UAP G2
User Manual

Version 2.01

DELIVERING YOUR MESSAGE!

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1 Introduction

1.1 System overview

The ATEIS UAP G2 is the new generation of Universal Audio Processor developed by ATEIS.

It has more powerful function and can be easily used in an exigent environment requiring audio quality.

❖ Audio

The UAP G2 unit handles 4 slots of 4 audio channels. Each slot can contain either an input board (A/D converters) or an output board (D/A converters); this is a factory hardware configuration. You can choose between: 16 outputs, 4 inputs and 12 outputs, 8 inputs and 8 outputs, 12 inputs and 4 outputs or 16 inputs.

The excellent sonic performance is being achieved by the advanced 24 bit A/D and D/A converters, and altogether with the 48/96 kHz capable audio processing and the ADSP 21371 DSP (266 MHz SIMD SHARC Core, capable of 1596 MFLOPS peak performance).

Every single analogue audio input can be software defined for five different sensitivities (input gain of 0dB, 12dB, 24dB, 40dB or 54dB it means the input device have sensitivities of 0dB, -12dB, -24dB, -40dB or -54dB) and for 48V phantom power operation. This can be set for each single channel and each machine independently.

❖ Linking

If more inputs or outputs are required, it is possible to digitally link up to 12 UAP G2 (maximum distance between two UAP G2 is 10 meters). Through this link, you can share up to 16 channels at 48 kHz or 5 channels at 96 kHz sampling rate to the next device. It is not a network so you will have to define outputs from the previous UAP G2 to inputs from the next UAP G2 etc.

❖ System configuration

To tell the machine what to do with audio and control signals there is a WindowsR based graphical design and operating environment software. With this all-in-one program you build up the network, design signal processing from a huge library of DSP components and apply control sources.

In the 'Monitor' part you can choose the parameters that make sense to be edited by the user and create an individual graphic user interface. To keep your design protected from unauthorized altering, there are many password locked user levels.

The signal path of the UAP G2 is built from virtual elements called 'Components', providing the functionality of simple preamps, filters, dynamics, delays, or more complex processors like automatic mixers, crossovers or feedback killer. Their control windows hold all the buttons, faders, knobs, meters etc. to set the desired values.

After selecting, placing and wiring DSP 'Components', your 'System' will be compiled and sent to the UAP G2 via TCP/IP Ethernet port.

❖ Preset Management

The UAP G2 includes two types of presets:

• Sub-preset:

They enable values of multiple parameters of the same design, such as levels, gains, EQ, etc. to be restored either from the PC software, the remote controllers or the control inputs.

• Master preset:

They enable completely different designs to be restored. Application examples for this feature are hotel meeting rooms with removable walls. These 'Master Presets' and 'Sub-Presets' residing in the UAP G2's memory which can be accessed in many ways: PC, Logic inputs, Third party. The maximum numbers of Presets depend of the UAP G2's memory space available. This limitation doesn't depend of the number of linked UAP G2.

❖ System Control

Once a 'System' is stored into the UAP G2s memories, you can disconnect your PC and run it as a standalone audio network. You can control all parameters like 'Channel Level', 'Master Volume' etc.

from assignable control sources or from front knob. There is a range of control devices built for the system you can operate. The UAP G2 integrates perfectly into third party control systems like: VITY, AMX, Audace, Crestron, etc.

❖ Connection

Audio and control connections are made via Euro-block connectors on the rear panel of the units.

❖ Components

Huge library with audio tools for all applications (routing, paging, signal processing, networking, speaker managing, etc)

❖ System

- System design by drag & drop
- DSP design by drag & drop from component library
- Changeable appearance of the control elements

❖ Monitor (custom designable graphical user environment)

- Freely designable user interface
- Import graphics or pictures from .jpeg, .bmp, .ico, .emf or .wmf files
- Graphic object functions: Resize, alignment, pack, space, order

❖ Offline Programming

Design and editing of "DSP designs"

❖ Easy operation

- Standard cut, copy and paste commands
- Contextual menu items
- Stackable floating docking or sliding control windows
- Resizable animated sliders, knobs and buttons
- Values can be typed directly into value fields
- Edit parameters of EQs or dynamics in graphic curve display.

❖ Additional Features

User-management: Up to 40 users with individual access rights, password protected 3rd Control table, with the addresses (names) and commands of all the control parameters accessible via the RS232 serial port and through TCP/IP.

❖ Scheduler

The scheduler allows planning of events (preset change, message play, close/open TTL out or change component's adjustments). Up to 255 different schedules can be scheduled. In one schedule you can define up to 255 events.

❖ Message Player

The Message player incorporated into the UAP G2 allows you to play any kind of message to be played. Two messages per UAP G2 can be run at a time.

With the 100 Mbyte memory, the following storage times are available in WAV format:

- Format : 48kHz, 24kHz, 16kHz / 16 bits
- Up to 53 minutes in 16 bits and 16 kHz sampling rate.
- Up to 34 minutes in 16 bits and 24 kHz sampling rate.
- Up to 17 minutes in 16 bits and 48 kHz sampling rate.

⚠ The message player cannot be used with the UAP G2 set at 96kHz. The UAP G2 must be set at 48kHz.

2   Safety declartion

> **Warning**
> This sign indicates a potentially hazardous situation that can result in death or serious personal injury.

❖ Do not expose the device to extreme temperatures, direct sunlight, humidity, or dust, which could cause fire or electrical shock hazard.

❖ Keep away water or other liquids from the device. Otherwise fire or electrical shock may result.

❖ Connect the power cord only to an AC outlet of the type stated in this Owner's Manual or as marked on the unit. Otherwise fire and electrical shock hazard results.

❖ When disconnecting the power cord from an AC outlet always grab the plug. Never pull the cord. A damaged power cord is a potential risk of fire and electrical shock hazard.

❖ Avoid touching power plugs with wet hands. Doing so is a potential electrical shock hazard.

❖ Take care for correct polarity when operating the device from a DC power source. Reversed polarity may cause damage to the unit or the batteries.

❖ Avoid placing heavy objects on power cords. A damaged power cord is a fire and electrical shock hazard.

❖ Do not cut, scratch, bend, twist, pull, or heat the power cord. A damaged power cord is a fire and electrical shock hazard. Ask your ATEÏS dealer for replacement.

❖ Turn off immediately the unit, remove the power cord from the AC outlet and consult your ATEÏS dealer in any of the following circumstances:

- 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.

If you continue using the device, fire and electrical shock may result.

❖ Do not drop or insert metallic objects or flammable materials into the unit as this may result in fire and electrical shock.

❖ Do not remove the device's cover, as there are exposed parts inside carrying high voltages that may cause an electrical shock. Contact your ATEÏS dealer if internal inspection, maintenance, or repair is necessary.

❖ Do not try to make any modifications to the device. This is a potential fire and electrical shock hazard.

❖ Avoid the device's ventilation slots to be blocked. Blocking the ventilation slots is a potential fire hazard.

> ⚠️ **Caution**
> This sign indicates a potentially hazardous situation that can result in moderate or minor personal injury and/or property damage.

❖ 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 0 °C and 40 °C (32 °F and 104 °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.

3   Quick start

1. Setup device and wiring
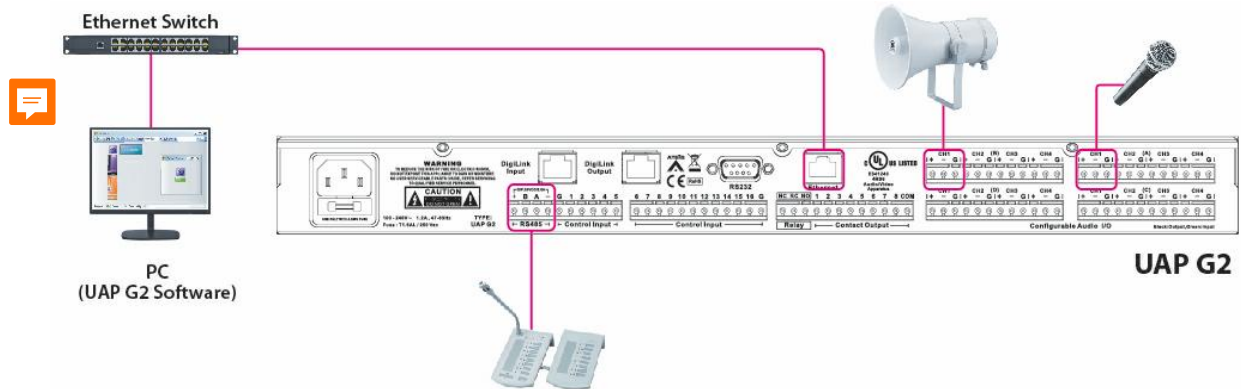
- Speaker and microphone are connected to the Audio Input/Output Connector.

  o BLACK = OUTPUT

  o GREEN = INPUT

- Connect a PC to the UAP G2 through the Ethernet port.

- Connect a PPM on the RS-485 port, in case of paging, connect to the Audio input as well.

- Power up the UAP G2 device and make sure the power LED on the front panel is glowing.

2. Install UAP G2 software.

3. Run UAP G2 Software.

4. The address of the UAPG2 is 192.168.100.6 by factory default settings.

   Make your PC's IP address static and choose 192.168.100.50 as network address for your computer. The Subnet mask as 255.255.255.0 and the Gateway as 192.168.100.254.

5. Choose the right network card on which the network is linked: Tools > Options (Shift + F8) > Network.
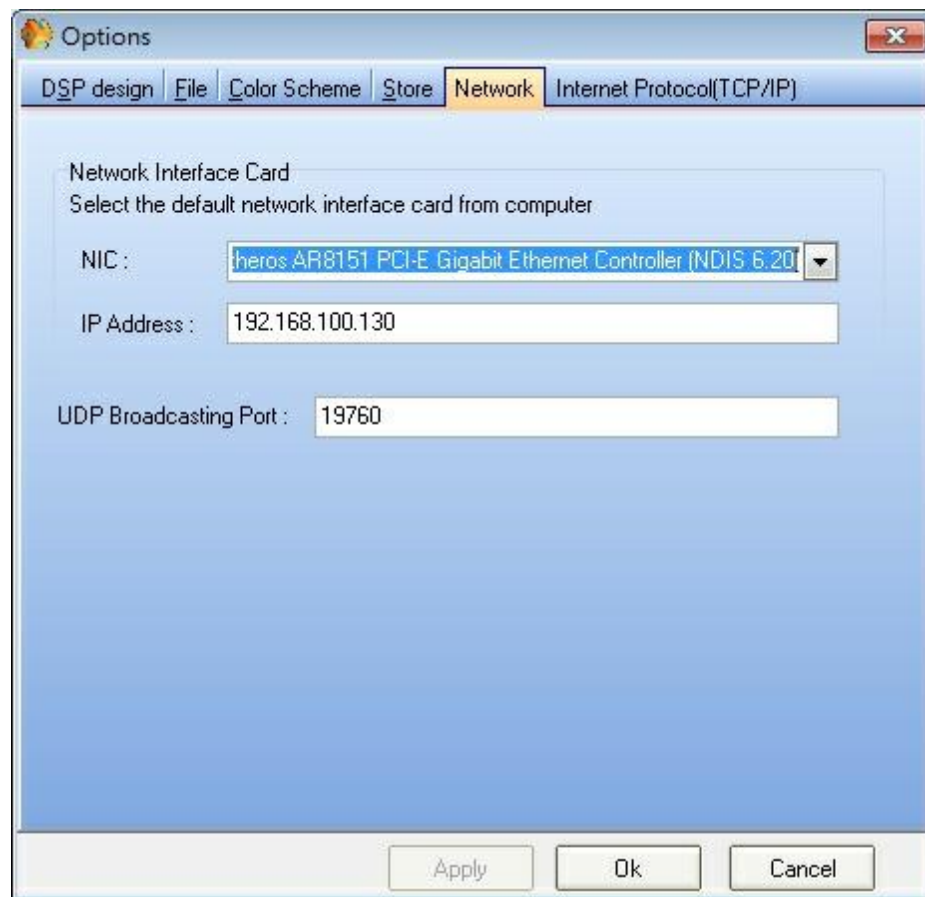
6. Search the UAPG2 by open the "Establish Ethernet Link" window (menu Tools, or Shift+F9).

   Enter the IP address of the UAPG2 and click "Connect". Once it displays a window of "Connection Successfully", close it and start to configure.

7. Create a New file:

   Create a new file File > New or by clicking the button on the top left of UAP G2 software which is shown in the picture below,

8. Create a block in the device editor window, the UAP G2 will be automatically assigned when connected to.

If there are several UAP G2 units, the connection in the software is the same as the physic connection. Drag the UAP unit icon and drop it in working area (System window):

Since there are many combinations audio boards can be fitted or omitted,

- With default setting of UAPG2 which comes and fitted with the following boards:
  - o Slot A: Analog Input
  - o Slot B: Analog Output
  - o Slot C: Analog Input
  - o Slot D: Analog Output
- Tips: If you are not sure about the hardware configuration of your UAPG2:
  - o BLACK Audio connectors = OUTPUT.
  - o GREEN Audio connectors = INPUT.

9. Once the UAP block is in the working area, you can right click it and you will have access to some features:

- Name: give a name to this UAPG2
- Delete: same issue as selecting and press "DEL" key (delete the virtual UAPG2)
- DSP functions: same effect as double-clicking on the UAPG2 icon, open the dsp design

working area (see create audio signal path)

- ExternalSelect: define the kind of each control input (Logic in (TTL) or analogue in)
- Update U-input to Input: allow users to switch component: input board to u-input board.

10. Double click the UAP block and start to manage the component.

The [UAP (*the name you choose)] window appears and allows you to edit the DSP configuration.

Drag and drop to add component or set audio bypass to check every channel, as the "Input A to Output B" shown in the picture below.
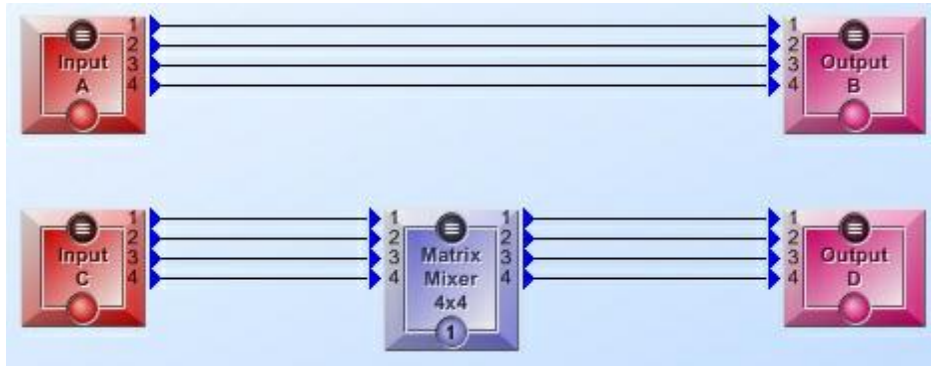
11. Compile and Store

Once the design is done, click [Compile].

The Compiling window appears as shown in the picture below.
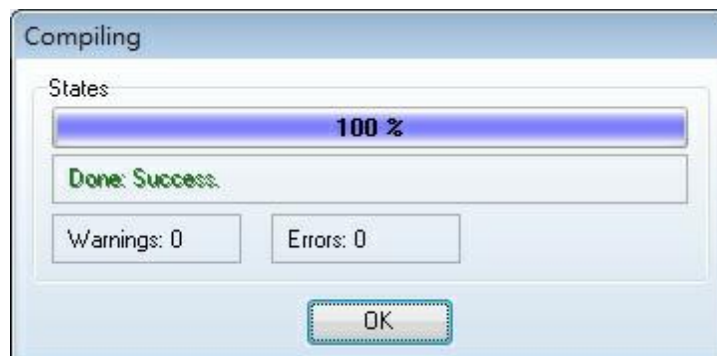
Then, click [Store] to store your design into the UAP, the Store window appears as the picture below.

Meanwhile, the system will ask the user to connect to the device and turn audio, click [Yes] to all.

12. Adjust element:

Double click the component and adjust their parameters.

Now you can adjust the parameters when the device is connected and easily click [Save Parameters].

If you want to add/delete the components or add more device, you need to disconnect to edit.

4　Product features

4.1　UAP G2 audio processor

The UAP G2 is a completely re-design audio processor of the UAP88. The processor is the state-of- the-art solution to meet almost all requirements of modern sound design in contemporary applications. Designed for Commercial application, the UAP G2 is the new DSP audio matrix for medium paging application and multi-zone audio routing.

With its powerful audio numerical signal treatment, the UAP G2 can easily be used in an exigent environment requiring audio quality.

Thanks to its Ethernet port, you can easily connect and pilot the UAP G2 through an IP network or via the PC by using RJ-45 connector directly.

The programming of UAP G2 is done through convivial software based on graphical Windows design environment. The signal path is defined by adding DSP components (Equalizer, Gate, Compressor, delay...), simply inserted a clear and intuitive graphical window by "drag en drop" operation. You can recreate a complex audio system in a simple 1U space machine. You can recreate a complex audio system in a simple 1U space machine regardless of the devices require racks and long cables demand in the past.

Once programmed, you can pilot your system through PC, VITY, Crestron or AMX. You can also disconnect the PC and the networked devices run as a standalone system; however it can be controlled through a range of controllers (logical TTL Input, logical TTL Output, analogical inputs, RS485 network). Wall-mount source selectors, Ethernet remote controller and programmable paging microphones are also available to work with UAP G2.

❖ The UAP G2 is made of:

- 4 slots of 4 audio channels.

- 8 programmable front knobs (pilot the element adjustment you define in the UAP G2).

- 16 control inputs (0 to 5 VDC) either analogue or Logical (contacts).

- 8 logic outputs (dry contacts).

- RS-232 serial interfacing for third party control.

- Ethernet port (RJ-45) TCP/IP based.

- RS-485 for connecting to the remote devices (URC, PPM-SP, PPM-SPWJB).

- 100 Mbytes memory message player (WAV, 16/24/48kHz, 16bits).

- Digital link to link up to 12 UAP G2 and share 16 audio channels in 48 kHz or 5 audio channels in 96 kHz.

• One micro controller and one DSP for standalone operation.

❖ Application diagram

4.1.1 Installation
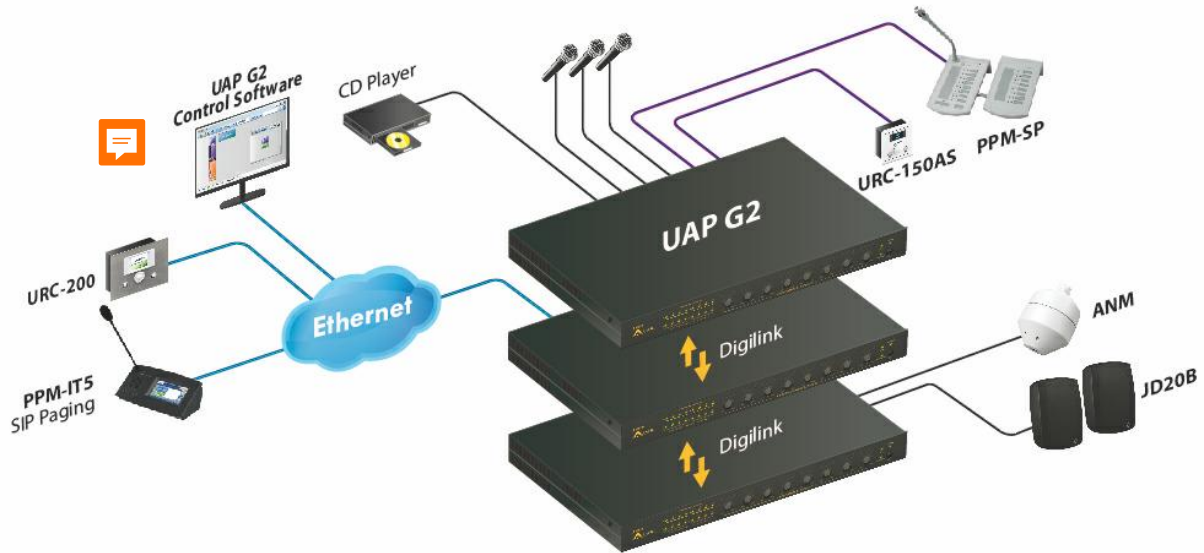
In the shipping box of the UAP G2, it contains a letter with a point by point instruction that need to be followed for safety reasons.

❖ Rack mounting

If it is required, fit the rack mounting brackets to each side of the UAP G2 by using the 6 pcs Phillips M3X screws supplied with the package.

❖ Sitting

The UAP G2 takes only a single 19'' rack space and generates little heat itself. Consider leaving enough ventilation space above and below the unit. Do not mount the UAP G2 directly above heat generating devices like power supplies or power amplifiers.

The UAP G2 cooling capacity is provided by a fan at the left side of the unit. Be sure to not to block the air vent holes along the sides of the housing. Normal operation is ensured within a temperature range between 0°C and 40°C (32 °F to 104 °F).

❖ Power connection

Connect the AC to the mains supply via a power cord. Check your line voltage before plugging in. The power supply of the UAP G2 accepts AC voltages ranging from 100 V to 240 V, 47~63 Hz.
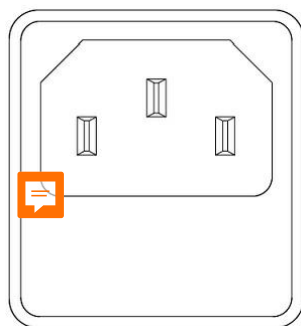
WARNING
TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK,
DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.
NO USER SERVICEABLE PARTS INSIDE, REFER SERVICING
TO QUALIFIED SERVICE PERSONNEL.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

100 - 240V~ 1.2A , 47-63Hz
Fuse : T1.6AL / 250 Vac

TYPE:
UAP G2

4.1.2   Front panel
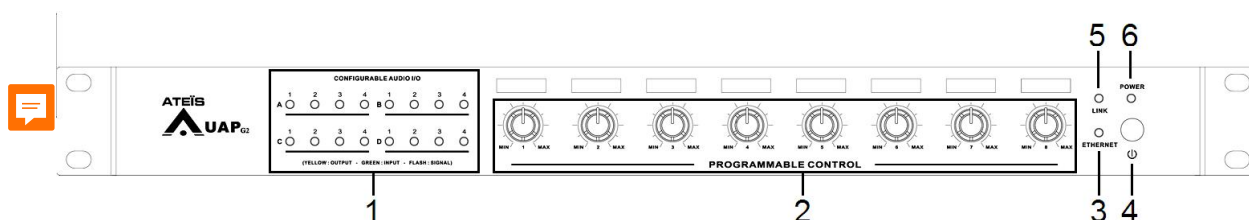
1. Configuration audio I/O

    There have 4 audio slots (A, B, C and D) in UAP G2. Each of these audio slots receives either 4 audio inputs channels or 4 audio outputs channels.

    When the UAP G2 is powered, you can see which kinds of audio card is fitted in each slots:

    - Green LEDs mean INPUTs
    - Yellow LEDs mean OUTPUTs

    When a signal passes through an input or an output, the corresponded LED will blink.

2. Programmable knob

    There are eight front knobs which allow a quick adjustment for every analogical audio element. To learn how to proceed, see How to use front knobs chapter.

3. Ethernet LED

    Light up when the UAP G2 is connected (on-line) to the TCP/IP network.

4. Standby button

    Activate the standby mode.

5. Link LED

    Light up when the UAP G2 is linked in a UAP G2 system (several UAP G2 units are connected).

	The link is successful	Unconnected line	Already on-line but don't configured	Already on-line but LVDS receive error
Linking LED	The LED green glows bright	The LED doesn't light	Twinkle 2 times	Twinkle 3 times

6. Power LED

    Lights up when the UAP G2 is switched on.

	Normal status	Standby status	Error status: • The UAP G2 has no design inside. • The design inside the UAP G2 does not match with the physical installation. • If the link led is off, The UAP G2 has no input link
Power LED	The LED glows bright in green	The LED glows bright in red	The LED flicks in red and green

4.1.3   Rear panel
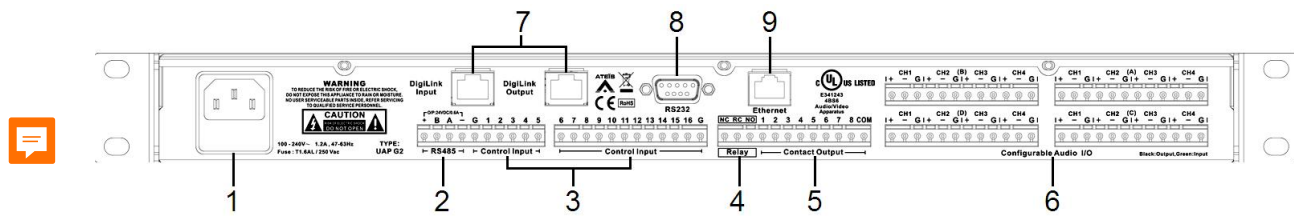
1. Mains power inlet

    Connect the mains power to this socket, the UAP G2 accepts AC voltages 100~240V, 1.2A, 47~63Hz (fuse: T1.6AL/250VAC).

2. RS485 connector

    24VDC input and RS485 connector is used for additional units such as the URC (universal remote controller) or the PPM (programmable paging microphone).

3. Control input connectors

4. Relay connectors

    It is capable to engage a relay if the UAP G2 is powered up via 24VDC (NO = normally open, NC = normally close, RC = Relay common).

    The contact has both normally open (NO) and normally closed (NC) relay contacts. When the machine is powered-up and working properly, the NC contact is closed and the NO contact is open.

