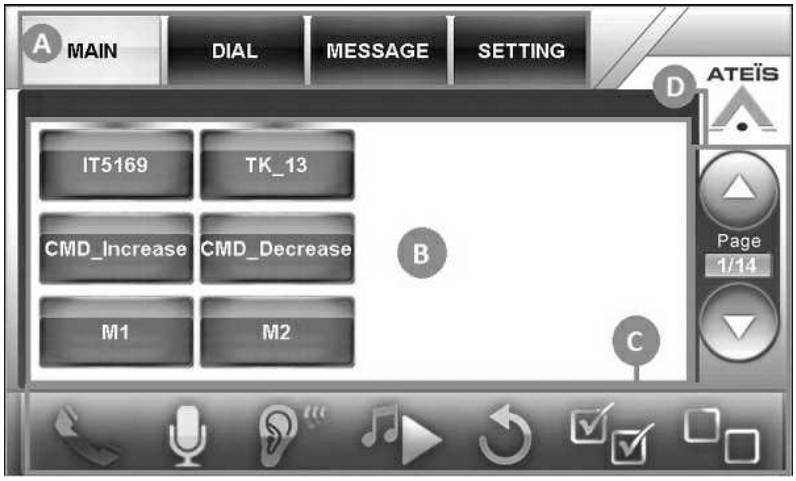
C RJ9 Connector:

To connect to a RJ9 telephone handset.

3.2.1.3.3 LCD Menu

All the buttons displayed on the PPM-IT5 will be configured via Terracom web interface, and used for displaying and operation only.

The PPM-IT5 supports multi-language, allowing to set the language shown on each button. The default language is English.



A Menu:

- MAIN: Display the Device button, Events buttons and Function buttons.
- DIAL: For typing the telephone numbers, SIP URI and so on.
- MESSAGE: Display the messages list.
- SETTING: Display the setting information.

B Content area.

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C Operation:

 SIP Call.

 Paging.

 Monitoring.

 Play message.

 Back to root menu (works with Macro buttons).

 Select all.

 Deselect all.

D Page Up/Page Down.

3.2.1.3.3.1 Main



❖ Button Types:

When press the button displayed PPM-IT5, its color will be changed to a lighter color.

- Device Button (Blue): Display the device name on the button. There is an color indicator at the upper-middle corner of a button to display its status, see the picture below.



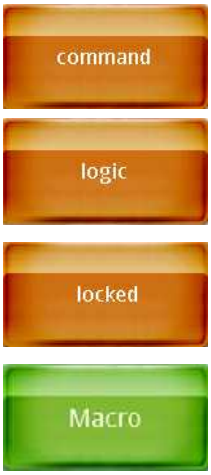
  - Green: Available

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- Red: Off-line
- Gray: Busy

In case of changing a device button names, you can use Ateis Studio software to change the name of LAP, ECS and IDA8 and edit the names of Terracom device's on web interface.

- Command Button (Orange): Press to perform the Command (string) function which has defined on the web interface.
- Logic Out Button (Orange): Press to perform the Logic (Out) function which has defined on the web interface.
- Locked Button (Orange): Locked button to similar to Command button, but it holds the Up/Down status.
- Macro Button (Green): Manage the buttons like a folder. After create a Macro button, press to enter in its page. See how to create a Marco button from Macro button chapter.

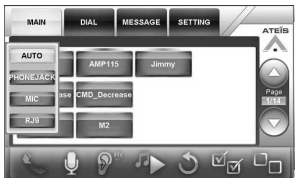


❖ Switch between the Audio Input/Output Set:

Press the hardware button on the front panel, a pop-up window will be displayed for switching the audio source.

Please note the action of the three hardware buttons on CDM-T5 needs to be programmed via web interface >Steup 1 > Machine Windows > Parameter Setting > External buttons first.

- Auto: Automatically detect the audio input/output set.
- Phone Jack: For plugging the external speaker and mic, the 1/8 inch (3.5mm) jack close to the RJ9 connector is the input.
- Mic: Use the internal speaker and microphone of PPM-IT5.
- RJ9 Connector: For plugging a RJ9 telephone handset.



❖ SIP Call:

- Call to other devices (one to one):
  1. Select a zone button which user wishes to call.
  2. Then press SIP Call button.



- The call from other devices (one to one):
  1. When receiving the SIP call from external device, a confirmation window will display and ask whether to [Accept] or [Reject] the call.



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2. Click [Hang up] button to end this SIP call.

- Paging to multi-users (multi-zones):



1. Select multiple zone buttons which user wishes to paging to.
2. Then press Paging call button.

❖Paging Message to Multiple Devices:



1. Select multiple zone buttons (devices).
2. Select the message file.
3. Press Play Message button.

3.2.1.3.3.2 Dial



- BS: Backspace.
- CANC: Cancel all.
- CAPS: Caps lock.
- SIP Call:

  Now the 100 in the Device List and call "100@1 user doesn't have to spend much time on typing the entire URI on the touch panel. After enter the name, and easily press the green button and the complete address will be dialed automatically if the name is existed. For example, if you enter "100" and press the button, The PPM-IT5 will find the exact device named 92.168.100.1:5060".

- Telephone Call:

  If you're going to dial a local phone or a cellphone, type the number and press button. You can re-dial the last number by pressing button.

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3.2.1.3.3.3 Message

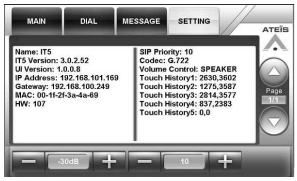


❖ Play Audio Messages:

1. Select the audio file on Message page.
2. Select the devices, and press  button.
3. The audio files are stored in the device's flash. You can check the free disk space on the web interface.

The format currently supported is WAV (16k 16bit only).

3.2.1.3.3.4 Setting



-  (Volume):

  Use - button and + button to adjust the speaker volume.

-  (Brightness):

  Use - button and + button to adjust the screen brightness.

3.2.1.3.4 Web Browser Interface

The PPM-IT5 can be programmed and controlled by Internet browser interface. To know the device setting and configuration of PPM-IT5, please download the TERRACOM user manual on www.paxproavgroup.com/terracom.

3.2.1.4 CD-8AS Wallmount Paging Console



The CD-8AS remote paging console which serves up to eight zones individually with an All-Call option. Zone selection buttons and Fireman microphone are encased in a heavy-duty IP30 wall-mounted metal box with a lockable door. The CD-8AS console use the same architecture as the PPM paging console, with a junction box embedded into the enclosure multiple units(only the first console in the chain is under monitored). The zone buttons of CD-8AS represent a single zone or group of zones and can be easily programmed through the system GUI using “drag and drop” functionality. The Push- To-Talk button can be programmed for PTT or latching operation. The status indicators including Power, EVAC and Fault which show the status of all the zone are also provided with.

The maximum distance between units is up to 300M. The CD-8AS is powered over RS485 via CAT-5 (FTP/STP), however if power is not available over RS485 it can be locally powered by using a 24VDC

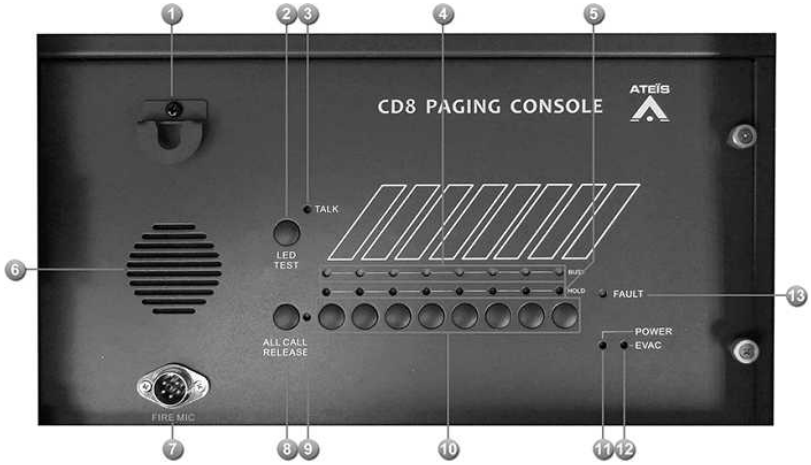
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supply. In case connecting 4 sets CD-8AS units on the 4 set of PDC port at the same, external power supply may be required.

❖ There are two versions of the CD-8 paging console with identical hardware and functionality but different firmware for compatibility with different systems.

- CD-8AS: For IDA8 system and ECS system controllers and slaves
- CD-8: For DIVA8 system controllers

3.2.1.4.1 Control Panel



1 Fireman Microphone Hook:

An U-shape hook to place fireman microphone.

2 LED Test Button:

Test LED on control panel, after pressing this button all LEDs light up and then off.

3 Talk Indicator:

This LED lights up if CD-8AS is allowed to paging, on the other word, the paging request has been acknowledged.

⚠ Sometime after paging request is granted, zones under paging still can be occupied by other sources. In such a case, the talk LED still light up, but you can check busy LED to know the situation.

4 Busy Indicator:

Show the status of zone:

Color	Status	Frequency	Activity
Red	Permanent	●	Priority of the zone is lower than other sources.
Green	Blinking	● ° ● ° ●	Priority of the zone is higher than other sources.
Green	Permanent	●	The zone only desired for paging is not using by other sources.

5 Hold Indicator:

These LEDs Indicate which keys are selected.

6 Monitoring Speaker:

This embedded speaker to play chime when paging or monitor signal from audio processor, it needs to work with RS485 output component to get audio signal from other DSP components in audio processor.

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7 Fireman Microphone Connector:

DIN Connector for fireman microphone connection.

8 All Call Release Button:

This button is used for selecting or deselecting all keys.

9 All Call Release Indicator:

This indicator lights up if all keys are selected.

10 Event Select Key:

These buttons are used to select keys, each key may link to an event for triggering actions like paging or adjust the value of parameters.

11 Power Indicator:

This LED lights up when the CD-8AS is powered on.

12 Evacuation Indicator:

Light up when system is under evacuation paging.

Status	Frequency	Activity
Permanent	●	System is under evacuation paging.
Blinking	● ° ● ° ●	CD-8 does not do a "Plug-in" in Ateis Studio before using.

13 Fault Indicator:

To display fault status of system. Following table list the states of fault:

Status	Frequency	Activity
Permanent	●	There are faults in audio processor.
Blinking	● ° ● ° ●	Lost communication with audio processor.

3.2.1.4.2 Connection with PPM JB Junction Box

The wiring examples of connecting the CD-8AS via PPM JB junction box on IDA8 processor can be the points as below,

- Max. 32 CD-8AS units (parallel mode)
- Max. 4 CD-8AS units (cascade mode)
- Use metal shielded CAT5/6 cable.

Please refer to Connection with PPM-AS chapter.

3.2.1.5 CD-16AS Wallmount Paging Console



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The CD-16AS remote paging console which serves up to eight zones individually with an All-Call option. Zone selection buttons and Fireman microphone are encased in a heavy-duty IP30 wall-mounted metal box with a lockable door.

The CD-16AS console use the same architecture as the PPM paging console, with a junction box embedded into the enclosure multiple units (only the first console in the chain is under monitored). The zone buttons of CD-16AS represent a single zone or group of zones and can be easily programmed through the system GUI using “drag and drop” functionality. The Push- To-Talk button can be programmed for PTT or latching operation. The status indicators including Power, EVAC and Fault which show the status of all the zone are also provided with.

The maximum distance between units is up to 300M. The CD-16AS is powered over RS485 via CAT-5 (FTP/STP), however if power is not available over RS485 it can be locally powered by using a 24VDC supply. In case connecting 4 CD-16AS units on the 4 set of PDC port at the same, external power supply may be required.

❖ There are two versions of the CD-16 paging console with identical hardware and functionality but different firmware for compatibility with different systems.

- CD-16AS: For IDA8 system and ECS system controllers and slaves (CD-16AS is function and connect to per PDC port. In case connecting 4 CD-16AS units on the 4 set of PDC port at the same, external power supply may be required).
- CD-16: For DIVA8 system controllers.

3.2.1.5.1 Control Panel



1 Fireman Microphone Hook

An U-shape hook to place fireman microphone.

2 Busy Indicator (1~8)

Show the status of zone:

Color	Status	Frequency	Activity
Red	Permanent	●	Priority of the zone is lower than other sources.
Green	Blinking	● ° ● ° ●	Priority of the zone is higher than other sources.
Green	Permanent	●	The zone only desired for paging is not using by other sources.

3 Fault Indicator

To display fault status of system. Following table list the states of fault:

Status	Frequency	Activity
Permanent	●	There are faults in audio processor.

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Blinking	● ° ● ° ●	Lost communication with audio processor.

4 Monitoring Speaker

This embedded speaker to play chime when paging or monitor signal from audio processor, it needs to work with RS485 output component to get audio signal from other DSP components in audio processor.

5 Fireman Microphone Connector

DIN Connector for fireman microphone connection.

6 Talk Indicator

This LED lights up if CD-16AS is allowed to paging, on the other word, the paging request has been acknowledged.

⚠ Sometime after paging request is granted, zones under paging still can be occupied by other sources. In such a case, the talk LED still light up, but you can check busy LED to know the situation.

---

7 LED Test Button

Test LED on control panel, after pressing this button all LEDs light up and then light off.

8 Hold Indicator (1~8)

These LEDs Indicate which keys are selected.

9 All Call Release Button

This button is used for selecting or deselecting all keys.

10 All Call Release Indicator

This indicator lights up if all keys are selected.

11 Event Select Key (1~8)

These buttons are used to select keys, each key may link to an event for triggering actions like paging or adjust the value of parameters.

12 Busy Indicator (9~16)

Please refer to Busy Indicator (1~8).

13 Hold Indicator (9~16)

Please refer to Hold Indicator (1~8).

14 Event Select Key (9~16)

Please refer to Event Select Key (1~8).

15 Power Indicator

This LED lights up when the CD-16AS is powered on.

16 EVAC Indicator

Light up when the system is under evacuation paging.

Status	Frequency	Activity
Permanent	●	System is under evacuation paging.
Blinking	● ° ● ° ●	CD-16 does not do a "Plug-in" in Ateis Studio before using.

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3.2.1.5.2 Connection with PPM JB Junction Box

The wiring examples of connecting the CD-16AS via PPM JB junction box on IDA8 processor can be the points as below,

- Max. 32 CD-16AS units (parallel mode)
- Max. 4 CD-16AS units (cascade mode)
- Use metal shielded CAT5/6 cable.

Please refer to Connection with PPM-AS chapter.

3.2.1.6 CD-TOUCHAS Wallmount Touchscreen Paging Console



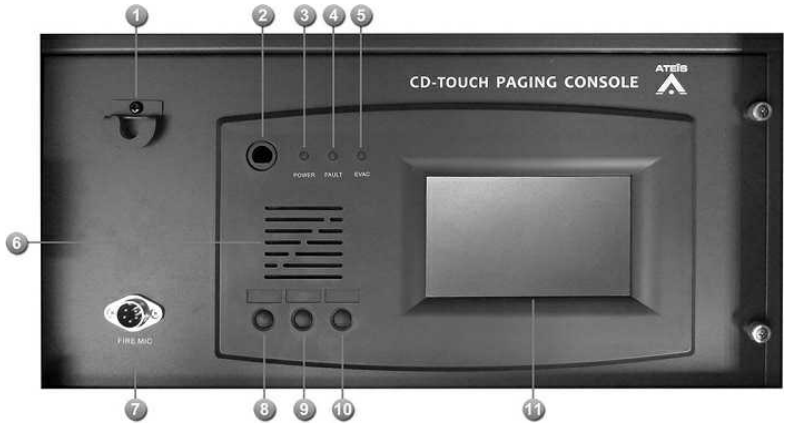
The CD-TOUCHAS paging console is a paging interface that allows call-paging, message broadcasting and DSP matrix parameter control. It contains a 5” full-color backlit touch-screen for simple, user-friendly operation. The screen offers up to 168 buttons across 14 pages which can be freely assigned in the software to any zone or group of zones. The CD-TOUCH has 3 hardware keys that can be assigned within the system control software. All paging parameters for site operation can be pre-programmed and stored within the console, including message triggering, level adjustment and pre-call chime setup. zone assignment, naming and grouping.

The CD-Touch-XX units connect to a monitored bus on CAT-5 FTP/STP. however if power is not available over RS485 it can be locally powered by using a 24VDC supply. In case connecting 4 CD-TOUCHAS units on the 4 set of PDC port at the same, external power supply may be required.

❖ CD-TOUCH is available in two different versions with identical hardware and functionality but different firmware for compatibility with different systems.

- CD-TOUCHAS: For IDA8 and ECS system controllers and slaves
- CD-TOUCH: For DIVA8 system controllers

3.2.1.6.1 Control Panel



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1 Fireman Microphone Hook:

An U-shape hook to place fireman microphone.

2 Microphone:

Function reserved.

3 Power Indicator:

This LED light up when the CD-TOUCHAS is powered on.

4 Fault Indicator:

To display fault status of system. Following table list the states of fault:

Status	Frequency	Activity
Permanent	●	There are faults in audio processor.
Blinking	● ° ● ° ●	Lost communication with audio processor.

5 Evacuation Indicator:

Status	Frequency	Activity
Permanent	●	System is under evacuation paging.
Blinking	● ° ● ° ●	CD-Touch does not do a "Plug-in" in Ateis Studio before using.

6 Monitoring Speaker:

This embedded speaker to play chime when paging or monitor signal from audio processor, it needs to work with RS485 output component to get audio signal from other DSP components in audio processor.

7 Fireman Microphone Connector:

DIN Connector for fireman microphone connection.

8 Left Button:

Function reserved.

9 Middle Button:

Function reserved.

10 Right Button:

Function reserved.

11 Touch Screen:

A back-lit touch screen with 5" diagonal and 800 x 480 resolution contains 14 pages, 12 keys for each pages can freely configure to paging or adjustment parameters in audio processor.

3.2.1.6.2 Troubleshooting

This chapter will help you to diagnose and solve the common problems with detailed explanation, any other information should be listed here as reference as well.

3.2.1.6.2.1 No Connection via Ateis Studio/IDA8 controller

❖ Issue: The CD-TOUCHAS unit is unable to connect by ATEIS Studio

This situations happen when the CD-TOUCHAS unit hasn't been searched and listed on the [Device Management] window or somehow the CD-TOUCHAS unit has no response on its front panel screen.

Please follow the instruction in How to Solve chapter and check whether the solution meets your requirements.

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➢ Connection - CD-TOUCHAS and IDA8 controller

1. Check whether the Power LED on CD-TOUCHAS lights up.
2. Check whether the CD-TOUCHAS is connected to and powered by the external power supply (24VDC). An incorrect voltage could damage the equipment or cause an electric shock. Please note that different operating voltages require the use of different types of power cable and plugs.
3. Check whether the CAT5 cable comply with the existing RJ45 connector on IDA8 controller. The cable must be firmly connected.
   - If the wiring between CD-TOUCHAS and IDA8 controller is correct, please continue moving to Step 2 - Software & Firmware Setting.
   - If users cannot diagnose the connection problem, please move to Step 4 - Contact Service in order to prevent from causing any hazard personal incident or other uncertainty happen.

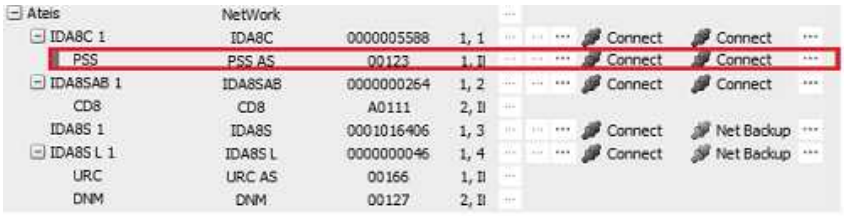
➢ Software Version: The different software and firmware version (CD-TOUCHAS and Ateis Studio) will cause no signal response on CD-TOUCHAS.

❖ Check Software

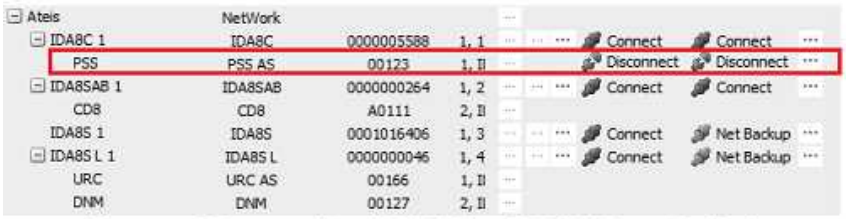
- Check the version of your CD-TOUCHAS and IDA8 by 2 types of the differentiation below.

1. By Ateis Studio on Device Management window

   Users can check whether the CD-TOUCHAS is well connected to IDA8 controller and searched via ATEIS Studio. If it's not under the normal connection, it's probably the version of your Ateis studio isn't match with your CD-TOUCHAS. See the picture below,



Normal Connection (PSS AS unit & IDA8 controller)



Abnormal Connection (PSS AS unit & IDA8 controller)

2. By Front screen panel of CD-TOUCHAS

   Users can also check by the color and the name of main function buttons on CD-TOUCHAS between Local and Global version have slightly different. See the picture below,

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Local Version (1.X.X.XX)



Global Version (2.X.X.XX)

If your CD-TOUCHAS is match with the software, please move to Step 3 - Software Setting. If not, please continue the modification by the following solution below.

❖ Solution:

If your software version or firmware version for each device isn't match with the same version, update or rollback your software & firmware version (Local version <=> Global version). See the example below,

- Example (Software & Firmware):

If the current version of your IDA8 controller on Ateis Studio is Global version (2.X.X.XX), yet CD-TOUCHAS is Local version (1.X.X.XX),

1. First, download the update code to rollback the global version of your IDA8 controller to local version for connecting with your CD-TOUCHAS functionally.

   [IDA8 controller : Global version (2.X.X.XX) => Local version (1.X.X.XX)]

2. Then, download the update code to update the local version of your CD-TOUCHAS to Global version.

   [CD-TOUCH : Local version (1.X.X.XX) => Global version (2.X.X.XX)]

3. Last, download the update code to update the local version of your IDA8 controller to global version for connecting with your CD-TOUCHAS.

   [IDA8 controller : Local version (1.X.X.XX) => Global version (2.X.X.XX)]

If users have the previous update code for local/global version matching with your software, simply open the files to update or rollback. If not, please move to Step 4 - Contact Service and ask your authorized expert personnel for update code.

➢ Software Setting: Check the RS485 protocol port for CD-TOUCHAS

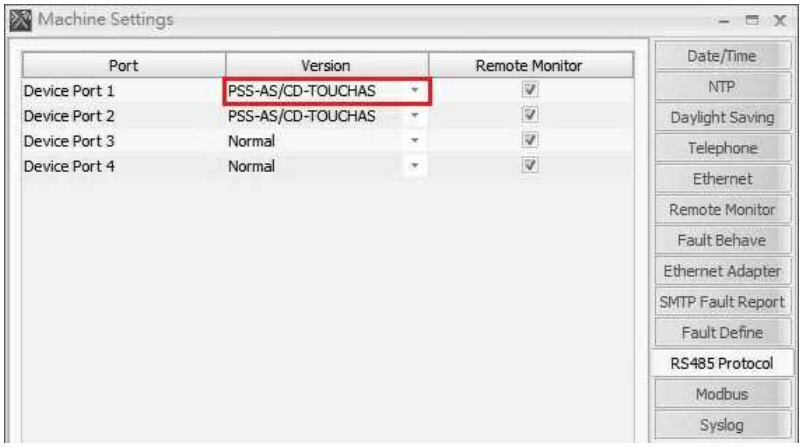
❖ Check whether any of the 4 device ports on [Machine Setting] window has been selected to [PSS/CD-TOUCHAS] option for connecting to the corresponded CD-TOUCHAS port. Please follow the steps below,

1. Open the Device Management Window.
2. Search and Connect to the device. See "Device Management >Search and Connect".
3. Select the device on the device list and click [Machine Setting window] button on the right grid.
4. After a pop-up window appears, click on the [RS485 Protocol] button on the right grid.
5. Select the [PSS/CD-TOUCHAS] option that meets your installed port for CD-TOUCHAS. See the pictures below.

If users cannot diagnose and fix the software problem, please contact our local Ateis technical personnel for further help.

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3.2.1.6.2.2 Fault LED

❖ Issue - CD-TOUCHAS is unable to connect by Ateis Studio

The situation happens when the CD-TOUCH has lost communication with audio processor.

Please follow the instruction in How to Solve chapter and check whether the solution meets your requirements.

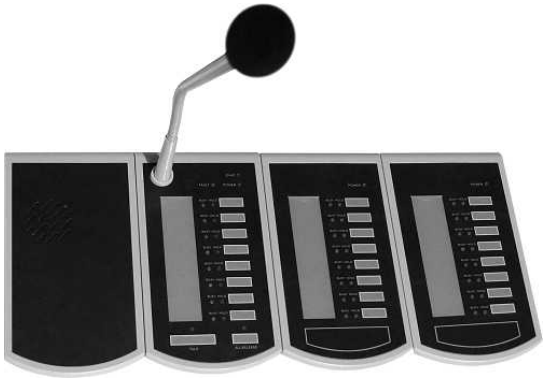
❖ LED indicators:

The FAULT LED blinks when the CD-TOUCHAS has lost communication with audio processor. First, check the information and diagnosed description displayed on [Status Bar] of CD-TOUCHAS, then move to the following steps listed below and find out the solution that meets your problem.

1. Check whether the CD-TOUCHAS has been connected with audio processor in the configuration table.
2. Check whether the RS485 protocol on [Machine Setting] function has been selected to [PSS/CD-TOUCHAS] option, and meets your installed port for PSS-AS (this setting is only for Ateis Global version software)
3. If the device still cannot work with the audio processor, it might result from the broken device or cables. When facing this problem, please contact our Ateis Local personnel.

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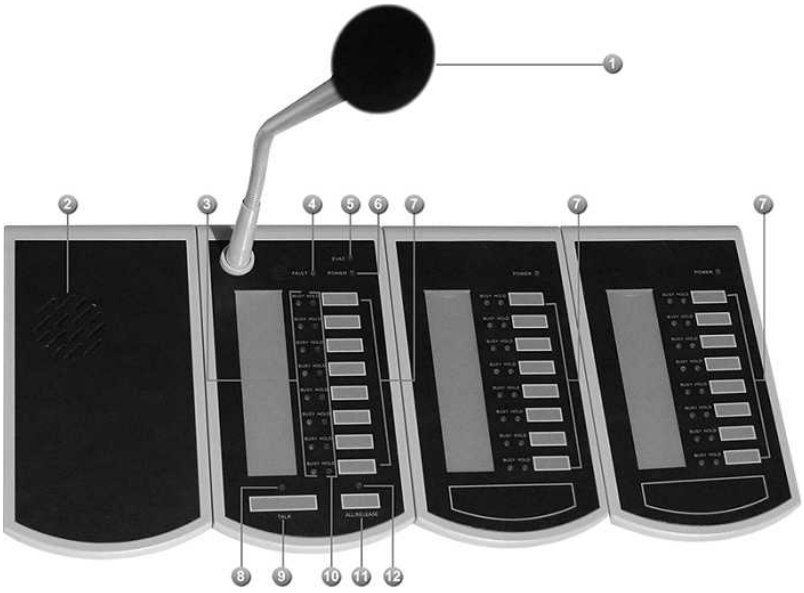
3.2.1.7 PSC-AS Paging Console



The PSC-AS microphone console is an unidirectional condenser addressable microphone which is compatible with all Ateis audio processor. Up to 32 x PSC-AS units can be connected using the daisy-chain wiring via RS485 protocol, and support up to 300M over a single CAT5 cable connection, the PSC-AS transmits both audio data and power supply to system units.

The PSC-AS comprises of 8 zones/8 buttons with sleek condenser gooseneck microphone, and spring metal protection, providing durability and excellent aesthetics as well as enhancing up to 256 zones expansion via the additional keypad. The control buttons represent a single zone or a group of zones and are easily defined via the GUI of the system units using a simple matrix selection. All buttons can be pre-programmed from the Ateis Studio and each button can be programmed for Push To Talk function or Latch functionality. The unit offers “Hold” and “Busy” LED signals in addition to the zone LED’s, and these features allow an easy identification of Selection/Busy signals for users.

3.2.1.7.1 Control Panel



1 Microphone:

The sleek unidirectional condenser gooseneck microphone which warrants high quality directive signal pick up.

2 Monitoring Speaker:

This embedded speaker to play chime when paging or monitor signal from audio processor, it needs to work with RS485 output component to get audio signal from other DSP components in audio processor.

3 Busy LED:

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Show the status of zone:

Color	Status	Frequency	Activity
Red	Permanent	●	Priority of the zone is lower than other sources.
Green	Blinking	● ° ● ° ●	Priority of the zone is higher than other sources.
Green	Permanent	●	The zone only desired for paging is not using by other sources.

④ Fault LED:

To display fault status of system. The following table list the states of fault,

Status	Frequency	Activity
Permanent	●	There are faults in audio processor.
Blinking	● ° ● ° ●	Lost communication with audio processor.

⑤ EVAC LED:

Status	Frequency	Activity
Permanent	●	System is under evacuation paging.
Blinking	● ° ● ° ●	PSC-AS does not do a "Plug-in" in Ateis Studio before using.

"Remote Plug-in" makes audio processor to recognize the peripheral devices.

⑥ Power LED:

This LED light up when the PSC-AS is powered.

⑦ Event Select Key:

These buttons are used to select keys, each key may link to an event for triggering actions like paging or adjust the value of parameters.

⑧ Talk Indicator:

This LED light up if the PSC-AS is allowed to paging, on the other word, the paging request has been acknowledged.

Sometime after paging request is granted, zones under paging still can be occupied by other sources. In such a case, the talk LED still light up, but you can check busy LED to know the situation.

⑨ Talk Key:

Push this key to request paging.

⑩ Hold LED:

These LEDs Indicate which keys are selected.

⑪ All/Release Button:

This button is used for selecting or deselecting all keys.

⑫ All/Release LED:

This indicator lights up if all keys are selected.

3.2.1.7.2 Configuration

The example here is the IDA8 system, the configuration is the same for ESC, LAPG2T and other Ateis Audio Processor.

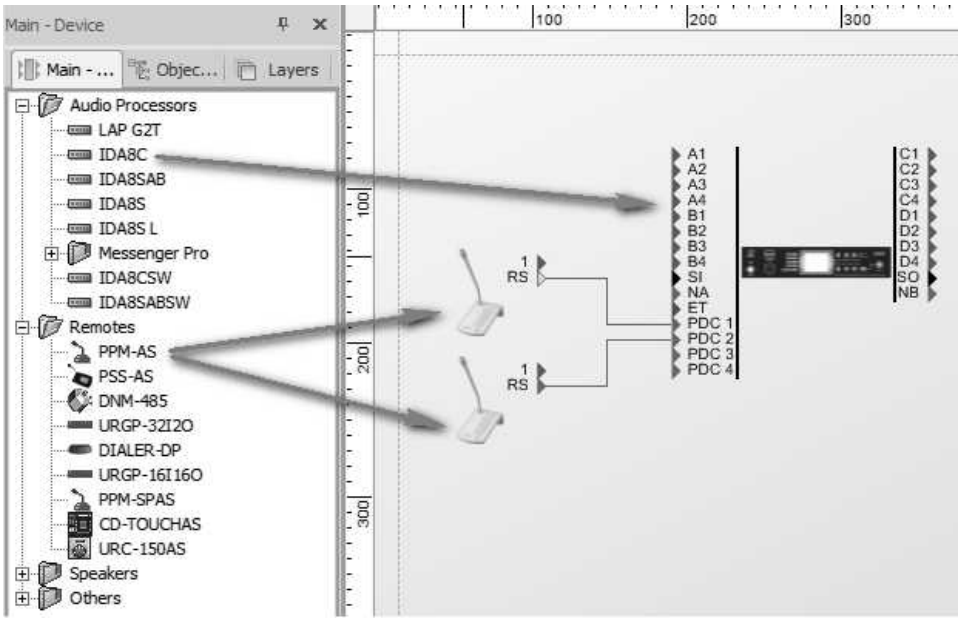
❖ Create PSC-AS Object

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1. Open or create a Ateis studio configuration file.
2. Drag IDA8C object to design window to create an audio processor object.
3. Drag PPM-AS to design window to create PSC object

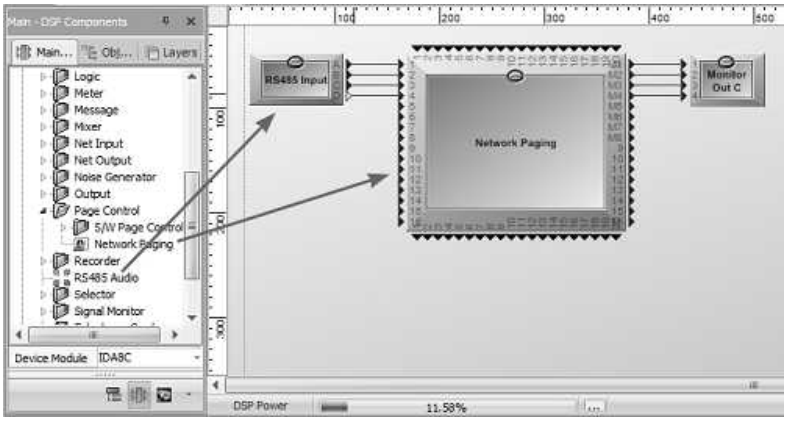
PPM-AS, PCP, PSC-AS and CDPM share the same object.

4. Wiring to connect green pins between PSC object and audio processor.



❖ DSP component configuration

The audio of PSC needs to be routed from using the Network_Paging component for paging processing. See the following example.



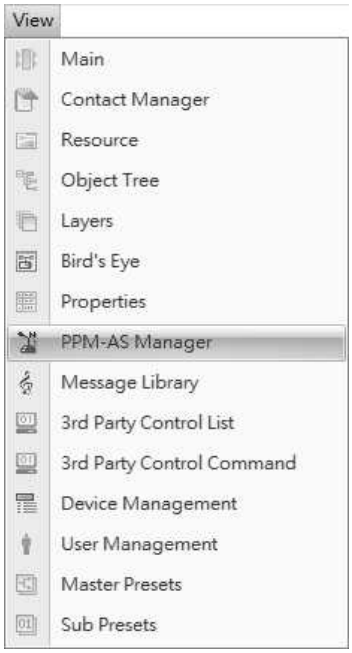
Pin A~D of RS485 Input component is corresponds to PSC 1~4 audio plugged in PDC1~4 respectively. [Network Paging] component process paging request coming from various sources, and to determine which source is allowed to paging to zones it desired. The zones are M1~M8 on Network Paging component. You need create an integration paging event to link with PSC, see DSP Components > Network Paging to know the paging settings.

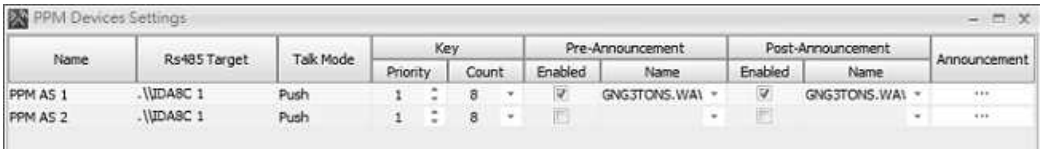
❖ PPM-AS Manager

[PPM-AS Manager] is an unit of the software to manage settings about paging console that connect to audio processors like IDA8 series.

Click main menu [View > PPM-AS Manager] to open the [PPM-AS Manager] window.

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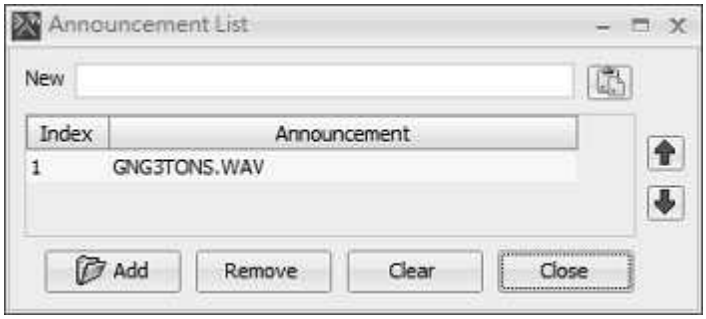




- Name: The name of PSC object, click to rename.
- RS485 Target: Indicates the connector on audio processor that PSC connected in the design window.
- Talk Mode: Specify the behavior of key pressing for paging. There are two modes:
  - Push: Push and hold the key for paging request, release the key to end paging.
  - Lock: First push for paging request, if request is grant then start paging, push again to end paging.
- Key-Priority: The priority of key.
- Key-Count: To specify how many keys on PSC.
- Pre-Announcement/Post-Announcement:
  - Enable: Tick/Untick the checkbox to enable/disable pre/post-announcement chime playing.

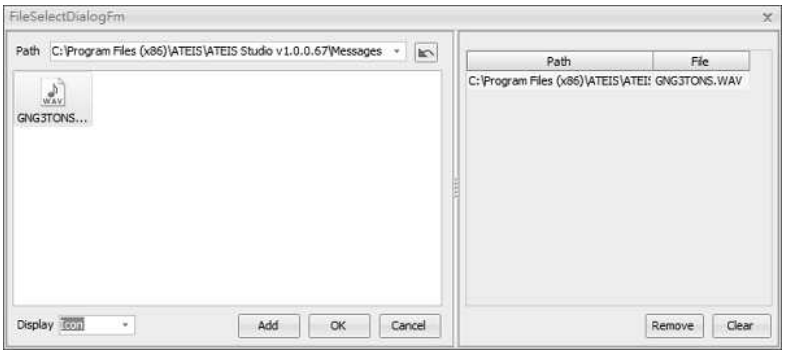
The name of chime can not be more than 16 characters (including the characters of file format such as .wav or .g722). The name can be modified from Machine File System.

- Announcement: Open announcement message settings window:



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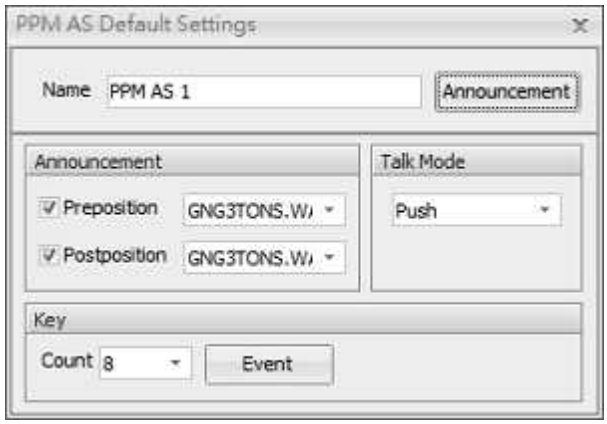
- New: The announcement message for creating new entry in the list. Type a name in the editor and press button.
- Index: The index for entries in the list.
- Announcement: The name of announcement message.
- Add: Add a name of announcement message from File Selection Dialog:



  - Path: Specify the directory to list all files with supported formats.
  - File List: Display files in the directory Path.
  - Display: Specify the display mode for file list. There are three modes: Icon/List/Detail.
  - Add: Move the select files to the ready list that the right side of window.
  - Ok: Add files in the ready list to announcement message list.
  - Cancel: Close window and ignore ready list.
  - Remove: Remove the select message file in ready list.
  - Clear: Clear ready list.

❖ PPM-AS Settings

Double click the PSC object open the window of PPM-AS Settings



- Name: The name of PSC.
- Announcement: Click to open the Announcement settings window, see prior section for details.
- Announcement:
  - Preposition/Postposition: Enable/disable pre/post-announcement chime playing.
  - Preposition/Postposition Name: Select message from the announcement message list for pre/post-announcement chime playing.

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The name of chime can not be more than 16 characters. The name can be modified from Machine File System.

- Talk Mode: Specify the behavior of key pressing when paging. See prior section for details.
- Key Count: Specify how many keys in PSC.
- Key Event: Bind a paging event with PSC for zone selection. See Network Paging component for details.

❖ Remote Plug-in

It needs to do a "Remote Plug-in" to make audio processor recognize this remote devices. See Remote Plug-in for details.

❖ Assign to Design Objects

The device object in design window needs map to physical device, then the configuration of the device can be set to the physical one. Click "Name " field of device list to select correspond device object.

3.2.1.8 PCP Wallmount Paging Console



The PCP paging console is a wall-mounted heavy duty remote which is compatible with Ateis audio processor, The PCP console interconnects over a dedicated RS485 for power, audio and data transmit. The RS485 communication protocol with daisy-chain wiring can support up to 300m over CAT5 cable connection.

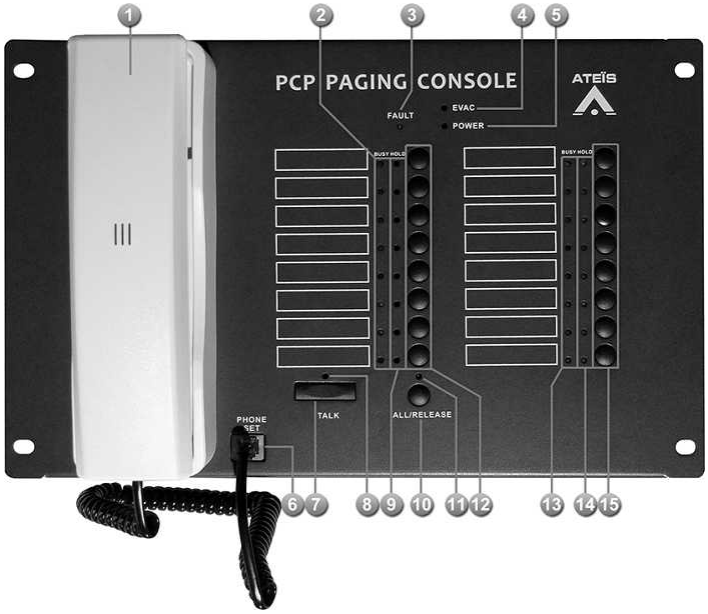
The unit comprises of 16 zones/16 buttons with Fireman microphone in a metal surface mount wall-box. It provides robust IP-30 protection. Each PCP contains a PMM-SPAS Master PCB with extension keypad and uses the same architecture as for the PPM-AS series of microphone consoles. Each ATEIS audio processor is capable to support up to 32 x PCP units per RS485 port in Master/Slave configuration.

The control buttons represent a single zone or a group of zones. All buttons can be [re-programmed from Ateis Studio, the PTT button can be programmed for Push To Talk function or for latching functionality.

The unit offers “Hold” and “Busy” LED signals in addition to the zone LED’s, and these features allow an easy identification of Selection/Busy signals for users. In addition, to meet the compliance with EN 54-16, POWER, FAULT and EVAC indicators are provided with.

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3.2.1.8.1 Control Panel



1 A telephone styled microphone for paging.

2 Busy Indicator (1~8):

Show the status of zone:

Color	Status	Frequency	Activity
Red	Permanent	●	Priority of the zone is lower than other sources.
Green	Blinking	● ° ● ° ●	Priority of the zone is higher than other sources.
Green	Permanent	●	The zone only desired for paging is not using by other sources.

3 Fault Indicator:

To display fault status of system. The following table lists the states of fault:

Status	Frequency	Activity
Permanent	●	There are faults in audio processor.
Blinking	● ° ● ° ●	Lost communication with audio processor.

4 EVAC Indicator:

Light up when the system is under evacuation paging.

Status	Frequency	Activity
Permanent	●	System is under evacuation paging.
Blinking	● ° ● ° ●	PCP does not do a "Plug-in" in Ateis Studio before using.

5 Power Indicator:

Light up when the PCP is powered on.

6 Microphone Connector:

A phone jack connector for connection of telephone styled microphone.

7 Talk Button:

Press this button to request paging. There are two modes for this button: push to talk and lock.

8 Talk Indicator:

This LED light up if PCP is allowed to paging, on the other word, the paging request has been

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acknowledged.

Sometime after paging request is granted, zones under paging still can be occupied by other sources. In such a case, the talk LED still light up, but you can check busy LED to know the situation.

9 Hold Indicator (1~8):

These LEDs Indicate which keys are selected.

10 All Call/Release Button:

This button is used for selecting or deselecting all keys.

11 All Call/Release Indicator:

This indicator lights up if all keys are selected.

12 Event Select Key (1~8):

These buttons are used to select keys, each key may link to an event for triggering actions like paging or adjust the value of parameters.

13 Busy Indicator (9~16):

Please refer to Busy Indicator (1~8).

14 Hold Indicator(9~16):

Please refer to Hold Indicator(1~8).

15 Event Select Key(9~16):

Please refer to Event Select Key(9~16).

3.2.1.8.2 Configuration

The example here is the IDA8 system, the configuration is the same for ESC, LAPG2T and other Ateis Audio Processor.

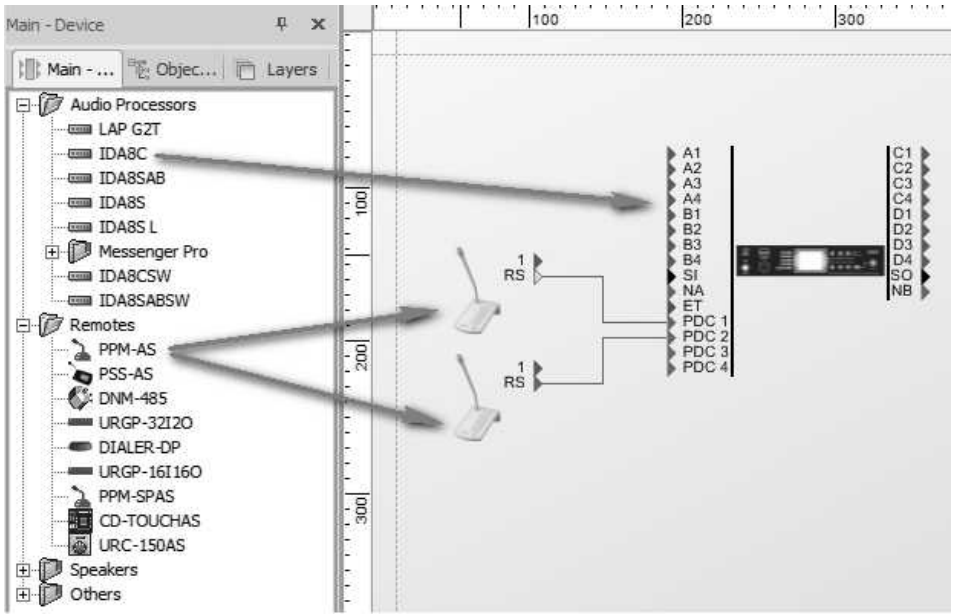
❖ Create PCP Object

1. Open or create a Ateis studio configuration file.
2. Drag IDA8C object to the design window to create an audio processor object.
3. Drag PPM-AS to the design window to create PCP object.

PPM-AS, PCP, PSC-AS and CDPM share the same object.

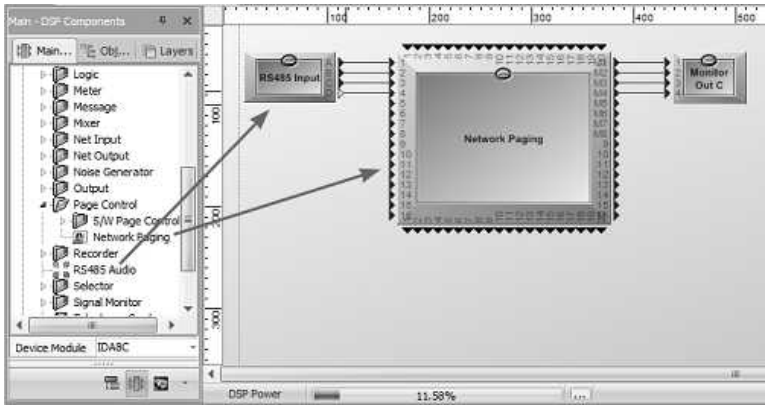
4. Wiring to connect green pins between PCP object and audio processor.

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❖DSP component configuration

The audio of PCP needs to be routed from using the Network Paging component for paging processing. See the following example.



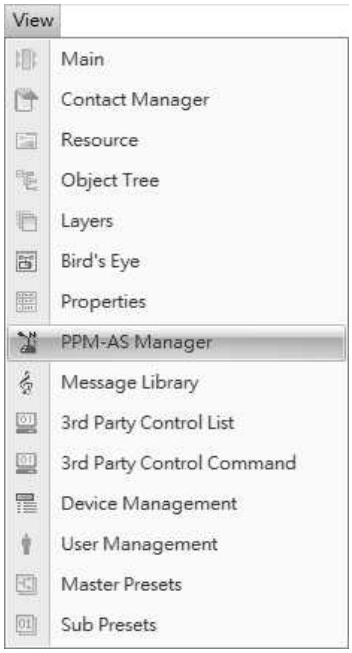
Pin A~D of RS485 Input component is corresponds to PCP 1~4 audio plugged in PDC1~4 respectively. [Network Paging] component process paging request coming from various sources, and to determine which source is allowed to paging to zones it desired. The zones are M1~M8 on Network Paging component. You need create an integration paging event to link with PCP, see DSP Components > Network Paging to know the paging settings.

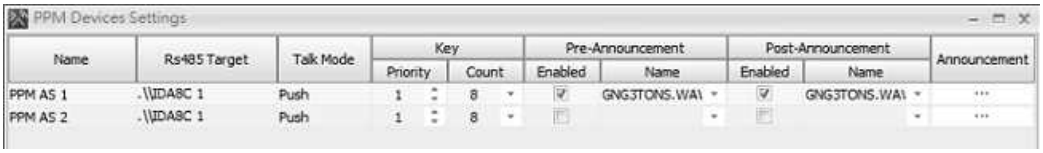
❖PPM-AS Manager

[PPM-AS Manager] is an unit of the software to manage settings about paging console that connect to audio processors like IDA8 series.

Click main menu [View > PPM-AS Manager] to open the [PPM-AS Manager] window.

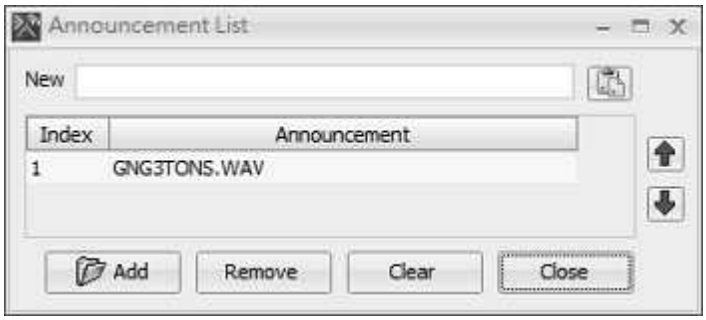
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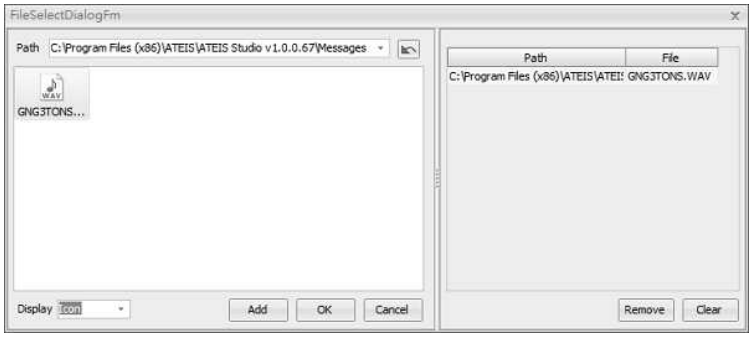


- Name: The name of PCP object, click to rename.
- RS485 Target: Indicates the connector on audio processor that PCP connected in the design window.
- Talk Mode: Specify the behavior of key pressing for paging. There are two modes:
  - Push: Push and hold the key for paging request, release the key to end paging.
  - Lock: First push for paging request, if request is grant then start paging, push again to end paging.
- Key-Priority: The priority of key.
- Key-Count: To specify how many keys on PCP.
- Pre-Announcement:
  - Enable: Tick/Untick the checkbox to enable/disable pre-announcement chime playing.
  - Name: Display the name of the message.
- Post-Announcement:
  - Enable: Tick/Untick the checkbox to enable/disable the post-announcement chime playing.
  - Name: Display the name of the message.
- Announcement: Open announcement message settings window:

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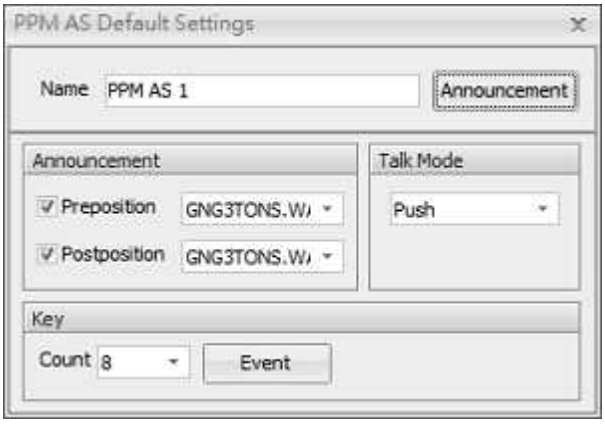
- New: The announcement message for creating new entry in the list. Type a name in the editor and press button.
- Index: The index for entries in the list.
- Announcement: The name of announcement message.
- Add: Add a name of announcement message from File Selection Dialog:



  - Path: Specify the directory to list all files with supported formats.
  - File List: Display files in the directory Path.
  - Display: Specify the display mode for file list. There are three modes: Icon/List/Detail.
  - Add: Move the select files to the ready list that the right side of window.
  - Ok: Add files in the ready list to announcement message list.
  - Cancel: Close window and ignore ready list.
  - Remove: Remove the select message file in ready list.
  - Clear: Clear ready list.

❖ PPM-AS Settings

Double click the PCP object and open the window of PPM-AS Settings



- Name: The name of PCP.

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- Announcement: Click to open the Announcement settings window, see prior section for details.
- Announcement:
  - Preposition: Enable/disable pre-announcement chime playing.
  - Preposition Name: Select message from the announcement message list for pre-announcement chime playing.
  - Postposition: Enable/disable post-announcement chime playing.
  - Postposition Name: Select message from the announcement message list for post-announcement chime playing.
- Talk Mode: Specify the behavior of key pressing when paging. See prior section for details.
- Key Count: Specify how many keys in PCP.
- Key Event: Bind a paging event with PCP for zone selection. See Network Paging component for details.

❖ Remote Plug-in

It needs to do a "Remote Plug-in" to make audio processor recognize this remote devices. See Remote Plug-in for details.

❖ Assign to Design Objects

The device object in design window needs map to physical device, then the configuration of the device can be set to the physical one. Click "Name " field of device list to select correspond device object.

3.2.1.9 CDPM Wallmount Paging Console



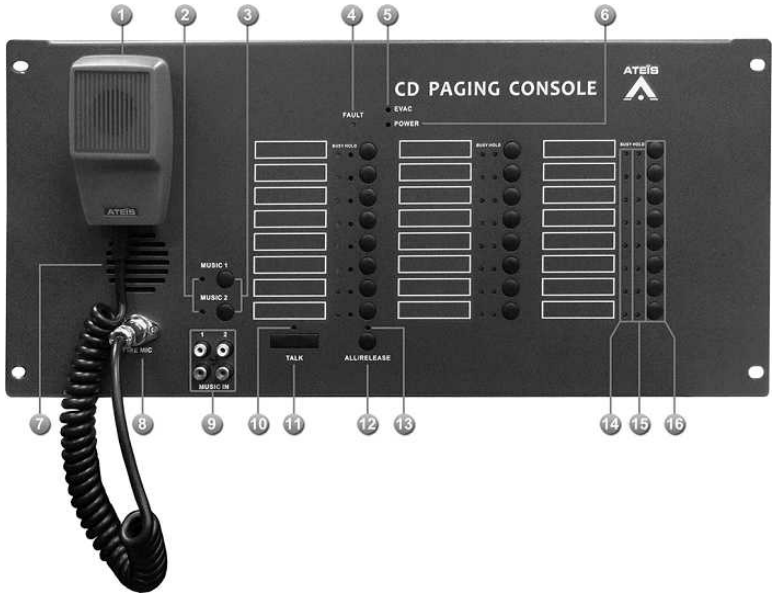
The CDPM paging console is a wall-mounted cabinet remote which is compatible with Ateis audio processor. The CDPM comprises of 24 zones/24 buttons with Fireman microphone in a metal surface mount wall-box. It provides robust IP-30 protection. Each CDPM contains a PMM PS Master PCB with extension keypad and uses the same architecture as for the PPM-AS series of microphone consoles. Each Ateis audio processor is capable to support up to 31 CDPM units per RS485 port in Master/Slave configuration. The control buttons represent a single zone or a group of zones. All buttons can be pre-programmed from ATEÏS Studio. The PTT button can be programmed for Push To Talk function or for latching functionality.

The CDPM supports 2 channels of music input. By pressing the button for selection, the two LED indicators shall light up and activate the music channel. The CDPM offers “Hold” and “Busy” LED signals in addition to the zone LED’s, and these features allow an easy identification of Selection/ Busy signals for users. In addition, to meet the com-pliance with EN 54-16, POWER, FAULT and EVAC indicators are provided with. The CDPM interconnects over a dedicated RS485 for power,

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audio and data transmit. The RS485 communication protocol offers daisy chaining of up to 300 m on a simple CAT5 cable, and yet makes outlets easy to connect via a standard RJ45 connector.

3.2.1.9.1 Control Panel



1 Fireman Microphone:

The Fireman Microphone SHM 1 is a small compact microphone dedicated to security calling. It is a totally monitored microphone with internal resistor network to detect four different states (Shortcut, Closed Contact, Open Contact, Absent). Firemen Microphone SHM 1 for All call, group or zone calls.

2 Music Active Indicator:

These two LED to indicate which music input channel is active.

3 Music Selection Button:

To select music input channel.

4 Fault Indicator:

To display fault status of system. Following table list the states of fault:

Status	Frequency	Activity
Permanent	●	There are faults in audio processor.
Blinking	● ° ● ° ●	Lost communication with audio processor.

5 EVAC Indicator:

Light up when the system is under evacuation paging.

Status	Frequency	Activity
Permanent	●	System is under evacuation paging.
Blinking	● ° ● ° ●	CDPM does not do a "Plug-in" in Ateis Studio before using.

6 Power Indicator:

This LED lights up when the CDPM is powered on.

7 Monitoring Speaker:

This embedded speaker to play chime when paging or monitor signal from audio processor, it needs to work with rs485 output component to get audio signal from other DSP components in audio processor.

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8 Fireman Microphone Connector:

DIN Connector for fireman microphone connection.

9 Music Input Connector:

There are two music input channels of CDPM. Users can select one of them by pressing music selection button.

10 Talk Indicator:

This LED lights up if CPCM is allowed to paging, on the other word, the paging request has been acknowledged.

⚠ Sometime after paging request is granted, zones under paging still can be occupied by other sources. In such a case, the talk LED still light up, but you can check busy LED to know the situation.

---

11 Talk Button:

Press this button to request paging. There are two modes for this button: push to talk and lock.

12 All Call/Release Button:

This button is used for selecting or deselecting all keys.

13 All Call/Release Indicator:

This indicator lights up if all keys are selected.

14 Busy Indicator (1~8):

Show the status of zone:

Color	Status	Frequency	Activity
Red	Permanent	●	Priority of the zone is lower than other sources.
Green	Blinking	● ° ● ° ●	Priority of the zone is higher than other sources.
Green	Permanent	●	The zone only desired for paging is not using by other sources.

15 Hold Indicator (1~8):

These LEDs Indicate which keys are selected.

16 Event Select Key (1~8):

These buttons are used to select keys, each key may link to an event for triggering actions like paging or adjust the value of parameters.

3.2.1.9.2 Configuration

3.2.1.9.2.1 Single Port

❖ Please refer to PPM-AS Configuration to know more about the configuration of single port on CDPM and PPM-AS.

3.2.1.9.2.2 Dual Port

❖ The purpose of dual port is using the RS485 (PDC port on IDA8) to fulfill the redundant loop in case of any failure with the cable connection. When detecting the failure of cable connection on one of the PDC port, the system will automatically switch to the redundant dual port. If both cable connection have failed, the IDA8 system will then report [Remote Offline] fault.

❖ The wiring of PDC dual ports can only be done by connected to the correct PDC ports, see as below,

- Connect the CDPM to PDC 1 port and PDC 2 port.

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- Connect the CDPM to PDC 3 port and PDC 4 port (IDA8C only).

❖ Configuration:

- Step 1: Go to Device Management > Machine File System > RS485 Protocol Setting window, and choose CDPM Dual Port.
- Step 2: Proceed the Drag n Drop and drag the PPM-AS icon from [Main-Device] and connect it to the IDA8 processor with dual ports: the PDC 1 port or the PDC 3 port.

⚠ The PDC 2 port and the PDC 4 port cannot be functioned when connected to other remotes such as DNM-485 in the configuration layout, or this redundant dual port will be disable.

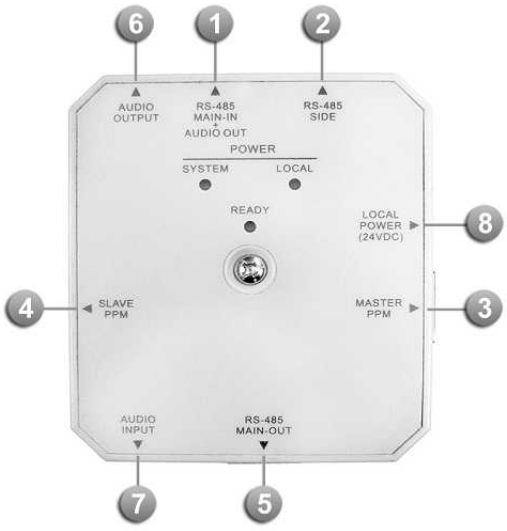
- Step 3: Go to Configuration Layout, and connect the Channel A and Channel B on the PDC Input component to the Mixer component, then connect the Mixer component to Network Paging component. See the picture as below.



- Step 4: Proceed [Compile] and [Store] action.

3.2.2 PPM JB Junction Box

3.2.2.1 Control Panel



The PPM JB is an electrical junction box which allows the chain-wiring of peripherals such as PPM-AS, CD-8AS, CD-16AS, URC-150AS, DNM-485 etc. with IDA8/ECS/LAP G2T processor.

- 5 x RJ45 connectors for:

1 RS-485 MAIN-IN + AUDIO OUT: Connects to the PDC port of IDA8 or connects to the previous PPM JB junction box.

2 RS485-SIDE: Connect to a URC device with 8-pin CAT5 cable.

3 MASTER PPM: Connect to a Master PPM using the supplied 10-pin CAT5 cable.

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4 SLAVE PPM: Connect to the PPM JB for Slave PPM with 8-pin CAT5 cable.

The Slave PPM shares the same audio output with the Master PPM and can only be used as a microphone.

5 RS-485 MAIN-OUT: Connect to next PPM JB junction box.

- 2 x internal screw connectors for 0 dB audio:

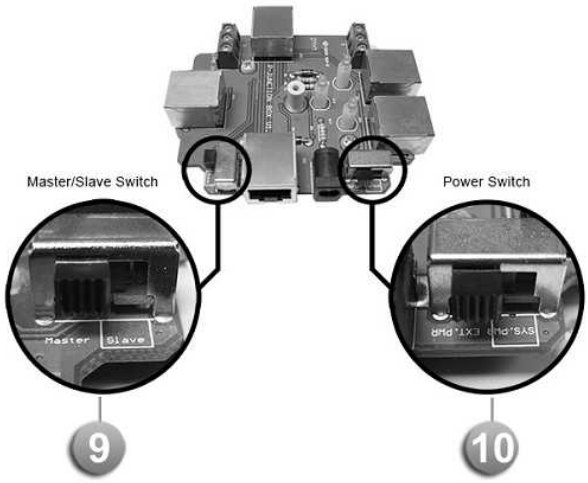
6 AUDIO OUTPUT: Audio output from PPM microphone to audio processor.

7 AUDIO INPUT: Audio input from audio processor to PPM's speaker for monitoring surveillance.

8 1 x input for additional 24V power supply. Depending on the distance between the processor and PPM-AS/URC-150AS etc. devices.

9 1 x internal switch inside the PPM JB junction box for PPM Master/Slave selection, see [Picture 1] below.

10 1 x internal switch inside the PPM JB junction box for System or local power supply selection, see [Picture 1] below.



[Picture 1]

❖LEDs:

- POWER SYSTEM: Light up when the power comes from a local power supply.
- POWER LOCAL: Light up when the power comes from audio processor.
- READY: Light up when the PPM JB junction box is powered correctly.

3.2.2.2 Connection with PPM JB Junction Box

To know the wiring connection of PPM JB junction box, see Connection with PPM JB Junction Box for details.

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3.2.3 DNM-485/DNM-ENET Noise Sensing Microphone



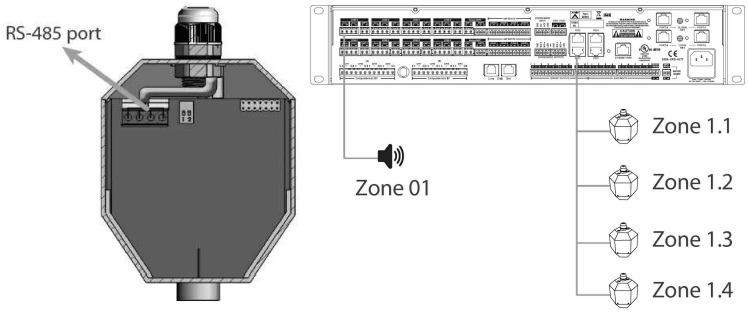
With built-in Electronic Condenser microphone (omnidirectional), the DNM-485/DNM-ENET enhances the ability to detect the surrounding background noise. The DNM-ENET is power by using CAT5 cable via PoE Ethernet. With the 0 dB modulation through the Audio Processor, the DNM-485/ DNM-ENET component provides the Automatic Gain Control (AGC) feature and automatically adjusts the output level of loudspeaker under any situation. The DNM can be controlled by the following processor: IDA8, ECS and LAP G2T.

- DNM-485: RS485 type
- DNM-ENET: Ethernet type

3.2.3.1 Installation

❖ System Structure

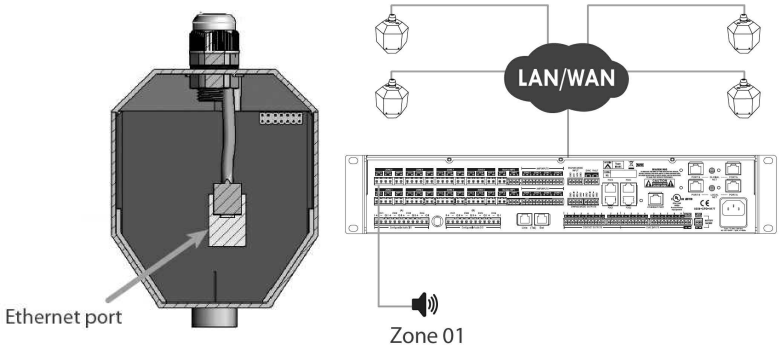
DNM-485



The DNM-485 requires to be powered by connecting to PPM JB junction box. To know its wiring connection, see Connection with PPM JB Junction Box for details.

- Max. 16 DNM-485 devices can be cascaded (for IDA8C / IDA8C-SW).
  Max. 8 DNM-485 devices can be cascaded (for IDA8S / IDA8SL / IDA8SAB / IDA8SAB-SW).
- Use metal shielded CAT5/6 cable.

DNM-ENET



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DNM-ENET can be connected to IDA8C / IDA8C-SW controller only (max. 20 units).

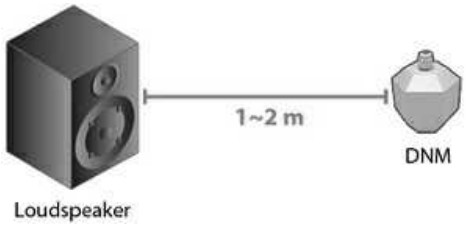
3.2.3.1.1 DNM-ENET

❖ Install the DNM-ENET device to the position in which the DNM can detect the background noise and adjust the speaker volume automatically, and connect the DNM with audio processor by Ethernet. If the system needs to connect to a series of DNM, connect the ethernet cable to the DNM devices, then the DNM devices will be auto searched. Please refer to DNM-E > Configuration > Step 3 > Deploy to learn how to assign the master/slave DNM units.

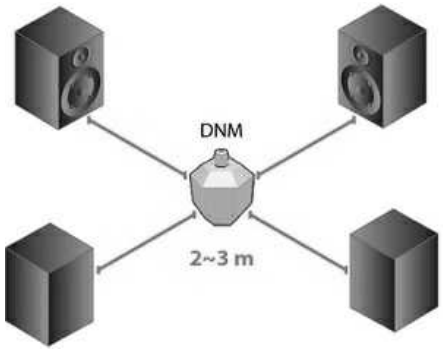
❖ One DNM-ENET can only support one zone (like IDA8 Zone Channel). Generally, place the DNM in front of a loudspeaker about 1~2 meters. The distance between DNM and speaker also relies on the power of the amplifier and loudspeaker. If it is a high-power loudspeaker (sound is louder), then the distance should be increased, and vice versa.

- The examples of installation as follows:

1. One zone connects to one loudspeaker only, generally, then install the DNM in front of the loudspeaker about 1~2 meters.

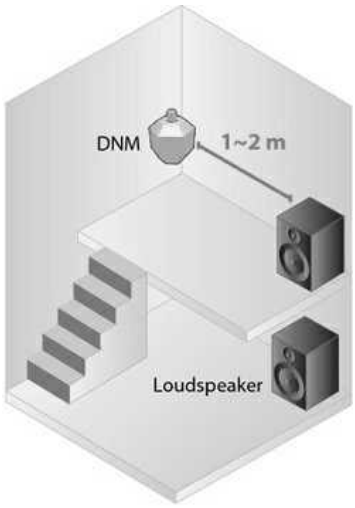


2. One zone connects to many loudspeakers, and installed the loudspeakers by circularity and the distance is not far between the loudspeakers, then the DNM can be set in the center of loudspeakers (eg: A small conference room etc.).

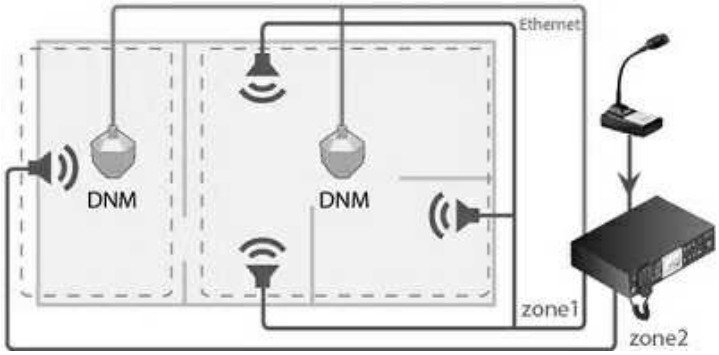


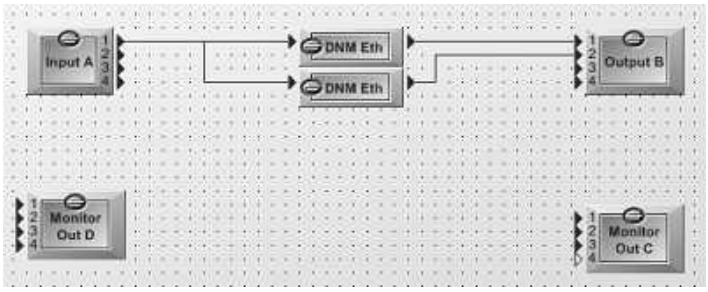
3. One zone connects to many loudspeakers, and the installation of loudspeakers are irregular but the distance of all loudspeakers are not far, then install the DNM about 1~2 meters in the front of any one loudspeaker.

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4. The DNM will adjust the level automatically allowing people to hear the broadcast clearly even the distance of each speaker is placed remotely. To avoid the problem that if the DNM is installed around quiet side, the volume of broadcast is too small for the loud side, users can separate the area to several zones and one DNM for one separated zone, and all of the DNM are same input source (eg. Department store, etc.).

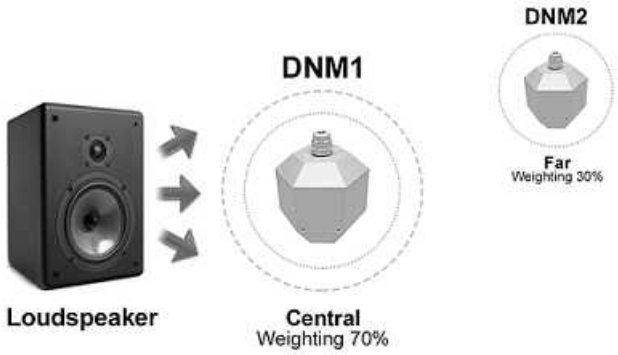




The sound of speakers from another zone can't effect each other, otherwise, the DNM will consider the sounds from another zone as a background noise.

5. When multiple DNM units are installed and facing the loudspeakers with different position in the same area, the detection setting of noise ratio(weighting) will be different from the location of DNM units, see DNM-E Configuration and see how to set the weighting of ratio on DNM units.

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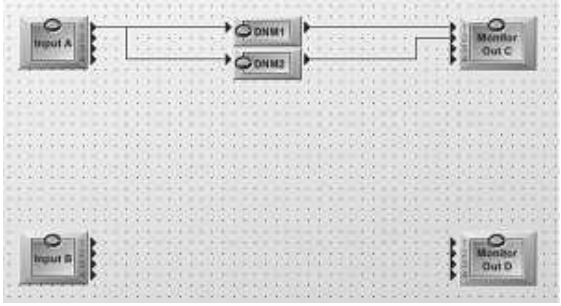


3.2.3.1.2 DNM-485

- ❖ Install the DNM-485 device to the position in which the DNM can detect the background noise and adjust the speaker volume automatically, and connect the DNM device with Audio Processor by RS485 or Ethernet, besides, if the system needs to connect to a series of DNM on same RS485 port, then the user should plug in the DNM devices one by one before connecting a series DNM to RS485 port. How to connect is described in the "Configuration" section.
- ❖ One DNM-485 can only support one Zone (like IDA8 Zone Channel). Generally, place the DNM in front of a loudspeaker about 1~2 meters. The distance between DNM and Loudspeaker also relies on the power of the amplifier and loudspeaker. If it is a high-power loudspeaker (sound is louder), then the distance should be increased, and vice versa.

- The examples of installation as follows:

  1. One zone connects to one loudspeaker only, generally, then install the DNM in front of the loudspeaker about 1~2 meters.
  2. One zone connects to many loudspeakers, and installed the loudspeakers by circularity and the distance is not far between the loudspeakers, then the DNM can be set in the center of loudspeakers (eg: A small conference room, etc.).
  3. One zone connects many loudspeakers, and the installation of loudspeakers are irregular but the distance of all loudspeakers are not far, then install the DNM about 1~2 meters in the front of any one loudspeaker.
  4. In a large area, the broadcast source is same in the area, and the distance of each loudspeaker is far, maybe the ambient noise is loud in one side, but quiet in the other side. What if the DNM is installed around loud side?
     The DNM will adjust the level automatically allowing people to hear the broadcast clearly, as all of the loudspeakers are connected from same source (same zone output). Maybe the volume of broadcast is too loud for the quiet side, or on the contrary, if the DNM is installed around quiet side, the volume of broadcast is too small for the loud side. To avoid this problem, the user can separate the area to several zones and one DNM for one separated zone, and all of the DNM are same input source (eg. Department store, etc.).



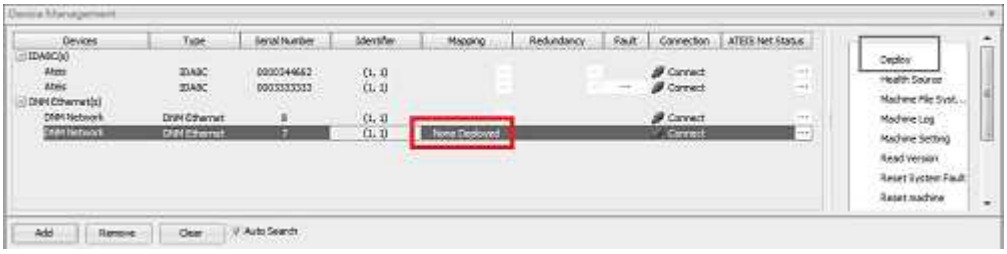
The sound of loudspeakers from another zone can't effect each other, otherwise, the DNM will consider the sounds from another zone as a background noise.

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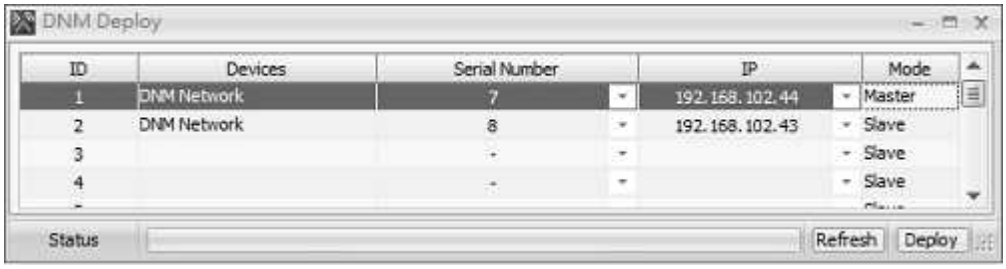
3.2.3.2 Configuration

3.2.3.2.1 DNM-ENET

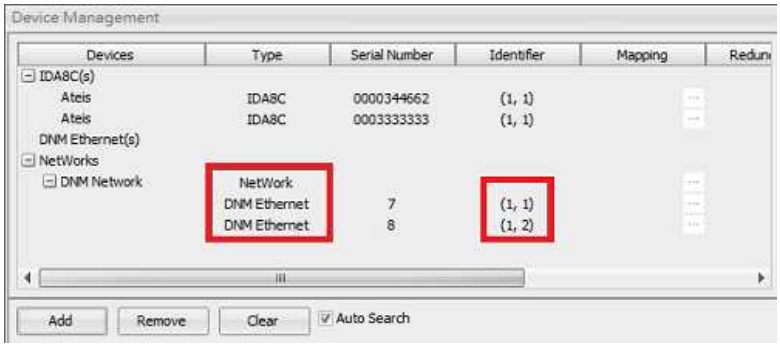
1. Plug the DNM using CAT5 cable via PoE Ethernet. (Here's the example using IDA8, the configuration is the same for other Ateis Audio Processor).
2. When the DNM units are connected, users need to activate the deploy action from the Device Management window first, and also if the status of [None Deployed] displayed on the Mapping gird, it also indicates the DNM unit needs to deploy as well. Please see the picture below,



3. Click [Deploy] and open its [Deploy] control window, and select which DNM units you connected as the Master/Slave units by entering their corresponded [Serial Number]. And click [Deploy] button to make all the connected DNM units deploy and be controlled together.



4. After proceeding the Deploy, the units will be a DNM network which their Identifier will change with the connected and deployed DNM devices.



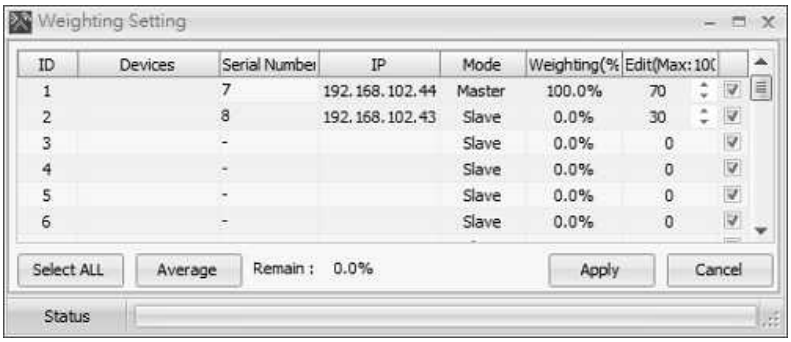
5. Now please go to click [Weighting Setting] function on Device Management to adjust the detection of noise ratio.



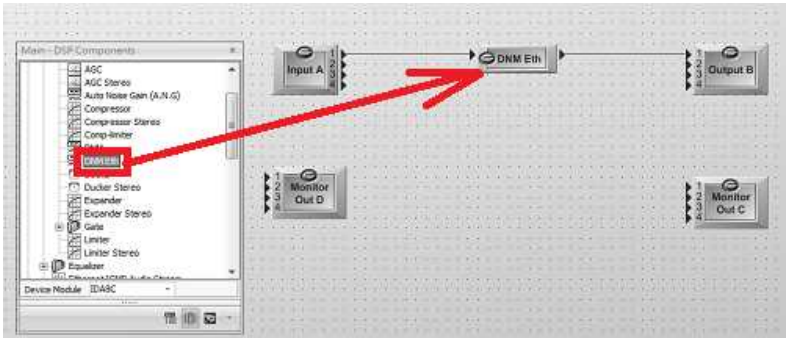
6. And adjust the weighting from the [Edit] gird, please note that max. percentage is 100%, and then click [Apply] button, then it will display a window of [Calibration]. After finished the setting, please close the setting window.

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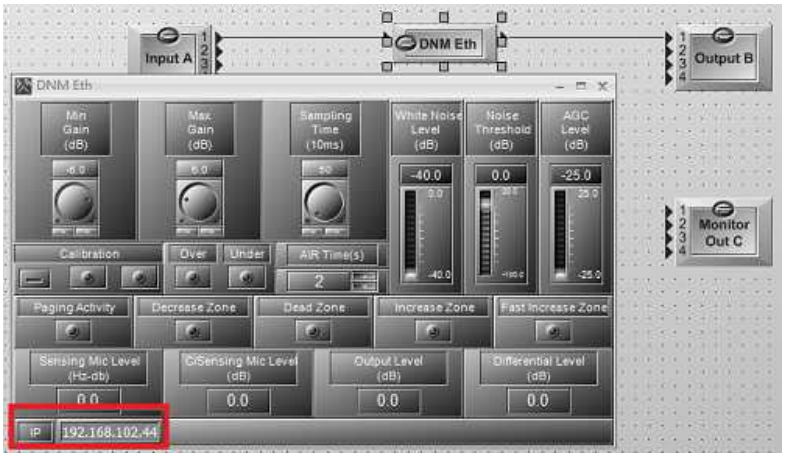
Click [Average] button to equally balance the total percentage.



7. Double click the IDA8C/S to open the DSP component editing window, then drag and drop to create "DNM-Eth" component. In this case, it simply input audio from "Input" component and output to "Output" component.



8. Then double click the [DNM Eth] component to open its control window, then enter the IP address of "Master DNM" After that, then proceed the Compile & Store.



9. Store the configuration, and then online.

10. Click "DNM" component to open it's element window, press button [Calibration] to start the calibration procedure. When it is calibrating, the red LED will light up, and the White Noise Level (dB) will be auto-tuning (sending out a low frequency tone). Note: White Noise Level(dB) is appropriate to stop around -20dB.

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11.After the calibration is successful, the green LED will light up, and the DNM will start to work.



12.If the White Noise Level goes up to 0dB and the 'Under LED' is lighted up, the calibration has failed at this time, and the DNM can't receive the calibration noise coming from loudspeaker, please check:

- Is the sound of loudspeaker is too small?
- Is the distance too far between DNM and loudspeaker?
- Is the DNM damaged?



13.If the White Noise Level goes down to -40dB and the over LED is lighted up, this means the

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calibration has failed at this time, and the DNM received the sound too loud, please check:

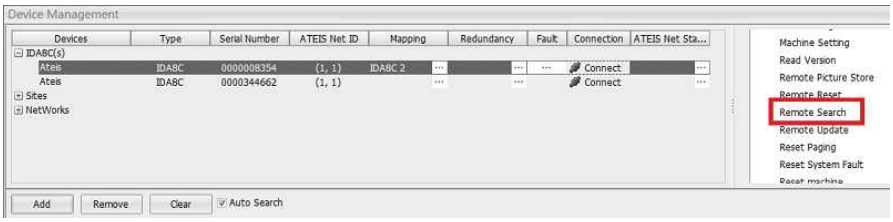
- Is The sound of loudspeaker is too loud?
- Is the distance too close between DNM and loudspeaker?
- Is the DNM damaged ?



14. After calibration finished, DNM starts to work, It increases the level of audio if there is some noise detected by DNM.
15. To save the parameter, click [Save parameter] in Ateis Studio.

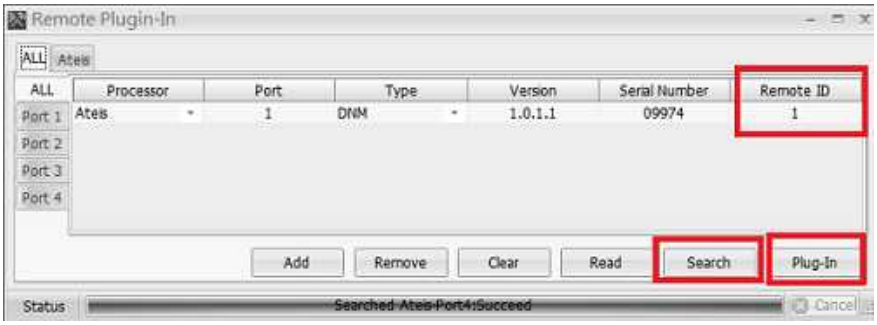
3.2.3.2.2 DNM-485

1. Plug the DNM to the RS485(PDC) port of IDA8C/S (Here's the example using IDA8, the configuration is the same for other Ateis Audio Processor).
2. Go to [Remote Search] on [Device Management] window.

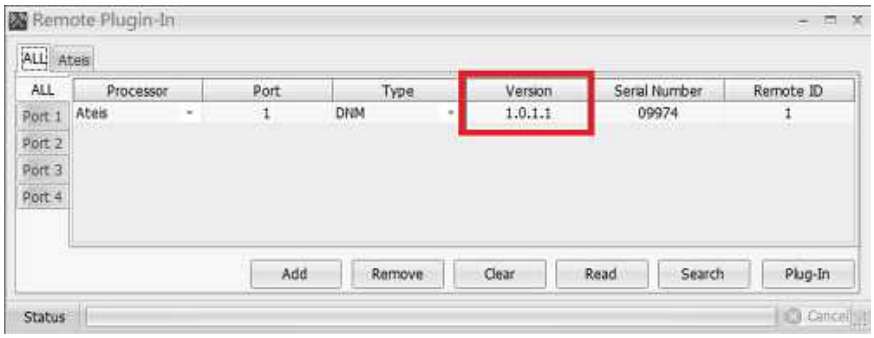


3. After a popup window of [Remote Plugin-In] window appears, click the [Search] button to see the DNM device the system has connected with. Then click [Plug-In] button to assign remote ID.

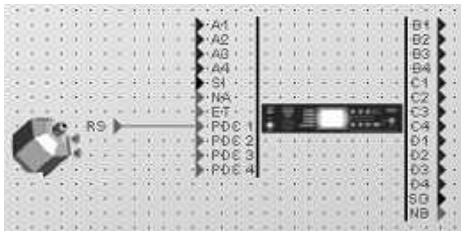
If the DNM device cannot be successfully searched by the system, please update the firmware version which is newer than v1.0.0.5 at least.



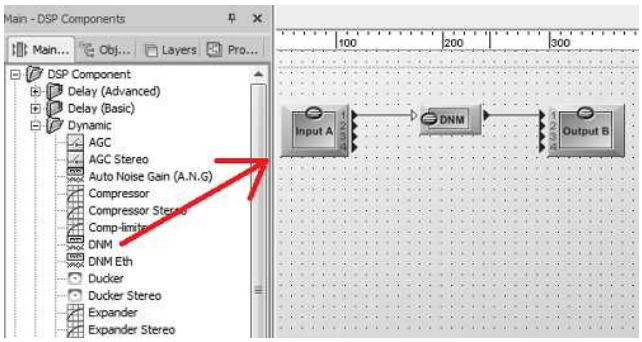
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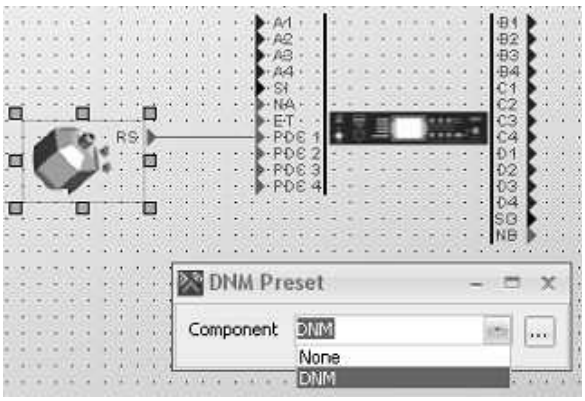
3. In device editing window, create a DNM and wires it to IDA8C/S's RS485 port.



4. Double click the IDA8C/S to open the DSP component editing window, then drag and drop to create "DNM" component. In this case, it simply input audio from "Input" component and output to "Output" component.



5. Go back to device editing window, click on the block of DNM device. A [DNM Preset] window pops up. There is a combo box to select the cooperate DSP component for the DNM device.



6. Store the configuration, and then online.

7. Click "DNM" component to open it's element window, press button [Calibration] to start the calibration procedure. When it is calibrating, the red LED will light up, and the White Noise Level (dB) will be auto-tuning. Note: White Noise Level(dB) is appropriate to stop around -20dB.

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8. After the calibration is successful, the green LED will light up, and the DNM will start to work.



9. If the White Noise Level goes up to 0dB and the 'Under LED' is lighted up, the calibration has failed at this time, and the DNM can't receive the calibration noise coming from loudspeaker, please check:
   - Is the sound of loudspeaker is too small?
   - Is the distance too far between DNM and loudspeaker?
   - Is the DNM damaged?



10. If the White Noise Level goes down to -40dB and the over LED is lighted up, this means the calibration has failed at this time, and the DNM received the sound too loud, please check:

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- Is The sound of loudspeaker is too loud?
- Is the distance too close between DNM and loudspeaker?
- Is the DNM damaged?

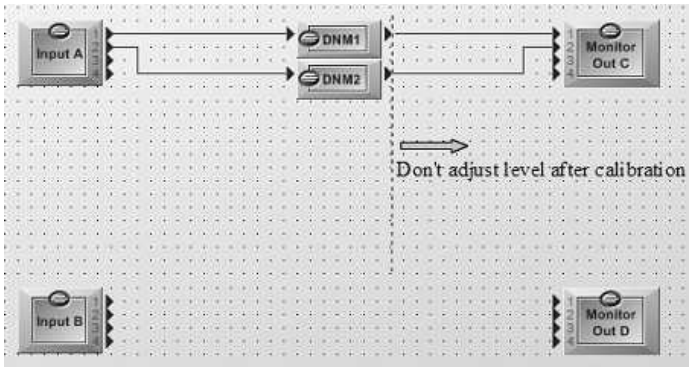


11. After calibration finished, DNM starts to work, It increases the level of audio if there is some noise detected by DNM.

12. To save the parameter, click the [Save parameter] in Ateis Studio.

3.2.3.3 Operation Notice

Once the calibration is successful, please do not adjust the level of component that is connected to the rear of DNM component (eg: Monitor Out C's level or amplifier gain, etc.), the level which can be adjusted is the component connected to the front side of DNM component (eg: Input A level or PC output volume, etc.).

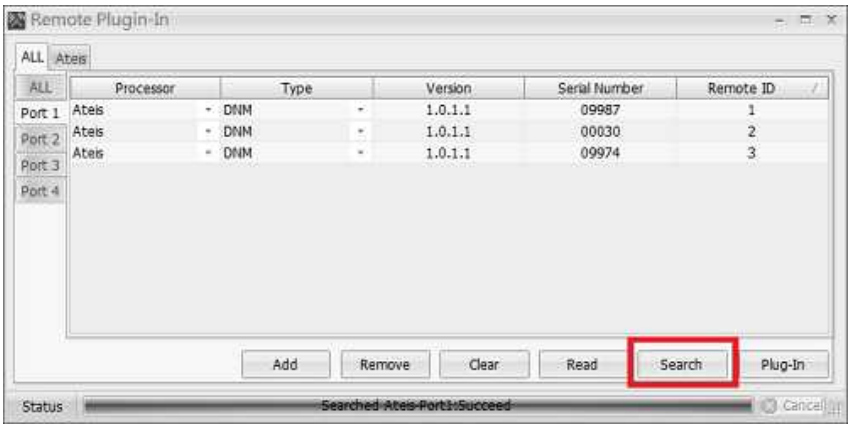


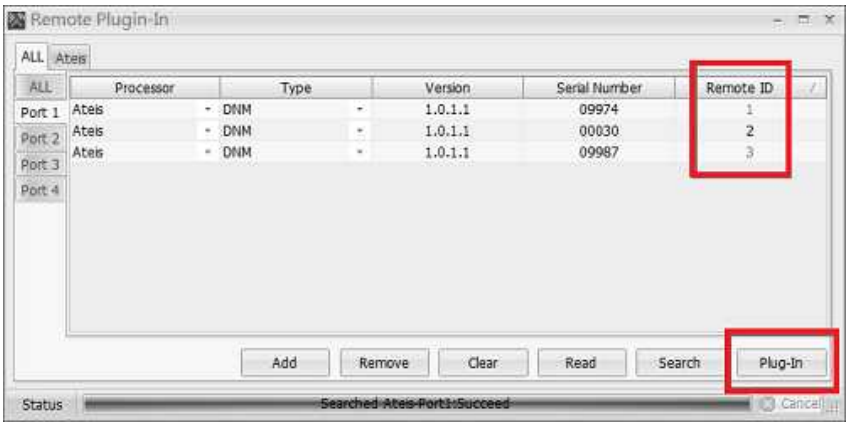
3.2.3.4 Multiple DNM-485 Devices on the Same PDC

If the system needs to use more than one DNM-485 and connect the DNM-485 units on the same RS485 port, users should assign the DNM-485 units with different IDs.

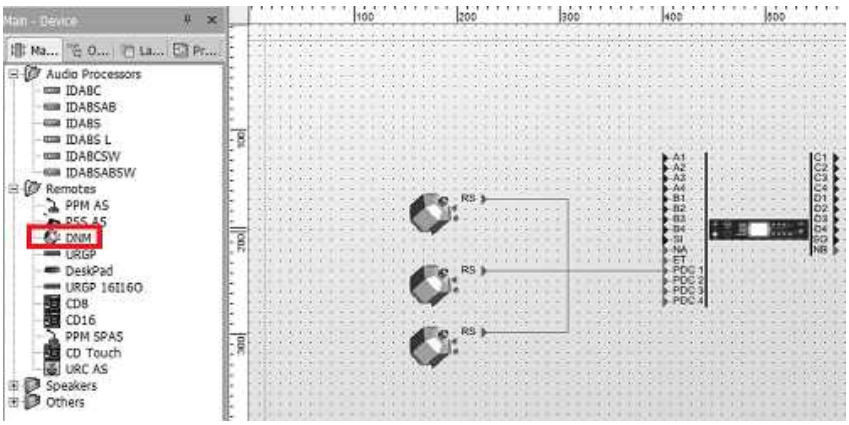
1. Go to [Remote Search] on [Device Management] window, then click [Search] button to list the DNM-485 devices the system has connected to. If the ID on the [Remote ID] grid display in red, which means the DNM-485 devices have the same ID, please click [Plug-In] button again, and the color of the listed ID will turn black, this means that the status of ID assignment has succeeded.

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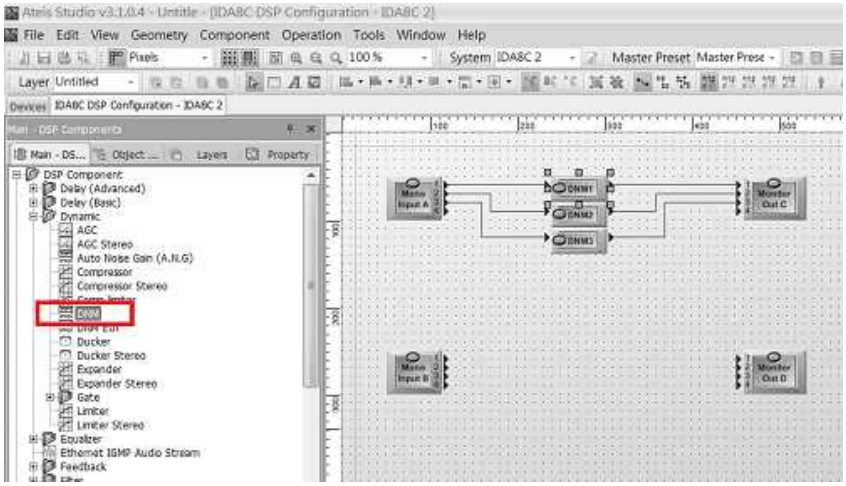


2. In the configuration file, drag and drop the DNM objects into the configuration, then connect to RS485 port (same with real wiring). If the system has three DNM-485, then drag and drop multiple DNM-485 components (the example below is connecting to multiple DNM in PDC1).

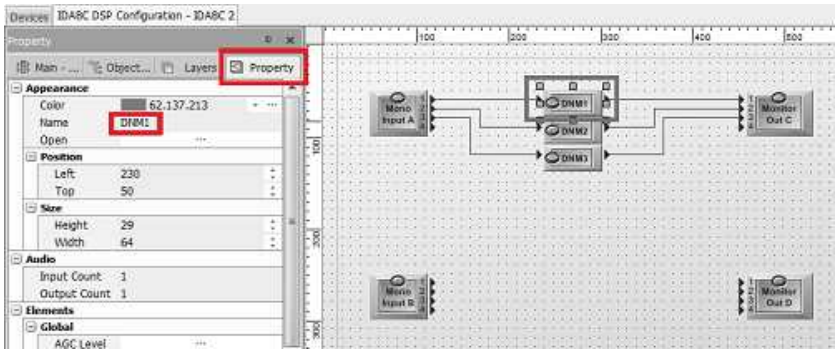


3. Drag and drop the DNM DSP component, and connect the input and output.

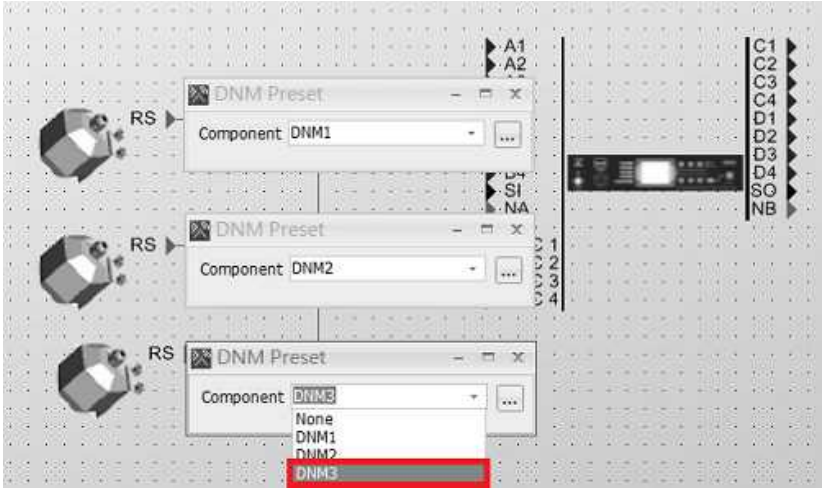
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4. To modify the DSP component name. You can simply use property to do this.

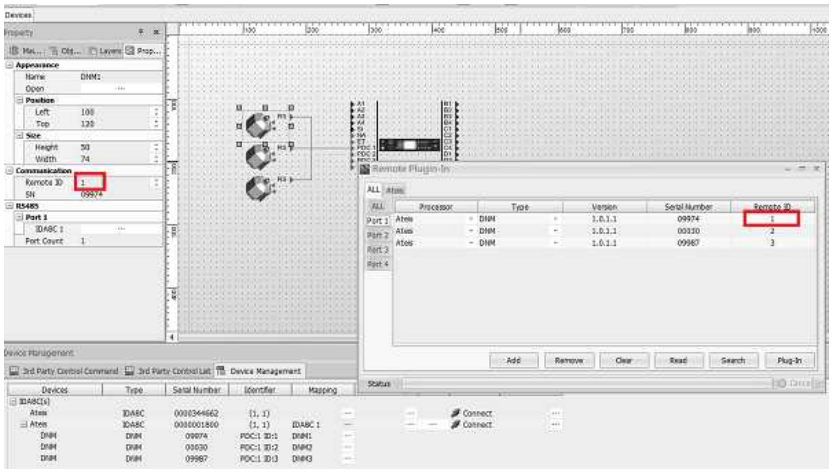


5. Go to device editing window. Double click the device DNM component to open a window, and link device DNM component with DSP DNM component.



6. Check the ID and Serial Number of your multiple DNM-485 devices on [Remote Plugin-In] or [Property] windows to see whether the DNM-485 devices connect to the system can be matched with the Ateis Studio software.

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7. Store, Online, Calibrate the three DNM-485 devices by each, see Configuration for calibration procedure.

3.2.4 URC-150/URC-150AS Remote Controller



The URC-150/URC-150AS is a state of the art Universal Remote Controller, which functions as part of ATEÏS' IDA8, ECS, LAPG2T and UAPG2. The URC can be fully programmed via ATEÏS' Studio software to adjust every setting: level control, preset, components' adjustments, etc. An elegant OLED for displaying information of parameters or the status. It gives extreme simple design and cost-effective consideration of with only Two buttons [EXIT], [BACK] and a Knob on control interface. The RS485 communication protocol allows daisy-chain wiring up to 32 units, providing with a long distance from the audio processor.

3.2.4.1 Control Panel



1 OLED Display: Two color OLED.

2 Exit Button: Back to the main menu.

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3 Knob:

- Turn: Select items or change volume.
- Press: Enter in the sub menu.

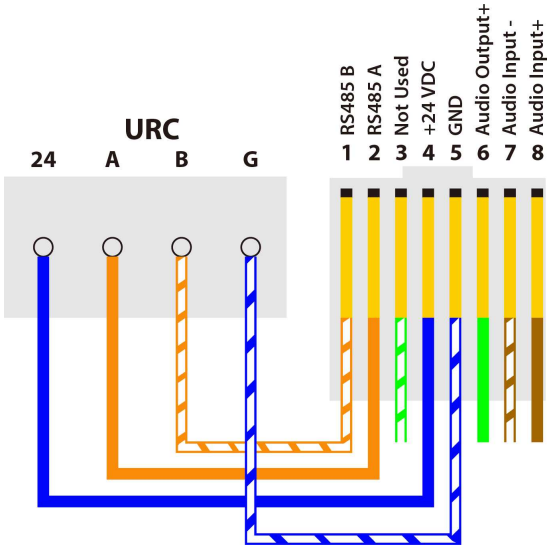
4 Back Button: Back to the root menu.

3.2.4.2 Rear Panel



1 24V / A / B / G:

Please connect the URC using the 8 pin CAT5 cable to the Junction Box. Connect with this 4 pair of pins to the corresponds 4 pairs of pin (24 / A / B / G) on the rear side of URC. See the picture below,



Pin1	RS-485 B
Pin2	RS-485 A
Pin3	Line in -
Pin4	24VDC
Pin5	Ground
Pin6	Line in +
Pin7	Line out -
Pin8	Line out +

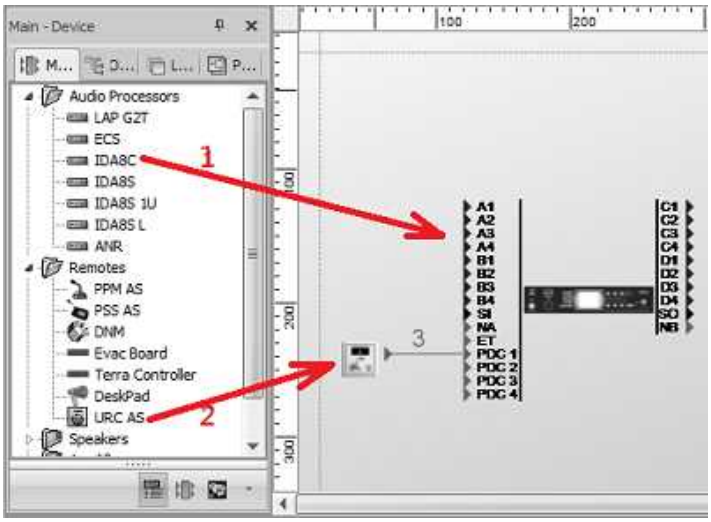
3.2.4.3 Configuration

❖ Create URC-150AS Object

1. Open or create a Ateis studio configuration file.

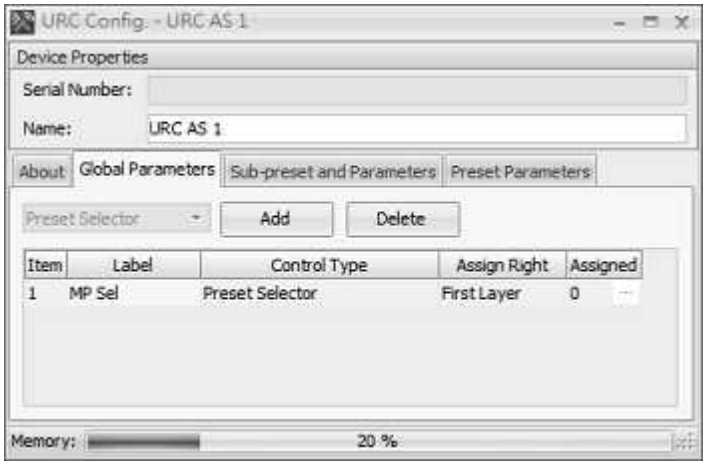
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2. Drag the audio processor to the design window to create audio processor object.
3. Drag URC-150AS to the design window to create URC-150AS object.
4. Wiring to connect green pins between URC-150AS object and audio processor.



❖URC-150AS Settings

Double click the URC-150AS object to open its setting window.



- Serial Number: A serial number of the URC-150AS.
- Name: Name of the URC-150AS.
- Memory: Indicate the memory usage of the URC-150AS for current settings.

❖URC-150AS Settings-About Tab



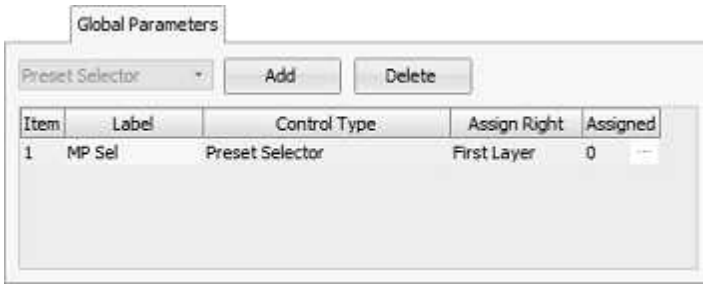
About Tab is the last item of the first layered menu in URC-150AS. Click the item to enter second layer of About function that is a list of texts that set in design time.

- Title: The text of about title.

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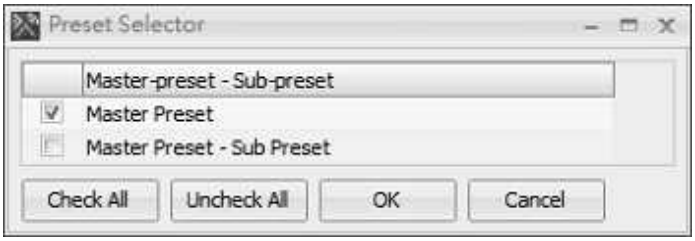
- Item: The item No. for the text in About text list.
- Text: The text in About text list.
- Add: To add a text in About text list.
- Delete: To remove selected text from About text list.

❖ URC-150AS Settings-Global Parameters Tab



The URC-150AS settings of controlling the global parameters like changing master/sub presets. Users are allowed to create arbitrary number of items until reach the memory limitation which displayed on the bottom of window.

- Add/Delete: Add/Delete a item in URC-150AS for controlling global parameters.
- Item: Index of the item.
- Label: Display text for the item.
- Control Type: Specify which type of global parameter is going to control. Available types list below:
  - Preset Selector: To change master/sub presets.
- Assign Right: To specify the item is belong to first layer or protected layer.
- Assigned: Indicate the number of presets are selected for change. There is an ellipsis button on the right of grid cell, click it to open the window for preset selection.

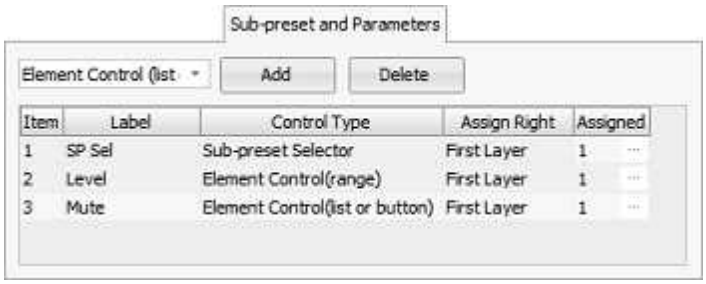


  - Check boxes for selection of master/sub presets to be linked to the item.
  - Check All button to select all master/sub presets.
  - Uncheck All button to de-select all master/sub presets.
  - OK button to confirm settings and close window.
  - Cancel to discard the modification of settings and close window.

❖ URC-150AS Settings-Sub-preset and Parameters Tab

This tab is for the sub-preset and parameter control using items in URC-150AS.

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- Function Settings

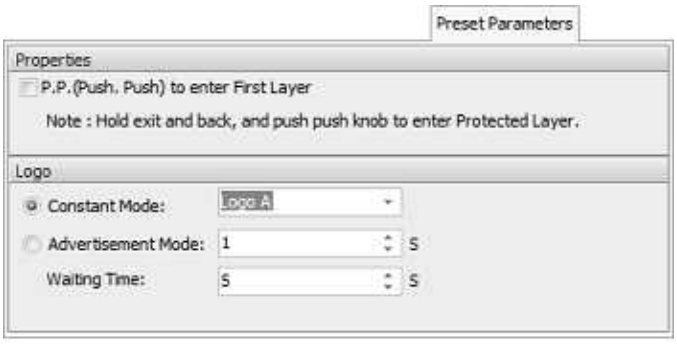
  To specify which function for controlling going to be created. The available functions list below:

  - Sub-Preset Selector: To change sub-preset.
  - Element Control (Range): To control element with range type value. For example "Level" in Input component with min -90 dB and max 20 dB is a range type of element.
  - Element Control (List or Button): To control element with list or boolean type value. For example "Mute" in Input component with states On/Off is a button type of element.

- Add/Delete: To add/delete an item for controlling sub-presets or elements.
- Item: Index of the item.
- Label: The display text of the item.
- Control Type: The type of item. This will refer to prior section "Function Combo Box" for details.
- Assign Right: Specify the item is belong to first layer or protected layer.
- Assigned: Indicate how many controlled target linked to the item, for example if a item controls 4 channels of "Mute" simultaneously, the value "Assigned" will be 4.

❖ URC-150AS Settings-Preset Parameters Tab

This tab can be set the behavior of menu.



- P.P. to enter First Layer: If this option is enabled, double click to enter the first layer menu is required.
- Constant Mode: There are two logo pictures(Logo A/Logo B)stored in the URC-150AS. Under this mode the logo will be displayed permanently using the one selected on combo box.
- Advertisement Mode: In this mode, the two pictures will be displayed in turn, the time to switch picture is in the editor on the right.
- Waiting Time: Specify how long will the logo pictures be displayed when the URC-150AS is in idle mode.

❖ Remote Plug-in

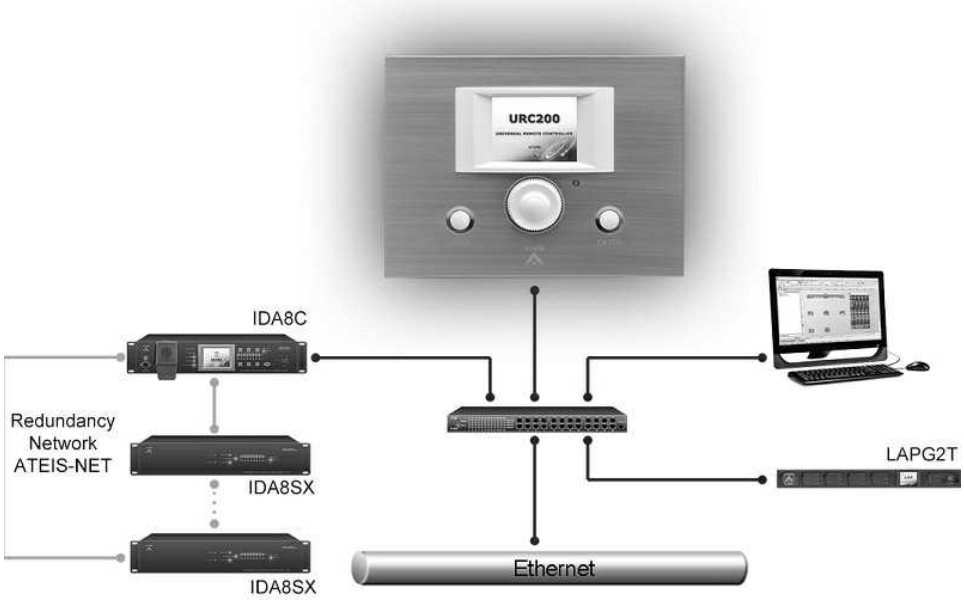
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The URC device must be proceed the "Remote Plug-in" in order to make the audio processor recognize its connection. See Remote Plug-in for details.

❖ Assign to Design Objects

The device object in design window needs to be mapped to physical device, then the configuration of the device can be set to the physical one. Click "Name " field of device list to select correspond device object.

3.2.5 URC-200/URC-200AS IP-Based Remote Controller



The URC-200/URC-200AS is an programmable remote controller (TCP/IP) for the IDA8 system, LAPG2T and ECS DSP audio matrix System. It allows users to customize the menu items for the control parameters, master/sub presets of Ateis audio processors. The URC220 contains a color 2" TFT panel, and with the well designed user interface it gives the user the best experience of using this control console. Two buttons and one encoders make menu controlling very simple and easy.

The URC-200/URC-200AS is powered over IP and easy to integrate with current demands for room controllers like light, curtains, sound and video control. The full color display is easy to read and has a low-power consumption to allow for long lines and multiple devices into one system.

3.2.5.1 Control Panel



1 TFT Panel:

A color 2" TFT panel presents the menu system of URC-200AS.

2 IR Receiver:

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It receives the control signals of handheld devices for controlling the system.

3 Back Button:

This button is used for going back to the upper layer of the menu.

4 Encoder:

Rotate this encoder for select the item of the menu.

5 Enter Button:

This button is used for going into to the inner layer of the menu.

3.2.5.2 Configuration

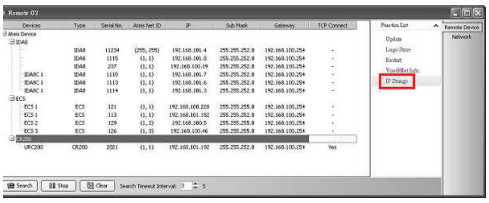
Please see the the steps below to setup the URC-200 for controlling the system.

1. Connect the URC220 to Ethernet switch to the audio processor such as IDA8C, ECS, ...etc.
2. Set the IP/Subnet Mask/Gateway in Protected Mode menu.
3. Edit Control Items, see topic Edit Control Items for details.
4. Save the configuration into the URC220, see topic Save/Load Configuration for details.

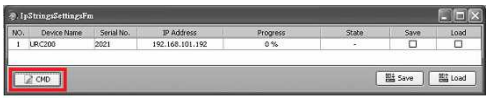
3.2.5.2.1 Edit Control Items

Users allows to configure and control the menu system of URC-200. The menu system is multi-layered, it the first layer, there are three items: ECS, LAP G2, AMP indicates what device can be controlled by URC-200. The following steps are the instruction of the building menus.

1. Operate the Remote G2 software. On the left, there is a grid lists all the devices which can be found by it, then select the node "CR200", and click [IP settings] in [Remote Device] page.



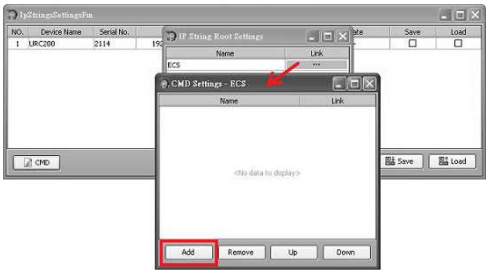
2. After a pop-up window [IpStringsSettingsFm] appears which lists all the URC220 that ready to save or load the configuration. Click the button [CMD] to open the settings window for the first layer items in the menu system.



3. Press [Reset] button to make the reset root menu to default.

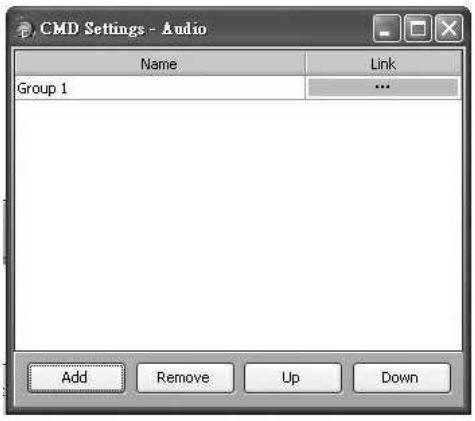


4. Click the [Link] button on the field for the desired menu item. It will open the CMD settings window. Press [Add] button to create an item in the menu for controlling parameter of the device.

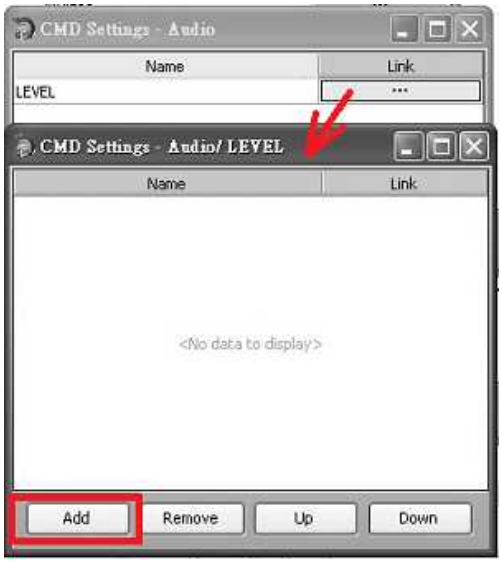


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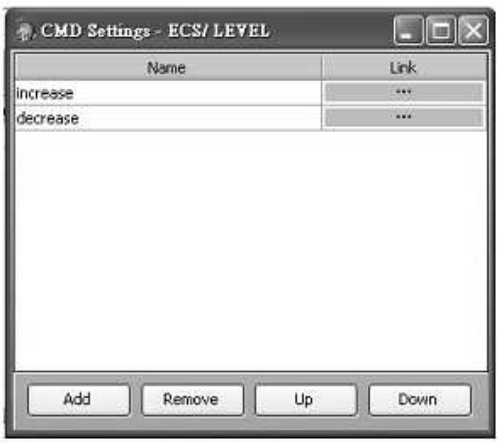
5. The default name is "Group 1", you can change it to the other string.



6. Click buttons on the field [Link] to open the command list window. Press button [Add] to create a command string.

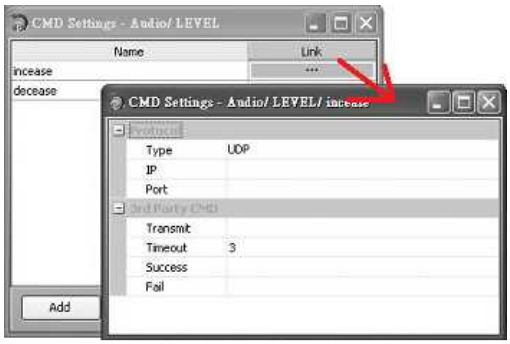


7. For example, I create two items: "increase" and "decrease" for controlling the audio level.



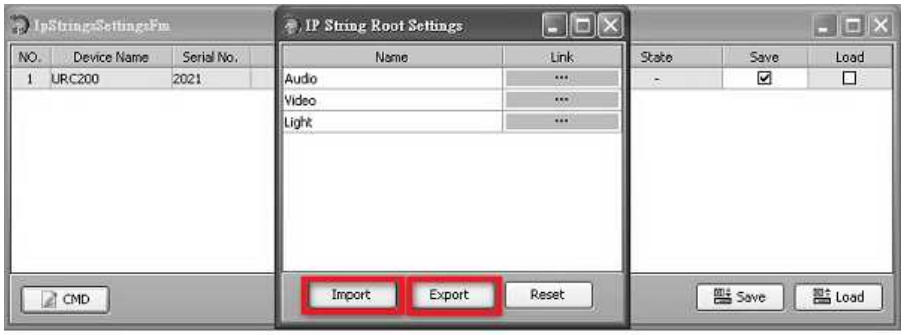
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8. Clink [link] field to fill the detail settings of the command string.



- Type: Indicate the communication protocol used, this field is read only.
- IP: The IP address of the device be controlled.
- Port: The port number of the device be controlled.
- Transmit: The command string for controlling the parameter of the target device. When the user selects the item of menu and press button [Enter] on the panel, this string will send to the target device.
- Timeout: Due to the networking quality could be varied in the different environment. For some applications with low bandwidth or bad quality network, we can set the timeout value to a large number because it may take more time to communicate with target devices. 3 seconds is the default value and it is suitable for most cases.
- Success: Set this field could show "Success" when the target device informs URC220 the command string is transferred successfully. This setting is optional, if you need it, please fill the value "06 0D".
- Fail: Set this field could show "Fail" when the target device informs URC220 the command string is transferred failed. This setting is optional, if you need it, please fill the value "10 0D".

3.2.5.2.2 Import/Export Configuration



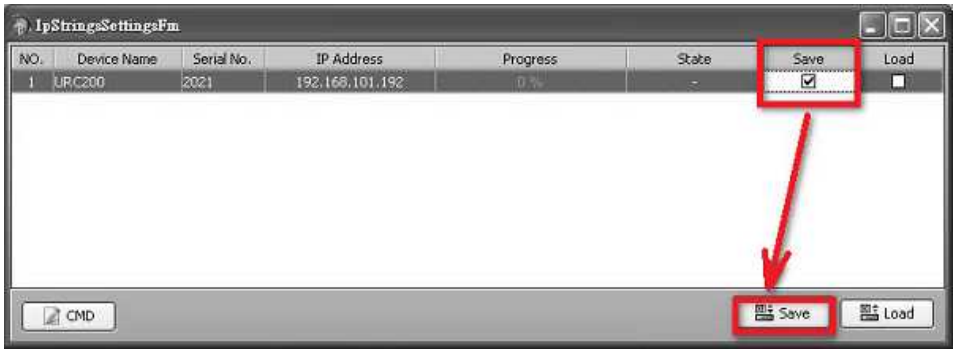
You can export the configuration of URC-200 to a file or import the configuration file.

- Export: By clicking this button to export configuration of URC-200 to a file.
- Import: By clicking this button to import configuration of URC-200 from a file.

3.2.5.2.3 Save/Load Configuration

The configuration of URC-220 is edited using the software. If you want URC-220 to run the configuration, you need to save it to the device. See the below figure, you have to select the target URC-200 that to be saved and then press the button [Save] to start save procedure. During the save period, the field [progress] in the grid shows the percentage the save procedure done.

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3.2.5.2.4 Reset Configuation

Sometimes if URC-200 power on with error, it needs to ignore current configuration, and reset to the default status. Holds on both two keys on the panel, and plugs the ethernet wire to URC-200 to power on. See the following demonstration.

After powered up, you'll see a message on the top of LCD screen: "No Preset".
It means the URC-200 now is forbidden to run the configuration. And then you can save another configuration for the device to make it working.



3.2.5.3 Maintenance

This topic contains the knowledge about the update procedure and inner settings of devices. For example the IP settings.

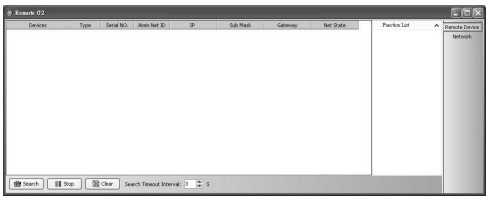
3.2.5.3.1 Update Firmware

Please follow the steps below to update the firmware of URC-200:

1. Run the software and search URC-200. Click [Network] page. Set the network interface card that communicate with URC-200. After the network interface card is selected, the IP address is refreshed automatically.

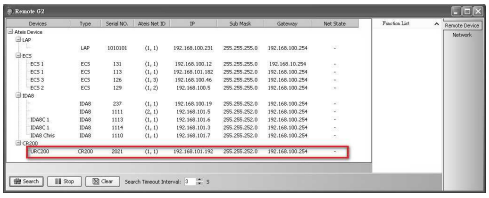


2. Click [Remote Device] page. This page lists all devices in the network. Press [Search] to discovery URC-200s throughout the network.

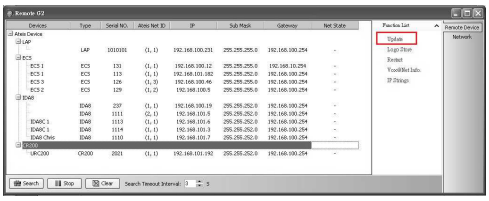


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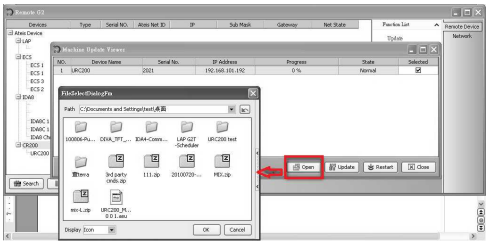
3. The result of search will displayed as the picture at the right. In the [Devices] field, devices are represented using a tree, each leaf node of the tree is a device. The URC-200 is one of them in the grid.



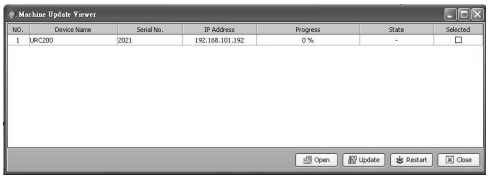
4. There is a box [Function List] at the right side of the window. By select the entry of the grid, the items inside the box changes accordingly to list all the functions that the device provide. Select entry [CR200], and then click the [Update] in the [Function List] box to open the update window.



5. Click [Open], use the dialog window to choose the desired firmware program for updating.



6. Select the desired URC-200 for updating by clicking [Selected] checkbox. Press [Update] to start updating procedure, which uploads the firmware program to the device's flash memory. There are progress bars for each URC-200 displaying the progress of the procedure. Once updating is finished, please press [Restart] to restart the device and make the change takes effect.



3.2.5.3.2 Protected Mode

There are some internal settings of URC-200/URC-200AS. Those settings are in the protected mode menu. To enter the protected mode, please hold both two buttons and turn the knob.



❖ Internal settings:

- Network: This page contains the settings of IP Address, Sub Mask and Gateway. Please configure these values before using a URC-200.

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- Version: Display the firmware version of URC-200.
- S. B.: This page is comprised of the two settings:
- Saver Time (min.): The waiting time that the menu go back to root page.
- Black Time (min.): The waiting time that the URC-200 enters sleep mode.

❖ Reset: If you modify the settings as the protected mode, please enable this function to save value.

❖ Return: Enable this function to go back to root menu.

3.2.5.4 Troubleshooting

This chapter will help you to diagnose and solve the common problems with detailed explanation, any other information should be listed here as reference as well.

❖ Hardware maintenance:

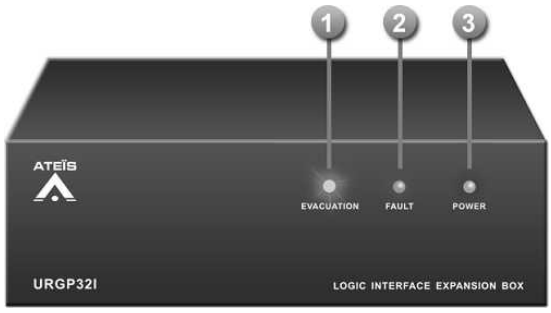
1. Be sure to keep the case clean and away from any heat source.
2. The operating temperature is 0°C ~ 40°C.
3. Keep it clean, especially air filters and ventilation paths (If the device has a fan).
4. Avoid vibrations and shocks.

3.2.6 URGP-32I2O



The URGP-32I2O is an extension unit for the IDA8-System, LAPG2T and ECS. The URGP-32I2O provides those systems with 32 alarm inputs. Each input is monitored and can be programmed to trigger a digital audio message into a specific zone or group of zones. The URGP-32I2O is linked to the System units through a RS232/RS485 monitored serial link.

3.2.6.1 Front Panel



1 Evacuation LED:

Light up in red when the Evacuation input is active or blinks while boot. The following table lists the states of the EVAC LED:

Status	Frequency	Activity
Continuous	●	One of the Evacuation inputs is active.
Blinking	● ° ● ° ●	Blinks 5 times after powered on.

2 Fault LED:

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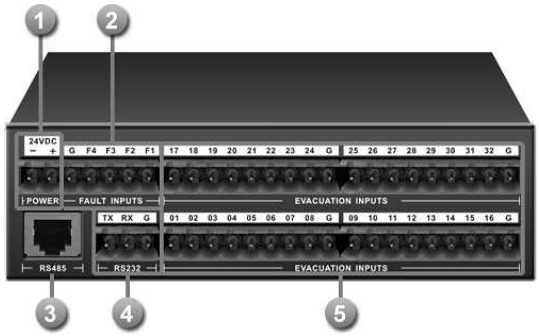
Display fault status of system. the following table lists the states of the Fault LED:

Status	Frequency	Activity
Continuous	●	One of the the fault inputs is active. One of the Evacuation inputs is Short Circuit or Line Open
Blinking	● ° ● ° ●	Blinks 5 times after powered on.

3 Power LED:

Light up in green when the device is powered.

3.2.6.2 Rear Panel



1 24V DC Input:

Main 24VDC power supply connector.

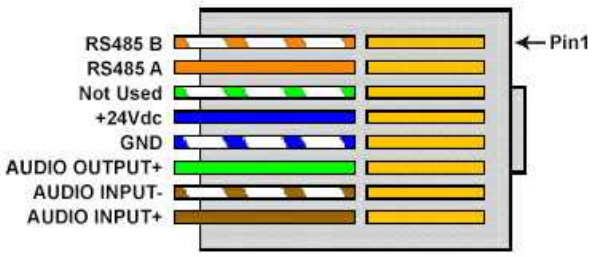
2 Fault Inputs:

4 fault inputs received logic signals and used as switches. See the table and figure below:

Definition	Circuit	Status
NO	Open	Inactive
NO	Short	Active
NC	Open	Active
NC	Short	Inactive

⚠ Do not input the external power voltage to this connector, it might damage the device.

3 RS485 Connector: 8C8P RJ45 connector for RJ45 connection.

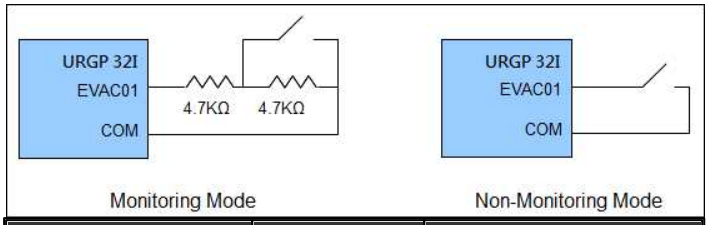


4 RS232 Connector

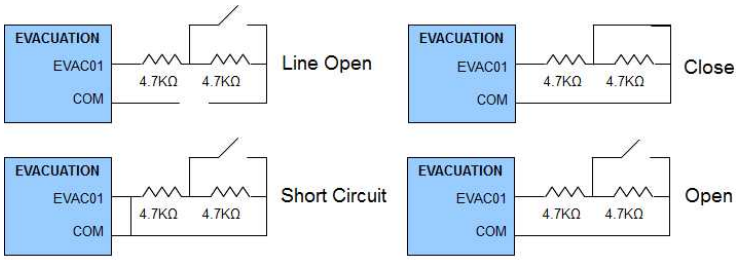
5 Evacuation Inputs:

32 evacuation contact inputs for expanding the channels for IDA8 system. The following table and figure show the status of the inputs.

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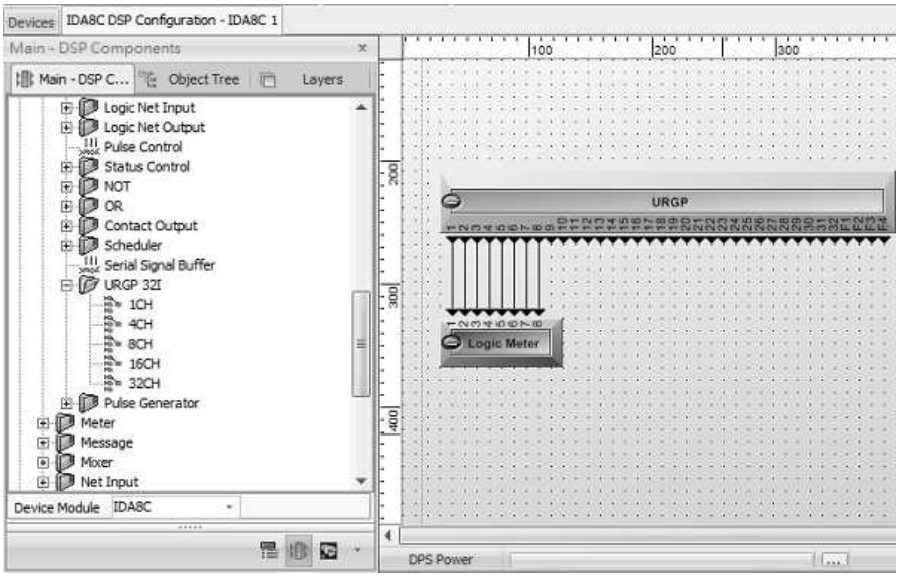
Mode	Definition	Status
Monitoring	NO	Short Circuit Open: Inactive Close: Active Line Open
Monitoring	NC	Short Circuit Open: Active Close: Inactive Line Open
Non-Monitoring	NO	Open: Inactive Close: Active
Non-Monitoring	NC	Open: Active Close: Inactive



Do not input the external power voltage to this connector, it might damage the device.

3.2.6.3 Configuration

The configuration of URGP-32I2O can be done by using the URGP-32I2O component on Ateis Studio. See URGP-32I2O Component for details.



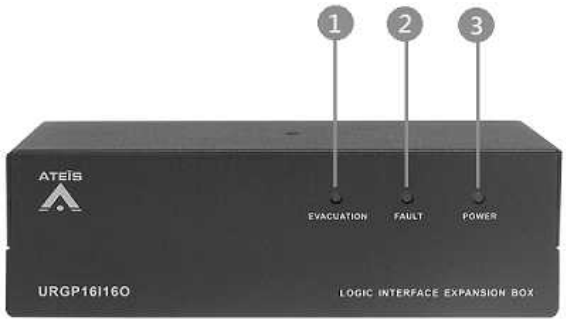
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3.2.7 URGP-16I16O



The URGP-16I16O is an extension unit for the IDA8-System, LAPG2T and ECS. The URGP16I16O provides those systems with 32 alarm inputs and outputs. Each input is monitored and can be programmed to trigger a digital audio message into a specific zone or group of zones. The URGP is linked to the System units through a RS232 /RS485 monitored serial link.

3.2.7.1 Front Panel



1 Evacuation LED:

Light up in red when the Evacuation input is active or blinks while boot. The following table lists the states of the EVAC LED:

Status	Frequency	Activity
Continuous	●	One of the Evacuation inputs is active.
Blinking	● ° ● ° ●	Blinks 5 times after powered on.

2 Fault LED:

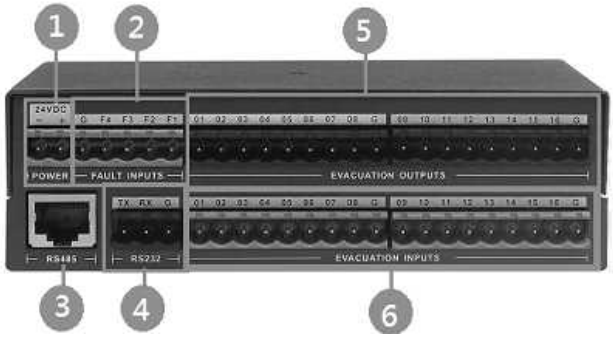
Display fault status of system. The following table lists the states of the Fault LED:

Status	Frequency	Activity
Continuous	●	One of the the fault inputs is active. One of the Evacuation inputs is Short Circuit or Line Open
Blinking	● ° ● ° ●	Blinks 5 times after powered on.

3 Power LED:

Light up in green when the device is powered.

3.2.7.2 Rear Panel



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1. 24V DC Input:

   Main 24VDC power supply connector.

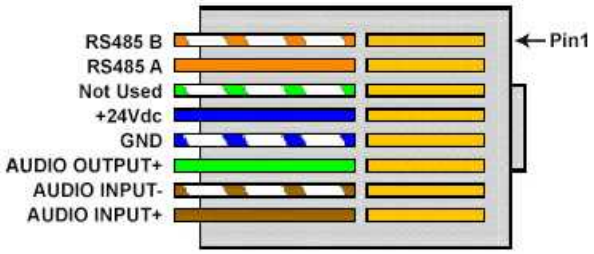
2. Fault Inputs:

   4 fault inputs received logic signals and used as switches. See the table and figure below:

Definition	Circuit	Status
NO	Open	Inactive
NO	Short	Active
NC	Open	Active
NC	Short	Inactive

⚠ Do not input the external power voltage to this connector, it might damage the device.

3. RS485 Connector: 8C8P RJ45 connector for RJ45 connection.



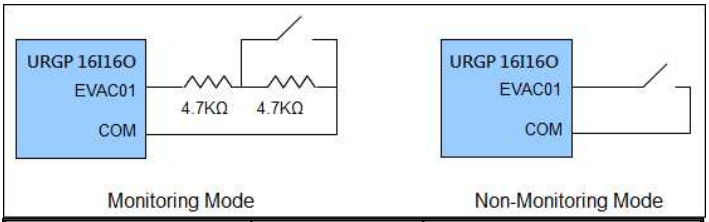
4. RS232 Connector

5. Evacuation Outputs:

   When the input pin of URGP16I16O component is logic high, the channel on Evacuation Output will output 5VDC.

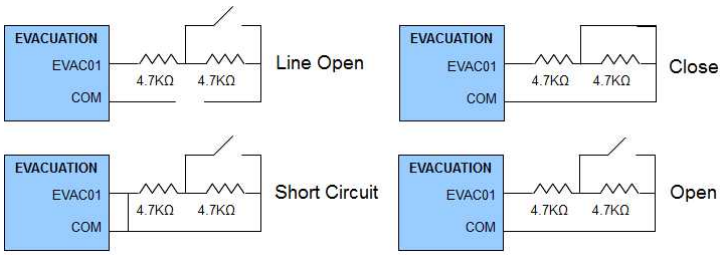
6. Evacuation Inputs:

   16 evacuation contact inputs for expanding the channels for IDA8 system. The following table and figure show the status of the inputs.



Mode	Definition	Status
Monitoring	NO	Short Circuit Open: Inactive Close: Active Line Open
Monitoring	NC	Short Circuit Open: Active Close: Inactive Line Open
Non-Monitoring	NO	Open: Inactive Close: Active
Non-Monitoring	NC	Open: Active Close: Inactive

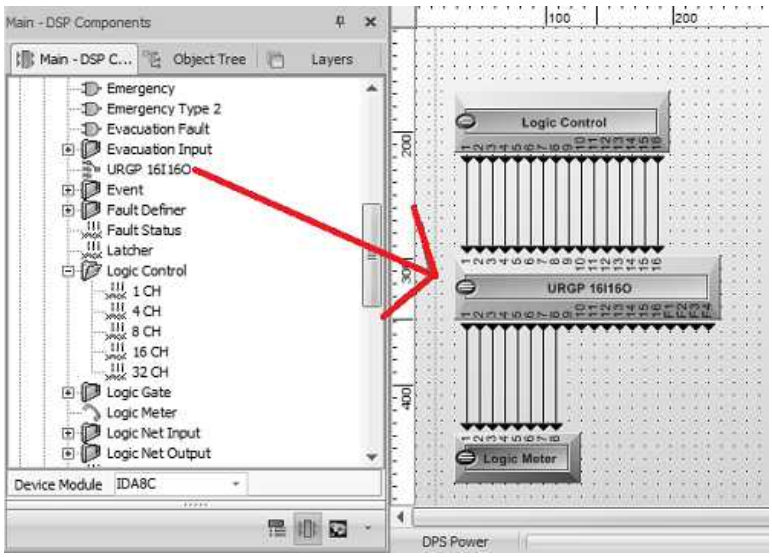
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Do not input the external power voltage to this connector, it might damage the device.

3.2.7.3 Configuration

The configuration of URGP-16I16O can be done by using Ateis Studio. The URGP-16I16O is the DSP component for the device. See URGP 16I16O component for details.



3.2.8 DIALER-DP



DIALER-DP dialpad is a touch dial, tabletop controller that connects to IDA8 or ECS processor. Users shall perform local and SIP call by connecting to either external telephone set with phone line or DIALER-DP with Ethernet connector.

To activate each item by touch provides users with a user-friendly instruction. DIALER-DP can be operated using the touch panel-dialing, mute, volume controls, 3-way calling, contact lists etc. The OLED on the front panel enhances a simple design, and the secured device information for users to monitor, included the connection status and dialing information. All the items can be fully programmed with Drag & Drop features from the system GUI software to adjust every custom settings and each item can be operated via Ateis Studio or DIALER-DP simultaneously.

DIALER-DP provides a quick-access use with a long-distance calls and multi-paging. Connecting to DPWL wireless transceiver device,its capabilities provide the freedom to limit the distance with you from room to room without moving the base unit, with secure, the password protecting to each calls

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allows you to confirm the callers to whom have the authority for multi-paging.

3.2.8.1 Control Panel



1 Buzzer:

To make sounds whenever there are numbers that are being dialed.

2 ACTIVE:

The LED flashes in blue whenever there are numbers that are being dialed.

3 Display Panel:

A OLED display panel which shows the current status including the dial numbers and connection.

There are two kinds of connection which will be displayed on the panel.

1. Ready: Indicate the phone line and CAT-5 are under normal connection and use.
2. Disconnect: Indicate the phone line doesn't connect to the device. Once there's a connection error occurs, the buzzer will automatically make sounds to remind users.

4 Volume up/down:

Push the buttons to adjust the speaker volume.

5 MUTE:

Press the button to mute the sound of users.

6 FLASH:

This button allows a 3-way telephone conversation. Press this button during the period of the talk with the first remote phone and dial the number of the second remote telephone. Once the second remote accepts the call, press the FLASH button again and start a 3-way telephone conversation.

7 STATUS:

Reserved.

8 REDIAL:

A function that automatically repeats the dialing of the number of last call.

9 Telephone Keypad:

A panel with dial numbers and setting templates.

10 MENU:

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Back to the default menu.

11 ON/OFF:

Push the button to make or cancel a telephone call after entering the dial numbers.

12 PHONE BOOK:

A database listing the names and telephone numbers of imported people from the Ateis Studio software.

13 BACK/UP/DOWN:

- BACK: Push the button to delete last number showing on the displaying panel.
- UP/DOWN: Push the button to choose the database from PHONE BOOK.

A long press by pressing and holding the BACK button will delete all the dial numbers.

3.2.8.2 Rear Panel



1 Battery Cover and Holder:

Put the 4 AAA batteries into your battery holder for the use of Wireless Box device. Insert the tip of your finger firmly into the opening on the side of the battery cover. Then lift up the cover slowly but firmly.

Do not use sharp objects that may damage parts of the cover.

2 Selector Switches:

A battery switch that can be turned to different positions [ON /OFF].

This device is capable or incapable to operate when switching ON / OFF.

3 PDC (Peripherals Device Controller) Connectors:

This connector links up with RJ-45 connector for IDA8 system or RS485 protocol for ECS Audio Processor on an ethernet network.

