



# UAP<sub>G3</sub> / G3H

Universal Audio Processor G3, Basic Ver./High Power Ver.

## User Manual

Revision History

v1.01

<b>Table of Contents</b>	<b>Page</b>
<b>About this manual</b>	<b>6</b>
1.1 Important safety instructions.....	6
1.1.1 General declaration .....	6
1.1.2 Connection .....	7
1.1.3 Notice signs .....	7
1.2 Copyright.....	8
1.3 Safety instructions.....	8
1.4 System requirement.....	9
<b>Hardware Installation &amp; connection</b>	<b>10</b>
2.1 Mounting.....	10
2.2 Power supply.....	10
2.3 Ethernet (RJ45).....	10
<b>Devices</b>	<b>11</b>
3.1 UAP G3/ UAP G3H.....	11
3.1.1 Front panel .....	11
3.1.2 Rear panel .....	12
3.1.3 Peripherals .....	13
3.1.3.1 RAC 5/ RAC 8 controller.....	13
<b>Configuration - UAP G3 Designer software</b>	<b>14</b>
4.1 Quick Start.....	15
4.1.1 Software Installation .....	15
4.1.2 Auto search & Connection .....	17
4.1.3 Create New File .....	18
4.2 Quick access toolbar.....	24
4.3 Main toolbar.....	25
4.3.1 Edit .....	25
4.3.2 Geometry .....	25
4.3.3 System .....	27
4.3.4 View .....	28
4.3.4.1 Template: devices/components.....	29
4.3.4.2 Object tree.....	30
4.3.4.3 Property.....	31
4.3.4.4 Layers.....	31
4.3.4.5 Phone book.....	32
4.3.4.6 Search.....	34
4.3.4.7 Options.....	35
4.4 Status bar.....	36
<b>Functionality</b>	<b>37</b>
5.1 3rd party command.....	37
5.1.1 Command format .....	38
5.1.1.1 CMD field.....	39
5.1.1.2 Data field.....	40
5.1.1.2 Value format.....	40
5.1.1.2 Element Target format.....	41
5.1.1.2 Event Target format.....	42
5.1.2 Supported commands .....	42
5.1.2.1 Handshake response command.....	42

5.1.2.2	Reboot (reset)/standby mode command.....	43
5.1.2.3	Element control value command.....	44
5.1.2.3	Write Element value command.....	44
5.1.2.3	Read Element value command.....	44
5.1.2.3	Increase Element value command.....	45
5.1.2.3	Decrease Element value command.....	46
5.1.2.3	Advanced Increase/Decrease Element value command.....	46
5.1.2.4	Events Control value command.....	47
5.1.2.4	Elements Adjust event.....	47
5.1.2.4	Elements N-Trigger event.....	48
5.1.2.4	Message Play event.....	49
5.1.2.4	Path Play event.....	50
5.1.2.4	Singular Paging event.....	51
5.1.2.4	Integrated Paging event.....	52
5.1.2.4	Basic Recorder event.....	53
5.1.2.4	Auto Recorder event.....	54
5.1.2.4	Uninterrupted Recorder event.....	55
5.2	Events.....	55
5.2.1	How-to: configure Message Player/Path Player .....	57
5.2.2	How-to: Elements Adjustment .....	58
5.2.3	How-to: Sub-Preset .....	59
5.2.4	How-to: singular/integrated paging .....	59
5.3	Scheduler.....	61
5.4	Source Type.....	65
5.5	Protocol List.....	67
5.6	Controls.....	67
5.6.1	Front panel knobs .....	68
5.6.2	Control input .....	70
5.6.3	Contact output .....	73
5.7	Device management.....	73
5.7.1	Download .....	75
5.7.2	File system .....	75
5.7.3	Phone book .....	77
5.7.4	Reboot .....	80
5.7.5	Update .....	80
5.7.6	Analog input calibration .....	81
5.7.7	Log .....	82
5.7.8	Settings .....	83
5.7.9	Fault list .....	84
5.8	Redundant setting.....	85
<b>DSP components</b>		<b>88</b>
6.1	Control.....	88
6.1.1	Analog Control .....	88
6.1.2	Analog Meter .....	88
6.1.3	AND .....	88
6.1.4	Binarized .....	88
6.1.5	Capture .....	89
6.1.6	Event Control .....	89
6.1.7	Event Trigger .....	90
6.1.8	Interface .....	91
6.1.8.1	OL-AMP.....	91
6.1.8.2	Control Output.....	91
6.1.8.3	Control Input.....	91
6.1.8.4	Front Panel Knob.....	91

6.1.9	Logic Control .....	92
6.1.10	Logic Meter .....	92
6.1.11	NOT .....	92
6.1.12	OR .....	93
6.1.13	Priority/Volume Arbiter .....	93
6.2	Delay.....	94
6.2.1	Delay (Advanced) .....	94
6.2.2	Delay (Basic) .....	95
6.3	DigiLink.....	96
6.4	Dynamic.....	96
6.4.1	AGC Mono/AGC Stereo .....	96
6.4.2	Compressor Mono/Compressor Stereo .....	97
6.4.3	Comp-Limiter .....	98
6.4.4	Ducker Mono/Ducker Stereo .....	99
6.4.4.1	How-to.....	100
6.4.5	Expander Mono/Expand Stereo .....	100
6.4.6	Gate .....	101
6.4.6.1	Gate - Mono/Stereo.....	101
6.4.6.2	Gate - Voice.....	102
6.4.6.3	Gate with Sidechain.....	103
6.4.7	Limiter Mono/Limiter Stereo .....	103
6.5	Equalizer.....	104
6.5.1	GEQ Mono/GEQ Stereo .....	104
6.5.2	PEQ Mono/PEQ Stereo .....	105
6.5.3	Hi&Lo Pass PEQ .....	106
6.6	Feedback.....	107
6.7	Filter.....	108
6.7.1	All Pass Fliter .....	108
6.7.2	Crossover Mono .....	109
6.7.3	Crossover Stereo .....	110
6.7.3.1	Hi/Lo Pass Filter.....	110
6.7.3.2	Hi&Lo Pass Filter.....	111
6.7.3.3	Notch Fliter.....	111
6.7.3.4	Shelving Fliter.....	112
6.8	Input.....	113
6.8.1	AEC .....	113
6.8.2	MI .....	113
6.8.3	MI-2 .....	114
6.8.4	LI .....	114
6.9	Inverter.....	114
6.10	Level Control.....	115
6.11	Message.....	115
6.11.1	Message Player .....	115
6.11.1.1	How-To.....	116
6.12	Mixer.....	118
6.12.1	Gain Sharing Mixer .....	118
6.12.2	Gain Sharing Mixer MM .....	119
6.12.3	Matrix Mixer .....	119
6.12.4	Standard Mixer (Stereo/Mono Mixer) .....	120
6.13	Noise Generator.....	121
6.13.1	Encrypted Sound Masking .....	121
6.13.2	Pink Noise .....	121
6.13.3	Tone Generator .....	122
6.13.4	White Noise .....	122



6.14	Output.....	122
6.14.1	LO .....	122
6.14.2	LO-2 .....	123
6.15	Page Control.....	124
6.15.1	S/W Page Control .....	124
6.15.2	Paging .....	124
6.16	Peak/RMS Meter.....	127
6.17	Selector.....	128
6.17.1	Input Selector .....	128
6.17.2	Output Selector .....	128
6.18	Signal Monitor.....	128
6.19	Source Type Shunt.....	129
6.20	USB Input/USB Output.....	130
6.21	UDP Stream.....	130
6.21.1	UDP Stream Receiver .....	130
6.21.2	UDP Stream Transmitter .....	131
6.22	VoIP.....	132
6.23	Xpressor.....	134
<b>Maintenance</b>		<b>136</b>
<b>Technical data</b>		<b>137</b>
8.1	UAP G3/UAP G3H.....	137
<b>Contact information</b>		<b>139</b>

# 1 About this manual

This user manual will explicitly describe the hardware installation and the software configuration, providing installers and users the necessary information to setup and configure the system.

❖ Firmware version:

Version
v1.01

## 1.1 Important safety instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth, see [Maintenance](#).
7. Leave enough space above and below the unit for good ventilation of the device. If the airflow is not adequate, the device will heat up inside and may cause a fire.
8. Do not install near any heat sources such as radiators. Heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for user safety. If the provided plug does not fit into userr outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way such as power-supply cord or plug is damaged, liquid has been moisture, does not operate normally, or has been dropped.

### 1.1.1 General declaration

- 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.
- 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 userr ATEİS dealer for replacement.
- 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.
- Do not try to make any modifications to the device. This is a potential fire and electrical shock

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.
- Operate the device in an environment with a free-air temperature of between -5 °C and +55 °C (-23 °F and 131 °F).
- Turn off all audio equipment when making any connections to the device, and make sure to use adequate cables.
- 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.
- CAUTION - Danger of explosion if battery is incorrectly replaced. Replaced only with the same or equivalent type.
- "Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus." or equivalent.
- **ATEİS group reserves the right to update, amend, change or withdraw these functions and to introduce new functions at any time without notice.**

### 1.1.2 Connection

- 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.
- Check whether the connection figures comply with the existing mains supply. Serious damage could occur if connecting the system to the wrong power supply. An incorrect mains 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.
- The mains cable must be firmly connected. If it is loose there is a fire hazard. Turn immediately off the unit, remove the power cord from the AC outlet and consult user ATEİS dealer in any of the following circumstances below:
  - 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.
- Only use connection cables available from or recommended by ATEİS. If user use cables user have made up userself, all claim to warranty is null and void.

### 1.1.3 Notice signs

**WARNING**  
TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK,  
DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.  
NO USER SERVICEABLE PARTS INSIDE, REFER SERVICING  
TO QUALIFIED SERVICE PERSONNEL.

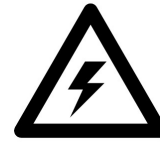


\*\* The above warning is located on the back of the unit.

#### Explanation of Graphical Symbols



The equipment or the property can be damaged, or persons can be lightly injured if the alert is not observed.



To alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

## 1.2 Copyright

All rights reserved. No part of this document may be reproduced or transmitted in any form by any means, electronic, mechanical, photocopying, or otherwise, without the prior written permission of the publisher. The content and illustrations are subject to change without prior notice.

## 1.3 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 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 user ATEİS dealer for replacement.
- Turn off the unit immediately, remove the power cord from the AC outlet and contact user ATEİS dealer in any of the following circumstances, If user 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.
- 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 user ATEİS 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 -5°C ~ +55°C (+23°F ~ +131°F).
- 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.

## 1.4 System requirement

System Requirement	
Supported Operating Systems	<ul style="list-style-type: none"><li>• Windows 7 (32 and 64 bit)</li><li>• Windows 8 (32 and 64 bit)</li><li>• Windows 8.1 (32 and 64 bit)</li><li>• Windows 10 (32 and 64 bit)</li></ul>
Memory	<ul style="list-style-type: none"><li>• At least 2GB RAM</li></ul>
Hard Disk	<ul style="list-style-type: none"><li>• Disk space required is 300MB</li></ul>

## 2 Hardware Installation & connection

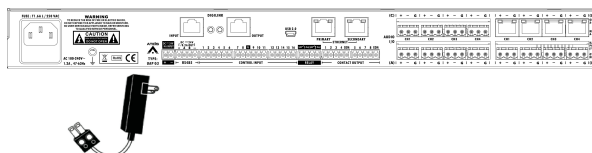
### 2.1 Mounting



Mount the UAP G3/ G3H audio processor in any standard 19-inch 1U audio equipment rack using the supplied mounting brackets and screws. Consider leaving enough ventilation space above and below the unit. Do not mount the processor directly above the heat generating devices like power supplies or power amplifiers.

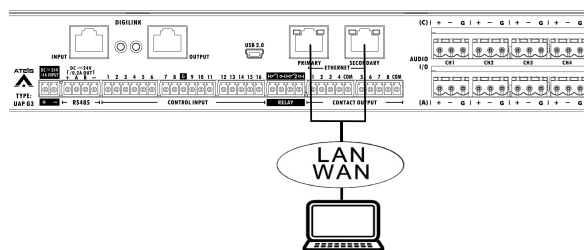
### 2.2 Power supply

Use the supplied 24VDC power adapter to connect the UAP G3/ G3H audio processor to the power outlet. The Power LED on the front panel will glow green when power is applied.



### 2.3 Ethernet (RJ45)

Use the supplied Ethernet cable (CAT5/6) to connect the UAP G3/ G3H audio processor to a computer.



## 3 Devices

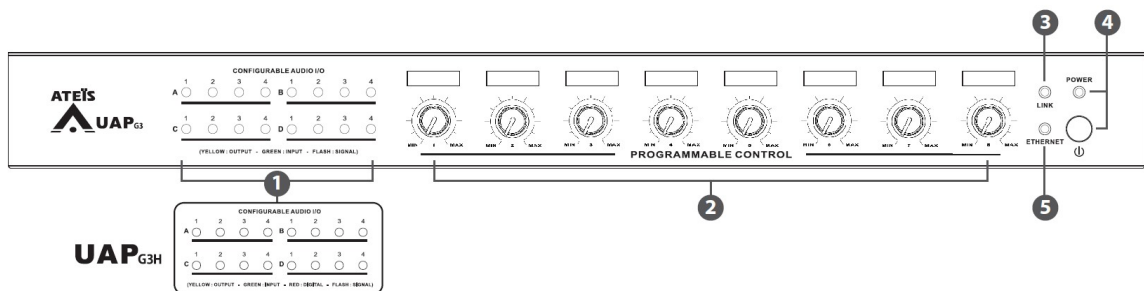
### 3.1 UAP G3/ UAP G3H

The UAP G3/UAP G3H is a cascable DSP audio processor which comes with 4 modular card slots for fully flexible I/O configuration. The I/O combination from 4x4O, 4x8O, 8x4O, 8x8O, 4x12O, 12x4O, 16I or 16O. Using OCTOLINK cards can up to 32x32O audio I/O. Up to 12 UAP G3/UAP G3H processors can be cascaded via Digi-Link bus. The UAP G3/UAP G3H can be linked via CAT5/6/7 cable with metal shielded RJ45 connector (max. length 33 ft/10m between units).

As our state of the art DSP processor, the UAP G3/UAP G3H also incorporates full drag n' drop DSP component library such as AGC, AEC, Ducker, various kinds of Mixer, Delay, A.N.G (Auto Noise Gain), ANR (Ambient Noise Reduction), PEQ, Feedback, Hi/Lo Pass, message player, event scheduler for element adjustment, preset changes and event control, dynamic zone paging, In/Out audio streaming, VoIP/SIP for teleconferencing, level control, telephone transmit/receive, audio recorder, etc. making the entire system flexible and easy to program and integrate. The UAP G3/ UAP G3H features 8 programmable knobs, each knob can be programmed in custom DSP parameter for intuitive control without PC or any other software.

The UAP G3/UAP G3H can be integrated with various inputs, outputs or controllers for Home & Office Automation. Logic I/O, RS485 and Ethernet is also available for 3rd party control.

#### 3.1.1 Front panel



##### 1. Configuration audio I/O

4 audio slots (A, B, C and D) are equipped in UAP G3/G3H. Each of these audio slots receives either 4 audio input or output channels. When the UAP G3/G3H is powered, users can identify the audio card through the color and status of LED lights:

- Yellow LEDs: analog OUTPUT
- Green LEDs: analog INPUT
- Red LEDs: digital INPUT/OUTPUT
- Blink: signaling

##### 2. Programmable Front Knob control

Eight front knobs which allow a quick adjustment for every analogical audio treatment. Please refer [\[HOW TO\]](#) chapter for details.

##### 3. Link LED

Light up when the UAP G3/G3H is link with UAP G3 system (several UAP G3/G3H units are connected).

	Linked	Unconnected line
Link LED	Green	The LED doesn't light

##### 4. Power button and LED

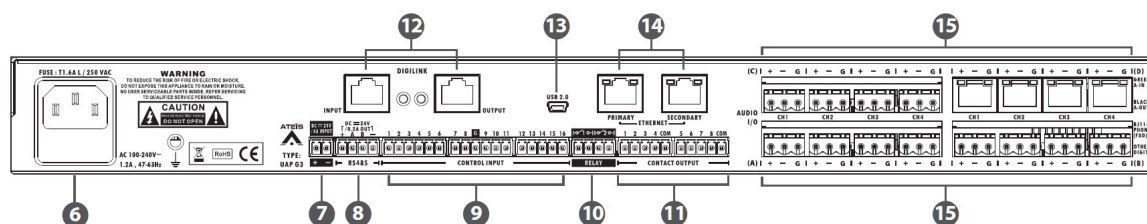
Lights up when the UAP G3/G3H is switched on. Push the button to switch to Normal/ Standby mode.

	Normal status	Standby status
Power LED	Green	Red

##### 5. Ethernet LED

Light up in green when the UAP G3/G3H is connected (on-line) to the TCP/IP network.

### 3.1.2 Rear panel



6. Mains power inlet: Connect the mains power to this socket, the UAP G3/G3H accepts AC voltages 100~240V, 1.2A, 47~63Hz (fuse: T1.6AL/250VAC).

7. 24VDC backup power input.

8. 1 set of RS485 interface for 3rd party control.

9. 16 channels control input: for logic control and volume control.

10. 2 customer defined relay output for external device control, each relay output with independent ground.

11. 8 contact outputs for external device control: 1~4 channel with the same ground, 5~8 channel with the same ground.

12. Digi-link input/output connectors: Up to 12 UAP G3/G3H can be linked via CAT5/6/7 cable with metal shielded RJ45 connector (max. length 33 ft/10m between units).

13. USB 2.0 interface connect to PC for background music play or teleconferencing application such as Skype, ZOOM, WhatsApp, etc.

14. Redundant Ethernet ports connect to PC for configuration and control.

15. Options of 4 modular card slots (Slot A, B, C, D) for fully flexible I/O configuration, and four different interfaces for users.

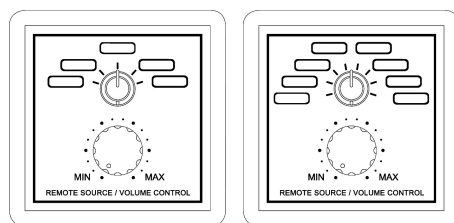
Analog Audio I/O Cards for Slot A/B/C/D			
Cards	Description of Model	UAP G3	UAP G3H
CDH-MI	4CH Mic/Line Audio Input Card, HORIZ type	v	v
CDH-LI	4CH Line Audio Input Card, HORIZ type	v	v
CDH-LO	4CH Line Audio Output Card, HORIZ type	v	v
CDH-MIO	2CH Mic/Line In & 2CH Line- Out Card, HORIZ type	v	v



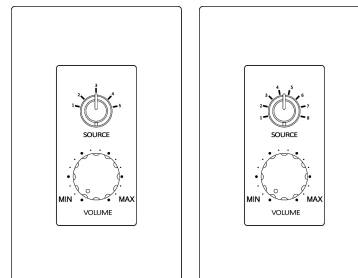
### 3.1.3 Peripherals

#### 3.1.3.1 RAC 5/ RAC 8 controller

The RAC includes two parts Top and Bottom and can be used to adjust the audio source and adjust the parameters (volume control, etc.) The two sets of 5/8 steps knobs on RAC can be programmed by using web browser. The RAC5/8 is available for US and EU type, and powered by 24VDC.



**RAC5/RAC8  
(EU Type)**



**RAC5/RAC8  
(US Type)**

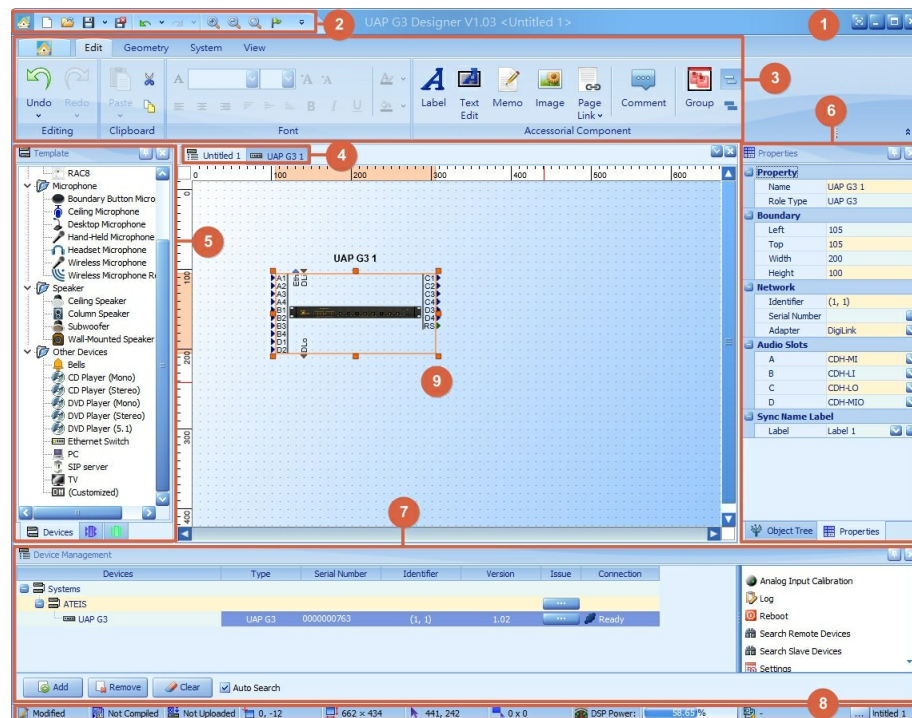
## 4 Configuration - UAP G3 Designer software

The UAP G3 Designer software integrates with fully DSP components and offers a flexible user-defined I/O configurations for different kinds of applications, including several models of quick settings, making the UAP system easy to setup, program and control, it also controls the audio devices via PC/Laptop for multi-rooms. The integrated special features include built-in message player, event, scheduler, In/Out streaming over IP (UDP/VoIP), audio I/O in UAP G3/ G3H.

### ❖ System requirement

- Win7 and above, 32-bit or 64-bit, operating system required. It is recommended that the user's operating system has been updated to the latest update status.
- At least 2GB RAM.
- Disk space required is 300MB.

### ❖ Interface



1. Title Bar: Display the software name, version and information of the current configuration file.
2. Quick Access Toolbar: The section where users can reach the main functions quickly.
3. Main Functions Toolbar: List the main functions of UAP G3 Designer software (Edit/Geometry/System/View).
4. Tab window: Switch different working areas and DSP settings of separate devices.
5. Left side dock panels (default:Template): A dock panel on the left side of software which contains all devices and elements, users can drag the window to customized the dock panel.
6. Right side dock panels (default: Properties and Object Tree):
  - Object Tree: Display the structure of current system configuration.
  - Properties: Display and edit the properties of the selected object (device, component, etc.)
7. Bottom side dock panels (default: Device management):
  - Device Management: Display the devices which have been searched in network dynamically, and display the fault and the connection status of devices.



5,6,7 panels are floating windows, users can drag the windows to up/bottom/left/right directions to pin them and customized the layout in this software.

8. Status Bar: Display the status of software including the file name, modification indication such as whether to proceed Compile/Update action, mouse cursor position, etc.
9. Working Area (configuration window and DSP components window): An area to design and program the system configuration and its DSP components of audio topology.

## 4.1 Quick Start

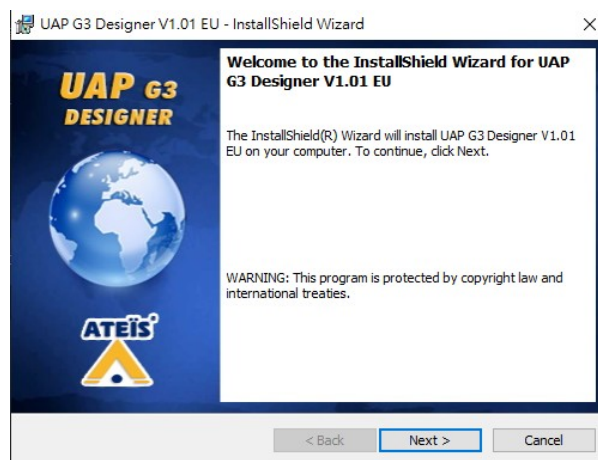
### 4.1.1 Software Installation

Install the UAP G3 Designer software to user Windows PC/Laptop (Win7 / Win 8/ Win 10/Win 11)  
Follow the instructions of the InstallShield Wizard to install UAP G3 Designer V1.01 EU software.

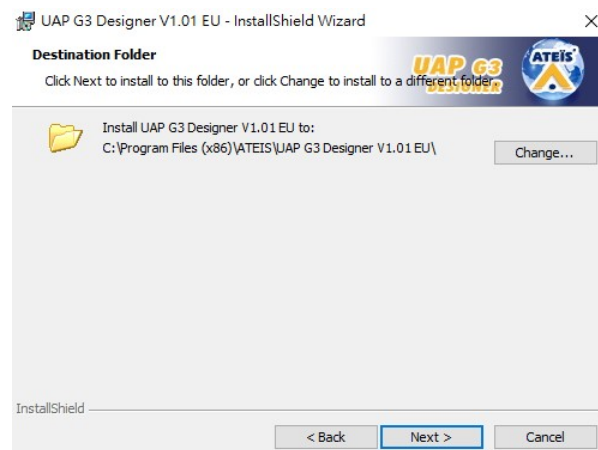


#### ❖ Installation

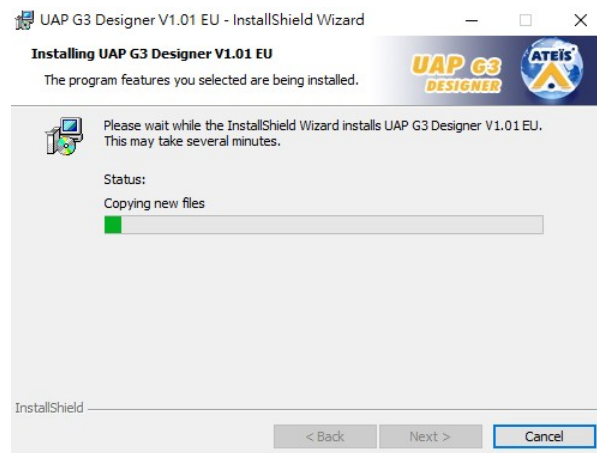
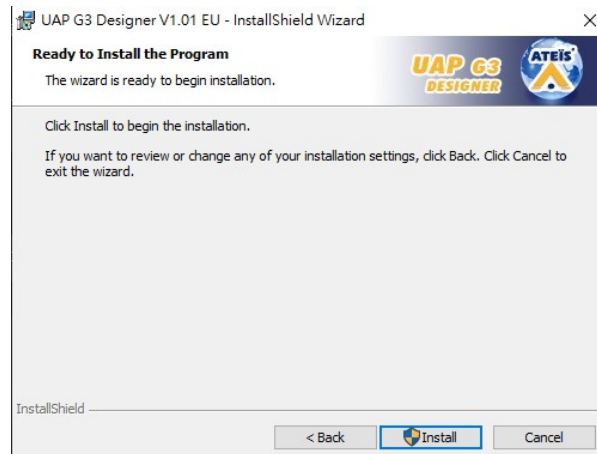
1. Click on [NEXT] to install the software.



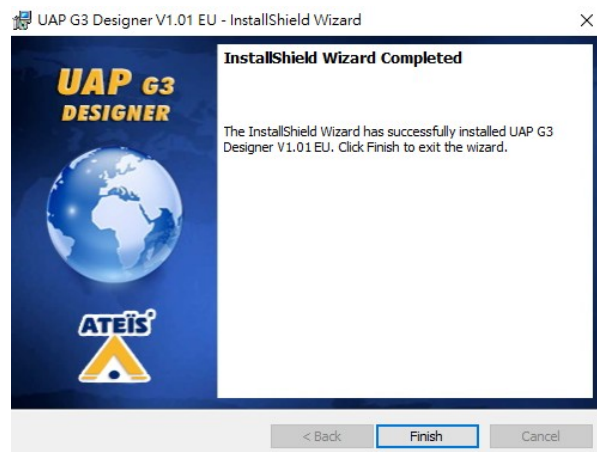
2. Click on [NEXT] to continue installing.



3. Click on [Install] to continue installing.



4. Click on [Finish] to complete the installing.



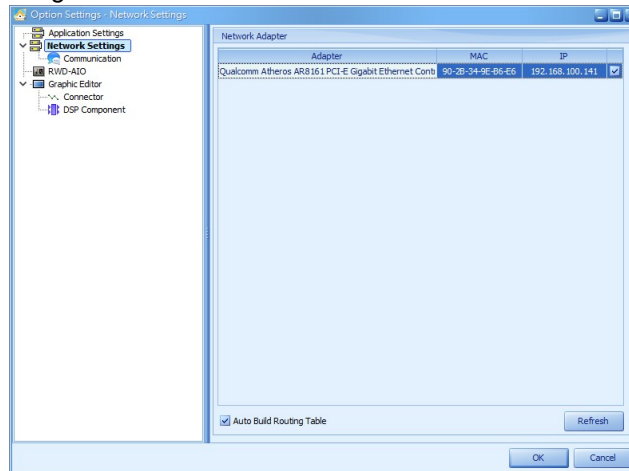
5. Go to the desktop and click on the [UAP G3 Designer v1.01] to start.



### 4.1.2 Auto search & Connection

#### ❖ Network setting

Go to File > Option > Network Settings, and select the network adapter in user PC/ laptop >> click on "OK" to finish the setting.



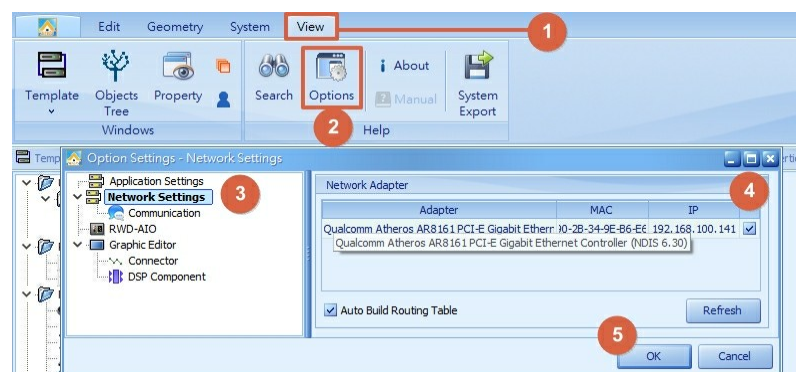
#### ❖ Auto Search and Connection

Search and connect to the devices for programming and controlling.

1. Make sure the UAP G3/ G3H Designer software is not blocked by the Windows Firewall.

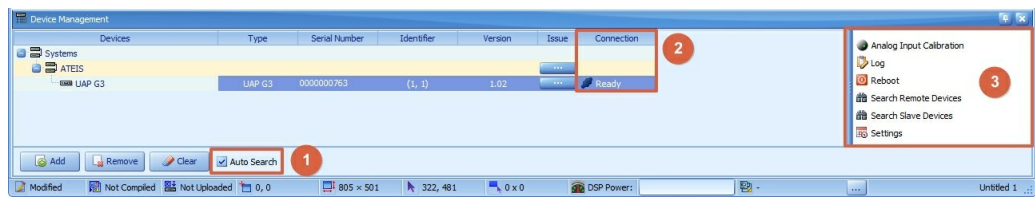


2. Go to "View > Options > "Network Settings > Network Adapter" window. Make sure the Network Adapter (network card) setting is correct and every device are connected appropriately, then power the devices to start the next steps. The suggested settings of internal Network card (NIC) to the IP range are: 192.168.100.1~192.168.100.254 / Subnet: 255.255.255.0. Note: The default IP of UAP G3/ G3H will be 192.168.101.168



Click [Refresh] to reload the network card setting on user PC when it is modified, and the [Network Adapter] setting will display the latest network card, MAC and IP address.

3. Enable the "Auto Search" function, and it will automatically list all network systems and their devices at the local network (except the remotes).

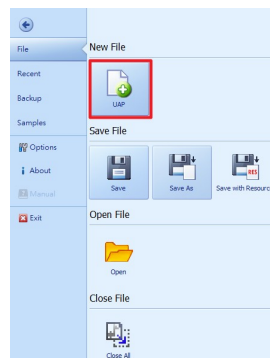


4. Check the connection status of every device, and make sure it's ready.
5. If the selected a device is ready to use, the right section of the panel will display its device function.

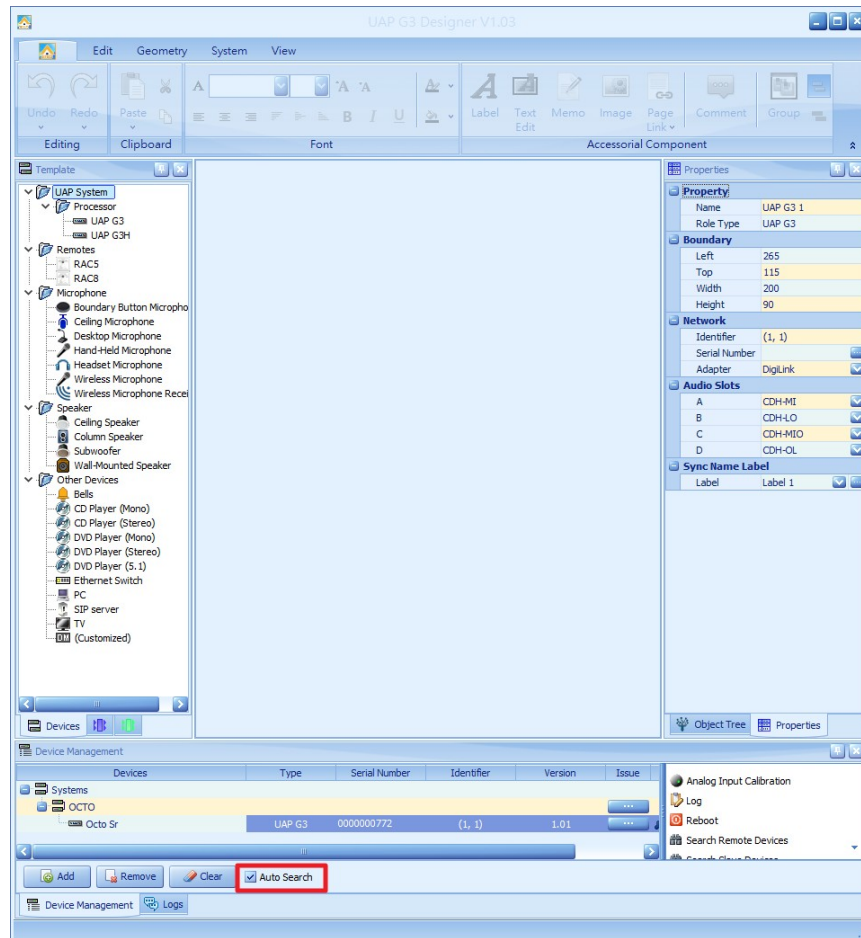
### 4.1.3 Create New File


❖ Create new file


1. First, go to [File] > [New] to open a new UAP G3 System file.



2. Check the box for [Auto Search] in the lower left corner of the window, display all the system which is connected to user's network.

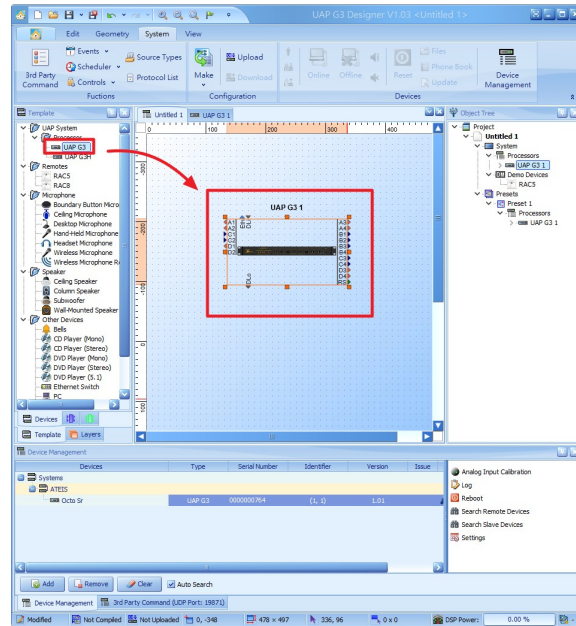



 If the connected device does not display in the ["Device Management"] Tab. Please check user IP/firewall settings in Windows if user do not see the connected devices in the "Device Management" Tab.

 The UAP G3 Designer software has automatic deploy function that enables each UAP G3 device with a device ID shown under "Identifier".

3. Go to "Device Management" >> "Drag n' Drop" the "UAP G3 Audio Network" on the editing window, and the online devices diagram will be automatically created.



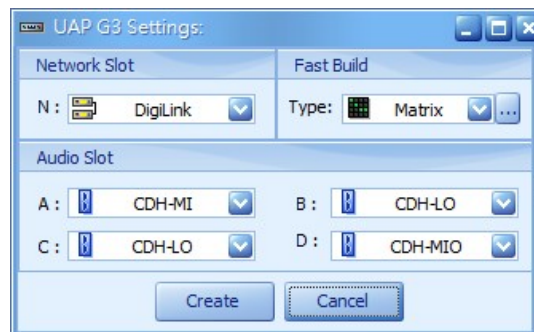


 A floating window will pop up which allows user to choose a various types of UAP G3 System display (Default/ Vertical/ Horizontal) shown on the editing window

4. There are more than 25 kinds of fixed DSP configuration on UAP G3 Designer software. These pre-programmed configurations are varying by different kinds of I/O hardware. Each I/O hardware has the individual model number (eg: MO, MI, etc.), and each model number can choose one kind of application under the same model ID.

 Please note these DSP configuration are not allowed to be edited.

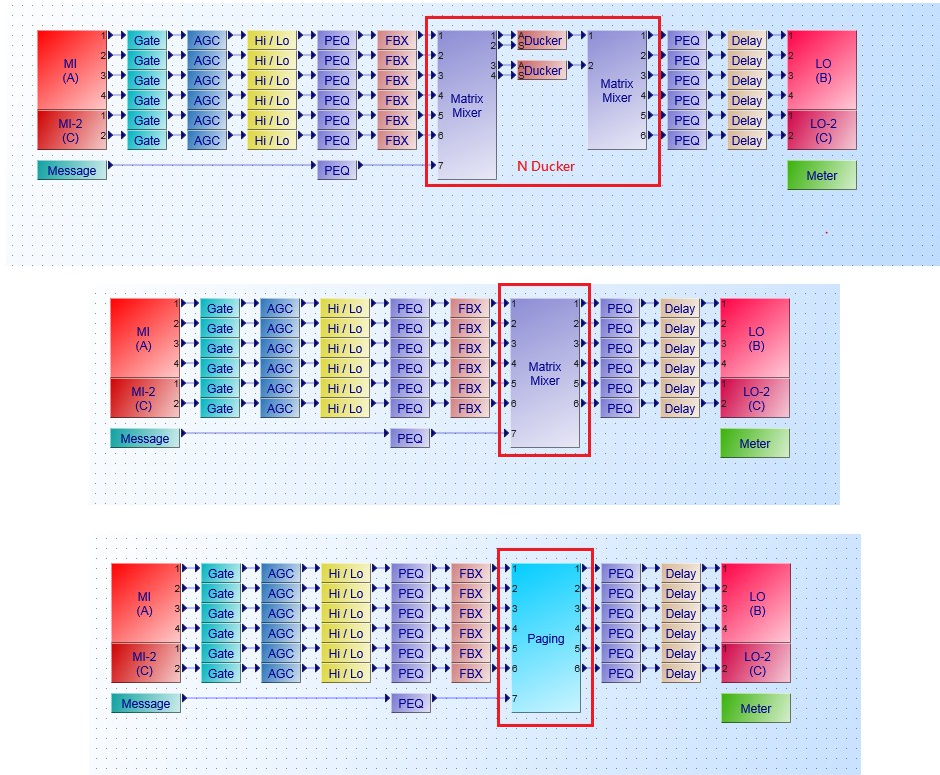
5. Drag and drop the UAP G3/G3H component on the editing window. The [UAP G3/ UAP G3H Settings] window will appear automatically as below. According to the card slots of processor, set the cards and the mode of planning topology.