    • The NC contact is open and the NO contact is closed when there's a power fault or power-off.

    • The NC contact is open and the NO contact is closed with the startup process of the UAP G2 (7 seconds).

5. Contact outputs connectors

6. Audio input/output connectors

7. Digi-link input/output connectors

8. RS232 connector

9. Ethernet (RJ45) connector

    Connect the UAP G2 over a TCP/IP based network or via your PC directly:

    • To load design in a UAP G2 system

    • To pilot UAP G2 system

    • To monitor UAP G2 system

    • To do 3rd party control via UDP protocol.

4.1.3.1 RS485 connector
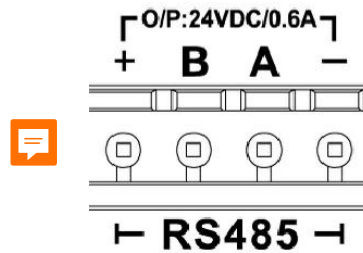

The RS485 port is used for additional units such as the URC (universal remote controller) or the PPM (programmable paging microphone).

- 24VDC power input: + and – (max. 0.6A total)

- DATA: A and B

The maximum cable length is depending on the type of cable for use and it should not exceed 300m with standard STP CAT5/6 cable.

This restriction is due to supply voltage which drops with low wire gauge in longer cable runs and can be obviated by using external power supplies (Junction Box) or higher diameter cables. However, we have seen data cable lengths up to 850m working just fine. You will have to put external power every three remote devices (PPM or URC) or every 300m.

It is recommended not to put more than 8 remote devices (PPM and/or URC) on one UAP G2. You can use more remote devices for sure (UAP G2 can manage up to 16 PPMs or 12 URC's), but this will increase the response time of the devices and you will have to be very careful in the wiring by adding external power supply.

4.1.3.2 Control input

The UAP G2 connects either logical input (TTL IN, dry contact) or analogical input (10 k Ohm potentiometer). Simply by connecting to the switch, relay or linear potentiometer between the number (1 and 8) and the G (ground). The number indicates which control logic channel will be used (when you define the action of the control input).

- **If you use control Input as analog input:**

You can connect Remote Controllers RAC 5 or RAC 8. Or a simple variable resistor (10K) to the analog control inputs as follows:

G 1 2 3 4 5   6 7 8 9 10 11 12 13 14 15 16 G
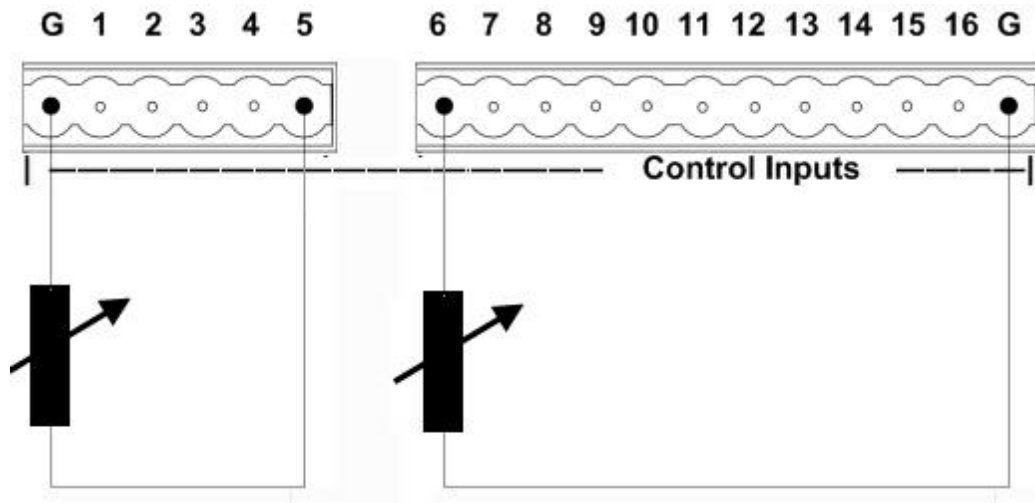
Control Inputs

You can reduce the step by putting a 100uF capacitor in parallel across the contact.

- **If you use control Input as Logic input:**

Caution: The logic In is momentary activate when the contact is open.

If you want to active a parameter when the contact closes, then you have to use the event Management (in menu View), to create "Element control" event. Then you can assign this event either to an opened or closed contact. For more details please see How to use Events chapter.

Simple activation of the TTL inputs can be made like the picture below:

G 1 2 3 4 5   6 7 8 9 10 11 12 13 14 15 16 G

Control Inputs

:
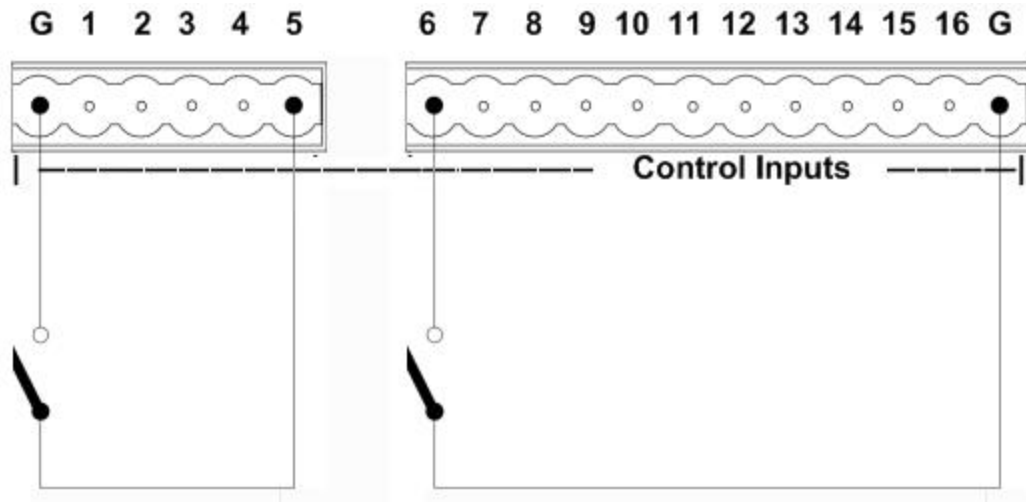
4.1.3.3 Contact output
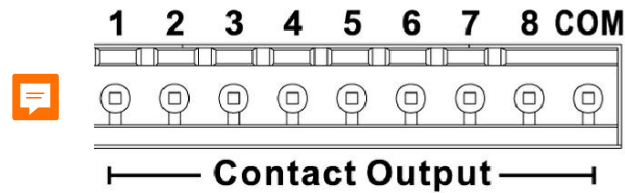
- The Contact closes when the Logic Output is active.

- The logic outputs are simple dry contact or relay contact, with a common rail.

- The common rail is linked to the ground.

- No voltage is provided.

Contact rating: (relays EGE type EDR201A0500)

Maximum voltage 100 VDC, Maximum switching current 0.5 amps, Maximum switching power 10VA.
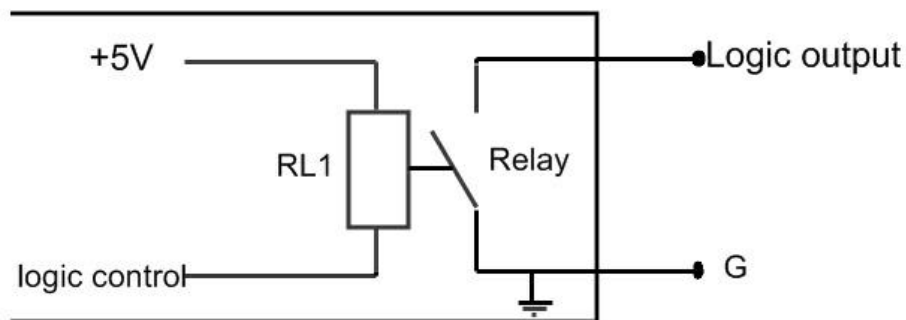
If the RS485 bus is unable to use, then you can easily use the 24VDC output of the UAP G2 to feed 8 LEDs that each have a 2k2 current limiting resistor.
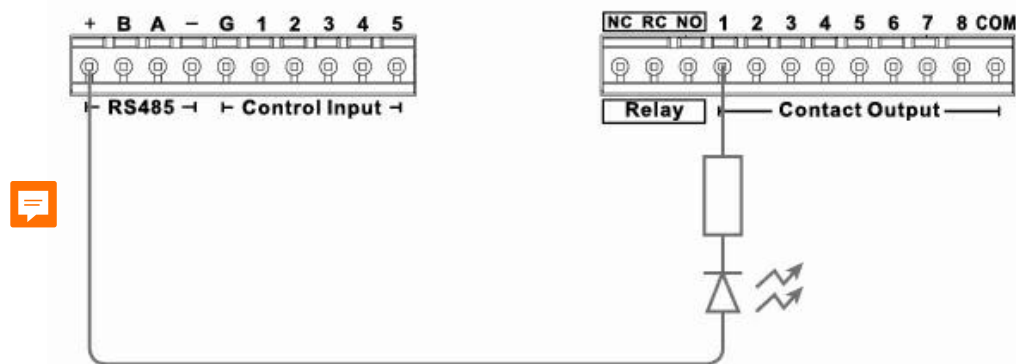
4.1.3.4 Audio input/output connector

Balanced audio input or output:

- + = Hot audio signal

- - = Cold audio signal

- S = Shield

Input and output cards have different connector colors:

- BLACK = OUTPUT
- GREEN = INPUT

If you want to use unbalanced signal, please connect the Cold (-) pin with the Shield (S) pin. There is a hardware clip operation on input board over 15dBu.

4.1.3.5 Digi-Link input/output

If you want to put several UAP G2 units in your rack (increase the number of input/output or remote controllers), simply use straight STP CAT5/6 cable with metal shielded RJ45 connector to connect to the "Digi-Link" OUT to the "Digi-Link" IN of the next UAP G2 in a maximum distance of 10 meters between two UAP G2 units. The last processor in the chain MUST be connected to the rst processor (the one connected directly to the computer) to form a loop.
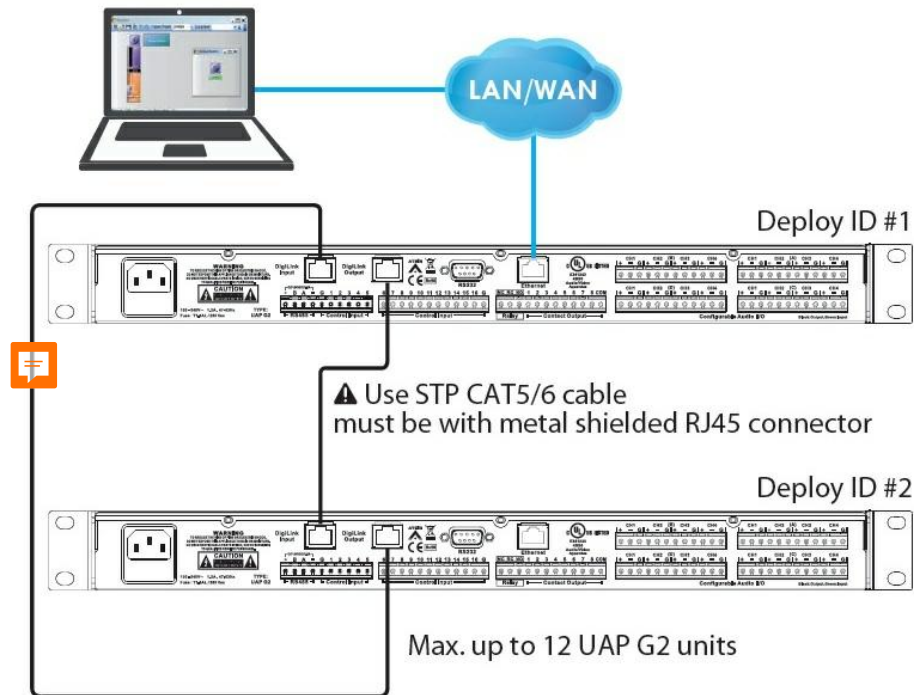
⚠ Use the supplied Ethernet UTP CAT5 cable on digilink connection is prohibited.

4.1.3.6 RS232 connector
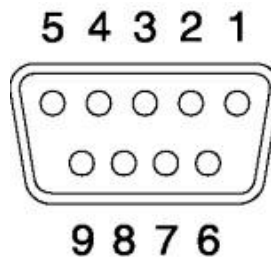
Connect the third party device (Crestron, AMX, VITY) to pilot some desired features of your UAP G2

system by using the Ateis Third party protocol. (see also 3rd party control over Ethernet) You also can find a DB9f connector for RS232 data communication at the rear side of the UAP G2. This port can be used for transparent RS232 data multi-point communication through the network or for 3rd party control applications.

RS232 does support cable lengths up to 15 m.

Pin	Signal	Text
1	CD	Carrier detect (n.c.)
2	RXD	Receive data
3	TXD	Transmit data
4	DTR	Data terminal ready (n.c.)
5	GND	Ground
6	DSR	Data set ready (n.c.)
7	RTS	Request to send (n.c.)
8	CTS	Clear to send (n.c.)
9	RI	Ring indicator (n.c.)

(n.c.): non connected

4.1.4 Characteristics

❖ Power

Item	Voltage Min.	Voltage Max.	Comment
AC Input	100VAC	240VAC	-
Backup Power Source	20VDC	28VDC	> 2.5A
Remote Controller Power	20VDC	25VDC, (Typ.: 24VDC)	<0.5A, @mains power plug in

- Power Consumption = 40 VA, 10 VA in stand-by mode.

❖ Analog Audio Specification

Parameters	Sensitivity	Min	Typ	Max	Units	Condition
Sensitivity*	-	0	-	-54	dBu	Only 5 selection(0dBu/-12dBu/-24dBu/-40dBu/-54dBu)
Equivalent Input Noise	0dBu	-	-	-81	dBu	20~20kHz@150Ω
	-12dBu	-	-	-93	dBu	20~20kHz@150Ω
	-24dBu	-	-	-104	dBu	20~20kHz@150Ω
	-40dBu	-	-	-112	dBu	20~20kHz@150Ω
	-54dBu	-	-	-115	dBu	20~20kHz@150Ω
THD+N	0dBu	-	-	0.04	%	20~20kHz@+4dBu
	-12dBu	-	-	0.06	%	20~20kHz@-2dBu
	-24dBu	-	-	0.06	%	20~20kHz@-14dBu
	-40dBu	-	-	0.06	%	20~20kHz@-30dBu
	-54dBu	-	-	0.06	%	20~20kHz@-44dBu
CMRR	0dBu	-	-	-60	dBu	10kHz@0dBu
		-	-	-70		1kHz@0dBu
	-12dBu	-	-	-70	dBu	10kHz@-12dBu
		-	-	-80		1kHz@-12dBu
	-24dBu	-	-	-75	dBu	10kHz@-24dBu

Parameters	Sensitivity	Min	Typ	Max	Units	Condition
		-	-	-90		1kHz@-24dBu
	-40dBu	-	-	-80	dBu	10kHz@-40dBu
		-	-	-85		1kHz@-40dBu
	-54dBu	-	-	-70	dBu	10kHz@-54dBu
		-	-	-80		1kHz@-54dBu
Frequency Response**	0dBu	-1	0	+1	dBu	18~30kHz@0dBu, sample rate=96k
	-12dBu	-1	0	+1	dBu	18~30kHz@-12dBu, ample rate=96k
	-24dBu	-1	0	+1	dBu	18~30kHz@-24dBu, ample rate=96k
	-40dBu	-1	0	+1	dBu	18~30kHz@-40dBu, ample rate=96k
	-54dBu	-1.5	0	+1.5	dBu	18~20kHz@-54dBu, ample rate=96k
Crosstalk***	-	-	-	-70	dBu	10kHz@150Ω
Maximum input	0dBu	-	-	+15	dBu	-
	-12dBu	-	-	+3	dBu	-
	-24dBu	-	-	-9	dBu	-
	-40dBu	-	-	-25	dBu	-
	-54dBu	-	-	-39	dBu	-
Input Impedance (Balanced)	-	9k	10k	11k	Ω	1kHz@sine wave
Output Impedance (Balanced)	-	90	100	110	Ω	1kHz@sine wave
Sample rate	-	48k	-	96k	Hz	Only 2 selection
Phantom power	-	47	48	50	V	DC

Note:

- * It means input could get the gain of sensitivity absolute value. For example: When the sensitivity=-54dBu and input=-54dBu,output will get 0dBu. When the Sensitivity=-54dBu and input=-44dBu,output will get 10dBu.

- ** The difference between 1kHz and the frequency of maximum value.

- ***Input ch sensitivity=0dBu,other ch sensitivity=-54dBu.

❖ Contact Inputs

Condition	Minimum	Typical	Maximum	Comment
Low	-	0 VDC	0.1 VDC	Function
High	-	4.2 VDC	5 VDC	Programmable

❖ TTL Outputs

Condition	Short	Open	Comment
-	0 VDC	Hi-impedance	Function Programmable

❖ Mechanical

- Dimension (WxHxD): 432 x 44 x 245 mm (17 x 1.7 x 9.3 inch)

- Weight: 3.5 kg (7.7 lbs)

- Mounting: 19" 1U rack

- Color: RAL7016

❖ Working Temperature.

• 0°C ~ 40°C

4.1.5 Peripherals

The following table is the peripherals list supported by UAP G2:

Device	Connection	Max. Number	Function
PPM V2	RS485	32	Remote console for with paging ability.
PPM V3	RS485	32	
PPM V4	RS485	32	
PPM-IT5	Ethernet	Eth. Limit	Paging, Element Control, Master/Sub Preset Control.
URC	Control Input	16	Analog and Logic functions for controlling elements such as volume.
URC200 TPC	Ethernet	Eth. Limit	Parameters Control, Master/Sub Preset Control.

• Max. Number indicates the max. number of peripherals the UAP G2 can connect one through the connector by using Junction Box.

One UAP G2 has 1 RS485 connector, and the sum of remote units are 32.

• Eth. limit: The max. number which can be assigned over the network.

If connect to the device through the sole Ethernet port of UAP G2, one PPM-IT5 or one URC200TPC can only be supported by UAP G2.

4.1.6 3rd party control

The following table refers to the 3rd Party Control protocols which UAP G2 is supported.

Protocol	Interface		Function
	Connection	**Settings**	
Ateis 3rd Party Protocol	Ethernet (UDP)	UDP Port = 19761	• Read/Write value of parameters. • Stepped adjustment for parameters.
Ateis 3rd Party Protocol	RS232	Baud Rate Parity Stop Bit	• Read/Write value of parameters. • Stepped adjustment for parameters.

# 4.2   Consoles and accessories

4.2.1   PPM-SP

The PPM-SP is an unidirectional addressable condenser paging microphone for UAP G2 system. In accordance with BS5839, it is monitored by using RS485 protocol over STP CAT5/6 cable, and transmits both audio and power from the paging console to the system units.

The PPM-SP has 8 zone buttons with a sleek gooseneck microphone, and the zones can be expanded to 256 zones via additional PPM-KP keypad. The PPM-SP enables live announcement to any pre-assigned zones. The paging station has a gooseneck microphone, a push-to-talk button, zone selection keys and a monitor speaker. Buttons represent a single zone or a group of zones and be easily defined in the software using a simple matrix selection. All buttons can be programmed using drag & drop feature from UAP G2 GUI software and each button can be programmed for PTT (Push To Talk) or latching functionality.

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

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

4.2.1.1 Front panel
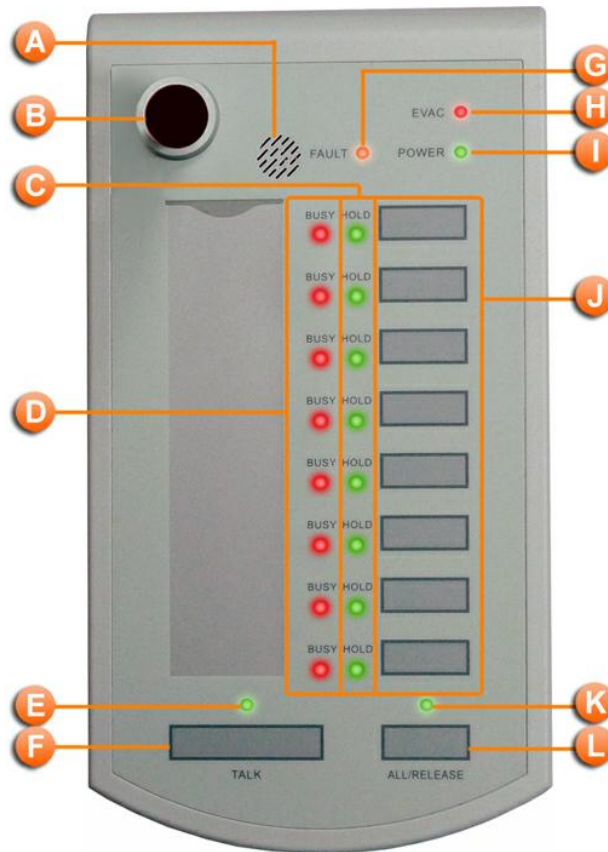
A Microphone

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

B Monitoring speaker

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

C Fault LED

See the following table of the fault status of system.

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

D EVAC LED

Status	Frequency	Activity
Blinking	🔵 ° 🔵 ° 🔵	PPM isn't assigned in UAP G2 Software, open Remote List to edit.

The "Remote Plug-in" function will let UAP G2 audio processor to recognize the peripheral devices.

E Power LED

This LED lights up when the PPM is powered.

F Hold LED

These LEDs Indicate which keys are selected.

G Event select key

These key buttons are used for selecting the events which may link to an event with an triggering actions like paging or adjust the value of parameters.

H All/Release LED

This indicator lights up if all keys are selected/deselected.

I All/Release button

Press this button to select/deselect all the key buttons.

J Talk key

Push this key to request paging.

K Talk indicator

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

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

L Busy LED

Show the status of zone:

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

4.2.1.2   Rear panel

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

❖ PPM-SP:

① Volume Control

Here you can use a cross-tip screwdriver to adjust the volume of the speaker, mic and chime of PPM-SP.
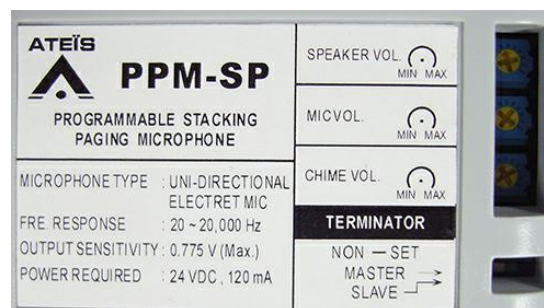
② Terminator

The terminator switch for Master-Slave connection with junction boxes.

③ Keypad connector

The keypad connector on PPM-SP for expanding additional keys with PPM-KP keypad.

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

❖ PPM-KP:

④ Keypad connector:

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

flat cable.

⑤ Keypad connector:

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

⑥ RJ45 connector (PPM-SP):

The RJ45 connector for connecting to the RS485 connector on UAP G2 processor.

📝 When the PPM-SP is connected to the junction box, please note the master PPM should use the 10-pin STP CAT5 cable, and Slave PPM should use with 8-pin STP CAT5 cable. See more on PPM-SP > Connection chapter.

📝 If the PPM-SP is linked to an additional PPM-KP, the PPM-KP keypad is able to start messages, see Use PPM-KP to trigger event (as messages)..

4.2.1.3 Characteristics

❖ Power

Item	Voltage	Current Consumption	Comment
DC Input	18V~26V, Typical 24V	120mA	-

❖ Microphone output

- Maximum level = 6dBu.

- Output Impedance = 100Ohm.

- THD @ 1kHz < 1%.

- Bandwidth @ -3dB = 100Hz ~ 18kHz.

❖ Front panel speaker

- Impedance = 4Ohm.

- Maximum Power @ 1kHz = 1W.

- THD @ 1kHz < 1%.

- Bandwidth @ -3dB = 200Hz ~ 8kHz.

❖ Cable length

- 300m (control and power on the same cable).

- 900m (when power line connects to junction box).

❖ Mechanical

- Dimensions (WxHxD)

  ○ PPM-SP base: 105 x 50 x 190 mm

  ○ PPM-SP with microphone: 105 x 350 x 190 mm

- Weight: 0.7Kg

- Color: RAL7035

4.2.1.4 Connection

To connect one or several remote devices on UAP G2, they require to add an external power supply via Junction Box (JB). For the first three remote devices and/or the first 300m of cable run, the power can be delivered by UAP G2. If the distance between UAP G2 and JB is more than 300m, the JB requires to add for external power supply. The maximum distance between UAP G2 and remote device is 850m.

❖ See the steps below to configure one or several PPM:

1. Connect the PPM.

2. Drag and drop the PPM device into the UAP G2 system on software, see PPM-SP Configuration chapter.

3. Search and set the PPM on software, see PPM-SP Configuration chapter.

4. Adjust the parameter settings of PPM on software. You can also assign chime to a PPM, see PPM-SP Configuration chapter.