3.2.8.3 Configuration

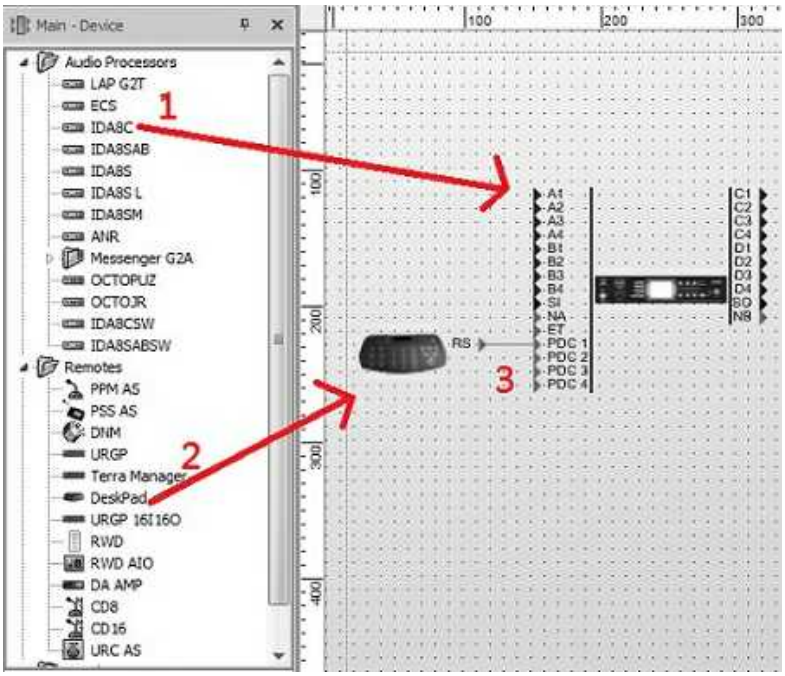
The DIALER-DP configuration must be done by using Ateis Studio software.

❖ Create a DIALER-DP Object

1. Open or create a Ateis studio configuration file, in the [Device] design window.
2. Create an audio processor object, drag IDA8C or ECS object to the configuration window.
3. Create a DIALER-DP object, drag the DIALER-DP to configuration window.
4. Start the basic wiring by connecting to the green pins between DIALER-DP and audio processor objects.

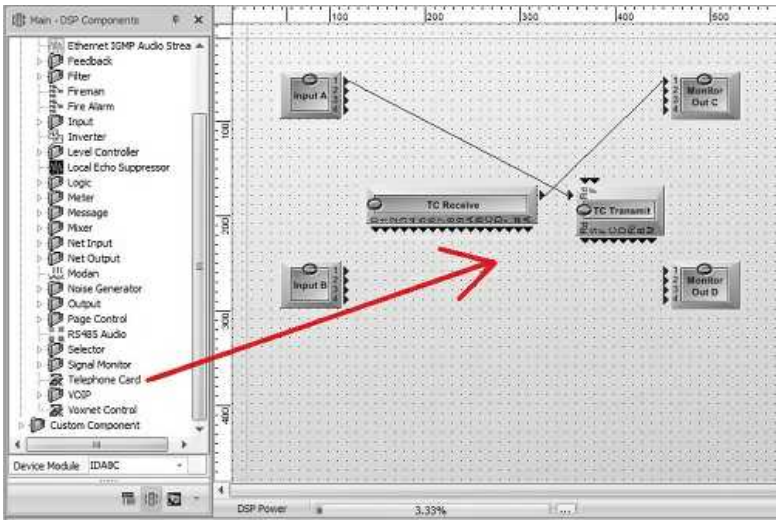
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When first-installing the remotes on Ateis Studio, you need to click the "Remote Plug-in" function on the right grid of the Device Management to make the audio processor to recognize it. See Remote Plug-in for details.



❖ DSP Component Configuration

The DIALER-DP needs to be processed dialing with Telephone Card component. See [Telephone Card] component [TC_Receive / TC_Transmit] for details. Telephone Card component shall be simply used by [Drag and Drop] to the editing slide to create this component for configuration. The figure below shows how component template works with the configuration window.



❖ After the action completed, start to [Compile] and [Store] on the Tools Bar to finish the installation procedure.

- Start the compile process. This action enhances Ateis Studio software to verify whether there's any major errors remain before uploading the design into audio processor.
- Start the store process. This action enhances to upload your configuration into the audio processor.

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3.2.9 DPWL



The DWL wireless transceiver is a remote which connects to IDA8 or ECS audio processor and provides the wireless network for DIALER-DP dialpad. By connecting to either two kinds of ports (RS485,RS232), the Wireless Transceiver makes it easy to set up and operate with Audio central unit and DIALER-DP dialpad. Its capabilities enhance the freedom to limit the distance with you from room to room without moving the base unit.

3.2.9.1 Front Panel



1 POWER:

The LED lights up when the DPWL wireless transceiver is powered.

2 STATUS:

The LED flashes and shows the DIALER-DP dialpad and DPWL wireless transceiver devices are under the status for RF of communication.

The LED flashes only when the two devices have been configured via Ateis Studio Software.

3.2.9.2 Rear Panel



1 24V DC Input:

24VDC power supply connector.

This connector is used for supplying power when using the RS232 protocol for ECS audio processor.

2 RS485:

Connect to IDA8xx System using RS485 protocol (PDC port) over a CAT5 cable connection for

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power and data transmit.

3. RS232:

   A Serial communication protocol (RS232) for third party device (Crestron, AMX, VITY) to your device.

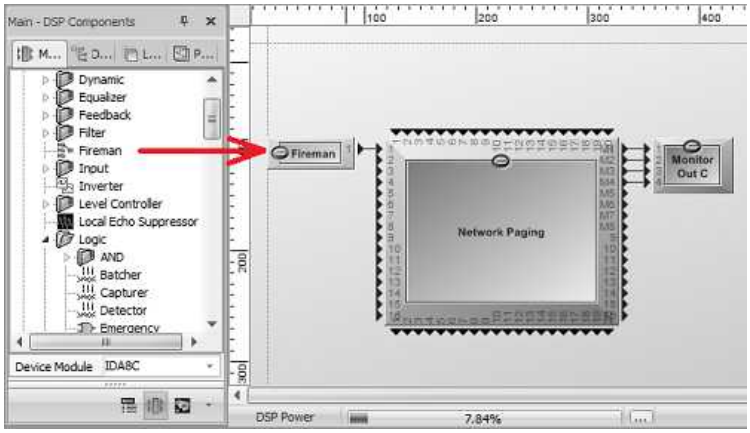
3.2.10 Fireman Microphone



The Fireman Microphone SHM 1 is a small compact microphone dedicated to EVAC calling. It is a totally monitored microphone with internal resistor network to detect four different states (shortcut, closed contact, open contact, absent).

3.2.10.1 Configuration

The Fireman microphone needs to be configured by using the Fireman component in Ateis Studio. Most of time Fireman component is working with Network Paging component, in such settings, fireman microphone is able to paging. See Fireman component for details.

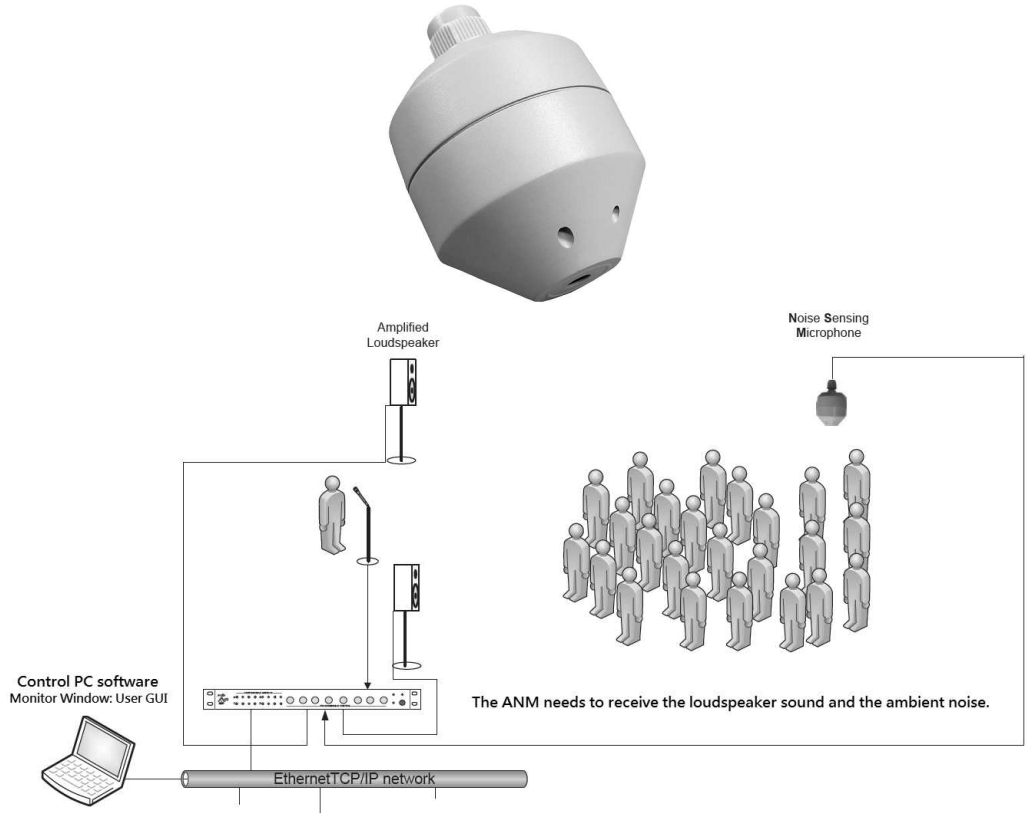


3.2.11 NSM

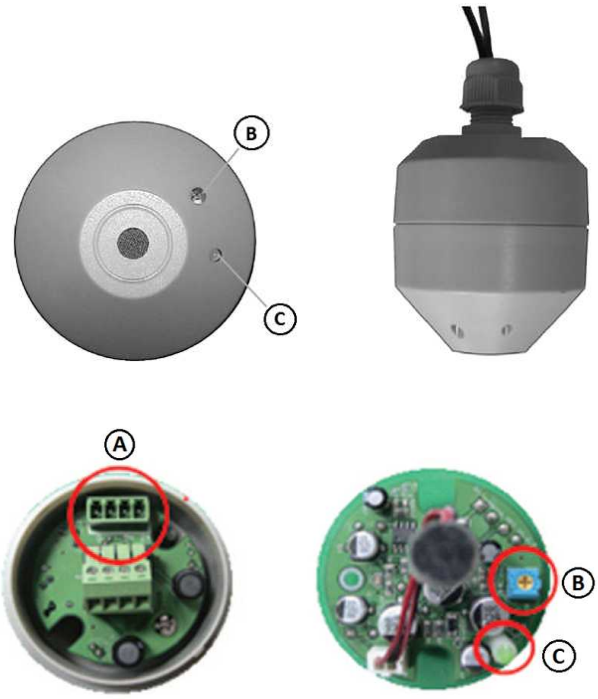
The NSM ensures that paging announcements and music playback are audible even during periods of high noise levels by continuously monitoring the ambient noise level. The NSM is designed to monitor and adjust the level of public address announcements based on a measure of the ambient noise in the PA zone. NSM will maintain a set volume of public address audio above the background noise, in order to guarantee that the announcement is intelligible, yet at a comfortable level.

- The NSM can be controlled by the following IDA8, ECS, UAP G2, LAP G2 and LAP G2T processor.
- The NSM can be worked by using the A.N.G component.

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3.2.11.1 Control



Ⓐ Audio & 24VDC: It contains the audio line and the 24VDC power.

Ⓑ Gain Control: Adjust the gain control of pre-amplification on NSM.

Ⓒ Power LED: Light up if the NSM is powered on.

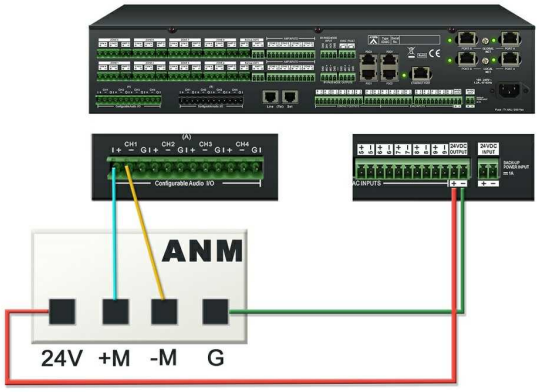
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3.2.11.2 Connection

❖ Connection Example:

This is the example of connecting the NSM device to IDA8 processor. Please make the connection by the following steps and the picture below.

- Step 1: Connect the [24V] port of NSM to [+ 24VDC OUTPUT] of IDA8 processor.
- Step 2: Connect the [+M] and [-M] port of NSM to Audio I/O card of IDA8 processor.
- Step 3: Connect the [G] port of NSM to [- 24VDC OUTPUT] of IDA8 processor.



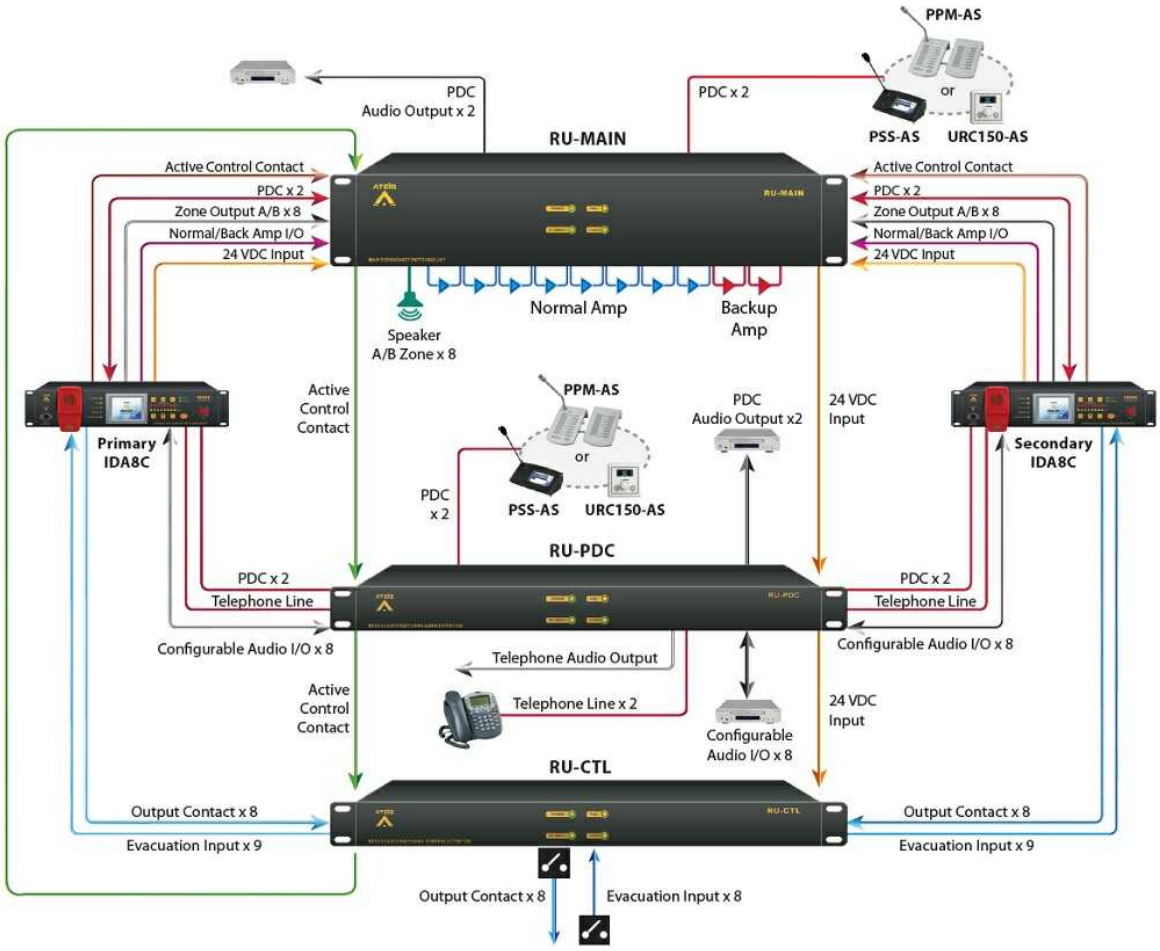
3.3 Redundancy Unit

The ID8RU switching redundancy devices provide the high level of redundancy and acting as a Primary/Secondary switching device for IDA8C Controller and IDA8SAB Slave unit. Here are the three types of devices listed below,

- IDA8RU-MAIN: The IDA8 redundancy unit for digital audio processing with paging console interface.
- IDA8RU-CTL: The IDA8 redundancy unit for secured and normal audio IN and OUT contacts.
- IDA8RU-PDC: The IDA8 redundancy unit for auxiliary audio IN and OUT contacts with paging console & telephone line interface.

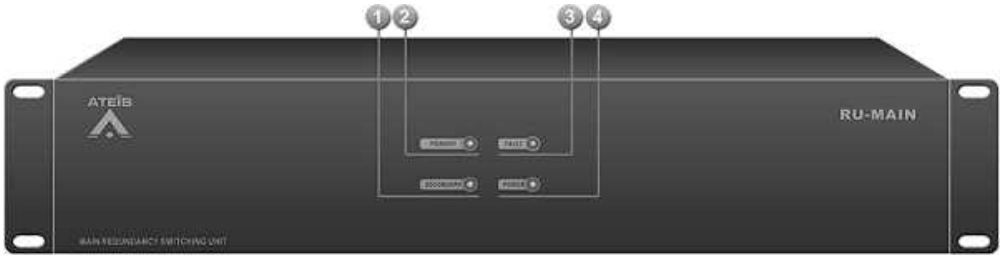
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3.3.1 RU-MAIN



RU-MAIN device is a device supplied with full-redundancy for audio processor. It is in charge of switching primary and secondary audio processor to active one of them. If primary audio processor is active, all signal of peripherals shall be directed to the primary audio processor. RU-MAIN device is also capable to monitor the status of audio processor. If primary audio processor breaks down, RU-MAIN device will detect automatically and switch to secondary audio processor.

3.3.1.1 Front Panel



1. Secondary Active Indicator:

   This LED lights up if secondary audio processor is active.

2. Primary Active Indicator:

   This LED lights up if primary audio processor is active.

3. Fault Indicator:

   This LED lights up if the unit is set to be slave, and a short or open is detected on S. WD (Secondary Watching Dog) port.

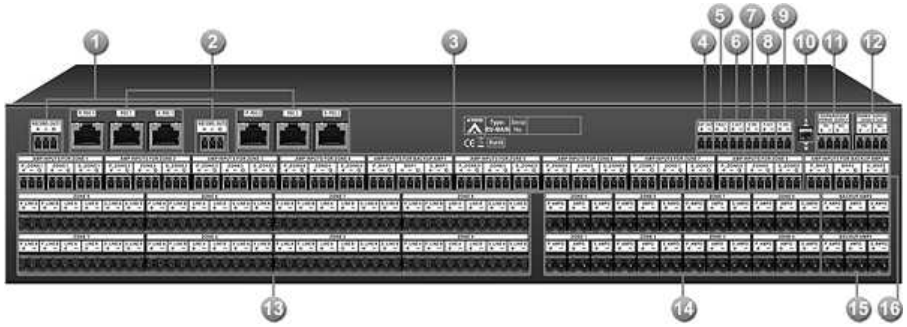
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If this indicator light up, it means there is an error of the unit, user needs to check wiring of S. WD connector or replace by a good unit.

4 Power Indicator:

This LED lights up if this unit is power on.

3.3.1.2 Rear Panel



1 PDC Audio Output for Record:

The audio output of peripheral plugged on PDC connector.

2 PDC Connectors:

There are 2 sets of PDC port in RU-Main, each set consist of three connectors, allow system to do one PDC peripheral redundancy, the "N" is the number of set:

- P_PDC N: Connect to one of primary audio processor's PDC connectors.
- PDC N: Connect to peripheral which communicates to audio processor using PDC interface, for example PSS-AS, PPM-AS.
- S_PDC N: Connect to one of secondary audio processor's PDC connectors.

3 Zone Amplifier Inputs:

There are 8 sets of Zone Amplifier Input in RU-MAIN, each set consist of three connectors, allow system to do one channel of zone amplifier redundancy, the "N" is the number of set:

- P_ZONE N: Connect to Nth channel of primary audio processor's zone amplifier input connector.
- ZONE N: Connect to Nth channel of normal amplifier's audio input connector.
- S_ZONE N: Connect to Nth channel of secondary audio processor's zone amplifier input connector.

4 EXP_OUT (Active Control Expansion Output):

This port output logic signal to next RU devices to synchronize redundancy state which tells primary or secondary is active.

5 Fault:

This port is a logic contact, which is normally closed, opened if the unit is set to be slave (refer to Master/Slave Switch of later item), and a short or open is detected on S_WD (Secondary Watching Dog) port.

6 S_ACT (Secondary Active Contact Output) / 8 P_ACT (Primary Active Contact Output):

The S_ACT and P_ACT contact outputs will inform the external device whether the primary or secondary is active.

- For example, when the RU status switches to the primary, the P_ACT is close contact,

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and S_ACT is open contact.

RU Status	P_ACT	S_ACT
Primary	Close	Open
Secondary	Open	Close

7 S_WD (Secondary Watching Dog Contact Inputs) / 9 P_WD (Primary Watching Dog Contact Inputs):

Connect the P_WD and S_WD inputs to the the Bypass Mode output on IDA8 processor. When IDA8 enters the bypass mode, the Bypass Mode output will inform the RU units, and the RU unit will determine whether to activate the primary IDA8 or the secondary IDA8 processor by the monitored P_WD and S_WD contact inputs.

The basic philosophy is that the master RU unit monitors the P_WD and S_WD inputs coming from the primary and secondary IDA8 processors and decide which one can be active, and also passes the decision to next RU units through EXP_OUT terminal. See the table as below.

- For example, when RU detects P_WD and S_WD contact are closed, it switches to the primary.

P_WD	S_WD	RU Switch Over
Close	Close	Primary
Close	Open	Primary
Open	Close	Secondary
Open	Open	Primary

If the RU unit is set as the slave RU unit, it monitors the S_WD which connects to the master RU unit, resulting in setting the primary or secondary IDA8 processors to be active.

10 Master/Slave Switch:

A DIP switch to set RU-MAIN be master or slave. The difference between master and slave please refer to item "(S_WD) Secondary Watching Dog".

11 Expansion Power Supply:

Output 24V DC power to next RU-MAIN/PDC/CTL devices.

There are two connectors of this output:

- PRI: Connect to Power Supply PRI connector next RU-MAIN/PDC/CTL.
- SEC: Connect to Power Supply SEC connector next RU-MAIN/PDC/CTL.

12 Power Supply:

24V DC power input, which is connect to 24V DC Output of IDA8C/S.

There are two connectors of this input:

- PRI: 24V DC power input from primary audio processor.
- SEC: 24V DC power input from secondary audio processor.

13 Speaker Zone Output:

There are 8 zones for speaker connection. each zone consists of following connectors (from left to right):

- P_LINEA: Connect to speaker zone output line A of primary audio processor.
- P_LINEB: Connect to speaker zone output line B of primary audio processor.

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- LINE A: Connect to line A speaker.
- LINE B: Connect to line B speaker.
- S_LINE A: Connect to speaker zone output line A of secondary audio processor.
- S_LINE B: Connect to speaker zone output line B of secondary audio processor.

14 Zone Amplifier Output:

There are 8 zones for amplifier output connection, it receive the gained audio signal coming from normal amplifier, each amplifier output consist of three connectors:

- P_AMPO: Connect to normal amplifier output connector of primary audio processor.
- AMPO: Connect to output of normal amplifiers.
- S_AMPO: Connect to normal amplifier output connector of secondary audio processor.

15 Backup Amplifier Output:

There are two backup amplifier outputs on RU-MAIN, each output consists of three connectors:

- P_AMPO: Connect to backup amplifier output of primary audio processor.
- AMPO: Connect to backup amplifier output.
- S_AMPO: Connect to backup amplifier output of secondary audio processor.

16 Backup Amplifier Input:

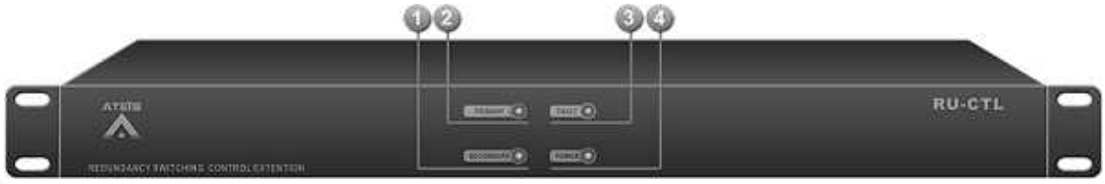
There are two backup amplifier inputs on RU-MAIN, each input consists of three connectors. N is the number of channel.

- P_BKP N: Connect to backup amplifier input of primary audio processor.
- BKP N: Connect to input of backup amplifier.
- S_BKP N: Connect to backup amplifier input of secondary audio processor.

3.3.2 RU-CTL

RU-CTL device is a device supplied with full-redundancy for audio processor. It is in charge of switching primary and secondary audio processor to active one of them. If primary audio processor is active, all signal of peripherals shall be directed to the primary audio processor. RU-CTL device is also capable to monitor the status of audio processor. If primary audio processor breaks down, RU-CTL device will detect automatically and switch to secondary audio processor.

3.3.2.1 Front Panel



1 Secondary Active Indicator:

This LED lights up if active system is primary audio processor.

2 Primary Active Indicator:

This LED lights up if active system is secondary audio processor.

3 Fault Indicator:

This LED lights up if the unit is set to be slave, and a short or open is detected on S. WD (Secondary Watching Dog) port.

If this indicator light up, it means there is an error of the unit, user needs to check wiring of

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S. WD connector or replace by a good unit.

4 Power Indicator:

This LED lights up if this unit is power on.

3.3.2.2 Rear Panel



1 Output Contacts:

There are 8 channels for output contacts, each channel consist of three connectors, where "N" is the number of channel:

- P_N: Connect to Nth output contact of primary audio processor.
- N: Nth channel of output contact.
- S_N: Connect to Nth output contact of secondary audio processor.

2 Expansion Power Supply:

Output 24V DC power to next RU-MAIN/PDC/CTL devices.

There are two connectors of this output:

- PRI: Connect to Power Supply PRI connector next RU-MAIN/PDC/CTL.
- SEC: Connect to Power Supply SEC connector next RU-MAIN/PDC/CTL.

3 Power Supply:

24V DC power input, which is connect to 24V DC Output of audio processor.

There are two connectors of this input:

- PRI: 24V DC power input from primary audio processor.
- SEC: 24V DC power input from secondary audio processor.

4 Evacuation Inputs:

There are 9 channels for evacuation input, each channel consist of three connectors, where "N" is the number of channel:

- P_N: Connect to Nth evacuation input of primary audio processor.
- N: Nth channel of evacuation input.
- S_N: Connect to Nth evacuation input of secondary audio processor.

5 Active Control Expansion Output:

This port output logic signal to next RU devices to synchronize redundancy state which tells primary or secondary is active.

6 Fault:

This port is a logic contact, which is normally closed, opened if the unit is set to be slave(refer to Master/Slave Switch of later item), and a short or open is detected on S_WD (Secondary Watching Dog) port.

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7 S_ACT (Secondary Active Contact Output) / 9 P_ACT (Primary Active Contact Output):

The S_ACT and P_ACT contact outputs will inform the external device whether the primary or secondary is active.

- For example, when the RU status switches to the primary, the P_ACT is close contact, and S_ACT is open contact.

RU Status	P_ACT	S_ACT
Primary	Close	Open
Secondary	Open	Close

8 S_WD (Secondary Watching Dog Contact Inputs) / 10 P_WD (Primary Watching Dog Contact Inputs):

Connect the P_WD and S_WD inputs to the the Bypass Mode output on IDA8 processor. When IDA8 enters the bypass mode, the Bypass Mode output will inform the RU units, and the RU unit will determine whether to activate the primary IDA8 or the secondary IDA8 processor by the monitored P_WD and S_WD contact inputs.

The basic philosophy is that the master RU unit monitors the P_WD and S_WD inputs coming from the primary and secondary IDA8 processors and decide which one can be active, and also passes the decision to next RU units through EXP_OUT terminal. See the table as below.

- For example, when RU detects P_WD and S_WD contact are closed, it switches to the primary.

P_WD	S_WD	RU Switch Over
Close	Close	Primary
Close	Open	Primary
Open	Close	Secondary
Open	Open	Primary

If the RU unit is set as the slave RU unit, it monitors the S_WD which connects to the master RU unit, resulting in setting the primary or secondary IDA8 processors to be active.

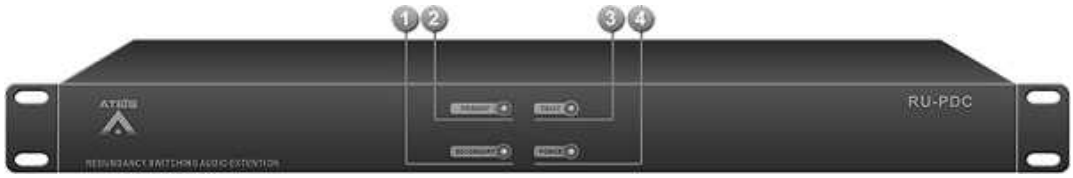
11 Master/Slave Switch:

A DIP switch to set RU-PDC be master or slave. The difference between master and slave please refer to item "(S_WD)Secondary Watching Dog".

3.3.3 RU-PDC

RU-PDC device is a device supplied with full-redundancy for audio processor. It is in charge of switching primary and secondary audio processor to active one of them. If primary audio processor is active, all signal of peripherals shall be directed to the primary audio processor. RU-PDC device is also capable to monitor the status of audio processor. If primary audio processor breaks down, RU-PDC device will detect automatically and switch to secondary audio processor.

3.3.3.1 Front Panel



1 Secondary Active Indicator:

This LED lights up if active system is primary audio processor.

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2 Primary Active Indicator:

This LED lights up if active system is secondary audio processor.

3 Fault Indicator:

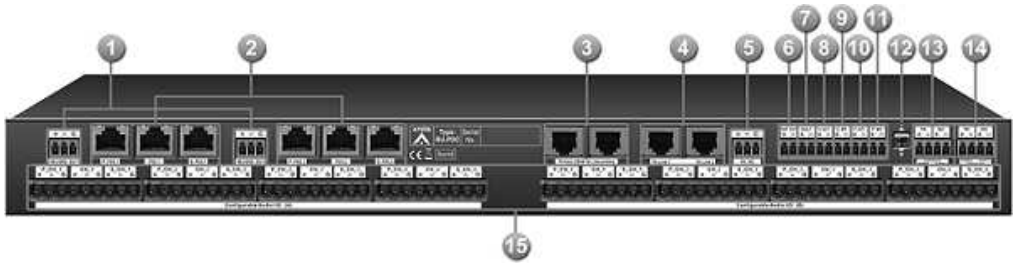
This LED lights up if the unit is set to be slave, and a short or open is detected on S. WD (Secondary Watching Dog) port.

If this indicator lights up, it means there is an error of the unit, user needs to check wiring of S. WD connector or replace by a good unit.

4 Power Indicator:

This LED lights up if this unit is power on.

3.3.3.2 Rear Panel



1 PDC Audio Output for Record:

The audio output of peripheral plugged on PDC connector.

2 PDC (Peripherals Device Controller) Connectors:

There are 2 sets of PDC port in IDA8RU-PDC, each set consist of three connectors, allow system to do one PDC peripheral redundancy, the "N" is the number of set:

- P_PDC N: Connect to one of primary audio processor's PDC connectors.
- PDC N: Connect to peripheral which communicates to audio processor using PDC interface, for example PSS-AS, PPM-AS.
- S_PDC N: Connect to one of secondary audio processor's PDC connectors.

3 IDA8 Telephone Connector:

There are two connectors for IDA8 telephone line:

- Primary Audio Processor Telephone: Connect to telephone line connector of primary audio processor.
- Secondary Audio Processor Telephone: Connect to telephone line connector of secondary audio processor.

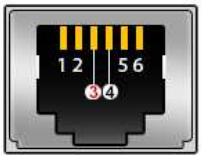
4 Telephone Line Connector:

There are two connectors for telephone line of telephone company:

- Tel. Line1: Line1 for telephone company connection.
- Tel. Line2: Line2 for telephone company connection.

Each pin is described as below, see Tip and ring for details.

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- PIN1: NC
- PIN2: NC
- PIN3: TIP (0V)
- PIN4: RING (-48V on hook). The monitoring range is from -40 to -57V, under or over the value might cause some problems.
- PIN5: NC
- PIN6: NC

5 Telephone Line Audio Output for Record:

Audio output of active telephone line.

6 Active Control Expansion Output:

This port output logic signal to next RU devices to synchronize redundancy state which tells primary or secondary is active.

7 Fault:

This port is a logic contact, which is normally closed, opened if the unit is set to be slave (refer to Master/Slave Switch of later item), and a short or open is detected on S_WD (Secondary Watching Dog) port.

8 S_ACT (Secondary Active Contact Output) / 10 P_ACT (Primary Active Contact Output):

The S_ACT and P_ACT contact outputs will inform the external device whether the primary or secondary is active.

- For example, when the RU status switches to the primary, the P_ACT is close contact, and S_ACT is open contact.

RU Status	P_ACT	S_ACT
Primary	Close	Open
Secondary	Open	Close

9 S_WD (Secondary Watching Dog Contact Inputs) / 11 P_ACT (Primary Watching Dog Contact Inputs):

Connect the P_WD and S_WD inputs to the the Bypass Mode output on IDA8 processor. When IDA8 enters the bypass mode, the Bypass Mode output will inform the RU units, and the RU unit will determine whether to activate the primary IDA8 or the secondary IDA8 processor by the monitored P_WD and S_WD contact inputs.

The basic philosophy is that the master RU unit monitors the P_WD and S_WD inputs coming from the primary and secondary IDA8 processors and decide which one can be active, and also passes the decision to next RU units through EXP_OUT terminal. See the table as below.

- For example, when RU detects P_WD and S_WD contact are closed, it switches to the primary.

P_WD	S_WD	RU Switch Over
Close	Close	Primary
Close	Open	Primary
Open	Close	Secondary

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P_WD	S_WD	RU Switch Over
Open	Open	Primary

If the RU unit is set as the slave RU unit, it monitors the S_WD which connects to the master RU unit, resulting in setting the primary or secondary IDA8 processors to be active.

12 Master/Slave Switch:

A DIP switch to set RU-PDC be master or slave. The difference between master and slave please refer to item "(S_WD) Secondary Watching Dog".

13 Expansion Power Supply:

Output 24V DC power to next RU-MAIN/PDC/CTL devices.

There are two connectors of this output:

- PRI: Connect to Power Supply PRI connector next RU-MAIN/PDC/CTL.
- SEC: Connect to Power Supply SEC connector next RU-MAIN/PDC/CTL.

14 Power Supply:

24V DC power input, which is connect to 24V DC Output of audio processor.

There are two connectors of this input:

- PRI: 24V DC power input from primary audio processor.
- SEC: 24V DC power input from secondary audio processor.

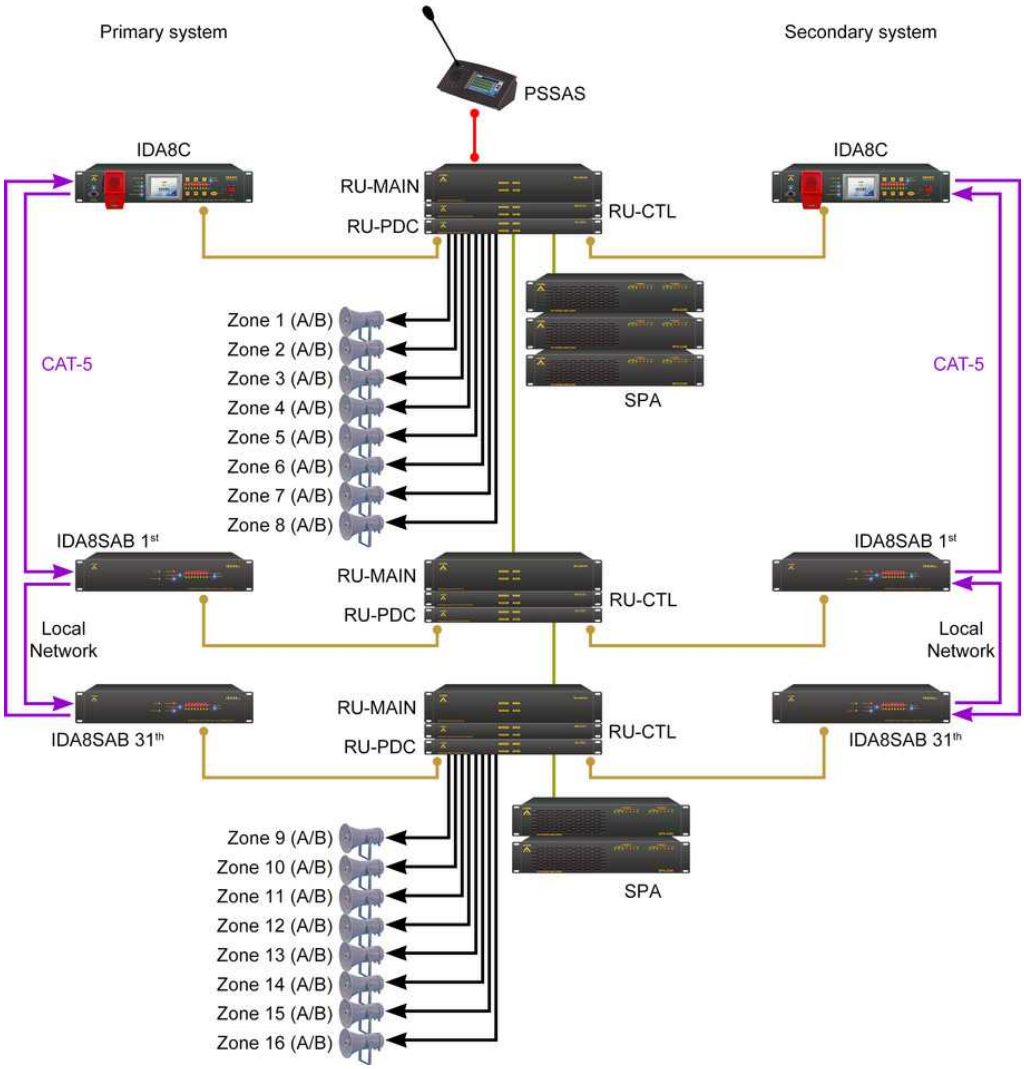
15 Configurable Audio I/O:

There are two ports (A/B) for configurable audio I/O, each port contains four channels, each channel consist of three connectors, where postfix "N" is the number of channel:

- P_CH_N: Connect to configurable audio I/O connector of primary audio processor.
- CH_N: Connect to audio In/Out equipment.
- S_CH_N: Connect to configurable audio I/O connector of secondary audio processor.

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3.3.4 Full Redundancy



If one of the system device occurs from the situations as below, the RU devices will be switched to operate.

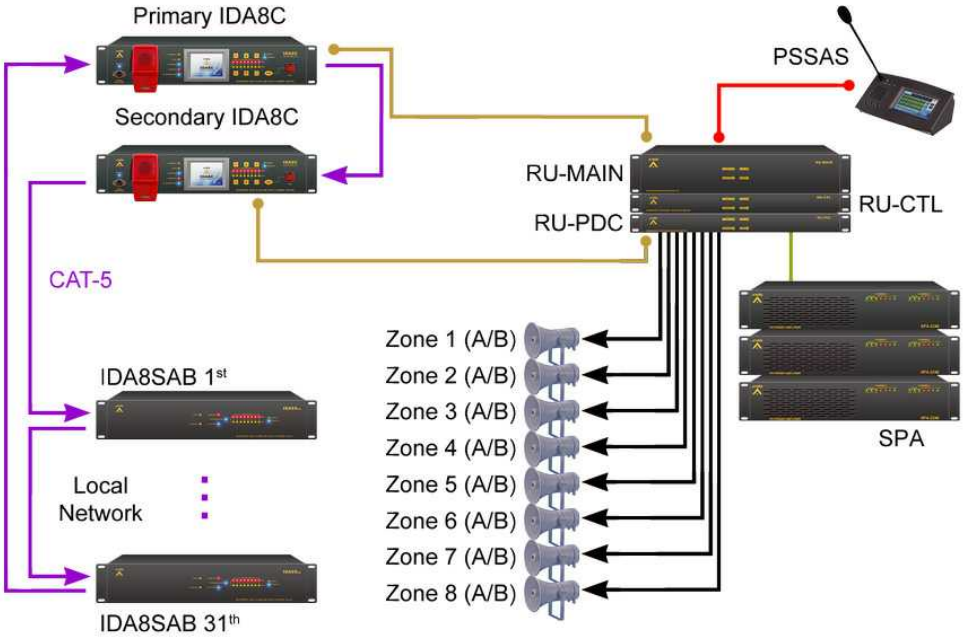
- Power Off
- Series fault messages appear. Please refer to Redundancy Switching Faults.

If the situations above happened to both primary and secondary systems, primary system still holds the higher priority.

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3.3.5 Partial Redundancy

The picture below takes IDA8C as the back-up device for example.



If one of the system devices occurs from the situations as below, the RU devices will be switched to operate.

- Power Off
- Series fault messages appear. Please refers to the Redundancy Switching Faults.

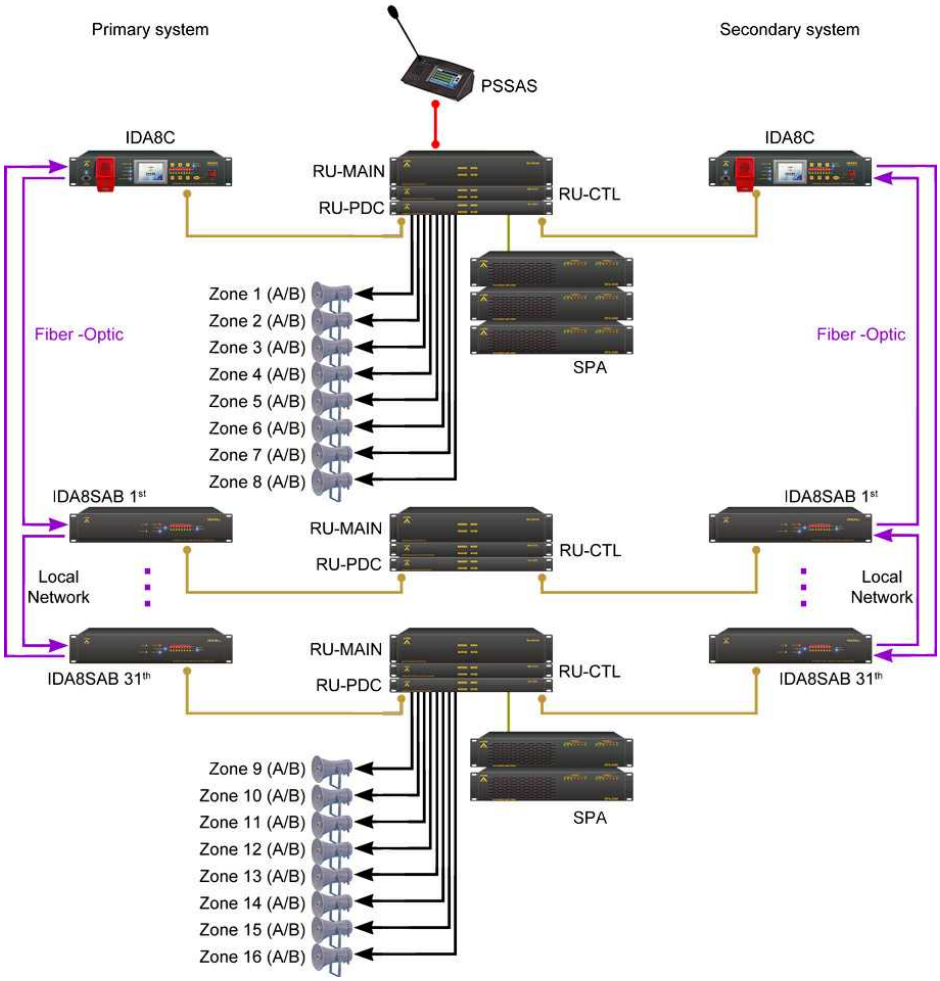
If the situations above happened to both primary and secondary systems, primary system still holds the higher priority.

3.3.6 Fiber Ateis Net

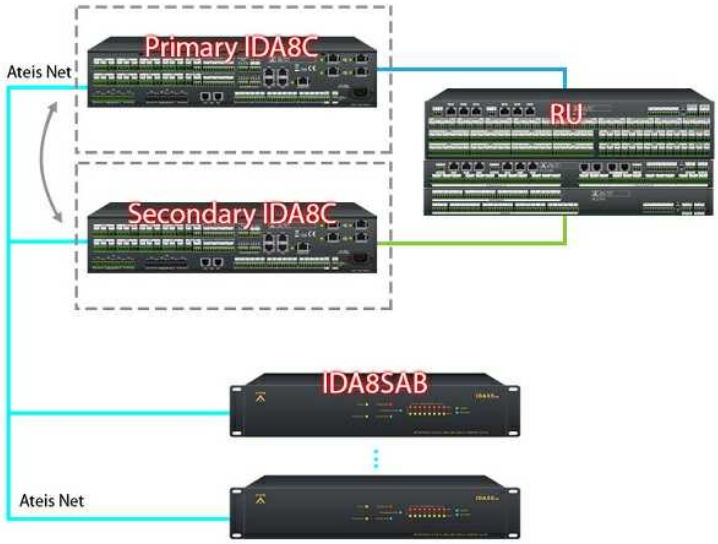
For fiber cable wiring, please see the picture as below.

- Fiber Hardware Wiring

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- Please replace the "Bypass Output Wiring" with the "**Contact Output Wiring**" when using fiber-optic.



3.3.7 Hardware Wiring

❖ Active Control

IDA8RU-MAIN/PDC/CTL unit will determine to activate as IDA8 primary or secondary network by monitoring the input logic contacts P_WD and S_WD. The basic philosophy is that the master

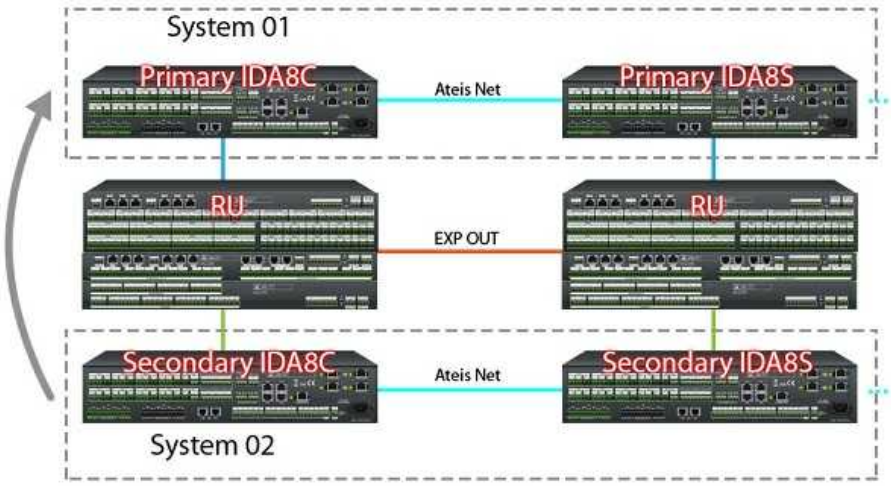
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RU monitors the signal coming from the primary and secondary IDA8C/8S units and decide which one can be active, and also pass the decision to next RU through EXP_OUT port.

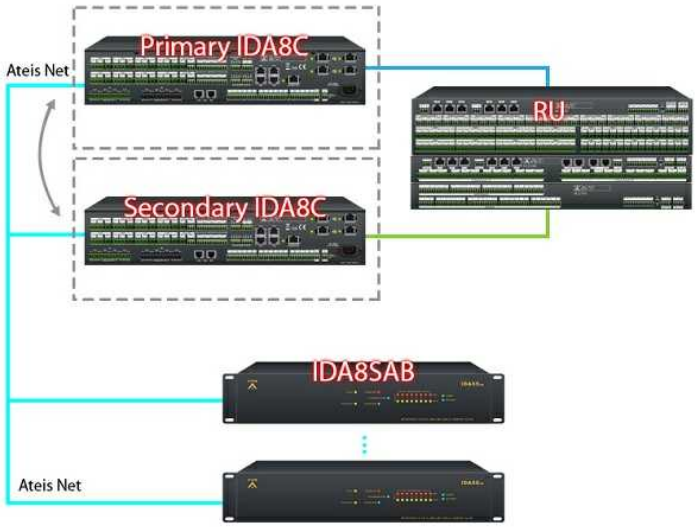
3.3.7.1 Ateis Net

Each IDA8C and IDA8S connect to its own Local Ateis Net. If one of the system is not function, the another one will replace.

- Full Redundancy



- Partial Redundancy



3.3.7.2 24V DC Power Supply

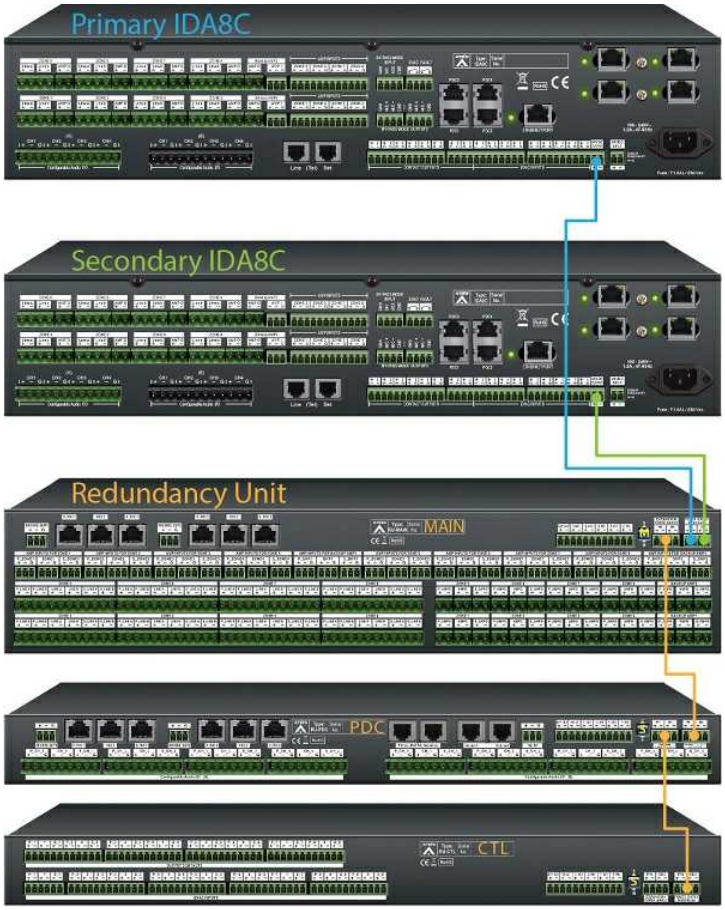
❖ Full & Partial Redundancy

- From IDA8 to RU-MAIN:
  - IDA8: 24VDC output.
  - RU-MAIN: Power Supply 24VDC/0.6A.
- From RU-MAIN to RU-PDC:
  - RU-MAIN: Expansion Power Supply.
  - RU-PDC/CTL: Power Supply 24VDC/0.35A.
- From RU-MAIN to RU-CTL:

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- RU-MAIN: Expansion Power Supply.
- RU-PDC/CTL: Power Supply 24VDC/0.2A.

The only power supply for RU is from IDA8s. In case the 24VDC output connector and wire are not working right, IDA8 can detect it and show the info on the TFT screen. If there is no power supply in the system, it means both the IDA8Cs are out of order, please contact your Ateis dealer.



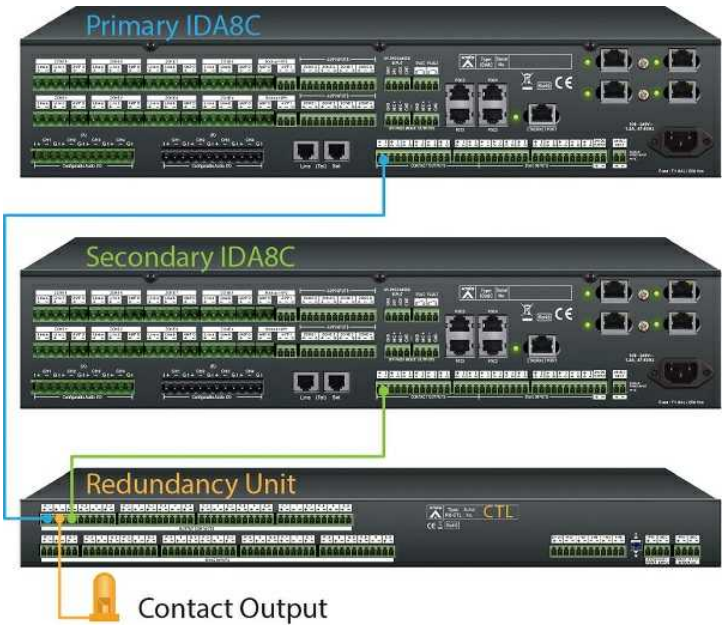
Set RU-MAIN as M and RU-PDC/CTL as S on the back panel.

3.3.7.3 Contact Outputs

❖ Full & Partial Redundancy

- From IDA8 to RU-CTL:
  - IDA8: Contact outputs 1~8.
  - RU-CTL: Output Contacts P_1~8, S_1~8.
- From RU-CTL to LED or signal output.
  - RU-CTL: Output Contacts 1~8.

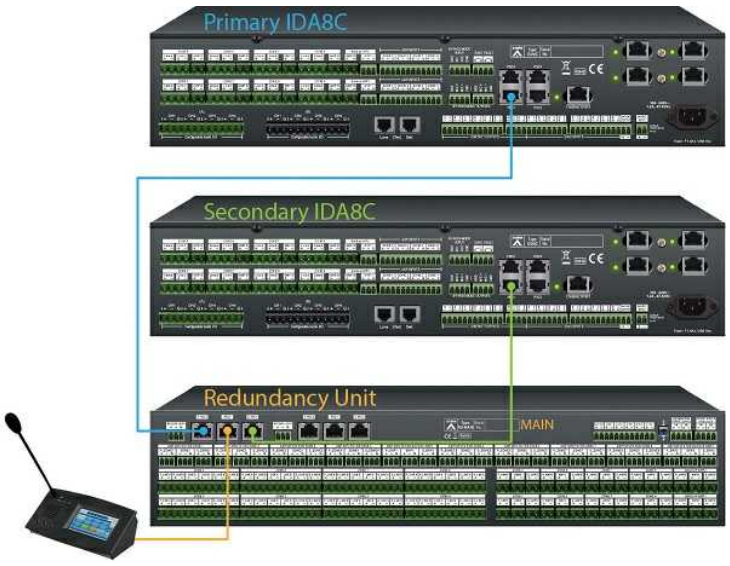
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3.3.7.4 PDC

❖Full & Partial Redundancy

- From IDA8 to RU-MAIN:
  - IDA8: PDC1~4.
  - RU-MAIN: P_PDC1, S_PDC1.
- From RU-MAIN to PPM-IT5/PSS-AS etc.
  - RU-MAIN: PDC1.



3.3.7.5 Normal/Backup Amplifier Input

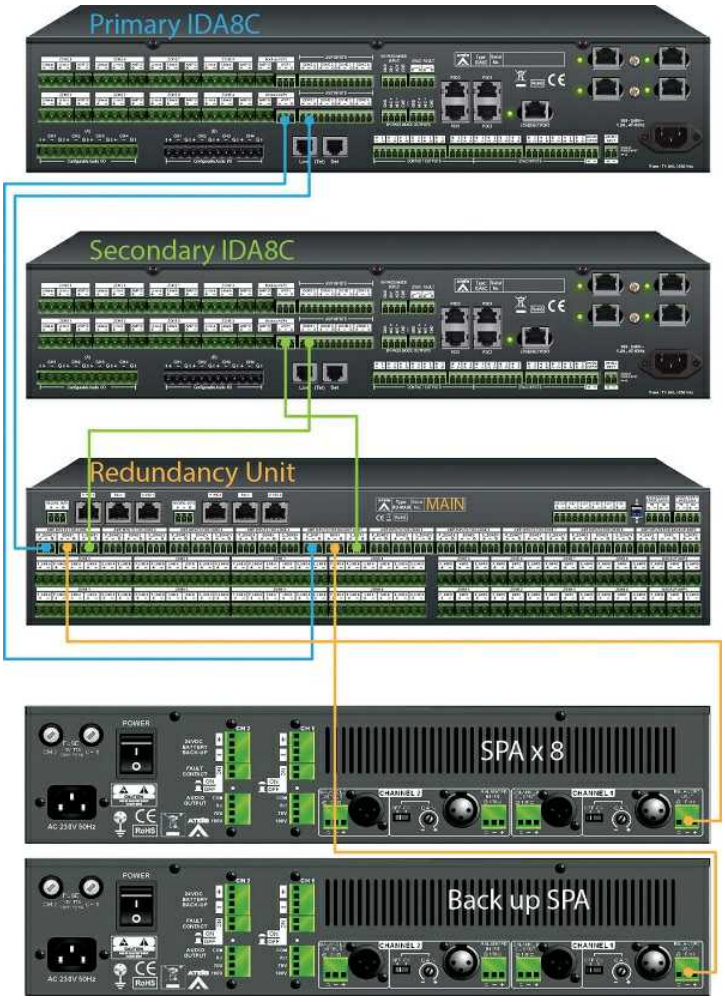
3.3.7.5.1 Matrix Mode

❖Full & Partial Redundancy

- Normal AMP input from IDA8C to RU-MAIN:
  - IDA8C: AMP Inputs Zone1~8.
  - RU-MAIN: AMP Inputs For Zone1~8 (P_ZONE, S_ZONE).

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- Normal AMP input from RU-MAIN to SPA:
  - RU-MAIN: AMP Inputs For Zone1~8.
  - SPA: Balanced Input.
- Backup AMP input from IDA8C to RU-MAIN:
  - IDA8C: Backup AMP1 (AMP I).
  - RU-MAIN: AMP Inputs For Backup AMP1 (P_BKP1+S_BKP1).
- Backup AMP input from RU-MAIN to SPA.
  - RU-MAIN: AMP Inputs For Backup AMP1 (BKP1).
  - SPA: Balanced Input.

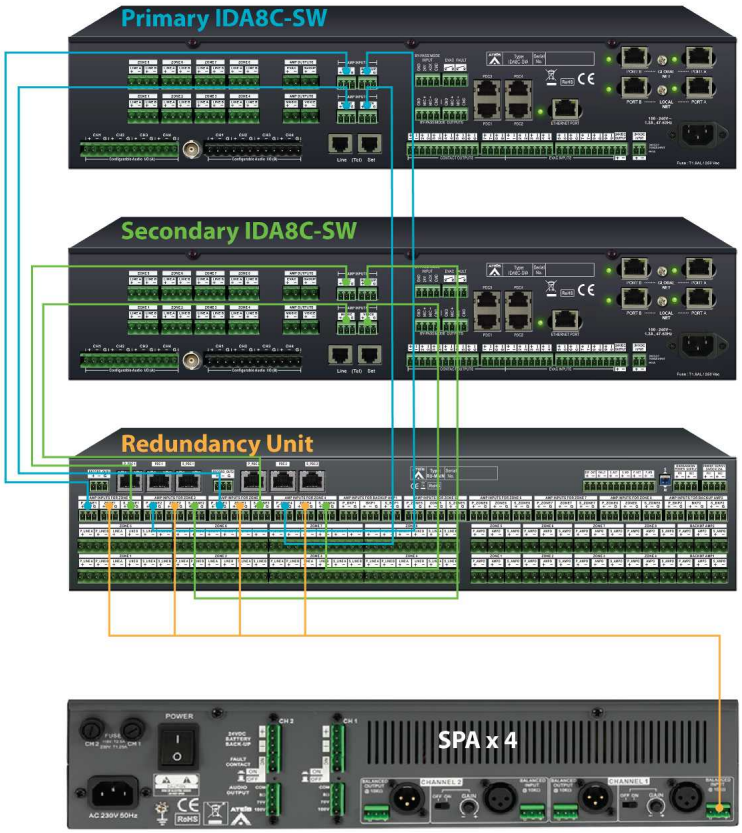


3.3.7.5.2 Switch Mode

❖ Full & Partial Redundancy

- Normal AMP input from IDA8C-SW to RU-MAIN:
  - IDA8C-SW: AMP Input EVAC, Backup, Voice, Music.
  - RU-MAIN: AMP Inputs For Zone1~8 (P_ZONE, S_ZONE).
- Normal AMP input from RU-MAIN to SPA:
  - RU-MAIN: AMP Inputs For Zone1~4.
  - SPA: Balanced Input.

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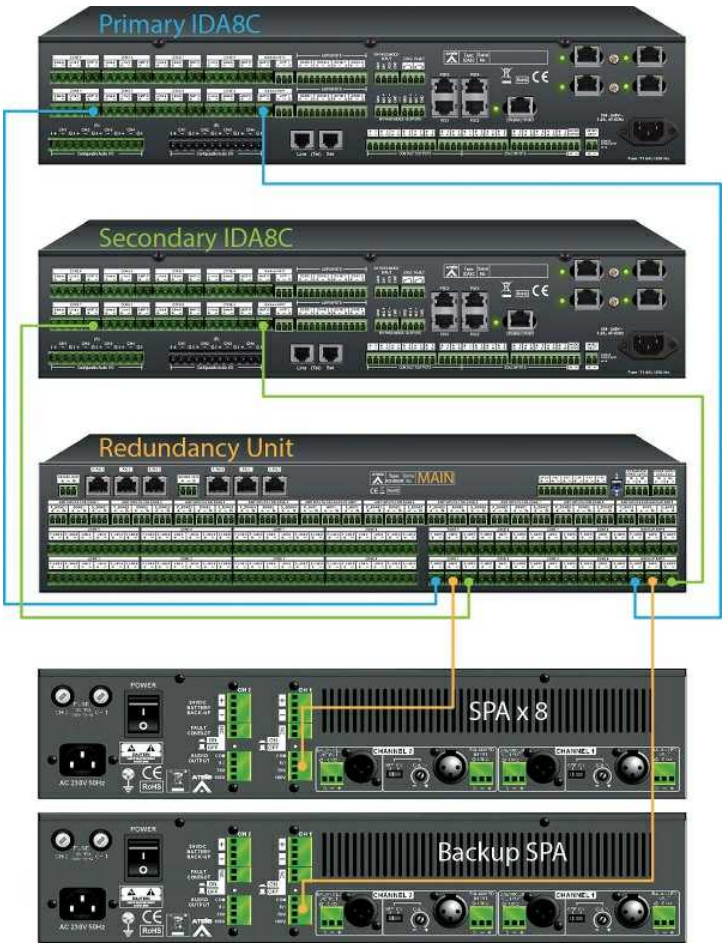
3.3.7.6 Normal/Backup Amplifier Output

3.3.7.6.1 Matrix Mode

❖Full & Partial Redundancy

- Normal AMP Output from IDA8C to RU-MAIN:
  - IDA8C: Zone1~8 AMP O.
  - RU-MAIN: Zone1~8 (P_AMPO, S_AMP O).
- Normal AMP Output from RU-MAIN to SPA:
  - RU-MAIN: Zone1~8 (AMP O)
  - SPA: Audio Output.
- Backup AMP Output from IDA8C to RU-MAIN:
  - IDA8C: Backup AMP1 (AMP O).
  - RU-MAIN: Backup AMP1 (P_AMPO, S_AMP O).
- Backup AMP Output from RU-MAIN to SPA.
  - RU-MAIN: Backup AMP1 (AMP O).
  - SPA: Audio Output.

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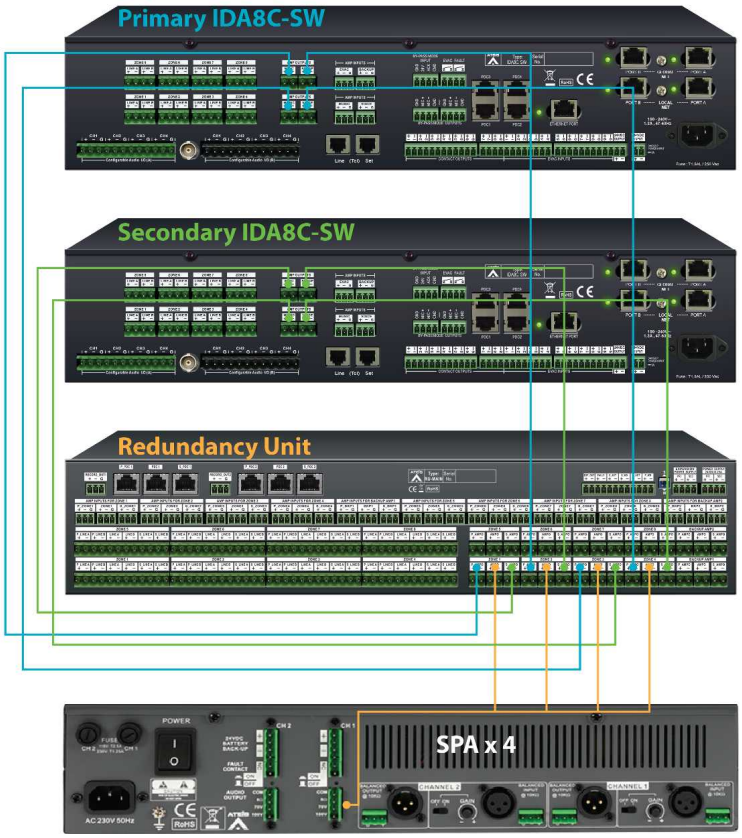


3.3.7.6.2 Switch Mode

❖ Full & Partial Redundancy

- Normal AMP Output from IDA8C-SW to RU-MAIN:
  - IDA8C-SW: AMP Output EVAC, Backup, Voice, Music.
  - RU-MAIN: Zone1~8 (P_AMPO, S_AMP O).
- Normal AMP Output from RU-MAIN to SPA:
  - RU-MAIN: AMP Outputs For Zone1~4.
  - SPA: Audio Output.

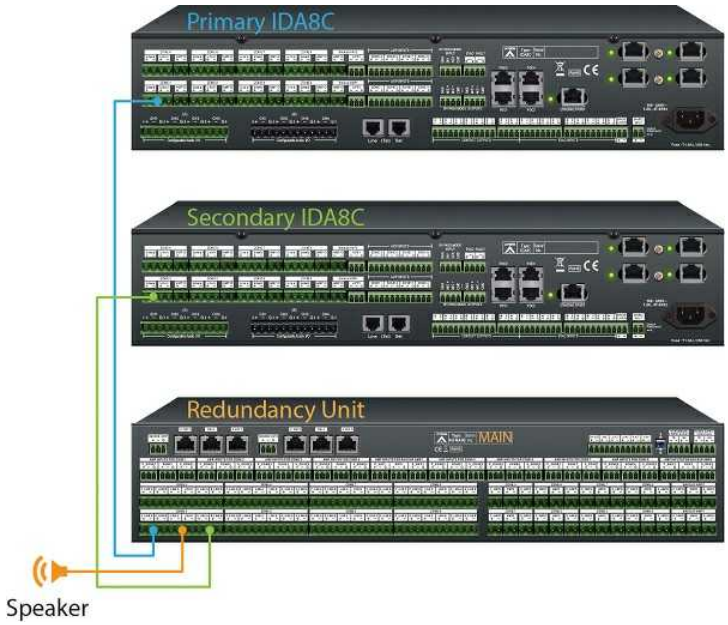
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3.3.7.7 Speaker Zone

❖Full & Partial Redundancy

- From IDA8 to RU-MAIN:
  - IDA8: Zone1~8, Lina a, Line b.
  - RU-MAIN: Zone1~8, (P_LINE A, P_LINE B, S_LINE A, S_LINE B)
- From RU-MAIN to Speaker:
  - RU-MAIN: Zone1~8, (LINE A, LINE B)



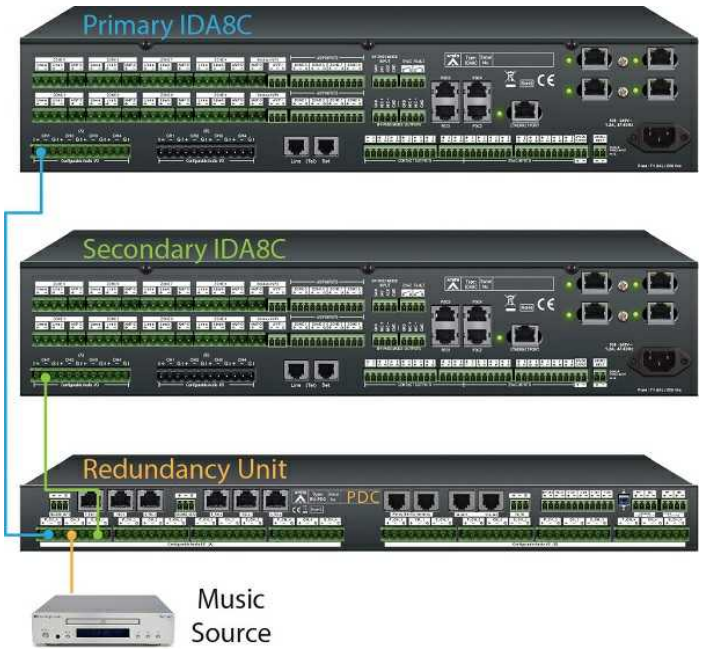
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3.3.7.8 Configurable Audio I/O

❖ Full & Party Redundancy

Black = Outputs, Green = Inputs.

- From IDA8 to RU-PDC:
  - IDA8: Configurable Audio I/O CH1~4.
  - RU-PDC: Configurable Audio I/O (P_CH_1~4, S_CH_1~4)
- From RU-PDC to Speaker:
  - RU-PDC: Configurable Audio I/O (CH_1~4)

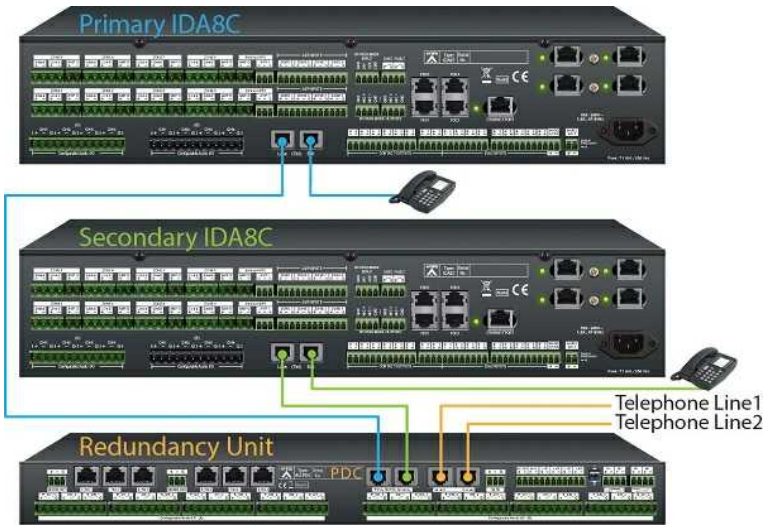


3.3.7.9 Telephone Lines

❖ Full & Partial Redundancy

- From IDA8 to RU-PDC:
  - IDA8: Line (Tel) Set.
  - RU-PDC: Primary (IDA8 Tel.) Secondary
- From RU-PDC to Telephone line:
  - RU-PDC: Tel.Line 1, Tel.Line2

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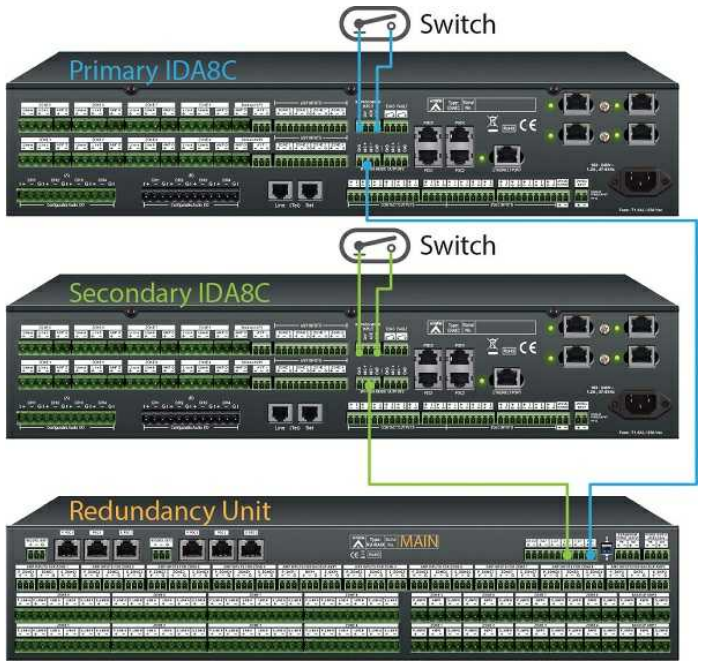


3.3.7.10 Bypass Mode

❖ Full Redundancy

Set a switch on IDA8's By-pass Mode input if needed.

- From IDA8 to RU-MAIN:
  - IDA8: By-pass Mode outputs.
  - RU-MAIN: P_WD, S_WD (Watchdog)



3.3.7.11 Bypass Mode Input

❖ Partial Redundancy

The "Bypass Mode Input" on primary and secondary IDA8C processor need to be short circuited.

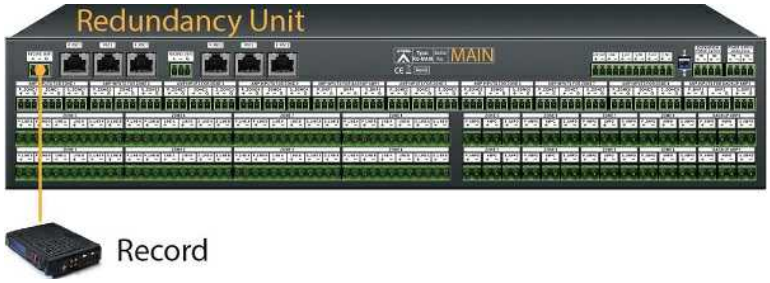
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3.3.7.12 Record

❖ Full & Partial Redundancy

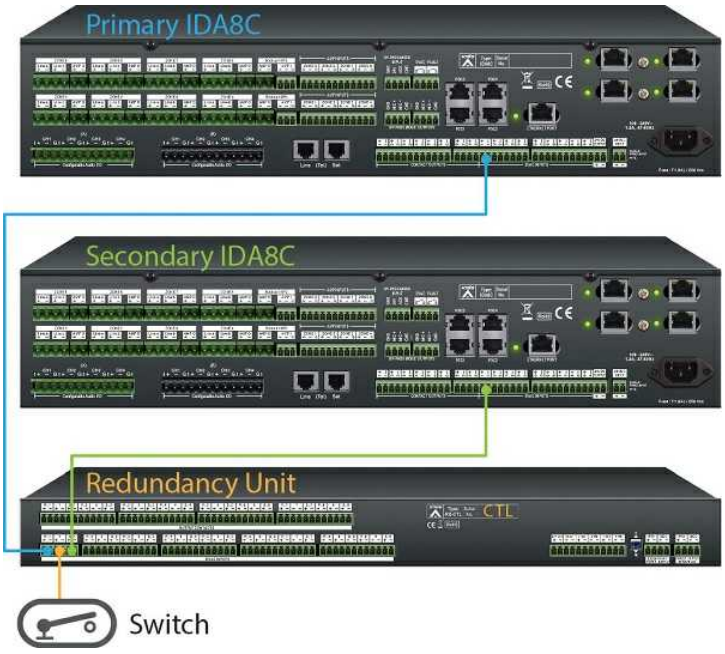
- From RU-MAIN to Record device:
  - RU-MAIN: Record_Out 1



3.3.7.13 EVAC Inputs

❖ Full & Partial Redundancy

- From IDA8 to RU-CTL:
  - IDA8: EVAC Inputs CH1~9.
  - RU-CTL: EVAC Inputs P_1~9, S_1~9.
- From RU-CTL to switch:
  - RU-CTL: EVAC Inputs 1~9.

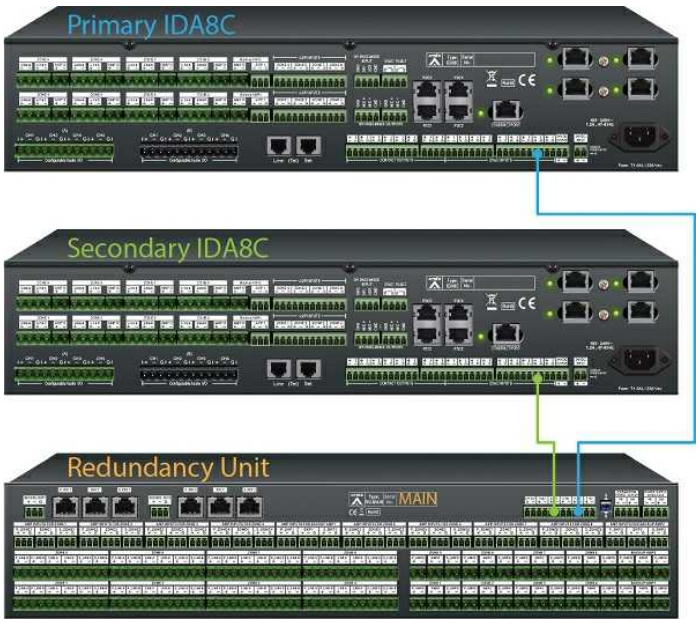


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3.3.7.14 External Indication

❖ Full & Partial Redundancy (usually on EVAC Inputs CH8)

- From IDA8 to RU-MAIN:
  - IDA8: EVAC Inputs CH8.
  - RU-MAIN: P_ACT, S_ACT.

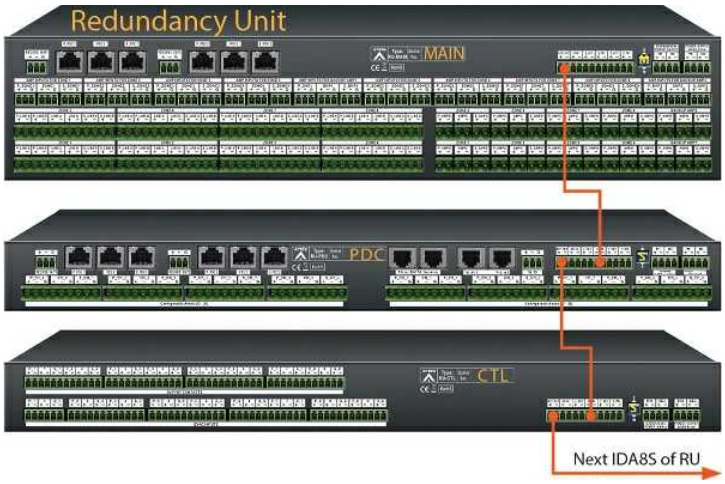


3.3.7.15 Expansion Out

❖ Full & Partial Redundancy

Set RU-MAIN as the master unit and RU-CTL/PDC as the slave unit.

- From RU-MAIN to RU-CTL/PDC:
  - RU-MAIN: EXP_Out
  - RU-CTL/PDC: S_WD



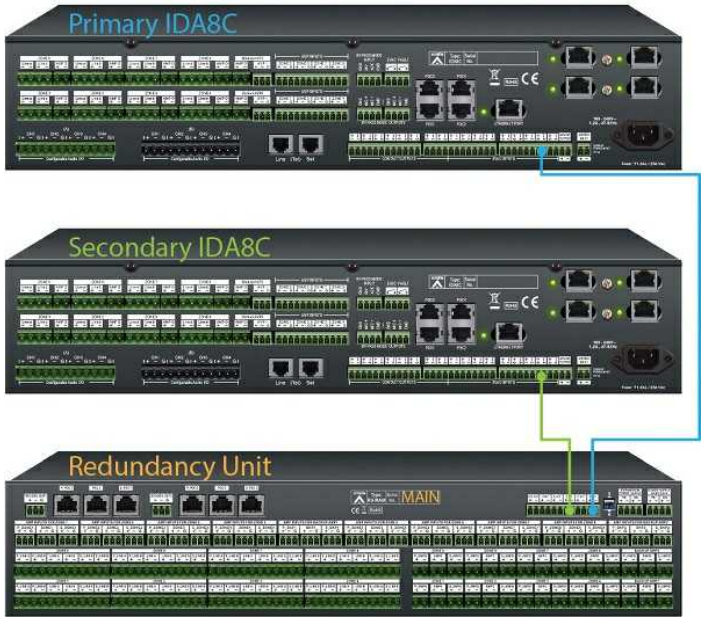
3.3.7.16 External Control

❖ Partial Redundancy (usually on Contact Output CH8)

- From IDA8 to RU-MAIN:
  - IDA8: Contact Output CH8.

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- RU-MAIN: P_WD, S_WD.



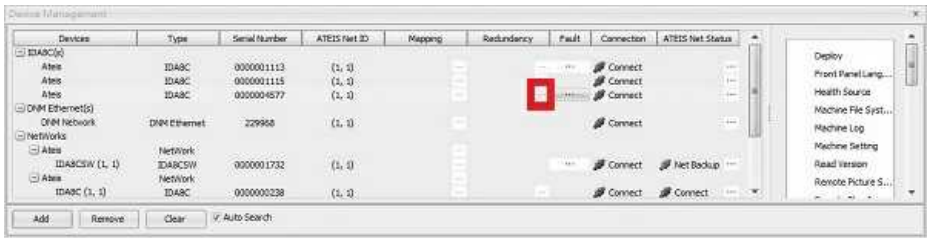
3.3.8 Ateis Studio Configurations

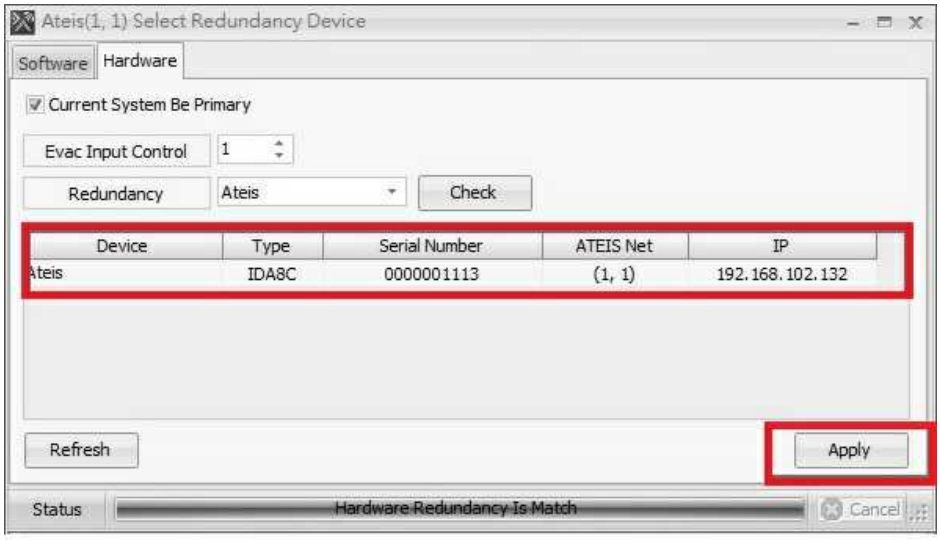
3.3.8.1 Global Ateis Studio

To configure the redundancy setting on global Ateis Studio, the primary and secondary devices must have the same hardware configurations(eg. zone board A/B/C/D and telephone card).

The following example is using one IDA8C and one IDA8S to do full redundancy.

- Step1: Click on the Redundancy button to open the "Select Redundancy Device" window and go to "Hardware" page.

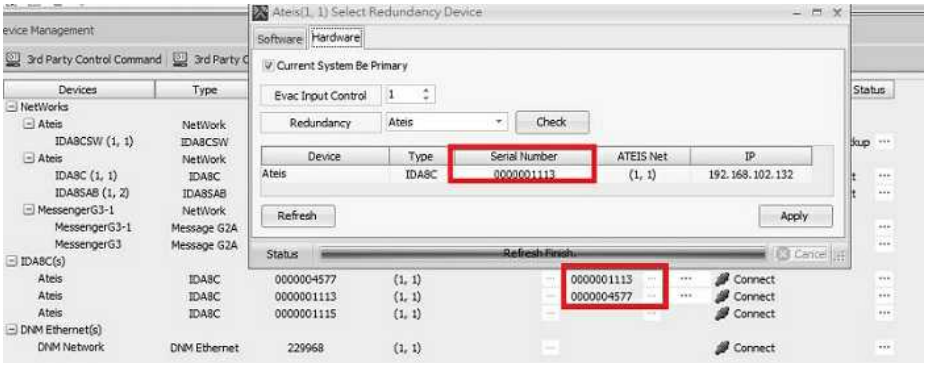




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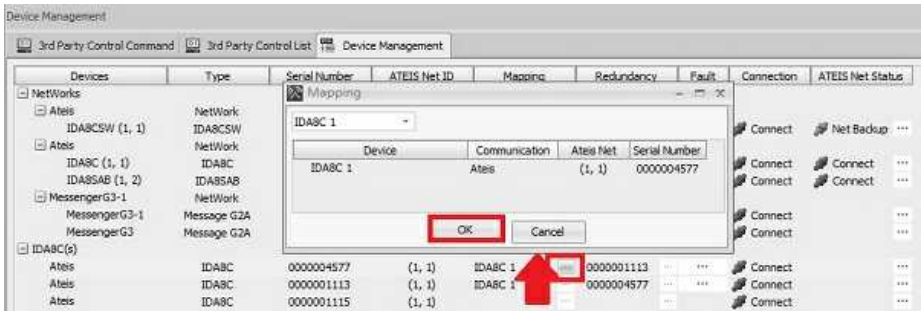
○ Select Redundancy Device window- Hardware page.

1. Current System Be Primary: Tick the box to have the selected device as the primary device; un-tick the box to have the selected device as the secondary device.
2. Evac Input Channel: Select one channel for external Evac indication.
3. Contact Output Channel (for fiber use only): Select one channel as the external contact output channel.
4. Redundancy: A list of the systems which are ready to do redundancy.
5. Device list: A list of the devices that are ready to do redundancy under the selected system.
6. Refresh: Click on the button to refresh the device list.
7. Apply: Click on the button to apply the current setting.



The above picture shows the setting is successful. Redundancy serial number will display the back up ends' serial numbers

- Step 2: click on the "Mapping" button and click on "OK" to finish the auto mapping setup.



- Step 3: click on the "Store" button to finish the redundancy setup.

❖ IDA8 Front Panel

If the redundancy configuration has setup successfully, the front panel will display the information as below.



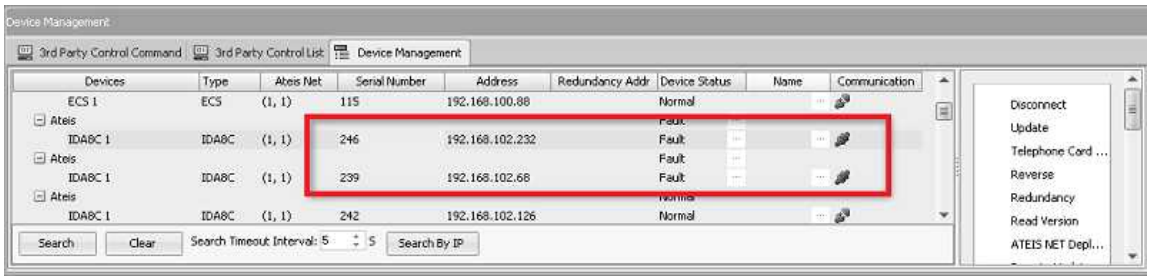
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1. "P" or "S": If the device is the primary device, a letter P will be shown. If it is a secondary device, a letter S will be shown.
2. "REDUNDANCY SYNCHRONIZING": it will be shown when the system is being synchronized.
3. "STANDBY": it means the device is the "STANDBY" end.

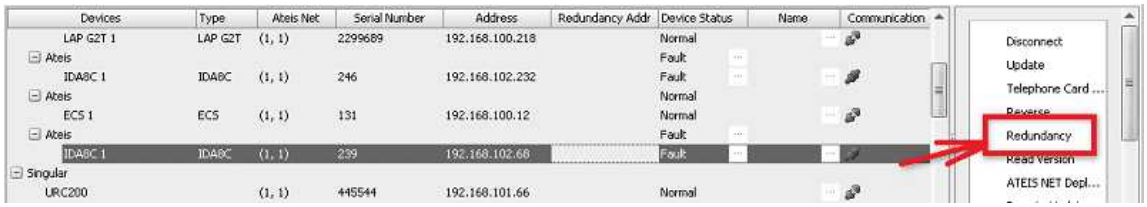
3.3.8.2 Local Ateis Studio

The following steps show how to configure the redundancy system in IDA8 system.

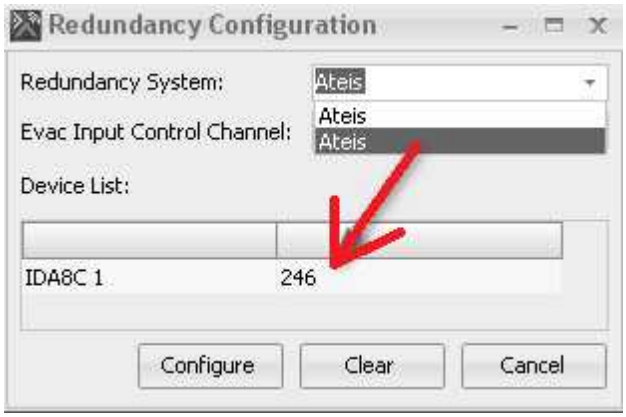
1. Setup the H/W connection redundancy system.
2. Search primary and secondary IDA8C using Ateis Studio and connect to them.



3. Select the IDA8C to be primary one, and click the [Redundancy] button on [Device Management] window.

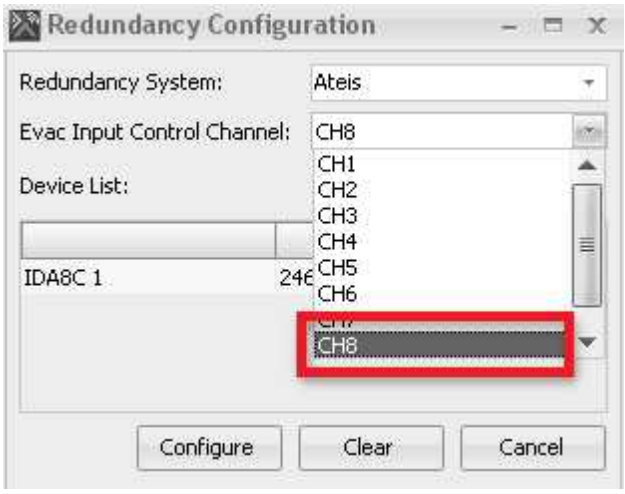


4. Choose the secondary IDA8C unit. You can click the item from the [Redundancy System] drop-dwon box, then check the device in [Device List] grid whether its serial number is correct.

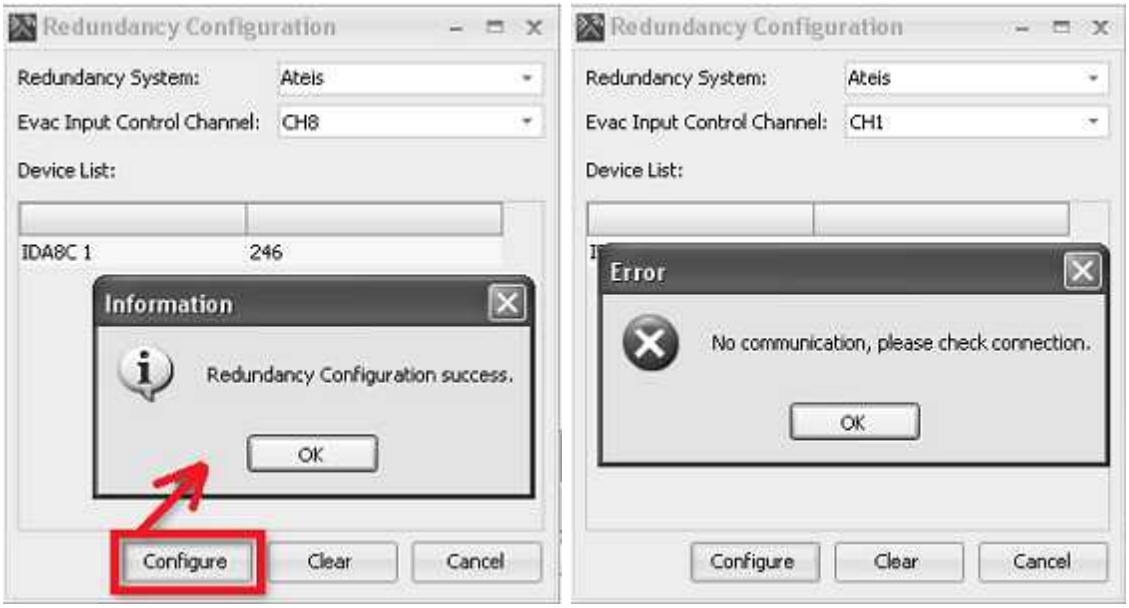


5. Set the Evacuation input Control Channel.

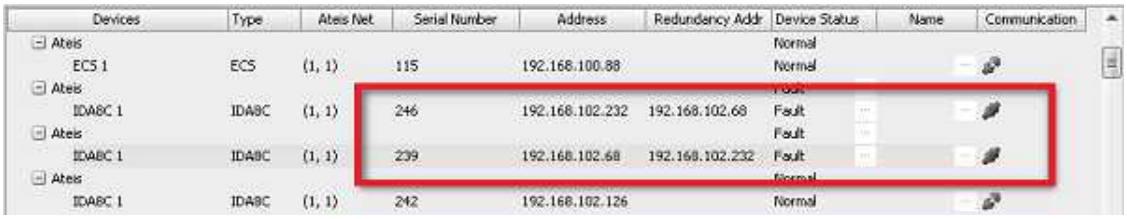
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6. Press the [Configure] button, the "Redundancy Configuration Success" message will display if the procedure has completed successfully. If an error window shows, this indicates this procedure does not succeed, please try to choose the other system.

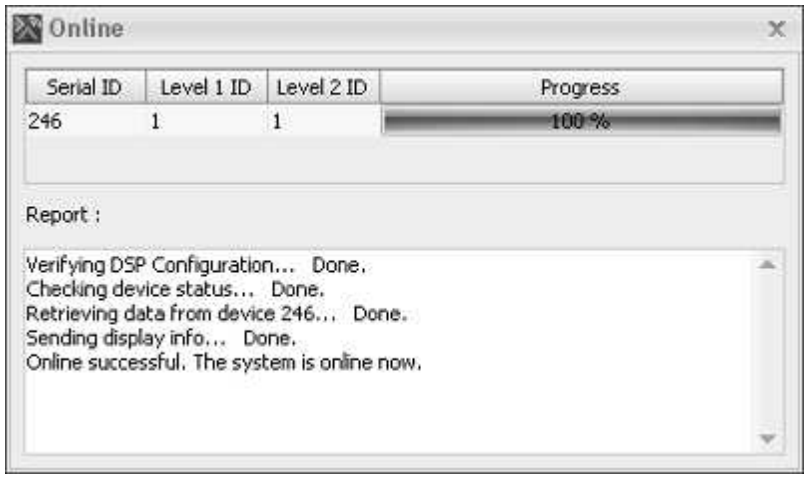


7. After this setting has completed, you can see the information on the Device window which shows the two IDA8C are redundancy for each other. The field "Redundancy Addr" now are filled with the redundant IDA8C's address.



8. Store one of the redundancy systems, the other will store the same configuration automatically.
9. The [Report] window will show the information of the current system, whether if there's an error is detected or the switching for redundancy has completed.

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❖ IDA8 Front Panel

When the redundancy has set up successfully, the front panel will display the information as below.



1. "P" or "S": If the device is the primary device, a letter P will be shown. If it is a secondary device, a letter S will be shown.
2. "REDUNDANCY SYNCHRONIZING": It will be shown when the system is being synchronized.
3. "STANDBY": It means the device is the "STANDBY" end.

3.3.8.3 Ateis Studio

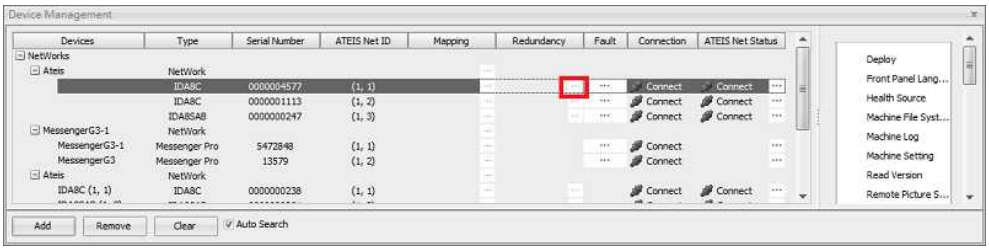
This function supports Partly Redundancy System only.

To configure the redundancy setting on global Ateis Studio, the primary and secondary devices must have the same hardware configurations(eg. zone board A/B/C/D and telephone card).

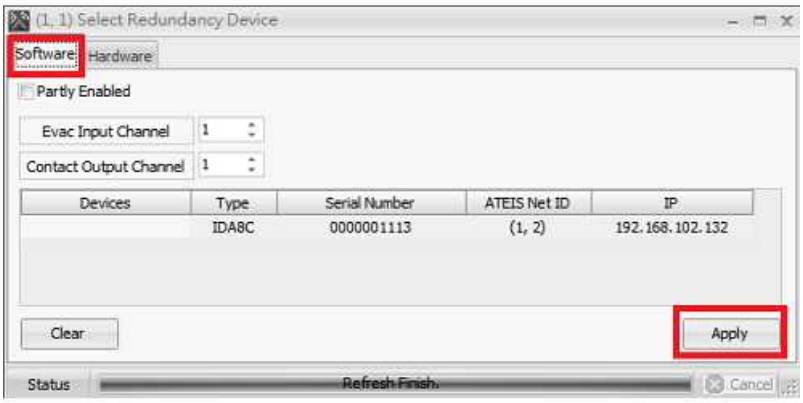
The following example is using one IDA8C and one IDA8S to do full redundancy.

- Step 1: Select one IDA8C as the primary device and the other IDA8C as the secondary device.
  - Click "Redundancy" button on the secondary device, and will open the "Select Redundancy Device" window, then go to "Software" page.

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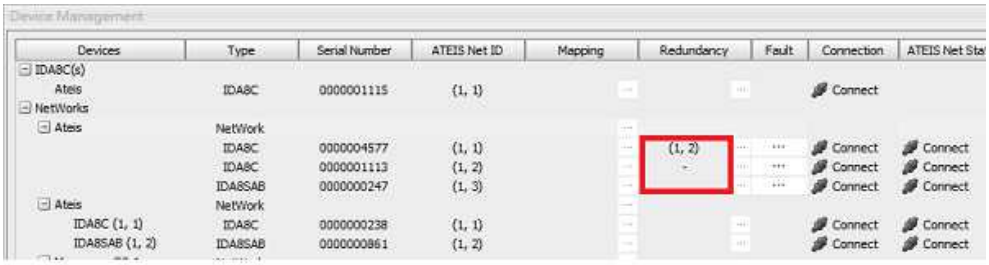


- Select Redundancy Device window- [Software] page.



1. Partly Enabled: Tick the box if you have RU devices to do redundancy. Uncheck the box if user won't do the redundancy.
2. Evac Input Channel: Select one channel for external Evac indication.
3. Contact Output Channel: Select one channel as the external contact output channel.
4. Device list: A list of the devices which are ready to do redundancy.
5. Clear: Click on the button to clean the current redundancy configuration.
6. Apply: Click on the button to apply the current setting.

- After applied the setting, the Device window will shows the setting is completed successfully.

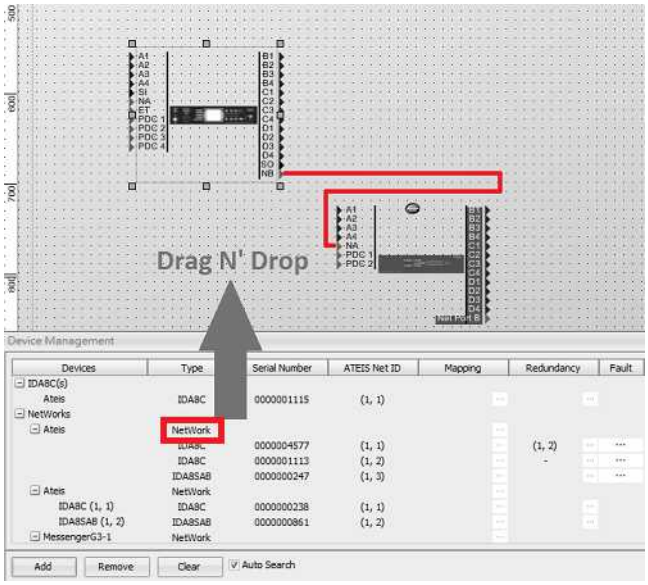


1. ─ : the sign represents IDA8C 1 as the operator end.
2. (1,1) : the sign represents IDA8C 2 as the standby end, as well as the IDA8C 1 back up end.

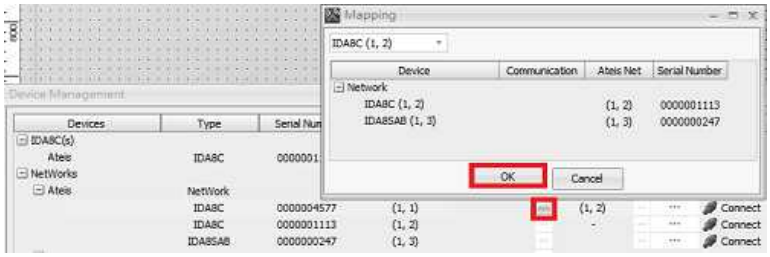
- Step 2: Drag and drop the "Network" button on to the editing page.

Please note that the IDA8C 2 (back up device) will not be shown on the editing window. Only the IDA8C 1 will be shown on the editing page.

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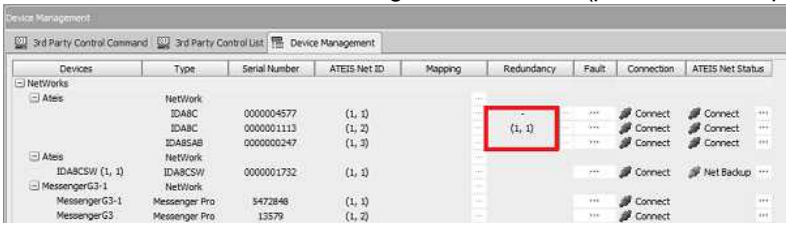


- Step 3: Click "Mapping" button and the "OK" to finish the auto-mapping setup.



- Step 4: click on the "Store" button to finish the redundancy set up.

Please note that if you switch the redundancy from primary device to the secondary device, the information will be shown on the "Device Management" window (please see the picture below).



❖ IDA8 Front Panel

If the redundancy configuration has setup successfully, the front panel will display the information as below.



1. "P" or "S": if the device is the primary device, a letter P will be shown. If it is a secondary device, a letter S will be shown.

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2. "REDUNDANCY SYNCHRONIZING": it will be shown when the system is being synchronized.

3. "STANDBY": it means the device is the "STANDBY" end.

3.4 Power Amplifier

3.4.1 SPA

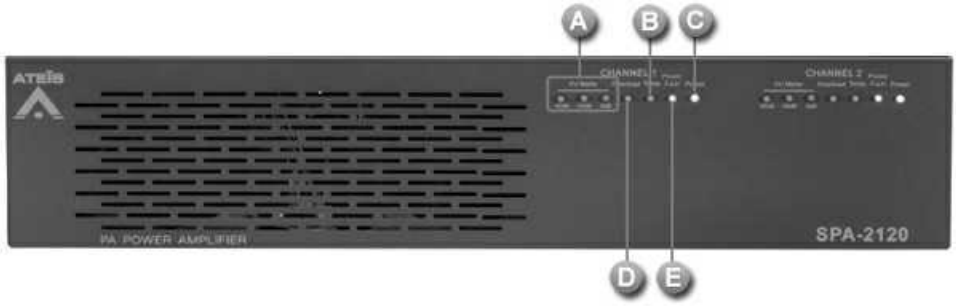


The SPA (Security Power Amplifier) were specifically developed to meet the requirements of EN 60849 for safety installations. Each amplifier module is fitted with its own 220 VAC/24 VDC power supply for increased system reliability. To avoid handling errors, the volume output is set using the potentiometer located at the back of the apparatus. In addition to standard protection via fuses, SPA amplifiers also have electronic and thermal protection to protect them from all potential hazards.

A fan provides forced cooling for the final power shelves and internal parts of the apparatus. It starts up automatically when the temperature reaches a certain threshold, and stops when it returns to normal values. Four LEDs display the status of each amplifier: AC or DC power supply, Line Overload and Temperature overload. Furthermore, a three LEDs VU-Meter indicates the presence and level of audio signal.

A surveillance circuit continuously monitors the temperature and the presence of AC and DC power supplies for both amplifiers. In case of a problem, the overload LEDs will be switched ON and the Fault relay will be activated. The SPA series (SPA 2060, 2120, 2240) can be ordered with optional 115V power supply.

3.4.1.1 Front Panel



A VU Meter:

The VU-meter is composed of three LEDs that represent three different level thresholds: -40dB, -20dB and 0dB. When the input signal reaches those thresholds, the corresponding LED will blink.

B Temp.:

If the device internal temperature exceeds 95 degrees C, the TEMP LED will light and the pre-amp will stop working until the temperature falls below 95 degrees C. The pre-amp will come back to a working state automatically. To avoid temperature failure, please insert an external fan to the rack system.

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Ⓓ Overload:

The overload LED will blink as soon as the output power exceeds the nominal value. If the Overload LED is blinking, check that the output load is well connected and still in good condition as well as checking the level of the input signal.

Ⓒ Power:

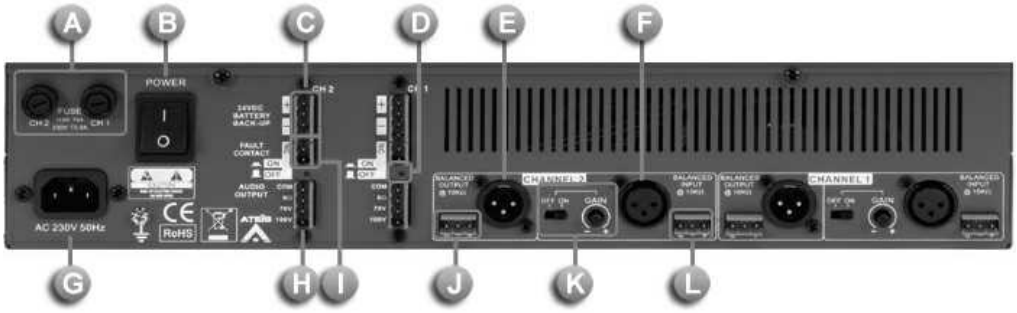
The Power LED indicates the ON/OFF status.

Ⓔ Power fault:

This LED indicates the main/backup power supply, the LED lights up when one of them is lost and the system will switch to the working one as well.

There is a button on the rear panel for disabling/enabling this LED indicator. It's required to enable this LED for the PA/VA system.

3.4.1.2 Rear Panel



Ⓐ Fuse Receptacles:

Two fuse receptacles are located on the left of the amplifier's rear panel.

Ⓑ Power Switch:

Push up the power switch (I position) will power on the device, pushing it down (O position) will off the power. When the power switch is on the I position, the front panel power LED will light up.

Ⓒ Channel 1/2 24VDC battery backup connector:

The SPA can be operated with battery backup. Use the channel 1 and channel 2 "24VDC Battery Backup" connector to do so. This 24VDC power supply can be used when no AC power is available. When in use, the front panel Power LED will be lit as well as the front panel DC LED.

Ⓓ Fault LED On/Off:

Enable/disable the Fault Power LED indicator. In need of turning off the indicator, use a thin screwdriver to press the retractable button.

Ⓔ & Ⓙ Channel 1/2 Outputs:

Each channel outputs a replica of the corresponding balanced audio input signal either on the XLR connector or on the Euro-terminal block.

The following table lists the pins of XLR connector(both Female and Male):



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Item	Description
Pin1	Chassis ground (cable shield).
Pin2	Positive polarity terminal for balanced audio circuits (aka "hot").
Pin3	Negative polarity terminal for balanced circuits (aka "cold").

F & L Channel 1/2 Inputs:

For each channel, there is an XLR balanced input and a Euro-terminal block balanced input. Each input can be gain adjusted to suit the user's needs. The On/Off gain switch can instantaneously bypass the gain controller and set the channel gain amplifier to maximum.

G AC Power Inlet:

The 3 pin IEC connector is located on the left of the amplifier's rear panel. It accepts a standard mains power lead fitted with an IEC connector.

For 115 V, fuse rating:

- SPA 2060: 2.5A
- SPA 2120: 5A
- SPA 2240: 8A

For 230 V, fuse rating:

- SPA 2060: 1.25A
- SPA 2120: 2.5A
- SPA 2240: 5A

H Channel 1/2 Audio Output:

For each amplifier channel, there is a dedicated Audio Output connector for connection of either 8 Ohm speakers, 70V speakers or 100V speakers. For the 8 Ohm connection and if you are using more than 1 speaker, please ensure that speakers are wired in a way that the total impedance load is between 8 Ohm and 16 Ohm. The Com point is the negative terminal and 8 Ohm, 70V and 100V are the positive terminals.

I Fault Contact:

The fault contact indicates an amplifier fault by an opening contact.

K Channel 1/2 Inputs GAIN and ON/OFF switch:

The on/off switch is mainly for the parallel output and the knob is for adjusting the amplifier gain.

3.4.1.3 Parallel Output/Installation

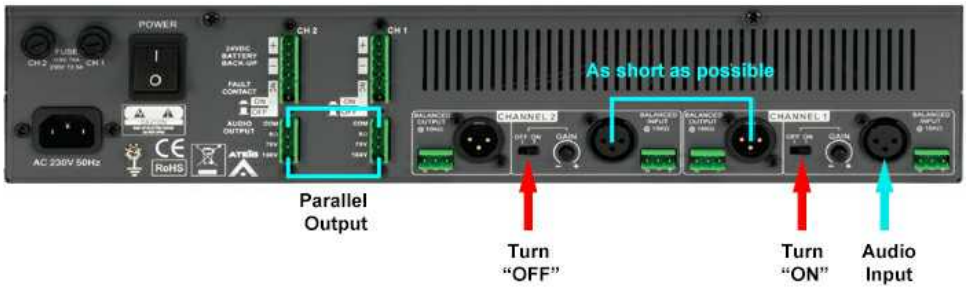
❖ To combine 2 or more channels into one. For example, 60W x 2 Channels to be one channel with 120W power, see the following as below:

1. Turn the input gain to "OFF" position on channel 2, but keep the channel 1 Input gain adjustable.
2. Connect channel 1 output to channel 2 input (XLR or Euro block)
3. Parallel the output of channel 1 and channel 2 (COM to COM, 70.7V line to 70.7V line).

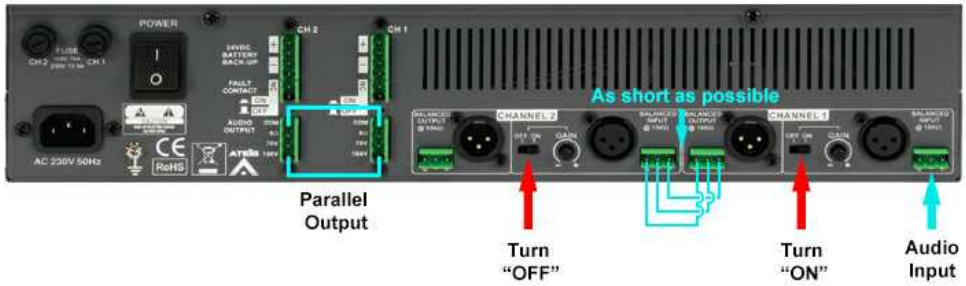
Please refer to the example connection below:

- Using XLR connectors

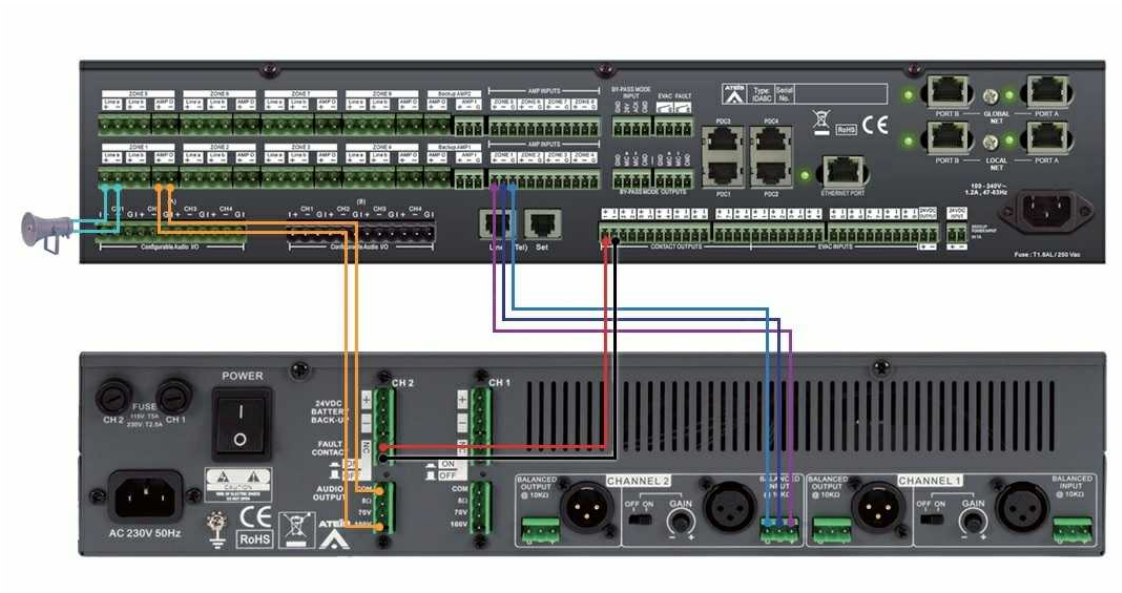
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- Using Euro-block



❖ IDA8 & SPA Wiring example



3.4.2 BPA



The BPA is a 2U 19" rack-mountable, 2-channel amplifier, transformer isolated for 100V, 50V, 8 ohm or 70V, 35V, 8 ohm loudspeakers. The 2 line inputs are with a balanced 3-pin XLR input and a balanced 3-pin phoenix input. The BPA amplifier range consists of five models: BPA-2060 (60W x 2),

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BPA-2120 (120W x 2), BPA-2240 (240W x 2), BPA-2480 (480W x 2) and BPA-1000(1000W x 1). The BPA-2060, BPA-2120, BPA-2240, BPA-2480 can be paralleled or bridged by combining 2 channels to double the power wattage. The BPA amplifier is designed to have protection of short-to-ground, short-circuit, overload and temperature overheat.

3.4.2.1 Front Panel



1 VU Meter:

The VU-meter is composed of three LEDs that represent three different level thresholds: -40dB, -20dB and 0dB. When the input signal reaches those thresholds, the corresponding LED will blink.

2 Temp.:

If the internal temperature of device reaches 95 degrees C, the TEMP LED will light up and the pre-amp will stop working until the temperature falls down under 95 degrees C. The pre-amp will come back to a working state automatically. To avoid temperature failure, please insert an external fan to the rack system.

3 Overload:

The overload LED will blink as soon as the output power exceeds the nominal value. If the Overload LED is blinking, check that the output load is well connected and still in good condition as well as checking the level of the input signal.

4 Power:

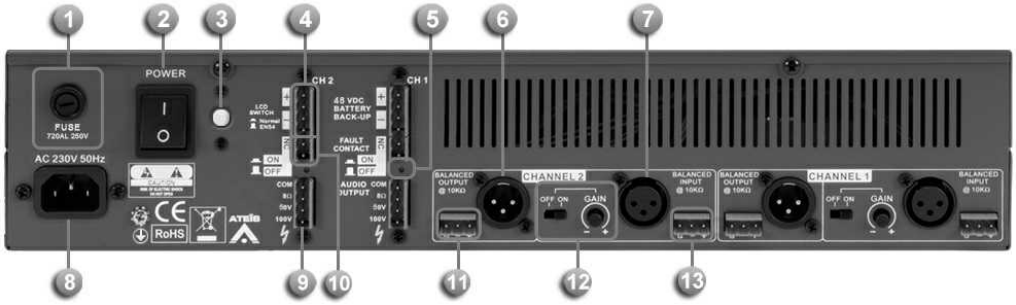
The Power LED indicates the ON/OFF status.

5 Power fault:

This LED indicates the main/backup power supply, the LED lights up when one of them is lost and the system will switch to the working one as well.

There is a button on the rear panel for disabling/enabling this LED indicator. It's required to enable this LED for the PA/VA system.

3.4.2.2 Rear Panel



1 Fuse Receptacle:

A fuse receptacle is located on the left of the amplifier’s rear panel.

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② Power Switch:

Push up the power switch (I position) will power on the device, pushing it down(O position) will off the power. When the power switch is on the I position, the front panel power LED will light up.

③ EN54 -16 LED Switch:

- Push on: Normal type.
- Push off: EN54-16 type.



④ Channel 1/2 48VDC battery backup connector:

The BPA amplifier can be operated with battery backup. Use the channel 1 and channel 2 "48VDC Battery Backup" connector to do so. This 48VDC power supply can be used when it's unavailable with AC power supply. The Power and DC LED shall light up when in use of Battery Backup.

⑤ Fault LED On/Off:

Enable/disable the Fault Power LED indicator. In need of turning off the indicator, use a thin screwdriver to press the retractable button.

⑥ & ⑪ Channel 1/2 Outputs:

Each channel outputs a replica of the corresponding balanced audio input signal either on the XLR connector or on the Euro-terminal block.

The following table lists the pins of XLR connector (Female and Male):



Item	Description
Pin1	Chassis ground (cable shield).
Pin2	Positive polarity terminal for balanced audio circuits (aka "hot").
Pin3	Negative polarity terminal for balanced circuits (aka "cold").

⑦ & ⑬ Channel 1/2 Inputs:

For each channel, there is an XLR balanced input and a Euro-terminal block balanced input. Each input gain control can be adjusted to suit the users' needs. The ON/OFF gain switch can instantaneously bypass the gain controller and set the channel gain amplifier to maximum.

⑧ AC Power Socket:

Main 230V~253V, 50/60Hz AC power input with fuse. It accepts a standard mains power lead fitted with an IEC connector.

⑨ Channel 1/2 Audio Output:

For each amplifier channel, there is a dedicated Audio Output connector for connection of either 8 Ohm speakers, 50V speakers or 100V speakers. For the 8 Ohm connection and if you are using more than 1 speaker, please ensure that speakers are wired in a way that the total

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impedance load is between 8 Ohm and 16 Ohm. The Com point is the negative terminal and 8 Ohm, 50V and 100V are the positive terminals.

⑩ Fault Contact:

The fault contact indicates an amplifier fault by an opening contact.

⑫ Channel 1/2 Inputs GAIN and ON/OFF switch:

The ON/OFF switch is mainly for the parallel output and the knob is for adjusting the amplifier gain.

3.4.2.3 Parallel & Bridged Output/Installation

❖ To combine 2 or more channels into one. For example, 120W x 2 Channels to be one channel with 240W power, see the listed description below:

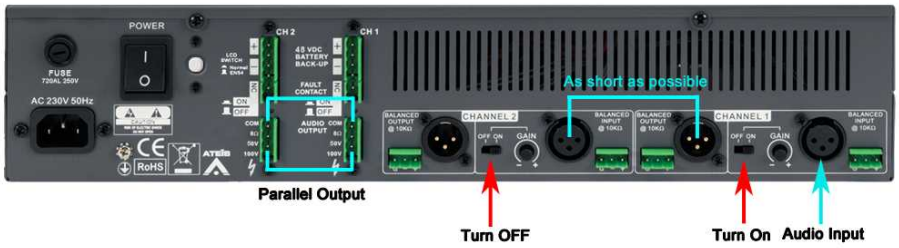
- BPA-2120 (120W x 2 Channel to be 240W power)
- BPA-2240 (240W x 2 Channel to be 480W power)
- BPA-2480 (480W x 2 Channel to be 960W power)

❖ Parallel Output:

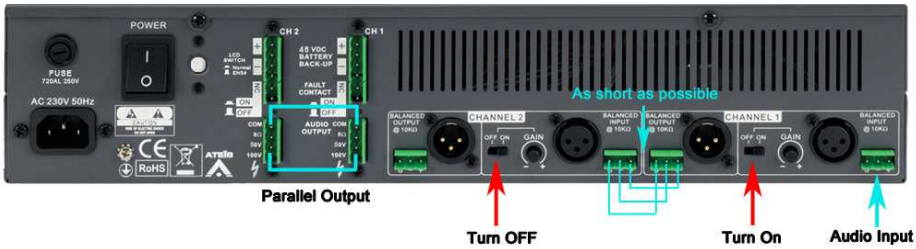
1. Turn the input gain to "OFF" position on channel 2, but keep the channel 1 Input gain adjustable.
2. Connect channel 1 output to channel 2 input (XLR connector or Euroblock connector).
3. Parallel the output of channel 1 and channel 2 (COM to COM, 100V line to 100V line).

Please refer to the example connection below:

- Via XLR connectors



- Via Euroblock connectors



❖ Bridged Output:

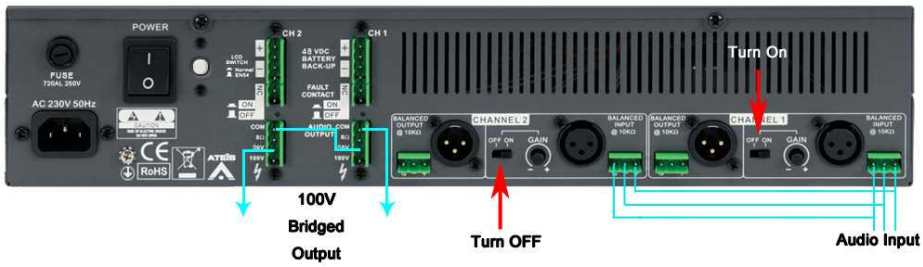
To combine two channel such as 240Wx 2 or 480W x 2 to be one channel 480W x 1 or 960W x 1. Please follow the instruction below:

1. Turn the input gain to "OFF" position on channel 2, but keep the channel 1 Input gain adjustable.
2. Connect channel 1 50V to channel 2 COM.

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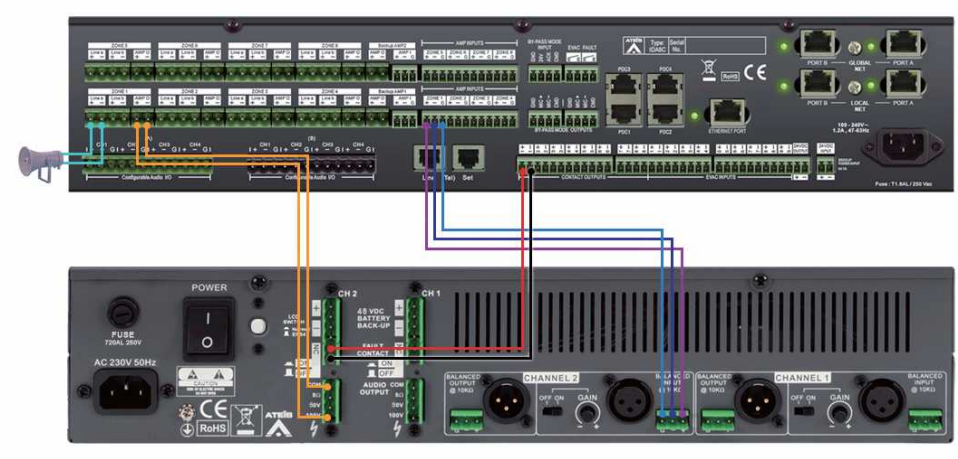
3. Connect channel 1 Audio Input to channel 2 Audio Input to share the same audio source.

Please refer to the example of Euroblock connector below:



❖ Amplifier Configuration:

The figure below shows the basic BPA amplifier wiring with IDA8C controller.



3.5 Battery Charger

3.5.1 SONAES 6/40A



The SONEAS battery charger, 6/40, is EN54-4 certified. The maximum charging current is 6 A. The battery charger is two rack units high, and has to be installed in a 19" rack. Maximum battery capacity 114 or 225 AH. The SONAES comes without batteries. To meet the secured power back-up system need, determining the exact conditions and the amount of battery back-up for a system is much complex than other applications. Public Address / Voice Alarm system does not draw a constant current. The standard defines a standby time and an evacuation time. In this case, it is crucial to pick a battery back-up that shall supply the minimum amount of power for a set amount of time. With SONAES battery chargers, it provides you with a battery calculator program which determines the exact capacity.

This product is a Power Supply Equipment (PSE) as defined in the EN 54-4 standard. It is designed to be connected to the 230 V public distribution network. To avoid any risk of electric shock, all interventions must be carried out with disconnected mains supply (upstream two-pole circuit-breaker open). Interventions with the equipment switched on are authorized only when it is impossible to switch the equipment off. The operation must only be performed by qualified personnel.

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3.5.1.1 Front Panel



When the 3 LEDs light up in green, it indicates that your apparatus is in correct operation. Here are the possible circumstances of facing detected fault with corresponding LED.

1. Output voltage fault:

   It is signalled by a yellow LED and it's available on dry contact (fail-safe) for remote monitoring.

   If there's no voltage on one or more output, all the five outputs are checked. Each dry contact is with a three pole SPDT switch (C-NC-NO), allowing 1A @ 24Vdc or 0,5A @ 120Vac.

2. Battery fault (back-up source):

   It is signalled by a yellow LED and it's available on dry contact (fail-safe) for remote monitoring.

   - If the battery voltage < 21,6V ±3 %.
   - If the internal impedance is too high (test every 4 hours maximum on a charged battery). The impedance limit value is 50 mW±10 %.
   - If the battery isn't under operation, the system shall continue proceeding the following manner: every 30 seconds for the first 20 minutes after commissioning and every 15 minutes after. As soon as a fault is detected, the test shall be continue proceeding every 30 seconds until 20 minutes after the fault disappears.

3. Mains fault (normal source):

   It is signalled by a yellow LED and it's available on dry contact with delay (fail-safe) for remote monitoring.

   - If the mains is not serve or < 195 V.
   - If the mains fuse is blown.
   - If the charger is faulty.

3.5.1.2 Real Panel



1. Main power socket
2. Auxiliary output terminals

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3 Battery terminal

4 Output contacts

5 Main output terminals

6 Temperature sensor

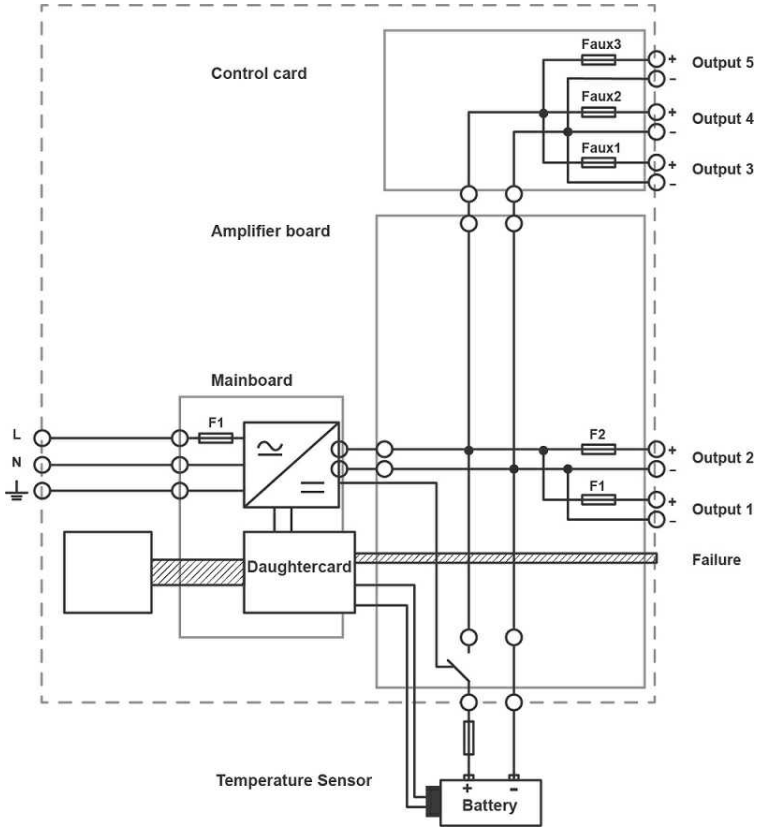
❖ Connection Specifications

- Mains: 2.5 mm²
- Battery: 16 mm²
- Amplifiers load (outputs 1 and 2): 16 mm²
- Controllers load (outputs 3 to 5): 2.5 mm²
- Alarm reports (plug-in): 1.5 mm²

3.5.1.3 Installation

- Block Diagram:

  To secure from the battery with a fuse with low resistance.



- Batteries:

  The battery temperature sensor must be placed as close to the battery as possible without being in physical contact with it. For example, it may be fixed on the battery cables by mean of the two tire wraps fitted.

- Battery wiring instructions:

  The power supply takes a resistance measurement of the battery including connections every 4 hours.

  The trigger threshold of the fault is 50 mW ±10 %.

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Exceeding this threshold is signalled as a battery fault and means that the power supply with its associated battery will not have the required back-up duration in case of mains power cut.

To avoid initiating this fault, please rad the following elements:

- Use batteries with a capacity of 24 to 114 Ah.
- Use authorized batteries.
- Use battery cables that are as short and large as possible (16 mm² max).
  - For a cross-section of 10 mm², the resistance is 2 mW/m.
  - For a cross-section of 16 mm², the resistance is 1.25 mW/m.

  Example: The resistance is 6 mW for the battery cables (+ and -) 1.5 m in length and with a cross-section of 10 mm².

Battery cables (+ and -) of 1.5 m in length and cross-section of 25 mm² allow correct operation with all the recommended batteries.

The connections and crimping should be realized properly in order to generate as low resistance as possible.

An additional battery fuse will be added about 1 to 2 mW.

3.5.1.4 Troubleshooting

❖ If the power supply does not deliver voltage on the outputs,

- Check mains presence on the mains terminal strip
- Check the fuses
- Check the voltage value on output terminals
- The voltage on the battery cables must be identical to that of the load
- Check that each 12 Vdc battery has a voltage greater than or equal to 11.5 Vdc
- Repeat the measurement after having disconnected the load and the battery
- Recheck the signalling of the indicator lights (see chapter 5)
- If all the steps are validated, check the compatibility of your load

❖ If the battery indicator light remains red,

- Check if the battery voltage is between 14V and 30V
- Check the battery voltage polarity
- If the battery does not take over after a mains fault,
- Check the voltage on the battery terminals
- Check the battery fuse
- Check the voltage on output terminals

❖ If the indicator lights are not illuminated,

- Check mains presence on the mains terminal strip
- Check the battery connection
- Check that the flat cable is properly connected
- Check the voltage on output terminals

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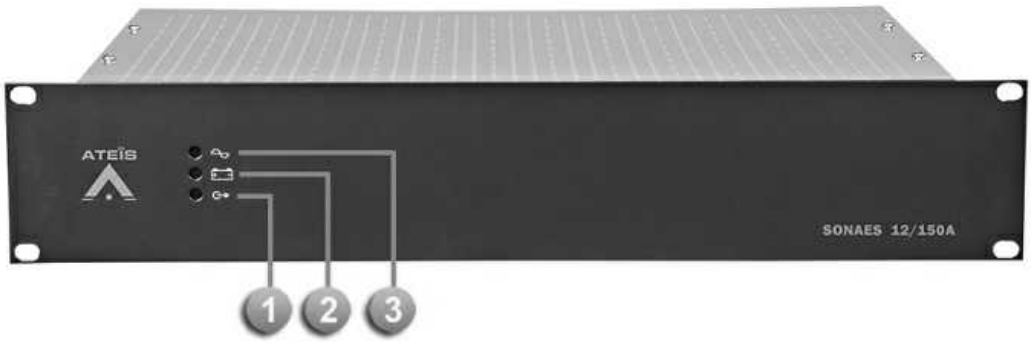
3.5.2 SONAES 12/150 A



The SONEAS 12/150 Battery Charger is EN54-4 certified. The maximum charging current is 12 A. The battery charger is two rack units high, and has to be installed in a 19" rack. Maximum battery capacity 114 or 225 AH. The SONAES comes without batteries. To meet the secured power back-up system need, determining the exact conditions and the amount of battery back-up for a system is much complex than other applications. Public Address / Voice Alarm system does not draw a constant current. The standard defines a standby time and an evacuation time. In this case, it is crucial to pick a battery back-up that shall supply the minimum amount of power for a set amount of time. With SONAES battery chargers, it provides you with a battery calculator program which determines the exact capacity.

This product is a Power Supply Equipment (PSE) as defined in the EN 54-4 standard. It is designed to be connected to the 230 V public distribution network. To avoid any risk of electric shock, all interventions must be carried out with disconnected mains supply. A bipolar isolating switch must be installed likewise in the batteries circuit. Interventions with the equipment switched on are authorized only when it is impossible to switch the equipment off. The operation must only be performed by qualified personnel.

3.5.2.1 Front Panel



When the 3 LEDs light up in green, it indicates that your apparatus is in correct operation. Here are the possible circumstances of facing detected fault with corresponding LED.

1 Output voltage fault:

It is signalled by a yellow LED and it's available on dry contact (fail-safe) for remote monitoring.

If there's no voltage on one or more output, all the five outputs are checked. Each dry contact is with a three pole SPDT switch (C-NC-NO), allowing 1A @ 24Vdc or 0,5A @ 120Vac.

2 Battery fault (back-up source):

It is signalled by a yellow LED and it's available on dry contact (fail-safe) for remote monitoring.

- If the battery is not serve.
- If the internal impedance is too high .
- If the battery voltage < 23,5 V ±3 %. resp. 47,0 V ±3 % mains present.

3 Mains fault (normal source):

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It is signalled by a yellow LED and it's available on dry contact with 5 sec delay (fail-safe) for remote monitoring.

- If the mains is not serve or < 185 V+/-5% as long as the charger was switched off, <165V+/-5% if it was switched on.
- If the mains fuse is blown.
- If the charger is faulty.
- If the internal temperature is too high.

3.5.2.2 Rear Panel



1 Main power socket

2 Auxiliary output terminals

3 Battery terminal

4 Output contacts

5 Main output terminals

6 Temperature sensor

❖ Connection Specifications

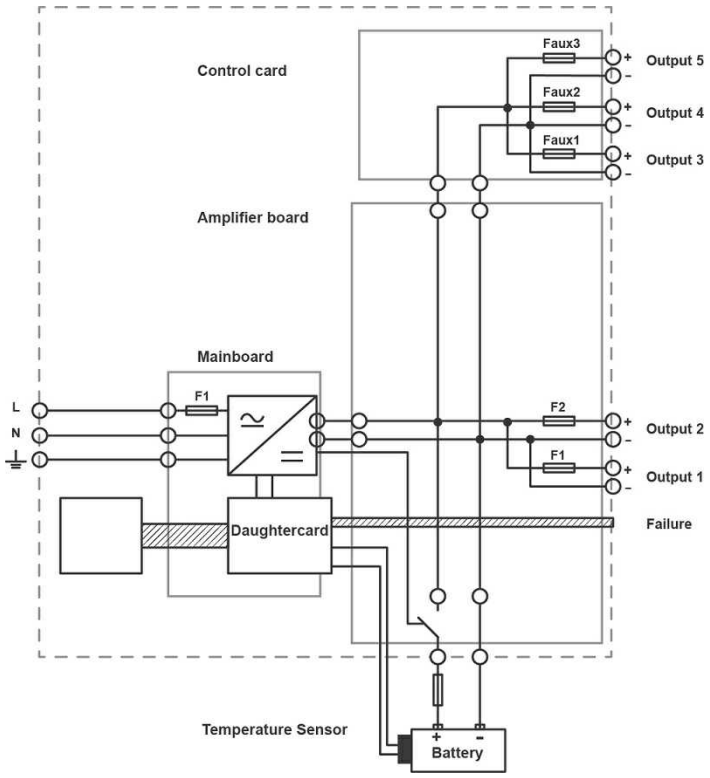
- Mains: 2.5 mm²
- Battery: 16 to 50 mm²
- Main outputs (outputs 1 to 6): 16 mm²
- Auxiliary outputs (outputs 7 to 9): 2.5 mm²
- Alarm reports (plug-in): 1.5 mm²

3.5.2.3 Installation

- Block diagram:

  To secure from the battery with a fuse with low resistance.

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- Mains:

  Use a bipolar D curve circuit breaker (4A for 24V version and 6A for 48V version) to connect the power supply to the mains circuit.

- Batteries:

  The battery temperature sensor must be placed as close to the battery as possible but doesn't need to be in contact with it. For example, it may be fixed on the battery cables by mean of the two tire wraps fitted.

- Battery wiring instructions:

  Use a bipolar isolating switch (e.g. isolator or disconnecting switch) by connecting the batteries to the supply.

  An additional fuse is also recommended to protect this circuit.

  In order to avoid any electrical damage, the cables connecting the batteries must imperatively match with the supply configuration (100 or 150A) : maximum sheath temperature, cross section, allowed current, maximum voltage.

- Operation:

  The power supply takes a resistance measurement of the battery including connections every 4 hours.

  The trigger threshold of the fault is 13 mW±10 % in 24V and 26mW±10% in 48V if the jumper is set on '75', and becomes 20mW±10% in 24V and 40mW±10% for 48V if the jumper is set on '50'.

  Exceeding this threshold is signalled as a battery fault and means that the power supply with its associated battery will not have the required back-up duration in case of mains power cut.

  To avoid initiating this fault, please take notice of the following elements:

  - Use authorized batteries.
  - Do not exceed the lengths of the table.

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- Ensure proper connections.
- An additional battery fuse will add about 1 to 2 mW.

- Wiring:

  Connect the battery wires to the terminal strip, but do not connect to the battery terminals.

  After the electrical connections are made (mains, loads and batteries).

  1. Close the upstream mains circuit-breaker.
  2. Check the load output voltage.
  3. Connect the battery terminals.

The openings provided in the cabinet must be kept free. Do not create additional openings because this can cause the device to malfunction and voids the warranty.

3.5.2.4 Troubleshooting

❖ The indicator light are not illuminated:

- Check the mains voltage
- Check the primary fuse F1 on the power and control board
- Check that the flat ribbon cable is correctly connected

❖ The output indicator light is yellow:

- Check the output fuses F1 to F6
- Check the auxiliary fuses F1 to F3

❖ The battery indicator light is yellow,

- Check that the nominal battery voltage is ok with the sytem voltage
- Check the polarity connections of each battery and on the rack battery connector
- Check the battery connections and the battery fuse connections
- Check the voltage of each battery block (>1,9V / >5,7V / >10,8V)
- Check that the battery is approved (see Pr 1.2.5)
- If the mains is present, check that the output current is <12A
- The internal battery resistor may be too high: replace the battery

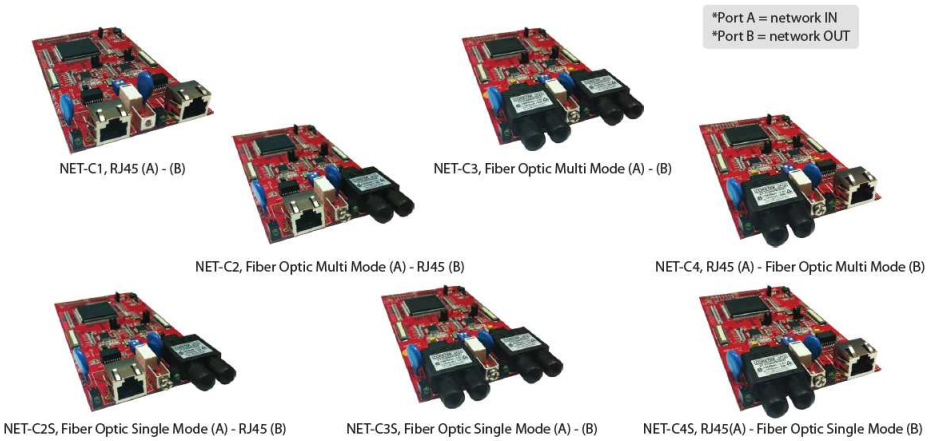
❖ The mains indicator light is yellow,

- Check the mains voltage
- Check the primary fuse F1 on the power and control board
- Check that cooling of the rack is sufficient and that the ambient temperature is < 45°C

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3.6 Optional Boards

3.6.1 Network Card



ATEÏS Net™ is a secured (monitored) audio network, developed and supplied for fast and low latency audio and data transport over a redundant copper (CAT-5) or fiber-optic network ring. ATEÏS Net™ has an open-architecture design and interfaces with remote devices such as paging consoles, audio break-in and break-out converters and room controllers, providing the best solution to medium to large-scale installations. ATEÏS Net™ secured audio network responds to PA/VA requirements as stated in EN54-16 and BS5839/8, with specific attributes for compliance in large installations.

❖ Function:

ATEÏS Net™ is able to simultaneously transport 48 audio channels(32 bit, 48 kHz sampling rate) with a latency <1ms together with the necessary control data over a CAT-5 or fiber-optic dedicated network. For LOCAL and GLOBAL system networking, optional ATEÏS Net™ networking cards can be installed into the IDA8 Controller and Slave units. Thanks to its loop architecture, the ATEÏS Net™ audio network is fully redundant. When a fault (line open or shorted) occurs on a loop segment, it will be automatically isolated without affecting the entire system functionality. ATEÏS global-net, can be a network of more than one controller(Matrix Mode and Switch Mode) and a maximum up to 31 IDA8Sxx Slave units (Matrix Mode and Switch Mode) in a local system.

As network addresses are auto negotiated, network setup is very easy. Once programmed, the system will operate independently without connecting to a PC having to be connected. 32 IDA8 system units can be a network in ATEÏS Global-Net, and each system includes one control unit connecting to 31 slave units in ATEÏS Local-Net.

The installation of NET-C1 cards (RJ45 to RJ45) are suitable with a maximum distance up to 100m between Matrix and Slave unit or Slave and Slave unit. For longer installation distances, optional NETC2, C3 or C4 can be used to extend distances with fiber-optic, up to 2 km between units in multi-mode or 20 km in single-mode.

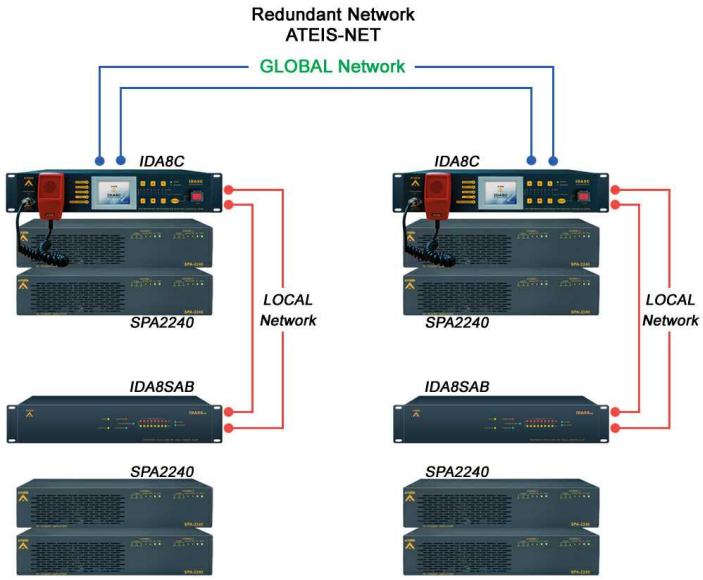
❖ Security:

In accordance with EN54-16 and BS5839/8, all IDA8 system components and peripherals on the ATEÏS Net™ secured audio network are monitored and reports stored in the IDA8C system controller. The controller monitors the status of all the equipment in the system, reports status changes and stores fault messages for recall either on the controller front-panel display or through the ATEÏS Studio PC-based software.