- Network Slot: If the UAP G3/G3H is embed with DigiLink port please choose [DigiLink], otherwise choose [Empty].
- Fast build: Four types of quick models for users to edit.

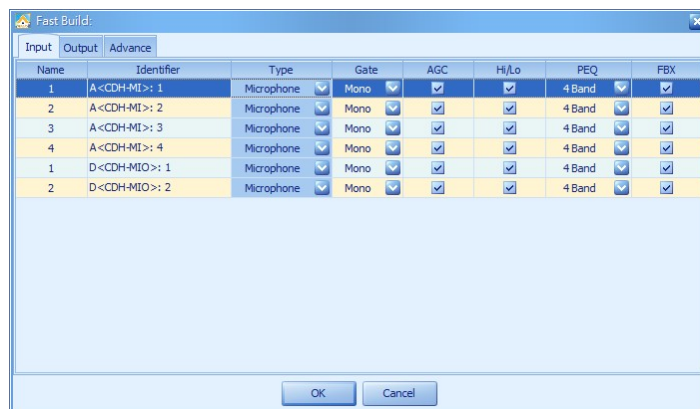






N Ducker/ Matrix/ Paging models

- Manual: Users choose the DSP components freely.
- Paging: For multiple devices to paging in the system.
- Matrix: Basic models of the paging.
- N Ducker: Suitable for dividing the system into several areas to paging.
- Click  to open fast build setting window as below.

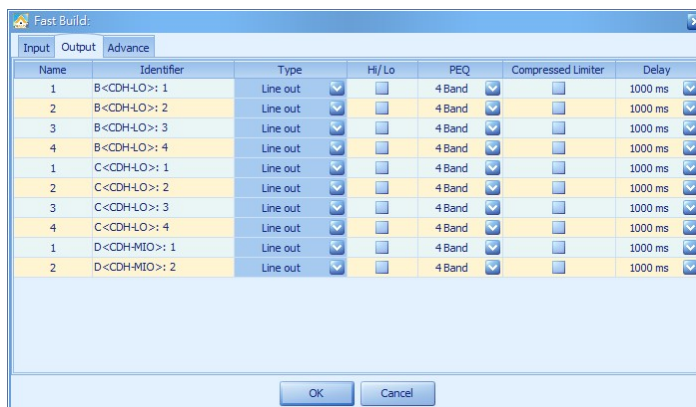


#### Input

- 1) Name: The default is the number of the component channel, and the user can replace the text according to the actual application.(ex: MIC, BGM, Location...)
- 2) Identifier: Identify the slot and card board.
- 3) Type: [-]/ [Microphone]/ [Line in]. Quickly help users to create component channel applications, ex: When selecting [Microphone], it will help users quickly select suitable components, such as Gate, AGC, etc.
- 4) Gate: [-]/ [Mono]/ [Voice]. Add Gate component to DSP configuration. See

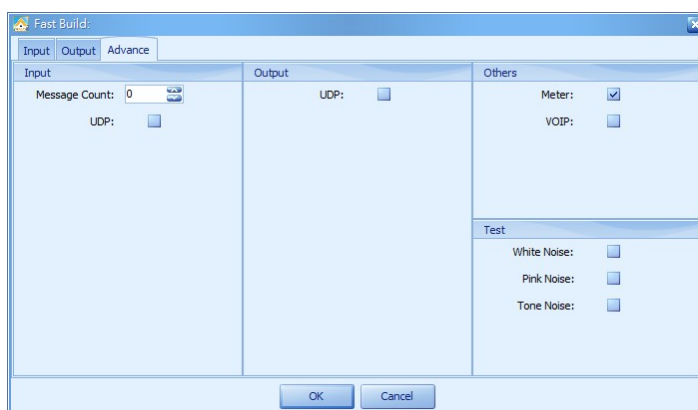
["Gate"](#) for details.

- 5) AGC: Add AGC(Automatic Gain Control) component to the DSP configuration. See ["AGC Mono/AGC Stereo"](#) for details.
- 6) Hi/Lo: Add Hi/Lo Pass component to the DSP configuration. See ["Hi/Lo Pass"](#) for details.
- 7) PEQ: Add PEQ (Parametric Equalizer) component to the DSP configuration, from 2-16 bands. See ["PEQ/PEQ Stereo"](#) for details.
- 8) FBX: Add FBX (Feedback) component to the DSP configuration, from 2-16 bands. See ["Feedback"](#) for details.



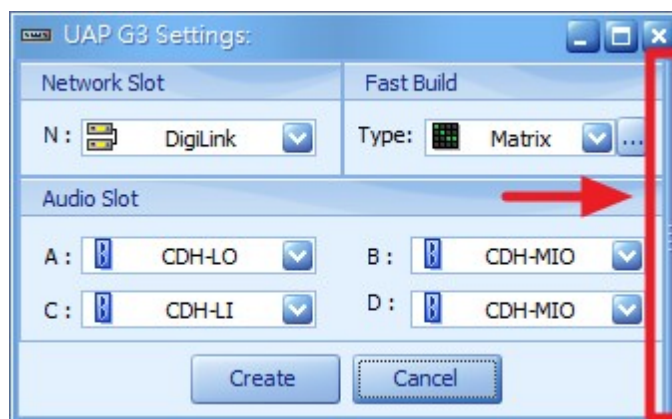
#### ■ Output

- 1) Name: The default is the number of the component channel, and the user can replace the text according to the actual application.(ex: MIC, BGM, Location...)
- 2) Identifier: Identify the slot and card board.
- 3) Type: [-]/ [Line out]/ [Amplifier]. Quickly help users to create component channel applications, ex: When selecting [Microphone], it will help users quickly select suitable components, such as Gate, AGC, etc.
- 4) Hi/Lo: Add Hi/Lo Pass component to the DSP configuration. See ["Hi/Lo Pass"](#) for details.
- 5) PEQ: Add PEQ (Parametric Equalizer) component to the DSP configuration, choose 2~16 bands. See ["PEQ/PEQ Stereo"](#) for details.
- 6) Compressed Limiter: Add Comp-Limiter component to the DSP configuration. See ["Comp-Limiter"](#) for details.
- 7) Delay: Add the Delay component and set the signal delay for 5~2000ms. See ["Delay"](#) for details.

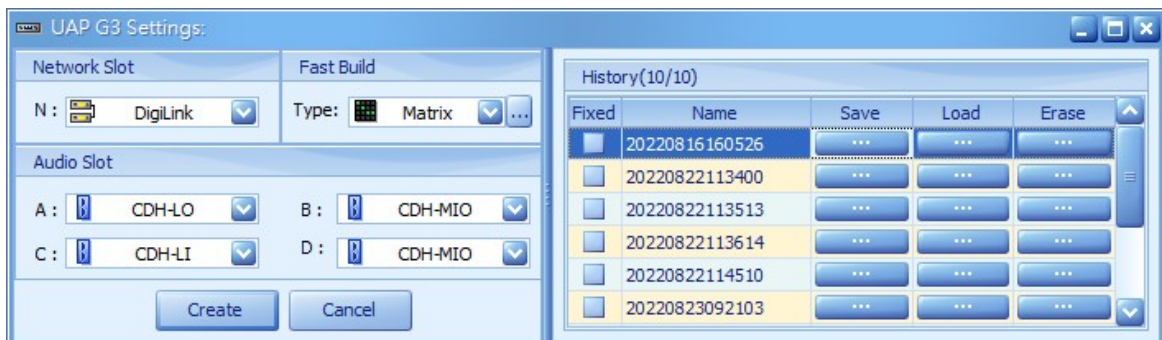


#### ■ Advance

- 1) Input: In [Message Counts] to set the number of message. Add UDP Stream component to DSP configuration. See "[UDP Stream](#)" for details.
  - 2) Output: Add UDP Stream component to DSP configuration. See "[UDP Stream](#)" for details.
  - 3) Others: Click [Meter] to add Peak/RMS Meter component and [VoIP] for components to DSP configuration. See "[Peak/ RMS Meter](#)" and "VoIP" for details.
  - 4) Test: Add [White Noise], [Pink Noise], [Tone Noise] components. See "[White Noise](#)", "[Pink Noise](#)", "[Tone Noise](#)" for details.
- Audio Slot: Choose the audio cards in Slot A, B, C, D on the UAP G3/G3H device.

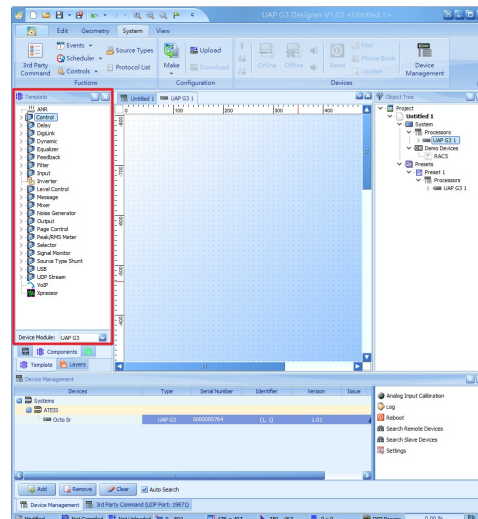


Click the bar at the right side to expand the setting window as below picture



- History
  - Fixed: Click the checkbox to fix the history on the list. The maximum of 10 records can be listed on this table maximum number of the list.
  - Name: User can change the name.
  - Save: Save/rewrite the record settings of network slot, audio slot and fast build.
  - Load: Load the settings of recent device.
  - Erase: Delete this record.

6. Double click on UAP G3/G3H processors or devices to open the DSP component diagram >>  
Click on each component to open the parameters setting window.



7. Click on "Compile" button to open the [Compile] window, here user will see the three options [Make/Compile/Build] which offers flexible choices whether from minor modification of compile setup to fully modification of compile setup.

- Make: The tables will be compiled only if the structures have been modified.
- Compile: The tables will be compiled only if the structures or parameters have been modified.
- Build: The tables will be fully compiled whether any of the structures or parameters have been modified or not.

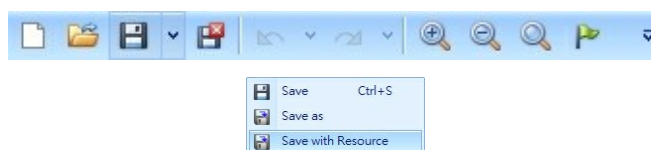


The processing speed of compile setup might be affected by the numbers of structures and parameters user have on the UAP G3 configuration and varied with the above three options, the speed of the fastest to the slowest will be Make > Compile > Build.



8. Click on "Upload" button to upload user UAP G3 configuration on to the UAP G3/ G3H processor.

9. Click on "Online" button to go online.

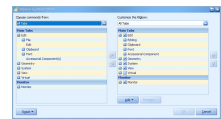
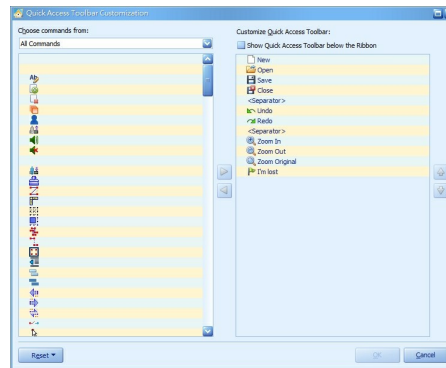
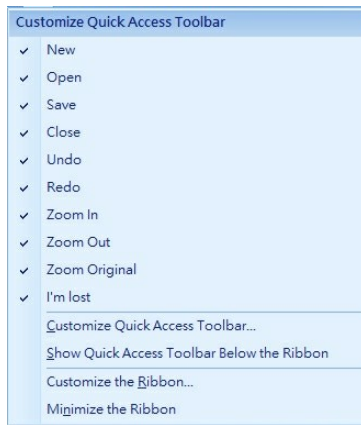
## 4.2 Quick access toolbar



- New UAP G3/ G3H file : Create a new UAP G3/ G3H configuration file.
- Open : Open a UAP G3/ G3H file.
- Save : Save the editing current configuration.
- Save as : Save with a different file name and/or path.
- Save with resource : Save the editing configuration and every file used in this configuration such as message and music.
- Close : Click to close the opened configuration.
- Undo /Redo : Recover to the recent actions/Recover the recent undo actions.
- Zoom In /Zoom Out : Click to zoom in and zoom out.
- Zoom Original : Click to display the working area in original size.
-

- I'm lost : Click this button to restore the scale and scroll scope of the working area.
- More Buttons : Click to pull down the "Customize Quick Access Toolbar" window. Including selective buttons to show on quick access toolbar and the modification of interface.

#### Customize Quick Access Toolbar



## 4.3 Main toolbar

### 4.3.1 Edit



#### ❖ Editing:

- Undo: Recover to the recent actions.
- Redo: Recover the recent undo actions.

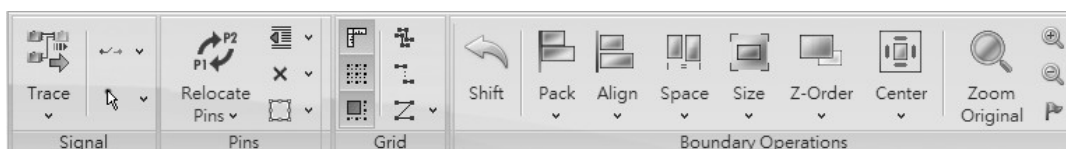
#### ❖ Clipboard: To paste, cut or copy the selected object (device, component, element).

#### ❖ Font: The format of text including font type, font size, color, italic, bold, underline and alignment.

#### ❖ Accessorial Component:

- Label: To create a label on design window.
- Text Edit: To create a text box on design window.
- Memo: To create a memo object on design window.
- Image: To insert an image.
- Page Link: Create a button to quickly link to the control panel of the processor, remote or DSP component.
- Comment: Select an element on the working area first, then click this function to add the text for a description of element.
- Group: Create a block to group the processor, remote or DSP component. First, selected the items user wish to be grouped, and choose either "Groups by selected objects" or "Groups by selected area" depending on user need, and click "Group" button.

### 4.3.2 Geometry



## ❖ Signal

- Trace: Show the audio signal path of the selected DSP component in the DSP configuration. Click this button once to start tracing, and click it again to stop.
  - Signal Path Forward Trace: Trace the input audio path through the selected DSP component.
  - Signal Path Bi-Direction Trace: Trace both input and output audio path through the selected DSP component.
  - Signal Path Backward Trace: Trace the output audio path through the selected DSP component.
- Include Settings/Exclude Settings:
  - Use [Include Settings] to trace the element settings of the selected component such as mute/channel selection on Selector component, etc.
  - Use [Exclude Settings] to not trace the element settings of the selected component such as mute/channel selection on Selector component, etc.



The Include Settings/Exclude Settings function can only be accessed if users have a Super Password ID

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- Trace While Mouse Click/Trace When Mouse Hover: Select the DSP component/pin/connector to trace by "Mouse Click" the component/pin/connector or "Mouse Hover" above the component/pin/connector.

## ❖ Pin(s)

- Relocate Pins: Edit the pin location on DSP component.
  - Exchange: Exchange the location of 2 pins.
  - Insert: Insert a pin in front of the selected pin location.
  - Pin Intent Mode: Automatically reorganize (Indent) the rest of pins when dragging one of the pin to another location.
  - None/Top/Bottom/Left/Right: Edit the location of connectors collector on the selected DSP component.
  - None Center Area (None/Keep Pin Name/Keep Component Name): Edit the dimension of center area border of component without affecting the pin name or component name.

## ❖ Grid

- Ruler: Click to show the ruler unit on the working area. Right click the ruler on working area to choose the unit of ruler (pixels, inches, centimeters).
- Grid: Click to display the grid on the working area.
- Snap to Grid: Click to enable the movement of selected object by grid points at a time.
- Right Angle: Click to enable the drawing the connectors only with right angles (90 degrees).
- Hyperlink: Click to hide the angle of connectors.
- Direct/Bezier: Select a connector to make it with right straight or with rounded angle.

## ❖ Boundary Operations

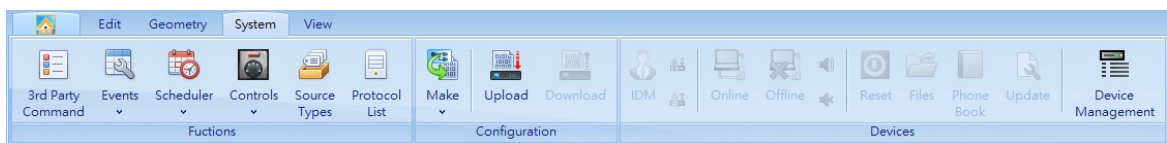
- Shift: Select several graphical objects, and then click shift to enter the value to move by X-axis or Y-axis.
- Pack: Select several graphical objects, and then pack them.
- Align: Select several graphical objects, and then align them.
- Space: Select several graphical objects and components, and then enlarge/shrink/equal the



space among them in horizontal/vertical.

- Size: Select several graphical objects, and then choose one of them to be the reference to make them have same size/width/height.
- Z-Order: Select the graphical objects to be on the front or at the back of other graphical objects. For example, It is useful with background images and buttons.
- Center: Select several components, and then move the components in center horizontal, center vertical or both center horizontal and vertical.
- Zoom Original: Zoom to the original size of the working area.
- Zoom In: Zoom in to the working area.
- Zoom Out: Zoom out of the working area.
- I'm lost: Click this button to restore the tools buttons and panels to the default layout.

### 4.3.3 System





#### ❖ Functions:


- 3rd Party Command: The 3rd Party Command function allows an external device to control the main controller including the events or elements through Ethernet (UDP) or RS485. Click it to open the 3rd Party Command window at the bottom dock panel.
- Event(s): Use main controller to control the ATEIS devices by event (Message Player/ Elements Adjustment/Sub-Preset/Singular Paging & Integrated Paging/Issue Detector/ Issue Controller/ Issue Group/ Issue Bridge/ Active Procedure/ Passive Procedure). Click it to open the events window at the bottom dock panel. See [Event](#) for details.
- Scheduler(s): The Scheduler function allows to automatically operate an event or element based on its configured settings such as begin/end time, play time(s) cycle, the triggering type of applied element (percent/Boolean/float), etc. Click it to open the events window at the bottom dock panel. See [Scheduler](#) for details.
- Control(s): Control the front panel knobs/control input/contact output of main controller.
  - [Front panel knobs](#)
  - [Control input](#)
  - [Contact output](#)
- Source Types: Sorting different audio sources, such as change the audio's name, set priority and EVAC. See [Source Type](#) for details.
- Protocol List: Set the protocols's type, processor and details. See [Protocol List](#) for details.


#### ❖ Configuration

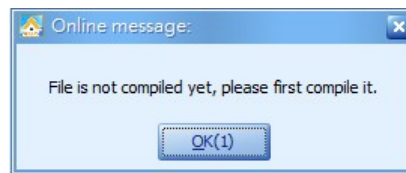
- Make: Compile the modified configuration if the structures or parameters have been modified. The software will verify there's no major errors remain before uploading the configuration into audio processor.
- Make All: Compile all the configuration even there is no modification have been made.
- Upload: Upload the configuration into the processor after compilation, then the system will execute based on the designed configuration.
- Download: Download the configuration file from processor.

#### ❖ Devices:

- IDM <Admin>: Manage/display/edit the user authorized level. See IDM for details. Click  and  button to login and logout.
- Online: Online the software with the processor. Once online, the parameters will be synchronized based on the adjustment of the parameters of processor. The system configuration is not able to edit during online.
- Offline: Leaving the online state, the user can continue editing.

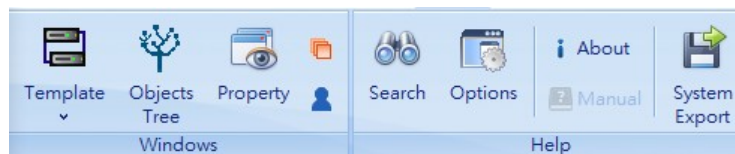
 If the parameters have been modified in the configuration, click 'Online' and the parameters will be synchronized based on the adjustment of the parameters.

 If the system topology has been modified in the configuration such as adding new component or event, remember to click 'Make (All)' and 'Upload' button again before Online. Otherwise, the error will be shown as below.



- Reboot: Shortcut for users to reboot all the uploaded devices. See [\[Device Management\]](#) for details.
- File system: Shortcut for users to restart all the uploaded devices. See [\[Device Management\]](#) for details.
- Phone Book: Shortcut for users to manage phone book information uploaded devices. See [\[Device Management\]](#) for details.
- Update: Shortcut for users to update all the uploaded devices. See [\[Device Management\]](#) for details.
- Device Management: Shortcut for users to manage the uploaded devices. Open the [Functionality]>[\[Device Management\]](#) window.

#### 4.3.4 View



##### ❖ Window

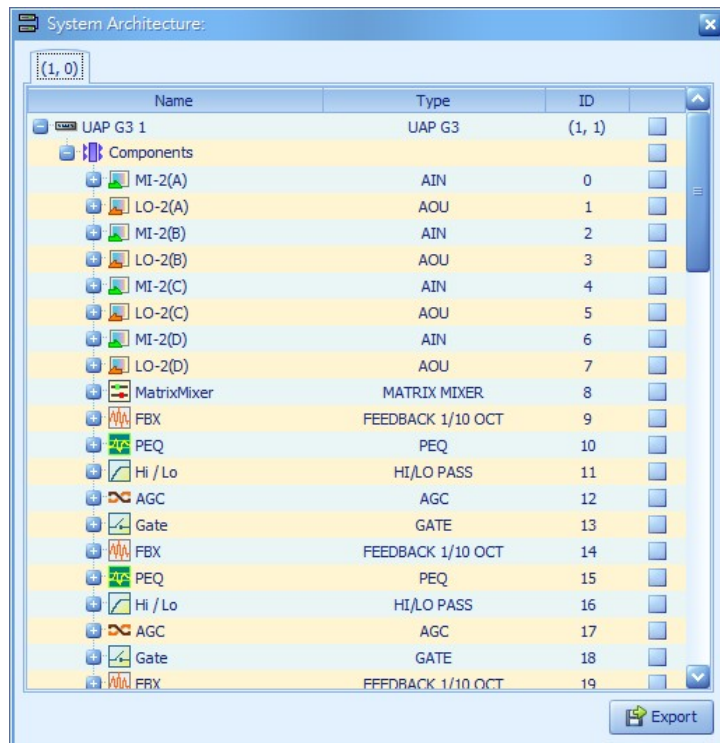
- Template: Open the [Devices/Components/Extended Components](#) window.
- Object Tree: Open the window at the right side of dock panel. See Object Tree for details.
- Property: Open the window at the right side of dock panel. See Property for details.
- Layer: Open the window at the left side of dock panel. See [Layer](#) for details.
- Phone Book: Open the Phone Book window. See Phone Book for details.

##### ❖ Help

- Search: To search the text in the editing configuration. See [Search](#) for details.
- Options: To edit the application setting, authentication, network setting, skin and the font color of RWD-AIO/DSP component on software etc.. See [Options](#) for details.



- About: Display the information of Designer software.
- Manual: Link to the user Manual of system.
- System export: Export the configuration settings in xml. format. User can select the specific parameter of the devices or DSP components



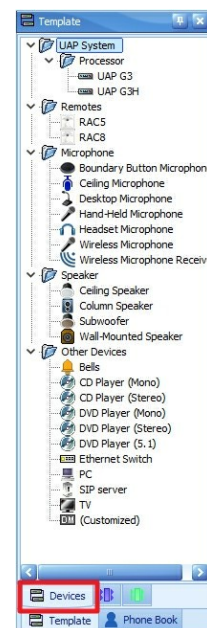
System Export Window

#### 4.3.4.1 Template: devices/components

❖ Path: View > Template > Components

❖ Device Template

Display the products and other hardware devices such as processors, remotes, microphones, Ethernet switches etc.. These objects can be 'drag n drop' into the design window (working area) for system configuration.

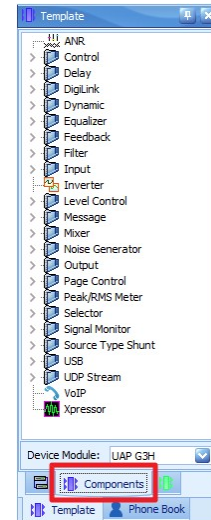


## ❖ Components Template

Display the DSP components such as EQ, Dynamic and Filter etc. of UAP G3/ G3H. The components can be 'drag n drop' into the design window (working area) for system configuration.



The Components Template can only be accessed if users have a Super Password ID.

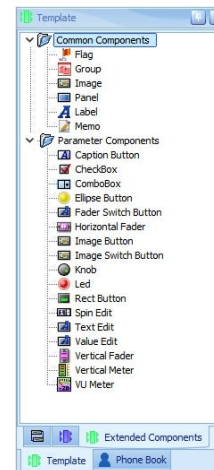


## ❖ Extended Components Template

The Extended Components Template has "Common Components" and "Parameters Components". It enables the Component Window to add some text, picture, etc. All of them are allowed to be 'drag and drop' to the working area of DSP components window.



**Note:** All of the extended component are not related to the physical functions.



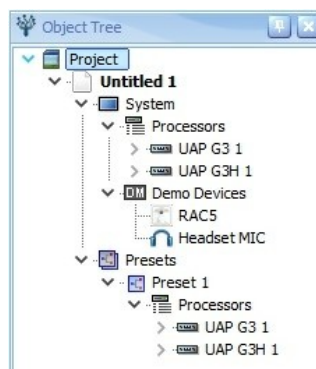
## ❖ How to Use

1. Find and click the tab of the extend components template on the left dock panel to show all extended components.
2. Select a extended component.
3. Drag and drop the component from extended components template to the working area of DSP components window to create it.

## 4.3.4.2 Object tree

This window will display the structure of the current system configuration in tree diagram including 2 parts: [System] and [Presets]. The [System] shows the structure of hardware such as the number/ name of card slots, input/output boards; the [Preset]s shows the structure of events, controls, etc. The relationship between each object can be clearly understood here. To link to the component windows, element and hardware in a quick way, double click it.

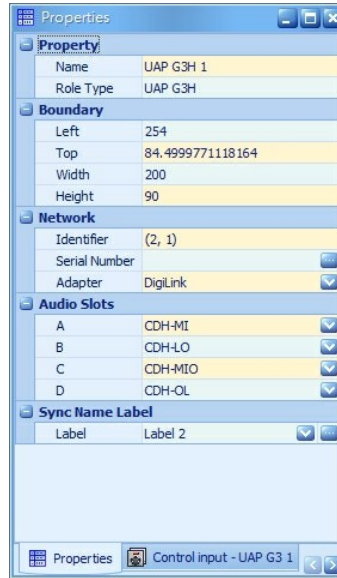
❖ Path: View > Object Tree




#### 4.3.4.3 Property

The Properties window will show the information of selected device/components/element and hardware connection (on Device Management window). It is able to edit the settings of the selected component/device on this window.

❖ Path: View > Property

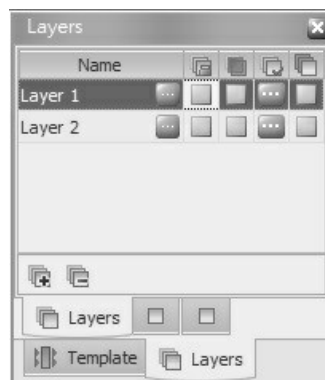







 To quickly edit the displayed texts of component, select a component first, and press F2 on user PC/laptop keyboard, then user can edit its displayed texts of component.



#### 4.3.4.4 Layers

Each object (device/component) can be set to belong to one or more layers. Users can choose to lock, hide and display (active) the object (device/component) on an assigned layer.

❖ Path: View > Layer

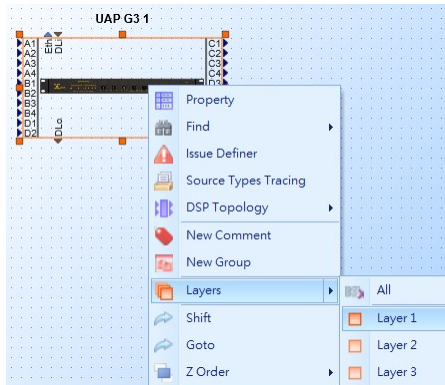



- Name: Name of the layer. Click  button at [Name] field to show the list of all objects which are belonged to this layer.
- Lock : Lock the objects on the chosen layer. All objects which are belonged to the locked layer cannot be edited.
- Hide : Hide the objects which do not belong to the chosen layer.
- Select : Select the objects and show its position on the working area.
- Active : Activate the layer which is currently operating. If the chosen layer is set as [Active], the objects which users add on the working area will automatically belong to this chosen layer.

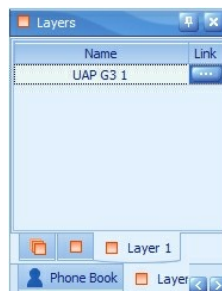
- Add : Add a new layer, and this new layer will be set as [Active] layer.
- Delete : Remove a selected layer.

#### ❖ How to Use

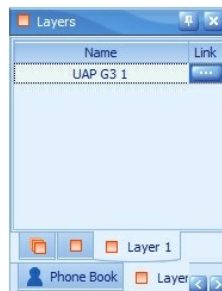
1. Select a device or component on the working area.
2. Right click it to assign it to a layer.



3. Click  button at the name field to show the list of all objects belonging to this layer.



4. Click the Link button to show the position of selected objects on the working area.



#### 4.3.4.5 Phone book

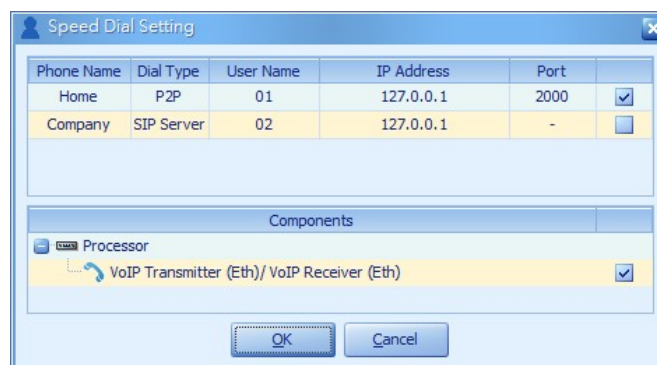
Allow to create/edit the phone book database for telephone call and VoIP call on PC/Laptop.

 Once completed, go to [Device Management > Phone Book](#) to upload the settings into UAP G3/ G3H processor.

❖ Path: View > Phone Book



- : Create a new contact person.
- : Remove the selected contact person.
- : Import the contact person information from the excel file (.xls).
- : Export the contact person information to a excel file (.xls).
- VoIP : Click this button to choose to load which contact and use which VoIP component, and click [OK] to load this chosen existing contact person to [VoIP Transmitter component](#), then user can use this VoIP Transmitter component to dial call.



- : Click to open the contact's setting window for editing the information.

#### ❖ How to Use

- Example 1 - create a new contact person via software.

1. Create a new contact person first, then click to edit the detail information.

**Personal**

Name: name111 ID: 0

Gender: Male Birthday: 2000/1/1 Title: ...

Country: Address: 1 E-mail: 2

Company:

**Telephone Card**

Phone Name	Number
Home	

3







**VoIP**

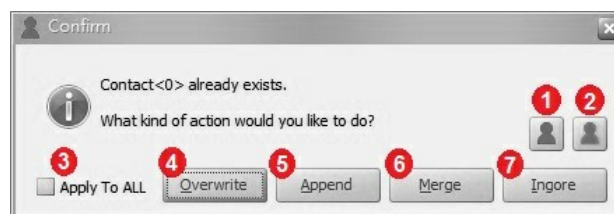
Phone Name	Dial Type	User Name	IP Address	Port
Home	SIP Server	ppp	127.0.0.1	-
Company	P2P		127.0.0.1	5555



4

**Comment**

5 6

- 1) Personal: Edit the contact details of this contact person.
- 2) Telephone Card: Edit the telephone setting of this contact person, allowing to dial his telephone/cell phone number.
  -  Add /  Remove: Click to add a new telephone setting/remove the selected telephone setting.
- 3) VoIP: Call this contact person via VoIP call.
  - Dial Type:
    - P2P (peer-to-peer): Set the IP address and port of the person user are calling to.
    - SIP Server: Set the user name (account) registered on SIP server, and the IP address of SIP server. Also, user need to set the setting of SIP Server, see [VoIP > How to](#) for details.
  -  Add /  Remove: Click to add a VoIP call setting/remove the selected VoIP call setting.
- 4) Comment: Memo area.
- 5) Save: Click to save the memo on this contact person.
- 6) Load: Click to load back to the previous memo on this contact person.
- Example 2: To export and import the contact person via the excel file (.xls).
  - 1) Click  button to export the data of contact person into a excel file.
  - 2) And click  button to import the exported excel file on another PC/Laptop. The excel file is allowed to be edited and added new contact person.
  - 3) If the data of contact person from imported excel file have already existed, the software will display a pop-up window, see the picture below. And user can choose the way to resolve the conflicted data (Override/Append/Merge/Ignore).

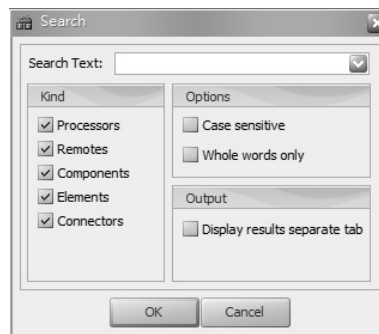


1. Old : Click to show the current data of contact person which users have set on configuration file.
2. New : Click to show the data of the contact person which users have imported from the excel file.
3. Apply to All: Tick this checkbox to perform the Overwrite/Append/Merge/Ignore action on all the data of contact person.
4. Overwrite: Replace the data in configuration file by the data from imported excel file.
5. Append: Keep the data in configuration file and add the new data from imported excel file.
6. Merge: Keep both data of [Telephone Card] and [VoIP] in configuration file and from imported excel file, and replace the data of [Personal] and [Comment] by the data from imported excel file.
7. Ignore: Ignore the data from imported excel file.

#### 4.3.4.6 Search

Search for certain letter, an item or a term in the current configuration file.

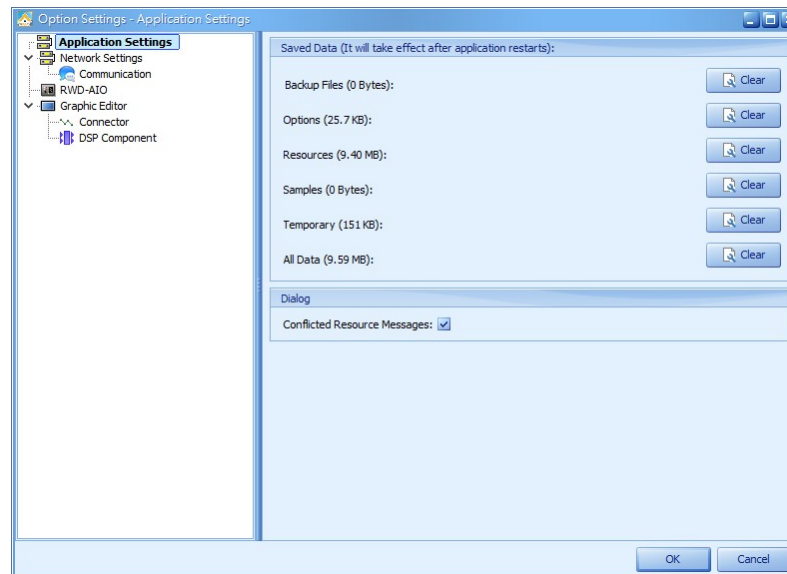
❖ Path: View > Search



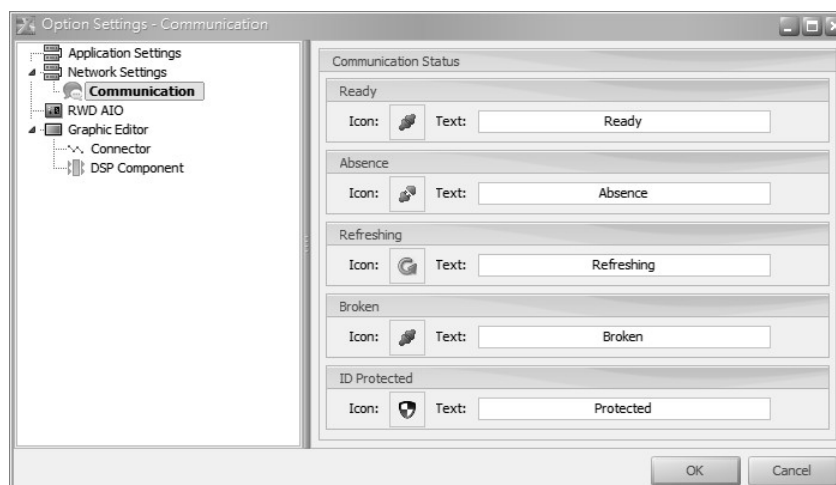
- Search Text: Type the text user wish to be searched.
- Case sensitive: A filter which must be typed exactly as required (shown as a capital letter or a common letter).
- Whole words only: A filter which the completed full letters or item can be searched only.
- Kind: A category filter (products/remotes/components/elements/connectors).

#### 4.3.4.7 Options

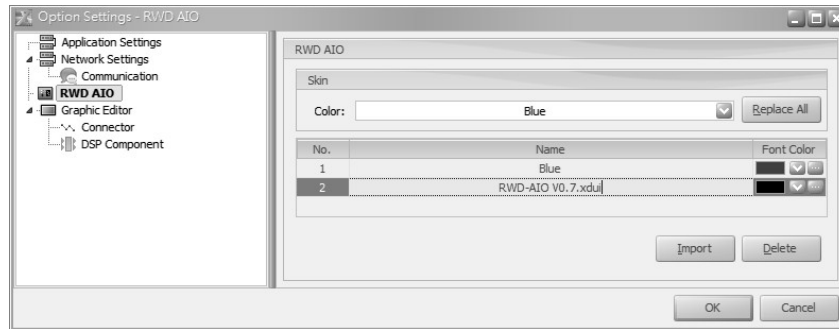
❖ Path: View > Options



- Communication: Set the custom text of the communication status (Ready/Absence/Refreshing/ Broken/ID Protected).



- RWD-AIO: Set the skin color (blue/orange as default) and the color of title displayed on RWD-AIO.



- Replace All: Click [Replace All] to apply the new setting of skin color.
  - Font color: Set the custom color setting for the title displayed on RWD-AIO, and click [OK] to apply the setting.
  - Import: Click this button to import a custom skin file (.xdui), the custom skin file can only be provided by ATEİS dealer.
  - Delete: Click this button to delete the selected skin file.
- Graphic Editor:
  - Connector: Set the custom display setting for signal path.
  - DSP Component: Set the custom display setting for the DSP component including the custom font, size, signal pin color etc..

## 4.4 Status bar

The status bar locates on the bottom of the software to show the information of the current software and current file.