❖ Hardware wiring

• Connect with several PPM and URC:
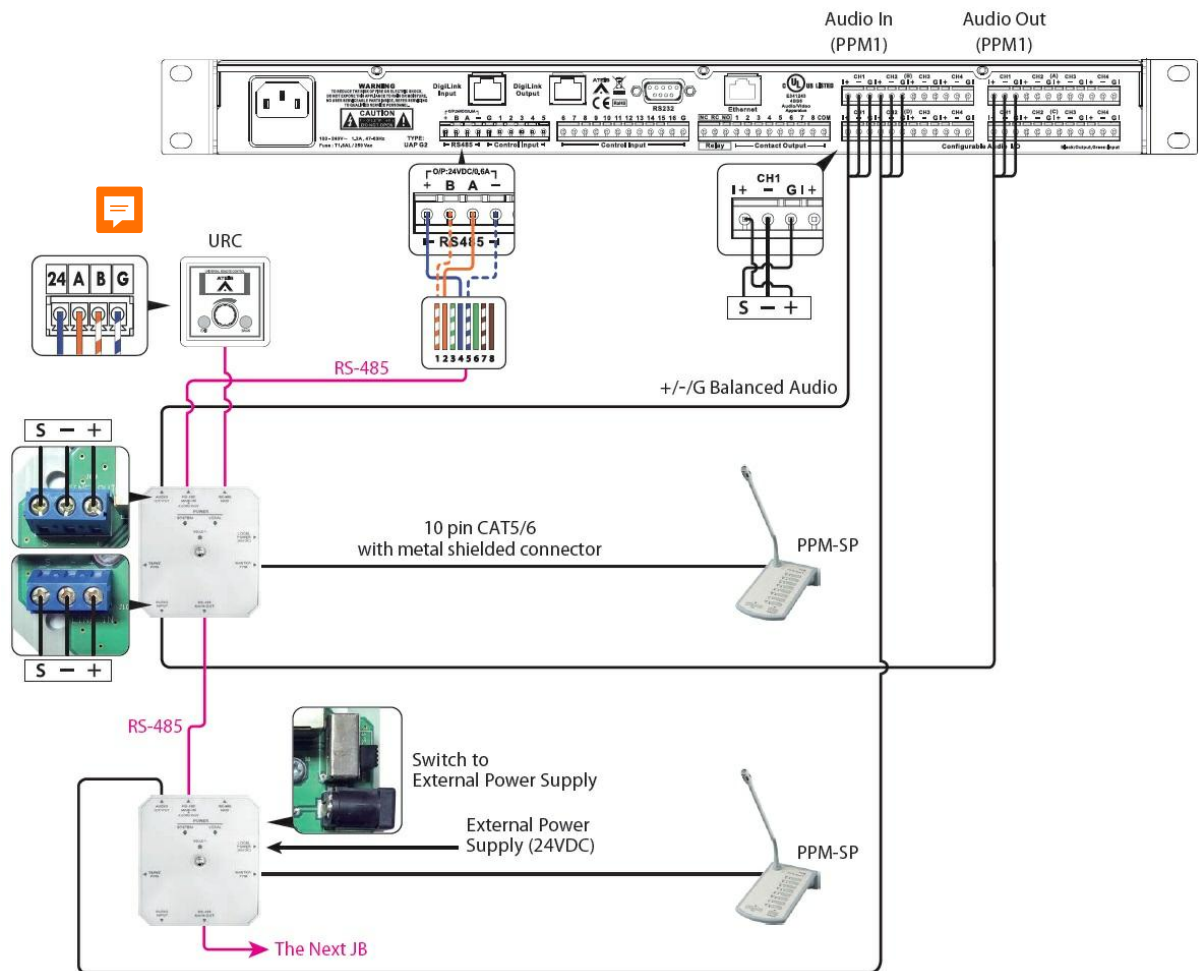
See cable_specification chapter to know more about the corresponded 8-pin out/10-pin out wiring.

❖ Connect to PPM

To connect one or several PPM units, it requires the Junction boxes (JB). Connect Audio to the UAP G2 Input you want, and remember of which PPM is connected to which input (note the serial number). After that, define the system with the PPM.
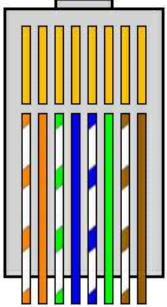
If there has an unstable connection, switch on the end line resistor on the last Master PPM (rear of PPM). Slave feature is not available for the moment.
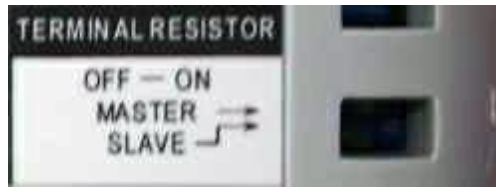
- Wiring without the external power:

  o Max. distance between UAP G2 and JB: 300m

  o Max. distance between JB and PPM: 2m

- With the External Power:

  o Max. distance between UAP G2 and JB: 850m
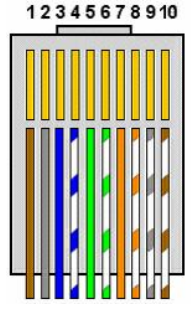
  o Max. distance between JB and PPM: 2m

4.2.1.4.1 Cable specification (8-pin/10-pin)

- Connect the Junction Box to UAP G2 processor by using the STP CAT5/6 cable with metal shielded connector.

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

- Connect the PPM-SP to the Junction Box by using the supplied 10-pin CAT5/6 cable.

Pin1	Slave RS-485 A
Pin2	24VDC
Pin3	Master RS-485
Pin4	Master RS-485 A
Pin5	Line out + (PPM Mic)
Pin6	Line out - (PPM Mic)
Pin7	Line in + (PPM speak.)
Pin8	Line in – (PPM speak.)
Pin9	Ground
Pin10	Slave RS-485 B

4.2.1.5 Configuration

❖ Drag and drop the PPM in one of the UAP G2 inputs (A3 for our example) in accordance to the inputs you have physically connected to the PPMs.
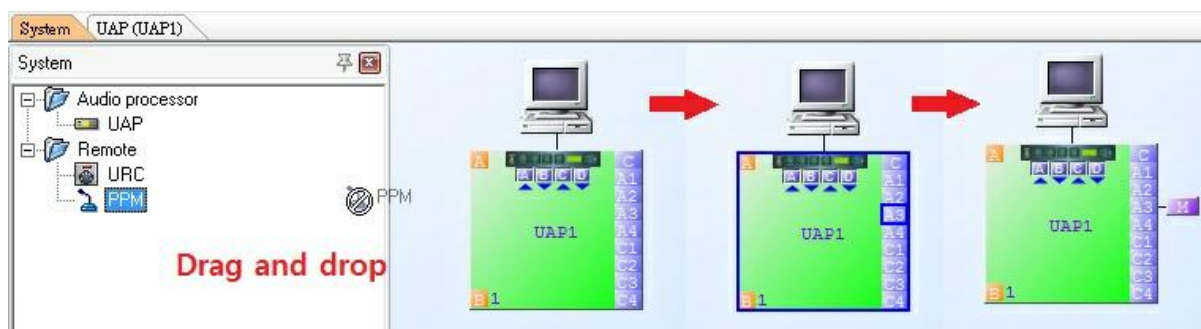
If you have several PPM units, repeat this action for each PPM, then Search the PPM (gives IP address to each PPM).

❖ Search and set PPM

1. First, make sure to clear all the old remote IP address on "Tools > Clear Remote IP".

📝 Always clear the remote address before installing or changing the system with new PPM units. If the system cannot be found with the correct number of remote devices during the search process, clear the remote IP and search the PPM again. If it doesn't correct the problem, please check the hardware wiring (to be sure that data A and B are well connected: A to A and B to B).

2. Click "View > Remote list" or press F9 on your computer keyboard. The "Remote Device List" window will appear, then click on the PPM's page.

3. Click "Search", then a new dialogue window will appear, click "Search" again.

4. When the system has completed the searching process, a list with the various connected PPM will appear. Each PPM is identified by its own serial number. This number is written on a sticker at the rear panel of PPM. The system will detect each PPM automatically (in our example the serial number of PPM is R01051).

📝 If the system doe not find all the remote devices, clear all the remote IP address (Shift+F5) and search again.

5. Click "Close" to close the remote search window.

6. Select the PPM in the first window by assigning the corresponding serial number to each PPM. See the example as the picture below, the Input A1 of UAP1 has connected the PPM R01051). Then click "Apply" and "OK".
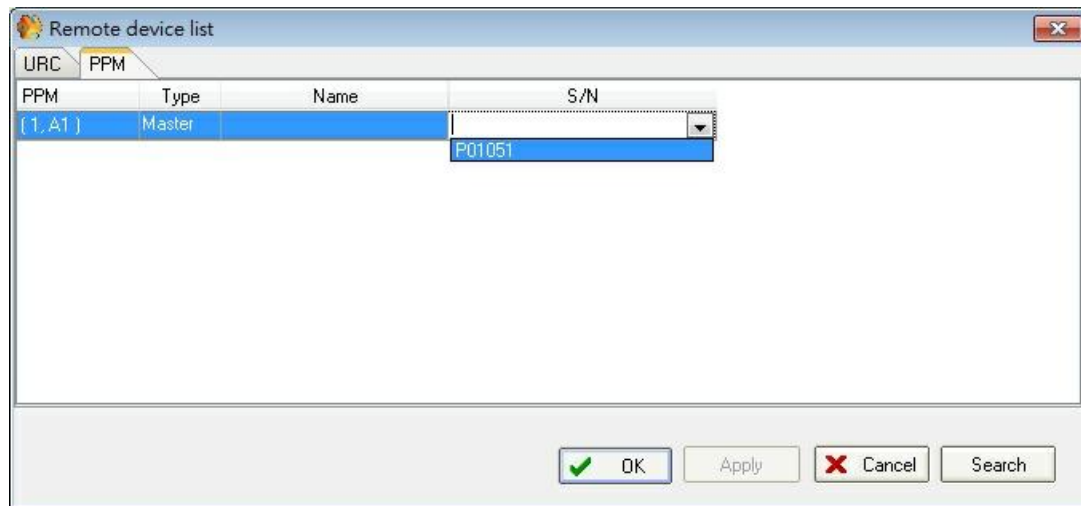
7. The system is now ready to work with the PPM connected on the input A1 of the UAP1 (according to the picture above).

❖ Adjust PPM parameter

Double click the PPM icon in the system window, the "PPM setting" window appear.

- Serial No.: The serial number of the PPM connected on this input.

- Name: Assign a name for this PPM.

- Priority: Set the priority of this PPM compared to others (1 = highest priority, 8 = lowest).

- Key: Number of key (8 for a single PPM, or more with extension's modules, up to 64).

- Talk: Select the talk behavior between "Press To Talk" or "Lock To Talk".

  o Push: Talk only while pushing the microphone button.

○ Locked: Talk after pushing the microphone button one time and stop talking by pushing the microphone button again.

• Message control:

You can have access to this option only in connection state. If notched, the last PPM-KP keypad is able to start messages. To be able to start messages from the PPM-SP, a PPM-KP must be link to the PPM-SP. Even, if you add several PPM-KP keypads, the last one is able to start messages only. (With additional PPM-KP keypad, please remember to change the key number in the PPM setting).

📝 When using a normal PPM, the message control is grayed out or disappearing when the serial number of a PPM is assigned.
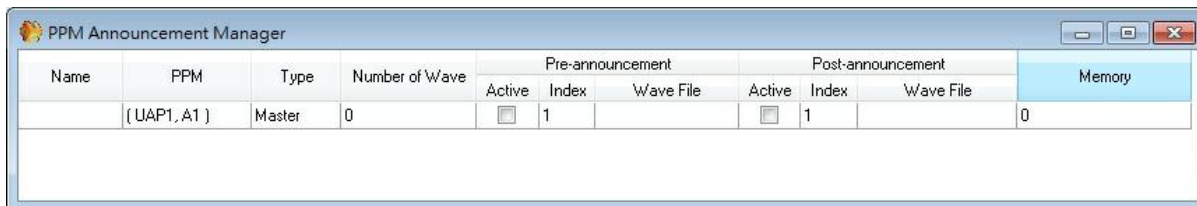
• Stacking paging cancel:

If not notched, the PPM-SP will record the announcements in case of the destination is already occupied by another PPM-SP. The announcement will be play as soon as the destination will be available.

📝 When using a normal PPM, the stacking paging cancel is grayed out or disappearing when the serial number of a PPM is assigned.

• Announcement setup:

Name	PPM	Type	Number of Wave	Pre-announcement			Post-announcement			Memory
				Active	Index	Wave File	Active	Index	Wave File	
	{ UAP1, A1 }	Master	0	☐	1		☐	1		0

The PPM has two chimes in his internal memory by default, click the "active" box and select which chime you want by clicking the "Index" field.

When all the settings have completed, the PPM is ready to be used like any kind of input sources. To learn how to configure the system in order to control the access of the sound to various areas through the PPM's keys.

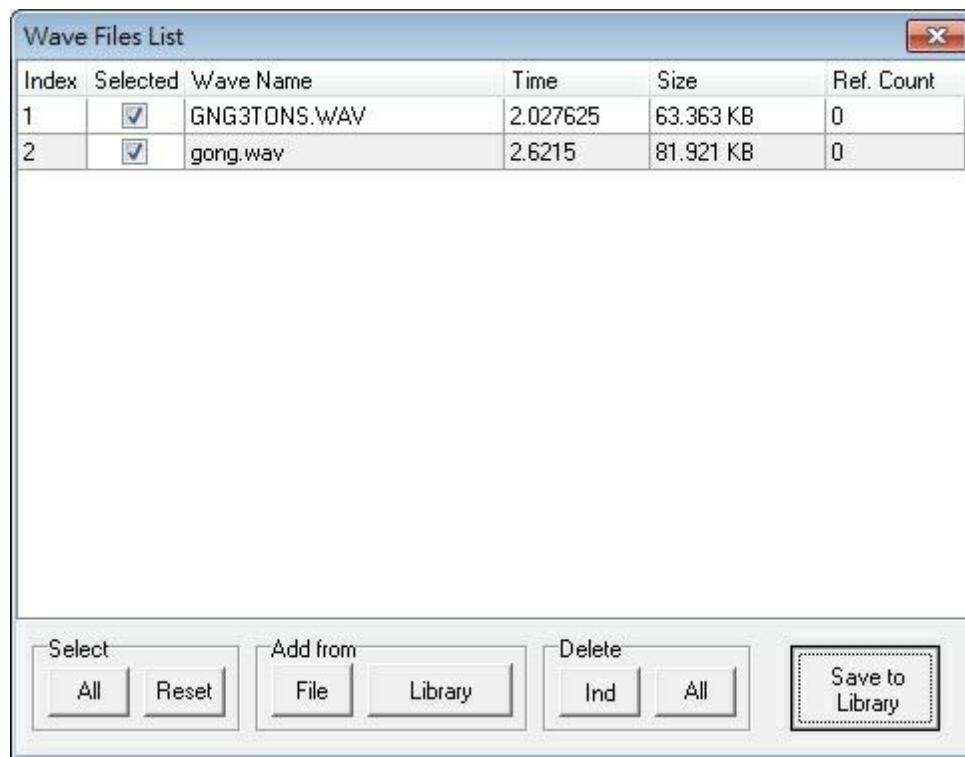#### 4.2.1.5.1 Chime

❖ Assign chime to PPM

You can upload a max. of 128KB (Wave files, 16 bits, 16 kHz mono) in a PPM, If you want to have several chimes in a PPM, then you must store all of them together in the same time.

See the steps below to load chime to a PPM:

1. Select chime.

2. Load chime (Wave files) in the PPM.

3. Adjust PPM's chime.

❖ Select chime

Open the window "View > Wave File Manager".

Wave Files List					
Index	Selected	Wave Name	Time	Size	Ref. Count
1	✓	GNG3TONS.WAV	2.027625	63.363 KB	0
2	✓	gong.wav	2.6215	81.921 KB	0

**Select:** All | Reset **Add from:** File | Library **Delete:** Ind | All **Save to Library**

Select which audio file you want to use. Click [Save to Library], and a message will appear, click "OK".

If the file is already transferred, the message would say: "there are 0 wave file transfer to Wave library", just close the window. You can also load your own wave files from PC: 16bits, mono, 16kHz in the wave file manager window (menu "view") by clicking add from [File]. A window will open and request you to choose the wave files in your computer. Select the chime and click [OK]. When you've selected all the whished files, click [Cancel]. Finally, click [Save to Library].

❖ Load chime

Open the window "Chime data store" > menu view"
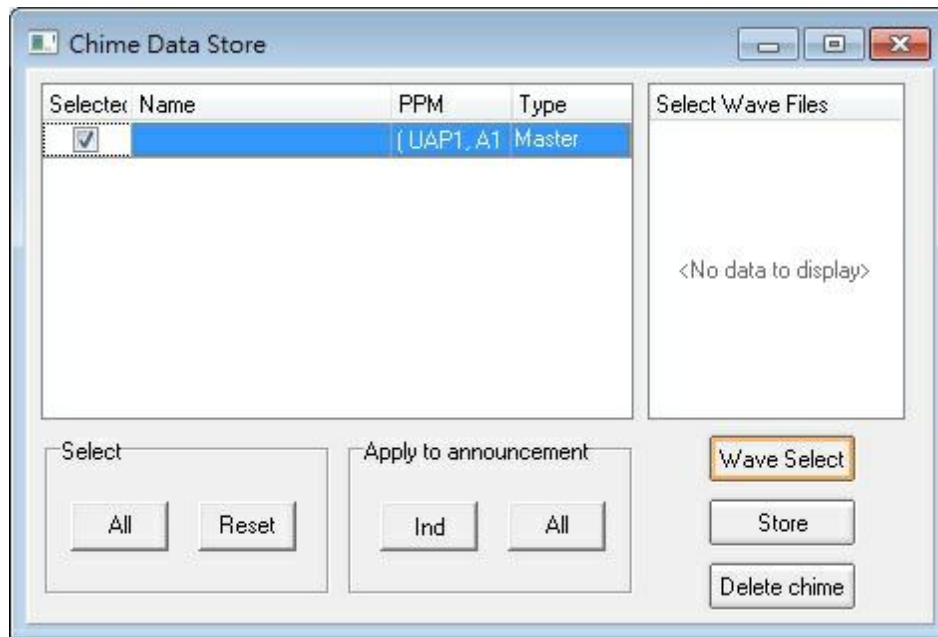
1. If you have several PPM connected, choose in which you want to load.

2. Click the "Wave Select" button to open the Wave library.
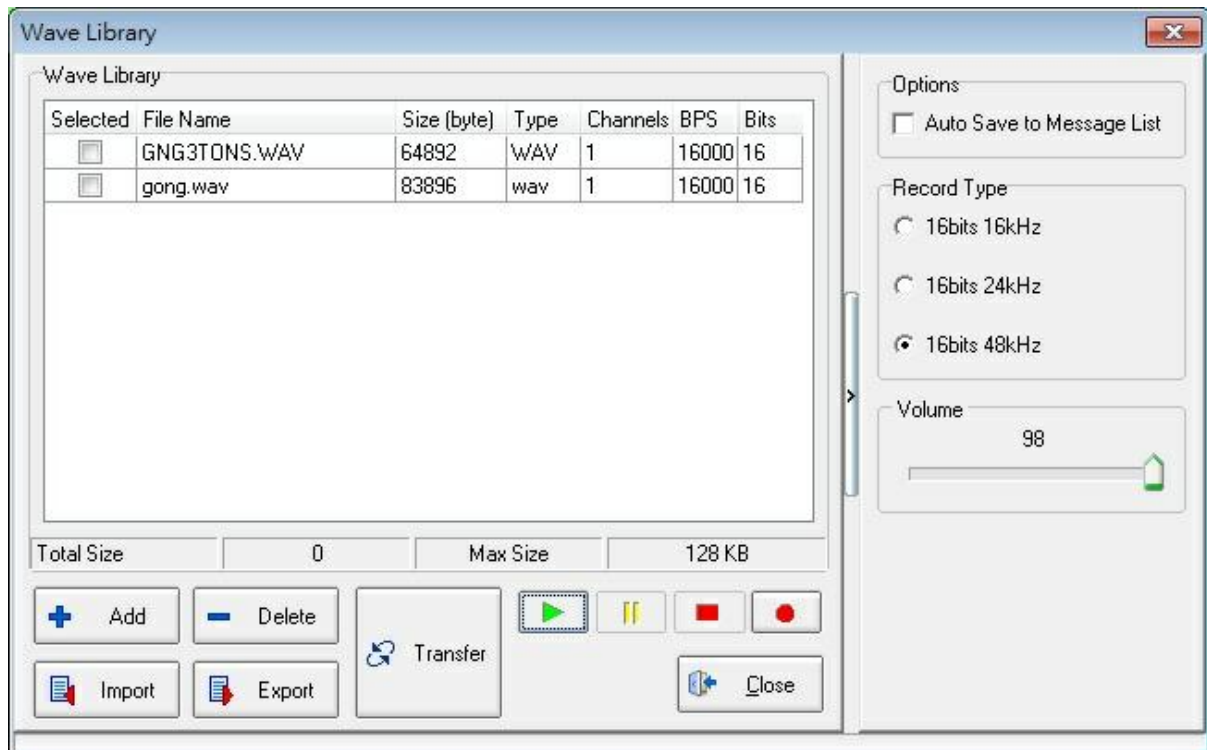
3. Select the files which will be uploaded in each PPM.

4. To import a wave from your computer, click "Add" to import a ZIP file from your computer, click "Import".

5. Click "Transfer" to send the file in the "Chime Data Store", see the picture below.
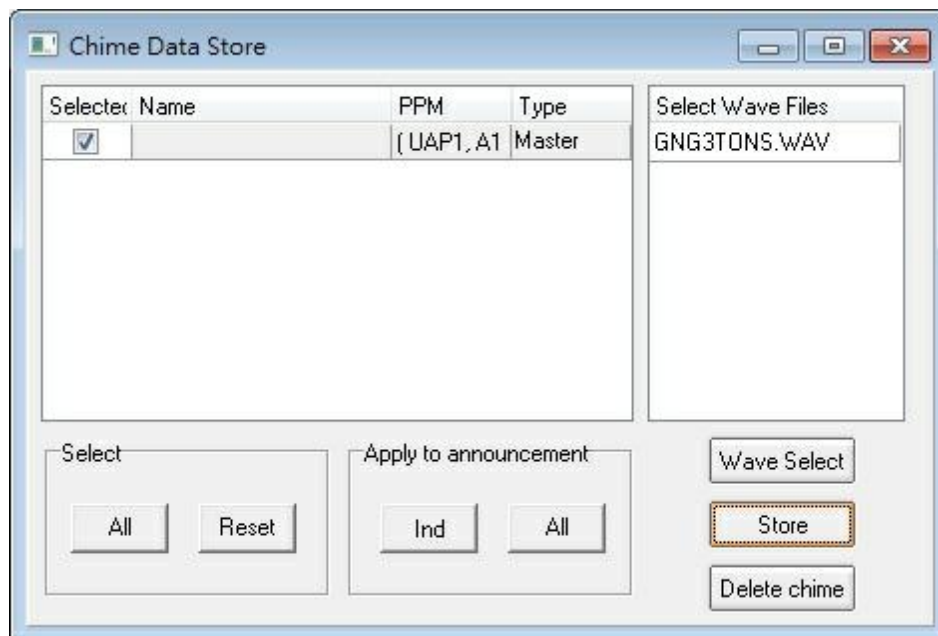
6. Click "Store" (or if you change only one PPM chime select it and click Ind). The wave files are uploaded in the PPM. Depending on your system, this operation takes time. When the process complete, close the window.

❖ Adjust PPM's chime

Open the PPM manager window menu "View > PPM Manager".
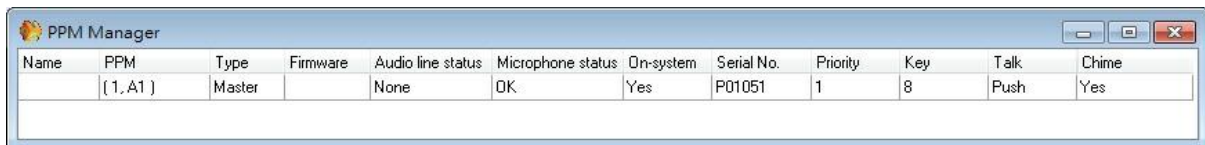
Click the "Chime" field of the PPM which you want to authorize the chime.

You can also reach this window by double clicking the PPM's icon, and click the "Announcement" Setup button.

The PPM announcement manager window appears:

- Click the Index field to select the wave files you want to use as a chime.
- Activate it by notching the Active box.

- If you have several PPMs, repeat the manipulation for each.

- When the adjustments have completed, compile your project and upload it in the UAP G2.

4.2.2   PPM-IT5

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

❖ Features

- 5" TFT LCD color touch panel.

- Full duplex intercom, zone paging, and control.

- High quality gooseneck microphone.

- Loudspeaker built-in.

- Ethernet interface including PoE (Power Over Ethernet).

- 24 VDC external power supply (if no PoE available).

- AGC(Automatic Gain Control) function.

- Noise Reduction and Acoustic Echo Cancellation.

- G.711/G.722/G.726/G.727/G.729/MP3 audio encoding/decoding and AAC+ decider.

- SNMP (Simple Network Management Protocol).

- Full duplex audio.

- Memory for message recording and playback.

- POWER/FAULT EVAC LEDs.

- RJ 9 for optional telephone headset, 3.5mm socket for Earphone-Mic headset.

- 2 mini-jack plugs for optional headsets.

4.2.2.1 Control panel

🅐 Microphone

A 280mm flex microphone.

🅑 Power LED

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

🅒 Fault LED

To display fault status of system, permanently lit if a fault state in the VACIE system has been engaged.

🅓 EVAC LED

The EVAC LED won't light up because UAP G2 doesn't have the Evacuation function (normally lights

up when system is under Evac paging).

E Left Button

Switch between Auto detecting the Microphone and phone jack.

F Middle Button

Push to talk for paging out during the half-duplex conversation.