3.6.1.1 Technical Data

This Ethernet based network is able to simultaneously transport 48 audio channels (32 bits, 48 kHz sampling rate) with a latency < 1 msec together with the necessary control data over a CAT5 or Fiber optic dedicated network.

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❖ Controls and Indicators

- Front
  - Data running indicator
  - Net-work present indicator

❖ Interconnections

- Front
  - Two system network connections either CAT5 or Fiber-optic or a combination

❖ Technical Specifications

- Battery power supply
  - Voltage = Internal multi-power socket
  - Power consumption = 5 W
- Performance
  - Frequency response = 20 Hz ~ 22 kHz
  - Sampling rate = 32 bit / 48 kHz
  - Latency = < 0.08 ms per dode
  - Integrity assurance = Watchdog
- Center Wavelength (Fiber-optic)
  - Multi-mode = 1300 nm
  - Single-mode = 1310 nm
  - FO connector type = Straight Tip
  - FO cable baud rate = 62.5 um (Multi-mode) / 9 um (Single-mode)
- Indicators
  - LED = Network active
  - LED = Network present
- Mechanical
  - (H x W x D) = 18 x 100 x 150 mm (7/10" x 4" x 6")

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- Environmental
  - Operating temperature = -5ºC ~ 55ºC (23ºF ~ 131ºF)
  - Storage temperature = -40ºC ~ 70ºC (-40ºF ~ 158ºF)
  - Relative humidity = 15% to 90%
  - Air pressure = 600 to 1100 h Pa

3.6.2 Audio Cards

3.6.2.1 Analog Audio I/O Cards

Analog audio cards are available for local inputs or outputs in blocks of 4in or 4out configuration. The U-Input audio card is highly adjustable for sensitivity, as well as with the maximized flexibility by providing with true 48V phantom power for each channel.

- U-Input Audio Card

4 Channels of analog audio inputs
Euro-block low-voltage disconnectable connectors
Sensitivity levels: 0 ~ 66 dB (+6 dB each step)
Signal, RTO, overload indicators
+48V phantom Power
-60 to +20dB fader range for level
-50 to +20dB overload threshold
Mute and bypass signal control
Volume display for each channel
RoHS compliant

- Output Audio Card

4 Channels of analog audio inputs
Euro-block low-voltage disconnectable connectors
Signal, overload indicators
-60 to +20dB fader range for level
-20 to +20dB overload threshold
Mute and bypass signal control
Volume display for each channel
RoHS compliant

3.6.2.2 Digital Audio I/O Cards (AES/EBU)

The digital audio I/O cards allow you to go all the way to digitize, present with the maximum sound quality and transmission distance on IDA8 system. The digital cards enhance a higher capacity of input & output configuration with up to 8 channels in and 8 channels out on a single card.

- AES/EBU: Mono Input/Output & Stereo Input/Output

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○ Mono: ▪ Mono Inputs = 4 mono inputs (CH1~CH4 which always receive from Left channel) ▪ Mono Outputs = 4 mono outputs (CH1~CH4 which always send to Left channel) ○ Stereo: ▪ Stereo Inputs: 2 stereo inputs (CH1~CH2 only, CH3~CH4 unavailable) ▪ Stereo Outputs: 2 stereo outputs (CH1~CH2 only, CH3~CH4 unavailable) ○ Duplex stereo (2CH for each channel): ▪ 4 channels audio input (CH1, CH2) and 2 channels outputs of digital audio (CH3, CH4)
3 pin euro-block connectors
RTO / Overload / Signal Indicators
-20 to + 20 dB for overload threshold
-60 to + 20 dB fader range of level
Level control
Volume display for each channel
Mute and bypass control
Digital transmission can be reach 100 meter
RoHS compliant

3.6.3 Telephone Card



By linking the "Line" connector of the ECS to a telephone line, and by using a microphone and a loudspeaker, then you can use the ECS as a telephone interface.

The interface of this telephone is available by using the “Telephone Card” dedicated components, in Ateïs Studio software, which are TC transmit and TC receive.



In option, you can also connect a telephone to the "Set" connector of the ECS allowing you to have a physical interface.

The telephone line bandwidth is around 300hz – 3.3khz. It's due to its narrow bandwidth we simulate.

The sound is up to 6.6 kHz for comfortable listening. But there is a distortion resulting in a metallic sound. You can put a low-pass filer to cut above 3.5kHz, that will help.

❖ Schematic:

- Connect the direct telephone line or a line coming from a PABX central to the "Line" RJ11 connector of the ECS.
- In option, you can also connect an analog telephone to the "Set" RJ11 connector of the ECS.

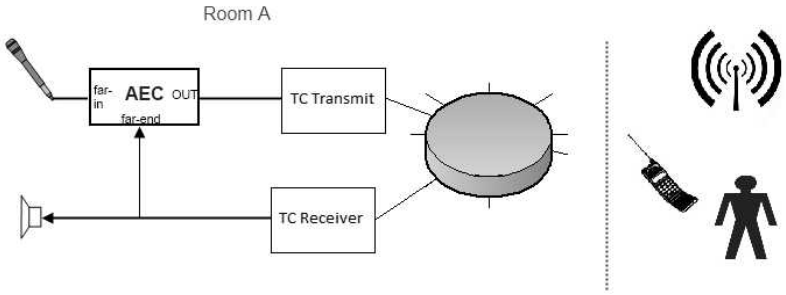
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- Connect a microphone or audio source to an input of the ECS. It will be used as telephone microphone.
- Connect a listening system (loudspeaker) to an output of the ECS. It will be used as a telephone speaker.



❖ Schematic TC + AEC

Example ECS with Telephone Card calling a Cellphone



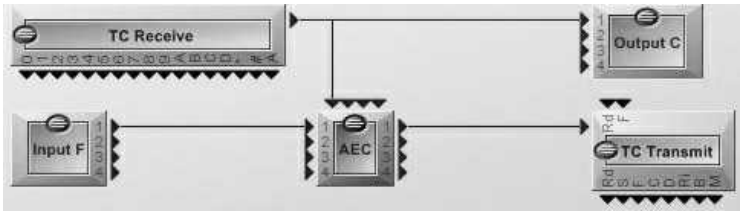
❖ Design in the ECS

Regarding the basic schematic above, here is the corresponding design which must be created with Ateïs Studio software.

The TC Transmit component is the interface between the local microphone (or audio sources) and the telephone line. Its input has to be linked to an input component where the microphone is physically connected to the ECS.

The TC Receive component is the interface between the local listening system (loudspeaker) and the telephone line. Its output has to be linked to an output component where the listening system is physically connected to the ECS.

You can use any input/output channels of the ECS.



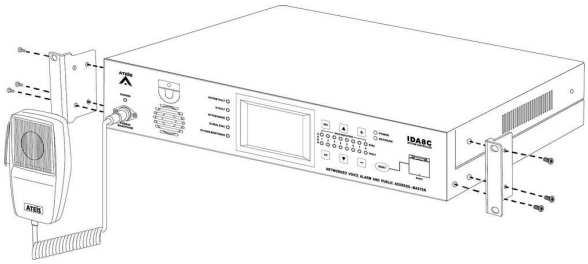
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4 Hardware Installation & Connection

4.1 Rack Mounting

Mount the IDA8C/IDA8C-SW/IDA8SAB/ IDA8SL unit in any standard 19-inch 2U audio equipment rack using the supplied mounting brackets and screws. Installing a IDA8S unit is similar to installing a IDA8C, except the IDA8S unit is installed in 19-inch 1U rack-mounting.

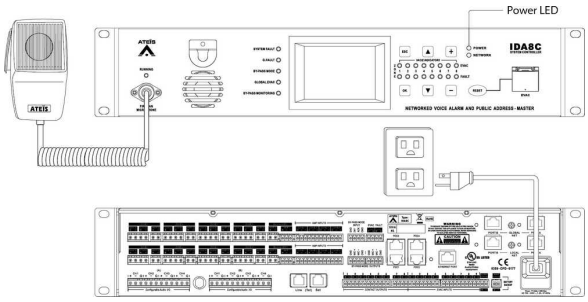
Consider leaving enough ventilation space above and below the unit. Do not mount the controller directly above the heat generating devices like power supplies or power amplifiers.



4.2 Power Supply

Use the supplied AC power cable to connect the IDA8C/IDA8C-SW/IDA8SAB/IDA8SL unit to he power outlet, and IDA8S unit by 24VDC. The Power LED on the front panel will glow green when power is applied.

If 24VDC power and AC mains power are connected at the same time, IDA8C/IDA8C-SW/IDA8SAB/IDA8SL will use AC power first, and switch to DC power if there AC mains is not present.

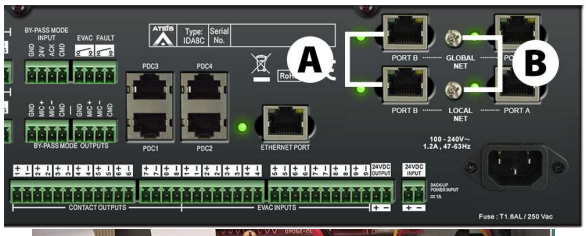


4.3 Global/Local Network Card

❖ **Rear structure of IDA8C for installing global/local network card.**

(A) Dual purpose of ports for connecting RJ45 cable and fiber-optics.

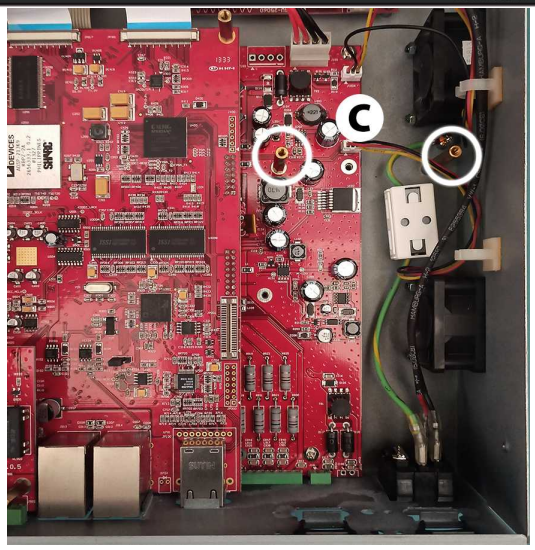
(B) Screw holes for fixing global/local network card.



❖ **Install local network card**

(C) Install copper pillars on "c" position for supporting local and global network card.

(D) Connect local network card and DSP card by flat flexible ribbon cable.

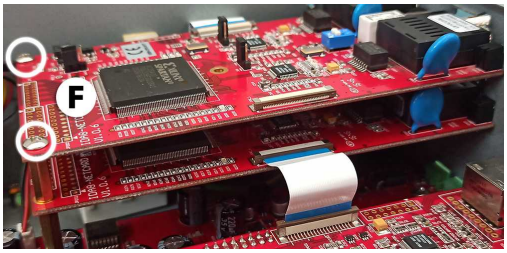


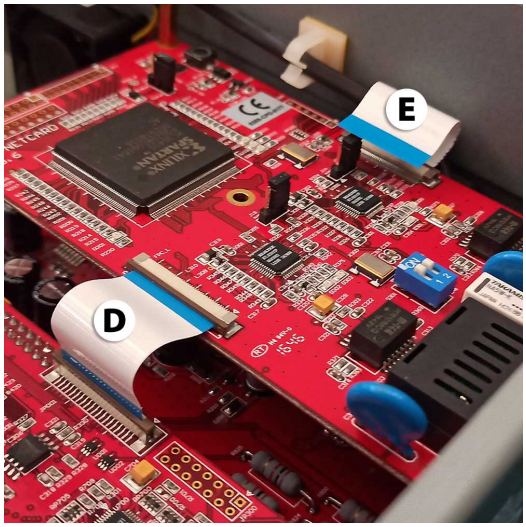
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❖ **Install global network card**

(E) Connect local network card and global network card by flat flexible ribbon cable.
*Global network card must be installed with local network card together.

(F) Tighten the screws up on copper pillars.





4.3.1 ATEIS Network Wiring

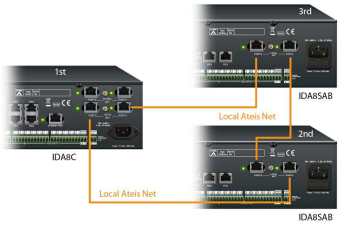
❖ One IDA8C unit (Matrix Mode and Switch Mode) and a IDA8SAB unit (Matrix Mode and Switch Mode) connect via Local ATEIS Net.



Connection example : Local Ateis Net.

❖ One IDA8C unit (Matrix Mode and Switch Mode) and 2 IDA8SAB units (Matrix Mode and Switch Mode) connect via Local ATEIS Net:

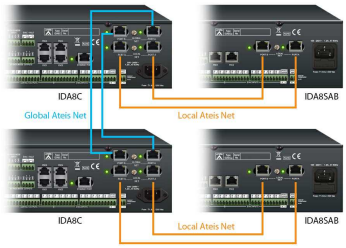
- Inside the IDA8 units, the packets travel around from A to B and B to A through wires.
- Therefore, the second slave unit is the one connected to the IDA8C's B port of Local Net.



Connection example : Local Ateis Net.

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❖ Two IDA8C master-slave systems connect with each other via Global ATEIS Net.



Connection example : Global / Local Ateis Net.

❖ More than two IDA8C units (Matrix Mode and Switch Mode) connect together via Local ATEIS Net.

- In case users have extra need with only one IDA8C master unit, more than two master units shall be linked up together via Local ATEIS Net, providing more capacity of paging zones and remote device.



Connection example: IDA8C units via Local Ateis Net.

4.3.2 Protection of ATEIS network

When a network fault has been detected on Ateis-Net, the Ateis-Net will operated a protection which automatically shuts down the IDA8 which has been detected with the network fault.

1. No Response from Network Communication:
   - Issue: The network communication between IDA8 units has failed and no response, then displayed as blacklist on Ateis-Net and in fault list too. To know more about the fault, see Net Blacklist chapter.
   - Troubleshooting: Please check whether the cable connection is correct and also collect the system log, then report this problem to ATEIS dealer.
2. Detecting Dangerous Network Packed on Ateis-Net:
   - Issue: When detecting this kind of problem, the Port A/Port B of Ateis-Net will auto shut down, and therefore no communication between the port, and also display fault [Local/Global Ateis-Net PA/PB Shutdown] and the [NETWORK] LED on front panel will light up in a frequency as flash twice and pause once. To know more about the fault, see Global Ateis-Net PA/PB Shutdown chapter.
   - Troubleshooting: Please reboot the IDA8 unit.

When one of the Port A/Port B on IDA8 unit has been auto shut down, this will also cause the Port A/Port B which is connected to the last/next IDA8 unit shut down as well, therefore, please make sure to reboot the IDA8 units along with the connected Port A/Port B B on the last/next IDA8 IDA8 units.

If multiple ports has been shut down, we recommend to reboot the IDA8 system. Please reboot the system simultaneously. If the IDA8 system is not located in the same place, please plug out the cable of Ateis-Net Port A/B first, and reboot the IDA8 unit one by one, then connect the Ateis-Net cable one by one. If this way still cannot trouble shoot your

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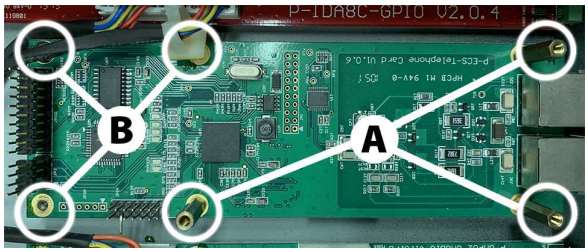
problem, please change the Ateis-Net cable or replace a new IDA8 unit, or contact ATEIS dealer for further assistance.

3. IDA8 Constantly Auto Reboot:
   - Issue: When this problem happened, it will cause failed disconnection with the system audio. Therefore, when the system has been reboot over six times in five minutes, it will auto shut down the Ateis-Net, and report [Local/global Ateis Net is broken] fault, then the LED on front panel will continually flash as well. To know more about the fault, see Global_Ateis_Net_is broken chapter.

- Troubleshooting:
  1. Check whether power supply, power cord, and system unit are function normally.
  2. If the method above still cannot trouble shoot your problem, please plug out the Ateis-Net Port A and Port B, and reboot the IDA8 unit, then put it in standby mode for five minutes, then plug in the Ateis-Net cable (Port A/Port B).

4.4 Telephone Card

❖ The telephone card is easy to install. Tight the screws up, install the copper pillars and put the "Zone Broad" on it.



(A) Put three copper pillars on the card for supporting the structure.

(B) Tighten 3 screws up for fixing telephone card.

4.5 Ampllifier Configuration

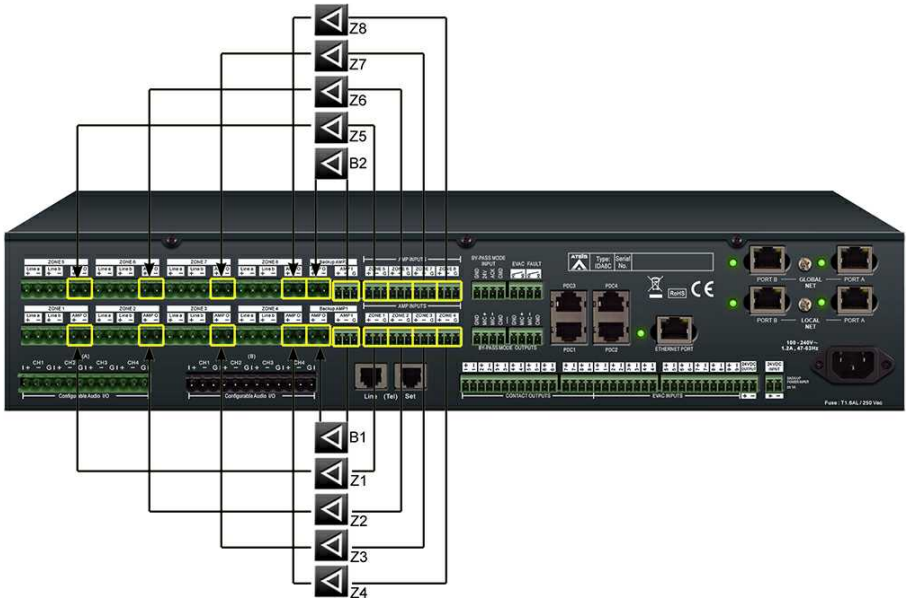
4.5.1 Basic Amplifier Connection

The figure below shows the basic setup of the normal amplifier and backup amplifier with IDA8C.

⚠We recommend that the IDA8 unit connects to the floating output amplifier.
- E.g. built-in transformer output for driving 70V and 100V loudspeakers such as BPA and DPA.
- E.g. the amplifier module's power supply and ground is floating ground from IDA8 unit.

If the IDA8 unit is connecting to non-floating output amplifier, please disable the leakage monitor function on Ateis Studio software > Monitoring > Global Setting > Enable Leakage.

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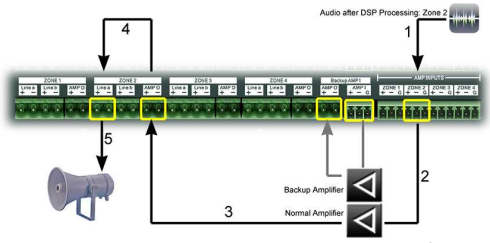


Basic Amplifier Connection

4.5.2 Amplifier Backup

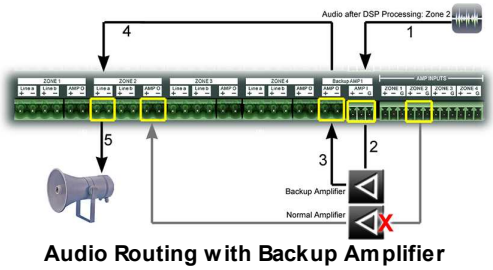
- Basic Concept:

In most of cases, audio goes through the normal amplifier. Once the normal amplifier fails, the IDA8 will switch to the backup amplifier to ensure that the system is still functioning. Meanwhile, the technician should analyze the problem, which in this case is, to replace the non-working amplifier with the functioning amplifier. The figure below shows the case of audio routing using a normal amplifier. The number in the figure below is the sequence of audio path.



Audio Routing without Backup Amplifier

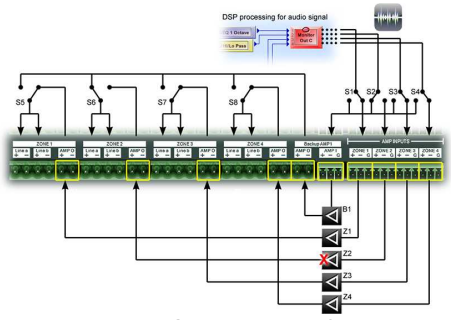
The figure below shows the amplifier backup in the case of audio routing. When an error with the normal amplifier is detected by IDA8C, the IDA8C will change the audio path from the normal amplifier to the backup amplifier and generate a fault to warn the user that there was an amplifier fault detected by the system.



Audio Routing with Backup Amplifier

- Backup Sharing Amplifier:

If one of the normal amplifiers fail, one backup amplifier can take over immediately. In the meantime, the unit will quickly switch from the failed amplifier. Based on this concept, the IDA8 system provides a flexible mechanism for amplifier backup. One backup amplifier can service multiple zones. The preview figure demonstrates how a backup amplifier works when a normal amplifier connected to Zone 2 fails. The backup amplifier can serve Zone 1 to Zone 4.



Backup Sharing Amplifier

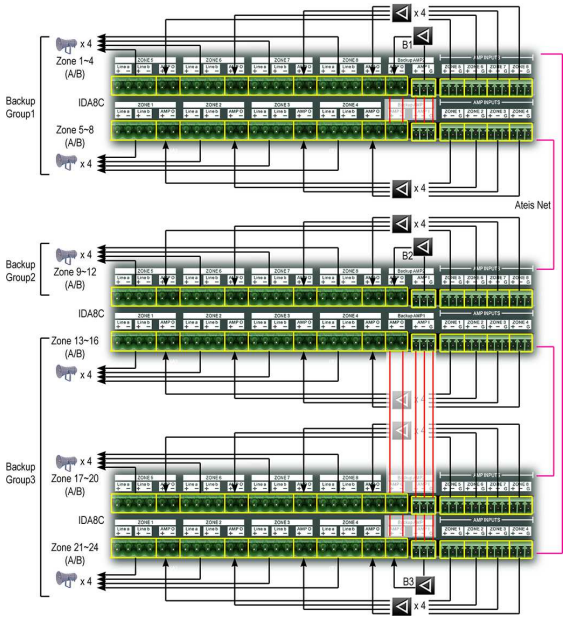
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❖ Advance Backup Amplifier Setup:

An Ateis Net system consists of one IDA8C and two IDA8S's. There are 24 zones in the system divided into three backup amplifier groups. For each group, there is a backup amplifier which becomes redundant if any of the normal amplifiers in the group fail. To group zones, you need to wire AMP I and AMP O between the backup amplifier connectors. Red lines show the wire connections to group zones.

There are three backup amplifier groups in the above figure:

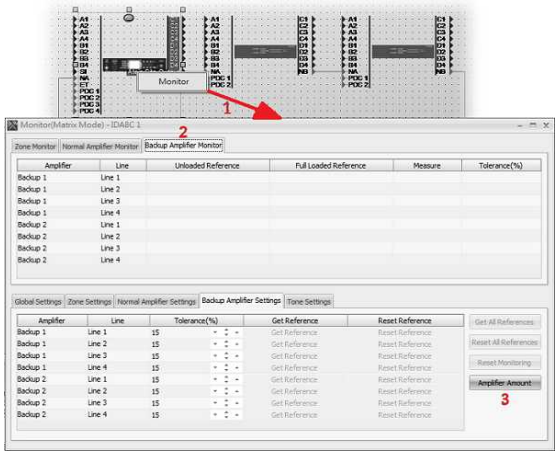
- Backup Group1: Amplifier B1 serves Zone1 ~ Zone8.
- Backup Group2: Amplifier B2 serves Zone9 ~ Zone12.
- Backup Group3: Amplifier B3 serves Zone 13 ~ zone24.



Advance Backup Amplifier Setup

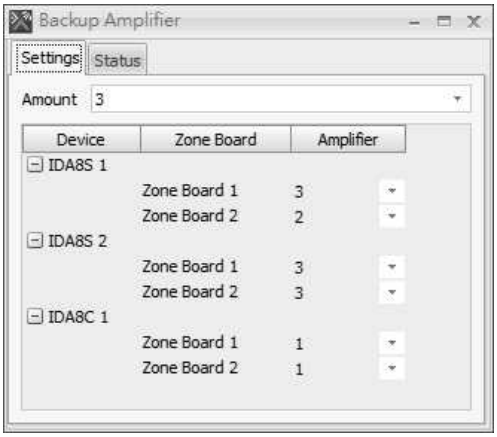
❖ Software settings:

1. Right click on IDA8C1 block in devices window, then click [Monitor] option to open [Monitor(Matrix Mode) - IDA8C1] window.
2. Select [Backup Amplifier Monitor].
3. Click [Amplifier Amount] button.



❖ The picture on the right shows the setting window for backup configuration in the Advance Backup Amplifier Setup:

- Amount: The number of backup amplifiers in system. The list content of the combo box in an amplifier depends on this value. For example, if Amount = 3, then the list content should be none (zero), 1, 2, 3.
- Field [Device] of Grid: List the devices in the same Ateis network.
- Field [Zone Board] of Grid: List the zone boards of the device. Zone Board1 means Zone1 to Zone4, Zone board2 means Zone5 to Zone8.
- Field [Amplifier] of Grid: Set the group without zones. In the above figure, IDA8S1 Zone board1(Zone1~Zone4 of IDA8S1), IDA8S2 Zone Board1(Zone1~4 of IDA8S2), IDA8S2 Zone Board2(zone 5~8 of IDA8S2) are the same value (i.e. those zones are



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the same group and use the same amplifier for backup).

4.6 Audio Card(s) Connection

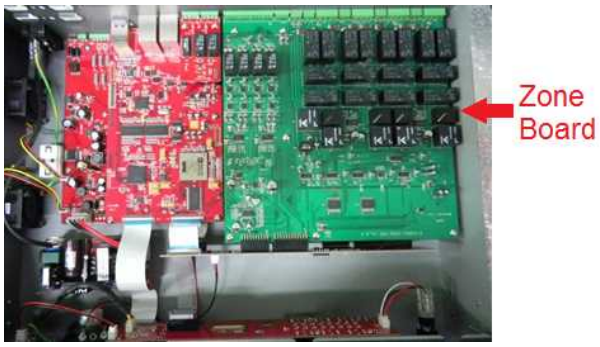
4.6.1 Install Audio Card in IDA8C/IDA8SAB/IDA8C-SW/IDA8SAB-SW

When adding audio I/O expansion by installing additional cards on IDA8C, IDA8SAB, IDA8C-SW or IDA8SAB-SW, please see the following steps as below.

The audio card installation of IDA8C, IDA8SAB, IDA8C-SW and IDA8SAB-SW unit is identical.

Please note the following example is using IDA8C controller.

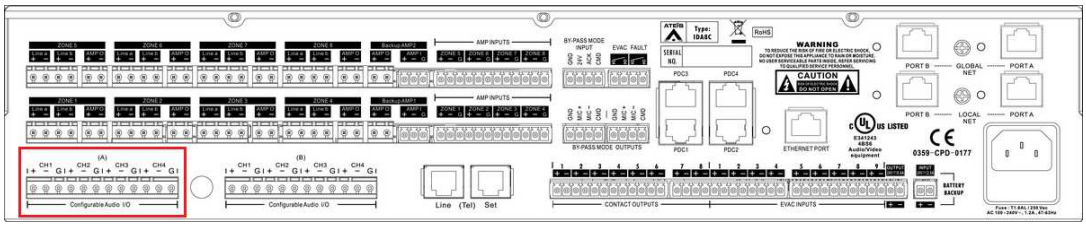
Firstly, remove the zone board of IDA8C before installs the audio card due to the audio bard slot is located underneath the zone board.



4.6.1.1 Install 1 audio card

❖ **Example 1 - install an audio card**

Always install the audio card on **Slot-A** first. See the following items are required for installation.



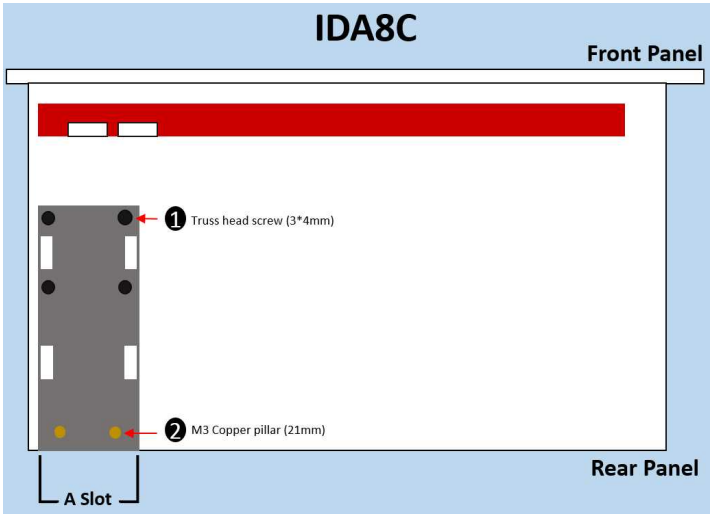
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❖ Card Installation on Slot-A

- Truss head screw (3*4mm)
- Copper pillar (21mm)

❖ How-to

1) Lock the 4 truss head screws on IDA8C.
2) Lock the 2 copper pillars on IDA8C.

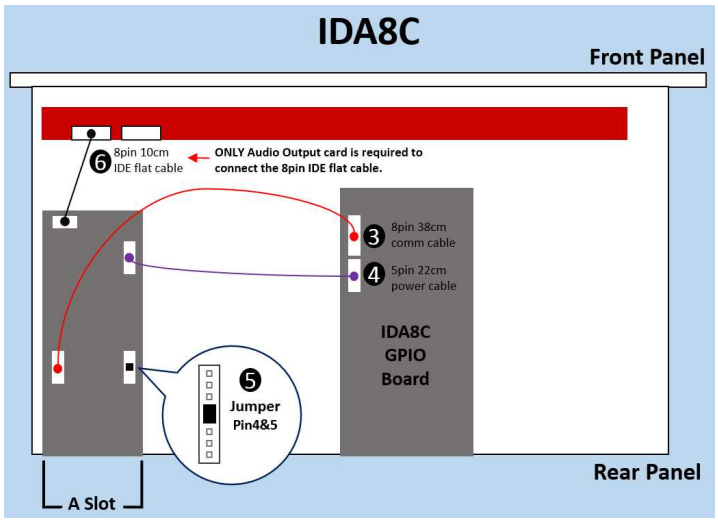


❖ Card Installation on Slot-A

- 8pin comm cable (38cm)
- 5pin power cable (22cm)
- Jumper component
- 8pin flat cable (Output Card only)

❖ How-to

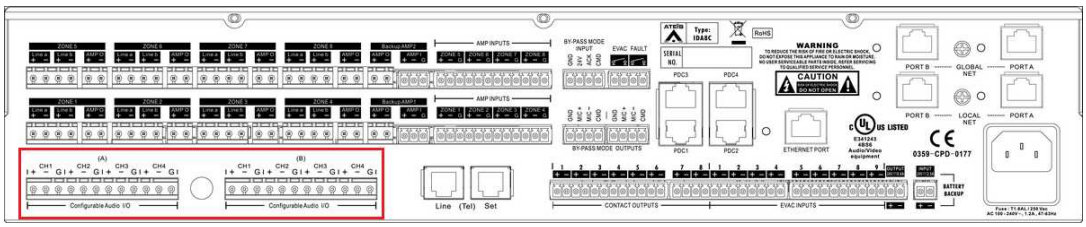
3) Connect the 8pin comm cable (38cm) between the GPIO board and audio card.
4) Connect the 5pin power cable (22cm) between the GPIO board and audio card.
5) Install the jumper on audio card.
6) Connect the 8pin flat cable between the audio bridge I/O card and audio card. Please note **ONLY** the Audio Output card is required to connect the 8pin IDE flat cable.



4.6.1.2 Install 2 audio cards

❖ Example 2 - install two audio cards

Install the audio card on Slot-A first, then Slot-B. See the following items are required for installation.



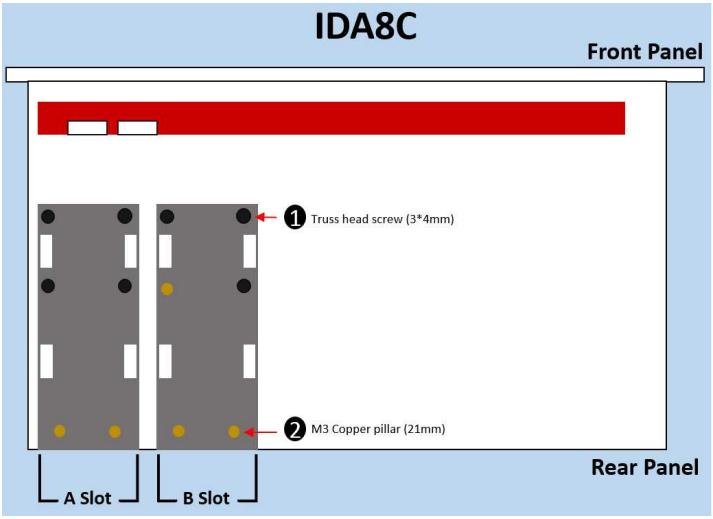
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❖ **Card Installation on Slot-A & B**

- Truss head screw (3*4mm)
- Copper pillar (21mm)

❖ **How-to**

1) Lock the 7 truss head screws on IDA8C.
2) Lock the 5 copper pillars on IDA8C.

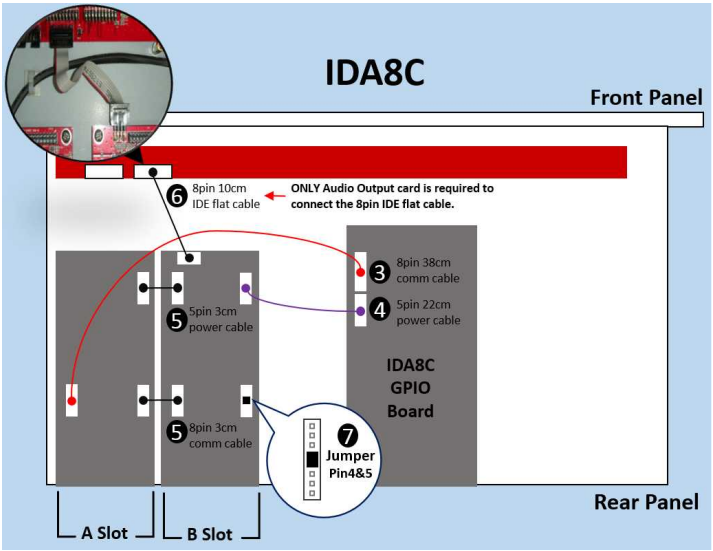


❖ **Card Installation on Slot-A & B**

- 8pin comm cable (38cm)
- 5pin power cable (22cm)
- 5pin power cable (3cm)
- 8pin comm cable (3cm)
- 8pin flat cable(s) (Output Card only)
- Jumper component

❖ **How-to**

3) Connect the 8pin comm cable (38cm) between the GPIO board and audio card.
4) Connect the 5pin power cable (22cm) between the GPIO board and audio card.
5) Use 5pin power cable (3cm) and 8pin comm cable (3cm) to link the audio card on A Slot and B slot.
6) Connect the 8pin flat cable(s) between the audio bridge I/O card and audio card(s). Please note **ONLY** the Audio Output card is required to connect the 8pin IDE flat cable.
7) Install the jumper on audio card.



4.6.2 Install Audio Card in IDA8S

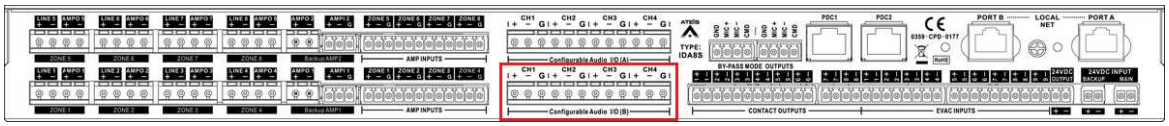
When adding audio I/O expansion by installing additional cards on IDA8S, please see the following steps as below.

4.6.2.1 Install 1 audio card

❖ **Example 1 - install an audio card**

Always install the audio card on **Slot-B** first. See the following items are required for installation.

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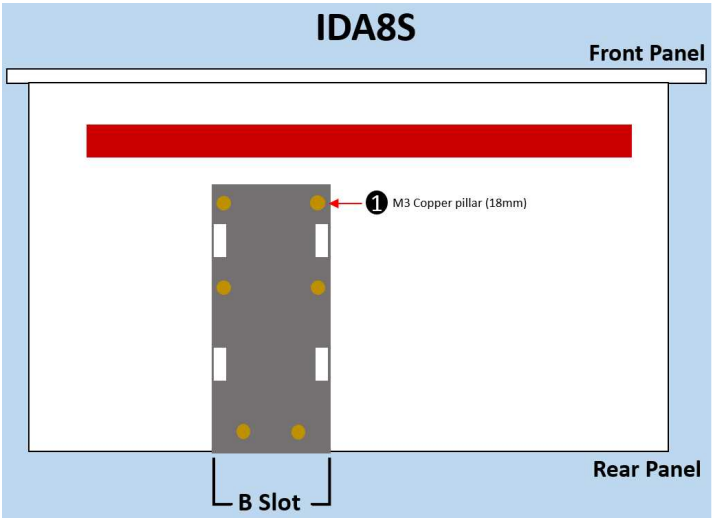


❖ **Card Installation on Slot-B**

- Copper pillar (18mm)

❖ **How-to**

1) Lock the 6 copper pillars on IDA8S.

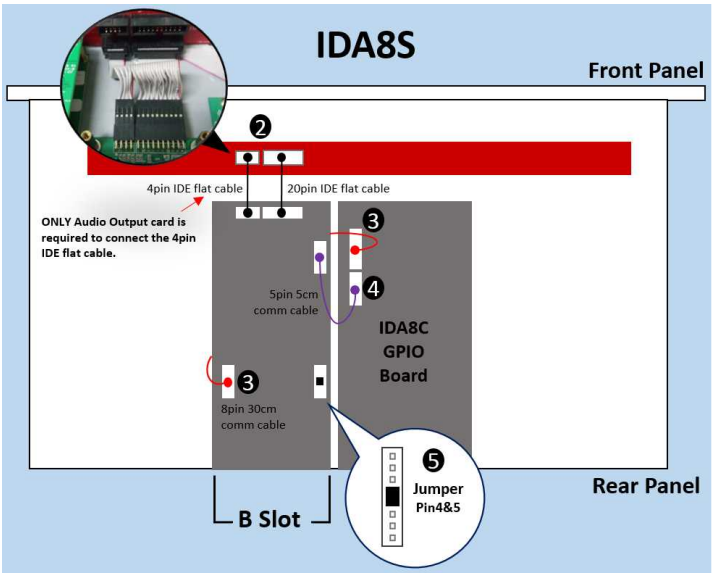


❖ **Card Installation on Slot-B**

- 8pin comm cable (30cm)
- 5pin power cable (5cm)
- 20pin flat cable & 4pin flat cable
- Jumper component

❖ **How-to**

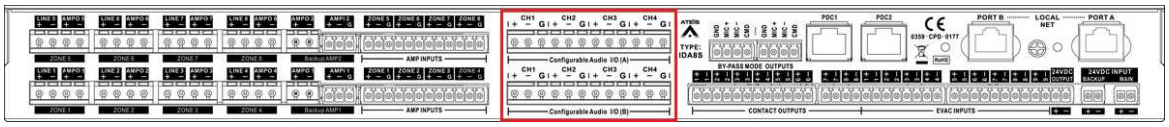
2) Connect the 2 IDE flat cables between the audio bridge I/O card and audio card. Please note **ONLY** the Audio Output card is required to connect the 4pin IDE flat cable.
3) Connect the 8pin comm cable (30cm) between the GPIO board and audio card.
4) Connect the 5pin power cable (5cm) between the GPIO board and audio card.
5) Install the jumper on audio card.



4.6.2.2 Install 2 audio cards

❖ **Example 2 - install two audio cards**

Install the audio card on Slot-B first, then Slot-A. See the following items are required for installation.



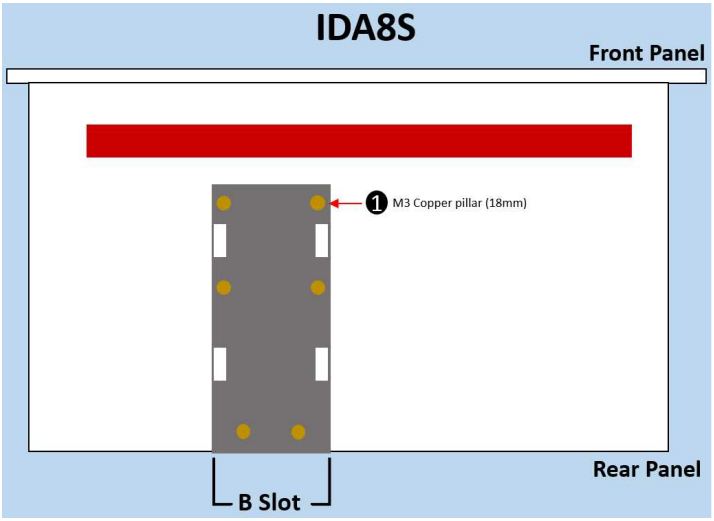
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❖ Card Installation on Slot-B

- Copper pillar (18mm)

❖ How-to

1) Lock the 6 copper pillars on IDA8S (B Slot).

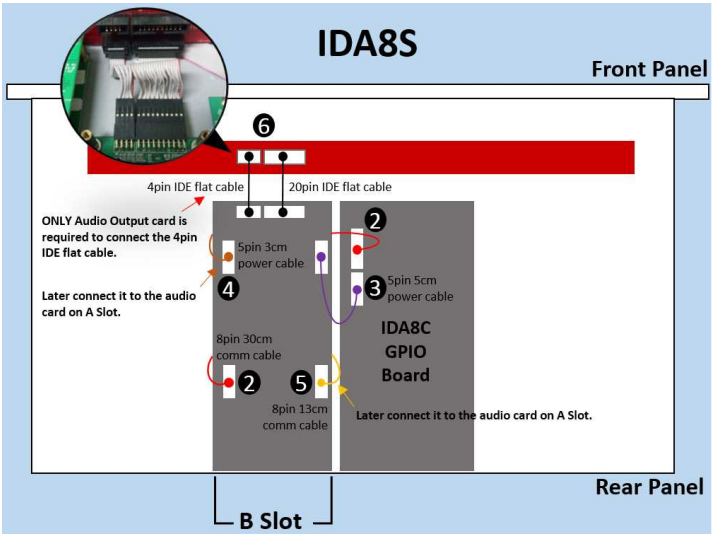


❖ Card Installation on Slot-B

- 8pin comm cable (30cm)
- 5pin power cable (5cm)
- 5pin power cable (3cm)
- 8pin comm cable (13cm)
- 20pin flat cable & 4pin flat cable

❖ How-to

2) Connect the 8pin comm cable (30cm) between the GPIO board and audio card.
3) Connect the 5pin power cable (5cm) between the GPIO board and audio card.
4) Connect the 5pin power cable (3cm) located at B Slot, and later connect it to the audio card on A Slot.
5) Connect the 8pin comm cable (13cm) located at B Slot, and later connect it to the audio card on A Slot.
6) Connect the 2 IDE flat cables between the audio bridge I/O card and audio card. Please note **ONLY** the Audio Output card is required to connect the 4pin IDE flat cable.



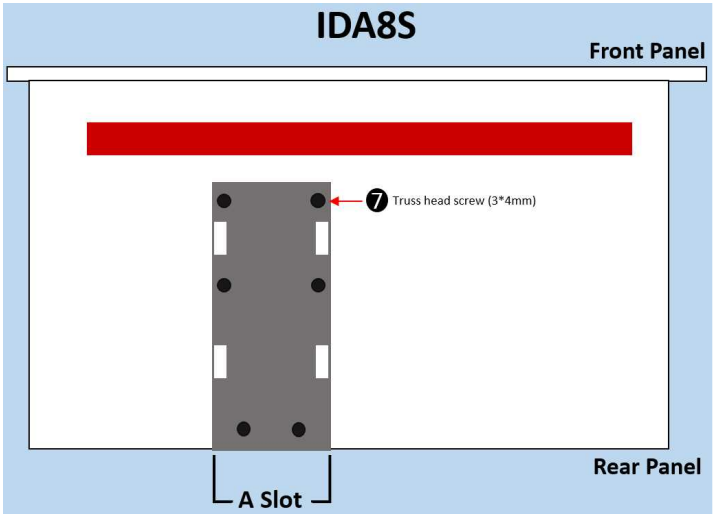
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❖ **Card Installation on Slot-A**

- Truss head screw (3*4mm)

❖ **How-to**

7) Lock the 6 truss head screws on IDA8S (A Slot).

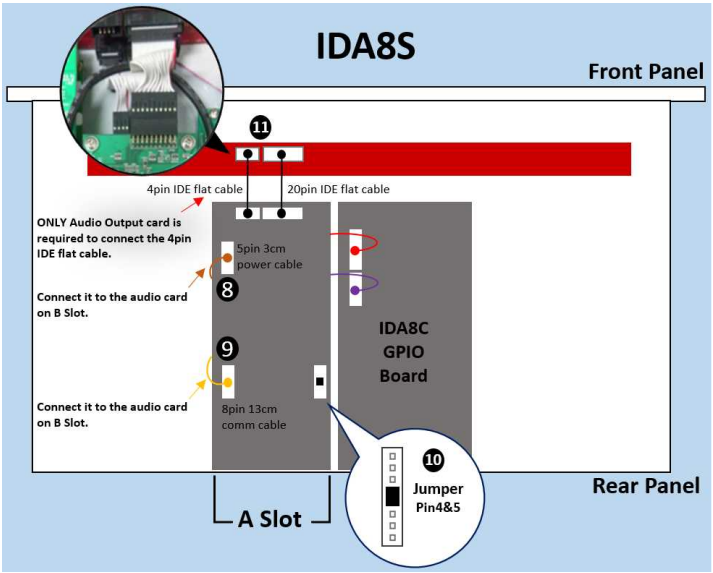


❖ **Card Installation on Slot-A**

- 5pin power cable (3cm)
- 8pin comm cable (13cm)
- Jumper component
- 20pin flat cable & 4pin flat cable

❖ **How-to**

8) Connect the 5pin power cable (3cm) located at B Slot, and later connect it to the audio card on A Slot.
9) Connect the 8pin comm cable (13cm) located at B Slot, and later connect it to the audio card on A Slot.
10) Install the jumper on audio card.
11) Connect the 2 IDE flat cables between the audio bridge I/O card and audio card. Please note **ONLY** the Audio Output card is required to connect the 4pin IDE flat cable.



4.7 Bypass Mode

The IDA8C/S provides a safe mechanism for paging when the microchip inside the device is not working. This is called Bypass Mode Paging. When the system is in Bypass Mode Paging, the paging source through the normal amplifier is directed without DSP component processing, and the backup amplifier cannot work due to the micro-controller crash.

❖ Sources of Bypass Mode Paging:

There are two source as input of bypass mode paging:

- Fireman microphone:

  A Fireman microphone is a microphone with a button which can be plugged into the front panel of the IDA8. When the system is under Bypass Mode Paging, press the button to start paging and release button to end paging.

- Audio coming from PDC1:

  The IDA8C allows you to use the PDC1 port as the source of bypass paging. It needs a button to start paging. The by-pass mode input contact can connect to a button for triggering

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Bypass Mode Paging.

The Fireman microphone has a higher priority than PDC1 source.

❖ Condition of Bypass Mode Switching:

There are two ways to switch the system state to Bypass Mode Paging:

- Hardware monitoring:

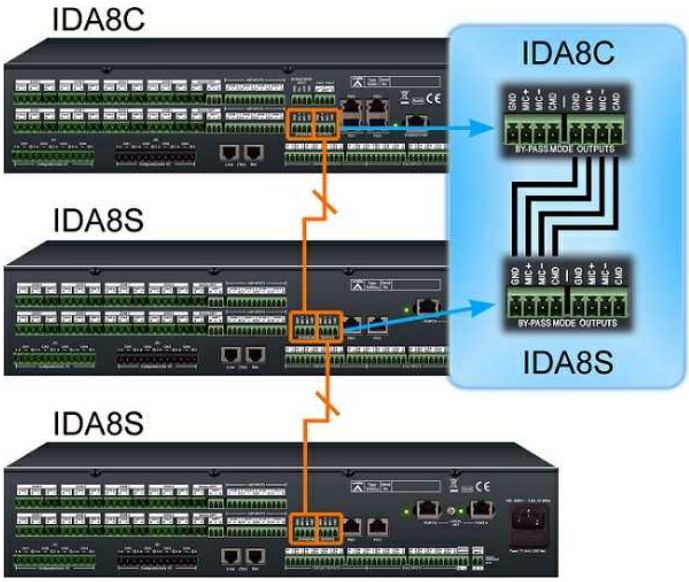
  In IDA8 devices, there are hardware monitored mechanisms to detect a micro controller crash. The system switches to Bypass mode paging if a micro controller crash is detected.

- Bypass mode input contact:

  Connect the pin CMD and pin GND of the bypass-mode input to a button. This input contact can trigger Bypass Mode Paging.

❖ Cascade:

If the application uses multiple IDA8s and connects using the fiber-optic as a transmitting media for Ateis Net, the additional wiring for Bypass Mode Paging cascade must be used. See the picture below:



4.8 Volume Control Remote Override

Volume override relay contacts shall be provided for each zone separately for overriding local loudspeaker volume controls. The VCT25R Volume Control Remote supports (2-wire, 3-wire and dual amplifier sound restoration i.e. standard 24V). Upon a call or an activated trigger input, these contacts shall be activated for the appropriate 8 zones of IDA8 controller.

VCT25R is an volume control device (25W/80W) with 10-step attenuation separately. Volume restoration levels can be pre-set, decreasing in 3dB steps (either -3dB or -6dB) to an OFF (0dB) with non-stop selector giving a smooth variation in output level. Providing volume control with a wide frequency response of 40Hz - 20 kHz. The paging levels can be restored and be adjusted to suit the environment like a noisy warehouse or a quiet office.

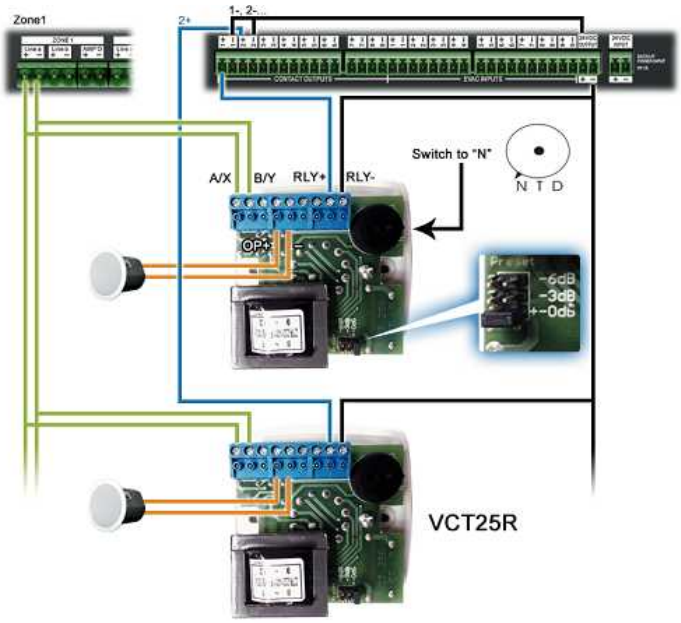
❖ Wiring:

The figure below shows the "2-wire" volume restoration of connecting the VCT25R Volume Control Remote on IDA8 system.

It supports up to maximum 8 x VCT25R devices to connect to 1x IDA8 controller.

Please note that the power consumption for running **1**x relay is 8.3mA @24Vdc.

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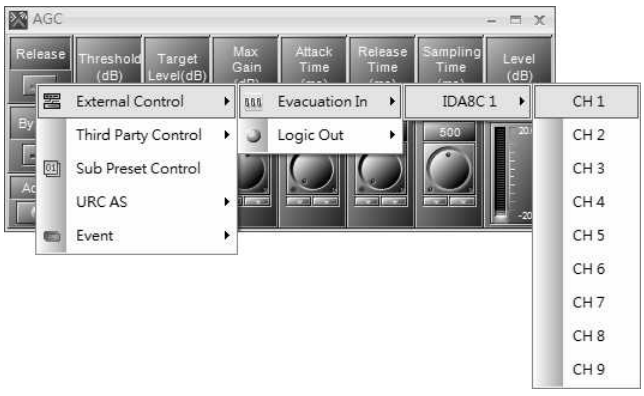


- 2-wire relay controlled restoration:
  1. Set function selector to "N"
  2. Pre-set restoration sound level (1=0 ,2=-3 ,3=-6dB).
  3. Connect amplifier output to "A" or X" and "B" or "Y", 24 Vdc to " - RLY+" as shown on the diagram.

4.9 Evacuation Input

The IDA8 processors have the evacuation inputs that allow the monitoring of external contacts. To configure the evacuation inputs, see the steps as below.

1. Assign an element to an evacuation input control:



2. Use Evacuation Input components.
3. By using the Evacuation Input component, you can control other logic components. The logic signal is coming from the Evacuation Input component and is going to any other input pins of the logic component as you choose. see Evacuation Input component chapter for details.

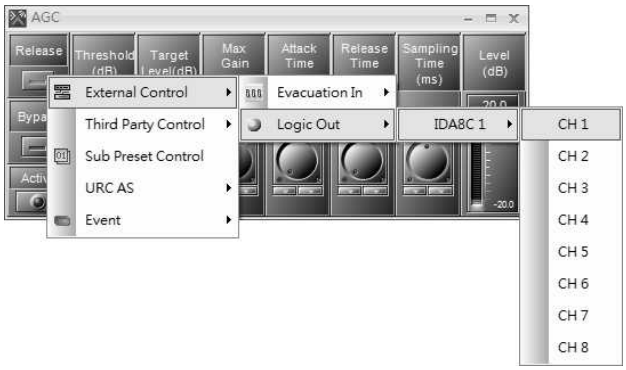
They can be used in the UGA mode, triggered by a change of the voltage polarization. To set this option,please use the Evacuation Input component, see Evacuation_Input_component chapter for details

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4.10 Contact Output

The IDA8C/S processor has the logic output channels for closing/opening a circuit of an external device. There are two ways to configure it, see the steps as below,

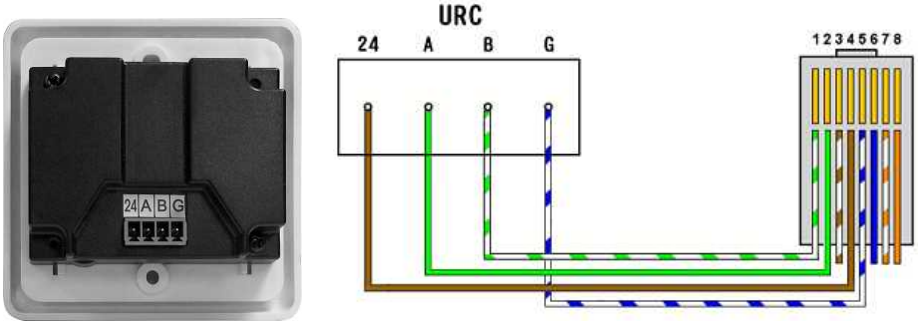
1. Assign an element to the evacuation output control.



2. Use the Logic Out component. By using the Logic Out component, you can output a signal coming from any logic component, see Logic Out component chapter for details.

4.11 URC-150/URC-150AS Wiring Connection

Please connect the URC-150AS using the 8-pin STP CAT5/6 cable with metal shielded connector to the PPM JB junction box. Connect with this 4 pair of pins to the corresponds 4 pairs of pin (24 / A / B / G) on the rear side of URC-150AS. See the picture below,



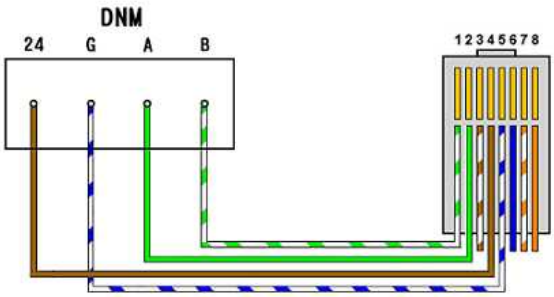
Pin1	RS-485 B
Pin2	RS-485 A
Pin3	Line in -
Pin4	24VDC
Pin5	Ground
Pin6	Line in +
Pin7	Line out -
Pin8	Line out +

4.12 DNM-485 Wiring Connection

Before the DNM-485 is connected with a PDC port, please connect the DNM-485 using the 8-pin STP CAT5/6 cable with metal shielded connector to the PPM JB junction box. Connect with this 4 pair of pins to the corresponds 4 pairs of pin (24 / G / A / B) on DNM-485.

See the picture below, connect Pin-1 to the B-pin on DNM-485, and so forth.

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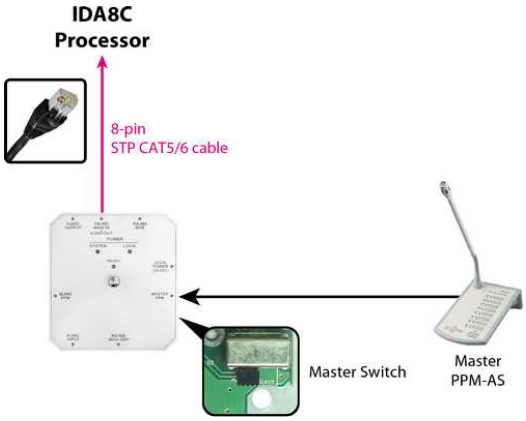
4.13 Connection with PPM JB Junction Box

To connect one or several remote devices such as PPM-AS/CD-8AS/CD-16AS/DNM-485 on IDA8C, they require to add an external power supply via PPM JB junction box (JB).

For the first three remote devices and/or the first 300m of cable run, the power can be delivered by IDA8C. If the distance between IDA8C and PPM JB is more than 300m, the PPM JB requires to add an external power supply.

4.13.1 Connect with One Device

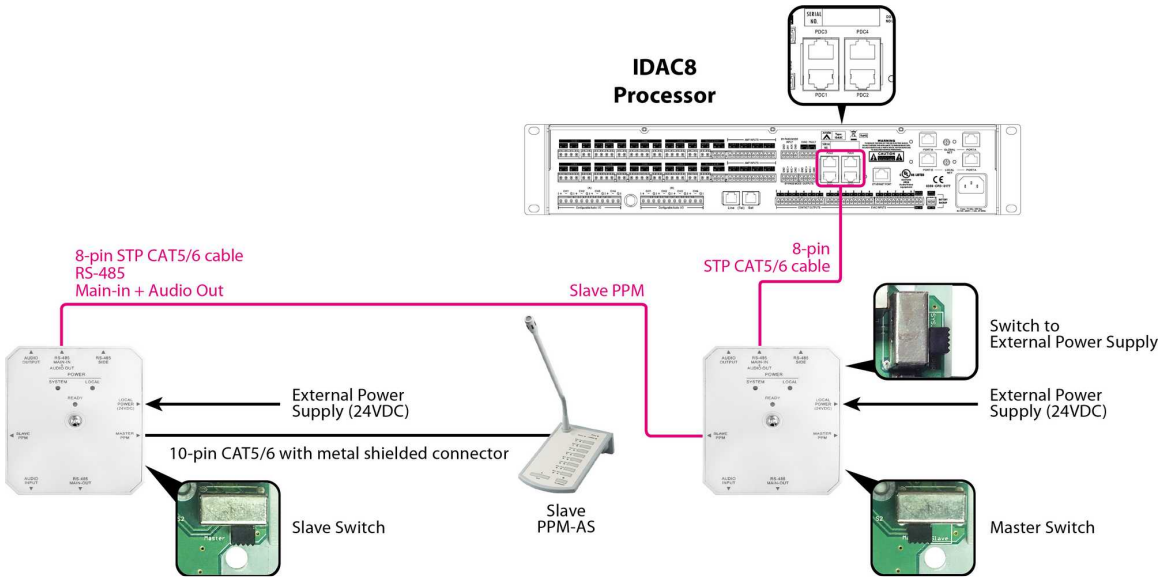
1. Connect the PPM JB junction box to IDA8C processor via 8-pin STP CAT5/6 cable.
2. Connect the PPM-AS to PPM JB junction box via 10-pin CAT5/6 with metal shielded connector.
3. Switch to [MASTER] switch on PPM JB junction box.



❖ Connect one PPM/CD8-AS/CD16-AS device to multiple PPM JB junction boxes in longer distance.

1. Connect the PPM JB to IDA8C processor via 8-pin STP CAT5/6 cable.
2. Connect the PPM-AS to PPM JB via 10-pin CAT5/6 with metal shielded connector.
3. Switch to [MASTER] switch on PPM JB which is connected to the PPM-AS, and switch to [SLAVE] switch on the rest of PPM JB.
4. If using the additional power supply, switch the [Power Switch] selection to the [External Power].

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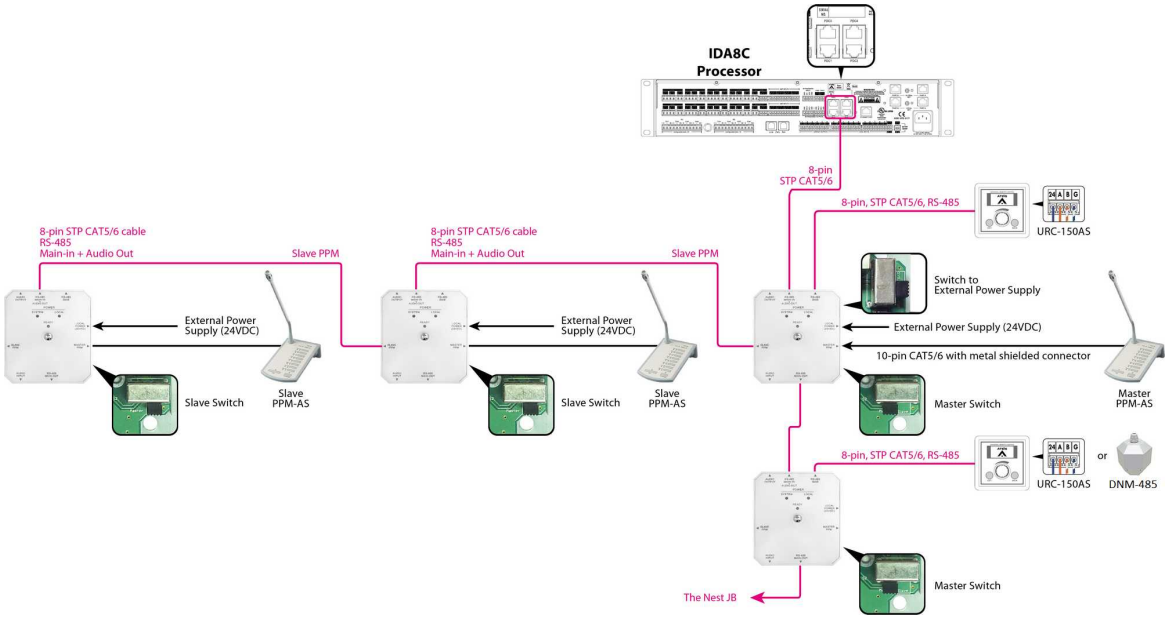
See Topology of Master & Slave Switch to know the topology of Master & Slave Switch on PPM JB.

4.13.2 Cascade with Multiple Devices

❖ Cascade with multiple PPM-AS/CD-8AS/CD-16AS/URC-150AS/DNM-485 devices:

To know the 8-pin STP CAT5/6 pinout using on URC-150AS, see 8 Pin RJ-48 / 10 Pin JR-45 for details.

Up to ten PPM-AS units can be connected via PPM JB junction boxes on one IDA8.



See DNM-485 Wring Connection to know the wiring details by using the 8-pin CAT5/6 cable to the corresponds 4-pin connection on DNM-485.

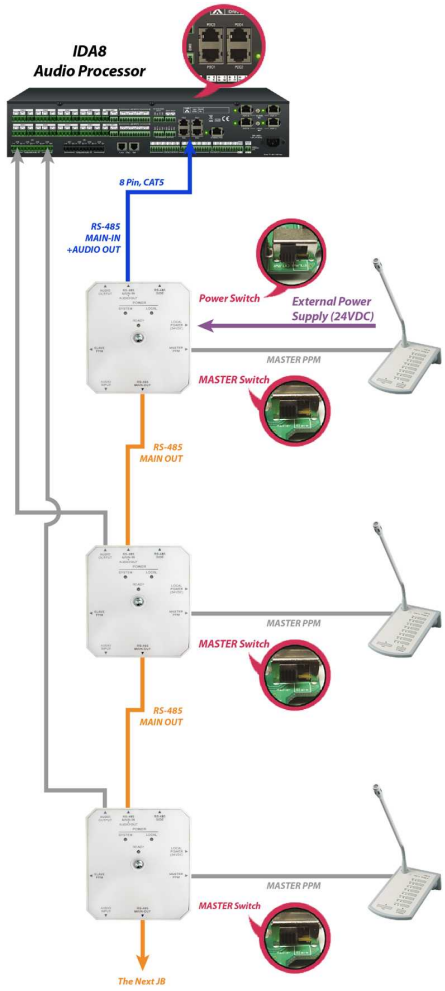
See URC-150AS Wring Connection to know the wiring details by using the 8-pin CAT5/6 cable to the corresponds 4-pin connection on URC-150AS.

See Topology of Master & Slave Switch to know the topology of Master & Slave Switch on PPM JB.

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4.13.3 Parallel with Multiple Devices

❖ The Parallel Mode of PPM-AS cables wiring allows each PPM-AS to connect to individual PPM JB junction box to paging, operate separately. See the wiring example below.



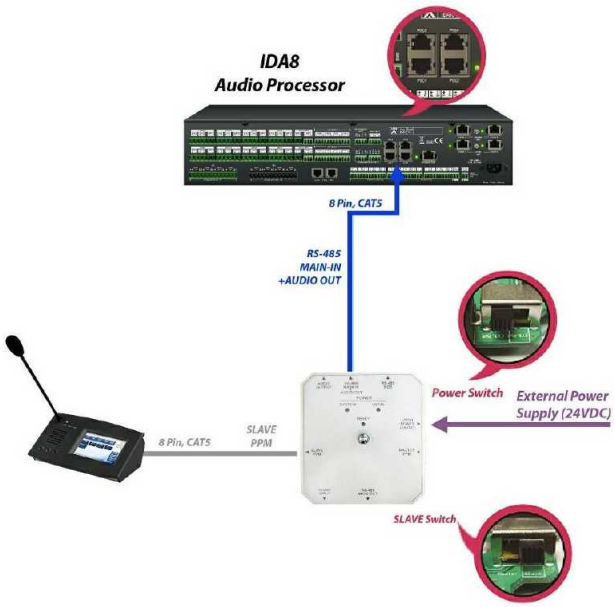
4.13.4 Connect with PSS-AS

When users intend to operate the PSS-AS device on IDA8C processor with a remote length, please use the PPM JB junction box for transmitting audio and external power supply. See the wiring example below.

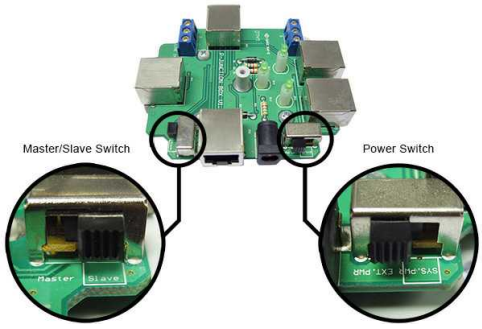
- Connection with a distance of 300M:

  1. Connect to the PDC port of IDA8 on [RS-485 MAIN-IN + AUDIO OUT], see the blue line in [Picture 1].
  2. Connect to the PSS-AS device on [SLAVE PPM] port], see the gray line in [Picture].
  3. Switch the power selection to [EXT PWR] on the [Power Switch].
  4. Remember to switch to [Slave] on Master/Slave Switch correctly, otherwise the PSS-AS cannot be identified in Ateis Studio software. Please see [Picture 2].

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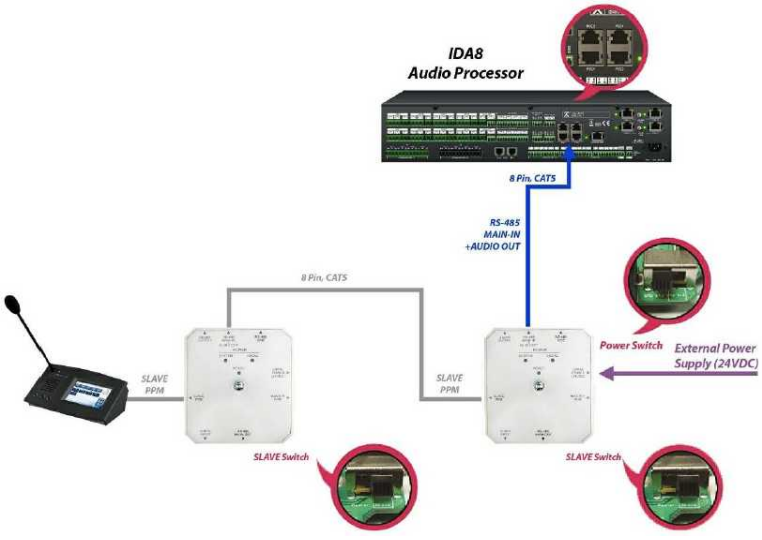
[Picture 1]



[Picture 2]

- Connection with a distance of 600M:

1. Connect to the PDC port of IDA8 on [RS-485 MAIN-IN + AUDIO OUT], see the blue line in [Picture 3].
2. Connect the next PPM JB junction box using the "SLAVE PPM" port with 8-pin CAT5 cable, see the gray line in [Picture 3].
3. Connect to the PSS-AS device on [SLAVE PPM] port of the next PPM JB.
4. Switch the power selection to [EXT PWR] on the [Power Switch].
5. Remember to switch to [Slave] on Master/Slave Switch correctly, otherwise the PSS-AS cannot be identified in Ateis Studio software.

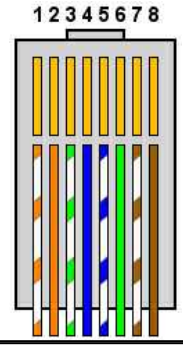


[Picture 3]

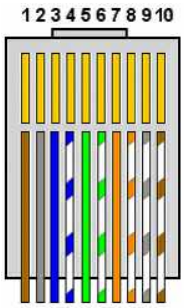
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4.13.5 8 Pin RJ-45/10 Pin RJ-45

❖8-pin STP CAT5/6 cable

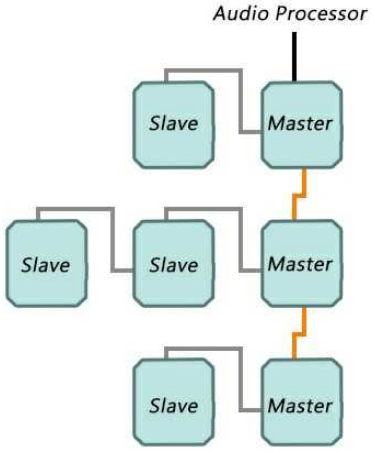
8-pin STP CAT5/6 cable with metal shielded connector		
Pin1	RS-485 B	
Pin2	RS-485 A	
Pin3	Line in -	
Pin4	24VDC	
Pin5	Ground	
Pin6	Line in +	
Pin7	Line out -	
Pin8	Line out +	

- A straight FTP CAT5 cable 5 pairs is needed (provided with PPM).

Pin1	Slave RS-485 A	
Pin2	24VDC	
Pin3	Master RS-485	
Pin4	Master RS-485 A	
Pin5	Line out + (PPM Mic)	
Pin6	Line out - (PPM Mic)	
Pin7	Line in + (PPM speak.)	
Pin8	Line in – (PPM speak.)	
Pin9	Ground	
Pin10	Slave RS-485 B	

4.13.6 Topology of Master & Slave Switch

- Master PPM: Switch the [MASTER/SLAVE switch] selection to [Master].
- Slave PPM: Switch the [MASTER/SLAVE switch] selection to [Slave]. See the picture as below



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5 System Configuration

5.1 Ateis Studio Software



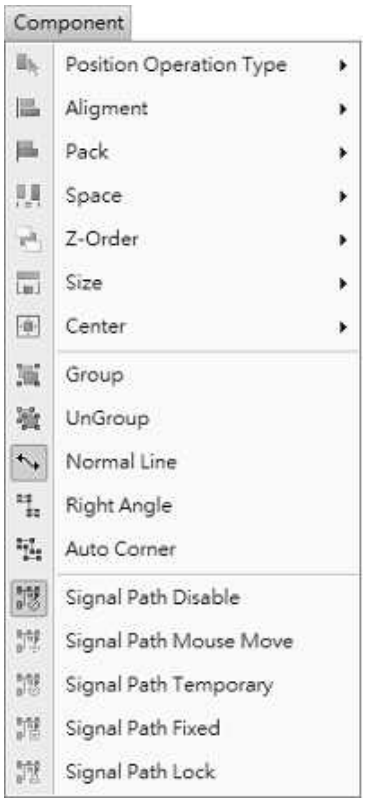
Ateis Studio software allows the systems to be configured, supervised, logged, reported and controlled centrally from a GUI (graphical user interface). Users can design their own graphic user interface or control panel(s) as well as program automatic sequences (events) and create different levels of user groups (security). Ateis Studio provides a complete set of tools and building blocks for real-time control, monitoring and design of an audio system or Voice Evacuation system from paging console to loudspeaker.

A library of control and monitoring elements including volume control faders, various metering, high level EQ, Compression, Limiting, Auto-Gain, Noise-sensing, Mixing, quick-buttons etc.. The behavior of these elements can be configurable for every customers' need.

- Ateis Studio Software Version:
  - Version 1.X.X.XX for Ateis Local-Net
  - Version 2.x.x.x and 3.x.x.x for Ateis Global-Net
- Ateis Global-Net:
  - You can start designing the internal signal paths for each device via "drag and drop".
  - Management of all the system units including device update, configuration modification, store the settings into each device independently etc. can be done in the network from your PC/ Laptop.

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5.1.1 Comoponent Editing



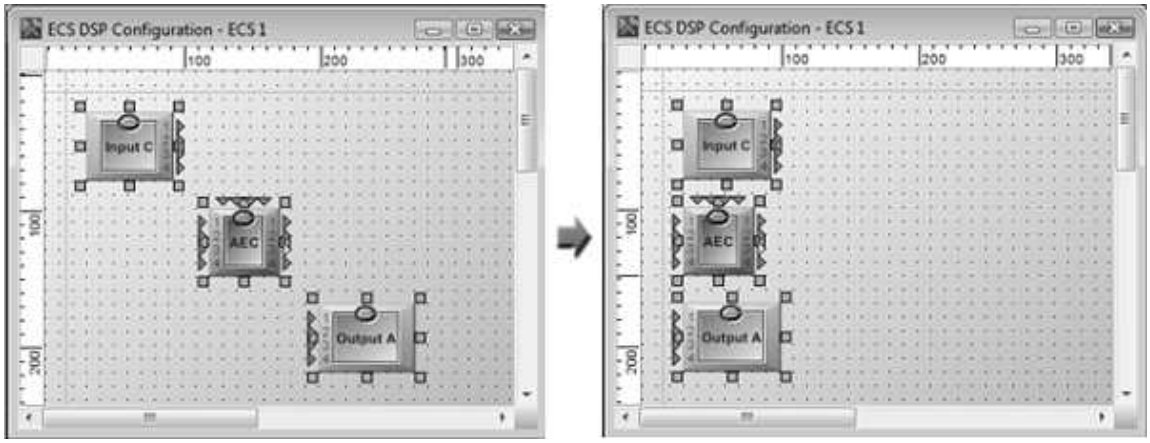


❖ Position Operation

- Position Operation Type :

  Define what kind of reference you use which can be the place in the Normal area, a Reference Component or a Reference point.

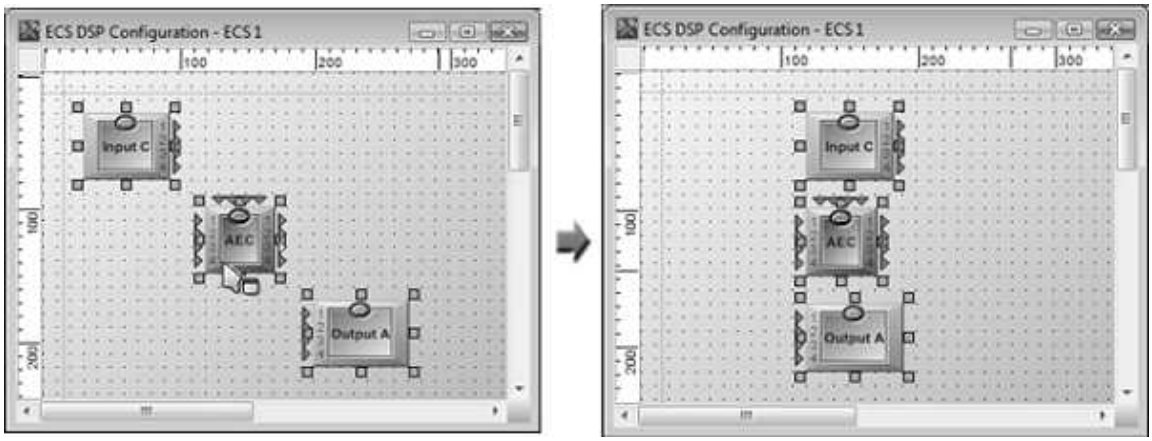
  - Normal : The reference is the place in the configuration. If you select several components, and use "Align Left", then the reference will be the left side of the component at the left of the area. All the selected components will be aligned to this reference.



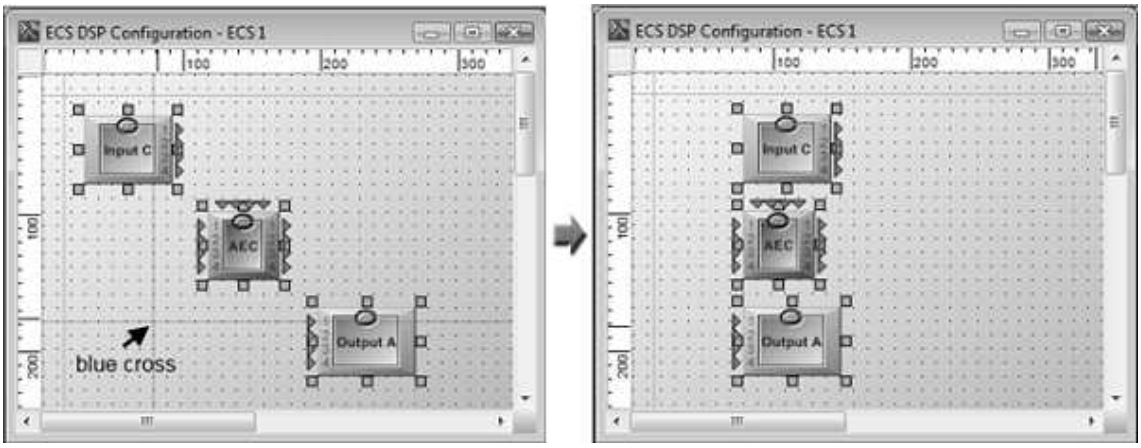
  - Reference Component : Use the component for reference. If you select several components, and use "Align Left" , the mouse cursor will change to , and will ask you to select a component for reference. Select a component by clicking it. The mouse will change to when it is placed on a component. All the selected components will be

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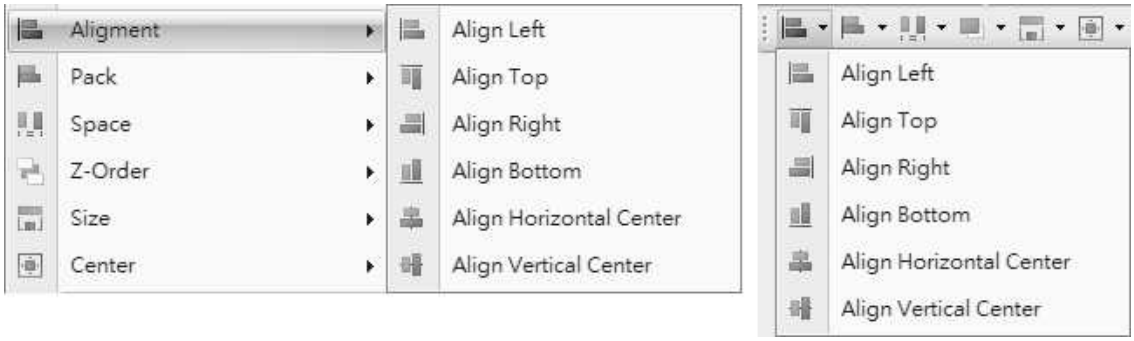
aligned to this component. In this example, we chose the AEC component for reference.



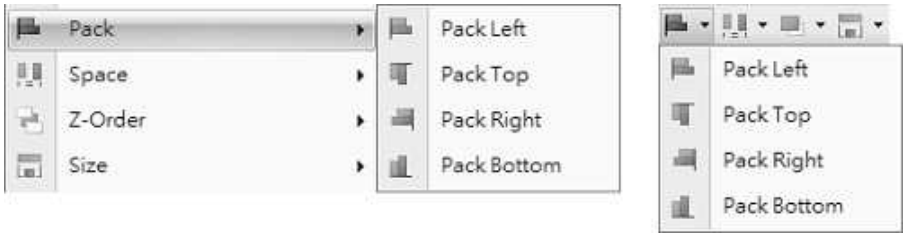
- Reference Point : Use the point for reference.If you select several components, and use "Align Left", the mouse cursor will change to a blue cross and will ask you to choose exactly where the reference is located. All the selected components will be aligned to this point.



- Alignment : Select several elements and align all the elements.



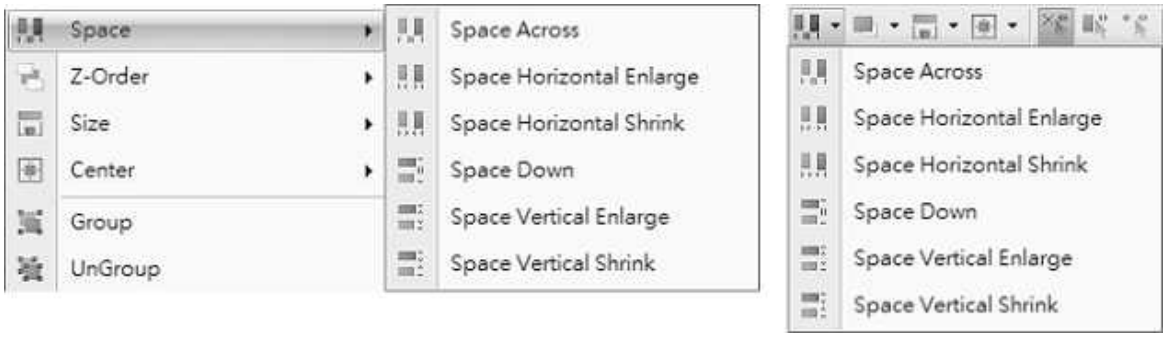
- Pack : Select several elements and then pack the elements.



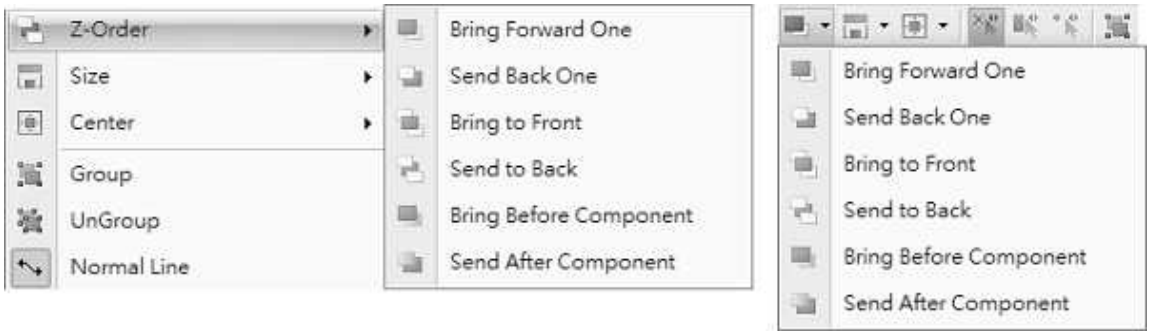
- Space : Select several elements and then define the space between all the elements. This

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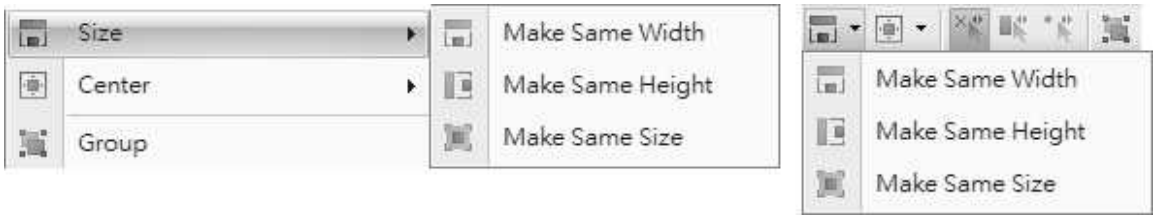
method will be easier if you pack the elements first.



- Z-Order : If you have elements which are under other elements, you can define each by selecting one element choosing if this will be to the front or to the back. Pay attention as sometimes elements can be totally hidden with this action. For example, It is useful with background images and buttons.



- Size : Resize the components. You can also select several components altogether and adjust them to have the same dimensions. All the selected components will have the size of the component on the top left of the window.



- Center : Select several components and move the components to the window's middle, horizontally or vertically.



❖ Grouping:

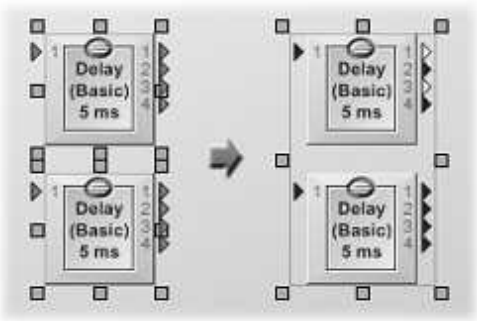
- Group :

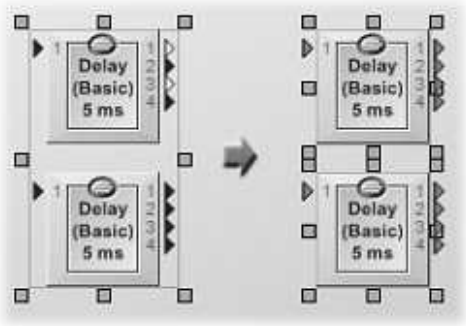
Select several components and group the components in one component.

- Ungroup :

Split the grouped components to a single component. It's the reverse of the Group function.

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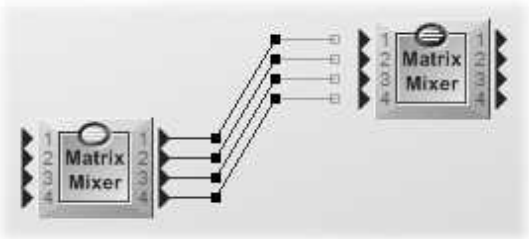




❖ Wiring Mode

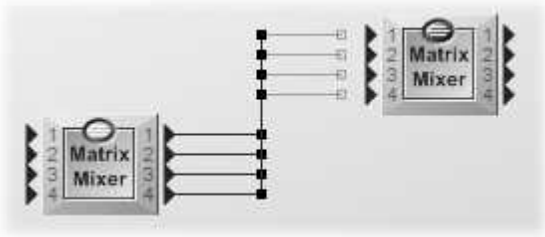
- Normal Line :

Select Normal Line if you want to draw the wire with different angles.



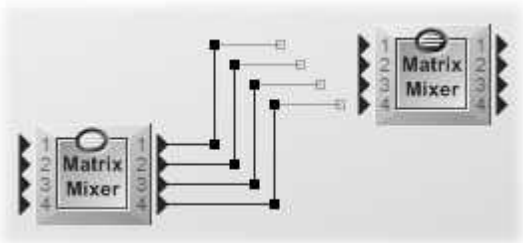
- Right Angle :

Select Right Angle if you want to draw the wire only with right angles (90 degrees).



- Auto Corner :

Select Auto Corner if you want the wires to be automatically arranged to have proper corner, with separated wires and with right angles.



❖ Signal Path Mode

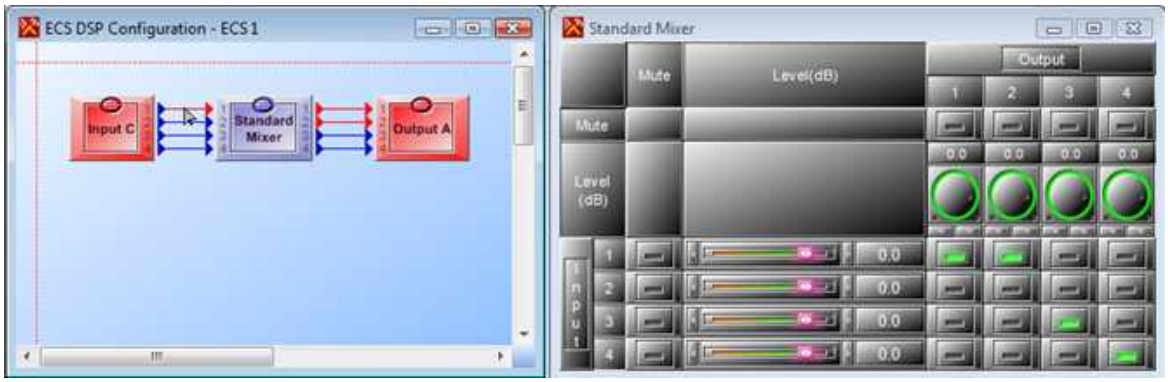
- Signal Path Disable :

Disable the signal path highlighting function. If the function is not disable, the signal path function allows to display where an audio signal is sent through the design. The signal path will be highlighted in red.

- Signal Path Mouse Move :

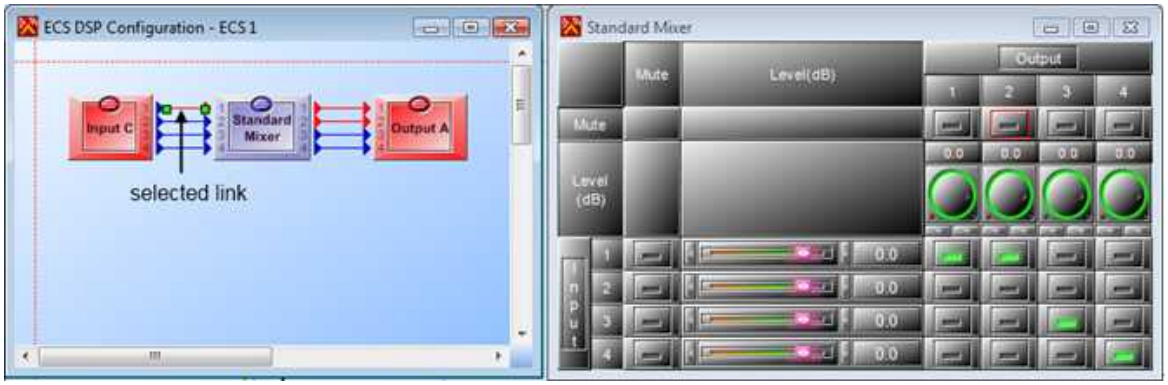
In this mode, by placing the mouse on a signal link, the signal link and the entire signal path will be highlighted in red. In the example below, input C1 is routed in the matrix to outputs 1 and 2. If you place the mouse on the link of channel 1, then the signal path on outputs 1 and 2 will be displayed in red.

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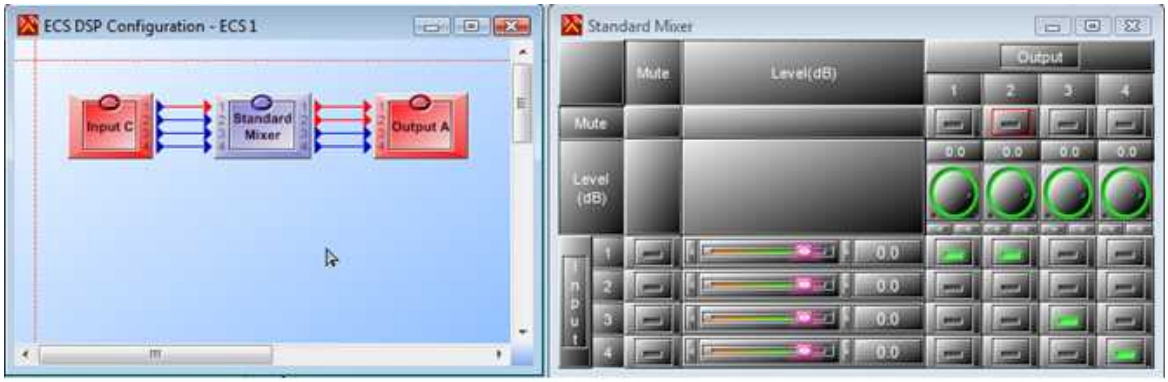
- Signal Path Temporary :

  In this mode, by selecting a signal link, the signal link and the entire signal path will be highlighted in red. If you click in a free zone, the signal path will be canceled. In the example below, input C1 is routed in the matrix to the output 1 and 2. If you place and select the link of channel 1, the signal path on outputs 1 and 2 will be displayed in red.



- Signal Path Path Fixed :

  In this mode, by selecting a signal link, the signal link and the entire signal path will be highlighted in red. The signal path is fixed, therefore, to cancel the fixed path, click another link or component which is not on a free zone). In the example below, input C1 is routed in the matrix to outputs 1 and 2. If you place and select the link of channel 1, the signal path on outputs 1 and 2 will be displayed in red.

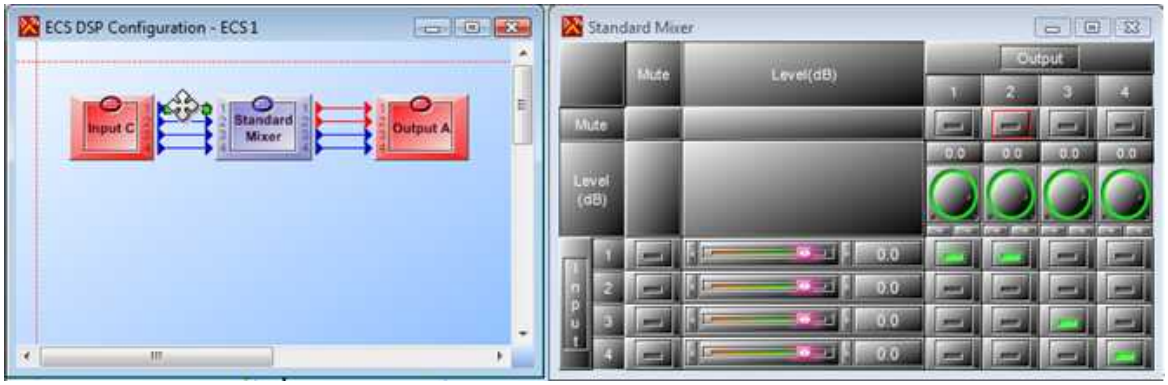


- Signal Path Lock :

  In this mode, by selecting a signal link, the signal link and the entire signal path will be highlighted in red, then the mouse cursor will change into to ask you to select the link again, after selecting the link,the signal path will be locked. To cancel the locked path, select "Signal Path Disable ". In the example below, input C1 is routed in the matrix to outputs 1 and 2. If you place and select the link of channel 1, the signal path on outputs 1 and 2 will be displayed

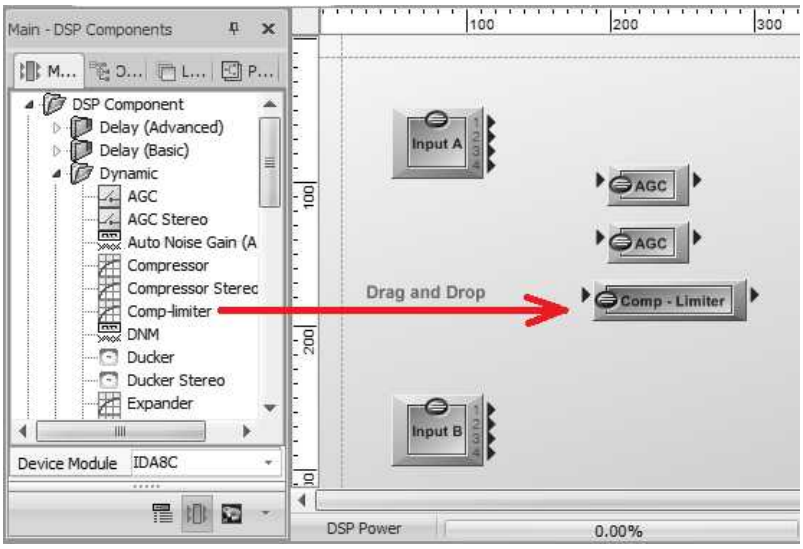
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in red.



5.1.2 Component Template

Component Template is an object container that allows users to drag and drop to the configuration. Here you can create many objects such as DSP components to make up a system for your specific application. Click menu [View > Main], to open Component Template window.



There are three pages of Component Template, You can click the icons on the bottom to switch between them.

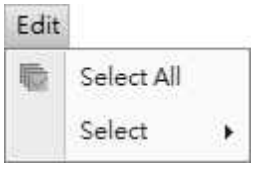
❖ Main-Devices: List the devices for drag and drop to a device configuration window.

❖ Main-DSP Components: List the DSP components for drag and drop to a DSP configuration window.

❖ Main-Extended Components: List the symbolic components such as images and texts.

5.1.3 Edit

- Select All : Select all the components and wiring pins.

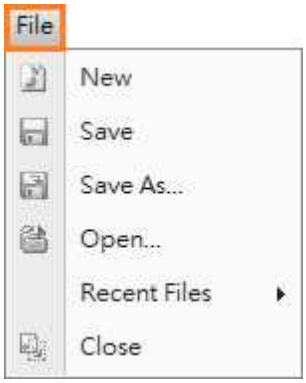


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- Select All DSP Components : Select all DSP components in the graphic editor.
- Select All Connectors : Select all wiring pins in the graphic editor.



5.1.4 File

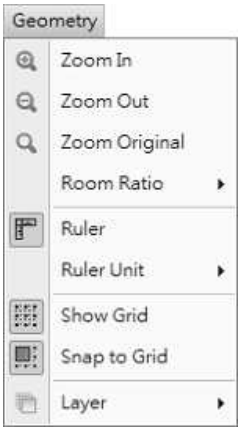




- New : Opens a new blank project.
- Save : Saves the current file you are currently working with.
- Save As : Opens the “Save as…” dialog box to save the current working project with a different name and/or path.
- Open : Opens the “Open...” dialog box which allows you to select a path and open a saved file.
- Recent Files: Quick access to the last opened file.
- Close : Close the opened files.

5.1.5 Geometry

- Zoom In/Out : Zoom in/out the configuration.
- Zoom Original : Zoom to the original size of the configuration.
- Room Ratio: Set the configuration to a specific ratio.

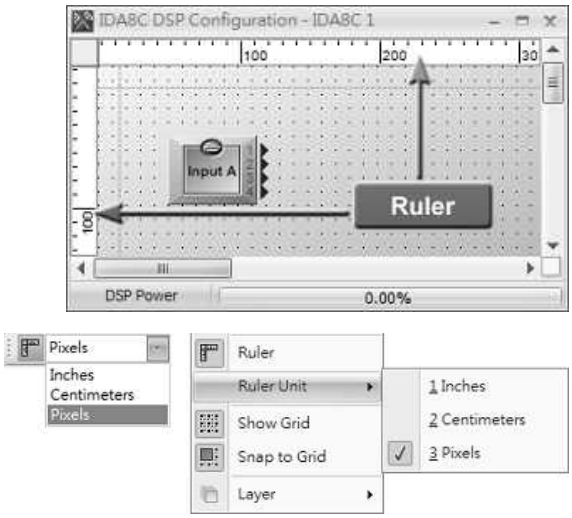




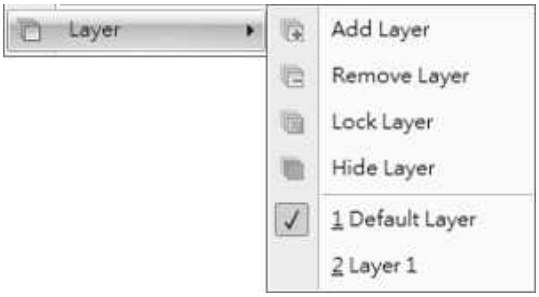


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- Ruler : Display/hide the ruler in the DSP configuration.
- Ruler Unit: Specify the ruler unit of the configuration. There are three types of units:
  - Inches
  - Centimeters
  - Pixels



- Show Grid : Display/hide the grid of the configuration.
- Snap to Grid : Enable/disable moving an object by multiple pixels at a time.
- Layer:
  - Add / Delete Layer: Add/Delete a layer of the configuration.
  - Lock Layer : Locks a layer of the graphic editor to disable movement of any objects belonging in that layer.
  - Hide Layer : Hide a layer. All objects belonging in that layer will become invisible.
  - Select Layer: Selects a layer to be current. Any newly created object will belong to the current layer.



5.1.6 Help

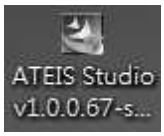


5.1.7 Install Ateis Studio

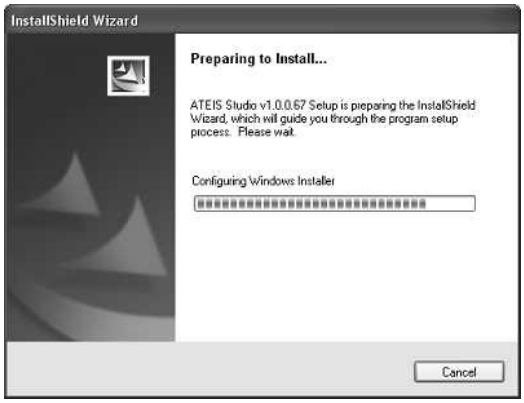
1. Before installing ATEIS Studio software, check if your PC has met the system requirements.
2. Turn on your PC and allow Windows to start up. Insert the supplied CD-ROM into your drive. If the content of the CD-ROM is not displayed automatically double click the 'My Computer' icon and navigate to the 'DVD/CD' drive.

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3. Copy the file 'ATEIS Studio v.1.x.x setup' using the copy and paste commands or by drag and drop to the 'Desktop'. Wait until the task has finished.



4. Start 'ATEIS Studio vx.x.x.x setup' by double clicking on its icon, and follow the instructions to install the software onto your hard drive.



5. By default the program software is installed under the path "C:\Program Files\ATEIS\ATEIS Studio vx.x.x.x". Change the installation path by clicking [Change...] if required, and click [Next].



7. Wait until the end of the installation.



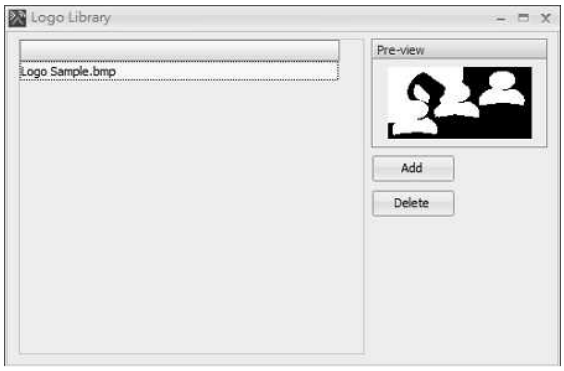
8. After all installation tasks have been finished successfully click [Finish] to exit the wizard.
9. The installation program creates a shortcut to the "ATEIS Studio v.1.x.x .exe" named "ATEIS Studio vx.x.x.x" on your "Desktop"'
10. Wait until the end of the installation.
11. Double click the Ateis Studio icon to start the program.

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5.1.8 Logo Library

Logo Library is a setting window for Logo Library management.

- Left Side of Window: List all the Logo files.
- Right Side of Window: A preview for the selected Logo file. Click [Add] to add a logo file and click [Delete] to remove the selected Logo file.



5.1.9 Operation

You will find the major operations that are related to system connection, allowing you to compile the configuration and to store the compiled configuration into the device. Most functions have the short access in the Tools bar.





- System: Allow users to switch to the current system configuration you want. All the actions in the tool bar only work on the current system. These actions include master preset changing, store, online/offline and audio enable/disable.
- Master Preset: Allow users to switch to master presets.
- Master Preset Settings /Sub-Preset Settings : Open the master preset settings/sub-preset settings window.
- Event : Click to open the Event settings window.
- Compile All : Click to start the compile process. The software will verify there's no major errors remain before uploading the configuration into audio processor.
- Store All : Click to start the compilation process and upload your configuration into the audio processor.
- Save Parameters : Click to save parameters to the device's flash under the Online status.
- Online : Click to make Ateis Studio online with the audio processors. Once online, the parameters will be synchronized including the adjustment of the parameters. When Ateis Studio is online with devices, designing configuration is not allowed.
- Offline : In the offline state, you can modify the configuration.
- Audio Enable /Audio Disable : Click to enable/disable the audio of Ateis devices.

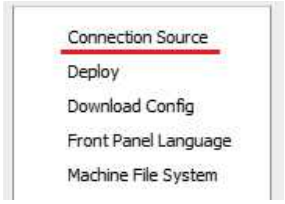
5.1.9.1 Realtime Parameters

❖ The parameters of components can be adjusted realtime under the Online status such as the component values including monitoring parameters, the action in the checkbox, level bar, level or

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source on the rotary knob etc..

- Download Config: The [Download Config] function is located at Device Management, see the picture as below. The Download Config function allows to retrieve the parameters that are stored in the Ateis devices. Please note this Download Config action does not contain to retrieve the parameters that saves under the Online status.



- Online: The Online action is located at Tools bar, see the picture as below. Online action allows to read the current parameters of Ateis devices. Please note the parameters might be different from the parameters after proceeding Download Config action.



❖ The adjustment of realtime parameters can be either done before the Store action, or adjust it directly after Online. The difference between the two are as below:

1. The parameters that are saved before proceeding the Store action: The Download Config action will not retrieve the parameters that saves under the Online status, the parameters will still remain the same.
2. The parameters that are saved under the Online status: Parameters will not be stored in the devices automatically after rebooting the processors/devices, they will still change back to the previous parameters.
3. If users would like to store the parameters under the Online status, please click the [Save Parameter] button. Please note if this button is clicked, the parameter will not change back to the parameters that are stored in the Download Config configuration.
4. If users would like to replace the original parameters with the current parameters, please proceed the steps as below:

   1) Proceed the action of realtime parameters.

   2) Click Offline button.

   3) Then click Compile and Store button.

❖ Example 1:

- Assuming there's a 3dB level bar, and after proceeding Compile, Store and Download Config action:
  - The level parameters will still remain as 3dB.
- Assuming to change the level parameters from 3dB to 5dB under the Online status, then click Download Config:
  - The level parameter will still go back to 3dB. But if clicking [Online] button now, the level will change to 5dB then.

❖ Example 2:

- Assuming there's a 3dB level bar, and after proceeding Compile, Store and Download Config action, the user has change the level from 3dB to 5dB under the Online status.
  - However, if user has rebooted the processors/devices, the actual level of device will still be 3dB.
  - If user wants to keep the level parameter as 5dB even the processors/devices are

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rebooted, please adjust the level under the Online status and click [Save Parameter] button, then the actual level of device will be 5dB. But if proceeding the Download Config action now, the level will be as 3 dB due to the reason that the [Save Parameter] function will not replace the original configuration. If user wants to change the level to 5dB, please click Online button.

- If user wants to keep the level as 5dB even proceeding Download Config action, please change the current level to 5dB, and click Compile and Store button.

❖ Please note the following circumstances are required to click the [Save Parameter] button:

1. When finishing the [Get Reference] action for the amplifier loudspeaker on the monitoring window, the monitoring value will not be automatically saved in the IDA8 system, therefore, please click [Save Parameter] button.
2. Click [Save Parameter] button after the calibration of DNM-485/DNM-ENET is completed.

5.1.10 Tools

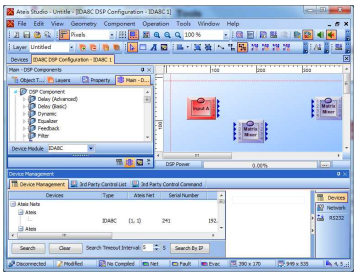
❖ Language

Choose the software language either English or Simplified Chinese.

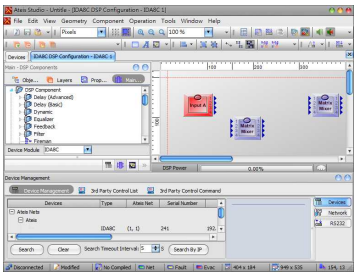


❖ Skin

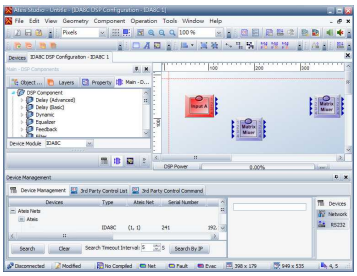
Change the skin style (color and appearance) on Ateis Studio windows, the software offer multiple skins, see the skin examples as below.



Office 2003 Blue



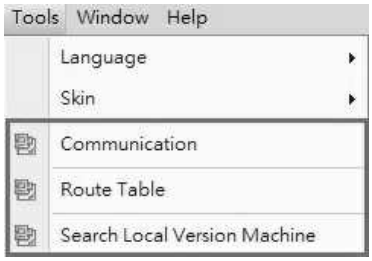
Mc Skin

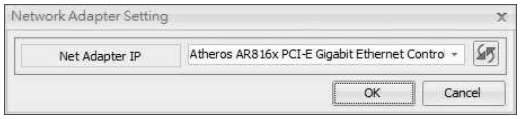


London Liquid Sky

❖ Communication (Network Adapter Setting)

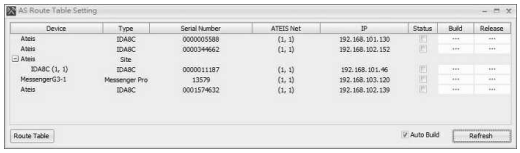
Select the network adapter in your PC/Laptop, and click [OK].





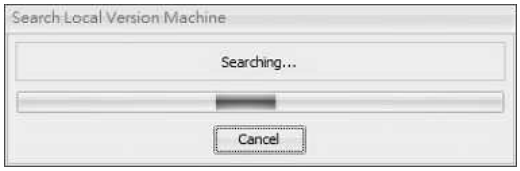
❖ Route Table

Manually modify the Windows route table on your PC.



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❖ Search Local Version Machine



Click this button to search the Version 1.x.x.xx IDA8 units, after the IDA8 units has been searched, the Ateis Studio software will auto update the Version 1.X.X.XX IDA8 units to Version 2.x.x.x and 3.x.x.x for Ateis Global-Net software.

Ateis Studio Software Version:

- Version 1.X.X.XX for Ateis Local-Net
- Version 2.x.x.x and 3.x.x.x for Ateis Global-Net

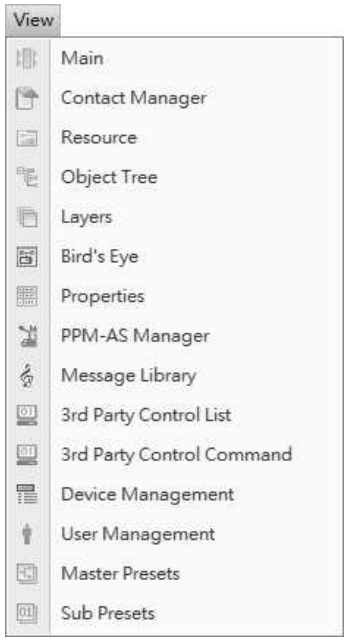
❖ DNM-ENET Monitoring



In order to improve the speed performance of Ateis Studio software when too many DNM-ENET units are connected in LAN and result in the software speed become slower, the [DNM-ENET Monitoring] optio can set as disable, and will not affect the functionality and operation of DNM-ENET.

This option is applicable for DNM-ENET unit. In other words, the DNM-485 unit can still be searched automatically even the [DNM-ENET Monitoring] option is disable.

5.1.11 View



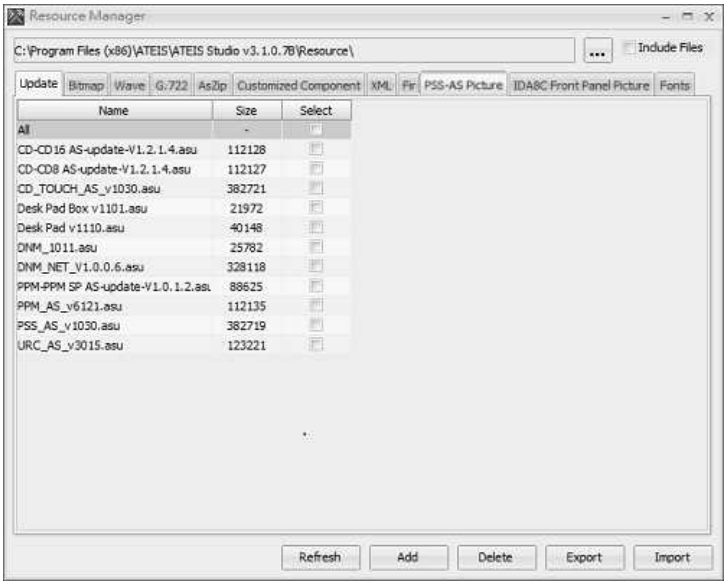
- Main : Contain various devices and DSP components for system designing.
- Compile : Compile the current configuration.
- Resource : To manage resource files in the software. See Resource Manager.
- Object Tree : To see the whole structure of configuration file. See Object Tree.
- Layers : To manage the graphical layers for objects. See Layers.
- Bird's Eye : To have an overview of graphical objects. See Bird's Eye.

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- Properties : Allow to inspect the various parameters of an object in graphic editor. See Properties.
- PPM-AS Manager : To have a overview of all PPM-AS in the configuration file.
- Message Library : To manage the message files in the software. See Message Library.
- 3rd Party Control List : To have an overview of elements that are 3rd party controllable.
- 3rd Party Control Command : Display the 3rd party control string of focused element.
- Device Management : Connect and search the devices over network and maintenance.
- Logo Library : To manage the Logos for Ateis devices. See Logo Library.
- User Management : Allow to edit the user level of configuration file.
- Master Presets / Sub Presets : Allow to edit the master/sub presets. See Master Presets and Sub Presets.

5.1.11.1 Resource Manager

Resource manager is a container for files which can be used in a device configuration.



- Path: Specify a path for searching resource files.
- [...]: [...] button to browse the folder if changing a path.
- Include File: Click the checkbox when the path has changed, it will copy the files from the original path to the new path.
- Pages of Resource File: There are various types of files which can be managed by Ateis Studio, each page is corresponded to a page in the resource manager.

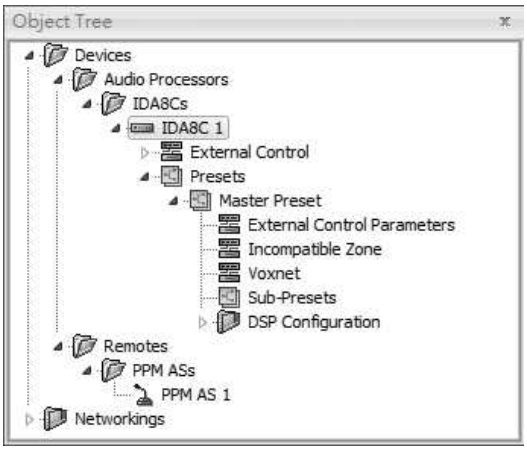
Update
Bitmap
Wave
G.722
AsZip
Customized Component
xml
Fir
PSS-AS Picture
IDA8 Front Panel Picture
Fonts

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- Refresh: Search the resource files in the folder specified in the resource manager path.
- Add/Delete: Add/remove a file to the resource manager.
- Export/Import: Export/import selected files to a single resource packed file.

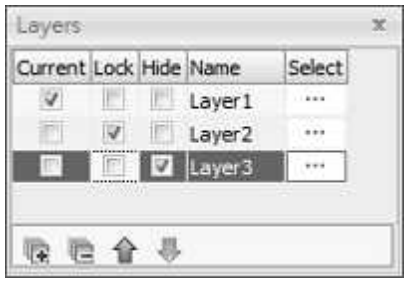
5.1.11.2 Object Tree

Display the designing of objects by tree structure, making it easy to understand and access objects.



5.1.11.3 Layers

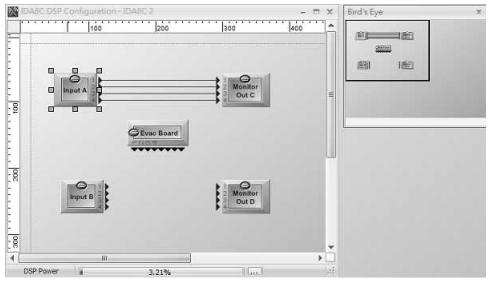
Each design window can separate into multiple layers. Every object in the design window belongs to a layer.



- Current: Indicate which layer is the current layer. The new objects will be put into the current layer.
- Lock: Lock a selected layer. All objects belong to the locked layer cannot be edited.
- Hide: Hide all objects belonging to a selected layer.
- Name: The name of a layer.
- Select[...]: A button used to select objects of the layer.
- : Add a new layer as the current layer.
- : Remove a selected layer and the components will belong to that layer.
- / : Move up/down a selected layer.

5.1.11.4 Bird's Eye

When your configuration design is huge, Bird's Eye gives an overview that easily help you to understand the layout of the design.

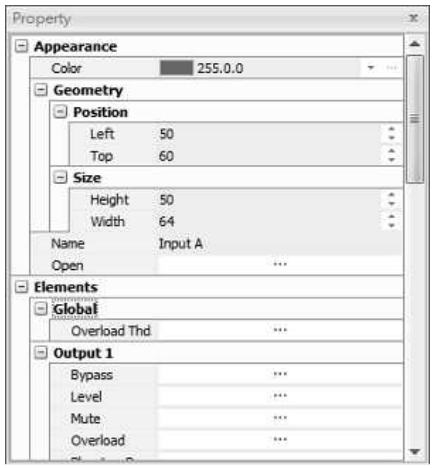


- Bird's Eye : Move the Bird's Eye window to see an overview of your configuration.

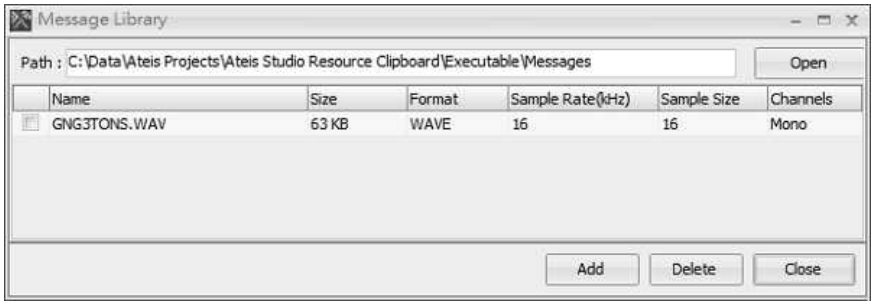
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5.1.11.5 Properties

Users can browse/edit the settings of the selected objects in the configuration design.



5.1.11.6 Message Library

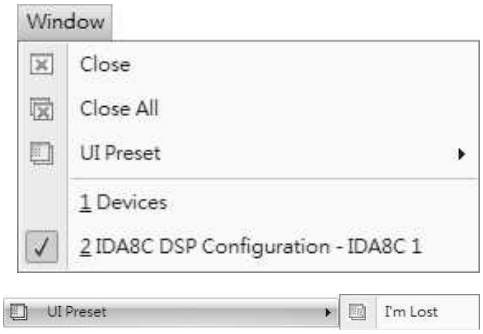


❖ An interface to manage the message files used in Ateis Studio.

- Path: The working directory for message files.
- Open: Click to open a file browser and change its working directory.
- Message File List: A grid which lists all the messages in the working directory and displays information.
- Add/Delete: Add/delete a message into the working directory.
- Delete: Remove a selected entry of the message list.

5.1.12 Window

- Close : Close the opened active window.
- Close All : Close all the opened windows.
- UI Preset : The UI Presets are pre-defined windows positioning.
- I'm Lost : The UI Preset "I'm Lost" will be auto activated by default, it allows to come back as the default standard windows positioning.



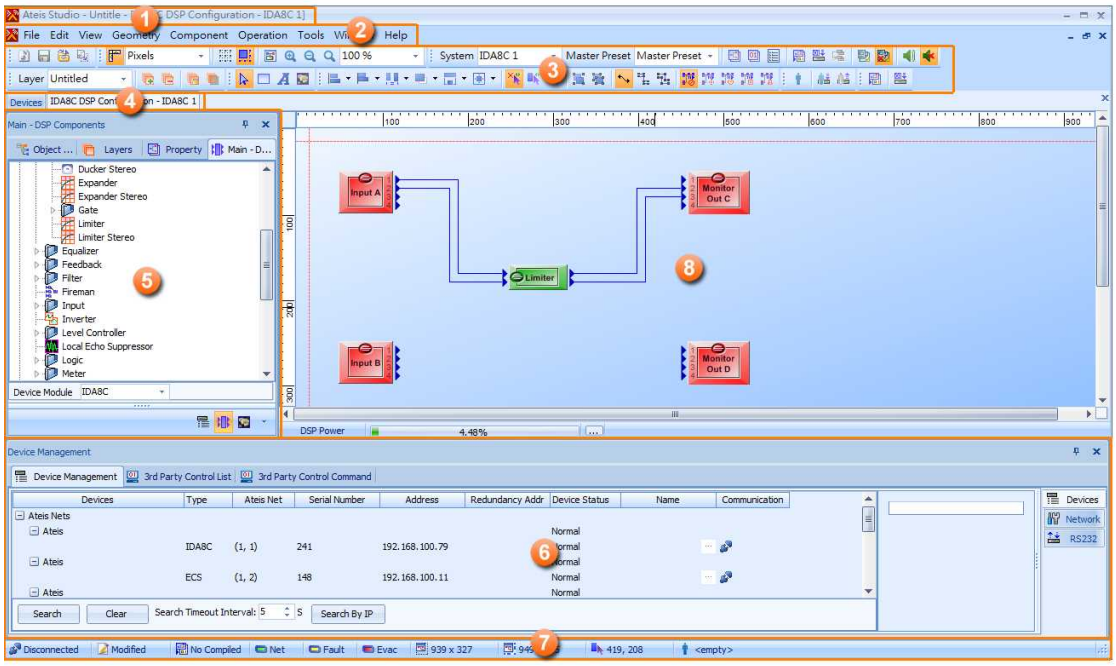
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- Active Windows

  In the bottom of the window menu, you will find all the opened windows on your project. Select the windows in the list, and the window will come on the first displaying level.



5.1.13 Windows Layout



The basic windows layout should look like the figure showed above, the position can be changed if you drag the dock panel (circle No.5 & 6 are examples of dock panel).

1. Title Bar: Display the path name of the current file.
2. Menu Bar: The main functionalities/tools of Ateis Studio.
3. Tools Bar: Short access to main functionalities that are hidden in the menu bar.
4. Tab Bar: Display the window title of the control windows/component window for quick access.
5. Dock Panel-Component Template: A dock panel on the left side of software which contains all devices and DSP components, users can use it to create and design your system.
6. Dock Panel-Device Management: A dock panel on bottom side of software lists information about devices, allowing to connect to a device for maintenance.
7. Status Bar: Display the status of software including the modification indication of editing file, mouse cursor position etc..
8. Working Area-DSP Components Editor: A graphical interface allows to design the system, drag n drop the components which creates specific audio signal processing, audio path from input to output and wiring between components and components.

5.2 Presets

The Ateis systems include two types of Presets:

- The Master Preset: A design preset which allows different configuration to be restored.
- The Sub-Preset: The parameters preset which allows the values of multiple parameters on the

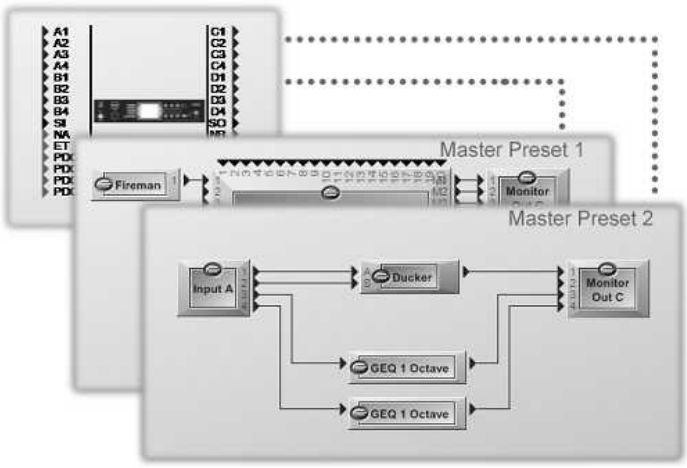
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same configuration such as levels, gains, EQ, etc. to be restored either from the PC software, the remote controllers or the control inputs.

These 'Master Presets' and 'Sub-Presets' will be stored in the device memory and can be changed in many ways: PC, logic inputs and third party. The max. number of master presets and sub presets depends on machine memory size and content of each preset.

5.2.1 Master Presets

Each Master Preset is able to contain different components, design paths, sub-presets, etc.. Users can switch the complete design by changing the Master Presets via the logic input contact or by third party.



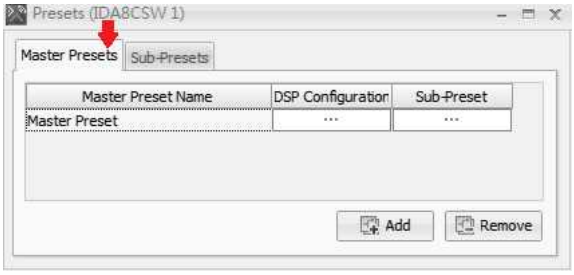
❖ Master Preset Management

Create or remove Master Presets:

1. In the tools bar, click  button next to the Master Preset drop-down box.

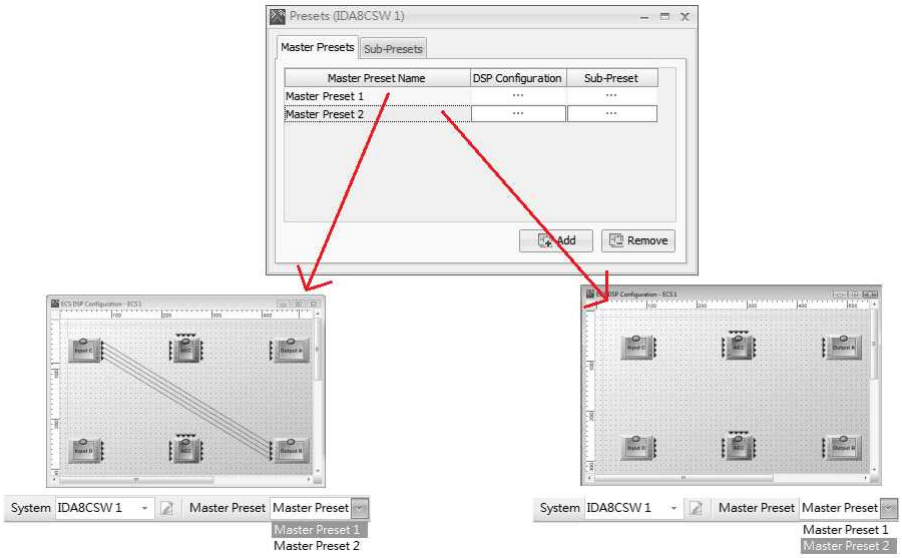


2. Select "Master-Presets" tab on [Presets] window.



- Edit: Click [...] button to open the DSP design window of the preset, see the picture as below.
- Sub-Preset: Open the settings window of sub-preset which belongs to the Master Preset.
- Add/Remove: Create a new Master Preset/remove a selected Master Preset.

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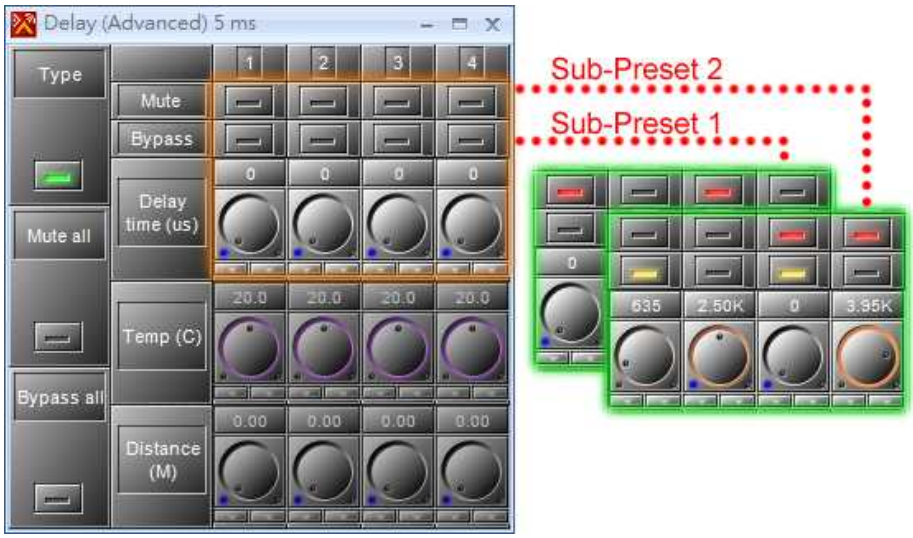
❖ Master Preset Switching: There can only have one master preset active at a time. Therefore, you can change the master to the other preset you want to edit. At run time, change the master preset to make the Ateis device working on a different DSP design belong to the master preset.

Click the drop-down box of Master Preset to switch to master presets:



5.2.2 Sub-Presets

The Sub-Preset allows to define and store the values of different component elements(volume gain, frequency, mute, etc.) you want to associate in one Sub-Preset. By loading a Sub-Preset you created, all associated elements will adopt the pre-defined values to their target values.



❖ Sub-Preset Management

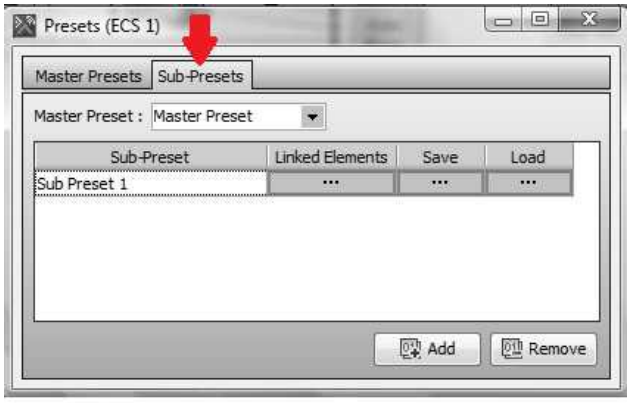
Create or remove Sub-Presets:

1. In the tools bar, click [SPreset] button next to the [MPreset] button.



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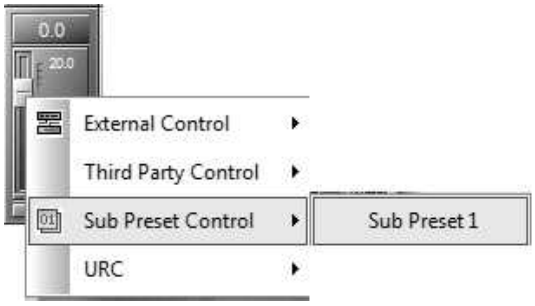
2. Select "Sub-Presets" tab on [Presets] window.



- Master Preset Drop-Down Box: Click to switch to the desired Master Preset and then edit the Sub-Preset settings which is belonging to it.
- Linked Elements: Open the window contained a table of elements controlled by the Sub-Preset. See the later section "Table of Linked Elements" for more detail.
- Save: Save a value of linked elements to the Sub-Preset. Those values are kept in the memory in Sub-Preset.
- Load: Load values from the storage of Sub-Preset and set to the linked elements.
- Add/Remove: Create a new Sub-Preset/remove a selected Sub-Preset.

❖ Assign an Element to be Controlled by Sub-Presets

Right click the element of component you want to control, and select your Sub-Preset.



❖ Table of Linked Elements

List all the elements controlled by Sub-Preset. There's a small panel on the right with an embedded graphic control, this is for adjusting the stored value in Sub-Preset.



- Device: The Ateis device containing the linked element.
- Component: The component containing the linked element.

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- Parameter: The element controlled by Sub-Preset.
- Value: Value stored in the Sub-Preset.
- Link: Click to open the window containing the linked element.
- Save: Click to save the current value of elements to the Sub-Preset.
- Load: Click to load value stored in the Sub-Preset and set to the linked elements.

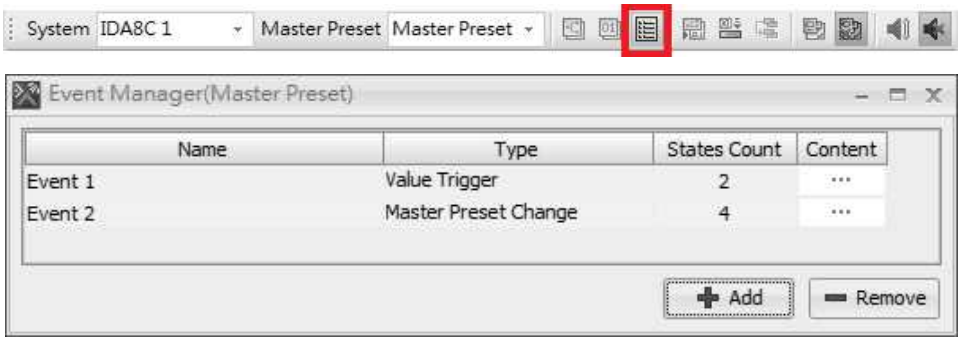
5.3 Event Management

5.3.1 Event Manager

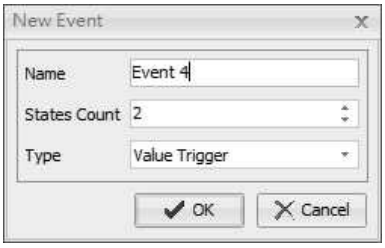
The Event Manager is a container to store and manage all the events. The Ateis devices is controlled by different types of events. Each event can be linked with one controller for adjusting the value or changing presets. The sources that can be linked to the events are as below,

Event Trigger component
Event Value Control component
PPM-AS
PSS-AS
TerraManager
Front Panel on some Ateis devices, like IDA8C

- Click Event manager button on Tools bar:

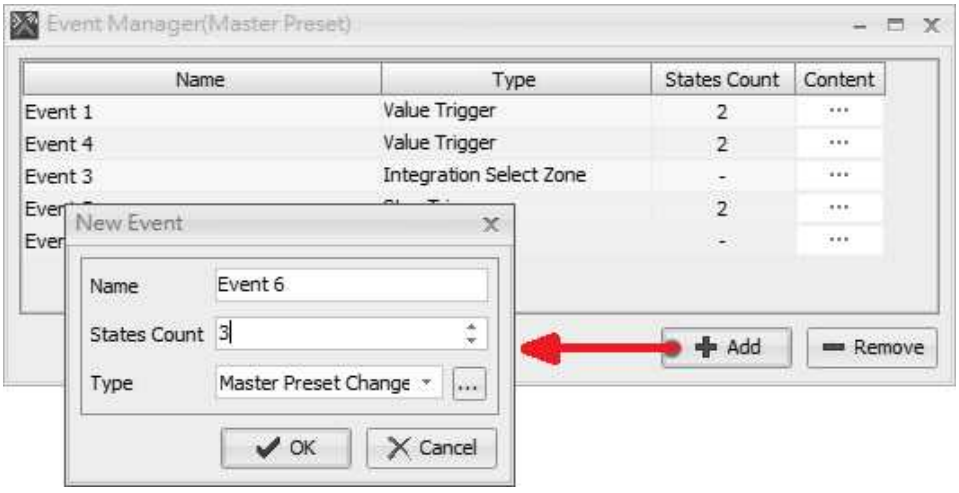


- To add a new event, the settings window will be shown as below.



  - Name: The name of an event.
  - States Count: States count is the number of states. For example, to control an element like Mute, you need to set the State Count to 2 since Mute has two states: On and Off.
  - Type: The type of triggering event.
  - Add: Add the event to open the popup menu, see the picture below:

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Add an event to the Event Manager, Some event cannot be created in this window, such as a paging event. In this case, users need to create it from the setting windows of [Network Paging] component.

- Content: Open the settings window belonging to the event.
- Remove: Remove a selected event.

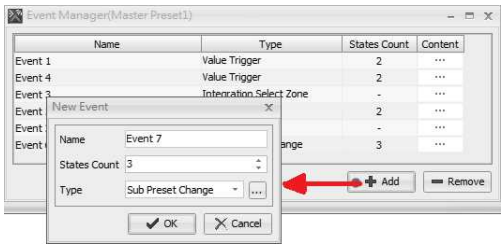
Once the events have been completed, click the tools bar to store the settings. See the picture as below.



5.3.2 Value Trigger

This event is used for controlling the element values by the state count for triggering the event.

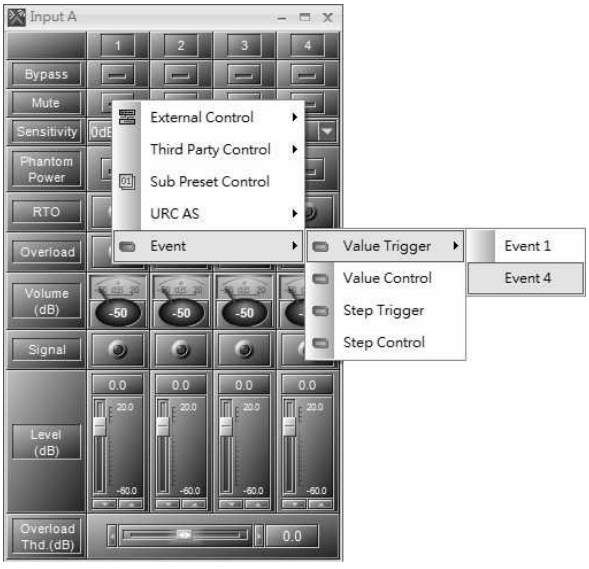
Click [Add] to create a new event, and a pop-up setting window will be displayed, here you can choose which kinds of event users acquired. Select [Value Trigger] option on [Type] drop-down box, then press [OK].



❖Event Settings

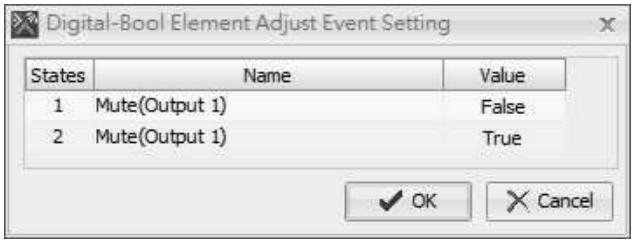
After creating a Value Trigger event, users need to assign an element to it.

1. Right click the desired element, and click the options [Event > Value Trigger > XXX] which XXX is the name of the event. See the picture on the right.

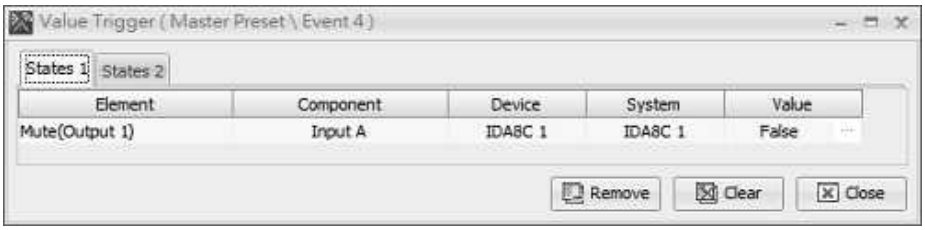


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2. There will be a window which displays the event information corresponded to the state and value.



2. Click [Content...] button on Event Manager window to open the settings window of event.



- State: Click [State] page tab to switch the state of value trigger event.
- Element: The element of the component controlled by value trigger.
- Component: The component of device contains the previously element.
- Device/System: The device/system contains the previously component.
- Value: The value that binds with the state. When a Value Trigger Event has been triggered, the source that triggers the event will send a state number to the system and the event will map this state number to a value and then sets it to the element.
- Remove: Remove the element controlled by the event.

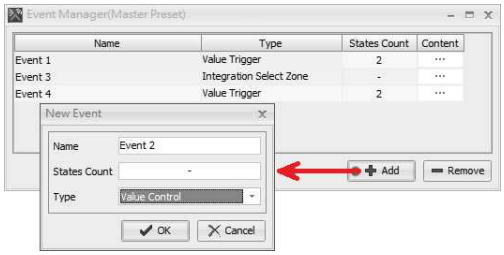
⚠ This action only removes the relation between the element and event and does not delete the element.

- Clear: Remove all elements controlled by the event.

5.3.3 Value Control

This event is used for controlling the element value for triggering the event.

Click [Add] to create a new event, and a pop-up setting window will be displayed, here you can choose which kinds of event users acquired. Select [Value Control] option on [Type] drop-down box, then press [OK].

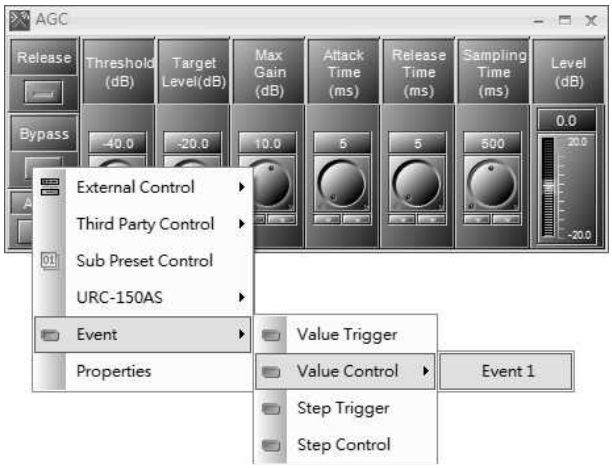


❖ Event Settings

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After creating a Value Control event, users need to assign an element to it.

1. Right click the desired element, and click the options [Event > Value Control > XXX] which XXX is the name of the event. See the picture on the right.
2. Click [Content...] button on Event Manager window to open the settings window of event.



3. On the right side of [Event Manager] window, there is a knob to simulate the source that triggers the event. The value of elements will also be changed if adjusting the knob.



- Control Type: This control option determines the type of knob simulation.
  - Value: Adjust the value of elements by the actual control actions you set on [Min] and [Max] option.
  - Percentage: Adjust the value of elements by the value range (max. and min.) and transmits to the percentage value.
- Element: The element of the component controlled by value trigger.
- Component: The component of device contains the previously element.
- Device/System: The device/system contains the previously component.
- Max/Min: The maximum/minimum value of the simulating knob.
- Remove: Remove the element controlled by the event.