❖ Items (from left to right)

1. Show if the configuration has been modified.
2. Show if the configuration has been compiled
3. Show if the configuration has been Uploaded.
4. The position of the left-top angle of design window (working area).
5. The size of design window (working area).
6. The position of mouse cursor.
7. The size of the selected area.
8. Show the current used DSP power.
9. Show the current date/time of system.
10. Click [...] to link to the Date/Time setting window.



The date/time display at label 9 and [...] button at label 10 can only be used after the configuration has been uploaded.

11. The name of file.

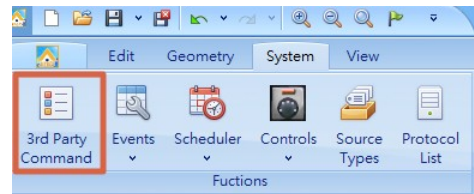


## 5 Functionality

### 5.1 3rd party command

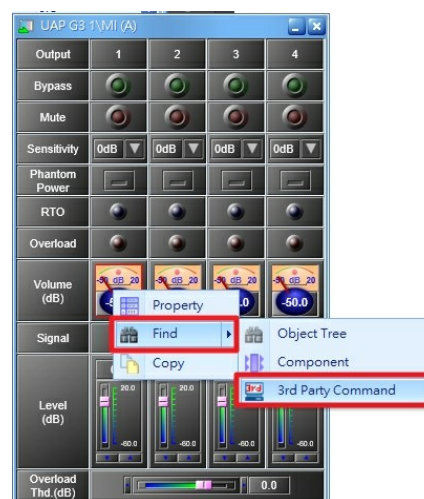
The 3rd Party Command function allows an external device to control the main controller including the events or elements through Ethernet (UDP) or communication interface.

- Path-1: System > 3rd Party Command

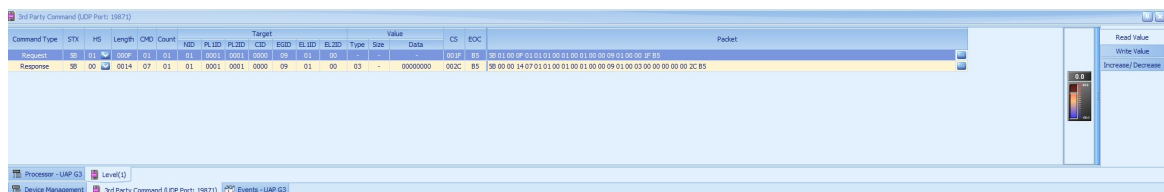


- Path-2:

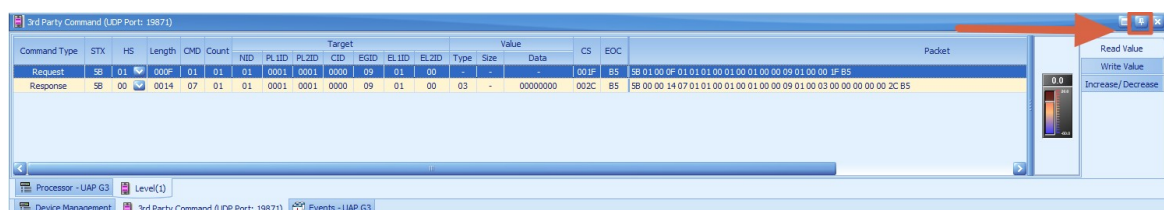
1. Right click the element > Find > 3rd Party Command.



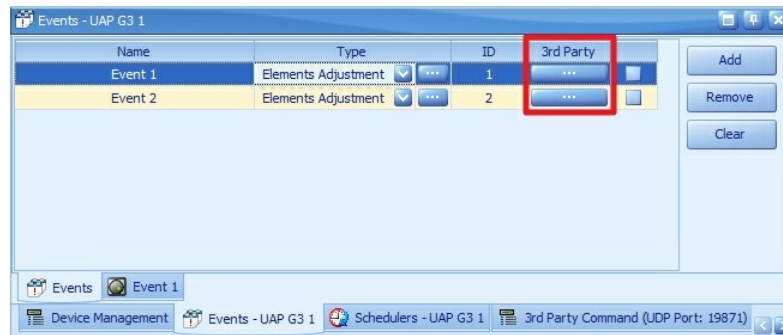
2. To see other 3rd party command of element, click the element on DSP window directly to switch the 3rd party command tab.



The 3rd party command of the selected element can be displayed on the control window permanently. Right click the element tab and select [Lock] option to lock the tab, see the picture as below.



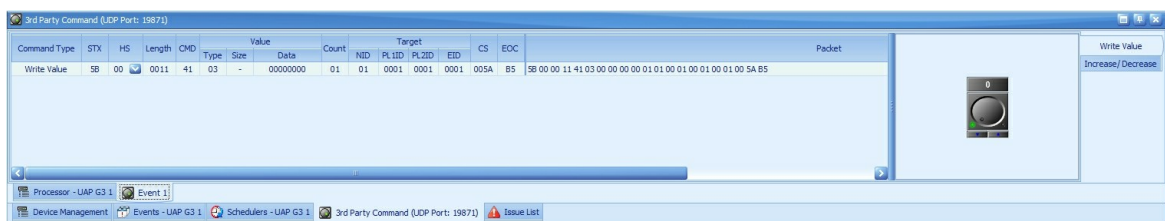
- Path-3: System > Event



In the [3rd Party Command] window, user can preview of the command string which is used for controlling the processor by external 3rd party device. The 3rd party command will be listed on the control window.

#### ❖ How to Use

1. The main window shows the formats of command string. The completely command can be found at [Packet] field.
2. The tab at right hand side of the window shows the different types of 3rd party command such as [Read Value] tab, [Write Value] tab and [Increase/Decrease] tab depending on the elements' properties.



- Read Value tab: To read the value.
- Write Value tab: Adjust the element value on the corresponded GUI element setting, and its command string shall be dynamically adjusted to a pre-defined value.

### 5.1.1 Command format

The 3rd party commands are composed by four segments: Head, CMD, Data and End.


	Head			CMD	Data	End	
	STX	HS	LEN			CS	EOC
Bytes	1	1	2	1	N	2	1
Value	5B	00, 01	0000 ↓ FFFF	00 ↓ FF	...	0000 ↓ FFFF	B5

- STX: always be 0x5B
- HS: When the external device writes 1 on [HS] command field, it means the UAP G3/ G3H will respond the external device a Handshake Response command. See [Handshake Response Command](#) for more details.
- LEN: The sum of bytes from [HS] field to [Data] field.

	Head			CMD	Data	End	
	STX	HS	LEN			CS	EOC
Bytes	1	1	2	1	N	2	1
Value	5B	00, 01	0000 ↓ FFFF	00 ↓ FF	...	0000 ↓ FFFF	B5

- CMD (command string):

- 27: [Reboot \(Reset\)/Standby Mode command](#)
- 01: [Read Element value command](#)
- 02: [Write Element value command](#)
- 03: [Increase Elements value command](#)
- 04: [Decrease Elements value command](#)
- 07: Update Elements value command (When UAP G3/ G3H receives 01 from the external device, the UAP G3/ G3H will respond 07).
- 08: [Advanced Increase/Decrease Elements value command](#)
- 41: [Events Control value command](#)
- F1: [Handshake Response command](#)

 Value: depend on each command.

- Data

The combination of Data (value/element target/event target) is depending on the different kinds of CDM (command string). The following two command examples are the most commonly used. To know each of the combination of Data, please refer to each corresponded command chapter.

\* Example 1 - 01 (Read Element Value command) is composed by Element Target format.

\* Example 2 - 02 (Write Element Value command) is composed by Value format and Element Target format.

\* Example 3 - 41 (Events Control value command) is composed by Value format and Event Target format.

- [Value format](#)
- [Element Target format](#)
- [Event Target format](#)

- End

- CS: The sum of value from [HS] field to [Date] filed.

	Head			CMD	Data	End	
	STX	HS	LEN			CS	EOC
Bytes	1	1	2	1	N	2	1
Value	5B	00, 01	0000 ↓ FFFF	00 ↓ FF	...	0000 ↓ FFFF	B5

- EOC: always be 0xB5

#### 5.1.1.1 CMD field

There are three types of command that are available for external device to control the UAP G3/ G3H.

1. [Reboot/Standby Mode command](#) (its CMD field is 27)
2. Element Type, see the following table below.
3. Event Type, see the following table below.

Element Type		Event Type	
CMD Field	Type	CMD Field	Type
02	<a href="#">Adjust Element value</a>	41	<a href="#">Elements Adjust event</a>
01	<a href="#">Read the Current Element value</a>		<a href="#">Elements N-Trigger event</a>
03	<a href="#">Increase the Current Element value</a>		<a href="#">Message Play event</a>

Element Type		Event Type	
04	<a href="#">Decrease the Current Element value</a>		<a href="#">Path Player event</a>
08	<a href="#">Advanced Increase/Decrease Elements value</a>		<a href="#">Singular Paging event</a>
-	-		<a href="#">Integrated Paging event</a>
-	-		<a href="#">Basic Recorder event</a>
-	-		<a href="#">Auto Recorder event</a>
-	-		<a href="#">Uninterrupted Recorder event</a>

### 5.1.1.2 Data field

#### 5.1.1.2.1 Value format

This chapter will describe the Data Field of command. There are three types of Data Field which are commonly used:

1. Value format: It is used for describing the data that can ask the specific targets (element/event) to proceed the action of element adjustment, message play event etc..
2. Event target format: It is used for identifying an event.
3. Element target format: It is used for identifying an element.

		Value			
		Value Type	Value Size	Value Data	
Bytes		1	N	N	
Type	Trigger	00	-	-	0 byte
	Boolean	01	-	00 or 01	1 byte
	Integer	02	-	00000000 ~ FFFFFFFF	4 byte
	Float	03	-	the float value in RAM	4 byte
	Percent	04	-	0.00f ~ 100.00f	4 byte
	Chars	05	N	the number of the characters	N byte
	Wchars	06	N	the number of the wide characters	N*2 byte

- Trigger: Directly trigger the specific targets (event/element) when receives the 3rd party command.
  - Example-1: Trigger the [Reset] parameter of AEC component to reset the channel.
  - Example-2: Trigger the [Message Player] Event, and play the messages.
- Boolean: Control the applied elements/events by Boolean value (ON/OFF) when receives the 3rd party command.
  - Example-1: Control the [Mute] parameter of Input Component and switch its ON/OFF value.
  - Example-2: Control the [Singular Paging] Event, and Start/Stop paging.
- Integer: Control the specific targets (event/element) by a received Integer value ( $-2^{31} \sim 2^{31}-1$ ).
  - Example-1: Control the Selector component, and use it to switch the channel.
  - Example-2: Control the [Elements N-Trigger] Event, and load the applied elements which are in the assigned group.
- Float: Control the specific targets (event/element) by a received Float value.
  - Example-1: Adjust the [Level] parameter of Input Component to -10.5 dB.
  - Example-2: Control the [Element Adjust] Event, and adjust all the applied parameters to -10.5 dB.
- Percent: Control the specific targets (event/element) by a received Percent value.
  - Example-1: Adjust the [Level (-60dB~20dB)] parameter of Input Component to 50%, which

means the [Level] will be adjusted to -20 dB.

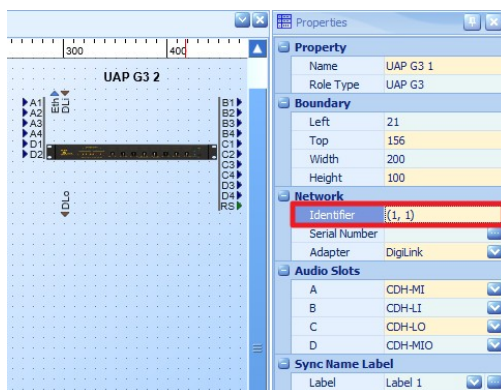
- Example-2: Control the [Element Adjust] Event, and adjust all the applied parameters to 50%.

#### 5.1.1.2.2 Element Target format

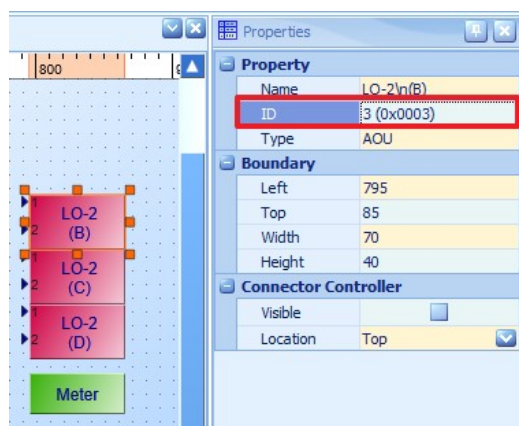
The following table is used for describing the element targets.

	Target Count	Element Target							...	Element Target N
		NID	PL1ID	PL2ID	CID	EID	EL1ID	EL2ID		
Bytes	1	1	2	2	2	1	1	1	...	...
Value	00 ↓ FF	01	0000 ↓ FFFF	0000 ↓ FFFF	0000 ↓ FFFF	00 ↓ FF	00 ↓ FF	00 ↓ FF	...	...

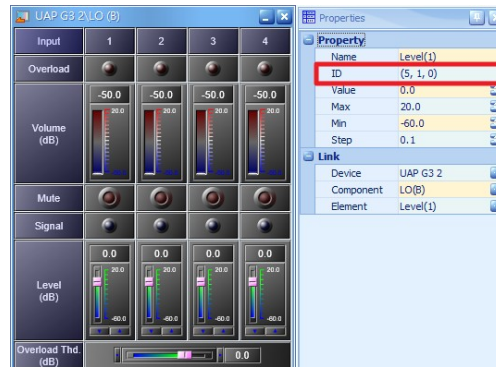
- Target count: The number of parameters which the external device wants to control in this command string.
- Target:
  - NID: The field is reserved. Always be 1.
  - PL1ID/PL2ID: The Identifier (ID) of processor (L1, L2).



- CID: The ID of component.



- EID/EL1ID/EL2ID: The ID of the parameter.

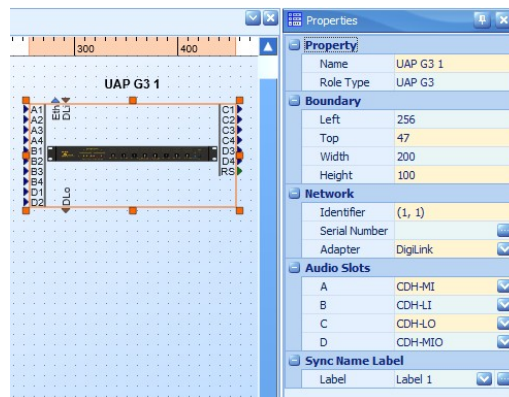


### 5.1.1.2.3 Event Target format

The following table is used to describe the event targets.

	Target Count	Element Target				...	Event Target N
		NID	PL1ID	PL2ID	EID		...
Bytes	1	1	2	2	1	...	...
Value	00 ↓ FF	01	0000 ↓ FFFF	0000 ↓ FFFF	0000 ↓ FFFF	...	...

- Target count: The number of events.
- Target:
  - NID: The field is reserved. Always be 1.
  - PL1ID/PL2ID: The Identifier (ID) of processor (L1, L2).



- EID: The ID of event.

Name	Type	ID	3rd Party
Issue Event 1	Issue Detector	1	-

## 5.1.2 Supported commands

The UAP G3/ G3H allows the external device to control it via 3rd party control, see the following command chapters.

### 5.1.2.1 Handshake response command

The Handshake is a secured packet switching. After the UAP G3/ G3H has received the handshake commands, it will send a response command to external device.

Please note the following condition:

If users are using the handshaking command to communicate with external device; however, the receiver does not reply due to its communication has ended and does not receive the handshaking. We recommend the external device to send the command to UAP G3/ G3H again, if the command is failed to send out more than 3 times. Please check the network communication or reboot the UAP G3/ G3H again.

	HS	CMD	Data	
			Command Target	Response State
Bytes	1	1	1	1
Value	00	F1	00 ↓ FF	00 ↓ FF

- HS:
  - 1: The external device requests UAP G3/ G3H to send back the response command after receiving the handshake commands.
  - 0: The external device does not request UAP G3/ G3H to send back the response command after receiving the handshake commands.
- Command target: To mark which handshaking command that UAP G3/ G3H has received.
- Response state: The response status that external device has received.
  - 0: ACK (UAP G3/ G3H responds the external device that it has received network packet).
  - 1: NAK (The process of sending the network packet to UAP G3/ G3H is not in order or has problem. Please resend the command. If it fails, contact user ATEIS dealer).
  - 2: Busy (UAP G3/ G3H is currently busy and cannot handle this packet. Please wait for a while and resend the command).
  - 3: Data Length Error (The length of received packet has error).

Example:

This command is used for responding the external device that UAP G3/ G3H processor has received the Handshake Command.

	STX	HS	LEN	CMD	Command Target	Response State	CS	EOC
Bytes	1	1	2	1	1	1	2	1
Value	5B	00	0006	F1	02	00	00F9	B5

### 5.1.2.2 Reboot (reset)/standby mode command

Use standby mode command to put the UAP G3/ G3H processor into standby mode for power saving.

Use Reboot command to activate the UAP G3/ G3H processor from standby mode.

- Example (Standby):

	STX	HS	LEN	CMD	Value Type	Value Data	Target Count	Target NID	Target PL1ID	Target PL2ID	Target EID	CS	EOC
Bytes	1	1	2	1	1	4	1	1	2	2	2	2	1
Value	5B	01	000B	27	00	00	01	01	0001	0001	0000	0037	B5

- Example (Reboot):

	STX	HS	LEN	CMD	Value Type	Value Data	Target Count	Target NID	Target PL1ID	Target PL2ID	Target EID	CS	EOC
Bytes	1	1	2	1	1	4	1	1	2	2	2	2	1
Value	5B	01	000B	27	01	01	01	01	0001	0001	0000	0038	B5

### 5.1.2.3 Element control value command

#### 5.1.2.3.1 Write Element value command

Use a value to adjust the specific parameters (Target Count + Target 1~N) via 3rd party control.

	CMD	Data				
		Value	Target Count	Target 1	...	Target N
Bytes	1	N	1	1	...	1
Value	02	...	00 ↓ FF	N	...	N

- CMD: always be 02
- Value: The value to control the elements of UAP G3/ G3H, see [Value Format](#) for details.
- Target count: The number of parameters which the external device wants to control in this command string.
- Target 1 ~ Target N: The target information including the position of this parameter, see [Element Target Format](#) for details.

Example:

This command can adjust the [Level (9, 1, 0)] value of a component (0) on Processor (1,1) to 5 dB (float, 40A00000).

	STX	HS	LEN	CMD	Value Type	Value Data	Target Count	Target NID	Target PL1ID	Target PL2ID	Target CID	Target EID	Target EL1ID	Target EL2ID	CS	EOC
Bytes	1	1	2	1	1	4	1	1	2	2	2	1	1	1	2	1
Value	5B	00	0014	02	3	40A00000	01	01	0001	0001	0000	09	01	00	0107	B5

#### 5.1.2.3.2 Read Element value command

This [Read Value] command contains the two following steps:

1. The external device will send the [Request] command to UAP G3/ G3H for asking the current value.
2. The UAP G3/ G3H will respond the [Respond] command to inform the current value to external device.

❖ Request Command

	CMD	Data			
		Target Count	Target 1	...	Target N
Bytes	1	1	1	...	1
Value	01	N	...	...	...

- CMD: always be 01
- Target count: The number of parameters which the external device wants to read in this command string.
- Target 1 ~ Target N: The target information including the position of this parameter, see [Element Target Format](#) for details.

Example:

This command can request to read the [Level (9, 1, 0)] value of a component (0) on Processor (1,1).



	STX	HS	LEN	CMD	Target Count	Target NID	Target PL1ID	Target PL2ID	Target CID	Target EID	Target EL1ID	Target EL2ID	CS	EOC
Bytes	1	1	2	1	1	1	2	2	2	1	1	1	2	1
Value	5B	00	000F	01	01	01	0001	0001	0000	09	01	00	001E	B5

## ❖ Respond Command

	CMD	Data					
		Target Count	Target 1	Value 1	...	Target N	Value N
Bytes	1	1	N	N	...	1	N
Value	07	N	...	...	...	...	...

- CMD: always be 07
- Target count: The number of parameters which the external device wants to read in this command string.
- Target 1 ~ Target N: The target information including the position of this parameter, see [Element Target Format](#) for details.
- Value 1 ~ Value N: When external device requests to get the Target 1~Target N from UAP G3/ G3H, the UAP G3/ G3H will reply Value 1~Value N to external device, see [Value Format](#) for details.

Example:

This command can respond (inform) the current value (5 dB) on Level (9, 1, 0) of a component (0) on Processor (1,1) to external device.

	STX	HS	LEN	CMD	Target Count	Target NID	Target PL1ID	Target PL2ID	Target CID	Target EID	Target EL1ID	Target EL2ID	Value Type	Value Data	CS	EOC
Bytes	1	1	2	1	1	1	2	2	2	1	1	1	1	4	2	1
Value	5B	00	0014	07	01	01	0001	0001	0000	09	01	00	03	40A00000	010C	B5

### 5.1.2.3.3 Increase Element value command

Use a value to increase the specific parameters (Target Count + Target 1~N) via 3rd party control.

	CMD	Data				
		Value	Target Count	Target 1	...	Target N
Bytes	1	N	1	1	...	1
Value	03	...	00 ↓ FF	N	...	N

- CMD: always be 03
- Value: The value is used to increase the specified targets by 3rd party control, see [Value Format](#) for details.
- Target count: The number of parameters which the external device wants to control in this command string.
- Target 1 ~ Target N: The target information including the position of this parameter, see [Element Target Format](#) for details.

Example:

This command can increase the [Level (9, 1, 0)] value of a component (0) on Processor (1,1) by 0.1 dB (float, 3DCCCCCD).

	STX	HS	LEN	CMD	Value Type	Value Data	Target Count	Target NID	Target PL1ID	Target PL2ID	Target CID	Target EID	Target EL1ID	Target EL2ID	CS	EOC
Bytes	1	1	2	1	1	4	1	1	2	2	2	1	1	1	2	1

	STX	HS	LEN	CMD	Value Type	Value Data	Target Count	Target NID	Target PL1ID	Target PL2ID	Target CID	Target EID	Target EL1ID	Target EL2ID	CS	EOC
Value	5B	00	0014	03	03	3DCC CCCD	01	01	0001	0001	0000	09	01	00	02CA	B5

#### 5.1.2.3.4 Decrease Element value command

Use a value to decrease the specific parameters (Target Count + Target 1~N) via 3rd party control.

	CMD	Data				
		Value	Target Count	Target 1	...	Target N
Bytes	1	N	1	1	...	1
Value	04	...	00 ↓ FF	N	...	N

- CMD: always be 04
- Value: The value is used for decreasing the specified targets by 3rd party control, see [Value Format](#) for details.
- Target count: The number of parameters which the external device wants to control in this command string.
- Target 1 ~ Target N: The target information including the position of this parameter, see [Element Target Format](#) for details.

Example:

This command can decrease the [Level (9, 1, 0)] value of a component (0) on Processor (1,1) by 0.1 dB (float, 3DCCCCCD).

	STX	HS	LEN	CMD	Value Type	Value Data	Target Count	Target NID	Target PL1ID	Target PL2ID	Target CID	Target EID	Target EL1ID	Target EL2ID	CS	EOC
Bytes	1	1	2	1	1	4	1	1	2	2	2	1	1	1	2	1
Value	5B	00	0014	04	03	3DCC CCCD	01	01	0001	0001	0000	09	01	00	02CB	B5

#### 5.1.2.3.5 Advanced Increase/Decrease Element value command

This command is used to increase/decrease the specific parameters, and the parameters will be limited within an expected max./min. range.

	CMD	Data					
		Value	Max	Min	Target Count	Target 1	Target N
Bytes	1	N	N - 1	N - 1	1	1	1
Value	08	...	...	...	00 ↓ FF	N	N

- CMD: always be 08
- Value: The value is used to increase/decrease the specified targets by 3rd party control.
  - If it is a positive number -> Increase.
  - If it is a negative number -> Decrease.
  - To know the format of command value, see [Value Format](#) for details.
- Max: The maximum value that the specific target (element) can be increased.
- Min: The maximum value that the specific target (element) can be decreased.
- Target count: The number of parameters which the external device wants to control in this command string.

- Target 1 ~ Target N: The target information including the position of this parameter, see [Element Target Format](#) for details.

Example:

This command can increase the [Level (9, 1, 0)] value of a component (0) on Processor (1,1) by 0.1 dB (float, 3DCCCCCD), and the value is also within the max./min range [-60 dB (float, C2700000) ~ 20 dB (float, 41A00000)].

	STX	HS	LEN	CMD	Value Type	Value Data	Max Data	Min Data	Target Count	Target NID	Target PL1ID	Target PL2ID	Target CID	Target EID	Target EL1ID	Target EL2ID	CS	EOC
Bytes	1	1	2	1	1	4	4	4	1	1	2	2	2	1	1	1	2	1
Value	5B	00	001C	08	03	3DCCCCCD	41A00000	C2700000	01	01	0001	0001	0000	09	01	00	04E2	B5


#### 5.1.2.4 Events Control value command

This type of command supports to let the 3rd party device to adjust the specific target (event type) by using a value.

See the following event control command chapters to know the action of different event command when receiving the same value.

	CMD	Data				
		Value	Target Count	Target 1	...	Target N
Bytes	1	N	1	1	...	1
Value	41	...	00 ↓ FF	N	...	N


- CMD: always be 41
- Value: The value is used to control the specific event by 3rd party control, see [Value Format](#) for details.
- Target count: The number of events which the external device wants to control in this command string.
- Target 1 ~ Target N: The target information including the position of this event, see [Element Target Format](#) for details.


 Please note the command action will be different by events, see the following chapters for details.

##### 5.1.2.4.1 Elements Adjust event

When using the Event Control Value command to control the Elements Adjust event, the Elements Adjust event will adjust all its applied parameters based on the value which has sent from 3rd party device. See the following 3 types of value format that is support by [Events Value Control] command.

- Boolean/Integer/Float value:

 If the command value is greater than the max. value set for this event, the event will automatically choose to control the max. applied value of event.

 If the command value is less than the min. value set for this event, the event will automatically choose to control the min. applied value of event.

- Percent value:

Adjust the applied value to a percent value.

- Example-1 (float value):

This command can use a float value (0.1f, 3DCCCCCD) to adjust the [Elements Adjust Event] (0) on Processor (1,1).

	STX	HS	LEN	CMD	Value Type	Value Data	Target Count	Target NID	Target PL1ID	Target PL2ID	Target EID	CS	EOC
Bytes	1	1	2	1	1	4	1	1	2	2	1	2	1
Value	5B	00	0011	41	03	3DCC CCCD	01	01	0001	0001	0000	02CB	B5

- Example-2 (percent value):

This command can use a percent value (10.0%, 41200000) to adjust the [Elements Adjust Event] (0) on Processor (1,1).

	STX	HS	LEN	CMD	Value Type	Value Data	Target Count	Target NID	Target PL1ID	Target PL2ID	Target EID	CS	EOC
Bytes	1	1	2	1	1	4	1	1	2	2	1	2	1
Value	5B	00	0011	41	04	41200 000	01	01	0001	0001	0000	00BB	B5

#### 5.1.2.4.2 Elements N-Trigger event


When using the Event Control Value command to control the Elements N-Trigger event, the Elements N-Trigger event will convert the received value to the corresponding Group Index, and proceed the Load Group action. See [Events > Elements N Trigger](#) to know the [Load] action.

- Trigger value:

When the Event Control Value command is a Trigger value, the Elements N-Trigger event will activate the [Load] action in the "FIRST" group only.


- Integer value:

When the Event Control Value command is a Integer value, the Elements N-Trigger event will convert the received Integer value to Group Index, then activate the [Load] action on this assigned group.

 If the received Integer value is greater than the max. value among the Group Index, it will automatically choose to load the max. value; if the received Integer value is less than the min. value among the Group Index, it will automatically choose to load the min. value.

- Percent value:

When the Event Control Value command is a Percent value, the Elements N-Trigger event will convert the received Percent value to Group Index, then activate the [Load] action on this assigned group.

 If the received Percent value is greater than the max. value among the Group Index, it will automatically choose to load the max. value; if the received Percent value is less than the min. value among the Group Index, it will automatically choose to load the min. value.

- Example-1 (trigger value):

Use the Trigger value to activate the [Load] action on the Elements N-Trigger Event (0) of Processor (1, 1).

	STX	HS	LEN	CMD	Value Type	Target Count	Target NID	Target PL1ID	Target PL2ID	Target EID	CS	EOC
Bytes	1	1	2	1	1	1	1	2	2	2	2	1
Value	5B	00	000C	41	'00	01	01	0001	0001	0000	0051	B5

- Example-2 (integer value):

Use the Integer value (00000000) to activate the [Load] action on the Elements N-Trigger Event (0) of Processor (1, 1).

	STX	HS	LEN	CMD	Value Type	Value Data	Target Count	Target NID	Target PL1ID	Target PL2ID	Target EID	CS	EOC
Bytes	1	1	2	1	1	4	1	1	2	2	2	2	1
Value	5B	00	0011	41	02	00000000	01	01	0001	0001	0000	0058	B5


- Example-3 (percent value):

Use the 0.0% value (00000000) to activate the [Load] action on the Elements N-Trigger Event (0) of Processor (1, 1).

	STX	HS	LEN	CMD	Value Type	Value Data	Target Count	Target NID	Target PL1ID	Target PL2ID	Target EID	CS	EOC
Bytes	1	1	2	1	1	4	1	1	2	2	2	2	1
Value	5B	00	0011	41	04	00000000	01	01	0001	0001	0000	005A	B5

### 5.1.2.4.3 Message Play event

When using the Event Control Value command to control the Message Play event, the Message Play event will convert the received value to the corresponding Function Code, and proceed the [Load Group] action.

 If the received value cannot be converted to the Function Code, then this command will be cancel.

See the following 3 types of value format that is support by [Events Value Control] command.

1. Trigger value: Play the message

2. Boolean value:

- Off: Stop the message
- On: Play the message

3. Integer value:

- 0: Stop the message
- 1: Play the message
- 2: Pause the message
- 3: Next message
- 4: Previous message

- Example-1 (stop the message):

Use the Integer value (00000000) to stop the Message Player Event (0) of Processor (1, 1).

	STX	HS	LEN	CMD	Value Type	Value Data	Target Count	Target NID	Target PL1ID	Target PL2ID	Target EID	CS	EOC
Bytes	1	1	2	1	1	4	1	1	2	2	2	2	1
Value	5B	00	0011	41	02	00000000	01	01	0001	0001	0000	0058	B5

- Example-2 (play the message):

Use the Integer value (00000001) to play the Message Player Event (0) of Processor (1, 1).

	STX	HS	LEN	CMD	Value Type	Value Data	Target Count	Target NID	Target PL1ID	Target PL2ID	Target EID	CS	EOC
Bytes	1	1	2	1	1	4	1	1	2	2	2	2	1
Value	5B	00	0011	41	02	00000001	01	01	0001	0001	0000	0059	B5

					001								
--	--	--	--	--	-----	--	--	--	--	--	--	--	--

- Example-3 (pause the message):

Use the Integer value (00000002) to pause the Message Player Event (0) of Processor (1, 1).

	STX	HS	LEN	CMD	Value Type	Value Data	Target Count	Target NID	Target PL1ID	Target PL2ID	Target EID	CS	EOC
Bytes	1	1	2	1	1	4	1	1	2	2	2	2	1
Value	5B	00	0011	41	02	00000002	01	01	0001	0001	0000	005B	B5

- Example-4 (play the next message):

Use the Integer value (00000003) to play the next message on Message Player Event (0) of Processor (1, 1).

	STX	HS	LEN	CMD	Value Type	Value Data	Target Count	Target NID	Target PL1ID	Target PL2ID	Target EID	CS	EOC
Bytes	1	1	2	1	1	4	1	1	2	2	2	2	1
Value	5B	00	0011	41	02	00000003	01	01	0001	0001	0000	005B	B5


- Example-5 (play the previous message):

Use the Integer value (00000004) to play the previous message on Message Player Event (0) of Processor (1, 1).

	STX	HS	LEN	CMD	Value Type	Value Data	Target Count	Target NID	Target PL1ID	Target PL2ID	Target EID	CS	EOC
Bytes	1	1	2	1	1	4	1	1	2	2	2	2	1
Value	5B	00	0011	41	02	00000004	01	01	0001	0001	0000	005C	B5

#### 5.1.2.4.4 Path Play event

When using the Event Control Value command to control the Path Play event, the Path Play event will convert the received value to the corresponding Function Code, and proceed the [Load Group] action.

 If the received value cannot be converted to the Function Code, then this command will be cancel.

See the following 3 types of value format that is support by [Events Value Control] command.

1. Trigger value: Play the message

2. Boolean value:

- Off: Stop the message
- On: Play the message

3. Integer value:

- 0: Stop the message
- 1: Play the message
- 2: Pause the message
- 3: Next message
- 4: Previous message

- Example-1 (stop the event):

Use the Integer value (00000000) to stop the Path Player Event (0) of Processor (1, 1).

	STX	HS	LEN	CMD	Value Type	Value Data	Target Count	Target NID	Target PL1ID	Target PL2ID	Target EID	CS	EOC
Bytes	1	1	2	1	1	4	1	1	2	2	2	2	1
Value	5B	00	0011	41	02	00000000	01	01	0001	0001	0000	0058	B5

- Example-2 (play the event):

Use the Integer value (00000001) to play the Path Player Event (0) of Processor (1, 1).

	STX	HS	LEN	CMD	Value Type	Value Data	Target Count	Target NID	Target PL1ID	Target PL2ID	Target EID	CS	EOC
Bytes	1	1	2	1	1	4	1	1	2	2	2	2	1
Value	5B	00	0011	41	02	00000001	01	01	0001	0001	0000	0059	B5

- Example-3 (pause the event):

Use the Integer value (00000002) to pause the Path Player Event (0) of Processor (1, 1).

	STX	HS	LEN	CMD	Value Type	Value Data	Target Count	Target NID	Target PL1ID	Target PL2ID	Target EID	CS	EOC
Bytes	1	1	2	1	1	4	1	1	2	2	2	2	1
Value	5B	00	0011	41	02	00000002	01	01	0001	0001	0000	005A	B5

- Example-4 (play the next message):

Use the Integer value (00000003) to play the next message on Path Player Event (0) of Processor (1, 1).

	STX	HS	LEN	CMD	Value Type	Value Data	Target Count	Target NID	Target PL1ID	Target PL2ID	Target EID	CS	EOC
Bytes	1	1	2	1	1	4	1	1	2	2	2	2	1
Value	5B	00	0011	41	02	00000003	01	01	0001	0001	0000	005B	B5

- Example-5 (play the previous message):

Use the Integer value (00000004) to play the previous message on Path Player Event (0) of Processor (1, 1).

	STX	HS	LEN	CMD	Value Type	Value Data	Target Count	Target NID	Target PL1ID	Target PL2ID	Target EID	CS	EOC
Bytes	1	1	2	1	1	4	1	1	2	2	2	2	1
Value	5B	00	0011	41	02	00000004	01	01	0001	0001	0000	005C	B5

#### 5.1.2.4.5 Singular Paging event

When using the Event Control Value command to control the Singular Paging event, the Singular Paging event will convert the received value to the corresponding Paging Code, and proceed the [Load Group] action.



If the received value cannot be converted to the Paging Code, then this command will be cancel.

See the following 2 types of value format that is support by [Events Value Control] command.

1. Boolean value

- off: Stop paging
- on: Start to page

2. Integer value

- 0: Stop paging
- 1: Start to page

• Example-1 (stop paging):

Use the Integer value (00000000) to stop the paging action of Singular Paging Event (0) on Processor (1, 1).

	STX	HS	LEN	CMD	Value Type	Value Data	Target Count	Target NID	Target PL1ID	Target PL2ID	Target EID	CS	EOC
Bytes	1	1	2	1	1	4	1	1	2	2	2	2	1
Value	5B	00	0011	41	02	00000000	01	01	0001	0001	0000	0058	B5

• Example-2 (start paging):

Use the Integer value (00000001) to start the paging action of Singular Paging Event (0) on Processor (1, 1).

	STX	HS	LEN	CMD	Value Type	Value Data	Target Count	Target NID	Target PL1ID	Target PL2ID	Target EID	CS	EOC
Bytes	1	1	2	1	1	4	1	1	2	2	2	2	1
Value	5B	00	0011	41	02	00000001	01	01	0001	0001	0000	0059	B5

#### 5.1.2.4.6 Integrated Paging event

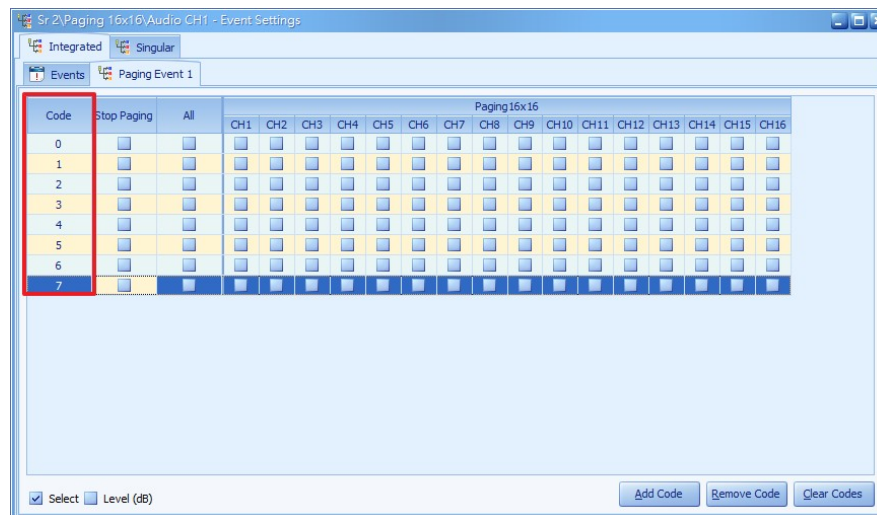
When using the Event Control Value command to control the Integrated Paging event, the Integrated Paging event will convert the received value to the corresponding Paging Code, and proceed the [Load Group] action.



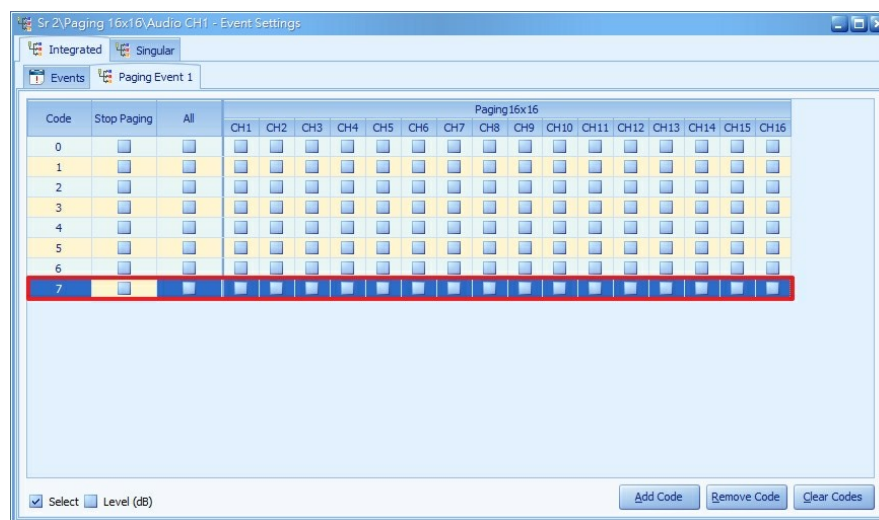
If the received value cannot be converted to the Paging Code, then this command will be cancel.