G Right Button

Push to hang up the call during the half-duplex conversation.

H Monitoring Speaker

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

I Touch Screen

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

4.2.2.2 Side panel

1. Microphone and loudspeaker:

Use the internal speaker and microphone of PPM-IT5.

2. Phone Jack:

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

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

3. RJ9 Connector:

To connect to a RJ9 telephone handset.

4.2.2.3 LCD menu

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

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

Ⓐ Primary horizontal menu:

- MAIN: Display the Device as button, Events as buttons and function buttons.

- DIAL: For typing telephone numbers, SIP URI and so on.

- MESSAGE: Messages list.

- SETTING: Display the setting information.

Ⓑ Content area.

Ⓒ System status: Display the status of the device, such as a network cable is unplugged.

Ⓓ Operation:

SIP Call.

Paging.

Monitoring.

Play message.

Back to root menu (works with Macro buttons)

Select all.

Page Up/ Down.

4.2.2.3.1 Main

❖ Button types:

All buttons change to lighter color while pressed.

Device Button (Blue): Displays the device name on the button. There is an indicator at the upper-left corner of a button showing its status, see the picture below:

❖ Device Status

- Available (Green)
- Off line (Gray)
- Busy (Red)

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

- Paging Group (Orange) : The Paging Group button. Press it then start paging by speaking to the goose-neck microphone of the IT5.

PagingGroup

Pressing the orange button won't pop up for asking for permission to access. For example, if you press PagingGroup button, the pre-chime will play right away for the paging.

- Command Button (Orange): Press to perform the Command (string) function defined on the web interface.

command

- Logic Out Button (Orange): Press to perform the Logic (Out) function defined edit on the web interface.

logic

- Locked Button (Orange): Similar to Command button, but it holds the Up/Down status.

locked
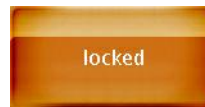
- Macro Button (Green): Manages buttons like a folder. After create a Macro button, press to enter in its page. See how to create a Macro button.

❖ SIP Call

- Call to other device (one to one)
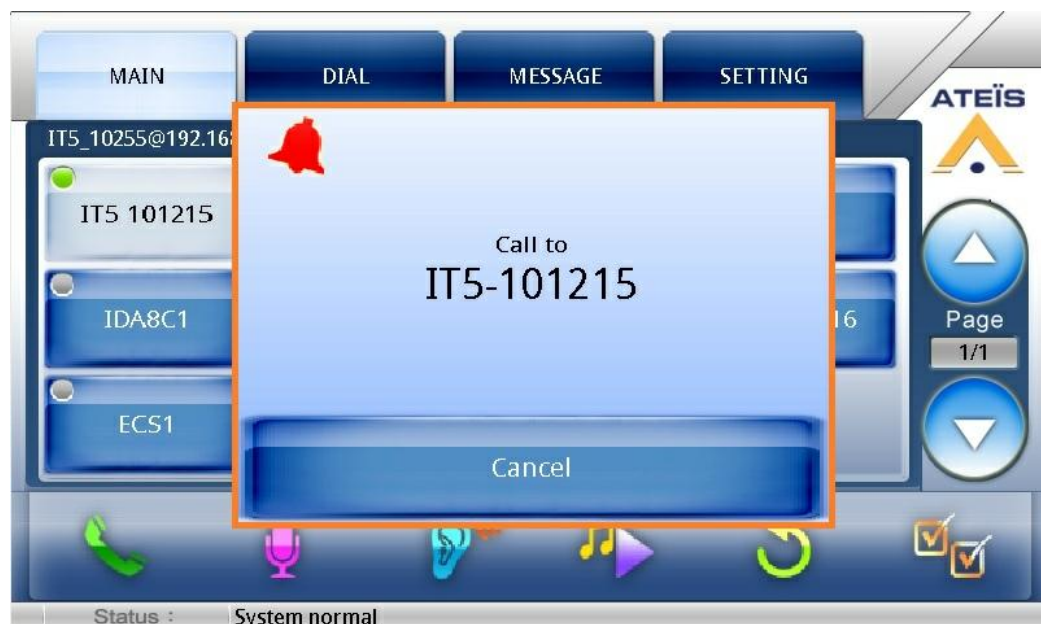
- Call from other device (one to one)

- Paging to multi-user

4.2.2.3.2 Dial
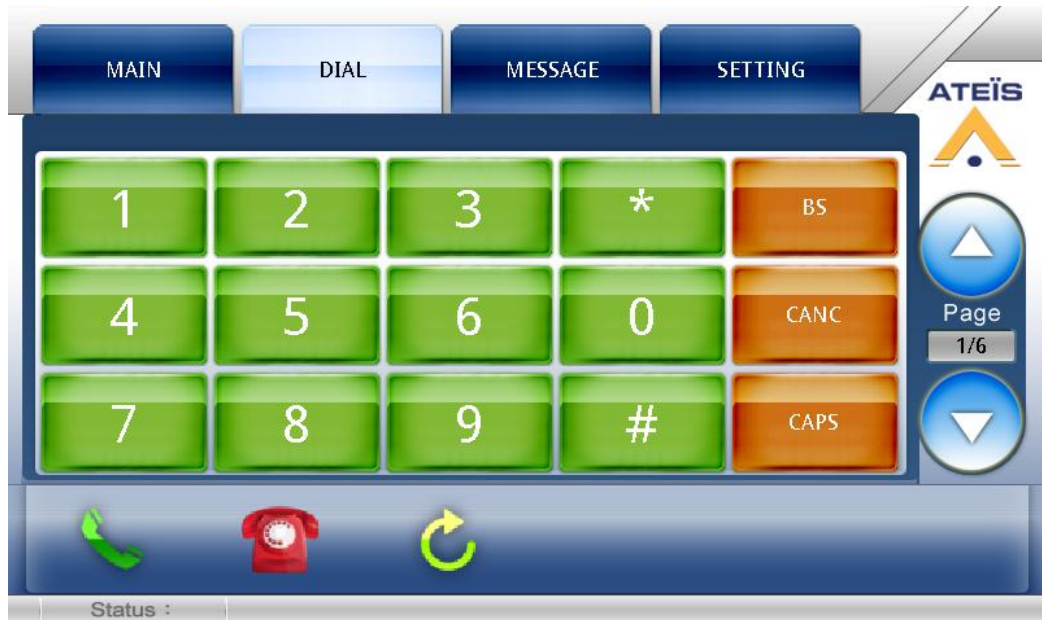
- BS: Backspace.

- CANC: Cancel all.

- CAPS: Caps lock.

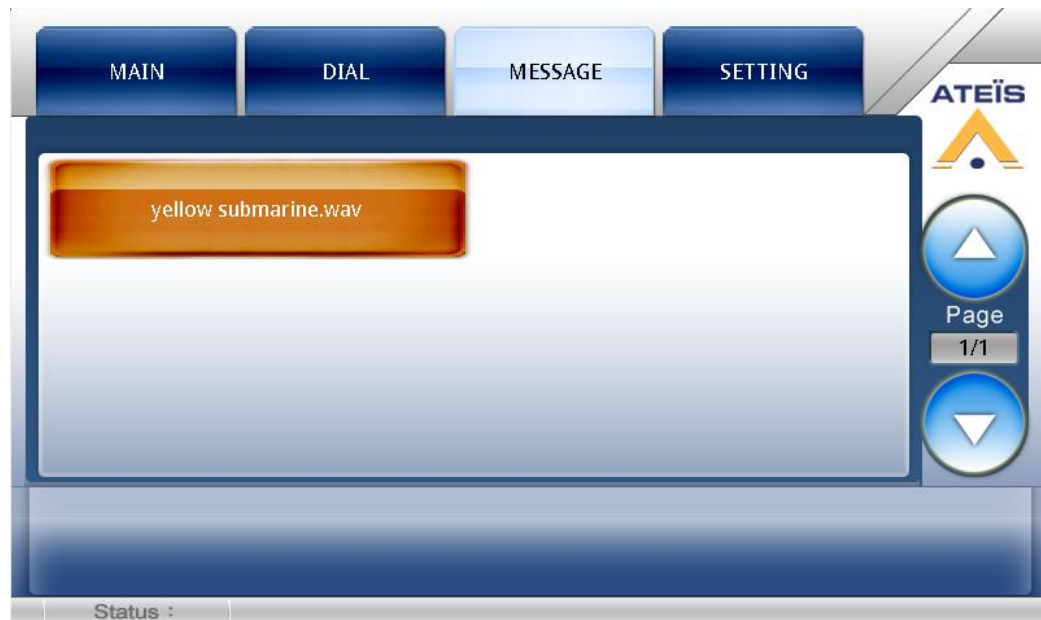After entering the phone number, press the " " icon to dial from SIP Call.

You can re-dial the last phone number by pressing " ".

If you intend to dial a local call, press the icon to dial.

4.2.2.3.3 Message

❖ Play messages:

Select the audio file > Go to Main page, select devices > Press button.

The audio files are stored in the device's flash. You can check the free disk space on the web server.

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

4.2.2.3.4 Setting

Use - , + buttons to adjust the speaker volume.

- (Volume):

  Use - , + buttons to adjust the speaker volume.

- (Brightness):

  Use - , + buttons to adjust the Screen brightness.

4.2.2.4 Characteristics

❖ Case

- Dimension = 250mm(W) x 140mm(L) x 80mm(H)
- Weight = 1.1kg (2.43 lb)
- Color = RAL7016

❖ Screen

Diagonal = 5"

Resolution = 800 x 480

❖ Power

Item	Voltage	Current Consumption	Connect Type
PoE	>19VDC	250mA	RJ45
24VDC	24VDC	-	DC Jack

- MAX Power consumption = 6W.

❖ Microphone Length: 275 mm.

❖ Microphone Output

- Maximum level = 6dBu.
- Output Impedance = 100Ohm.
- THD @ 1kHz < 1%.
- Bandwidth @ -3dB = 100Hz ~ 18kHz.
- Noise Gate Threshold = -84dBu ~ -24dBu.
- Target Output Level = 0.
- Max Output Level = -54dBu ~ 6dBu.
- Attack Time = 8ms.
- Release Time = 100ms.

❖ Front Panel Speaker

- Impedance = 4Ohm.
- Maximum Power @ 1kHz = 1W.
- THD @ 1kHz < 1%.

- Bandwidth @ -3dB = 200Hz ~ 12kHz.

❖ Maximum Cable Length

- 100m on Category 5 cable

4.2.2.5 Connection

At first connect the PPMTouch to your TCP/IP network. If your switch/hub provides PoE (power over ethernet) then you don't need to use a power supply. The switch/hub will bring power to the PPMTouch. If you don't have PoE, then power the PPMTouch with the external power supply.
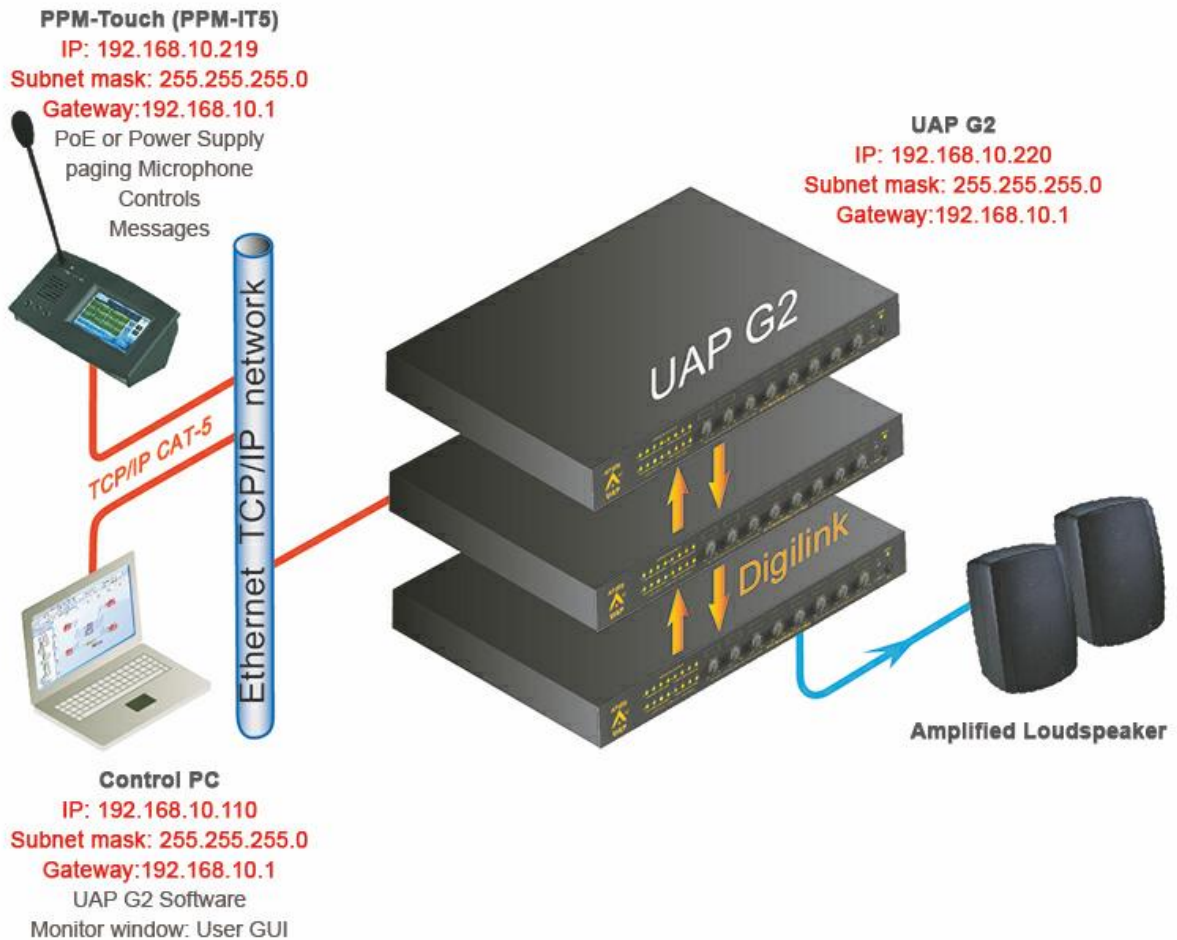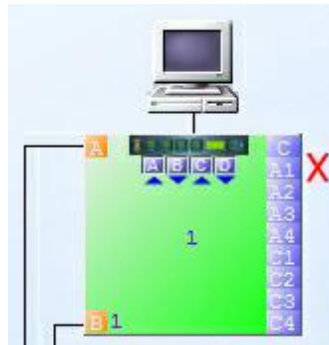

Set the IP settings of your PC to be on the same network than the PPMTouch.

4.2.2.6 Configuration

❖ Define the PPMTouch in the UAP G2 software

With the PPMTouch, there is no need to put it in the System window as we do with the PPM and PPM-SP.

Double-click in the UAP G2 icon, to open the component list.

Drag and drop one of the LPC to the design area. The PPMTouch can have 16 output zones at max.

Drag and drop the PPMTouch component to the design area.

Link the PPMTouch component output to the input of the LPC. Connect also the LPC outputs to the zone outputs.
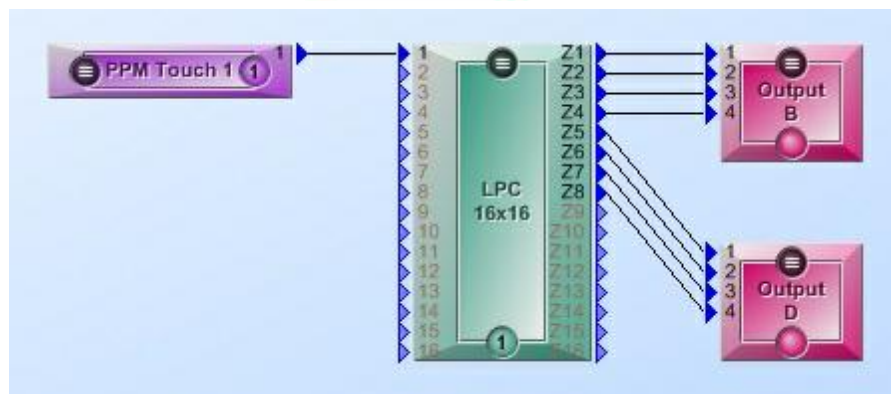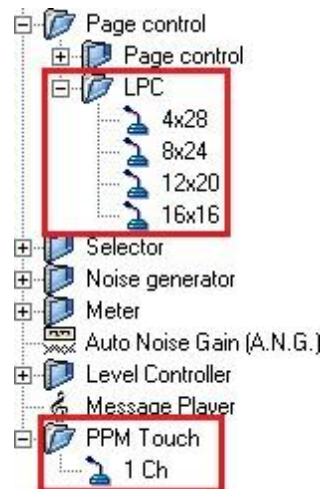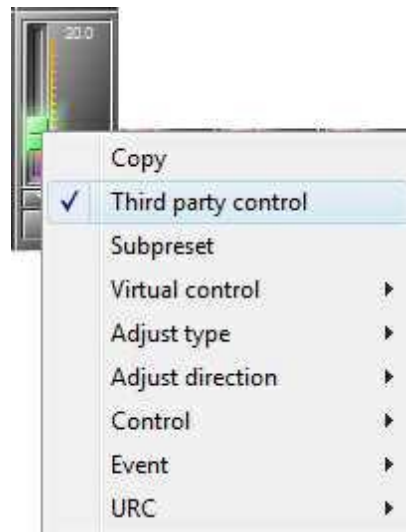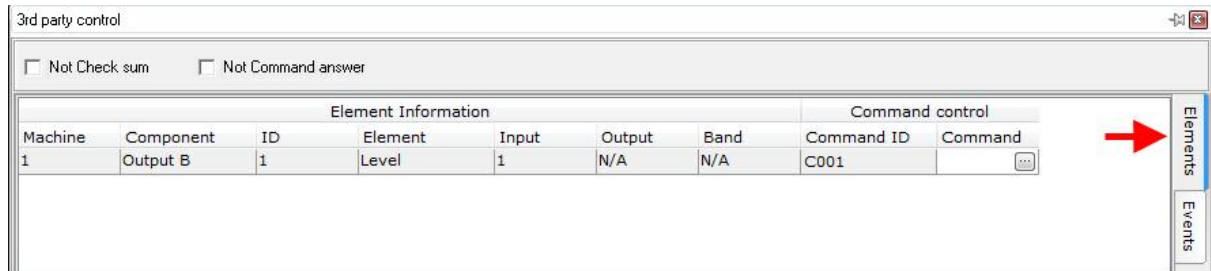

❖ Define Control

- Control a fader:

  In the UAP G2 software, open the component to control.

  To control a fader, right-click on the fader and select "Third Party".

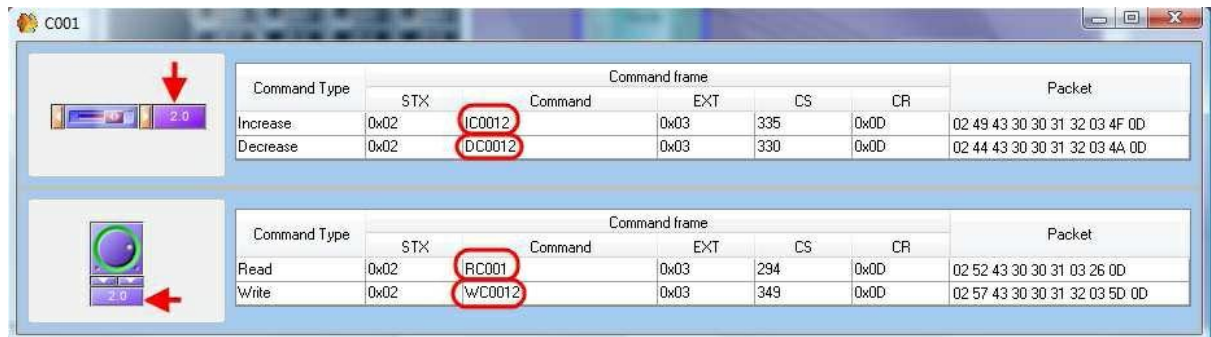Open View/Third Party, and select the "Elements" tab. You can see the element control.

Just add a "I" to the command ID (here C001) to increase or a "D" to decrease.

In this example, the command IC001, will increase of 2.2 dB.

⚠️ The following content is not available on v1.0.3.54:

Click on the three dots (⬚) of the event, that will open this window.

Here you can see three different command: Increase, Decrease, Read and Write.

If you want to increase or decrease the fader, then you have to write the step (in dB) in the horizontal

fader in the window top. The Command will change, depending of the step.

If you want to write a value, then you have to write this target value on the knobs, in the window

bottom. The Command will change, depending of target value.

If you want to read a value, then you don't have to set the knobs, just use the Command.
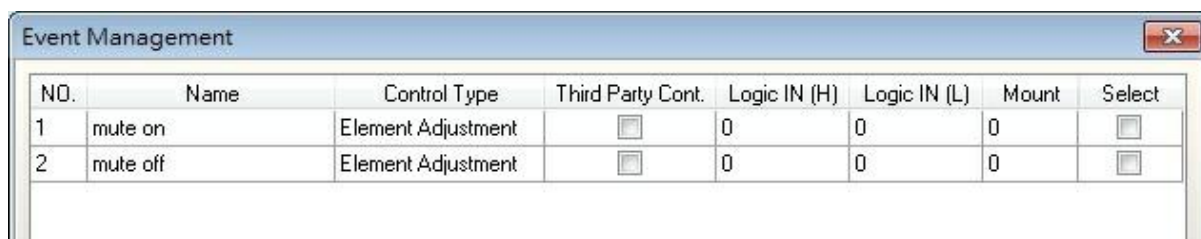
You can read, under "Commands", the Command string to be set in the PPMTouch.

Please see Set Control on PPMTouch.

• Control a button:

To control a button, we need to use two events. One event is used to active the button and another to release it.

Open "View > Event Management."

Click [Add] two times, to create two events. Under "control Type" select "Element Adjustment".

Rename the event as you want.

Now push your button to have it in its "active position". Then right-click in the button and select the

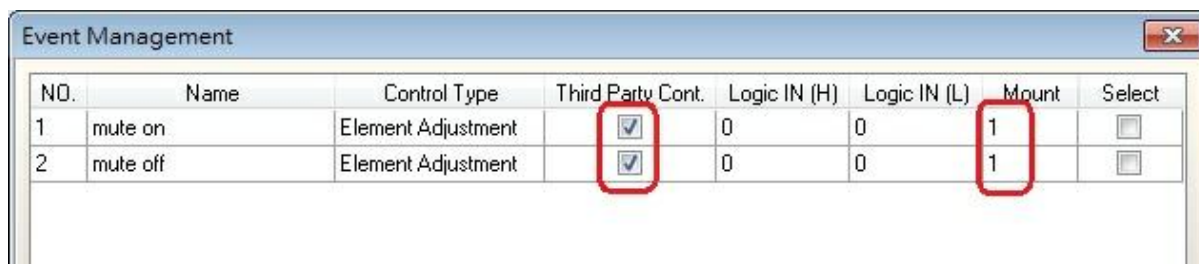event for the activation (in our example, Mute On).

Then do the same for the other button position. Release the button and assign it to the event for the release (in our example, Mute Off).
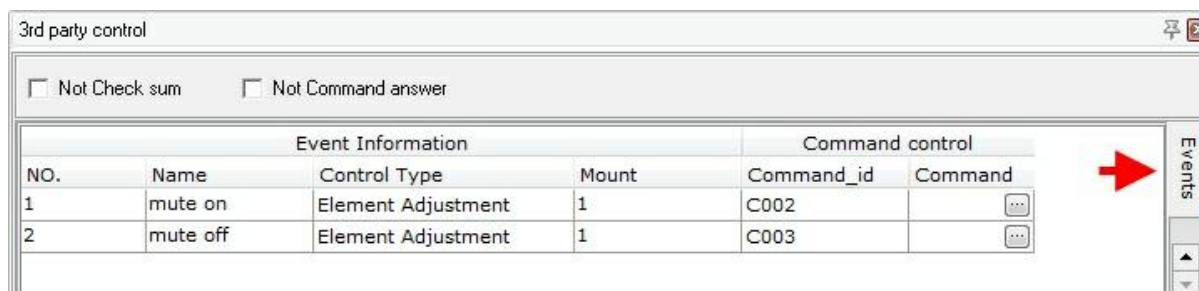
Now open again View/Events Management.

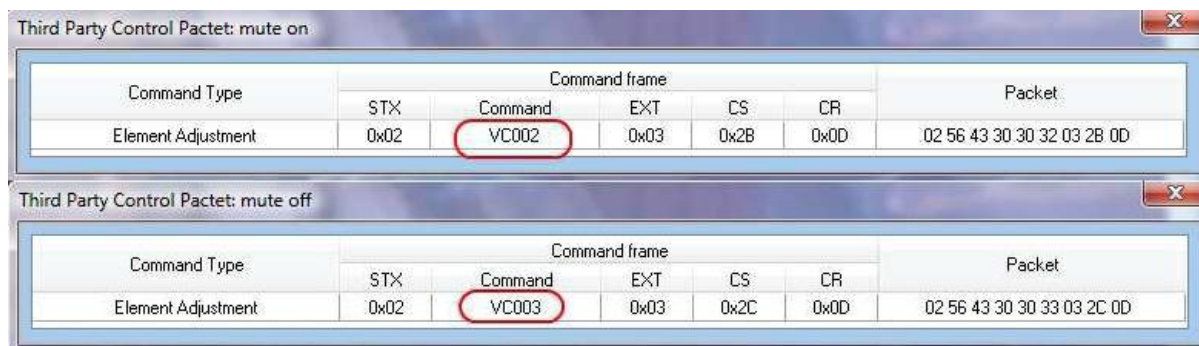Notch the "third Party" option for the both events.