⚠ This action only removes the relation between the element and event and does not delete the element.

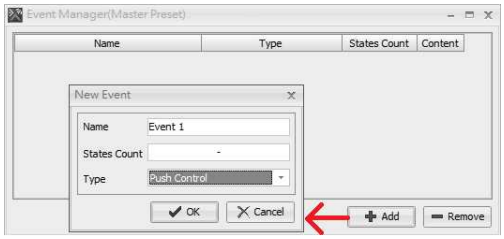
- Clear: Remove all elements controlled by the event.

5.3.4 Push Control

This event is used for controlling the event button on the paging consoles. To trigger the button, push and hold the button.

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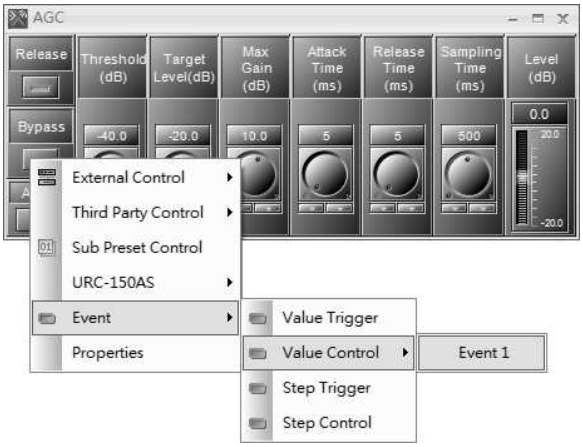
Click [Add] to create a new event, and a pop-up setting window will be displayed, here you can choose which kinds of event users acquired. Select [Push Control] option on [Type] drop-down box, then press [OK].



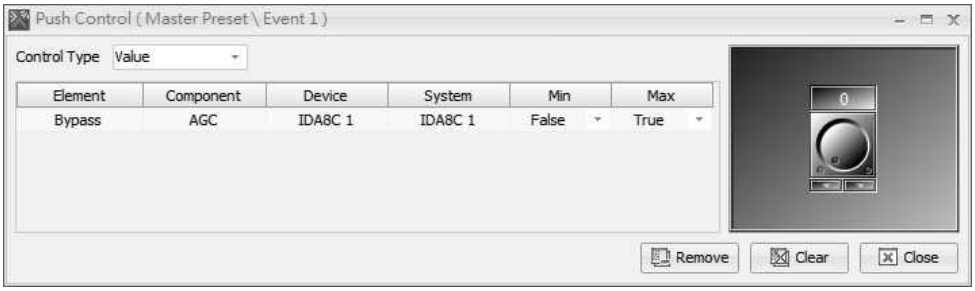
❖ Event Settings

After creating a Push Control event, users need to assign an element to it.

1. Right click the desired element, and click the options [Event > Value Control > XXX] which XXX is the name of the event. See the picture on the right.
2. Click [Content...] button on Event Manager window to open the settings window of event.



3. On the right side of window, there is a knob to simulate the source that triggers the event. The value of elements will also be changed if adjusting the knob.



- Control Type: This control option determines the type of knob simulation.
  - Value: Adjust the value of elements by the actual control actions you set on [Min] and [Max] option.
  - Percentage: Adjust the value of elements by the value range (max. and min.) and transmits to the percentage value.
- Element: The element of the component controlled by value trigger.
- Component: The component of device contains the previously element.
- Device/System: The device/system contains the previously component.
- Max/Min: The maximum/minimum value of the simulating knob.
- Remove: Remove the element controlled by the event.

⚠ This action only removes the relation between the element and event and does not delete the element.

- Clear: Remove all elements controlled by the event.

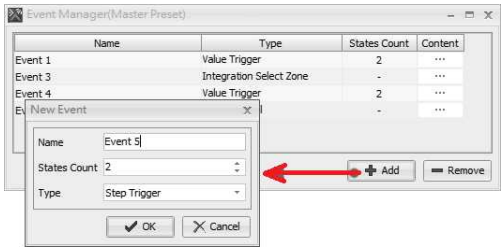
5.3.5 Step Trigger

This event is used for controlling the element value. It will adjust the element value by steps when the source triggers the event. There are multiple states in triggered event, each state contains a step

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value.

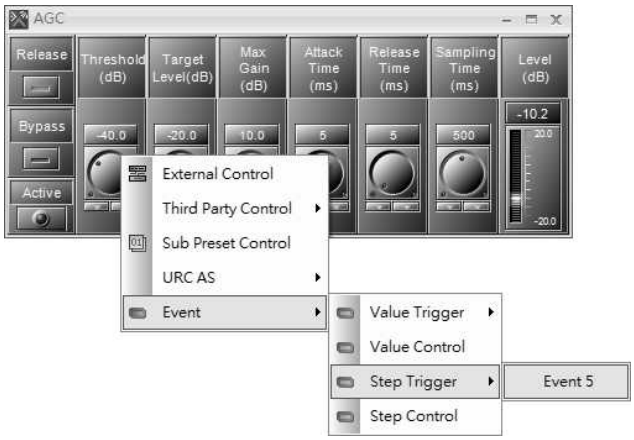
Click [Add] to create a new event, and a pop-up setting window will be displayed, here you can choose which kinds of event users acquired. Select [Step Trigger] option on [Type] drop-down box, then press [OK].



❖ Event Settings

After creating a Step Trigger event, users need to assign an element to it.

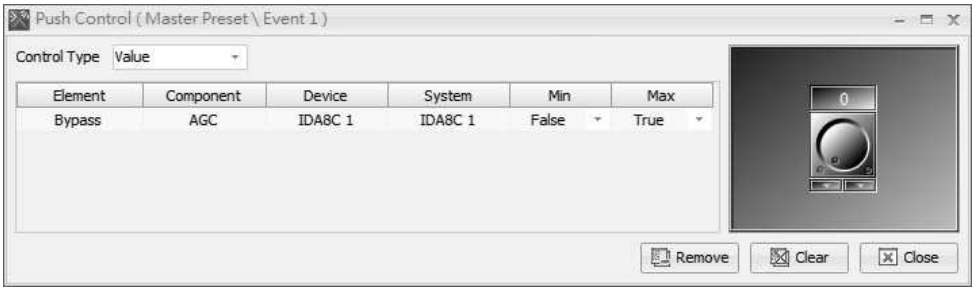
1. Right click the desired element, and click the options [Event > Step Trigger > XXX] which XXX is the name of the event. See the picture on the right.



2. Then there will be a window which displays the event information corresponded to trigger step. Tick the checkbox on [Select] grid.



3. Click [Content...] button on Event Manager window to open the settings window of event.



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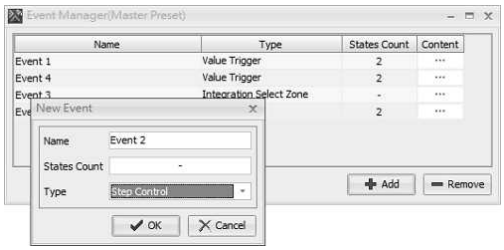
- State: Click [State] page tab to switch the state of value trigger event.
- Element: The element of the component controlled by value trigger.
- Component: The component of device contains the previously element.
- Device/System: The device/system contains the previously component.
- Step Value: The step value of the state.
- Modify: Enable/disable the selected element controlled by the state of event.
- Remove: Remove the element controlled by the event.

⚠ This action only removes the relation between the element and event and does not delete the element.

5.3.6 Step Control

This event is used for controlling the element value. It will adjust the element value by step when the source triggers the event. The source which triggers the event will send the step value to the event for adjusting elements.

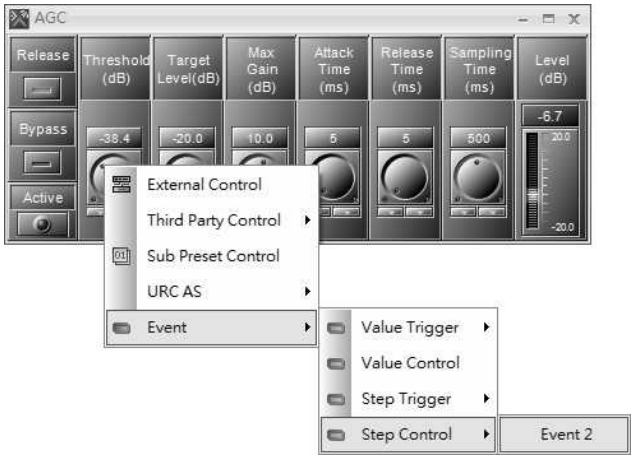
Click [Add] to create a new event, and a pop-up setting window will be displayed, here you can choose which kinds of event users acquired. Select [Step Control] option on [Type] drop-down box, then press [OK].



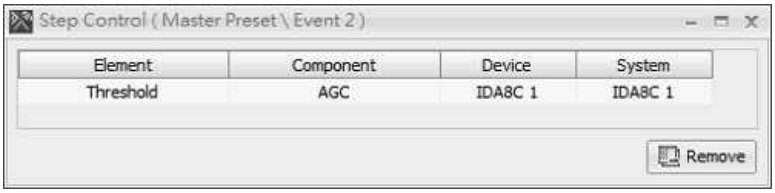
❖ Event Settings

After creating a Step Control event, users need to assign an element to it.

1. Right click the desired element, and click the options [Event > Step Control > XXX] which XXX is the name of the event. See the picture on the right.



2. Click [Content...] button on Event Manager window to open the settings window of event.



- Element: The element of the component controlled by value trigger.
- Component: The component of device contains the previously element.
- Device/System: The device/system contains the previously component.
- Remove: Remove the element controlled by the event.

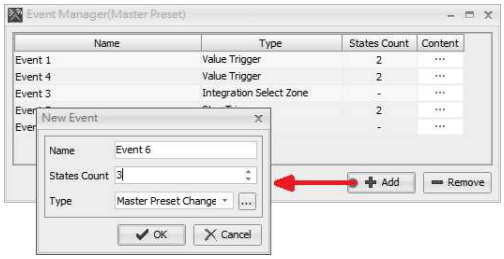
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⚠ This action only removes the relation between the element and event and does not delete the element.

5.3.7 Master Preset Change

This event is used for changing the Master Preset of Ateis devices. Each state can be linked to a Master Preset. When a source triggers a Master Preset Change event, it will send a state number to the event, then changes to the Master Preset linked to the state.

Click [Add] to create a new event, and a pop-up setting window will be displayed, here you can choose which kinds of event users acquired. Select [Master Preset Change] option on [Type] drop-down box, then press [OK].



❖ Event Settings

Click [Content...] button on Event Manager window to open the settings window of event.

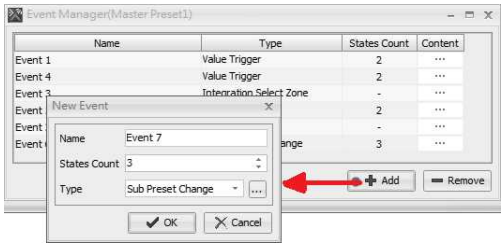


- No: Indicate the state No.
- Master Preset: Define which Master Preset links to the state.
- Open: Click to open the settings window of the selected Master Preset.

5.3.8 Sub-Preset Change

This event is used for changing the Sub-Preset of Ateis devices. Each state can be linked to a Sub-Preset. When a source triggers a Sub-Preset Change event, it will send a state number to the event, then changes to the Sub-Preset linked to the state.

Click [Add] to create a new event, and a pop-up setting window will be displayed, here you can choose which kinds of event users acquired. Select [Sub-Preset Change] option on [Type] drop-down box, then press [OK].



❖ Event Settings

Click [Content...] button on Event Manager window to open the settings window of event.



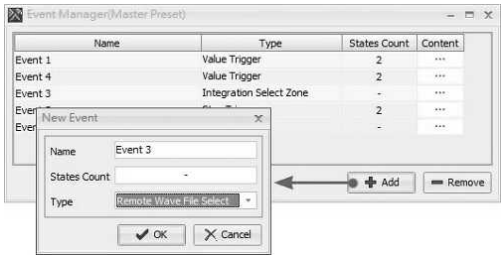
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- No: Indicate the state No.
- Master Preset: Define which Master Preset links to the state.
- Open: Click to open the settings window of the selected Master Preset.

5.3.9 Remote Wave File Select

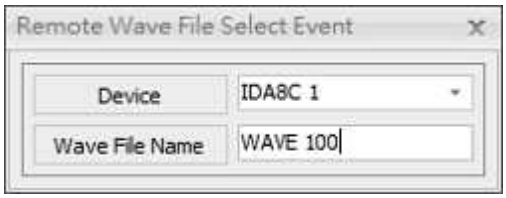
This event is used for selecting the wave files of Ateis devices. When an audio source triggers the selecting event, it will send a state number to the event, then the selected changes of wave file will linked to the state.

Click [Add] to create a new event, and a pop-up setting window will be displayed, here you can choose which kinds of event users acquired. Select [Remote Wave File Select] option on [Type] drop-down box, then press [OK].



❖ Event Settings

Click [Content...] button on Event Manager window to open the settings window of event.

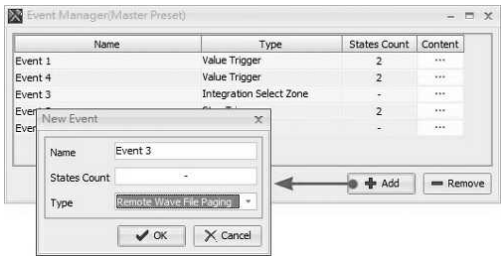


- Device: The device corresponds to the trigger event.
- Wave File Name: The name of the wave file.

5.3.10 Remote Wave File Paging

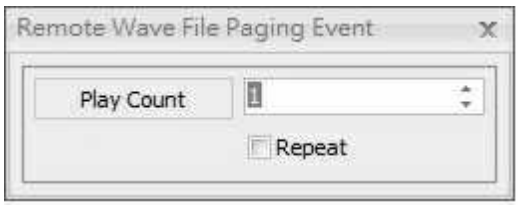
This event is used for paging the wave files of Ateis devices. Choose the wave file and execute the wave paging linked to the state.

Click [Add] to create a new event, and a pop-up setting window will be displayed, here you can choose which kinds of event users acquired. Select [Remote Wave File Paging] option on [Type] drop-down box, then press [OK].



❖ Event Settings

Click [Content...] button on Event Manager window to open the settings window of event.



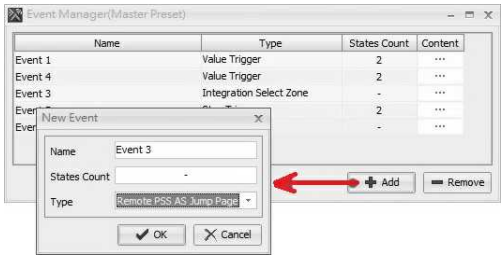
- Play Count: Set the play times to enable the wave paging.
- Repeat: Tick [Repeat] checkbox to enable the wave paging continuously.

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5.3.11 Remote PSS-AS Jump Page

This event is used for jumping pages in the Ateis devices. When an audio source triggers the selecting event, users can customize the pages which reduce the difficulties for switching pages repeatedly.

Click [Add] to create a new event, and a pop-up setting window will be displayed, here you can choose which kinds of event users acquired. Select [Remote PSS-AS Jump Page] option on [Type] drop-down box, then press [OK].



❖Event Settings

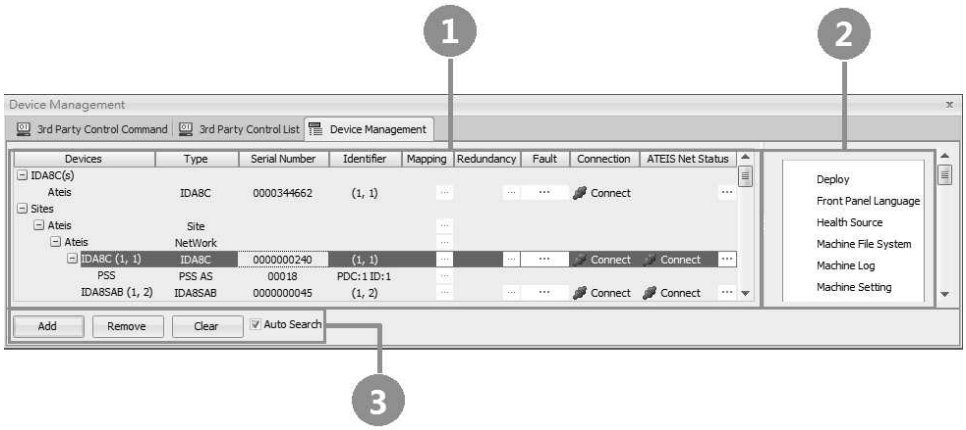
Click [Content...] button on Event Manager window to open the settings window of event.



- Page: Select the page which users intend to switch to.

5.4 Device Management

Device Management window helps to search the Ateis devices on network. Select the [Device Management] tab or open it through the menu [View > Device Management].



1 Device Information:

- Devices: List the Ateis devices. In addition, click the [Devices] tab to arrange the devices which are listed in Device List window in alphabetical order.

If the Ateis Studio cannot find IDA8 devices, please see Ateis Studio Cannot Find Devices troubleshooting for details.

- Type: The type of the Ateis device such as ECS, IDA8C etc..
- Serial Number: The serial number of Ateis device.
- Identifier: Display the ID of Ateis Net as (X, Y), X indicates as the ID of global net and Y as local net.
- Redundancy: The redundancy address of the device.

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- Fault: Display the fault status of devices. If a fault is detected, this field will display [....] button, click to open the Fault List window.
- Connection: Display the status of Ateis device on Ethernet communication (Connect, Disconnect and Block). If the Connection grid displays in [Block], click [Clear] button to refresh the status again.
- ATEIS Net Status: Display the status of Ateis device on Ateis net backup (Connect, Disconnect and Backup). Click [....] button to open the Ateis Port window.

2 Device Function: All the available functions of the device.

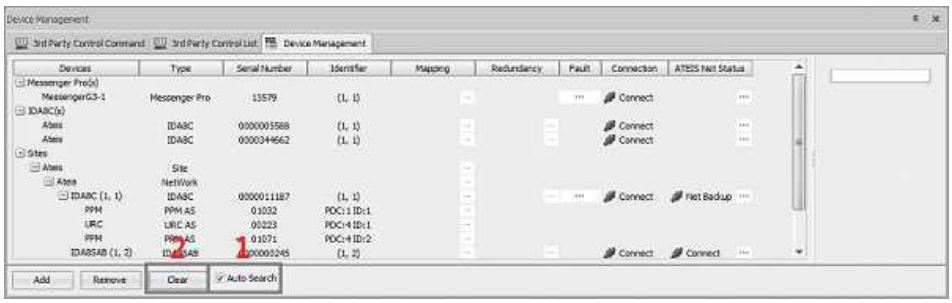
3 Search Devices:

- Search: Click to search the Ateis devices on network.
- Remove: Remove the selected Ateis devices on network.
- Clear: Clear the current search results on the grid.
- Auto Search: Click to auto refresh the Device List.

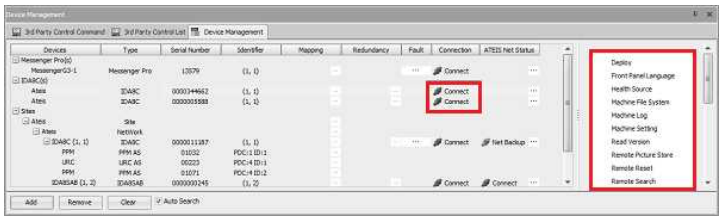
To auto search the DNM-ENET noise sensing microphone(s) which are connected in LAN, please enable the [DNM-ENET Monitoring] option on Ateis Studio software > Tools window.

5.4.1 Search and Connect

1. Before searching the Ateis devices in LAN, the device information area will be shown as empty.
2. Click [Auto Search] button under the Devices tab, then click [Clear] button, the device list will appear after few seconds.

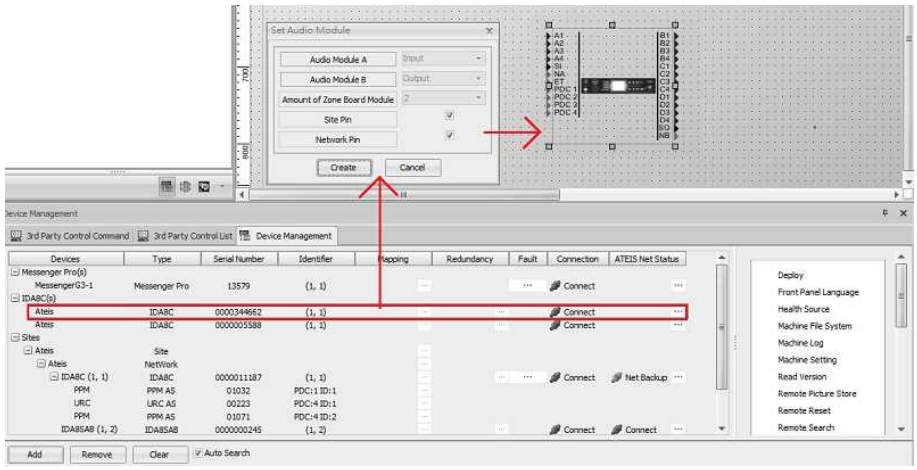


3. The [Connection] block in red shows which device has been connected and the block at the right shows the function settings users can configure such as Update Firmware, Download Config etc..



4. Now Drag n Drop the device/system into the configuration window, there will be a [Set Audio Module] window appears. See the picture below,

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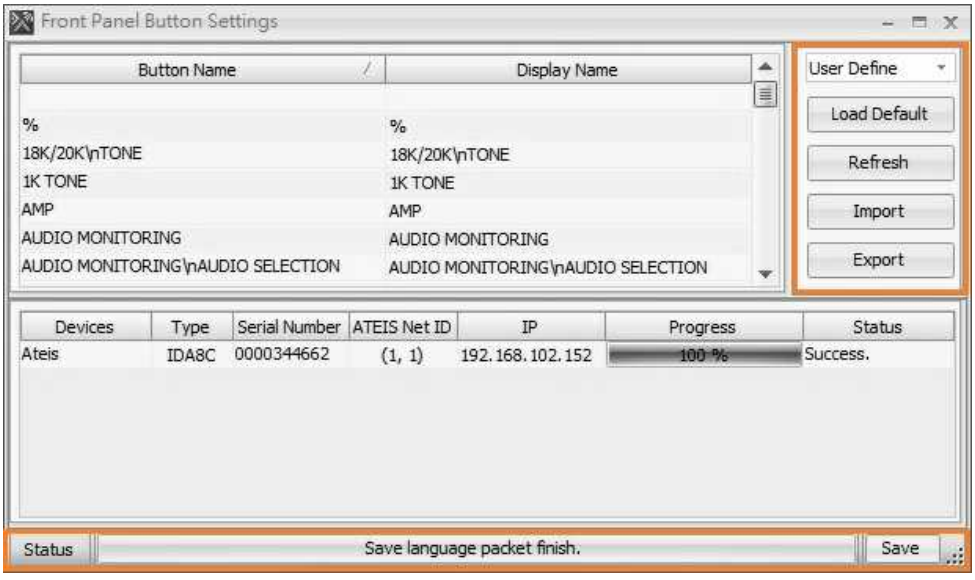


5.4.2 Front Panel Language

❖ For Ateis Studio Version 2.0.X

Allow to modify the texts on front panel display to customized languages.

- Step 1:
  1. Open [Device Management] window.
  2. Search and connect to the device.
  3. Click [Front Panel Language] button.
- Step 2:



- User Define: Choose to apply which modes.
- Load Default: Read the signal default.
- Refresh: Refresh the setting in your device.
- Import: Import an Ateis Studio .xml file.
- Export: Export the selected files into a .xml file.
- Status: Show the process is in progress: Success or Failed.
- Save: Save the selected files, and settings will be displayed on the front panel.

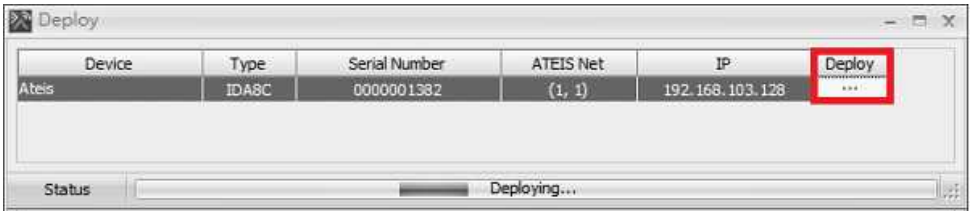
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This function requests to log in (Level 4) when operating the device.

5.4.3 Deploy

The Deploy function allows to configure the networking state of devices on Ateis-Net. Connecting the physical units together through ATEIS Global-net port and the identification must be assigned to each device when they are setup for the first time. To do this, you need to configure the "config IP" function by following the steps listed below:

1. Open [Device Management] window.
2. Search and connect to the device.
3. Select the device on the Device List and click [Deploy] button.
4. After a pop-up window appears, click [...] Deploy button to start deploying.

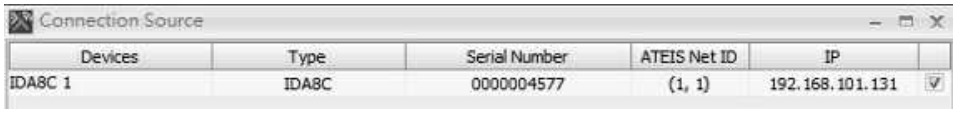


5.4.4 Connection Source

Allow to check the status of devices that have been fully connected to PC via CAT5 cable connection.

1. Open [Device Management] window.
2. Search and connect to the device.
3. Select the device on Device List and click [Connection Source] button.
4. Click [Download Config] to execute a retrieve the parameters that are stored in the Ateis devices.
5. After a pop-up window appears, check the device that ticks the checkbox.

This action can only be ticked one at a time.



5.4.5 Machine File System

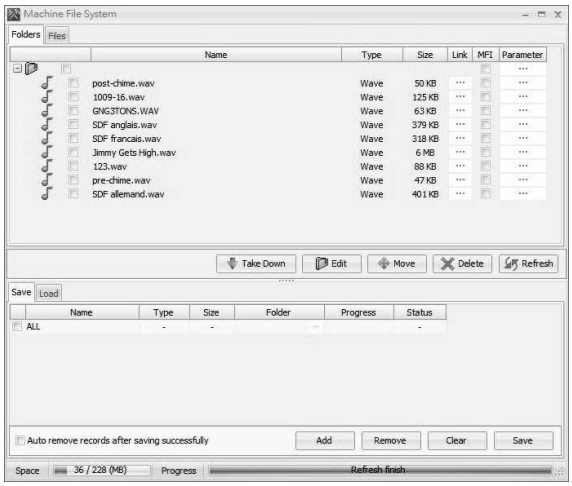
Allow to manage the audio (WAVE, G.722), figure (Bitmap) and messenger machine (HAC) with specific order and topic stored in your device. Click to open [Machine File System] setting window.

5.4.5.1 How To

The example here is IDA8 system, the configuration is the same for other Ateis audio processors. This chapter will help you to comprehend each steps.

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❖ Step 1: [Open the setting Window]



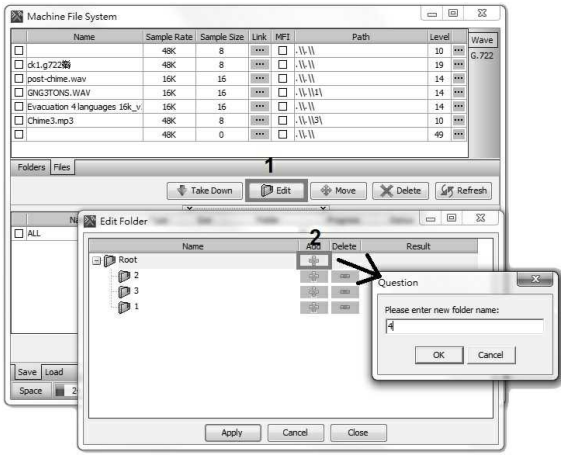
- Open [Device Management] window, and click [Machine File System] button.
- The supported formats of audio files include WAV and G.722 format:
  - 16K, 16bits.
  - 24k, 16bits.
  - 48k, 16bits.
- The capacity of the audio sources:

Item	Capacity
IDA8C	200MB
IDA8S	100MB
LAP G2T	100MB
ECS	100MB

Please make sure the software's version is correct as it will affect the path of file storing.

❖ Step 2: [Create a new folder]

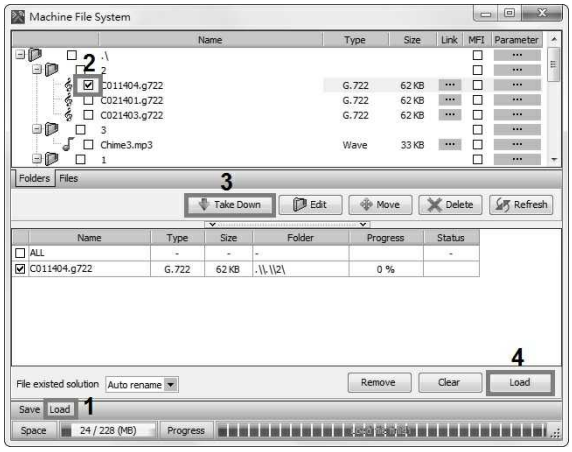
- Click [Edit] button to open the [Edit Folder] window, and click [+] [-] button to add/delete a new folder, there will be a pop-up window which you can set the folder name.
  After that, click [Apply] button to apply the new settings.



❖ Step 3: [Load the file]

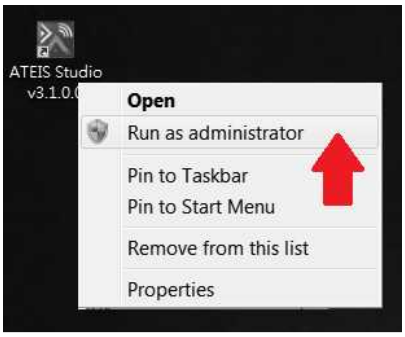
Follow the 4 steps on the upper picture,

1. Click [Load] tab.
2. Select the file.
3. Click [Take Down] button to add the selected file.
4. Click [Load] to load the file.



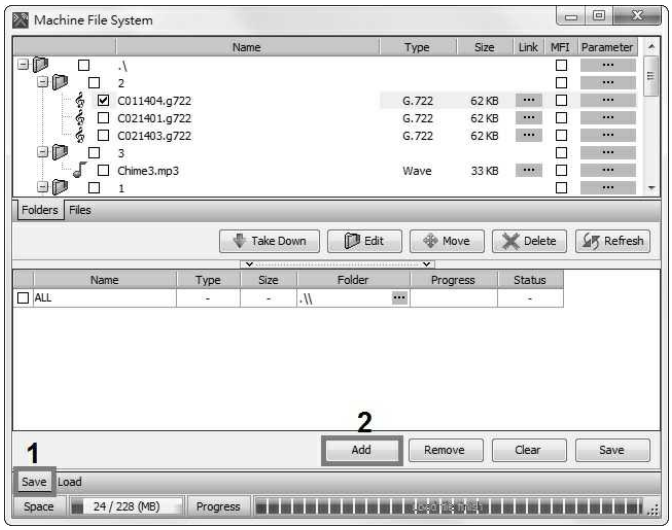
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If the selected files you have loaded from the device cannot be seen on Machine File System, please restart the software again by using [Run as administrator]. See the picture below,

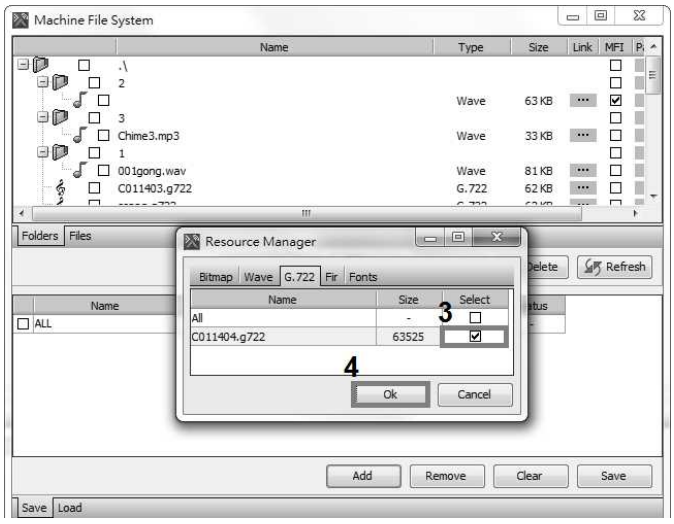


❖ Step 4: [Add and save the selected file into the folder]

1. Go to [Save] tab.
2. Click [Add] button to open the [Resource Manager] window.



3. Tick the file you wish to add in.
4. Click [OK] button.

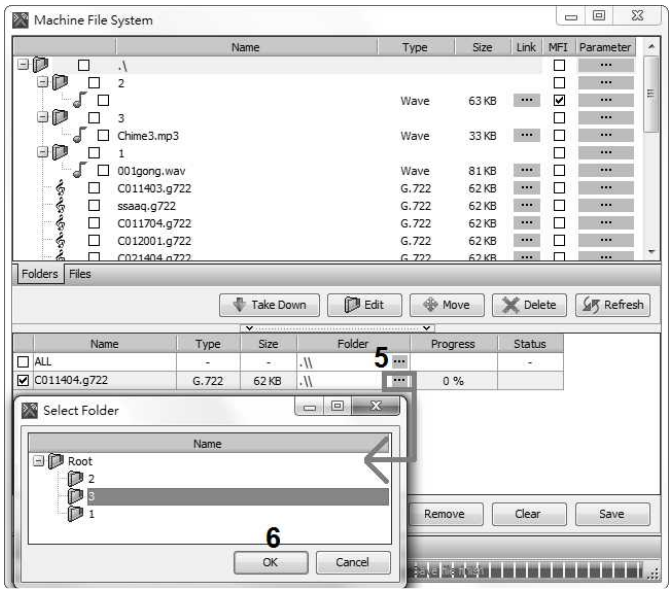


5. After the file has been saved

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added, click the [...] button on the file. Then a pop-up Select Folder window will be displayed, please select the Root folder you wish this file to be added in.

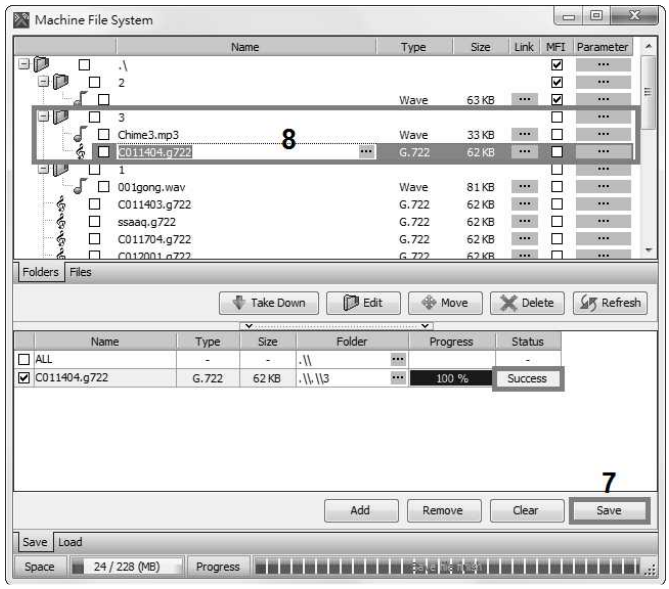
6. Click [OK] button.



5. Click [Save] button.

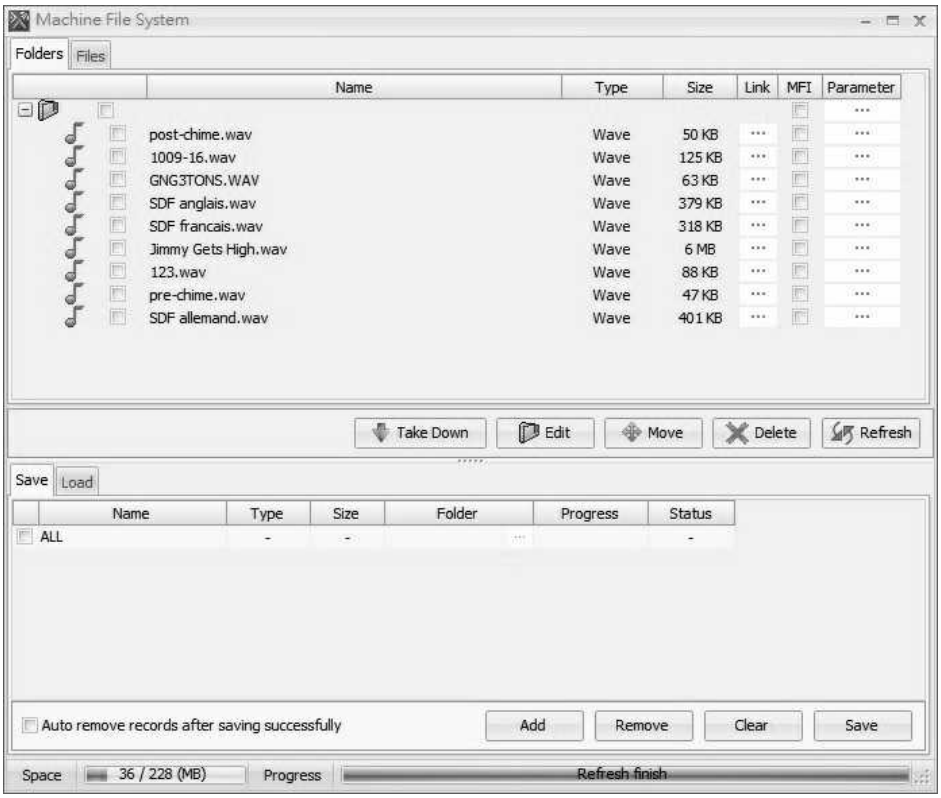
6. The file will be automatically added into the assigned folder which listed on the top of the [Folder] window.

❖ Once the settings have been made, users can add a message player component and use the files in the device to play messages.



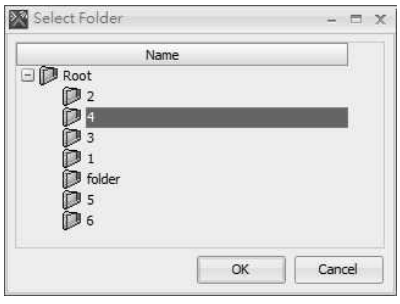
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5.4.5.2 Parameters



❖ Top Grid

- Take Down: Move the file from the Folder window to the below grid.
- Edit: Add a folder/file.
- Move: Select the files you wish to put into on [Folders] window, and click [ ] button to open [Select the folder] window, then choose the folder you wish the files to put into.



- Delete: Delete the folder/file.
- Refresh: Refresh the setting.
- Link: The source of the folder/file.
- MFI (Monitor File Integrity): Click to monitor the selected files once/per hour, when the selected files are damaged and

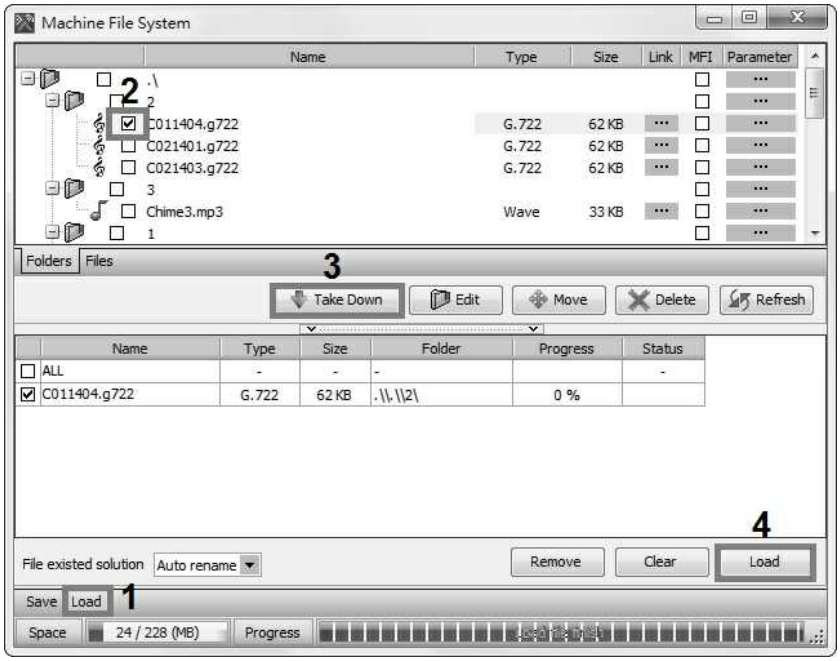
❖ Bottom Grid

- Status: Status of the file (succeed or fail).
- [Auto remove records after saving manually]: After this setting is enabled, the files which have been successfully uploaded into IDA8C processor will not be listed, instead leaving the unfinished/failed files on the list.
- Add: Add the selected WAV/G722 format.
- Remove: Remove the selected files that listed on the bottom of [Folder] window.
- Clear: Clear all the files that listed on the bottom of [Folder] window.
- Save: Save the selected files in your device.
- Save: Display and save files from PC into your device.
- Load: Display save uploaded files from your device into PC.
- Progress Bar: Progress of the file (0%-100%).

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cannot be played, the IDA8 system will show [File Corruption] fault.

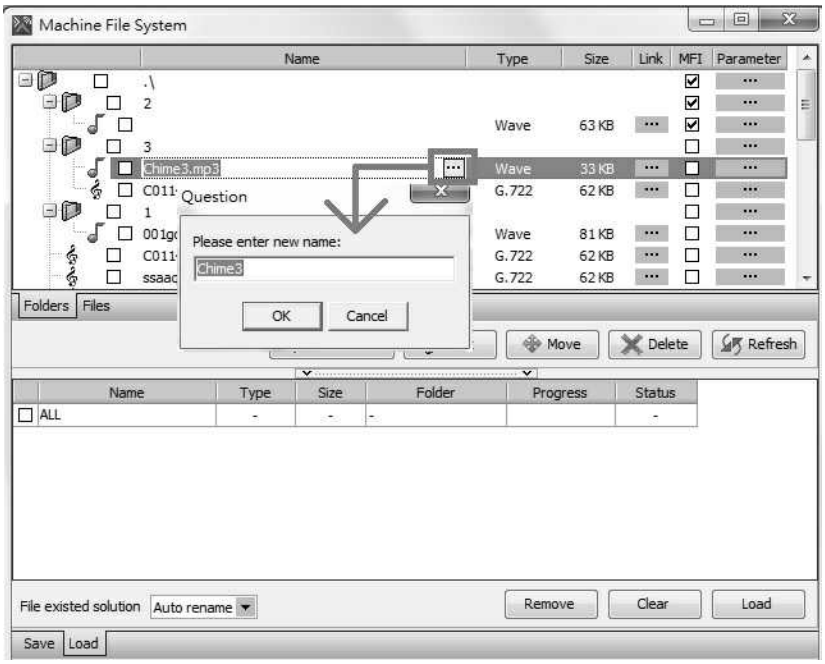
❖ Load the files



- File Existed Solution:
  1. Auto Rename: Choose this to rename to file name + (x). x indicates the files with the same name. Eg: C011404.g722 will rename to C011404(1).g722
  2. Give up: Choose this to give up to load the file which is existed or with the same file name.
  3. Replace: Choose this to overwrite the file which is existed.

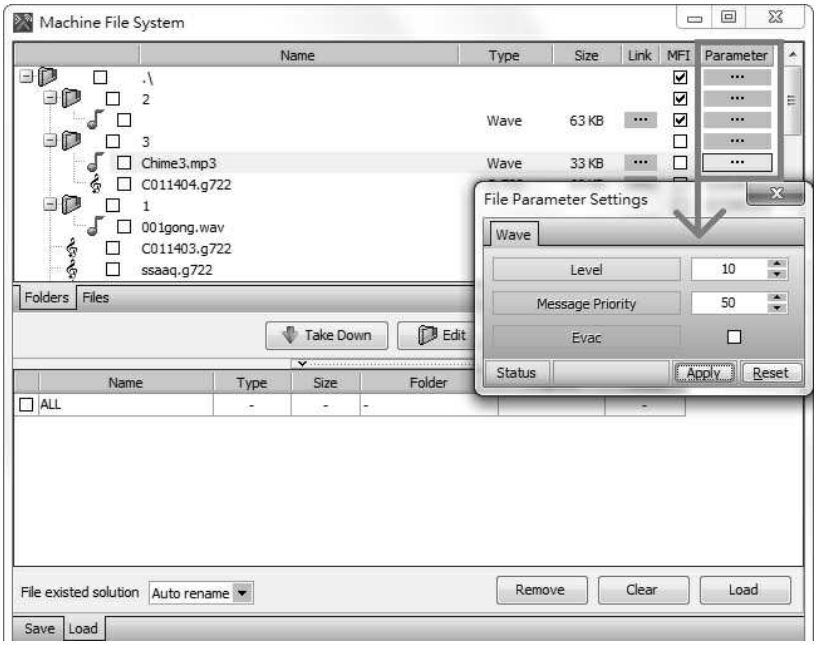
❖ Change File Name

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- The name of file cannot be more than 50 characters.
- The name of chime file cannot be more than 16 characters (including the characters of file format such as .wav or .g722).

❖ Change Parameter of Wave File



- Level: To increase and decrease audio volume. Please refer to mapping table below and see the actual dB with its corresponded level.

Level	dB
0	-60
1	-41
2	-37
3	-33
4	-29
5	-25
6	-21

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Level	dB
7	-19
8	-16
9	-13
10	-10
11	-7
12	-4
13	-2
14	0
15	2
16	4
17	6
18	8
19	9
20	10

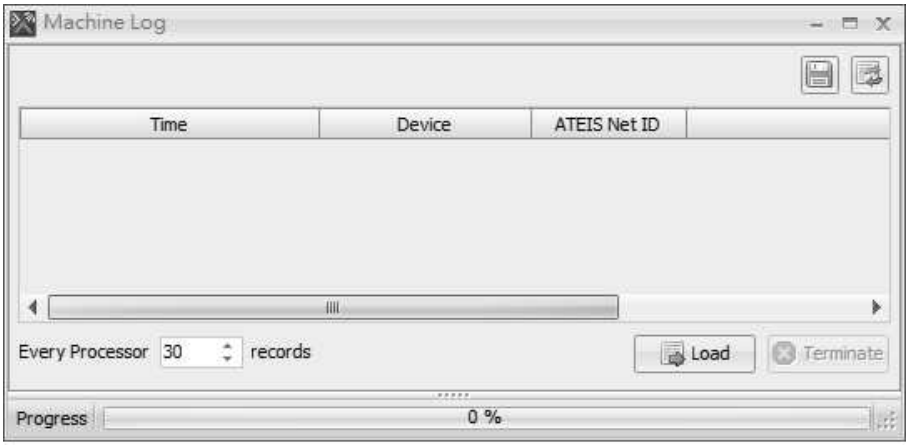
- Message Priority: The default priority of Modbus message when triggering the message file.
- Evac: The default type of Modbus message when triggering the message file.
- Apply: Confirm the alteration.

Once the settings have been made, users can manage the audio volume changing with the stored files.

5.4.6 Machine Log

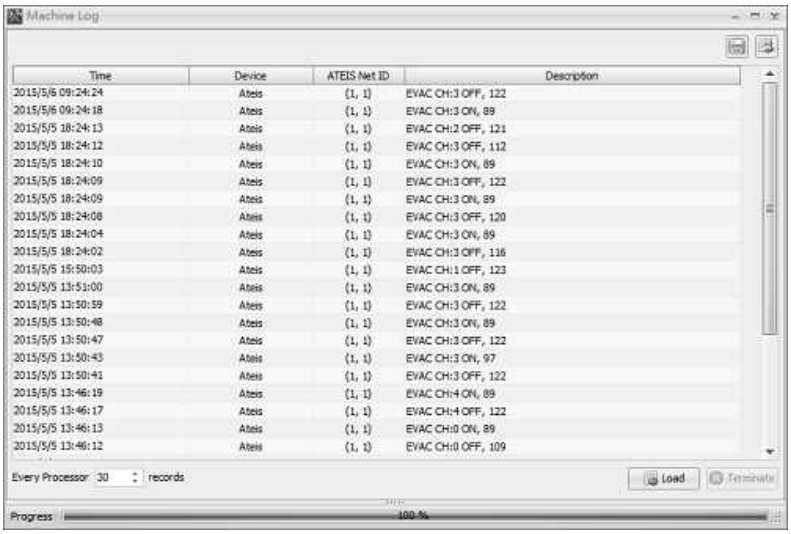
Allow to read the log of audio processor.

1. Open [Device Management] window.
2. Search and connect to the device.
3. Click [Log] to open the log window.



4. Set the read count and click [Load] button to show the logs. In case of sending the log to your technician, click [Save Record] button to generate a .txt file.

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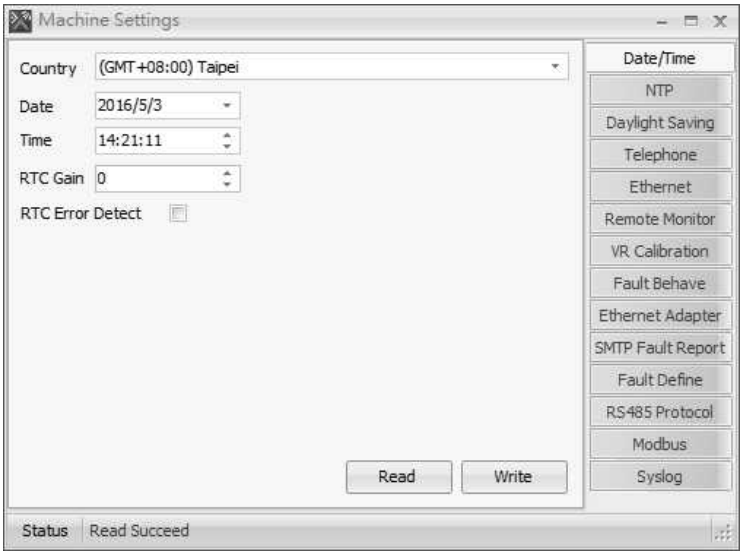


5.4.7 Machine Setting

1. Open [Device Management] window.
2. Search and Connect to the device.
3. Click [Machine Setting] to open its control window.

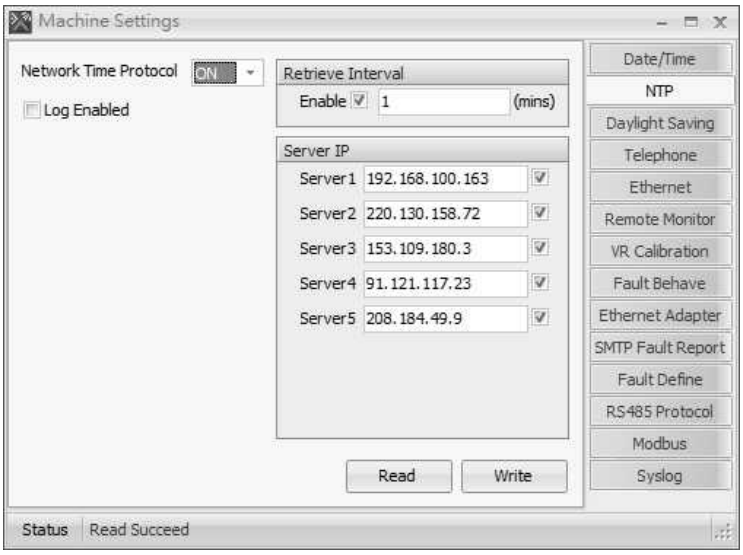
5.4.7.1 Date/Time/NTP/Daylight Saving

❖ Date/Time

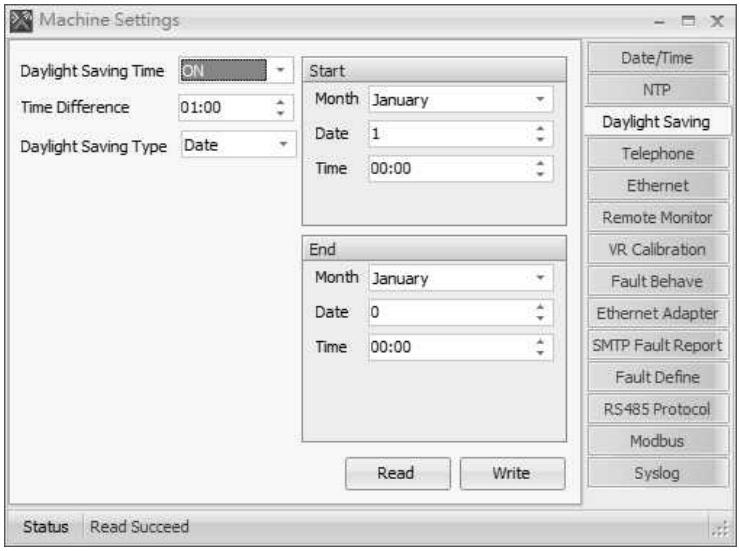


❖ NTP: Read the Time set in the device and manually adjust the time by clicking [Read] and [Write] button. The adjustment is required in period for the component which is associated with the time such as Scheduler. You can use the NTP server (Network Time Protocol) to sync the clocks on your LAN.

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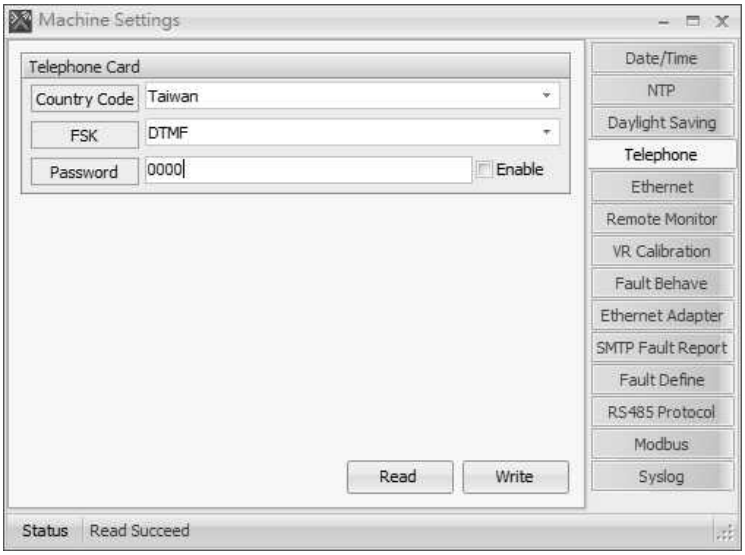


❖ Daylight Saving



5.4.7.2 Telephone Setting

Click [Telephone] to open [Telephone Card] window.



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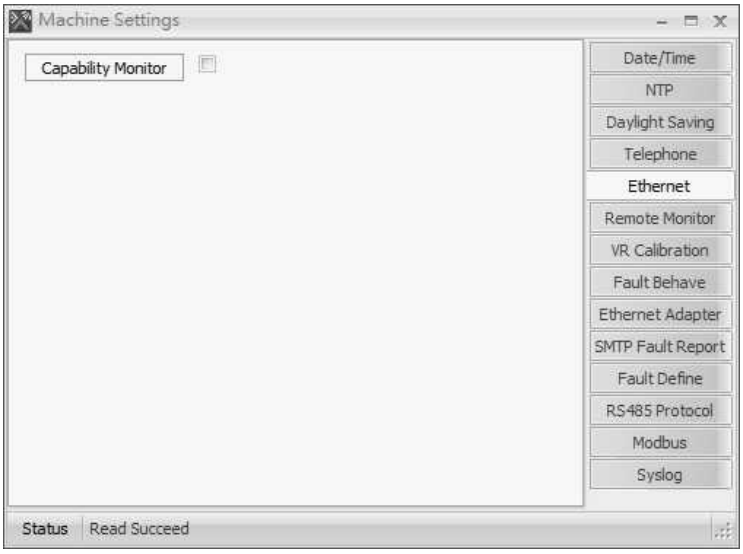


- Country Code: Select the country/area.
- FSK: Choose the standard for transmitting caller ID.
- Password Enable: Enable the password access if the caller has paging request.

5.4.7.3 Ethernet Monitor

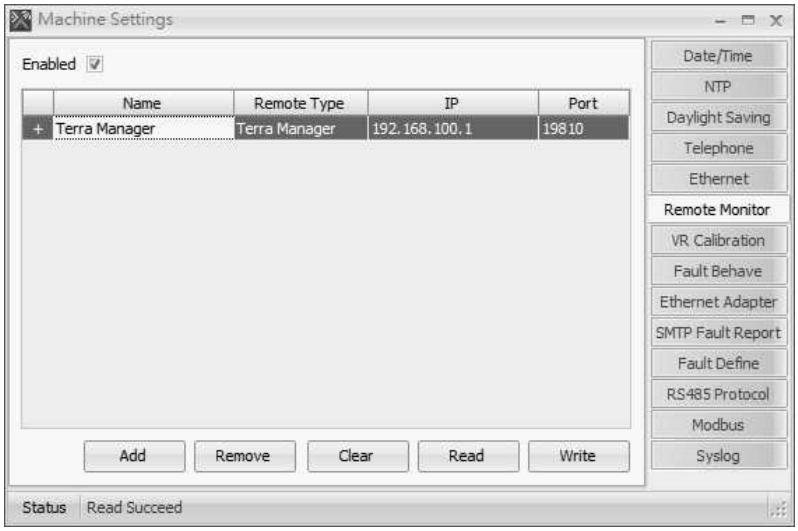
Allow to monitor the Ethernet status.

Once enabled, the fault message will show in log list when the communication is broken.



5.4.7.4 Remote Monitor

Click [Enabled] checkbox to monitor the TerraManager software.



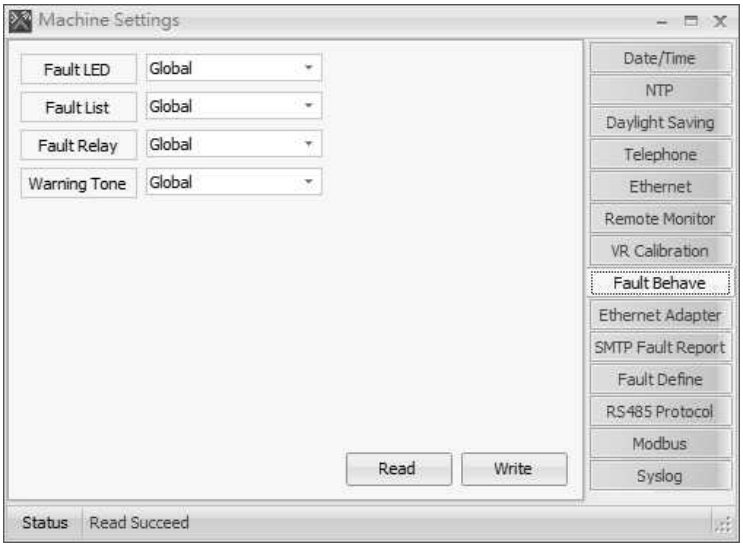
- IP: The IP address of TerraManager.
- Port: Enter the default port of TerraManager: 19810.

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- Read: Refresh the setting.
- Write: Save the setting.

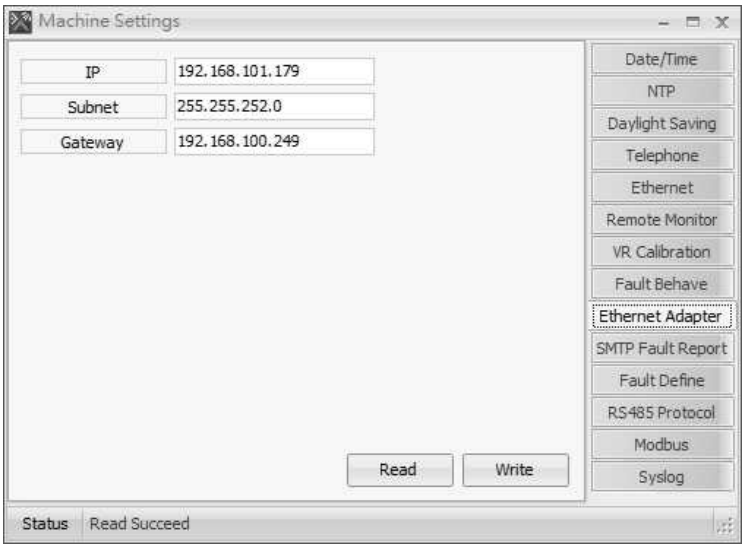
5.4.7.5 Fault Behave

Allow to choose either global or local system as the norm for the whole system.



5.4.7.6 Ethernet Adapter

Allow to change the IP, Subnet and Gateway. After changing it, click [Write] button, then reboot the machine again. The IP address will change to the new one.

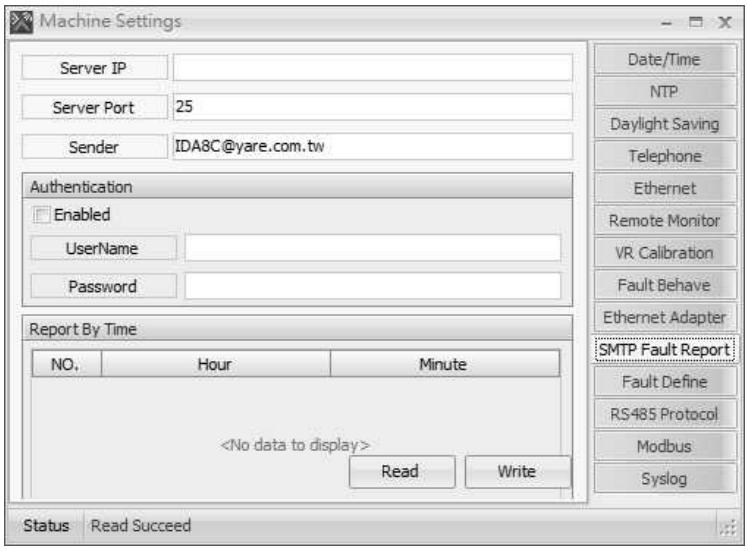


5.4.7.7 SMTP Fault Report

Allow to receive fault reports from IDA8 by e-mail.

1. Open [Device Management] window.
2. Search and connect to the device.
3. Click [Fault E-Mail Setting] to open [Fault E-mail Setting] window.

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- Server IP: Enter the mail server.
- Server Port:SMTP port of the mail server. The default value is 25.
- Sender: The sender's name, the default is "Devicename@yare.com.tw".
- Authentication: Enable to set the username and password for avoiding receiving the spam.
- Report By Time: Set 5 different time a day at which the device will send the report.

4. Once the e-mail setting is done, the e-mail sent by the device contains two parts, one is the fault list and the other is the list of the devices which haven't reported faults. See the picture below,

Sender-Time	Wed, 22 Aug 2012 18:11:43 +0800
From	IDA8C@yare.com.tw
To	1111@192.168.100.176
CC	
Subject	Status reporting

(1,1)
No Preset Table.
Reset Error.
Local AteisNet Backup Mode.

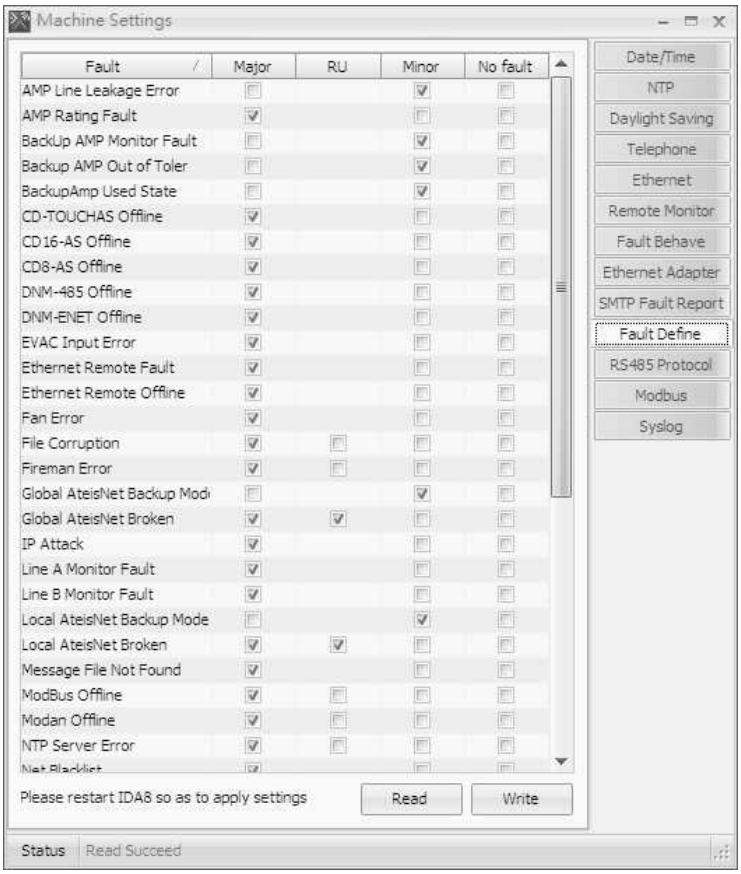
No Response
(1,2)

5.4.7.8 Fault Define

Allow to define the type of fault as the Major/RU Switch/Minor/No Fault.

After applied the Fault Define settings on one IDA8 processor, the settings of the rest of connected IDA8 processors will be modified synchronously.

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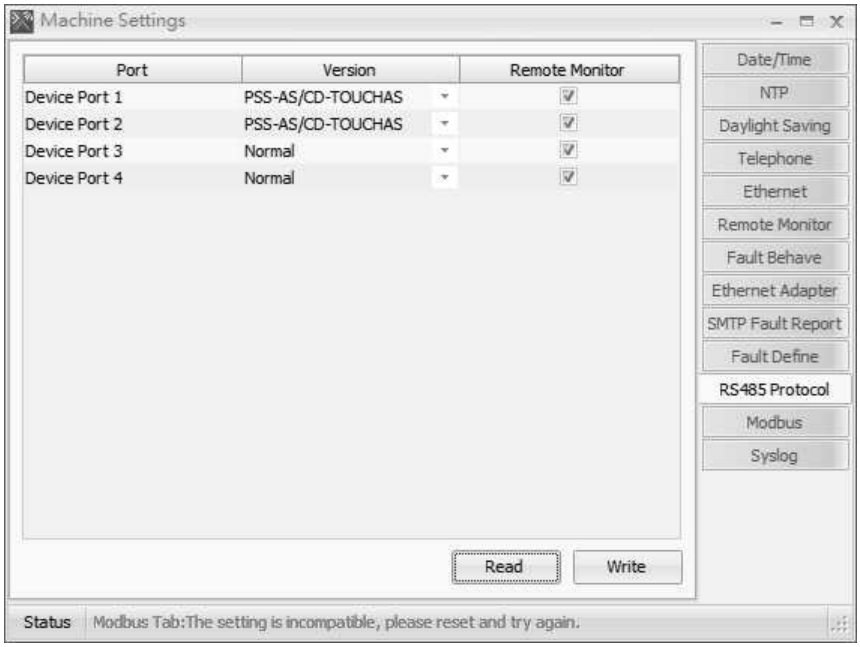
Tick the checkbox of various faults you want to be informed/warned.

- Major: The general fault. When this type of fault has occurred, it will open the fault relay of IDA8. The G. Fault LED on the front panel of IDA8 will light up and also display the fault on the LCD panel of IDA8.
- RU: When this type of fault has occurred and the system has been configured as redundant, the primary IDA8 will be switched to the second IDA8.
- Minor: The minor fault. When this type of fault has occurred, it will not open the fault relay of IDA8. The G. Fault LED on the front panel of IDA8 will still light up and also display the fault on the LCD panel of IDA8.
- No Fault: The fault will not be reported even if fault has occurred.

Please manually restart the IDA8 processor after the modification, so that the settings will apply to the system.

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5.4.7.9 RS485 Protocol

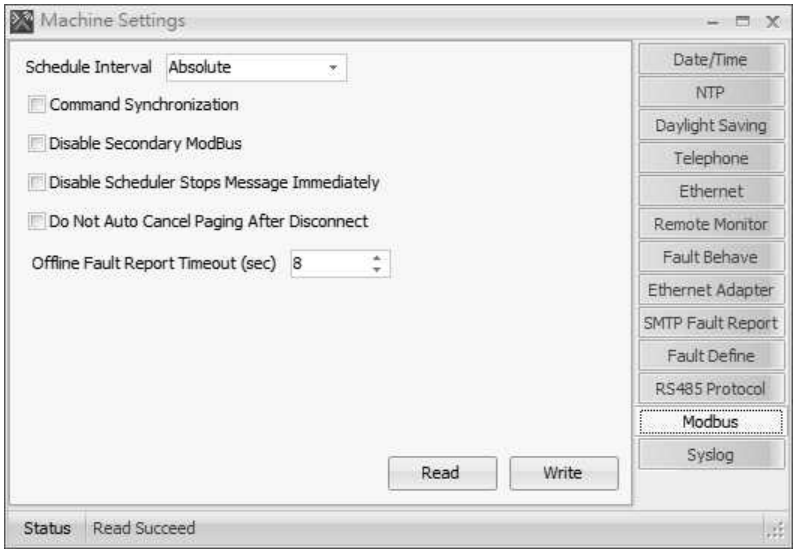


- Version:
  1. When the PSS-AS or CD-TOUCHAS device is connected to PDC port, select [PSS-AS/CD-TOUCHAS] from the drop-down Version box.
  2. When the PPM-AS, URC-150AS or DNM-485 is connected to PDC port, select [Normal] from the drop-down Version box.
  3. When using dual ports on CDPM, select [CDPM Dual Port] from the drop-down Version box.
- Remote Monitor:

  Enable or disable the remote monitoring function. If the wiring connection between the remote and IDA8 is broken, it will display a [Remote offline] fault.

5.4.7.10 Modbus

Allow to set the message schedule of Modbus.



- Schedule Interval: Choose schedule interval to be as [Absolute] or [Relative] for the message schedule.

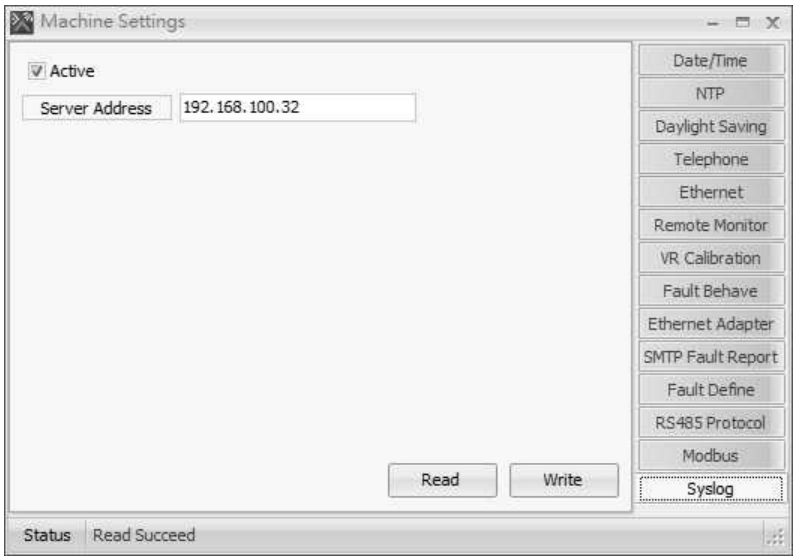
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- Command Synchronization: Click to auto synchronize the Modbus commands of standby unit when redundancy configuration.
- Disable Secondary Modbus: Click to disable the Modbus connection of standby unit when redundancy configuration.
- Disable Scheduler Stops Message Immediately: Click to stop the message/music playing when disable the scheduler function via Modbus client, or the audio will be stopped after the message playlist ends.
- Do Not Auto Cancel Paging After Disconnect: Click to not automatically cancel the triggering paging after the Modbus connection fails.
- Offline Fault Report Timeout (sec): Set the time to report the [Modbus Offline] fault on IDA8 when the Modbus connection fails.

5.4.7.11 Syslog

Allow the IDA8C whether to activate the Syslog function or not.

- Active: Click to active the Syslog function.
- Server Address: Enter the IP address server for Syslog.

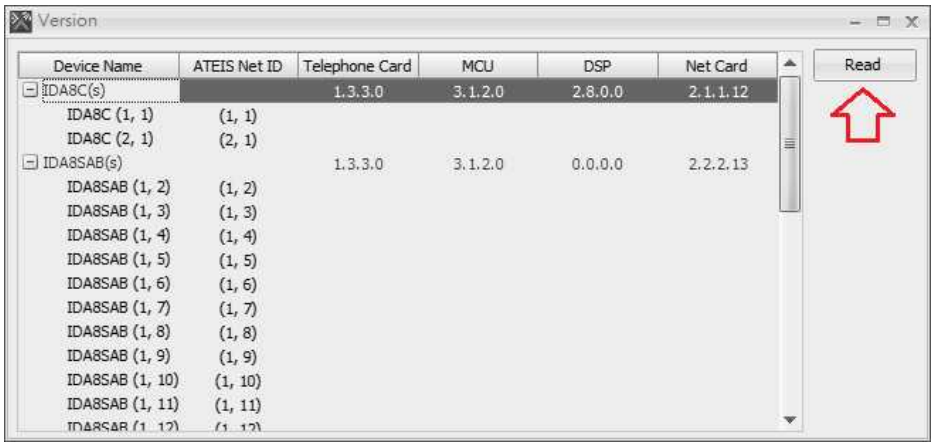


5.4.8 Read Version

Allow which version is loaded in the device and which version is available with the current Ateïs Studio software:

1. Open [Device Management] window.
2. Search and connect to the device.
3. Click [Read Version] to open the window.

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4. Click [Read] button to get the version data from the device.
   - Device Name: The name of each device that has fully connected with.
   - Firmware Unit: The firmware version of the chip (MCU, DSP, NET Card, Telephone Card).

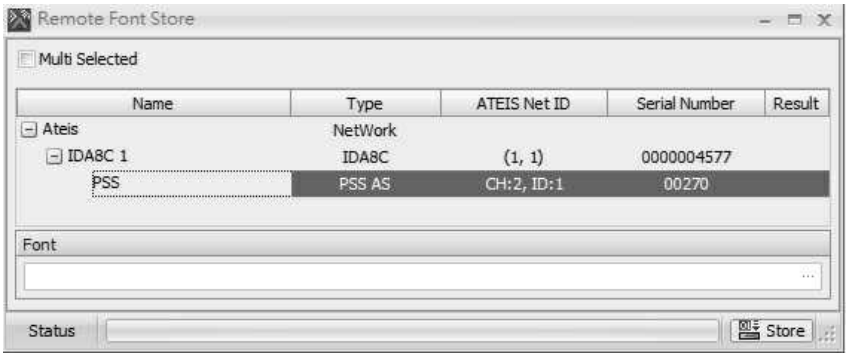
   If the version number or Network ID are marked in red which means the firmware needs to be updated or the device hasn't fully connected with Ateis Studio, see Update chapter.

Press [Ctrl + F3] to open 4 hidden firmware grids in Read Version window: MCU/DSP/FPGA/AEC.

5.4.9 Remote Font Store

Allow to store the custom font file including non-English characters to PSS-AS console.

1. Open [Device Management] window.
2. Search and connect to the device.
3. Click [Remote Font Store] to open the window.



4. Click [...] to choose the font file.
5. Click [Store] to store the setting.
6. After that, please go to [PSS-AS Setting] to enable the [Using Font File] checkbox.

The maximum size of the font file is 8MB, and the source of file will not be provided by Ateis.

5.4.10 Remote Picture Store

Allow to store pictures or replace background pictures in PSS-AS console.

1. First, put the picture file you wish to store into the PSS-AS under the source path: Ateis Studio > Resource > PSS-AS Picture. For example, if you wish to replace the control button in the red circle as the picture below, replace them with your new files.

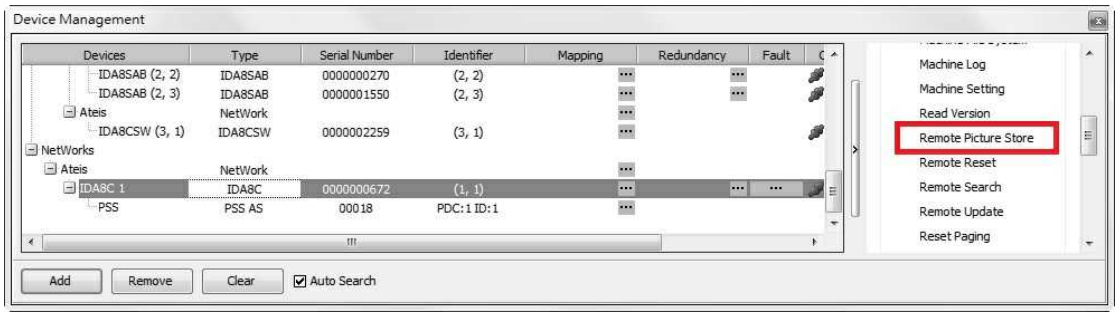
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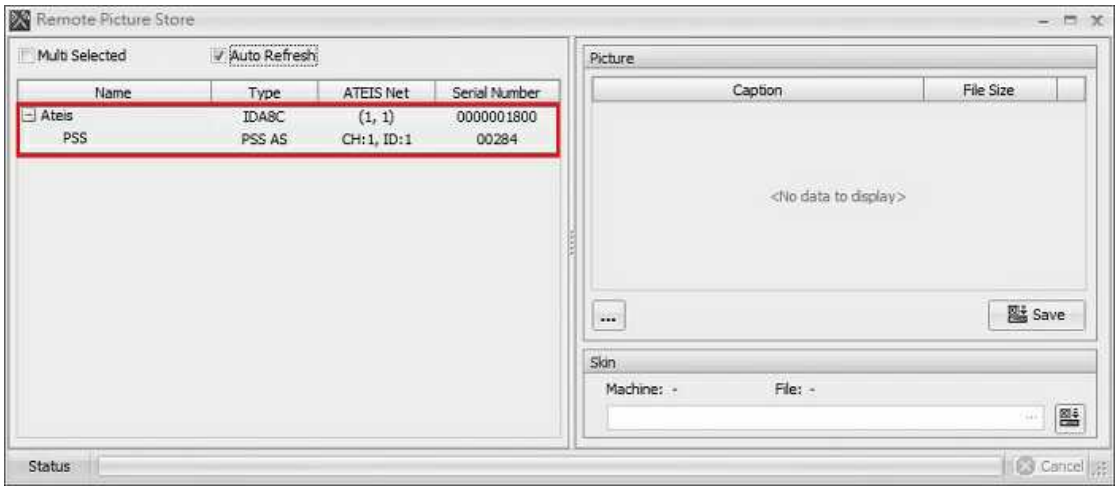
The properties of files need to be followed by the standard format as below in order to be read by the system.

- Size: 144 x 80
- Format: 24bit color bmp
- Name: lamp01_d.bmp (when deselected the button)
- lamp01_l.bmp (when pressed the button)

2. Run the Ateis Studio software, tick [Auto Search] to search the PSS-AS, and select the IDA8 processor and click [Remote Picture Store] on Device Management to open its control window.

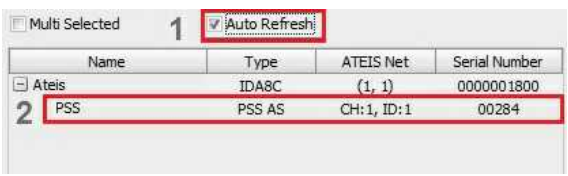


3. A pop-up control window will be displayed. The system devices (IDA8 processor, PSS-AS console) will be listed on the left side.

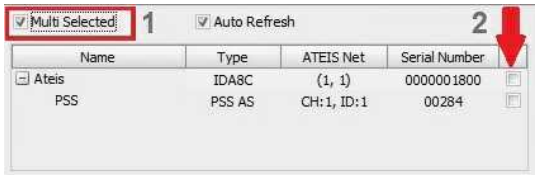


- Tick [Auto Search] checkbox to search the PSS-AS. If there are multiple PSS-AS consoles you wish to change their figure files, tick [Multi Selected] checkbox and select multiple devices.

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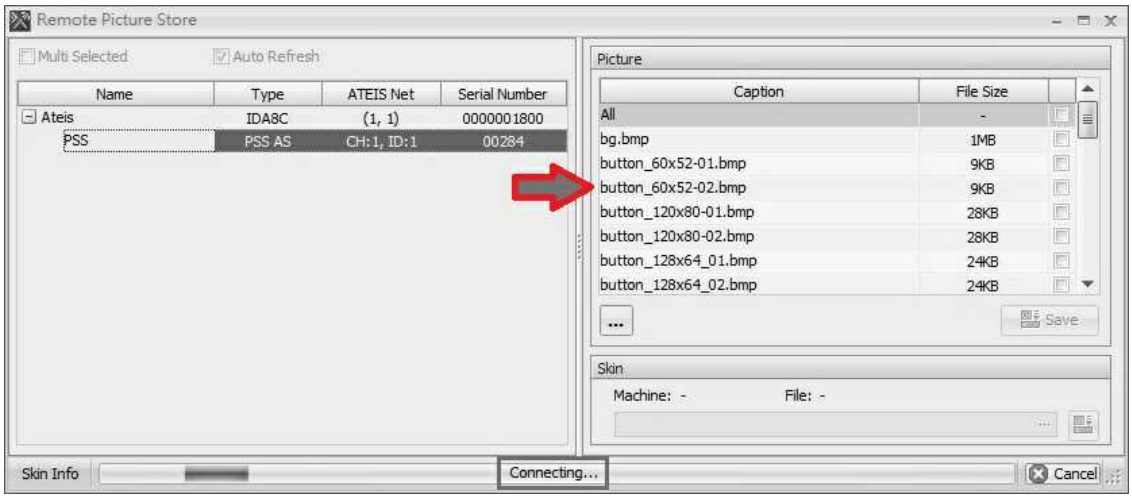


Auto Search

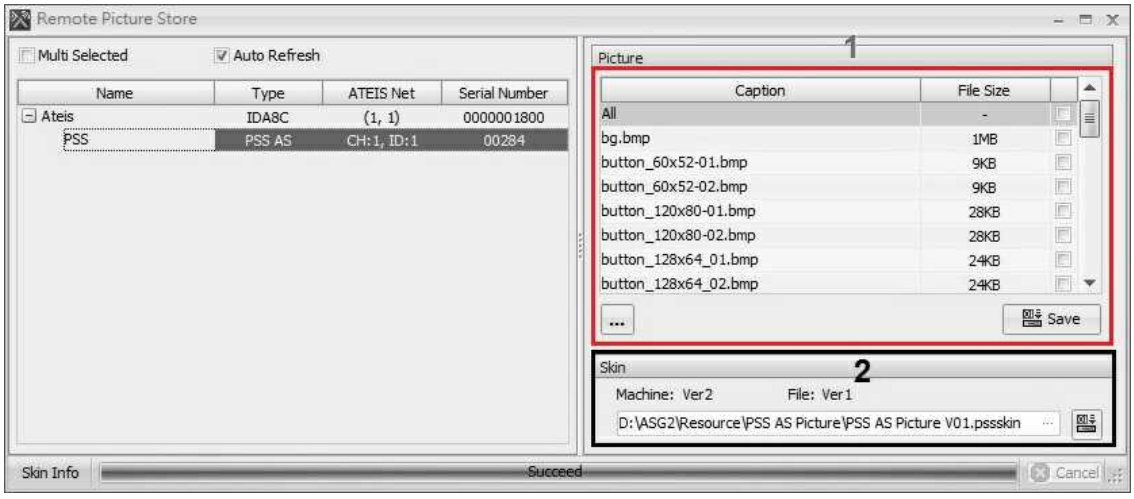


Multi Selected

4. After connecting to the remote, click the device(s) users intend to store pictures into it/them.



- Picture Setting/Skin Setting:

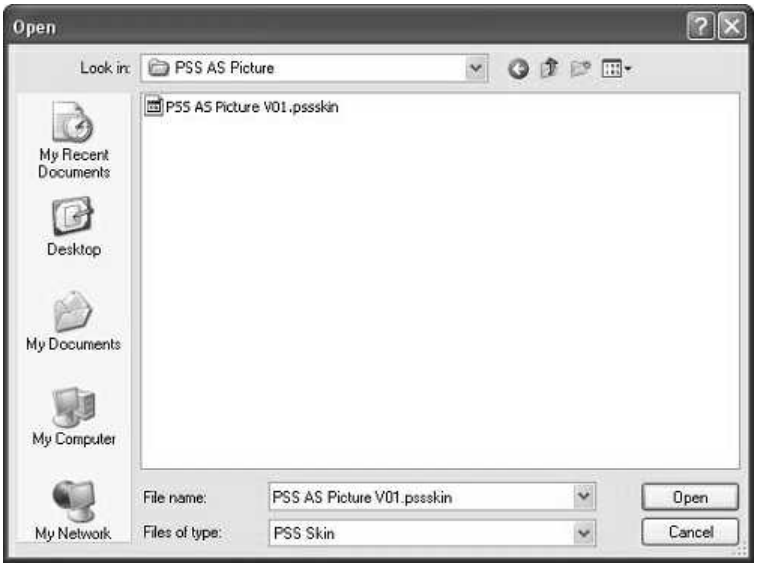


1. Picture Setting: Select the custom figure files.
   - Caption/File Size: The name/size of figure file.
   - : Click to select the file users intend to store into the device. Note: By selecting all the files one at a time, click the first button at the first row [All].
   - ...: Click to open a quick-access of [Resource Manager] window, a database contains files that can be used in a device configuration.
   - Save Save: Click Save button to store the adjustment and upload your configuration into the device.
2. Skin Setting: Select a skin file.

Please send all the bmp files to your Ateis dealer, we will generate a skin file for you. Then you can put this skin file into the source path, see the picture as below.

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- Size: 144 x 80
- [···]: Click to select the skin folder. See the picture below,



- Store all : Click to store the adjustment and upload your configuration into the device.

5. After that, please reboot the PSS-AS console.

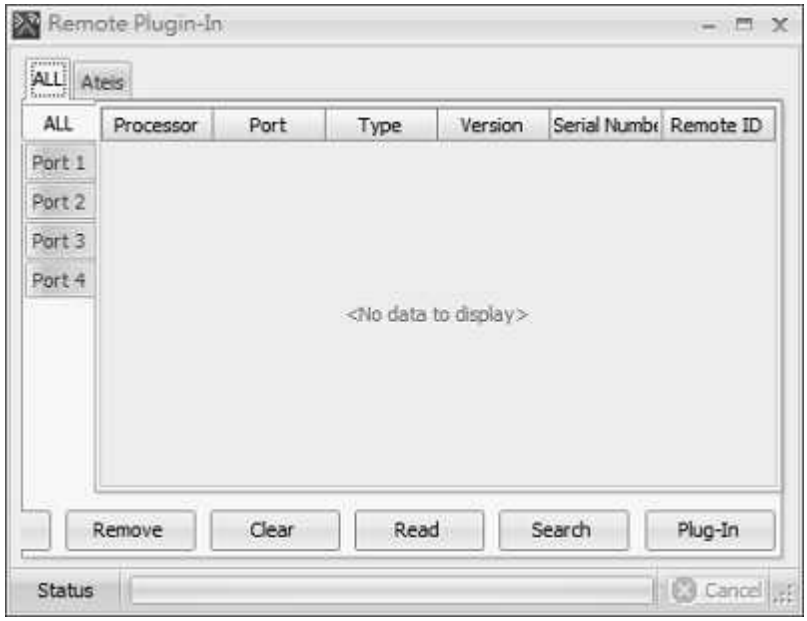


5.4.11 Remote Search

When the remote is used for the first time, users need to configure "Remote Search" function to make the audio processor to recognize it. Follow the steps listed below,

1. Open [Device Management] window.
2. Search and connect to the device.
3. Click [Remote Search] to open the setting window.

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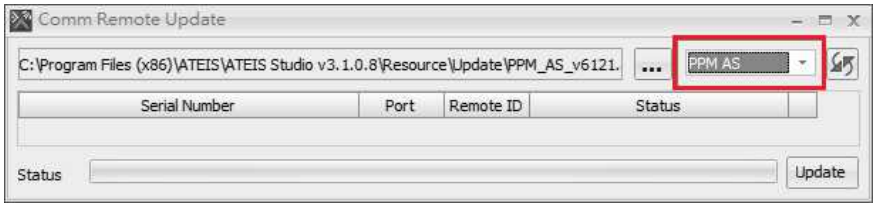
First, Click Select all the remotes from all the ports(port 1 - port 4) or search it by individual port, and click [Search] button, then the remote will be searched/appeared from the IDA8 processor.

- Search: Read and refresh data from the audio processor.
- Remote ID: The internal identification for each remote device.
- Type: Specify which type of remote device belong to the ID.
- Serial Number: Set the serial number of the remote device which can be found on the attached sticker.
- Version: The firmware version of the remote device.
- Port: A drop-down list located on the left bottom is used for switching RS485 channel settings.

5.4.12 Remote Update

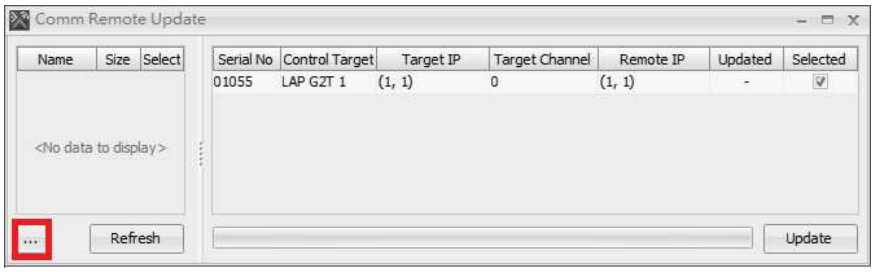
Allow to update the firmware of the remote devices connected with the audio processor.

1. Open [Device Management] window.
2. Search and connect to the device.
3. Once your remote device has been plugged-in, you can click the remote to open the [Remote Update] window.
4. And select the remote type. See the picture as below,

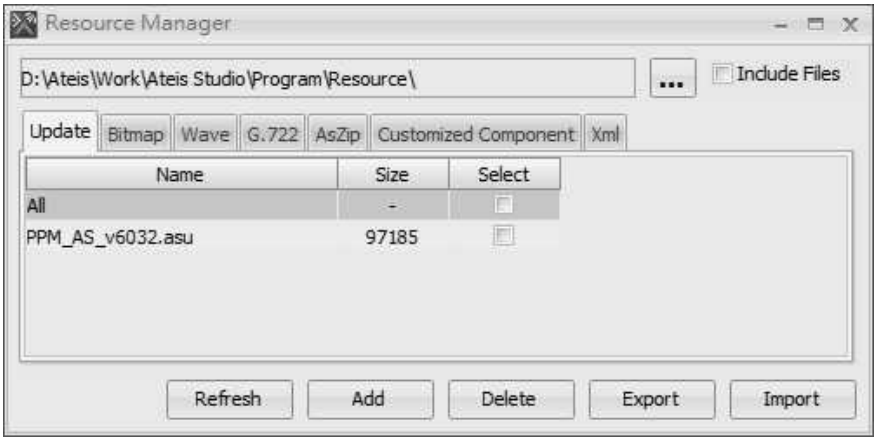


5. The "Comm Remote Update" window appears and lists the device you have.

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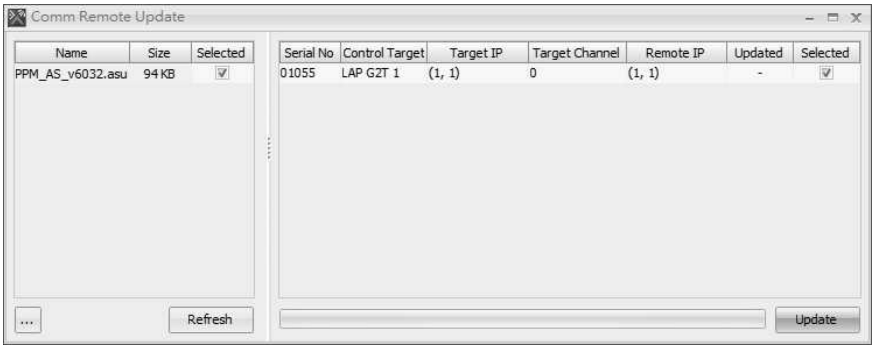


The files will automatically read by Ateis Studio if they're placed under the right directory. If not, click the [...] to browse the files for updating as shown in the picture below:

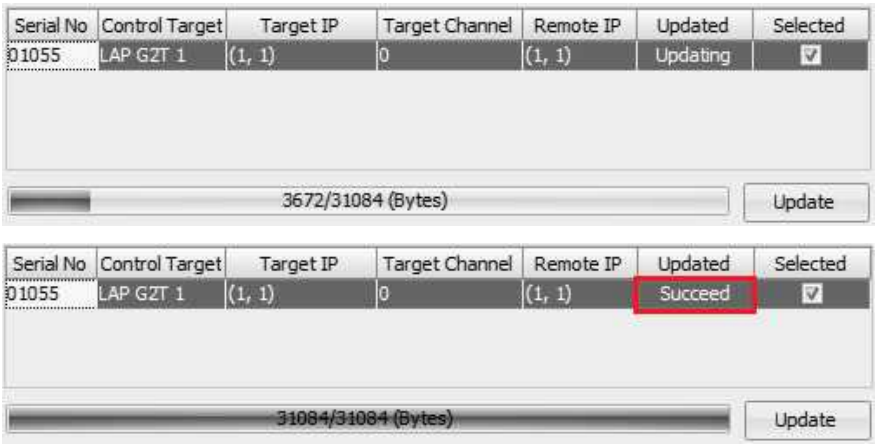


In case of adding files from other directory, click [Add] to browse the files.

6. The available files will be listed at the left part of the window, select the desired file and click [Update] button.



7. The Updating procedure will take a few minutes and once it's done, the Updated status shows "Succeed" .



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5.4.13 Reset Paging

This function helps to cancel all the paging sources such as PPM etc. immediately.

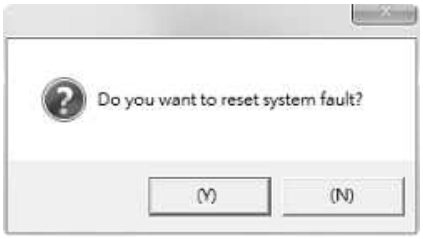
1. Open [Device Management] window.
2. Search and connect to the device.
3. Click [Reset Paging] to open the window. There will be a window appears as the picture below, which will ask you whether you want to proceed this action.



5.4.14 Reset System Fault

When the system fault has occurred, the function helps to reset the System Fault LED from the front panel of IDA8C.

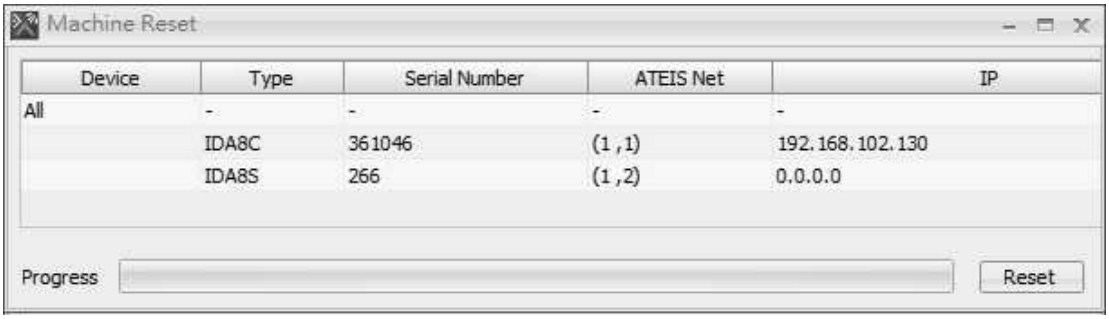
1. Open [Device Management] window.
2. Search and connect to the device.
3. Click [Reset System Fault] to open the window.
4. And Click [Y] to complete this action.



5.4.15 Reset Machine

Allow to reboot the machine by Ateis Studio instead of operating the touch panel.

1. Open [Device Management] window.
2. Search and connect to the device.
3. Click [Reset Machine] to open the control window.



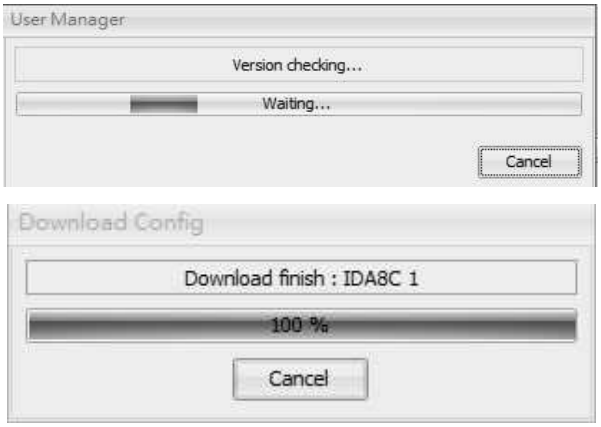
4. Select the units needed to be rebooted first, and click [Reset] to start rebooting.

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5.4.16 Download Config

Allow to retrieve the parameters that are stored in the audio processors.

1. Open [Device Management] window.
2. Search and connect to the device.
3. Make sure the firmware version are compatible before configuring "Download Config". Note: Please go to "Read Version" and "Update" before Download Config.
4. Click [Download Config] to execute the Download Config action.



5. After a pop-up window appears, click Yes/No. Users can save the file if a configuration has already existed due to the Ateis Studio can only edit a file a time.



5.4.17 Update

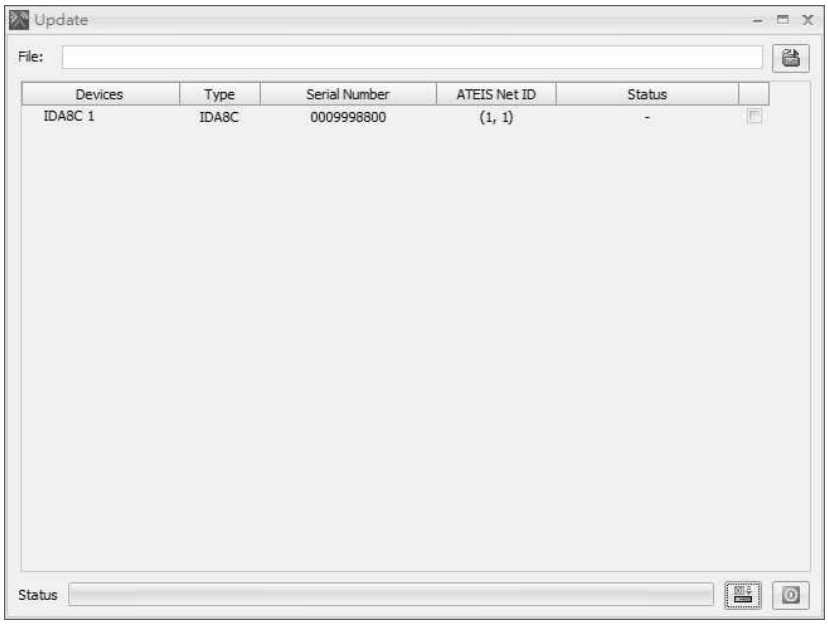
The purpose of updating the firmware is to match the version contained in your Ateïs Studio software and the version contained in the hardware of your devices.

If uploading the firmware version from vx.x.x.x (older ver.) to v3.4.0.9 (or newer ver.), the IDA8C/ IDA8C-SW controller will auto update the firmware twice and auto reboot the hardware twice. Please wait for this update to finish.

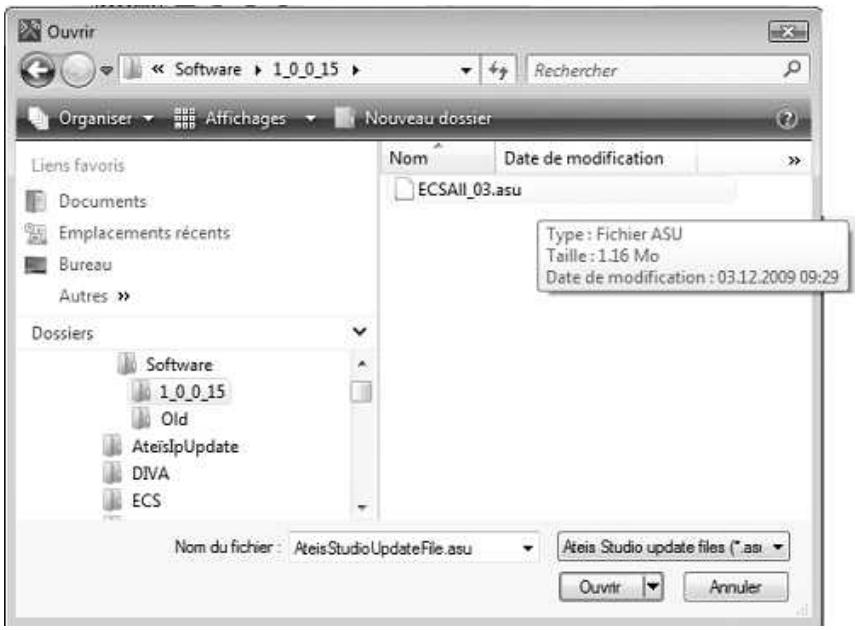
Read the version to see if there are mismatching versions. If so, update both the Ateïs Studio software and the audio processor firmware. To do this, follow the steps below:

1. Open [Device Management] window.
2. Search and connect to the device which needs updating.
3. Click [Update] to open the update window.
4. Select the desired device in the list.

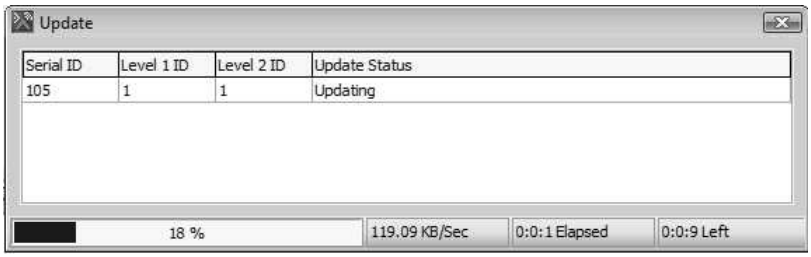
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5. With the file browser open, search the ASU (Ateïs Studio Update) files on your PC. Then, click [Open] to start the update process.

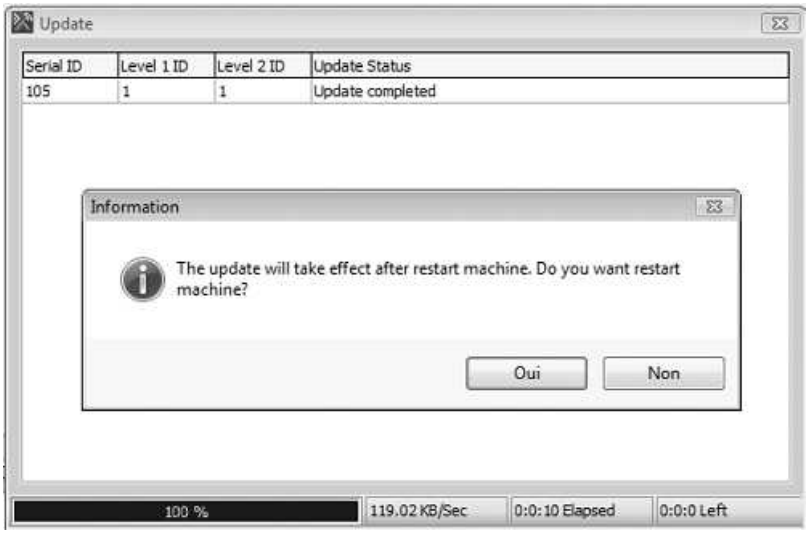


The progress bar in the Update window displays the status of the update:

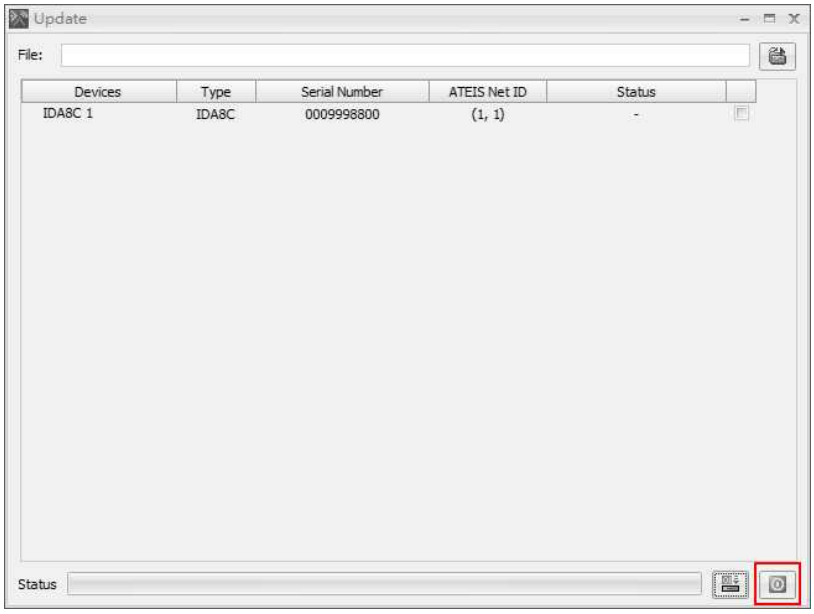


6. When the update is completed, a pop-up window will appear and ask if you want to reboot the device, click [Yes]. If there are some firmware not update yet, click [No].

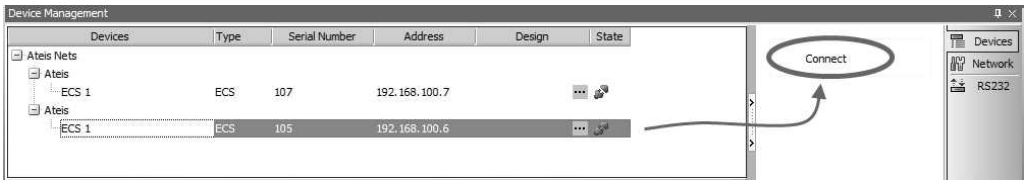
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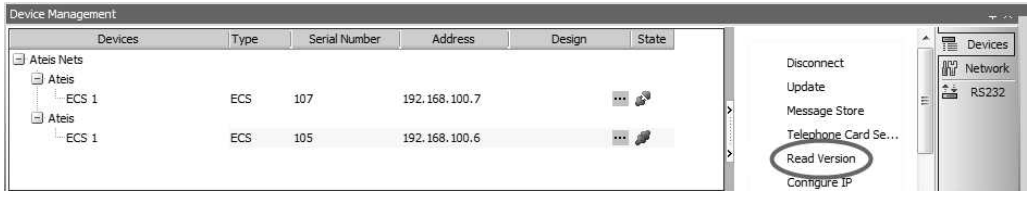
Click reboot button When all of the firmware are ready to go.



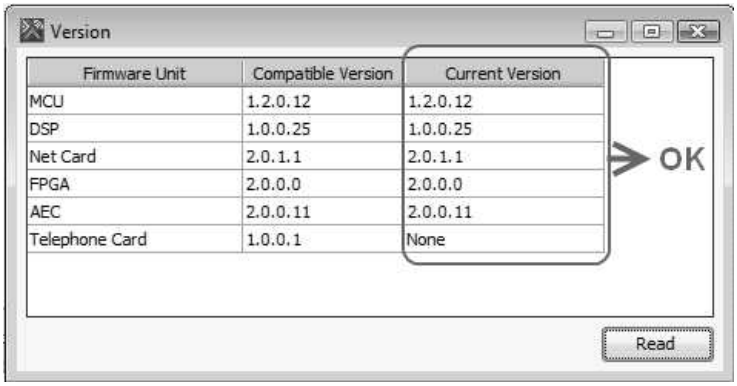
7. Now your device is updated. Since the device is rebooted, it is currently unconnected. Select it and click [Connect] again.



8. It is recommended that the firmware version be checked confirming that it is now displayed in black which means the device is now ready for use.



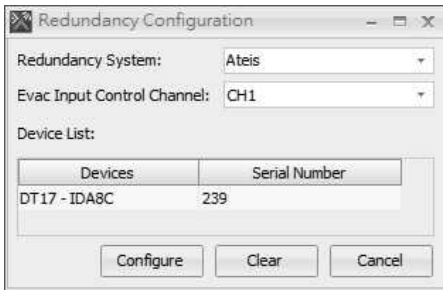
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5.4.18 Redundancy

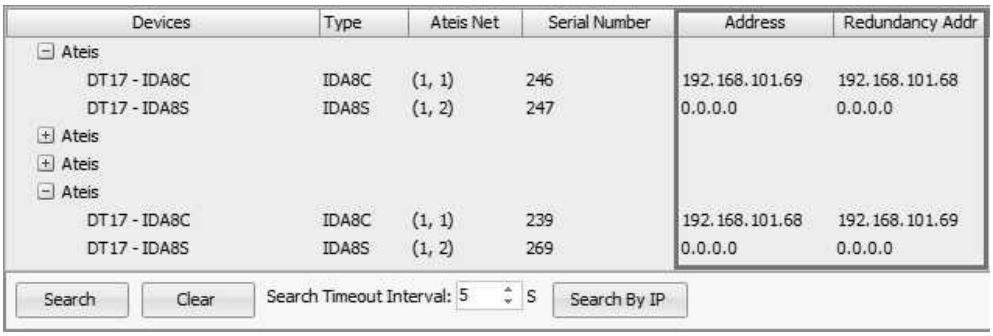
Allow to set the redundancy system used for IDA8.

1. Open [Device Management] window.
2. Search and connect to the device.
3. Click [Redundancy] to open [Redundancy Configuration] window.



- Redundancy System: Choose the network the desired secondary system is in, the device list will change with this item.
- Evac Input Control Channel: The channel which is connected to the redundancy units.
- Device List: Shows how many units in the secondary system and their serial numbers.

4. Once the setting is done, press the "Configure" button and you can see the redundancy information shows at the device Information column as shown in the picture below. The two system becoming each other's backup system.



5.5 3rd Party Control

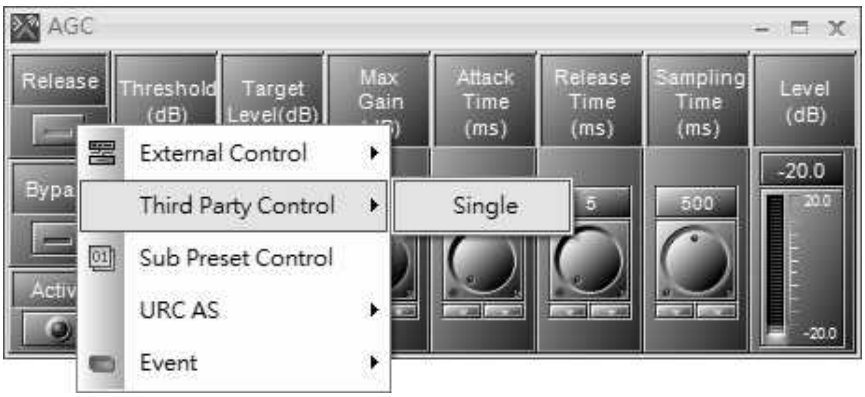
5.5.1 Ateis 3rd Party Control

Depending on the device, Ateis 3rd party protocol allows an external device to control an Ateis device through Ethernet or RS232.

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5.5.1.1 Assign Elements to 3rd Party Control

To let an element controllable by 3rd party protocol, right click the element and click [3rd Party Control > Single] on the pop-up window. See the picture as below,

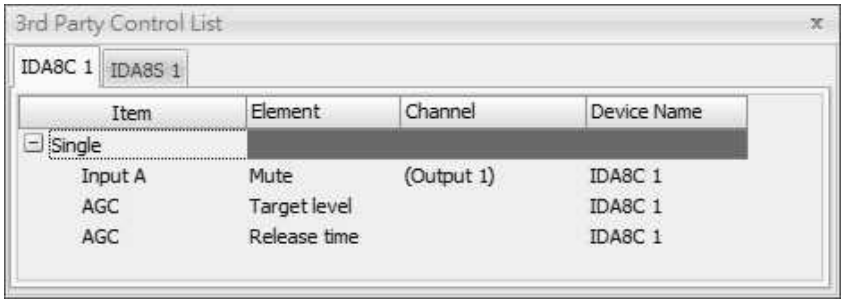


After completed the setting, you will receive a preview of the string which is used for controlling the Ateis devices by the external 3rd party device. The 3rd Party Control Command will be list on the preview window.

To know a details of all the elements controlled by 3rd party devices, click 3rd Party Control List window.

5.5.1.2 3rd Party Control List

Click [View > 3rd Party Control List] to open this window which lists all the elements available for 3rd party control.



- Devices Tab: Each tab will list all the elements controlled by a 3rd party device.
  - Item: Display the elements set for 3rd party control. The parent item shown as "single" indicates the type is single. A single 3rd party control command can only control one element.
  - Element: The name of the element.
  - Channel: The channel to which the element of component has belonged.

5.5.1.3 Machine Set Table

Function Name	Command Name	IN/reply Data Format
Ethernet MAC(Read Only)	M000	E1-00-00-AA-BB-A0
Ethernet IP	M001	192.168.100.254
Ethernet Sub Mask	M002	255.255.255.255
Ethernet Getway	M003	255.255.255.255
Ethernet DHCP flag(Read Only)	M004	0 or 1 (On/Off)
Ethernet Receive Port	M005	Example: 19720
Ethernet Send Port	M006	Example: 19721

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5.5.1.4 Communication Protocol

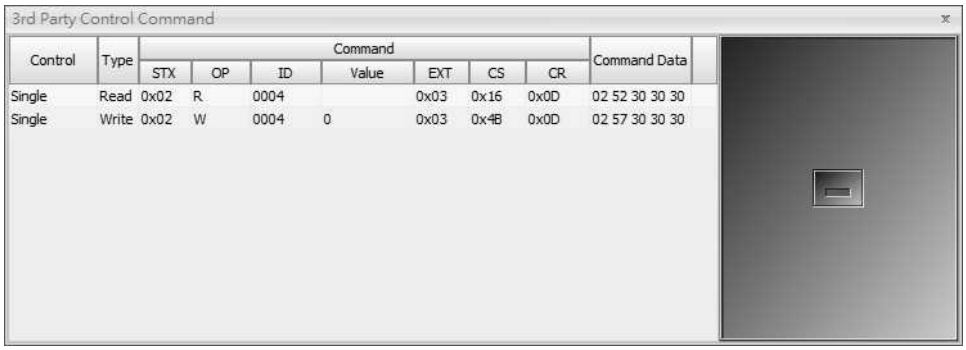
❖ Programmable RS232 settings:

Communication can be established using a standard-asynchronous-serial protocol. The UART settings are shown as below.

Name	Setting
Baud rate	BR115200 / BR57600 / BR56000 / BR38400 / BR19200 / BR9600 (def.) / BR4800 / BR2400 / BR1200 / BR600 /
Data bits	8
Parity	None / Odd / Even /
Stop bit	1

5.5.1.5 3rd Party Control Command

This window shows a preview of the element that is assigned for 3rd party control. In the left part, a grid shows information of the command string for a 3rd party device to the control element. The right part is a visual object which allows users to change its value and see the command string.



- Control: Display the command string which is for single control or multiple control.
- Type: Display the command string which is for reading/writing parameters of Ateis devices.
- Command: There are several sub-fields in this field, STX, CP, ..., CR. Each is part of the complete command string.
- Command Data: The content of a command string composed by hexadecimal.

5.5.1.5.1 Command Frame

Header section	Data Section		Check-sum	
STX	Command string	E	CS	CR

- STX : always be 0x02
- EXT: always be 0x03
- Command string: Number of Max is 50
  - Command code: 1 char, I/D/W/R/T/M/S/L/E/P/V/N/Y/U/B.
  - Function name: 4 char, named by user.

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- Value: depend on each command.

- CS: Sum of all all characters of command string
- CR: always be 0x0D
  - For each command, answer can be ACK CR (executed), NACK CR (not executed), DLE CR (not executed), or none, depend on communication protocol settings.
  - ACK： 0x06 DLE： 0x10 NACK： 0x10
  - The answers are not inserted inside STX…ETX LRC CR frame.

5.5.1.5.1.1 Increase/Decrease Command

Command string = I/D nnnn vvv

STX	Data Section			
STX	I/D **nnnn vvvv**	EXT	CS	CR

STX	Data Section		
STX	**I/D nnnn vvvv**	EXT	CR

nnnn = function name (fixed 4 length)

vvvv = value (unfixed)

For example: Room1 volume, value = 3 dB

'STX' + IR0013 + 'EXT' + 'CS' + 'CR '

'STX' + IR0013 + 'EXT' + 'CR '

5.5.1.5.1.2 Write Parameter Command

Command string = W nnnn vvv

STX	Data Section			
STX	**W nnnn vvvv**	EXT	CS	CR

STX	Data Section		
STX	**W nnnn vvvv**	EXT	CR

nnnn = function name (fixed 4 length)

vvvv = value (unfixed)

For example: cd1, value = 10 dB

'STX' + WCD110 + 'EXT' + 'CS' + 'CR '

'STX' + WCD110 + 'EXT' + 'CR '

5.5.1.5.1.3 Read Parameter Command

Command string =Rnnnn

STX	Data Section			
STX	**Rnnnn**	EXT	CS	CR

STX	Data Section		
STX	**Rnnnn**	EXT	CR

nnnn = function name (fixed 4 length)

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Answer is always **Rnnnnvvvv (Reply Read Para. Com.)**

5.5.1.5.1.4 Connect Test Command

Command string = T

STX	Data Section			
STX	**T**	EXT	CS	CR

STX	Data Section		
STX	**T**	EXT	CR

Answer is always **ACK CR** or None, depend on communication protocol settings.

5.5.1.5.1.5 Control Command (IDA8)

1. Change Preset

command string = Mvvv

STX	Data Section			
STX	**Mvvvv**	EXT	CS	CR

STX	Data Section		
STX	**Mvvvv**	EXT	CR

vvvv = Master preset number

2. Load Sub-Preset

command string = Svvv

STX	Data Section			
STX	**Svvvv**	EXT	CS	CR

STX	Data Section		
STX	**Svvvv**	EXT	CR

vvv = Sub-Preset number

3. Reply Read Parameter Command

Command string =Rnnnnvvv

STX	Data Section			
STX	**Rnnnnvvv**			

STX	Data Section		
STX	**Rnnnnvvv**		

DB element

nnnn = function name (fixed 4 length)

vvvv = sign + integer(fixed 2 length) + dot + decimal(fixed 1 length)

Other element

Answer is always **Rnnnnvvvv (Reply Read Para. Com.)**

nnnn = function name (fixed 4 length)

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vvvv = value (unfixed)

4. Reply Machine System Value

Command string =Pnnnnvvv

STX	Data Section			
STX	**Pnnnnvvv**			

STX	Data Section		
STX	**Pnnnnvvv**		

nnnn = function name (fixed 4 length)

vvvv = value (unfixed)

5. Ethernet Reset Command

Command string = N

STX	Data Section			
STX	**N**	EXT	CS	CR

STX	Data Section		
STX	**N**	EXT	CR

Reset Value

IP Address	192,168,100,230
Sub Mask	255,255,255,0
Gateway	192,168,100,254
Receive Port	19760

6. AutoReply Control Command

Command string =Bnnnnf

STX	Data Section			
STX	Bnnnnf	EXT	CS	CR

STX	Data Section		
STX	**Pnnnnvvv**	EXT	CR

nnnn = function name (fixed 4 length)

f = flag (unfixed)

0	End
1	Start

Answer is always **Rnnnnvvvv (Reply Read Para. Com.)**

7. Firmwave Version Read

Command string = O

STX	Data Section			
STX	0	EXT	CS	CR

STX	Data Section		
STX	0	EXT	CR

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Answer is always **Oaaaa-bbbb-cccc-dddd (Reply FirmWave Version Com.)**

aaaa = firmwave version 1

bbbb = firmwave version 2

cccc = firmwave version 3

dddd = firmwave version 4

8. Messenger Fault Read

Command string = F

STX	Data Section			
STX	**F**	EXT	CS	CR

STX	Data Section		
STX	**F**	EXT	CR

Answer is always **(Reply Messenger Fault)**

9. Reply Messenger Fault

Command string = Fsnnnn

STX	Data Section			
STX	Fsnnnn	EXT	CS	CR

STX	Data Section		
STX	Fsnnnn	EXT	CR

s = Messenger body size

Messenger body size	Reply word
Messenger G2A 2L 2.5	L
Messenger G2A 2L 3.5	
Messenger G2A 2L 4.5	
Messenger G2A 2XL 2.5	X
Messenger G2A 2XL 3.5	
Messenger G2A 2XL 4.5	
Messenger G2A L 2.5	L
Messenger G2A L 3.5	
Messenger G2A L 4.5	
Messenger G2A M 2.5	M
Messenger G2A M 3.5	
Messenger G2A M 4.5	
Messenger G2A XL 2.5	X
Messenger G2A XL 3.5	
Messenger G2A XL 4.5	

nnnn = fault bit mask

Bit 001： FLASH_ERROR

Bit 002： SPI_FLASH_ERROR

Bit 003： SSI_CPLD_ERROR

Bit 004： SSI_FP_ERROR

Bit 005： SSI_AUDIO_ERROR

Bit 006： I2C_ADS7830_ERROR

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Bit 007： I2C_ADT75_ERROR

Bit 008： DSP_SDRAM_ERROR

Bit 009： DSP_COMM_ERROR

Bit 010： DSP_CODE_ERROR

Bit 011： FPGA_COMM_ERROR

Bit 012： INPUT1_20K_ERROR

Bit 013： INPUT2_20K_ERROR

Bit 014： POWER_24V_ERROR

Bit 015： POWER_LOW12V_ERROR

Bit 016： POWER_12V_ERROR

Bit 017： POWER_48V_ERROR

Bit 018： POWER_DC24V_ERROR

Bit 019： POWER_AC_ERROR

Bit 020： PRESET_TABLE_ERROR

Bit 021： NO_PRESET_TABLE

Bit 022： NO_PARAMETER_TABLE

Bit 023： PARAMETER_TABLE_ERROR

Bit 024： PHY_ERROR

Bit 025： ETHER_ER

Bit 028： USER_DEFINE_FAULT

Bit 030： WRONG_PA_PB_DIR

Bit 050： AMP1_PA_REMOVE

Bit 051： AMP2_PA_REMOVE

Bit 052： AMP3_PA_REMOVE

Bit 053： AMP4_PA_REMOVE

Bit 054： AMP1_PB_REMOVE

Bit 055： AMP2_PB_REMOVE

Bit 056： AMP3_PB_REMOVE

Bit 057： AMP4_PB_REMOVE

Bit 058： AMP1_COMM_ERROR

Bit 059： AMP2_COMM_ERROR

Bit 060： AMP3_COMM_ERROR

Bit 061： AMP4_COMM_ERROR

Bit 062： AMP1_FRAME_SLIP

Bit 063： AMP2_FRAME_SLIP

Bit 064： AMP3_FRAME_SLIP

Bit 065： AMP4_FRAME_SLIP

Bit 066： AMP1_LRCK_ERROR

Bit 067： AMP2_LRCK_ERROR

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Bit 068 : AMP3_LRCK_ERROR

Bit 069 : AMP4_LRCK_ERROR

Bit 070 : AMP1_SCLK_ERROR

Bit 071 : AMP2_SCLK_ERROR

Bit 072 : AMP3_SCLK_ERROR

Bit 073 : AMP4_SCLK_ERROR

Bit 074 : AMP1_PLL_LOCK_ERROR

Bit 075 : AMP2_PLL_LOCK_ERROR

Bit 076 : AMP3_PLL_LOCK_ERROR

Bit 077 : AMP4_PLL_LOCK_ERROR

Bit 078 : AMP1_OVER_TEMPER

Bit 079 : AMP2_OVER_TEMPER

Bit 080 : AMP3_OVER_TEMPER

Bit 081 : AMP4_OVER_TEMPER

Bit 082 : AMP1_OVER_CURRENT

Bit 083 : AMP2_OVER_CURRENT

Bit 084 : AMP3_OVER_CURRENT

Bit 085 : AMP4_OVER_CURRENT

Bit 129 : MATLAB_2L25_NOT_EXIST

Bit 130 : MATLAB_2L35_NOT_EXIST

Bit 131 : MATLAB_2L45_NOT_EXIST

Bit 132 : MATLAB_2XL25_NOT_EXIST

Bit 133 : MATLAB_2XL35_NOT_EXIST

Bit 134 : MATLAB_2XL45_NOT_EXIST

Bit 135 : MATLAB_L25_NOT_EXIST

Bit 136 : MATLAB_L35_NOT_EXIST

Bit 137 : MATLAB_L45_NOT_EXIST

Bit 138 : MATLAB_M25_NOT_EXIST

Bit 139 : MATLAB_M35_NOT_EXIST

Bit 140 : MATLAB_M45_NOT_EXIST

Bit 141 : MATLAB_XL25_NOT_EXIST

Bit 142 : MATLAB_XL35_NOT_EXIST

Bit 143 : MATLAB_XL45_NOT_EXIST

Bit 144 : MATLAB_2L25_CORRUPTION

Bit 145 : MATLAB_2L35_CORRUPTION

Bit 146 : MATLAB_2L45_CORRUPTION

Bit 147 : MATLAB_2XL25_CORRUPTION

Bit 148 : MATLAB_2XL35_CORRUPTION

Bit 149 : MATLAB_2XL45_CORRUPTION

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Bit 150 : MATLAB_L25_CORRUPTION

Bit 151 : MATLAB_L35_CORRUPTION

Bit 152 : MATLAB_L45_CORRUPTION

Bit 153 : MATLAB_M25_CORRUPTION

Bit 154 : MATLAB_M35_CORRUPTION

Bit 155 : MATLAB_M45_CORRUPTION

Bit 156 : MATLAB_XL25_CORRUPTION

Bit 157 : MATLAB_XL35_CORRUPTION

Bit 158 : MATLAB_XL45_CORRUPTION

5.5.2 Modbus Control

5.5.2.1 Table of Modbus

5.5.2.1.1 Status

Address	Length	Name	Type	Bit																Value	Function
				15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Hex	
Global Status																					
0	1	Global Status	R	1																#8000	General deferred defaults synthesis
					1															#4000	General immediate defaults synthesis
						1														#2000	Primary device is active
							1													#1000	Secondary device is active
								1												#0800	Backup device is in fault state
									1											#0400	Ethernet network disconnected
										1										#0200	General evacuation state synthesis
											1									#0100	NTP server unavailable
												1								#0080	System fault (internal)
													1							#0040	Local Ateis-Net in backup mode (only one segment open)
														1						#0020	Local Ateis-Net broken (more than one segment open)
															1					#0010	Global Ateis-Net in backup mode (only one segment open)
																1				#0008	Global Ateis-Net broken (more than one segment open)
																	1			#0004	System in bypass mode
1	1	Free																			
2	1	Free																			
3	1	Watchdog Output	R	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		Number increased automatically by IDA8, every 8 seconds
4	1	Watchdog Input	R/W	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		Number increased automatically by the Modbus client, every 8 seconds
5	1	Max Record	R	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		Maximum duration for message recording, in seconds.
6	1	Global Change Counter	R	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		Counter increased at every change (occupancy state, and default state)
7	1	Busy Change Counter	R	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		Counter increased at every change of the occupancy state.
8	1	Fault Change Counter	R	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		Counter increased at every change of the occupancy state.
9	1	Execution	R	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		"1", when the command (Routing Action) is currently in treatment.
10	1	Message Change Counter	R	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		Counter increased at every change of the internal message list
11	1	Scheduler Change	R	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		Counter increased at every change of the internal scheduler list

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		Counter																			
12	1	Remote IO Change Counter	R	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		Counter increased at every change of either evac input or contact output
13	1	Free																			
14	1	Message Library Time Stamp	R	T	T	T	T	H	H	H	H	T	T	T	T	U	U	U	U		Year (thousands, hundreds, tens, units) of last change in message library
15	1			M	M	M	M	M	M	M	M	D	D	D	D	D	D	D	D		Month (tens, units), Day (tens, units)
16	1			H	H	H	H	H	H	H	H	M	M	M	M	M	M	M	M		Hour (tens, units), Minute (tens, units)
17	1											S	S	S	S	S	S	S	S		Second (tens, units)
18	238	Free																			
Input Status																					
256	2045	PDC Status 1																	1	#0001	0=Online or no configure, 1=Offline
												x	x	x	x	x					Audio level of the listening speaker (from 0 (min) to 20 (max))
											1									#0100	Microphone active
										1										#0200	Chime active
									1											#0400	Recording active
								1												#0800	Listening active(Only command 2100 available)
					1															#4000	Microphone fault
				1																#8000	Speaker fault
		...																			
2303		PDC Status 2048																			
2304	2	IP Input Status 1	R																1	#0001	Audio stream not received
											1									#0100	Active
2305		IP Input Status 2																			
2306	30	Free																			
2336	4096	0dB Input Status 1	R																1	#0001	Absent (no monitoring tone detected)
											1									#0100	Active (signal detection, contact..)
		...																			
6431		0dB Input Status 4096																			
6432	512	Remote Input Status 1	R	x							x	x	x	x	x	x	x	x	x		Fireman status (bit15, 0=no fault, 1=fault) Evacuation input channel 1 (bit0) to 9(bit8), 0=inactive, 1=active
		...																			
6943		Remote Input Status 512																			
6944	56	Free																			
Output Status																					
7000	4096	Speaker Line Faults 1	R	1																#8000	Deferred fault, zone still working
					1															#4000	Immediate fault
						1														#2000	Normal amplifier fault
							1													#1000	Backup amplifier in use
								1												#0800	Speaker line open
									1											#0400	Speaker line short
										1										#0200	Speaker line impedance (18K/20KHz)
											1									#0100	Speaker line leak to earth
												1								#0080	Backup amplifier fault
														1						#0020	Speaker Immediate fault (Both line A and line B fault)
															1					#0010	Speaker line fault (1KHz, open or short or bad impedance)
11095		Speaker Line Faults 4096																			
11096	4096	Speaker Line Busy1	R	1																#8000	Evacuation state

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					1														#4000	Over ride bit (source cut by another one)
						1													#2000	Fail bit (source couldn't be routed to this zone)
							x	x	x											BusySource type: 0 = free (no source) 1 = peripheral input PDC (paging microphones,? 2 = external audio input 3 = audio message 4 = telephone input 5 = IP input 6 = Fireman
										x	x	x	x	x	x	x	x	x	x	BusySource number: For type = 0, always 0 For type = 1, peripheral input PDC (paging microphones,? 1 to 4095 For type = 2, external audio input 1 to 4095 For type = 3, audio message number 1 to 999 (0 if unknown) For type = 4 and 6, always 0 For type = 5, 1 for live announcement, 2 for message broadcast, 3 for music
15191		Speaker Line Busy 4096																		
15192	4096	0dB Output Busy1		1															#8000	Evacuation state
					1														#4000	Over ride bit (source cut by another one)
						1													#2000	Fail bit (source couldn't be routed to this zone)
							x	x	x											BusySource type: 0 = free (no source) 1 = peripheral input PDC (paging microphones,? 2 = external audio input 3 = audio message 4 = telephone input 5 = IP input 6 = Fireman
			R							x	x	x	x	x	x	x	x	x	x	BusySource number: For type = 0, always 0 For type = 1, peripheral input PDC (paging microphones,? 1 to 1023 For type = 2, external audio input 1 to 1023 For type = 3, audio message number 1 to 999 (0 if unknown) For type = 4 and 6, always 0 For type = 5, 1 for live announcement, 2 for message broadcast, 3 for music
19287		0dB Output Busy 4096																		
19288	512	Contact Output Status 1										x	x	x	x	x	x	x	x	IDA8 contact outputs 1 (LSB) to 9(MSB)
		...																		...
19799		Contact Output Status 512										x	x	x	x	x	x	x	x	
19800	200	Free																		
Scheduler Status																				
20000	1	Scheduler Program Count	R							x	x	x	x	x	x	x	x	x	x	Number of scheduled programs (0 to 100)
20001	1600	Scheduler Source 1		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Source type/number
20002		Scheduler Start Year 1	R	x	x	x	x													Year (thousands)
								x	x	x	x									Year (hundreds)
												x	x	x	x					Year (tens)
																x	x	x	x	Year (units)

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20003		Scheduler Start Day 1		x	x	x	x														Month (tens)
								x	x	x	x										Month (units)
												x	x	x	x						Day (tens)
																x	x	x	x		Day (units)
20004		Scheduler Start Time 1		x	x	x	x														Hour (tens)
								x	x	x	x										Hour (unit)
												x	x	x	x						Minutes (tens)
																x	x	x	x		Minutes (unit)
20005		Scheduler Start Seconds 1										x	x	x	x						Seconds (tens)
																x	x	x	x		Seconds (unit)
20006		Scheduler Stop Year 1		x	x	x	x														Year (thousands)
								x	x	x	x										Year (hundreds)
												x	x	x	x						Year (tens)
																x	x	x	x		Year (units)
20007		Scheduler Stop Day 1		x	x	x	x														Month (tens)
								x	x	x	x										Month (units)
												x	x	x	x						Day (tens)
																x	x	x	x		Day (units)
20008		Scheduler Stop Time 1		x	x	x	x														Hour (tens)
								x	x	x	x										Hour (unit)
												x	x	x	x						Minutes (tens)
																x	x	x	x		Minutes (unit)
20009		Scheduler Stop Seconds 1										x	x	x	x						Seconds (tens)
																x	x	x	x		Seconds (unit)
20010		Scheduler Period 1		x	x	x	x														Hour (tens) of the period between two events
								x	x	x	x										Hour (unit) of the period between two events
												x	x	x	x						Minutes (tens) of the period between two events
																x	x	x	x		Minutes (unit) of the period between two events
20011		Scheduler Period Seconds 1										x	x	x	x						Seconds (tens)
																x	x	x	x		Seconds (unit)
20012		Scheduler Days 1											x	x	x	x	x	x	x		Days (Sat, Fri, Thu, Wed, Tue, Mon, Sun)
												x									Program activation (0=program off, 1= program on)
20013		Scheduler Times 1										x	x	x	x	x	x	x	x		Number of repetitions
20014		Scheduler Chime 1														x	x	x	x		Chime number (#FFFF=no chime), or 1 to 8
20015		Scheduler Priority 1										1								#0080	Add to waiting queue when priority lower then current
																	1			#0004	Priority high (Default = 1)
																		1		#0002	Priority medium (Default = 50)
																			1	#0001	Priority low (Default = 99)
				x	x	x	x	x	x	x	x	0	0	0	0	0	0	0	0	#xx00	Priority 1 to 99
																				#0000	Use default priority by system
20016		Scheduler Reserved 1																			
21585		Scheduler Source 100	R																		
		...																			...