- Integer value: Use the Integer value and convert it to the code on Paging component > Paging Event, see the picture below.





- If the code cannot be found, this command will be cancel.
- If the paging zones (16x16) in the code has found, it will start to paging.
- To stop the paging action, users need to define a [cancel paging] code, see the example of Code 7 as the picture below. Use the Integer value to convert it to Code 7 on Paging Event, then the paging will stop.




• Example-1 (stop paging):

Use the code (Integer value 00000001) to stop the paging action of Integrated Paging Event (0) on Processor (1, 1).

	STX	HS	LEN	CMD	Value Type	Value Data	Target Count	Target NID	Target PL1ID	Target PL2ID	Target EID	CS	EOC
Bytes	1	1	2	1	1	4	1	1	2	2	2	2	1
Value	5B	00	0011	41	02	00000001	01	01	0001	0001	0000	0059	B5

#### 5.1.2.4.7 Basic Recorder event

When using the Event Control Value command to control the Basic Record event, the Basic Record event will convert the received value to the corresponding Function Code, and proceed the [Load Group] action.

 If the received value cannot be converted to the Function Code, then this command will be canceled.

See the following 2 types of value format that is support by [Events Value Control] command.

1. Boolean value

- off: Stop recording
- on: Start to record

2. Integer value

- 0: Stop recording
- 1: Start to record
- 2: Pause recording


• Example-1 (start to record):

Use the Integer value (00000001) to start the record action of Basic Recorder Event (0) on Processor (1, 1).

	STX	HS	LEN	CMD	Value Type	Value Data	Target Count	Target NID	Target PL1ID	Target PL2ID	Target EID	CS	EOC
Bytes	1	1	2	1	1	4	1	1	2	2	2	2	1
Value	5B	00	0011	41	02	00000001	01	01	0001	0001	0000	0059	B5

#### 5.1.2.4.8 Auto Recorder event

When using the Event Control Value command to control the Auto Recorder event, the Auto Recorder event will convert the received value to the corresponding Function Code, and proceed the [Load Group] action.

 If the received value cannot be converted to the Function Code, then this command will be canceled.

See the following 2 types of value format that is support by [Events Value Control] command.

1. Boolean value

- off: Stop recording
- on: Start to record

2. Integer value

- 0: Stop recording
- 1: Start to record
- 2: Pause recording


• Example-1 (start to record):

Use the Integer value (00000001) to start the record action of Auto Recorder Event (0) on Processor (1, 1).

	STX	HS	LEN	CMD	Value Type	Value Data	Target Count	Target NID	Target PL1ID	Target PL2ID	Target EID	CS	EOC
Bytes	1	1	2	1	1	4	1	1	2	2	2	2	1
Value	5B	00	0011	41	02	00000001	01	01	0001	0001	0000	0059	B5

#### 5.1.2.4.9 Uninterrupted Recorder event

When using the Event Control Value command to control the Uninterrupted Recorder event, the Uninterrupted Recorder event will convert the received value to the corresponding Function Code, and proceed the [Load Group] action.

 If the received value cannot be converted to the Function Code, then this command will be canceled.

See the following 2 types of value format that is support by [Events Value Control] command.

##### 1. Boolean value

- off: Stop recording
- on: Start to record

##### 2. Integer value

- 0: Stop recording
- 1: Start to record
- 2: Pause recording

##### • Example-1 (start to record):

Use the Integer value (00000001) to start the record action of Uninterrupted Recorder Event (0) on Processor (1, 1).

	STX	HS	LEN	CMD	Value Type	Value Data	Target Count	Target NID	Target PL1ID	Target PL2ID	Target EID	CS	EOC
Bytes	1	1	2	1	1	4	1	1	2	2	2	2	1
Value	5B	00	0011	41	02	00000001	01	01	0001	0001	0000	0059	B5

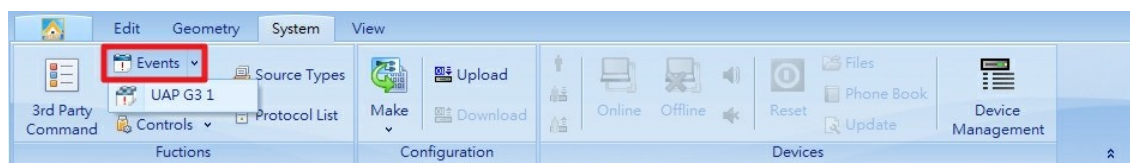
## 5.2 Events

The UAP G3/ G3H Designer software offers various types of event to control the UAP G3/G3H devices. For example, to adjust the value of elements, paging event, trigger a message playing event. An event is allowed to set several elements, and an element can be controlled by several events.

##### ❖ Path-1 (massage and paging event only):

Double click [Message Player]/[Paging] component to create [Message Player & Path Player] event/[Singular Paging & Integrated Paging] event.

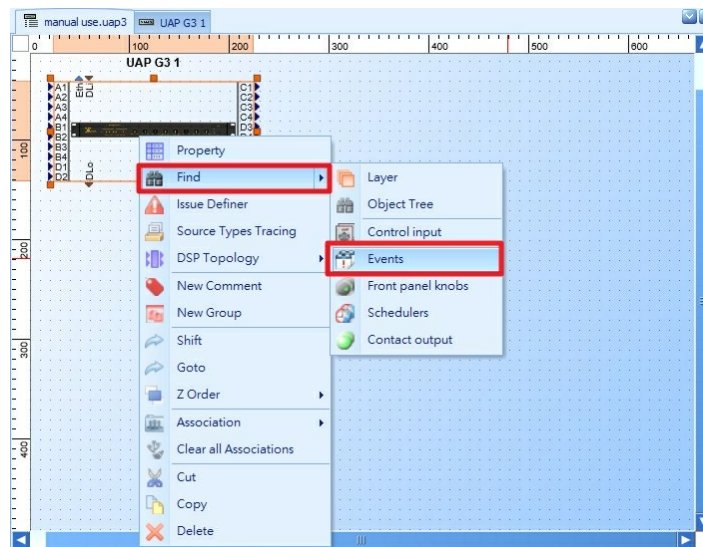
##### ❖ Path-2: Tool Bar > System > Events > UAP G3/ G3H processor



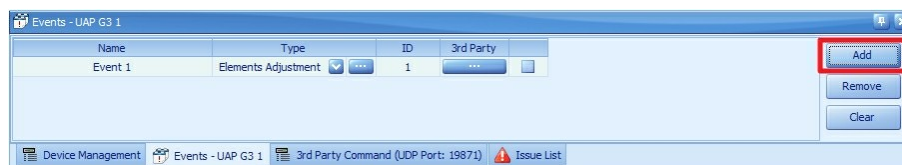
##### ❖ Path-3: Right click UAP G3/ G3H figure icon > Find > Events, see the picture below.

##### ❖ How to Use - create a event

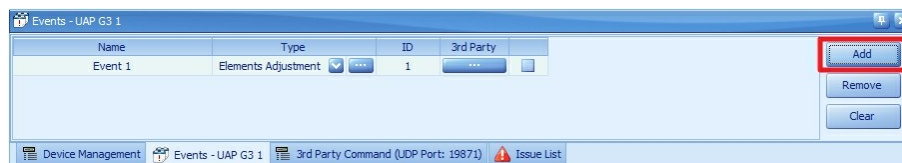
1. Right click the figure of UAP G3/ G3H that intended to set a event.



2. The control window will show at the bottom dock panel, see the picture below.



3. Click [Add] button to create a new event, then select a type for this event.



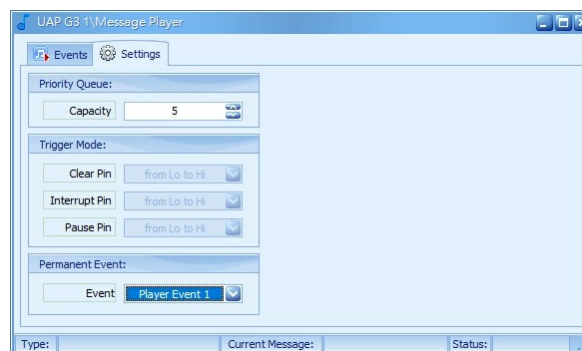
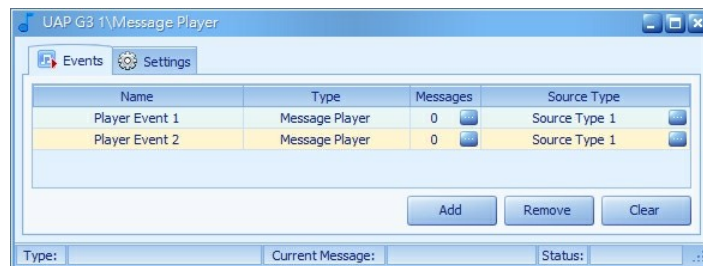
- Type

- Message Player/Path Player: This Message Player allows to play the audio message files stored in UAP G3/ G3H or USB flash drive. It needs to create a Message Player component first, see [Message Player](#).
- Elements Adjustment: Use a rotary knob which is connected to the Control Input of UAP G3/ G3H to adjust all the applied elements. The value which is using to adjust the applied elements shall be based on the setting of [Maximum/Minimum Value] and [Step Value], see [Elements Adjustment](#).
- Sub-Preset: Receive the triggered signal and use the value user set on Event to adjust the applied element's value, see [Elements Sub-Preset](#).
- Singular Paging: A Singular Paging event is similar to Integrated Paging event except it "has one code only". It needs to create a Network Paging component first, see [Singular/Integrated Paging](#).
- Integrated Paging: A Integrated Paging event can have multiple codes for zone paging selection, and each code can be assigned to the key button on paging console. It needs to create a Network Paging component first, see [Singular/Integrated Paging](#).
- Issue Detector: Issue detector can set different parameter values (such as Mute, Overload LED, etc.), the system can detect the change of the parameter value and determine the follow-up action taken by the Issue (for example, when the parameter value changes, a specific LED lights up)
- Issue Controller: Set the value of ON/OFF, the machine will use this value to determine the follow-up action to be taken after the ISSUE occurs.

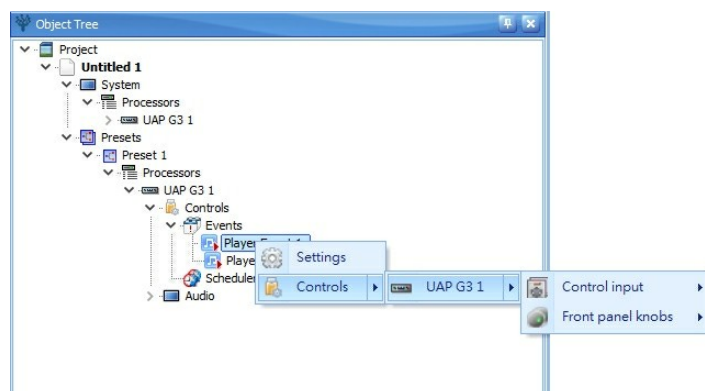
- Issue Group: Contains multiple events, and switches specific events through settings, each issue can take individual settings
- Issue Bridge: It can detect and convert the issue that occurs on the machine into ON/OFF value, which has determined the action after the subsequent issue occurs. (For example, the system can take relevant notifications or other actions after detecting hardware damage to the machine)
- Active Procedure: Defines how UAP G3/G3H send program packets with third-party machines.
- Passive Procedure: Define how UAP G3/G3H receive programs from third-party machines, and exchange packets

### 5.2.1 How-to: configure Message Player/Path Player

1. Create a Message Player component first and choose [Message Player]. See [Message Player](#) component for details.
2. Then follow the how-to from [Message Player How-To](#) to add/remove the new message event. The message event can also add/remove from Event window, see the picture as below.




3. After completed the settings, go to Object Tree dock panel and assign this Message Player event to one of the control, see the picture as below.

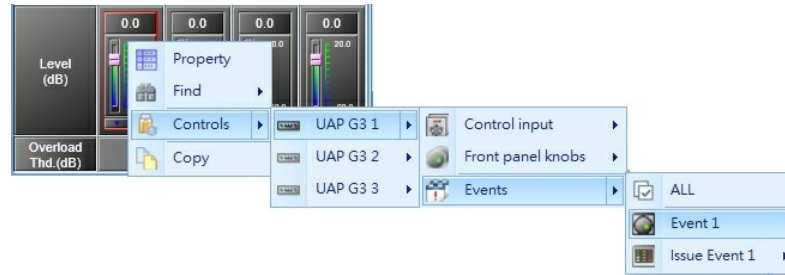



Right click the controls in Object Tree panel, and quickly assign them to the selected event.

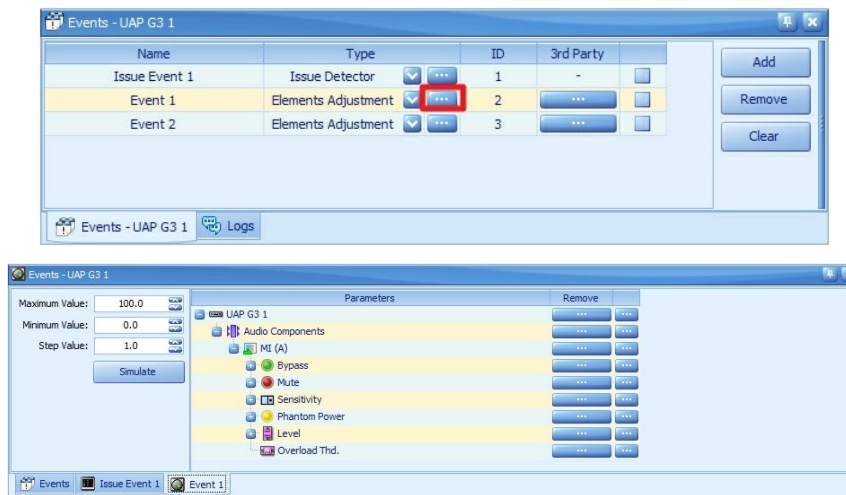
## 5.2.2 How-to: Elements Adjustment

1. Right click the elements and assign them to an event.

 If the element's property and the type of event are not correspondence, the event will not be shown here for further assigned action.

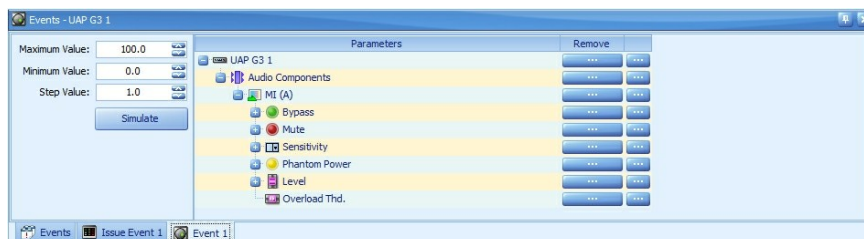


2. After assigning the element(s) to the selected event, click  button to view the parameters which are applied, see the pictures as below.



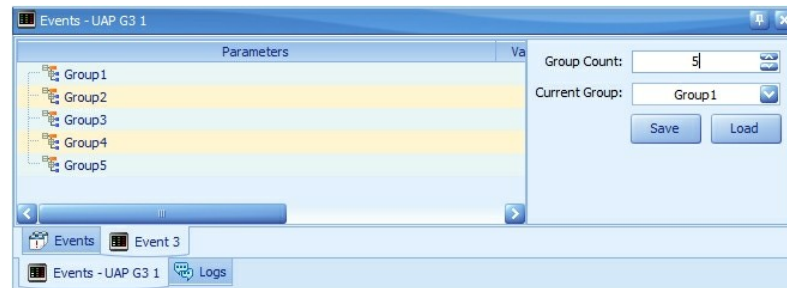
[Elements Adjustment] Type

- Maximum/Minimum Value: Set the range of maximum/minimum value which can be controlled by event.
- Step Value: Set the step value which can be controlled by event. The unit of step value is based on the round off method, for example, when the step value is set as 5.4, the unit of step value which the event can be controlled will round off to 5.
- Simulate: Simulate the value via a pop-up window, see as below.

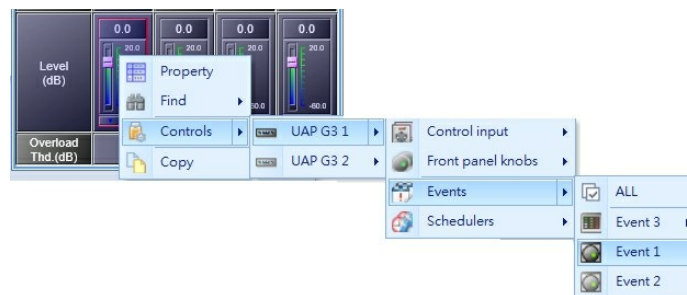


### 5.2.3 How-to: Sub-Preset

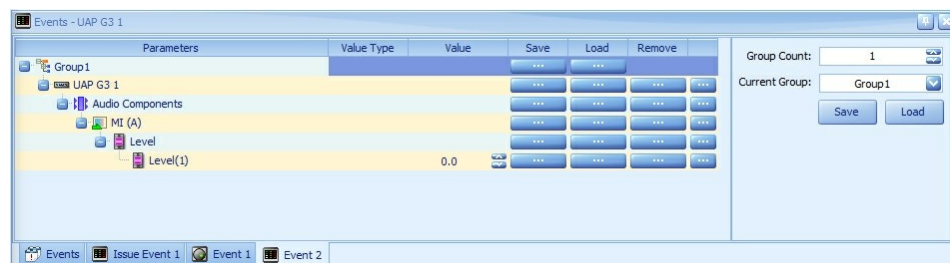
1. First, Select how many groups of this event on [Group Count].



- Current Group: Choose a group and set (save or load) the parameters of event.
  - Save: Save the current modified parameters as the latest applied value.
  - Load: Click to load the adjusted value of event to the applied elements.
2. Right click the element and assign it to the selected group.



3. After assigned the element to an event, it will display the detailed setting of the controlled elements on [Event] dock panel, see the picture below.




[Elements N Trigger] Type

4. If the values have been modified, please click [Save...] button to save the pre-defined value again.

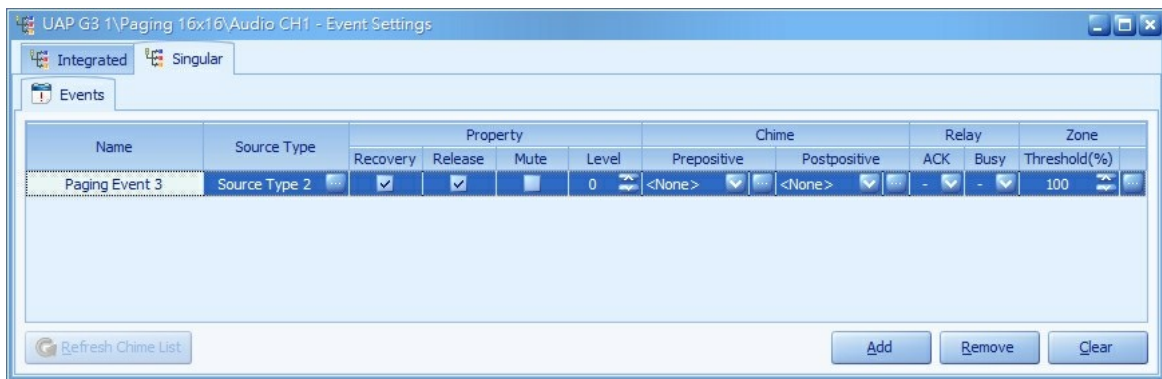
### 5.2.4 How-to: singular/integrated paging


Example 1: Set a paging event.

1. Create a Paging component and click it to open its control window.
2. Select a mode (Permanent/Volume/Analog) to an input on control window. Only the Volume Mode needs to adjust the Threshold, Response Time and Hold Time additionally. Then select an analog (logic) input channel for triggering the paging event.

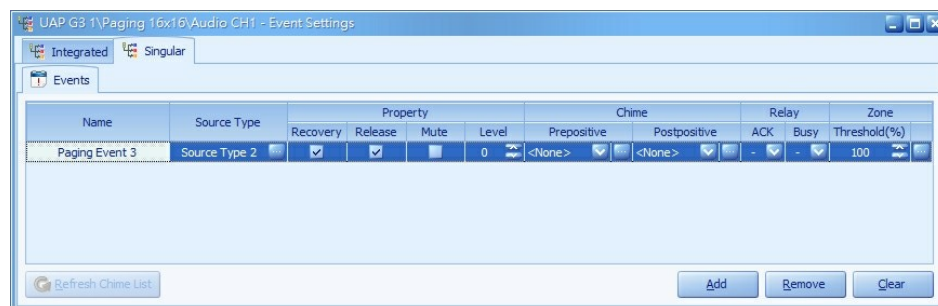
 If both [Permanent/Volume/Analog mode] and [Analog Input] are selected on control window, the paging action will be activated when both options are satisfied.





3. Click  button on Mounting field to enter [Event Settings] window. Click [Add] button to establish a new integrated/singular paging event.

- Integrated: An integration paging event has multiple codes for zone selection.
- Singular: This event is similar to the integration paging event except that it "only has one code".



[Event Setting] window

- Source Type: The type of the paging source. If there's a zone paging now, this zone will need to know where its paging source is from.



To define the name of each source type, go to Relay Tab. See [Page Control component > Paging > Relay Tab](#).

- Recovery: Allow the paging source take back the zones from the occupied zones when their paging has finished.
- Release: Once a paging source has completed its paging session, it will release the zone to other activated sources.



The occupied zone will return to the active source if both "Recovery" and "Release" options are enabled.


- Mute: Mute the audio.
- Level: Set the volume level.
- Prepositive/Postpositive: The pre-chime/the post-chime before/after the paging.
- ACK: The specific logic output stays High during the paging period.
- Busy: Select a logic output channel. When the paging event is busy due to the chosen zone is being occupied by other sources or its own source, then the state of this selected logic output channel will be changed from Low to High.
- Threshold %: This is to determine a paging request which can be allowed or denied by the percentage. If the percentage of available zones is greater than the number set on "Threshold %", the paging request will be performed. On the opposite, the paging request will be denied.



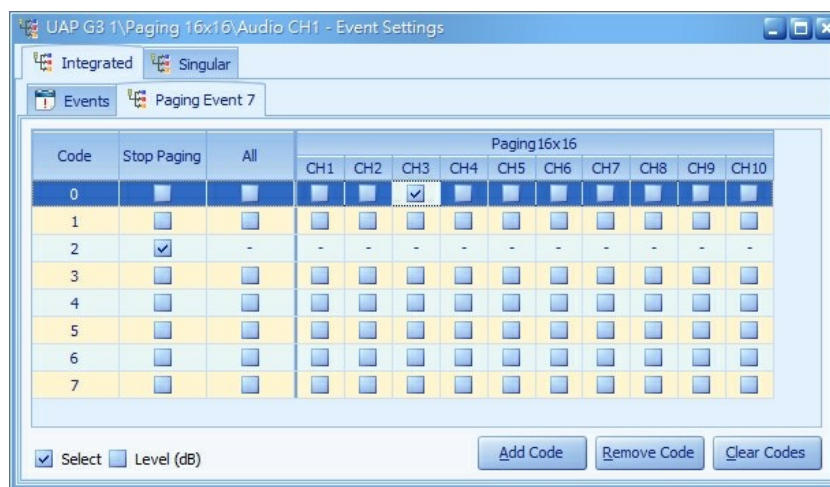
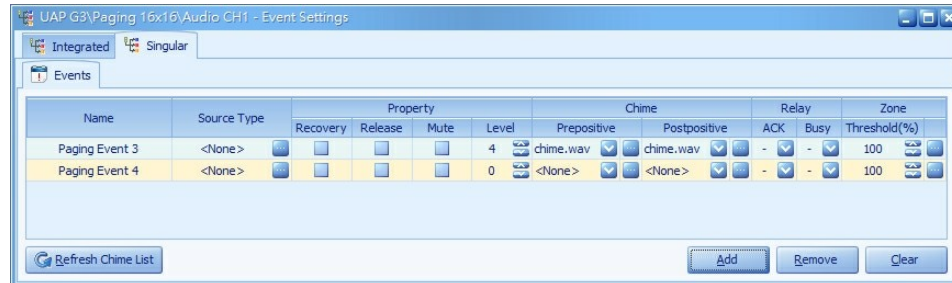
The available zones indicates two meanings:



- 1) The selected paging zones are not occupied by other sources with higher priority.
- 2) The priority of the other occupied sources are lower than the paging sources itself.

4. Select a paging event and click  button as the picture below, and it will display all zones of this Paging component in [Paging Event] tab.

If it is an integrated event, the zone is allowed to create multiple codes for zone selection. But if it is a singular event, it has only one code.



There are 3 ways to control the zones (select/priority/level):

- Select: Tick the checkbox to pre-select the zone(s) to the corresponding code.
- Priority: The priority of zone. If more than one source is attempting to paging to the same zone, the processor will decide which source for paging by priority value.



The smaller the value is, the higher the priority is.

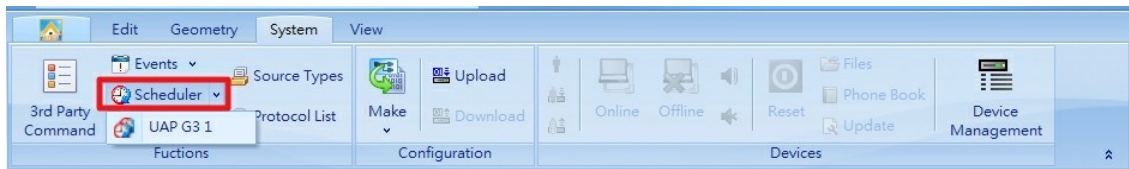
- Level: The different level for each zone.
- Code: The code is an identification to represent a zone combination so called a selection of zones. For example, a button on RWD-AIO can be set to a code, when the button is pushed, the zone of this code will be selected and then perform paging.
- Stop Paging: A code as a stop paging action.
- All: Select all paging zones on the corresponding code.
- Paging 16 x 16 Zones: List all the corresponding paging zones in processor. Up to 16 zones can be added in a code.

## 5.3 Scheduler

The scheduler function is used for operating an event or element automatically based on its configured settings and assigned time.

### ❖ Path

1. System > Scheduler > select a processor.

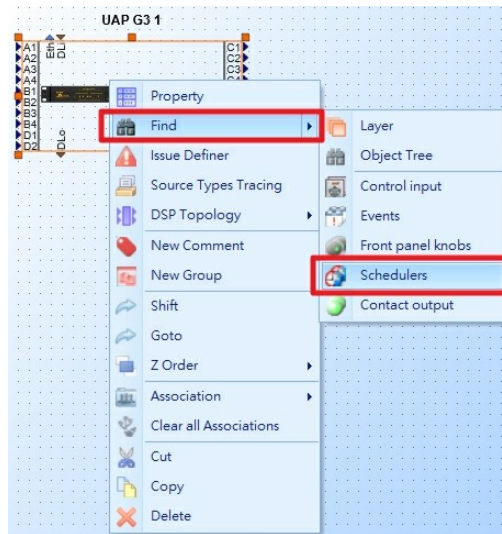


2. Right click the processor, and it will show a pop-up menu, then select Find > Schedulers.

#### ❖ How to Use

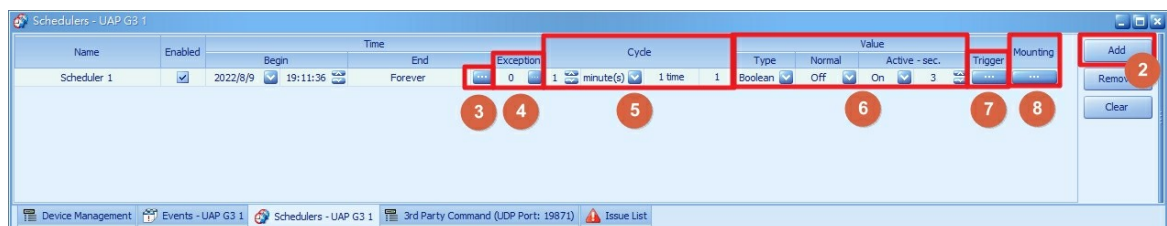
For example, if users want to play a message at 8AM everyday from 2022/1/1~2022/12/31, except 2022/8/9.

1. Right click the figure of UAP G3/ G3H processor, then select Find > Schedulers to open the scheduler window, see the picture as below.



2. The Scheduler window will display at the bottom dock panel, see the picture as below.

Click [Add] button to create a new schedule, then see the following steps to configure the setting.




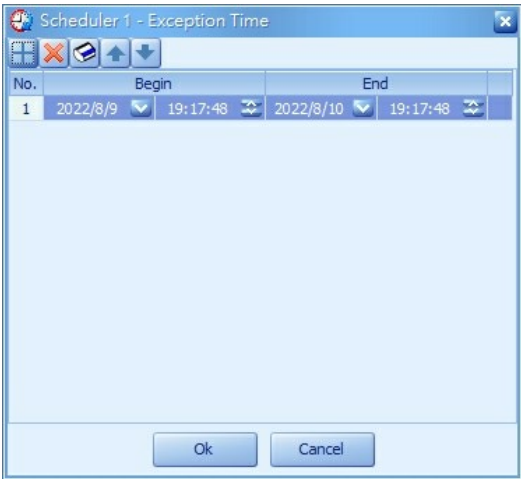
- Name: the name of schedule.
- Enable: Tick the checkbox to enable this schedule.

3. Begin/End Time: The [Begin Time] is the start time to control the scheduler. And click button at [End Time] field, it will display a setting window, then user can choose the type to end this schedule (Forever, Trigger N Times, Specific Time).

- Forever: No end time, this scheduler will be activated after the Begin Time, and be valid forever.
- Trigger N Times: The scheduler will be invalid after it has triggered N times.
- Specific Time: The scheduler is only valid between the Begin Time and the End Time which user set. User can choose the the specific end-time and end-date on its setting window, see the picture as below.



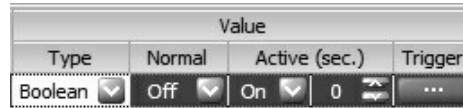
4. Exception Time: Click  button at [Exception] field, it will display a setting window. Here user can add the particular time between the Begin Time and the End Time to stop triggering the schedule. For example, the time of this schedule will not be triggered from 08:00:00 to 23:59:59, 2022/8/9.




5. Cycle: Set the play time(s) cycle of this schedule. Users can set 1~N hour/day/week/month/year as the play time(s) cycle of schedule, In addition, user can set the number of trigger times in a cycle of schedule.
- Trigger Time (second/minute/hour/day/week/month/year): The time interval of every cycle.
  - 1 Time: The scheduler will only be triggered once time in its cycle time.
  - N Times: The scheduler can be triggered many times in its cycle time. See the picture as below, the scheduler will be triggered on 8:00, 9:00, 10:00, 11:00, 12:00 of the 1st day.



6. Value: When a scheduler was triggered, it will use a Active Value to control the applied targets [Elements/ Events], and after a short time, it will use a Normal Value to restore the applied targets [Elements/ Events].

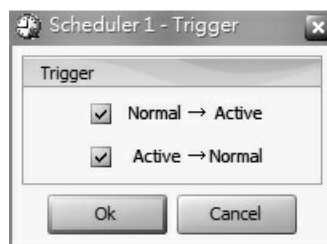



- Type: Define the value type of the normal value and the active value.
  - Trigger: Trigger the applied elements when the time user set is up.
  - Percent: Trigger the applied elements by percent value when the time user set is up.
  - Boolean: Trigger the applied elements by Boolean value (ON/OFF) when the time user set is up.
  - Integer: Trigger the applied elements by Integer value (whole number value) when the time user set is up.
  - Float: Trigger the applied elements by float value (floating point number value) when the time user set is up.
  - Character: Trigger the applied elements by character when the time user set is up.
  - Unicode: Trigger the applied elements by Unicode string when the time user set is up.
- Normal: Define the [Normal] value to be used for triggering the applied targets [elements/events].
- Active-sec: Define the [Active] value to be used for triggering the applied targets [elements/events].

Trigger: Users can easily disable the [Normal value trigger] function. Click  button at the [Trigger] field, and set the trigger way of the scheduler on its setting window.

After the scheduler has been triggered, the applied elements will maintain as [Active] value for a period of time. The time can be user-defined on [Active-sec.] field.

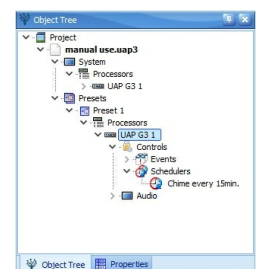
- Normal → Active: Enable this checkbox to control the applied elements by using the [Active] value when the [Normal] value has changed to [Active] value.
- Active → Normal: Enable this checkbox to control the applied elements by using the [Normal] value when the maintained [Active] value has ended and will be turned to [Normal] value.



8. Apply : At last, we can apply the elements to Scheduler. For example, right click the output channel that is intended to control the message player, and assign the elements to scheduler; or user can assign a scheduler from [Object Tree] panel. See the pictures as below.

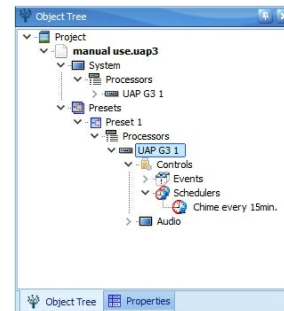
Path-1:

Right click the Value[1] element in Logic Control component to show the popup-menu. And select Controls > Processor > Schedulers > Chime every 15min.

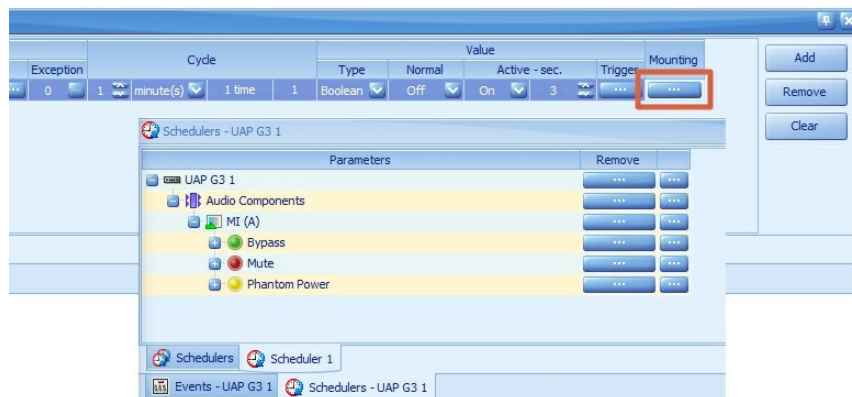


Path-2:

Go to [Object Tree] panel > right click the Event1 > Controls > Processor > Schedulers > Chime every 15min.



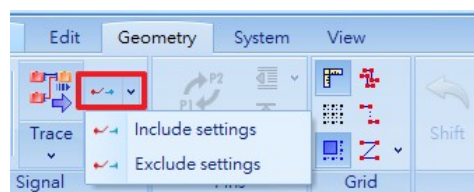
9. After assigned a schedule to control an element, click [Mounting] button, and it will show a tree view listed all its applied elements. See the picture as below.



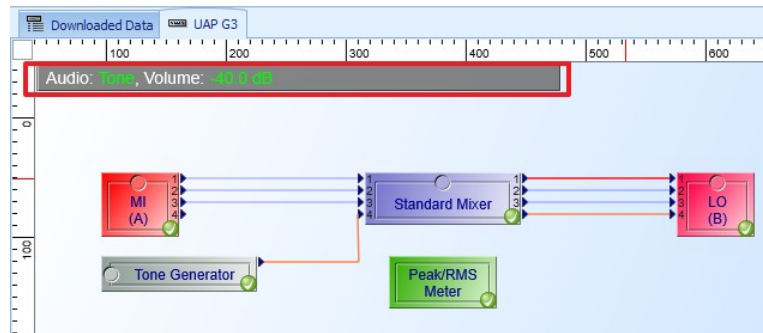
## 5.4 Source Type

Source Type is a function to tag audio sources. Audio sources may come from different devices such as DPM-T5, Message player, AIN6 component, Paging Event, etc. User can give these audio sources different source type as a tag which includes name, priority, EVAC and so on. When user configures the audio, the source type tag will follow the streaming through DSP components to outputs. When these audio sources are playing in the system, user can identify or trace the audio from its source type. This makes it easy for users to know which audio source each speaker is playing, and each audio stream tag of every DSP component in the entire system.

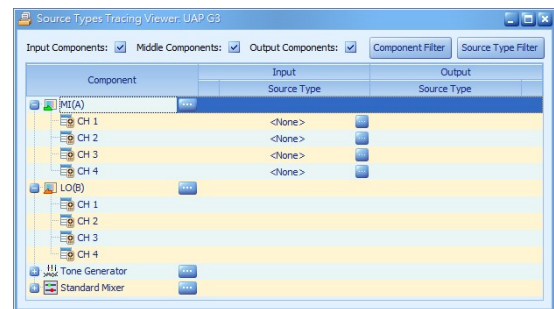
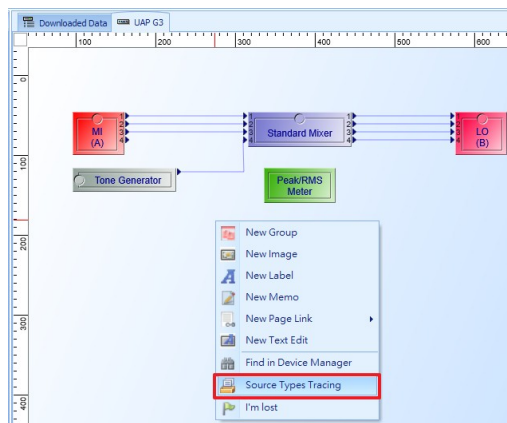
- Trace in Offline status: User can trace the audio source type with two ways.



- Include setting: The DSP parameter will affect the tracing audio source type.
  - Exclude setting: The DSP parameter will not affect the tracing audio source type.
- Trace in Online status: User can trace the audio source in online status, and there are two functions available.
  - Peak/RMS Meter: Drag the Peak/RMS Meter component on the working area, it will monitor the audio and show the volume besides the [Audio](source type) on the working area. The string will show in the same color if it is the same source type. See picture below.



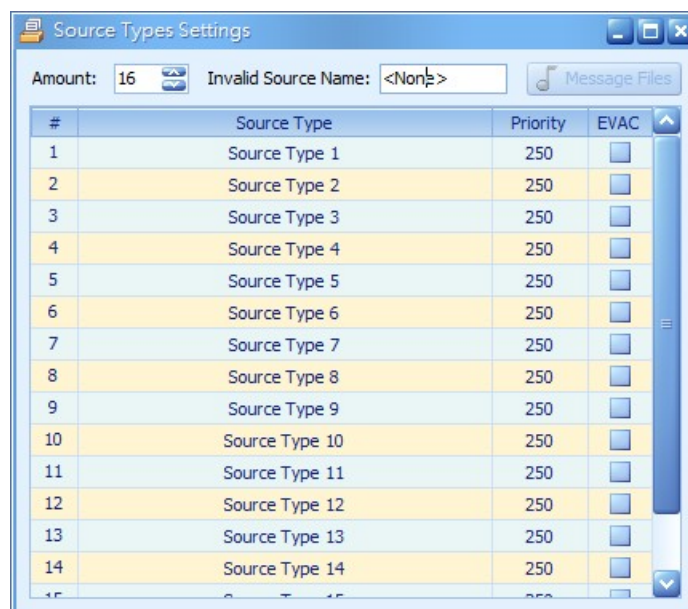
- Device overview: Overview all the components in the device. Each string or component can be traced the audio source type and show as the same color. Right click to [Source Type Tracing] to open [Source type setting viewer]. See picture below.