Check on "Mount", it must be 1 if the event is assigned to an element parameter.

Open View/Third Party, and select the "events" tab. You can see the both events.

Click on the three dots ( ) of the both events, one by one, that will open these windows.

You can read, under Command, the Command string to be set in the PPMTouch.

Compile and store the configuration.

Please see Set Control on PPMTouch.

4.2.2.7 Web interface

UAP G2 System embeds a web interface that enables you to control the PPM-IT5 through your favorite internet browser.

4.2.2.7.1 Window layout

Ⓐ Main menu bar:

In this menu you will find the major operations related to your device which allows you to compile the configuration design and to save the compiled configuration into the device.

Ⓑ Second menu bar:

In this menu you will find the detail settings for each function.

Ⓒ Name / Version:

Display the name of the product, firmware version and system time.

Ⓓ URI:

Display the URI (sip:x@y:Port).

🄴 Line / Out:

Display the information of Line Out(2 channels).In

🄵 Content area:

List the information of device and the adjustment of each setting.

🄶 Save/Cancel:

These buttons are made for users whether to save or cancel the settings.

4.2.2.7.2 Setup 1

Setup 1	Setup 2	Update	Status	About	Logout
Basic Setting	Device List	Function Libraries	Main Window	Volume Control	GUI
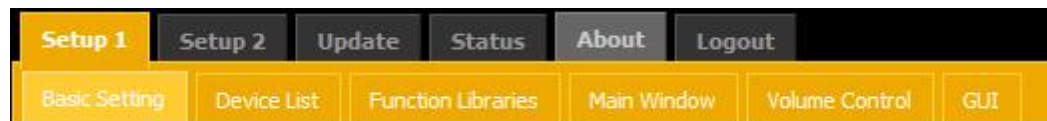
Under the "Setup 1" tab, you can set how PPM-IT5 connects with network and perform each functions such as Stream Out, Logic Control, 3rd party control, etc.
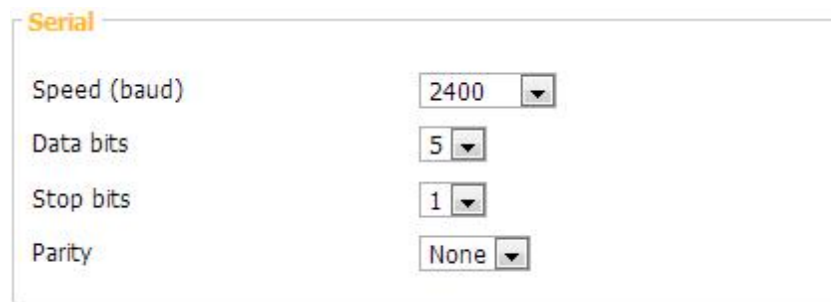
4.2.2.7.2.1 Basic setting

❖ Network:

Network

DHCP	○ Enable ● Disable
IP Address	192.168.101.171
Subnet Mask	255.255.252.0
Gateway	192.168.100.254
DNS	192.168.100.203 ☐

- DHCP: Enables/disables the Dynamic Host Configuration Protocol.
- IP Address: Click to change its IP to fit your network. (Each Terracom device is shipped from the factory with a default IP address of 192.168.100.1)
- Subnet Mask: Depends on the LAN where the Terracom devices located.
- Gateway Server: The IP address of the gateway server.
- DNS: Check the checkbox to enable the DNS server and type the IP address.

❖ Serial:

This area is for the 3rd Party control.
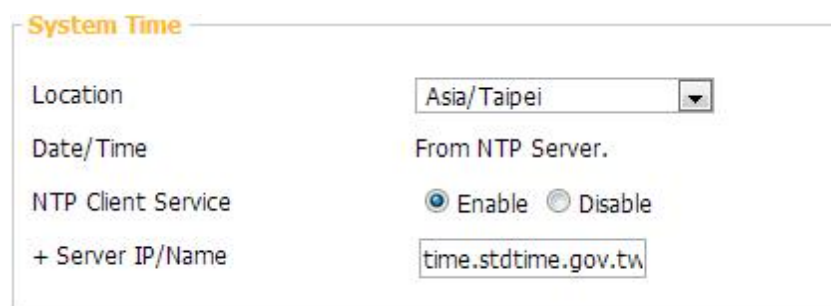
- Speed(Baud), Date bits, Stop bits, Parity: Settings for 3rd Party Control and SERIAL LINK bypass.

❖ System Time:

- Location: Click the drop-down list to select the location and click the [Save] button at the bottom of the page to apply.

- Date/Time: Manually set the device's time.

- NTP Client Service: Once enable this, the NTP Server IP is needed.

Changes in the System Time area will affect the Scheduler and the Current Time displayed at the upper right of the web page.

❖ Dial Agent:

- On PPM-IT5's webpage:

Agent Service: Enables/Disables the dial function. The PPM-IT5 will become the dial for other device with telephone card such as ECS. You need to add a VoIP component for ECS by Ateis Studio and type your IT5's IP at the Dial Agent field as shown in the picture below:
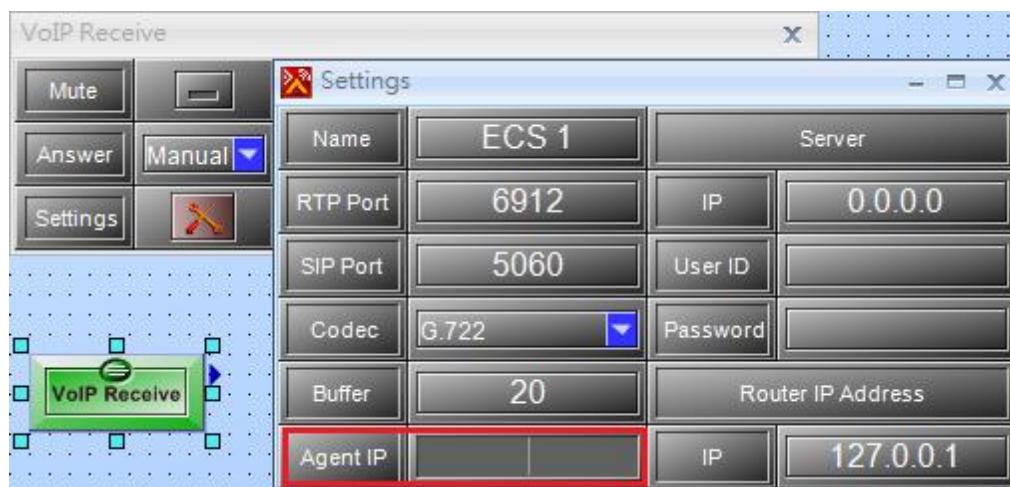
Once the setting is done, switch to dial page of IT5 and you can start a telephone, see this.

Once enable this, the IT5 only remains the dial function.

- On the webpage of other types of Terracom device (non-Terra-FXO and non-IT5):

The Terra-FXO is the Foreign Exchange Station and can perform the telephone call with a phone set plugged. Click the drop-down list to choose the FXO as the Agent Device which has been added into the Address Book.

❖ License (Only appears on IT5's webpage):

- License Service: Enables/Disables the License Service, the user need to enter the username/ password before performing a call, paging, etc. Once the license service is enabled, you can set the permission of buttons as well. See this.

❖ Family Status:

- Status Notify Service:

Enables/Disables this feature for the management and monitoring purpose usually when the network setting doesn't support IGMP. Under this occasion, a TerraServer is needed.

Once enable Status Notify Service, the Terracom device will unicast its online status to the Server, and the Server will spread it to other devices, therefore, each device and be added into Address Book and be communicated.

❖ SERIAL LINK Bypass:

- Serial to Network Service: Enables/Disables the bypass from the Terracom device to Network.

- Network to Serial Service: Enables/Disables the bypass from Network to the Terracom device.

❖ Third Party Controls:

There are two interfaces provided for 3rd Party Control:

- Serial Controls Service: Enables/Disables the 3rd party control. Once enabled, the "Serial" setting area is required.

⚠ This will automatically disables the Serial to Network Bypass.

- Network Controls Service: If the Network Controls Service is enabled, the local network port is required.

❖ Command String Controls:

- Network Port: If the user choose Ethernet interface for Command feature, the source(network) port must be assigned.

❖ SIP:

- Transfer Protocol: In certain cases, users may use the Terra Server to relay the audio packet through TCP or UDP.

- Firewall Traversal Mode: For users to choose SIP server or not.

- Username: For TERRA family to identify this device.

- SIP Port: Network port for SIP protocol.

- RTP Port: Network port for RTP protocol, the value should be an even number.

- AGC: If Auto Gain Control is enabled, the following items will appear:

   o AGC Noise Threshold Control: The threshold for active AGC.

   o AGC Maximum Gain Allowed: Limit the maximum gain in AGC.

- Global Priority:

   IDA8, UAP G2, LAP G2T and ECS use central priority control mechanism. The device priority is required while cooperating with these devices.

   Once the SIP priority here is higher than the TerraManager's, this device's zone won't be able to

paged by TerraManager.

- Audio Codec: There are two Codec for SIP, G.711 / G.722 / G.726 / G.727

- Time to Stop Ring: The SIP call will be hung up after the set time. If sets up as 0 second, it won't stop ringing.

- SIP Auto Answer: The SIP call will be automatically picked up, usually for monitoring usage.

- SIP Auto Answer Input: Choose the input source, MIC IN or LINE IN.

- Booting Tone: The Terracom device will play the booting tone after it's ready.

- Speak Out IP Address(CIN1): Closing pin G and pin 1 during the booting tone,TERRA-EX, EXA, IEX, AMP, FDX, DS will speak out its IP Address.

- Factory Setting(CIN2): Closing pin G and pin 2 during the booting tone will restore the default setting.
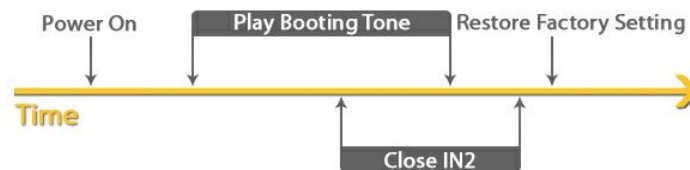
- SIP Active/Inactive, Audio Out Active/Inactive:

  The Terracom will trigger the chosen "Logic Out (Single)" Function while the SIP call/Audio output is active/inactive. The following pictures show the change of a logic signal in time line graphic:

SIP active/ inactive indication

Logic Out (Single): Reverse mode

❖ SIP :
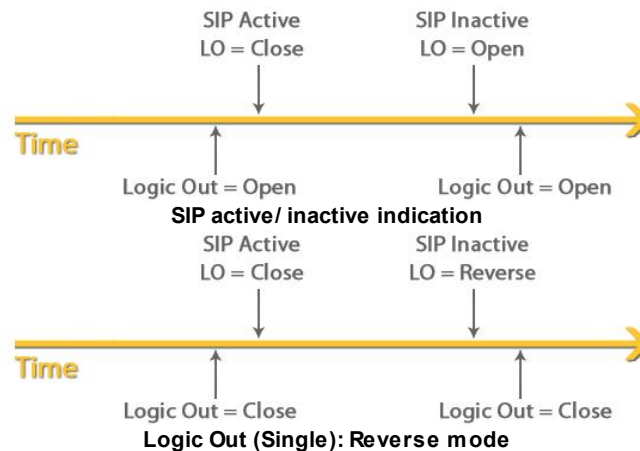
Half-duplex: Enables/Disables the half-duplex intercom to PPM-IT5.

Once it's enabled, a new button "Push to Talk" appears on IT5's touch screen during a call from Terra-DS as shown in the picture below:

When the button is pressed, the IT5 is the party who transmits.

❖ Stream Buffer:

Streaming Buffering Time: Buffering time for Audio-in from network.

❖ Paging Setting:

You can only enable one setting a time.

- TERRA server agent: Paging through Terra Server, you need to enable the "Family Status" as well.

   o TEERA Server IP: Enter the IP Address of your Terra Server.

- IGMP Fix Address:This is for multi-paging. Enable the fix address to use the specific IGMP address and disable the fix address to get the IGMP address randomly.

4.2.2.7.2.2 Device list

| Basic Setting | Device List | Function Libraries | Audio Matrix | Control Input | Playlist | Recording |

Address Book

Name	URI	Zone	Product Type	Action
AMP_101115	AMP_101115@192.168.101.115:5060	1,2	amp	Edit / Delete
EX536_101162	EX536_101162@192.168.101.162:5060	1,2	ex536	Edit / Delete
IT5_101215	IT5_101215@192.168.101.215:5060		touch	Edit / Delete

RealTime Search

Name	URI	Product Type	Action
FDX_101170	FDX_101170@192.168.101.170:5060	fdx	Add
LAPG2T1	LAPG2T1@192.168.101.98:5060	lapg2t	Add
1	1@192.168.100.230:5060	uapg2	Add
IDA8C4	IDA8C4@192.168.101.8:5060	IDA8C	Add
DS_10112	DS_10112@192.168.101.12:5060	drs	Add
1001	1001@192.168.101.218:5060	fdx	Add
IT5_101169	IT5_101169@192.168.101.169:5060	touch	Add
AMP_101118	AMP_101118@192.168.101.118:5060	amp	Add
ateis	ateis@192.168.102.55:5060	touch	Add
EXA_101124	EXA_101124@192.168.101.124:5060	exa	Add

❖ Address Book:

If you need to use Function Libraries, the devices need to be added into the Address Book.

Add Device

Name	FDX_101170
Product Type	TERRA-FDX ▾
URI	FDX_101170@192.168.101.170:
Zone	1,2 ▾ Add
Priority	99

⚠ The priority set will affect the paging and SIP calls. The smaller the number the higher the priority.

❖ RealTime Search:

Shows the list of all Terracom units connecting to your LAN, click "add" to add the device.

4.2.2.7.2.3 Function libraires

The Function Libraries chapter talks about how to set the functions for Control Inputs.

First things first, please make sure the Basic Setting and the Control Calibration are done completely.

Allows the user to create a group as a function target with devices added in the address book.
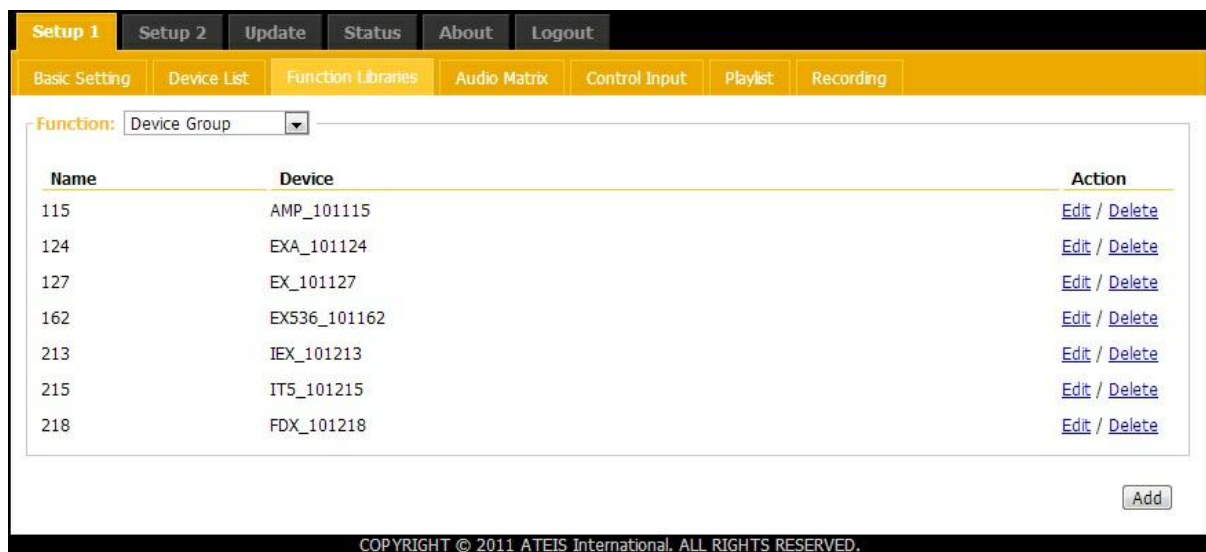
Click the [Add] button to add a group as shown in the picture below:

Sends Command String to other device.

1. Set the Function and click Save.

- String: The command string depends on the target device. Terracom only receive the command string in ASCII.

- Interface: You can send Command string through the Serial port or Network.

- Mode:

  o Time Interval: The device will send the command string in period.

  o Time Out: The device will stop sending the string if receiving the answer string from the target.

2. A Command (String) can be triggered by a Logic or by a scheduler.

- By using a Logic:

  Go to "Control Input" page and use logic to send a command.

  After connecting a trigger device such as a push button, you can perform the function with the setting listed below:
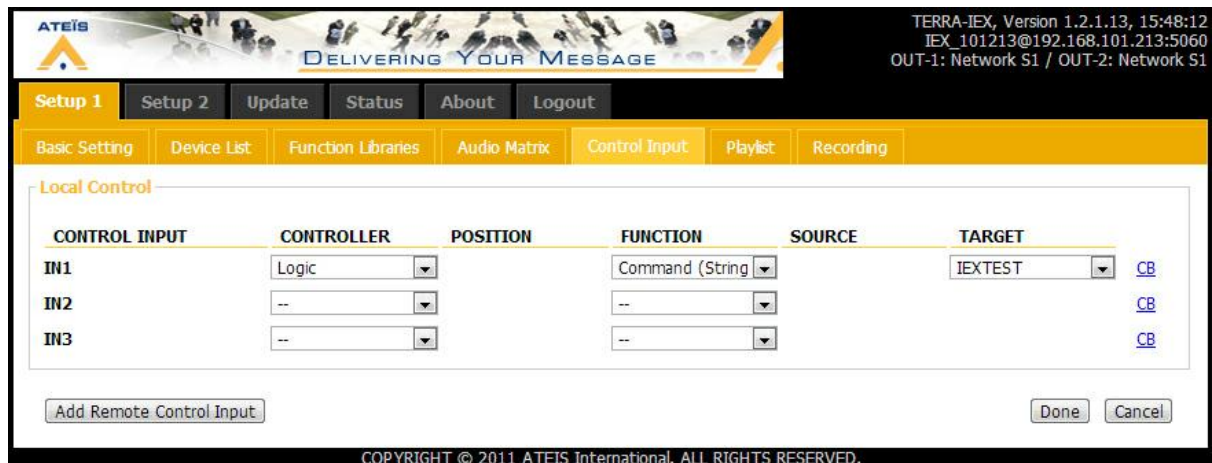
- Control Input: Select the input your button is connected to. (IN1 means short pin 1 and pin G)

- Controller: Select Logic.

- Position: N/A.

- Function: Select Command (String)

- Source: N/A.

- Target: Select the command function you set.

After pressing the button, the command will be sent through Network or through Serial.

- By using a Scheduler:

Go to "Scheduler" page and use the scheduler to send a command at the the time you set.

1. Go to "Setup2 > Scheduler".

2. Click the first drop-down list at the Command area to select "Command (String)", the commands will show on the next drop-down list as shown in the picture below.

3. After the Date, Time and Repeat settings are done, the Terracom will send the command trigger by the scheduler.

3. Here is an example the PPM-IT5 sends command to control 3rd party type of UAP G2, ECS, LAP G2T, etc.

- Send the string: **%02hWC0051%03h$1%0dh** from PPM-IT5.

  o **02**: This is a fixed value and cannot be changed.

  o **WC0051**: Number created by Ateis Studio.

  o **%xxh**: Convert xx into hexadecimal values.

  o **$1**: Checksum.

o **0D**: This is a fixed value and cannot be changed.

📝 Normally, you only have to change the "WC0051".

- Here we can check the 3rd party control command received by the target:

Control	Type	STX	OP	ID	Value	EXT	CS	CR	Command Data
Single	Read	0x02	R	0005		0x03	0x17	0x0D	02 52 30 30 30 35 03 17 0D
Single	Write	0x02	W	0005	1.0	0x03	0xAB	0x0D	02 57 30 30 30 35 31 2E 30 03 AB 0D
Single	Increase	0x02	I	0005	1.0	0x03	0x9D	0x0D	02 49 30 30 30 35 31 2E 30 03 9D 0D
Single	Decrease	0x02	D	0005	1.0	0x03	0x98	0x0D	02 44 30 30 30 35 31 2E 30 03 98 0D

String: %02hcmd=3rd WC0015%03h$1%0dh

Sends the Logic controls to the target.

1. Set the Function and click Save:

- Name: The function's name.
- Remote Target: Select the target you want it to perform the Logic Out as a remote. If none of items are selected, the target will be the local device.
- Channel: Depends on the type of Terracom. For example, the Terra-IO has 8 relays.

  ⚠ If the Terracom device doesn't have the channel you chosen, no activity will be taken.

- Value:

  o LOUT_MODE_ZERO: Contact output's channel relay will be "Normally open".

  o LOUT_MODE_ONE: Contact output's channel relay will be "Normally close".

  o LOUT_MODE_TOGGLE: Contact output's channel relay will switch between open and close.

  o LOUT_MODE_PULSE: Close during High period then open during Low period like a square

wave.

- ▪ High/Low period: The period between each pulse.

- ▪ Times: The times of the pulse.

   o LOUT_MODE_REVERSE: Reverse the last status.

2. Go to "Control Input" page, there are two ways to use the Logic Out(Single) function.

   • By using the Logic:

      Here we use an example to explain how the remote control works with Logic Out(single) function.

      After connecting a device such as a power switch which can be controlled by a Terracom device's relay. You have to set a logic input (button) to trigger the Logic Out (relay). See the picture below:
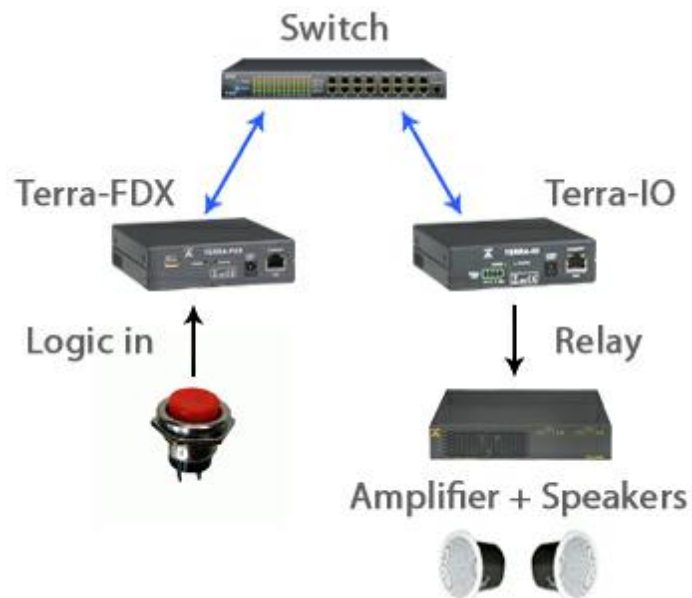
FDX uses IO's relay to open the Amplifier's power.
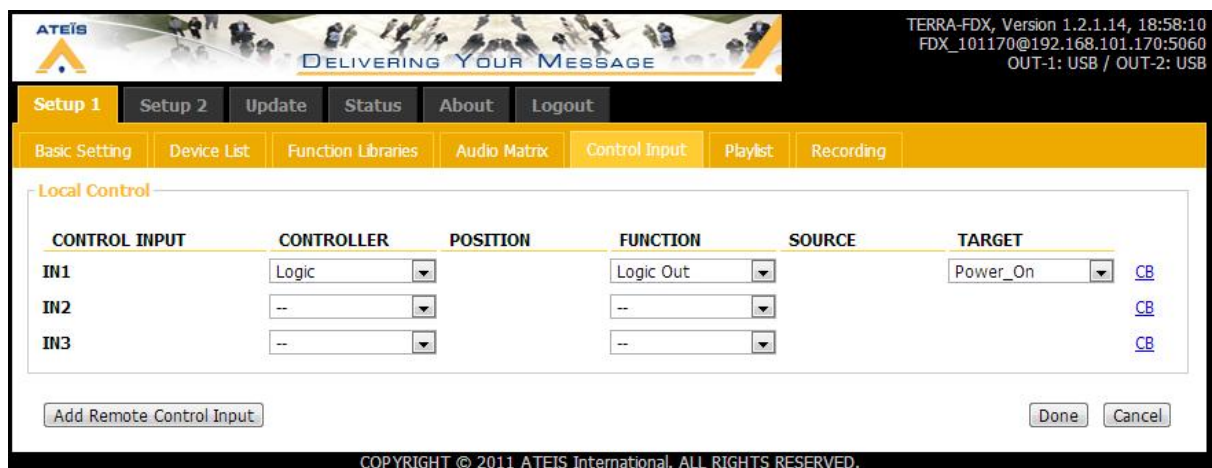
   o Control Input: Select the input the button is connected to. (IN1 means short pin 1 and pin

G)

- o Controller: Select Logic.

- o Position: N/A.

- o Function: Select Logic Out.

- o Source: N/A.

- o Target: Select the Logic Out(single) function you set, here we use Power_On.

After pressing the button connected to FDX, the IO switches its relay to open the power of the Amplifier.

- By using a Scheduler:

Go to "Scheduler" page and use the scheduler to send a Logic Out at the the time you set.

1. Go to "Setup2 > Scheduler".

2. Click the first drop-down list at the Command area to select "Logic Out (Single)", the logic out function will show on the next drop-down list as shown in the picture below.