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21600		Scheduler Reserved 100																			
21601	9	Free																			
21610	512	User Define Fault 1										x	x	x	x	x	x	x	x		User Define Faults 1(LSB) to 8(MSB)
		...																			...
22122		User Define Fault 512										x	x	x	x	x	x	x	x		
22123	78	Free																			
Input Audio Level Status																					
22201	999	Message 1 Audio Level	R												x	x	x	x	x		Audio level of PDC input (0 to 20)
				x																#8000	Message doesn't existed
		...																			...
23199		Message 999 Audio Level																			
23200	1	Free																			
23201	2048	PDC Audio Level 1	R												x	x	x	x	x		Audio level of PDC input (0 to 20)
				x																#8000	Channel doesn't existed
		...																			...
25248		PDC Audio Level 2048																			
25249	4096	Mic/Line Input Audio Level 1	R												x	x	x	x	x		Audio level of Mic/Line input (0 to 20)
									0	0	0									#0000	Sensitivity 0dB (Input) / Sensitivity 0dB (U-Input)
									0	0	1									#0100	Sensitivity 12dB (Input) / Sensitivity 6dB (U-Input)
									0	1	0									#0200	Sensitivity 24dB (Input) / Sensitivity 12dB (U-Input)
									0	1	1									#0300	Sensitivity 40dB (Input) / Sensitivity 18dB (U-Input)
									1	0	0									#0400	Sensitivity 54dB (Input) / Sensitivity 24dB (U-Input)
									1	0	1									#0500	Sensitivity 54dB (Input) / Sensitivity 30dB (U-Input)
									1	1	0									#0600	Sensitivity 54dB (Input) / Sensitivity 36dB (U-Input)
									1	1	1									#0700	Sensitivity 54dB (Input) / Sensitivity 42dB (U-Input)
							x													#0800	Phantom power (0=OFF, 1=ON)
						x														#1000	Mute (0=OFF, 1=ON)
				x																#8000	Channel doesn't existed
		...																			...
29344		Mic/Line Input Audio Level 4096																			
Output Audio Level Status																					
29345	4096	Speaker Line Output Level 1	R									x	x	x	x	x	x	x	x		Audio level of speaker line output (0 to 20)
				x																#8000	Channel doesn't existed
		...																			...
33440		Speaker Line Output Level 4096																			
33441	4096	0dB output Level 1	R									x	x	x	x	x	x	x	x		Audio level of 0dB output (0 to 20)
				x																#8000	Channel doesn't existed
		...																			...
37535		0dB Output Level 4096																			
Message List Status																					
37560	1	Messages Count	R							x	x	x	x	x	x	x	x	x	x		Number of existing messages in the following list(0 to 999)

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37561	1998	Message Number List 1	R							x	x	x	x	x	x	x	x	x	x		Message number (1 to 999)
37562		Message Bank List 1														x	x	x	x		Bank number which contains the message (1 to 8)
		...																			...
39556		Message Number List 999								x	x	x	x	x	x	x	x	x	x		Message number (1 to 999)
39558		Message Bank List 999														x	x	x	x		Bank number which contains the message (1 to 8)
39559	2	Free																			
39561	8	Bank 1 CRC16	R	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		CRC16 of messages stored in bank 1
		...																			...
39568		Bank 8 CRC16		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		CRC16 of messages stored in bank 8
39569	31	Free																			
39600	63	Messages Fault 1-16	R	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		Bit0=message 1, bit15=message 16
		...																			...
39662		Messages Fault 993-999										x	x	x	x	x	x	x	x		Bit0=message 993, bit6=message 999
39663	37	Free																			
39700	1	Messages Queue Count	R							x	x	x	x	x	x	x	x	x	x		Number of waiting messages in the waiting queue
39701	200	Message Number List 1								x	x	x	x	x	x	x	x	x	x		1st Waiting Message Number
		Message Number List 2								x	x	x	x	x	x	x	x	x	x		2nd Waiting Message Number
		...																			...
39900		Message Number List 200								x	x	x	x	x	x	x	x	x	x		200th Waiting Message Number
39901	99	Free																			

5.5.2.1.2 Commands

Address	Length	Name	Type	Bit																Value	Function
				15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Hex	
Commands																					
40000	1	Command	R/W	MSB								LSB								Hex	Parameters (register which must be filled before the command)
Set all audio levels											1									0100	PDC input/output levels, speaker line levels, 0dB input/outputs levels
Set Peripheral audio levels											1								1	0101	PDC Input Audio Level
Set Peripheral audio level											1							1		0102	PDC Output Audio Level
Set speaker lines audio levels											1						1			0104	Speaker Line Level
Set 0dB outputs audio levels											1					1				0108	0dB output Level
Set 0dB inputs audio levels											1				1					0110	Mic/Line Input Audio Level
Set message audio levels											1			1						0120	Message number, Audio Level
Reset Contact Output										1									1	0201	IO number 1 to 4096
Set Contact Output										1								1		0202	IO number 1 to 4096
Reset Evacuation Input										1								1	1	0203	IO number 1 to 4608
Set Evacuation Input										1							1			0204	IO number 1 to 4608
Reset Fail bit										1							1		1	0205	Routing Table
Reset Over ride bit										1							1	1		0206	Routing Table
Toggle Contact Output										1							1	1	1	0207	IO number 1 to 4096
Play background music									1		1									0500	Source type/number (types 1 and 2 only), Routing Table or KeyTable, Paging Advanced Setting
Stop background music									1	1										0600	Source type/number (types 1 and 2 only)
Listen a pre recorded message						1					1									2100	Message number, Routing Table or KeyTable(Stop if Message=0)

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Listen audio routed to a matrix				1				1										2200	Output number, Routing Table or KeyTable, (Stop if Routing Table is empty)
Play audio message without chime						1			1									0900	Message number, Routing Table or KeyTable, Priority (0 = system default), Scheduler Num of times, Scheduler Start Time, Trans ID(If use), Dwell Time, Paging Advanced Setting
Play audio message with chime				1		1			1									2900	Message number, Routing Table or KeyTable, Priority (0 = system default), Scheduler Num of times, Scheduler Start Time, Trans ID(If use), Dwell Time, Paging Advanced Setting
Stop audio message						1		1										0A00	Message number, Routing Table or KeyTable (if empty, all zones with message running)
Get audio message name						1												0800	Message number
Set audio message name						1		1	1									0B00	Message number, Message Name
Start new microphone announcement without chime (Return an error if already announcement)					1				1									1100	Source type/number (types 1 and 2 only) , Routing Table or KeyTable, Priority (0 = Priority 1), Paging Advanced Setting
Start new microphone announcement with chime (Return an error if already announcement)				1	1				1									3100	Source type/number (types 1 and 2 only) , Routing Table or KeyTable, Priority (0 = Priority 1), Chime number(0 = chime NO.1), Paging Advanced Setting
Stop microphone announcement in all zones					1			1										1200	Source type/number (types 1 and 2 only)
Add zones to existing/ Start announcement without chime					1		1		1									1500	Source type/number (types 1 and 2 only) , Routing Table or KeyTable, Priority (0 = Priority 1), Paging Advanced Setting. If source already routed, set Source and Routing/Key Table only to modify zones.
Add zones to existing/ Start announcement with chime				1	1		1		1									3500	Source type/number (types 1 and 2 only) , Routing Table or KeyTable, Priority (0 = Priority 1), Chime number(0 = chime NO.1), Paging Advanced Setting. If source already routed, set Source and Routing/KeyTable only to modify zones.
Stop zones in announcement					1		1	1										1600	Source type/number (types 1 and 2 only) , Routing Table or KeyTable
Modify zones in announcement (Load the new absolute routing table)					1		1	1	1									1700	Source type/number (types 1 and 2 only) , Routing Table or KeyTable
Send zone selection to microphone without chime					1			1	1									1300	Source type/number (only type 1, number 2), KeyTable
Send zone selection to microphone with chime					1		1											1400	Source type/number (only type 1, number 2), KeyTable, Chime Number(0 = chime NO.1)
Start recording of microphone to audio message					1	1			1									1900	Source type/number, Bank number, Message Number (0=assigned by ida8), Stop Time, Stop second(0 = 30 sec)
Stop recording of microphone					1	1		1										1A00	Source type/number, Bank number
Delete audio message					1	1		1	1									1B00	Message number, Bank number=Message number for confirmation
Move audio message					1	1	1											1C00	Message number, Bank number=new bank
Read the 6 first messages from the message list					1	1	1		1									1D00	Result available in Messages List 1 to 6
Read the 6 next messages from the message list					1	1	1	1										1E00	Result available in Messages List 1 to 6

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Create a scheduled program without chime					1			1			1									4900	Source type/number, Program number(0 = system assign), Routing Table or Key Table, Priority(0 = system default), Start Time, Stop Time, Period, Days,Times, Dwell Time, Paging Advanced Setting
Create a scheduled program with chime					1	1		1			1									6900	Source type/number, Program number(0 = system assign), Routing Table or Key Table, Priority(0 = system default), Start Time, Stop Time, Period, Days,Times, Dwell Time, Paging Advanced Setting
Activate a scheduled program					1			1		1	1									4B00	Program number (1 to 200)
Deactivate a scheduled program					1			1												4800	Program number (1 to 200)
Delete a scheduled program					1			1		1										4A00	Program number (1 to 200), Source=Program number (confirmation)
Get parameters of a scheduled program					1			1	1	1	1									4F00	Program number, Parameters read in Source number, Routing Table or KeyTable, Priority, Start Time,Stop Time, Period, Days,Times
Modify a scheduled program					1			1	1	1										4E00	Program number (1 to 200), Source type/number, Routing Table or KeyTable, Priority, Start Time,Stop Time, Period, Days,Times
Cancel all paging					1	1	1	0	0	0										7000	n/a
First log				1																8000	Result in the address 58588 to 59091
Next log				1															1	8001	Result in the address 58588 to 59091, all at "0" if it's the end of the history
Previous log				1														1		8002	Result in the address 58588 to 59091
Last log				1														1	1	8003	Result in the address 58588 to 59091
40001	1	Command Acknowledge	R																		If the command is acknowledged, the result is "0". If the command was been rejected, the result is the command value.
Parameters for Commands																					
40002	1	Priority	R/W														1			#0004	Priority high (Default = 1)
																		1		#0002	Priority medium (Default = 50)
																			1	#0001	Priority low (Default = 99)
				x	x	x	x	x	x	x	x	0	0	0	0	0	0	0	0	#xx00	Priority 1 to 99
																				#0000	Use default priority by system
40003	1	Message number	R/W							x	x	x	x	x	x	x	x	x	x		Message Number / Number of Message Item For 1 to 999 = Single message assign. For -1 to -100 = Group message assign, number of messages to concatenate. And need to fill message item field (address 24900 ~ 24999).
40004	1	Chime number	R/W							x	x	x	x	x	x	x	x	x	x		Chime number, 1 to 8 (Chime is 1st file in bank, and chime number = bank number)
40005	1	Program number	R/W								x	x	x	x	x	x	x	x	x		Scheduled program number, 1 to 200
40006	1	Source number	R/W				x	x	x												Busy Source type: 0 = free (no source) 1 = peripheral input PDC (paging microphones,? 2 = external audio input 3 = audio message 4 = telephone input 5 = IP input 6 = Fireman
										x	x	x	x	x	x	x	x	x	x		Busy Source number: For type = 0, always 0 For type = 1, peripheral input PDC (paging microphones,? 1 to 1023 For type = 2, external audio input 1 to 1023 For type = 3, audio message

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																					number 1 to 999 (0 if unknown) For type = 4 and 6, always 0 For type = 5, 1 for live announcement, 2 for message broadcast, 3 for music
40007	1	Bank number	R/W													x	x	x	x		Bank number 1 to 8
40008	1	IO number	R/W	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		Evacuation input or contact output number
40009	1	Scheduler Start Year	R/W	x	x	x	x														Year (thousands)
								x	x	x	x										Year (hundreds)
												x	x	x	x						Year (tens)
																x	x	x	x		Year (units)
40010	1	Scheduler Start Day		x	x	x	x														Month (tens)
								x	x	x	x										Month (units)
												x	x	x	x						Day(tens)
																x	x	x	x		Day(units)
40011	1	Scheduler Start Time		x	x	x	x														Hour (tens) of scheduler beginning (message or music)
								x	x	x	x										Hour (unit) of scheduler ending (message or music)
												x	x	x	x						Minutes (tens) of scheduler ending (message or music)
																x	x	x	x		Minutes (unit) of scheduler ending (message or music)
40012	1	Scheduler Start Seconds										x	x	x	x						Seconds (tens) of scheduler ending (message or music)
																x	x	x	x		Seconds (unit) of scheduler ending (message or music)
40013	1	Scheduler Stop Year	R/W	x	x	x	x														Year (thousands)
								x	x	x	x										Year (hundreds)
												x	x	x	x						Year (tens)
																x	x	x	x		Year (units)
40014	1	Scheduler Stop Day		x	x	x	x														Month (tens)
								x	x	x	x										Month (units)
												x	x	x	x						Day(tens)
																x	x	x	x		Day(units)
40015	1	Scheduler Stop Time		x	x	x	x														Hour (tens) of scheduler ending (message or music)
								x	x	x	x										Hour (unit) of scheduler ending (message or music)
												x	x	x	x						Minutes (tens) of scheduler ending (message or music)
40016	1	Scheduler Stop Seconds														x	x	x	x		Minutes (unit) of scheduler ending (message or music)
												x	x	x	x						Seconds (tens) of scheduler ending (message or music)
																x	x	x	x		Seconds (unit) of scheduler ending (message or music)
40017	1	Scheduler Period HM	R/W	x	x	x	x														Hour (tens) of the period between two messages (message)
								x	x	x	x										Hour (unit) of the period between two messages (message)
												x	x	x	x						Minutes (tens) of the period between two messages (message)
																x	x	x	x		Minutes (unit) of the period between two messages (message)
40018	1	Scheduler Period S										x	x	x	x						Seconds (tens) of the period between two messages (message)
																x	x	x	x		Seconds (unit) of the period between two messages (message)
40019	1	Scheduler Days	R/W																1	#0001	Enable Scheduled on Sunday
																		1		#0002	Enable Scheduled on

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																				Monday
																1			#0004	Enable Scheduled on Thursday
															1				#0008	Enable Scheduled on Wednesday
														1					#0010	Enable Scheduled on Thursday
													1						#0020	Enable Scheduled on Friday
												1							#0040	Enable Scheduled on Saturday
											1								#0080	Scheduled Enable (0 = Disable)
40020	1	Scheduler Num of times										x	x	x	x	x	x	x		Number of repetitions (message)
			R/W									0	0	0	0	0	0	0	#0001	Number of repetitions = 1 (one time)
																				to
												1	1	0	0	0	1	1	#0063	Number of repetitions = 99
40021	1	Trans ID	R/W						x	x	x	x	x	x	x	x	x	x	x		Level 0 to 20
40022	1	Audio Level													x	x	x	x	x		Level 0 to 20
			R/W												1	0	1	0	1	#0015	Lower (-)
															1	0	1	1	0	#0016	Louder (+)
40023	1	Group Message Dwell Time	R/W	x	x	x	x														Minutes (tens)
								x	x	x	x									Minutes (unit)
												x	x	x	x					Seconds (tens)
																x	x	x	x	Seconds (unit)
40024	1	Group Message Dwell Time Tenths	R/W													x	x	x	x		Tenths of seconds
40025	1	Paging Advanced Setting	R/W									x	x	x	x	x	x	x	x		Zone available percentage, 0~100
											x									0=None 1=Release type
										x										0=None 1=Recoverytype
									x											0=None 1=Evacuation type
								x												0=do not queue if there is high priority 1=queue
							x													0=None 1=Security
				1																Enable, must be set 1
40026	1	ATEIS Net ID		x	x	x	x	x	x	x	x										Level 1 ID
												x	x	x	x	x	x	x	x	Level 2 ID
40027	3	Free																			
40030	32	Message Name	R/W									x	x	x	x	x	x	x	x		ASCII code of the first character of the message name (32 characters max)
...																					...
40061												x	x	x	x	x	x	x	x		
40062	38	Free																			
40100	4	Key Table																	1	#0001	Key1
																		1		#0002	Key2
																	1			#0004	Key3
																1				#0008	Key4
															1					#0010	Key5
														1						#0020	Key6
													1							#0040	Key7
												1								#0080	Key8
			R/W								1									#0100	Key9
										1										#0200	Key10
									1											#0400	Key11
								1												#0800	Key12
							1													#1000	Key13
						1														#2000	Key14
					1															#4000	Key15
				1																#8000	Key16
		...	R/W																		...
40103																			1	#0001	Key49
			R/W															1		#0002	Key50

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																1			#0004	Key 51	
															1				#0008	Key 52	
														1					#0010	Key 53	
													1						#0020	Key 54	
												1							#0040	Key 55	
											1								#0080	Key 56	
										1									#0100	Key 57	
									1										#0200	Key 58	
								1											#0400	Key 59	
							1												#0800	Key 60	
						1													#1000	Key 61	
					1														#2000	Key 62	
				1															#4000	Key 63	
			1																#8000	Key 64	
40104	6	Free																			
40110	100	Message Number Item 1	R/W							x	x	x	x	x	x	x	x	x	x		1st Message Number of Message Group
		Message Number Item 2								x	x	x	x	x	x	x	x	x	x		2nd Message Number of Message Group
		...																			
40209		Message Number Item 100								x	x	x	x	x	x	x	x	x	x		100th Message Number of Message Group
40210	256	Routing Table CH1~8 (1)	R/W															1	#0001	1st Machine network paging component CH1~8	
																	1		#0002	...	
																1			#0004	...	
															1				#0008	...	
														1					#0010	...	
													1						#0020	...	
												1							#0040	...	
											1								#0080	...	
										1									#0100	2nd Machine network paging component CH1~8	
									1										#0200	...	
								1											#0400	...	
							1												#0800	...	
						1													#1000	...	
					1														#2000	...	
				1															#4000	...	
			1																#8000		
		...	R/W																		
40465		Routing Table CH1~8 (256)																1	#0001	511st machine network paging component CH1~8	
																	1		#0002		
																1			#0004		
															1				#0008		
														1					#0010		
													1						#0020		
												1							#0040		
											1								#0080		
										1									#0100	512st machine network paging component CH1~8	
									1										#0200		
								1											#0400		
							1												#0800		
						1													#1000		
					1														#2000		
				1															#4000		
			1																#8000		
40466	256	Routing Table CH9~16 (1)	R/W															1	#0001	1st Machine network paging component CH9~16	
																	1		#0002		

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																1			#0004	
															1				#0008	
														1					#0010	
													1						#0020	
												1							#0040	
											1								#0080	
										1									#0100	2nd Machine network paging component CH9~16
									1										#0200	
								1											#0400	
							1												#0800	
			R/W			1													#1000	
					1														#2000	
				1															#4000	
				1															#8000	
		...	R/W																	
40721		Routing Table CH9~16 (256)																1	#0001	511st machine network paging component CH9~16
																	1		#0002	
																1			#0004	
			R/W												1				#0008	
														1					#0010	
													1						#0020	
												1							#0040	
											1								#0080	
										1									#0100	
									1										#0200	512st machine network paging component CH9~16
								1											#0400	
			R/W				1												#0800	
						1													#1000	
					1														#2000	
				1															#4000	
				1															#8000	
40722	2048	PDC Input Audio Level 1										x	x	x	x	x	x	x	x		Audio level of PDC input (0 to 20)
				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	#FFFF	Unchanged audio level
		...	R/W																		...
42769		PDC Input Audio Level 2048																			
42770	2048	PDC Output Audio Level 1										x	x	x	x	x	x	x	x		Audio level of speaker line (0 to 20)
				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	#FFFF	Unchanged audio level
		...	R/W																		...
44817		PDC Output Audio Level 2048																			
44818	4096	Speaker Line Level 1										x	x	x	x	x	x	x	x		Audio level of speaker line (0 to 20)
				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	#FFFF	Unchanged audio level
		...	R/W																		...
48913		Speaker Line Level 4096																			
48914	4096	0dB output Level 1										x	x	x	x	x	x	x	x		Audio level of 0dB output (0 to 20)
				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	#FFFF	Unchanged audio level
		...	R/W																		...
53009		0dB Output Level 4096																			

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53010	4096	Mic/ Line Input Audio Level 1	R/W									x	x	x	x	x	x	x	x		Audio level of Mic/Line input (0 to 20)
									0	0	0										Sensitivity 0dB (Input) / Sensitivity 0dB (U-Input)
									0	0	1										Sensitivity 12dB (Input) / Sensitivity 6dB (U-Input)
									0	1	0										Sensitivity 24dB (Input) / Sensitivity 12dB (U-Input)
									0	1	1										Sensitivity 40dB (Input) / Sensitivity 18dB (U-Input)
									1	0	0										Sensitivity 54dB (Input) / Sensitivity 24dB (U-Input)
									1	0	1										Sensitivity 54dB (Input) / Sensitivity 30dB (U-Input)
									1	1	0										Sensitivity 54dB (Input) / Sensitivity 36dB (U-Input)
									1	1	1										Sensitivity 54dB (Input) / Sensitivity 42dB (U-Input)
						x															Phantom power (0=OFF)
					x																Mute (0=OFF)
				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	#FFFF	Unchanged all setting
		...																			...
57105		Mic/ Line Input Audio Level 4096																			
57106	4	Free																			
57110	120	MessagesList1, Index	R																		Index of the list
57111		MessagesList1, Reserved																			Reserve
57112		MessagesList1, Number																			Message number
57113		MessagesList1, Bank																			Bank number in which is stored the message
57114		MessagesList1, Name																			32 ASCII characters packed to 16 words, MSB is first character
		...																			...
57130		MessagesList2, Index																			Index of the list
57131		MessagesList2, Reserved																			Reserve
57132		MessagesList2, Number																			Message number
57133		MessagesList2, Bank																			Bank number in which is stored the message
57134		MessagesList2, Name																			32 ASCII characters packed to 16 words, MSB is first character
		...																			...
		...																			...
57210		MessagesList6, Index																			Index of the list
57211		MessagesList6, Reserved																			Reserve
57212		MessagesList6, Number																			Message number
57213		MessagesList6, Bank																			Bank number in which is stored the message
57214		MessagesList6, Name																			32 ASCII characters packed to 16 words, MSB is first character
		...																			...
57230	70	Free																			
57300	64	Speaker Line Fault of Key1	R	1																#8000	Deferred default, zone still working

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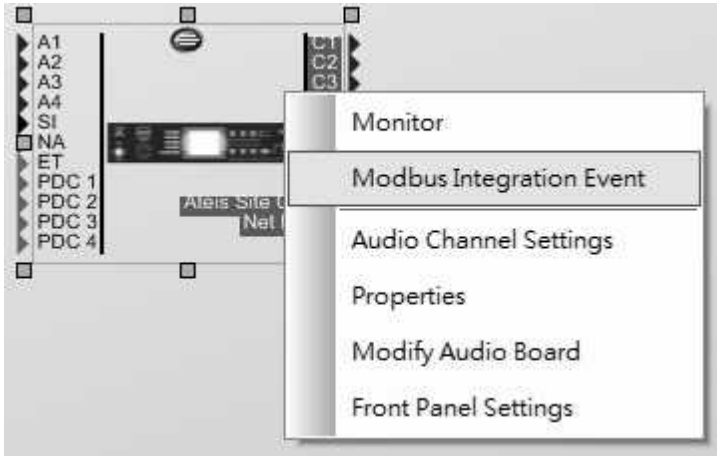
					1													#4000	Immediate default
						1												#2000	Normal amplifier fault
							1											#1000	Backup amplifier in use
								1										#0800	Speaker line open
									1									#0400	Speaker line short
										1								#0200	Speaker line impedance (18K/20K)
											1							#0100	Speaker line leak to earth
												1						#0080	Backup amplifier fault
														1				#0010	Speaker line impedance (1K)
		...																	...
57363		Speaker Line Fault of Key 64																	
57364	36	Free																	
57400	64	Speaker Line Busy of Key 1		1														#8000	Evacuation state
					1													#4000	Over ride bit (source cut by another one)
						1												#2000	Fail bit (source couldn't be routed to this zone)
							x	x	x										Busy Source type: 0 = free (no source) 1 = peripheral input PDC (paging microphones...) 2 = external audio input 3 = audio message 4 = telephone input 5 = IP input 6 = Fireman
			R							x	x	x	x	x	x	x	x	x	Busy Source number: For type = 0, always 0 For type = 1, peripheral input PDC (paging microphones,? 1 to 4095 For type = 2, external audio input 1 to 4095 For type = 3, audio message number 1 to 999 (0 if unknown) For type = 4 and 6, always 0 For type = 5, 1 for live announcement, 2 for message broadcast, 3 for music
		...																	...
57463		Speaker Line Busy of Key 64																	
57464	36	Free																	
57500	64	Speaker Line Trans ID of Key 1		x	x														Amplifier Fault Status (Immediate) 00 (Hex)=No Fault; 01 (Hex)= Fault
						x	x												Broadcast Location 01 (Hex) = OCC, 02(Hex) = Station
			R					x	x	x	x	x	x	x	x	x	x	x	Transaction ID 01 (Hex) to 7FF (Hex) OCC is broadcasting then IDA8 will reflect FFF(Hex)
...																			...
57563		Speaker Line Trans ID of Key 64																	
57564	512	Remote Monitor Status 1															x		1st remote status (0=no configure or online, 1=offline).
																x			2nd remote status (0=no configure or online, 1=offline)
				x															...
			R																16th remote status (0=no configure or online, 1=offline)
		...																	...
58075		Remote Monitor Status 512																	

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58076	512	Remote Microphone Status 1	R															x		1st remote microphone status (0=no configure or online, 1=offline)
																	x			2nd remote microphone status (0=no configure or online, 1=offline)
																				...
				x																16th remote microphone status (0=no configure or online, 1=offline)
		...																		...
58587		Remote Microphone Status 512																		
58588	1	Log Year	R	x	x	x	x													Year(thousand) of the log
								x	x	x	x									Year(hundred) of the log
												x	x	x	x					Year(tens) of the log
																x	x	x	x	Year(unit) of the log
58589	1	Log Date		x	x	x	x													Month (tens) of the log
								x	x	x	x									Month (unit) of the log
												x	x	x	x					Day(tens) of the log
																x	x	x	x	Dat (unit) of the log
58590	1	Log Time Hour/ Minute		x	x	x	x													Hour (tens) of the log
								x	x	x	x									Hour (uint) of the log
												x	x	x	x					Minutes (tens) of the log
																x	x	x	x	Minutes (uint) of the log
58591	1	Log Time Second										x	x	x	x					Second (tens) of the log
																x	x	x	x	Second (uint) of the log
58592	100	Log Text 1										x	x	x	x	x	x	x	x	Log text (100 ASCII characters)
		...																		
59091		Log Text 100										x	x	x	x	x	x	x	x	

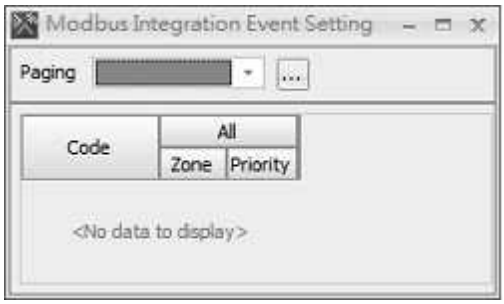
5.5.2.2 Table of Modbus Key

- Step 1: Create an [Integration Event] on Network Paging component, the event code can be set from 1~64, see Network Paging component > Integration for details.
- Step 2: Right click on IDA8 processor icon, then click [Modbus Integration Event].

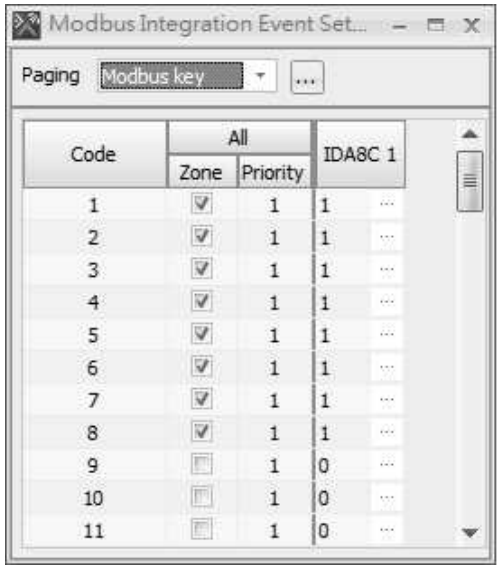


- Step 3: Choose the integration event from [Paging] drop-down box.

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- Step 4: After completed the Modbus Key setting, the Modbus address will be applied at the range of 40100~40103.

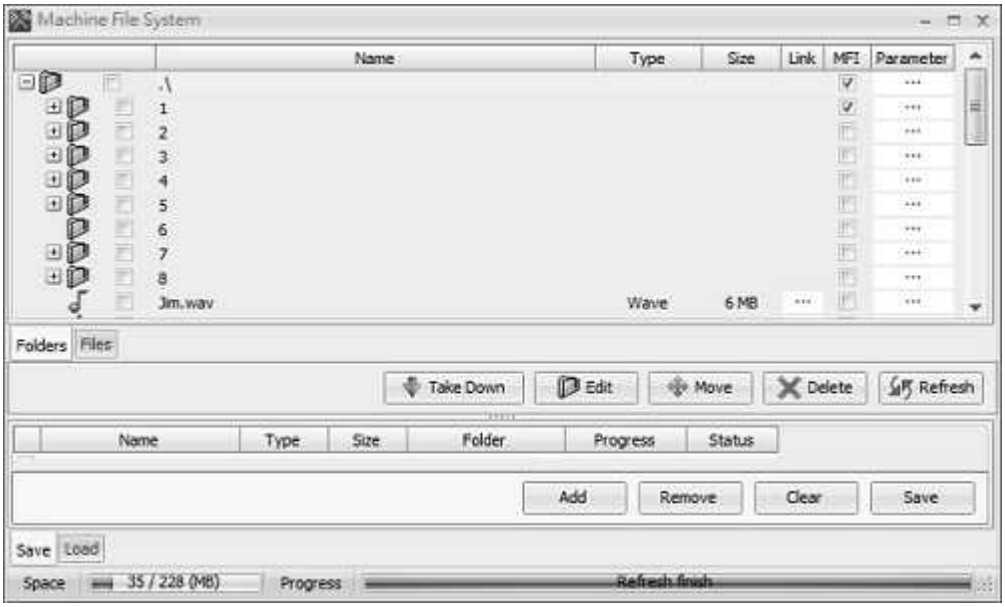


5.5.2.3 Recording Function via Remotes

The Modbus Recording function is applicable for PSS-AS, PPM-AS, CD8-AS, CD16-AS, CD-TOUCHAS and CDPM device only. When the audio message has recorded, it will be stored into the internal memory of IDA8.

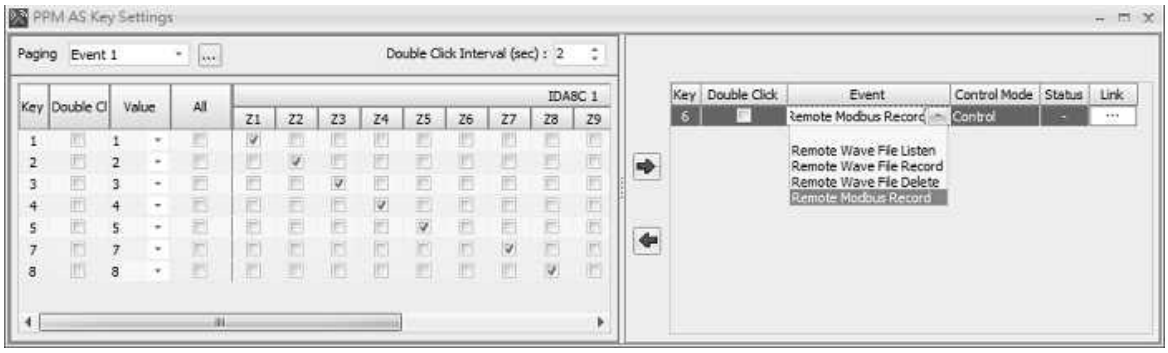
- Step 1: Create a folder on Machine File System. See the picture below.

The Modbus supports to detect up to eight folders.

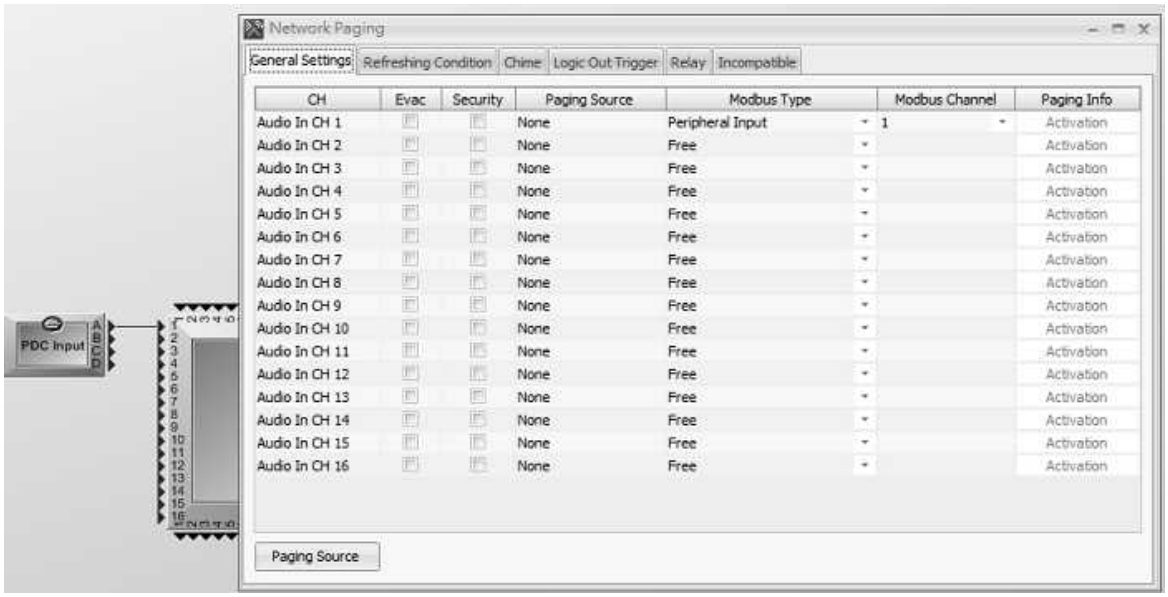


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- Step 2: Assign which remote(PSS-AS, PPM-AS etc.) that is connected to the IDA8 processor as the recording button on in the device configuration. Then click the remote icon to open its setting window. After that, choose the key with the corresponded modified zones, then click [➡] button to move the selected key from the left side to the right side, allowing the keys as the Remote Event button for Modbus. See the picture as below,



- Step 3: Connect the PDC Input component to the Network Paging component, and click Network Paging component to open its setting window. Select [Peripheral Input] option as the Modbus type and the Modbus channel that is corresponded to the PDC port on IDA8 processor. Then click [Compile] and [Store] button.



- Step 4: Set the Modbus address as 40007. This indicates the folder of recorded file. Set 1 as the first folder, and 2 as the second folder, and so on.
- Step 5: Set the Modbus address as 40006, the address is using the hex code, therefore, this indicates the Modbus address will be set a 040x. x stands for Modbus channel.
- Step 6: Set the Modbus address as 40015 and 40016. This indicates the duration of the recording time.

Set the default recording time as 0 to indicate the recording time is as 30 seconds.

- Step 7: Now check the connected remote console, you will find the LED of the zone button that is corresponded to the recording function is flashing, this indicates the remote console is at the standby status of ready to record the message.
- Step 8: Press the zone button that its LED is flashing to start to record, the recording time will be

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ended by the duration time you set at Step 6. If you want to stop the message earlier, click the zone button again or apply 1A00 command.

5.5.2.4 Log Loading

The Modbus client also allows to read all the logs of IDA8 system. See the following steps:

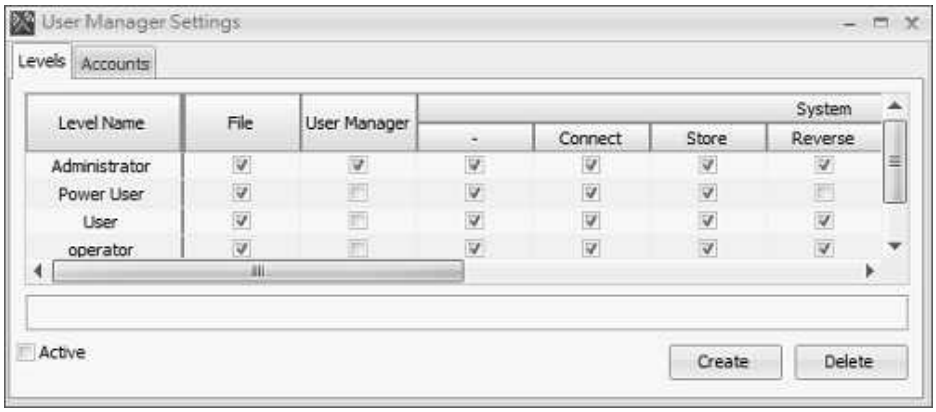
- Step 1: Set the Modbus address as 40026, this indicates which IP address of Ateis-Net will be read.

> The IP address which is corresponded to the number is based on the hex code For example, set the code as 0101, this indicates Ateis-Net (1,2);set the code as 2020, this indicates Ateis-Net (32,32).

- Step 2: Proceed the Modbus command: 8000/8001/8002/8003.
- Step 3: Now Modbus client can read the IDA8 logs from the address range of 58588~59091.

5.6 User Management

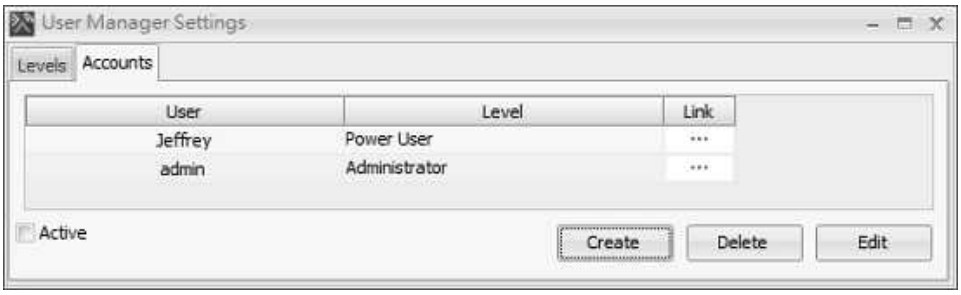
User management ensures the security for accessing system resources and operations. Click [View > User Management] to open the [User Manager Settings] window.



There are two tabs in [User Manager Settings] window: [Levels] and [Accounts].

- Levels: Set the user level for accessing the system action. There are four default user levels (Administrator/Power User/User/Operator) used by most applications which need authorized requirement.
- Accounts: Allow to create/delete/edit user account with different access level.

5.6.1 User Accounts

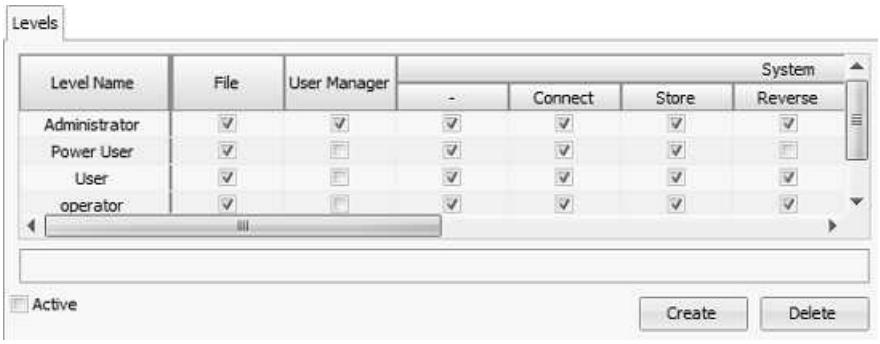


- Link: Click [...] button to switch to [Levels] tab.
- Create/Delete: Create/delete a new/selected user.
- Edit: Change password of a selected user.

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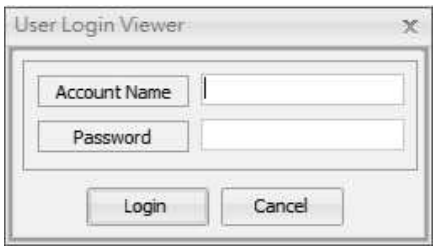
5.6.2 User Levels

Set the user level for accessing the system action. There are four default user levels(Administrator/ Power User/User/Operator) used by most applications which need authorized requirement.



- File: Allow to open the Ateis Studio configuration files.
- User Manager: Allow to edit the user accounts and user levels.

After the [User Manager] option is enabled, when opening a configuration file or connecting to the IDA8 system which has higher security for accessing system resource and operations, a [User Login Viewer] pop-up window will be shown, and users request to enter account ID and password.



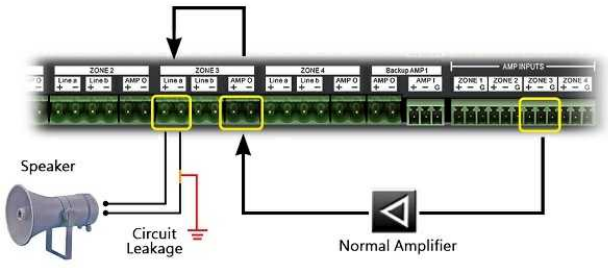
- System (-): Select all authorized levels inside the system.
- System (Connect/Store/Download Config/Update/Para. R/W/Online): Allow to connect/store/ download config/update/ read or write parameters/go online/ to Ateis devices.
- Master Preset (-): Select all authorized levels in master preset.
- Master Preset (View/Edit/Control): Allow to view/edit/control the master preset configuration.
- Active: Enable/disable the [Active] option for activating the user management on configuration.
- Create: Create a new user account.
- Delete: Remove the selected user level. Note: The default [Administrator, Power User and User] are not allowed to remove.

5.7 Monitoring

5.7.1 Matrix Mode

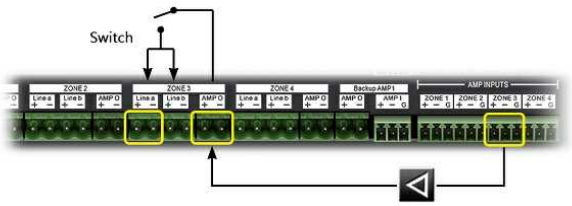
5.7.1.1 Circuit Leakage

- Circuit Leakage is caused when the AMPO +/- conducting to the ground. For example, the isolation of a speaker's wire is broken.



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- Leakage causes the gradual loss of voltage. Once it is detected, the IDA8C will open the relay of the leakage zone.

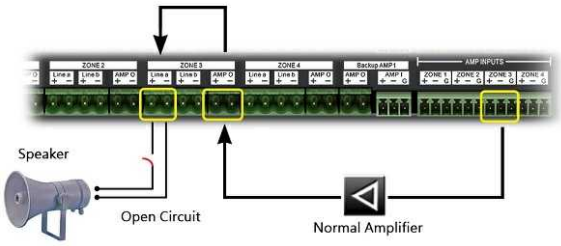


The following messages will display on the touch panel of the IDA8C and in the Ateis Studio. See Line A/B Error.

5.7.1.2 Open/Short Circuit

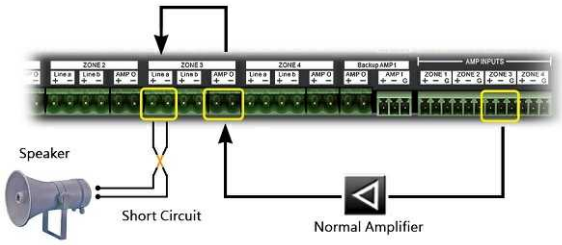
❖ Open circuit

- The open circuit occurs when a break exists in a complete conducting pathway.
- Once the open circuit is detected, the IDA8C will open the relay. The following messages will display on the touch panel of the IDA8C and in Ateis Studio. See Line A/B Error.

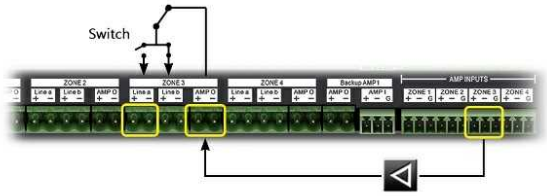


❖ Short circuit

- The short circuit occurs when the electrical current running across separate wires accidentally touch each other.



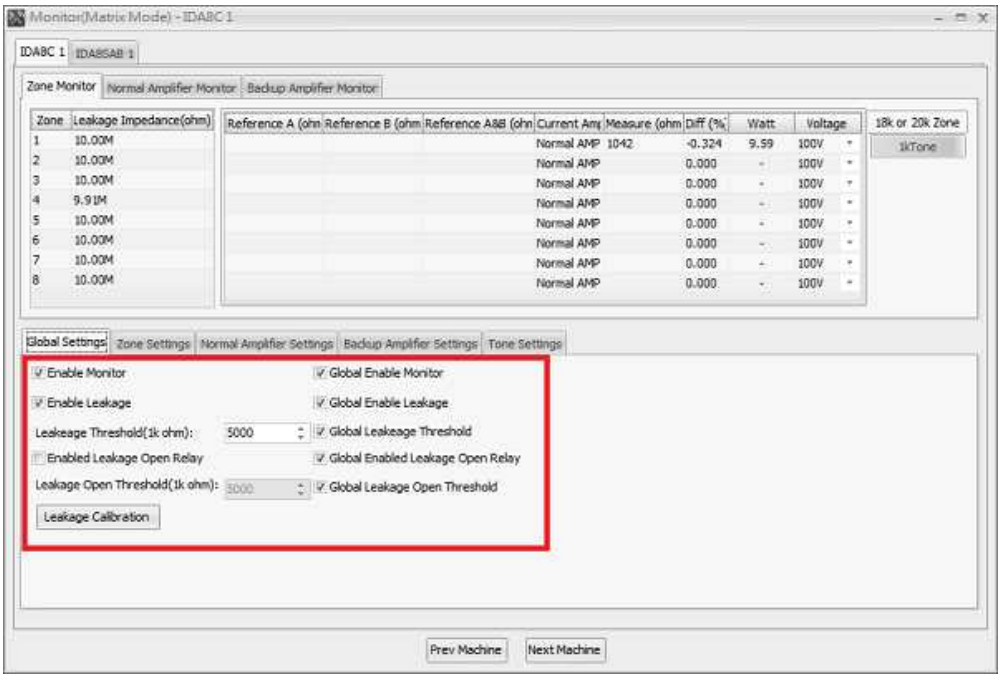
- Once the short circuit is detected, the IDA8C will force open the short-circuited line to protect the circuitry and the amplifier from the over-current damage.
- If you use both line a/b, the IDA8 keeps the working line continuous, see the picture below.



The following messages display on the touch panel of the IDA8C and in Ateis Studio. See Line A/B Error.

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5.7.1.3 Global Settings



❖ Function Settings:

- Enable Monitor:

  A check box used to enable or disable the monitor function. If users have this function disable, the [Bypass Monitoring] LED will light up.

- Enable Leakage:

  A check box used to enable or disable the leakage detect function.

- Leakage Threshold (1k ohm):

  A threshold value for the leakage detection. If the leakage impedance is lower than this value, the leakage circuit will be detected and show fault report.

- Enable Leakage Open Relay:

  Enable the function of leakage open relay.

- Leakage Open Threshold (1k ohm):

  If the leakage impedance is lower than this value, the fault Leakage replay will be detected and opened relay, this will result in no audio sound and show fault report.

- Leakage Calibration:

  If the system detects a leakage fault, but the problem wasn't found in the circuit after performing a proper check, it needs to perform a leakage calibration to confirm the monitor function is working properly.

Please note the initial leakage impedance will be different depending on the amplifiers and speakers the IDA8 processors have connected.

❖ How to perform a Leakage Calibration:

1. First, to get the correct leakage value (empty load), all the cables connected to the amplifiers and the speaker lines on IDA8 need to be removed. After disconnected the cables, if the range of leakage impedance is 8.xx~9.xx M ohm during the empty load, please continue to go to Step 2.

If the range of leakage impedance is smaller than/equal as 8.xxM ohm, this indicates as

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a hardware problem, please replace a new IDA8.

2. Click the Leakage Calibration button to proceed this action. After the calibration, the leakage impedance value will go to 10Mohm.
3. For testing whether the leakage monitoring is working properly, users can try to connect either speaker +/- pin shorted to ground or AMP-O +/- pin shorted to ground, the leakage values should be 0.00 ohm, this is for triggering a leakage fault for testing.
4. If the leakage values are not 0, this will indicate as a hardware problem, please replace a new IDA8.

- Global Enable Monitor:

  If users want to enable the monitoring function on all the connected IDA8 processors, you need to click the [Global Enable Monitor] option first, and change the [Enable Monitor] option either by clicking to enable this function or unclick to cancel the monitoring function.

- Global Enable Leakage:

  If users want to enable the monitoring function on all the connected IDA8 processors, you need to click the [Global Enable Leakage] option first, and change the [Enable Leakage] option either by clicking to enable this function or unclick to cancel the monitoring function.

- Global Leakage Threshold:

  If users want to enable the monitoring function on all the connected IDA8 processors, you need to click the [Global Leakage Threshold] option first, and change the [Leakage Threshold 1k ohm] option either by clicking to enable this function or unclick to cancel the monitoring function.

- Global Enable Leakage Open Relay:

  If users want to enable the monitoring function on all the connected IDA8 processors, you need to click the [Global Enable Leakage Open Relay] option first, and change the [Enable Leakage Open Relay] option either by clicking to enable this function or unclick to cancel the monitoring function.

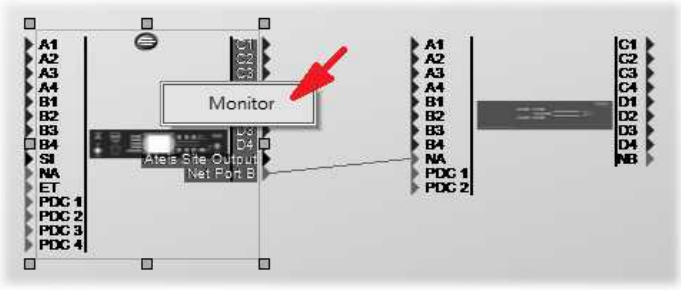
- Global Leakage Open Threshold:

  If users want to enable the monitoring function on all the connected IDA8 processors, you need to click the [Global Leakage Open Threshold] option first, and change the [Leakage Open Threshold 1k ohm] option either by clicking to enable this function or unclick to cancel the monitoring function.

5.7.1.4 Zone Monitoring

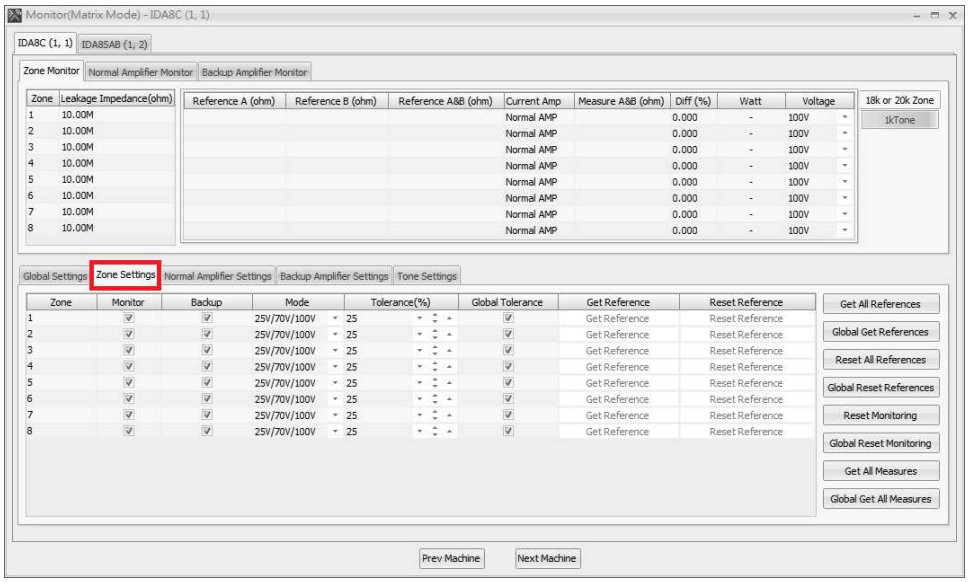
❖ Settings:

- First, in Ateis Studio, right click the IDA8C/S icon.



- When the window [Monitoring(Matrix Mode)-IDA8C/S X] appears, select [Zone Settings] page.

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❖ Functions on the down side of [Zone Settings] page:

- Zone: Indicate a row is related to a zone.
- Monitor: Enable/disable the zone monitoring, if the monitoring of a zone is disabled, the IDA8C/S will not detect faults of that zone.
- Backup: This setting will notice the IDA8 if the backup amplifier services the zone correctly. For example, if the checkbox is not checked, the IDA8C/S will not switch to the backup amplifier for the zone with the fault This results in the monitoring of the zone not working.
- Mode: There are two types of mode:
  1. 25V/70V/100V: An Audio signal through the amplifier and back to the IDA8C/S.
  2. 0dB: Instead of going through the amplifier and back to the IDA8C/S, the audio will output to other equipment and monitoring is disabled under this mode.
- Tolerance(%): Specify the tolerance of impedance to detect a bad impedance fault. For example, if the reference is 1000 ohm and the tolerance is set to 15%, the range of good impedance will be 850 ~ 1150 ohm. If measured impedance value is 1300 ohm, a bad impedance fault is recognized by the IDA8C/S.
- Global Tolerance: Click to change the tolerance setting on [Tolerance%] grid for all the zones of impedance value, which connected to all of the IDA8 processors. If the zone is not been selected on [Global Tolerance] grid, the tolerance value will not change.
- Get Reference: When the system is constructed, the user needs to get the impedance value of the speaker for further reference. This value will be utilized to detect faults of zones. The rule of fault detection is described in preview item "Tolerance(%)".
- Reset Reference: Reset the reference value to empty, resulting in the disabling of zone monitoring, but the measure value is still updated.

❖ Functions on the right side of [Zone Settings] page:

- Get All Reference: Get the reference of gain value on the selected IDA8 processor.
- Global Get Reference: Get all the reference of impedance value on all the IDA8 processors.
- Reset All Reference: Reset the reference of impedance value on the selected IDA8 processor.
- Global Reset All Reference: Reset all the reference of impedance value on all the IDA8 processors.
- Reset Monitoring: This will tell the IDA8C/S to reset the monitoring and to initialize the state of the devices. In the case of zone short fault or leakage relay open, the IDA8C/S will open the

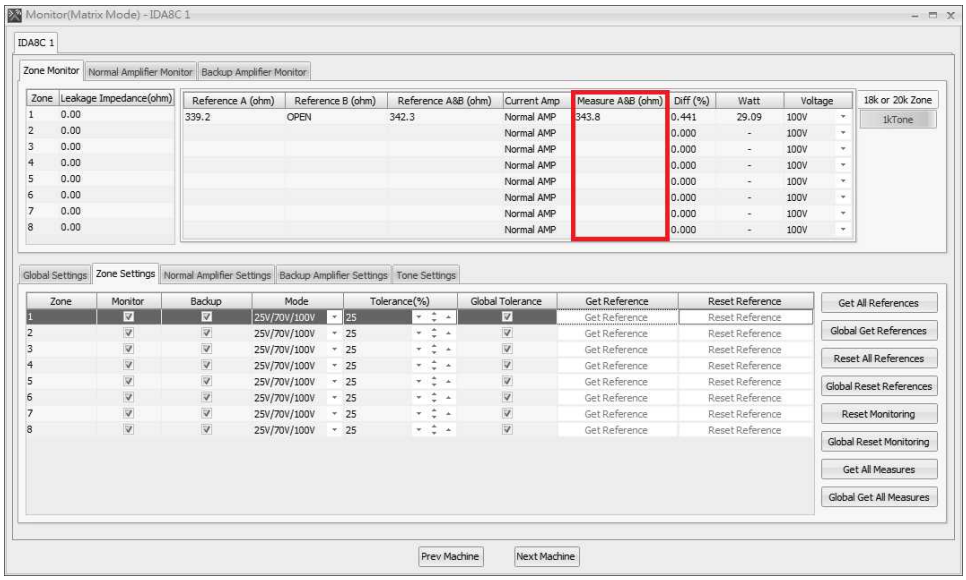
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internal relay to stop the output of the audio signal to speaker. After the relay is opened, the IDA8C/S has no way to know if the circuit outside has a short or not. Therefore, after the user repairs the circuit, the user needs to reset the monitoring to close the relay to the output audio signal to the speaker again, so that the IDA8C/S can monitor the short problem again.

- Global Reset Monitoring: Reset the monitoring function on all the IDA8 processors.
- Get all Measures: Get the current value of Measure A&B (usually for 1K Tone) on the selected IDA8 processor.
- Global Get All Measures: Get all the reference value of Measures A&B on all the IDA8 processors.

❖ Measurement:

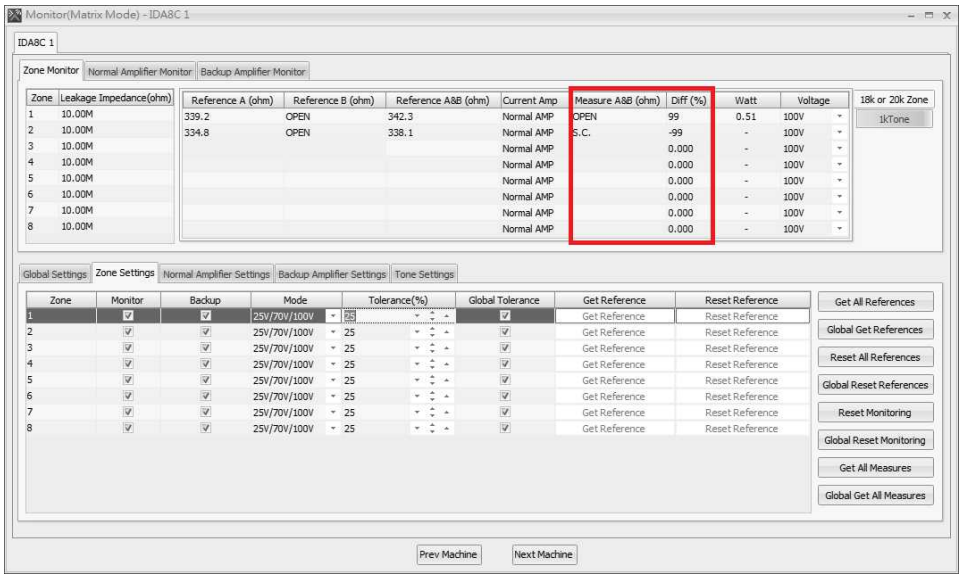
After parameter settings are set in the grid at the lower part, the IDA8C/S starts to measure the value which is received from the internal circuit, and displays it on the grid at the upper part of the window:



- Leakage Impedance: The impedance between the Line A/B +/- signal and ground causes the current leakage.
- Reference A (ohm): Show the impedance value for reference received from Line A output.
- Reference B (ohm): Show the impedance value for reference received from Line B output.
- Reference A&B (ohm): Show the impedance value for reference received from Line A & B.
- Current Amp: Show which amplifier is for the current zone (normal amplifier or backup amplifier).
- Measure (ohm): Show the impedance value of Line A & B.
- Diff(%): Show the difference percentage of Measure(ohm) and Reference A&B (ohm).
- Watt: Display the current watt value of connected speakers.
- Voltage: Select the current voltage which connects to the amplifier.
- [18K or 20K Zone]/[1K Tone]: Choose to display window based on your tone setting. Please refer to [Frequency] option on Tone Settings chapter.

❖ Faults:

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- Leakage Occurrence:

  If the leakage impedance is lower than the leakage threshold which is defined in [Global Settings] tab, then a Leakage Occurrence fault is recognized.

  If the internal values of monitoring Line A/B become abnormal, the IDA8C/S will detect and recognize that error, then generate a global fault Line A/B Error. The error status is showed in the field [Measure(ohm)]. There are three kinds of Line A/B Errors listed below:

- Line A/B Open:

  If the value of Measure (ohm) is greater than 5000 ohm, this fault can be recognized by the IDA8C/S. The field of [Measure(ohm)] shows "OPEN". Please see the example on Zone 2.

- Line A/B Bad Impedance:

  If the value of Measure (ohm) is greater than Reference A&B (ohm) + Tolerance (%), or value of Measure (ohm) is less than Reference A&B (ohm) - Tolerance (%), this fault can be recognized by the IDA8C/S. The field of [Diff(%)] shows the percentage of difference. In the figure above, the difference in percentage of zone 1 is -50.85% which is greater than the tolerance of 25%. A Line A/B bad impedance is then recognized.

- Line A/B Short:

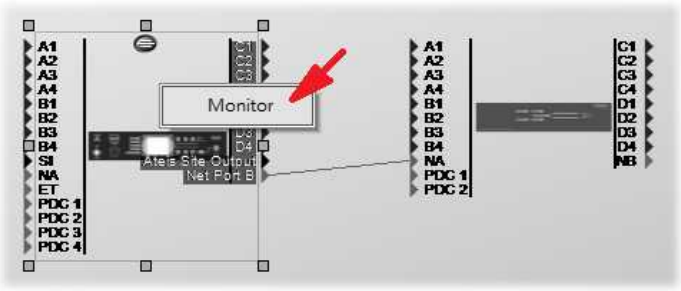
  The voltage of pin +, - is monitored by the IDA8C/S, if the voltage is zero. This means there is a short circuit outside the IDA8C/S. If this fault is detected, the internal relay of a zone will be open to stop the audio signals to the speaker. The user needs to perform a Reset Monitoring as described in the preview part of this topic in order to switch the status back. Pleas see the Line A/B Short example on Zone 3, which makes the audio output to the speaker short. A string "S. C." will be showed in the field [Measure(ohm)].

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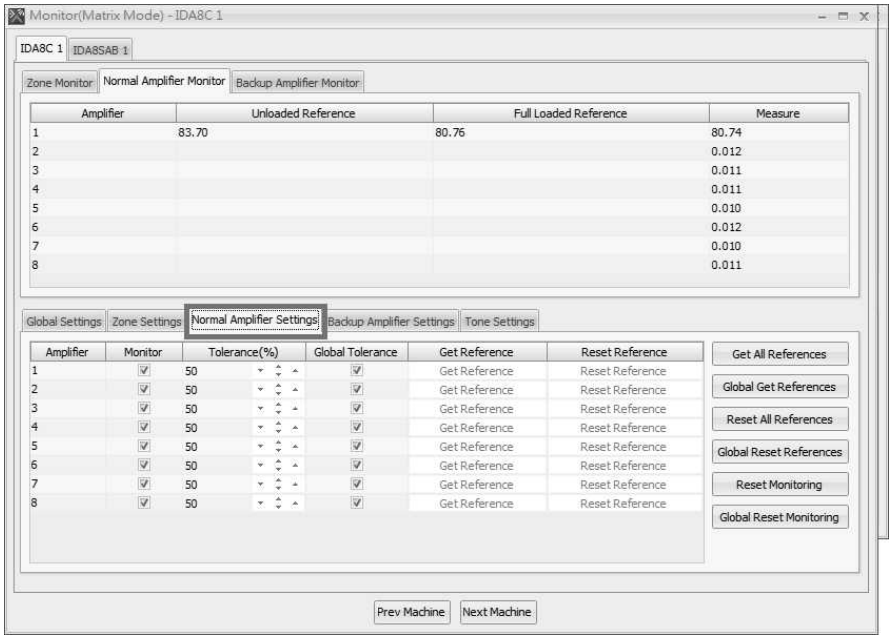
5.7.1.5 Normal Amplifier Monitoring

❖ Settings:

- First, in Ateis Studio, right click the IDA8C/S icon.



- When the window [Monitoring(Matrix Mode)-IDA8C/S X] appears, select the [Normal Amplifier Settings] page.



- Amplifier:

  Indicate a row is related to a normal amplifier of a zone.

- Monitor:

  Enable/disable the normal amplifier monitoring for the selected zone. If the monitoring of a normal amplifier is disabled, the IDA8C/S will not detect faults of the normal amplifiers.

- Tolerance (%):

  To determine the boundary of the fault detection for a selected zone. If one of the following conditions meets the description below, IDA8 will recognize the fault.

  - Measure < (Full Loaded Reference x (100% - Tolerance%))
  - Measure > (Unloaded Reference x (100% + Tolerance%))

- Global Tolerance:

  Click to change the tolerance setting on [Tolerance%] grid for all the zones of normal amplifier, which connected to all of the IDA8 processors. If the zone is not been selected on [Global Tolerance] grid, the tolerance value will not change.

- Get Reference:

  Get the reference values of the selected zone for further fault detection. Be aware, the hardware configuration(IDA8C/S, amplifiers, wiring) should be completed before getting the reference.

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- Get All Reference:

  Get the reference of gain value from the selected IDA8 processor.

- Global Get Reference:

  Get all the reference of gain value from all the IDA8 processors.

- Reset All Reference:

  Reset the reference of gain value from the selected IDA8 processor.

- Reset Reference:

  Clear the reference values of the selected zone to initialize the status. If the reference value is cleared, the monitoring will stop.

- Global Reset Reference:

  Reset all the reference of gain value from all the IDA8 processors.

- Reset Monitoring:

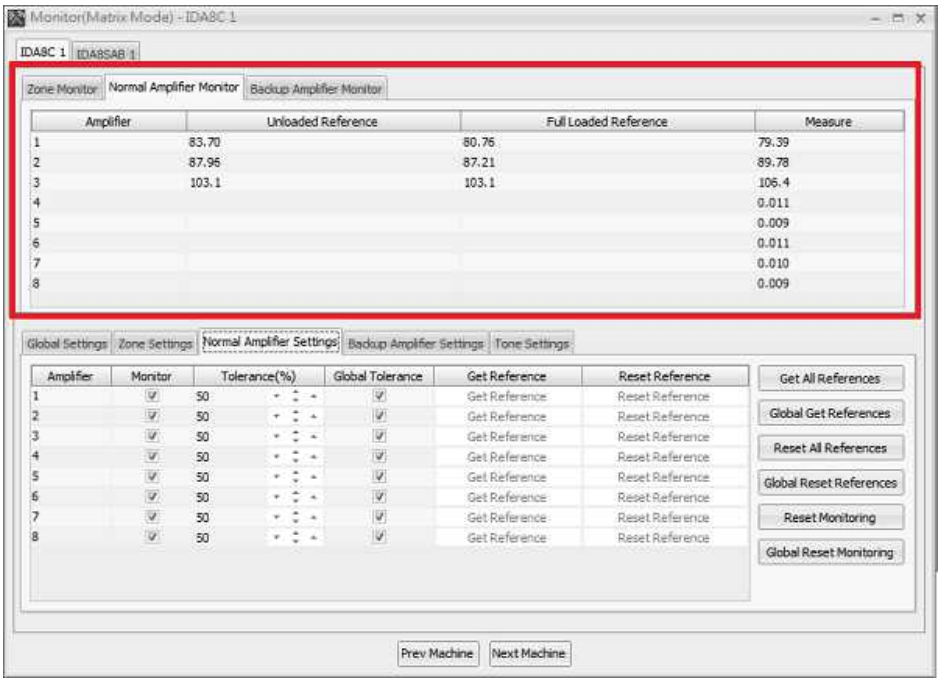
  Reset all the monitoring on all the zones, and the detected faults from amplifier will be cleared. After that, the monitoring function will execute the monitoring again.

- Global Reset Monitoring:

  Reset the monitoring function on all the IDA8 processors.

❖ Measurement:

After completed the parameter settings at the lower part of [Normal Amplifier Settings] page, the IDA8C/S starts to measure the value received from the internal circuit, and displays it on the grid at the upper part of window.



- Unloaded Reference:

  Display the value of an unloaded reference which is the gain of an amplifier when there is no load to the zone. This value is used for determining if there is a fault of a normal amplifier.

- Full Loaded Reference:

  Display the value of a full loaded reference which is the gain of an amplifier when there is a full load to the zone. This value is used for determining if there is a fault of a normal amplifier.

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- Measure:

  Display the value of measure, which is the gain of an amplifier.

❖ Faults:

- Amplifier Gain Too High:

  If the measurement > (Unloaded Reference x (100% + Tolerance%)), an Amplifier Gain Too High fault is recognized. And the fault will occurs, please check the following points:

  - Make sure there is a good connection between the speaker and the IDA8C/S.
  - Replace the non-working speaker with a working one.
  - Check the gain of the amplifiers to see if the value has changed after getting a reference.

  If all of the above actions have been checked but the amplifier still receives a fault that is too high, replace the amplifier.

- Amplifier Gain Too Low:

  If the measurement < (Full Unloaded Reference x (100% - Tolerance%)), an Amplifier Gain Too Low fault is recognized. And the fault will occurs, please check the following points:

  - Check if the signal going into the amplifier is too large. Some amplifiers have an indicator "Overload". Check this indicator.
  - Check if speaker is working or damaged.

  If all of the above have been checked but the amplifier still receives a fault that is too low, change the amplifier.

  If this fault generated after the speaker configuration is changed, you can perform a reference again to get new values for a reference.

- Amplifier Fail:

  If the measurement < (Unloaded Reference / 10), and the fault will occur, please check the following points:

  - Check if the amplifier power on.
  - Check if the gain of the amplifier is too low, please increase the gain from the knob.
  - Check if the wires between the amplifier and the IDA8 are connected correctly.

  If all the points above have been checked completely but still the amplifier receives a fail fault, please replace the amplifier.

- Rating Fault:

  If the measurement < 30 while getting the references, and the fault will occurs, please check the following points:

  - Check if the amplifier power on.
  - Check if the gain of the amplifier is too low, please increase the gain from the knob.
  - Check if the wires between the amplifier and the IDA8 are connected correctly.

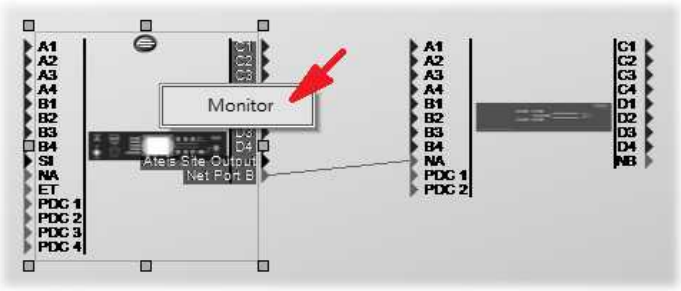
  If all the points above have been checked completely but still the amplifier receives a fail fault, please replace the amplifier.

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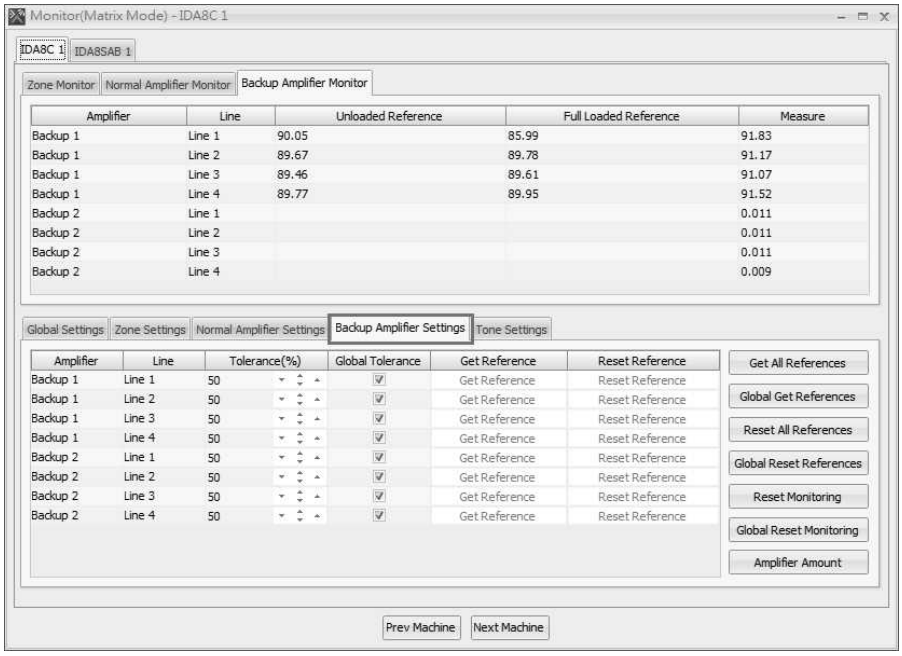
5.7.1.6 Backup Amplifier Monitoring

❖ Settings:

- First, in Ateis Studio, right click the IDA8C/S icon.



- When the window [Monitor(Matrix Mode)-IDA8C/S X] appears, select the [Backup Amplifier Settings] page.



- Amplifier: Indicate which backup amplifier will be monitored.
- Line: Indicate which combination of the zone and the backup amplifier will be monitored.
- Tolerance(%): To determine the boundary of the fault detection for a selected zone. If one of the following conditions meets the description below, IDA8 will recognize the fault.
  - Measure < (Full Loaded Reference x (100% - Tolerance%))
  - Measure > (Unloaded Reference x (100% + Tolerance%))
- Global Tolerance:

  Click to change the tolerance setting on [Tolerance%] grid for all the zones of backup amplifier, which connected to all of the IDA8 processors. If the zone is not been selected on [Global Tolerance] grid, the tolerance value will not change.
- Get Reference:

  Get the reference values of the selected zone for further fault detection. Please note that the hardware configuration(IDA8C/S, amplifiers, wiring) should be completed before getting the reference.
- Get All Reference:

  Get the reference of gain value from the selected IDA8 processor.

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- Global Get Reference:

  Get all the reference of gain value from all the IDA8 processors.

- Reset All Reference:

  Reset the reference of gain value from the selected IDA8 processor.

- Global Reset Reference:

  Reset the reference of gain value from all the IDA8 processors.

- Reset Monitoring:

  Reset all the monitoring on all the zones, and the detected faults from amplifier will be cleared. After that, the monitoring function will execute the monitoring again.

- Global Reset Monitoring:

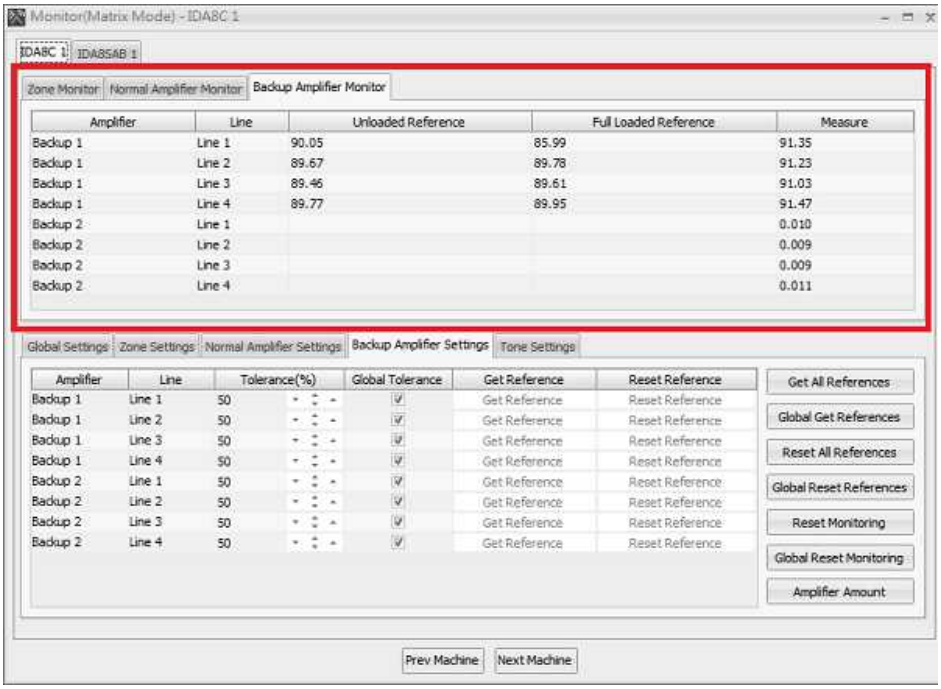
  Reset the monitoring function on all the IDA8 processors.

- Amplifier Amount:

  Open the software setup window for the backup configuration in the Advance Backup Amplifier Setup. Please refer to Amplifier Backup chapter.

❖ Measurement:

After completed the parameter settings in the grid at the lower part, the IDA8C/S starts to measure the value received from the internal circuit and displays it on the grid at upper part of window.



- Unloaded Reference:

  Display the value of an unloaded reference which is the gain of an amplifier when there is no load to the zone. This value is used for determining if there is a fault of a normal amplifier.

- Full Loaded Reference:

  Display the value of a fully loaded reference which is the gain of an amplifier when there is a full load to the zone. This value is used for determining if there is a fault of a normal amplifier.

- Measure:

  Display the value of measure, which is the gain of an amplifier.

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❖ Faults:

- Amplifier Gain Too High:

  If the measurement > (Unloaded Reference x (100% + Tolerance%)), an Amplifier Gain Too High fault is recognized. And the fault will occurs, please check the following points:

  - Make sure there is a good connection between the speaker and the IDA8C/S.
  - Replace the non-working speaker with a working one.
  - Check the gain of the amplifiers to see if the value has changed after getting a reference.

  If all of the above actions have been checked but the amplifier still receives a fault that is too high, replace the amplifier.

- Amplifier Gain Too Low:

  If the measurement < (Full Unloaded Reference x (100% - Tolerance%)), an Amplifier Gain Too Low fault is recognized. And the fault will occurs, please check the following points:

  - Check if the signal going into the amplifier is too large. Some amplifiers have an indicator "Overload". Check this indicator.
  - Check if speaker is working or damaged.

  If all of the above have been checked but the amplifier still receives a fault that is too low, change the amplifier.

  If this fault generated after the speaker configuration is changed, you can perform a reference again to get new values for a reference.

- Amplifier Fail:

  If the measurement < (Unloaded Reference / 10), and the fault will occur, please check the following points:

  - Check if the amplifier power on.
  - Check if the gain of the amplifier is too low, please increase the gain from the knob.
  - Check if the wires between the amplifier and the IDA8 are connected correctly.

  If all the points above have been checked completely but still the amplifier receives a fail fault, please replace the amplifier.

- Rating Fault:

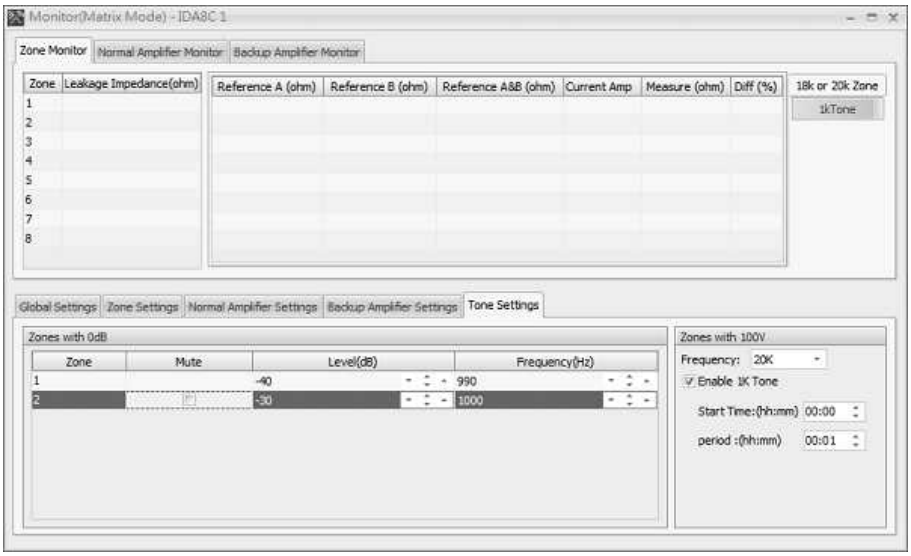
  If the measurement < 30 while getting the references, and the fault will occurs, please check the following points:

  - Check if the amplifier power on.
  - Check if the gain of the amplifier is too low, please increase the gain from the knob.
  - Check if the wires between the amplifier and the IDA8 are connected correctly.

  If all the points above have been checked completely but still the amplifier receives a fail fault, please replace the amplifier.

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5.7.1.7 Tone Settings



In the lower part of the window [Monitoring(Matrix Mode)-IDA8C/S X], there is a page [Tone Settings] for configuring the tone signal which is utilized for monitoring. There are two types of settings

❖ Zones with 0dB:

If the audio signal from Amplifier Zone Output is not returning to the IDA8C/S for monitoring, this allows the user to mix a tone into that signal for further detection. You can change this setting in the [Zone Settings] tab and the [Mode] field. There are parameters of settings:

- Zone: Indicate the zone number of parameters.
- Mute: Mute the tone signal.
- Level (dB): The level of the tone signal.
- Frequency (Hz): The frequency of the tone signal.

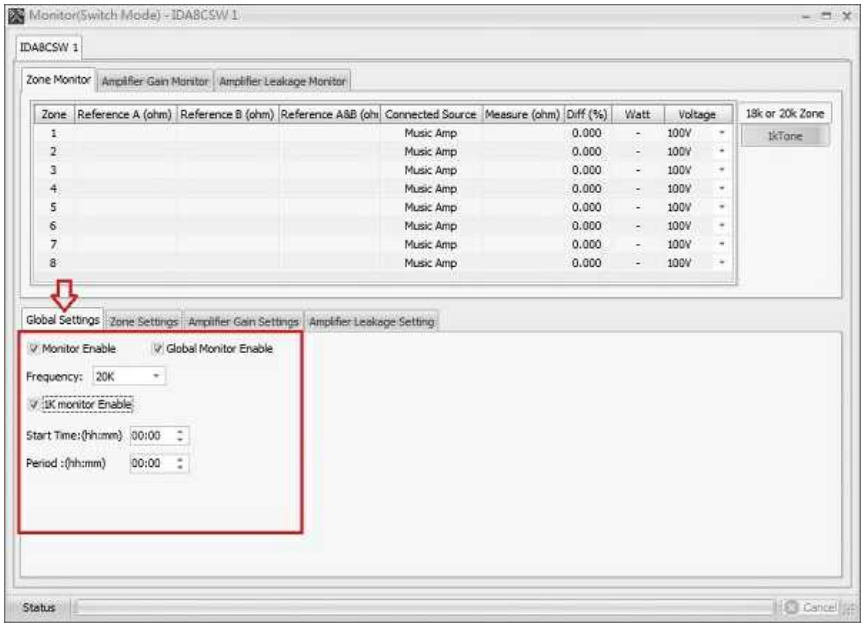
❖ Zones with 100V:

- Frequency: The frequency of the tone signal.
- Enable 1K Tone: Enables 1K tone for monitoring. If this option is on, during the [Start Time] and [period], a 1K tone signal will be sent to the amplifier for monitoring.
  - Start Time(hh:mm): The time to start 1K tone sending.
  - Period(hh:mm): The sending period of 1K tone.

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5.7.2 Switch Mode

5.7.2.1 Global Settings

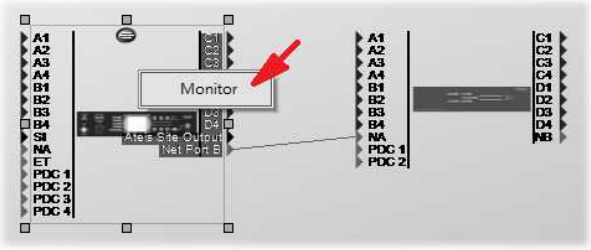


- Monitor Enable: A check box used to enable or disable the monitor function.
- Global Monitor Enable: If users want to enable the monitoring function on all the connected IDA8 processors, you need to click the [Global Monitor Enable] option first, and change the [Monitor Enable] option either by clicking to enable this function or unclick to cancel the monitoring function.
- Frequency: The frequency of the tone signal.
- 1K Monitor Enable: Enables 1K tone for monitoring. If this option is on, during the Start Time and the End Time, a 1K tone signal will be sent to the amplifier for monitoring.
- Start Time(hh:mm): The time to start 1K tone sending.
- Period (hh:mm): The sending period of 1K tone.

5.7.2.2 Zone Monitoring

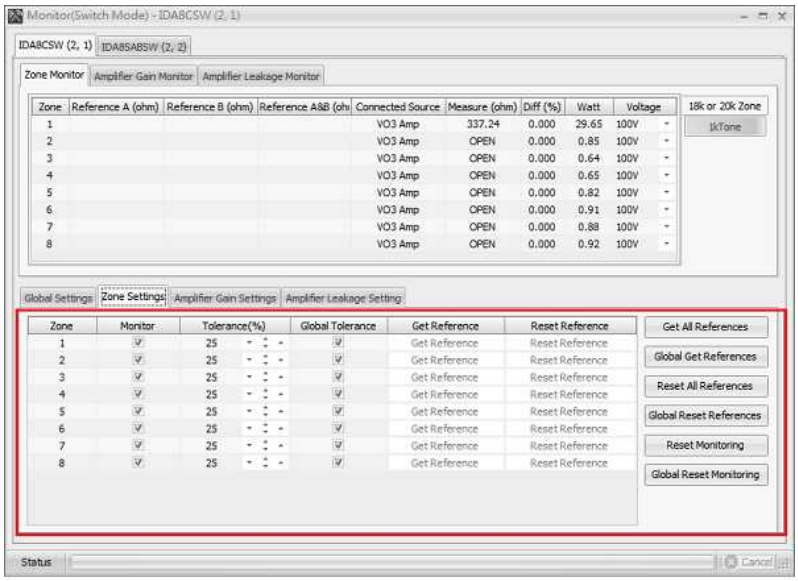
❖ Settings:

- First, in Ateis Studio, right click the IDA8C-SW icon.



- When the window [Monitoring(Switch Mode)-IDA8CSW/ X] appears, select [Zone Settings] page.

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❖ Functions on the left side of [Zone Settings] page:

- Zone: Indicate a row is related to a zone.
- Monitor: Enable/Disable the zone monitoring, if the monitoring of a zone is disabled, the IDA8C/S will not detect faults of that zone.
- Tolerance(%): Specify the tolerance of impedance to detect a bad impedance fault. For example, if the reference is 1000 ohm and the tolerance is set to 15%, the range of good impedance will be 850 ~ 1150 ohm. If measured impedance value is 1300 ohm, a bad impedance fault is recognized by the IDA8C/S.
- Global Tolerance: Click to change the tolerance setting on [Tolerance%] grid for all the zones of impedance value, which connected to all of the IDA8 processors. If the zone is not been selected on [Global Tolerance] grid, the tolerance value will not change.
- Get Reference: When the system is constructed, the user needs to get the impedance value of the speaker for further reference. This value will be utilized to detect faults of zones. The rule of fault detection is described in preview item "Tolerance(%)".
- Reset Reference: Reset the reference value to empty, resulting in the disabling of zone monitoring, but the measure value is still updated.

❖ Functions on the right side of [Zone Settings] page:

- Get All Reference: Get the reference of gain value from the selected IDA8 processor.
- Global Get References: Get all the reference of impedance value on all the IDA8 processors.
- Reset All Reference: Reset the reference of impedance value from the selected IDA8 processor.
- Global Reset All Reference: Reset all the reference of impedance value on all the IDA8 processors.
- Reset Monitoring: This will tell the IDA8C/S to reset the monitoring and to initialize the state of the devices. In the case of zone short fault or leakage relay open, the IDA8C/S will open the internal relay to stop the output of the audio signal to speaker. After the relay is opened, the IDA8C/S has no way to know if the circuit outside has a short or not. Therefore, after the user repairs the circuit, the user needs to reset the monitoring to close the relay to the output audio signal to the speaker again, so that the IDA8C/S can monitor the short problem again.
- Global Reset Monitoring: Reset the monitoring function on all the IDA8 processors.

In the case of zone short fault, the IDA8C slave/ SW will open the internal relay to stop the

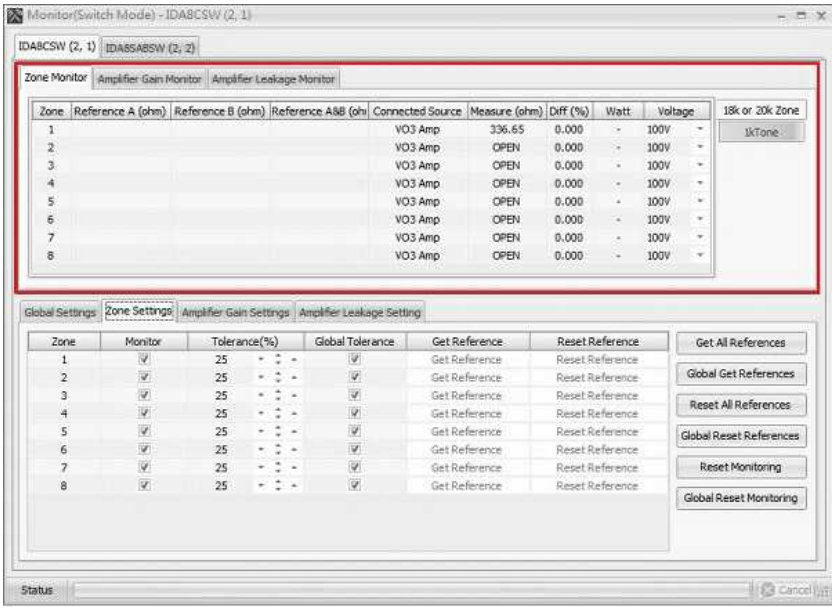
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output of the audio signal to speaker. After the relay is opened, the IDA8C-SW has no way to know if the circuit outside has a short or not. Therefore, after the user repairs the circuit, the user needs to reset the monitoring to close the relay to the output audio signal to the speaker again so that the IDA8C-SW can monitor the short problem again.

- Get all Measures: Get the current value of Measure A&B (usually for 1K Tone) on the selected IDA8 processor.
- Global Get All Measures: Get all the reference value of Measures A&B on all the IDA8 processors.

❖ Measurement:

- After completed the function setting at the lower part of [Zone Settings] page, the IDA8C-SW will start to measure the value which is received from the internal circuit, and then displays it on the grid at the upper part of the window.

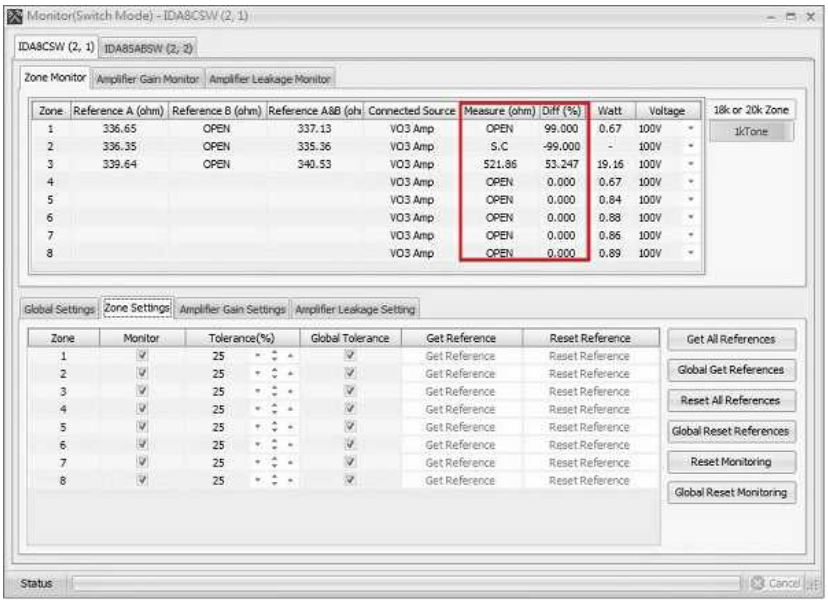


❖ Functions on the upper side:

- Reference A (ohm): Display the impedance value for reference received from Line A output.
- Reference B (ohm): Display the impedance value for reference received from Line B output.
- Reference A&B (ohm): Display the impedance value for reference received from Line A & B.
- Connected Source: Display which amplifier is for the current zone (normal amplifier or backup amplifier).
- Measure (ohm): Display the impedance value of Line A & B.
- Diff(%): Display the difference percentage of Measure(ohm) and Reference A&B(ohm)
- Watt: Display the current watt value of connected speakers.
- Voltage: Select the current voltage which connects to the amplifier.
- [18K or 20K Zone]/[1K Tone]: Choose to display window based on your tone setting. Please refer to [Frequency] option on Tone Settings chapter.

❖ Faults:

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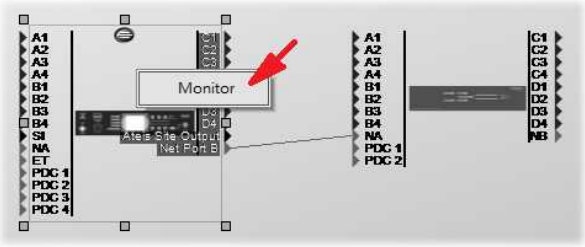


- Line A/B Open: If the value of Measure (ohm) is greater than 4000 ohm, this fault can be recognized by the IDA8C/S. The field of [Measure(ohm)] shows "OPEN". Please see the example of Zone 1 from the picture above.
- Line A/B Bad Impedance: If the value of Measure (ohm) is greater than Reference A&B (ohm) + Tolerance (%), or value of Measure (ohm) is less than Reference A&B (ohm) - Tolerance (%), this fault can be recognized by the IDA8C/S. The field of [Diff(%)] shows the percentage of difference. In the figure above, the difference in percentage of zone 3 is 53.247 which is greater than the tolerance of 25%. A Line A/B bad impedance is then recognized.
- Line A/B Short: The voltage of pin +, - is monitored by the IDA8C/S, if the voltage is zero. This means there is a short circuit outside the IDA8C/S. If this fault is detected, the internal relay of a zone will be open to stop the audio signals to the speaker. The user needs to perform a Reset Monitoring as described in the preview part of this topic in order to switch the status back. Please see the example of Zone 2, which indicates "S.C." on the field [Measure(ohm)].

5.7.2.3 Amplifier Monitoring

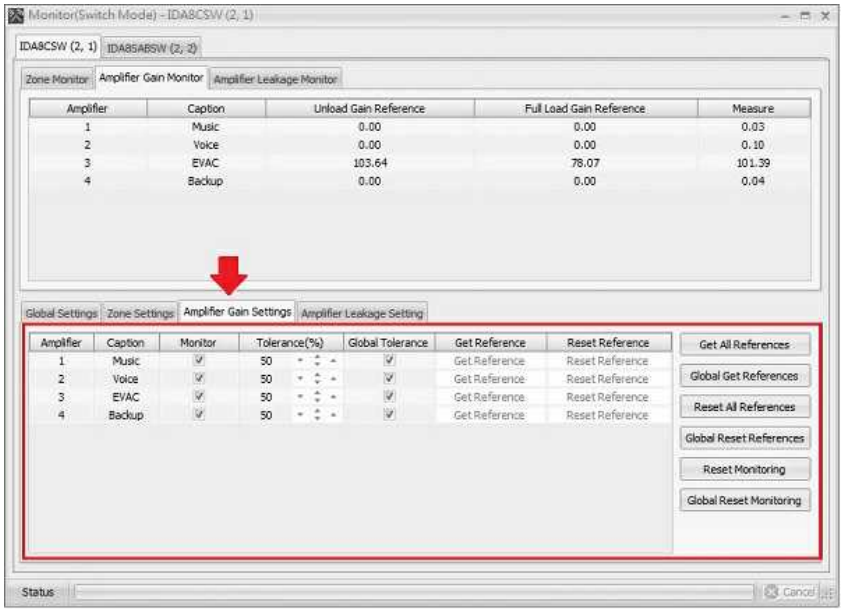
❖ Settings:

- First, in Ateis Studio, right click the IDA8C-SW icon.



- When the window [Monitoring(Switch Mode)-IDA8CSW/ X] appears, select the [Amplifier Gain Setting] page.

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- Amplifier: Indicate a row is related to a normal amplifier of a zone.
- Caption: Indicate the caption of amplifier channel.
- Monitor: Enable/Disable the normal amplifier monitoring for the selected zone. If the monitoring of a normal amplifier is disabled, the IDA8C-SW will not detect faults of the normal amplifiers.
- Tolerance(%): Specify the tolerance of impedance to detect a bad impedance fault. For example, if the reference is 1000 ohm and the tolerance is set to 15%, the range of good impedance will be 850 ~ 1150 ohm. If measured impedance value is 1300 ohm, a bad impedance fault is recognized by the IDA8C/S.
- Global Tolerance: Click to change the tolerance setting on [Tolerance%] grid for all the zones of impedance value, which connected to all of the IDA8 processors. If the zone is not been selected on [Global Tolerance] grid, the tolerance value will not change.
- Get Reference: When the system is constructed, the user needs to get the impedance value of the speaker for further reference. This value will be utilized to detect faults of zones. The rule of fault detection is described in preview item "Tolerance(%)".
- Reset Reference: Reset the reference value to empty, resulting in the disabling of zone monitoring, but the measure value is still updated.

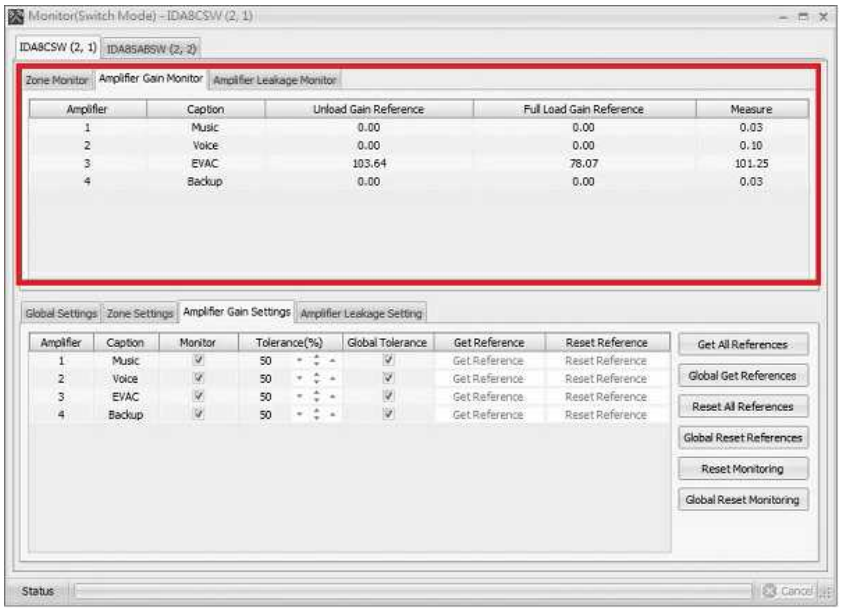
❖ There are buttons on the right side of the page [Zone Settings]:

- Get All Reference: Get the reference of gain value from the selected IDA8 processor.
- Global Get Reference: Get all the reference of impedance value on all the IDA8 processors.
- Reset All Reference: Reset the reference of impedance value from the selected IDA8 processor.
- Global Reset All Reference: Reset all the reference of impedance value on all the IDA8 processors.
- Reset Monitoring: This will tell the IDA8C/S to reset the monitoring and to initialize the state of the devices. In the case of zone short fault or leakage relay open, the IDA8C/S will open the internal relay to stop the output of the audio signal to speaker. After the relay is opened, the IDA8C/S has no way to know if the circuit outside has a short or not. Therefore, after the user repairs the circuit, the user needs to reset the monitoring to close the relay to the output audio signal to the speaker again, so that the IDA8C/S can monitor the short problem again.
- Global Reset Monitoring: Reset the monitoring function on all the IDA8 processors.

❖ Measurement:

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After completed the parameter settings at the lower part of [Amplifier Gain Setting] page, the IDA8C-SW will start to measure the value received from the internal circuit, and displays it on the grid at the upper part of window.



- Caption: Indicate the caption of amplifier channel.
- Unloaded Reference: Display the value of an unloaded reference which is the gain of an amplifier when there is no load to the zone. This value is used for determining if there is a fault of a normal amplifier.
- Full Loaded Reference: Display the value of a full loaded reference which is the gain of an amplifier when there is a full load to the zone. This value is used for determining if there is a fault of a normal amplifier.
- Measure: Display the value of measure, which is the gain of an amplifier.

❖ Faults:

- Amplifier Gain Too High:

  If the measurement > (Unloaded Reference x (100% + Tolerance%)), an Amplifier Gain Too High fault is recognized. And the fault will occurs, please check the following points:

  - Make sure there is a good connection between the speaker and the IDA8C/S.
  - Replace the non-working speaker with a working one.
  - Check the gain of the amplifiers to see if the value has changed after getting a reference.

  If all of the above actions have been checked but the amplifier still receives a fault that is too high, replace the amplifier.

- Amplifier Gain Too Low:

  If the measurement < (Full Unloaded Reference x (100% - Tolerance%)), an Amplifier Gain Too Low fault is recognized. And the fault will occurs, please check the following points:

  - Check if the signal going into the amplifier is too large. Some amplifiers have an indicator "Overload". Check this indicator.
  - Check if speaker is working or damaged.

  If all of the above have been checked but the amplifier still receives a fault that is too low, change the amplifier.

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If this fault generated after the speaker configuration is changed, you can perform a reference again to get new values for a reference.

- Amplifier Fail:

  If the measurement < (Unloaded Reference / 10), and the fault will occur, please check the following points:

  - Check if the amplifier power on.
  - Check if the gain of the amplifier is too low, please increase the gain from the knob.
  - Check if the wires between the amplifier and the IDA8 are connected correctly.

  If all the points above have been checked completely but still the amplifier receives a fail fault, please replace the amplifier.

- Rating Fault:

  If the measurement < 30 while getting the references, and the fault will occurs, please check the following points:

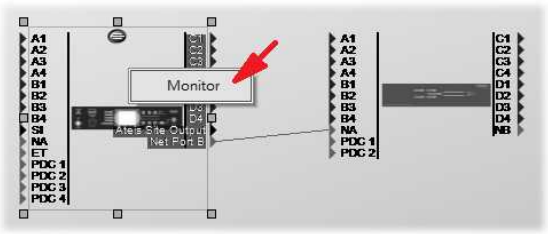
  - Check if the amplifier power on.
  - Check if the gain of the amplifier is too low, please increase the gain from the knob.
  - Check if the wires between the amplifier and the IDA8 are connected correctly.

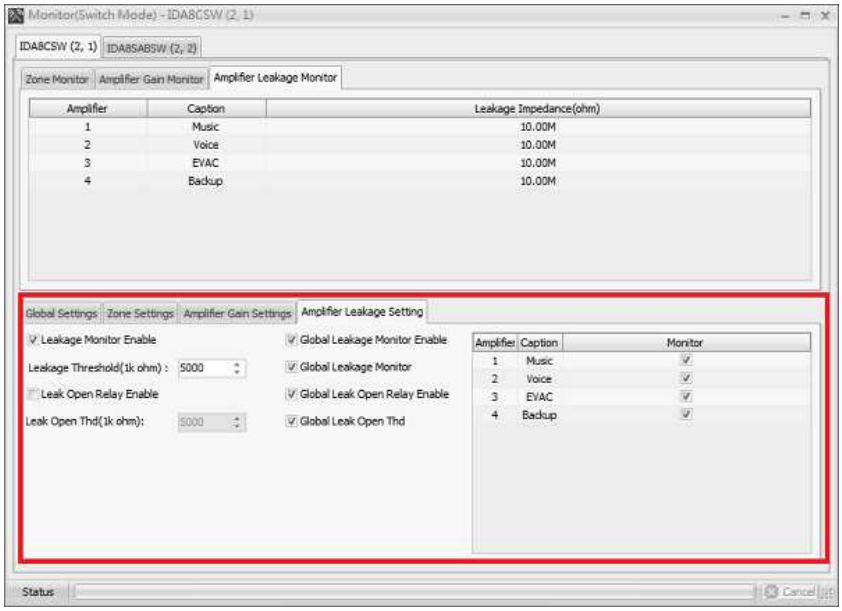
If all the points above have been checked completely but still the amplifier receives a fail fault, please replace the amplifier.

5.7.2.4 Amplifier Leakage Monitoring

❖ Settings:

- First, in Ateis Studio, right click the IDA8C-SW icon.



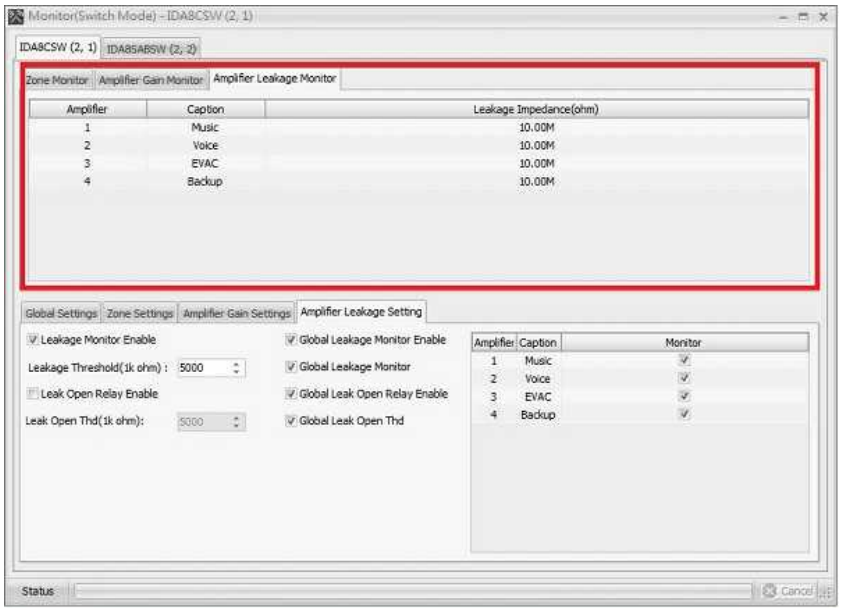


- Leakage Monitor Enable: A check box used to enable or disable the leakage detect function.

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- Leakage Threshold (1k ohm): A threshold value for the leakage detection. If the leakage impedance is lower than this value, the fault Leakage Occurrence is detected.
- Leak Open Relay Enable: Open the relay setting when the fault Leakage Occurrence is detected in the system.
- Leak Open Threshold (1k ohm): A threshold value for the leakage detection. If the leakage impedance is lower than this value, the leak open.
- Global Leakage Monitor Enable: If users want to enable the monitoring function on all the connected IDA8 processors, you need to click the [Global Leakage Monitor Enable] option first, and change the [Leakage Monitor Enable] option either by clicking to enable this function or unclick to cancel the monitoring function.
- Global Leakage Threshold: If users want to enable the monitoring function on all the connected IDA8 processors, you need to click the [Global Leakage Threshold] option first, and change the [Leakage Threshold 1k ohm] option either by clicking to enable this function or unclick to cancel the monitoring function.
- Global Leakage Open Relay Enable: If users want to enable the monitoring function on all the connected IDA8 processors, you need to click the [Global Leakage Open Relay Enable] option first, and change the [Enable Leakage Open Relay] option either by clicking to enable this function or unclick to cancel the monitoring function.
- Global Leakage Open Threshold: If users want to enable the monitoring function on all the connected IDA8 processors, you need to click the [Global Leakage Open Threshold] option first, and change the [Leakage Open Threshold 1k ohm] option either by clicking to enable this function or unclick to cancel the monitoring function.
- Monitoring Checkbox: Select the checkbox to activate the channel usage of amplifier.

❖ Measurement:



- Caption: Indicate the caption of amplifier channel.
- Leakage Impedance(ohm): The impedance between the Line A/B +/- signal and ground causes the current leakage.

When the amplifier is used by the zone, the value of Leakage Impedance will be detected.

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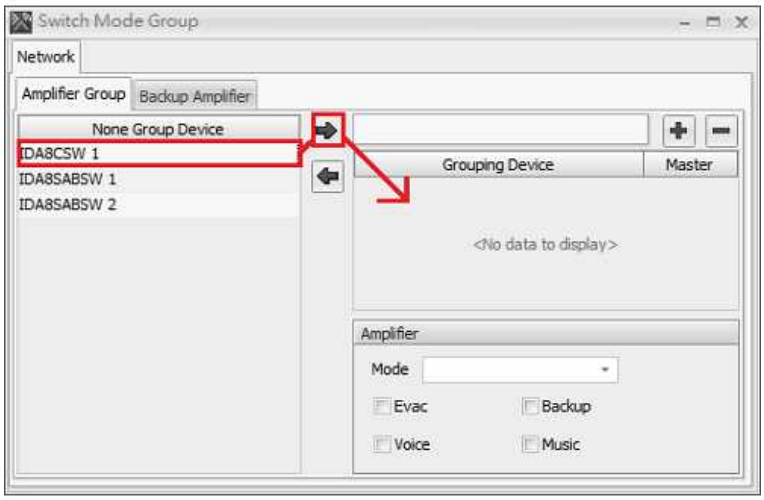
5.7.2.5 Switch Amplifier Group

Each IDA8C/IDA8SAB (Switch Mode) requires less number of amplifiers with only 4 audio inputs \/ outputs. This function allows users to choose up to 4 amplifiers maximum units in different modes (Equal Mode, Unequal Mode, Backup Sharing Mode) of multi-groups.

1. Right click the switch mode device to open a pop-up window.
2. Click [Switch Amplifier Group] to open the setting window. See the picture below,

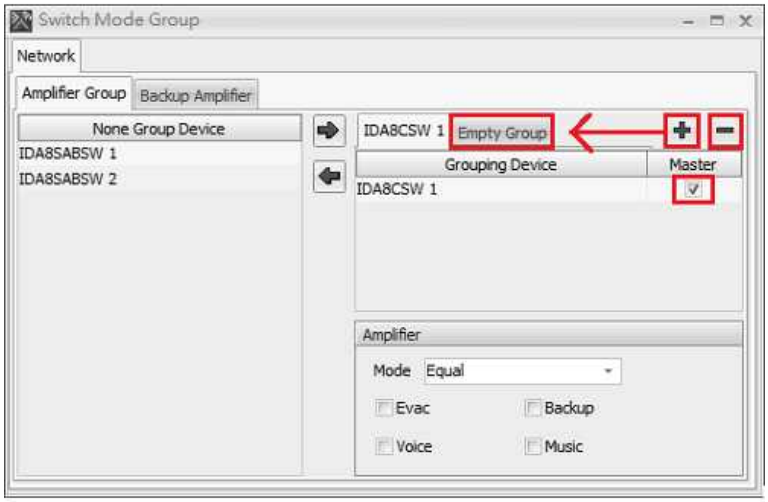


3. Select the device(s) on the left grid which users intend to put in as a grouping device.



- / : Create or Delete from the selected device on the left grid into or a grouping device on the right grid.

4. Create multi-groups.

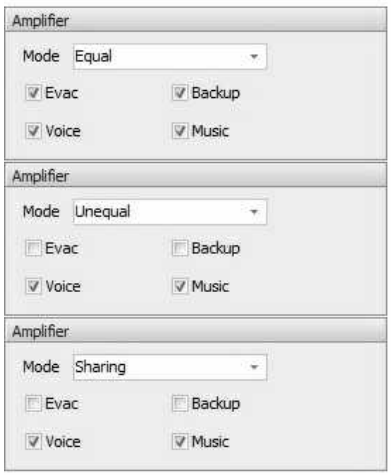


- / : Create or Delete a new group.

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- Master: Select to enable the unit as a matrix device.

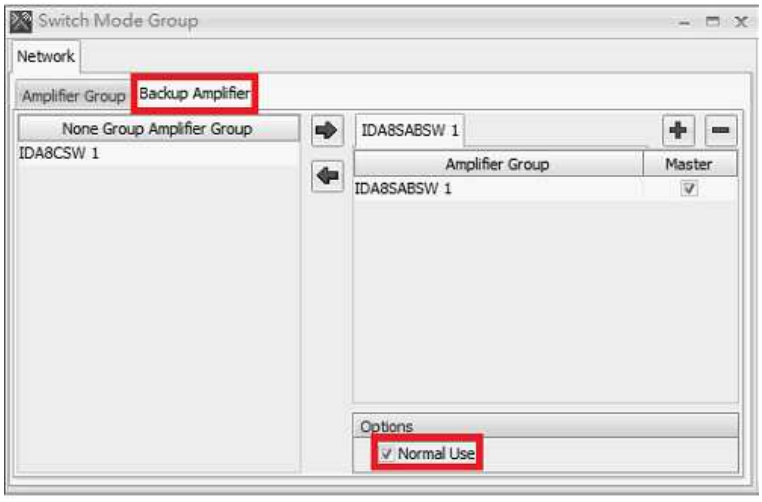
5. Select the application of each amplifier.



There are three types of mode (Equal Mode, Unequal Mode, Backup Sharing Mode) which provide users with a multi-functional combination for preference.

In case you might face any common issue of how these three types work, see Installation Notes chapter.

6. Select as a backup Amplifier (this function shall only be displayed and adjusted under the use of economic mode).



- Normal Use: Select to enable the backup amplifier as Voice or Music sources simultaneously when the backup amplifier is vacant currently.

5.7.3 Procedure of Monitoring Setup

The connection wiring of hardware has completed before the monitoring setup, as the IDA8C/S will get the values from the hardware's initial state for reference. When the system is operating and reference values are correctly achieved, the IDA8C/S continuously measures the internal status and compares it with referenced values to determine if there are incorrect processes of zone/amplifiers.

1. Setup hardware equipment, including an IDA8C/S, a normal amplifier, a backup amplifier, speakers and wiring between the devices,
2. Create a configuration using Ateis Studio.
3. Store the configuration, then online.

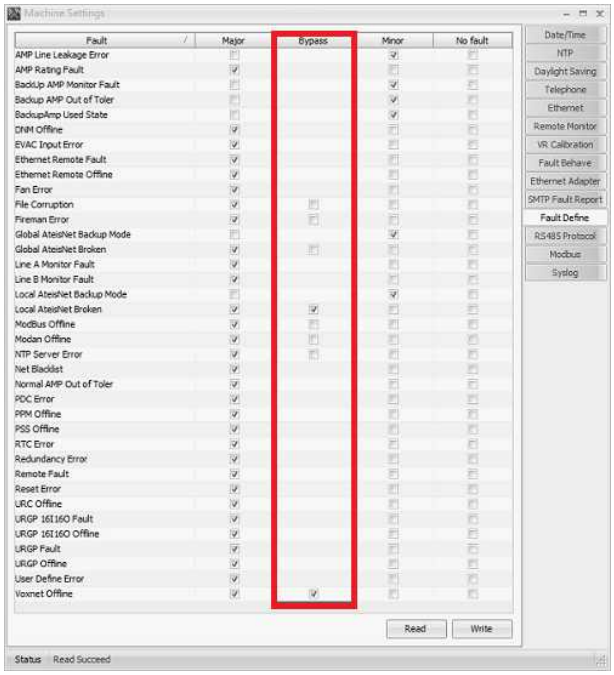
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4. Set appropriate settings for your application on Ateis Studio. You can see more details on the following topic Zone Monitoring, Normal Amplifier Monitoring, Backup Amplifier Monitoring.
5. Press [Get reference] button to start the monitoring for the zone you selected.

5.7.4 Redundancy Switching Faults

The below errors will result in redundancy switching.

- All the "System Faults" will result in redundancy switching.
- All the faults under the selected the checkbox on [Bypass] mode will result in redundancy switching.



5.8 Modbus

The IDA8 system is capable to allows to send/receive multiple Modbus status/commands on RS485 port (the PDC port on IDA8) or Ethernet (TCP/IP). The supported functions which the Modbus clients can access are ReadHoldingRegisters, ReadInputRegisters, WriteSingleRegister, WriteMultipleRegisters.

Once connected, the Modbus clients can receive a detailed status information from the server (Busy, Faults, messages list, action of scheduled events) as well as performing the PA functions such as live broadcasting or message announcements with the pre-recorded message files. IDA8 can handle up to 4,096 speaker lines (100V outputs), 4,096 0dB outputs, 2,048 paging microphones, 999 audio messages and 100 event schedulers.

- The server address of Modbus on IDA8 system can be configured:
  - With a maximum of 10 Modbus clients.
  - Port number via TCP/IP: 502 by default.
  - Parameter of RS485 communication: 115200, E, 8, 1 by default.
- Modbus Table:
  - The maximum of the table size: 65536, and the data with is 16 bits.
  - The address range of data reading: 0~39999 & 57300~65535

Each Modbus client has the same value.

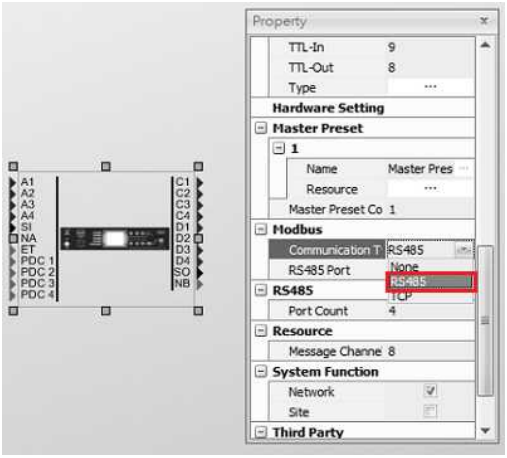
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○ The address range of data writing: address 38900~53199

Each Modbus client is separated which will not be conflicted.

5.8.1 Configuration

1. First, right click on your IDA8 processor to open [Property] window.
2. Choose the communication protocol either from RS485 port or TCP/IP, then choose which PDC port as the Modbus protocol.
3. Click [Compile] and [Store] button to complete the configuration of Modbus.
4. Please refer to the following chapters for details:
   1) Table of Modbus Status and Table of Modbus Commands
   2) Table of Modbus Key
   3) Recording Function via Remotes
   4) Log Loading



5.9 Security Mode

When the power of IDA8 system is under a low status (system can only use the battery to power supply), the Security Mode provides users to choose to proceed with only the important paging schedule or close down the system monitoring which under the standard/normal mode.

When IDA8 system is under the Security Mode, the system will operate with the listed two point of description as below:

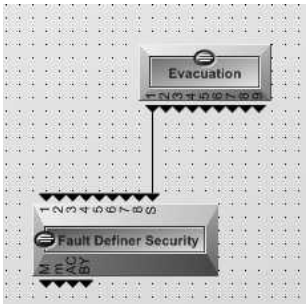
- The paging function will only be activated when the checkbox of Security on Network Paging component has been ticked, see Network Paging component.
- To change the system to Security Mode, user needs to connect the S Input Pin from the Fault Define Security component, see Fault Define Security component and the example below,

The period of monitoring (amplifier/speaker line) function will be changed to 90 seconds/per time.

Please note that if one of the IDA8 unit change into the Security mode, the rest of the IDA8 units will change as well.

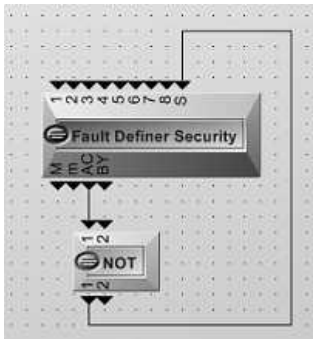
❖ Connection Example of S Input Pin:

- When the Channel 1 of Evacuation component is open, the IDA8 system will change to Security Mode. See the picture below,



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- When the AC power supply of IDA8 has been cut off, the IDA8 system will change to Security mode. See the picture below,



5.10 Message Limitation

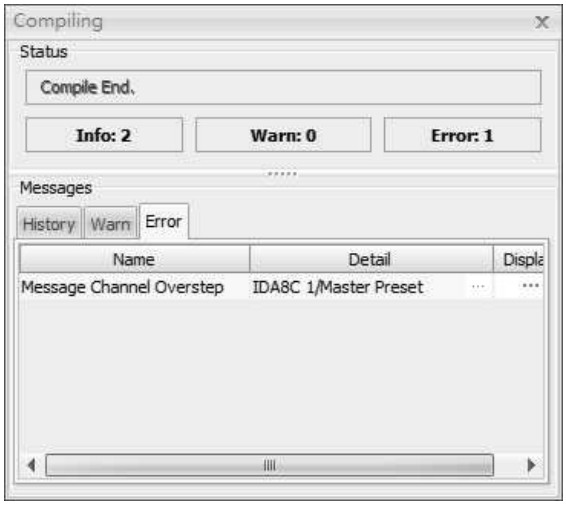
❖ Each IDA8 has 8 x message channel sources, the following listed below are the components which will be occupied by the usage number of the message channel sources.

- Network Paging x 2
- Voxnet Control x 2
- VoIP x 1
- DTMF VoIP x 1
- Message Player x 1
- MM Player x 1 - 2 (users defined)
- Ethernet IGMP Audio Stream x 1
- Fire Alarm x 1 - 4 (users defined)

❖ Example:

If users use the [Networking Paging] component, the usage number of message channel sources will be left 6 channel sources.

If the number of channel is beyond the max. of 8 x message channel sources, the [Compile] action will be failed and display an error on the [Compile] window, see the picture below, then users need to adjust and decrease the number of channel sources.



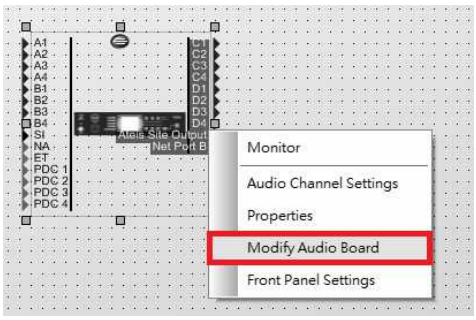
5.11 Modify Audio Board

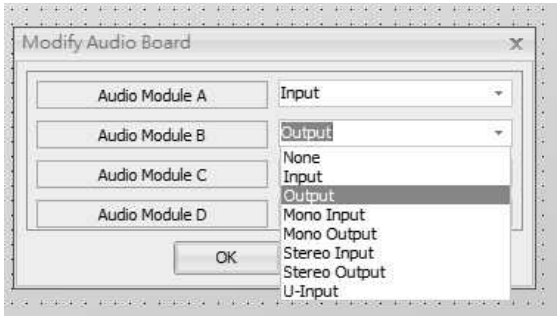
This function allows users to change the audio board which have been installed in the IDA8 processors.

In case that the audio board cannot successfully mapped with the connected hardware device, this

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could avoid users not to re-mapping, re-edit the configuration once the audio boards are not the same.





5.12 Ethernet Access List

The table below contains the IP address (include IGMP IP address) and IP port which the IDA8 system will use, please make sure to configure the listed IP addresses and IP ports settings on the connected network switch.

IGMP IP Address	Port	Function
IDA8 System		
239.211.34.35	19700	ATEIS Studio search
239.211.34.36	19700	ATEIS Studio search
239.211.34.46	19770	ATEIS Studio search receive
239.211.34.47	19781	ATEIS Studio element display
239.211.34.48	19782	ATEIS-NET status display
239.240.38.25	9000	Binary status
239.240.38.25	9002	Machine status
239.240.38.25	8998	IGMP quick paging
239.240.38.25	8995	Machine display status
239.241.100.xx (xx=0 to 255)	Any (default: 6912)	RTP stream
User-Defined IP	6912	RTP address
User-Defined IP	8010	Terracom third party
User-Defined IP	8010 - 8059, 8200 - 8249 8300 - 8349, 8400 - 8449	Audio messages
User-Defined IP	19762	Control & command
IP Address	Port	Function
User-Defined IP	19780	Control & command
User-Defined IP	123	NTP transmit
User-Defined IP	514	System log
User-Defined IP	502	Modbus
User-Defined IP	14500	NTP receive
User-Defined IP	5060	SIP command
User-Defined IP	8000	SIP command
User-Defined IP	9002	Control & command
User-Defined IP	9012	Stream
User-Defined IP	12302	Control & command
User-Defined IP	12303	Control & command
User-Defined IP	19760	Control & command
User-Defined IP	19761	3rd party control
User-Defined IP	19763	Redundancy config
User-Defined IP	19784	Remote command
TERRACOM System (PPM-IT5)		

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IGMP IP Address	Port	Function
User-Defined IP	80	Website configuration

5.13 SNMP protocol

The IDA8 system supports SNMP protocol (Simple Network Management Protocol).

1. Support SNMP version 1 (SNMPv1) only. Do not support version 2 or version 3.
2. The SNMP agent receives requests on UDP port 161.
3. The time out of communication response is 3 seconds by default.

Layer	Content										
.1	iso										
.1.3		org									
.1.3.6			dod								
.1.3.6.1				internet							
.1.3.6.1.4					private						
.1.3.6.1.4.1						enterprises					
.1.3.6.1.4.1.30512							ateis				
.1.3.6.1.4.1.30512.2								ida8			
.1.3.6.1.4.1.30512.2.1									WatchdogCounter		
.1.3.6.1.4.1.30512.2.2									Author		
.1.3.6.1.4.1.30512.2.3									Product		
.1.3.6.1.4.1.30512.2.4									SystemTicks		
.1.3.6.1.4.1.30512.2.5									Version		
.1.3.6.1.4.1.30512.2.6									Status		
.1.3.6.1.4.1.30512.2.7									NumLines		
.1.3.6.1.4.1.30512.2.8									Lines		
.1.3.6.1.4.1.30512.2.8.1										Line	
.1.3.6.1.4.1.30512.2.8.1.1											LineIndex
.1.3.6.1.4.1.30512.2.8.1.2											LineMajorFault
.1.3.6.1.4.1.30512.2.8.1.3											LineMinorFault
.1.3.6.1.4.1.30512.2.8.1.4											LineOpenFault
.1.3.6.1.4.1.30512.2.8.1.5											LineShortFault
.1.3.6.1.4.1.30512.2.8.1.6											LineImpFault
.1.3.6.1.4.1.30512.2.8.1.7											LineImp1kFault
.1.3.6.1.4.1.30512.2.8.1.8											LineLeakFault
.1.3.6.1.4.1.30512.2.8.1.9											LineAmpFault
.1.3.6.1.4.1.30512.2.8.1.10											LineAmpBackupFault
.1.3.6.1.4.1.30512.2.9									NumRemotes		
.1.3.6.1.4.1.30512.2.10									Remotes		
.1.3.6.1.4.1.30512.2.10.1										Remote	
.1.3.6.1.4.1.30512.2.10.1.1											RemoteIndex
.1.3.6.1.4.1.30512.2.10.1.2											RemoteAbsentFault
.1.3.6.1.4.1.30512.2.10.1.3											RemoteMicFault
.1.3.6.1.4.1.30512.2.10.1.4											RemoteSpeakerFault
.1.3.6.1.4.1.30512.2.11									NumUserFaults		
.1.3.6.1.4.1.30512.2.12									UserFaults		
.1.3.6.1.4.1.30512.2.12.1										UserFault	
.1.3.6.1.4.1.30512.2.12.1.1											UserFaultIndex

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.1.3.6.1.4.1.30512.2.12.1.2											UserFaultName
.1.3.6.1.4.1.30512.2.12.1.3											UserFaultType
.1.3.6.1.4.1.30512.2.12.1.4											UserFaultStatus

Content	Details
WatchdogCounter	The counter will increase every 8 seconds.
Author	ATEIS Group
Product	IDA8C
SystemTicks	System running time (ms)
Version	Version 2
Status	System Global Status Bit15 = Minor Fault Bit14 = Major Fault Bit13 = Primary active if RU config Bit12 = Secondary active if RU config Bit11 = Backup device fault if RU config Bit10 = Ethernet cable broken Bit9 = Evacuation Bit8 = NTP server disconnection Bit7 = System Fault Bit6 = Local ATEIS Net Backup Mode Bit5 = Local ATEIS Net Broken Bit4 = Global ATEIS Net Backup Mode Bit3 = Global ATEIS Net Broken Bit2 = Bypass Mode
NumLines	The number of speaker line in the system. If there are 5 IDA8 units, the number of line is 8 x 5 = 40 lines.
Lines	The Speaker Line Monitoring
Line	Line Class: Each IDA8 unit has 8 lines (zones). Node 1 ~ 8 = 1st IDA8 Node 9 ~ 16 = 2nd IDA8 Node 17 ~ 24 = 3rd IDA8 Node 25 ~ 32 = 4th IDA8 ...and so on. If configured the system with ATEIS Global-Nets, the order will local net first, then global net. For example, the system network is: IDA8C(1, 1), IDA8S(1, 2), IDA8S(1, 3), IDA8C(2, 1), IDA8S(2, 2), IDA8C(3, 1). Node 1 ~ 8 = IDA8 (1, 1) Line 1~8 Node 9 ~ 16 = IDA8 (1, 2) Line 1~8 Node 17 ~ 24 = IDA8 (1, 3) Line 1~8 Node 25 ~ 32 = IDA8 (2, 1) Line 1~8 Node 33 ~ 40 = IDA8 (2, 2) Line 1~8 Node 41 ~ 48 = IDA8 (3, 1) Line 1~8
LineIndex	Line Index uniquely, from 1 to N.
LineMajorFault	1 if major fault, 0 if normal. The conditions include: 1. Open Circuit 2. Short Circuit 3. Bad Impedance 4. Do Not Get Backup AMP 5. IDA8 Unit Offline
LineMinorFault	1 if minor fault, 0 if normal. The conditions include: 1. Line Leakage 2. Normal AMP Fault, but backup AMP 3. Only Backup AMP Fault
LineOpenFault	1 if open circuit, 0 if normal.
LineShortFault	1 if short circuit, 0 if normal.
LineImpFault	1 if bad impedance by 18/20KHz monitoring, 0 if normal.
LineImp1kFault	1 if bad impedance by 1KHz monitoring, 0 if normal.
LineLeakFault	1 if leakage, 0 if normal.
LineAmpFault	1 if Normal AMP Fault, 0 if normal.
LineAmpBackupFault	1 if Backup AMP Fault, 0 if normal.
NumRemotes	The number of PDC port in the system. IDA8C series fix 4 PDC Port. IDA8S series fix 2 PDC Port. For example, there are 2 IDA8C and 5 IDA8S, the number of PDC port is 2 x 4 + 5 x 2 = 18.
Remotes	Remote(PDC) Port Status
Remote	Remote Status Class: Must connect RS485 Input to NPC in the configuration, then set Modbus Type to Peripheral Input and set Modbus Channel uniquely in the NPC. The node order will follow Modbus Channel. For example, set the1st IDA8C on Modbus Channel 1~4 for PDC 1~4, set the 2nd IDA8S on Modbus Channel 5~6 for PDC 1~2, the node order will be: Node 1 ~ 4 = 1st IDA8C PDC 1~4.

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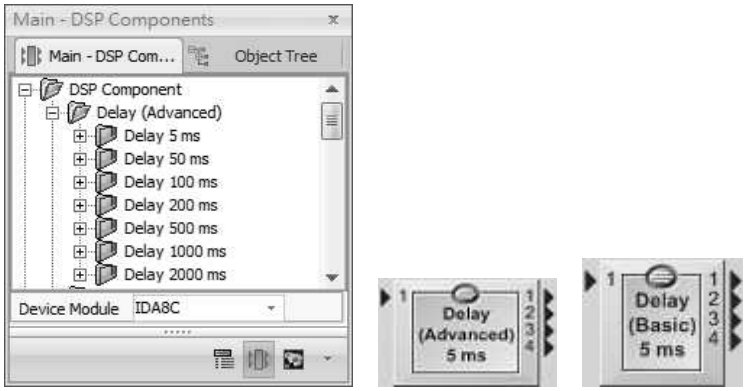
	Node 5 ~ 6 = 2nd IDA8C PDC 1~2 …and so on. If the system net config are: IDA8C(1, 1), IDA8S(1, 2), IDA8S(1, 3), IDA8C(2, 1), IDA8S(2, 2), IDA8C(3, 1). Node 1 ~ 4 = IDA8C (1, 1) PDC 1~4 Node 5 ~ 6 = IDA8S (1, 2) PDC 1~2 Node 7 ~ 8 = IDA8S (1, 3) PDC 1~2 Node 9 ~ 12 = IDA8C (2, 1) PDC 1~4 Node 13 ~ 14 = IDA8S (2, 2) PDC 1~2 Node 14 ~ 18 = IDA8C (3, 1) PDC 1~4
RemoteIndex	Remote(PDC) Index uniquely, from 1 to N.
RemoteAbsentFault	If the Modbus Channel in this Index will not be set, the value is 0. If sets the Modbus Channel: The value is 1 if the remote is offline. The value is 2 if the remote is online. The value is 1 if the IDA8 unit is offline.
RemoteMicFault	If sets Modbus Channel: The value is 1 if the microphone has fault. The value is 0 if the mic is working. If the Modbus Channel will not be set, the value is 0. Only the PSS and PPM remote can detect the microphone fault.
RemoteSpeakerFault	If set Modbus Channel If speaker fault, the value is 1. If normal, the value is 0. If do not set Modbus Channel, the value is 0. Only PSS can detect speaker fault.
NumUserFaults	The number of User Define Item User need create Fault Define Security component in the config. Each IDA8 unit reserve 8 fault item, if total 5 IDA8 units in the system, the number of User Faults is 8 x 5 = 40.
UserFaults	User Fault Status
UserFault	User Fault Class: Users need create Fault Define Security component in the configuration, the pin 1~8 is mapping to fault item 1~8, the pin 9 and more is not display. Each IDA8 unit reserve 8 node fix even if do not create Fault Define Security component. Node 1 ~ 8 = 1st IDA8 of Fault Define Security component. Node 9 ~ 16 = 2nd IDA8 of Fault Define Security component. Node 17 ~ 24 = 3rd IDA8 of Fault Define Security component …and so on. If configured the system with ATEIS Global-Net, the node order will local net units first, then global net units. For example: IDA8C(1, 1), IDA8S(1, 2), IDA8S(1, 3), IDA8C(2, 1), IDA8S(2, 2), IDA8C(3, 1) Node 1 ~ 8 = IDA8 (1, 1) Node 9 ~ 16 = IDA8 (1, 2) Node 17 ~ 24 = IDA8 (1, 3) Node 25 ~ 32 = IDA8 (2, 1) Node 33 ~ 40 = IDA8 (2, 2) Node 41 ~ 48 = IDA8 (3, 1)
UserFaultIndex	Fault Index uniquely, from 1 to N.
UserFaultName	This User Fault name is the same with the name in Fault Define Security component.
UserFaultType	The value 1 if the type is Major, 0 if type is Minor
UserFaultStatus	If Fault Define Security is not created or the pin is not connected, the value is 0. If Fault Define Security has created and the pin is connected: The value is 1 if the fault is deactivated. The value is 2 if the fault is activated. If the IDA8 unit is offline, the value do not change.

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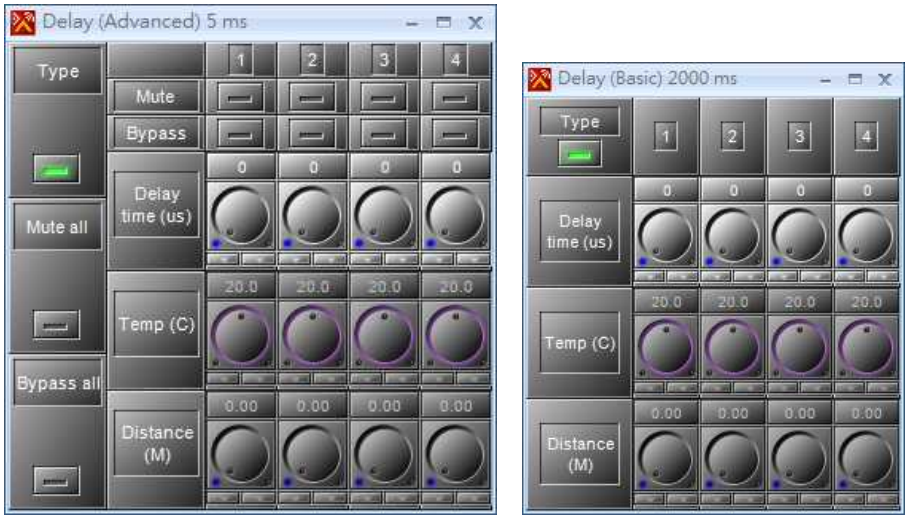
6 DSP Components

6.1 Delay (Advanced & Basic)

Used to delay the audio signal input to the component. The delayed component records the audio into a internal buffer and then plays the stored audio based on parameters set by users. There are two ways to adjust the delay time for a channel. First, adjust the element delay time, then adjust the Element Temp and Distance. Element Type can be switched between two modes.



❖Control Window



Maximum Value		Precision Value		Distance	
Type	Maximum Value	Type	Maximum Value	Type	Maximum Value
5ms	5000 µs	5ms	5 µs	5ms	1.62 m
50ms	50000 µs	50ms	20 µs	50ms	16.25 m
100ms	100000 µs	100ms	20 µs	100ms	32.5 m
200ms	200000 µs	200ms	20 µs	200ms	65 m
500ms	500000 µs	500ms	20 µs	500ms	162.5 m
1000ms	1000000 µs	1000ms	20 µs	1000ms	325 m
2000ms	2000000 µs	2000ms	20 µs	2000ms	650 m

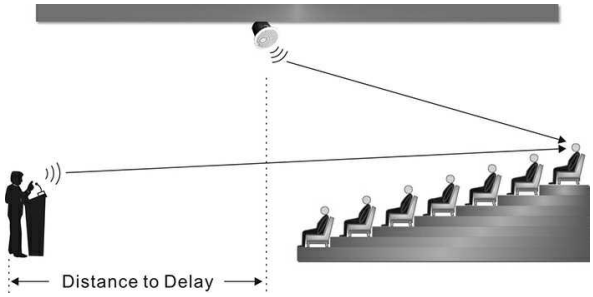
- Type: Choose between adjusting with Time or with Distance and temperature.
- Mute/Mute all: Mute (all) the output channel(s).
- Bypass/Bypass all: Bypass the audio signal of (all) the channel(s). Note: This will disable the Delay function.
- Delay Time: Specify how much time will be delayed for the audio signal of a channel.
- Temp: Specify the temperature to compute the delay time of a channel.

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- Distance: Specify the distance to compute the delay time of a channel.

❖ Application

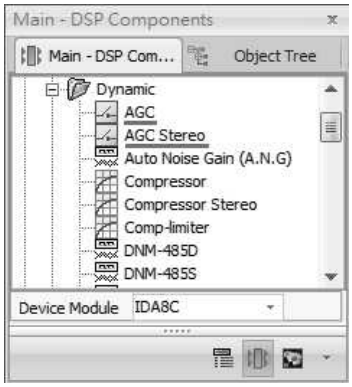
Take a conference application as an example, attendants sit at the back row will receive the sound from the speakers with time difference (delay) due to the distance between the speakers.
The solution is to add a delay to the speakers placed in the middle of the room.



6.2 Dynamic

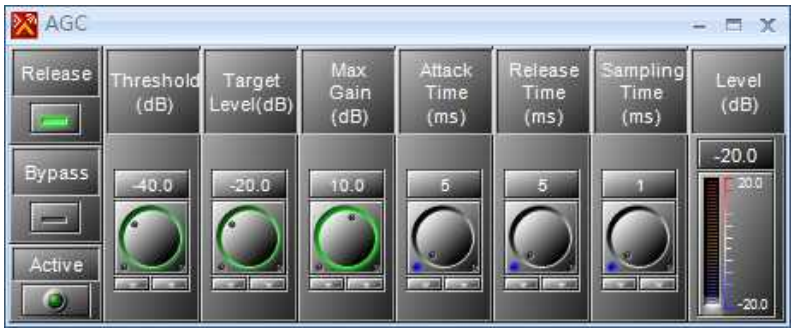
6.2.1 AGC/AGC Stereo

With this Automatic Gain Control(AGC), the input signal can be increased or decreased to a target level. You can adjust the gain source automatically by setting a target level. There are two types of AGC, one is the signal channel, and the other is stereo.





❖ Control Window



- Release: If the release button is on, the [Release Time] setting will be activated.
- Bypass: Disable the AGC Function(i.e. Bypasses the audio signal from input to output).
- Active LED: The LED will flash when the gain is controlled.
- Threshold: Set the threshold level and the audio level is above, then the gain will be controlled.

⚠ Don't set the threshold too low, otherwise it will hear unexpected sounds such as ambient noise.

- Target Level: Determine which relative volume you want to target.
- Max Gain: Determine the maximum of automatic gain.

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⚠ Limit the max. gain to keep a natural audio sound.

- Attack Time: Adjust the fade-in time to reach the target level.

⚠ If the attack time is too short, the audio peak will be heard when the speaker begins to talk.

- Release Time: Adjust the fade-out time of the signal when AGC is no longer working. This value is ignored if the “Release button” is off.

⚠ If the release time is too short, the audio slack will be heard between the speaker's words.

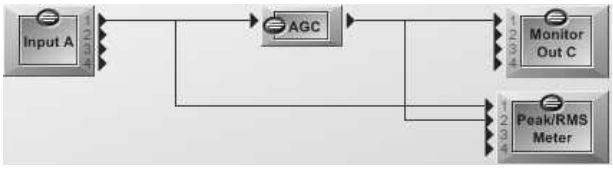
- Sampling Time: Set the average time needed by measuring the input level.

⚠ If the sampling time is too long, it will make the AGC too insensitive on the short peaks.

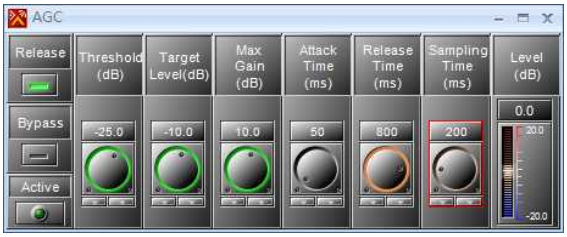
- Level: Display the level of gain that AGC increases/decreases the input signal.

❖ Example

If users want to automatically adjust the gain of a type of vocal microphone, set the element settings as the picture on the right.

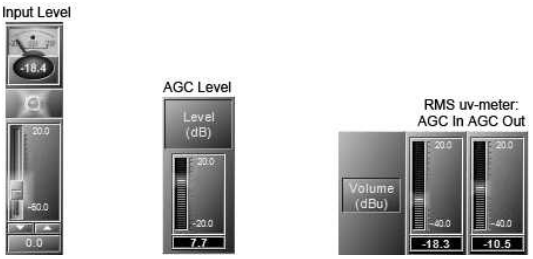


1. First, set the input sensitivity to -40dB on [Input A] component for standard dynamic microphone.
2. Second, set the elements on AGC control window as below,



- Threshold: Set at -25dB. The level is adjusted only when the input signal is above -25dB.
- Target level: Set the final target level at -10dB.
- Maximum gain: Set at 10dB.
- Release time: Set at 800 (ms).
- Attack time: Set at 50 (ms).
- AVG time: Set at 200 (ms).

3. You can see on the vu-meter when the speaker talks at -18.3 dBu, the final level is around -10.5 dBu.
4. You can see on the vu-meter when the speaker talks at 8 dBu, the final level is around -10.6 dBu.
5. And this will benefit for both the presenter and audience with more comfortable audio sound in a large room.



[3]

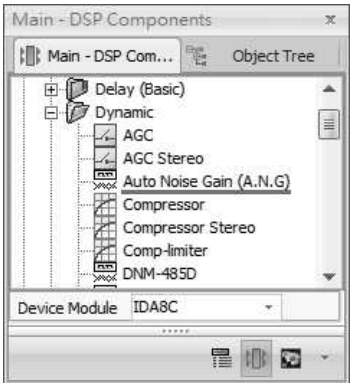
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[4]

6.2.2 Auto Noise Gain (A.N.G.)

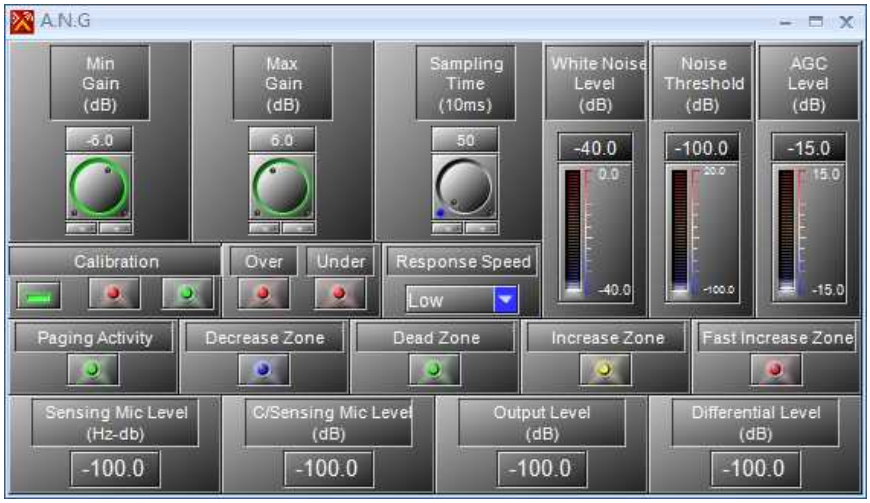
Used to adjust the audio levels of the Program Material input (P.M.) depending on the ambient noise. The ambient noise can be measured by the NSM (noise sensing microphone) unit via sensing microphone input (S.M.).





- S.M.: Sensing Microphone input.
- P.M.: Program Material input.

❖ Control Window



- Min/Max Gain: The minimum/maximum level compensation.
- Sampling Time: Determine the period of time between the two ambient noise measurements.
- White Noise Level: The level which is automatically adjusted in the calibration process.
- Noise Threshold: The measurement of background noise level when the Calibration button is enabled.
- Calibration: Start the automatic calibration. Calibration proceeding: light up in red. Calibration succeeded: light up in green.

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- Over/Under: Indicate the calibration result which White Noise Level is over/under the range now.
- Response Speed: Select the speed reaction of A.N.G., the speed of adapting the P.M. audio level depends on the ambient noise.
- Paging Activity: Light up when the paging is activated.
- Decrease/Increase Zone: Indicate the AGC gain is decreasing/increasing.
- Dead/Fast Increase Zone: Indicate the AGC is not changing/is increasing fast.
- Sensing Mic Level: Display the input level of sensing microphone.
- C/Sensing Mic Level: Display the input level of sensing microphone after the internal calibration function.
- Output Level: Display the output level.
- Differential Level: The difference level between the Output level and the C/Sensing Mic level.

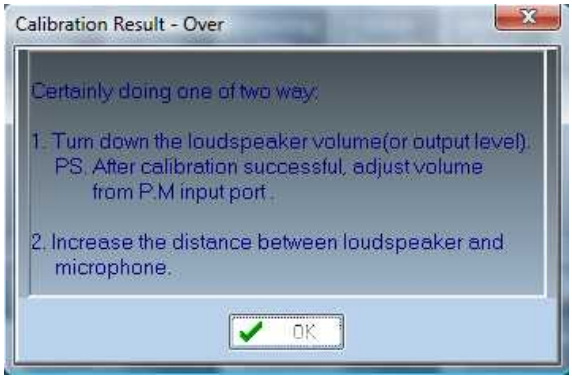
❖ Example to Set the A.N.G.

1. Connect the NSM microphone to the S.M. input, and the paging audio source to the P.M. input. Set the input sensitivity of NSM to 0dB on software. The max. cable length between the NSM and the audio processor is 500 meter with CAT-5 cable.
2. Link the output of ANG component to an Output component where it is connected to a loudspeaker.
3. Click on the [Calibrate] button to start the auto-calibration.
4. The calibration LED will light up in red during the calibration process. Please wait for a while and do not make punctual noise. The calibration must be done in normal ambient conditions.
5. When the calibration is completed, the LED will turn in green, see the picture as below below.

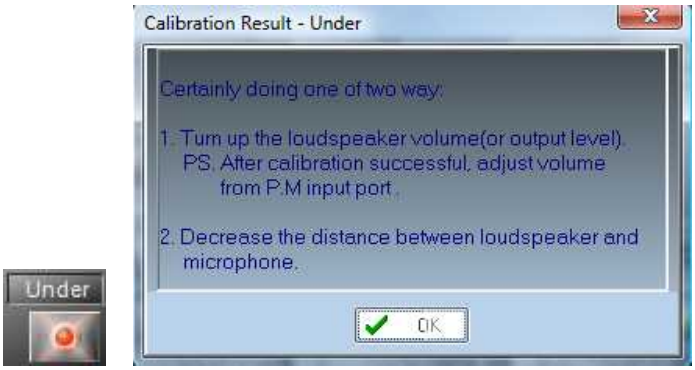


6. If both Over/Under LEDs are OFF, it means the calibration has properly completed and the A.N.G. is ready now.
7. If one of the Over/Under LEDs still lights up, it means the White Noise Level is out of range. And a pop-up window will instruct you what to do. See the pictures as below.





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8. Restart the calibration process until the both Over/Under LED are OFF.

The A.N.G. is still adjusting the AGC level with the ambient noise to be ready for paging if though the paging is not activated.

The calibration should be done in normal ambient noise. There should be no sudden loud noise during the calibration.

Do not adjust the gain of output, amplifier or sensing microphone during or after the calibration. You can adjust the volume of the audio source connected to the P.M. input.

Theoretically, when the calibration has finished, the AGC level will be stable around 0 dB in an environment of no increasing noise. However, every calibration might have a deviation. If the AGC level is not stable around 0dB, users could adjust the gain of the output function, amplifier or sensing microphone to let the AGC level stable around 0 dB.

After the calibration is successful, the paging microphone shouldn't be placed near the sensing microphone because the user's voice will also be received by the sensing microphone.

The AGC level will still be calculated even it's not activated.

❖ Use the A.N.G.



- If the [Calibration] LED lights up in green indicates the system is ready.
- If the A.N.G. has detected an ambient noise average of -12dB, choose a medium [Response Speed] and a short [Sampling Time] in order to adequately react quickly.
- The A.N.G. will automatically adjust the level on the P.M. signal depending on the ambient noise detected from the NSM microphone. The A.N.G. works when an audio signal is detected on the P. M. input and [Paging Activity] LED will light up.

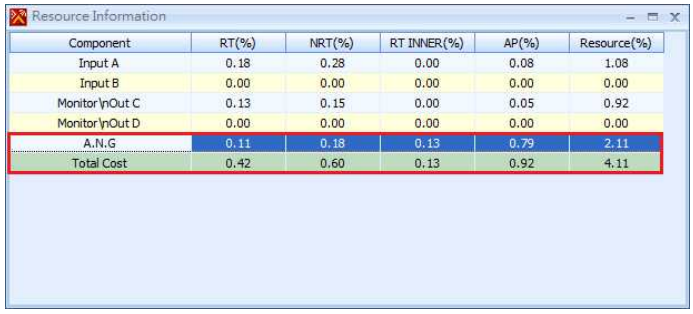
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- Dead Zone:

  If the sensing microphone doesn't detect more noise than during the calibration process, the A. N.G. will be in [Dead Zone]. See the picture on the right.

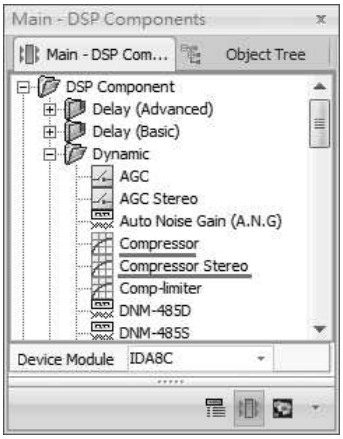
When using the A.N.G components, the max. number of NSM unit which connects to IDA8 depends on the [DSP Power]. See the picture on the right.



It requires additional audio input board due to that there has only one audio input for each PDC port.

6.2.3 Compressor/Compressor Stereo

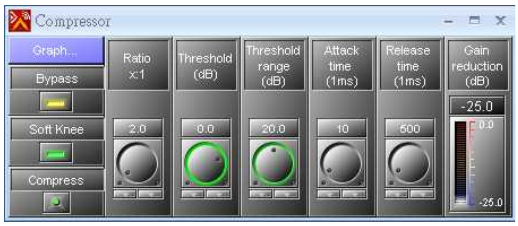
The Compressor allows to decrease the level which with louder sound dynamically while quiet sounds remain untreated. In this way, the quiet sounds are more audible without the loud sounds are being too loud, this improves the audibility of audio in noisy environments. Compressor Stereo component is the same as the Compressor component, but works on both stereo output channels.



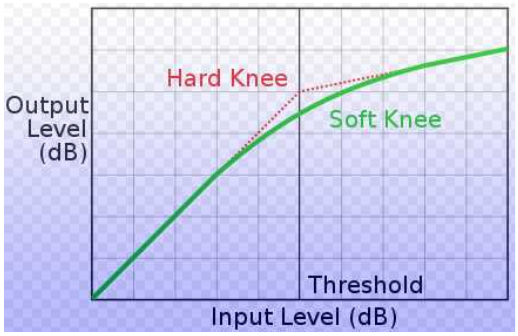


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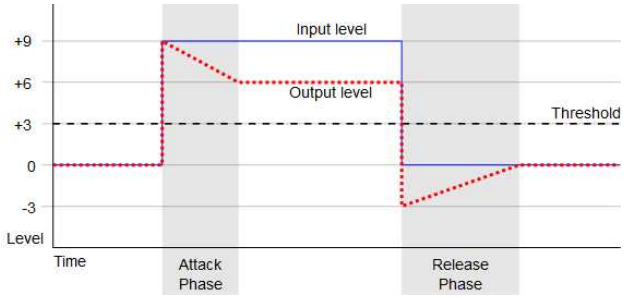
❖ Control Window



- Bypass: Disable the Compressor's function.
- Soft Knee: Enable/disable the “Soft Knee” mode. The Soft Knee reduces the audible change from uncompressed to compressed, especially for higher ratios where the changeover is more noticeable.