Source Type Setting Viewer

#### ❖ How to set Source Type

Click [System] > [Source Type] > [Source Type Settings]



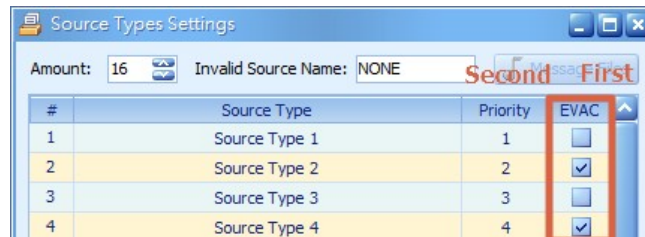
- Amount: Set the number of Source Types. The Maximum is 255.
- Invalid Source Name: Click to set the name of the invalid Source Type. If the audio source type is not included in the Source Type List, it will show as the defined name on the working area. See [How to set Source Type] for details.



- Message File: The setting can only be editing in Online state.
- Source Type: Click to change the name of the source type.
- Priority: Setting the priority of the source types. The smaller the number is, the higher priority it has.
- EVAC: Check If the user want to set the source type as EVAC message. The EVAC has higher priority than the usual priority.

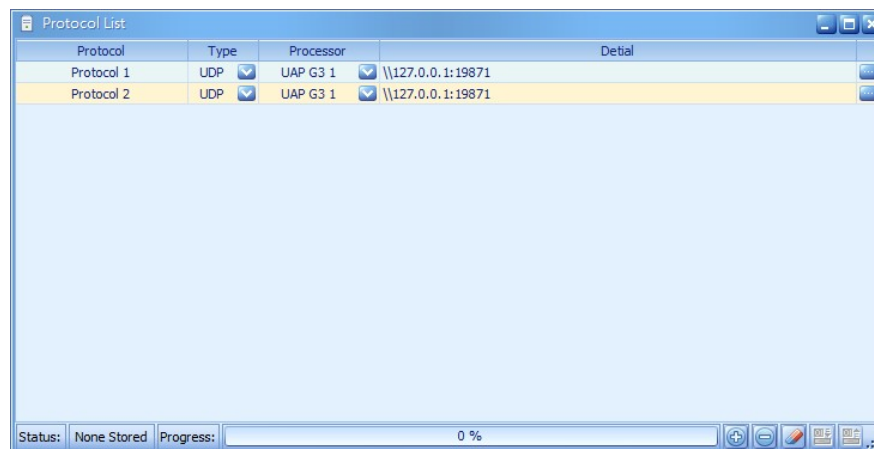


For example: How to determine the priority of Source Type



- First, the Source type with EVAC has a higher priority: Source Type 2, 4 have a higher priority than Source Type 1, 3
- Second, see the numbers in the priority: Source Type 2 is higher than Source Type 4.
- So, in this situation the priority are: Source Type 2 > Source Type 4 > Source Type 1 > Source Type 3.

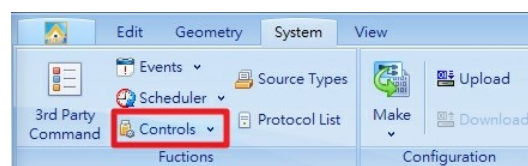
## 5.5 Protocol List



## 5.6 Controls

There are four kinds of control in UAP G3/ G3H system, front panel knobs, control input, logic I/O and contact output.

❖ Path: System > Controls



### 5.6.1 Front panel knobs

❖ How to Use - assign an element control on a front panel knob of UAP G3/ G3H

1. Click [Controls] button on the toolbar to pull-down a small window, see the picture as below.
2. Select [Front Panel Knobs] option to control this element, then select a UAP G3/ G3H intended to make adjustment.





3. After the selection, its control window will be displayed at the bottom dock panel, see the picture as below.

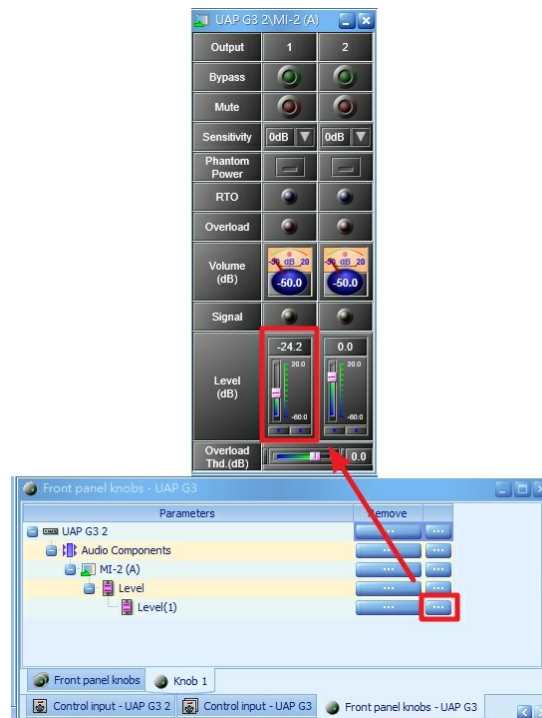


- Type:
  - Value: If the knob has been adjusted, it will control the element by an value between min, max and steps depend on position of knob. For example, if the [Min] sets to -60, [Max] sets to 30, and the position of knob on front panel is -20. Then all the applied elements will be set as -20 value.
  - Percent: Control the range of value by percentage. For example, if the [Min] sets to 0, [Max] sets to 100, and the position of knob on front panel is 50. Then all the applied elements will be set as 50%  $[50-0]/[100-0] * 100\%$ .
- Direction:
  - Clockwise: Turn right to increase the value.
  - Counterclockwise: Turn left to increase the value.
- Max/Min: The max./min. range of value.
- Step: The step of value.
- Adjust Mode: The way to change the value on front panel knob.
  - Linear: The value will be increased(+)/decreased(-) by linear (the ratio of value and rotated angle).
  - Log: When rotated the knobs on front panel, the current value will be changed by a large variation at the beginning stage, and will increase/decrease little by little at the later stage.
  - Antilog: When rotated the knobs on front panel, the current value will be increased/decreased little by little at the beginning stage, and will be changed by a large variation at the later stage.
- Preset Control: Click the checkbox to save the parameters as preset. Save the DSP

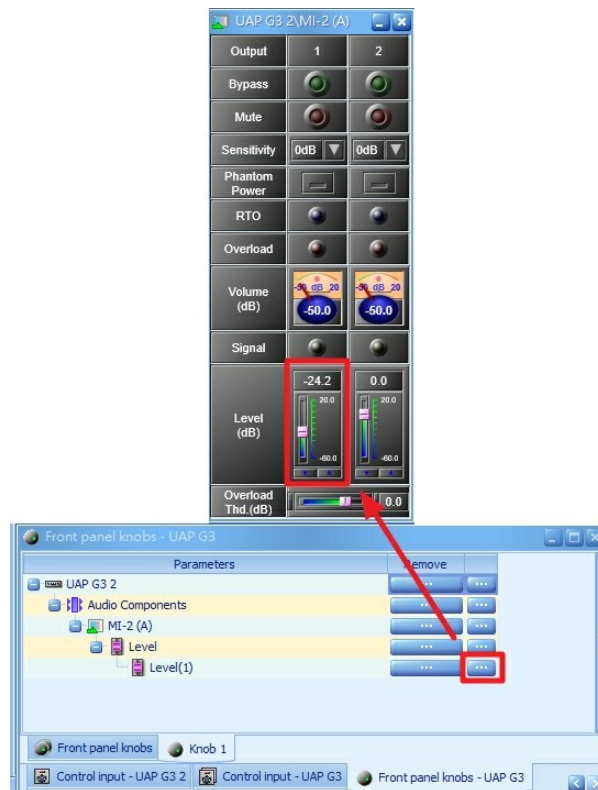




components in the project exclude the wiring of routing.

- Pre-Sync: Click the check box to calculate the parameter in sync with the device.
  -  button: Click this button to link to its applied element setting page.
4. In order to add the element in each of the controls, double click the component which user wish to control its element.
  5. Right click the element and open a pop-up menu window.
  6. Select [Controls] option > Processor's/Device's name > Front panel knobs > one of knob.
  7. Then, click  button on the Control window to check if the applied elements setting is functioned.



8. It will display the detailed setting of the controlled elements on both Control window and the element grid on the component window.

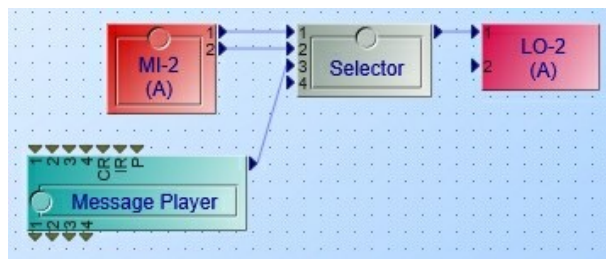


- Remove : Click  on Remove grid to remove the selected element, or user can remove the element from its component window (Component > [Controls] option > UAP G3/ G3H > Front panel knobs > one of knob).

## 5.6.2 Control input

❖ How to Use - connect a RAC remote for source selection (RAC5/8) and volume control (Knob).

1. First, connect the MI/MI-2 input pins and a Message Player pin to a [Selector] component, see the diagram as below. These connected input pins are the audio sources which can be selected and switched on RAC5/RAC8 remote.



2. Click [Controls] button on the toolbar to pull-down a small window, see the picture as below.
3. Select [Control Input] option to control this element, then select a processor or a device (e.g. UAP G3/ G3H) intended to make adjustment.



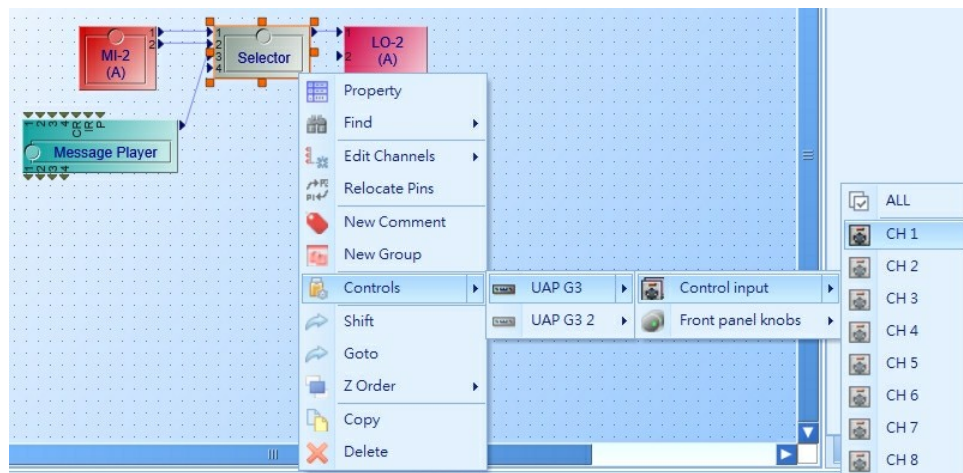
4. After the selection, its control window will be displayed at the bottom dock panel, see the picture

as below.

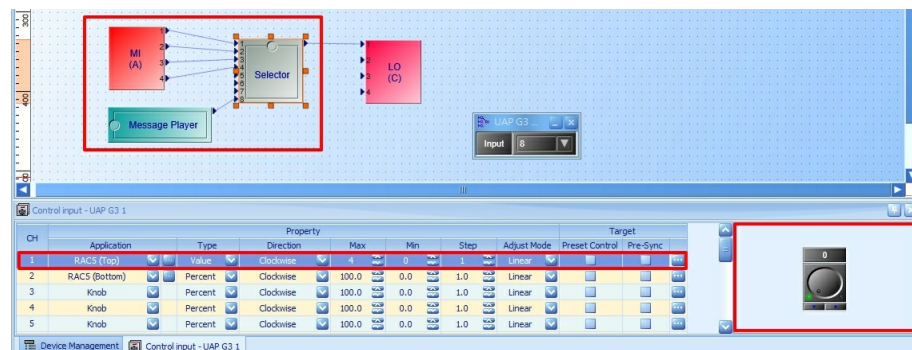
5. Assign the CH1 for [RAC8 (Top)] option and CH2 for [Knob] option.



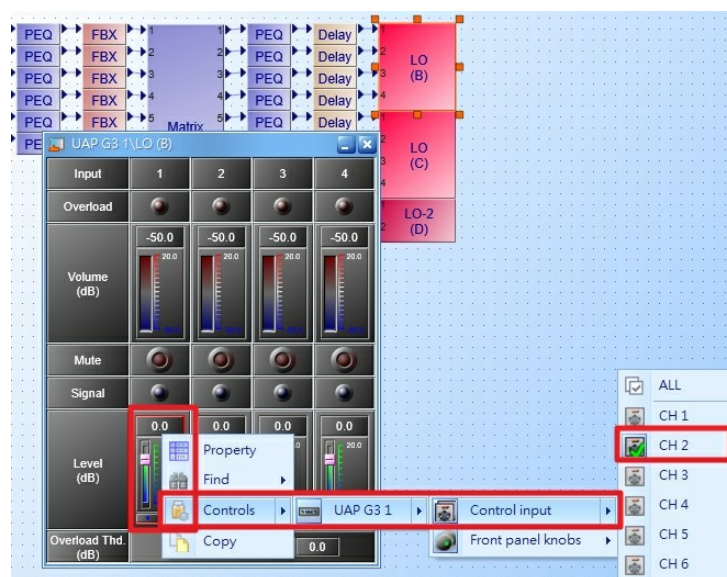
- CH1/CH2: The two channels of control input on the rear panel of UAP G3/ G3H.
  - Application: Select a type of control.
    - Knob: Select it to control the elements from the front panel knobs.
    - Switch: Select this type to program and send a Hi to Lo signal to an external device such as ON/OFF switch button.
    - RAC5/8 (Top/Bottom): Select this type to let the RAC5/8 remote be used by UAP G3/ G3H.
  - Type:
    - Value: If the knob has been adjusted, it will control the element by an value between min, max and steps depend on position of knob. For example, if the [Min] sets to -60, [Max] sets to 30, and the position of knob on front panel is -20. Then all the applied elements will be set as -20 value.
    - Percent: Control the range of value by percentage. For example, if the [Min] sets to 0, [Max] sets to 100, and the position of knob on front panel is 50. Then all the applied elements will be set as 50%  $[50-0]/[100-0] * 100\%$ .
  - Direction:
    - Clockwise: Turn right to increase the value.
    - Counterclockwise: Turn left to increase the value.
  - Max/Min: The max./min. range of value.
  - Step: The step of value.
  - Adjust Mode: The way to change the value of control inputs.
    - Linear: The value will be increased(+)/decreased(-) by linear (the ratio of value and rotated angle).
    - Log: When rotated the knobs on front panel, the current value will be changed by a large variation at the beginning stage, and will increase/decrease little by little at the later stage.
    - Antilog: When rotated the knobs on front panel, the current value will be increased/decreased little by little at the beginning stage, and will be changed by a large variation at the later stage.
  - Category:
    - Normal: Use this channel to control the elements and events.
    - Preset: Use this channel to switch to the preset function.
    - button: Click this button to link to its applied element setting page.
6. Double click the [Selector] component, and right click its element. Select [Controls] option > Processor's/Device's name > Control Input > CH 1. See as below.



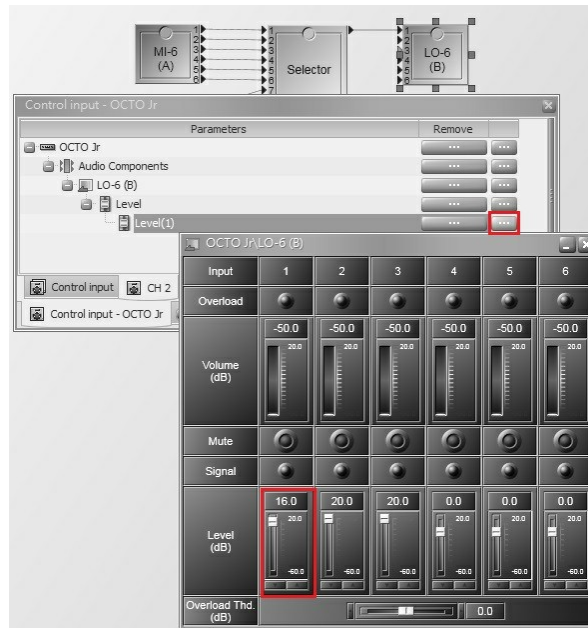
7. Try to switch the channel steps on the simulation window and see whether the input channels on Selector component window are coordinated. See as below.



8. Double click the Output component to open a Output component window.
9. Then right click the Level element and assign the control on CH2.
10. Then, click button on the Control Input window to check if the applied elements setting is functioned.



11. It will display the detailed setting of the controlled elements on both [Control Input] window and [Element] grid on the component window.



### 5.6.3 Contact output

❖ How to Use - connect a LED indicator for status monitor (logic output) on OL-AMP.

• CH1~CH2: The two channels of contact output on the rear panel of OL-AMP.

• Operator:

- OR: Do an OR operation for all the applied elements which is assigned to control contact output.
- AND: Do an AND operation for all the applied elements which is assigned to control contact output.
- NOR: Do an NOR operation for all the applied elements and result to the logic output.
- NAND: Do an NAND operation for all the applied elements and result to the logic output.



❖ Example: Please refer to the example of Controls >Logic Output.

## 5.7 Device management

Enable the "Auto Search" function at the bottom of Device Management Window, it will automatically list all network systems and their devices at the local network. This window provides some information such as ID, faults and connection status of every device. Besides, select one of the system or device, it will show more function on the right hand side for system management.

❖ Path: System > Device Management



### 1. Device Information

- **Devices:** List the entire UAP G3/ G3H systems. Click [+] [-] button and unfold/fold the devices which are connected under the system.
- **Type:** The type of the device such as UAP G3, UAP G3H, etc.
- **Serial Number:** The serial number of the device.
- **Identifier:** Display the ID of ATEİS network as X-coordinate/Y-coordinate).
- **Version:** The firmware version of the device.
- **Fault:** Click to open a Fault List window. If a fault is detected, this field will display [...] button, click to open the Fault List window. See [Fault List](#) for details.
- **Connection:** Show the Ethernet communication status between the UAP G3/ G3H Designer and the ATEİS device. There are five types of status:

Connection Status	Description	Solution
Ready	The communication between UAP G3/ G3H Designer and devices is in good condition.	-
Absence	The devices are not being searched by UAP G3/ G3H Designer, therefore, UAP G3/ G3H Designer cannot communicate with them.	Check if the network cable is securely connected, or reboot the devices and software.
Broken	If the packet switching between UAP G3/ G3H Designer and devices is failed more than 3 times, the software will forbid to communicate with the devices, and the devices will be isolated to Black List.	Click [Clear] button to auto search again, or reboot the devices.
Refreshing	The UAP G3/ G3H Designer is synchronizing the communication with devices.	-
Protected	The system network is being protected by IDM Setting.	Login the IDM setting on Device Management (click 'Connect' button)


### 2. Device Function

List all the available functions for devices which will be told in next chapter later.

### 3. Search Devices



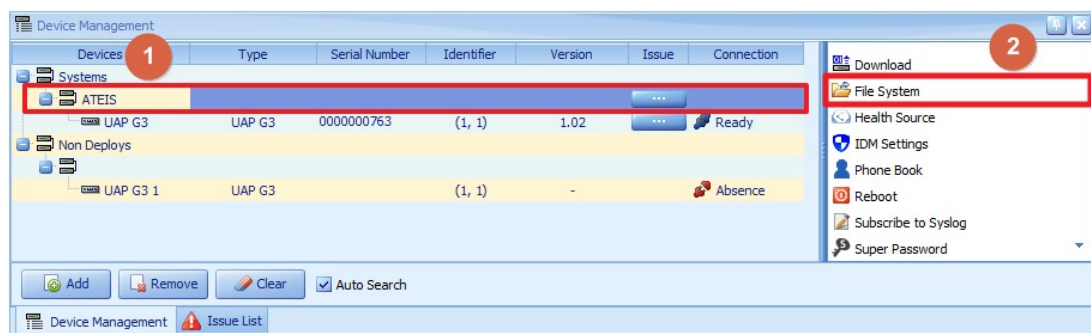
- Add: If the UAP G3/ G3H processor cannot be searched automatically even the Network Adapter (network card) setting is correct. Users can manually add a UAP G3/ G3H by entering the IP address of user PC/laptop. Only the [Product] and [IP] are required fields.
- Remove: Remove the selected device manually.
- Clear: Clear the current search results on the grid.
- Auto Search: Enable to auto search or refresh the listed devices.

 To search the remotes, see Search Remote Devices for details.



### 5.7.1 Download

Allow to download the stored configurations from UAP G3/ G3H processor into the UAP G3/ G3H Designer software.



❖ How to Use:

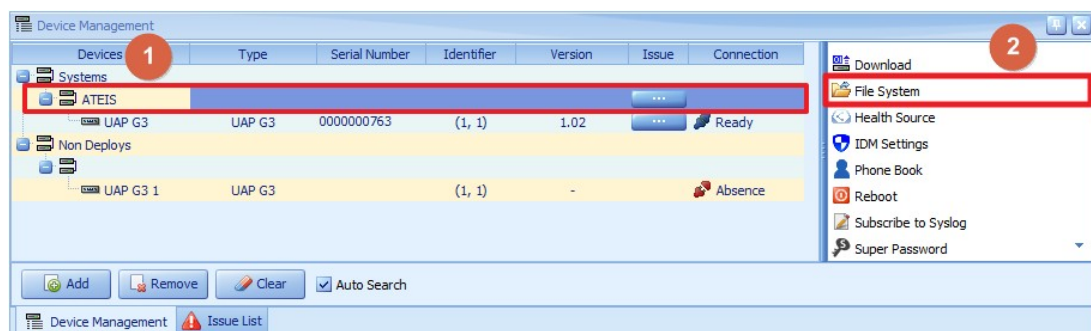
1. Open the Device Management panel.
2. Click [Download] button to begin the Download function.
3. After that, the system will automatically run the current working configuration.

### 5.7.2 File system

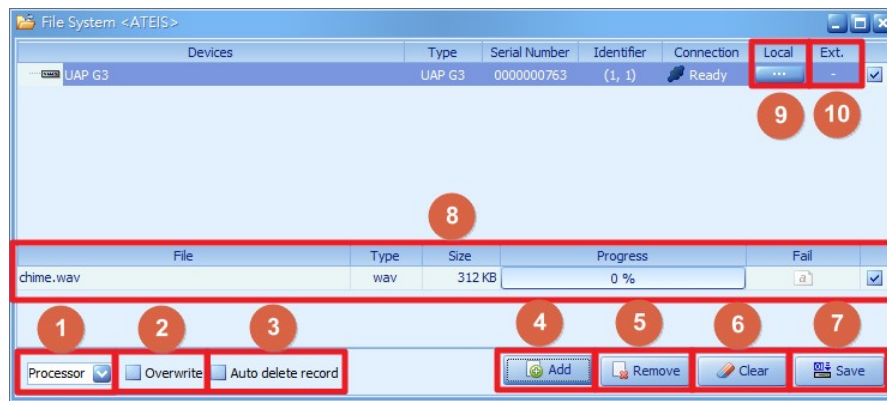
Allow to manage all the files stored in the UAP G3/ G3H processor. The File System allows to save files into the UAP G3/ G3H or load files from UAP G3/ G3H. The supported file format are WAV, MP3, BMP, G722, XML, TIF, LOG, INI, PNG, JPG and XDUI.

❖ How to Use

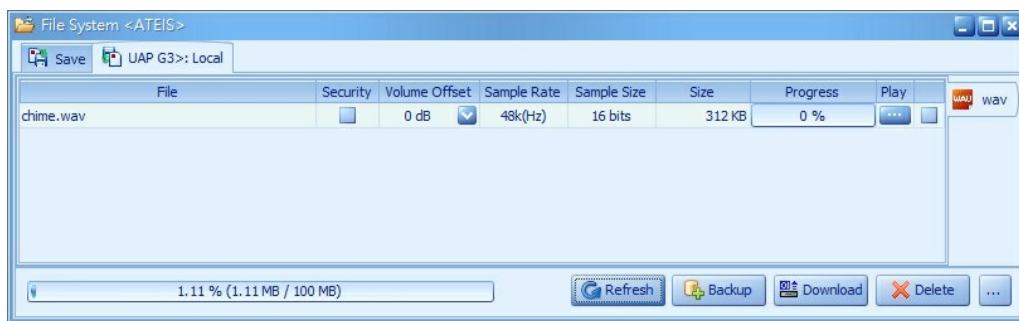
1. Open the Device Management panel, and select a system.



2. Click [File System] on the right side of the panel, and it will display a pop-up control window.



1. Processor/Remote: Select a device intended to save the files in.
  2. Overwrite: Tick to automatically overwrite the files when the files which store in UAP G3/ G3H has the same file name.
  3. Auto Delete Record: Tick to automatically remove the files list in (H) area after save the files successfully. If failed, the files will remain in (H) area.
  4. [Add] Button: Add the files from PC/Laptop, and it will be listed in the (H) area.
  5. [Remove] Button: Delete the selected files in the (H) area.
  6. [Clear] Button: Remove all files in the (H) area.
  7. [Save] Button: Save the selected files listed in the (H) area into the selected device (A).
  8. It will show the information of the files intended to save into UAP G3/ G3H, remote. The "Fail" column will show the information when saving process is failed.
  9. "Local" Button: Click to open a window listed all files in the UAP G3/ G3H.
  10. "Ext." Button: Click to open a window listed all the extension devices connected to the UAP G3/ G3H.
3. Click [Add] button to add files, and select all the files user wish to save into UAP G3/ G3H.
  4. Click button on the "Local" field to open a window. It will display all files in the processor.





- Tag: Function reserved.
- Security: Enable to make the file cannot be removed from the UAP G3/ G3H through File System function.
- Level: The compensated level of the playing audio file. For example, if the original audio file is too loud, user can set to decrease the output level here.



The different audio files may have different level. To avoid the different level of these messages while playing, it's recommended to adjust the level here.

- Sampling Rate/Sample size/Size: Display the information of audio file.
- Progress: The progress of loading.



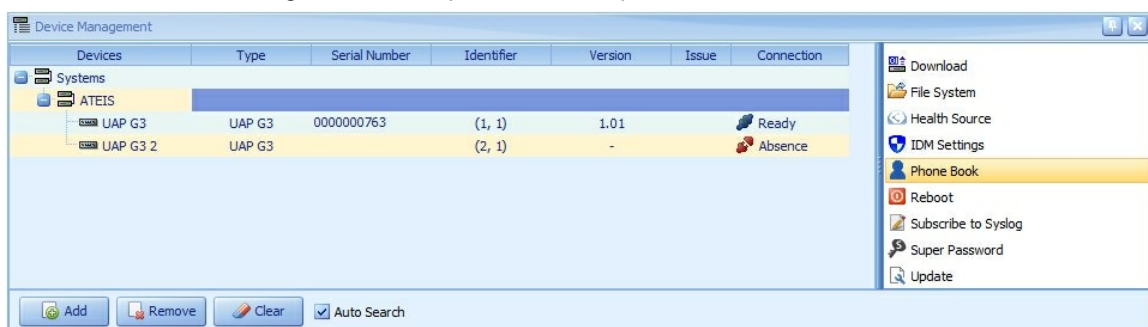
- Progress Bar (at the left bottom): The current memory storage and the total storage of the processor.
  - Refresh: Refresh the files from the processor.
  - Backup: Backup all the files including audio, config files in UAP G3/ G3H to PC/Laptop (\\My Documents\\UAP G3 Designer\\Resource\\[machines]\\processors\\[machines SN]).
  - Download: Download the selected files from UAP G3/ G3H to PC/Laptop, the files will be stored in the path \\My Documents\\UAP G3 Designer\\Resource\\[machines]\\processors\\[machines SN].
  - Delete: Delete the selected files.
  -  button: Click to show the current folder path (\\My Documents\\UAP G3 Designer\\Resource\\[machines]\\processors\\[machines SN]).
5. Tick the checkbox on the certain files to load those files, then click [Load] button. And the files can be founded by clicking  button.

### 5.7.3 Phone book

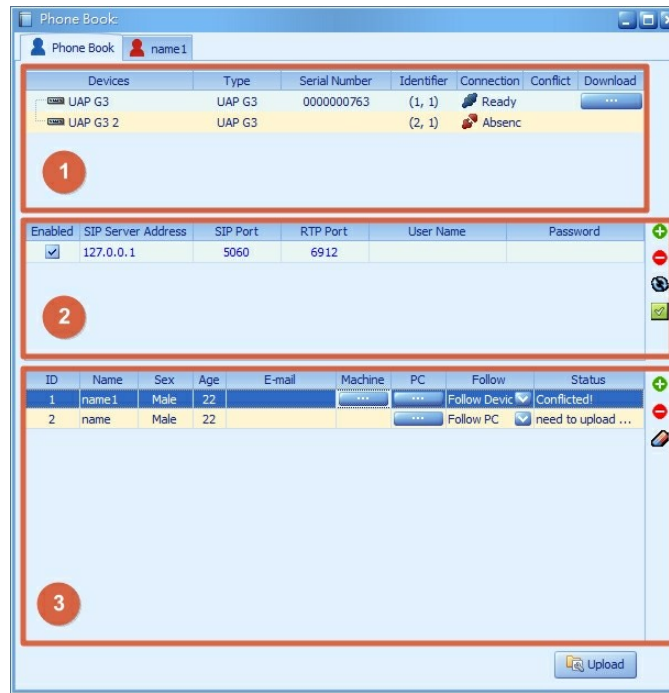
Allow to create/edit the phone book database, these settings can be uploaded into the UAP G3/ G3H processor for VoIP call page and VoIP Fast Call event, etc.

#### ❖ Path


1. Open the Device Management panel, and select a system network. The [Phone Book] function will be shown on the right section of panel, see the picture as below.







2. Click [Phone Book] on the right side of the panel, and it will display a pop-up control window.






1) Devices: Display the name/type/serial number/identifier/connection of UAP G3/ G3H processor which will be used for storing the Phone Book setting.

- Download : Click to download the phone book from UAP G3/ G3H processor into the UAP G3/ G3H Designer software.

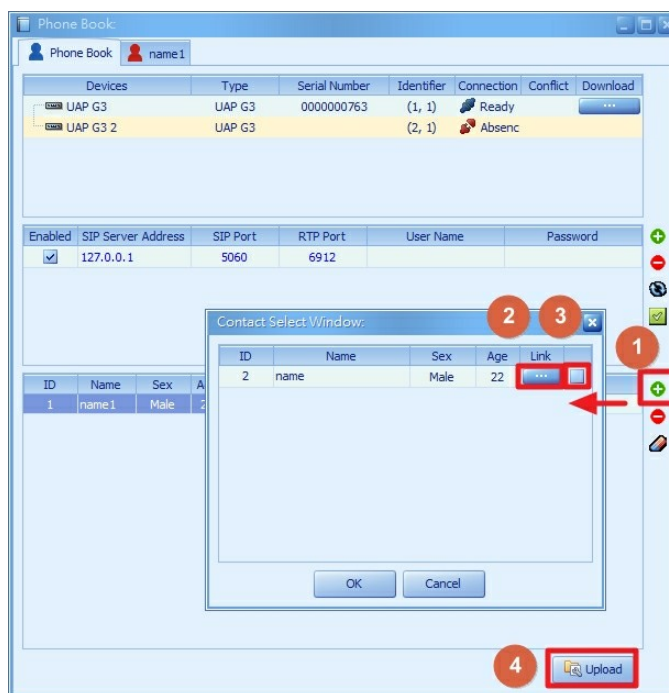
2) SIP Server:

- Enable: Activate the selected SIP server.
- SIP Server Address: The IP address and port of SIP Sever.
- SIP Port: The network port for SIP protocol, the default port is 5060.
- RTP Port: The network port for RTP protocol for receiving and transmitting audio, the default port is 6912.
- User Name/Password: The registered user name (account) and password which allows UAP G3/ G3H to login in on SIP server.
-  Add /  Remove: Click to add/remove a certain SIP server. The maximum number of SIP server is 4.
-  Retrieve SIP Server Information: Click to restore/download the SIP server settings from the UAP G3/ G3H to UAP G3/ G3H Designer software.
-  Store SIP Server Information: Click to upload the SIP server settings into the UAP G3/ G3H.

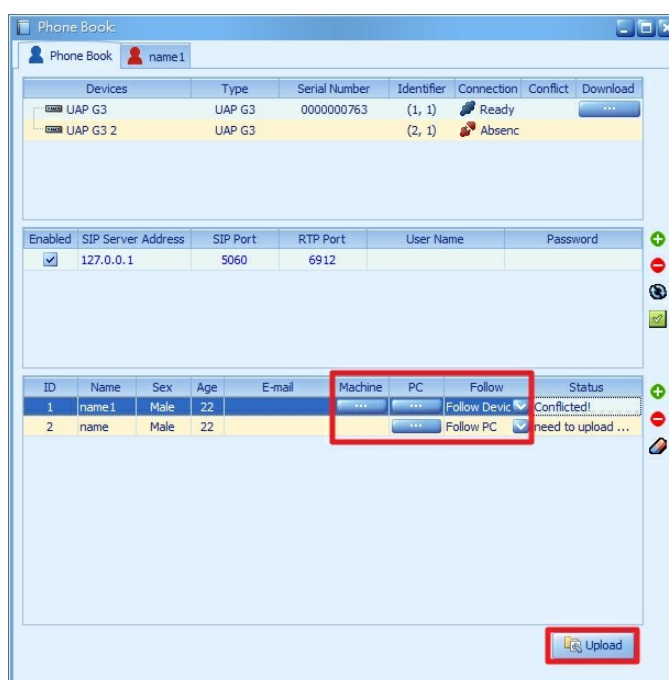
3) Phone Book: Display the phone book setting (ID/Name/Sex/Age/E-mail) which intends to upload into the UAP G3/ G3H.

-  Add /  Remove: Click to add/remove a selected contact person.
-  Clear: Clear all the phone book setting.

❖ How to Use - upload the phone book setting to UAP G3/ G3H.



1. Click to add the phone book setting.
2. Click [...] to edit the contact person.
3. Select the contact person user wish to add in, and click [OK] to save the setting.
4. Click [Upload] to store upload the settings into the UAP G3/ G3H processor.



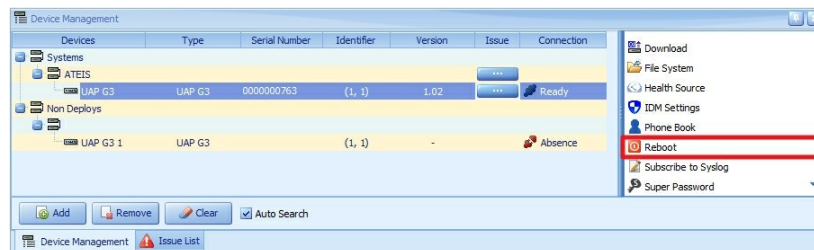
5. If the contacts settings are conflicted when uploading the contacts settings into the UAP G3/ G3H, user need to choose either to follow (upload) the setting edited in PC (UAP G3/ G3H Designer software) or Machine (UAP G3/ G3H hardware).
6. Click [Upload] again to synchronize the contacts settings of Machine (UAP G3/ G3H) with PC (UAP G3/ G3H Designer software).

### 5.7.4 Reboot

To reboot the devices by UAP G3/ G3H Designer software.

#### ❖ How to Use


1. Open the Device Management panel, and select a system or a UAP G3/ G3H processor in ready status. The [Reboot] function will be shown on the right section of panel.



2. Click [Reboot] on the panel, and it will display a pop-up control window.



3. Select certain processors or remotes to reboot.

 When rebooting the UAP G3/ G3H, the remotes connected on the UAP G3/ G3H will be rebooted as well even if the remotes are not selected.

### 5.7.5 Update

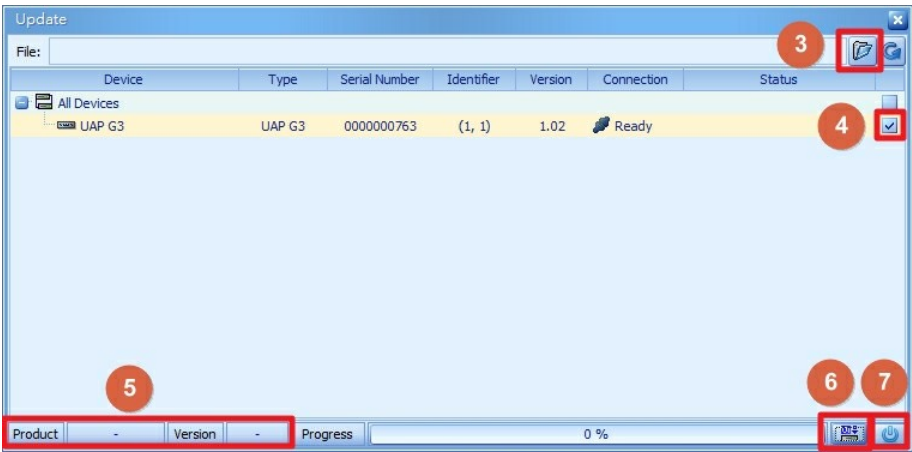
Show the current firmware version of devices and allow to update the devices' firmware.


#### ❖ How to Use


1. Open the Device Management panel, and select a device or a system in ready status. The [Update] function will be shown on the right section of panel.




2. Click [Update] on the panel, and it will display a pop-up control window.



3. Click  button to add a firmware file for updating certain devices.

 The default path is \\My Documents\\UAP G3 Designer\\Resource\\xdu".

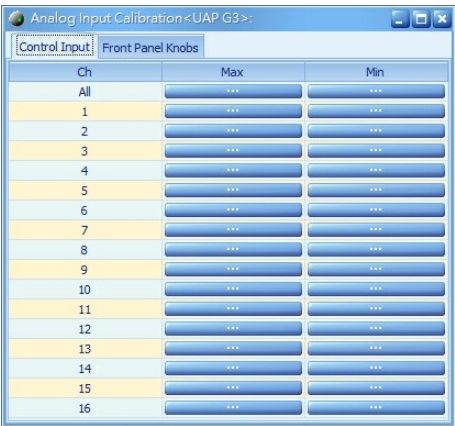
- 4. Select the device to update. The devices which have the same product type as the firmware file or the version of device is different from the firmware file will be selected automatically.
- 5. Double check if the selected devices are corresponding with the file by the [Product] and [Version] information displayed at the status bar.
- 6. Click update  button to start, and the [Progress] bar will show the update progress in percentage.
- 7. After finished update progress, click Reboot button to restart the device with new updated version.

5.7.6 Analog input calibration

Allow to calibrate the rotary knobs on the front panel and the control inputs on the rear panel of UAP G3/ G3H based on the min/max voltage. Please operate this function when initially using the UAP G3/ G3H, otherwise, the knobs/control inputs cannot be completely performed as the programmed voltage.