3. After the Date, Time and Repeat settings are done, the Terracom will send the Logic Out signal triggered by the scheduler.

The Marco manage the sub-page and controls the function at the same time.

1. Set the Function's name and click Save.

- Name: The button name.
- Control: This item is for Logic Out(Single) and Command(String), the action will be taken while the Marco button is pressed.

2. Go to Main Window page and set the Marco button you create before.

   Click the drop-down list to switch between Macro and the Main page.

- Button Function: There are Device, Paging Group, Command(String), Logic Out(Single) and Locked Btn.
- Button Name: The name of each button appears on IT5's touch screen.

There is no way to move buttons from one Macro to another, you need to add those buttons manually.

Pages to all devices in the group.

1. Select devices you want to paging and give this paging group a name, here shows "p115" which includes 4 devices.

2. Go to "Control Input" page, there are two ways to use the Paging Group function you set.

   • By using a Logic:

      After connecting a trigger device such as a push button, you can perform the function with the setting listed below:

   o Control Input: Select the input your button is connect to. (IN1 means short pin 1 and pin G)

   o Controller: Select Logic.

   o Position: N/A.

   o Function: Select Call Button.

   o Source: Select the source, MIC IN or LINE IN.

   o Target: Select the target, here we use p115.

   By pressing the button to start a paging to all devices (if the priority is lower than other current

paging source, the paging failed)

- By using a RAC 5 or RAC 8:

  After connect a RAC and a button, you can perform the function with the setting listed below

- o Control Input: Select the input the RAC is connected to (IN1 means short pin 1 and pin G).

- o Controller: RAC 5 (or RAC 8).

- o Position: The channels of the RAC.

- o Function: Select Call Target.

- o Source: N/A

- o Target: Select the target, you can set 5 (or 8) different targets.

Now, set a button (as mentioned before) to trigger for RAC.

- o Control Input: Select the input your button is connect to (IN2 means short pin 2 and pin G).

- o Controller: Select Logic.

- o Position: N/A.

- o Function: Select Call Trigger.

- o Source: Select the source, MIC IN or LINE IN.

- o Target: Select the target, here we use "IN1" where the RAC is connected to.

Easily switch the knob to the target you want and press the button to paging.

Locked Button is associated with External Variable and only appear at PPM-IT5's Function Libraries. Here we use a simple example showing how to combine those functions steps by steps:
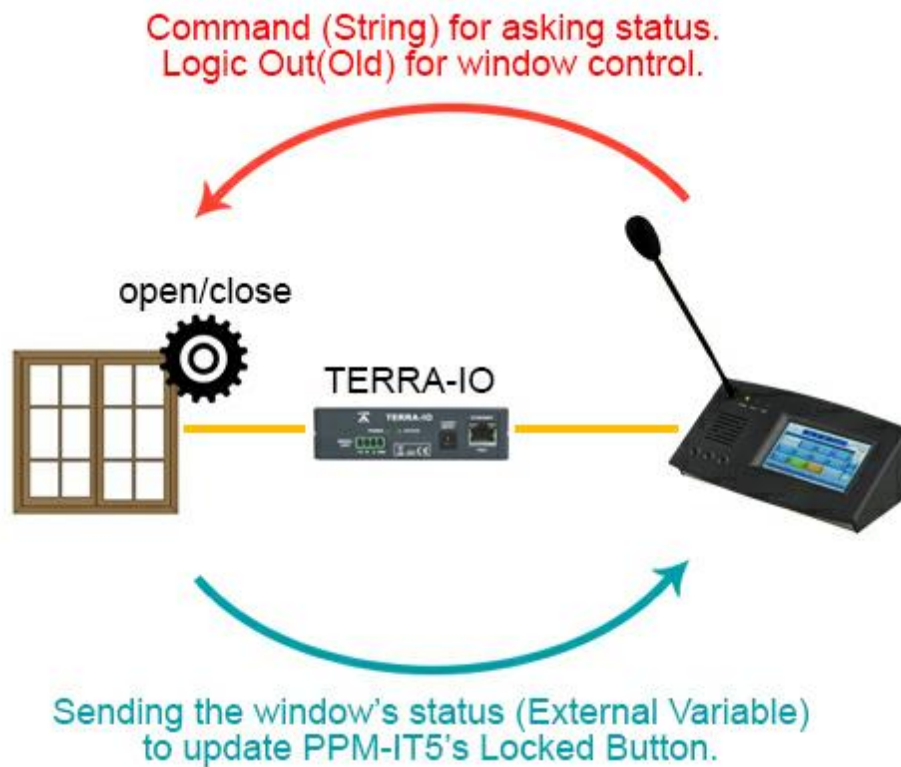
Pressing one button on PPM-IT5 to control the window with the Terra-IO.

❖ Add a Locked Button function:

This is for performing the Logic Out with External Variable's status.
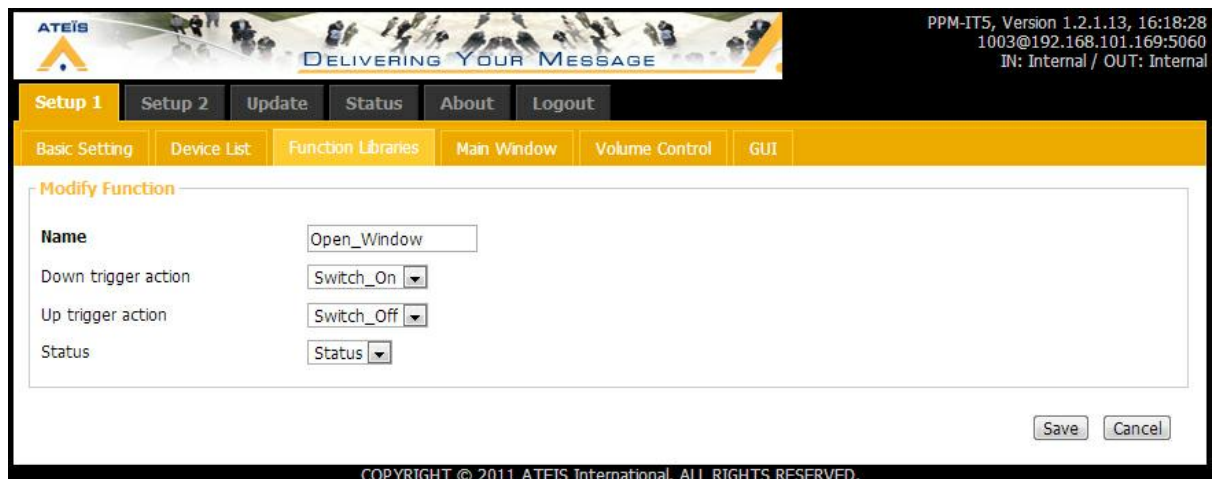
- Name: Button's name, this will appear on IT5's touch screen.

- Down trigger action: Select the Logic Out(Single), action when the button is down.

- Up trigger action: Select the Logic Out(Single), action when the button is up.

- Status: This is the External Variable function.

After the Locked Button function added, see the next chapter to add an External Variable function.

Allows other device to control Terracom devices through 3rd Party Control. You have to enable the 3rd Party Control at Basic Setting page.

1. Set the Function and click Save.

- Name: Function's name as the string.
- Function:
    o Call: Calls one device or call devices one by one.
    o Paging: Pages to device. (One or more)
    o Message: Plays message to device. (One or more)
    o Monitor: As the monitor function of PPM-IT5's.
    o Hung up: Closes the session (Call, paging, Message, Monitor).
    o Logic out: Controls local Logic Out or remote Logic Out by sending UDP packets.
- Source: Choose the The MIC-IN or LINE-IN from the Terracom.
- Target: The target for the selected function, a group or a device.

❖ Example:
- 3rd party control Terracom device:

    We use this program "UDP Test Tool " to command IT5, string: cmd=3rd _____, underline is the function's name.

    And then the PPM-IT5(192.168.101.215) will call AMP-101217.
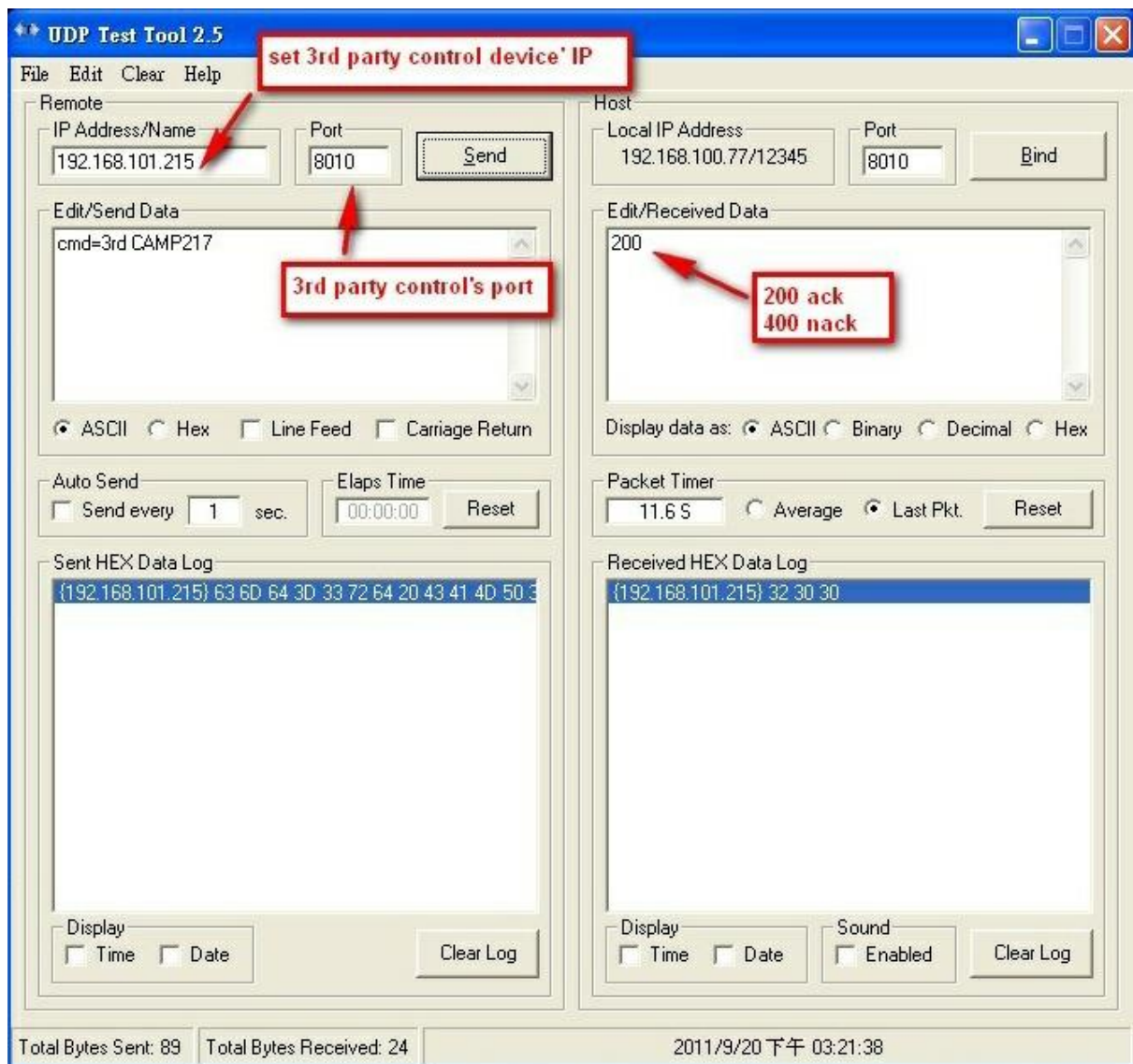
Add an External Variable function and save.

This is for updating the button status with the true/false value and showing the "button up" or "button down".

- Name: The name of the function.

- Type: The type of function, select Logic.

- True/False: The elements of the answer string.

- Auto Update: The command string, see the picture below.

- Name: The function's name.

- String: The command string depending on what your target device can receive and read.

- Interface: Choose Network

  o Network IP: The IP of the device which performs the Logic Out.

  o Network Port: The Port of the device which performs the Logic Out.

- Mode: The way a device answering the command.

  o Time Out: The device will stop sending the string if receiving the answer string from the target.

  o Time Interval: The device will send the command string in period.

- Ans: Click the [Add] button to add the Variable, here is #Status#.

- Time Out: Set the time out, the unit is millisecond.

- Repeat: The times of sending the command string.

In this case, the answer string would be "I am open"(true) or "I am close" (false). Once PPM-IT5 receive this, it will update the button's status(up or down).

Jumping pages via the PPM-IT5 by using this function. Users can customize the pages which reduce the difficulties for switching pages repeatedly.

1. Select the "Goto Button" function at "Setup1 > Function Libraries".
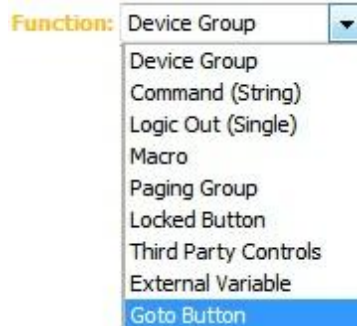
2. Choose the name of the function.

- Edit / Delete: Edit or delete the selected function. Edit: To open the setting window, see the next picture below.

- Add: Set more page jumping function.

3. Select the customized function users intend to change via PPM-IT5, then press the [Save] button.

- Name: The customized name of each button appears on IT5's touch screen.
- Page: Choose the modified page intending to switch to .

Save the alteration to perform a page jumping function on PPM-IT5.

Set the Null Button for specific black space via the PPM-IT5 by using this function.

1.Choose the specific page and button to set the null button. One page is consisted of a maximum up to twelve buttons. Users shall customize the function for their demand.

2.Once the setup has completed, see the picture below and check whether the alteration is modified or not.

4.2.2.7.2.4 Main window

Here you can set the buttons of PPM-IT5, this will immediately show on its TFT screen.
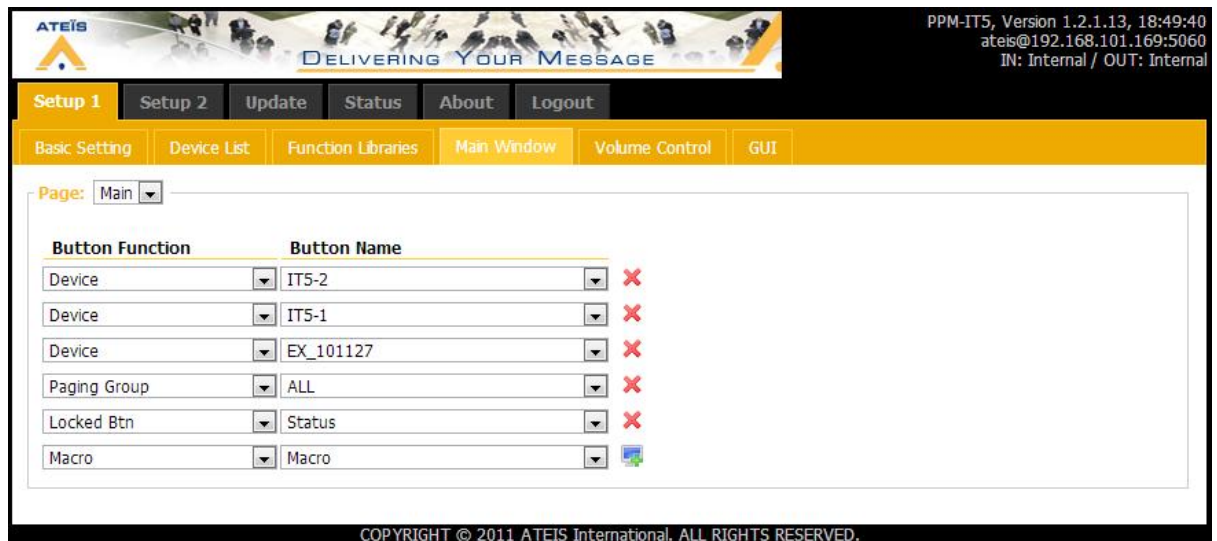
Use "⊞" and "✖" to add/delete buttons, it needs to click the [Add] icon to confirm the last button you added.

❖ Button Function:

- Device:

  The booked device, the button name is the same as the device's name. See this.

- Paging Group:

  The Paging Group button is a group of devices edited in the Function Libraries. The paging starts and the pre-chime plays after the button pressed. See this.

- Command (String):

The button which sends a command string edited in the Function Libraries. See <u>this.</u>

- Logic Out (Single):

  The Logic Out edited in the Function Libraries, see <u>this.</u>

- Locked Btn:

  The Locked Btn edited in the Function Libraries, see <u>this.</u>

- Macro:

  The Macro edited in the Function Libraries for managing buttons. See <u>this.</u>

- Goto Button:

  The Goto Button edited in the Function Libraries, see <u>this.</u>

- Null Button:

  This Null Button edited in the Function Libraries, see <u>this.</u>

❖ Button Name:

You have to add functions at the Function Libraries page, then the items will appear at each drop-down list.

❖ License Service:

Once the license service is enabled, you can set the permission of buttons. The password is required for the unchecked items.
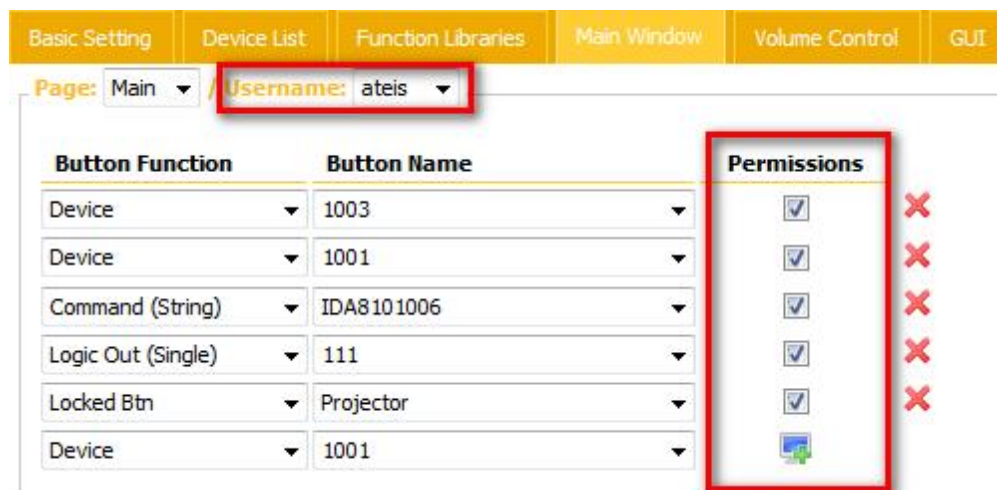
The keyboard for typing the password appears when the secured button is pressed as shown in the picture below:

4.2.2.7.2.5 Volume control

- Volume:

  Adjust the level of built-in speaker.

- Phone Jack:

  Adjust the level of Audio In-Out (3.5mm phone jack).

- Microphone:

  Adjust the level of built-in microphone on your PPM-IT5 device.

- Chime itself:

  Adjust the level of chime sounds for the built-in speaker.

- Chime out:

  Adjust the level of chime sounds for other paging zones.

4.2.2.7.2.6 GUI

Here you can change the font size and language of the main buttons, you have to reboot PPM-IT5 for the changes to take effect.

❖Display Settings:

Title	Options
Screen Timeout	OFF
Disable Screen Saver During Phone Calls	OFF
Enlarge Font	100%
Backlight Level	7

- Screen Timeout: Set the Screen Timeout from 15 seconds to 30mins.
- Disable Screen Saver During Phone Calls: Enable or Disable the Screen Saver function on your device.
- Enlarge Font: Enlarge the font from scale 80% to 160 %.
- Backlight Level: The level settings for backlight control.

❖Label Settings:

Default Name	Customize Name
MAIN	MAIN
DIAL	DIAL
MESSAGE	MESSAGE
SETTING	SETTING

- PPM-IT5 supports multi-language Here you can change the name of MAIN, DIAL, MESSAGE, SETTING. It will also display on the PPM-IT5.

4.2.2.7.3 Setup 2

Setup 1	Setup 2	Update	Status	About	Logout
Account Management	Scheduler				

Under the "Setup 2" tab, you can set how PPM-IT5 connects with network and perform each functions such as Account Management and Scheduler.

4.2.2.7.3.1 Account management

Here you can manage the accounts, such as add/delete a user's ID and change one's password.

Five default account:

1. admin / admin

2. ateis / ateis

3. user1 / user1

4. user2 / user2

5. user3 / user3

If you want to change an existing account, the old password is required.

Management

Select Function	Change a user's password ▾

Change a user's password

User's ID	
Old Password	
New Password	
Re-enter to Confirm	

4.2.2.7.3.2 Scheduler

❖ Custom Scheduler List:

Custom Scheduler List

Example Scheduler	Send logic1(Logic out) Command...
a	Send FDXTEST(String) Command... Start on: 2012-11-05 Ends: 2012-11-06 Repeats: Daily Delete Edit»
b	Send 170-p(Logic out) Command...
c	Send B(Message) to dall...

You can click the Example to see how to set a scheduler. The schedules will be listed after the example, click the content for further editing or to delete.

❖ New Scheduler:

- Name: Scheduler's name.

- Start On: The start time.

- Time: From 00:00 to 23:59.

- Command: Logic Out(Single), Command(String) and Play message.

- Repeat (YYYY/MM/DD)

  o Daily: Repeat every day.

  o Weekly: Repeat weekly, you can choose the weekdays.

  o Monthly: Repeat the DD every month.

  o Yearly: Repeat the MM/DD every year.

If you want to repeat two or more days monthly or yearly, please set another scheduler.

- End: The end time.

- Summary: No function for the moment.

4.2.2.7.4 Update
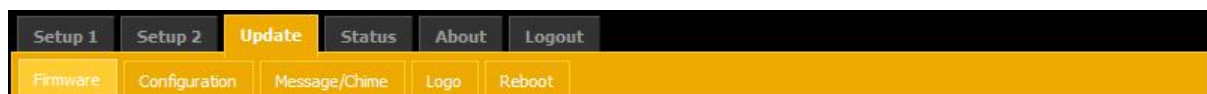
❖ Firmware:

You can download the newest version of Firmware on Ateis website.

❖ Configuration:

It will create a file with .sql extension in your PC.

Only upload files backed up using this firmware and from the same model of devices. Do not upload any files that were not created by this interface.

❖ Message / Chime:

Here you can set the Pre-Chime/Post-Chime of Paging and Message. Click on the "Upgrade new chime file" to add more chimes.

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

❖ Logo:

Here you can customize your own Logo figure on the device. (Size: 75x75 , PNG file)
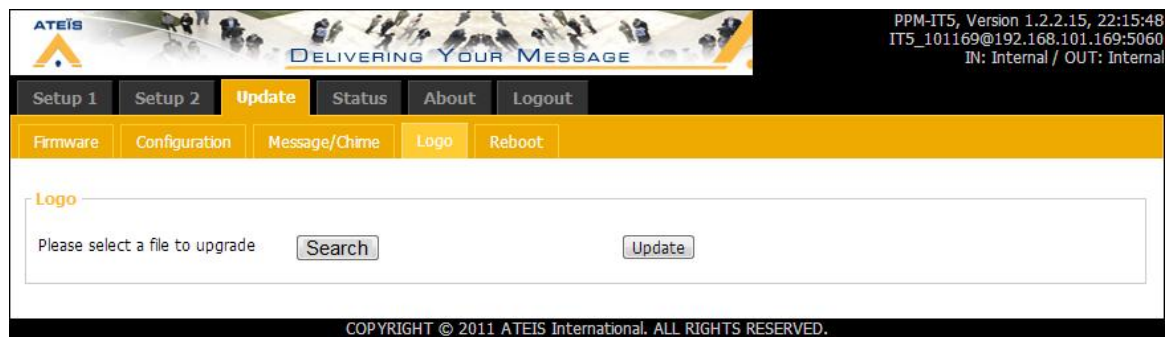
❖ Reboot:

Reboot the Terracom device, this would take a while.

4.2.2.7.5 Status
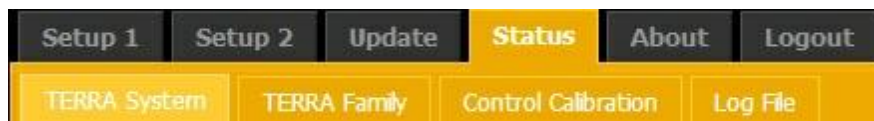
❖ TERRA System:

Shows the basic information of the Terracom unit.

❖ TERRA Family:

Shows the list of all Terracom units connecting to your LAN and some Ateis Devices which can be paged or received SIP call from Terracom such as IDA8C, UAPG2, etc.

📝 LAP G2T and ECS needs VoIP component edited.

❖ Control Calibration:

Displays the result of control input calibration.

❖ Log File:

Displays the log file, it is up to 3000 lines of text.

4.2.2.7.5.1 System

❖ System time:

Displays the current time. You can change the location and NTP server at "Setup1 > Basic Setting".

❖ Network:

Displays the IP address, MAC address, etc of the local Terracom device. You can change each filed at "Setup1 > Basic Setting".

```
NETWORK

DHCP                    DISABLE
MAC Address             00:22:13:00:19:43
IP Address              192.168.101.170
Subnet Mask            255.255.252.0
Gateway                192.168.100.254
DNS                    192.168.100.203
```

❖ SIP:

Displays the SIP information. You can change each filed at "Setup1 > Basic Setting".

```
SIP

Username               IT5_101169
SIP Port               5060
RTP Port               6912
Audio Codec            G.722
```

❖ Detect Router type:

```
DETECT ROUTER TYPE C

Dependent Mapping, random port, no hairpin
```

The following are router's types:

1. **Open:** This device is under Open Internet.