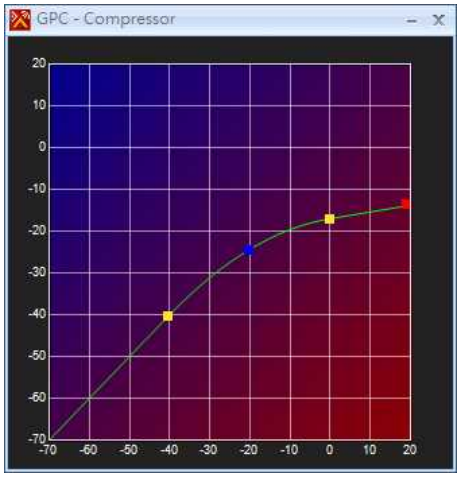


- Ratio: Set the compression ratio.
- Threshold: Set the threshold level above which compression begins.
- Threshold Range: Set the range of level, in which the ratio gradually alters from 1:1 to the value set by Ratio parameter (Soft Knee function).
- Attack Time: Set the time it takes to respond to the input signal. A compressor might provide a degree of control over how quickly it acts. The 'attack phase' is the period when the compressor has decreased gain to reach the level that is determined by the ratio.



- Release Time: Set the time after signal level below the threshold level to stop compressing.
- Gain Reduction: Reflect the current amount of gain reduction.

❖ Graphical Control Window

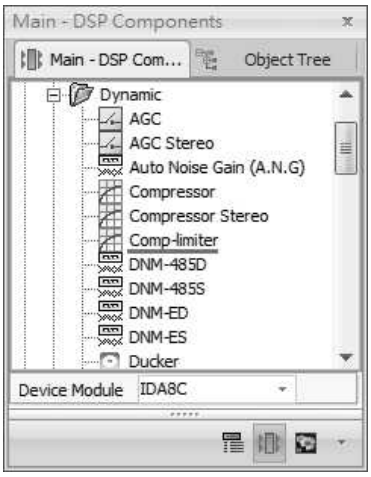


- Axis:
  - X/Y: Input/output signal level(dB)
- Control Points:
- Blue: Adjust Threshold.
- Red: Adjust the range of threshold.
- Yellow: Adjust ratio.

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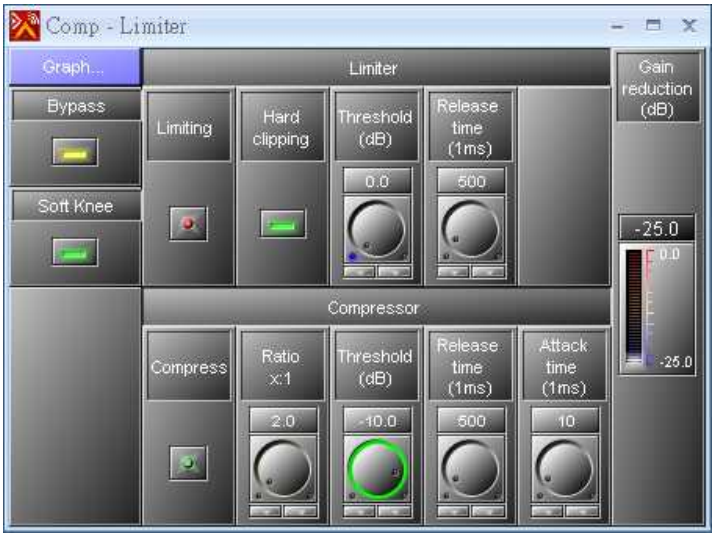
6.2.4 Comp-limiter

Comp-limiter is a combination of the Compressor and the Limiter Components.





❖ Control Window



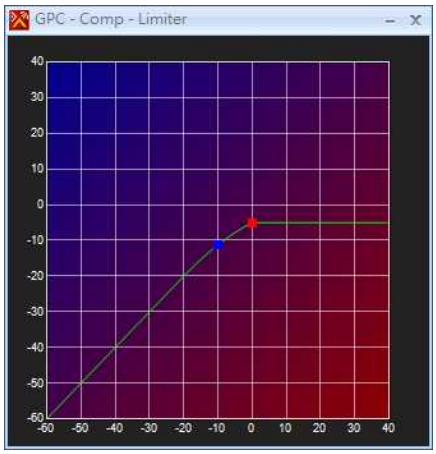
- Bypass: Disable the Comp-limiter's function.
- Soft Knee: Enable/disable the “Soft Knee” mode, see Compressor > Element chapter.
- Limiting (Limiter): Indicate limiting.
- Hard Clipping (Limiter): Enable/disable the “Hard clipping” mode.
- Threshold (Limiter): Activate the Limiter function when input level above this value.
- Release Time (Limiter): Set the time it takes to release the limiter gain.
- Ratio (Compressor): Set the compression ratio, which the compressor will compress the input level by this compression ratio setting to be the output level.
- Threshold (Compressor): Activate the Compression function when input level above this value.
- Release Time (Compressor): Set the time it takes to release the compressor gain. The Release Time is the period when the compressor is increasing gain to the level determined by the ratio or to 0 dB, once the level has fallen below the threshold.
- Attack Time (Compressor): Set the time it takes to respond to the input signal. The Attack Time is the period when the compressor is decreasing gain to reach the level that is determined by the ratio.

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The attack time can decide the sensitivity of compressor. The longer of Attack Time is, the slower of the compression it will take, and vice versa.

- Gain Reduction: Reflect the current amount of gain reduction.

❖ Graphical Control Window



- Axis
  - X/Y: Input/output signal level (dB).
- Control Points
  - Blue: Adjust Threshold(Compressor).
  - Red: Adjust Threshold(Limiter).

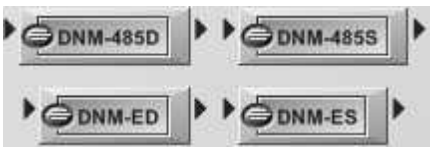
6.2.5 DNM-485D/DNM-485S/DNM-ED/DNM-ES

The DNM component is basically the same functions as the A.N.G. component, but the ambient noise is measured by the DNM-RS485 or DNM-ENET (noise sensing microphone) unit via sensing microphone input (S.M.).

❖ The difference between of DNM-485D/DNM-ED and DNM-485S/DNM-ES.

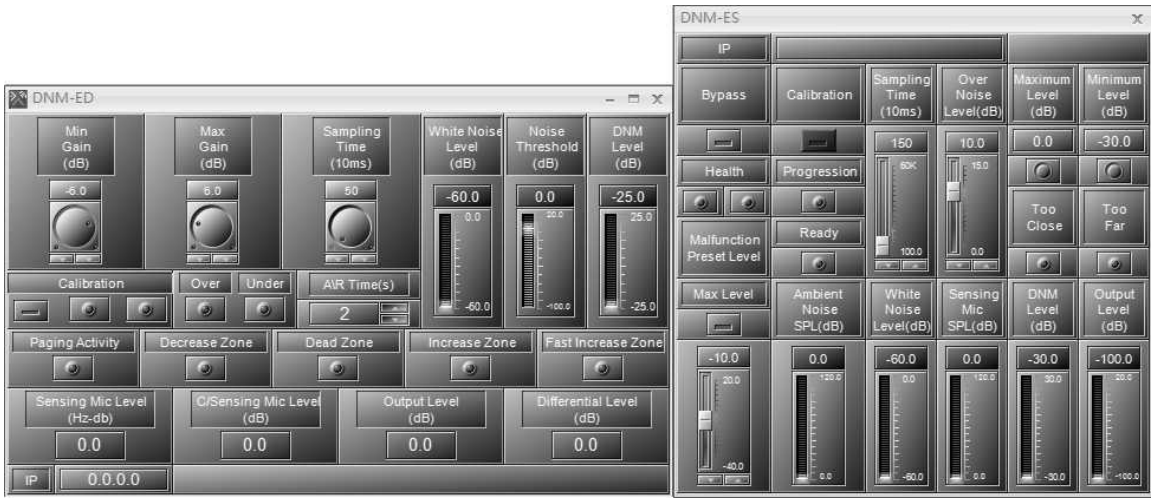
- D: Dynamically increase/decrease the level based on the background ambient noise.
- S: Increase/decrease the level based on a standard value.





❖ Control Window

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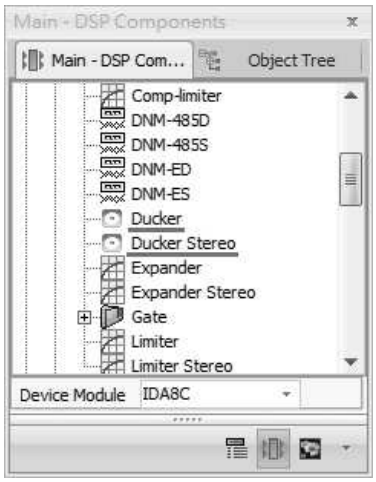


- Min/Max Gain (dB): The minimum/maximum level compensation.
- Sampling Time (dB): Determine the period of time between the two ambient noise measurements.
- White Noise Level (dB): The level which is automatically adjusted in the calibration process.
- Noise Threshold (dB): The measurement of background noise level when the Calibration button is enabled.
- DNM Level (dB): Display the gain value which the DNM algorithm has calculated.
- Calibration: Start the automatic calibration.
- Calibration proceeding: Light up in red.
- Calibration succeeded: Light up in green.
- Over/Under: Indicate the calibration result which White Noise Level is over/under the range now.
- AR Time (s): The attack/release time.
- Paging Activity: Light up when the paging is activated.
- Response Speed: Select the speed reaction of A.N.G., the speed of adapting the P.M. audio level depends on the ambient noise.
- Decrease/Increase Zone: Indicate the AGC gain is decreasing/increasing.
- Fast Increase Zone: Indicate the AGC is not changing/is increasing fast.
- Sensing Mic Level: Display the input level of sensing microphone.
- C/Sensing Mic Level: Display the input level of sensing microphone after the internal calibration function.
- Output Level (dB): Display the output level.
- Differential Level (dB): The difference level between the Output level and the C/Sensing Mic level.
- IP: Set the IP address of [Master DNM-ENET].

6.2.6 Ducker/Ducker Stereo

The Ducker is a type of switch, allowing to automatically attenuate or switch off the signal before sending to input A channel (pin) when the chosen level (in dB) is perceived in input S channel (pin). A typical application is paging over background music: A ducker senses the presence of audio from a XLR microphone and triggers a reduction in the output level of the music signal for the duration of the paging signal. It restores the original level once the paging is over.

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❖ Control Window



- Bypass: Disable the Ducker's operations.
- Active: Light up when the Ducker is activated while the signal has been detected on input S channel (pin).
- Thd.: The threshold of detection on input S channel. The input A channel is attenuated when the input S channel goes above this threshold.

⚠ To avoid the unexpected attenuation, don't set a threshold level too low.

- Response Time: Adjust the time between the level detection of input S and the beginning of the Ducker's activation on input A channel.

⚠ Don't set the "response time" too long, otherwise you won't hear the beginning of input S channel (as the first word of a speech).

- Attack Time: Adjust the fade-in time of input A channel when the Ducker is working.
- Hold Time: Adjust the time between the end of level detection on Input S and the end of the Ducker's operation.

⚠ Set enough "Hold time" to avoid the unexpected background level during the speeches breaks.

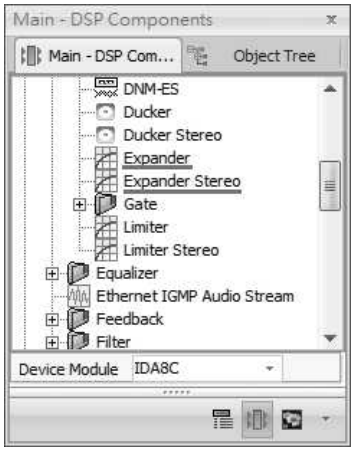
- Release Time: Adjust the fade-out time of input A channel when the Ducker is no longer working.
- Audio Depth: Adjust the level of input A channel when the Ducker is activated.
- Speech Gain: Adjust the level of input S channel when the Ducker is activated.

6.2.7 Expander/Expander Stereo

The Expander works in an opposite function to the Compressor component which allows to turn off the level which with quieter sound dynamically. Therefore, the Expander will be as the compressor

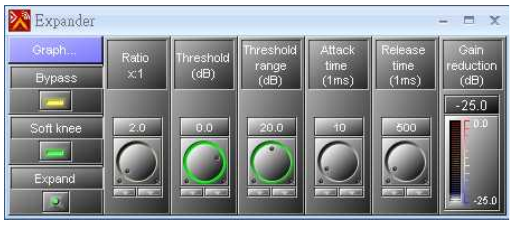
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which balances out the signal to make it sound more professional.



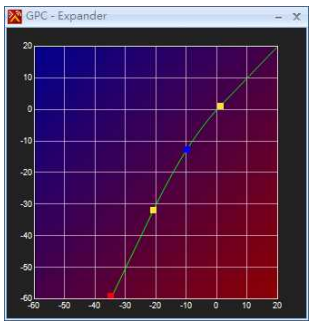


❖ Control Window



- Bypass: Disable the expander's function.
- Soft Knee: Enable/disable the “Soft Knee” mode.
- Expand: Indicate that the function is active.
- Ratio: Set the expansion ratio.
- Threshold: Set the threshold level above which expansion begins.
- Threshold Range: Set the range of level, in which the ratio gradually alters from 1:1 to the value set by the ratio parameter (Soft Knee function).
- Attack Time: Set the time it takes to respond to the input signal.
- Release Time: Adjust the time to stop the gain reduction.
- Gain Reduction: Reflect the current amount of gain reduction.

❖ Graphical Control Window



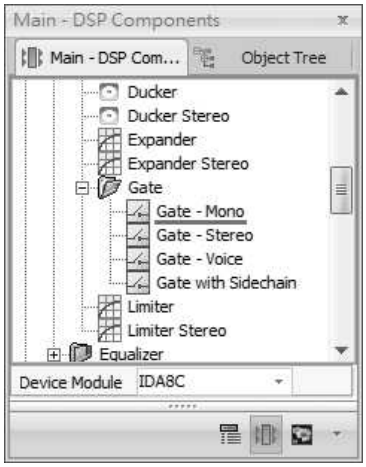
- Axis:
  - X/Y: Input/output signal level(dB).
- Control Points:
  - Red: Adjust Ratio.
  - Yellow: Adjust the range of Threshold.
  - Blue: Adjust Threshold.

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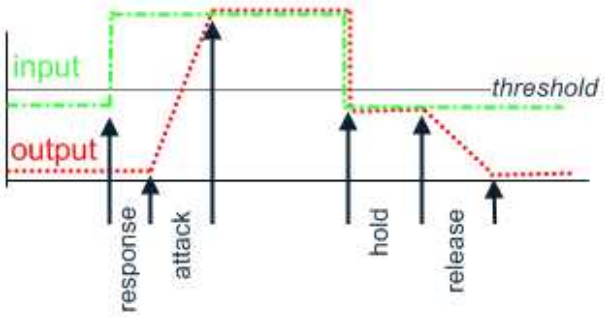
6.2.8 Gate

6.2.8.1 Gate - Mono

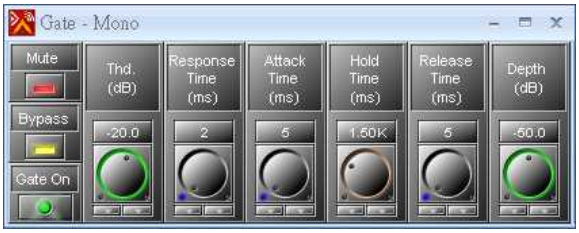
The Gate allows to cut off the signal below the chosen threshold.







❖ Control Window

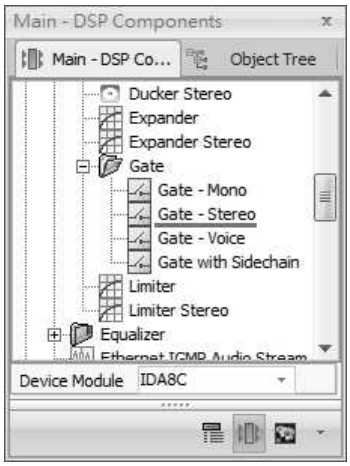


- Mute/Bypass: Mute/disable the Gate's module.
- Gate On: Light up when gate is activated.
- Thd.: Set the threshold level above which Gate will open.
- Response Time: Adjust the time between the level's detection and the beginning of the Gate operation.
- Attack Time: Adjust the fade-in time of signal when Gate is activated.
- Hold Time: Adjust the time between the end level's detection and the end of the Gate operation.
- Release Time: Adjust the fade-out time of signal when Gate is no longer activated.
- Depth: Attenuate the level when Gate is activated.

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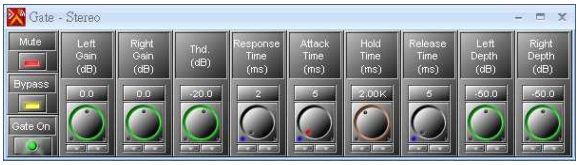
6.2.8.2 Gate - Stereo

The stereo Gate channels allows to cut off the signal below the chosen threshold.





❖ Control Window

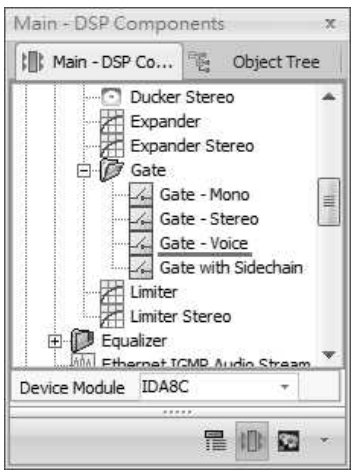


- Mute/Bypass: Mute/disable the Gate's module.
- Gate On: Light up when Gate is activated.
- Left/Right Gain: Set the volume of the signal connected to the input L channel/input R channel.
- Thd.: Set the threshold level above which Gate will open.
- Response Time: Adjust the time between the level's detection and the beginning of the Gate operation.
- Attack Time: Adjust the fade-in time of signal when the Gate is activated.
- Hold Time: Adjust the time between the level's detection and the Gate operation.
- Release Time: Adjust the fade-out time of signal when the Gate is no longer activated.
- Left/Right Depth: Attenuate the level when the Gate is activated.

6.2.8.3 Gate - Voice

The Gate-Voice is an active detection algorithm which opens only if a human voice is detected.

⚠ This is NOT a noise cancellation component.





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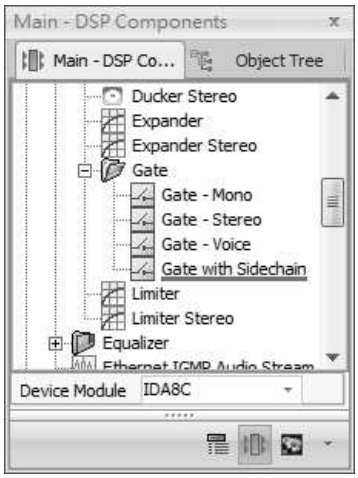
❖ Control Window



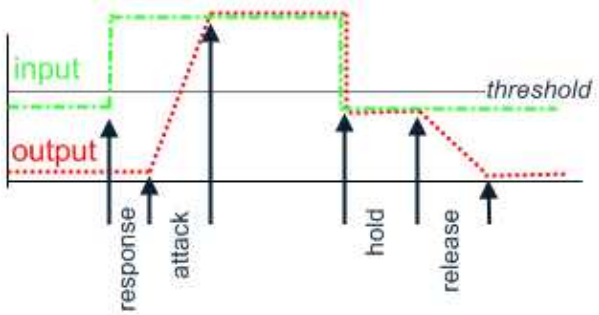
- Gate On: Light up when Gate-Voice is activated.
- Mute: Mute the Gate-Voice's module.
- Bypass: Disable the Gate-Voice's operation.
- Thd.: The threshold to determine and pass the input signal.
- Hold Time: Time to close the output when no more human speech is detected.
- Release Time: Adjust the fade-out time of the signal to decrease the signal after the hold time.
- Voice Recognition: The level of sensitivity for human voice.

6.2.8.4 Gate with Sidechain

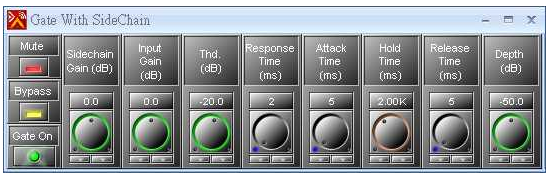
Allow to control a Gate on an audio channel (I) with an external Sidechain signal (S). When the Sidechain input (S) goes above the threshold, the gate will be activated and the signal on the Input(I) will go to the output.







❖ Control Window



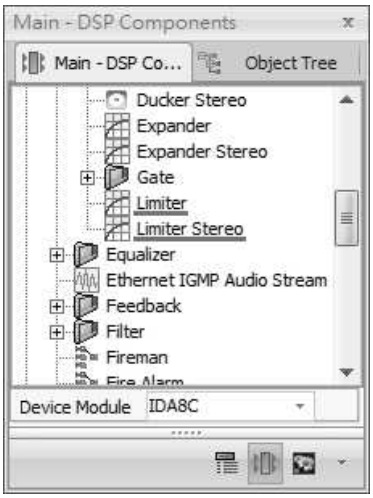
- Mute/Bypass: Mute/disable the Gate's module.
- Thd.: Set the threshold level (input S) above which Gate will open.
- Response Time: Adjust the time between the level's detection and the beginning of Gate operation.
- Attack Time: Adjust the fade-in time of signal when the Gate is activated.

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- Gate On: Flash when Gate is activated.
- Sidechain/Input Gain: Set the volume of the signal connected in the input S channel/ input I channel.
- Hold Time: Adjust the time between the end level's detection and the end of the Gate operation.
- Release Time: Adjust the fade-out time of signal when the Gate is no longer activated.
- Depth: Attenuate the level when the Gate is activated.

6.2.9 Limiter/Limiter Stereo

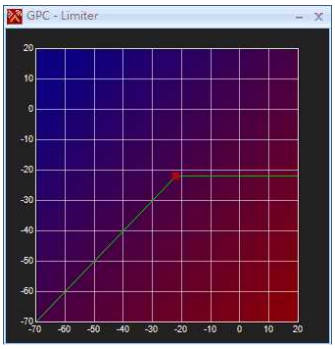
Offer the limitation of volume.





❖ Control Window





- Bypass: Disable the Limiter's operation.
- Hard Clipping (Limiter): Enable/disable the “Hard clipping” mode.
- Limiting: Light up when the Limiter is activated (open).
- Threshold (dB): Set the threshold level from where the limiter or compressor will start.
- Release Time: Set the time it takes to release the gain reduction.
- Gain reduction (dB): Set the current amount of gain reduction.
- Graphical Control Window: Adjust the compression ratio by moving the red cursor.

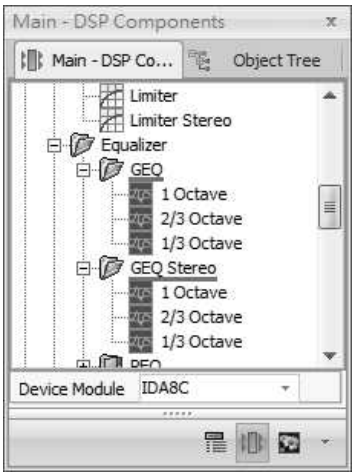
6.3 Equalizer

6.3.1 GEQ/GEQ Stereo

GEQ (Graphic Equalizer) is the input signal which allows users to set its own gain and bandwidth. There are three types of GEQ: 1 Octave, 2/3 Octave and 1/3 Octave. 1/3 Octave is spoken informally as "third-octave EQ" because the center frequency of its filters are spaced to one third of an octave

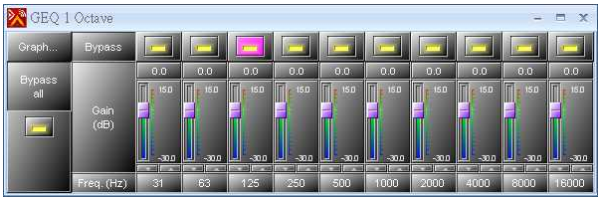
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apart with three filters to an octave. Equalizers with half as many filters per octave are common where there is less precise control and is called a 2/3-octave equalizer, and the 1 Octave GEQ is one filter to an octave.

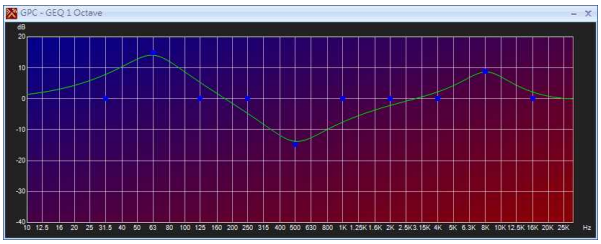




❖ Control Window



- Bypass all: Disable all the EQ frequency bands.
- Bypass: Disable the selected frequency band.
- Gain: Set the gain of the selected frequency band.



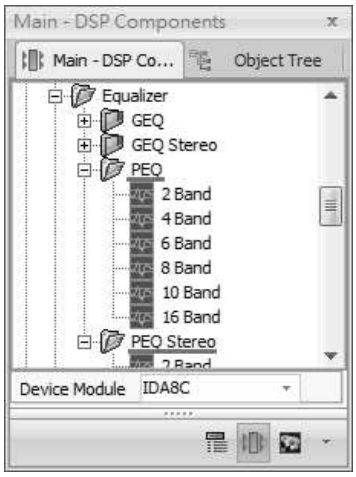
❖ Graphical Control Window

- Axis:
  - X: Frequency of output signal(Hz).
  - Y: Gain of output signal(dB).
- Control Points:
  - Blue: Adjust the Gain.

6.3.2 PEQ/PEQ Stereo

PEQ(Parametric Equalizer) is a multi-band variable equalizers which controls the three primary parameters: amplitude, center frequency and bandwidth, making more precise adjustments to sound than other equalizers. The amplitude of each band can be controlled, the center frequency can be shifted, and bandwidth ("Q") can be widened or narrowed.

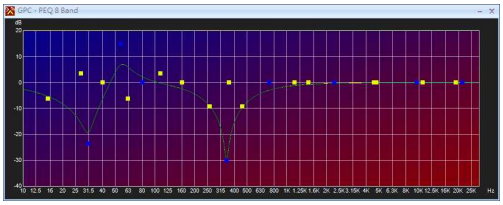
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❖ Control Window





❖ Element Description

- Bypass all: Disable the EQ(all the frequency bands).
- Bypass: Disable the selected frequency band.
- Bandwidth: Set the width around the frequency(Q factor) of selected frequency band.
- Frequency: Set the frequency of a band.
- Gain: Set the gain(attenuate or increase the selected frequency).

❖ Graphical Control Window

- Axis:
  - X: Frequency of output signal(Hz).
  - Y: Gain of output signal(dB).
- Control Points:
  - Blue: Adjusts Gain(using vertical direction) and Frequency(using horizontal direction).
  - Yellow: Adjusts Bandwidth

❖ Application

An equalizer can be used to correct or "flatten" the frequency response of speakers rather than designing the speaker itself to be equalized. Some speaker systems don't use separate woofers and tweeters to cover the bass and treble frequencies but rather include full-range drivers. However, this speaker system is sold with an active equalizer designed to correct the poor frequency balance of those drivers. That equalizer must go into the sound system before the amplifier so that the amplified signal is sent to the speakers. The signal has its response increased at the frequencies where the response of these drivers falls off, producing a high fidelity reproduction regardless. Ateis audio processors give you the same solution without using an external equalizer, it's all done in the software component PEQ.

6.4 Ethernet IGMP Audio Stream

This component is an Internet stream player which receives audio stream and play the streaming source. The Internet audio stream which sends the audio streaming from the devices such as PC or Terra device, and compose into the certain RTP format (Real-time Transport Protocol) and play the

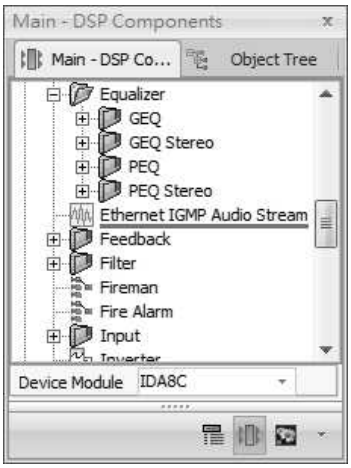
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audio stream via this component. For example, TerraServer can be the source to stream audio to this component. The supported format are included PCM (16K 16Bit Mono), G711ulaw, G711alaw, G722 and MP3.

IGMP address 224.0.0.0~224.0.0.2 is reserved, which can not be used as the IP of IGMP address.

- 224.0.0.0: Base address(reserved).
- 224.0.0.1: For all the hosts on the same network segment.
- 224.0.0.2: For all the routers on the same network segment.

The [Ethernet IGMP Audio Stream] component will occupy with 1 x message channels, please refer to Message Limitation chapter.





❖ Control Window



❖ Element Description

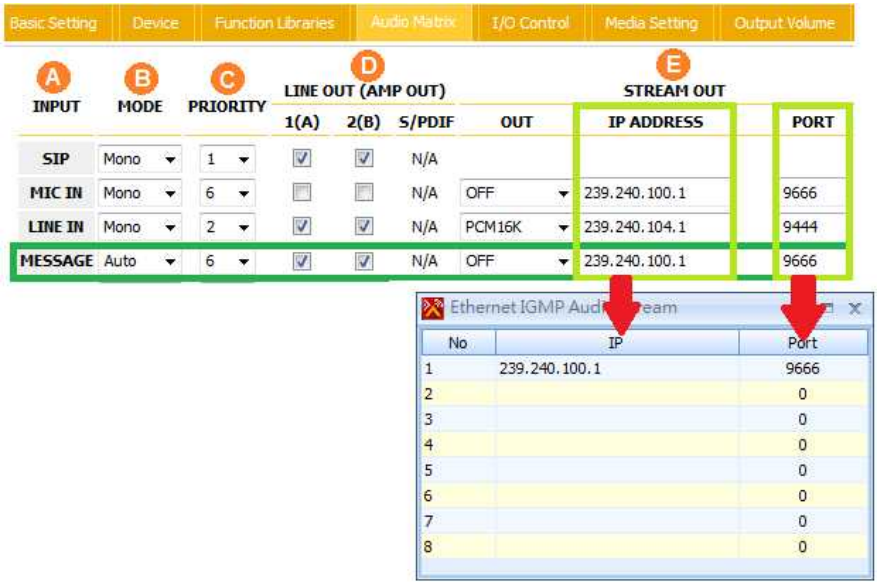
- Stop: Disable the action of audio streaming.
- No.1- No.8: The channel of audio stream.
- [...]: Click to open the window of channel setting.



❖ Application

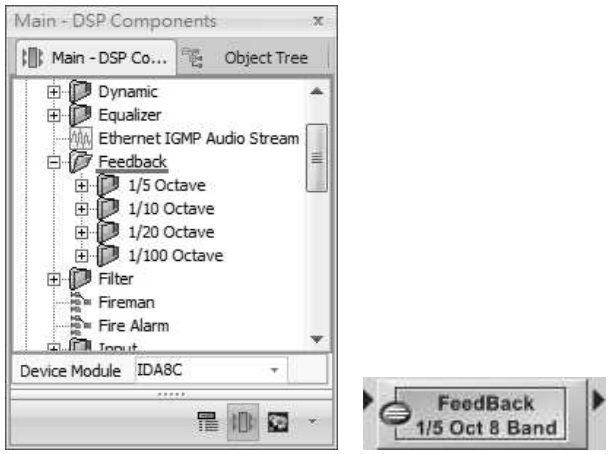
There are several types as the server of Ethernet audio stream: Terra Server, Terracom device or computer software such as VLC Media Player. The picture below shows how to use the Audio Matrix on Ateis Web Interface to set the preset of audio stream on TerraServer.

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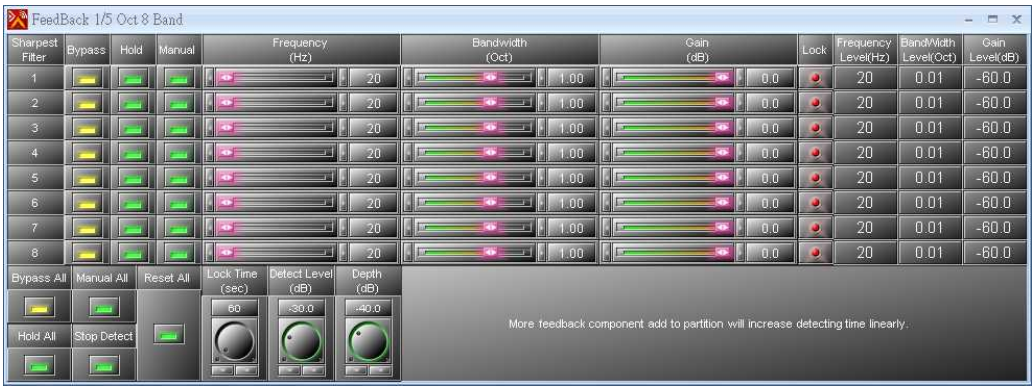


6.5 Feedback

The Feedback analyzes the signal, detects the feedback and attenuates the responsible frequency. There is several types of feedback components. The difference is only the bandwidth which is tuned for Music higher than speech(the bandwidth is decreasing between it). Each category has 4 kinds of feedback filters(4, 8 12 or 16). The attenuation time of feedback is increased by the number of filters.



❖ Control Window



- (All) Bypass: Disable (all) the Feedback operation.

If the All Bypass button is enabled, all the captured values will be erased.

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- (All) Hold: When feedback is detected, a frequency will lock the component to hold this setting. Enable this button if you don't want to release all the detected frequency after the Lock time.
- Manual: Enable the Frequency, Bandwidth and Gain fader to be adjusted manually. This will disable the automatic detection.
- Frequency/Bandwidth/Gain: The Frequency/Bandwidth/attenuation of notch filter for attenuating the feedback.
- Lock: Display if the feedback killers channel has detected and erased the frequency which are causing the feedback.
- Frequency/Bandwidth/Gain Level: Automatically display the locked frequency/bandwidth of the notch filter/attenuation of frequency.
- Manual All: Activate the manual settings with frequency, bandwidth and gain knobs.
- Lock Time: The interval time to lock the detected feedback frequency, then the Feedback filter will activate. If the Hold Button is enable, the detected feedback frequency will not disappear after the Lock Time.

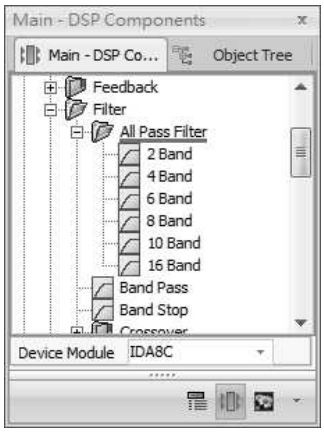
If the feedback appears randomly for a short time, it's better to set a appropriate 'Lock time'.

- Stop Detect: Stop detecting feedback.
- Reset All: Reset all the values.
- Detect Level (dB): The target level which will consider as the Feedback source.
- Depth (dB): The maximum gain reduction for Feedback filter.

6.6 Filter

6.6.1 All Pass Filter

The All Pass Filter is a signal processing filter that passes all frequencies equally but changes the phase relationship between the various frequencies.





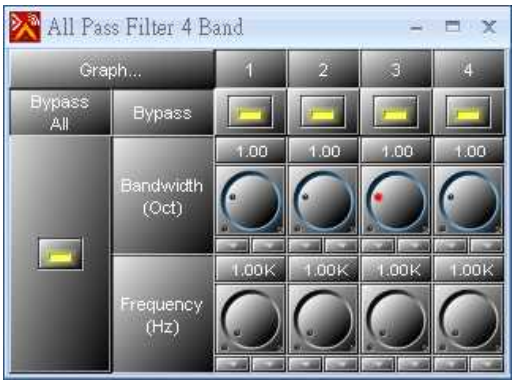
❖ Control Window

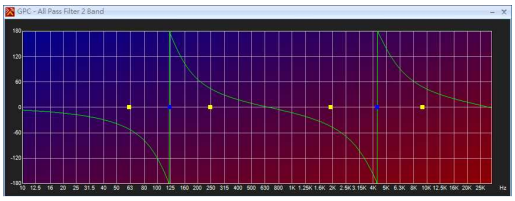
❖ Element Description

- Bypass All: Disable all the bands of Filter's module.
- Bypass: Disable the selected band of Filter's module.
- Bandwidth: The transition bandwidth.
- Frequency: The frequency at which the phase shift crosses 90°.

❖ Graphical Control Window

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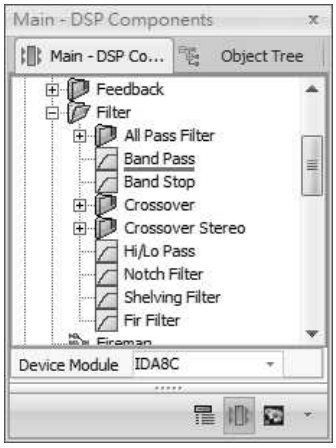




- Axis:
  - X: Frequency of output signal(Hz).
  - Y: Gain of output signal(dB).
- Control Points:
  - Blue: Adjust frequency.
  - Yellow: Adjust bandwidth.

6.6.2 Band Pass

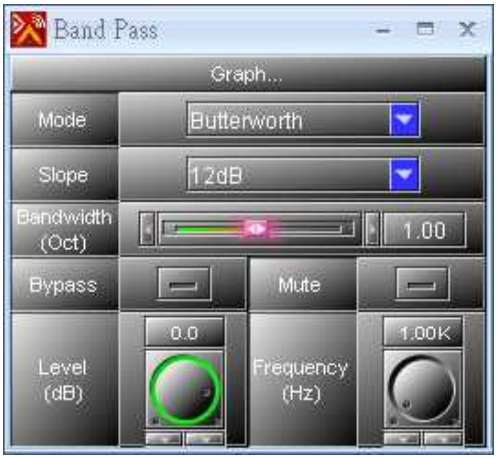
Allow to pass the frequency within a certain range and attenuates the frequency which are not within that range.

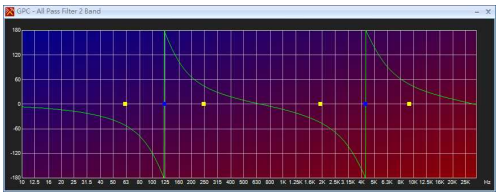




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❖ Control Window





❖ Element Description

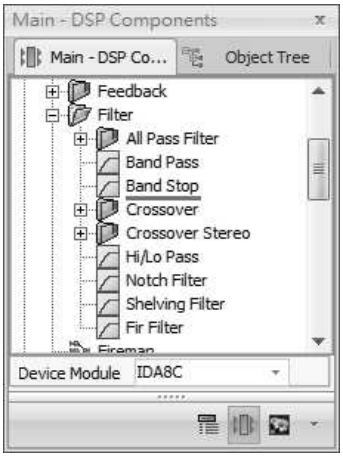
- Mode: The type of filtering,
- Slope: The slopes of attenuation.
- Bandwidth: The difference between the upper and lower frequencies in a contiguous set of frequencies.
- Mute: Mute the filter's module.
- Level: The gain of the filter's module.
- Frequency: The frequency of cut.

❖ Graphical Control Window

- Axis:
  - X: Frequency of output signal(Hz).
  - Y: Level of input signal(dB).
- Control Points:
  - Blue: Adjust the element Frequency(Horizontal) and Level(Vertical).
  - Yellow: Adjust the element Bandwidth.

6.6.3 Band Stop

A Band Stop component is a filter that passes most unalterable frequency, but attenuates those in a specific range to the very low levels. It works in an opposite function to Band Pass component.

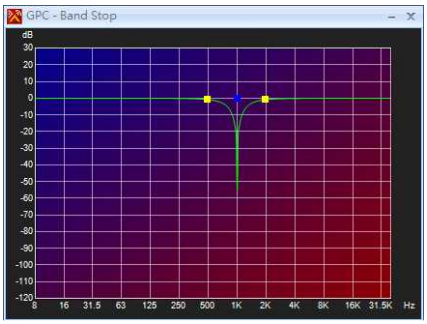




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❖ Control Window





❖ Element Description

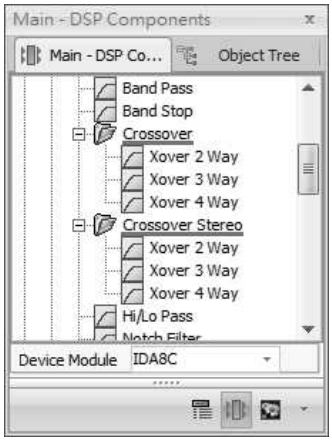
- Mode: The type of filtering.
- Slope: The slope of attenuation.
- Bandwidth: The difference between the upper and lower frequency.
- Bypass/Mute: Disable/mute the filter's module.
- Level: The gain of the filter's module.
- Frequency: The frequency of cut.

❖ Graphical Control Window

- Axis:
  - X: Frequency of output signal(Hz).
  - Y: Level of input signal(dB).
- Control Points:
  - Blue: Adjust element Frequency(Horizontal) and Level (Vertical).
  - Yellow: Adjust element Bandwidth.

6.6.4 Crossover/Crossover Stereo

Crossover component allow to split the audio signal into separate frequency bands which can be routed to other DSP components for those bands. A 2-way crossover consists of a low-pass and a high-pass filter. A 3-way crossover is constructed as a combination of low-pass, band-pass and high-pass filters (LPF, BPF and HPF respectively).





❖ Control Window

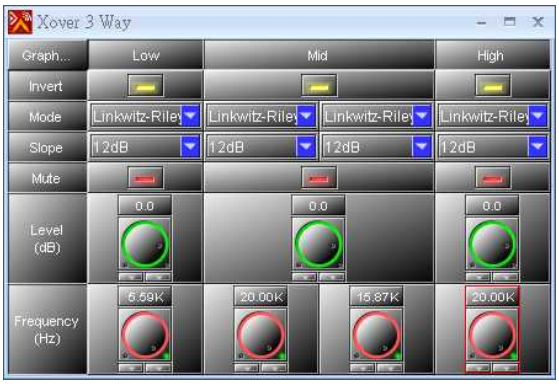
❖ Element Description

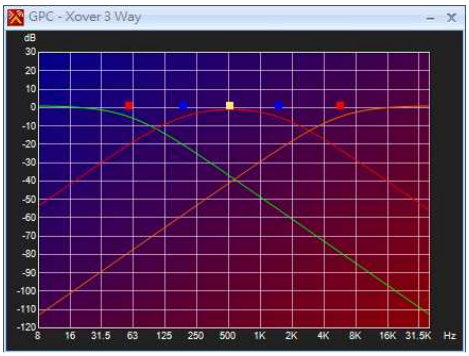
- Invert: Invert the phase of signal.
- Mode: The type of filtering.
- Slope: The slope of attenuation.
- Mute: Mute the filter's module.
- Level: The gain of signal.
- Frequency: The frequency of cut.

❖ Graphical Control Window

- Axis:

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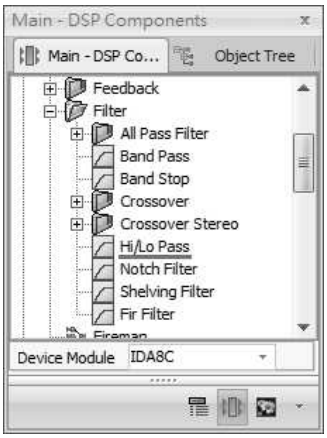




- Control Points:
  - X: Frequency of output signal(Hz).
  - Y: Level of input signal(dB).
- Control Points:
  - Blue: Adjust Level and hi-pass Frequency or low-pass Frequency of mid band.
  - Yellow: Adjust Level and both hi-pass Frequency and low-pass Frequency of mid band.
  - Red: Adjust Level and low band or hi band.

6.6.5 Hi/Lo Pass

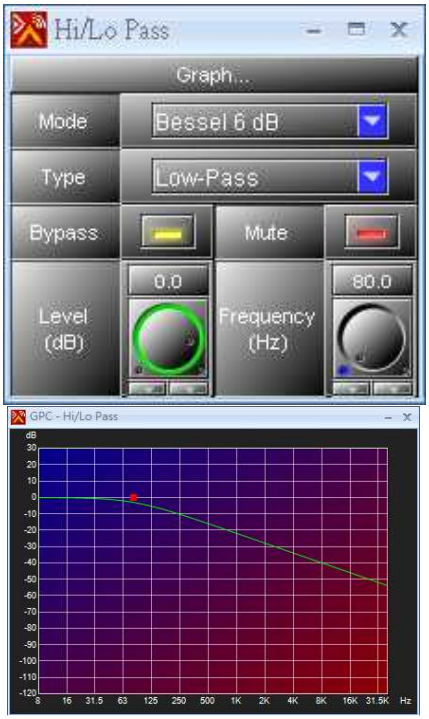
Allow to pass the high/low frequency and attenuate the frequency lower/higher than its cutoff frequency.





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❖ Control Window



❖ Element Description

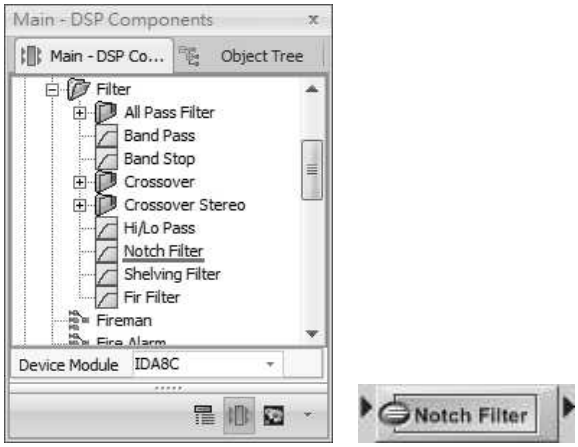
- Mode: The type of filtering.
- Type: Low or High pass.
- Bypass/Mute: Disable/mute the filter's module.
- Level: The gain of signal.
- Frequency: The frequency of cut.

❖ Graphical Control Window

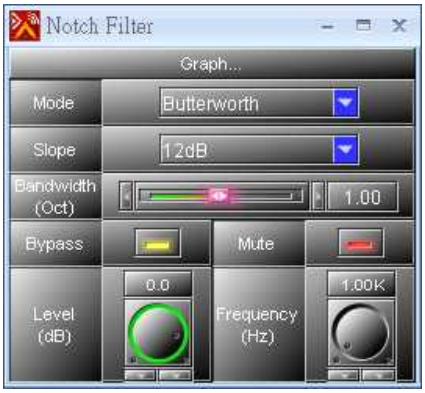
- Axis:
  - X: Frequency of output signal (Hz).
  - Y: Level of input signal (dB).
- Control Points:
  - Red: Adjust element Frequency (Horizontal) and Level (Vertical).

6.6.6 Notch Filter

A notch filter is a band-stop filter with a narrow stop band (high Q factor). It works in an opposite function to Band Pass component.



❖ Control Window



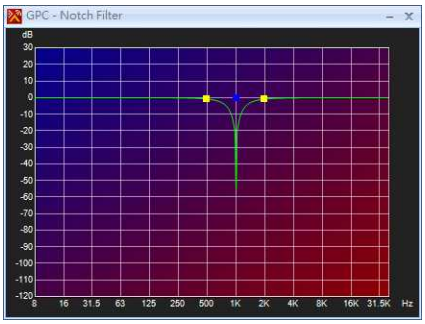
❖ Element Description

- Mode: The type of filtering.
- Slope: The slope of attenuation.
- Bandwidth: The difference between the upper and lower cut of frequency.
- Bypass/Mute:Disable/mute the filter's module.
- Level: The gain of filter's module.
- Frequency: The center frequency to be cut.

❖ Graphical Control Window

- Axis:

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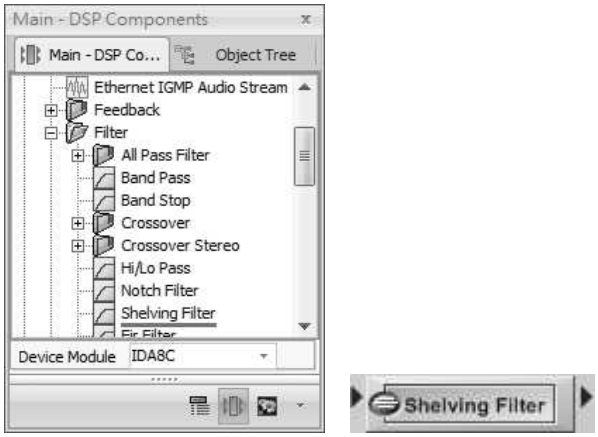


- X: Frequency of output signal (Hz).
- Y: Level of input signal (dB).

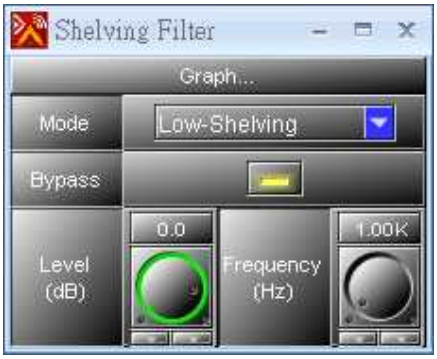
- Control Points:
  - Blue: Adjust element Frequency (Horizontal) and Level (Vertical).
  - Yellow: Adjust element Bandwidth.

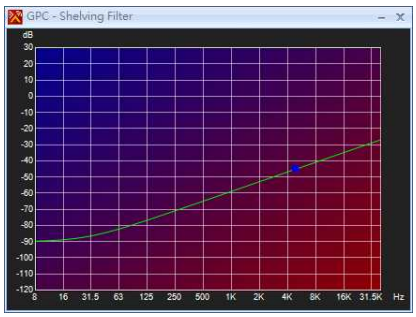
6.6.7 Shelving Filter

Shelving Filter implements a first order response and provides an adjustable boost or cut to frequency above/lower than a certain point.



❖ Control Window





❖ Element Description

- Mode: The type of filtering (high pass or low pass).
- Bypass: Disable the filter's module.
- Level: The gain of the filter's module.
- Frequency: The frequency of cut.

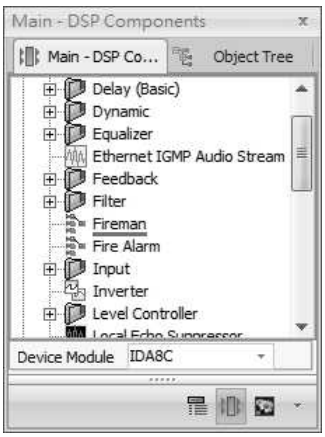
❖ Graphical Control Window

- Axis:
  - X: Frequency of output signal (Hz).
  - Y: Level of input signal (dB).
- Control Points:
  - Blue: Adjust element Frequency (Horizontal) and Level (Vertical).

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6.7 Fireman

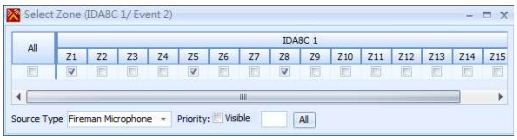
This component represents the Fireman Microphone with one channel audio output.





❖ Control Window





❖ Element Description

- Mute: Mute the audio signal.
- Monitor: Enable/disable the monitoring function if the fireman mic has fault/shortcut.
- Level: The level of Fireman component.
- Paging-Event Selection: Select a paging event using the Fireman component.

Before assigning a paging event to the component, you need to create the event first. See Network_Paging_Component chapter for details.

- Paging-Event Link Button: To open the settings window of the binding paging event.

6.8 Fire Alarm

In case of Evacuation, messages of live paging/pre-recorded playback stored in Fire Alarm Message component can be played simultaneously into different zones (up to 4 messages per IDA8C).

The Fire Alarm component will be occupied with 1 to 4 message channels, please refer to Message Limitation chapter.

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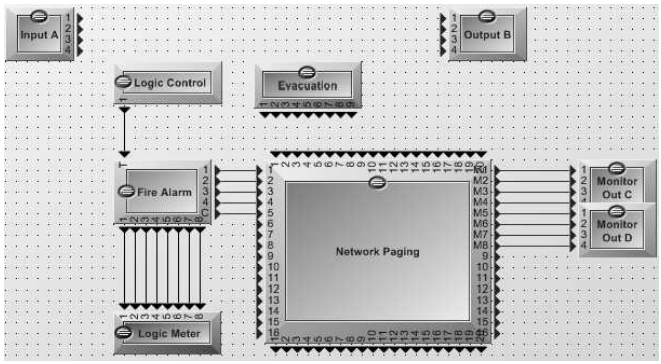


❖ Control Window



- Audio Channel: Select the number of audio output for Fire Alarm message. One controller can use up to 4 message channels.
- Logic Channel: Select the number of logic output pin for Fire Alarm component. One controller can handle from 1~32 logic output.
- Terminate: Enable to control the EVAC input signal in order to terminate the Fire Alarm Message.
- Conflict: Enable to play the message that is based on the same priority zone when facing the circumstance of fire alarm messages and other paging messages may be used in the same paging zones simultaneously. In this way, the message shall be played in the paging zones with the same priority.

❖ Configuration



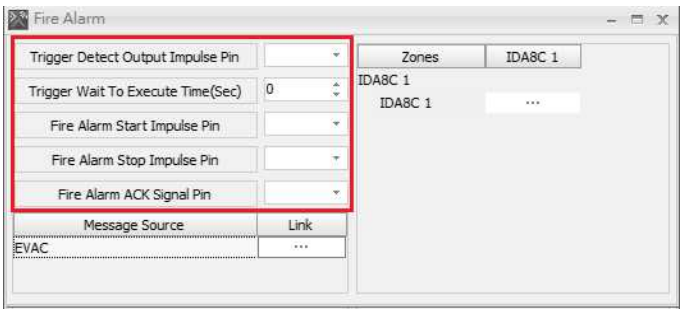
- The Fire Alarm Message component must be placed the messages to assigned zones via [Network Paging Component] and also be triggered by [EVAC Input Component]. The above picture shall provide you the basic wiring configuration of how each component works. There are

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three types of mode for EVAC Input: Contact with monitor/Contact without monitor/ Voltage.

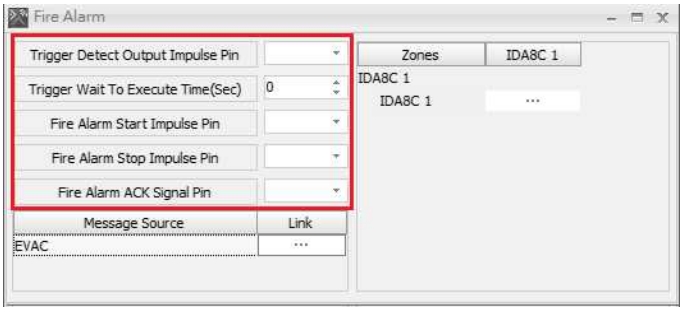
Simply make adjustment by clicking the [Evacuation] component if users intend to change the types of modes.

6.8.1 Logic Signal & Trigger time

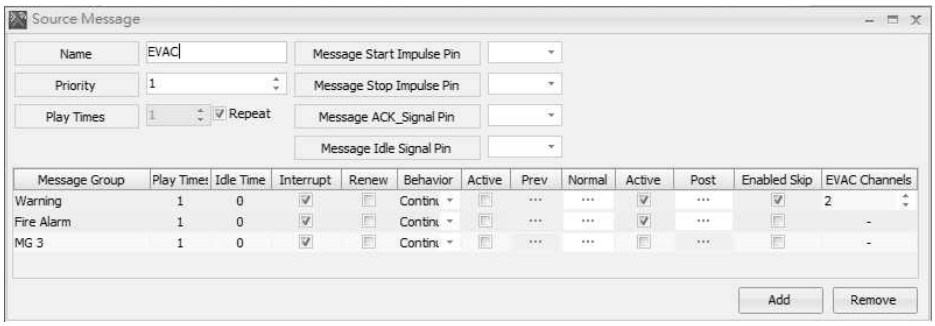


- Trigger Detect Output Impulse Pin: Set the number of Logic Output Pin for controlling the EVAC Input Pin of Fire Alarm component. Once the EVAC Input pin has been triggered, the Logic Output will continue sending a pulse signal for one second.
- Trigger Wait To Execute Time: Set the holding time for triggering the Fire Alarm component. After triggering, it will only be operated after the end of setting time and start paging.
- Fire Alarm Start Impulse Pin: Set the number of Logic Output signal pin when the message-paging starts paging. The Logic Output will continue sending a pulse signal for one second.
- Fire Alarm Stop Impulse Pin: Set the number of Logic Output signal pun when message-paging ends paging. The Logic Output will continue sending a pulse signal for one second.
- Fire Alarm ACK Signal Pin: Set the number of ACK Signal Pin when the Fire Alarm component start paging with high signal. And the signal shall be as low signal when the Fire Alarm component ends.

6.8.2 Message Source Setting

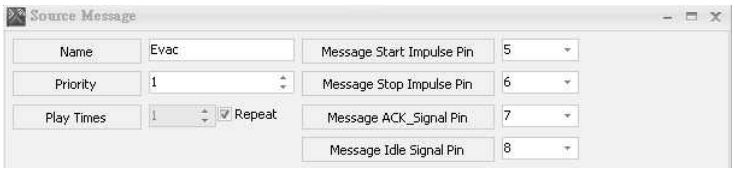


Set the name for each message channel. The Fire Alarm component can be used up to 4 message channels and 1 Conflict Message channel with custom setting for individual play list. Click [---] Link button to open the setting window, see the picture as below.



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Each of the Fire Alarm Message can be added in more than one Message Group and the name of [Message Group] can be changed for users' preference. During the message paging, the playlist of [Message Group] shall be played orderly from top to bottom [Warning > Fire Alarm > MG3].



- Priority: Set the priority for Fire Alarm Message. Select the priority order for message output when more than 1 message needs to be played in the same paging zone simultaneously.
- Play Times: Set the play times of Fire Alarm Message (max.100 times or select [Repeat] button for continuous play).

The play times is based on when all the [Message Group] has finished playing from top to bottom.

- Message Start Impulse Pin: Set the number of Logic Output signal pin when the message starts paging.
- Message Stop Impulse Pin: Set the number of Logic Output signal pin when the message ends paging.
- Message ACK Signal Pin: Set the number of ACK Signal Pin when Fire Alarm component starts paging with high signal, and will be as low signal when the message ends.
- Message Idle Signal Pin: Set the number of Message Idle Signal Pin when each [Message Group] are in Idle Mode with high signal, and shall be as low signal without Idle Mode.

The following description of functionality included Prev/Normal/Post...etc. and parameters of each [Message Group] shall be listed below.

Message Group	Play Times	Idle Time	Interrupt	Renew	Behavior	Active	Prev	Normal	Active	Post
Warning	1	0	☑	☐	Continu	☑	...	...	☑	...
Fire Alarm	1	0	☑	☐	Continu	☑	...	...	☐	...
MG 3	1	0	☑	☐	Continu	☐	...	...	☑	...

- Play Times: Set the time of [Message Group] (max.100 times).

The play times of [Message Group] is based on with the order of Prev>Norma>Post.

- Idle Time: Set the Idle Time between the former and latter [Message Groups] (max.100 seconds).
- Interrupt: Allow the interruption during the playback. If not, the message in Message Group will be ended after the Fire Alarm stops.
- Renew: Allow to recalculate the play times in [Message Group]. During the playback of [Message Group], this setting shall be referred to whether to be recalculated or continued the current play times once the status of EVAC Input has changed.
- Behavior: Set the playback mode of message when the status of EVAC Input has changed. There are three types of modes including [Continue Play], [Restart Play] and [Net Time Continue Play].
  - Continue Play: Continually play the message when changing to another paging zone.
  - Restart Play: Start playing over again from Prev when changing to another paging zone.
  - Next Time Continue Play: Start playing after the playing list of [Message Group] ends.
- Active: Select to active the message playback of Prev/Post.

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This button needs to be selected if users intend to make adjustment of [Message Play List].

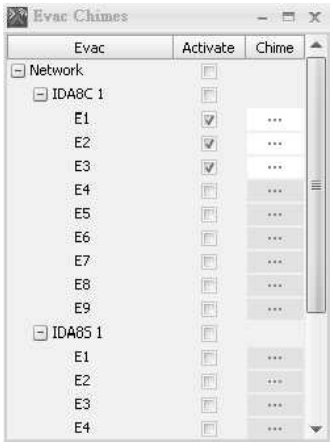
- Prev/Post/Normal Message: There are three types of Message Play for [Message Group]: Prev/Post/Normal.

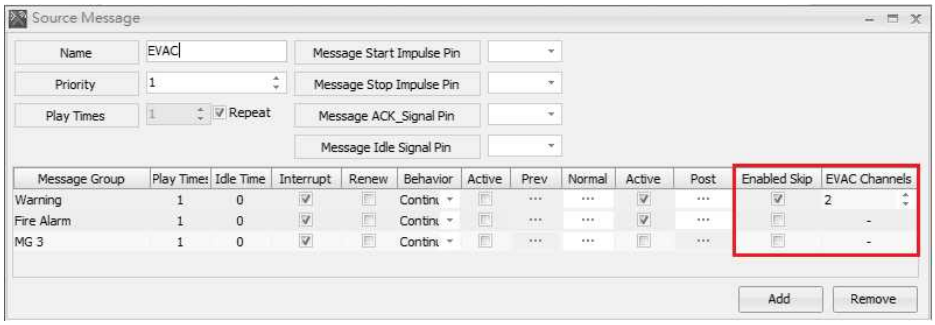
Before clicking [Prev/Post] button, make sure the [Active] button is selected forwards.

  - Prev/Post Message: Edit the lists of playback messages in [Message Group] from top to bottom orderly. See the picture as below.
    For more information of Message Play Component, please read Message Player.



  - Normal Message: After playing the Prev Message from [Message Group], the messages with high signal of EVAC Input will be played in order. When the playbacks of [Prev Message] end, the [Post Message] will play afterwards. In the use of [Normal Message], the EVAC Input must be fully connected to.
  - See the picture below which lists the [EVAC Input Channel] of each device. To use the EVAC Channels, select [Active] button, then click [...] Message button for further message setting.

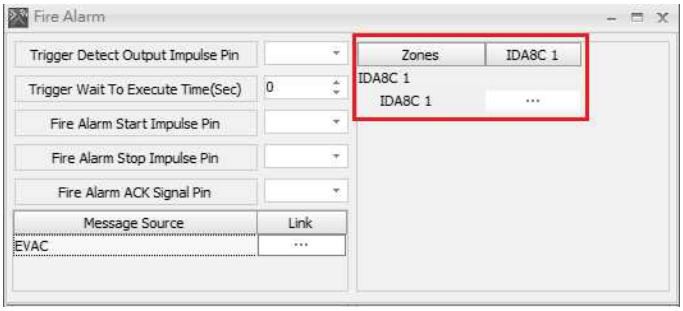




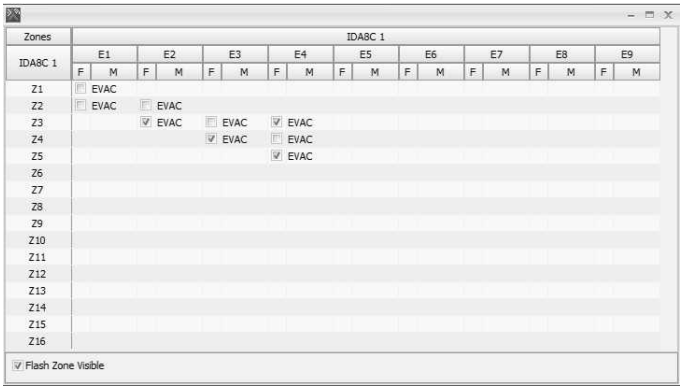
- Enable Skip: Enable this option to skip over the selected [Message Group] playlist if the number of EVAC inputs are triggered more than or equal the value in [EVAC channels] field.
- Evac Channels: Refer to [Enable Skip].

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6.8.3 Paging Zone Setting



Users shall assign the message playback for each zone. Take the picture below as an example, when the EVAC Input 1 has been triggered, the Zone 1 of IDA8C 1 controller shall be play the assigned EVAC message, as for Zone 2 and Zone 3 shall be played with A_U message. In case the multiple EVAC Inputs have been trigger and more than one message needs playing in same zone simultaneously, the system shall operate by the order of priority.

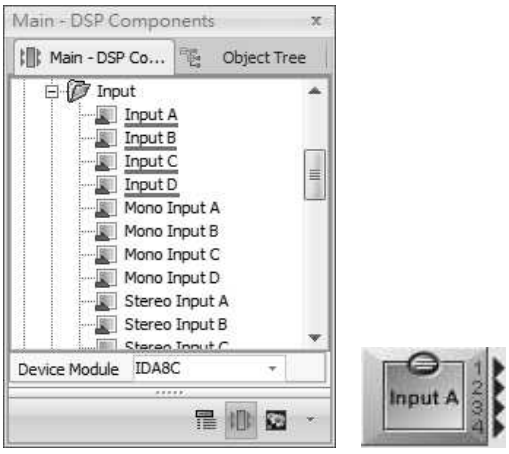


- Flash Zone Visible: Enable this option to request the EVAC LED of the selected zones on IDA8C to flash for evacuation warning purpose. For example: When there's a fire emergency and the E4 evac input channel is triggered, the EVAC LED of Z3 and Z5 will flash on the IDA8 front panel, and the EVAC LED of Z4 will light up constantly.

6.9 Input

6.9.1 Audio Input

Allow to control and monitor the parameters of analog input signal.



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❖ Control Window

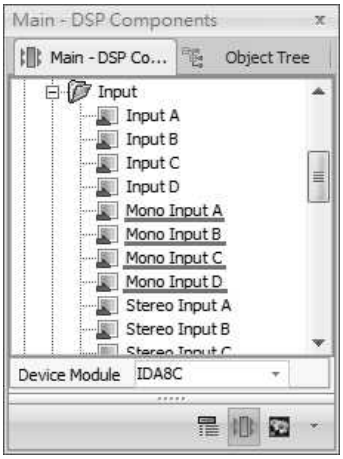


❖ Element Description

- Bypass/Mute: Disable/mute the audio channel.
- Sensitivity: Set the input gain of the channel to the preamplifier.
- Phantom Power: Apply 48 VDC phantom power to the channel input for use with condenser mics.
- RTO: An input channel 'Routed To Output(s)'.
- Overload: Light up if the signal of an input channel is bigger than Overload Thd.
- Volume: The VU-Meter shows the channel of RMS level.
- Signal: Light up if the audio signal presents above -30 dB from the chosen 'Sensitivity'.
- Level: The signal output level of channel.
- Overload Thd.: A threshold value to determine the signal of channel is overloaded or not.

6.9.2 Mono Input

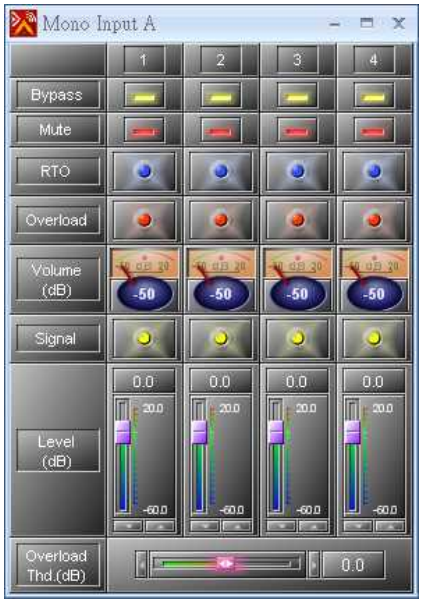
Used for the AES/EBU input, it's very similar to the analog Input component except without Sensitivity and Phantom Power values.





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❖ Control Window

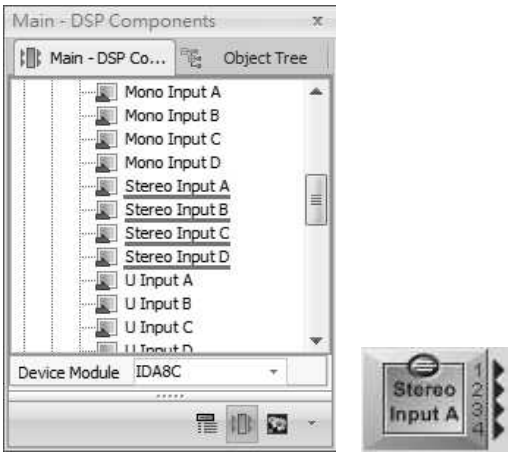


❖ Element Description

- Bypass/Mute: Disable/mute the audio channel.
- RTO: An input channel 'Routed To Output(s)'.
- Overload: Light up if the signal of input channel is bigger than Overload Thd.
- Volume: The VU-Meter shows the channel of RMS level.
- Signal: Light up if an audio signal presents above -30 dB from the chosen 'Sensitivity'.
- Level: The signal output level of channel.
- Overload Thd.: A threshold value to determine the signal of channel is overloaded or not.

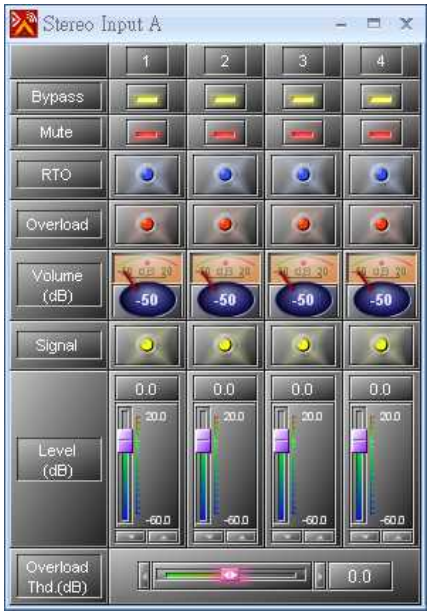
6.9.3 Stereo Input

Used for the AES/EBU input, it's very similar to the analog Input component except without Sensitivity and Phantom Power values. The audio input to channel 1 board goes to the component Stereo Input X channel 1 & 2 and channel 3 to Stereo Input X channel 3 & 4.



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❖ Control Window

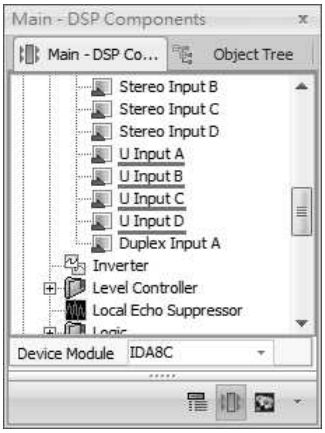


❖ Element Description

- Bypass/Mute: Disable/mute the audio channel.
- RTO: The input channel 'Routed To Output(s)'.
- Overload: Light up if the signal of input channel is bigger than Overload Thd.
- Volume: The VU-Meter shows the channel of RMS level.
- Signal: Light up if an audio signal presents above -30 dB from the chosen 'Sensitivity'.
- Level: The signal output level of channel.
- Overload Thd.: A threshold value to determine the signal of a channel is overloaded or not.

6.9.4 U Input

Allow to control and monitor the parameters of analog input signal.



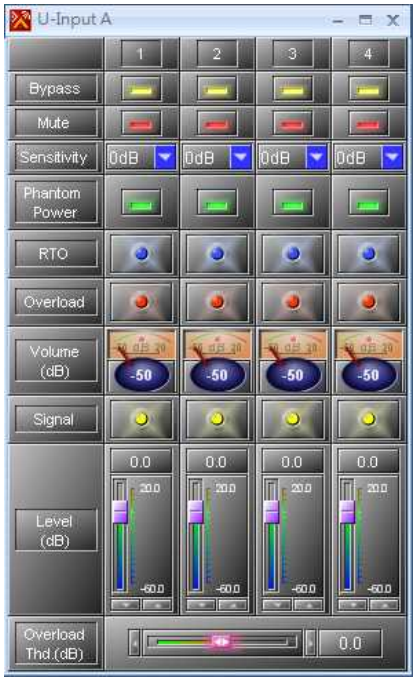


❖ Control Window

❖ Element Description

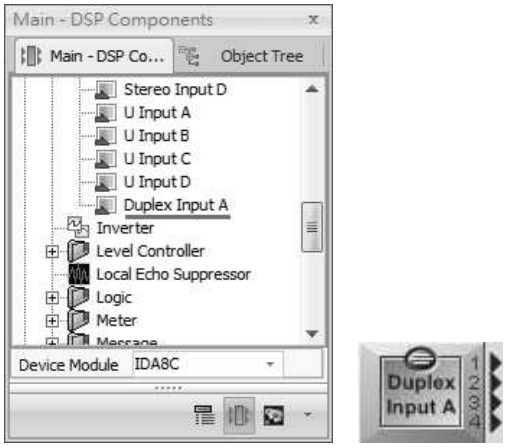
- Bypass/Mute: Disable/mute the audio channel.
- RTO: The input channel 'Routed To Output(s)'.
- Overload: Light up if the signal of input channel is bigger than Overload Thd.
- Volume: The VU-Meter shows the channel of RMS level.
- Signal: Light up if an audio signal presents above -30 dB from the chosen 'Sensitivity'.
- Level: The signal output level of channel.
- Overload Thd.: A threshold value to determine the signal of a channel is overloaded or not.

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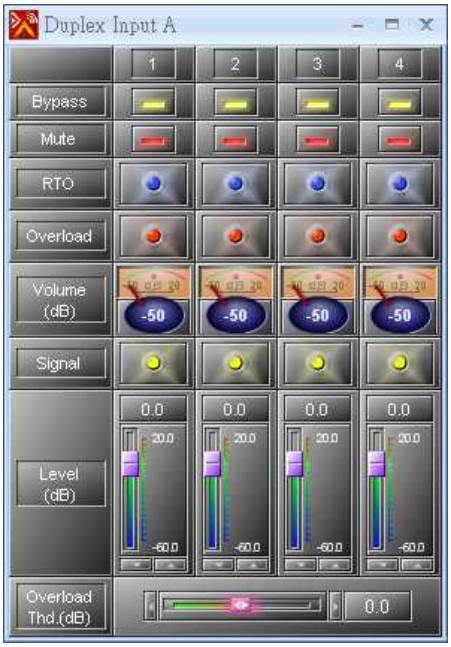
6.9.5 Duplex Input

Used for the AES/EBU input, it's very similar to the analog Input component except without Sensitivity and Phantom Power values. The audio input to channel 1 board goes to the component Duplex Input A channel 1 & 2, channel 2 to the Duplex Input A channel 3 & 4, channel 3 to the Duplex Output B channel 1 & 2 and channel 4 to the Duplex Output B channel 3 & 4.



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❖ Control Window

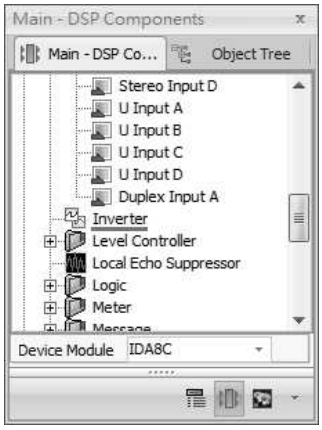


❖ Element Description

- Bypass/Mute: Disable/mute the audio channel.
- RTO: The input channel 'Routed To Output(s)'.
- Overload: Light up if the signal of input channel is bigger than Overload Thd.
- Volume: The VU-Meter shows the channel of RMS level.
- Signal: Light up if an audio signal presents above -30 dB from the chosen 'Sensitivity'.
- Level: The signal output level of channel.
- Overload Thd.: A threshold value to determine the signal of a channel is overloaded or not.

6.10 Inverter

Allow to change the signal phase of 180 degrees.





❖ Control Window



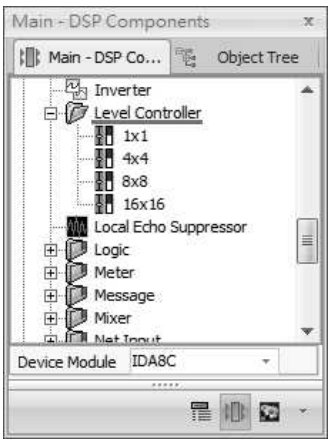
❖ Element Description

- Mute: Mute the inverter module.
- Invert: Activate the inverter.

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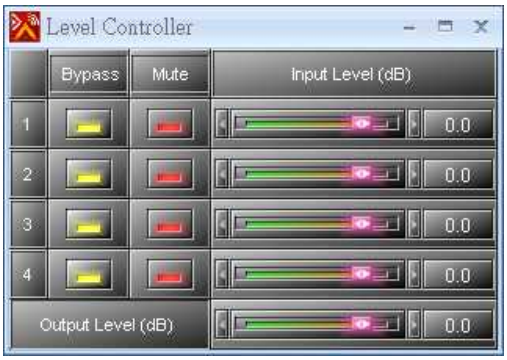
6.11 Level Controller

Allow to adjust the signal level.





❖Control Window

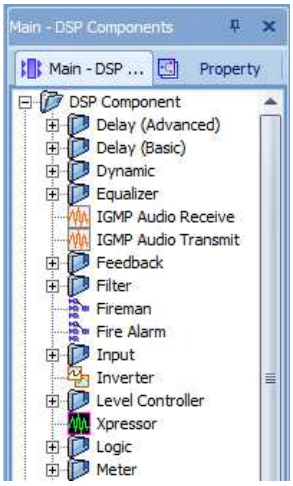


❖Element Description

- Bypass/Mute: Disable/mute the module's function.
- Input/Output Level: Adjust the level of an input/output channel.

6.12 Xpressor

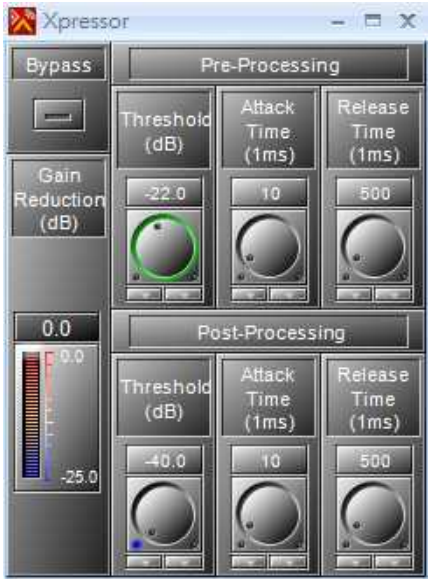
This component is designed for preventing and suppressing local echo or feedback. It has two parts, the Pre-Processing and the Post-Processing. The Pre-Processing reduces the level above the threshold for avoiding the feedback. The Post-Processing removes the echo below a threshold which is for avoiding the residual echo.





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❖Control Window



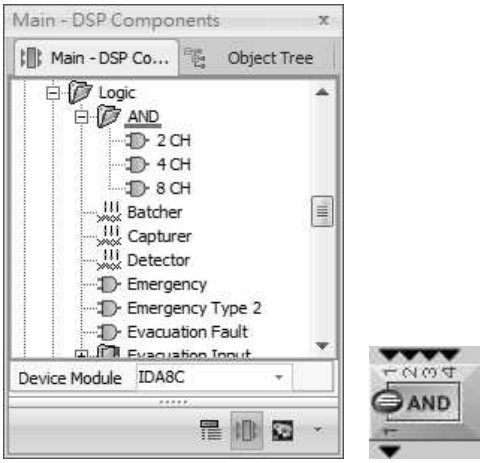
❖Element Description

- Bypass: Disable this module's function.
- Gain Reduction: Display the gain of output volume.
- Pre-Processing
  - Threshold: When the input volume is larger than the Pre-Processing Threshold, it will decrease the volume to [Threshold].
  - Attack Time: The needed time for changing the volume from the original level to the expected level.
  - Release Time: The needed time for changing the volume from the expected level to the original level.
- Post-Processing
  - Threshold: When the input volume is smaller than the Post-Processing Threshold, it will suppress the echo sound that has left.
  - Attack Time: The needed time for changing the volume from the original level to the expected level.
  - Release Time: The needed time for changing the volume from the expected level to the original level.

6.13 Logic

6.13.1 AND

Allow the logical operation "AND" that applied on a logic signal.

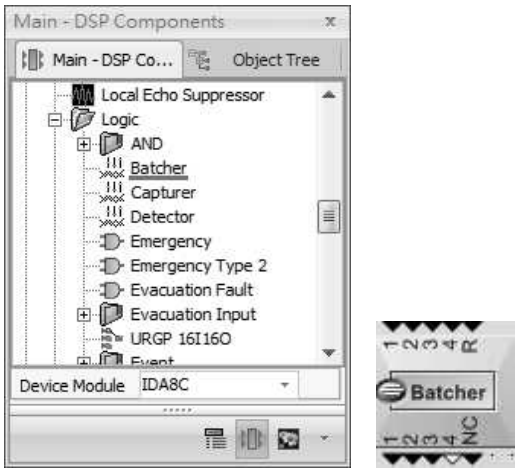


6.13.2 Batcher

Allow to make multiple sets of inputs and outputs simultaneously. The status of output will be automatically clear as 0 after 1 second.

The number of input and output channels must be the same when using the Batcher component.

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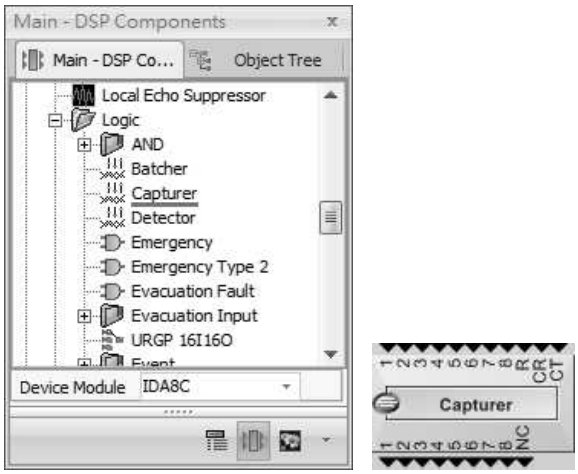
- R pin (Reset): The "pulse trigger" that will give the R pin the triggering signal.
- NC pin (No Change): When the input "remains the same", the NC will give a pulse to let the next component which is connected to the Batcher component to identify the remain status.

6.13.3 Capturer

Allow to capture the selected parameter of input and lock them as the output. Users can also use the pins of Capturer to choose the time to capture and lock.

The basis of Capturer is based on two modes: [Ready] and [Disable]. [Ready] indicates that once the input has changed, the Capturer component will capture the updated changes of input to output, and after capturing, the component will be in Disable mode, which means no matter the change of input, the output will not be affected.

The channel mapping of input and output via Capturer component need to be the same.

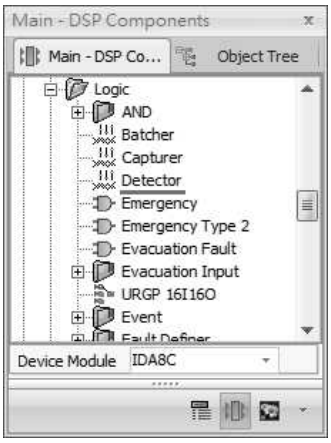


- R pin (Reset): The "pulse trigger" that allows to capture the updates changes of input to output, based on the [Ready] Mode.
- CR pin: To compulsively lock the status, based on the [Disable] mode.
- CT pin: If there's no changes on input, the Capturer component will still capture the input to output again.
- NC pin (No Change): When the input "remains the same", the NC will give a pulse to let the next component which is connected to the Capturer component to identify the remain status.

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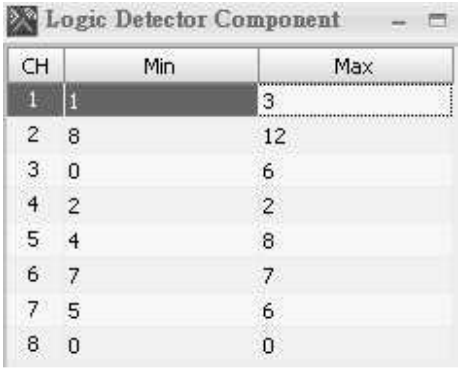
6.13.4 Detector

Used when the output is based on the range of input you select. Note that the setting of input range is according to the binary code.





❖ Control Window



CH	Min	Max
1	1	3
2	8	12
3	0	6
4	2	2
5	4	8
6	7	7
7	5	6
8	0	0

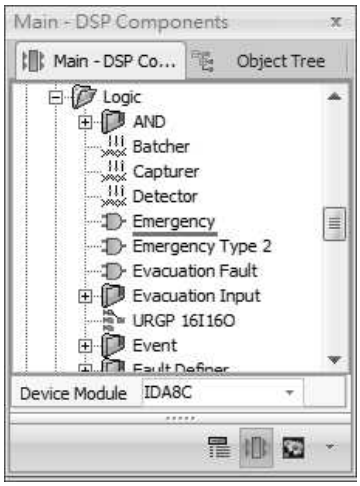
❖ Detector Setting

- The range of every output pin can be set individually, the corresponded input needs to set by binary code.

Please connect the channel pins by the order of input, and avoid using the repeated pins among other mapping pins. The default number of blank mapping pin is 0.

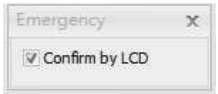
6.13.5 Emergency

The Emergency component is used for IDA8C processor for triggering the EVAC/RESET button on its LCD front panel. When pushing the EVAC/RESET button, the confirmation window on LCD panel will display a window.





Double click the Emergency component, a [Confirm by LCD] window will display. Enable or disable this function to decide whether the [EMERGENCY ENABLE/ DISABLE] confirmation window will be



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displayed on the LCD panel of IDA8C when pushing the EVAC button.

The window of [EMERGENCY ENABLE] will display on LCD when pushing the EVAC Button, see the picture on the right.

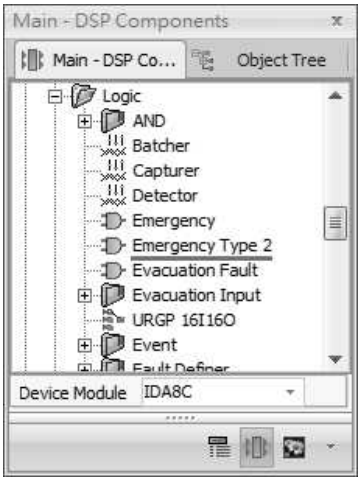


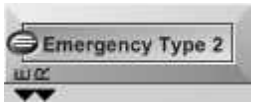
The window of [EMERGENCY DISABLE] will display on LCD when pushing the RESET Button, see the picture on the right.



6.13.6 Emergency Type 2

The Emergency Type 2 component is similar to the Emergency component, the difference are the usage of EVAC and RESET button. See the difference from the two pins of Emergency Type 2 component as below.



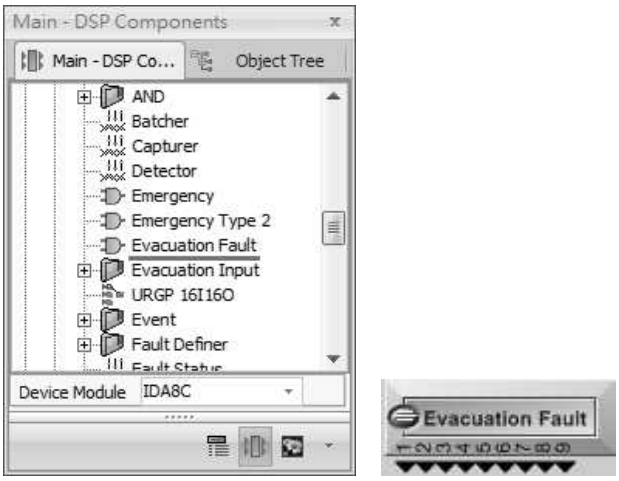


- E Pin (EVAC): When pushing the EVAC/RESET button on front panel of IDA8C, the EVAC/ RESET will function directly. Not like the Emergency component which will display a confirmation window on LCD of IDA8C first.
- R Pin (RESET): Used as a cancel button of logic triggering when pushing the RESET button on front panel of IDA8C.

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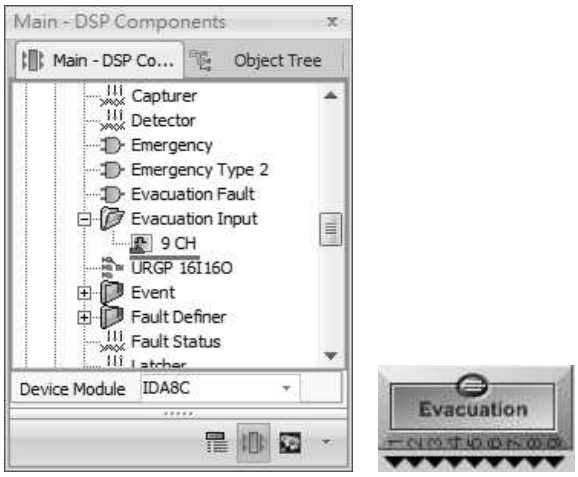
6.13.7 Evacuation Fault

This component will be triggered when the EVAC fault has occurred and will inform the next component which are connected to.

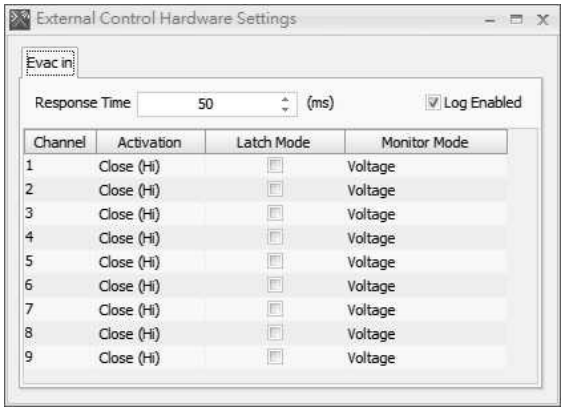


6.13.8 Evacuation Input

This component corresponds to the Evacuation Input of IDA8C/S, the output logic signal will be the other logic component's input.



❖ Control Window



❖ Parameters

- Response Time: Determine how quick the system responds to the hardware status changing from

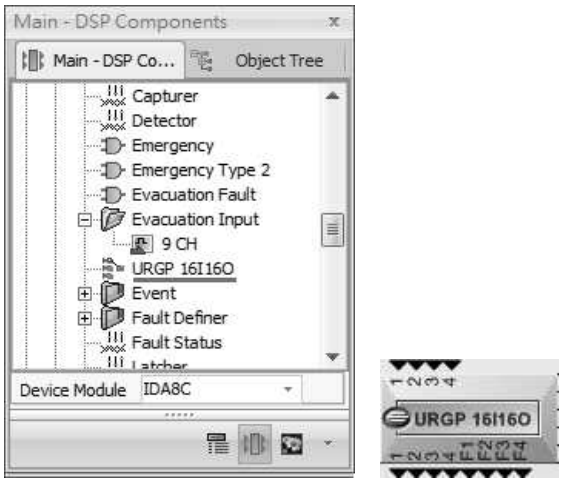
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Open (Lo) to Close (Hi) or from Close (Hi) to Open (Lo).

- Log Enabled: Tick the checkbox to record the logs on Machine Log list when the evac input of IDA8 processor has been triggered.
- Activation: This parameter to determine under what condition the hardware will generate 1 output. There are two choices:
  - Open (Lo): The component output=1 when the contact open (contact mode) or voltage low (voltage mode).
  - Close (Hi): The component output=1 when the contact close (contact mode) or voltage hi (voltage mode).
- Latch Mode: Tick the checkbox to enable the latch mode, which it requires to input state from Low to Hi to activate the action, and input state from Low to Hi again to stop the action.
- Monitor Mode:
  - Voltage: The logic output component is triggered by a voltage polarization change.
  - Contact With Monitor: The logic output component is triggered by opening/closing the connector of +/- Pin on rear panel, and this will detect the faults and display on front panel. Please see Evacuation Inputs(Contact Mode) for details.
  - Contact Without Monitor: The logic output component is triggered by opening/closing the connector of +/- Pin on rear panel without detection/monitoring.

6.13.9 URGP-16I16O

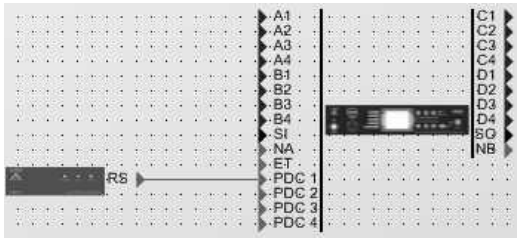
This component corresponds to URGP-16I16O peripheral devices, which offers more logic input channels of audio processor.



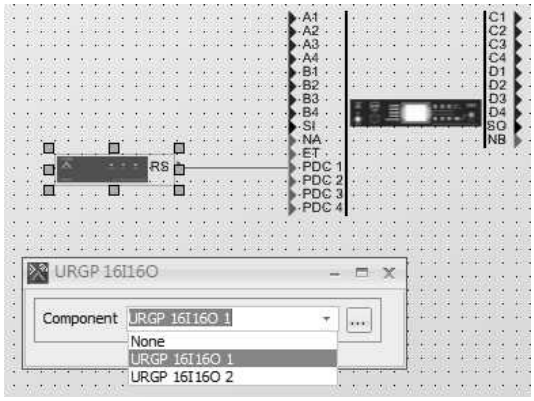
- Input Pins: When the Input Pin is high, the Evacuation Output channel on URGP-16I16O will output 5VDC.
- Output Pins: The input status of Evacuation Input channel on URGP-16I16O.
- Fault Pins: The fault status of Fault Input channel on URGP-16I16O.

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- Drag the URGP-16I16O device icon from the configuration file, and connect it to PDC port. See the picture on the right.



- Double click the URGP-16I16O device icon to open a setting window, them you can choose which URGP-16I16O component you want to connect to. See the picture on the right.

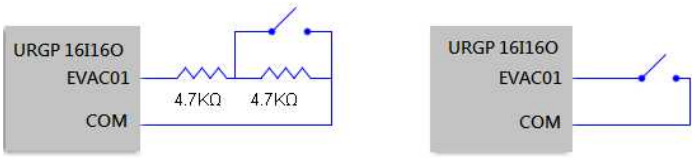


❖ Control Window



❖ Parameters

- Monitor Mode: Enable/disable the external device monitoring. If this option is enabled, it needs two 4.7k Ohm resisters in the external device circuit.



Monitoring Mode Non-Monitoring Mode

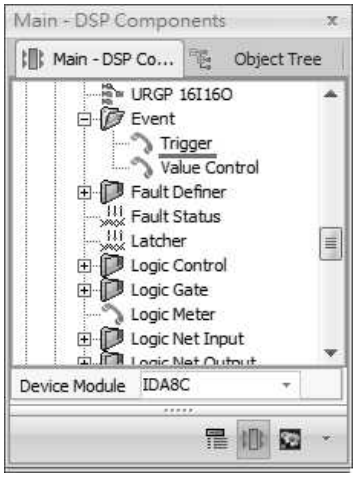
- Type: Specify the mode of activation. There are two choices:
  - Open (Lo): Normally open, close the contact to the output signal.
  - Close (Hi): Normally close, open the contact to the output signal.
- Status: Show states of the external device. There are four states:
  - Open: An open circuit of external device is detected.
  - Short: A short circuit of external device is detected.
  - Activate: The logic output is active.
  - Deactivate: The logic output is deactivated.

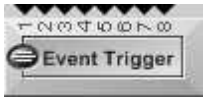
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6.13.10 Event

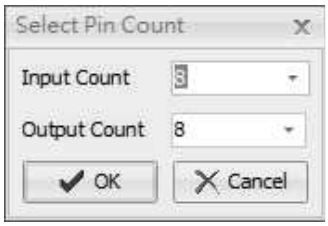
6.13.10.1 Trigger

This component links the events to the logic signal, which the events will be triggered if the input logic signal is from Low to High or from High to Low depending on the settings.





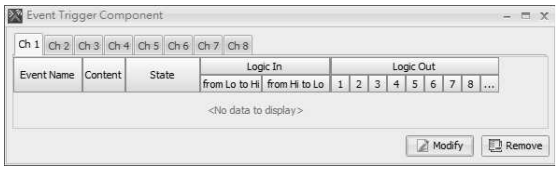
❖ Control Window



❖ When dragging the Event Trigger component from [Main-DSP Components], a [Select Pin Count] window will display as the picture on the left, this indicates the input and output channel counts:

- Input Count: The number of elements you want to trigger.
- Output Count: The output count indicates the number of channels to be as the event results.

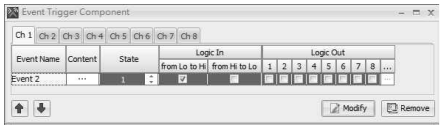
❖ Control Window



❖ Double click the Event Trigger component to open its control window. There are several tabs on the top of the window. Each tab represents for a logic input channel.

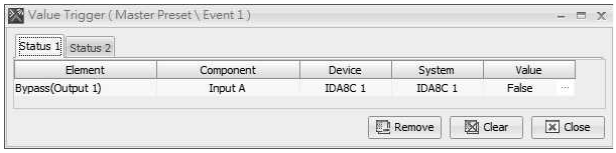
- Event Name: The name of the events that are linked.
- Content: A [...] link button to open the setting window.

❖ Control Window

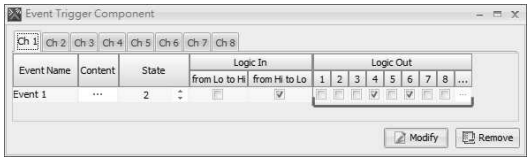


❖ After the events are linked to the component, the grids will list the events on the control window.

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- Event Name: The name of the events that are linked.
- Content: A [...] link button to open the setting window.
- State: The item of the element which you want to trigger an event.
- Logic In: Choose the type of trigger either raising edge(Lo to Hi) or falling edge(High to Lo), or both you want.
- Logic Out: Define the state of output signal. There are two cases which need to be considered whether the event is proceeded successfully or not. To finish this configuration, first, you need to select the output signal what is function/working, see the picture on the right.



From the above picture, the logic output of channel 4 and 6 are selected. For more settings, click the [...] grid on [Logic Out].

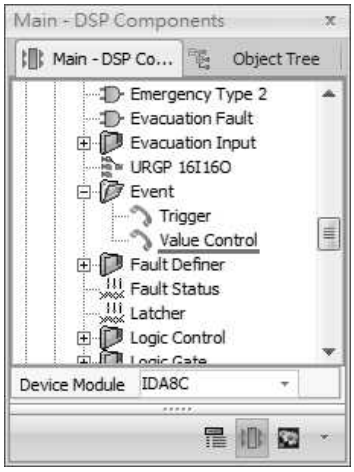


From the above figure, the settings indicates when [Event 1] is Failed, Output 4 will be 1 and Output 6 will be 0, and when [Event 1] is successfully triggered, the Output 4 will be 0 and Output 6 will be 1.

The Value Trigger/Step Trigger/Master Preset Change/Sub-Present Change can be modified by Event Trigger component only.

6.13.10.2 Value Control

This component link events to logic signal, linked events will be triggered if any input logic signal changes.



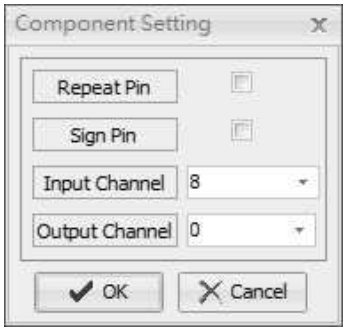


❖ Control Window

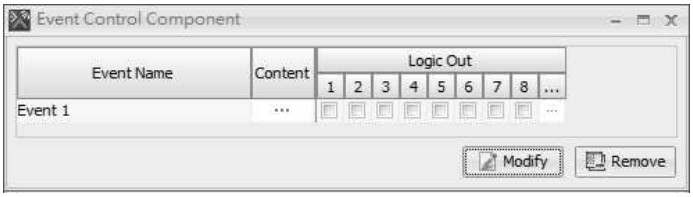
When the Value Control component is dragged from [Main-DSP Components], a [Component Setting] window will display as the picture below.

- Repeat Pin: Click to add a R Pin as the indication if the value is the same and wants to repeat the trigger events.
- Sign Pin: Click to add a Sign Pin if the triggering value includes the minus value.
- Input Channel: The number of input which is available in the binary range.

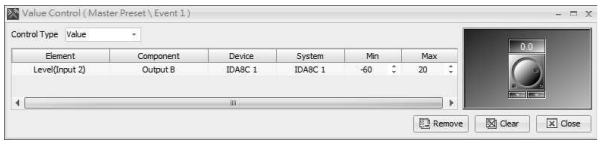
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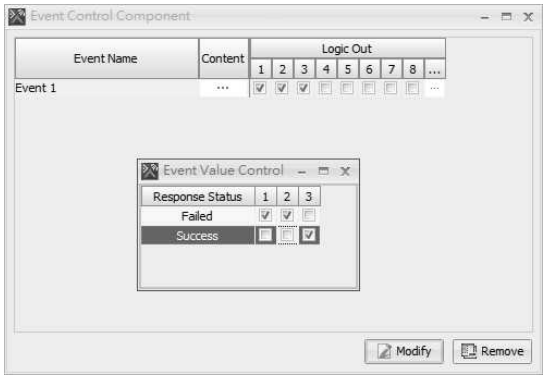
- Output Channel: The number of channels to be as the event results.



❖ Parameters



- Event Name: The name of the events that are linked.
- Content: A [...] link button to open the event setting window to assign which elements to control.
- Logic Out: Define the state of output signal. There are two cases which need to be considered whether the event is proceeded successfully or not. To finish this configuration, first, you need to select the output signal what is function/working, see the picture on the right.
- Control Type:
  - Value: Control the elements based on the binary codes.
  - Percentage: Control the elements based on the relative percentage.



- From the picture above, the logic output of channel 1~3 are selected. Click the [...] grid to open [Event Trigger] window.

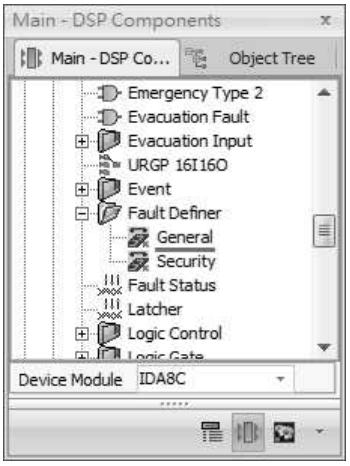
The Value Control/Value Trigger/Step Trigger/Step Control/Master Preset Change/Sub-Present Change can be modified by Event Value Control component only.

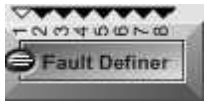
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6.13.11 Fault Definer

6.13.11.1 Fault Definer

This component allows users to trigger the customized faults which meet the users' need.





❖ Control Window

The Fault Message can be read from the LCD front panel on IDA8C and the Fault List from Ateis Studio software as well. The Input Pin can be generate in either Hi or Lo in circumstances.



- Hi/Lo checkbox: Define the channel pin either high or low, and the message which users has set in [Message] field will be displayed on the Fault List of LCD front panel on IDA8C and Ateis Studio software as the reporting message.
- Message: Define the message as the reporting message when the channel pin is High/Low based on the [Hi/Lo] settings you set, and this message will be displayed on the Fault List of LCD front panel on IDA8C and Ateis Studio software.

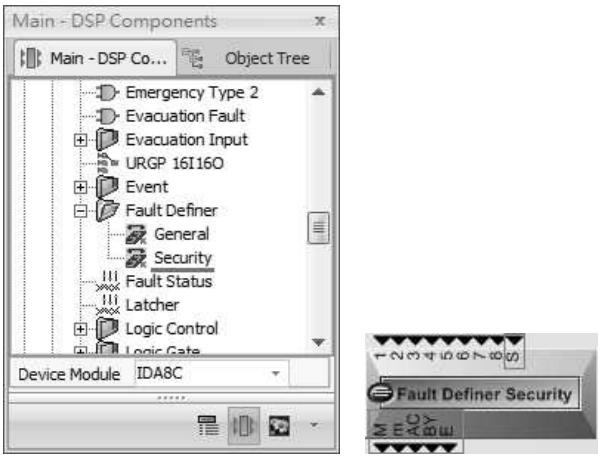
The maximum length of message is 50 character strings.

- Fault: This LED will light up in red when the fault is generated.

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6.13.11.2 Fault Definer Security

Allow to trigger the customized faults in the status of security mode.



- S (Security) pin: When the S pin is high, the IDA8 system will enter the security mode.
- M (Major) pin: When the system has major fault, the M pin is high.
- m (Minor) pin: When the system has minor fault "only", the m pin is high.

When the system has no faults, the M pin and m pin is low.

When the system has both major fault and minor fault, please note only the M pin is high.

- AC (AC power) pin: When the AC power supply is present, the AC pin is high. On the contrary, when the AC power is not present, the AC pin is low.
- BY (bypass mode) pin: When the system enters the bypass mode, the BY pin is high. On the contrary, the BY pin is low when the system is not in bypass mode.
- E pin: When the evacuation event is triggered by IDA8 system, the E pin is high.

❖ Control window



- Hi/Lo checkbox: Define the channel pin either high or low, and the message which users has set in [Message] field will be displayed on the Fault List of LCD front panel on IDA8C and Ateis Studio software as the reporting message.
- Mode: To define the fault is a major or minor fault.
- Message: Define the message as the reporting message when the channel pin is High/Low based on the [Hi/Lo] settings you set, and this message will be displayed on the Fault List of LCD front panel on IDA8C and Ateis Studio software.

The maximum length of message is 50 character strings.

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- Fault LED: This LED will light up in red when the fault is generated.

6.13.12 Latcher

Allow to lock the status of output, and the setting can be reset by clicking the [Auto Reset Initializing] button. See the picture below,

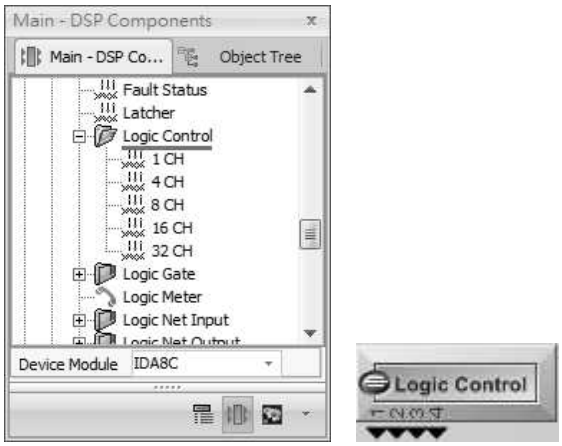


Auto Reset Initializing

- R (Reset) pin: The triggering signal, which will lock after reset (mapping with R pin).
- CR (Clear) pin: A pulse action based on the [Disable] mode, providing the function of lock.

6.13.13 Logic Control

Allow to generate the logic signal using buttons in Ateis Studio.



❖ Control Window



❖ Elements

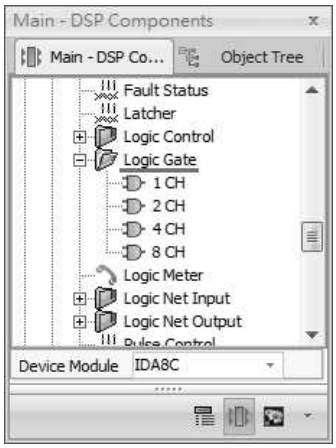
The element allows to show the control logic signal for each channel output.

- On/Off: Output logic signal 0 or 1.

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6.13.14 Logic Gate

Allow to delay the output time.





❖ Control Window

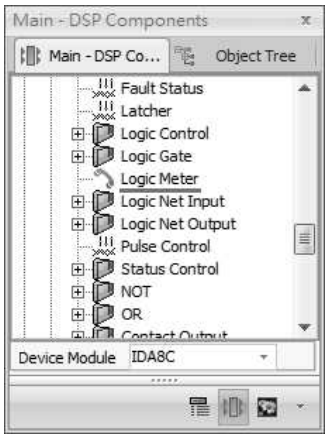


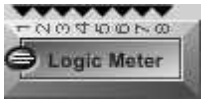
❖ Elements

Rising Response Time (100ms)/Falling Response Time (100ms): The time of output delay when a rising signal/ falling signal is triggered. The unit of time is 100ms, therefore, the actually value is N x 100 ms.

6.13.15 Logic Meter

This component has LEDs to indicate the statuses of the logic signal.





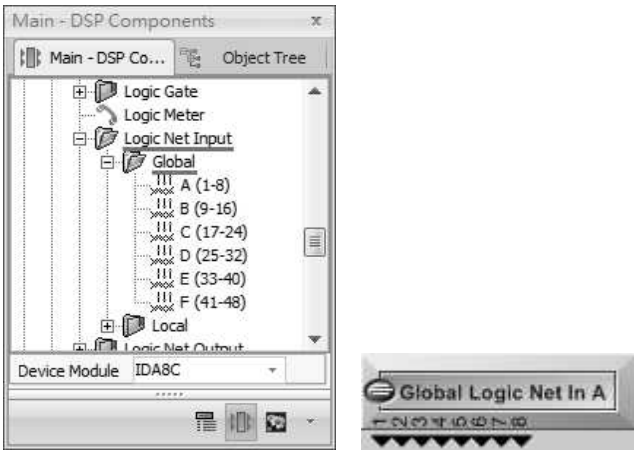


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6.13.16 Logic Net Input

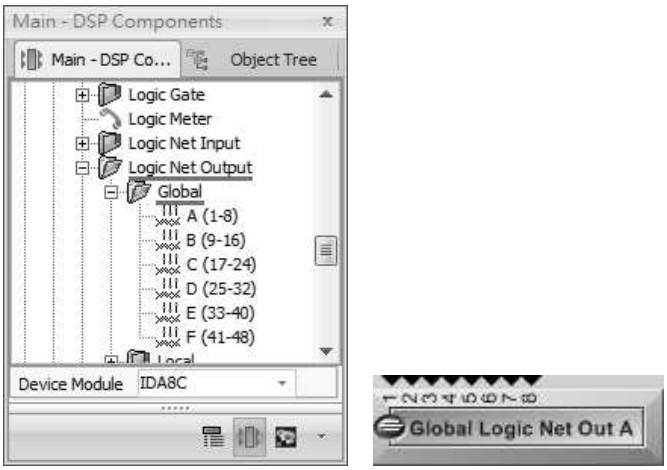
This component transfers logic signals over Ateis Net. The logic signal goes into the Logic Net Out component in one device and out from the Logic Net In component in another device by using the Ateis Net card.

The signal path is one-to-many and there are 48 channels available to carry signals which are numbered and identified by number. For example, a signal goes into channel 1 of Logic Net Out A component and will go out from the channel 1 of Logic Net In A component.



6.13.17 Logic Net Output

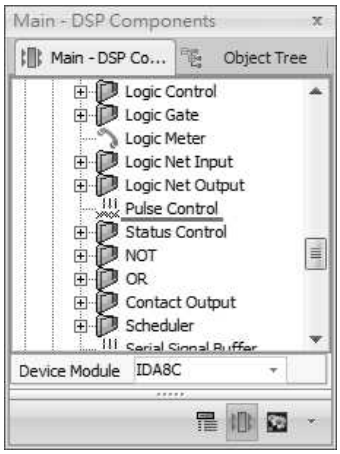
This component transfers logic signals over Ateis Net.



6.13.18 Logic Pulse Control

The Pulse Control component allows to have a duration of 1 second for pulse output when the status of Input Pin has been changed. Please see the picture below,

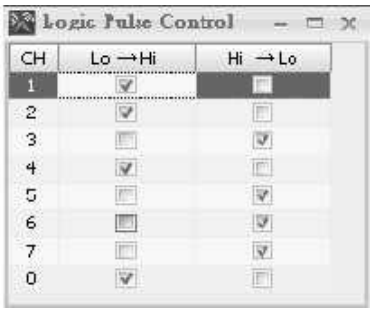
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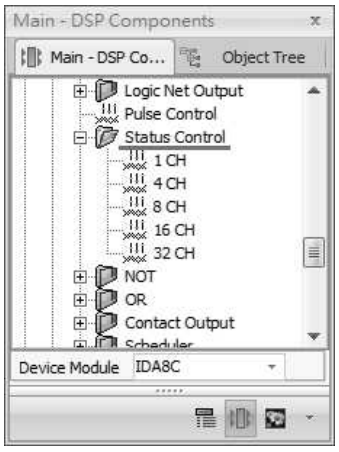
- The input pin and output pin of Pulse Control are mutually corresponded with each other.
  The status of each pin can be set individually. When the input is triggered, the output will result in a duration of 1 second pulse.





6.13.19 Status Control

Allow the status output to get locked and remains at the last status when the input has triggered the pulse. The Input Pin N and Output Pin N are mutually corresponded, they will not be affected by other Pins.

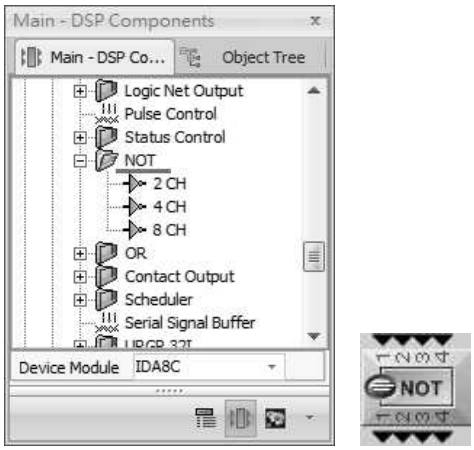




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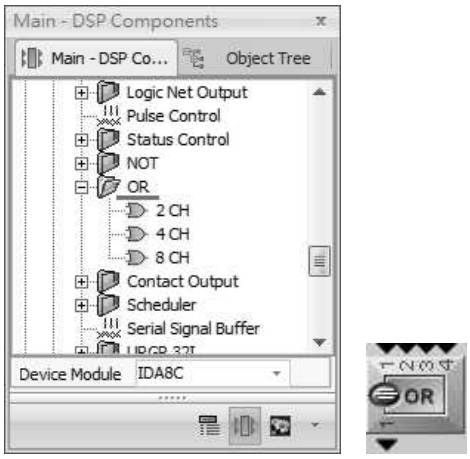
6.13.20 NOT

This component performs logical NOT operation.



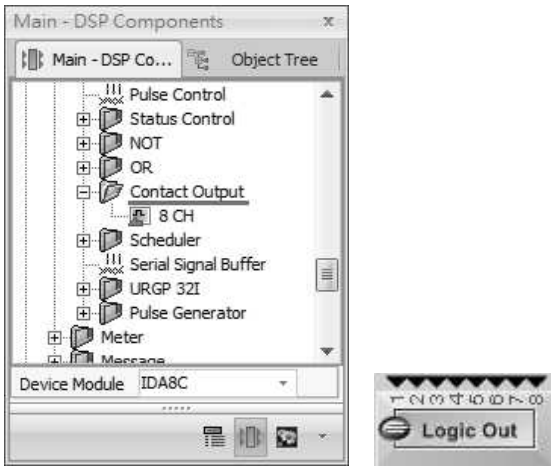
6.13.21 OR

This component performs logical OR operation.



6.13.22 Output

This component is corresponding to the contact outputs.

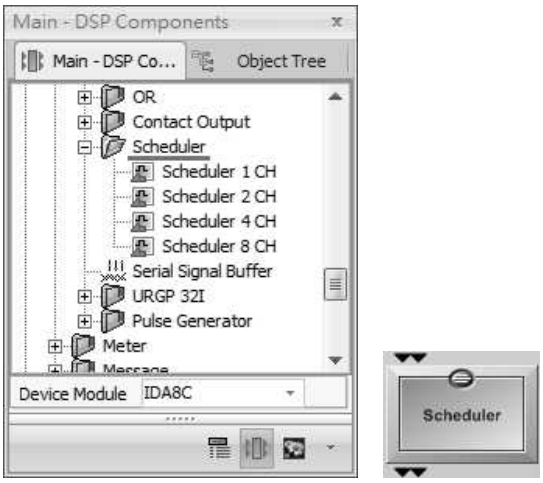


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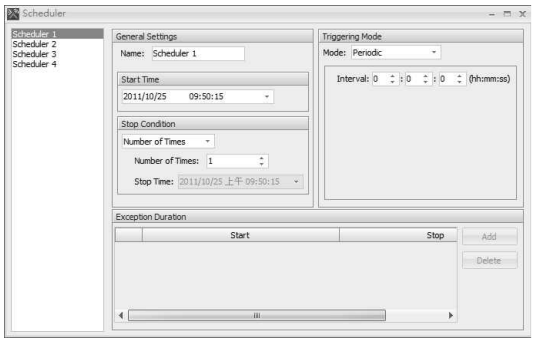
6.13.23 Scheduler

Allows to arrange the timing of generating logical pulse to output. The length of pulse is 1 sec. There are four types of schedulers: Scheduler 1 CH, Scheduler 2 CH, Scheduler 4 CH and Scheduler 8 CH.

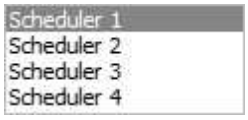
The pins on the top side enables(signal = 1) or disables(signal = 0) the scheduler belongings to the channel. The pins at the button will generate the pulse signal depending on the settings of component.



❖ Control Window

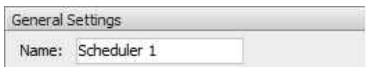


❖ Scheduler List



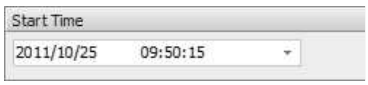
Change the channels of scheduler from Scheduler List.

❖ General Settings



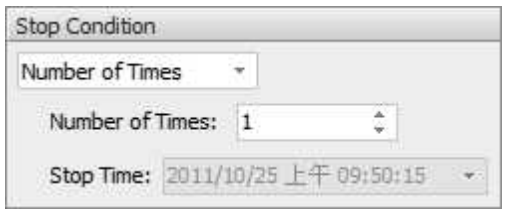
- Name: The name of Scheduler.

❖ Start Time



- The start time of the scheduler.

❖ Stop Condition



Specify the condition to stop a Scheduler. There are three types of condition:

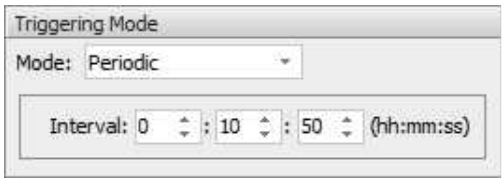
- Continue: In this option, scheduler will never stop. The triggering setting is always valid.
- Number of Times: Scheduler is triggered N times using triggering setting where N can be set at "Number of Times parameter".
- Stop Time: Scheduler is activated from start time to the time which set in the "Stop Time parameter".

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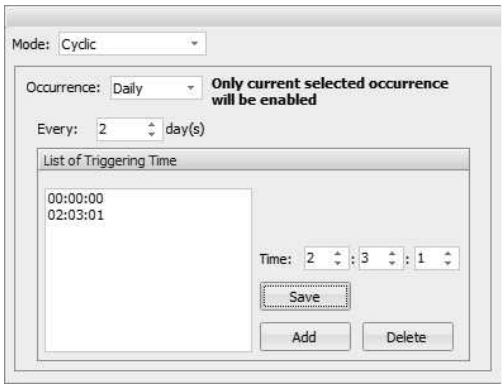
❖ Triggering Mode

The triggering mode defines the rule of triggering a pulse to output.

- Periodic: The interval is the time between two triggers.



- Cyclic: The Occurrence parameter determines the cycle type of triggering. There are five types available: Hourly/ Daily/Weekly/Monthly/Yearly.It allows the user to define the interval between cycles by specifying the parameter of Every N cycle unit where the cycle unit can be Hour/Day/Week/Month/Year.
- The box lists the Time of Triggering. You can add or remove the triggering time in the cycle.



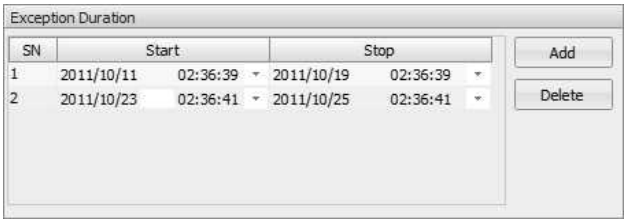
- By Excel File

	A	B	C	D	E	F	G	H
1	2011.1	24HR						
2	1	08:00:00	09:00:00	10:00:00	11:00:00	12:00:00	13:00:00	14:00:00
3	2	08:00:00	09:00:00	10:00:00	11:00:00	12:00:00	13:00:00	14:00:00
4	3	08:00:00	09:00:00	10:00:00	11:00:00	12:00:00	13:00:00	14:00:00
5	4	08:00:00	09:00:00	10:00:00	11:00:00	12:00:00	13:00:00	14:00:00
6	5	08:00:00	09:00:00	10:00:00	11:00:00	12:00:00	13:00:00	14:00:00
7	6	08:00:00	09:00:00	10:00:00	11:00:00	12:00:00		

It allows to set the triggering times by using an excel file. The rules are listed below:

- Field A1 is the "Year. Month" for scheduling. Note: Refer to the format as shown in the picture above.
- B1 ~ X1 is the field for time format, there are two choices:
  - 24HR
  - AM/PM
- A2 ~ A 32 represents the day of a month.
- For each row, B to X fields are the time to be triggered.

❖ Exception Duration

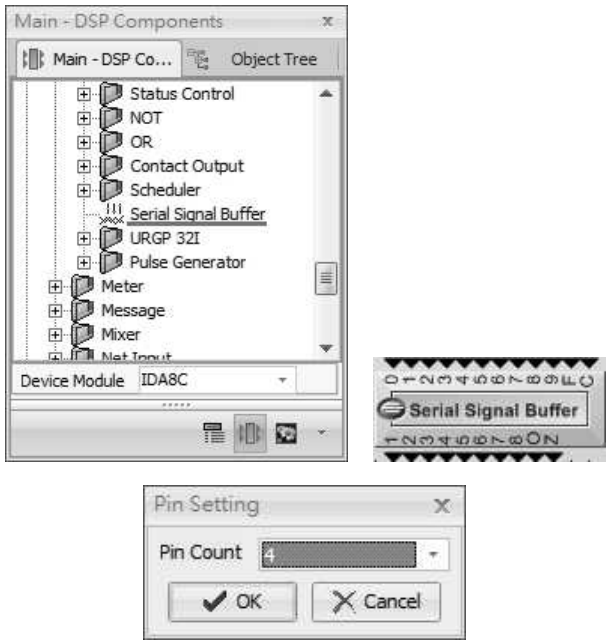


- The "Exception Duration" allows to edit a list for the exceptions of the triggering. Each exception consists of a start time and a stop time. During the exception time all triggering will be masked.

6.13.24 Serial Signal Buffer

Used for converting the decimal code to the binary code. After dragging this component to the configuration window, the [Pin Setting] window will be displayed, choose the number of pin, and click [OK] to proceed.

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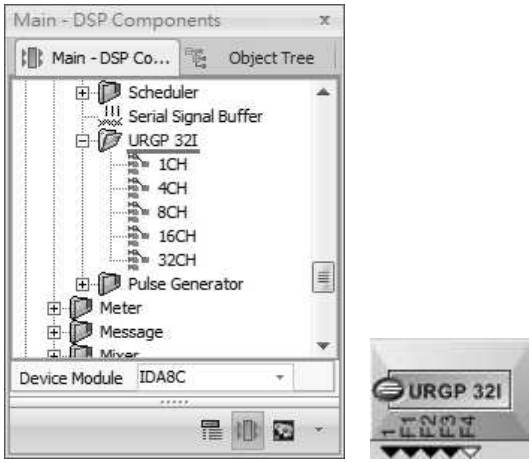
- Pin Count: Choose the binary code of the output.
- F Pin: Output the binary codes/binary combinations which are converted from decimal codes/ decimal combinations after the F Pin is triggered.

The higher of the Pin count indicates higher priority of decimal codes.

  - Pin 1: LSB stands for the first priority of decimal codes.
  - Pin 4: MSB stands for second priority of decimal codes.
- C Pin (Clear): All the decimal combinations will be 0 (clear away) if the C Pin is triggered.
- O Pin (Overflow): If the output range of decimal combinations are more than the range of binary codes, the O Pin will output a pulse as a warning.
- Z Pin (Zero): If the total output of decimal combination is 0, the Z Pin will output a pulse as a notification.

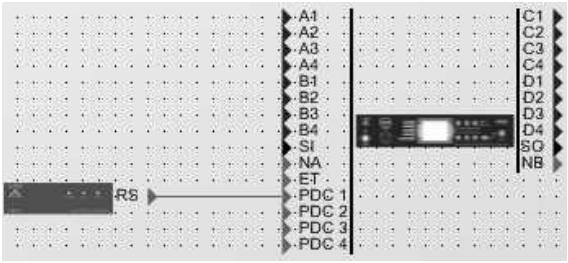
6.13.25 URGP-32I2O

This component corresponds to URGP-32I2O peripheral devices, which offers more logic input channels of audio processor.

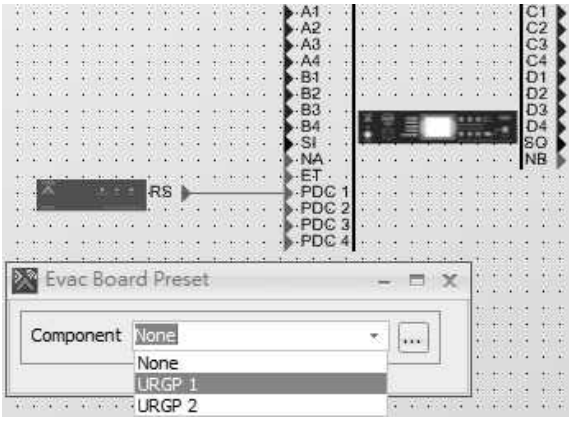


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- Drag the URGP-32I2O device icon from the configuration file, and connect it to PDC port. See the picture on the right.



- Double click the URGP-32I2O device icon to open a setting window, them you can choose which URGP-32I2O component you want to connect to. See the picture on the right.

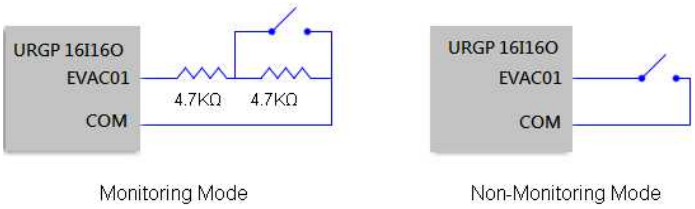


❖ Control Window



❖ Parameters

- Monitor Mode: Enable/disable the external device monitoring. If this option is enabled, it needs two 4.7k Ohm resisters in the external device circuit.



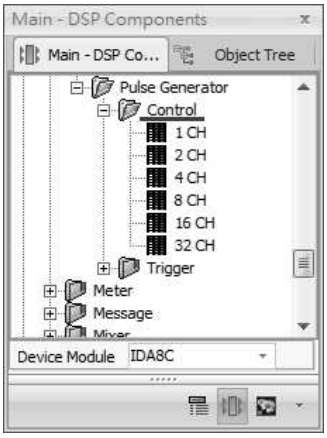
- Type: Specify the mode of activation. There are two choices:
  - Open(Lo): Normally open, close the contact to the output signal.
  - Close(Hi): Normally close, open the contact to the output signal.
- Status: Show states of the external device. There are four states:
  - Open: An open circuit of external device is detected.
  - Short: A short circuit of external device is detected.
  - Activate: The logic output is active.
  - Deactivate: The logic output is deactivated.

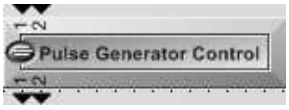
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6.13.26 Pulse Generator

6.13.26.1 Control

The Pulse Generator Control component is a component which gives pulse. Note: The connected input pin is a high active pin and gives pulse when deactivating.





❖ Control Window

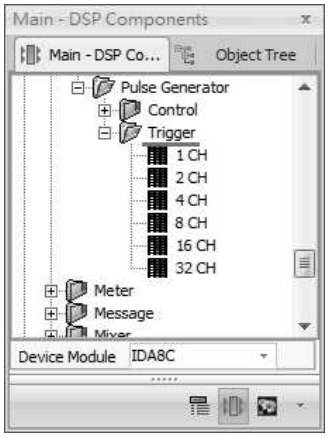


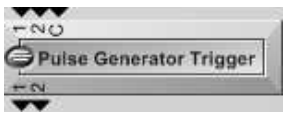
❖ Elements

- High Time(sec)/Lo Time(sec): The Hi time and Lo time of output pulse.

6.13.26.2 Trigger

The Pulse Generator Control component is a component which gives pulse, and can also set the number of pulse time. Note: The connected input pin will be triggered and give pulse when it's in raising edge.





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❖ Control Window

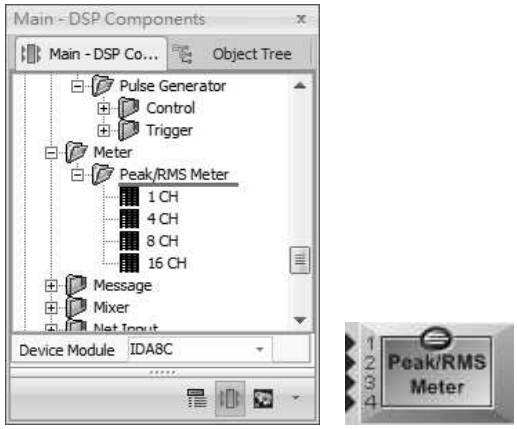


❖ Elements

- High Time(sec)/Lo Time(sec): The Hi time and Lo time of output pulse.
- Count: Set the number of pulse time.
- C Pin (Clear): If you want to stop and clear the setting of pulse count from [Count] function, the C Pin will trigger a raising edge. Once the pin is triggered, the number of count will be cleared as 0(The count will remains back to the same counts on Control window for the next time).

6.14 Meter-Peak/RMS Meter

Display the amplitude of the incoming audio signal. There are two approaches available for measuring the signal. The first one is RMS which is often used to measure complex waveforms especially for non-repeating signals like noises. The other is Peak approach.



❖ Control Window



❖ Elements

- Indefinite: Block the display of level value.
- Measure Type: The type of measuring.
- Hold Time: The time the value is displayed.
- Volume: Measures the value of the signal.

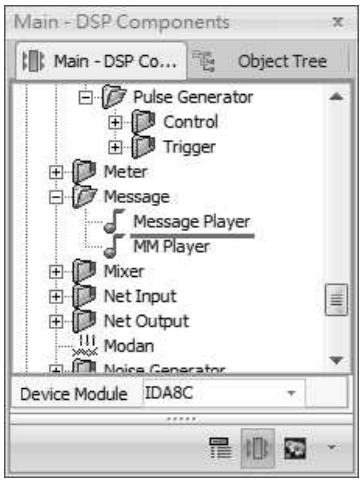
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6.15 Message

6.15.1 Message Player

This component plays the audio message files stored in your Ateis devices. It allows multiple events binding with a message in the event list. Each event can be assigned for triggering source. If there is more than one event triggered in the same message player component, the event with the highest priority will play the message.

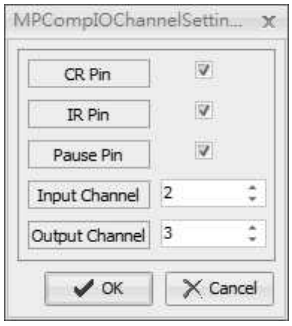
The smaller value has the higher priority.







- Once you drag and drop the component, you can set component pins. See the picture on the right.



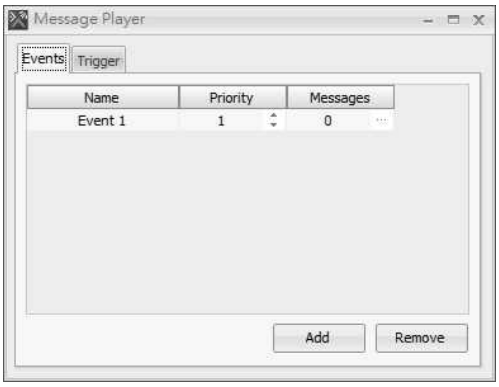
- CR Pin: Cancel the event for triggering messages and clear all of the logic signals.
- IR Pin: Interrupt. This will interrupt the messages and not play the messages.
- Pause Pin (P): Trigger P pin is used for stopping/continuing the messages, it will restart exactly where you paused.
- Input Channel: The number of trigger channels.
- Output Channel: The number of channels of message playing.

The [Message Player] component will occupied with 1 x message channels, please refer to Message Limitation chapter.

❖ Control Window

- Event: Double click the message player to open the window shown as below.

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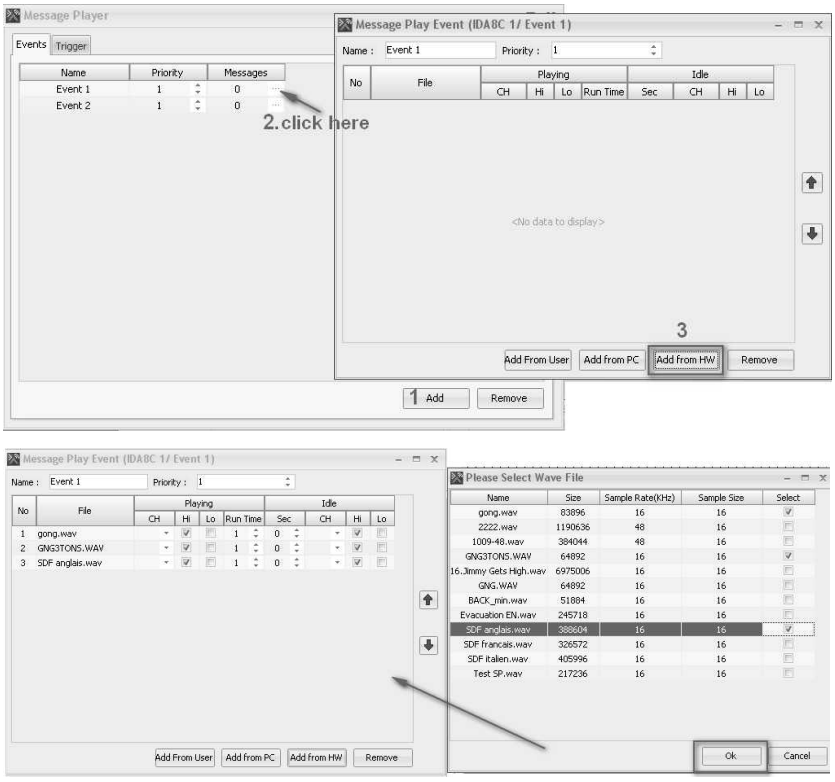


❖ Elements

- Name: Rename the event.
- Priority: The priority of Event. No matter which one is triggered first, the Event with the higher priority will take priority.
- Messages: The total messages in this event.

❖ Add an event by clicking [...] in Messages grid to open "Message Play Event" window.

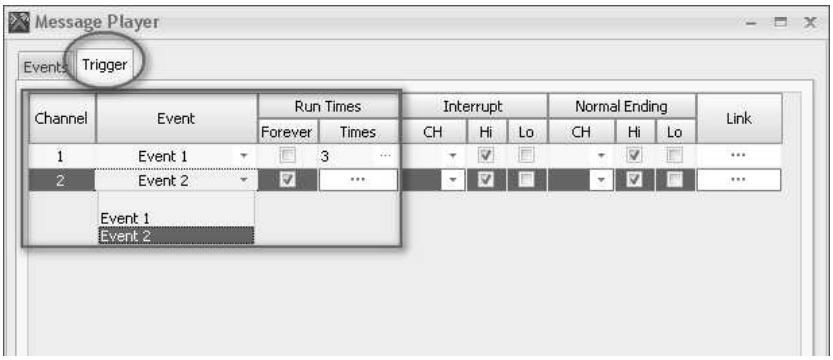
- Click [Add from HW] and select messages. Note: The current support audio formats are WAV (16K 16bit, 24K 16bit, 48K 16bit) and G722.
- At last, click [OK].



❖ Trigger Tab

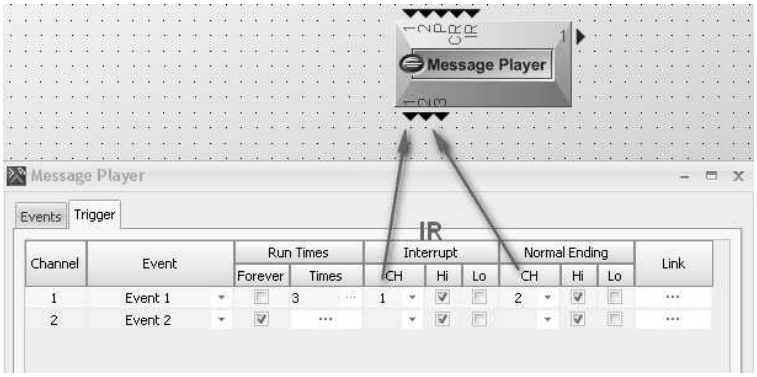
- Click [Trigger] tab and you can see 2 channels. That means “input channel=2” of your setting.
- Click [Event] drop-down list and select the event and its run times.
- See the example as below, when channel 1 is triggered, the Event 1 will run 3 times.

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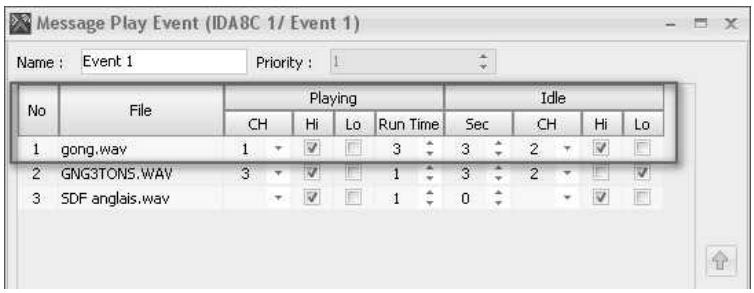


- Set the logic out signal:

  1. Interrupt: If the IR trigger interrupts the Event 1, the logic output CH 1 will send a signal "High".
  2. Normal Ending: If the Event 1 is set to end normal ending and not interrupted or cleared, the logic output CH 2 will send a signal "High".



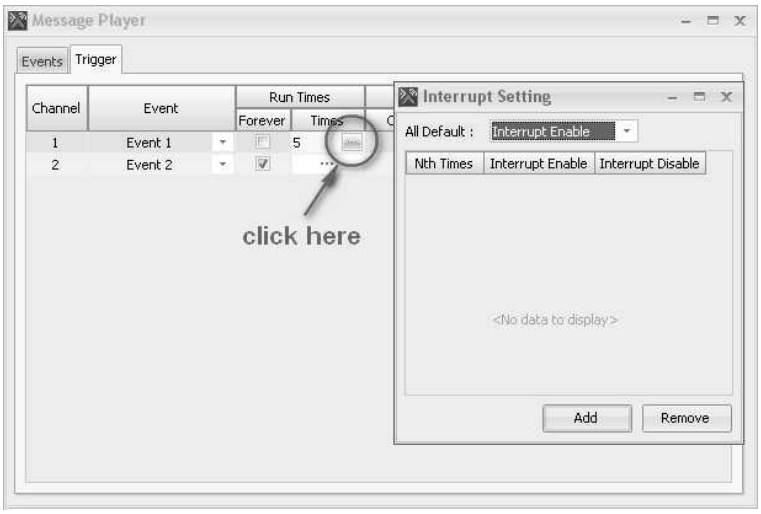
  1. Playing: When the first message(gong.wav) is playing, the logic output Ch1 will send a signal "High".
  2. Idle: After playing gong.wav for 3 times, it will idle for 3 seconds before playing the next message (GNG3TONS.WAV). During the idle time, the logic output Ch2 will send a signal "High".



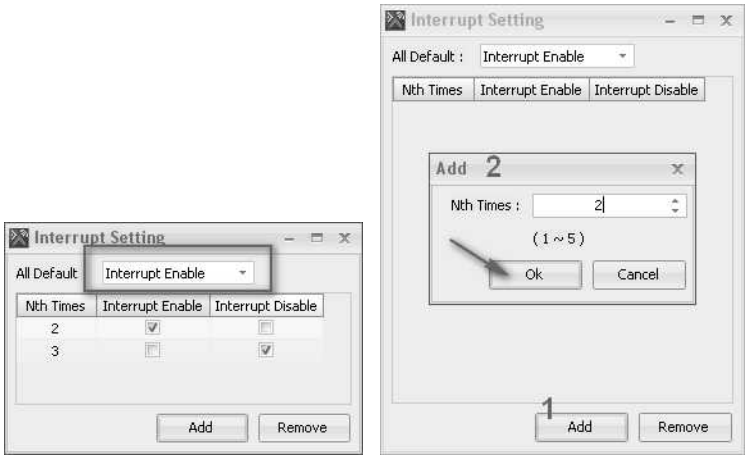
- Interrupt Enable/Disable:

  Open the window of Interrupt Setting to add items.

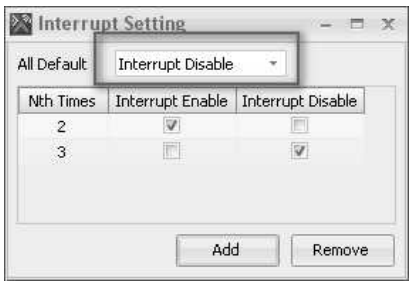
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- Interrupt Enable: When interrupt is enabled, it means that except the "Nth times" you set, the others would be interrupted. For example, only the 2nd times won't be interrupted. See the picture below.



- Interrupt Disable: This different from the Interrupt Enable is only the Nth times you set will be interrupted.

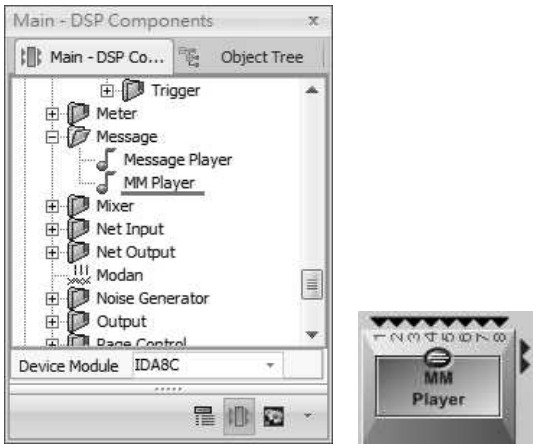


6.15.2 MM Player

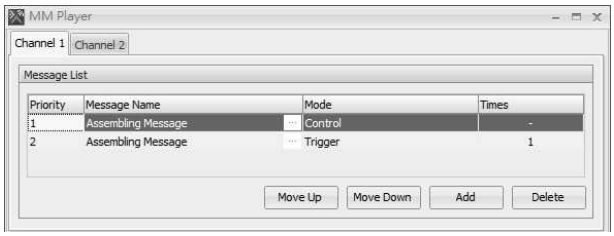
This component plays the messages stored in the Ateis device. It allows to set the playing sequence of messages and play through the logic signal input of component.

The [MM Playeer] component will occupied with 1 or 2 message channels, please refer to Message Limitation chapter.

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❖ Control Window

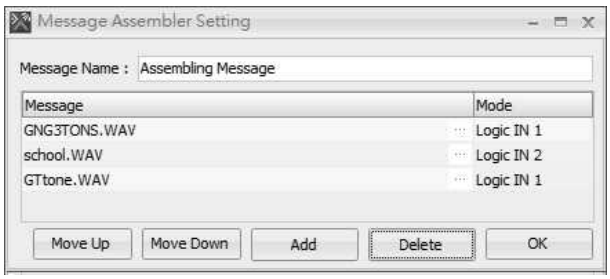


❖ Elements

- Priority: The priority depends on the list order.
- Message Name: Click [...] to manage the messages stored in the device or PC.
- Mode: Choose the mode of playing messages.
- Control: Control by the Logic signal. The signal will be high when the message is playing, and will stop if it is low.
- Trigger: Play the message in "1 + the Times you set". For example, it will play 5 times if you set 4 at the last column.
- Times: Set for trigger.