❖ How to Use

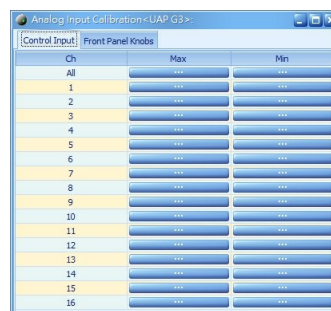
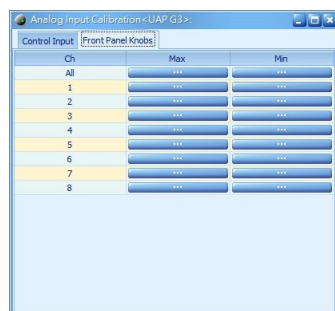
- 1. Open the Device Management panel, and select a UAP G3/ G3H processor in ready status. The [Analog Input Calibration] function will be shown on the right.



- 2. Click [Analog Input Calibration] on the panel, and it will display a pop-up control window.

Control Inputs

Front Panel Knobs



3. Rotate all the front panel knobs on UAP G3/ G3H or the knobs of the connected remote (RAC5/8) via the control inputs of UAP G3/ G3H to the minimum level first.
4. Click [...] button for [All] channel on [Min] field to calibrate the correct voltage for all the corresponded knobs.



Before clicking the [...] calibration buttons on software, make sure the front panel knobs and the knobs of the connected remote RAC5/8 via the control inputs of UAP G3/ G3H are in the minimum/maximum level.

5. Then a pop-up window will display the information whether the calibration is succeed or not, see the picture below.



6. Then proceed the same calibration steps for maximum level, rotate all the front panel knobs on UAP G3/ G3H or the knobs of the connected remote (RAC5/8) via the control inputs of UAP G3/ G3H to the maximum level. Then, click [...] button for [All] channel on [Max] field on software.



Please proceed the [Analog Input Calibration] function again when one of the following situation occurs.

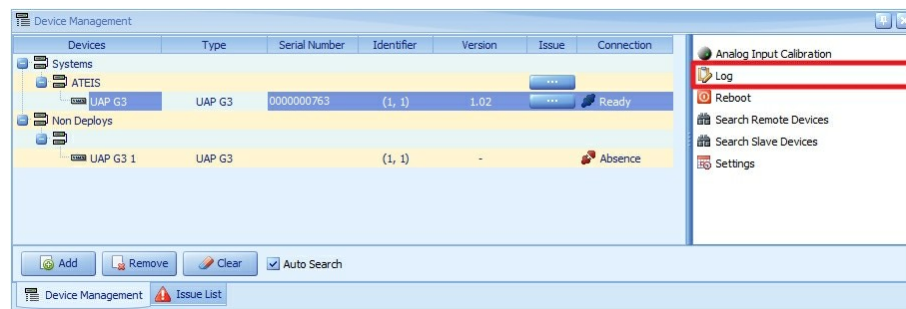
- 1) After calibration, if the knob has already been rotated to the minimum level while using this knob for element adjustment, but the sound can still be heard.
  - 2) After calibration, if the knob has already been rotated to the maximum level while using this knob for element adjustment, but the sound is not as loud as expected.
- By doing so, this will reduce the inaccuracy of sound level when using the knobs to control parameters.

## 5.7.7 Log

To display the Log of the selected device.

### ❖ How to Use



1. Open the Device Management panel, and select a device in ready status. This [Log] function will be shown on the right section of panel.



2. Click [Log] on the panel, and it will display pop-up the control window.




3. Click  button on the Show field to display the selected log by date.

- Export : Choose a log list on the left, and click this button to export the chosen log list to a excel file (.xls).
- Refresh : Click this button to refresh the log list.

## 5.7.8 Settings

To set the time/date and the daylight saving time for UAP G3/ G3H system. The time/date can be either as user-defined or from NTP server.

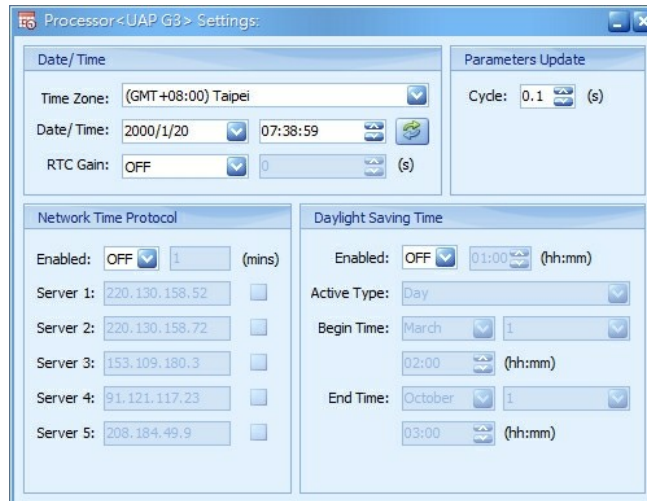
 Changes in the Date/Time setting will affect the Scheduler and the Current Time display on UAP G3/ G3H Designer software.

### ❖ How to Use

1. Open the Device Management panel, and select a device in ready status. The [Settings] function will be shown on the right section of panel.



2. Click [Date/Time Correction] on the panel, and it will display pop-up the control window.



- Date/Time: The timezone of user devices.
  - RTC Gain (Real Time Clock): Set ON to update the system time using the RTC gain (increase/decrease) everyday.
- Parameters Update:
  - Cycle (s): Set the cycle time to refresh the value of DSP parameter setting during the Online.
- Network Time Protocol:
  - Enabled: Enable the NTP setting. If the NTP is activated, the system date/time of UAP G3/ G3H will be synchronized by NTP server.
  - Time Interval of Update (mins): The time interval to update system time from NTP server.
  - Server 1 -5: The IP address of NTP Server, and choose which set of server by ticking the checkbox.
- Daylight Saving Time:
  - Enabled: Enable/disable the Daylight Saving Time function on UAP G3/ G3H device.
  - Active Type: Choose [Date] or [Week] option to define the period of Daylight Saving Time.
  - Begin Date/Time: Set the start date/time of Daylight Saving Time.
  - End Date/Time: Set the end date/time of Daylight Saving Time.

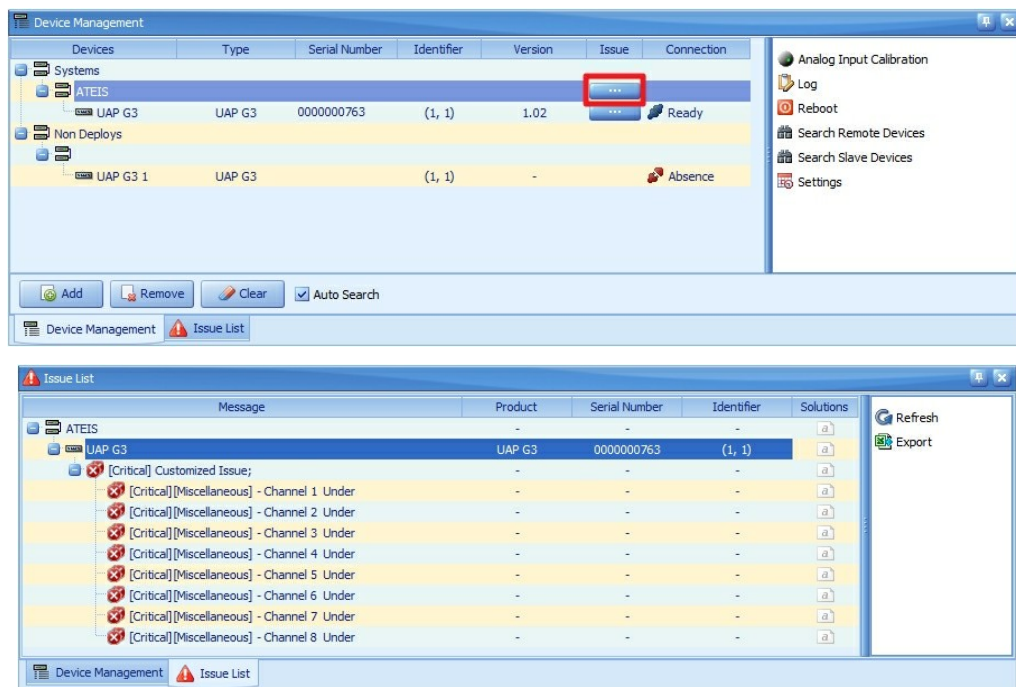
### 5.7.9 Fault list


If the UAP G3/ G3H Designer software detects any Issue, it will show the fault at [Device Management] panel.

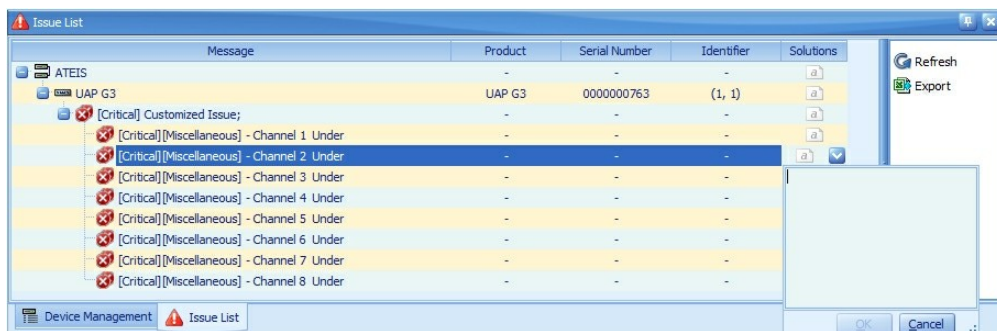
#### ❖ How to Use

1. Click [...] at Fault grid to open a Issue List window, it will list the faults of this UAP G3/ G3H system.





2. Click  button to know the troubleshooting to this Issue.

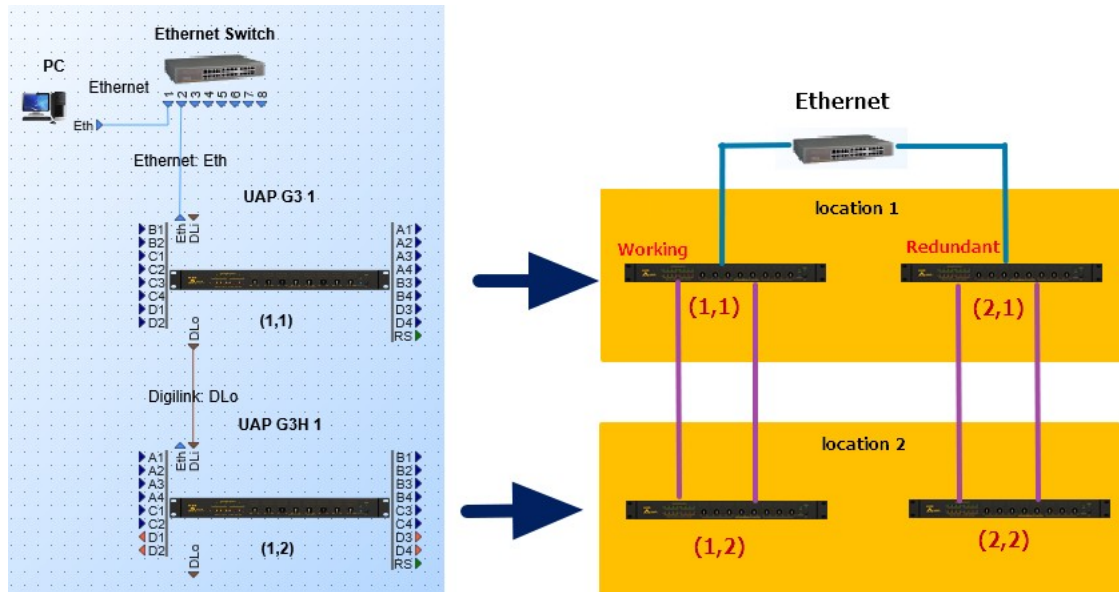


## 5.8 Redundant setting

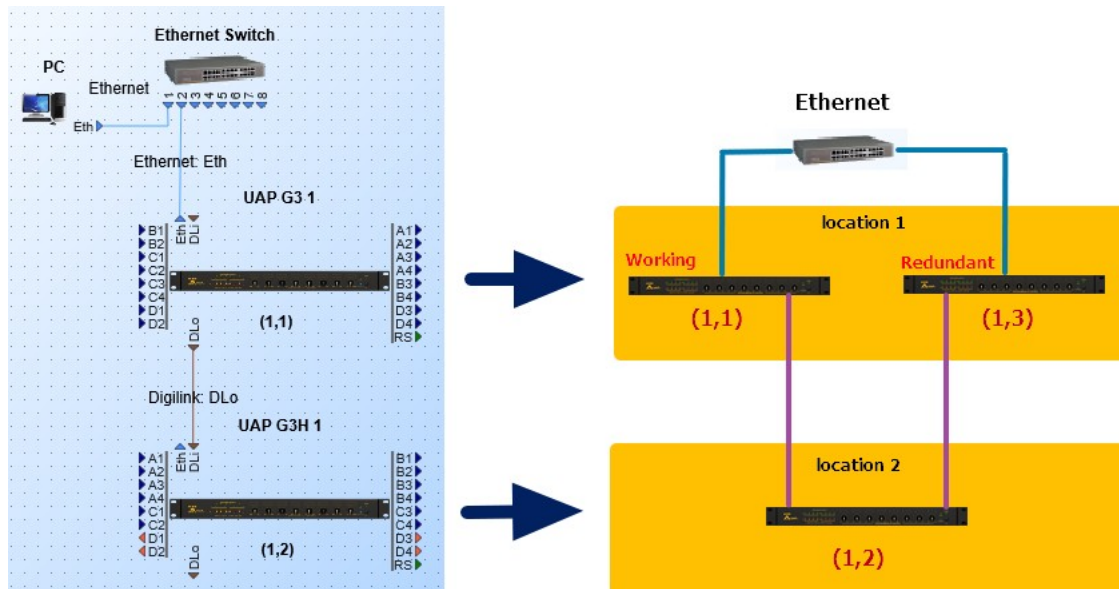
UAP System provides several ways for setup redundant, including . User can setup redundant processors or redundant loops, so that the machines can replace the processors/ loops when the failure is detected.

### ❖ Redundancy for processors

- Symmetric redundancy: When some machines in the user's system are abnormal and cannot operate normally, another set of identical devices will enter the working status and replace the responsibilities of all machines in the original system. All machines in the original system will enter standby status and back to working mode until the issue has been fixed. This method provides a relatively complete backup mechanism for the user's system environment. It can easily be setup as 1 backup 1, 2 backup 1, ...



- Asymmetric redundancy: When a specific machine in the user's system is abnormal and cannot operate normally, another identical device will wake up automatically to replace the responsibilities of the original machine until the issue has been fixed, and the original machine will enter the standby status. This method can save costs, and users can only choose the crucial devices in the system to backup machines, instead of needing to backup all machines like a symmetric backup.



#### ❖ Redundancy for remotes

- OCTO Link: Connecting the remotes through OCTO Link ports. When the standby mode OCTO Link ports detects the failure of the working mode OCTO Link port, it will automatically wake up and continue to operate to ensure that the remotes in the connection can continue to be used normally and the system can operate normally.

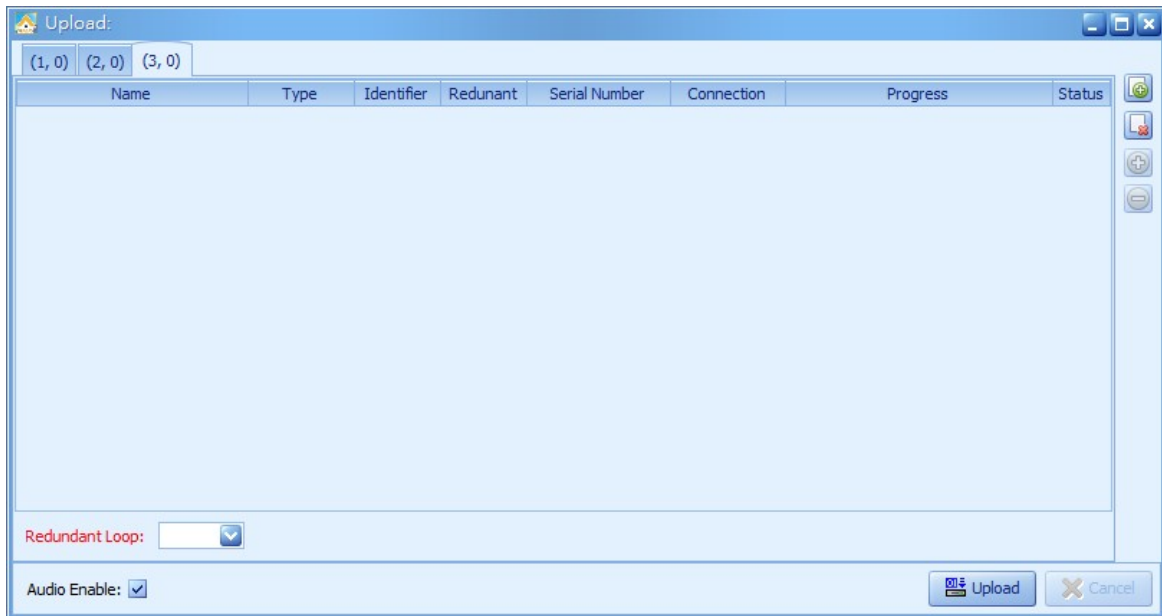
- How to set redundant loop through OCTO Link





1. Drag the UAP G3 processor on the template and drop on the working area.



2. Click [Upload] the device.

3. After uploading, the Upload window as below will appear.



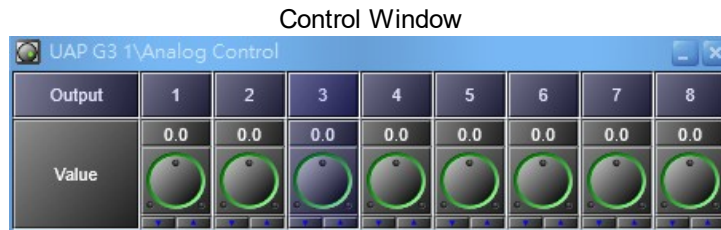
- Name: Device's name.
  - Type: The machine type of the device.
  - Identifier: The first represent the Loop and the second number represent the device number in the loop.
  - Redundant: Display the redundant device.
  - OL-Backup: Available if the device is equipped with OL card.
  - Serial Number: the number of the device.
  - Connection: Display the connection status.
  - Progress: Percentage bar of the progress.
  - Status: Show the process is in progress, it will show "Success" or "Failed".
  - Redundant Loop: Choose which loop will be set as redundant loop.
  - Audio Enable: Default is click on the check box, After finishing the setting the system will output the audio. Users can mute the system by stat the checkbox unclick.
  -  : Add asymmetrical RU Loop, the added loop will be list on a different tag page.
  -  : Remove asymmetrical RU LOOP.
  -  : Add symmetrical RU processor.
  -  : Remove symmetrical RU processor.
  - Upload: upload the current settings.
  - Cancel: Cancel editing.
- Hot Swap: User can removing components from or plugging them into a device system while the power remains switched on. The remotes can be changed or replaced without shutting down or rebooting the main controller/ system.

## 6 DSP components

### 6.1 Control

#### 6.1.1 Analog Control

Send analog signal to the output channel or control the value such as level control or trigger the events.



Analog Control-8CH

- Output: The channel of analog output channel (available in 1CH, 4CH, 8CH, 16CH).
- Value: The value of the analog output channel.

#### 6.1.2 Analog Meter

The Analog Meter monitors the Analog Control and displays the signal values on the control window.



Analog Meter-8CH

- Input: The analog input channel to monitor.
- Value: Display the monitored value.

#### 6.1.3 AND

A logic calculator for all of the detected logic input signals to do the AND operation for output signal.



- Input: The input channel.
- Value: Light up in green when the signal is detected.

#### 6.1.4 Binarized

The Binarized component can transmit the analog signal (-N, +N) to the logic signal (0 or 1), and set the threshold value for transmitting the analog signal to logic signal.

Control Window



- Output: The channel which outputs the signal.
- Signal: Light up when the signal is detected.
- Threshold: Set the threshold value for transmitting the analog signal to logic signal.

### 6.1.5 Capture

The Capture component is similar to Binarized component, the difference is it can transmit the analog signal (-N, +N) to logic signal (0 or 1) in multiple output channels, and also set the threshold value in a range (max. and min.) for transmitting the analog signal to logic signal.

Control Window



- Input: Display the detected value from analog signal.
- Output: The channel which outputs the signal.
- Max/Min. : Set the maximum and minimum threshold value in multiple output channels (1CH, 4CH, 8CH, 16CH) for transmitting the analog signal to logic signal.

### 6.1.6 Event Control

The Event Control allows to link the events to the logic signal, the linked events will be triggered based on the signal value.

 See [Events](#) chapter for more details.

Control Window



- Input: The input channel to trigger the event. Click to rename the input channel.
- Event: Select an event from the drop-down list. See [Events](#) chapter for details.
- Percent: Trigger the event by the value range (max. and min.) and transmits to the percentage value. For example, if the property of value is -60 value (min) and 20 value (max.), and the Value user set on Event Control component is 0, the final percentage value will be 75%.
- Value: Trigger the event by value in the between of the min and max user set on Property. See as below,



### 6.1.7 Event Trigger

The Event Trigger 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.

- Set at least one event that the type should be [Message Player] or [Element N Trigger] in Event Trigger. See [Events](#) chapter for details.

Control Window





- Input: The number of channel on event trigger component.
- Event: Select an events. See [Events](#) chapter for details.
- Rising Edge: Start the events if input signal is from low to high.
- Falling Edge: Start the events if input signal is from hi to low.

## 6.1.8 Interface

### 6.1.8.2 Control Output

### 6.1.8.2 Control Output

Control Window



- Output: The 8 channel output channel used to control the elements or trigger events.
- Value: Define the value which controls the elements or triggers the events (The Simulate option must be activated first)

### 6.1.8.3 Control Input

Control the elements or trigger the events via the 16 channel control inputs on UAP G3/ G3H.

Control Window



- Input: The 16 channel Input channel used to control the elements or trigger events.
- Simulate: Tick the Simulate button to define the value which controls the element or triggers the events. If this button is disable, the system will use the value set from the physical UAP G3/ G3H hardware wiring for reference.
- Value: Define the value which controls the element or triggers the events (the Simulate option must be activated first).

### 6.1.8.4 Front Panel Knob

Control the value such as level control or trigger the events via the 6 programmable knobs on the front panel of UAP G3/ G3H.

Control Window



- Output: The 6 CH output channel on the front panel of UAP G3/ G3H.
- Simulate: Tick the Simulate button to define the value which controls the element or triggers the events. If this button is disable, the system will use the value set from the physical UAP G3/ G3H hardware wiring for reference.
- Value: Define the value which controls the element or triggers the events (the Simulate option must be activated first).

### 6.1.9 Logic Control

To send out logic signals which is being monitored by Logic Meter.

Control Window



- Output: The number of logic output channel pins on this component.
- Value: Enable/disable the signal of logic output channel.

### 6.1.10 Logic Meter

The Logic Meter monitors the Logic Control and displays the signal values on the control window.

Control Window



Logic Meter-8CH

- Input: The logic input channel pins to monitor.
- Signal: Light up when the signal value is detected.

### 6.1.11 NOT

A logic calculator which the signal will be the opposite side through the NOT component.

Control Window



NOT-8CH

- Input: The number of input channel pins on this component.
- Value: Light up when the signal is detected.



### 6.1.12 OR

A logic calculator which the output signal of OR component will be engaged when any one of the input signal is detected.

Control Window



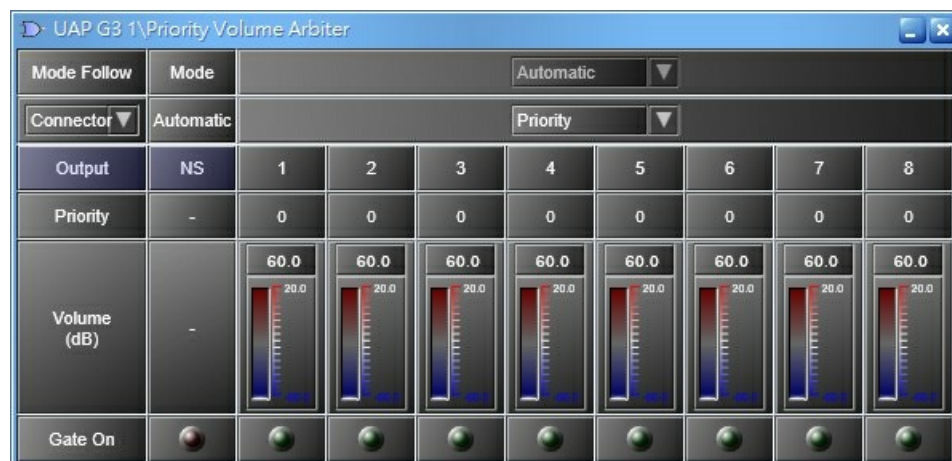
OR-8CH

- Input: The number of input channel pins on this component.
- Value: Light up when the signal is detected.

### 6.1.13 Priority/Volume Arbiter

This component acts as a role to define what kind of priority mode the mic input (input 1 to input 8) will be use on Gain Sharing Mixer component. The mode includes Priority, Priority FIFO, Priority LIFO, Priority + Volume, etc. The Priority/Volume Arbiter component will send logic output signal to RS485 Procedure Trigger component, which allows the RS485 Procedure Trigger component to send the 3rd party commands to external devices such as USB camera via RS485 protocol on UAP G3/ G3H.

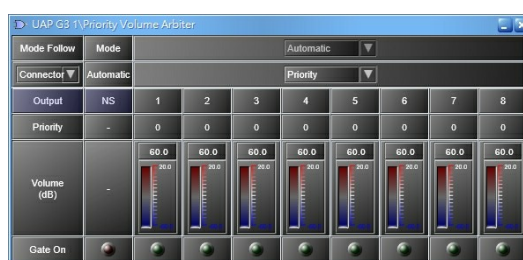
Control Window



- M Pin: Manually assign which microphone input CH to output.
- P Pin: The behavior pin for priority. The number of channel pin can be user-defined (max. 32 channel).
- V Pin: The behavior pin for volume. The number of channel pin can be user-defined (max. 32 channel).



To change the channel inputs, right click the Priority/Volume Arbiter component, and select Edit Channels > Customized. Then change the number on Activate Channels grid. See the pictures as below.



- NS Pin: Indicate as 'No Signal'. When the logic output pin (1~4) are not being triggered, connect

the NS pin to RS485 Procedure Trigger component to send a 3rd party command automatically.

- Mode Follow:

1. Connector: The behavior of Priority/Volume will be based on the physical pin connection between the Gain Sharing Mixer component and Priority Volume Arbiter component.

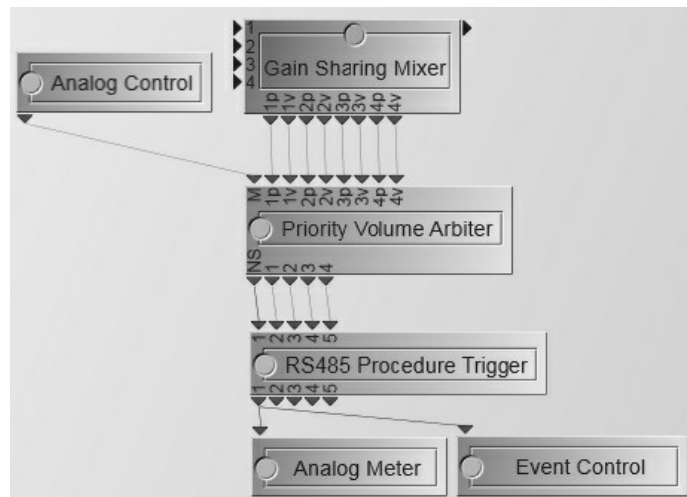
- Automatic:

- Priority: Activate the mic inputs with the highest priority in Gain Sharing Mixer component.
- Priority + FIFO: Activate the mic inputs with the highest priority in Gain Sharing Mixer component, plus in the order on "first in first served" basis.
- Priority + LIFO: Activate the mic inputs with the highest priority in Gain Sharing Mixer component, plus in the order on "last in first served" basis.
- Priority + Volume: Activate the mic inputs with the highest priority and the biggest input volume in Gain Sharing Mixer component.
- FIFO: Activate the mic inputs in the order on "first in first served" basis.
- LIFO: Activate the mic inputs in the order on "last in first served" basis.
- Volume: Activate the mic inputs with the biggest input volume in Gain Sharing Mixer component.

2. Manual: Manually assign which microphone input CH to output.

- Mode: Automatically assign to output which mic input CH or manually.

- Output: Indicate the logic output channel on Priority Volume Arbiter component.
- Priority/Volume: Display the priority/volume of the output channel.
- Gate On: Light up when the NS pin/output channel is being triggered.



## 6.2 Delay

### 6.2.1 Delay (Advanced)

This component delays the audio signal from input to output. There are two types to adjust the delay time for a channel. The first is by adjusting the element Delay time, the second is by adjusting the temperature and distance to compute the delay time. The [Delay] component records the audio into an internal buffer and then plays the stored audio based on delay parameters set by user. This component is available as 3 types of output channel (1CH, 4CH and 8CH) and 7 types of delay time (5ms, 50ms, 100ms, 200ms, 500ms, 1000ms, and 2000ms).

Control Window



4CH Delay (Advanced) 500ms

- Type: An alternative button. 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 for a channel.
- Distance: Specify the distance to compute the delay time for a channel.

## 6.2.2 Delay (Basic)

This component delays the audio signal from input to output. This component is a compact version of Delay (Advanced) that is not allowed to mute or bypass the signal of the input. The delayed component records the audio into a internal buffer and then plays back the stored audio based on parameters set by the user. There are two types to adjust the delay time for a channel in different way. The first is by adjusting the element Delay time, the second is by adjusting the Temp and Distance to compute the delay time. This component is available as 3 types of output channel (1CH, 4CH and 8CH) and 7 types of delay time (5ms, 50ms, 100ms, 200ms, 500ms, 1000ms, and 2000ms).

Control Window



4CH Delay (Basic) 500ms

- Type: An alternative button. Chooses between adjusting with Time or with Distance and temperature.
- Delay Time: Specifies how much time will be delayed for the audio signal of a channel.
- Temp: Specifies the temperature to compute the delay time for a channel.
- Distance: Specifies the distance to compute the delay time for a channel.

## 6.3 DigiLink

Control Window



4CH DigiLink Output 4 CH



4CH DigiLink Input 4 CH

- Output/Input: Indicate the input/ output channel.
- DigiLink Channel: Set the Channel.
- Overload: Light up if the signal of an input channel is bigger than Overload Thd.
- Bypass: Bypass the audio signal of (all) the channel(s).
- Mute/Mute all: Mute the /input output channel(s).
- Volume (dB): The meter shows the channel level.
- Signal: Light up when the channel is activated.
- Level: Set the signal output level of channel.
- Overload Thd. (dB): A threshold value to determine the signal of a channel is overloaded or not.

## 6.4 Dynamic

### 6.4.1 AGC Mono/AGC Stereo

With this Automatic Gain Control (AGC), the input signal can be increased or decreased to a target level automatically. The AGC effectively reduces the volume if the signal is strong or raises the volume when it's weak. There are two types of AGC, one is the signal channel and the second is stereo.

Control Window



- Threshold (dB): When the audio input level is above this threshold setting, the AGC function will activate.



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

- Target Level (dB): Define which target volume for AGC to increase/decrease.

- Max Gain (dB): Define the maximum of automatic gain.



Limit the max. gain to keep a natural audio dynamic.

- Attack Time (dB): Adjust the fade-in time to reach the target level.
- Release Time (dB): Adjust the fade-out time of the signal when AGC is no longer working. This value is ignored if the “Release button” is off.
- Sampling Time (ms): Set the average time needed by measuring the input level.



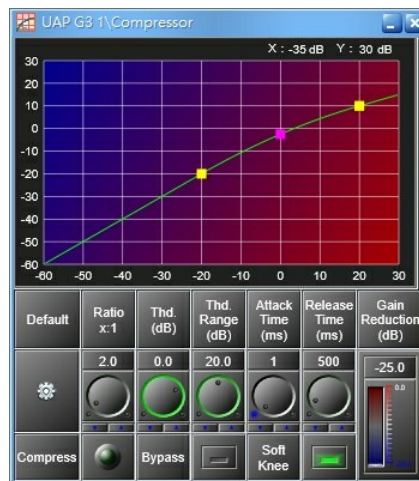
If the sampling time is too long, it will make the AGC too insensitive on the short peaks.

- Level (dB): Display the gain of AGC function.
- Default: Click to restore all settings to factory setting.
- Bypass: Disable the AGC function (i.e bypass the audio signal from input to output).
- Active LED: The LED will flash when the AGC is activated.

## 6.4.2 Compressor Mono/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. When the audio is too loud, the Compressor can avoid overloading for amplifier input. The Compressor Stereo component is the same as the Compressor Mono component, but works on both stereo output channels.

Control Window



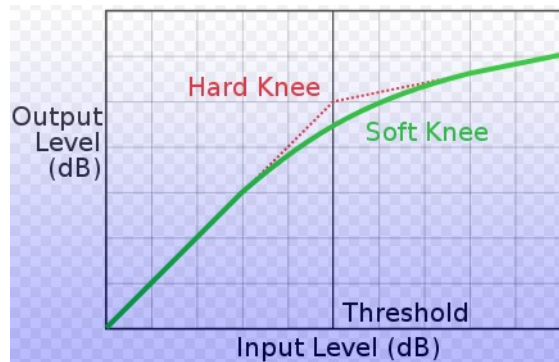
- Default: Click to restore all settings to factory setting.
- Ratio x:1: Set compression ratio.
- Thd. (dB): Set the threshold level above which the compression begins.
- Thd. Range (dB): Set the range of level, in which the ratio gradually alters from 1:1 to the value set by Ratio parameter (Soft Knee function).
- Attack Time (ms): 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 time is the period when the compressor has decreased gain to reach the level that is determined by the ratio.



The Attack Time can decide the sensitivity of compressor. The longer the Attack Time, the lower sensitivity of Compressor, and vice versa.

- Release Time (ms): The time after signal level below the threshold level to stop compressing.
- Gain Reduction (dB): Indicate the current amount of gain reduction.

- Compress: Light up in green when Compress is activating.
- Bypass: Disable the Compressor function.
- Soft Knee: Enable/disable the “Soft Knee” mode. This element controls whether the bend in the response curve is a sharp angle or has a rounded edge. A soft knee slowly increases the compression ratio as the level increases and eventually reaches the compression ratio set by user. A soft knee reduces the audible change from uncompressed to compressed, especially for higher ratios where the changeover is more noticeable.



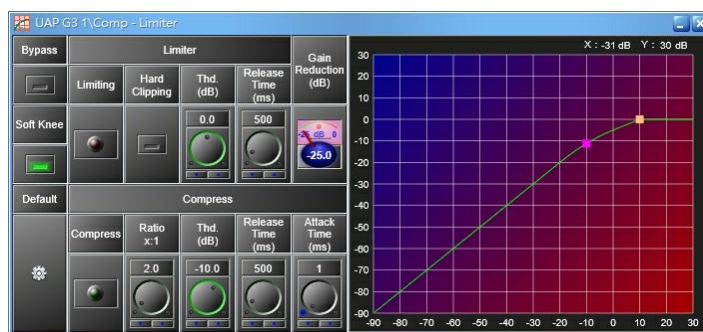
Enable to smoothly increase the audio level to reduce distortion.

- Graphical Window
  - Axis X/Y: Input/output signal level (dB).
  - Pink Control point: Threshold (dB).
  - Yellow Control Points: Threshold Range.
  - Orange Control Points Ratio.

### 6.4.3 Comp-Limiter

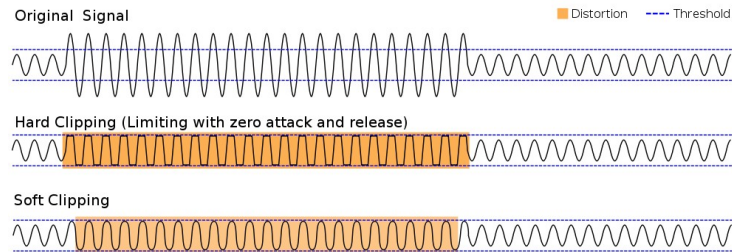
Comp-limiter is a combination of the Compressor and the Limiter Component.

Control Window



- Bypass: Disable the Comp-limiter function.
- Soft Knee: Enable/disable the “Soft Knee” mode. Read [DSP components > Compressor](#) chapter.
- Default: Click to restore all settings to factory setting.
- Limiter:
  - Limiting: Light up when the limiting is activated.
  - Hard Clipping: Enable/disable the “Hard clipping” mode. The difference between "Hard" and "Soft" clipping is that hard clipping cuts off the peaks flat, and a soft clipping is like a limiter which gives user a clipped signal with slightly rounded edges at the cut-off points, rather than the right-angle edges of a hard clipping. See the picture below.





- Thd. (dB): Activate the Limiter function when input level above this value.
- Release Time (ms): The time it takes to release gain reduction.
- Compress:
  - Compress: Light up when the compression is activated which it will compress the input level by Ratio to be the output level.
  - Ratio X:1: Set the compression ratio.
  - Thd. (dB): Activate the Compression function when input level above this value.
  - Release Time (ms): Set the time it takes to release gain reduction. The 'release phase' is the period when the compressor is increasing gain to the level determined by the ratio or to zero dB, once the level has fallen below the threshold.
  - Attack Time (ms): 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 time is the period when the compressor is decreasing gain to reach the level that is determined by the ratio.



The attack time can decide the sensitivity of compressor. The longer the Attack Time, the lower sensitivity of Compressor, and vice versa.

- Gain Reduction (dB): Indicate the current amount of gain reduction.
- Graphical Window
  - Axis-X/Y: Input/output signal level (dB).
  - Pink Control Point: Threshold (Compressor).
  - Orange Control Point: Threshold (Limiter).

#### 6.4.4 Ducker Mono/Ducker Stereo

The Ducker is a type of switch which allows user to attenuate or switch off the signal arriving in input A automatically when the chosen level (in dB) is perceived in input S.

Control Window



- Active: Light up when the Ducker is activated while the signal has been detected on input S channel (pin).
- Bypass: Disable the Ducker function.
- Thd. (dB): 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 (ms): The time between the level detection of input S and the beginning of the Ducker's operation on input A channel.



Don't set the "response time" too long, otherwise user won't hear the beginning of input S channel (as the first word of a speech).

- Attack Time (ms): The fade-in time of input S channel when the Ducker is activated.
- Hold Time (ms): The time interval between the signal of input S is below the Thd.



Set enough "Hold time" to avoid the unexpected background level during the speeches breaks.

- Release Time (ms): The fade-out time of input S channel when the Ducker is not activated.
- Audio Depth (dB): The level of input A channel when the Ducker is activated.
- Speech Gain (dB): The level of input S channel when the Ducker is activated.
- Default: Click to restore all settings to factory setting.

#### 6.4.4.1 How-to

For example, we set a system for a speech with background music playing and the speechmaker is using a standard dynamic microphone. When the speechmaker is talking, the background music must decrease its level. The component can be configured as the pictures shown as below. The microphone is connected to channel 2 of the "MI-6(A)" Input component with sensitivity set as -40dB. The microphone is linked to the input S channel of the Ducker. The music player (as a CD player) is connected to channel 1 of the "LO-6(A)" Input component then the music source is linked to the input A channel of the Ducker.