2. **Independent Mapping, Independent Filter:** This device is under Full Cone NAT.

3. **Independent Mapping, Address Dependent Filter:** This device is under Restricted Core NAT.

4. **Independent Mapping, Port Dependent Filter:** This device is under Port Restricted Core NAT.

5. **Dependent Mapping:** This device is under Symmetric NAT.

6. **Firewall:** This device is under Symmetric Firewall..

7. **Blocked or could not reach STUN server:** The UDP is Blocked.

⚠ If shows the type 2, 3 which means the router supports STUN protocol and can go through NAT automatically.

⚠ If shows the type 4, 5, 6 which means the router doesn't support the SIP, you need to use a SIP server or TerraServer.

⚠️ If shows the type 7, please contact the technician to fix your network.

4.2.2.7.5.2 Family

TERRA FAMLIY STATUS

URL	Product	Version	Status
IEX_101213@192.168.101.213:5060	TERRA-IEX	1.2.1.13	Available
SDM_10113@192.168.101.13:5060	TERRA-DS	2.2.1.13	phone(callee)
IDA8C4@192.168.101.8:5060	IDA8C	2.0.0.17	Available
ateis155@192.168.101.155:5060	TERRA-FDX	1.2.1.13	Available
DS_10112@192.168.101.12:5060	TERRA-DS	1.2.1.13	Available
IO_101183@192.168.101.183:5060	TERRA-IO	1.2.1.13	Available
ateis150@192.168.101.150:5060	TERRA-FDX	1.2.1.13	Available
ateis153@192.168.101.153:5060	TERRA-FDX	1.2.1.13	Available

- URL: Shows the web interface URL of the Terra com device and its SIP Port.
- Available status:
  - Available: The device is available for SIP call or paging.
  - phone (caller)/(callee): The SIP caller and callee.

📝 There is no way to know which device is called by which device is.

4.2.2.7.5.3 Log file

Click the Log File will open a new window displaying the log content.

You can save the webpage to a single html file.
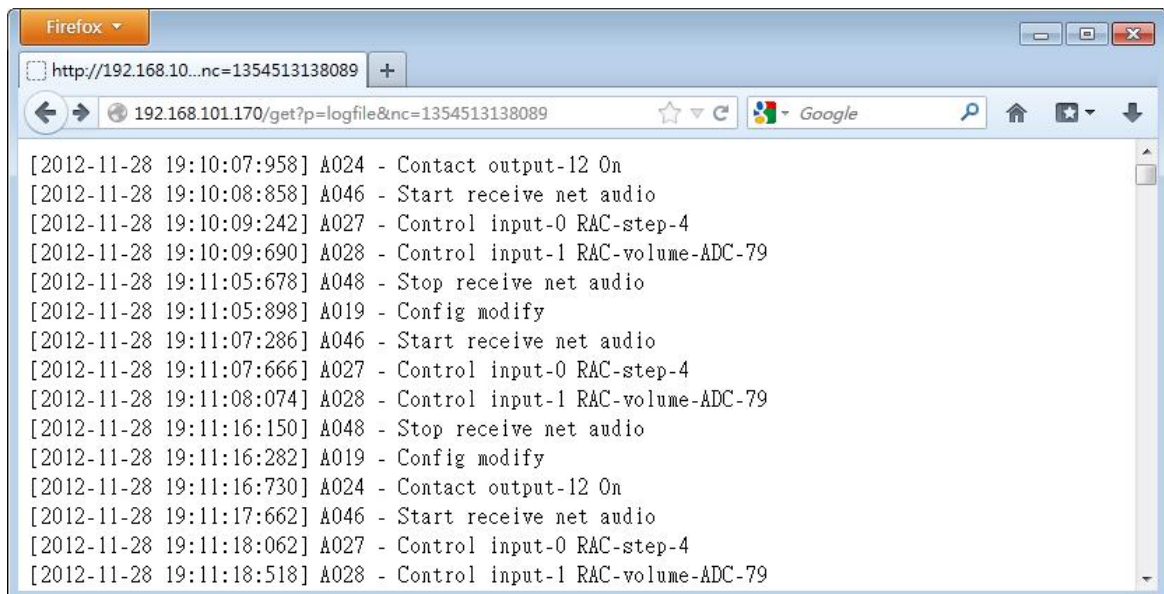
4.2.3 URC

URC can be fully programmed via UAP G2 software to adjust every setting you want: volume, mute, preset, components' adjustments, etc. This remote device is connected to the UAP G2 via the RS485 port.

❖ Use a URC

Because every remote device needs power, you will have to add external power supply every three remotes devices or every 300 meters. Except for the first three remote devices or the first 300m, power will be delivered by the UAP G2. The maximum distance between UAP G2 and remote device is 800m.

There are six main steps to configure a URC or several URCs:

1. Connect the URC(s)

2. Define the system with the URC(s)

3. Search and set the URC (The UAPG2 scans the system and attributes a specific IP address for each remotes device (PPM and URC) automatically)

4. Define and adjust URC's parameters

5. Assign adjustments

6. Set adjustments

If you have some troubles during the procedure, try to clean the UAPG2 memory (first try to clear remote IP address, after, if needed, try to clean MCU data then restart UAPG2-PPM software)

4.2.3.1 Control panel
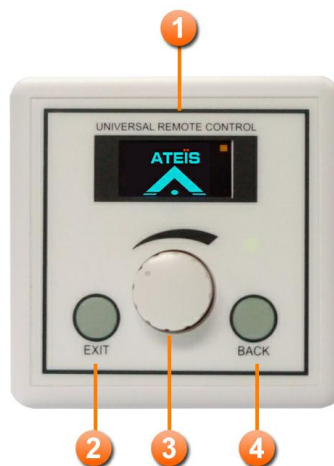
🔴 OLED Display

🟠 Exit Button

    Back to the main menu.

🟠 Knob

- Turn: Select items or change volume.

- Press: Enter in the sub menu.

🟠 Back Button

    Back to the root menu.

4.2.3.2 Characteristics

❖ Case

    Dimension = 84mm (W) x 33mm (L) x 84mm (H).

    Weight = 0.08KG.

❖ Power

Item	Voltage	Current Consumption	Comment
DC Input	24VDC	20mA	-

❖ Maximum Cable Length

    1200m on Category 5 cable.

4.2.3.3 Connection

To connect URC, use the RS485 connector at the rear of the UAPG2. For several URCs you may have to use Junction boxes (JB), or you can daisy-chain them. See This.

📝 If you have a bad connection: Switch on the end line resistor on the last URC (Blue switch: 1 = inactive, White square = active).
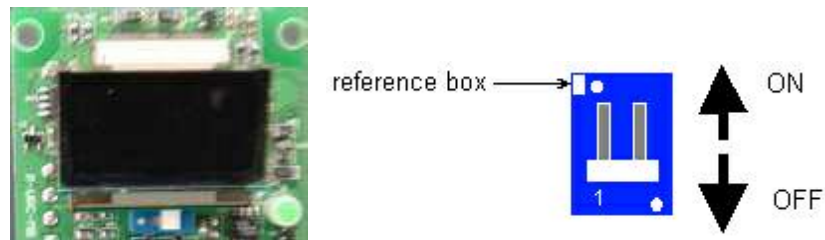
4.2.3.4 Configuration

❖ Define the system with URC

Drag and drop the URC to the communication port of the UAPG2 (C, at the top of the inputs). If you have several URCs and several UAPG2, define the URC to the UAPG2 in the same way as the physical connection.
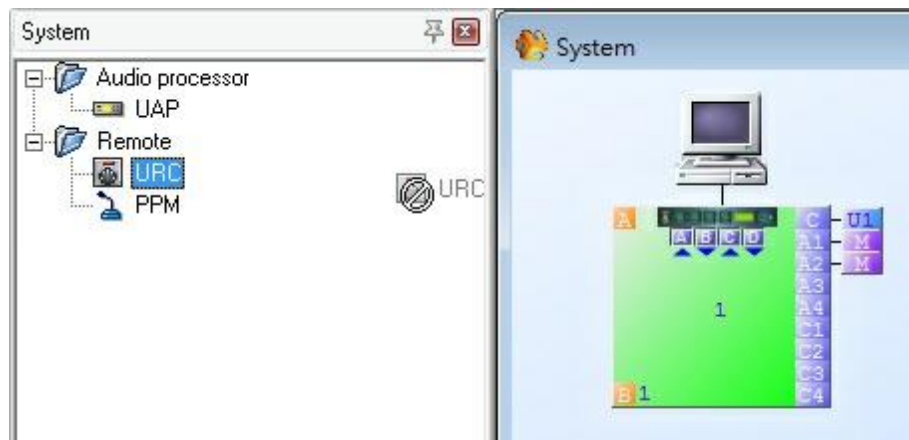
❖ Search and set URC

After defining the system, it is necessary to communicate where and who are the URCs to the system. The research procedure is automatic, but requires to be launched.

1. First make sure to clear all old remote IP address. Clear remote IP (Shift + F5).

2. Click "View Remote list" or hit F9.

3. You can also double click on one of the URC's icons. A windows appears, click [Search].
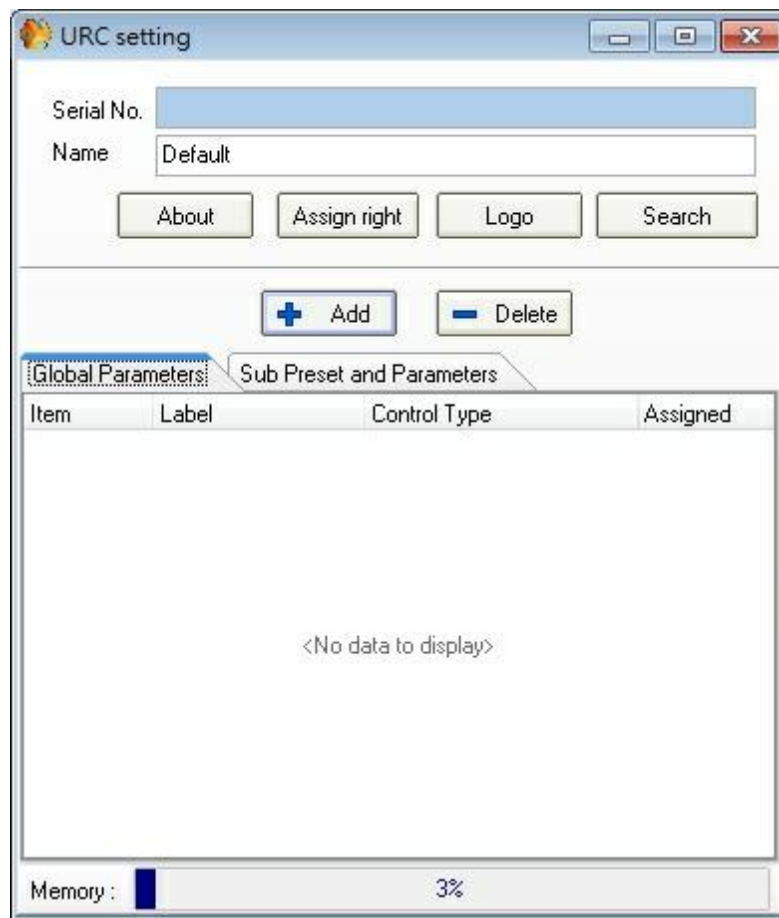
A window appears, click on URC's page, not on PPM's one.
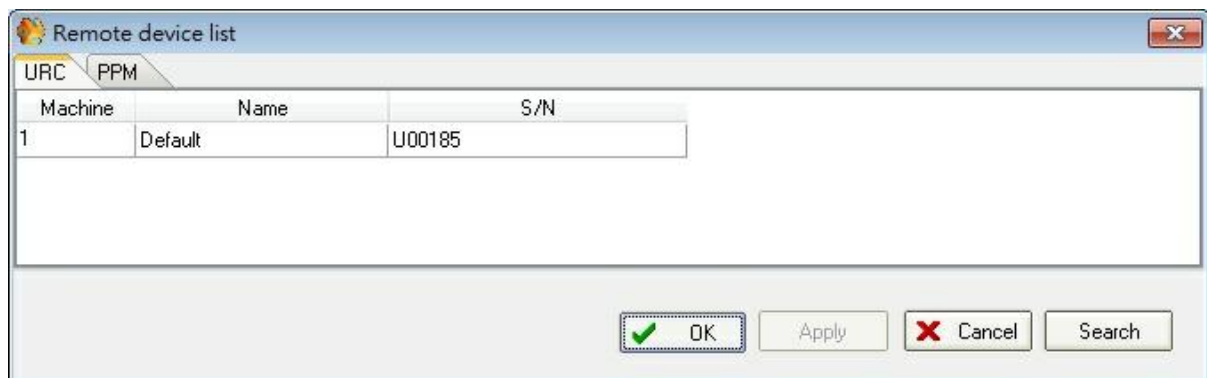
Then, Click [Search], a new dialogue window appears, click [Search] again.

4. When the system has finished the search, a list with the various connected URCs or PPMs appears.

5. Each URC is identified by its own serial number. This number is written on a sticker on the URC. The system finds automatically each URC (in our example the URC's serial numbers is U00185).

If the system doesn't find all the devices: Clear all remote IP address and search again.
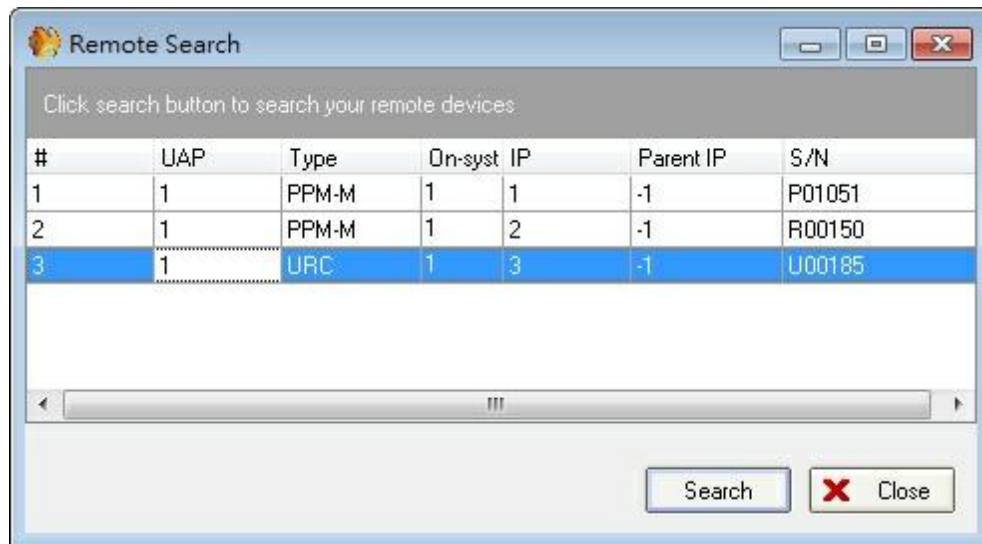
6. Click [Close] to close the Remote Search window.

7. Set the URC: Select the URC in the first window by assigning the corresponding serial number to each URC (for our example we have connected a URCs on UAPG2 1) :
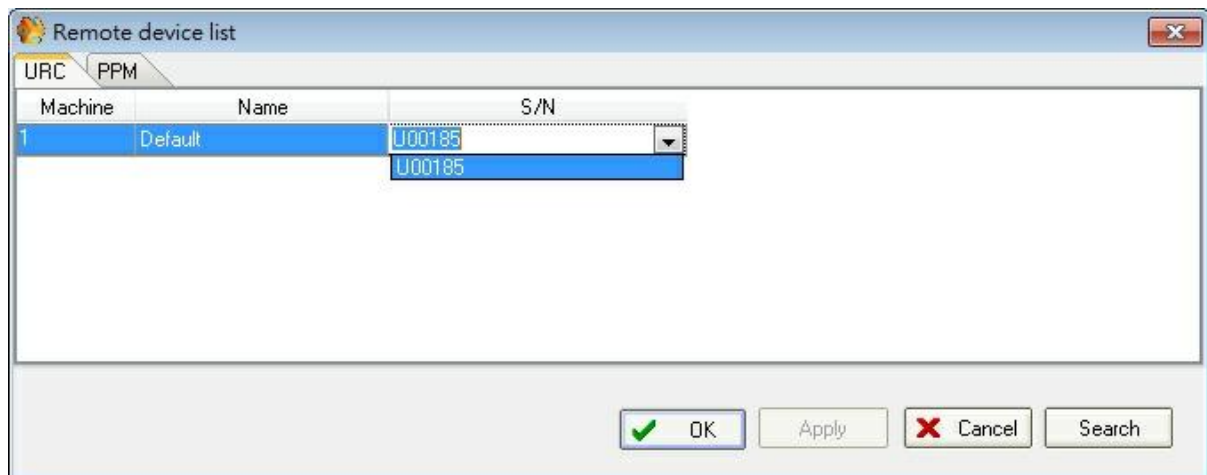
8. Click [Apply], then click [OK].

9. The system is now ready to work with the URC.

❖ Define and adjust URC's parameters
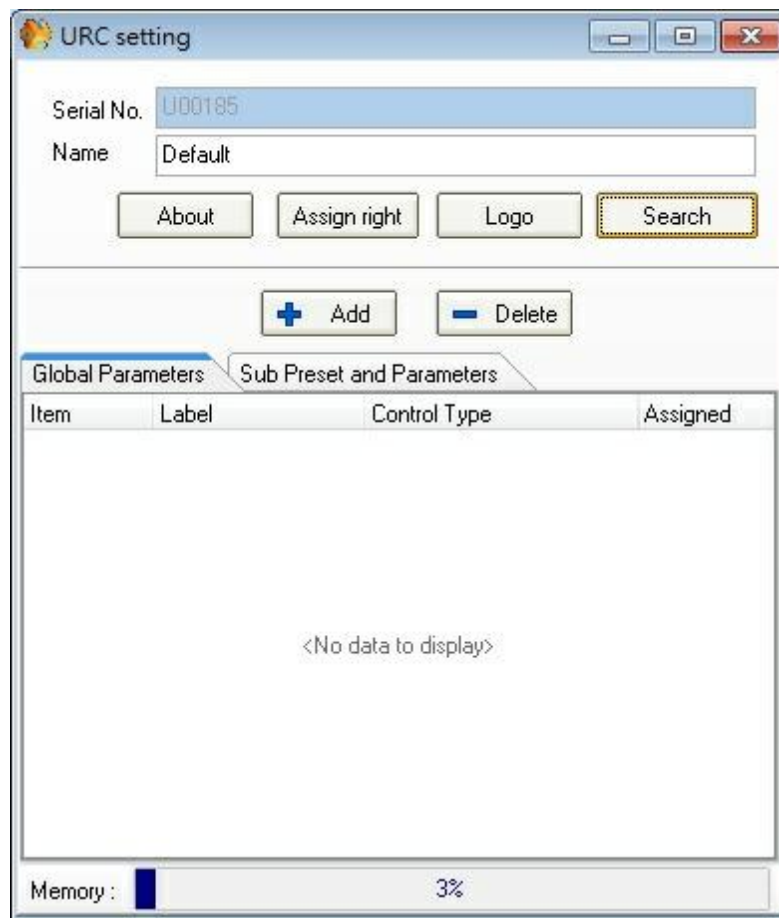
- **Serial No:**

    Indicates which URC you are going to configure.

- **Name:**

    Gives a name for this URC. Essential when you have several URCs connected.

- <u>All the following options will be explained in details.</u>

- **About:**

    You can write few words in the default menu called "About" The user will also have access to the URC's version number in this menu. You can also change the name of this menu.
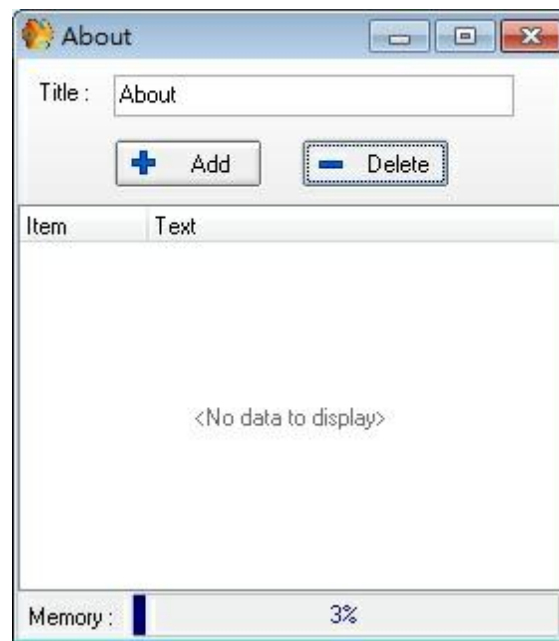
- o Title: Title for the menu which appears on the screen of URC after the various adjustments' choices (Max. ten characters).

- o Add and Delete: Adds or deletes a line of ten characters.

- o Memory: Indicates the state of filling of the URC's internal storage.

- **Assign right:**

  Enables to protect several settings with a password. By clicking on Assign Right you can protect some adjustments you have created in the URC. Just select if you want the adjustment to the first layer (not protected) or in the protected layer.

To access to the protected layer: Hold exit and back and push the knob. Then enter the user name, select [apply], enter the password and select [apply].

- **Logo:**

  Enables to choose two different logos. Those logos will appear on the URC screen. It is possible to post two different images to the screen of the URC. Only one image at a time can be shown. By clicking the logo button the following window appears:

- o Constant Mode: Chooses one image (A or B) to be posted on the screen of the URC.

- o Advertisement Mode (warning mode): Alternates the two images every swap time seconds.

o Waiting time: Sets the number of seconds before the URC returns to its initial state (apparent logo, and you have to push twice the rotate knob for accessing the adjustments). Be sure to let enough time to the user to read and choose.

o Open:
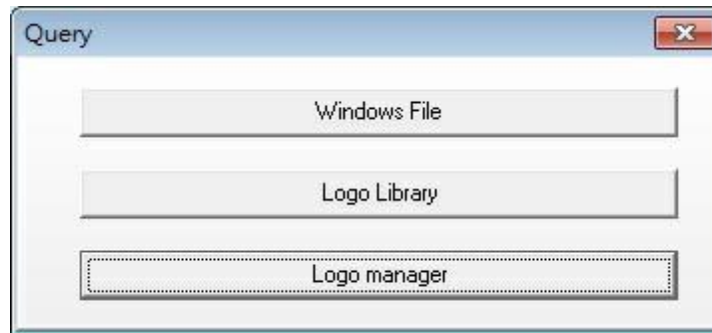
You can search and assign to the URC any images (be careful about the image size.) you have on your computer by clicking on Windows File or Logo Library button. By clicking Logo manager, a window shows you which images you have selected for your URC.
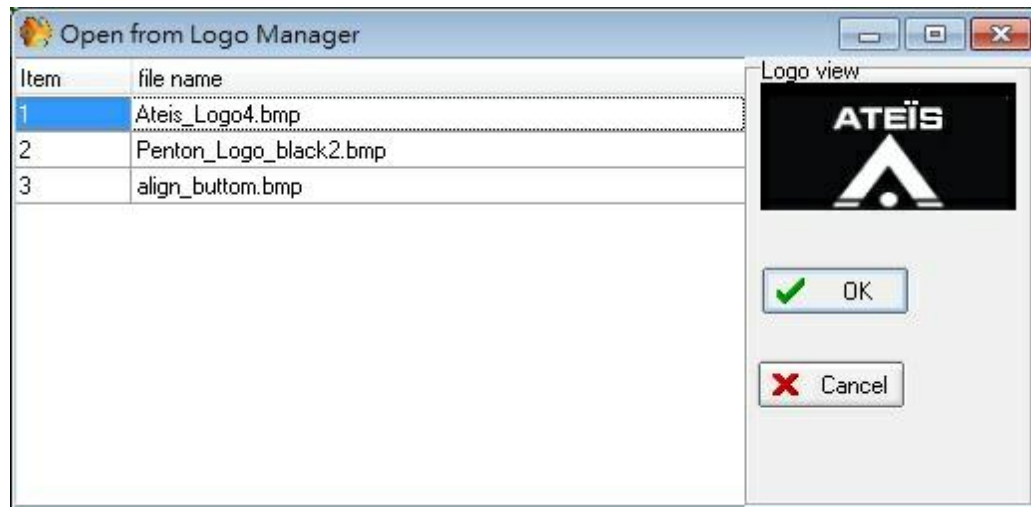
You can use any type of image you want. But the screen of the URC has only one color (plus the black background). So the best image parameters are:

- Size: 128x64 pixels.

- Color: Black and white.

- **Search:**

You can launch the URC's research process from here. See the "Search and set URC" paragraph above.

- **Global Parameters:**

Manage the choices of Master Preset to which you will have access with the URC. (Master Preset: change all the system's design. On this tab you can create a Master-Preset selection on the URC. This tab is called "Global Parameter" because these parameters will be available from every Master-Preset. It's different than the others tab, "Sub-Preset and Parameters", where

the parameters are depending of the Master- Preset. Of course at first the Master-Preset must be created. To create Master-Preset, please see Master- Preset chapter.