❖ Control Window

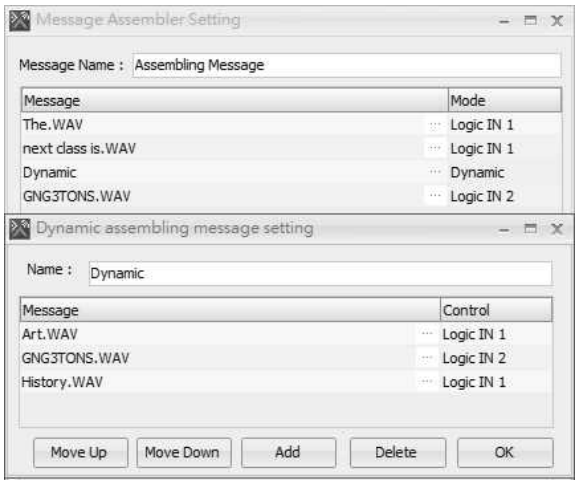
You can set the Message play list from the setting window as below.



❖ Elements

- Mode:
  - Logic Input: Choose Logic IN1~ IN8 to control the message play, If you set more than one messages on the same Logic input. it will play those messages in order.
  - Dynamic: Use dynamic to manage the messages. Choose Dynamic and click [...] to open [Dynamic assembling message setting] window. See the picture below.

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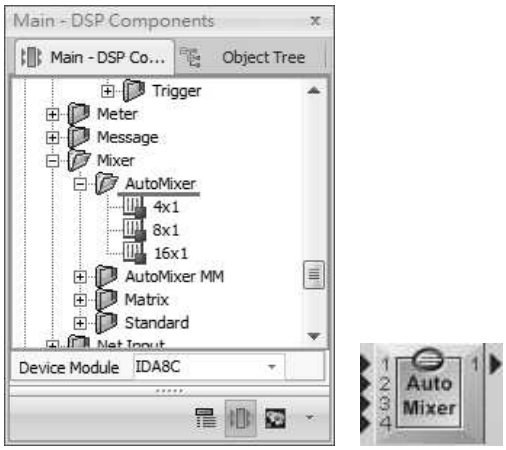
Here is an example for explaining the order of play with Dynamic.Once the Logic IN 1 is high, it will play "The"+"next class is"+"Art", then, "The"+"next class is"+"History".

6.16 Mixer

6.16.1 AutoMixer

This component mixes several signals to one output. The activation of channel(s) can be done manually/automatically by a signal and the priority.

The auto mixer adjusts the signal output level on the output node depending on the number of activated input channels.



❖ Control Window



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❖ Element Description

- Type:
  - Manual: Manually activate the channels(the threshold and priority are ignored).
  - Automatic: Channels are activated depending on the priority and threshold.
- Last Mic. On Designated: Define which channel will stay open (only if "Last Mic. On" is activated).

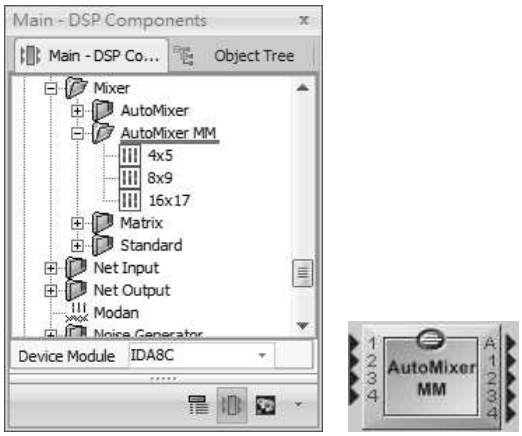
⚠ The channel will stay open if it's muted.

- Mute: Mute/unmute the channel input.
- Invert: Invert the polarity of the input channel.
- Solo: Solos the input channel (the channel goes directly to the output).
- Gate On: Display the activation status of input channel.
- Level: Adjusts the level of output channel.
- Manual Mode: This item is only used in manual mode, which allows manual channel activation.
- Automatic Mode Priority Level: Set the priority level of channel.
- Output Mute: Mute/unmute the module's output.
- Output Level: Set the output level of this module.
- Threshold: Sets the threshold for channel activation.
- Background Threshold: Set how the input signal will be interpreted for opening a gate. The background level will increase the input activation level.
- Hold Time: Set the threshold for channel activation.
- Attenuation Response Time: Set a pre-delay time for automatic attenuation. That means the transition time of attenuation when a channel is added/removed.
- Attenuation Gain: The amount of current gain reduction.
- Open Mic. Limits: Choose the max. number of activated channels.
- NOM Attenuation Mode: Choose this mode if you want a linear attenuation or a logarithmic attenuation to be more realistic.
  - Eq1: (NOM-1) x step (same attenuation for each additional channel).
  - Eq2: log2 (NOM) x step.

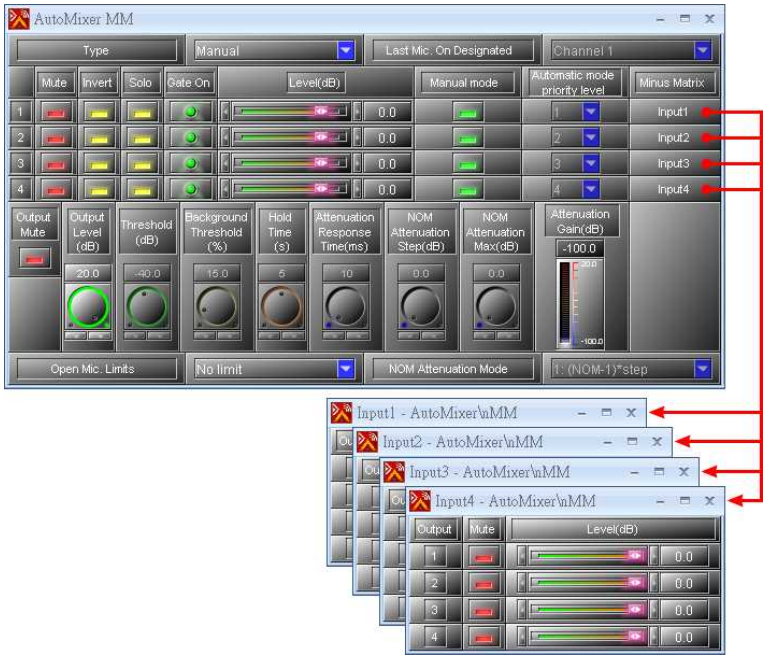
6.16.2 AutoMixer MM

This component allows mixing several signals to one output. The activation of channel(s) is depended on threshold value and the priority setting. The output 1 is the standard auto-mixer output like the auto-mixer component. On each input channel, you can open a mini-mixer which allows you to send the input signal to different outputs with different levels of mixing.

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❖ Control Window



❖ Element Description

- Type:
  - Manual: Manually activate the channels (the threshold and priority are ignored).
  - Automatic: Channels are activated depending on the priority and threshold.
- Last Mic. On Designated: Define which channel will stay open (only if "Last Mic. On" is activated).

⚠ The channel will stay open if it's muted.

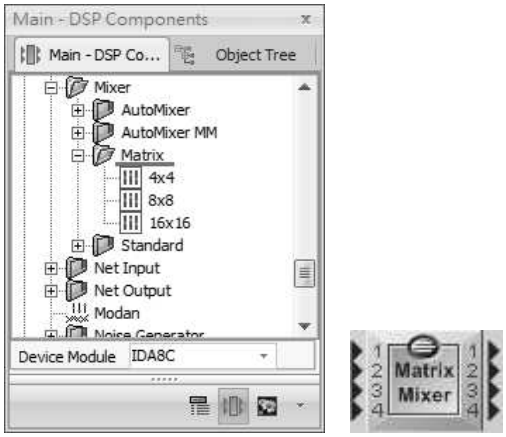
- Mute: Mute/unmute the channel input.
- Invert: Invert the polarity of the input channel.
- Solo: Solos the input channel (the channel goes directly to the output).
- Gate On: Display the activation status of input channel.
- Level: Adjusts the level of output channel.
- Manual Mode: This item is only used in manual mode, which allows manual channel activation.

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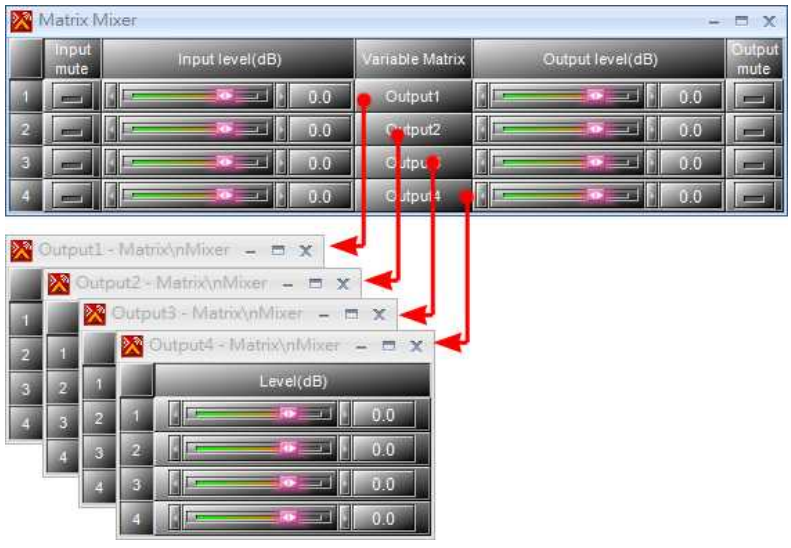
- Automatic Mode Priority Level: Set the priority level of channel.
- Output Mute: Mute/unmute the module's output.
- Output Level: Set the output level of this module.
- Threshold: Sets the threshold for channel activation.
- Background Threshold: Set how the input signal will be interpreted for opening a gate. The background level will increase the input activation level.
- Hold Time: Set the threshold for channel activation.
- Attenuation Response Time: Set a pre-delay time for automatic attenuation. That means the transition time of attenuation when a channel is added/removed.
- Attenuation Gain: The amount of current gain reduction.
- Open Mic. Limits: Choose the max. number of activated channels.
- NOM Attenuation Mode: Choose this mode if you want a linear attenuation or a logarithmic attenuation to be more realistic.
  - Eq1: (NOM-1) x step (same attenuation for each additional channel).
  - Eq2: log2 (NOM) x step.

6.16.3 Matrix

Allow to mix the signals together and route the source signals to external processing components.



❖ Control Window



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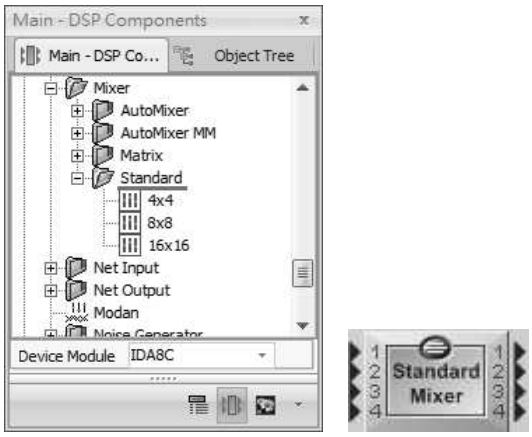
- Click [Output(n)] buttons under the label 'Variable Matrix' to open the sub-control windows of output channels.
- Create an individual mix of the input signals independently for the specified output. By default all levels are set as 0 dB which means that all audio signals at the input are mixed with no attenuation and appear like this on every output.

❖ Element Description

- Input Mute: Mute/unmute the channel input.
- Input Level: Mute/unmute the channel input.
- Output Level: Set the master output level of the channel.
- Output Mute: Mute/unmute the channel output.
- Matrix Output Level: Set the input level on the particular output channel for mixing.

6.16.4 Standard

The matrix module is similar to the standard mixer. The main difference is that there is no ability to make independent mixing for each output channel. So the module primarily used for simple routing purposes.



❖ Control Window



❖ Element Description

- Input Mute: Mute/unmute the channel input.
- Input Level: Set the input level of the channel.
- Output Mute: Mute/unmute the channel output.
- Output Level: Set the master output level of the channel.

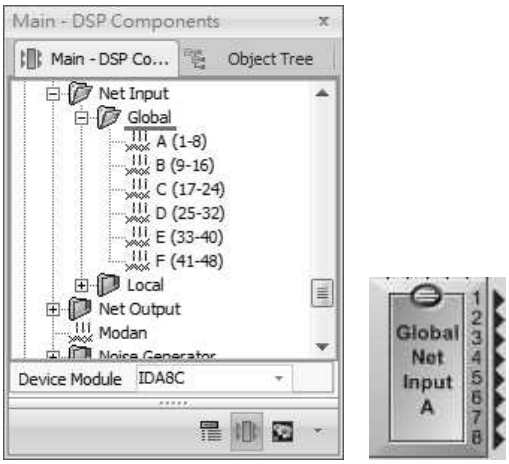
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- Routing: Turns on/off the input on the particular output channel.

6.17 Net Input

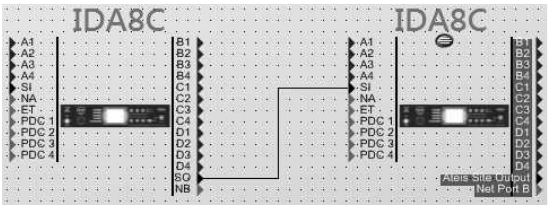
6.17.1 Global Net Input

This component transfers the audio signals over Ateis Net. The signal goes into a channel of Net Output component and retrieves from the output with the same channel or any other Net Input component (the signal path is one to many relationship). There are up to 48 channels available to carry signals, and the number of channels will be distributed based on the number of channels you set on Audio Channel Setting option.

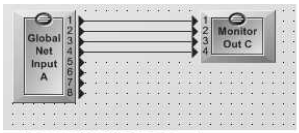


❖ The diagram below shows a example using IDA8 devices to show the configuration of the Net Input and Net Output components.

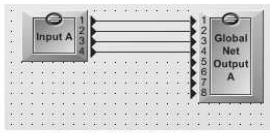
- In Device editing window, create an IDA8C and an IDA8SAB. Connect the SO to SI pin to create a Ateis Net system.



- In the DSP design window of IDA8C, it utilizes the Net Input/Output channel 1 to transport audio signal from Input A channel in IDA8C(1,1) to Output C channel in IDA8C(2,1).



IDA8C (1,1) DSP Design



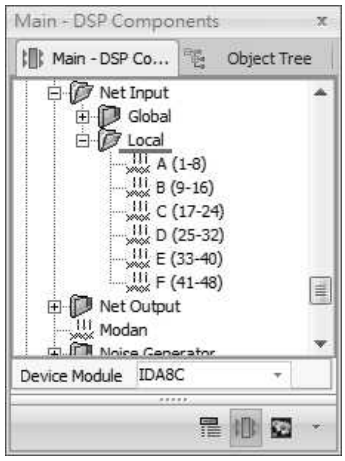
IDA8C (2,1) DSP Design

Please check and set the number of paging source from Audio_Channel_Settings window chapter and make sure the number you set is correctly distributed.

6.17.2 Local Net Input

This component transfers the audio signals over Ateis Net. The signal goes into a channel of a Net Output component and retrieves from the output with the same channel or any other Net Input component (the signal path is one to many relationship). There are up to 48 channels available to carry signals, and the number of channels will be distributed based on the number of channels you set on Audio Channel Setting option.

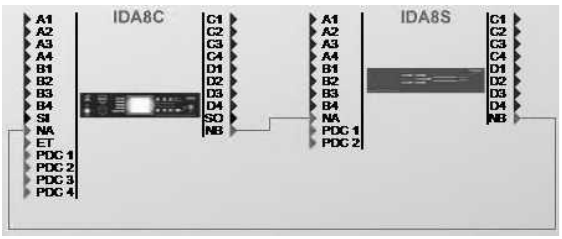
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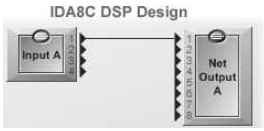


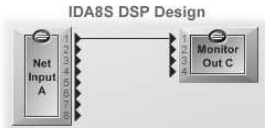
❖ The diagram below shows a example using IDA8 devices to show the configuration of the Net Input and Net Output components.

- In Device editing window, create an IDA8C and an IDA8SAB. Connect the NB to NA pins to create a Ateis Net system.



- In the DSP design window of IDA8C, it utilizes the Net Input/Output channel 1 to transport audio signal from Input A channel in IDA8C to Output C channel in IDA8SAB.



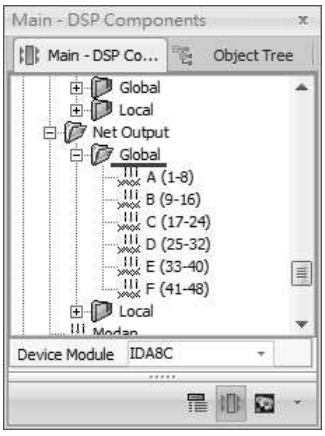


Please check and set the number of paging source from Audio_Channel_Settings window chapter and make sure the number you set is correctly distributed.

6.18 Net Output

6.18.1 Global Net Output

This component transfers audio signals over Ateis Net. It must work with Net Input. Please go to Global Net Input for details.

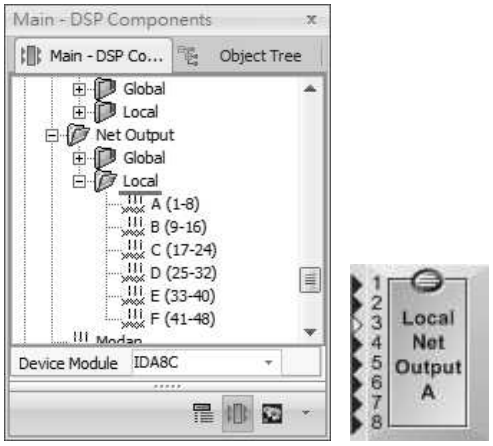




6.18.2 Local Net Output

This component transfers audio signals over Ateis Net. It must work with Net Input. Please go to Local Net Input for details.

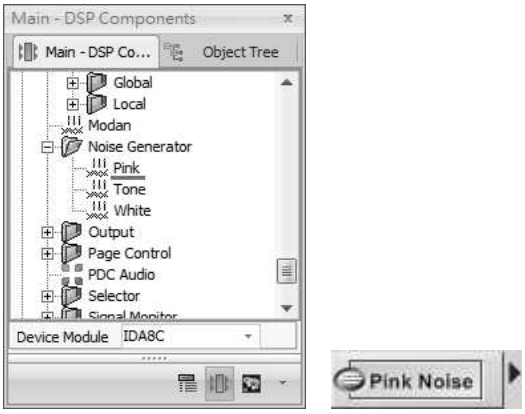
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6.19 Noise Generator

6.19.1 Pink

Pink noise or $1/f$ noise is a signal or a process with a frequency spectrum. In pink noise, each octave carries an equal amount of noise power.



❖ Control Window



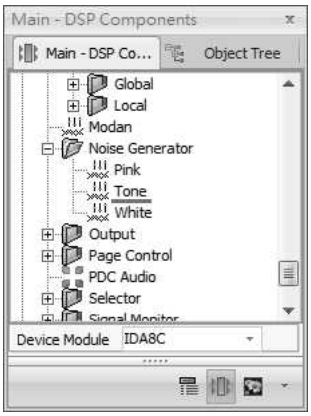
❖ Element Description

- Mute: Mute the sound coming out from the component.
- Level: The level of the pink noise.

6.19.2 Tone

Generates either tone (single frequency) or sweep sequence (between two fixed frequencies and in a defined interval of time).

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❖ Control Window

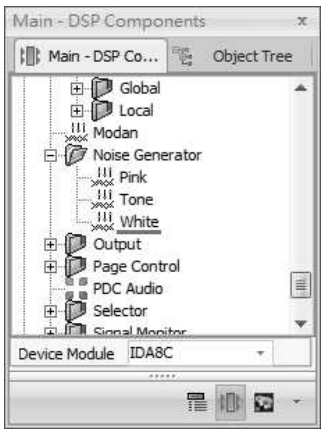


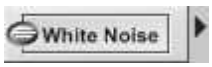
❖ Element Description

- Level: The level of signal.
- Tone freq.: If the Tone mode is activated, this item needs to be selected.
- Start freq.: If the Tone mode is activated, this item needs to be selected.
- Stop freq.: Select the maximum frequency for Sweep mode.
- Inc. Time: Select the time between the frequency changes in Sweep mode.
- Mute: Mute the sound coming from the component.
- Sweep: Activate the Sweep mode (sweep of frequency).
- Tone: Activate the Tone mode (one single frequency played).
- Sweep Type: Choose the interval between Min and Max frequencies (1Octave, 1/3 Octave etc.).

6.19.3 White

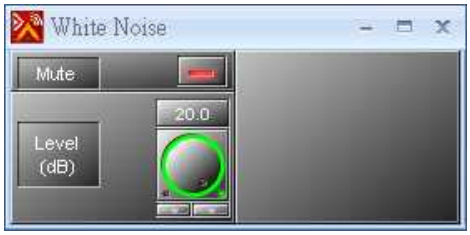
This component generates a White noise. The White noise is a random signal (or process) with a flat power spectral density. In other words, the signal contains equal power within a fixed bandwidth at any center frequency.





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❖Control Window



❖Element Description

- Mute: Mute the sound coming from the component.
- Level: The level of the white noise.

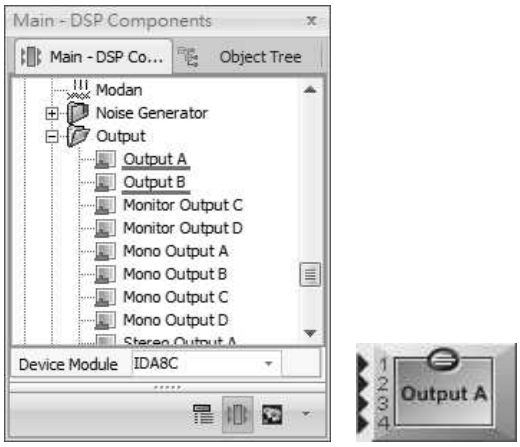
❖Application

For example, it can be used to set up the equalization for a concert or other performance in a venue. A short burst of white or pink noise is sent through the PA system and monitored from various points in the venue, so that the engineer can tell if the acoustics of the building naturally boost or cut any frequencies. The engineer can then adjust the overall EQ to ensure a balanced mix.

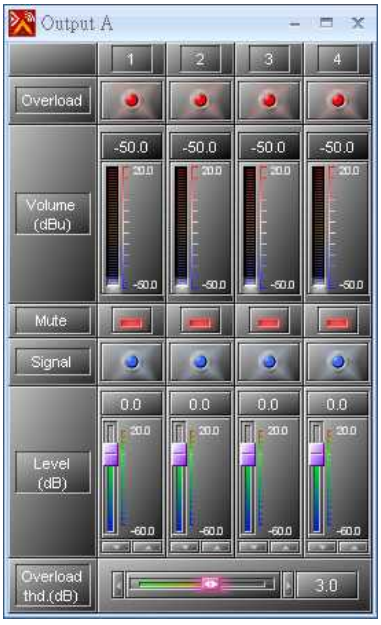
6.20 Output

6.20.1 Output

The analog output modules represent the physical analog outputs accessible on the rear panel of device.



❖Control Window



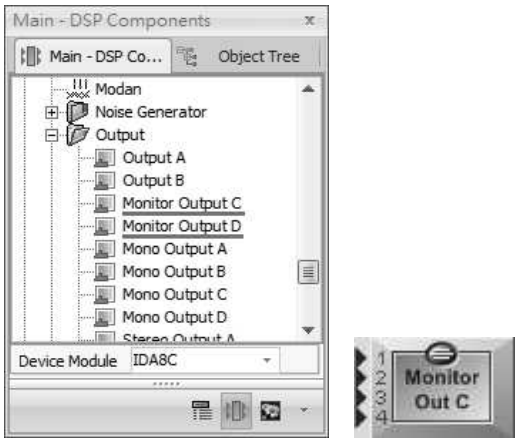
❖Element Description

- Overload: The channel level above the chosen Overload Threshold.
- Volume: The meter shows the channel level.
- Mute: Mute/unmute the output channel, the LED lights in red while the channel is muted.
- Signal: Indicate if a channel is activated or not.
- Level: The level of signal output of the module.
- Overload thd.: Set the threshold of the overload indicator.

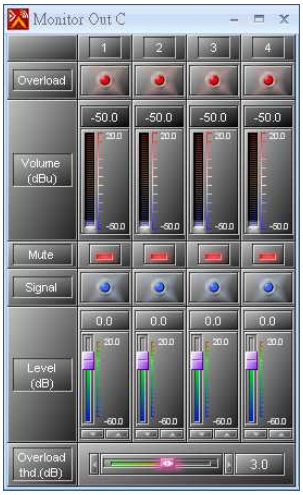
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6.20.2 Monitor Output

The monitor output modules represent the amplifier zone output accessible on the rear panel of the device. There are 2 separate modules for use with the zone boards 1 and 2.



❖ Control Window

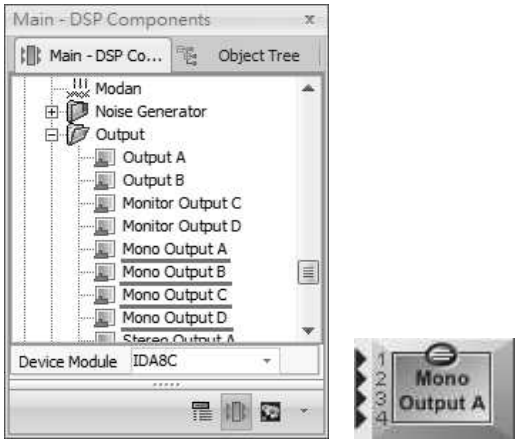


❖ Element Description

- Overload: The channel level above the chosen Overload Threshold.
- Volume: The meter shows the channel level.
- Mute: Mute/unmute the output channel, the LED lights in red while the channel is muted.
- Signal: Indicate if a channel is activated or not.
- Level: The level of signal output of the module.
- Overload thd.: Set the threshold of the overload indicator.

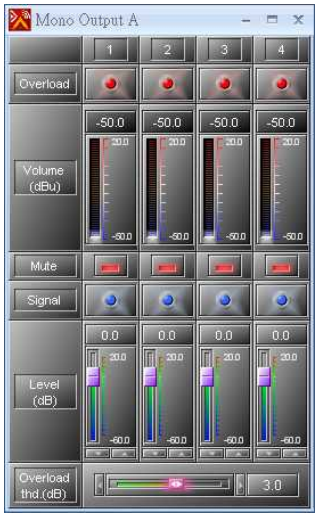
6.20.3 Mono Output

For AES/EBU output, the mono output modules represent the physical outputs accessible on the rear panel of the device. There are several separate modules for use with each of the audio boards.



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❖ Control Window

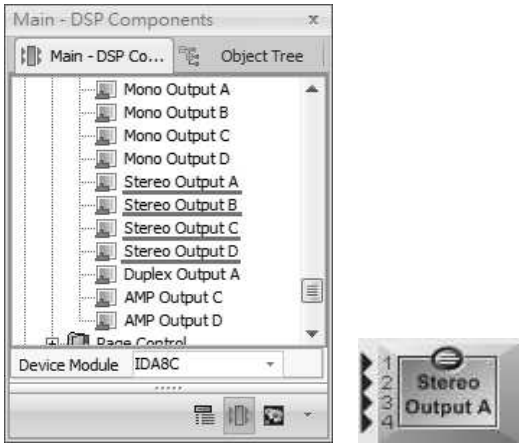


❖ Element Description

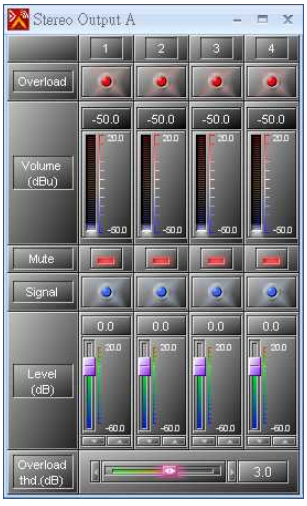
- Overload: The channel level above the chosen Overload Threshold.
- Volume: The meter shows the channel level.
- Mute: Mute/unmute the output channel, the LED lights in red while the channel is muted.
- Signal: Indicate if a channel is activated or not.
- Level: The level of signal output of the module.
- Overload thd.: Set the threshold of the overload indicator.

6.20.4 Stereo Output

For AES/EBU output, the stereo output modules represent the outputs accessible on the rear panel of the device. There are several separate modules for use with each of the audio boards.



❖ Control Window



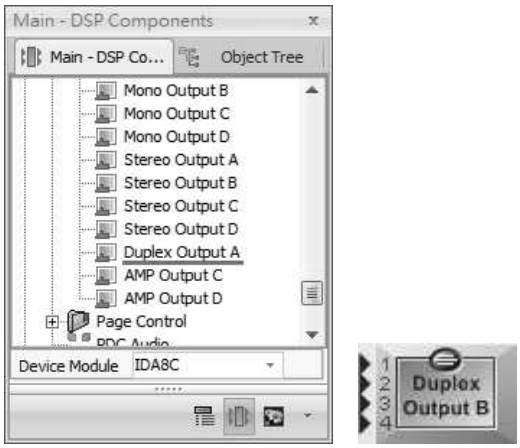
❖ Element Description

- Overload: The channel level above the chosen Overload Threshold.
- Volume: The meter shows the channel level.
- Mute: Mute/unmute the output channel, the LED lights in red while the channel is muted.
- Signal: Indicate if a channel is activated or not.
- Level: The level of signal output of the module.
- Overload thd.: Set the threshold of the overload indicator.

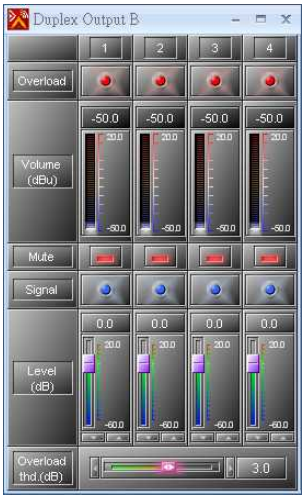
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6.20.5 Duplex Output

For AES/EBU output, the duplex output modules represent the physical outputs accessible on the rear panel of the device. There are several separate modules for use with each of the audio boards.



❖ Control Window



❖ Element Description

- Overload: The channel level above the chosen Overload Threshold.
- Volume: The meter shows the channel level.
- Mute: Mute/unmute the output channel, the LED lights in red while the channel is muted.
- Signal: Indicate if a channel is activated or not.
- Level: The level of signal output of the module.
- Overload thd.: Set the threshold of the overload indicator.

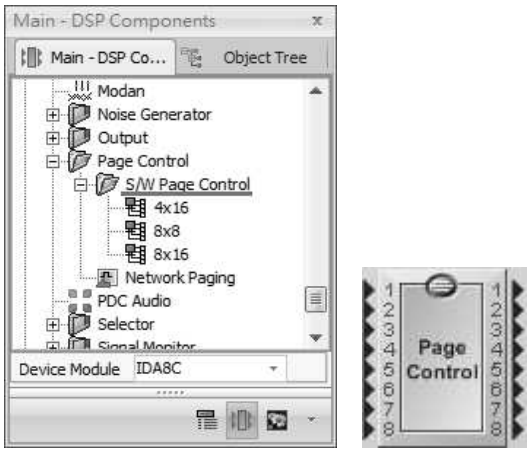
6.21 Page Control

6.21.1 S/W Page Control

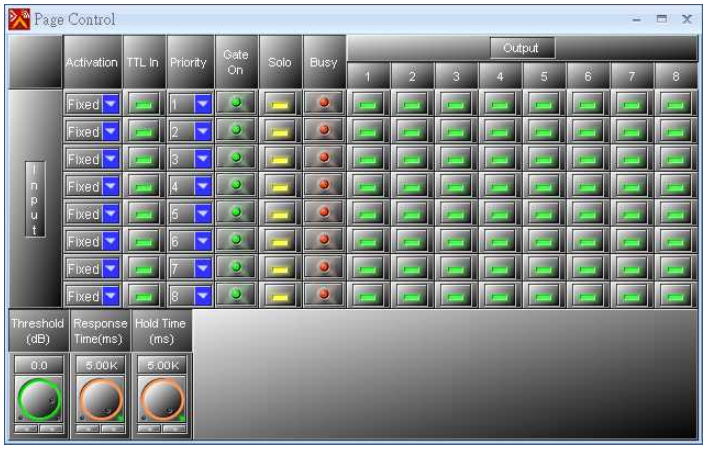
Allow to activate and route the audio inputs to the outputs.

This is not a mixer, only one input can be routed to an output.

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❖ Control Window



❖ Element Description

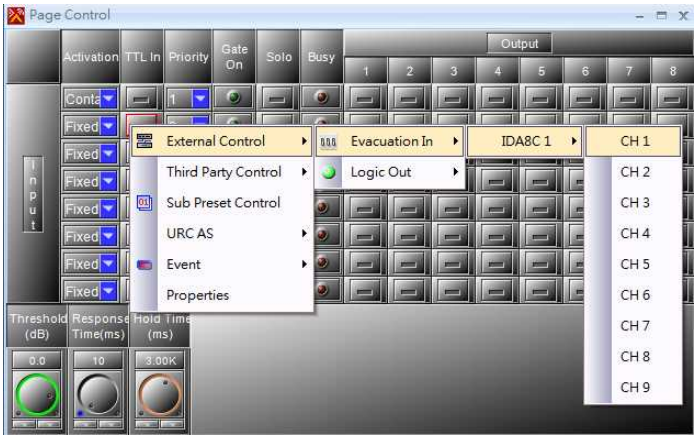
- Activation: The activation type of routing.
  - Fixed: The input channel will be routed to the chosen output channel(s) which users have selected on [Output].
  - Vox: When the input level is above the threshold which is set in [Threshold] setting, the input channel will be routed to the chosen output channel(s) which users have selected on [Output].

Please note the activation of [Vox] type will be decided by the settings of [Threshold], [Response Time] and [Hold Time].

  - Contact: When the [TTL In] button is pressed and activates the gate of routing from the input channel to the output channel(s) which users have selected on [Output].
  - Vox + Contact: When both [Vox] type and [Contact] type are present, the chosen output channel(s) which users have selected on [Output] will be routed.
- TTL In: Activate the gate of routing from the input channel to the output channel(s) which users have selected on [Output].

You can right click the [TTL In] button to assign which output channel will be triggered by which EVAC input of IDA8 processor, see the picture as below,

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- Priority: When multiple input channels are being triggered, the channel which has higher priority and will be routed first.
  - The smaller the number is, the higher the priority is.
  - The priority basis will be based on first-in, first-served if the priority among the conflicted input channels are the same.
- Gate On LED: This LED will light up when the input channel is triggered and its gate of routing is activated.
- Solo: Activate the [Solo] button to forbid other input channels to route to output channel if an input channel has been activated to route to output channels, even though the chosen output channel of each input channel does not conflicted.
- Busy: Light up if the gate of input channel is open, but this channel can not be routed because the other input channel with higher priority has been activated already.
- Output (channel output): The chosen output channel(s) will be routed when the input channel is activated
- Threshold (dB): When the level of input channel is above this [Threshold] setting, the gate of routing will be activated.
- Response Time (ms): If the level of input channel is continually greater than the [Threshold], and has passed the [Response time] setting, the gate will be opened.
- Hold Time (ms): If the level of input channel is less than the [Threshold], this [Hold time] setting is to keep the gate continually open after no input signal is detected.

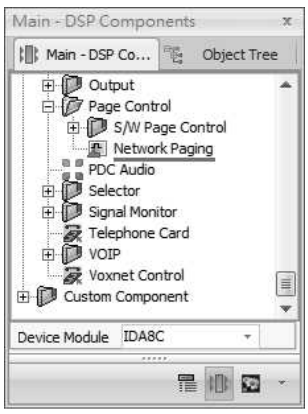
❖ Application

You cannot have two input channels mixed to an output (even if they have the same priority). In this case, the busy LED of the lower channel number will light up and these channels won't be routed. Each output works separately. On each one output, only the channels with the gate ON and with the highest priority will be routed.

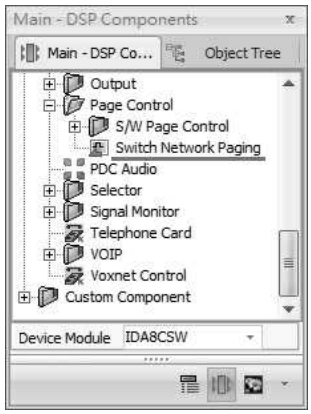
6.21.2 Network Paging (Matrix & Switch Mode)

The Network Paging component routes the input source signal to zones using priority arbitration. The pins at the left represent the paging sources and the pins at the right are zones. The pins on top allow to control the paging activity and the pins on the bottom are the output logic signals which tell the status of paging activity.

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[Matrix]

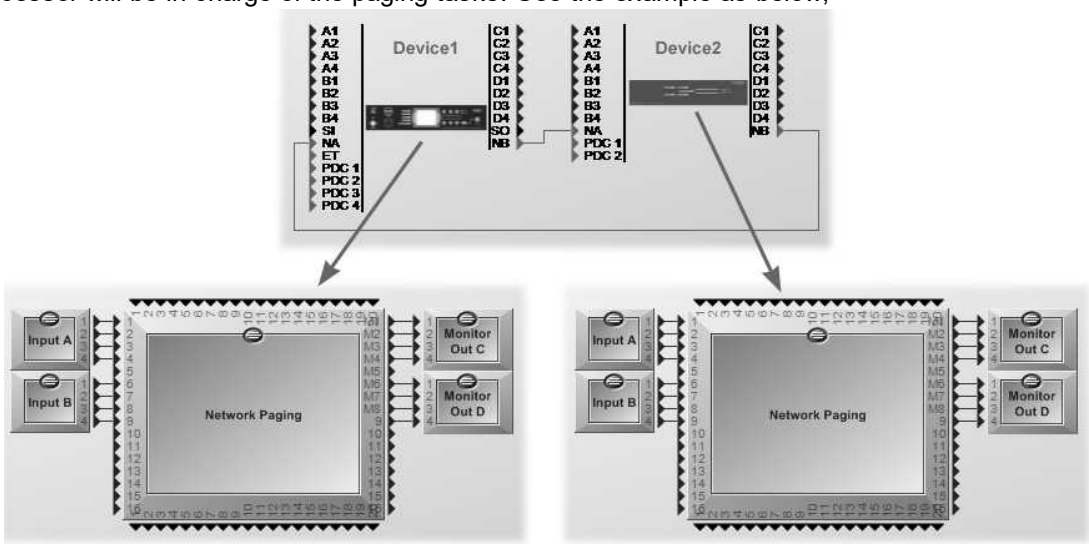


[Switch Mode]



6.21.2.1 Network Cascading Paging

Some applications like PA station system requires a huge number of zones for paging by connecting to multiple Ateis audio processors via Ateis Net. The Network Paging configuration of every audio processor will be in charge of the paging tasks. See the example as below,

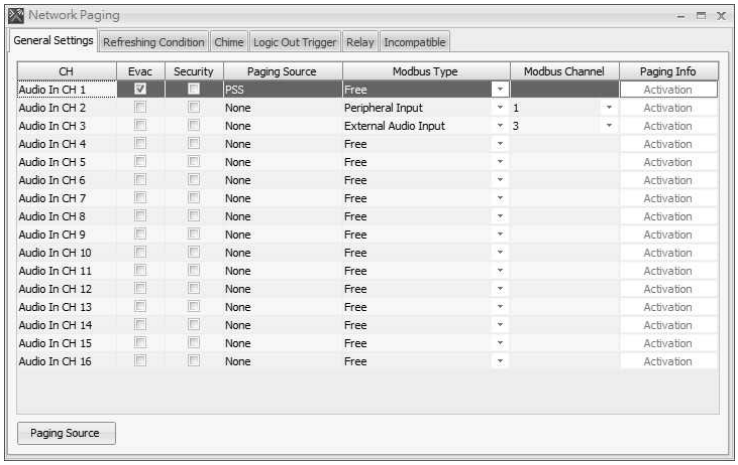


- Double click the Network Paging component to open the settings window, the following sections will describe the parameters of each tab.

The Network Paging component will occupied with 2 x message channels, please refer to Message Limitation chapter.

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6.21.2.2 General Settings

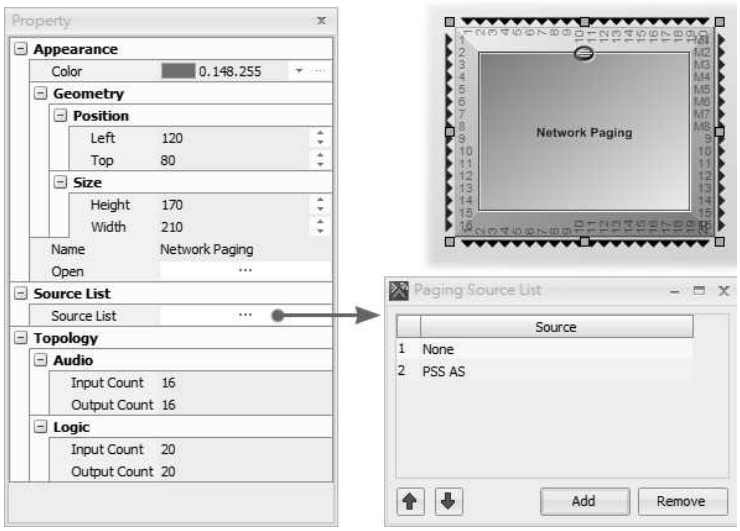


- Evac: Enable to set the paging source as an evacuation source. If the Evac source is activated during paging, the device will show this "LED GLOBAL EVAC" state on IDA8 front panel. Also, this activity will be logged.
- Security: Tick the checkbox to change into security type, which the paging function will still function for the selected audio channel.
- Paging Source: Assign the paging source which have added on [Paging Source] window to the corresponded channel. This Paging Source function needs to be worked by using Relay on [Relay] tab together, please refer to Relay function as below.
- Modbus Type: Set the source type for 3rd party controller using Modbus protocol to get data from Ateis devices.
- Modbus Channel: Set the source channel information for 3rd party controller using modbus protocol to get data from Ateis devices.
- Paging Info (activation): Click to open a window for further settings as shown in the picture below.

6.21.2.3 Source List

A source list allows to assign the paging source (from 1 to 16 channel). If a zone is under the paging status, the zone needs to know which paging source comes from.

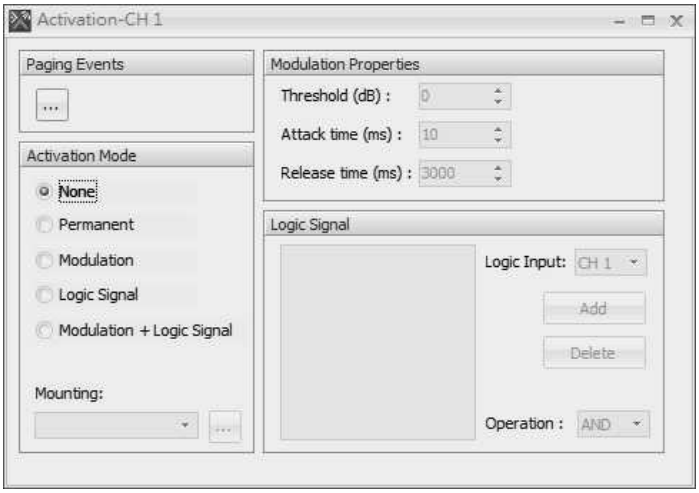
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1. Right click the Network Paging component to open [Property] window, then click [...] Source List to oepn [Paging Source List].
2. Click Network Paging component on DSP design window, and click [Paging Source] button to add/remove the paging source.

Check how source list apply in General Setting.

6.21.2.4 Paging Info-Activation

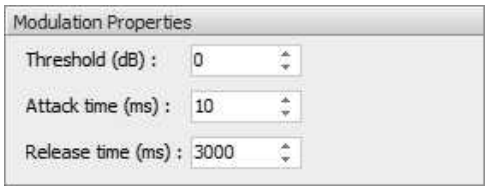


- Paging Event:

  Binds a paging event for the zone selection. Only events with a singular type are selectable. See the section "Zone and Priority" below for more details about the paging events.

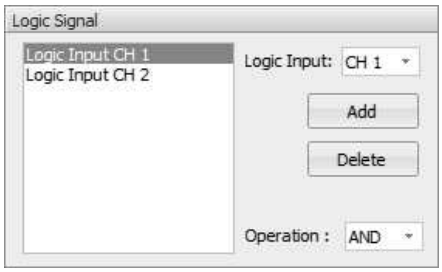
- Activation Mode:
  - None: If you want to paging using the control console like PPM-AS or PSS-AS, which the paging request is not coming from component itself.
  - Permanent: The paging source is always requested for paging such as background music.
  - Modulation: Paging request is recognized/released if the conditions on [Modulation Properties] are satisfied.

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Modulation Properties

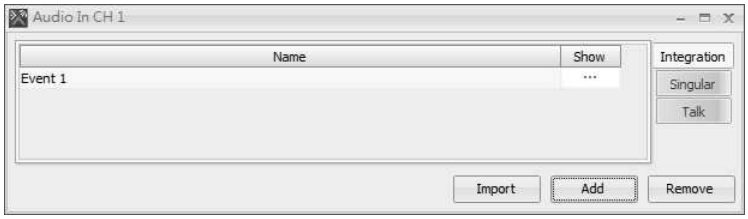
- Logic Signal: Paging request is established depending on the logic signal(Low to High or High to Low) of an input.



The settings allow you to put multiple channels to perform a logic operation AND/OR to determine the paging activities.

- Modulation + Logic Signal: Under this mode, IDA8 decides to request a paging if both the modulation and logic signal conditions are satisfied. It releases a paging request if one of the conditions is achieved.

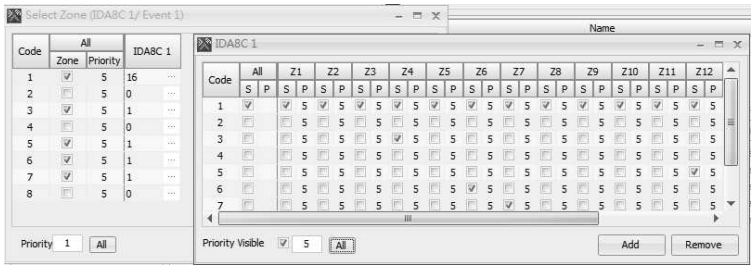
6.21.2.5 Zone and Priority



This section is about the zone section of a paging request, and to specify the priority for judgment if there are zones conflict with another paging source which occupies it. There are two types of paging events, Integration and Singular.

6.21.2.6 Integration

An Integration paging event has multiple codes for zone selection. This is for each code which is able to assign the key of control consoles such as PPM-AS and PSS-AS. Click [....] button on Show grid, a setting window will be displayed as the picture below.



- Setting
  - Code: A zone combination or a selection of zone. See the example above, the zone

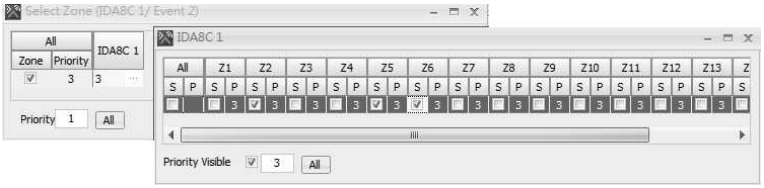
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combination of code is (Z1, Z2, and Z3) which means zone 1, 2 and 3 will be selected when requesting to paging.

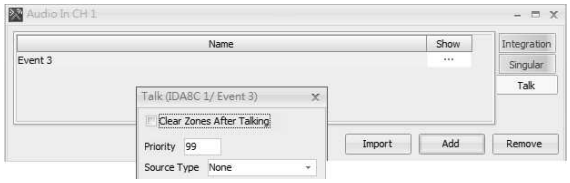
- All (Source/Priority): Select all the zones.
- Zone Selection: Tick the checkbox to set a zone in a code.
- Priority: A priority value per zone along with the code. If more than one source is attempting to paging to the same zone, IDA8 will decide which source for paging by priority value.
- Priority Visible: A checkbox to show/hide the priority setting inside the grid.
- All: Set the same priority value for all the zones.
- Add: Add codes to event.
- Remove: Remove the selected code.

6.21.2.7 Singular

The Singular paging event is similar to Integration event except it "has one code only".



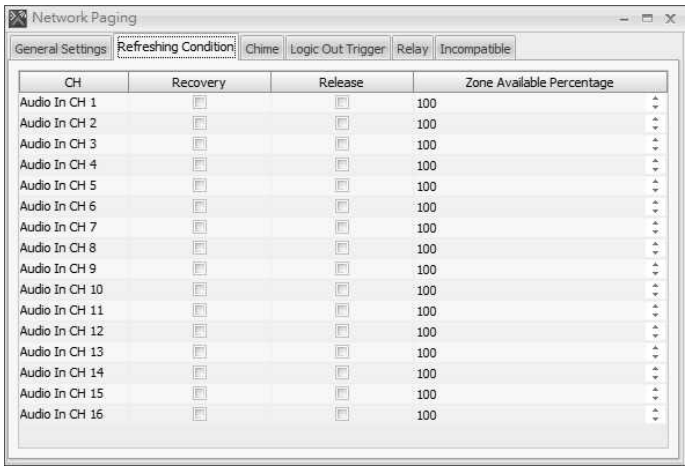
- Talk: For triggering the paging directly (it needs to be used altogether with [Event Trigger] component or mount (assign) to the event key of PSS-AS/PPM-AS, etc.



- Clear Zones After Talking: Tick to clear the zone selection after paging.
- Priority: Choose the priority order of Talk Event.
- Source Type: Assign the source type of Talk Event.

6.21.2.8 Refreshing Condition

The behavior setting of a paging request and the zone available condition.



- Recovery: To let the paging source returns as active source when their paging event has finished.

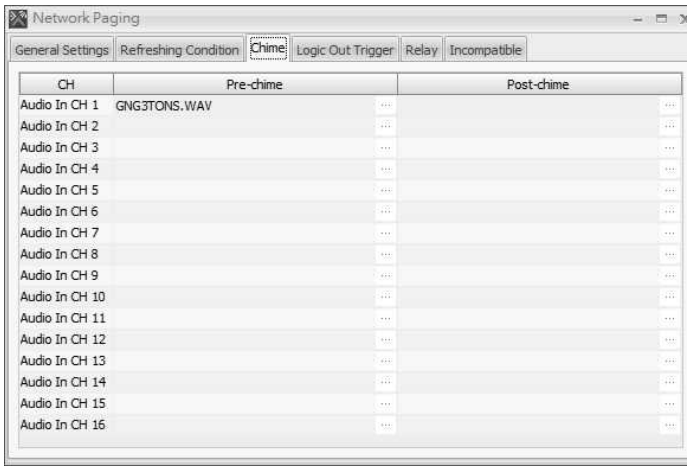
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The occupied zone will return to active source if both options "Recovery" of the activated source and "Release" of releasing the source are enabled.

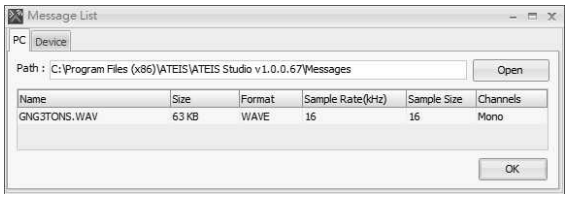
- Release: To let the paging source releases the zone to other active sources after finishing its paging session.
- Zone Available Percentage: Set a paging request which can be allowed/denied by percentage. If the percentage of available zones is bigger than the number set at "Zone Available Percentage", the paging event will succeed. On the opposite, the paging request will be denied.

The available zones means the selected paging zones are not occupied by other sources or not occupied by other sources with lower priority.

6.21.2.9 Chime

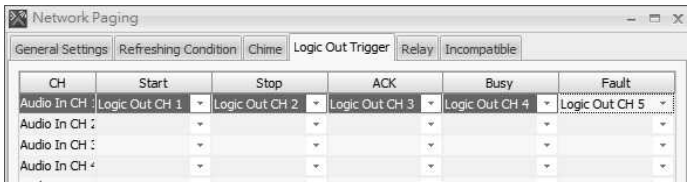


- The chime can be set as pre-chime and post-chime. Click [Chime] tab first, then click the [...] button on the grid to open the Message List window.



- Select the name of chime file from [Device] tab. The [PC] tab is only for displaying the listed chime file.

6.21.2.10 Logic Out Trigger

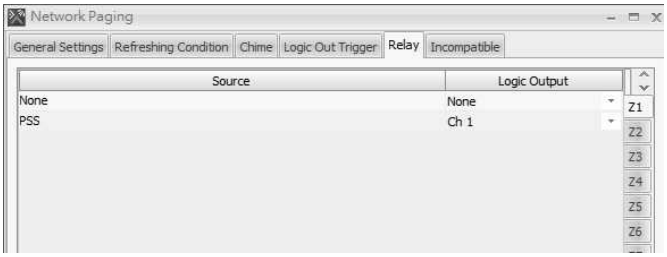


There are 20 channel logic outputs for each Network Paging component.

- Start/Stop: Generate a pulse to a logic out when a paging begins/stops.
- ACK: The logic output stays High during the paging session.
- Busy: All the selected zones which are occupied by the other source with higher priority.
- Fault: The logic output stays High if any of the selected zones have fault.

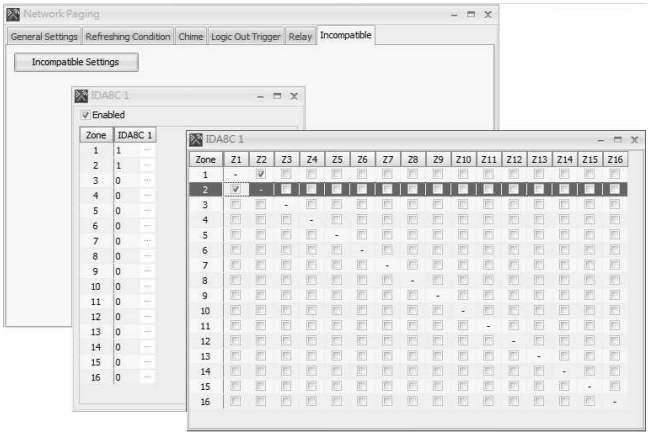
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6.21.2.11 Relay



- This Relay function needs to be worked with Paging Source function together. Check the content of creating source list and apply it here.
- It is able to output a logical High to a specific output channel in condition of a zone is occupied by a specific source. From the picture on the left, the Logic Output of channel 1 will stay High if the Z1 (Zone 1) is occupied by the paging source of PSS-AS.

6.21.2.12 Incompatible



When the zones are under paging, and do not wish other sound from other paging zones close to the current paging zone disturbed or covered their own paging sound. Then users can use the Incompatible function to avoid this kind of situation.

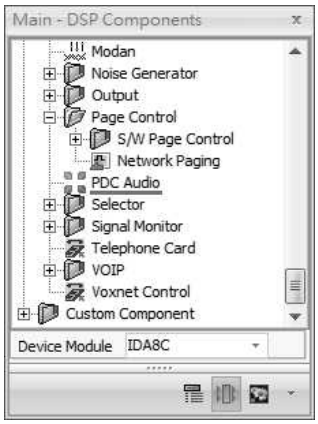
- Enabled: Tick to enable this Incompatible function.
- Zone checkbox: Set the paging zones which users wish not to be disturbed during the paging status.
- Please see the example picture on the left, when the zone is paging and Zone 2 (Z2) has been selected for not to paging, the other paging sources cannot be paging to Zone 2 (Z2), except one condition that the paging source is higher than the paging source of Zone 1 (Z1). Another example, when Zone2 (Z2) is paging, other paging sources cannot be paging to Zone1 (Z1). And in this case, Zone (Z1) and Zone (Z2) will not be proceed paging at the same time.

6.22 PDC Audio

6.22.1 PDC Input

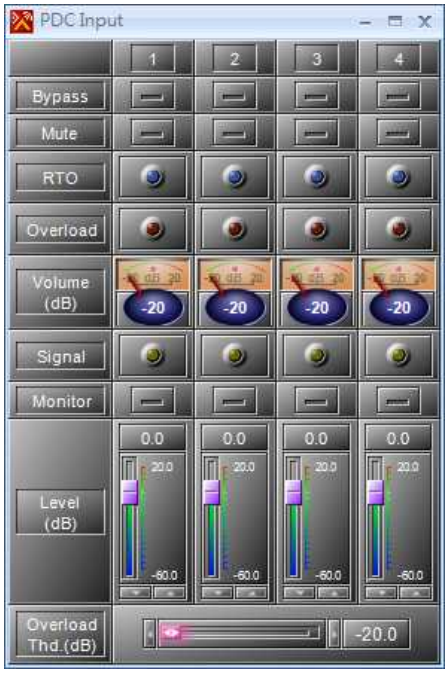
This component controls and monitors the PDC input signal parameters. The input component represents the physical analog inputs accessible on the PDC port of the Audio Processor. There are four ports (A to D) which represent different channels of the PDC port. Some consoles like PSS-AS which transfers audio signals via PDC port. To process an audio signal with another DSP component, you need to create a DPC Input component in the design window.

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❖ Control Window



❖ Element Description

- Bypass/Mute: Disable/mute the audio channel.
- RTO: An input channel 'Routed To Output(s)'.
- Overload: Light up if the signal of an input channel is bigger than Overload Thd.
- Volume: The VU-Meter shows the channel of RMS level.
- Signal: Light up if the audio signal presents above -30 dB from the chosen 'Sensitivity'.
- Monitor: Monitor if the PDC cable is open or short. When there's fault, IDA8 system will report [PDC Error] fault.

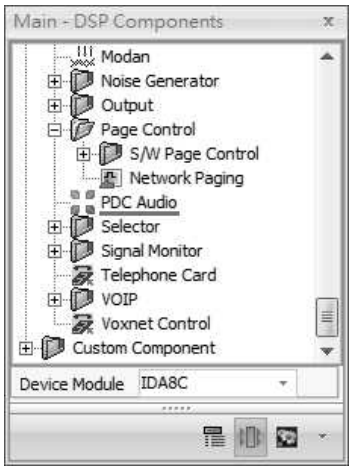
The CD8-AS, CD16-AS, PSS-AS and CD-TOUCHAS support this monitor function.

- Level: The signal output level of channel.
- Overload Thd.: A threshold value to determine if the signal of a channel is overloaded or not.

6.22.2 PDC Output

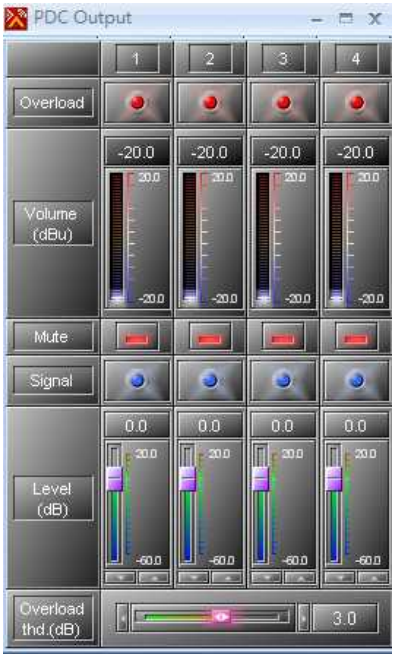
This component controls and monitors the PDC output signal parameters. The output component represents the physical analog inputs accessible on the PDC port of the Audio Processor. There are four ports (A to D) which represent different channels of the PDC port. Some consoles like PSS-AS which transfers audio signals via PDC. To outputs an audio signal via PDC port, you need to create a PDC output component in the design window.

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❖ Control Window

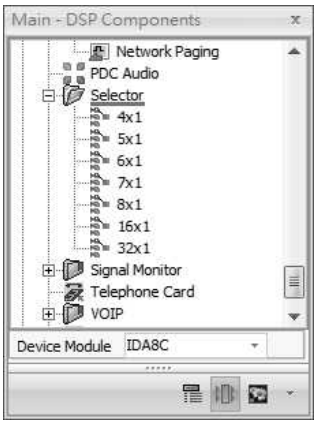


❖ Element Description

- Overload: Light up if the signal of an input channel is bigger than Overload Thd.
- Volume: The VU-Meter shows the channel of RMS level.
- Mute: Mute the audio channel.
- Signal: Light up if the audio signal presents above -30 dB from the chosen 'Sensitivity'.
- Level: The signal output level of channel.
- Overload Thd.: A threshold value to determine if the signal of a channel is overloaded or not.

6.23 Selector

A simple selector allowing the user to select which input is routed to the single output.





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❖Control Window

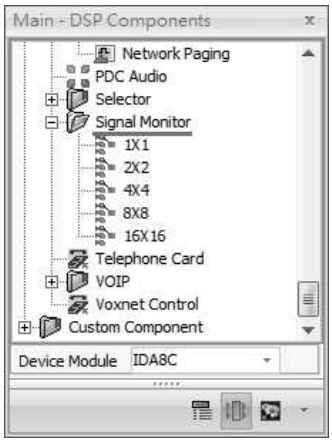


❖Element Description

- Input Select: Open the drop-down list to select the input.

6.24 Signal Monitor

This component detects the input signal and shows its active status. If the condition is satisfied the element "Trigger On" will be set to On and the logic output channel will be set to High.





❖Control Window



❖Element Description

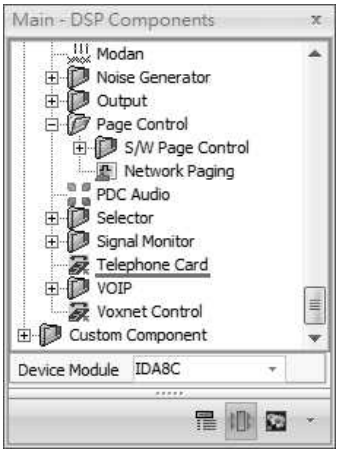
- Trigger On: Light up If the input signal is activated or not.
- Threshold: Determine if the audio input is activated or not.
- Volume: The volume of input signal.
- Response Time: Determine if an audio input is activated or not.
- Hold Time: Determine if an audio input is activated or not.

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6.25 Telephone Card

6.25.1 TC Transmit

Allow the Ateis device to dial/receive phone calls. It needs to work with the telephone card.





❖ Pins at the Top

- Rd: Redial when the state of signal is from low to high.
- F: Flashes when making a 3-way calling. Active if state of signal from lo to hi.

❖ Pins at the Bottom

- Rd: The telephone line(RJ11 connector) connection is correct.
- S: Whether the set port is connected to the telephone or not.
- F: The telephone line(RJ11 connector) connection is failed.
- C: The caller and receiver are in the conversation at the moment.
- D: The receiver hasn't picked up the call which is calling by IDA8C.
- Ri: The calling to IDA8C hasn't been picked up yet.
- B: The telephone line of receiver is busy now.

❖ Control Window



- Dial: This button can be used as [Dial] or [Receive] a phone call.
- Hang up: Hang up the call.

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- Digit Keys: 16 digit keys includes the numbers from "0" to "9", symbols "*" and "#", letters from "A" to "D".
- Current Number: Record the numbers which are dialed or displayed the incoming calls.
- Back: Erase the last digit of current Number.

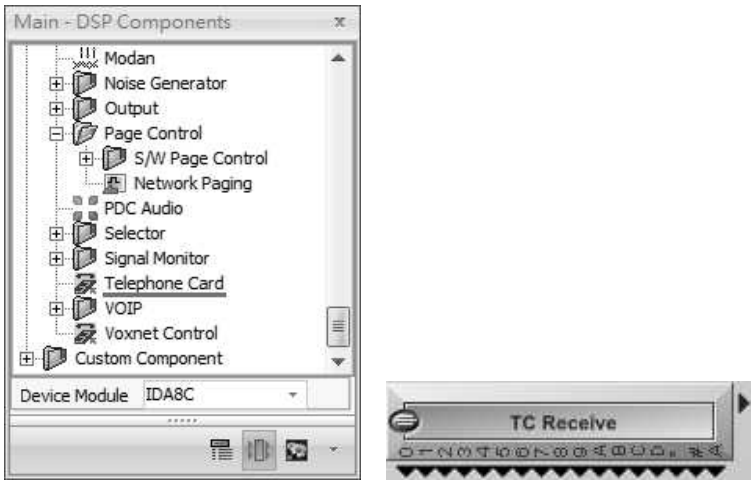
A long press by pressing and holding the [BACK] button will delete all the dial numbers.

- Last Number: Display the number of last call.
- Redial: Redial the last number.
- Dialing: The status of telephone card is dialing.
- Ringing: An incoming call needs to be received.
- Set: Light up if the external telephone set doesn't connect to the telephone card.
- Ready: Light up when the telephone line and CAT5 cable connection are connected to the system unit.
- Connect: Light up after a few seconds of the dialing call.
- Busy: Light up if the telephone remote is in busy status and is not allowed to receive any other calls.
- MCU: Function Reserved.
- Fault: Light up if there is an error on telephone line.
- Mute: Mute the transmitting audio.
- Flash: Allow a 3-way telephone conversation. Press this button during the conversation of the first remote phone, and dial the number of the second remote telephone. Once the second remote accepts the call, press [FLASH] button again and start a 3-way telephone conversation.
- Level: Adjust the level of transmitting audio.
- Delay Key Define: Define the key for delay time. For some telephone systems, it will needs to dial 0 for an outside line before dialing the required number. Between 0 and the outside phone number, it requires a short delay. In this case, you can define and select the digit signal included " A,B,C, D,*,# " and delay time(sec) for your preference. For example, the digit signal you select is " # ", the dial numbers should be "0#XXXXXXXXX" where X is the outside phone number you want to call.
- Delay Time: Select the delay time for a delay digit.

6.25.2 TC Receive

Receive a telephone call and detects if a DTMF tone output logic signal responded to the key pressing on remote telephone. It needs to work with the telephone card.

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- The pins of the component will output the DTMF status.
  - 0~9, A~D,* and #: The status of DTMF code.
  - A: Indicates as "Any" pin; when any of the DTMF code is pressed for dialing, the A pin will be triggered.

❖ Control Window



- Caller Mute: Mute the audio of a caller.
- Caller Level: Adjust the audio level of a caller.
- Ring Mute: Mute the ring audio.
- Ring Level: Adjust the level of a ring.
- DTMF: If the caller presses any key on its phone after an incoming call was received, the telephone card will detect and display the numbers that have been triggered on the control window and change the status of the logic output corresponding to the detected number.
- History: Display the history of DTMF numbers from an incoming call.
- Auto Answer: The mode of action for answering incoming calls. There are two types of modes:
  - Manual: Press the Dial button on the control window of TC Transmit for receiving calls.
  - After N Rings: The telephone receives the calls automatically after ringing N times.
- Hang up sound times: Select the hang up times after hanging up the call.
- Disable Hang up sound: Disable the function of hang up sound times.
- Noise Suppression: Enable/disable the noise suppression function to dynamically filter out the

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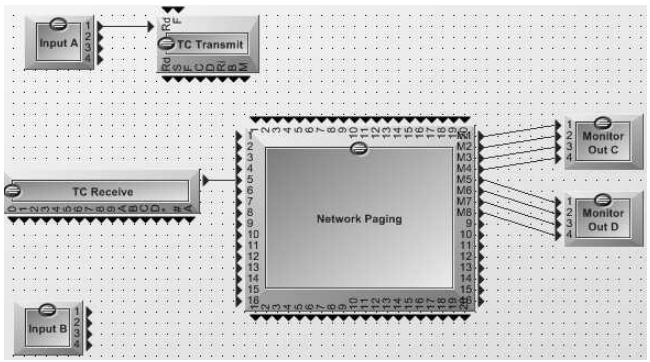
noise.

- Line Echo Cancellation: Enable/disable the echo cancellation function to dynamically pick-up all possible echo source.
- Voice Enhance: Enable/disable the voice enhance function to dynamically enhance the level of human voice.
- Hang Up Delay(sec): After the phone hangs up, IDA8 will not end the broadcast immediately but delay for a few seconds before ending the broadcast.
- Paging Method: Select the element of network paging to allow ulti-paging via dialing the telephone numbers.
  - [Digit Length]: Enable/disable setting fixed digit quantity of phone key to identifying paging zone. Please select [Length] function on [Paging Method] option first.

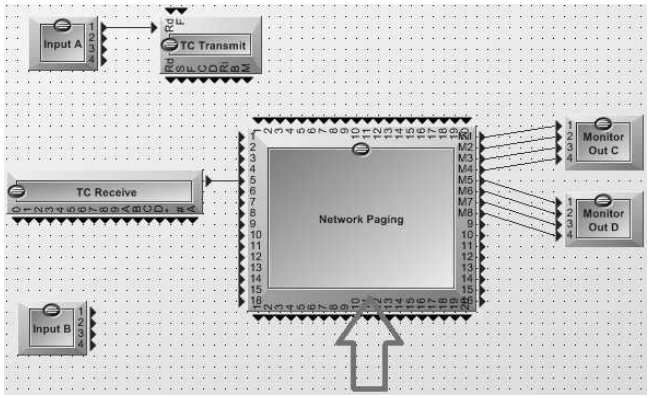
6.25.2.1 DTMF Paging

This function require you to enter the DTMF codes, allowing to paging to multiple zones whenever there's any emergency happens and messages must be paging. Once you have entered the DTMF code, it will be automated into the dial command and activate the paging.

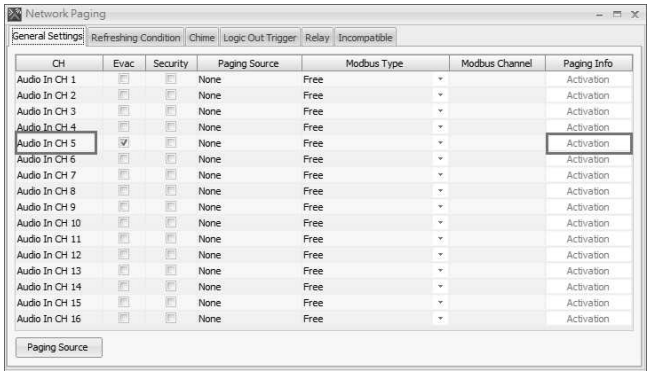
- Before proceeding the DTMF paging, make sure the connection between each component has fully connected with.



- Double click the [Network Paging] component to open the pop-up setting window.

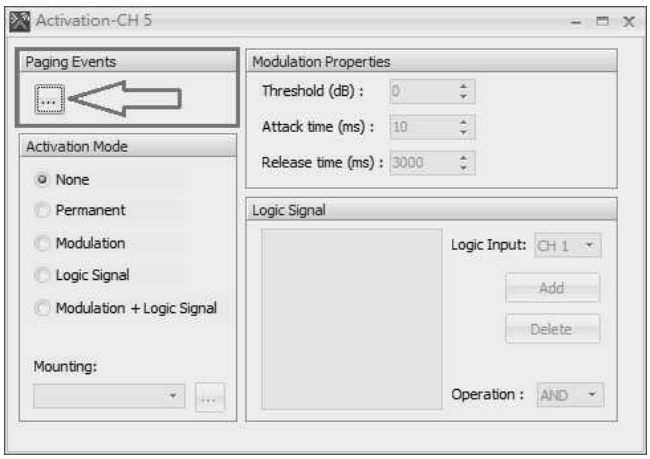


- Click [Activation] button corresponded to its CH(the CH that is connected to TC Receive component) on [Paging Info] grid.

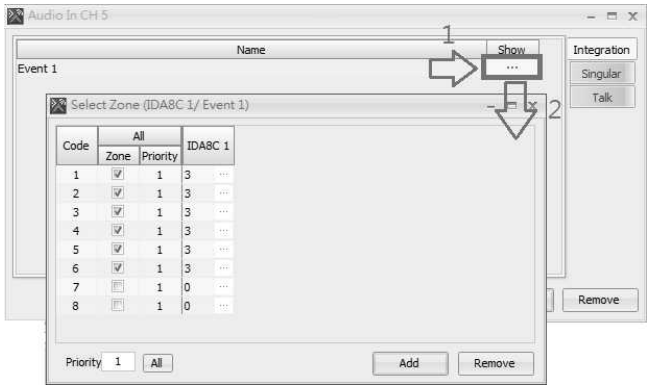


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- Then, click the [.....] button to open the channel window and then [Add] an event on [Integration] section. The name of event can be user-defined.

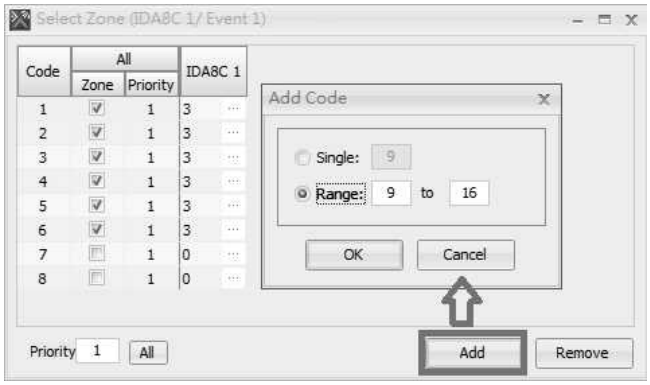


- Click [.....] button to open the [Select Zone] window.

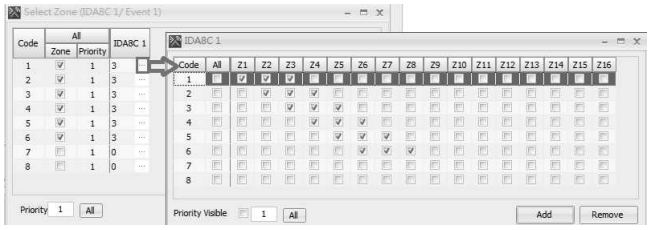


- Then click [Add] button to open the [Add Code] window.

If you would like to add a new code, click [Add] button to open the [Add Code] window. There are two ways to create a new code: Single and Range. The code can be user-defined. 0 and minus number are forbidden to use. eg: 0, -1, -10 etc.

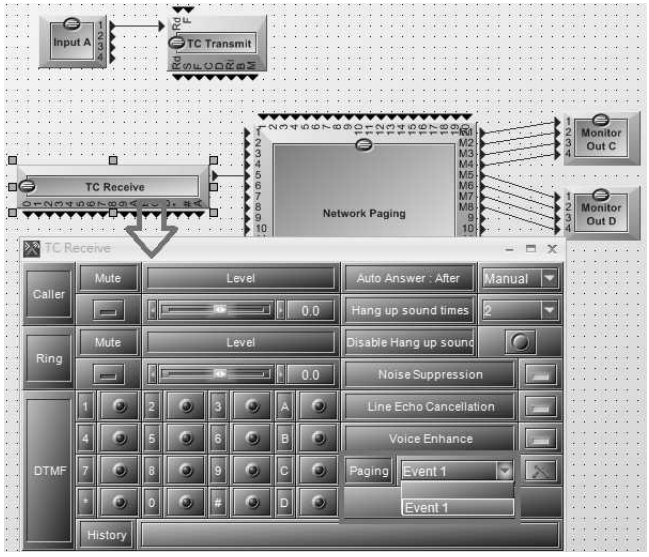


- Click [.....] button to open the [Zone] window and then start to choose which zone you assign for paging.
- Click [Add] button if you would like to create more codes.

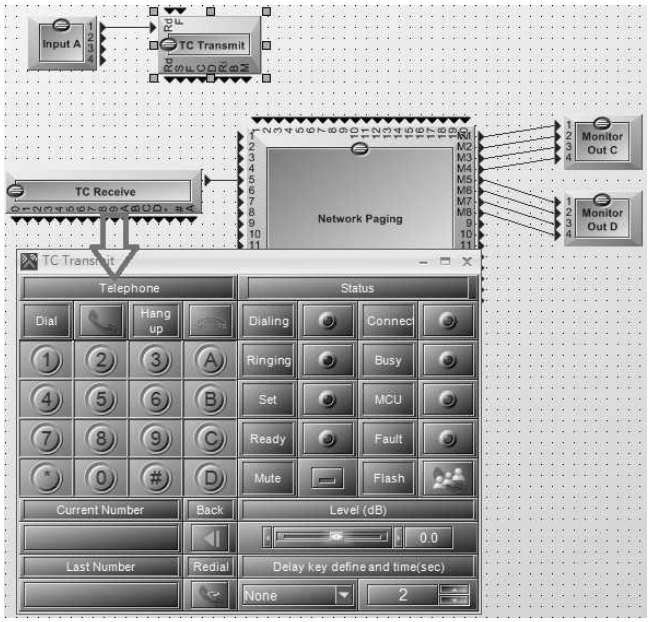


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- After that, double click the [TC Receive] component to open its window, select the item in [Paging] drop-down box you have created. Then click [Store] button to save the settings into the machine.



- Now click on the [TC Transmit] component to enter the telephone number. After entering the numbers, click [Dial] button to dial, then you can hear the audio source from the [Input A] component.



❖ Before calling via DTMF code, please follow the instruction of paging method.

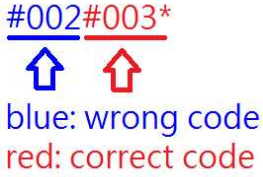
- Dial = #00X∗
  - # = start
  - ∗ = end
- Example:
  - If you would like to paging to Code [2], then dial #002∗
- Cancel the call = #000∗
- Example:
  - If you would like to cancel the paging, then enter #000∗

- Redial:

  When dialing the wrong code, simply redial the correct code again after the wrong code.

- Example:

  If you dial the Code [3] to the wrong Code [2], you only need to redial the correct code again (2) after the wrong one. The situation might be shown as #002#003∗ See the picture below,



The numbers during the paging will also be listed on

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- The paging function will be canceled right way after finishing dialing.

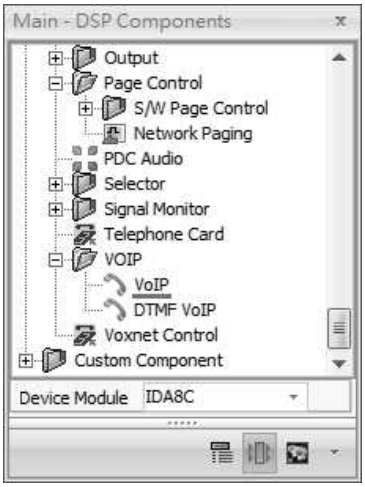
the [History] of [TC Receive] component window for displaying the entered numbers, in additions, if the code you dial has been set as the EVAC, the EVAC signal on front panel of your machine such as IDA8C processor will also light up.

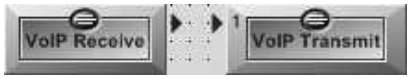
6.26 VoIP

6.26.1 VoIP

Allow the device such as PPM-IT5, IP phone, Terra-K etc. to call via LAN/WAN. G.711, G.722, L16 and MP3 format can be supported by IDA8. The communication protocol via SIP protocol or Voxnet format.

The [VOIP Receive] component will occupied with 1 x message channels, please refer to Message Limitation chapter.





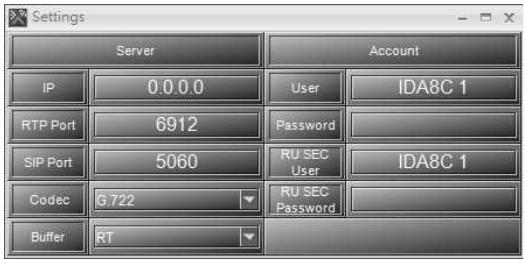
❖ [VoIP Receive]-Control Window



- Mute: Mute or unmute the channel input.
- Level: The level of the channel.
- Setting [ ]

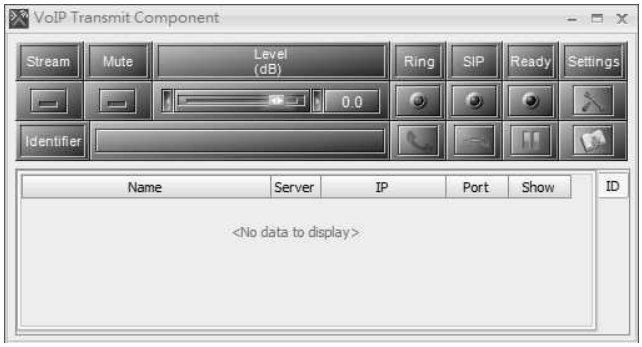
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❖[VoIP Receive]-Setting



- Server:
  - IP: The connected IP of SIP server.
  - RTP Port: The port that is using for streaming.
  - SIP Port: The port that is using via SIP protocol.
  - Codec: The format that is using for streaming.
  - Buffer: The delay time of streaming.
- Account:
  - User: The calling name (text or telephone number) can be user-defined.
  - Password: The password that is using to connected to SIP server.
  - RU SEC User: The calling name (text or telephone number) of the secondary unit when using redundant configuration.
  - RU SEC Password: The password of secondary unit when using redundant configuration using to connected to the SIP server.
  - Paging: With the element of network paging, users can multi-paging through calling.
  - Answer Behavior: Select the ring tone time before the call picks up automatically.
    - [0 ring]: When IDA8 receives SIP call, the SIP call be picked it up directly without ringing.
    - Manual: Manually pick up the SIP call by clicking [] Call button.

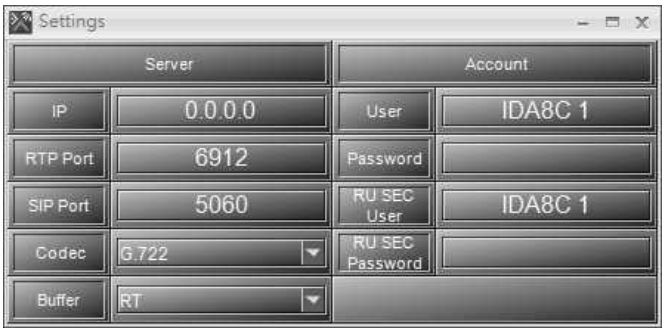
❖[VoIP Transmit]-Control Window



- Mute: Mute/unmute the channel input.
- Level: The level of channel.
- Ring: Light up if receiving calls.
- SIP: Light up when the call is busy.
- Ready: Light up if it's in standby mode. It will light off when receiving call or the call is busy at the moment.
- Setting []

❖[VoIP Receive]-Setting

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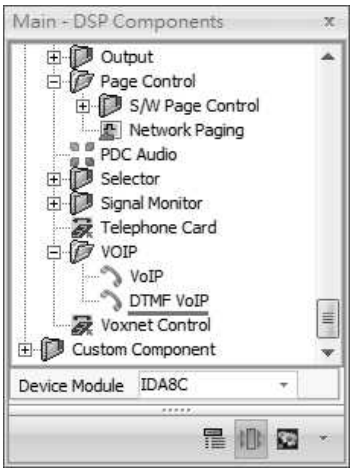
- Server:
  - IP: The connected IP of SIP server.
  - RTP Port: The port that is using for streaming.
  - SIP Port: The port that is using via SIP protocol.
  - Codec: The format that is using for streaming.
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- Account:
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  - RU SEC User: The calling name(text or telephone number) of the secondary unit when using redundant configuration.
  - RU SEC Password: The password of secondary unit when using redundant configuration using to connected to the SIP server.
  - Paging: With the element of network paging, users can multi-paging through calling.
  - Answer Behavior: Select the ring tone time before the call picks up automatically. Select manual mode to manually pick up the call by clicking [ ] Call button.
  - Call: Click to dial the call/receive the call.
  - Cancel/Hang up: Click to cancel/hang up the call.
  - Telephone Book: Click to open [Contact Manager] window and choose the contacts.
  - Identifier: Enter/display the SIP IP call. The format is "[phone number]@[IP address]:[SIP port]"

6.26.2 DTMF VoIP

Receive a telephone call and detects if a DTMF tone output logic signal responded to the key pressing on remote telephone. It needs to work with the telephone card.

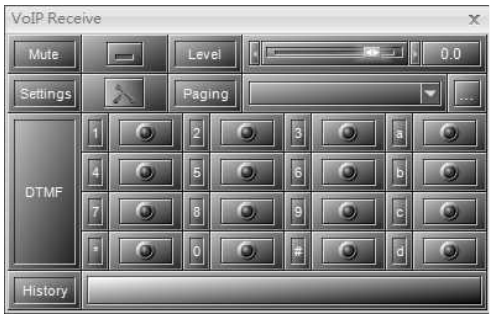
The [DTMF VoIP] component will occupied with 1 x message channel, please refer to Message Limitation chapter.

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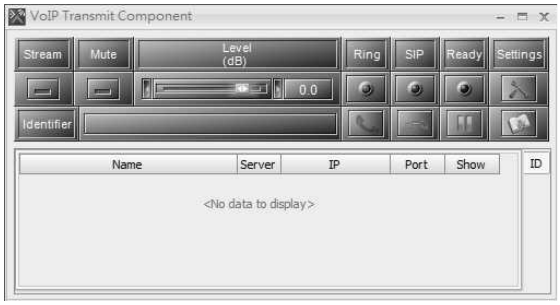


❖[DTMF VoIP Receive]-Control Window



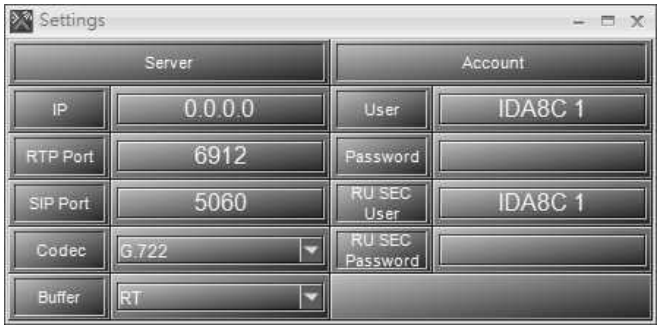
- Mute: Mute the ring audio.
- Level: Adjust the level of a ring.
- DTMF: If caller press any key on its phone after an incoming call was received, the VoIP card will detect and display the numbers triggered on the control window and change the status of logic output to the detected number.
- History: Display the history of DTMF numbers from an incoming call.
- Paging: With the element of network paging, users can multi-paging via dialing the telephone numbers.

❖[DTMF VoIP Transmit]-Control Window



- Mute: Mute/unmute the channel input.
- Level: The level of channel.
- Ring: Light up if receiving calls.
- SIP: Light up when the call is busy.
- Ready: Light up if it's in standby mode. It will light off when receiving call or the call is busy at the moment.
- Setting [ ].

❖[VoIP Receive]-Setting



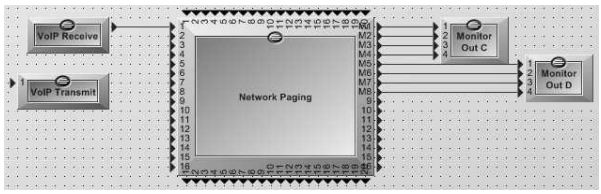
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- Server:
  - IP: The connected IP of SIP server.
  - RTP Port: The port that is using for streaming.
  - SIP Port: The port that is using via SIP protocol.
  - Codec: The format that is using for streaming.
  - Buffer: The delay time of streaming.
- Account:
  - User: The calling name (text or telephone number) can be user-defined.
  - Password: The password that is using to connected to SIP server.
  - RU SEC User: The calling name (text or telephone number) of the secondary unit when using redundant configuration.
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- Paging: With the element of network paging, users can multi-paging through calling.
- Answer Behavior: Select the ring tone time before the call picks up automatically. Select manual mode to manually pick up the call by clicking [ ] Call button.
- Call: Click to dial the call/receive the call.
- Cancel/Hang up: Click to cancel/hang up the call.
- Telephone Book: Click to open [Contact Manager] window and choose the contacts.
- Identifier: Enter/display the SIP IP call. The format is "[phone number]@[IP address]:[SIP port]

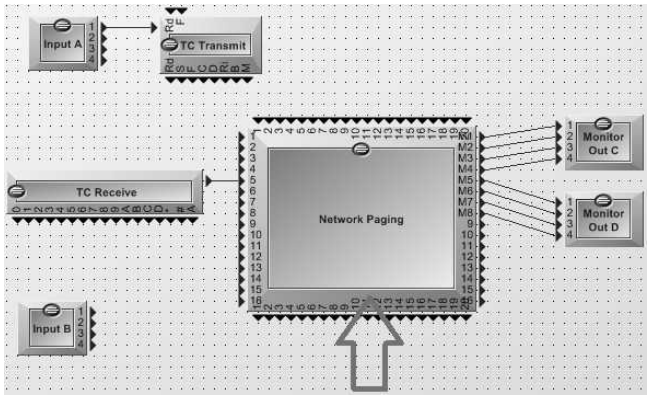
6.26.3 VoIP DTMF Paging

This function require you to enter the DTMF codes, allowing to paging to multiple zones whenever there's any emergency happens and messages must be paging. Once you have entered the DTMF code, it will be automated into the dial command and activate the paging.

- Before proceeding the DTMF paging, make sure the connection between each component has fully connected with.

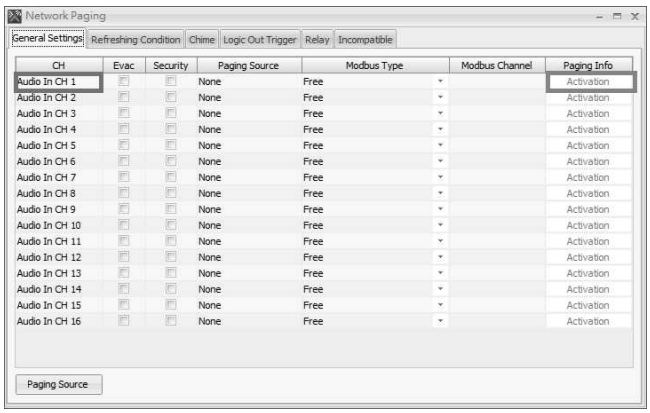


- Double click the [Network Paging] component to open the pop-up setting window.

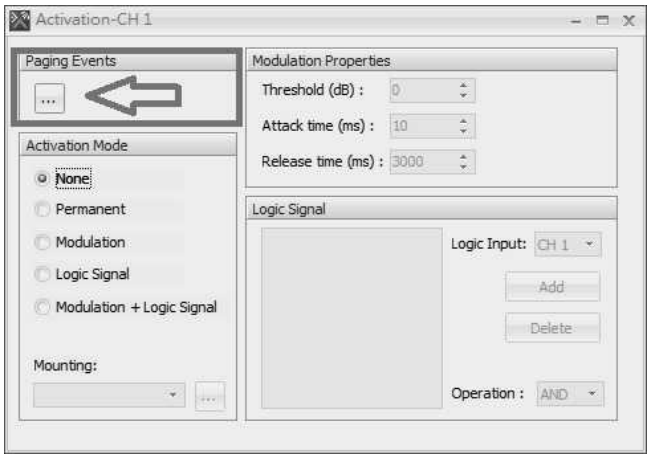


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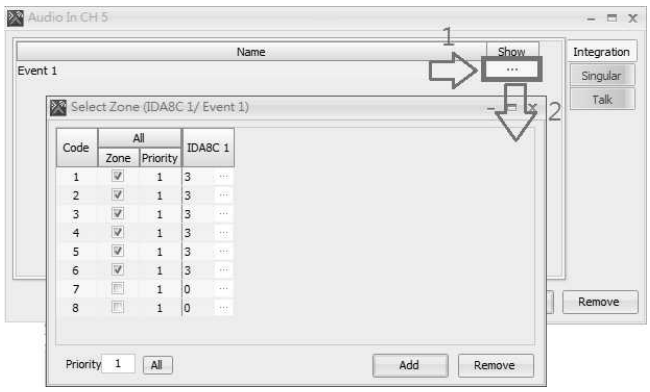
- Click [Activation] button corresponded to its CH (the CH that is connected to TC Receive component) on [Paging Info] grid.



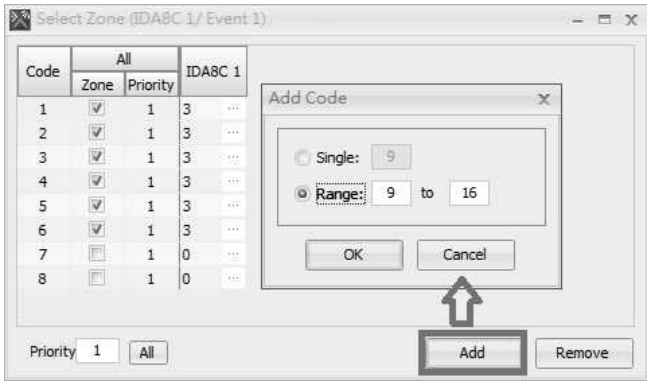
- Then, click [.....] button to open the channel window and then [Add] an event on [Integration] section. The name of event can be user-defined.



- Click [.....] button to open the [Select Zone] window.



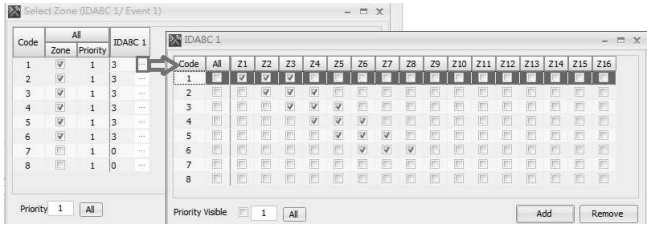
- Then click [Add] button to open the [Add Code] window.



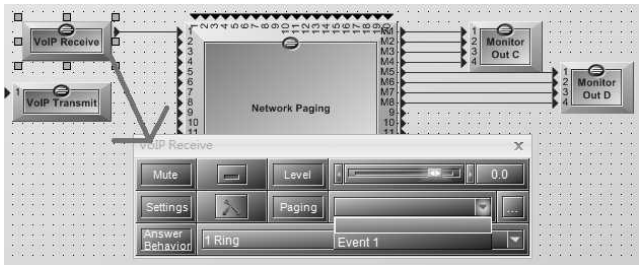
If you would like to add a new code, click [Add] button to open the [Add Code] window. There are two ways to create a new code: Single and Range. The code can be user-defined. 0 and minus number are forbidden to use. eg: 0, -1, -10 etc.

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- Click [……] button to open the [Zone] window and then start to choose which zone you assign for paging.
- Click [Add] button if you would like to create more codes.



- After that, double click the [TC Receive] component to open its window, select the item in [Paging] drop-down box you have created. Then click [Store] button to save the settings into the machine.



❖ Before calling via DTMF code, please follow the instruction of paging method.

- Dial = #X∗
  - # = start
  - ∗ = end
- Example:
  - If you would like to paging to Code [2], then dial #2∗
  - The paging function will be activated right way after finishing dialing.
- Cancel the call = #∗
- Example:
  - If you would like to cancel the paging, then enter #∗
  - The paging function will be canceled right way after finishing dialing.
- Redial:

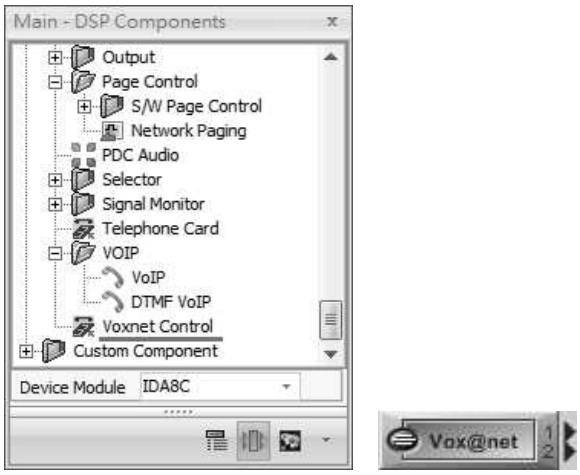
  When dialing the wrong code, simply redial the correct code again after the wrong code.
- Example:
  - If you dial the Code [3] to the wrong Code [2], you only need to redial the correct code again (2) after the wrong one. The situation might be shown as #2#3∗
  - If the code you dial has been set as the EVAC, the EVAC signal on front panel of your machine such as IDA8C processor will also light up.

6.27 Voxnet Control

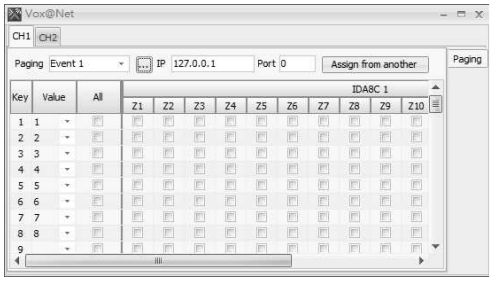
This component is a bridge between the Ateis device and the Voxnet device. It maps the key in Voxnet protocol to the code in an event for paging control.

The [Voxnet Control] component will occupied with 2 x message channels, please refer to Message Limitation chapter.

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❖ Setting Window

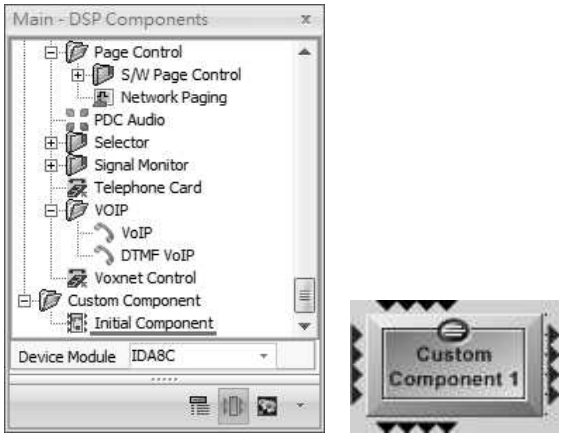


There are two channels for paging with Voxnet source.

- Paging Event: Set the paging event to bind with the Voxnet source.
- Key: The key of Voxnet protocol.
- Value: Set the code mapped to the key. Each code represents a zone selection combined for paging.
- All: Selects all the zones.
- Zone Selection: Select a zone for paging.

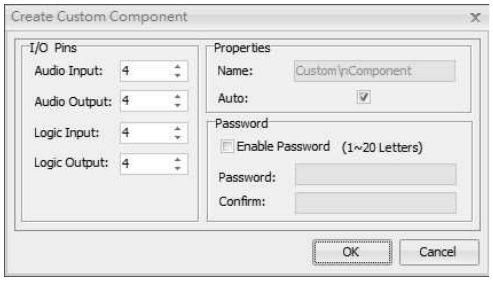
6.28 Custom Component-Initial

When the DSP component configuration is complex, the Initial component provides another new configuration window to put any component into it, allowing to see the connected components and pins clearly.



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❖ Control Window

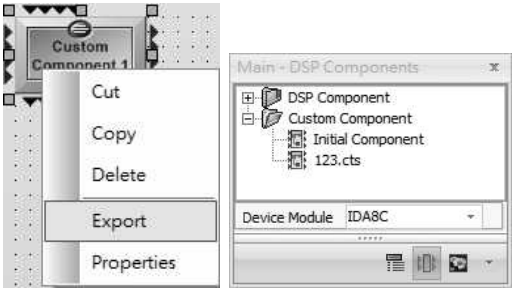


- I/O Pins:
  - Audio Input/Output: Select the number of input/out pin you want.
  - Logic Input/Output: Select the number of logic input/output pin you want.
- Properties:
  - Name: The name of the Initial Component.
  - Auto: Click or unclick the Auto button if users want to change the name of Initial Component.
- Password:
  - Enable Password: Click to enable the password function. And enter the password and the confirmation password again. If the password function is enable, there will be a pop-up window as the picture below,



- Export:

  The Export function allows users to save and export the configuration on the Initial Component to the list of Custom Component list.
  Right click on the component and click [Export] function. After the configuration has been exported, the configuration will be listed on the list of Custom Component. See the picture below,



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7 Fault List & Troubleshooting

For security purposes, the IDA8 is designed to monitor the connected equipments. When an error is detected, a fault will be generated to inform the user. Then user can change the non-working equipment quickly to make the system function correctly again.

There are two types of faults:

- System Fault:

  This sort of fault is about the internal error of the IDA8C/S. In most of cases, it is a hardware failure and the board inside the device needs to be changed o repaired.

- G.Fault:

  The G.Fault LED lights up for mostly all faults.

When a fault is generated, the following will be performed by the IDA8C/S:

- Fault State Output contact open (when a major fault occurs).
- Log the fault.
- A warning message of the fault will be shown in the touch screen panel.
- When Ateis Studio is connected to the IDA8C/S, in [Device Status] field of [Device Management] panel will show a fault, see the picture as below.



- There is a warning tone generated by the monitoring speaker.
- And a text message shown in the PSS touch screen panel, see the picture as below.



7.1 Table of Global Faults

Name	Description	Troubleshooting
Ethernet Broken	The Ethernet connection fails. (If the ethernet monitoring is enabled in ATEIS Studio)	1. Check if the Ethernet cable connected to the network switch and IDA8 is correct and does not loosen. 2. Ping the IDA8, and check whether it has responded. If no, check the Ethernet switch/router.
User Define Error	This fault happens when the "Fault Define" DSP component received a logic signal from the input.	Check the trigger source of [Fault Define General] component, and re-define its configuration.
PDC Error	The audio cable for Fireman and PDC port turns short circuit or cuts off.	1. Check the RJ45 cable between PDC port and remote unit. 2. Replace a new RJ45 cable for testing purpose.

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		3. Replace a new remote unit for testing purpose.
Normal/Backup AMP Error	1. Amplifier gain is too high. 2. Amplifier gain is too low. 3. Amplifier fails.	1. Check the cable between IDA8 and amplifier. 2. Go to [Normal Amplifier Monitor] in [Monitor] window in ATEIS Studio, and check the Measure value. If the value is 0, it means the cable has loosened. If the value is not 0, it means the cable may leakage.
Line A/B Monitor Error	1. Line A/B Open, a speaker is not connected to IDA8C/S. 2. Line A/B Bad Impedance, the impedance of the speakers is changed over the tolerance. 3. Line A/B short, a circuit outside the speaker zone output connector is shorted, and no sound comes out. This fault may damage the amplifier.	1. Check cable between IDA8 line A/B and speaker. 2. Go to [Zone Monitor] page in [Monitor] window in ATEIS Studio and check [Measure A&B] value. 3. If it's a [Line A/B Open], check if the wiring of LINE A/B is connected correctly and tightly, then replace a new speaker for testing purpose. 4. If it's a [Line A/B Short Circuit], plug out the LINE A/B speaker lines, and proceed [Reset Monitor]. Then wait for 10 seconds and check if there's [Line A/B Open] fault. If there's [Line A/B Open] fault, please check if the speaker lines are short-circuit. 5. If it's a [Line A/B Bad Impedance], check if the wiring of LINE A/B is connected correctly and tightly. Then check if the speaker impedance has changed. If the output level is under normal condition, click [Get Zone Reference], and increase the percentage value on [Tolerance %]. If the output level is unacceptable, replace a new speaker for testing purpose.
AMP Line Leakage Error	The measurement of speaker lines has short-circuit fault due to the + speaker line is connected to ground wire, and - is connected to ground wire.	1. Check the cable between IDA8, normal amplifier and speaker line. 2. Go to [Zone Monitor] page in [Monitor] window in ATEIS Studio, and check [Leakage Impedance (ohm)] value. 3. Remove speaker line A & B first, if the leakage value recovers, then this is speaker line problem. 4. Remove amplifier cable, if the leakage value recovers, then this is amplifier problem.
SMTP Server Error	SMTP xxx Connect Fail SMTP xxx No Response SMTP xxx HELO Fail SMTP xxx EHLO Fail SMTP xxx Authentication Fail SMTP xxx Username Fail SMTP xxx Password Fail SMTP xxx FROM Fail SMTP xxx TO Fail	1. Check the Ethernet connection of IDA8. 2. Check the Ethernet connection of SMTP Server.

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	SMTP xxx Data Fail (xxx = ip address)	
EVAC Input Error	The voltage of EVAC input is not in the range (when the evacuation input is set to "contact mode").	Check the Evacuation Input connection on the rear panel of IDA8 processor.
Local AteisNet Broken	Both local ATEIS net card port A & B connection broken	1. Check if the cables are connected tightly and correctly. 2. Try to replace RJ45/fiber cable for testing purpose. 3. Check the netcard port LED s blinking. If not blinking, please replace netcard. 4. Reboot the machine and check if the communication is normal.
Global AteisNet Broken	This fault happens when one or more IDA8C's or IDA8S's over Ateis Net lose the connection.	
Fireman Error	The fireman microphone has an error.	1. Check if the cable between fireman mic and IDA8 processor is connected tightly and correctly. 2. Try to replace other fireman mic for testing purpose.
VOX@NET Offline	The IDA8C/S can't communicate with the VOX@NET software.	1. Check the Ethernet connection of IDA8. 2. Check the Ethernet connection of Voxnet server.
Redundancy Error	1. It shows "Backup Device Offline" when a backup device can't communicate. 2. It shows "Operation Mode Fail" for: • RU device is turned off. • The incorrect wiring between the RU and the IDA8.	1. If it's a [Backup Device Offline], check the Ethernet connection on both primary and secondary unit. 2. If it's a [Operation Mode Fail], check whether the primary and secondary role are reversed in the redundancy configuration. If not, check the state of P_ACT and S_ACT contact output, the P_ACT should be short and S_ACT should be open.
URGP16I160 Fault	There is an monitoring error in URGP16I160 device due to the reasons of out of tolerance.	Check if the fault input pins and evacuation pins on URGP16I16O are connected correctly and does not loosen.
Remote Offline	The peripheral devices (PSS-AS/PPM-AS/URC-150AS/...) can't communicate with the IDA8C/S.	1. Check the remote connection. 2. Re-plug RJ45 cable from PDC port. 3. Try to connect the remote using other PDC port. 4. Try to change a remote unit for testing purpose. 5. Reboot machine.
URGP Fault	The URGP device monitor is out of tolerance	1. Check fault input pins on URGP. 2. Check the evacuation pins on URGP.
Remote Fault	There is a hardware error of peripheral devices, such as the microphone capsule/speaker on a PSS.	1. If it's a [Microphone Fault], try to live paging and check whether the volume is too loud or too low. If yes, please replace the unit. If not, please reboot IDA8 and remote unit. 2. If it's a [Speaker Fault], try to play the music and check whether the volume is too loud or too low. If yes, please replace the unit. If not, please reboot IDA8 and remote unit.
Ethernet Remote Offline	The connection with remote such as TerraManager has lost.	1. Check the Ethernet connection of IDA8.

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		2. Check the Ethernet connection of TerraManager.
Ethernet Remote Fault	The remote fault status of the Terra-K/SDM device with TerraManager.	1. If it's a [Mic Offline], check the Ethernet connection of TerraManager. 2. If it's a [Mic Disconnect], check the Ethernet connection of Terra-K/SDM. 3. If it's a [Mic Short], check the Terra-K/SDM microphone state, try to live paging and check whether the volume is too low, if yes, please replace the Terra-K/SDM.
File Corruption	The file CRC check code fails if the file monitor option is enabled.	Please re-upload the message file again.
ModBus Offline	The Modbus client can't communicate.	1. Check the Ethernet connection of IDA8. 2. Check the Ethernet connection of modbus client.
AMP Rating Fault	The IDA8 gets the reference value which is too low.	1. Check the normal/backup amplifier cable connection. 2. Try to change other zone and test again. 3. Go to [Normal Amplifier Monitor] or [Backup Amplifier Monitor] on [Monitor] window in ATEIS Studio, and check whether the Measure value is more than 30.
BackupAmp Used State	A normal amplifier fails and is replaced by the backup amplifier.	1. Check normal amplifier cable connection. 2. Go to [Normal Amplifier Monitor] on [Monitor] window in ATEIS Studio, and check whether the Measure value is too high or low.
Local AteisNet Backup Mode	one of local ATEIS net port broken.	1. Check if the cables are connected tightly and correctly. 2. Check which port (Port A or Port B) is disconnected via [Device Management] window on ATEIS Studio. 3. Try to replace RJ45/Fiber cable for testing purpose. 4. Check if the netcard port LED is blinking. If it's not blinking, please replace netcard. 5. Reboot the machine and check if the communication is normal.
Global AteisNet Backup Mode	One of the global ATEIS net port has broken. Note: Only for global net IDA8.	
Bypass Mode	If using a redundancy unit, the IDA8 will enter the bypass mode when a Bypass Mode fault occurs. If not, the IDA8 will enter in that mode only when the "Bypass Input" line on the rear panel has broken.	1. Check whether there is a [SYSTEM FAULT] type in fault list. If yes, please troubleshooting it first. 2. Check whether the "Bypass Input line" of IDA8 is disconnected.
Major User Define Fault	The "Fault Define Security" component trigger.	Check the input pins of [Fault Define Security] in the configuration.
Minor User Define Fault	The "Fault Define Security" component trigger.	
Modan Offline	The Modan client can't communicate.	1. Check the Ethernet connection of IDA8. 2. Check the Ethernet connection of modan client.

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NTP Server Error	All the NTP server can't communicate.	1. Check the Ethernet connection of IDA8. 2. Check the Ethernet connection of NTP server. 3. If the NTP server is in global Ethernet, please check the gateway setting and make sure the IDA8 is able to access the global Ethernet.
Normal AMP Out of Toler.	The normal amplifier measure out of tolerance.	1. Check the cable between IDA8 and normal amplifier. 2. Check if the normal amplifier gain has changed. If the output level is under normal condition, click [Get Reference], and increase the percentage value on [Tolerance %]. If the output level is unacceptable, replace a new amplifier for testing purpose.
Backup AMP Out of Toler.	The backup amplifier measure out of tolerance.	
IP Attack	There is some network client attack the machine. IDA8 will block its communication.	1. Confirm whether this IP device has been sending too much data traffic packet to IDA8 in a period of short time. 2. Reboot the IP device (it could be PC/laptop or any IP device in the LAN).
NT PHY Error	A/B Packet or lost errors in the Ateis Local / Global Net Card.	1. Reboot machine. 2. Replace RJ45 or fiber cable for testing purpose. 3. If the error still exists, please replace the netcard.
Local AteisNet PA/B Shutdown	Global ATEIS net card detect unknown communication so that the port disable, you need restart machine to recovery it.	1. Reboot machine. 1. Replace RJ45 or fiber cable for testing purpose. 2. If the error still exists, please replace the local netcard.
Global AteisNet PA/B Shutdown	Local ATEIS net card detect unknown communication so that the port disable, you need restart machine to recovery it.	
Net Blacklist	There is some IDA8 communication is unstable.	1. Reboot machine. 2. If the error still exists, please catch this IDA8 logs and send it to our engineer.
Fan Error	Fan fail	1. Reboot machine. 2. Replace the fan.

7.1.1 Ethernet Broken

❖ The Ethernet connection fails (if the Ethernet monitoring has been enabled in Aties Studio).

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - "Ethernet Broken" message will be displayed at the touch screen of the IDA8C.

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- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

7.1.2 User Define Error

❖ A user defined error is detected by the IDA8C/S. This kind of error can be defined by using the "Fault Definer" DSP component.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - G. Fault LED on the front panel of IDA8C/S.
- Log:
  - "User Define Error" message will be displayed at the touch screen of IDA8C.

    "XXXXX", where XXXXX is the content defined in "Fault Definer" the DSP component field [Message].
  - A text message will be displayed at the window [Machine Fault Record] in Ateis Studio, see the picture as below.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

7.1.3 PDC Error

❖ The audio cable for Fireman and PDC port turns short circuit or cuts off.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - "PDC Error" message will be displayed on the touch screen of IDA8C.
  - The text messages will be displayed at the window [Machine Fault Record] in Ateis Studio.
    - PDC: Indicate errors in which PDC port.
    - Audio Short: Turn short circuit.

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7.1.4 Normal Amplifier Error

❖ Amplifier gain is too high/Amplifier gain is too low/Amplifier has failed.

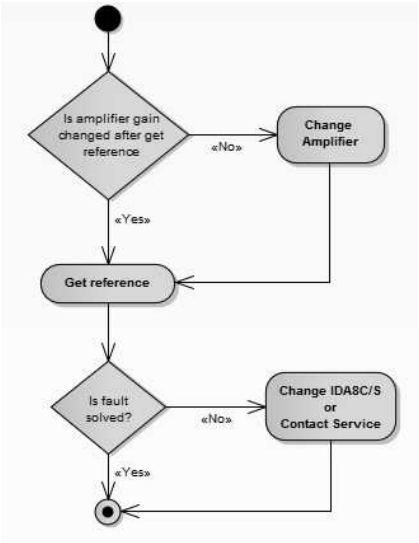
❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - G. Fault LED on the front panel of the IDA8C/S.
  - Zone Fault LEDs on the front panel of the IDA8C/S.
- Log:
  - Amplifier Gain too High/Low/Amplifier Fail:
    - "Normal AMP Error" or "Backup AMP Error" messages will be displayed at touch screen on the front panel of IDA8C.
    - "Z1 Normal AMP Too High", where "Z1" could be any other zones, and "Normal AMP" could be "Backup AMP" as well.
  - A text message will be displayed at the [Machine Fault Record] window in the Ateis Studio, see the picture as below.

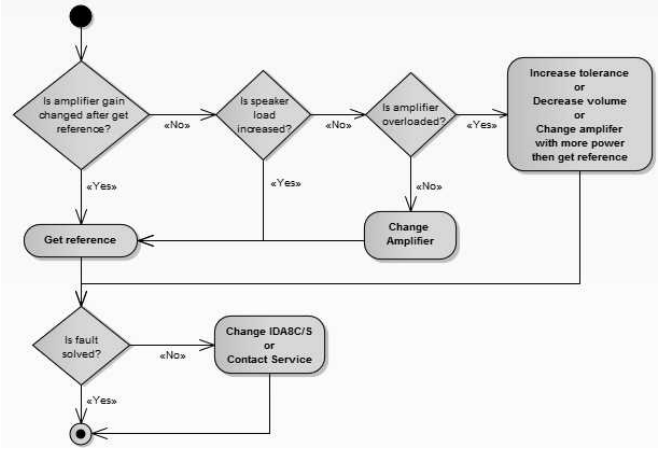


- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

❖ Troubleshooting:

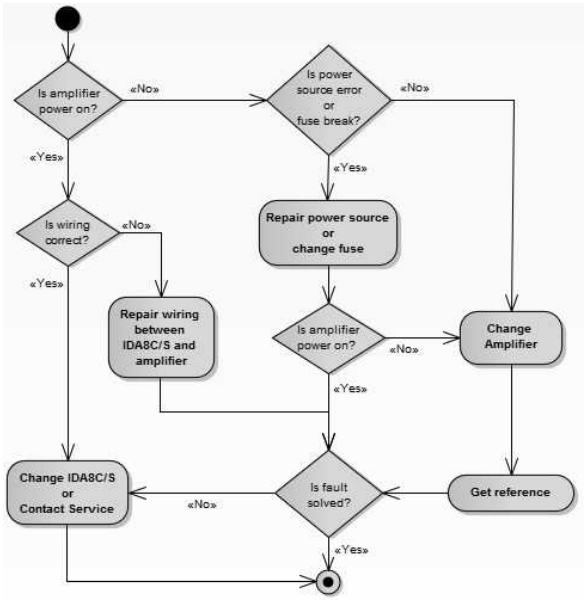


Amplifier Gain Too High



Amplifier Gain Too Low

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Amplifier Fail

7.1.5 Line A/B Monitor Fault

❖ This error is mainly for loudspeakers connected to the IDA8C/S's speaker zone output connectors. There are three kinds of faults:

- Line A/B Open:

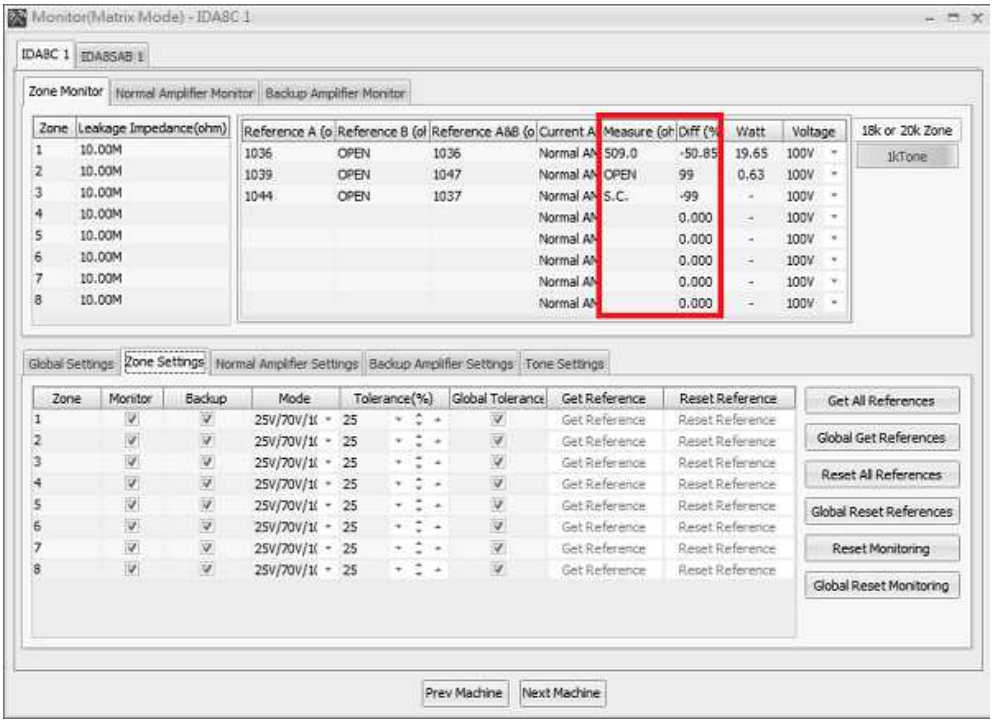
  If the value of Measure (ohm) is greater than 4000 ohm, this fault can be recognized by IDA8C/S when the field of [Measure(ohm)] shows "OPEN".

- Line A/B Bad Impedance:

  If the value of Measure (ohm) is greater than Reference A&B (ohm) + Tolerance (%), or the value of Measure (ohm) is less than Reference A&B (ohm) - Tolerance (%), this fault can be recognized by the IDA8C/S when the field of [Diff(%)] shows the percentage of difference.

  In the figure, the difference in the percentage of Zone 4 is 78.24 which is greater than the tolerance of 15%, a Line A/B bad impedance is recognized.

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- Line A/B Short:

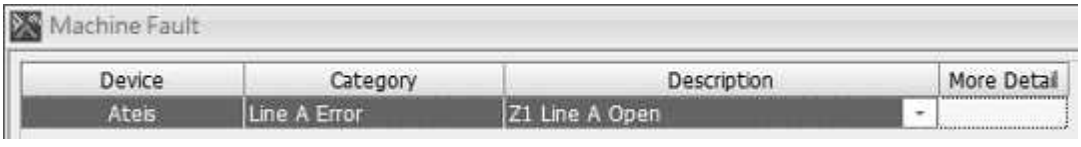
  The voltage of pin +, - is monitored by the IDA8C/S. If the voltage is zero, it means there is a short circuit outside the IDA8C/S. If this fault is detected, the internal relay of the zone will be opened to stop the audio signal output to the speaker. The user must perform a Reset Monitoring as described in the preview part of this topic in order to switch the status back (i.e. make the audio output to the speaker and enable monitoring of the short again. A string "S.C." is showed in the field [Measure(ohm)].

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - G. Fault LED on the front panel of the IDA8C/S.
  - Zone Fault LEDs on the front panel of the IDA8C/S.
- Log:
  - Line A/B Open / Bad Impedance / Short:

    The text messages display at the touch screen on the front panel of the IDA8C:
    - "Line A Error", where Line A could be Line B.
    - "Z1 Line A OPEN", where Z1 could be any zone, Line A could be Line B.

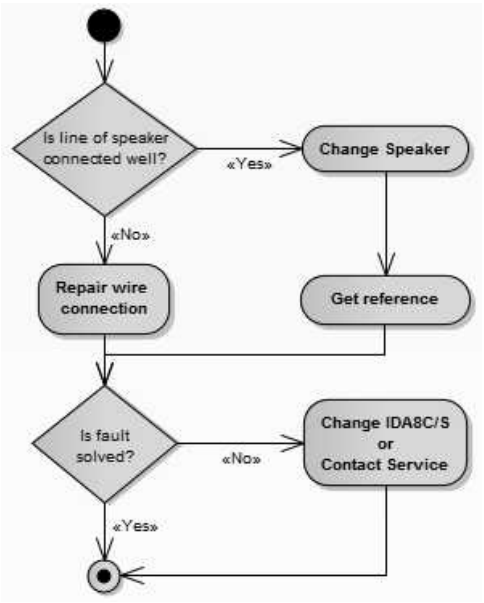
    A text message will be displayed at the window [Machine Fault Record] of Ateis Studio, see the picture as below.



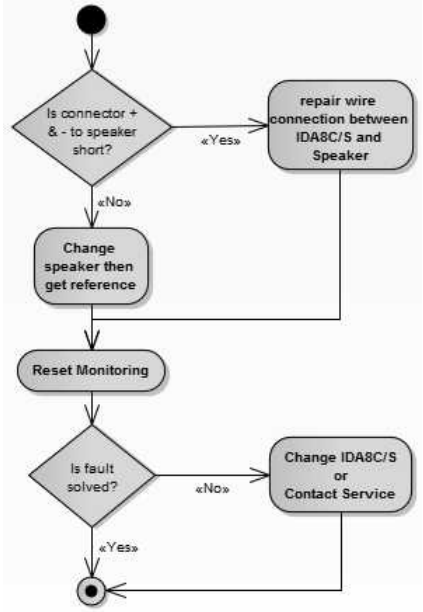
- A buzzing sound will be outputted to the monitoring speaker on front panel of the IDA8C.

❖ Troubleshooting:

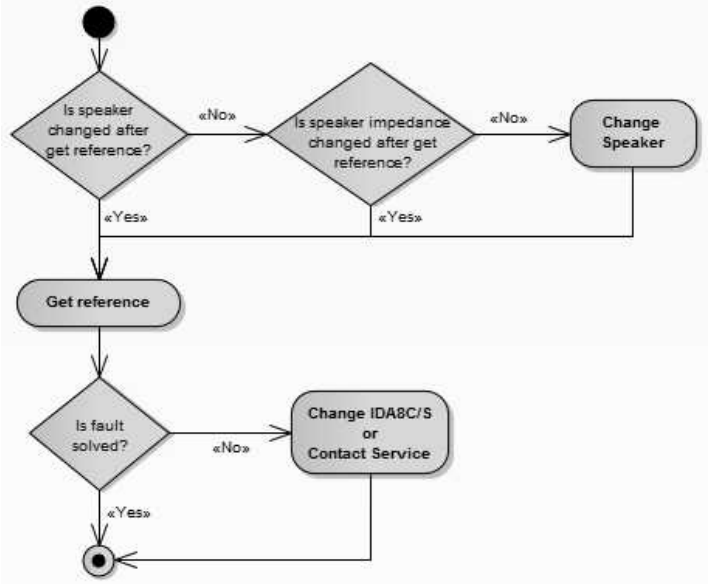
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Line A/B Open



Line A/B Short



Line A/B Bad Impedance

7.1.6 Amplifier Line Leakage Error

❖ An electricity leakage between the IDA8C/S and the speaker is detected. The measurement of speaker lines has short-circuit fault due to the + speaker line is connected to ground wire, and - is connected to ground wire.

❖ Indication:

- LED Indicator:

  When this error is detected, the following LEDs will light up:

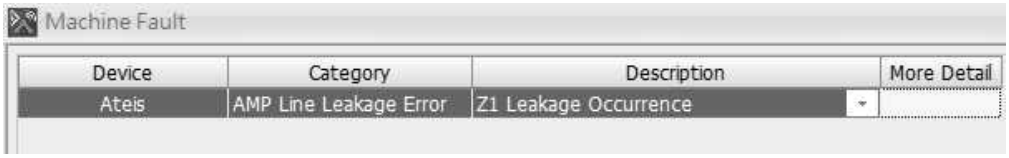
  - G. Fault LED on the front panel of the IDA8C/S.
  - Zone Fault LEDs on the front panel of the IDA8C/S.

- Log:
  - The text messages will be displayed on the touch screen of the IDA8C as follows:
    - "AMP Line Leakage Error".

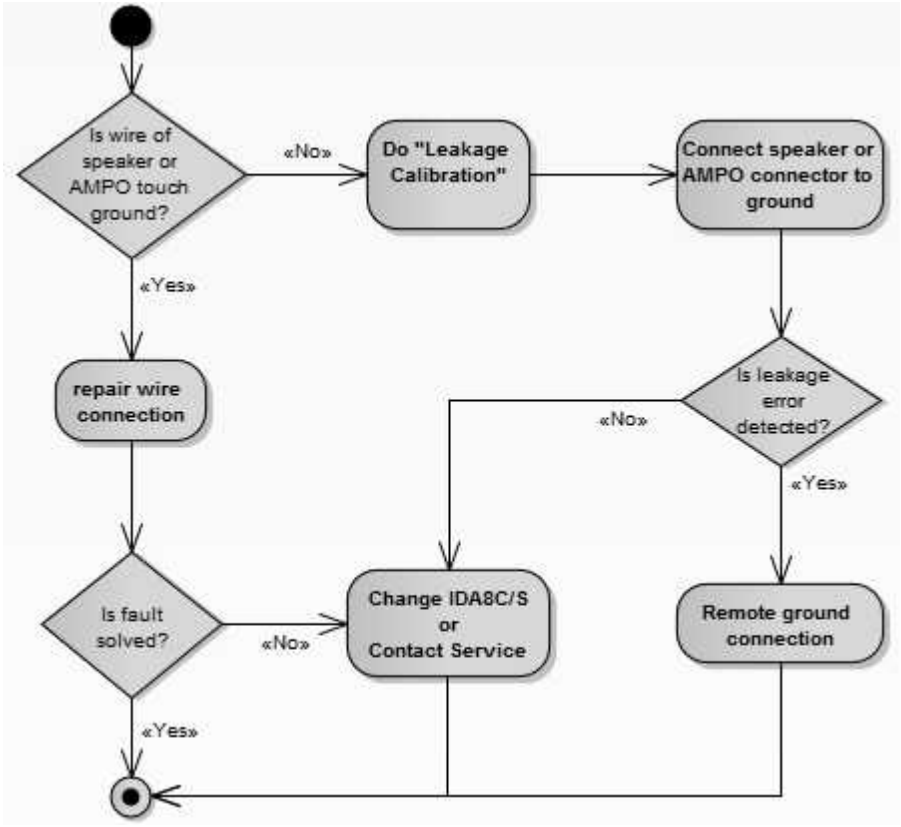
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- "Z1 Line Leakage Error", where Z1 can be any zone.

○ A text message displays at the [Machine Fault Record] window in Ateis Studio, see the picture as below.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.



Fault Handling : Amplifier Line Leakage Error

❖ Troubleshooting:

1. Plug out the LINE A speaker line, and wait for 90 seconds to check if the Leakage fault has cleared out or still exists.
2. If there's no Leakage fault, check if the + speaker line is connected to ground wire, and - is connected ground wire.

7.1.7 EVAC Intput Error

❖ The voltage of EVAC input is not in the range (when the evacuation input is set to "contact mode").

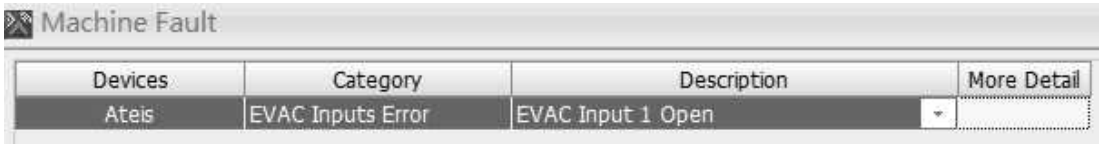
❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - ○ G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - ○ EVAC Input Error (OPEN)

    "EVAC Input Error" messages will be displayed on the touch screen of the IDA8C.
  - ○ A text message will be displayed at the [Machine Fault Record] window in Ateis Studio,

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see the picture as below.



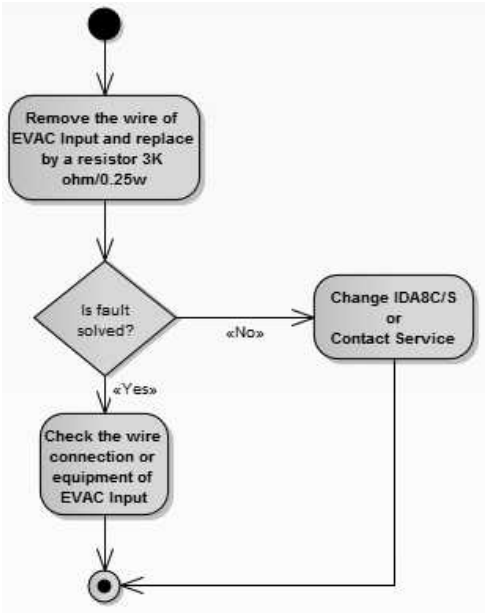
- EVAC Input Error (SHORT)

  "EVAC Input Error" message will be displayed on the touch screen of IDA8C:

- A text message will be displayed at the [Machine Fault Record] window in Ateis Studio, see the picture as below.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.



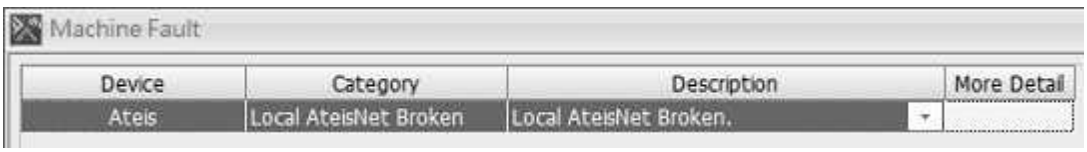
Fault Handling : Evacuation Intput Error

7.1.8 Local Ateis-Net Broken

❖ The Local Ateis Net is broken, this problem may come from the wire connection between devices on the Ateis Net or the net card on the device.

❖ Indication:

- LED Indicator: When this error is detected, the following LED will light up:
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - "Local AteisNet Broken" message displays on the touch screen of IDA8C.
  - A text message displays at the [Machine Fault Record] window in Ateis Studio, see the picture as below.



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- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

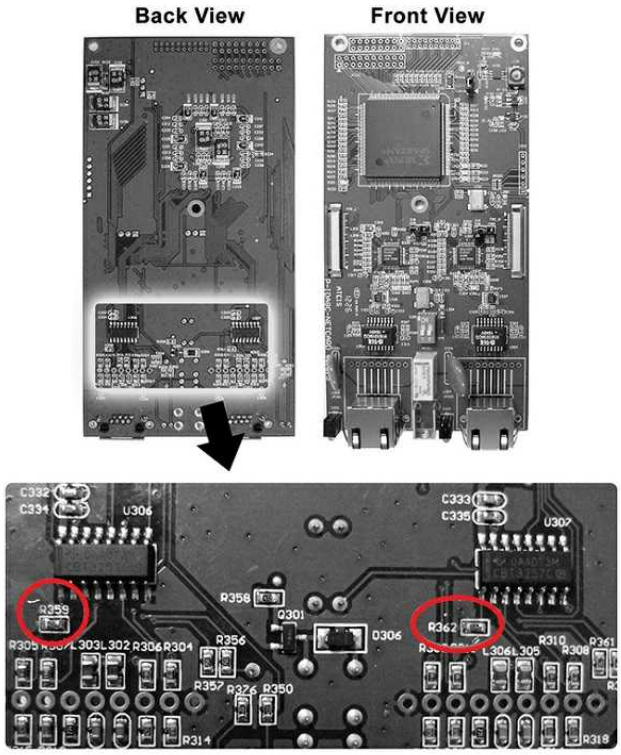
❖ Troubleshooting:

- Check the wire connection between all IDA8C/S on the Local Ateis Net.
- If the wire connection is connected properly, the device must be checked as follow:
- For IDA8C:

  Prepare a working IDA8S, establish the Ateis Net wire connection between the IDA8C and the IDA8S. Deploy the Ateis Net using Ateis Studio.

  If the fault is not solved, please check the hardware version of Ateis Net card.

⚠ A quick examination for the Ateis Net card with RJ45 connectors (NOT the fiber connectors), see the picture as below.



hardware V.105 or higher, with the resistors.

If your Ateis Net card doesn't have the resistors (as circled in the picture), it might cause the connection problems. Please contact your Ateis dealer to replace it with a working one.

- For each IDA8S on the Ateis Net:
  - Prepare a working IDA8C, establish the Ateis Net wire connection between the IDA8C and the IDA8S. Deploy the Ateis Net using Ateis Studio and perform the examination as referred to in the preceding paragraph.
  - If the fault is not solved, replace the Ateis Net card of the IDA8S.

    Once it's recovered, the log will show:

    "Local AteisNet Normal Mode"

7.1.9 Global Ateis-Net Broken

❖ The Global Ateis Net is broken, this problem may come from the wire connection between devices on the Ateis Net or the net card in the device.

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❖ Indication:

- LED Indicator: When this error is detected, the following LED will light up:
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - "Global AteisNet Broken" message displays on the touch screen of IDA8C.
  - A text message displays at the [Machine Fault Record] window in Ateis Studio, see the picture as below.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

❖ Troubleshooting:

- Check the wire connection between all the IDA8C/S on the Global Ateis Net.
- If the wire connection is connected properly, the device must be checked as the following:

❖ For IDA8C:

Prepare a workable IDA8S device, establish the Ateis Net wire connection between the IDA8C and the IDA8S. Deploy the Ateis Net using Ateis Studio.

If the fault is not solved, please check the hardware version of Ateis Net card.

❖ For each IDA8S on the Ateis Net:

- Prepare a workable IDA8C device, establish the Ateis Net wire connection between the IDA8C and the IDA8S. Deploy the Ateis Net using Ateis Studio and perform the examination as referred to in the preceding paragraph.
- If the fault is not solved, replace the Ateis Net card of the IDA8S.

Once it recovers, the log will show:

"Global AteisNet Normal Mode"

7.1.10 Fireman Error

❖ The Fireman microphone has an error.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - Fireman Open/Short:

    "Fireman Error" or "Fireman Audio Open" display on the touch screen of IDA8C.
  - A text message displays at the [Machine Fault Record] window in Ateis Studio, see the picture as below.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

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❖ Troubleshooting:

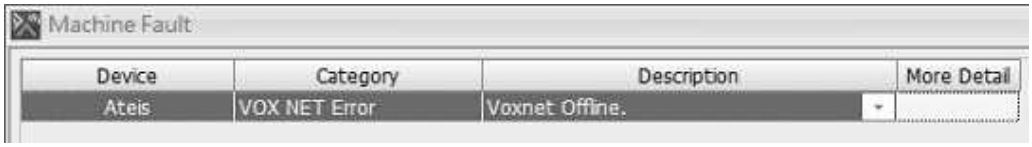
- Check the wire connection of the fireman microphone.
- If the wire connection is correct but still indicate a fault, replace the fireman microphone with a working one.
- If the fireman microphone is replaced but still indicate a fault, replace the IDA8C or contact your technician.

7.1.11 VOX@NET Offline

❖ The IDA8C/S cannot communicate with VOX@NET server.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - "Voxnet Offline" message displays on the touch screen of IDA8C.
  - A text message displays at the [Machine Fault Record] window in Ateis Studio, see the picture as below.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

❖ Troubleshooting:

Observe the link and the active LED indicator on the RJ45 connector of the PC with the VOX@NET server installed and ethernet switch. It is an error if the link LED is not lit up or active LEC is not blinking. Possible causes are listed below:

- Both the switch and PC receive an incorrect LED display behavior. Check the cable between the PC & ethernet switch.
- Only VOX@NET receive an LED display behavior. Check the network card of the PC. You can change a network card to see if it is working properly.
- Only switch can receive an LED display behavior. Check the switch, you can simply change to another port to see if it is working properly.

Observe the link and active LED indicator on the RJ45 connector of the IDA8C/S and switch. Possible causes are listed below:

- Both the switch and IDA8C/S receive an incorrect LED display behavior. Check the cable between the IDA8C/S & ethernet switch.
- Only the IDA8C/S receive an incorrect LED display behavior. Check the IDA8C/S. You can replace it with a working IDA8C/S to see if it is working properly.
- Only the switch receive an incorrect LED display behavior. Check the switch. You can simply change to another port to see if it is working properly.

7.1.12 Redundancy Error

❖ It shows "Backup Device Offline" when a backup device can't communicate.

❖ It shows "Operation Mode Fail" due to the points as below:

- RU device is turned off.

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- The incorrect wiring between the RU and the IDA8.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - "Redundancy Error", "Backup Device Offline" or "Operation Mode Fail" messages display at the touch screen of the IDA8C.
  - A text message displays at the window [Machine Fault Record] in Ateis Studio, see the picture as below.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

❖ Troubleshooting:

The only power supply for RU is from IDA8s. In case the 24VDC output connector and wire are not working right, the IDA8 can detect it and show the fault list on the touch screen as following:

- VS_D12V_RL Error
- -12V Error
- 12V Error

If anyone of them shows, please check the connections or replace the device.

In case of a damaged relay of RU which cannot switch the system, the Primary IDA8 would become the main system.

Once it's recovered, the log will show:

- "RU OK: Backup Device Online."
- "RU OK: Operation Mode Normal."

7.1.13 URGP-16I16O Fault

❖ There is an monitoring error in URGP-16I16O device due to the reasons of out of tolerance.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - "URGP-16I16O Fault" message displays on the touch screen of IDA8C.
  - The text messages display at the window [Machine Fault Record] in Ateis Studio, see the picture as below.
    - Port: Indicate which port in your device has fault.
    - ID: Indicate which customized name triggers fault.
    - CHn: Indicate which channel is cut off.

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7.1.14 Remote Offline

❖ The IDA8C/S cannot communicate with peripheral devices.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - The text messages display at the touch screen of the IDA8C as below.
    - "Remote Offline"
    - "PPM Port:2 ID:1", where Port N is the Nth PDC port for the peripheral connection, the ID is the unique number for each peripheral device on the PDC port.
  - A text message displays at the window [Machine Fault Record] in Ateis Studio, see the picture as below.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

❖ Troubleshooting:

- Replace the peripheral device with a working one. If the fault is resolved, the problem is from the peripheral device. Send the peripheral device to your technician.
- If the fault is not resolved, change the IDA8C/S and contact your technician.

7.1.15 URGP-32I2O Fault

❖ There is an error on the evacuation inputs or fault inputs on the URGP-32I2O.

❖ Indication:

- LED Indicator:

  When this error is detected, the following LEDs will light up:
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - EVAC Input Error (Open):

    The text messages display on the touch screen of the IDA8C as below.
    - "URGP-32I2O Fault"
    - "Port:1 IP:1, ch1 Open", where Port N is the Nth PDC port for a peripheral connection. The IP is the unique number for each peripheral device on the PDC port, ch is the number of channel.
  - A text message displays at the window [Machine Fault Record] in Ateis Studio, see the picture as below.

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- EVAC Input Error (Short):

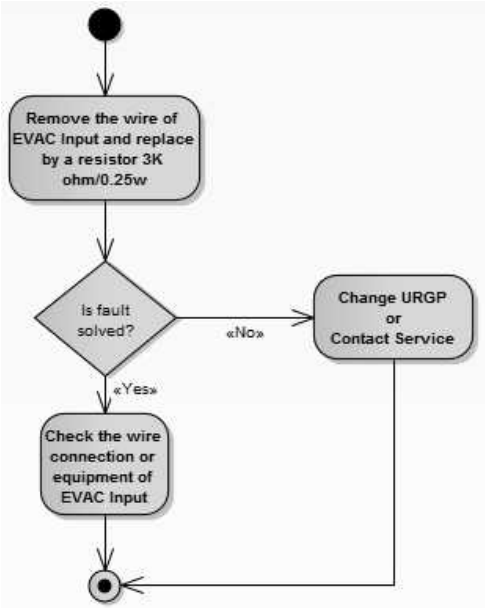
  Text messages display on the touch screen of IDA8C:

  - "URGP-32I2O Fault"
  - "Port:1 IP:1, ch1 Short", where Port N is the Nth PDC port for a peripheral connection. The IP is the unique number for each peripheral device on the PDC port, ch is the number of the channel.

- A text message displays at the window [Machine Fault Record] in Ateis Studio, see the picture as below.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.



Fault Handling : URGP Fault

7.1.16 Remote Fault

❖ An error is detected on peripheral devices. For PPM-AS or PSS-AS, this fault relates to a capsule microphone or a speaker error.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - G. Fault LED on the front panel of the IDA8C/S.
- Log
  - PPM-AS / PSS-AS Capsule Microphone Open or Short / Speaker Error:

    The text messages display on the touch screen of IDA8C:

    - "Remote Fault"

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- "PSS Port:1 ID:1, Microphone Fault", where Port N is the Nth PDC port for a peripheral connection. The ID is the unique number for each peripheral device on the PDC port.

- A text message displays at the window [Machine Fault Record] in Ateis Studio, see the picture as below.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

7.1.17 Ethernet Remote Offline

❖ The IDA8C/S cannot communicate with ethernet peripheral devices such as TerraManger.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - "Ethernet Remote Offline" message displays at the touch screen of the IDA8C.
  - A text message displays at the [Machine Fault Record] window in Ateis Studio, see the picture as below.

    TM1: Indicate which customized name triggers fault.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

7.1.18 Ethernet Remote Fault

❖ An error is detected on ethernet peripheral devices. This fault relates to a capsule microphone or a speaker error such as Terra-K, SDM etc.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - "Ethernet Remote Fault" message displays on the touch screen of IDA8C.
  - A text message displays at the window [Machine Fault Record] in Ateis Studio, see the picture as below.

    TM1: Indicate which customized name triggers fault.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

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7.1.19 File Corruption

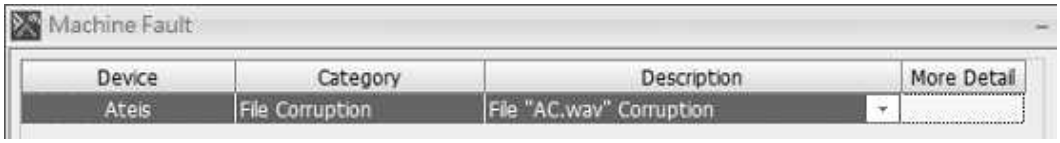
❖ The file CRC check code fails (if the file monitoring has been enabled in ATEIS Studio).

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - The text messages display at the touch screen of the IDA8C:

    "File Corruption"

    "File xxx Corruption" (where xxx = file name)
  - A text message displays at the window [Machine Fault Record] in Ateis Studio, see the picture as below.



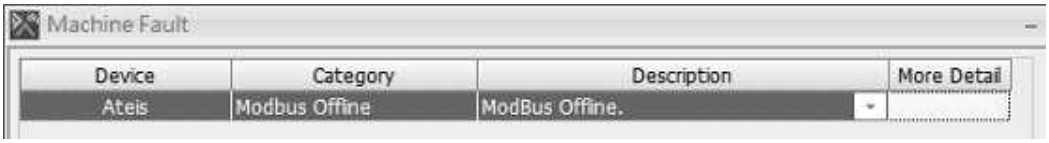
- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

7.1.20 ModBus Offline

❖ The Modbus client can't communicate.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - "ModBus Offline" message displays at the touch screen of the IDA8C.
  - A text message displays at the window [Machine Fault Record] in Ateis Studio, see the picture as below.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

❖ Troubleshooting: Check the Modbus client communication. Once it's recovered, the LOG will show: "ModBus Online."