- Threshold: Set as -18dB, because less value would activate the attenuation causing the microphone to catch some unexpected noise even when the speaker is not talking.
- Response Time: Set very short, because the background music must be attenuated as soon as the speaker is talking.
- Attack and Release Times: The "fade-out" and "fade-in" on the background music. Set the attack time as soon as the speaker is talking, and set the release time in 1 second for hearing comfort.
- Hold Time: Set as 1.5(sec) which is enough to avoid the music increasing during the speech breaks.
- Audio Depth: Set as -20dB for constantly hearing the music with in a very low level during the speech (adjust the level by environment).

#### 6.4.5 Expander Mono/Expand Stereo

The Expander works in an opposite function to the Compressor component which allows to turn off the level which with quieter sound dynamically. The Expander is useful when user want to increase the dynamic range of audio. For example, when user have a noisy recording and want to reduce the volume of the quieter parts so user don't notice the noise as much. A side effect of expanders is that they change the way sounds decay and can end up silencing quieter parts of user audio that user want to keep.

Control Window





- Default: Click to restore all settings to factory setting.
- Ratio x:1: Set the expansion ratio.
- Thd. (dB): Activate the Expansion function when input level below this value.
- Thd. Range (dB): 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 (ms): Sets the time which it takes to respond to the input signal.



The Attack Time can decide the sensitivity of Expander. The longer the Attack Time, the lower sensitivity of Expander, and vice versa.

- Release Time (ms): Adjust the time to stop the gain expansion.
- Gain Reduction (dB): Indicate the current amount of gain expansion.
- Expand: Lights up in green when Expander is activated.
- Bypass: Disable the Expander function.
- Soft Knee: Enable/disable the "Soft Knee" mode, see [DSP components > Compressor](#) for details.



Enable to smoothly decrease the audio level to reduce distortion. .

- Graphical Window
  - Axis-X/Y: Input/output signal level (dB).
  - Pink Control Point: Threshold.
  - Orange Control Point: Ratio.
  - Yellow Control Point: Threshold Range.

## 6.4.6 Gate

### 6.4.6.1 Gate - Mono/Stereo

The Gate allows to close the audio channel when the input signal is below the threshold. The mono and stereo module are available.

Control Window

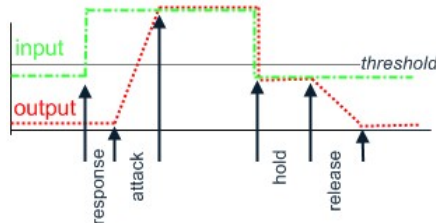


Gate - Mono



Gate - Stereo

- Mute: Mute the output of Gate component.
- Bypass: Bypass the input signal to the output of Gate component.
- Thd. (dB): Set the threshold lower than input signal, then the Gate will be opened and the input signal will pass.
- Response Time (ms): During the time period, if the input signal is continuously great then Thd., the gate will open.
- Attack Time (ms): The fade-in time of the signal when Gate is closed.
- Hold Time (ms): The time between the level's detection and the beginning of the Gate opening.
- Release Time (ms): The fade-out time of signal when Gate is opened.

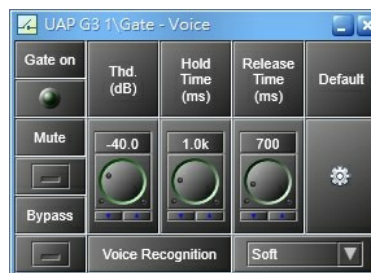


- Depth (dB): Attenuate level when Gate is closed.
- Gate on: Light up in green when Gate is opened.
- Default: Click to restore all settings to factory setting.
- Left/Right Gain (dB): Set the level of the signal connected to the input L channel/input R channel (Gate-Stereo only).
- Left/Right Depth (dB): Attenuate level when the Gate is closed (Gate-Stereo only).

#### 6.4.6.2 Gate - Voice

The Gate-Voice is an active detection algorithm which opens only if a human voice is detected. For example, if user knock on a table, this noise will be stopped by Gate-Voice, but when user speak the Gate-Voice will allow the human voice to open the Gate. If there is a noise and a human voice present, the Gate-Voice will open and both noise and voice will pass through.

Control Window



- Gate on: Light up when the Gate-Voice component is opened.
- Mute: Mute the output of Gate-Voice component.
- Bypass: Disable the Gate-Voice component.

- Thd. (dB): Set the threshold to open the Gate-Voice (human voice only).
- Hold Time (ms): The time to close the output when no more human speech is detected continually.
- Release Time (ms): The fade-out time of the signal to decrease the signal after the hold time.
- Default: Click to restore all settings to factory setting.
- Voice Recognition: The level of sensitivity for human voice.

#### 6.4.6.3 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 opened and the signal on the Input(I) will go to the output.

Control Window

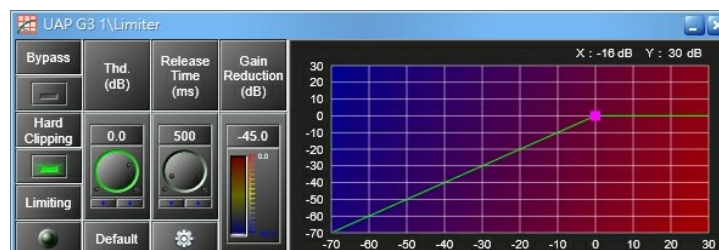


- Sidechain Gain (dB): Set the volume of the signal connected in the input S channel.
- Input Gain (dB): Set the volume of the signal connected in the input I channel.
- Thd. (dB): Set the threshold lower than input signal, then the Gate will be opened and the input signal will pass.
- Response Time (ms): During the time period, if the input signal is continuously great then Thd., the gate will open.
- Attack time (ms): The fade-in time of signal when the Gate is opened.
- Hold Time (ms): The time to close the output when input S channel is continually below the threshold.
- Release Time (ms): The fade-out time of signal when the Gate is closed.
- Depth (dB): Attenuate the level when the Gate is closed.
- Mute: Mute the Gate with Sidechain component.
- Bypass: Disable the Gate with Sidechain component.
- Gate on: Light up when the Gate is opened.
- Default: Click to restore all settings to factory setting.

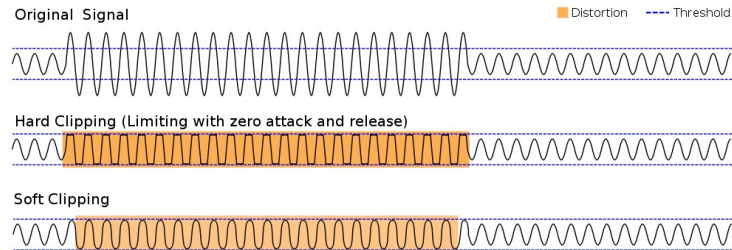
#### 6.4.7 Limiter Mono/Limiter Stereo

Offer the limitation of volume.

Control Window



- Bypass: Bypass the input signal to the output of Limiter component.
- Hard Clipping: Enable/disable the "Hard clipping" mode. The difference between "Hard" and "Soft" clipping is that hard clipping cuts off the peaks flat, and a soft clipping is like a limiter which gives user a clipped signal with slightly rounded edges at the cut-off points, rather than the right-angle edges of a hard clipping. See the picture below.



- Limiting: Light up when the Limiter is activated.
- Thd. (dB): Activate the Limiter function when input level above this value.
- Release Time (ms): Set the fade-out time it takes to release the Gain Reduction (dB).
- Gain Reduction (dB): Display the current amount of gain reduction.
- Default: Click to restore all settings to factory setting.
- Graphical Window
  - Axis-X/Y: Input/output signal level (dB).
  - Pink Control Point: Threshold.

## 6.5 Equalizer

### 6.5.1 GEQ Mono/GEQ Stereo

GEQ (Graphic Equalizer) is the input signal which allows users to set its own gain and bandwidth, this helps to adjust to compensate for the room's acoustics. Such compensation can also be applied to tweak the sound quality of a recording studio in addition to its use in live sound reinforcement systems.

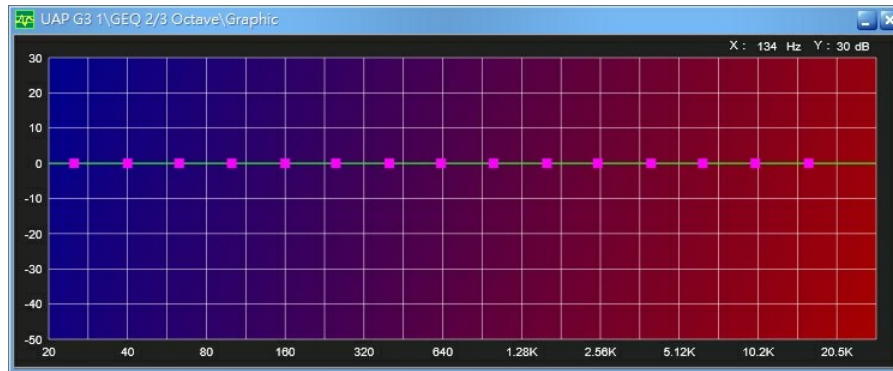
There are three types of GEQ: 1 Octave, 2/3 Octave and 1/3 Octave. 1/3 Octave is spoken informally as "third-octave EQ" because the center frequency of its filters are spaced to one third of an octave apart with three filters to an octave.

Control Window



GEQ mono 2/3 Octave

- All Bypass: Disable all the EQ frequency bands.
- Band: The pre-determined (fixed) center frequencies.
- Bypass: Disable the selected band.
- Gain (dB): Set the gain of the selected frequency band.
- Freq. (Hz): The central frequency of band.
- Graphical Window

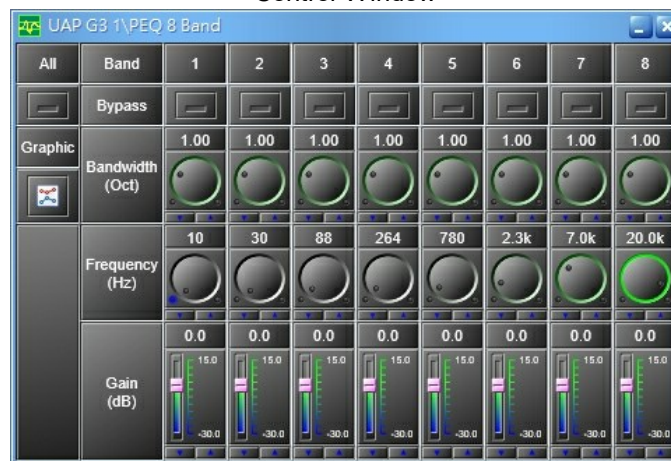


- Axis-X: Frequency of output signal (Hz).
- Axis-Y: Gain of output signal (dB).
- Purple Control Point: Gain (dB).

## 6.5.2 PEQ Mono/PEQ Stereo

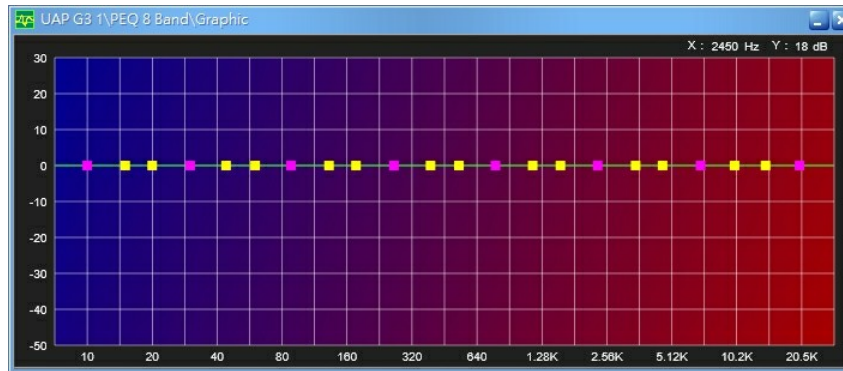
PEQ (Parametric Equalizer) is a multi-band variable equalizers which controls the three primary parameters: amplitude, center frequency and bandwidth, making more precise adjustments to sound than other equalizers. The amplitude of each band can be controlled, the center frequency can be shifted, and bandwidth ("Q") can be widened or narrowed.

Control Window



PEQ Mono 8 Band

- Bypass All: Disable all the EQ (frequency bands).
- Bypass: Disable the selected frequency band.
- Bandwidth (Oct): Set the width around the frequency (Q factor) of selected frequency band.
- Frequency (Hz): Set the frequency of a band.
- Gain (dB): Set the gain (attenuate or increase the selected frequency).
- Graphical Window

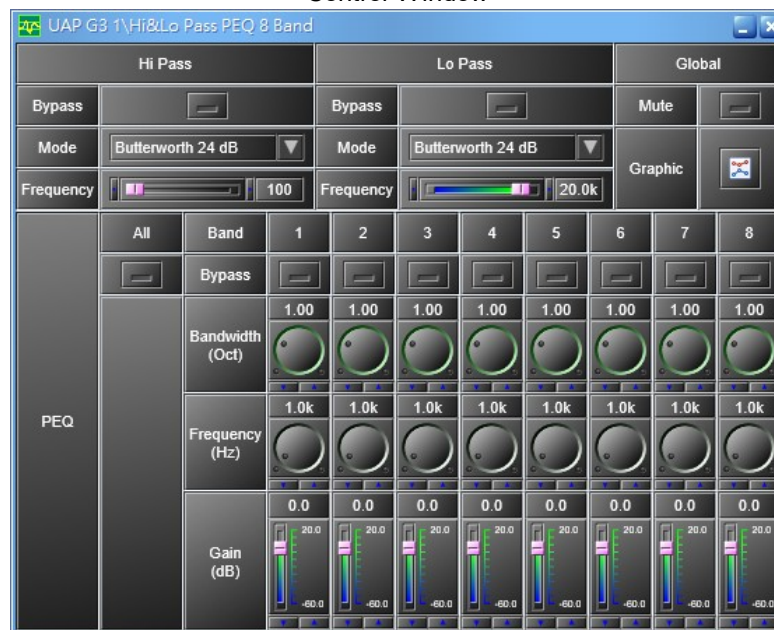


- Axis-X: Frequency of output signal (Hz).
- Axis-Y: Gain of output signal (dB).
- Purple Control Point: Gain (vertical direction) and Frequency (horizontal direction).
- Yellow Control Point: Bandwidth.

### 6.5.3 Hi&Lo Pass PEQ

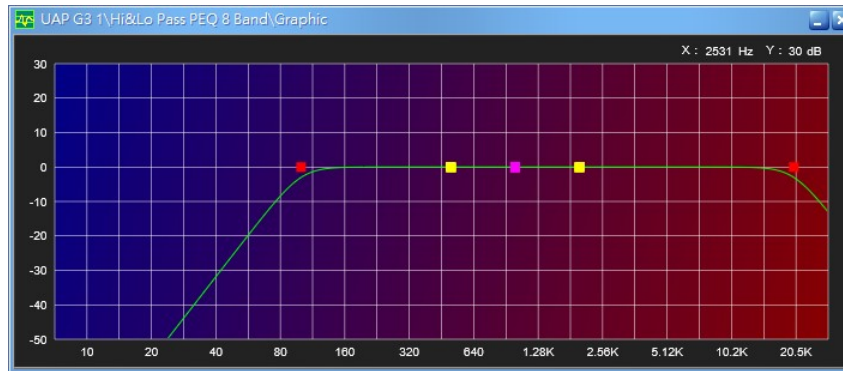
Hi&Lo Pass PEQ is a multi-band variable equalizer component that Hi&Lo pass filter combines with PEQ.

Control Window



- Hi&Lo Pass
  - Bypass: Disable the selected frequency band.
  - Mode: The type and of filtering (Linkwitz-Rilet, Butterworth, Bessel).
  - Frequency (Hz): Set the frequency of a band.
  - Mute (dB): Mute this DSP parameter.
- Graphical Window



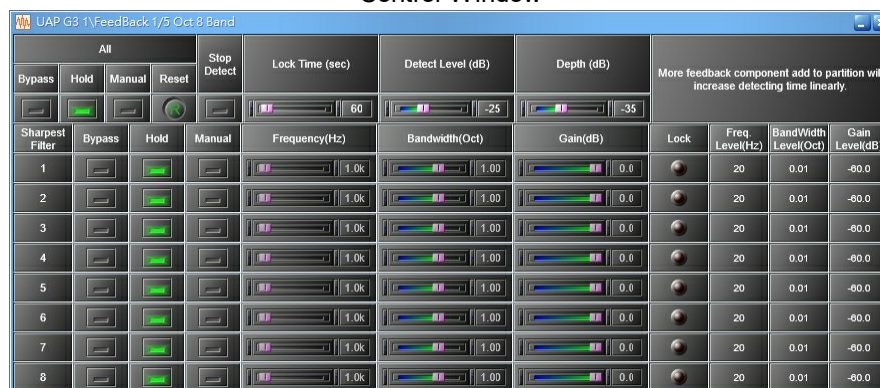


- Axis-X: Frequency of output signal (Hz).
- Axis-Y: Gain of output signal (dB).
- Purple Control Point: Gain (vertical direction) and Frequency (horizontal direction) for PEQ.
- Yellow Control Point: Bandwidth.
- Red Control Point: Frequency (horizontal direction) for Hi&Lo Pass filter.
- PEQ
  - Bypass All: Disable all the EQ (frequency bands).
  - Bypass: Disable the selected frequency band.
  - Bandwidth (Oct): Set the width around the frequency (Q factor) of selected frequency band.
  - Frequency (Hz): Set the frequency of a band.
  - Gain (dB): Set the gain (attenuate or increase the selected frequency).

## 6.6 Feedback

The Feedback analyzes and detects the feedback signal and attenuates the specific frequency. There are 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 bands). The more of the feedback bands have, the better of the feedback frequency will be detected, but it will increase and consume the loading of DSP power of UAP G3/ G3H processor at the same time.

Control Window



Feedback 1/5 Oct 8 band

- (All) Bypass: Disable (all) the Feedback operation.



If the All Bypass button is enabled, all the captured values will be erased.

- (All) Hold: When feedback is detected, a frequency will lock the component to hold this setting. Enable this button if user don't want to release all the detected frequency after the Lock time.



If the portable/wireless microphones were used, this setting will be recommended to close for dynamically catching the filters.

- (All) Manual: Enable (all) the manual setting (s) with Frequency, Bandwidth and Gain. This will disable the automatic detection.
- All Reset: Reset all parameter values.
- Stop Detect: Stop detecting feedback.
- Lock Time (sec): 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'.

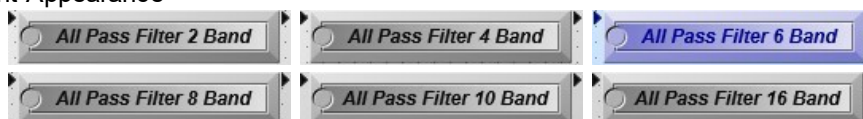
- Detect Level (dB): The target level which will consider as the Feedback source.
- Depth (dB): The maximum gain reduction for Feedback filter.
- Frequency (Hz)/Bandwidth (Oct)/Gain (dB): Manually set the Frequency/Bandwidth/attenuation of notch filter for attenuating the feedback.
- Lock LED: Display if the feedback killers channel has detected and erased the frequencies which are causing the feedback.
- Frequency/Bandwidth/Gain Level: Automatically display the locked frequency/bandwidth of the notch filter/attenuation of frequency.

## 6.7 Filter

### 6.7.1 All Pass Filter

An All Pass Filter is a signal processing filter that passes all frequencies equally but changes the phase relationship between various frequencies. It performs this by varying its propagation delay with frequency.

❖ Component Appearance



❖ Control window

Here takes GEQ mono 2/3 Octave as example.



All Pass Filter 8 band

❖ Element Properties

Name	Initial	Minimum	Maximum	Precision	Unit
All	Off	-	-	-	-
Bypass	On	-	-	-	-
Bandwidth	1.00	0.01	4.00	0.01	Oct
Frequency	1.0K	20	20000	1	Hz

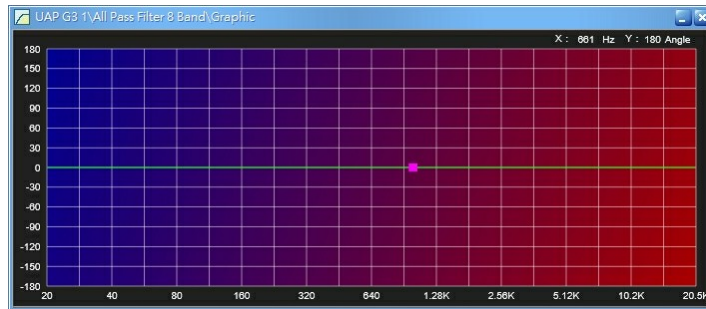
❖ Element Description

- All: Disables this function.



- Bypass: Disables the selected filter.
- Bandwidth: The transition bandwidth.
- Frequency: The frequency at which the phase shift crosses  $90^\circ$ .

❖ Graphical Window

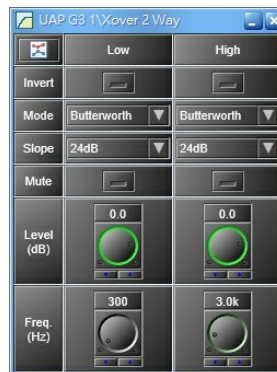


- Axis  
X: Frequency of output signal(Hz)  
Y: Gain of output signal(dB)
- Control Points  
Purple: Frequency.  
Yellow: Bandwidth.

## 6.7.2 Crossover Mono

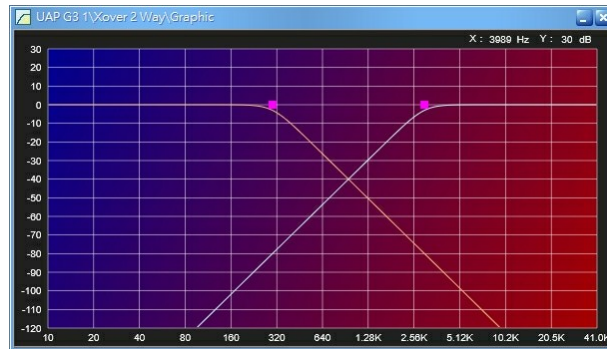
The Crossovers will split the audio signal into separate frequency bands that can be separately routed to other DSP components for those bands. A 2-way crossover component consists of a low-pass and a high-pass filter. A 3-way crossover is in a combination of low-pass, band-pass and high-pass filters (LPF, BPF and HPF respectively).

Control Window



Xover 2 way Mono

- Invert: Invert the phase of the signal.
- Mode: The type of filtering (Linkwitz-Riley, Butterworth, Bessel).
- Slope: The slope of attenuation.
- Mute: Mute the output of Crossovers component.
- Level (dB): The gain of signal.
- Freq. (Hz): The cutoff frequency.
- Graphical Window



- Axis-X: Frequency of output signal (Hz).
- Axis-Y: Level of input signal (dB).
- Purple Control Point: frequency.

### 6.7.3 Crossover Stereo

Enter topic text here.

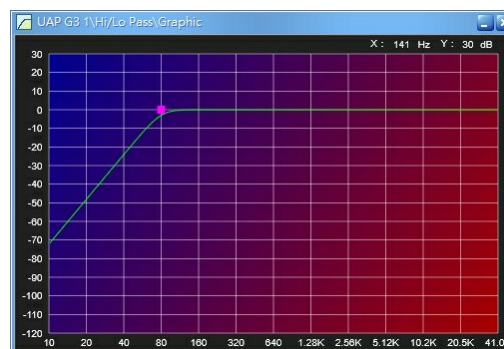
#### 6.7.3.1 Hi/Lo Pass Filter

Allow to pass the high/low frequency and attenuate the frequency lower/higher than its cutoff frequency.

Control Window



- Mode: The type of filtering (Linkwitz-Rilet, Butterworth, Bessel).
- Type: Low or high pass.
- Bypass: Bypass the input signal to the output of Hi/Lo Pass component.
- Mute: Mute the output of Hi/Lo Pass component.
- Level (dB): The gain of signal.
- Freq. (Hz): The frequency of cut.
- Graphical Window



- Axis-X: Frequency of output signal (Hz).
- Axis-Y: Level of input signal (dB).
- Purple Control Point: frequency.

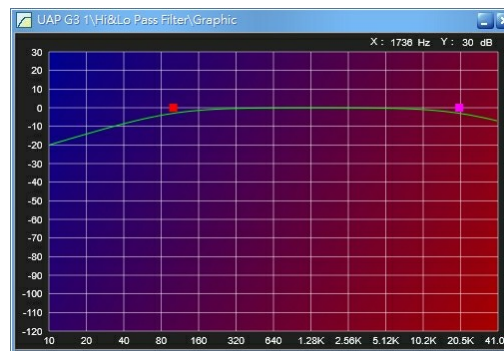
### 6.7.3.2 Hi&Lo Pass Filter

Allow to pass the high/low frequency and attenuate the specific frequency lower/higher than its cutoff frequency.

Control Window



- Mode: The type of filtering.
- Bypass: Bypass the input signal to the output of Hi/Lo Pass Both component.
- Mute: Mute the output of Hi/Lo Pass Both component.
- Level (dB): The gain of signal.
- Low Freq (Hz): Set the Low cutoff frequency.
- High Freq (Hz): Set the High cutoff frequency.
- Graphical Window



- Axis-X: Frequency of output signal (Hz).
- Axis-Y: Level of input signal (dB).
- Purple Control Point: Low frequency.
- Red Control Point: High frequency.

### 6.7.3.3 Notch Fliter

In signal processing, a band-stop filter or band-rejection filter is a filter that passes most frequencies unaltered, but attenuates those in a specific range to very low levels. It is the opposite of a band-pass filter. A notch filter is a band-stop filter with a narrow stop band (high Q factor).

❖ Component Appearance



❖ Control window



❖ Element Properties

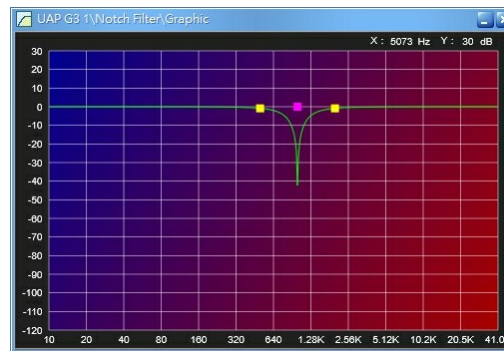
Name	Initial	Minimum	Maximum	Precision	Unit
Mode	Butterworth	-	-	-	-

Name	Initial	Minimum	Maximum	Precision	Unit
Slope	12dB	-	-	-	-
Bypass	Off	-	-	-	-
Mute	Off	-	-	-	-
Bandwidth	1.00	0.01	2.00	0.01	Oct
Level	0.0	-90.0	20.0	0.1	dB
Freq.	160	10	22000	1	Hz

#### ❖ Element Description

- Mode: The type of filtering.
- Slope: The slope of attenuation, the higher slope means the drop speed levels are faster.
- Bypass: To enable/disable this function.
- Mute: Mutes the component.
- Bandwidth: The difference between the upper and lower cut of frequencies in a contiguous set of frequency.
- Level: The gain of component.
- Freq.: The center frequency to be cut.

#### ❖ Graphical Window



- Axis  
X: Frequency of output signal (Hz).  
Y: Level of input signal (dB).
- Control Points  
Purple: Frequency (Horizontal) and Level (Vertical).  
Yellow: Bandwidth.

#### 6.7.3.4 Shelving Filter

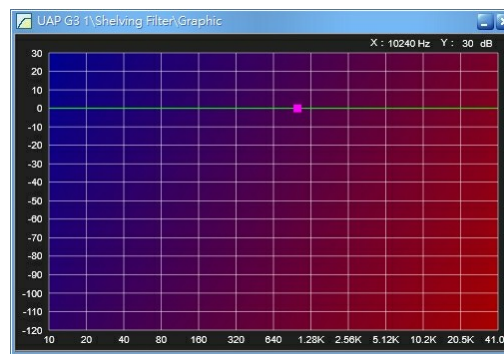
Shelving Filter implements a first order response and provides an adjustable boost or cut to the frequency above/lower than a certain point.

Control Window



- Mode: The type of filtering (high pass or low pass).
- Bypass: Bypass the input signal to the output of Shelving Filter component.
- Level (dB): The gain of the filter module.
- Freq. (Hz): The frequency of cut.

- Graphical Window



- Axis-X: Frequency of output signal (Hz).
- Axis-Y: Level of input signal (dB).
- Purple Control Point: frequency (horizontal) and level (vertical).

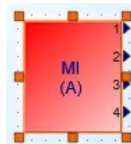
## 6.8 Input

### 6.8.2 MI

### 6.8.2 MI

The MI component allows to control and monitor the parameters of 4CH Mic/Line audio inputs signal.

Component Appearance



Control Window



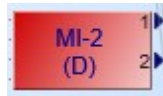
- Bypass: Bypass the input signal to the output of MI component.
- Mute: Mute the audio channel.
- Sensitivity: Set the input gain of the channel.
- Phantom Power: Apply 48 VDC phantom power to this channel input when using with the XLR condenser microphone.
- RTO: An input channel 'Routed To Output (s)'.
- Overload: Light up if the signal of an input channel is bigger than Overload Thd.
- Volume (dB): 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 (dB): Set the signal output level of channel.

- Overload Thd. (dB): A threshold value to determine the signal of channel is overloaded or not.

### 6.8.3 MI-2

The MI-2 component allows to control and monitor the setting of the 2CH analog mic/line audio inputs signal.

Component Appearance



Control Window



### 6.8.4 LI

The LI component allows to control and monitor the parameters of 4CH Line audio inputs signal.

Component Appearance



Control Window



## 6.9 Inverter

This component changes the signal phase of 180 degrees.

Control Window



- Mute: Mute the component.
- Invert: Activate the inverter.

## 6.10 Level Control

Enter topic text here. To adjust the volume level of the input signal.  
Control Window



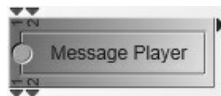
- Bypass: Bypass the input signal to the output of Level Controller component.
- Mute: Mute the output of Level Controller component.
- Input Level: Adjust the level of an input channel.
- Output Level: Adjust the output level of CH1~CH16.

## 6.11 Message

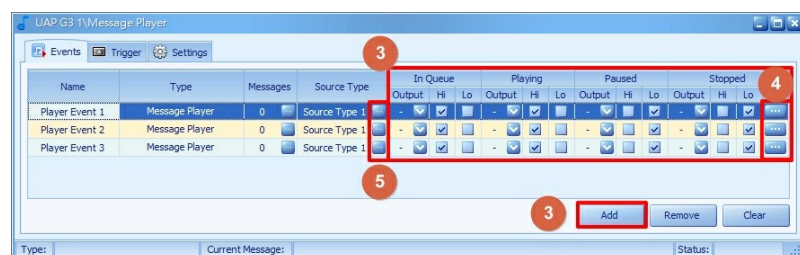
### 6.11.1 Message Player

Use this component to play the message files. Multiple message sources can be put together as an event. If there is more than one trigger event in the same message player component, the event with the highest priority will play the message.

Component  
Appearance

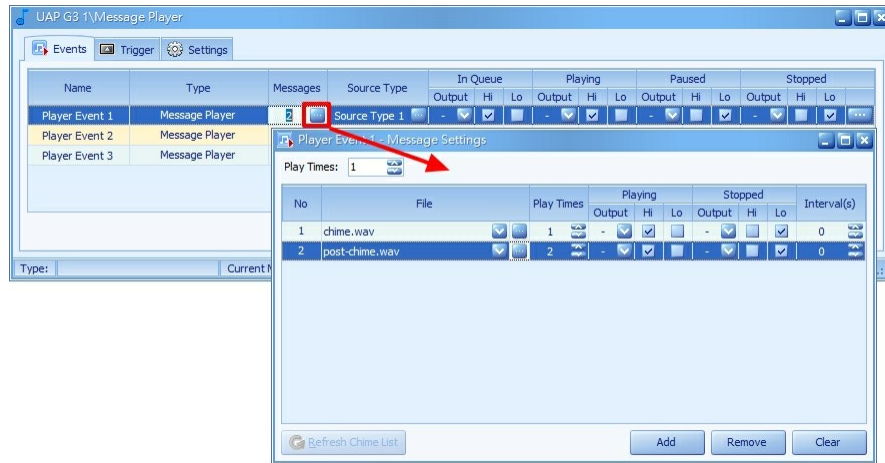


Control Window

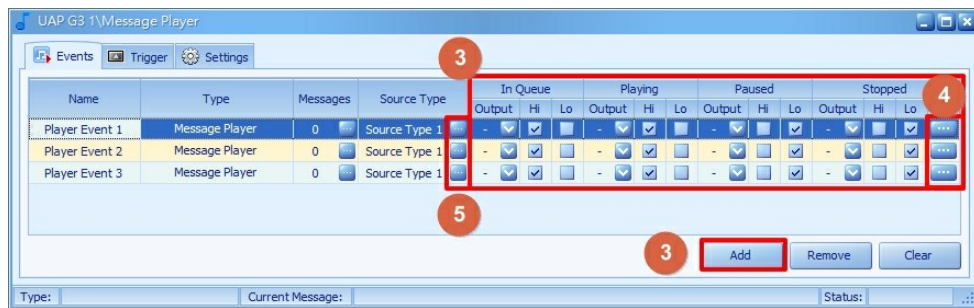


- Name: The name of playing event.
- Type:
  - Message Player: Select either a message file from UAP G3/ G3H hardware or from external USB driver as the play source.
  - Path Player: Select a message folder from external USB driver as the play source.
- Messages: Set the total number of message files in the event. Click button and add/edit the message files in [Message Settings] window. See the picture as below,





The Path Player type does not need to add/edit/remove the message files due to it will play the audio source from a message folder, see the picture as below,

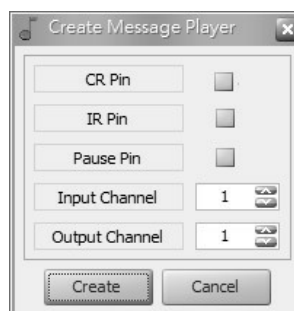


- **Priority:** The priority of the message event. The smaller the value is, the higher the priority is. The priority range is 1~99.
- **In Queue:** Transmit Hi/Lo signal to the selected output channel when the event is waiting to play messages.
- **Playing:** Transmit Hi/Lo signal to the selected output channel when the event is playing messages.
- **Paused:** Transmit Hi/Lo signal to the selected output channel when the event is paused to play messages.
- **Stopped:** Transmit Hi/Lo signal to the selected output channel when the event is stopped to play messages.
- **Play Times:** Set the interval of playing times to play the event.

#### 6.11.1.1 How-To

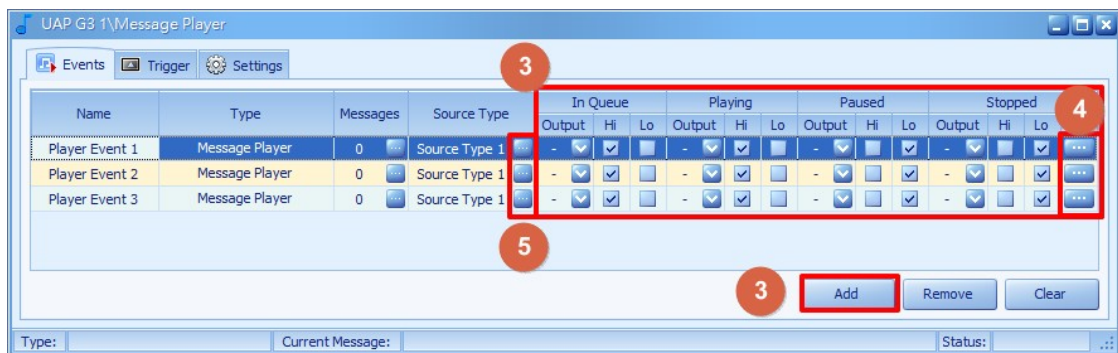
##### ❖ How to Use

1. Drag and drop the Message Player component and set the pins of this components to the working area.

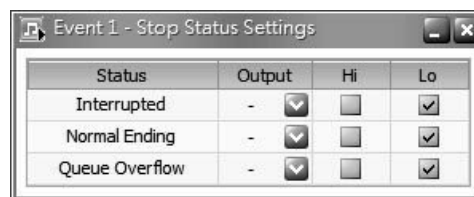




- CR Pin: Cancel the event for triggering messages and clear all of the logic signals.
  - IR Pin: Interrupt. It will interrupt the messages and not play the messages.
  - Pause Pin (P): It is used for stopping messages or continue the messages, it will restart exactly where the message is paused.
  - Input Channel: The number of trigger channels.
  - Output Channel: The number of output channels of playing message, it will also display the status of the playing message.
- Double click the Message Player component to open its control window.
  - Click 'Add' button to create a new event. Then, set the Hi/Lo signal and output channel for different status of event.



- Click button to open a pop-up a window, providing a method to stop playing the message.



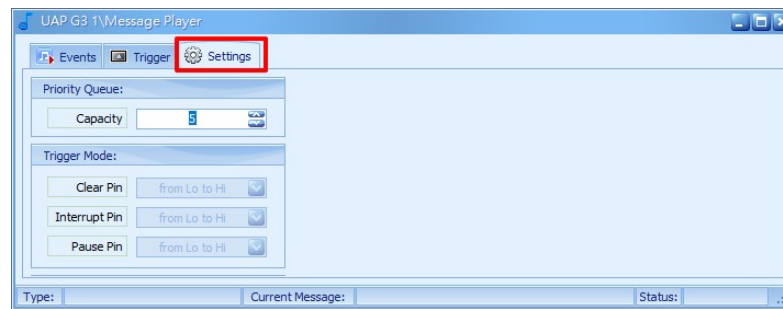
- Interrupted: Transmit Hi/Lo signal to the selected output channel when the event is interrupted.
- Normal Ending: Transmit Hi/Lo signal to the selected output channel when the event has completely played messages.
- Queue Overflow: Transmit Hi/Lo signal to the selected output channel when the messages in waiting queue (priority queue) are fully occupied.

The max. number of message queue can be set in Settings tab > Priority Queue.

- Click button and edits the message files intended to play with the above settings.
- Click button on File grid > Message Setting window to add or edit the message intended to play from PC/Laptop.



- In the Settings tab, it enables 3 types of pin to be set a trigger mode and the capacity (priority queue) which means the maximum number of event in waiting queue (priority queue).



- Priority queue: If multiple message events are waiting to be played at the same time, the event with higher priority will proceed the message playing action, and the rest of message event will be placed at priority queue. Set the max. number of recording events in waiting queue (max. 5).
- Clear (CR) Pin: Cancel the event for triggering messages and clear all of the logic signals.
- Interrupt (IR) Pin: It will interrupt the messages and not play the messages.
- Pause (P) Pin: It is used for stopping messages or continue the messages, it will restart exactly where the message is paused.
- Permanent event: Select a event as the permanent playing event, this event is usually used for background music, the priority of this event will be the lowest. When other events are playing the messages, the permanent event will be stopped, once the rest of playing events have ended, it will continue to play again.

## 6.12 Mixer

### 6.12.1 Gain Sharing Mixer

The Gain Sharing Mixer is able to mix multiple input signals into one signal output automatically. This component attenuates all inputs by dividing the sum of all volume level to the volume level of each input. The activation of the channel(s) shall be done automatically by a signal and the priority. It adjusts the signal output level on depending on the numbers of activated input channels. This function can be worked in conference applications or houses of workshop where the mixing has to be executed automatically.

Control Window



Gain Sharing Mixer 8x1

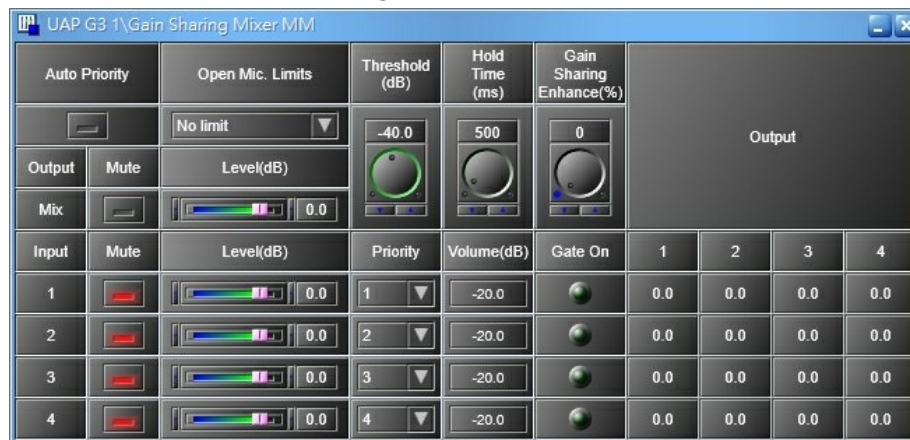
- Open Mic. Limits: Set the number of the open (activated) microphone for this component.

- Output Mute: Mute or unmute the mixed output signal.
- Output Level: The volume level of the channel's output signal.
- Mute: Mute or unmute the selected channel.
- Level: Increase or decrease the input level of channel.
- Thd. (dB): Set the threshold level to activate the channel when the level of mic input is above this value.
- Hold Time (ms): The time to keep the gate open after no audio input is continually detected.
- Gain Sharing Enhance %: The difference of each microphone's gain level will be bigger. In other words, the mic in bigger volume will almost remain as its original volume; and the mic in small volume will relatively become less small.
- Priority: Set the priority of mic input if there's too many inputs are activated, then the lower priority of mic will not be mixed if the number of total mic is more than the number user set on [Open Mic. Limits]. 1 is the highest.
- Volume (dB): Display the current volume of mic input.
- Gate On: Light on when the mic is activated.

### 6.12.2 Gain Sharing Mixer MM

This component combines the functions of [Gain Sharing Mixer](#) and [Matrix Mixer](#). The activation of the channel(s) shall be done automatically by a signal and the priority. It adjusts the signal output level depending on the numbers of activated input channels. It also allows to adjust the volume of the several inputs which are mixed together.

Control Window



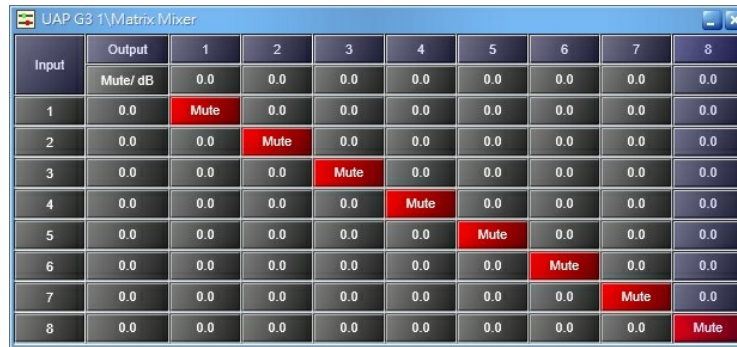
Gain Sharing Mixer MM 4x5

All the settings on Gain Sharing Mixer MM component is identical to a [Gain Sharing Mixer](#) and [Matrix Mixer](#) component.

### 6.12.3 Matrix Mixer

The Matrix Mixer offers two main functionalities: First one is mixing, it sums signals together; Second one is volume adjustment, it allows the inputs, outputs and several inputs which are mixed together and adjust the volume level. 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.

Control Window

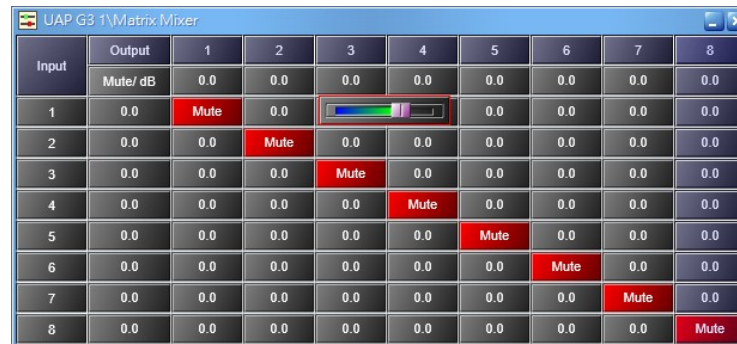


Matrix Mixer 8x8

- Input Mute/dB: Mute the channel input or sets the master input level of the channel.
- Output Mute/dB: Mute the channel output or sets the master output channel of the channel.

#### ❖ How to Use

1. One click to mute the channel.
2. Click and hold one of the button (channel), the button will change the color. Then release the button to show the volume bar for adjustment.



### 6.12.4 Standard Mixer (Stereo/Mono Mixer)

The Matrix Mixer is similar to the Standard Mixer (Stereo/Mono Mixer). The main difference is that Standard Mixer (Stereo/Mono Mixer) has no ability to mix individual level for each output channel, so the component is used for simple routing purposes primarily.

Control Window



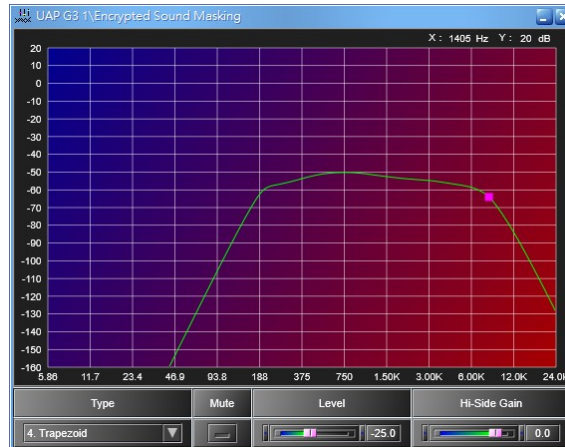
- Input Mute: Mute the channel input.
- Input Level: Set the master input level of the channel.
- Output Mute: Mute the channel output.
- Output Level: Set the master output channel of the channel.
- Routing: Turn on/off the input on the particular output channel.

## 6.13 Noise Generator

### 6.13.1 Encrypted Sound Masking

Encrypted Sound Masking can help make user workplace more acoustically comfortable. It is the process of adding a low/high level and unobtrusive background sound to an environment in order to reduce the intelligibility of human speech for protecting private speech privacy and reduce noise distractions in an open workplace/environment.

Control Window



- Type: the NC (Noise Criterion) curves can be determined by plotting the octave band levels for a given noise spectrum.
  - NC40 (Noise Criterion 40): The NC40 is a modified version of the standard NC40 curve, which a range of frequencies will be cut off at the end of the curve.
  - NC40\_LB: Use NC40 type as the norm, and increase the low frequency curve.
  - NC40\_HC: Use NC40 type as the norm, and cut the high frequency curve at the end.
  - Trapezoid: Sound masking with a flat and balance curve.
  - Noise Criterion Balanced: An acceptable curve of the background or masking sound.
- Mute: Mute the component.
- Level: Adjust the output level.
- Hi-Side gain: Adjust the high frequency gain at the end of the curve.

### 6.13.2 Pink Noise

Pink noise or  $1/f$  noise is a signal with a frequency spectrum which the power spectral density is inversely proportional to the frequency. In pink noise, each octave carries an equal amount of noise power.

Control Window



- Mute: Mute the component.
- Level: The level of the pink noise.

### 6.13.3 Tone Generator

Generate either a tone (single frequency) or a sweep sequence (between the two fixed frequencies and in a defined interval of time).

Control Window



- Mute: Mute the component.
- Sweep: Activate the Sweep mode (sweep of frequency).
- Tone: Activate the Tone mode (single frequency)
- Level: The level of signal.
- Tone Freq.: If the Tone mode is activated, it will select the frequency.
- Start/Stop Freq.: The minimum and maximum frequency for Sweep mode.
- Inc. Time: The time between the frequencies which changes in the Sweep mode.
- Sweep Type: Choose the interval between the frequency of min. and max. (1 Octave, 1/3 Octave, ..., etc.).

### 6.13.4 White Noise

This component generates a White noise. The White noise is a random signal with a flat power spectral density. In other words, the signal contains equal power within a fixed bandwidth at any center frequency. For example, it can be used for setuping 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.

Control Window



- Mute: Mute the component.
- Level: The level of the white noise.

## 6.14 Output

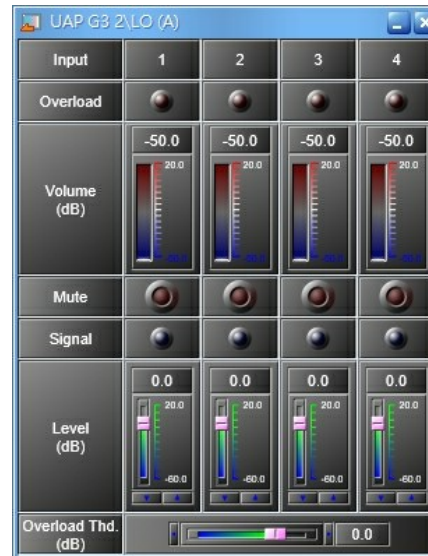
### 6.14.1 LO

The LO component allows to control and monitor the setting of the 4CH outputs signal.

Component Appearance

Control Window



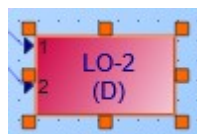


- Overload: Indicate the channel level above the chosen Overload Threshold (dB).
- Volume (dB): The meter shows the channel level.
- Mute: Mute the output signal.
- Signal: Light up when the signal is above -30dB level.
- Level (dB): The signal output level of the channel.
- Overload Thd. (dB): A threshold value to determine the signal of a channel is overloaded or not.

## 6.14.2 LO-2

The LO-2 component allows to control and monitor the setting of the 2 CH analog outputs signal.

Component Appearance



Control Window



- Overload: Indicate the channel level above the chosen Overload Threshold (dB).
- Volume (dB): The meter shows the channel level.
- Mute: Mute the output signal.
- Signal: Light up when the signal is above -30dB level.
- Level (dB): The signal output level of the channel.
- Overload Thd. (dB): A threshold value to determine the signal of a channel is overloaded or not.

## 6.15 Page Control

### 6.15.1 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. Two input channels mixed to an output is not allowed (even if they have the same priority). In this case, the busy LED of the lower channel number will light up and these output channels will be routed by the input channel which has higher priority. Each output works separately. On each output, only the channels with the gate ON and with the highest priority will be routed.

Control Window



- Thd. (dB): Set the threshold level if the input signal is continually greater than the threshold and response time at VOX activation.
- Response Time: The time if the input signal is continually greater than threshold and response time at VOX activation, and the gate will open.
- Hold Time: The time to close the gate if the input signal is continually below the threshold.
- Activation: The activation type of routing.
  - Fixed: Activate the routing for the selected output channel.
  - Vox: Activate the routing when the input audio channel is above the threshold level.
  - Contact: Activate the routing by a triggering action via an external device such as push button or on UAP G3/ G3H Designer software. And use the [TTL In] button to activate/deactivate the action.
  - Vox+Contact: Activate the routing when both Vox and Contact modes are enable.
- TTL In: Activate the routing with a logical input or from UAP G3/ G3H Designer software, this function is worked with Contact Activation.
- Priority: The smaller the number is, the higher the priority is.
- Gate On LED: Light up when the gate is opened.
- Solo: Route this input only.
- Busy LED: Light up if the gate of channel is open, but the channel is not routed.



The channel will not routed if the other channels with higher priority is already activated.

- Output: Click the desired button of the output where the input will be routed to.

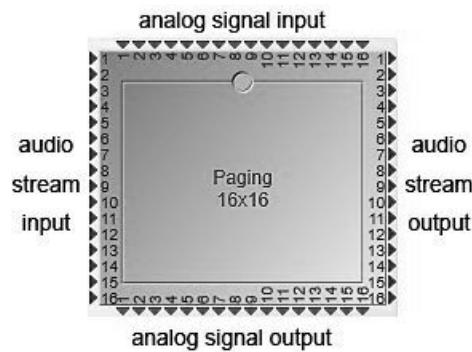
### 6.15.2 Paging

The Paging component routes the input source signal to zones by using priority arbitration. The pins at the left side represent the paging sources and the pins at right side are refers to paging zones. The pins on top side are able to control the paging activity and the pins on the bottom output logic signals to tell the status of paging activity. Each source can specify the intended paging zones. However, It does not always succeed when a source is requested for paging due to the zones may



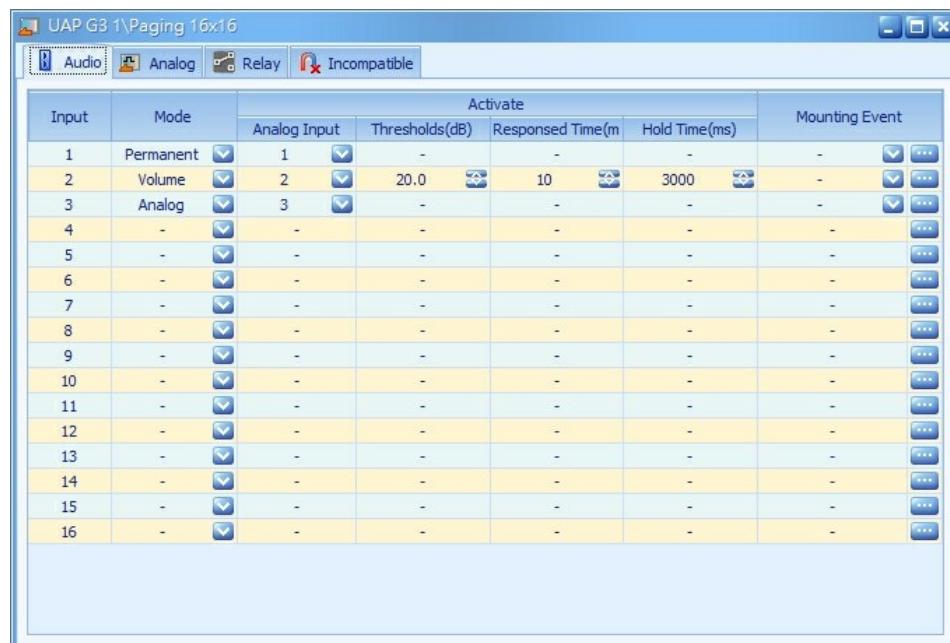
already be occupied by another source.

#### ❖ Component Appearance



#### ❖ Control Window

##### • Audio Tab




##### ○ Mode: 3 kinds of modes to trigger the paging action.

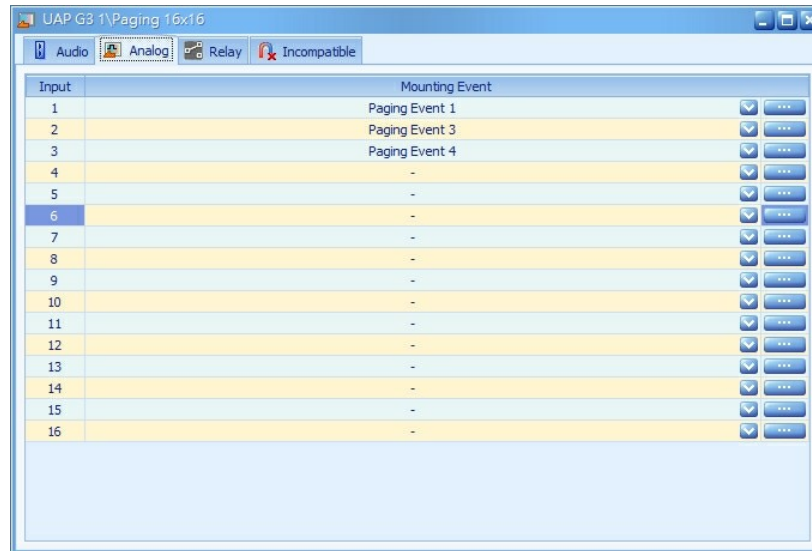
- Permanent: The paging source is always requested for paging. It's used when continues routing the audio to zones such as background music.
- Volume: The channel which requests for paging will be activated if the level signal is continuously higher than the 'Threshold' and over the 'Response Time'.
- Logic: When receives the analog signal, the channel which requests for paging will be activated depending on the logic signal of an input. For example, if a logic value is > 0.5, it indicates the triggering is from Low to High and it will request a paging. On the other hand, if the value is <0.5, it indicates the triggering from High to Low, it releases a paging request. The settings allow user to put multiple channels to perform a logic operation AND/OR to determine the paging activities.


##### ○ Analog Input: The input channel to trigger on paging event.

##### ○ Threshold (dB): Set the threshold level above which the paging request will be activated automatically and route the signal (only for Volume Mode).

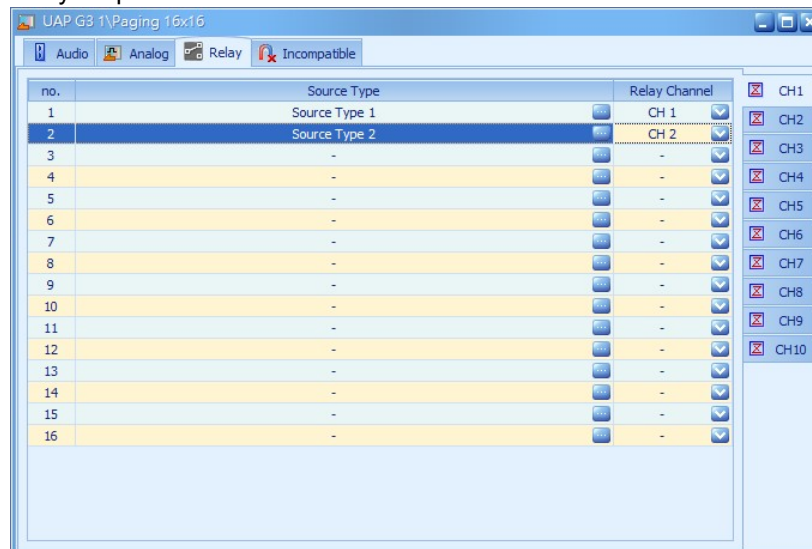
##### ○ Response: Set the time between the level's detection and the beginning of the paging (only for Volume Mode).

- Hold Time (ms): Set the time between the end level's detection and the end of the paging (only for Volume Mode).
- Mounting Event: Select a paging event for the zone selection.
  - : Assign a paging event. The paging source, zones, codes, priority, etc. of each event can be adjusted.
- Analog Tab



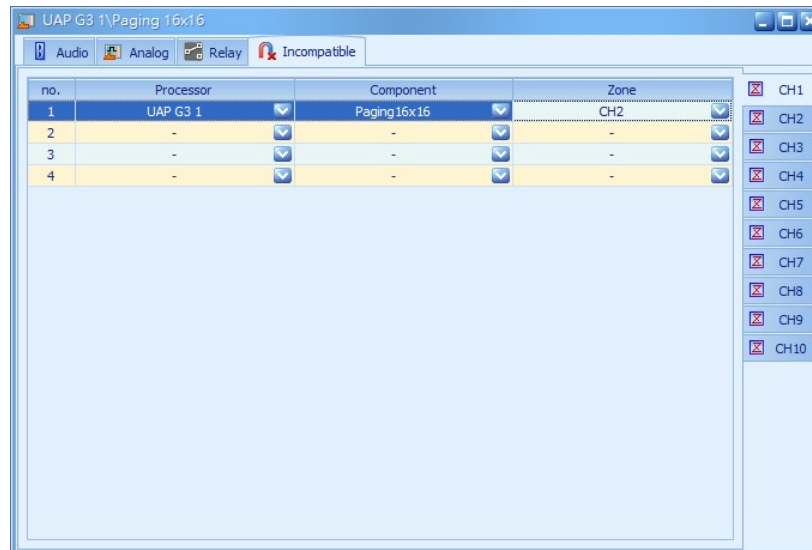
- Mounting Event: Assign a paging event. Each event can adjust its paging source, zones, codes, priority, etc.
- : Link to the setting window of the chosen paging event.
- Relay Tab:
 

It is able to output a logical High to a specific output channel in the condition of a zone is occupied by a specific source.



- Source type: Define the type of the paging source. If there's a zone paging now, this zone will need to know where is its paging source from.
- Analog output: Select a logic analog output channel for the source.
- Incompatible Tab:
 

If the paging zones do not wish the sound from other paging zones which are close to the current paging zone disturb or cover its own paging sound. Then user can enable the Incompatible function to avoid this kind of situation.



- Processor: Select a UAP G3/ G3H processor.
- Paging component: Select a Network Paging component.
- CH: Select an output channel intended to mute.

## 6.16 Peak/RMS Meter

This component displays and monitor 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 for measuring the complex waveforms especially for non-repeating signals like noises. The second is the Peak approach.

Control Window



Peak/RMS Meter 8CH

- Indefinite: Enable to update the volume only if volume is greater than previous volume .
- Measure type: The type of measuring.
- Hold time: The result of measurement.
- Component: Select the component that the user would like to monitor.
- Direction: [Input]/[Output]
- Channel: Choose the channel of the monitored target.
- Confirm: Light up when the audio is valid.
- Source Type: Display the name of the detected source type that the user defined..

- Volume: Measure the value of the signal.

## 6.17 Selector

### 6.17.1 Input Selector

The Input Selector component is able to assign one of channel input routed to a single output. The Input Selector has 7 kinds of components in different number of channel (4x1, 5x1, 6x1, 7x1, 8x1, 16x1, and 32x1).

Component Appearance



Control Window



- Input: Assign an input routed to a single output in Input Selector.

Input Selector

Name	Initial	Minimum	Maximum	Precision	Unit
Input	CH1	-	-	-	-

### 6.17.2 Output Selector

The Output Selector component can assign multiple of channel output to a single input. The Input Selector has 7 kinds of components in different numbers of channels (1x4, 1x5, 1x6, 1x7, 1x8, 1x16, and 1x32).

Component Appearance



Control Window



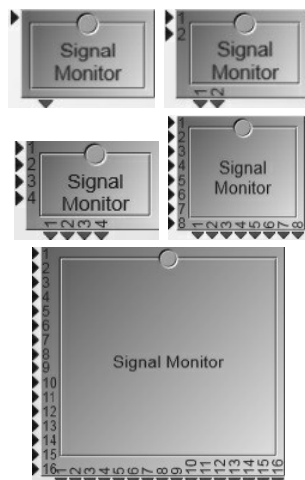
- Output: Assign an Output routed from a single input in Output Selector.
- Output Selector

Name	Initial	Minimum	Maximum	Precision	Unit
Output	CH1~32	-	-	-	-

## 6.18 Signal Monitor

This component detects the input signals and shows the active status of each input signal. If the signal is triggered ON, the logic output channel will be set to High.

Component Appearance



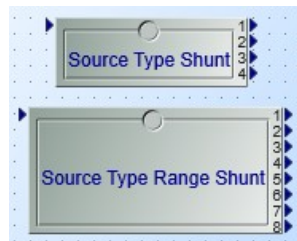
Control Window



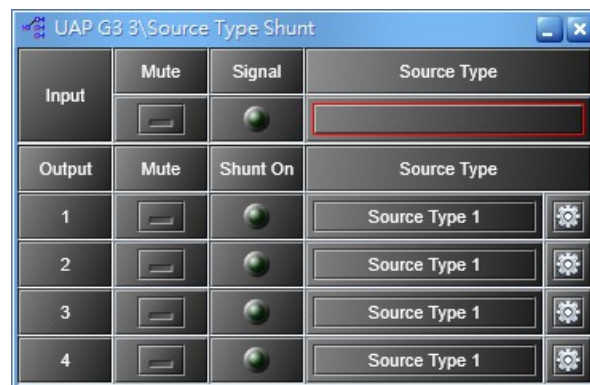
- **Trigger On:** Light up If the input signal is activated or not. If the input signal is continuously greater than the Threshold over the Response Time, the Trigger On value will be set to 1 and the corresponding logic output is set to High.
- **Threshold (dB):** The threshold to determine if the audio input is activated.
- **Volume (dB):** The volume of the input signal.
- **Response Time (ms):** The time to determine if an audio input is activated.
- **Hold Time (ms):** The time which the input signal will trigger OFF if the signal is smaller than the threshold and over the Hold time.

## 6.19 Source Type Shunt

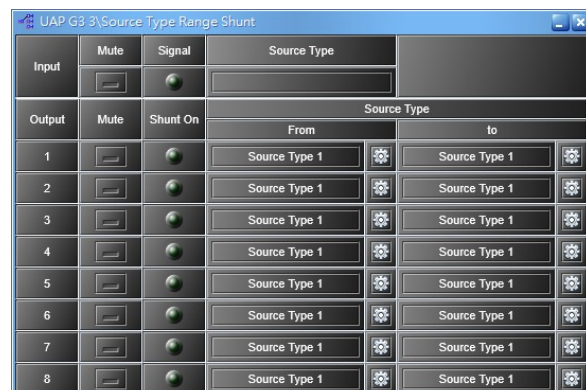
Component Appearance



Control Window



Source Type Shunt Single 1x4



Source Type Shunt Range 1x8

### ❖ Single

- **Input:** Audio Input.
- **Mute:** Mute the audio.
- **Signal:** Light up when the signal is detected.
- **Source Type:** The system will detect the sound source and display the category according to the category set by the user.
- **Output:** Audio Output.
- **Shunt On:** Light up when the Source Type Selector is working.
- **Source Type Selector:** Users can set the Source Type, priority, and EVAC of the channel(s). If the input audio matches this setting, the audio will passing through this output. In Single settings, only one sound source type can be selected

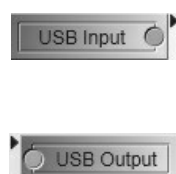
## ❖ Range

- Source Type From/to: In Range settings, the users can choose more than one source type. If the audio input matches any source type, the audio will pass through the output.

## 6.20 USB Input/USB Output

The USB Input and USB Output component allow to adjust the level of USB audio input/output. The USB interface refers to the mini-USB port on rear panel of UAP G3/ G3H.

Component Appearance



Control Window



- Mute: Mute the component.
- Active: Light up when the Mini-USB driver has been detected successfully.
- Level (dB): Adjust the level of Mini-USB input/output.
- Volume (dB): Display the level of Mini-USB input/output.

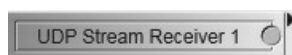
## 6.21 UDP Stream

It's used for playing the BGM message files via IP network, or receive the audio coming from remote microphone and transmit the audio coming from remote speaker.

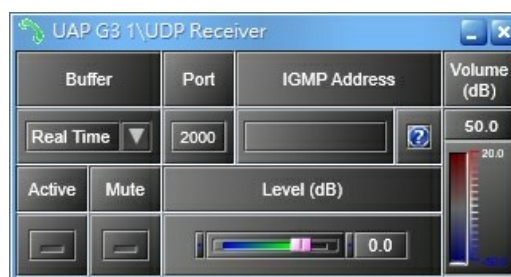
### 6.21.1 UDP Stream Receiver

The UDP Stream Receiver is used for receiving the messages to other hosts on an Internet Protocol (IP) network without prior communications to set up special transmission channels or data paths. It supports unicast networking applications.

Component Appearance



Control Window



- Buffer: The delay time of streaming. It supports Real Time, 200ms, 500ms, 1000ms, 1500ms, and 2000ms. If the network communication is unstable, user can use a bigger buffer as the delay time, this will avoid the audio clipping.
- Active: Start to receive the stream.
- Mute: Mute the UDP Stream Receiver.
- IGMP Address/Port: Allow UAP G3/ G3H to receive the audio streaming via Group Management



Protocol protocol (Multicast).

- Level (dB): To adjust the volume level of output channel.
- Volume (dB): Display the volume of output channel.

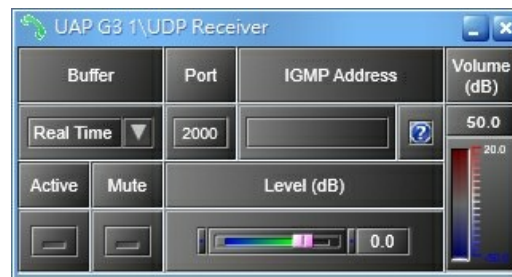
#### ❖ How to Use - Receiver Side

For example, we want to receive the UDP streaming from the specific port of UAP G3/ G3H and output to a speaker.

1. Connect the UDP Stream Receiver component to an output channel on the working area as picture below.



2. Double click the UDP Stream Receiver component, then set the IP address and IP port to receive streaming on control window, see the picture below.

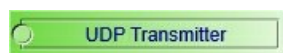


3. Set an appropriate buffer time based on the current network environment.
4. Click [Active] button to start receiving the stream, and the audio signal will transmit to the output channel (step1) for paging, etc.

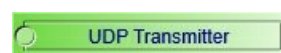
## 6.21.2 UDP Stream Transmitter

The UDP Stream Transmitter is used for sending the messages to other hosts on an Internet Protocol (IP) network without prior communications to set up special transmission channels or data paths. It supports unicast and multicast networking applications.

Component Appearance



Control Window



- Codec: The supported streaming format are G.722, L16, G.711 uLAW, and G.711 aLAW.
- Talk: Start to transmit the stream.
- Mute: Mute the UDP Stream Transmitter.
- Address/Port: Set an address and port to transmit the stream.
- Level: Adjust the volume level of input channel.
- Volume: Display the volume of input channel.

#### ❖ How to Use-Transmitter Side

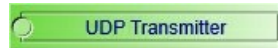
For example, we want to send the mic input streaming via UDP Transmitter component to Internet (address:port).

1. Connect an input channel to the UDP Stream Transmitter component on the working area as picture below.





- Double click the UDP Stream Transmitter component, then set the IP address and IP port to transmit streaming on control window, see the picture below.



- Set the codec (audio data transmission format).
- Click [Talk] button to start sending streaming, and the audio signal input will be transmitted to the internet through this component.

## 6.22 VoIP

The VoIP (Voice over Internet Protocol) component enables the UAP G3/ G3H to transmit and receive the audio signal through internet. Different from the UDP component, it's used for one-to-one networking applications. In addition, the DTMF (Dual-Tone Multi-Frequency signaling) is also supported - after the phone call has been received, press the number as codes on telephone for event trigger, network paging, etc..


Component Appearance



Control Window

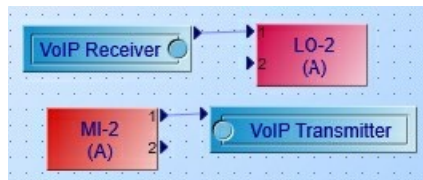


- VoIP Receiver
  - Answer: Choose the way (Auto/Manual) to answer the phone when receiving a phone call.
  - Buffer: The delay time of streaming. It supports Real Time, 200ms, 500ms, 1000ms, 1500ms, and 2000ms.
  - Paging Event: With the element of network paging, users can voice multi-paging via dialing the number on the phone.
  - Event: Link to the Event Setting window. User can set the pre-chime/post-chime before/after the paging action.
  - SIP Server: Once the SIP server which intended to have a phone call has been selected on VoIP Transmitter component, here will dynamically adopt and display the same SIP server.
  - Level (dB): To adjust the far-end volume level.
  - DTMF: After a far-end call is picked up, and the keys on the phone has been triggered. This A/B/C/D/\*/# LED will light up when the value is pressed by the far-end call for monitor purpose.
- VoIP Transmitter
  - Call: Click this button to dial the call/receive the call.
  - Hold: Click this button to hold the current phone call.
  - Identifier: Enter/display the SIP IP call. The format is "[phone number]@[IP address]:[SIP port]"
  - Last Number: Display the phone number of the last call.
  - Keypad: For entering the phone number, DTMF, etc..

- Ring: Light up if receiving calls.
- SIP: Light up when the call is busy (on the call).
- Ready: Light up if it's in standby mode. It will light off when receiving call or the call is busy at the moment.
-  Phone Book: Click to open [Phone Book](#) window and choose an existing VoIP contact person, and directly make the call.
- Mute: Click to mute the near-end volume.
- Level (dB): Adjust the level of channel.
- SIP Server: Select the SIP server intended to have a phone call.
- Codec: The supported streaming format (G.722, L16, G.711 uLAW, and G.711 aLAW).


#### ❖ How to Use

1. Connect the VoIP Receiver component to an output channel, and connects an input channel to the VoIP Transmitter as picture below.



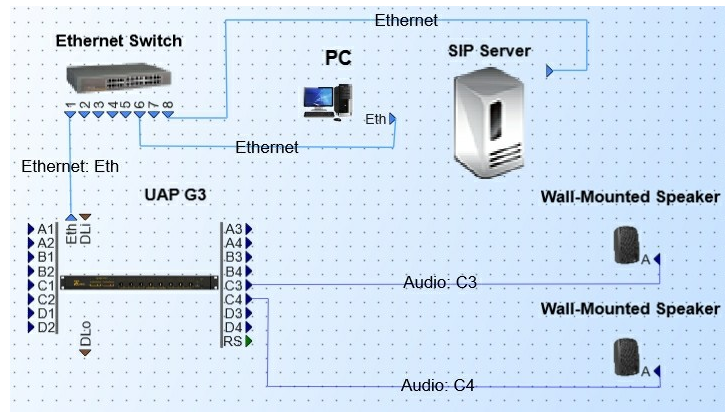
2. Double click the two components to open its control window and make appropriate adjustment.
3. Enter the correct URI into the Identifier, or use the SIP server to have a call.




To dial the existing contact, click  to load an existing VoIP contact from [Phone Book > VoIP Speed Dial Setting](#).



4. Before using SIP server to dial a call, choose a SIP server by pulling down the menu.
5. If the SIP Server is selected, click SIP Server icon to link to the figure of SIP server on the working area of configuration.



6. Double click the figure icon of SIP server, it will display a pop-up a window for entering the settings of SIP server. And click  button to set the SIP account and password for this UAP G3/ G3H.



## 6.23 Xpressor

This component is designed for suppressing local Echo or feedback. It has two parts: Pre-Processing and Post-Processing. The Pre-Processing reduces the level above the threshold for avoiding feedback. The Post-Processing removes the echo below a threshold which is for avoiding the residual echo.

Control Window




- Bypass: Bypass the input signal to the output of Xpressor component.
- Gain Reduction (dB): Display the gain of output volume.
- Pre-Processing:
  - Thd. (dB): When the input volume is larger than the Pre-Processing threshold, it will decrease the volume to [Threshold].

- Attack Time (ms): The needed time for changing the volume from the original level to the expected level.
- Release Time (ms): The needed time for changing the volume from the expected level to the original level.
- Post-Processing:
  - Thd. (dB): When the input volume is smaller than the Post-Processing threshold, it will suppress the echo sound that has left.
  - Attack Time (ms): The needed time for changing the volume from the original level to the expected level.
  - Release Time (ms): The needed time for changing the volume from the expected level to the original level.

## 7 Maintenance

### ❖ Cleaning

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 Make sure to unplug the main power supply of UAP G3/ G3H unit prior to cleaning.

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The panels and chassis can be cleaned with a soft cloth and mild non-abrasive cleaning solution.

Avoid cleaning powders or scrubbing pads, as these will scratch and dull the paint. Do not apply liquid directly to the surface. Dampen the cloth with the cleaning solution and wipe gently.


### ❖ Dust removal

After used the unit for a long-time, especially in dusty environments, the heat sinks may become clogged with dust. This will interfere with cooling from the air inlets, and lead to higher temperature operation and reduced life.


Dust can be most easily removed by brushing or directing an air jet between the fins of the heat sinks.

### ❖ User maintenance

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 User maintenance should be done by qualified personnel only.

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 Dangerous mains voltages are present inside the units. Unplug the main power supply before user do any maintenance.

---

Users can inspect if any broken connectors, ground, cable connections, or loose screws on the outside of UAP G3/ G3H unit.

If any loose parts rattle around on the inside when the UAP G3/ G3H unit is turned over in all directions, please shut down the UAP G3/ G3H unit immediately, as a loose part could lodge in a dangerous place and cause further damage or shock hazard.

### ❖ Require service

If the UAP G3/ G3H unit isn't working properly or the proper operation cannot be restored, the UAP G3/ G3H unit may require service from ATEİS Technical Support. This must be examined by qualified technical personnel, to avoid shock hazard or improper repairs. Please contact user's ATEİS dealer or [ATEİS Feedback](#).

## 8 Technical data

### 8.1 UAP G3/UAP G3H

#### ❖ Electrical

AC power input	100 ~ 240 VAC, 47 ~ 63 Hz
DC power input	24 VDC (21~27.5 VDC)
Power consumption	36 W (max.)

#### ❖ Logic Input

Low active	max. 0.8 VDC
High active	min. 2.2 VDC

#### ❖ Audio Characteristics (General)

A/D-D/A bit resolution	24 bit
Output level (audio line out)	0 dBu
Output impedance	30 ohm
Sampling rate	48k Hz
Frequency response	20 Hz ~ 20k Hz(±3 dB) @ 0 dBu
EIN	<-125 dBrA @ 60 dB gain
THD+N	< 0.006 % @ 4 dBu (1 kHz) in, 0 dB gain

#### ❖ Audio Characteristics (Mic In/ Audio I/O)

Phantom power	48 VDC, 15 mA
Input gain range	0 ~ 66 dB (6 dB steps)
Maximum input level	18 dBu
Input impedance (balanced)	8k ohm
EIN	<-125 dBrA @ 60 dB gain
CMRR	> 85 dBu (1 kHz) @ 36 dB gain
Crosstalk	> 70 dB @ 42 dBu (10 kHz) in, -36 dB gain

#### ❖ Audio Characteristics (Line In & Line Out)

Maximum input level	18 dBu
Maximum output level	18 dBu
Input impedance	8k ohm
Output impedance	30 ohm
EIN	<-86 dBrA @ 0 dB gain
CMRR	> 75 dBu (1 kHz) @ 0 dB gain
Crosstalk	> 70 dB @ 6 dBu (10 kHz) in, 0 dB gain

#### ❖ Network

Max. UAP G3/UAP G3H units via Digi-Link	12
Max. distance between UAP G3/UAP G3H units	10m/33 ft (STP CAT5/6/7 cable)
Max. remote units via UAP G3-Link	4 remote units per UAP G3-Link card and connect 1 DGL-MIC mic at the end of bus
Max. communication	250m/820ft (STP CAT5/6/7 cable, metal

distance between remote units	shielded RJ45 connector)
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#### ❖ Audio Characteristics (Line In & Line Out)

Output level (headphone)	0 dBu
Output level (audio line out)	0 dBu
Output impedance	30 ohm
Sampling rate	48k Hz
Frequency response	20 Hz ~ 20k Hz
EIN	< 85 dBu
THD+N	< 0.1%

#### ❖ Mechanical & Environmental

Dimensions (W x H x D):	431 x 49 x 204 mm (16.9 x 1.9 x 8 inch)
Weight:	2.5 kg (5.5 lbs)
Color:	RAL7046
Operating temperature:	-5 °C ~ +55 °C (23 °F ~ +131 °F)
Storage temperature:	-40 °C ~ +70 °C (-40 °F ~ +158 °F)
Relative humidity:	20% to 95%
Air pressure:	600 to 1100 hPa
Heat dissipation:	10.24 BTU/hr



## 9 Contact information



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**ATEIS Far East Corp.**  
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