7.1.21 AMP Rating Fault

❖ The IDA8 gets the reference value which is too low.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - The text messages display at the touch screen of the IDA8C:
    - "AMP Rating Fault"

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- "Zone n Normal AMP Rating too low"
- "Zone n BackUp AMP Rating too low" (where n = 1~8)

○ A text message displays at the window [Machine Fault Record] in Ateis Studio, see the picture as below.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

❖ Troubleshooting: Check the amplifier power and wiring. Once it's recovered, the LOG will show:

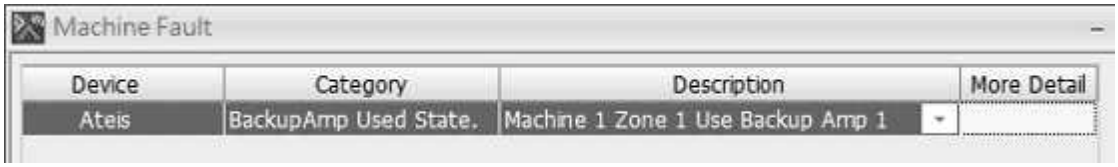
- "Zone n Normal AMP OK"
- "Zone n Backup AMP OK"

7.1.22 BackupAmp Used State

❖ A normal amplifier has failed and was replaced by the backup amplifier.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - ○ G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - ○ The text messages display at the touch screen of the IDA8C:
    - "BackupAmp Used State"
    - "Machine X Zone Y Use Backup Amp Z" (Where X = machine ID, Y = 1~8 and Z = 1~n).
  - ○ A text message displays at the window [Machine Fault Record] in Ateis Studio, see the picture as below.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

7.1.23 Local AteisNet Backup Mode

❖ One of the local ATEIS net port has broken.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - ○ G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - ○ "Local AteisNet Backup Mode" message displays play at the touch screen of the IDA8C.
  - ○ A text message displays at the window [Machine Fault Record] in Ateis Studio, see the picture as below.

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- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

7.1.24 Global AteisNet Backup Mode

❖ One of the global ATEIS net port has broken.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - "Global AteisNet Backup Mode" message displays at the touch screen of the IDA8C.
  - A text message displays on the window [Machine Fault Record] in Ateis Studio, see the picture as below.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

7.1.25 Bypass Mode

❖ If using a redundancy unit, the IDA8 will enter in the bypass mode when a Bypass Mode fault occurs, the following table listed the Bypass Mode faults.

Bypass Mode Fault
Flash Error
I2C Error
SSI Error
SPI Flash Error
NetCard Error
DSP Boot Failure
DSP Boot Error
Power Error
AESEBU Boot Error
TEL Boot Error
License deact
Main Board FPGA Boot Error
Ethernet Broken
DSP SDRAM Error
DSP No Response
DSP Fault

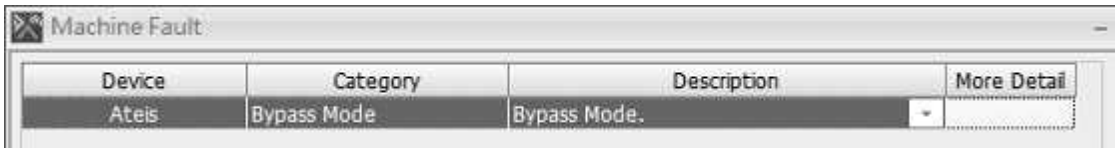
If not, the IDA8 will enter in that mode only when the "Bypass Input line" on the rear panel has broken.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - G. Fault LED on the front panel of the IDA8C/S.

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- Log:
  - "Bypass Mode." message displays at the touch screen of the IDA8C.
  - A text message displays at the window [Machine Fault Record] in Ateis Studio, see the picture as below.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

7.1.26 Major User Define Fault

❖ The "Fault Define Security" component has been triggered.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - The text messages display at the touch screen of the IDA8C:
    - "Major User Define Fault"
    - "Major Fault : xxx" (where xxx = user-defined word.)
  - A text message displays at the window [Machine Fault Record] in Ateis Studio, see the picture as below.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

7.1.27 Minor User Definer Fault

❖ The "Fault Define Security" component has been triggered.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - The text messages display at the touch screen of the IDA8C:
    - "Minor User Define Fault"
    - "Minor Fault : xxx" (where xxx = user-defined word.)
  - A text message displays at the window [Machine Fault Record] in Ateis Studio, see the picture as below.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

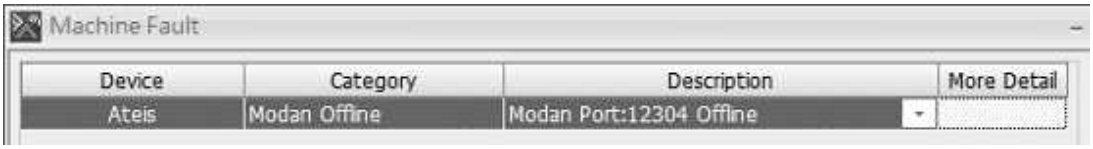
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7.1.28 Modan Offline

❖ The Modan client can't communicate.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - The text messages display at the touch screen of the IDA8C:
    - "Modan Offline"
    - "Modan Port: n offline" (Where n = 1~65535)
  - A text message displays at the window [Machine Fault Record] in Ateis Studio, see the picture as below.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

7.1.29 NTP Server Error

❖ All the NTP server can't communicate.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - "NTP Server Error" messages display at the touch screen of the IDA8C.
  - A text message displays at the window [Machine Fault Record] in Ateis Studio, see the picture as below.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

7.1.30 Normal AMP Out of Toler

❖ The reference value measured from the normal amplifier is out of tolerance.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - The text messages display at the touch screen of the IDA8C:
    - "Normal AMP Out of Toler"
    - "Zone n Normal AMP Gain Too High"
    - "Zone n Normal AMP Gain Too Low " (Where n = 1~8)

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- A text message displays at the window [Machine Fault Record] in Ateis Studio, see the picture as below.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

7.1.31 Backup AMP Out of Toler

❖ The reference value measured from the backup amplifier is out of tolerance.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - The text messages display at the touch screen of the IDA8C:
    - "Backup AMP Out of Toler."
    - "Zone n Backup AMP Gain Too High"
    - "Zone n Backup AMP Gain Too Low " (Where n = 1~8)
  - A text message displays at the window [Machine Fault Record] in Ateis Studio, see the picture as below.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

7.1.32 IP Attack

❖ The local ATEIS net card has failed.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - System Fault LED on the front panel of the IDA8C/S.
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - "Local Netcard Boot Failure" message displays on the touch screen of the IDA8C.
  - A text message displays at the [IP Attack] window in Ateis Studio, see the picture as below.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

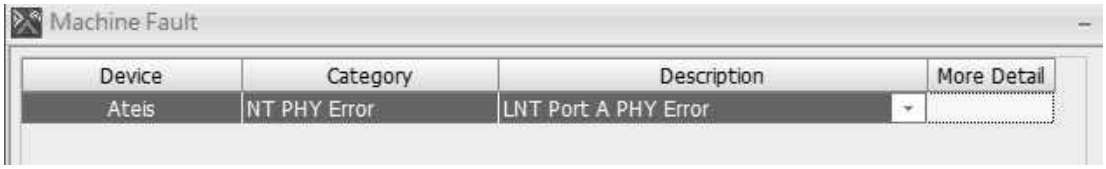
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7.1.33 NT PHY Error

❖ The system detection of Ateis Local/Global-Net card is broken.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - "NT PHY Error" message displays at the touch screen of the IDA8C.
  - The text messages display at the window [Machine Fault Record] in Ateis Studio, see the picture as below.
    - LNT: Error in Ateis Local Net Card. Note: GNT: Ateis Global Net Card.
    - Port A PHY Error: Error in A/B Port Net Card.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

7.1.34 Local AteisNet PA/B Shutdown

❖ The local Ateis-Net card has detected unknown communication and causes the port is disable, users need to reboot the machine.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - "Local AteisNet PA/B Shutdown" message displays at the touch screen of the IDA8C.
  - A text message displays at the window [Machine Fault Record] in Ateis Studio, see the picture as below.



7.1.35 Global AteisNet PA/B Shutdown

❖ The global Ateis-Net card has detected unknown communication and causes the port is disable, users need to reboot the machine.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - "Global AteisNet PA/B Shutdown" message displays at the touch screen of the IDA8C.
  - A text message displays at the window [Machine Fault Record] in Ateis Studio, see the picture as below.

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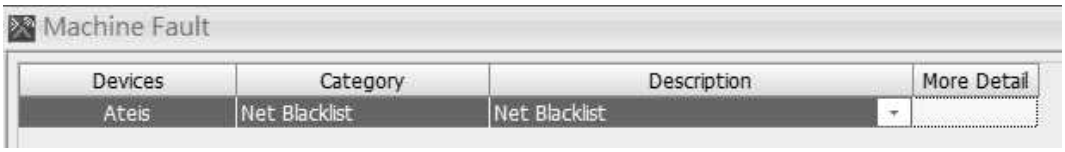


7.1.36 Net Blacklist

❖ The communication of IDA8 is unstable.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - "Net Blacklist" message displays at the touch screen of the IDA8C.
  - A text message displays at the window [Machine Fault Record] in Ateis Studio, see the picture as below.



7.1.37 Fan Error

❖ The fan in IDA8 breaks down.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - "Fan Error" message displays at the touch screen of the IDA8C.
  - A text message displays at the window [Machine Fault Record] in Ateis Studio, see the picture as below.



7.2 Table of System Faults

Name	Description	Detail	Troubleshooting
SSI Error		Audio board control has failed.	Reboot device.
No Para. Table.		The IDA8 can't find the DSP parameters.	Please re-store configuration of ATEIS Studio again.
Flash Error	I2C Z LED No Response I2C Z LED Driver Error I2C Z LED Compare Error I2C LOGICOUT POWER FAN UEVM No Response I2C LOGICOUT POWER FAN UEVM Driver Error I2C LOGICOUT POWER FAN	An error occurred in the Nand flash inside IDA8C/S. NAND flash access fault for IDA8C(256MB) or IDA8S(128MB)	Reboot device.

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Name	Description	Detail	Troubleshooting
	UEVM Compare Error I2C EVACU IN No Response I2C EVACU IN Driver Error I2C EVACU IN Compare Error I2C POWER DETECT No Response I2C POWER DETECT Driver Error I2C POWER DETECT Compare Error I2C TEMPERATURE No Response I2C TEMPERATURE Driver Error I2C TEMPERATURE Compare Error I2C FRP_BUTTON SLED No Response I2C FRP_BUTTON SLED Driver Error I2C FRP_BUTTON SLED Compare Error I2C FP MONITOR No Response I2C FP MONITOR Driver Error I2C FP MONITOR Compare Error I2C PCM3168 No Response I2C PCM3168 Driver Error I2C PCM3168 Compare Error I2C ADAPTER No Response I2C ADAPTER Driver Error I2C ADAPTER Compare Error		
I2C Error		There is an internal error of I2C communication between micro controllers. Front panel LED, fan, Evac input, temperature detect, button control fail.	Reboot device.
Local Netcard Boot Failure		The local ATEIS net card fails. Note: Only for IDA8 local net. Local ATEIS net card can't boot	1. Reboot device. 2. Re-connect the ribbon cable of Local netcard.
DSP Boot Failure		There is an internal error of communication between micro controllers inside devices. DSP chip can't boot	Reboot device.
Preset Table Error		The structure of the configuration is not compatible with the	Please re-store configuration of ATEIS Studio again.

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Name	Description	Detail	Troubleshooting
		current firmware. Configuration (ats file) version is not match	
No Preset Table		There is no configuration inside the device. Fail to find the configuration	Please re-store configuration of ATEIS Studio again.
SPI Flash Error		There is an internal error of the micro controller SPI communication. System setting access fail	1. Reboot device. 2. If this error often shows on front panel, replace the machine.
No Para. Table.		Can't find DSP parameter	Please re-store configuration of ATEIS Studio again.
Para. Table Error		There is a data error in the table which stores important information of the configuration. DSP parameter (ats file) version not matching	Please re-store configuration of ATEIS Studio again.
Trans Error		There is an internal hardware error of the device. DSP chip communication fail	1. Reboot device. 2. If this error often shows on front panel, replace the machine.
Power Error	5v Error VS_D12V_RL Error -12v Error 12v Error 48v Error System 24v Error Normal 24v Error BackUp 24v Error	The power circuit inside the device has an error. 5v, 12v, 48v, 24v fail detected	Reboot device.
Reset Error		Last time the machine is unpredictably shut down, please see the machine log. Machine is unpredictable shutdown at last time, please see machine log	When the machine shuts down unpredictable, it will auto reboot. However, if this error continues happening, please contact the manufacturer.
AESEBU Boot Failure		AESEBU card can't boot.	Update firmware and reboot machine.
TEL Boot Error		The communication between the main controller unit and telephones fails. Telephone card can't boot	Update firmware and reboot machine.
Main Board FPGA Boot Error		There is an Internal hardware error. Main board FPGA chip can't boot	Update firmware and reboot machine.
Global Netcard Boot Failure		The global ATEIS net card fails. Note: Only for IDA8 global net. Gocal ATEIS net card can't boot	1. Reboot device. 2. Update the same firmware again. 3. Re-connect the ribbon cable of global netcard.
DSP SDRAM Error		There has SDRAM fault in DSP chip. The SDRAM of DSP chip	Reboot device.

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Name	Description	Detail	Troubleshooting
		error	
DSP No Response		No response on DSP chip communication. DSP chip communication fail	Reboot device.
DSP Fault		An error of DSP default file and hence no audio output. DSP fail	Reboot device.

7.2.1 SSI Error

❖ The Audio board control has failed.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - "SSI error" message displays at the touch screen of the IDA8C.
  - A text message displays at the window [Machine Fault Record] in Ateis Studio, see the picture as below.



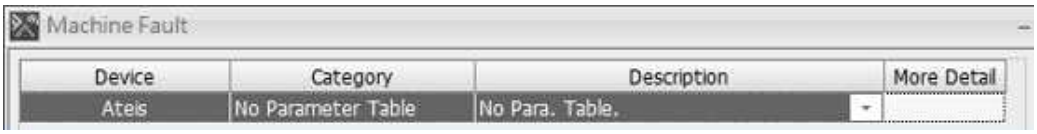
- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

7.2.2 No Parameter Table

❖ The IDA8 can't find the DSP parameters.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - "No Parameter Table" message displays at the touch screen of the IDA8C.
  - A text message displays at the window [Machine Fault Record] in Ateis Studio, see the picture as below.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

7.2.3 Flash Error

❖ The Nand flash inside the IDA8C/S has an error.

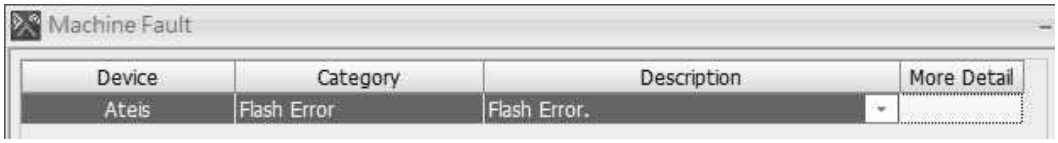
❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - System Fault LED on the front panel of the IDA8C/S.

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- G. Fault LED on the front panel of the IDA8C/S.

- Log:
  - "Flash Error" message displays on the touch screen of the IDA8C.
  - A text message displays at the [Machine Fault Record] window in Ateis Studio, see the picture as below.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

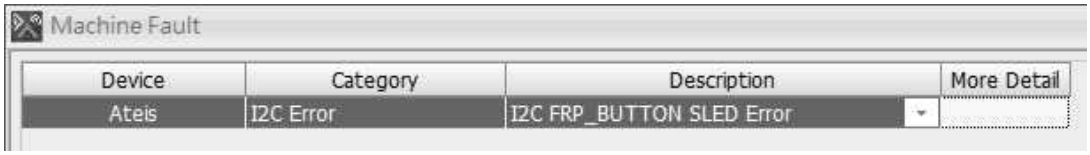
7.2.4 I2C Error

❖ There is an internal error of I2C communication between micro controllers.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - System Fault LED on the front panel of the IDA8C/S.
  - G. Fault LED on the front panel of the IDA8C/S.

- Log:
  - "I2C Error" message displays on the touch screen of the IDA8C.
  - A text message displays at the [Machine Fault Record] window in Ateis Studio, see the picture as below.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

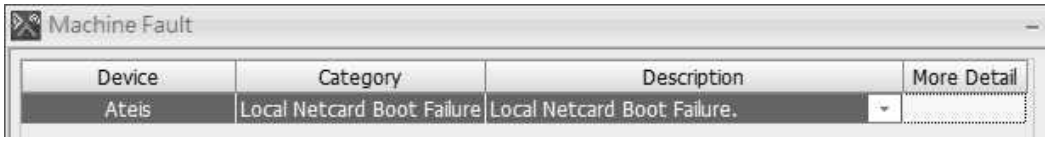
7.2.5 Local Netcard Boot Failure

❖ The local ATEIS net card has failed.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - System Fault LED on the front panel of the IDA8C/S.
  - G. Fault LED on the front panel of the IDA8C/S.

- Log:
  - "Local Netcard Boot Failure" message displays on the touch screen of the IDA8C.
  - A text message displays at the [Machine Fault Record] window in Ateis Studio, see the picture as below.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

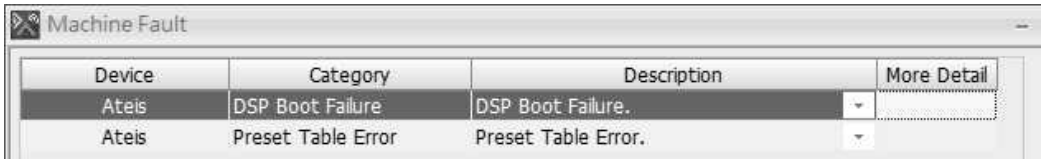
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7.2.6 DSP Boot Error

❖ There is an internal error of communication between micro controllers inside devices.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - System Fault LED on the front panel of the IDA8C/S.
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - "DSP Boot Error" messages display on the touch screen of the IDA8C.
  - Text messages display at the [Machine Fault Record] window in Ateis Studio, see the picture as below.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

7.2.7 Preset Table Error

❖ The structure of configuration is not compatible with the current firmware.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - System Fault LED on the front panel of the IDA8C/S.
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - "Preset Table Error" message displays on the touch screen of the IDA8C.
  - A text message displays at the [Machine Fault Record] window in Ateis Studio, see the picture as below.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

7.2.8 No Preset Table Error

❖ There is no configuration inside the device.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - System Fault LED on the front panel of the IDA8C/S.
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - "No Preset Table" message displays on the touch screen of the IDA8C.
  - A text message displays at the [Machine Fault Record] window in Ateis Studio, see the

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picture as below.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

7.2.9 SPI Flash Error

❖ An internal error of micro controller SPI communication.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - System Fault LED on the front panel of the IDA8C/S.
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - "SPI Flash Error" message displays on the touch screen of the IDA8C.
  - A text message displays at the [Machine Fault Record] window in Ateis Studio, see the picture as below.



- A buzzing sound will be outputted to monitoring speaker on the front panel of the IDA8C.

7.2.10 Parameter Table Error

❖ There is a data error in the table which stores important information of configuration.

❖ Indication:

- LED Indicator When this error is detected, the following LEDs will light up:
  - System Fault LED on the front panel of the IDA8C/S.
  - G. Fault LED on the front panel of the IDA8C/S.
- Log
  - "Para. Table Error" messages display on the touch screen of the IDA8C.
  - Text messages display at the [Machine Fault Record] window in Ateis Studio, see the picture as below.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

7.2.11 Trans Error

❖ There is an internal hardware error.

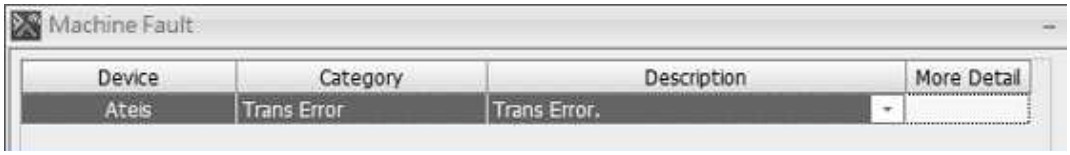
❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:

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- System Fault LED on the front panel of the IDA8C/S.
- G. Fault LED on the front panel of the IDA8C/S.

- Log:
  - "Trans Error" message displays on the touch screen of the IDA8C.
  - A text message displays at the [Machine Fault Record] window in Ateis Studio, see the picture as below.



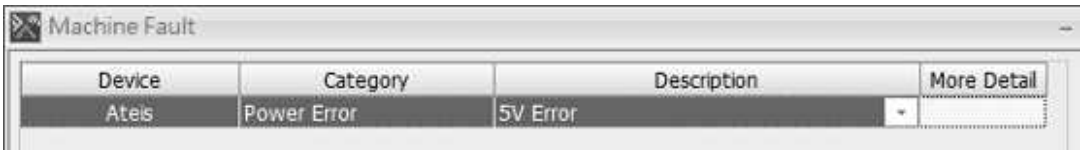
- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

7.2.12 Power Error

❖ The power circuit inside device is error.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - System Fault LED on the front panel of the IDA8C/S.
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - "Power Error" message displays on the touch screen of the IDA8C.
  - A text message displays at the [Machine Fault Record] window in Ateis Studio, see the picture as below.



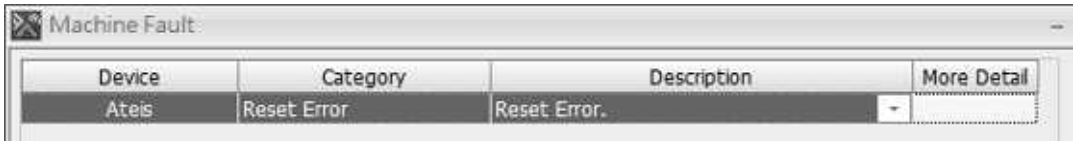
- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

7.2.13 Reset Error

❖ The machine has shut down unpredictably, please check the machine log.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - System Fault LED on the front panel of the IDA8C/S.
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - "Reset Error" message displays on the touch screen of the IDA8C.
  - A text message displays at the [Machine Fault Record] window in Ateis Studio, see the picture as below.



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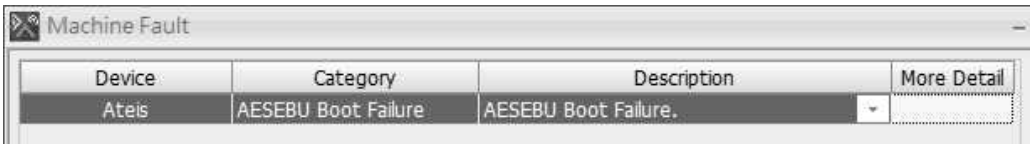
- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

7.2.14 AESEBU Boot Failure

❖ The AESEBU card has failed.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - "AESEBU Boot Error." message displays at the touch screen of the IDA8C.
  - A text message displays at the window [Machine Fault Record] in Ateis Studio, see the picture as below.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

7.2.15 Main Board FPGA Boot Error

❖ There is an internal hardware error.

❖ Indication:

- LED Indicator: When this error is detected, following LEDs will light up:
  - System Fault LED on the front panel of the IDA8C/S.
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - "Main Board FPGA Boot Error" message displays on the touch screen of the IDA8C as:
  - A text message displays at the [Machine Fault Record] window in Ateis Studio, see the picture as below.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

7.2.16 TEL Boot Failure

❖ The communication between main controller unit and telephone fails.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - System Fault LED on the front panel of the IDA8C/S.
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - "TEL Boot Failure" message displays on the touch screen of the IDA8C.
  - A text message displays at the [Machine Fault Record] window in Ateis Studio, see the

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picture as below.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

7.2.17 DSP SDRAM Error

❖ There has SDRAM fault in DSP chip.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - System Fault LED on the front panel of the IDA8C/S.
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - "DSP SDRAM Error" message displays on the touch screen of the IDA8C.
  - A text message displays at the [Machine Fault Record] window in Ateis Studio, see the picture as below.



7.2.18 DSP No Response

❖ There is no response on the DSP chip communication.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - System Fault LED on the front panel of the IDA8C/S.
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - "DSP No Response" message displays on the touch screen of the IDA8C.
  - A text message displays at the [Machine Fault Record] window in Ateis Studio, see the picture as below.



7.2.19 DSP Fault

❖ An error of DSP default file and hence no audio output.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - System Fault LED on the front panel of the IDA8C/S.
  - G. Fault LED on the front panel of the IDA8C/S.

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- Log:
  - "DSP Fault" message displays on the touch screen of the IDA8C.
  - A text message displays at the [Machine Fault Record] window in Ateis Studio, see the picture as below.



7.2.20 Global Netcard Boot Failure

❖ The global Ateis-net card has failed.

❖ Indication:

- LED Indicator: When this error is detected, the following LEDs will light up:
  - System Fault LED on the front panel of the IDA8C/S.
  - G. Fault LED on the front panel of the IDA8C/S.
- Log:
  - "Global Netcard Boot Failure" message displays on the touch screen of the IDA8C.
  - A text message displays at the [Machine Fault Record] window in Ateis Studio, see the picture as below.



- A buzzing sound will be outputted to the monitoring speaker on the front panel of the IDA8C.

7.3 Ateis Studio Cannot Find Devices

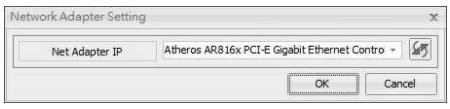
If the Ateis Studio cannot find IDA8 devices, please check the following troubleshooting.

1. Choose the network card on your PC again.

- There may have more than one wired/wireless network adapter cards on your PC. Click [Tools > Communication] on Ateis Studio software, and open its setting window.



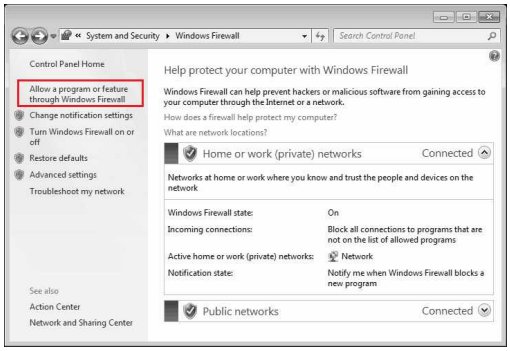
- Reselect the network adapter card which has been used for connecting the IDA8 devices to Ethernet. Then click [OK].



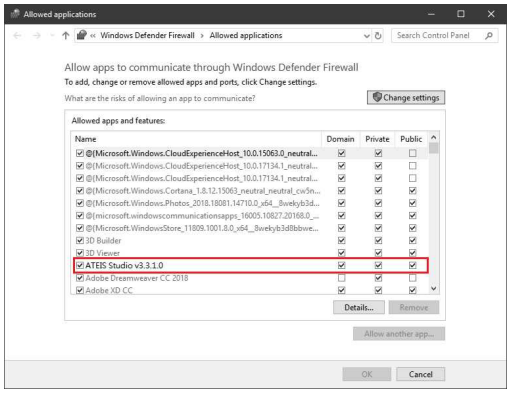
2. Check if the Windows Firewall has allowed Ateis Studio software.

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- Go to [Windows Firewall > Allow a program or feature through Windows Firewall].

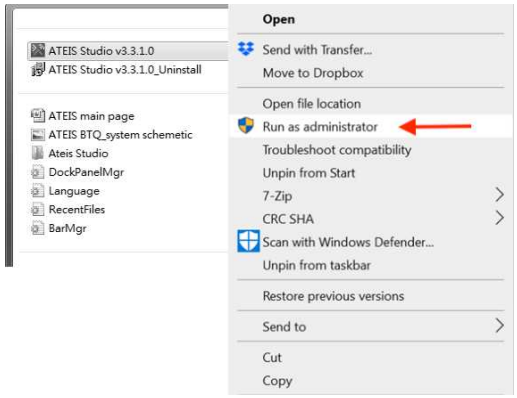


- Enable the checkbox options on "Domain", "Private" and "Public" columns.



3. Run the Ateis Studio software as administrator on Windows.

- Right-click the Ateis Studio software icon, then click "Run as administrator" button to run the Ateis Studio software with the administrator level.



- Or you can set "Run as administrator" to default. First, right click the Ateis Studio software icon (Figure 1). Then click [Properties] button to enable "Run this program as an administrator" option (Figure 2).

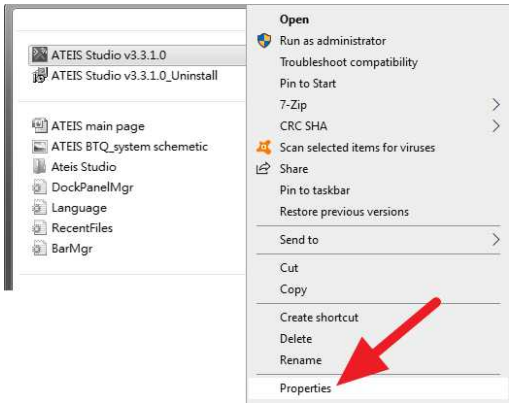


Figure 1

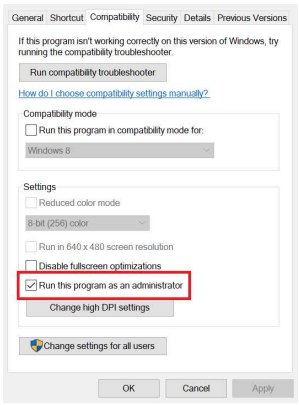


Figure 2

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8 Log List

LOG item	Description
Nand Flash Error	NAND flash access fault for IDA8C(256MB) or IDA8S (128MB)
I2C Z LED No Response I2C Z LED Driver Error I2C Z LED Compare Error I2C LOGICOUT POWER FAN UEVM No Response I2C LOGICOUT POWER FAN UEVM Driver Error I2C LOGICOUT POWER FAN UEVM Compare Error I2C EVACU IN No Response I2C EVACU IN Driver Error I2C EVACU IN Compare Error I2C POWER DETECT No Response I2C POWER DETECT Driver Error I2C POWER DETECT Compare Error I2C TEMPERATURE No Response I2C TEMPERATURE Driver Error I2C TEMPERATURE Compare Error I2C FRP_BUTTON SLED No Response I2C FRP_BUTTON SLED Driver Error I2C FRP_BUTTON SLED Compare Error I2C FP MONITOR No Response I2C FP MONITOR Driver Error I2C FP MONITOR Compare Error I2C PCM3168 No Response I2C PCM3168 Driver Error I2C PCM3168 Compare Error I2C ADAPTER No Response I2C ADAPTER Driver Error I2C ADAPTER Compare Error	Front panel LED, fan, evac input, temperature detect and button control fails
SSI Error	Audio board control has a fault
Global Netcard Boot Failure	Gocal ATEIS netcard can't boot
Local Netcard Boot Failure	Local ATEIS net card can't boot
DSP Boot Failure	DSP chip can't boot
Local AteisNet Broken Local AteisNet Recovery	local ATEIS net card connection status
Local AteisNet Backup Mode Local AteisNet Normal Mode	local ATEIS net backup connection status
DSP SDRAM Error	The SDRAM of DSP chip error
DSP No Response	DSP chip communication fail
DSP Fault	DSP fail
DSP Recovered	DSP recover when dsp detect error
Preset Table Error	Configuration (.ats file) version not matching
No Preset Table	Can't find a configuration
No Parameter Table	Can't find a DSP parameter
Parameter Table Error	DSP parameter (.ats file) version not matching
Trans Error	DSP chip communication fails
Ethernet Broken	Ethernet connection status

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LOG item	Description
Ethernet Recovery Ethernet Broken	
LVDT Occurrence	Low voltage detected when power supply is lower than 16VDC
AESEBU Boot Failure	AESEBU card can't boot
TEL Boot Failure	Telephone card can't boot
Main Board FPGA Boot Failure	Main board FPGA chip can't boot
Global netcard doesn't exist	Global Ateis netcard isn't exist
Global NT Error	Global ATEIS net card fails
AESEBU Error	AESEBU card fails
TEL Error	Telephone card fails
Main Board FPGA Code Error	Main board FPGA chip fails
RU OK: Backup Device Online RU Error: Backup Device Offline	Backup device status in the redundancy configuration
RU OK: Operation Mode Normal RU Error: Operation Mode Fail	Operation mode status in the redundancy configuration
Power On Status	Machine is powered
AteisNET Deploying	Starts ATEIS Net deploying
Restart Machine	Resets machine by ATEIS Studio
LVDT Recovery	Recovery form low voltage status
NTP Server Error	All of the NTP server can't communicate
NTP Sync: yyyy/mm/dd hh:mm:ss (ex: NTP Sync: 2013/7/12 08:15:42)	NTP synchronization time
Global AteisNet Broken Global AteisNet Recovery	Global ATEIS net card connection status
Voxnet Online Voxnet Offline	Voxnet server connection status
ModBus Online ModBus Offline Modbus Connect:xxx Modbus Disconnect:xxx (xxx = client ip address)	Modbus client connection status
Global AteisNet Backup Mode Global AteisNet Normal Mode	Global ATEIS Net backup connection status
Evac Event Beginning Evac Event Ending	Any evacuation paging beginning/ ending
Store Configuration Table Start Store Configuration Table End	Stores configuration table status
Store Configuration Success Store Configuration Fail	Stores configuration table results
Update Start Update End	Updates machine status
Update Success Update Fail	Updates machine result
Zone n Overflow (n = 1~16)	Zone overflow status
5v Error VS_D12V_RL Error -12v Error 12v Error 48v Error System 24v Error Normal 24v Error BackUp 24v Error	Power status
Store File Start Store File End	Stores file status
Store File Success	file access result

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LOG item	Description
Store File Fail	
Delete File Success Delete File Fail	Delete file result
PDC n Audio Short PDC n Audio Open PDC n Audio OK (n = 1~4)	PDC cable status
Zone n Normal AMP OK Zone n Normal AMP Fai Zone n Normal AMP Gain Too High Zone n Normal AMP Gain Too Low Zone n Normal AMP Rating too low (where n = 1~8)	Normal amplifier status
Zone n Backup AMP OK Zone n Backup AMP Fai Zone n Backup AMP Gain Too High Zone n Backup AMP Gain Too Low Zone n Backup AMP Rating too low (where n = 1~8)	Backups amplifier status
Zone n Line A Good Zone n Line A Open Zone n Line A Short-Open Zone n Line A Bad Impedance (where n = 1~8)	Speaker line A status
Zone n Line B Good Zone n Line B Open Zone n Line B Short-Open Zone n Line B Bad Impedance (where n = 1~8)	Speaker line B status
AMP Zone n No Leakage AMP Zone n Leakage AMP Zone n Leakage Inner Fail (global only) AMP Zone n Leakage Line A Open (global only) AMP Zone n Leakage Line B Open (global only) (n = 1~8)	Zone leakage status
Evac n Open Evac n Short (where n = 1~9)	Evacuation input monitor status
Fireman Audio Line Open Fireman Audio Line OK Fireman Audio Line Short Fireman Button Press Fireman Button Release Fireman Button Open Fireman Button Short	Fireman monitor status
xxx Port: m ID: n On line xxx Port: m ID: n Off line (where xxx = Remote Name, m = 1~4, n = 1~32)	Remote device connection status
xxx Port:m ID:n Speaker Fault xxx Port:m ID:n Microphone Fault, RMS:--- xxx Port:m ID:n Microphone OK, RMS:--- xxx Port:m ID:n Fireman Key Fault, Voltage:--- xxx Port:m ID:n Fireman Key Fault, ADC:--- xxx Port:m ID:n Fireman Audio Fault, RMS:--- xxx Port:m ID:n Fireman Audio OK, RMS:--- (where xxx = Remote Name, m = 1~4, n = 1~32)	Remote device mic/speaker/fireman key status
Bypass Mode Beginning Bypass Mode Ending	Bypass mode status
Paging Start Source : n At : xxx	Paging start status

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LOG item	Description
(where n = source channel, xxx = zone number)	
Paging Stop Source : n At : xxx (where n = source channel, xxx = zone number)	Paging stop status
URGP 32I Port:m Fault CH:n, Deactive URGP 32I Port:m Fault CH:n, Active URGP 32I Port:m CH:n Line Open URGP 32I Port:m CH:n Short Circuit (m = 1~4, n = 1~32)	URGP 32I device monitor status
URGP16I16O Port:m ID:1 Fault CH:n, Deactive URGP16I16O Port:m ID:1 Fault CH:n, Active URGP16I16O Port:m ID:1 CH:n Line Open URGP16I16O Port:m ID:1 CH:n Short Circuit (where m = 1~4, n = 1~16)	URGP16I16O device board monitor status
S/WDOG RETS = xxx (where xxx = code address)	Watchdog status
Exception RETX= xxx (where xxx = code address)	Exception status
KernelPanic Code = xxx (where xxx = code address)	Kernel panic status
File xxx Corruption (where xxx = file name)	File CRC code error
mmm Audio RMS = nnn (where mmm = Fireman or PDC, nnn = RMS value)	Audio RMS value
Major Fault : xxx (where xxx = user customer define word)	Major fault occurs form the "Fault Definer Security"
Minor Fault : xxx (where xxx = user customer define word)	Minor fault occurs form the "Fault Definer Security"
Modan Port:n Online Modan Port:n Offline (n = 1~65535)	Modan client status
ZB m Zone n Reference_Full_Load-tolerance is xxx (where m = 1~2, n = 1~8, xxx = tolerance value)	Zone full load tolerance value recording
ZB m Zone n Reference_Unload+tolerance is xxx (where m = 1~2, n = 1~8, xxx = tolerance value)	Zone unload tolerance value recording
ZB m Zone n Measure on Full_Load is xxx (where m = 1~2, n = 1~8, xxx = measure value)	Zone measure value recording
ZB m Zone n Impedance_Reference_AB-tolerance is xxx (where m = 1~2, n = 1~8, xxx = reference value)	Zone reference value recording
ZB m Zone n Impedance_Reference_AB+tolerance is xxx (where m = 1~2, n = 1~8, xxx = reference value)	Zone reference value recording
ZB m Zone n Impedance Measure on Line AB is xxx (where m = 1~2, n = 1~8, xxx = reference value)	Zone reference value recording
xxx IP:yyy Port:zzz Online xxx IP:yyy Port:zzz Offline (xxx = remote name, yyy = ip address, zzz = port number)	Ethernet remote connection status
xxx mic Offline xxx mic Online xxx Mic Disconnect xxx Mic OK xxx Mic Short (xxx = remote name)	Ethernet remote mic status
Net Blacklist Machine (x,x)	There is some IDA8 communication is unstable

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LOG item	Description
(xx = mahcine net id)	
IP Attack:xx.xx.xx.xx (xx = ip address)	There is some network client attack the machine. IDA8 will block its communication.
Global AteisNet PA/B Shutdown	Global ATEIS net card detect unknown communication so that the port disable, you need restart machine to recovery it.
Local AteisNet PA/B Shutdown	Local ATEIS net card detect unknown communication so that the port disable, you need restart machine to recovery it.
Local AteisNet Protect Enable/Disable	Local ATEIS net card detect unknown communication so that enable protection function.
Global AteisNet PA/B Unstable	Global ATEIS net port has unstable communication, it may cause by its fiber cable or network card problem.
Local AteisNet PA/B Unstable	Local ATEIS net port has unstable communication, it may cause by its fiber cable or network card problem.
Global AteisNet Protect Enable/Disable	Global ATEIS net card detect unknown communication so that enable protection function.
CMD Time Out	Some command process too long so that machine auto restart, please catch the logs and send to Taiwan engineer.
EVAC CH:xx yy, zz (xx = channel number, yy=open/short/on/off, zz=monitoring value)	Evacuation input detail status
Fan:xx xx xx xx xx xx (xx = fan deteil measure value)	Fan fail detail measure value
Global Netcard Restart	Global netcard restart because some static electricity
GNT Port xx yy Error (xx=port, yy=CRC or PHY)	Global netcard port has some hardware error
LNT Port xx yy Error (xx=port, yy=CRC or PHY)	Local netcard port has some hardware error
SIP Registration Success/Failure	SIP Server connection status
Dial xxx Call from xxx Call Start Call End (xxx = telephone number)	Telephone call event

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9 Technical Data

9.1 Processor

9.1.1 IDA8C

❖ Electrical

Item	Voltage	Current Consumption	Comment
AC Power Input	115V~230V	1.6A@100V, 0.7A@240V	Frequency:50Hz~60Hz
DC Power Input	18V~30V (typical 24V)	2A	-
DC Power Output	18V~30V (typical 24V)	0.5A	-

- AC Maximum Consumption: 48W

❖ Audio characteristics (general)

A/D-D/A bit resolution:	24 bit
Sampling rate:	48 kHz
Frequency Response:	±1dBu@ 20Hz ~ 20kHz
EIN:	≤-80dBrA @ 0dB gain
THD + N:	≤0.04% @ 4dBu input, 0dB gain
CMRR:	≤-42dBu @ 0dB gain, 0dBu (1KHz) input

❖ Amplifier Inputs (Zone1~8)

Maximum level:	14 dB
Output Impedance:	50 Ohm
Bandwidth:	±1dBu@ 20Hz ~ 20kHz

- THD+N (Total Harmonic Distortion plus Noise)

Sensitivity	Minimum	Maximum	Unit	Frequency
0dBu	-	0.04	%	20~20kHz@+4dBu
-12dBu	-	0.06	%	20~20kHz@-2dBu
-24dBu	-	0.06	%	20~20kHz@-14dBu
-40dBu	-	0.06	%	20~20kHz@-30dBu
-54dBu	-	0.06	%	20~20kHz@-44dBu

- EIN (Equivalent Input Noise)

Sensitivity	Minimum	Maximum	Unit	Frequency
0dBu	-	-81	dBu	20~20kHz@150Ω
-12dBu	-	-93	dBu	20~20kHz@150Ω
-24dBu	-	-104	dBu	20~20kHz@150Ω
-40dBu	-	-112	dBu	20~20kHz@150Ω
-54dBu	-	-115	dBu	20~20kHz@150Ω

❖ Configurable Audio Output

Maximum level:	14 dB
Output Impedance:	50 Ohm
Bandwidth:	±1dBu@ 20Hz ~ 20kHz

- THD+N (Total Harmonic Distortion plus Noise)

Sensitivity	Minimum	Maximum	Unit	Frequency
0dBu	-	0.04	%	20~20kHz@+4dBu
-12dBu	-	0.06	%	20~20kHz@-2dBu

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-24dBu	-	0.06	%	20~20kHz@-14dBu
-40dBu	-	0.06	%	20~20kHz@-30dBu
-54dBu	-	0.06	%	20~20kHz@-44dBu

- EIN (Equivalent Input Noise)

Sensitivity	Minimum	Maximum	Unit	Frequency
0dBu	-	-81	dBu	20~20kHz@150Ω
-12dBu	-	-93	dBu	20~20kHz@150Ω
-24dBu	-	-104	dBu	20~20kHz@150Ω
-40dBu	-	-112	dBu	20~20kHz@150Ω
-54dBu	-	-115	dBu	20~20kHz@150Ω

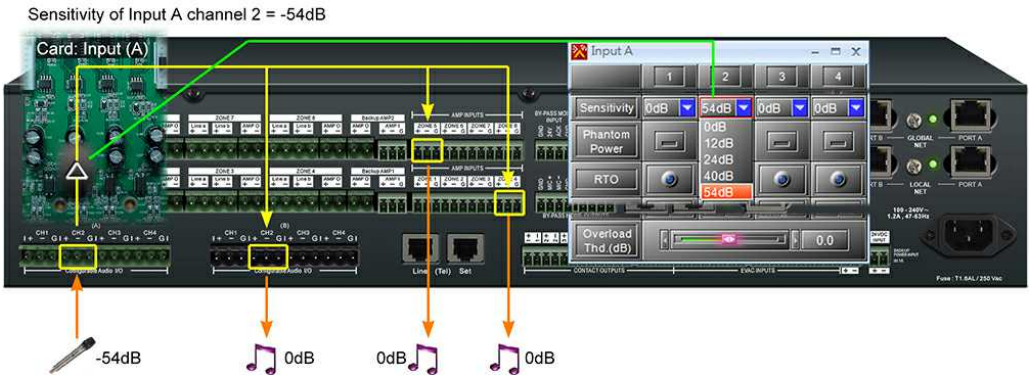
❖ Speaker Line/Amplifier & Monitor Speaker

Speaker line/Amplifier	Monitoring Speaker
Maximum Power: 700W (RMS)	Impedance: 8 Ohm
Maximum Power (Siren + Message): 1000W	Maximum Power @ 1kHz: 1.6W
	THD @ 1kHz = < 1%
	Bandwidth @ -3dB = 100Hz ~ 12kHz

❖ Configurable Audio Input

- Sensitivity

For each channel of a configurable audio input card, there are five levels to gain the audio signal. They are sensitivity values of 0dBu, 12dbBu, 24dBu, 40dBu and 54dBu respectively. The meaning of sensitivity value is how large the gain is for an audio source, and to amplify the giving minus input source to 0dBu. The figure below is an example of when the sensitivity value is set to 54dBu, and input source is 54dBu, after the gaining circuit of the audio card you'll get the 0dBu of output.



Maximum level = 14 dBu
Input Impedance =10k Ohm
Bandwidth =±1dB@ 20Hz ~ 20kHz

- THD+N (Total Harmonic Distortion plus Noise)

Sensitivity	Minimum	Maximum	Unit	Frequency
0dBu	-	0.04	%	20~20kHz@+4dBu
-12dBu	-	0.06	%	20~20kHz@-2dBu
-24dBu	-	0.06	%	20~20kHz@-14dBu
-40dBu	-	0.06	%	20~20kHz@-30dBu
-54dBu	-	0.06	%	20~20kHz@-44dBu

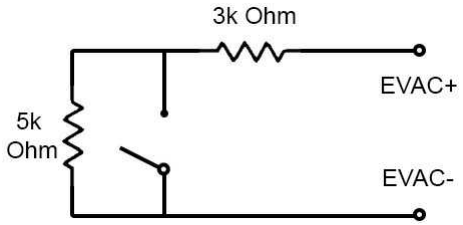
❖ PDC

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Maximum Output Level:	10 dBu
Output Impedance:	300 Ohm
○ THD:	@ 1kHz at output < 0.02
○ Bandwidth:	@ -3dBu at output = 20Hz ~ 20kHz
Noise:	@ 22Hz ~ 22kHz = -85dBu
Maximum Input Level:	16 dBu
Input Impedance:	11k Ohm
○ THD:	@ 1kHz at input < 0.02
○ Bandwidth:	@ -3dBu at input < 20Hz ~ 22kHz
RS232 voltages:	-6.5/+6.5
Distance up to 1000 meters for using external power supply. **Note:** The distance using internal power supply is differ from each product.	

❖ Evacuation Inputs (Contact Mode)

- 4 status: On, Off, Open and Short



❖ Evacuation Inputs (Voltage Mode)

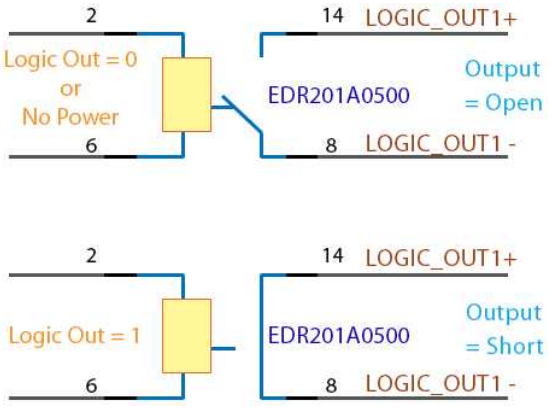
- On Voltage:

Item	Minimum	Maximum	Unit
High	18	72	VDC
Low	-	0.8	VDC

❖ Contact Outputs + EVAC, Fault State Outputs

Item	Minimum	Maximum	Unit
Voltage	-	100	VDC
Current	-	0.5	ADC

❖ Contact Output Relay



Contact Output

Contact Form	Maximum	Unit
Carry Current	1.0	ADC
Maximum Voltage	100	VDC
Electrical Life	1 x 10^8 (Ref 10VDC, 10mA)	-

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❖ Mechanical

Dimensions (W x H x D):	436mm (W) x 88mm (H) x 313mm (L)
Weight:	5.36Kg
Screen:	3.5" color touch panel
Colour:	RAL7016
Operating Temperature:	0°C ~ 40°C

9.1.2 IDA8SAB

❖ Electrical

Item	Voltage	Current Consumption	Comment
AC Power Input	115V~230V	1.6A@100V, 0.7A@240V	Frequency:50Hz~60Hz
DC Power Input	18V~30V (typical 24V)	2A	-
DC Power Output	18V~30V (typical 24V)	0.5A	-

- AC Maximum Consumption: 48W

❖ Audio characteristics (general)

A/D-D/A bit resolution:	24 bit
Sampling rate:	48 kHz
Frequency Response:	±1dBu@ 20Hz ~ 20kHz
EIN:	≤-80dBrA @ 0dB gain
THD + N:	≤0.04% @ 4dBu input, 0dB gain
CMRR:	≤-42dBu @ 0dB gain, 0dBu (1KHz) input

❖ Amplifier Inputs (Zone1~8)

Maximum level:	14 dB
Output Impedance:	50 Ohm
Bandwidth:	±1dBu@ 20Hz ~ 20kHz

- THD+N (Total Harmonic Distortion plus Noise)

Sensitivity	Minimum	Maximum	Unit	Frequency
0dBu	-	0.04	%	20~20kHz@+4dBu
-12dBu	-	0.06	%	20~20kHz@-2dBu
-24dBu	-	0.06	%	20~20kHz@-14dBu
-40dBu	-	0.06	%	20~20kHz@-30dBu
-54dBu	-	0.06	%	20~20kHz@-44dBu

- EIN (Equivalent Input Noise)

Sensitivity	Minimum	Maximum	Unit	Frequency
0dBu	-	-81	dBu	20~20kHz@150Ω
-12dBu	-	-93	dBu	20~20kHz@150Ω
-24dBu	-	-104	dBu	20~20kHz@150Ω
-40dBu	-	-112	dBu	20~20kHz@150Ω
-54dBu	-	-115	dBu	20~20kHz@150Ω

❖ Speaker Line/Amplifier

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Maximum Power:	700W (RMS)
Maximum Power(Siren + Message):	1000W

❖ Configurable Audio Output

Maximum level:	14 dBu
Output Impedance:	50 Ohm
Bandwidth:	±1dBu@ 20Hz ~ 20kHz

- THD+N (Total Harmonic Distortion plus Noise)

Sensitivity	Minimum	Maximum	Unit	Frequency
0dBu	-	0.04	%	20~20kHz@+4dBu
-12dBu	-	0.06	%	20~20kHz@-2dBu
-24dBu	-	0.06	%	20~20kHz@-14dBu
-40dBu	-	0.06	%	20~20kHz@-30dBu
-54dBu	-	0.06	%	20~20kHz@-44dBu

- EIN (Equivalent Input Noise)

Sensitivity	Minimum	Maximum	Unit	Frequency
0dBu	-	-81	dBu	20~20kHz@150Ω
-12dBu	-	-93	dBu	20~20kHz@150Ω
-24dBu	-	-104	dBu	20~20kHz@150Ω
-40dBu	-	-112	dBu	20~20kHz@150Ω
-54dBu	-	-115	dBu	20~20kHz@150Ω

❖ Configurable Audio Input

- Sensitivity

  For each channel of a configurable audio input card, there are five levels to gain the audio signal. They are sensitivity values of 0dBu, 12dbBu, 24dBu, 40dBu and 54dBu respectively. The meaning of sensitivity value is how large the gain is for an audio source, and to amplify the giving minus input source to 0dBu. The figure below is an example of when the sensitivity value is set to 54dBu, and input source is 54dBu, after the gaining circuit of the audio card you'll get the 0dBu of output. For more information as reference, please see this.

Maximum level:	14 dBu
Input Impedance:	10k Ohm
Bandwidth:	±1dBu@ 20Hz ~ 20kHz

- THD+N (Total Harmonic Distortion plus Noise)

Sensitivity	Minimum	Maximum	Unit	Frequency
0dBu	-	0.04	%	20~20kHz@+4dBu
-12dBu	-	0.06	%	20~20kHz@-2dBu
-24dBu	-	0.06	%	20~20kHz@-14dBu
-40dBu	-	0.06	%	20~20kHz@-30dBu
-54dBu	-	0.06	%	20~20kHz@-44dBu

❖ PDC

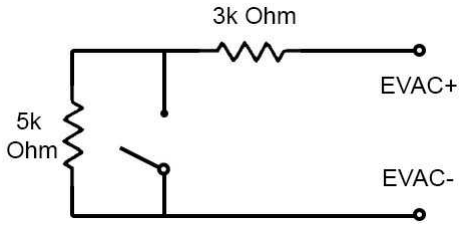
Maximum Output Level:	10 dBu
Output Impedance:	300 Ohm
○ THD:	@ 1kHz at output < 0.02
○ Bandwidth:	@ -3dBu at output = 20Hz ~ 20kHz
Noise:	@ 22Hz ~ 22kHz = -85dBu
Maximum Input Level:	16 dBu
Input Impedance:	11k Ohm
○ THD:	@ 1kHz at input < 0.02

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Maximum Output Level:	10 dBu
○ Bandwidth:	@ -3dBu at input < 20Hz ~ 22kHz
RS232 voltages:	-6.5/+6.5
Distance up to 1000 meters for using external power supply. **Note:** The distance using internal power supply is differ from each product.	

❖ Evacuation Inputs (Contact Mode)

- 4 status: On, Off, Open and Short



❖ Evacuation Inputs (Voltage Mode)

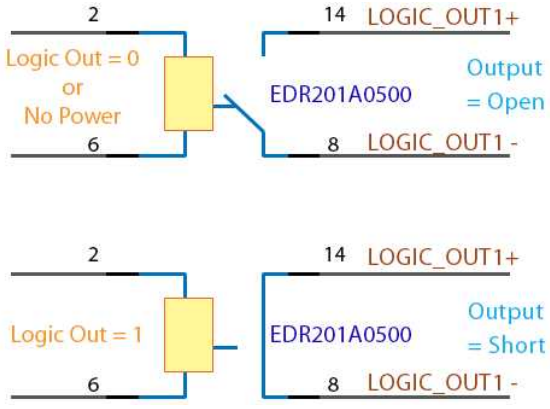
- On Voltage

Item	Minimum	Maximum	Unit
High	18	72	VDC
Low	-	0.5	VDC

❖ Contact Outputs + EVAC, Fault State Outputs

Item	Minimum	Maximum	Unit
Voltage	-	100	VDC
Current	-	0.5	ADC

❖ Contact Output Relay



Contact Output

Contact Form	Maximum	Unit
Carry Current	1.0	ADC
Maximum Voltage	100	VDC
Electrical Life	1 x 10^8 (Ref 10VDC, 10mA)	-

❖ Mechanical

Dimensions(W x H x D):	436mm (W) x 88mm (H) x 289mm (L)
Weight:	5Kg
Colour:	RAL7016
Operating Temperature:	0°C ~ 40°C

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9.1.3 IDA8SL

❖ Electrical

Item	Voltage	Current Consumption	Comment
AC Power Input	115V~230V	1.6A@100V, 0.7A@240V	Frequency:50Hz~60Hz
DC Power Input	18V~30V (typical 24V)	2A	-
DC Power Output	18V~30V (typical 24V)	0.5A	-

- AC Maximum Consumption: 48W

❖ Audio characteristics (general)

A/D-D/A bit resolution:	24 bit
Sampling rate:	48 kHz
Frequency Response:	±1dBu@ 20Hz ~ 20kHz
EIN:	≤-80dBrA @ 0dB gain
THD + N:	≤0.04% @ 4dBu input, 0dB gain
CMRR:	≤-42dBu @ 0dB gain, 0dBu (1KHz) input

❖ Amplifier Inputs (Zone1~8)

Maximum level:	14 dB
Output Impedance:	50 Ohm
Bandwidth:	±1dBu@ 20Hz ~ 20kHz

- THD+N (Total Harmonic Distortion plus Noise)

Sensitivity	Minimum	Maximum	Unit	Frequency
0dBu	-	0.04	%	20~20kHz@+4dBu
-12dBu	-	0.06	%	20~20kHz@-2dBu
-24dBu	-	0.06	%	20~20kHz@-14dBu
-40dBu	-	0.06	%	20~20kHz@-30dBu
-54dBu	-	0.06	%	20~20kHz@-44dBu

- EIN (Equivalent Input Noise)

Sensitivity	Minimum	Maximum	Unit	Frequency
0dBu	-	-81	dBu	20~20kHz@150Ω
-12dBu	-	-93	dBu	20~20kHz@150Ω
-24dBu	-	-104	dBu	20~20kHz@150Ω
-40dBu	-	-112	dBu	20~20kHz@150Ω
-54dBu	-	-115	dBu	20~20kHz@150Ω

❖ Speaker Line/Amplifier

Speaker Line/Amplifier	
Maximum Power:	100W(RMS)
Maximum Power (Siren + Message):	1500W

❖ Configurable Audio Output

Maximum level:	14 dBu
Output Impedance:	50 Ohm
Bandwidth:	±1dBu@ 20Hz ~ 20kHz

- THD+N (Total Harmonic Distortion plus Noise)

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Sensitivity	Minimum	Maximum	Unit	Frequency
0dBu	-	0.04	%	20~20kHz@+4dBu
-12dBu	-	0.06	%	20~20kHz@-2dBu
-24dBu	-	0.06	%	20~20kHz@-14dBu
-40dBu	-	0.06	%	20~20kHz@-30dBu
-54dBu	-	0.06	%	20~20kHz@-44dBu

- EIN (Equivalent Input Noise)

Sensitivity	Minimum	Maximum	Unit	Frequency
0dBu	-	-81	dBu	20~20kHz@150Ω
-12dBu	-	-93	dBu	20~20kHz@150Ω
-24dBu	-	-104	dBu	20~20kHz@150Ω
-40dBu	-	-112	dBu	20~20kHz@150Ω
-54dBu	-	-115	dBu	20~20kHz@150Ω

❖ Configurable Audio Input

- Sensitivity

  For each channel of a configurable audio input card, there are five levels to gain the audio signal. They are sensitivity values of 0dBu, 12dbBu, 24dBu, 40dBu and 54dBu respectively. The meaning of sensitivity value is how large the gain is for an audio source, and to amplify the giving minus input source to 0dBu. The figure below is an example of when the sensitivity value is set to 54dBu, and input source is 54dBu, after the gaining circuit of the audio card you'll get the 0dBu of output. For more information as reference, please see this.

Maximum level:	14 dBu
Input Impedance:	10k Ohm
Bandwidth:	±1dBu@ 20Hz ~ 20kHz

- THD+N (Total Harmonic Distortion plus Noise)

Sensitivity	Minimum	Maximum	Unit	Frequency
0dBu	-	0.04	%	20~20kHz@+4dBu
-12dBu	-	0.06	%	20~20kHz@-2dBu
-24dBu	-	0.06	%	20~20kHz@-14dBu
-40dBu	-	0.06	%	20~20kHz@-30dBu
-54dBu	-	0.06	%	20~20kHz@-44dBu

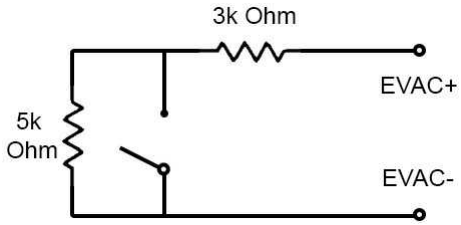
❖ PDC

Maximum Output Level:	10 dBu
Output Impedance:	300 Ohm
○ THD:	@ 1kHz at output < 0.02
○ Bandwidth:	@ -3dBu at output = 20Hz ~ 20kHz
Noise:	@ 22Hz ~ 22kHz = -85dBu
Maximum Input Level:	16 dBu
Input Impedance:	11k Ohm
○ THD:	@ 1kHz at input < 0.02
○ Bandwidth:	@ -3dBu at input < 20Hz ~ 22kHz
RS232 voltages:	-6.5/+6.5
Distance up to 1000 meters for using external power supply. **Note:** The distance using internal power supply is differ from each product.	

❖ Evacuation Inputs (Contact Mode)

- 4 status: On, Off, Open and Short

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❖ Evacuation Inputs (Voltage Mode)

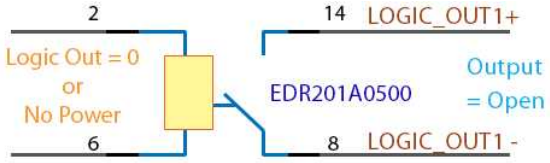
- On Voltage

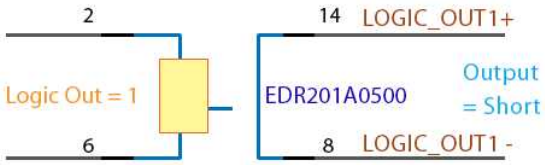
Item	Minimum	Maximum	Unit
High	18	72	VDC
Low	-	0.5	VDC

❖ Contact Outputs + EVAC, Fault State Outputs

Item	Minimum	Maximum	Unit
Voltage	-	100	VDC
Current	-	0.5	ADC

❖ Contact Output Relay





Contact Output

Contact Form	Maximum	Unit
Carry Current	1.0	ADC
Maximum Voltage	100	VDC
Electrical Life	1 x 10^8 (Ref 10VDC, 10mA)	-

❖ Mechanical

Dimensions(W x H x D):	436mm (W) x 88mm (H) x 300mm (L)
Weight:	5Kg
Colour:	RAL7016
Operating Temperature:	0°C ~ 40°C

9.1.4 IDA8S

❖ Electrical

Item	Voltage	Current Consumption	Comment
DC Power Input	18V~30V (typical 24V)	2A	-
DC Power Output	18V~30V (typical 24V)	0.5A	-

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- AC Maximum Consumption: 48W

❖ Audio characteristics (general)

A/D-D/A bit resolution:	24 bit
Sampling rate:	48 kHz
Frequency Response:	±1dBu@ 20Hz ~ 20kHz
EIN:	≤-80dBrA @ 0dB gain
THD + N:	≤0.04% @ 4dBu input, 0dB gain
CMRR:	≤-42dBu @ 0dB gain, 0dBu (1KHz) input

❖ Amplifier Inputs (Zone1~8)

Maximum level:	14 dB
Output Impedance:	50 Ohm
Bandwidth:	±1dBu@ 20Hz ~ 20kHz

- THD+N (Total Harmonic Distortion plus Noise)

Sensitivity	Minimum	Maximum	Unit	Frequency
0dBu	-	0.04	%	20~20kHz@+4dBu
-12dBu	-	0.06	%	20~20kHz@-2dBu
-24dBu	-	0.06	%	20~20kHz@-14dBu
-40dBu	-	0.06	%	20~20kHz@-30dBu
-54dBu	-	0.06	%	20~20kHz@-44dBu

- EIN (Equivalent Input Noise)

Sensitivity	Minimum	Maximum	Unit	Frequency
0dBu	-	-81	dBu	20~20kHz@150Ω
-12dBu	-	-93	dBu	20~20kHz@150Ω
-24dBu	-	-104	dBu	20~20kHz@150Ω
-40dBu	-	-112	dBu	20~20kHz@150Ω
-54dBu	-	-115	dBu	20~20kHz@150Ω

❖ Speaker Line/Amplifier

Speaker Line/Amplifier	
Maximum Power:	700W (RMS)
Maximum Power (Siren + Message):	1000W

❖ Configurable Audio Output

Maximum level:	14 dBu
Output Impedance:	50 Ohm
Bandwidth:	±1dBu@ 20Hz ~ 20kHz

- THD+N (Total Harmonic Distortion plus Noise)

Sensitivity	Minimum	Maximum	Unit	Frequency
0dBu	-	0.04	%	20~20kHz@+4dBu
-12dBu	-	0.06	%	20~20kHz@-2dBu
-24dBu	-	0.06	%	20~20kHz@-14dBu
-40dBu	-	0.06	%	20~20kHz@-30dBu
-54dBu	-	0.06	%	20~20kHz@-44dBu

- EIN (Equivalent Input Noise)

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Sensitivity	Minimum	Maximum	Unit	Frequency
0dBu	-	-81	dBu	20~20kHz@150Ω
-12dBu	-	-93	dBu	20~20kHz@150Ω
-24dBu	-	-104	dBu	20~20kHz@150Ω
-40dBu	-	-112	dBu	20~20kHz@150Ω
-54dBu	-	-115	dBu	20~20kHz@150Ω

❖ Configurable Audio Input

- Sensitivity

  For each channel of a configurable audio input card, there are five levels to gain the audio signal. They are sensitivity values of 0dBu, 12dbBu, 24dBu, 40dBu and 54dBu respectively. The meaning of sensitivity value is how large the gain is for an audio source, and to amplify the giving minus input source to 0dBu. The figure below is an example of when the sensitivity value is set to 54dBu, and input source is 54dBu, after the gaining circuit of the audio card you'll get the 0dBu of output. For more information as reference, please see this.

Maximum level:	14 dBu
Input Impedance:	10k Ohm
Bandwidth:	±1dBu@ 20Hz ~ 20kHz

- THD+N (Total Harmonic Distortion plus Noise)

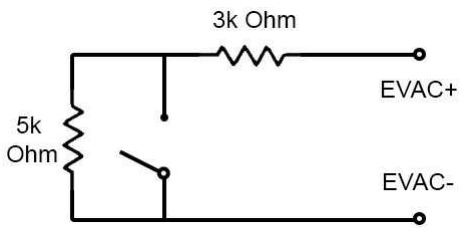
Sensitivity	Minimum	Maximum	Unit	Frequency
0dBu	-	0.04	%	20~20kHz@+4dBu
-12dBu	-	0.06	%	20~20kHz@-2dBu
-24dBu	-	0.06	%	20~20kHz@-14dBu
-40dBu	-	0.06	%	20~20kHz@-30dBu
-54dBu	-	0.06	%	20~20kHz@-44dBu

❖ PDC

Maximum Output Level:	10 dBu
Output Impedance:	300 Ohm
○ THD:	@ 1kHz at output < 0.02
○ Bandwidth:	@ -3dBu at output = 20Hz ~ 20kHz
Noise:	@ 22Hz ~ 22kHz = -85dBu
Maximum Input Level:	16 dBu
Input Impedance:	11k Ohm
○ THD:	@ 1kHz at input < 0.02
○ Bandwidth:	@ -3dBu at input < 20Hz ~ 22kHz
RS232 voltages:	-6.5/+6.5
Distance up to 1000 meters for using external power supply. **Note:** The distance using internal power supply is differ from each product.	

❖ Evacuation Inputs (Contact Mode)

- 4 status: On, Off, Open and Short



❖ Evacuation Inputs (Voltage Mode)

- On Voltage

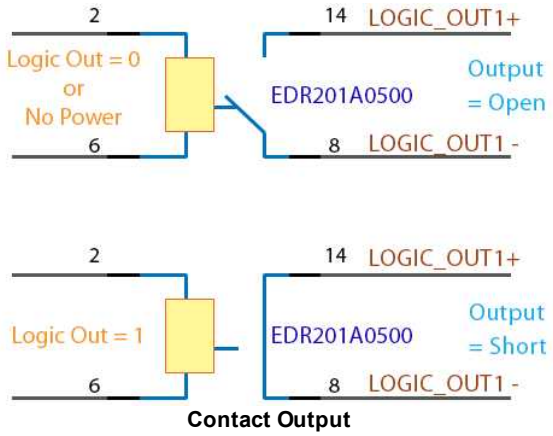
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Item	Minimum	Maximum	Unit
High	18	72	VDC
Low	-	0.5	VDC

❖ Contact Outputs + EVAC, Fault State Outputs

Item	Minimum	Maximum	Unit
Voltage	-	100	VDC
Current	-	0.5	ADC

❖ Contact Output Relay



Contact Output

Contact Form	Maximum	Unit
Carry Current	1.0	ADC
Maximum Voltage	100	VDC
Electrical Life	1 x 10^8 (Ref 10VDC, 10mA)	-

❖ Mechanical

Dimensions(W x H x D):	436mm (W) x 44mm (H) x 285mm (L)
Weight:	4.2Kg
Colour:	RAL7016
Operating Temperature:	0°C ~ 40°C

9.1.5 IDA8C-SW

❖ Electrical

Item	Voltage	Current Consumption	Comment
AC Power Input	115V~230V	1.6A@100V, 0.7A@240V	Frequency:50Hz~60Hz
DC Power Input	18V~30V (typical 24V)	2A	-
DC Power Output	18V~30V (typical 24V)	0.5A	-

- AC Maximum Consumption: 48W

❖ Audio characteristics (general)

A/D-D/A bit resolution:	24 bit
Sampling rate:	48 kHz
Frequency Response:	±1dBu@ 20Hz ~ 20kHz
EIN:	≤-80dBrA @ 0dB gain
THD + N:	≤0.04% @ 4dBu input, 0dB gain

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A/D-D/A bit resolution:	24 bit
CMRR:	≤-42dBu @ 0dB gain, 0dBu (1KHz) input

❖ Amplifier Inputs (Zone1~8)

Maximum level:	14 dB
Output Impedance:	50 Ohm
Bandwidth:	±1dBu@ 20Hz ~ 20kHz

- THD+N (Total Harmonic Distortion plus Noise)

Sensitivity	Minimum	Maximum	Unit	Frequency
0dBu	-	0.04	%	20~20kHz@+4dBu
-12dBu	-	0.06	%	20~20kHz@-2dBu
-24dBu	-	0.06	%	20~20kHz@-14dBu
-40dBu	-	0.06	%	20~20kHz@-30dBu
-54dBu	-	0.06	%	20~20kHz@-44dBu

- EIN (Equivalent Input Noise)

Sensitivity	Minimum	Maximum	Unit	Frequency
0dBu	-	-81	dBu	20~20kHz@150Ω
-12dBu	-	-93	dBu	20~20kHz@150Ω
-24dBu	-	-104	dBu	20~20kHz@150Ω
-40dBu	-	-112	dBu	20~20kHz@150Ω
-54dBu	-	-115	dBu	20~20kHz@150Ω

❖ Configurable Audio Output

Maximum level:	14 dB
Output Impedance:	50 Ohm
Bandwidth:	±1dBu@ 20Hz ~ 20kHz

- THD+N (Total Harmonic Distortion plus Noise)

Sensitivity	Minimum	Maximum	Unit	Frequency
0dBu	-	0.04	%	20~20kHz@+4dBu
-12dBu	-	0.06	%	20~20kHz@-2dBu
-24dBu	-	0.06	%	20~20kHz@-14dBu
-40dBu	-	0.06	%	20~20kHz@-30dBu
-54dBu	-	0.06	%	20~20kHz@-44dBu

- EIN (Equivalent Input Noise)

Sensitivity	Minimum	Maximum	Unit	Frequency
0dBu	-	-81	dBu	20~20kHz@150Ω
-12dBu	-	-93	dBu	20~20kHz@150Ω
-24dBu	-	-104	dBu	20~20kHz@150Ω
-40dBu	-	-112	dBu	20~20kHz@150Ω
-54dBu	-	-115	dBu	20~20kHz@150Ω

❖ Speaker Line/Amplifier, Monitor Speaker

Speaker line/Amplifier	Monitoring Speaker
Maximum Power: 800W(RMS)	Impedance: 8 Ohm
Maximum Power (Siren + Message): 1000W	Maximum Power @ 1kHz: 1.6W
	THD @ 1kHz = < 1%

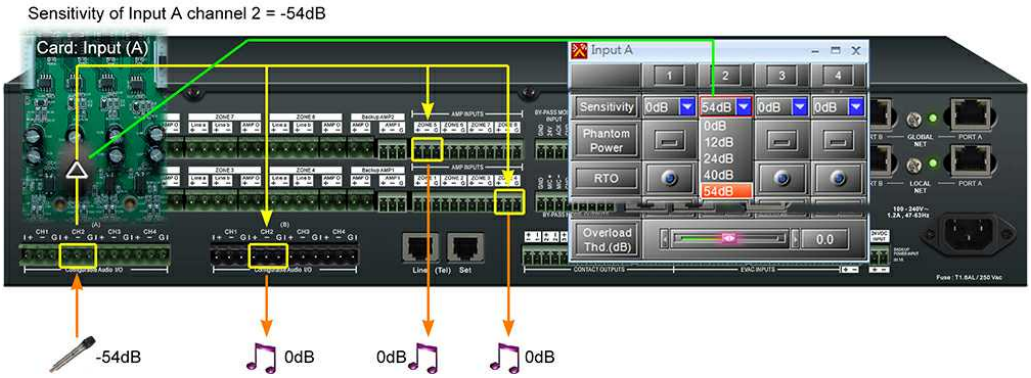
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Speaker line/Amplifier	Monitoring Speaker
	Bandwidth @ -3dBu = 100Hz ~ 12kHz

❖ Configurable Audio Input

- Sensitivity

For each channel of a configurable audio input card, there are five levels to gain the audio signal. They are sensitivity values of 0dBu, 12dbBu, 24dBu, 40dBu and 54dBu respectively. The meaning of sensitivity value is how large the gain is for an audio source, and to amplify the giving minus input source to 0dBu. The figure below is an example of when the sensitivity value is set to 54dBu, and input source is 54dBu, after the gaining circuit of the audio card you'll get the 0dBu of output.



Maximum level:	14 dBu
Input Impedance:	10k Ohm
Bandwidth:	±1dBu@ 20Hz ~ 20kHz

- THD+N(Total Harmonic Distortion plus Noise)

Sensitivity	Minimum	Maximum	Unit	Frequency
0dBu	-	0.04	%	20~20kHz@+4dBu
-12dBu	-	0.06	%	20~20kHz@-2dBu
-24dBu	-	0.06	%	20~20kHz@-14dBu
-40dBu	-	0.06	%	20~20kHz@-30dBu
-54dBu	-	0.06	%	20~20kHz@-44dBu

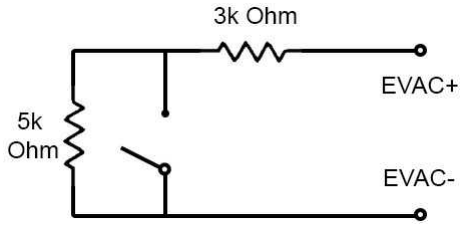
❖ PDC

Maximum Output Level:	10 dBu
Output Impedance:	300 Ohm
○ THD:	@ 1kHz at output < 0.02
○ Bandwidth:	@ -3dBu at output = 20Hz ~ 20kHz
Noise:	@ 22Hz ~ 22kHz = -85dBu
Maximum Input Level:	16 dBu
Input Impedance:	11k Ohm
○ THD:	@ 1kHz at input < 0.02
○ Bandwidth:	@ -3dBu at input < 20Hz ~ 22kHz
RS232 voltages:	-6.5/+6.5
Distance up to 1000 meters for using external power supply. **Note:** The distance using internal power supply is differ from each product.	

❖ Evacuation Inputs (Contact Mode)

- 4 status: On, Off, Open and Short

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❖ Evacuation Inputs (Voltage Mode)

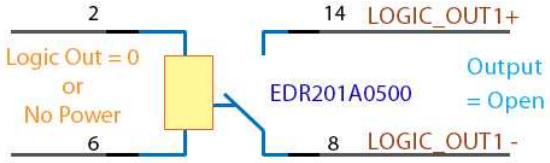
- On Voltage:

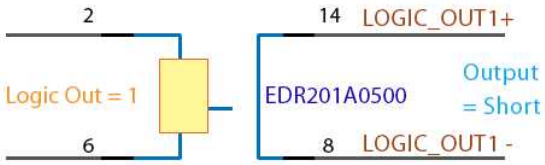
Item	Minimum	Maximum	Unit
High	18	72	VDC
Low	-	0.5	VDC

❖ Contact Outputs + EVAC, Fault State Outputs

Item	Minimum	Maximum	Unit
Voltage	-	100	VDC
Current	-	0.5	ADC

❖ Contact Output Relay





Contact Output

Contact Form	Maximum	Unit
Carry Current	1.0	ADC
Maximum Voltage	100	VDC
Electrical Life	1 x 10^8 (Ref 10VDC, 10mA)	-

❖ Mechanical

Dimensions(W x H x D):	436mm (W) x 88mm (H) x 313mm (L)
Weight:	5.36Kg
Screen:	3.5" color touch panel
Colour:	RAL7016
Operating Temperature:	0°C ~ 40°C

9.1.6 IDA8SAB-SW

❖ Electrical

Item	Voltage	Current Consumption	Comment
AC Power Input	115V~230V	1.6A@100V, 0.7A@240V	Frequency:50Hz~60Hz
DC Power Input	18V~30V (typical 24V)	2A	-

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DC Power Output	18V~30V, Typical 24V18V~30V (typical 24V)	0.5A	-

- AC Maximum Consumption: 48W

❖ Audio characteristics (general)

A/D-D/A bit resolution:	24 bit
Sampling rate:	48 kHz
Frequency Response:	±1dBu@ 20Hz ~ 20kHz
EIN:	≤-80dBrA @ 0dB gain
THD + N:	≤0.04% @ 4dBu input, 0dB gain
CMRR:	≤-42dBu @ 0dB gain, 0dBu (1KHz) input

❖ Amplifier Inputs (Zone1~8)

Maximum level:	14 dB
Output Impedance:	50 Ohm
Bandwidth:	±1dBu@ 20Hz ~ 20kHz

- THD+N (Total Harmonic Distortion plus Noise)

Sensitivity	Minimum	Maximum	Unit	Frequency
0dBu	-	0.04	%	20~20kHz@+4dBu
-12dBu	-	0.06	%	20~20kHz@-2dBu
-24dBu	-	0.06	%	20~20kHz@-14dBu
-40dBu	-	0.06	%	20~20kHz@-30dBu
-54dBu	-	0.06	%	20~20kHz@-44dBu

- EIN (Equivalent Input Noise)

Sensitivity	Minimum	Maximum	Unit	Frequency
0dBu	-	-81	dBu	20~20kHz@150Ω
-12dBu	-	-93	dBu	20~20kHz@150Ω
-24dBu	-	-104	dBu	20~20kHz@150Ω
-40dBu	-	-112	dBu	20~20kHz@150Ω
-54dBu	-	-115	dBu	20~20kHz@150Ω

❖ Speaker Line/Amplifier

Maximum Power:	800W (RMS)
Maximum Power(Siren + Message):	1000W

❖ Configurable Audio Output

Maximum level:	14 dBu
Output Impedance:	50 Ohm
Bandwidth:	±1dBu@ 20Hz ~ 20kHz

- THD+N (Total Harmonic Distortion plus Noise)

Sensitivity	Minimum	Maximum	Unit	Frequency
0dBu	-	0.04	%	20~20kHz@+4dBu
-12dBu	-	0.06	%	20~20kHz@-2dBu
-24dBu	-	0.06	%	20~20kHz@-14dBu
-40dBu	-	0.06	%	20~20kHz@-30dBu
-54dBu	-	0.06	%	20~20kHz@-44dBu

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- EIN (Equivalent Input Noise)

Sensitivity	Minimum	Maximum	Unit	Frequency
0dBu	-	-81	dBu	20~20kHz@150Ω
-12dBu	-	-93	dBu	20~20kHz@150Ω
-24dBu	-	-104	dBu	20~20kHz@150Ω
-40dBu	-	-112	dBu	20~20kHz@150Ω
-54dBu	-	-115	dBu	20~20kHz@150Ω

❖ Configurable Audio Input

- Sensitivity

  For each channel of a configurable audio input card, there are five levels to gain the audio signal. They are sensitivity values of 0dBu, 12dbBu, 24dBu, 40dBu and 54dBu respectively. The meaning of sensitivity value is how large the gain is for an audio source, and to amplify the giving minus input source to 0dBu. The figure below is an example of when the sensitivity value is set to 54dBu, and input source is 54dBu, after the gaining circuit of the audio card you'll get the 0dBu of output. For more information as reference, please see this.

Maximum level:	= 14 dBu
Input Impedance:	=10k Ohm
Bandwidth:	±1dBu@ 20Hz ~ 20kHz

- THD+N (Total Harmonic Distortion plus Noise)

Sensitivity	Minimum	Maximum	Unit	Frequency
0dBu	-	0.04	%	20~20kHz@+4dBu
-12dBu	-	0.06	%	20~20kHz@-2dBu
-24dBu	-	0.06	%	20~20kHz@-14dBu
-40dBu	-	0.06	%	20~20kHz@-30dBu
-54dBu	-	0.06	%	20~20kHz@-44dBu

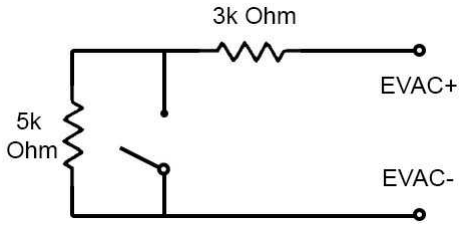
❖ PDC

Maximum Output Level:	10 dBu
Output Impedance:	300 Ohm
○ THD:	@ 1kHz at output < 0.02
○ Bandwidth:	@ -3dBu at output = 20Hz ~ 20kHz
Noise:	@ 22Hz ~ 22kHz = -85dBu
Maximum Input Level:	16 dBu
Input Impedance:	11k Ohm
○ THD:	@ 1kHz at input < 0.02
○ Bandwidth:	@ -3dBu at input < 20Hz ~ 22kHz
RS232 voltages:	-6.5/+6.5
Distance up to 1000 meters for using external power supply. **Note:** The distance using internal power supply is differ from each product.	

❖ Evacuation Inputs (Contact Mode)

- 4 status: On, Off, Open and Short

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❖ Evacuation Inputs (Voltage Mode)

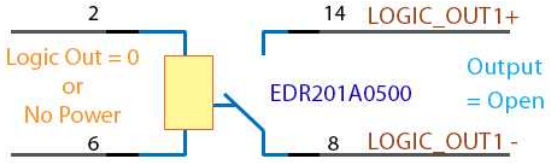
- On Voltage

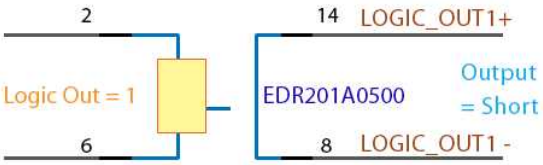
Item	Minimum	Maximum	Unit
High	18	72	VDC
Low	-	0.5	VDC

❖ Contact Outputs + EVAC, Fault State Outputs

Item	Minimum	Maximum	Unit
Voltage	-	100	VDC
Current	-	0.5	ADC

❖ Contact Output Relay





Contact Output

Contact Form	Maximum	Unit
Carry Current	1.0	ADC
Maximum Voltage	100	VDC
Electrical Life	1 x 10^8 (Ref 10VDC, 10mA)	-

❖ Mechanical

Dimensions (W x H x D):	436mm (W) x 88mm (H) x 289mm (L)
Weight:	5Kg
Colour:	RAL7016
Operating Temperature:	0°C ~ 40°C

9.2 Redundancy Unit

9.2.1 RU-MAIN / RU-PDC / RU-CTL

❖ Electrical

Voltage	Power Consumption	
24 VDC	RU-MAIN	600mA
	RU-PDC	200mA
	RU-CTL	350mA

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❖ Mechanical

Dimensions (H x W x D):	RU-MAIN: 88 x 436 x 150 mm RU-CTL/RU-PDC: 44 x 436 x 150 mm
Weight:	RU-MAIN: 4.5 kg (10 lbs) RU-CTL/RU-PDC: 2.5 kg (5.5 lbs)
Colour:	RAL7016

❖ Environmental

Operating temperature:	-5ºC ~ 55ºC (23 ºF ~ 131 ºF)
Storage temperature:	-40 ºC ~ 70 ºC (-40 ºF ~ 158 ºF)
Relative humidity:	15% to 90%.
Air pressure:	600 to 1100 hPa

9.3 Power Amplifier

9.3.1 SPA

❖ Electrical

Item	Voltage	Power Consumption		Comment
AC Input (per ch.)	220 VAC ±10%, 50 Hz	SPA2060	Idle: 12VA Full Power: 155VA	• *Total Mains-power consumption • *Idle: Measured with 10 Volt surveillance tone on the output
		SPA2120	Idle: 12VA Full Power: 290VA	
		SPA2240	Idle: 11VA Full Power: 550VA	
DC Input	19-30 VDC	SPA2060	Idle: 0.16A Full Power: 2.1A	• **Per ch. @ 24 VDC • *Alarm cycle + 10 V pilot-tone @ 48 VDC
		SPA2120	Idle: 0.16A Full Power: 4.05A	
		SPA2240	Idle: 0.21A Full Power: 7.79A	

❖ Audio Characteristics

Frequency response:	±3dB@40Hz ~ 20KHz
Distortion at nominal power:	<1% (@ 1 kHz) @ -10dB of rated output)
SNR (Signal-to-noise ratio):	86dB@ 1 kHz at full power
Inputs/Outputs:	Power output: 100 V
	Main line input: 770 mV
	Input impedance: 20K Ohm

❖ Mechanical

Dimensions (W x H x D):	• SPA2060, SPA2120 = 425mm (W) x 305mm(D) x 88mm(H) • SPA2240 = 425mm (W) x 420mm(D) x 88mm(H)
Weight:	• SPA2060 = 10.6 Kg (23.3 lbs) • SPA2120 = 12.3 Kg (27.1 lbs) • SPA2240 = 18.5 Kg (40.8 lbs)
Colour:	RAL7016

❖ Environmental

Operating temperature:	-5ºC ~ 55ºC (23 ºF ~ 131 ºF)
Storage temperature:	-40 ºC ~ 70 ºC (-40 ºF ~ 158 ºF)
Relative humidity:	15% to 90%.

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9.3.2 BPA

❖ Electrical

Mains Power Supply AC Input:	230 VAC ±10%, 50/60 Hz
Power consumption: • Total mains-power consumption @ 230 VAC • Idle: Measured with 10 Volt surveillance tone on the output.	Standby - idle - full load (per channel)
	BPA-2060: 2.5VA - 140VA
	BPA-2120: 2.5VA - 11VA - 295VA
	BPA-2240: 2.5VA - 11VA - 550VA
	BPA-2480: 2.5VA - 13VA - 1000VA
	BPA-1000: 3.0VA - 15VA - 1000VA
Fuse rating:	BPA-2060: 2.5A @ 110 V, 1.25A @ 250 V
	BPA-2120: 5 A @ 110 V, 2.5 A @ 250 V
	BPA-2240: 8 A @ 110 V, 5 A @ 250 V
	BPA-2480: 16 A @ 110 V, 7 A @ 250 V
	BPA-1000: 18 A @ 110 V, 9 A @ 250 V

Battery Power supply 48 VDC Input:	48 - 53 VDC
Power consumption: Alarm cycle + 10 V pilot-tones @ 48 VDC	Standby - idle - full load (per channel)
	BPA-2060: 0.09 A - 2.0A
	BPA-2120: 0.09 A - 0.16A - 4.07 A
	BPA-2240: 0.09 A - 0.23A - 8.13 A
	BPA-2480: 0.09 A - 0.23A - 13 A
	BPA-1000: 0.12 A - 32 A

❖ Inputs/Outputs

- Input

Power inputs:	• US type: 115V • EU type: 230V
Line inputs:	2 x (one per channel) for BPA-2XXX units
Connector:	3-pin XLR and 3-pin phoenix (electronically balanced)
Frequency response:	+/-3 dB @ 50 Hz and 18 kHz
SNR (Signal-to-noise ratio):	86 dB @ 1 kHz at full power
THD (Total harmonic distortion):	< = 1 % @ 1 kHz
Sensitivity:	0.775V @ 10K Balanced
Input range:	-6 dBV to 6 dBV / 770 mV
Input impedance:	22k ohm

- Output

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Power outputs: (US type: 70V, 35V, 8 Ω) (UL type: 100V, 50V, 8 Ω)	❖ US type: • BPA-2120: ○ 120W x 2 CH,RMS (EN54-16/ UL60065) ○ 60W x 2 CH,RMS (UL2572/UL1711) • BPA-2240: ○ 240W x 2 CH,RMS (EN54-16/ UL60065) ○ 120W x 2 CH,RMS (UL2572/UL1711) • BPA-2480: ○ 480W x 2 CH,RMS (EN54-16/ UL60065) ○ 240W x 2 CH,RMS (UL2572/UL1711) • BPA-1000: ○ 1000W x x 1 CH, RMS (EN54-16/ UL60065) ○ 500W x 1 CH,RMS (UL2572/UL1711) ❖ EU type: • BPA-2120: 120W x 2 CH,RMS • BPA-2240: 240W x 2 CH,RMS • BPA-2480: 480W x 2 CH,RMS • BPA-1000: 1000W x x 1 CH, RMS
Frequency response:	20 Hz to 20 kHz @ -3 dB
SNR (Signal-to-noise ratio):	> 90 dB (no pilot tone) @ 20 Hz to 20 kHz
Distortion:	< 1 % (@ 1 kHz) @ -10dB of rated output
Crosstalk:	< 80 dB at nominal load for 1 kHz

- Loudspeakers Outputs

BPA-2060:	Rated load resistance: 166.7 ohm (100 V); 41.6 ohm (50 V)
	Rated load capacitance: 31 nF (100V); 125 nF (50V)
	Rated output power: 60W (1 min. at 40°C)(per CH)
BPA-2120:	Rated load resistance: 83 ohm (100V); 20 ohm (50V)
	Rated load capacitance: 60 nF (100V); 250 nF (50V)
	Rated output power: 120W (1 min. at 40°C)(per CH)
BPA-2240:	Rated load resistance: 40 ohm (100V); 10 ohm (50V)
	Rated load capacitance: 125 nF (100V); 500 nF (50V)
	Rated output power: 240W (1 min. at 40°C)(per CH)
BPA-2480:	Rated load resistance: 20 ohm (100 V); 5 ohm (50 V)
	Rated load capacitance: 250 nF (100 V); 1 nF (50V)
	Rated output power: 480W (1 min. at 40°C)(per CH)
BPA-1000:	Rated load resistance: 10 ohm (100V); 2.5 ohm (50V)
	Rated load capacitance: 521 nF (100V); 1042 nF (50V)
	Rated output power: 1000W (1 min. at 40°C)(per CH)

❖ Mechanical

Dimensions(W x H x D):	• BPA-2060: 88 x 430 x 375 mm • BPA-2120/BPA-2240: 88 x 430 x 375 mm • BPA-2480: 88 x 430 x 430 mm • BPA-1000: 88 x 425 x 430 mm
Weight:	• BPA-2060: 11.5 kg (25.3 lbs) • BPA-2120: 13.7 kg (30.2 lbs) • BPA-2240: 16.2 kg (35.7 lbs) • BPA-2480: 21.5 kg (47.4 lbs) • BPA-1000: 21 kg (46.2 lbs)
Mounting:	19" rack mounting
Colour:	RAL: 7016

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- Environmental

Operating temperature:	-5ºC ~ 55ºC (23 ºF ~ 131 ºF)
Storage temperature:	-40 ºC ~ 70 ºC (-40 ºF ~ 158 ºF)
Relative humidity:	0% to 70%
Air pressure:	600 to 1100 hPa
Heat dissipation:	• BPA-2060: 580 BTU/hr • BPA-2120: 1160 BTU/hr • BPA-2240: 2110 BTU/hr • BPA-2480: 3550 BTU/hr • BPA-1000: 3600 BTU/hr

9.3.3 DPAfour

❖ Electrical

Item	Voltage	Power Consumption		Comment
AC Input	115 or 230V +/- 15%	DPA4125	Standby: 1VA	Frequency: 50/60Hz
			Idle: 38VA	
			Full Power: 600VA	
		DPA4250	Standby: 1VA	
			Idle: 44VA	
			Full Power: 1169VA	
DC Output	19~30V	-		

Battery Power supply 24 VDC Input:	19-30 VDC
Power consumption: • Total Mains-power consumption @ 230 VAC • Alarm cycle + 10 V pilot-tones @ 24 VDC	Standby- idle -full load (per channel)
	DPA4125: 0.03A - 1.45A - 22.5A
	DPA4250: 0.03A - 1.65A - 43.85A

❖ Audio Characteristics

Frequency response:	±3dB@50Hz ~ 20KHz
Distortion at nominal power:	<0.1% (@ 1 kHz) @ -10dB of rated output power
SNR (Signal-to-noise ratio):	> 90 dB
Inputs/Outputs:	Power output: 100 V
	Main line input: 770 mV
	Input impedance: 20K Ohm

❖ Loudspeakers Outputs

DPA4125:	Rated load resistance = 80 ohm (100 V)
	Rated load capacitance = 62,5 nF (100 V)
	Rated output power = 125 W (cont. at 40°C)
	Two channels bridged = 250 W (cont. at 40°C)
DPA4125:	Rated load resistance = 40 ohm (100 V)
	Rated load capacitance = 120 nF (100 V)
	Rated output power = 250 W (cont. at 40°C)
	Two channels bridged = 500 W (cont. at 40°C)
Frequency response:	40 Hz to 20 kHz (-3 dB)
S/N:	>90 dB (no pilot tone)
Crosstalk:	<70 dB at nominal load for 1 kHz
Distortion:	<0,1% (@ 1 kHz) @ -10dB of rated output power

- Environmental

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Operating temperature:	-5ºC ~ 55ºC (23 ºF ~ 131 ºF)
Storage temperature:	-40 ºC ~ 70 ºC (-40 ºF ~ 158 ºF)
Relative humidity:	15% to 90%.
Air pressure:	600 to 1100 hPa

❖ Mechanical

Dimensions(W x H x D):	DPA4125/DPA4250: 88.5 x 483 x 370 mm
Weight:	DPA4125 = 14 Kg (31 lb) DPA4250 = 18 Kg (40 lb)
Colour:	RAL7016

9.4 Battery Charger

9.4.1 SONAES 6/40A

❖ Network Input

- Single-phase voltage: 195 V to 264 V
- Frequency: 47 to 63 Hz
- Class I
- Neutral and earthing systems: TT, TN, IT
- Maximum primary current @ 195 V: 1 A
- Two pole circuit breaker (D curve) to be provided upstream

❖ Output

- Rated voltage: 24 V
- Rated output current for battery charge : 6A
- Floating voltage set at half-load and at 25 °C: 27. 2 V ±0.5 %
- 2 ‘amplifiers’ outputs with a current of 20A maximum per output
- 3 ‘controllers’ outputs with a current of 5A maximum per output
- The maximum total current of the 5 outputs is 40A
- The power supply can operate without load current: Imin = 0 A

❖ Features and Technical Specifications:

- The Power Supply Equipment and the public address and voice alarm system must be powered by the same mains. Mains voltage must appear and disappear at the same time on both devices, whatever the reason.
  - In normal operating mode:
- the Power Supply Equipment recharges the batteries and maintains them when they are fully charged. The maximum current that can be provided to the user outputs is Imax a.
  - In back-up operating mode:
- The total operating current is provided by the batteries and may not exceed ‘Imax b mains not present’. It includes the current of the PA/VA amplifiers and the current of all the controllers outputs.
  - Imax a : maximum available current which may be drawn continuously while charging the battery.
  - Imax a = 6A – C/20 (C : battery capacity in Ah).
  - Imax b (mains present) : maximum available output current which may be drawn a short time, during which the battery may not be charged.

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- Imax b (mains present) = 6 A
- Imax b (mains not present) : maximum available current which may be drawn from the batteries when the mains supply is not available.
- Imax b (mains not present) = the total consumption of the system with no mains, and is anyhow less than 40A.

- Authorized Batteries:

  The power supply can be coupled with 24 to 114 Ah batteries. We have approved following batteries:

  - Yuasa NPL series
  - Powersonic GB series
  - ABT TM series
  - Enersys VE series
  - Effekta BTL series
  - Long GB series.

If you would like to use another battery type, please let us approve them.

- Operating Temperature:
  - -10 °C to +45 °C at 100 % load
  - -10 °C to +55 °C at 75 % load
  - Storage temperature: -25 to +85 °C
  - Relative humidity: 20 to 95 %

❖ Summary of Available Equipment

- Temperature compensation:

  A battery voltage compensation system maintains the charge characteristics within the limits specified by the battery manufacturer across the entire operational temperature range.

- Battery low voltage cut-out:
  - The cut-out threshold is 21,6 V ±3 %.
  - The element causing the cut-out will be in the + position.
- Maintenance:

  In order to ensure maximal and durable service, we strongly recommend that your product must be maintained clean and ensure that it is installed in a dry and ventilated location. We shall in no case be liable for damages associated with improper use or incorrect maintenance of the equipment.

- Warning:
  - Replacing the original battery with a battery of incorrect type may result in an explosion hazard.
  - Used batteries must be disposed of in compliance with recycling requirements.
- Fuse Protection

F1 mother board (mains): rating -breaking capacity – size	2 A Time lag / 5x20 / 1500 A breaking capacity
F1 to F2 ‘amplifiers board’ (2 outputs) : rating - type – size	20 A gG 10x38

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Faux1 to Faux3 'controlers' board (3 outputs): rating - type – size	5A F 5x20
External battery fuse (not fitted with PSE) rating - type	[Ibmax (mains not present)] A gG type Very low resistance

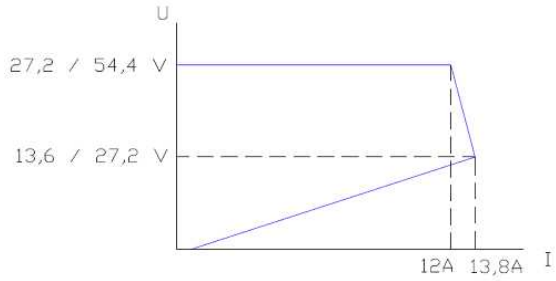
9.4.2 SONAES 12/150 A

❖ Network Input

- Single-phase voltage: 220 V - 240 V
- Frequency: 50 Hz-60Hz
- Power consumption at full load: 380 W (PLN-24CH12) or 760 W (PRS-48CH12)
- Maximum primary current @ 195 V: 2 A (SON 24V 12A MS150 RACK) or 4A (SON 48V 12A MS150 RACK)
- Class I
- Neutral and earthing systems: TT, TN, IT
- Two pole circuit breaker (D curve) to be provided upstream

❖ Output

- Rated voltage: 24 V (SON 24V 12A MS150 RACK) or 48V (SON 48V 12A MS150 RACK)
- Floating voltage set at half-load and at 25 °C: 27. 2 V ±0.5 % or 54.4V +/-0.5%
- 6 main outputs with a current of 40A maximum per output (protection see chapter 7)
- 3 auxiliary outputs with a current of 5A maximum per output. (protection see chapter 7)
- The maximum total current of the 9 outputs is 150A
- The power supply can operate without load current: Imin = 0 A
- Rated output current of rectifier : 12A



❖ Features and Technical Specifications:

- If your amplifiers are not supplied by the same mains as the Power Supply Equipment, a failure of the mains of the amplifiers must generate an alarm to the voice alarm system.
  - In normal operating mode:
- The Power Supply Equipment recharges the batteries and maintains them when they are fully charged. The maximum current that can be provided to the user outputs is Imax a.
  - In back-up operating mode:
- The total operating current is provided by the batteries and may not exceed 'Imax b mains not present'.
  - Imax a : maximum available current which may be drawn continuously while charging the battery.
  - Imax a = 12A – C/20 (C : battery capacity in Ah).

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- Imax b (mains present) : maximum available output current which may be drawn a short time, during which the battery may not be charged, but not discharged.
- Imax b (mains present) = 12 A
- Imax b (mains not present) : maximum available current which may be drawn from the batteries when the mains supply is not available, 150A if the jumper is set on '75', or 100A if the jumper is set on '50' (see figure 1).

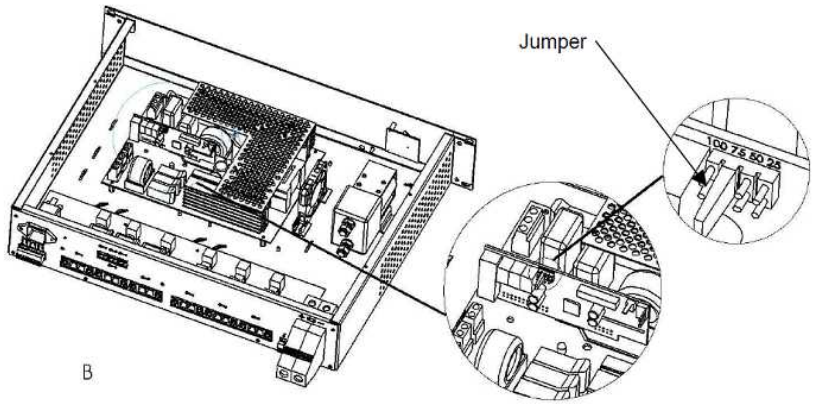


Figure 1 : Location of the jumper

- The jumper is set on the ‘50’ position as factory setting. Any other position of the jumper operates like ‘50’ except the ‘75’ position.
- Authorized batteries:
  - If Imax b (mains not present) is greater than 100A, use batteries with a capacity of 86 to 225 Ah and set daughter board jumper on ‘75’.
  - If Imax b (mains not present) is less than 100A, use batteries with a capacity of 65 to 225Ah, and set daughter board jumper on ‘50’.
- The following batteries have been approved:
  - Fiamm FG Series
  - Yuasa NP Series
  - Effekta BTL Series
  - Powersonic GB Series
  - Long GB Series
  - Sun FT Series
  - Enersys VE Series
  - ABT TM Series

  Note: If you would like to use another battery type, please let us approve them.
- Environmental Specifications:
  - Operating temperature: -5 °C to +45 °C at 12 A.
  - Altitude : The max operating temperature decreases of 5°C every 1000 m when over 2000m.
  - Storage temperature: -25 to +85 °C.
  - Operating relative humidity: 20 to 95 % without condensation,
  - Storage relative humidity: 100 to 95 %.

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❖ Summary of Available Equipment

- Battery Test:
  - The battery presence test is performed in the following manner: every 30 seconds for the first 20 minutes after commissioning and every 15 minutes after. As soon as a fault is detected, the test is performed every 30 seconds until 20 minutes after the fault disappears.
  - The impedance measurement test occurs every 4 hours if the mains is present on the power supply and if his current is < 12A. The impedance limit value is 13 mW ±10 % in 24V and 26 mW ±10% in 48V.
- Temperature Compensation:

  A battery voltage compensation system maintains the charge characteristics within the limits specified by the battery manufacturer across the entire operational temperature range.
- Battery Low Voltage Protection:
  - The battery low voltage protection threshold is 21,6 V ±3 % (SON 24V 12A MS150 RACK) or 43.2 V ±3 % (SON 48V 12A MS150 RACK).
  - The element causing the cut-out will be in the + position.
- Battery Reverse Connection Protection:
  - At start-up: the battery relays will not close.
  - During operation: the fuse F8 will blow out.
- Maintenance:

  In order to ensure maximal and durable service, we strongly recommend that your product must be maintained clean and ensure that it is installed in a dry and ventilated location. We shall in no case be liable for damages associated with improper use or incorrect maintenance of the equipment.
- Warning:
  - Replacing the original battery with a battery of incorrect type may result in an explosion hazard.
  - Used batteries must be disposed of in compliance with recycling requirements.
- Fuse Protections:

F1 mother board (mains): rating- type - size - breaking capacity	6.3 A T for 24V version 8A T for 48V version 5x20 1500 A breaking capacity
F8 mother board rating - type - size	12.5A 5x 20
F1 to F6 main outputs board (6 outputs): rating - type - size	32 A gG 10 x 38
Faux1 to Faux3 auxiliary outputs board (3 outputs): rating - type - size	5A F 5x20
External battery fuse (not fitted with PSE): rating - type	[Ibmax (mains not present)] A gG type

9.5 Console

9.5.1 PPM-AS

❖ Electrical

DC Power Input	18V~30V

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Power consumption:	2.88W

❖ Microphone

Microphone level:	6dBu
THD:	@ 1kHz < 1%
Bandwidth:	@ -3dBu = 100Hz ~ 18kHz

❖ Front Panel Loudspeaker

Impedance:	8Ohm
Maximum Power:	@ 1kHz = 1W
THD:	@ 1kHz < 1%
Bandwidth:	@ -3dBu = 200Hz ~ 8kHz

❖ Mechanical

Dimensions (W x L x H):	105mm x 190mm x 50mm
Cable Length:	• 100m (control and power on the same cable) • 900m (when power line connects to junction box)
Weight:	4.7 kg (10.4 lbs)
Color:	RAL7035
Operating temperature:	0ºC ~ 55ºC

❖ Comes standard with PPM JB junction box and CAT5 cable (1.5m)

9.5.2 PSS-AS

❖ Electrical

DC Power Input	18V~30V
Power consumption:	6W

❖ Microphone

Microphone level:	-35dBu
THD:	@ 1kHz < 0.03%
Bandwidth:	@ -3dBu = 20Hz ~ 20kHz

❖ Front Panel Loudspeaker

Impedance:	4Ohm
Maximum Power:	@ 1kHz = 2W
THD:	@ 1kHz < 1%
Bandwidth:	@ -3dBu = 200Hz ~ 12kHz

❖ Mechanical

Dimensions (W x L x H):	250mm x 140mm x 75mm
Touch Screen:	Diagonal: 5"/Resolution = 800 x 480
Weight:	1.1Kg
Maximum Cable Length:	100m on CAT5 cable
Operating temperature:	0ºC ~ 55ºC

9.5.3 PPM-IT5

❖ Electrical

Item	Voltage	Current Consumption	Connect Type
PoE	44~57VDC	250mA	RJ45
24VDC	18~30VDC	-	DC Jack

- Max. Power consumption: 6W

❖ Microphone

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Microphone level:	-35dBu
THD:	@ 1kHz < 0.03%
Bandwidth:	@ -3dBu = 20Hz ~ 20kHz

❖ Front Panel Loudspeaker

Impedance:	4Ohm
Maximum Power:	@ 1kHz = 2W
THD:	@ 1kHz < 1%
Bandwidth:	@ -3dBu = 50Hz ~ 8kHz

❖ Mechanical

Dimensions (W x L x H):	250mm x 140mm x 80mm
Touch Screen:	Diagonal: 5"/Resolution = 800 x 480
Weight:	1.1 Kg
Color:	RAL7016
Maximum Cable Length:	100m on CAT5 cable
Operating temperature:	0ºC ~ 55ºC

9.5.4 CD-8AS / CD-16AS

❖ Electrical

DC Power Input	18V~30V
Power consumption:	4W

❖ Audio characteristics (general)

Microphone directivity:	Unidirectional
Microphone Frequency response:	100~16 kHz
Loudspeaker Maximum Power:	1W
Loudspeaker Frequency response:	10Hz ~ 18kHz
Maximum Output Level:	+6dBu

❖ Mechanical

Dimensions (W x H x D):	• CD-8AS: 320mm x 190mm x 130mm • CD-16AS: 350mm x 250mm x 130mm
Weight:	• CD-8AS: 3.6Kg • CD-16AS: 4.7kg
Color:	RAL7016
Screen:	Diagonal: 5"/ Resolution: 800 x 480
Maximum Cable Length:	• 100m (control and power on the same cable) • 900m (when power line connects to junction box)
Operating temperature:	0ºC ~ 55ºC

9.5.5 CD-TOUCHAS

❖ Electrical

DC Power Input	18V~30V
Power consumption:	4W

❖ Audio characteristics (general)

Microphone directivity:	Unidirectional
Microphone Frequency response:	100~16 kHz
Loudspeaker Maximum Power:	1W
Loudspeaker Frequency response:	10Hz ~ 18kHz
Maximum Output Level:	+6dBu

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❖ Mechanical

Dimensions (W x H x D):	400mm x 210mm x 130mm
Weight:	0.45 Kg
Color:	RAL7035
Screen:	Diagonal: 5"/ Resolution: 800 x 480
Maximum Cable Length:	100m on CAT5 cable
Operating temperature:	0ºC ~ 55ºC

9.5.6 URC-150 / URC-150AS

❖ Electrical

Item	Voltage	Current Consumption	Comment
DC Power Input	24VDC	20mA	-

❖ Mechanical

Dimensions (W x L x H):	84mm x 33mm x 84mm
Weight:	0.08 Kg (0.17 lbs)
Maximum Cable Length:	100m on CAT5 cable
Operating temperature:	0ºC ~ 55ºC

9.5.7 URC-200 / URC-200AS

❖ Electrical

Item	Voltage	Current Consumption	Comment
DC Power Input	18V~30V	50mA	-

❖ Mechanical

Dimensions (W x L x H):	140mm x 108mm x 34mm
Weight:	0.35 Kg (0.7 lbs)
Screen:	Diagonal = 2" /Resolution = 176 x 220
Color:	RAL7016
Maximum Cable Length:	100m on CAT5 cable
Operating temperature:	0ºC ~ 55ºC

9.5.8 URGP-32I2O / URGP-16I16O

❖ Electrical

Item	Voltage	Current Consumption	Comment
DC Input	24VDC	30mA	-

❖ Evacuation Inputs (Contact Mode)

- Bias Voltage

Item	Minimum	Maximum	Unit
Voltage	-	5	VDC

- Monitoring resistor: 4.7k Ohm

❖ Evacuation Inputs (Voltage Mode)

- On Voltage

Item	Minimum	Maximum	Unit
Voltage	18	72	VDC

❖ Mechanical

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Dimensions (W x L x H):	140mm x 75mm x 44mm
Weight:	0.48 Kg
Maximum Cable Length:	• RS485: 600m on Category 5 cable • RS232: 15m
Operating temperature:	0ºC ~ 55ºC

9.5.9 SHM

❖ Microphone

Bandwidth:	@ -3dBu = 300Hz ~ 6kHz
Impedance:	500ohm
Sensitivity:	-72dB

❖ Mechanical

Dimensions (W x L x H):	62mm x 45mm x 102mm
Weight:	0.15kg

9.5.10 CDPM

❖ Electrical

DC Power Input	18V~30V
Power consumption:	4W

❖ Audio characteristics (general)

Microphone directivity:	Unidirectional
Microphone Frequency response:	100~16 kHz
Maximum input sound level:	+16dBu
Loudspeaker Maximum Power:	1W
Loudspeaker Frequency response:	10Hz ~ 18kHz
Maximum Output Level:	+6dBu

❖ Audio characteristics (music input)

Input Impedance:	10kOhm
Maximum level:	12dBu
THD:	< 0.1% @ 1kHz
Frequency response:	20Hz ~ 20kHz @ -3dBu

❖ Mechanical

Dimensions (W x H x D):	483 mm x 220 mm x 68 mm
Weight:	3.9Kg
Color:	RAL7035
Maximum Cable Length:	100m (control and power on the same cable) 900m (when power line connects to junction box)
Operating temperature:	0ºC ~ 55ºC

9.5.11 PCP

❖ Electrical

DC Power Input	18V~30V
Power consumption:	4W

❖ Handset Microphone Output

Microphone level:	6dBu
THD:	@ 1kHz < 0.1%
Bandwidth:	@ -3dB = 50Hz ~ 20kHz

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❖ Music Input

Input Impedance:	10kOhm
Maximum level:	12dBu
THD:	@ 1kHz < 0.1%
Bandwidth:	@ -3dB = 20Hz ~ 20kHz

❖ Mechanical

Dimensions (W x H x D):	346 mm x 220 mm x 128 mm
Weight:	3Kg
Color:	RAL7035
Maximum Cable Length:	100m (control and power on the same cable) 900m (when power line connects to junction box)
Operating temperature:	0ºC ~ 55ºC

9.5.12 PSC-AS

❖ Electrical

DC Power Input	18V~30V
Power consumption:	4W

❖ Microphone

Microphone level:	6dBu
THD:	@ 1kHz < 0.1%
Bandwidth:	@ -3dB = 50Hz ~ 20kHz

❖ Music Input

Input Impedance:	10kOhm
Maximum level:	12dBu
THD:	@ 1kHz < 0.1%
Bandwidth:	@ -3dB = 20Hz ~ 20kHz

❖ Mechanical

Dimensions (W x L x H):	220mm x 483mm x 115.7mm
Weight:	0.37Kg
Color:	RAL7035
Maximum Cable Length:	100m (control and power on the same cable) 900m (when power line connects to junction box)
Operating temperature:	0ºC ~ 55ºC

9.5.13 NSM

❖ Electrical

Power consumption:	7 mA @ 48 VDC

❖ Audio Characteristics

Phantom Power:	14 - 48 V DC
Microphone directivity:	Unidirectional
Sensitivity range:	50~90dBA@±5 dBA
Maximum Output Level:	+20dBu
Output Impedance:	150 Ohm
Frequency response:	60 Hz- 10 kHz

❖ Mechanical & Environmental

Dimensions:	Hexagonal cylinder: Ø 62.5 mm x 92 mm (H)
Ledge Mounting:	On wall or flat mounting

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Dimensions:	Hexagonal cylinder: Ø 62.5 mm x 92 mm (H)
Operating temperature:	0ºC ~ 55ºC

9.5.14 DNM-485 / DNM-ENET

❖ Electrical & Connector

• DNM-485: RS485 type • DNM-ENET: Ethernet type including PoE (Power On Ethernet)	
Power supply:	DNM-ENET PoE input: 6W (conform IEEE 802.3af) DNM-485 euro block input: 6W (18~30 VDC)
Connector:	DNM-ENET: CAT5 cable DNM-485: 5.08 mm EURO block (4pin)
Max. cable length:	DNM-485: 600M on CAT5 cable
Include RS485 of baud rate:	38400 bps @600M

❖ Audio characteristics (general)

Capsule type:	Electret condenser
Microphone directivity:	Omnidirectional
Frequency response:	50~16 kHz
Sensitivity range:	60~130dBA@±5 dBA

❖ Mechanical & Environmental

Dimensions:	Hexagonal cylinder: 100mm(Φ) x 130mm(H)
Weight:	0.13 Kg
Operating temperature:	0ºC ~ 55ºC
Storage temperature:	-40° to +80° C

9.5.15 DIALER-DP

❖ Mechanical

Dimensions (L x W x H):	255mm x 108mm x 66mm
Telephone Keypad:	• Touch key (0~9 , #, *) • Support resembles telephone keypad
Panel Display:	• 128*32 Pixels • Monochrome (White)
Buzzer:	Sound pressure level >85dBA@10cm
Status LED:	• Blue • Display the status of button
RS485 Protocol:	• RJ45 @Maximum Distance 500M(between system unit and DialPad) • 24 VDC@ 30 mA maximum • 24 VDC@ 20 mA sleeping mode
Battery Holder:	• 4”AAA” • 6 VDC@ 100mA maximum • 6 VDC@ 70mA sleeping mode
Weight:	0.5kg
Colour:	RAL7016

❖ Environmental

Operating temperature:	0ºC ~ 40ºC

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9.5.16 DPWL

❖ Mechanical

Dimensions (L x W x H):	100mm x 67mm x 30mm
Power LED:	• Green • Display for Power supply
Status LED:	• Green • Display the status of RF
RS485 Protocol:	• RJ45 @Maximum Distance 500M{between system unit and DialPad • 24 VDC@ 30 mA maximum
RS232 Connection:	• DB9 @Maximum Distance 12M(between system unit and DialPad Receiver
DC Status LED: Connection:	• DC-JACK@ 24V • 24 VDC@ 30 mA maximum
Weight:	0.1 kg (0.2 lbs)
Colour:	RAL7016

❖ Environmental

Operating temperature:	0ºC ~ 40ºC

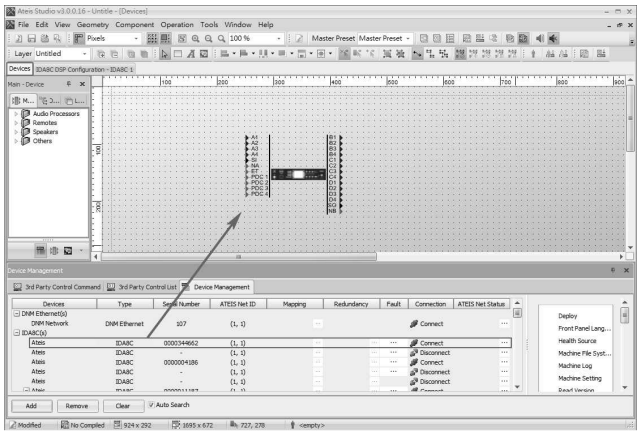
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10 Application Examples

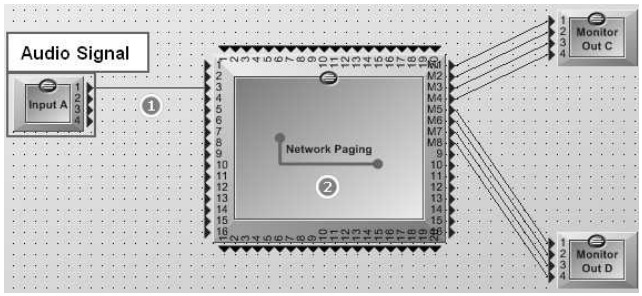
10.1 Setup on Front Panel

10.1.1 Audio Signal

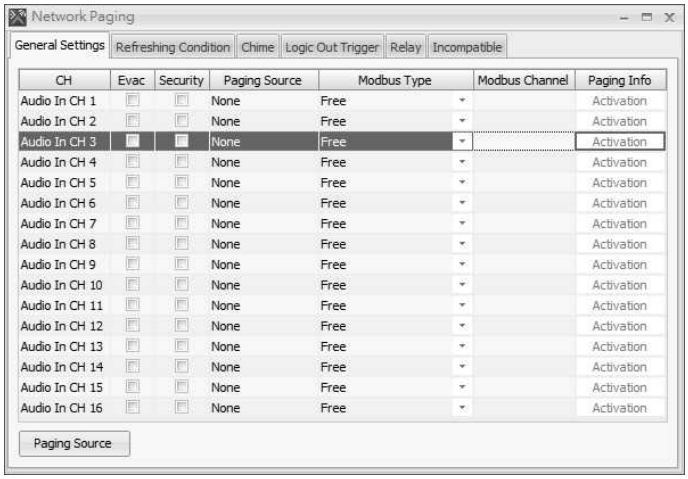
- Step 1: "Drag n' drop" the selected device from the Device List.



- Step 2: Double click the device to enter "DSP Configuration" page. Connect the "Input A" to "Network Paging" (Channel 3 as the input channel for example here).
- Then double click the Network Paging component to open its setting window.



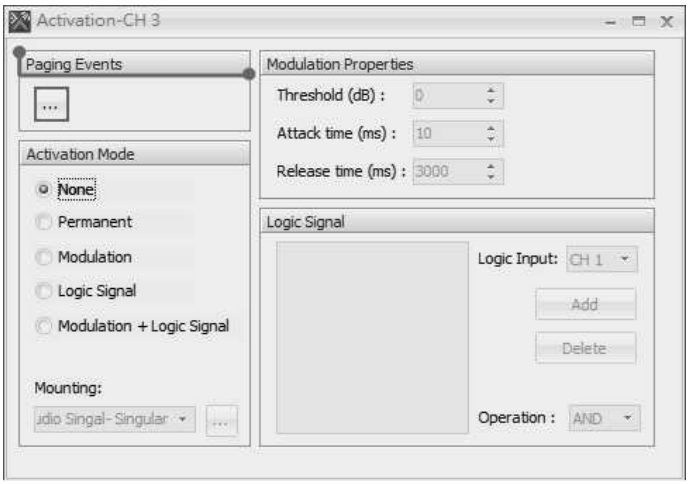
- Step 3: Click "Activation" button on channel 3.



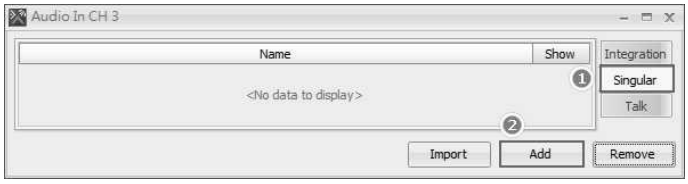
CH	Evac	Security	Paging Source	Modbus Type	Modbus Channel	Paging Info
Audio In CH 1			None	Free		Activation
Audio In CH 2			None	Free		Activation
Audio In CH 3			None	Free		Activation
Audio In CH 4			None	Free		Activation
Audio In CH 5			None	Free		Activation
Audio In CH 6			None	Free		Activation
Audio In CH 7			None	Free		Activation
Audio In CH 8			None	Free		Activation
Audio In CH 9			None	Free		Activation
Audio In CH 10			None	Free		Activation
Audio In CH 11			None	Free		Activation
Audio In CH 12			None	Free		Activation
Audio In CH 13			None	Free		Activation
Audio In CH 14			None	Free		Activation
Audio In CH 15			None	Free		Activation
Audio In CH 16			None	Free		Activation

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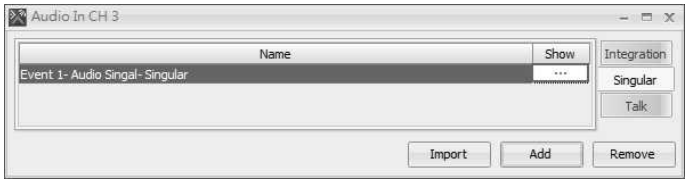
- Step 4: Click [...] Paging Events button to open the front panel setup window.



- Step 5: Click "Singular" tab, then click [Add] button to configure a singular event.



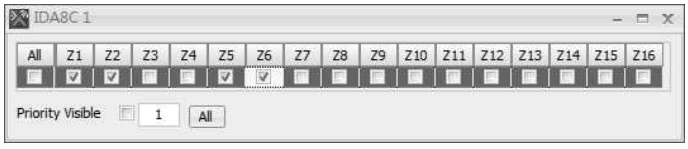
- Step 6: Click [...] Show button to select the certain paging zones.
- Under the "Name", users are free to modify the name of the event.



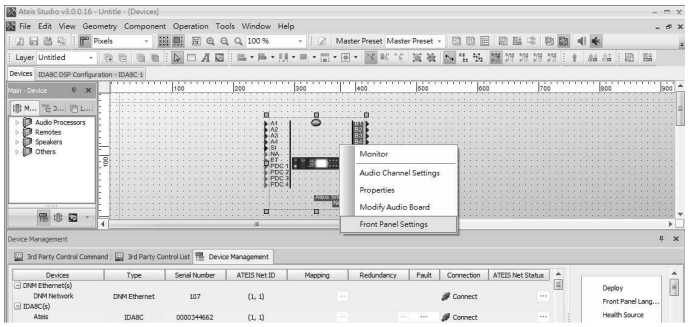
- Step 7: Click [...] button to open the zone selection window.



- Step 8: Select the zones(Z1, Z2,Z5 and Z6 for example) and close all the windows to finish the paging zone selection.

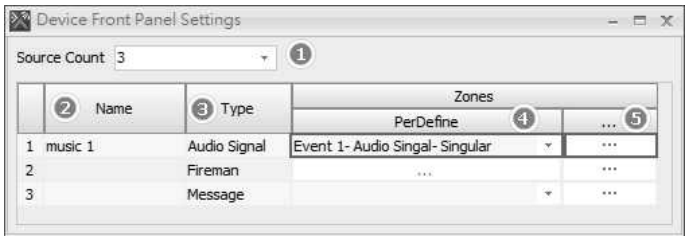


- Step 9: Go back to Device window, right click on the device and choose "Front Panel Settings"

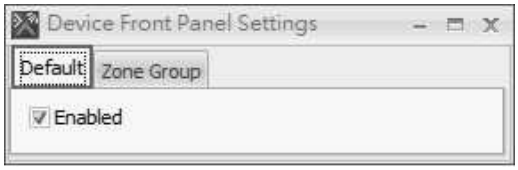


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- Step 10: Open the event window and select the events. "

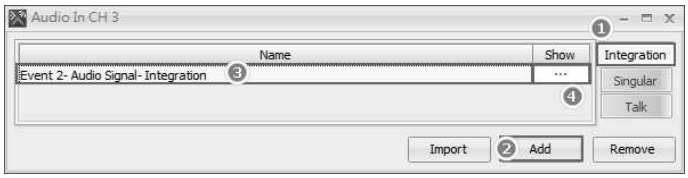


1. Source Count: Select how many events you would like to display on the front panel. IDA8 supports up to 32 event setting on front panel.
2. Name: Change the name events.
3. Type: there are 3 types of events, including Audio Signal, Fireman and Message.
4. PreDefine: Select the event.
5. Zones: Select the zones of event.

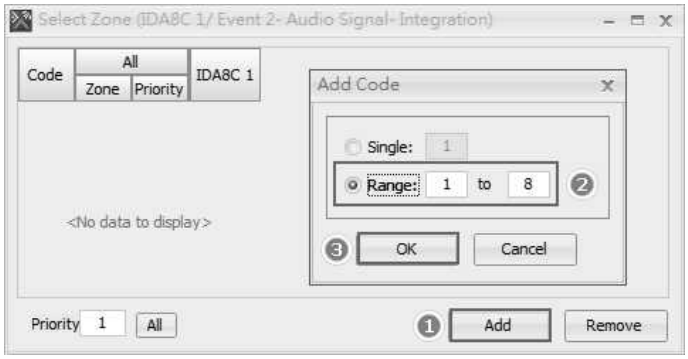


Go to the "Default" page and tick the [Enable] option to set "music 1" event for certain zones paging.

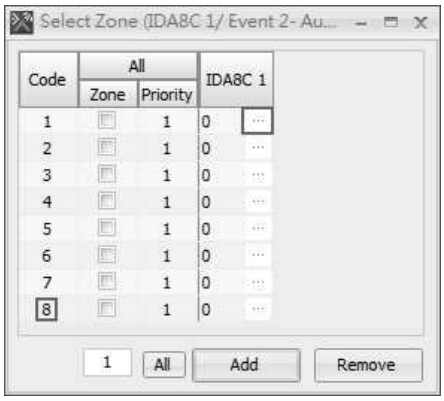
- For "Zone Group" event setting, please follow step 1- step 4 only, then follow the steps below.
- Step 5: click [Integration] tab and click [Add] button.



- Step 6: click [Add] button again on the window and select the range of the code. The example here is set from 1 to 8. Then click [OK].

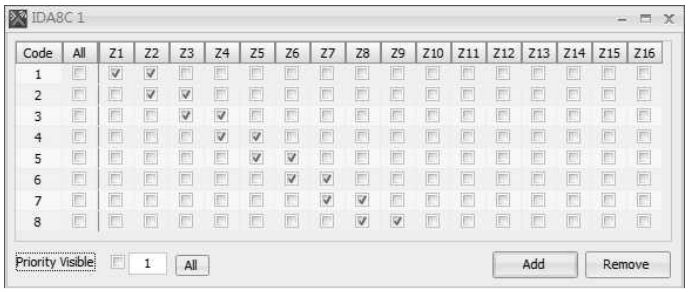


- Step 7: There are 8 codes on the list and click [...] code 1 button to select the zones for code 1.

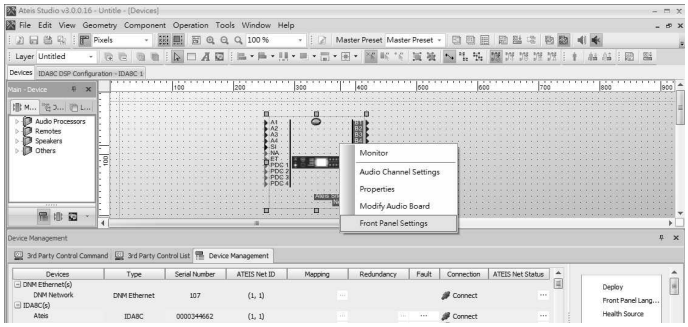


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- Step 8: Select the paging zones under each code and close the window to finish the setting.



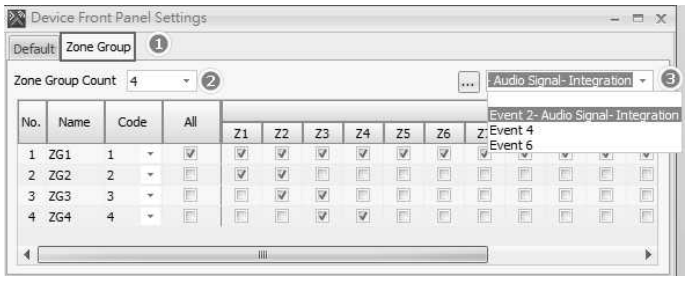
- Step 9: Go back to Device window, right click the device and choose "Front Panel Settings"



- Step 10: Enter the name of the next event, here is set for "music 2" and select the PerDefine event which you set the "Integration" zone group.
- After, Click [...] button to apply the "Integration" zone group setting on the event.



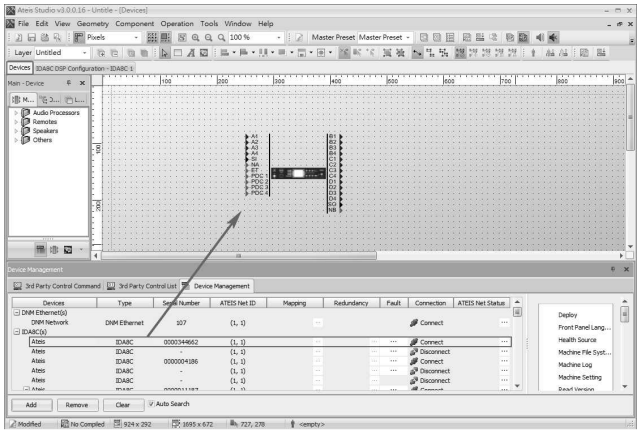
- Step 11: Go to "Zone Group" tab, then select the "Zone Group Count"(the zone buttons that will appear on the front panel. Here is set for 4).
- Select the "Integration" setting. Here is set for "Event 2- Audio Signal- Integration", then close the window to finish the "Integration zone group" setting.



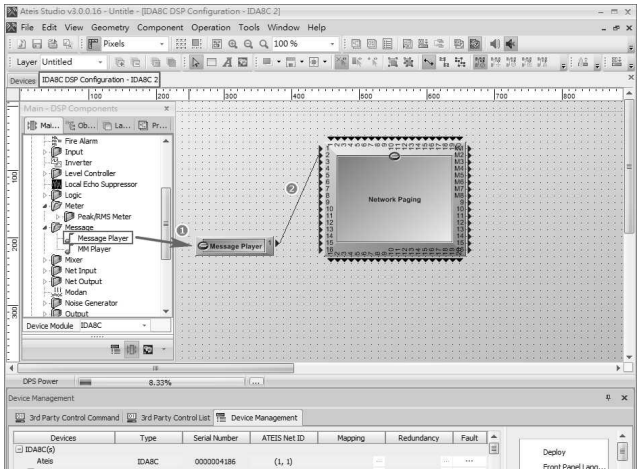
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10.1.2 Message

- Step 1: "Drag n' drop" the selected device from the Device List.

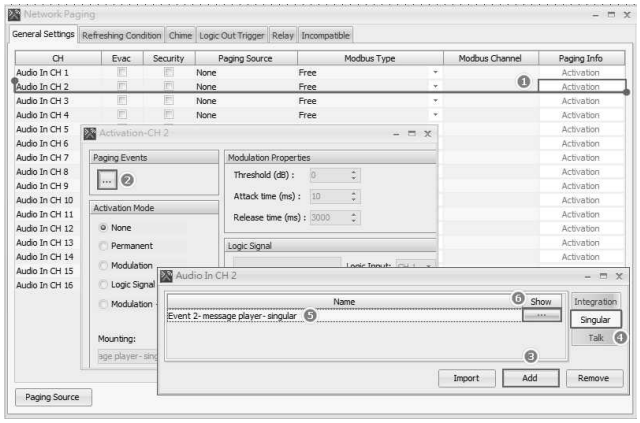


- Step 2: Double click the device to open "DSP Configuration" window.
- "Drag n' Drop" the Message Player component to the window, and connect the component to the Network Paging component(The channel 2 as the message input channel for example).



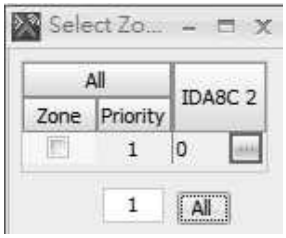
- Step 3: Double click the Network Paging component to open its setting window.

1. Click [Activation] button on channel 2.
2. Click [Paging Events] button.
3. Click [Add] button.
4. Select [Singular].
5. Enter the name of singular message event.
6. Click [...] Show button to open the zone setting window.

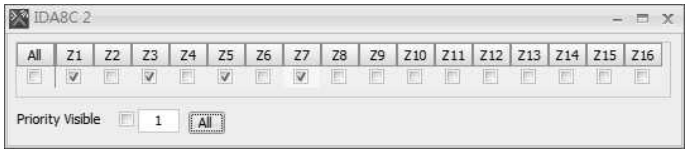


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- Step 4: Click [...] IDA8C button again to open the zone selection window.

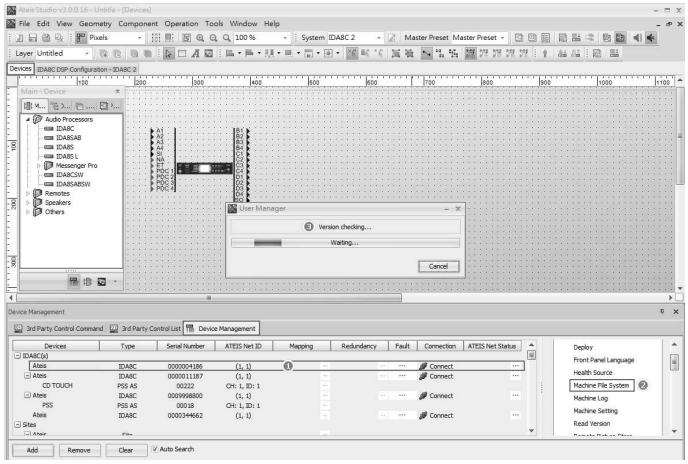


- Step 5: Select the zones for singular message event. Then close all the windows to finish the setting.

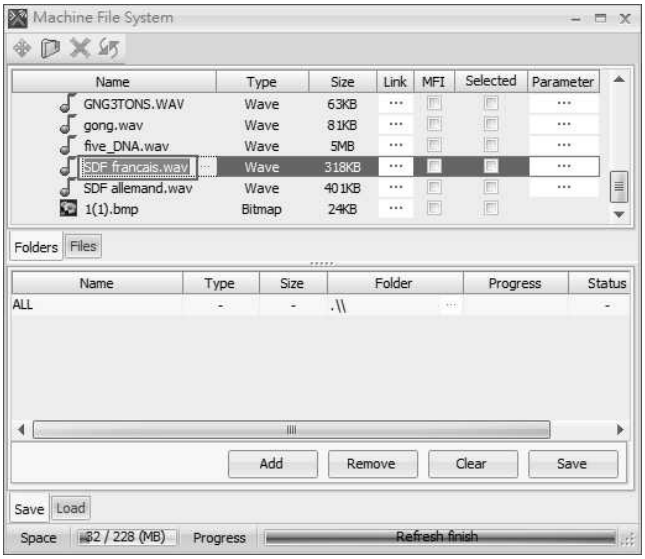


- Step 6: Go back to the "Device" window.

1. Click the Device you are editing first.
2. Click [User Manager] function on Machine File System window.

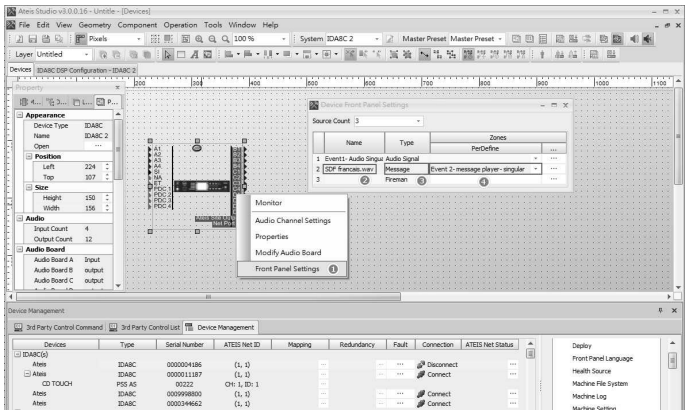


- Step 7: Once the loading is completed, there will a window listed the audio message in the selected device(we take IDA8C here for an example).
- Then copy the file name of the chosen audio message.



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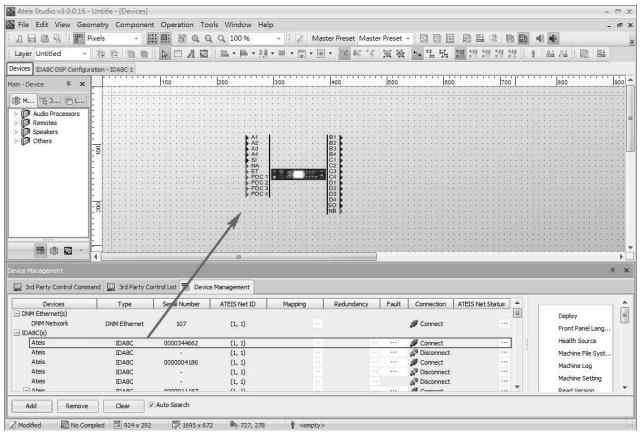
- Step 8: Go back to the Device window, right click the device component.



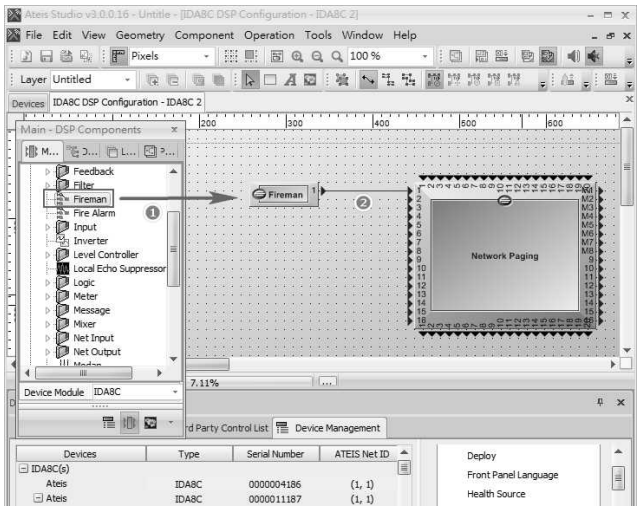
1. Click "Front Panel Settings" to open its setting window.
2. Paste the message file name on the name column
   Note: The file name must be exactly the same.
3. Select the type to "Message".
4. Apply the message event zone setting on the "PerDefine" column to finish the setting.

10.1.3 Fireman

- Step 1: "Drag n' drop" the selected device from the Device List.

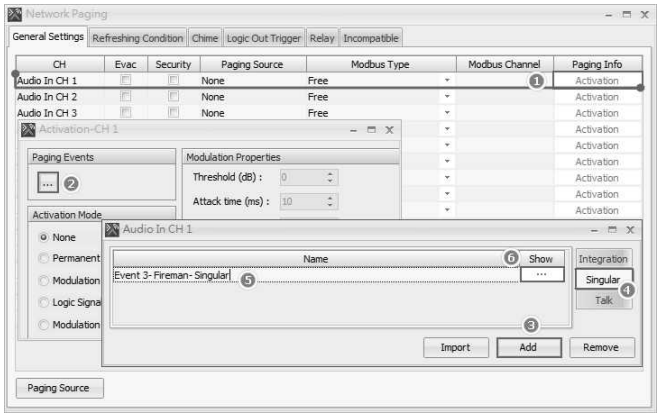


- Step 2: Double click the device to open "DSP Configuration" window.
- "Drag n' Drop" the "Fireman" component to the window, and connect the component to the "Network Paging" component(The channel 1 as the message input channel for example).



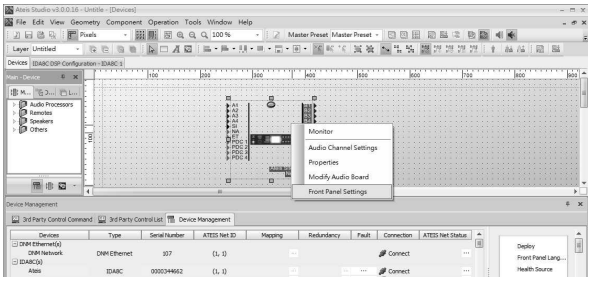
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- Step 3: Double click the Network Paging component to open its setting window.

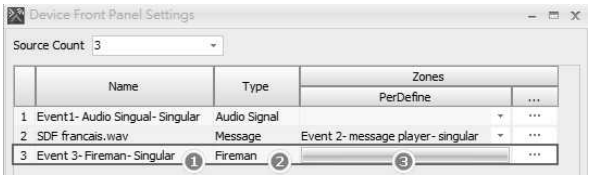


1. Click [Activation] button on channel 2.
2. Click [Paging Events] button.
3. Click [Add] button.
4. Select [Singular].
5. Enter the name of singular message event.
6. Click [...] Show button to open the zone setting window.

- Step 4: Go back to the Device window, right click the device and choose "Front Panel Settings"



- Stop 5: Apply the setting on "Device Front Panel Settings"



1. Enter the name of event.
2. Select [Fireman] type.

- Step 6: Click the PerDefine button to open the "Fireman" window. Apply the [Fireman event] to finish the setting.

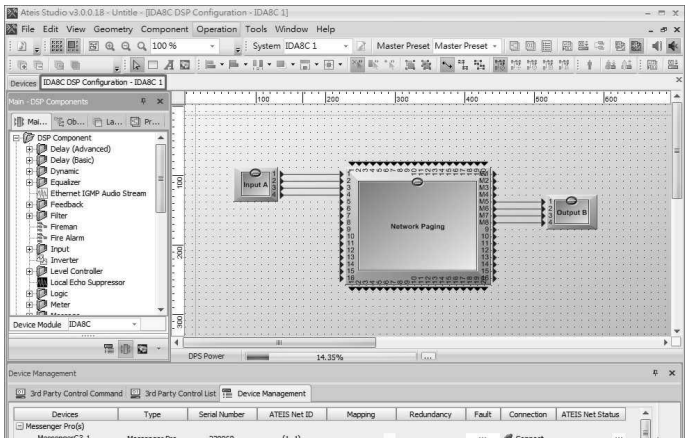


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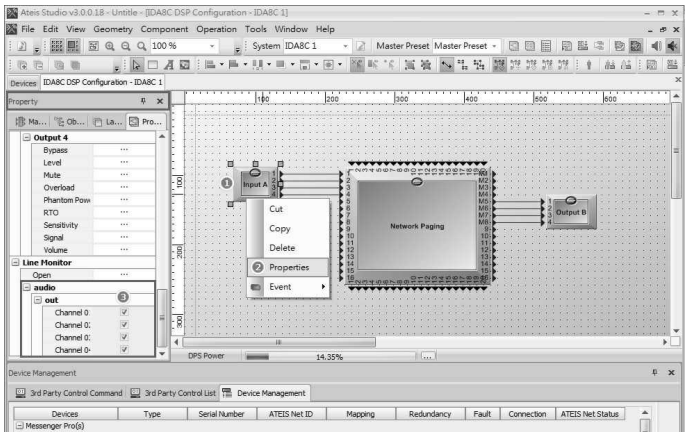
10.2 Setup Audio Monitoring on Front Panel

Allow to monitor the audio input/output sources to each zone/channel over the device's front panel.

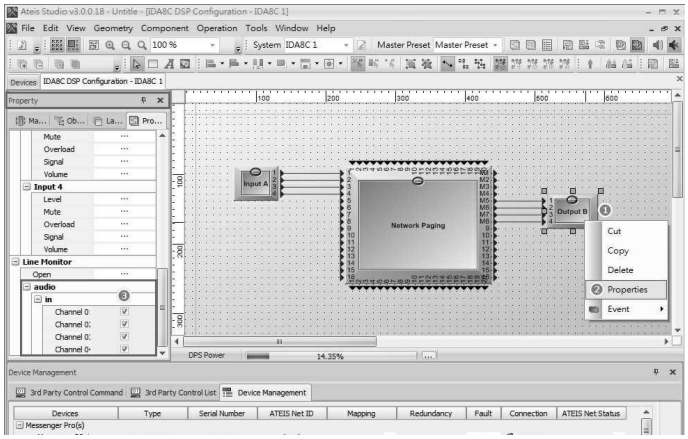
- Step 1: Open the "Device DSP Configuration" window. The example here monitors Input A, channel 1,2,3,4 and Output B, channel 5,6,7,8.



- Step 2: Right click Input A component to open the [Properties] window, then go to [Audio Out] and tick the boxes for the monitoring channels (channel 1-4).



- Step 3: Right click the Output B component to open the [Properties] window, then go to [Audio In] and tick the boxes for the monitoring channels (channel 5-8) to finish the setting.
- Step 4: Go to the device front panel and select [Audio Monitoring] button, then select the desired channel and press "ON" to play the audio source, and press again to stop playing the audio source.



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