To check your Master-Preset click on [Name] button, next to the Master-Preset unroll menu.
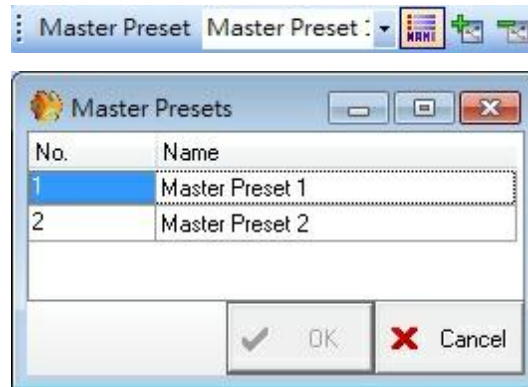
Open the URC settings window, and select the "Global Parameters" tab.
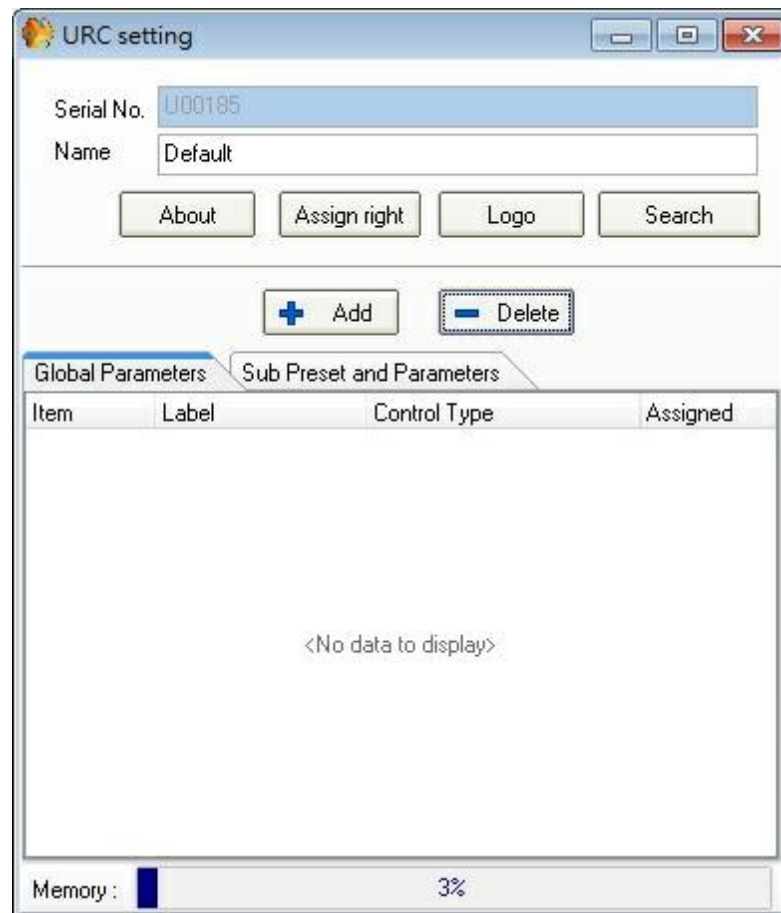
Click on [+ Add] to create a Master-Preset selector.
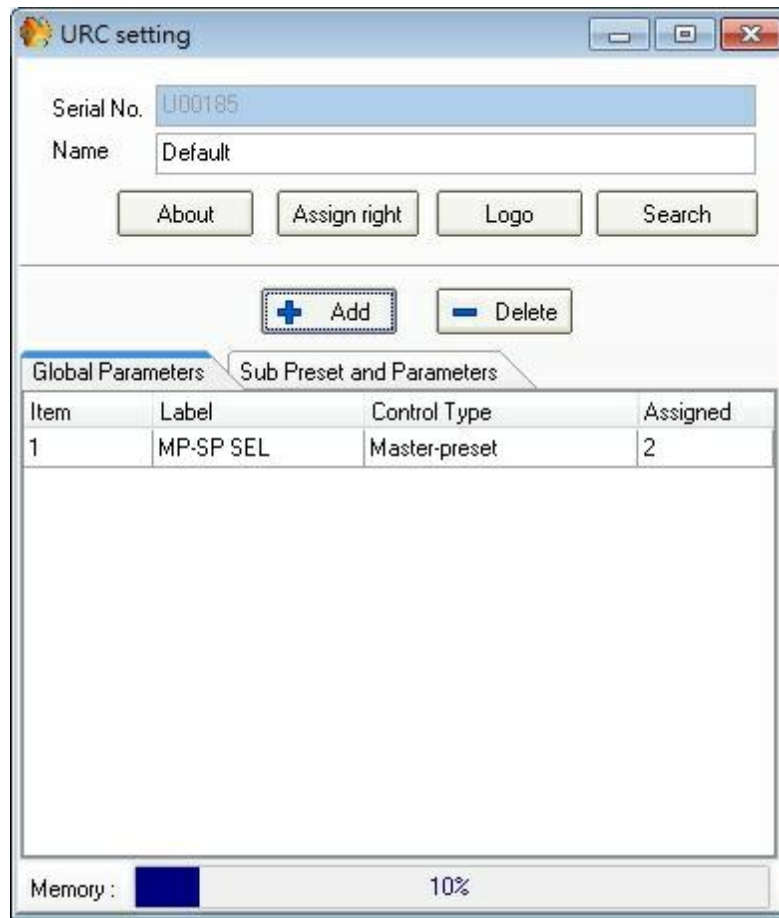
You can change the name in the Label space.

Click on the three dots ( ) on the right of the "Assigned" space, a window opens and you can choose which Master Preset is accessible with this function (Here named: MP-SP SEL.)
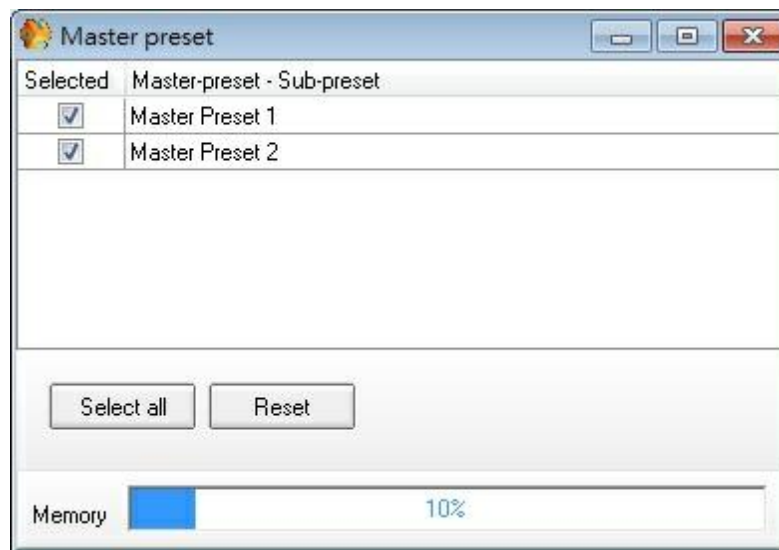
With this adjustment, you can then choose to switch between two modes/master preset pages

(conference or music for example) by clicking twice on the rotate knob of the URC and clicking on "MP-SP SEL." on the URC.

You can have several "MP-SP SEL." (by clicking [add]) with several Master Preset choices, just cross the check box after clicking the three dots on Assigned.

The setting is complete. To activate this parameter, compile and store the configuration into UAP.

- **Sub Preset and Parameters:**

On this tabYou can manage the choices of parameters and Sub Preset to which you will have access with the URC. Assign adjustments of component to a URC for a specific Master Preset. The parameter of this tab depends of the Master-Preset. You have to create the parameters for each Master-Preset individually.

So at first select in which Master-Preset you want to have the adjustments. Open the URC settings window by clicking on the URC icon. Click on "Sub Preset and Parameters" tab.
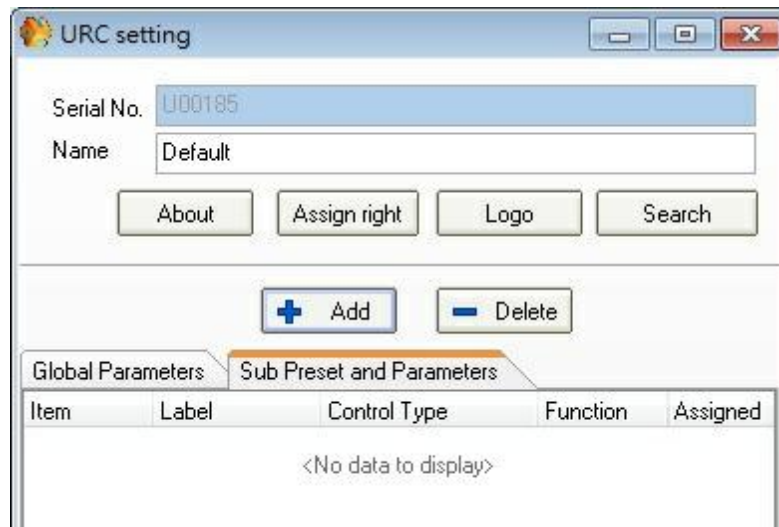
You can then Add or Delete all the kind of adjustments you want to have on the URC. Be aware however not to overload the URC memory.
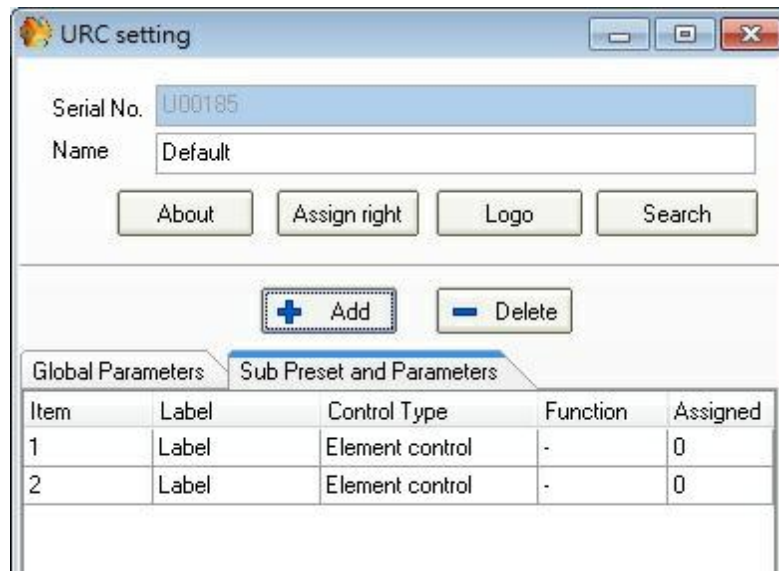
Assign a Label (name) for each of them. Not that here you just define how many adjustments you will have with the URC.

Unroll the "Control Type" menu, and select if it is a Sub-Preset control or an Element control.
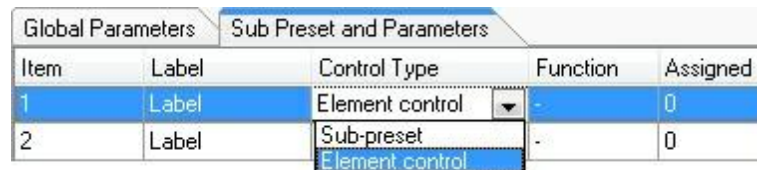
Follow the step in the chapter "Sub-Preset" or "Element Control".

- **Memory:**

Indicate the state of filling of the URC's internal storage. Pay attention to not exceed the URC storage capacity.

4.2.3.4.1 Element control

Now that we have create the Element parameter (Sub Preset and Parameters tab chapter), we have to assign this element control to an adjustment.
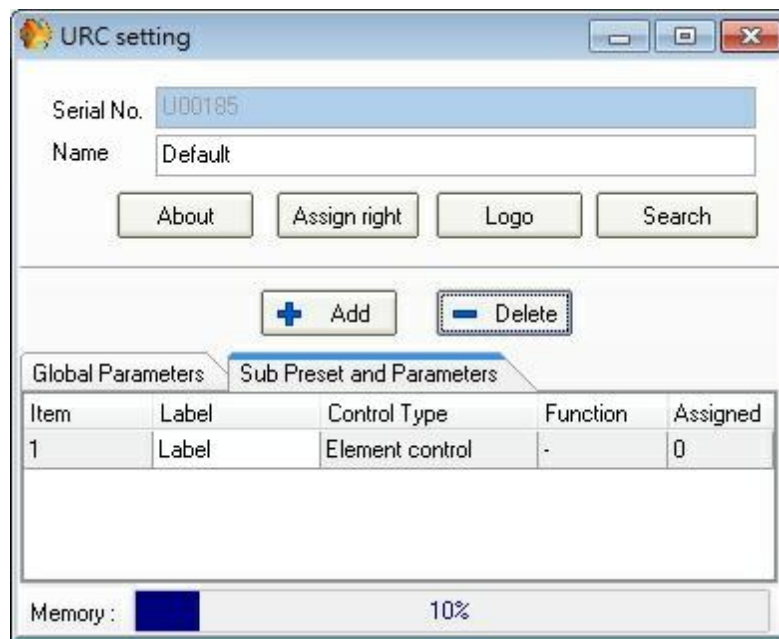
To assign the control to a specific action (adjustments), go to the design (double click on the UAPG2's icon), then double click on the component (module) of which you want to use an adjustment.

Finally right click on the adjustments and select "URC > UAPG2 (or the name you have given) > URC (or the name you have given) > Label (or the name you have given)".

❖ Assign adjustments

⚠ You cannot control an element if the corresponding inputs/outputs of the component are not linked to something. As example, to control the volume of the channel 3 on a volume control component, the input 3 and output 3 of the component must be linked to something.

Go to the design (double click on the UAPG2's icon), then double click on the component (module) of which you want to use an adjustment. Finally right click on the adjustments and select "URC > UAPG2 (or the name you have given) > URC (or the name you have given) > Label (or the name you have given, in our example it's "volume")".
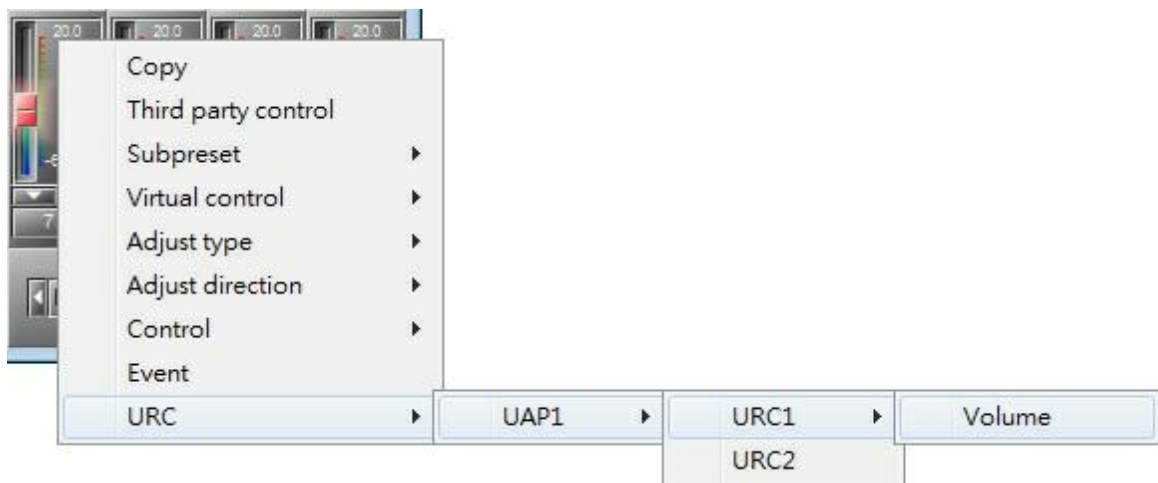
If you see an asterisk, it means that another adjustment is linked to this label. It is impossible to assign two different types of adjustments (for example a mute with a fader) on a same Label, they

must be the same type of adjustment.

This is only visible when the machine is connected.

Now, on the URC setting window you can see the number "1" under "Assigned", that means that this control is assigned.
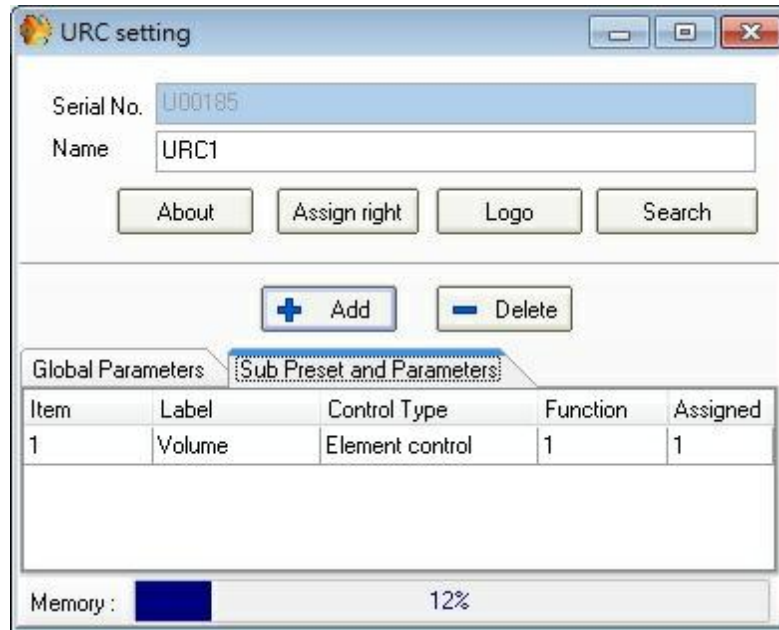
The setting is complete. To activate this parameter, compile and store the configuration into UAP.

With this adjustment, you can control an element by clicking twice on the rotate knob of the URC, clicking on "volume" (the Label), and move the knobs on the URC.

After that, you can set the adjustments (default values, unity on URC's screen), by clicking on the three dots in the URC setting window. (next chapter).

❖ Set adjustments

Open the URC setting window. You can see how many module's adjustment you have assigned to a label (number in the assigned column).

For example, in the following window, we see that there are two actions connected to the Volume_CD label.
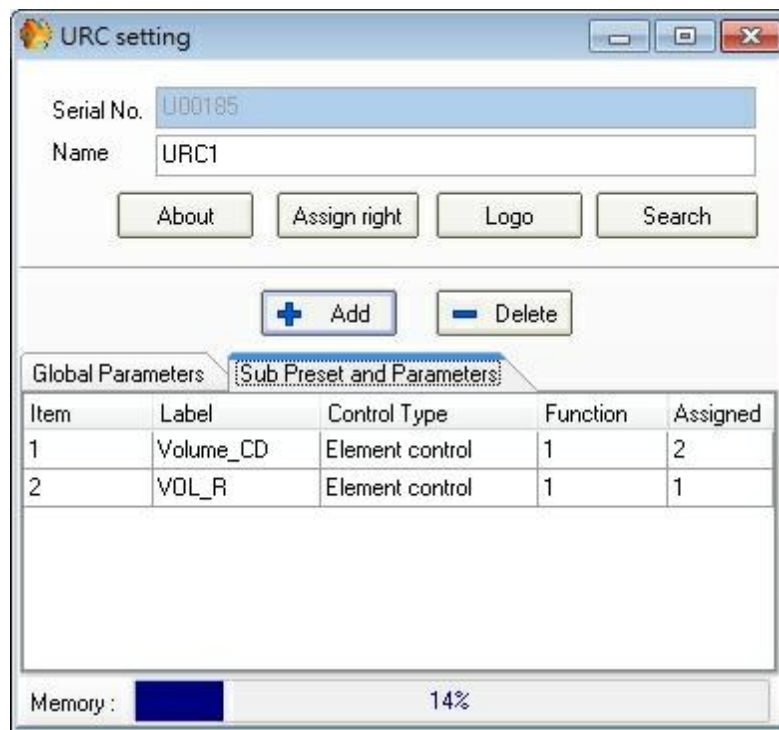
By clicking on the three dots (⬚ , in assigned column) a box appears. According to the assigned function some adjustments are available by clicking in the box and set the value):
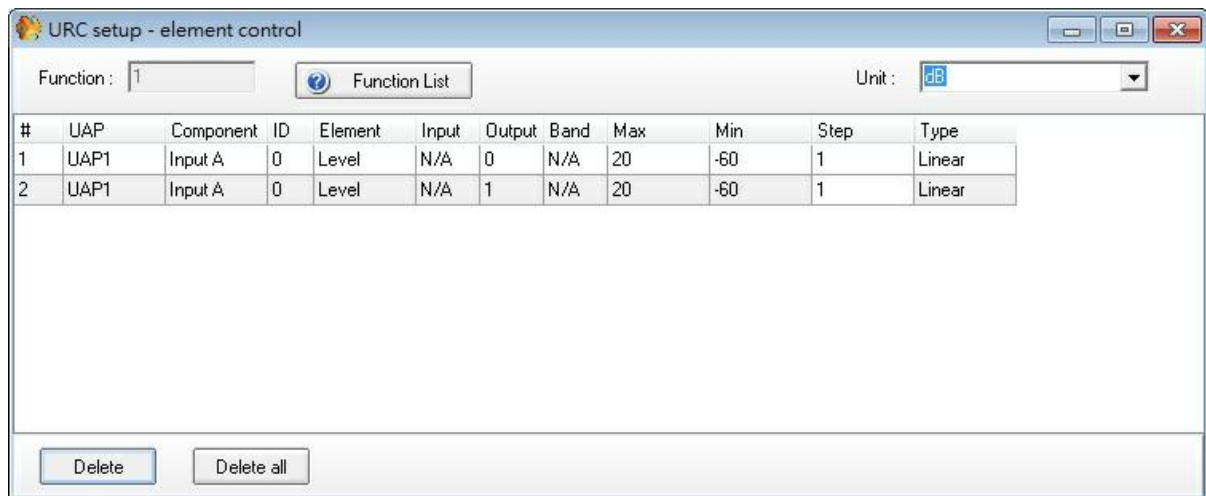
- **UAPG2 Column:** If there are several UAPG2s: shows on which the action is undertaken.

- **Component, ID Element, Input, Output, Band:** Shows which components and which kind of adjustments are assigned to this label.

- **Max, Min, Step, Type:** Enables to adjust parameter adjustment. For example here we have fixed the max level at 20 (dB), the minimum at -40 (dB), Step: fix the incrementing. Type: choose Linear or Log.

- **Unit:** Insert a unity for the adjustments, here: level in dB, this unity will be displayed on the URC's screen.

❖ Protect the access to URC with Password

You can protect the access to the element of the URC with a Password.

To do this, you have to use the IDM (access to Master-Presets), not the UserID.

Open User >ID Management, and then create a new IDM associated with the Master-Presets.
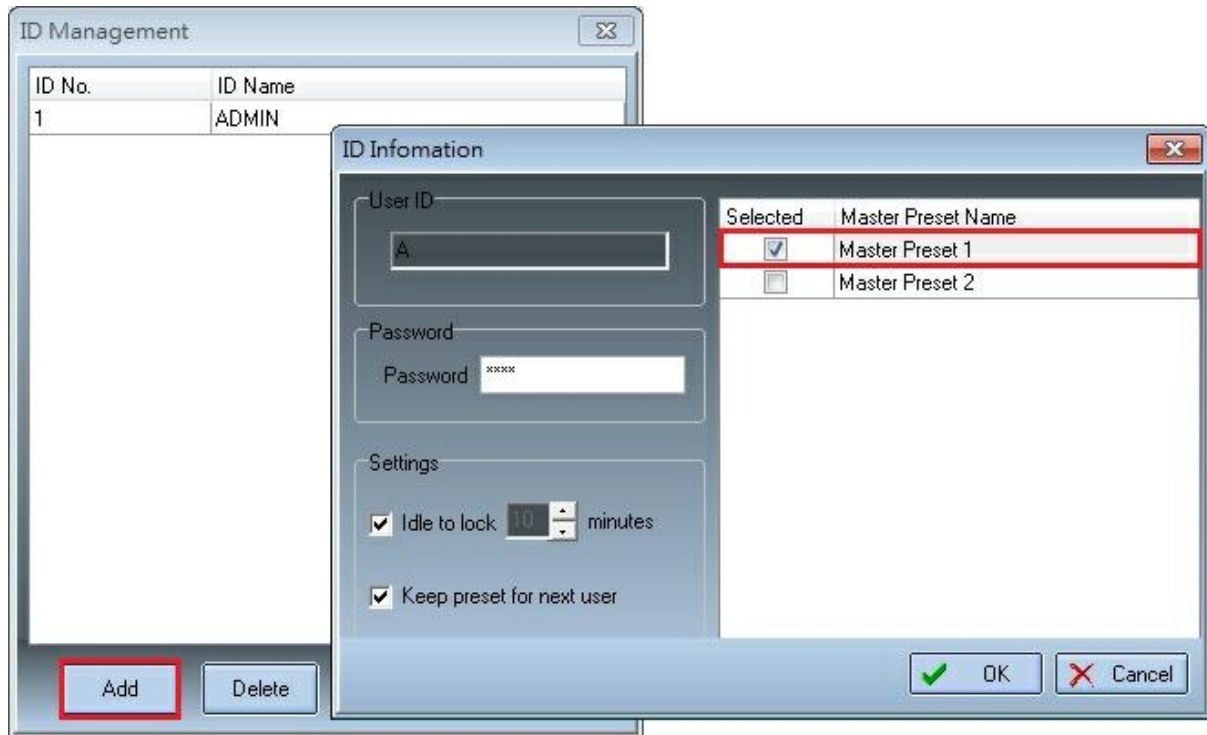
Our advice is to use a very short user name and password, because it takes time to enter these names with the knobs of the URC.

On the URC window click on [Assign Right], a window will open and display all the parameter created in the URC:

Then for each parameter, select if you want it in the first layer (not protected) or in the protected layer.
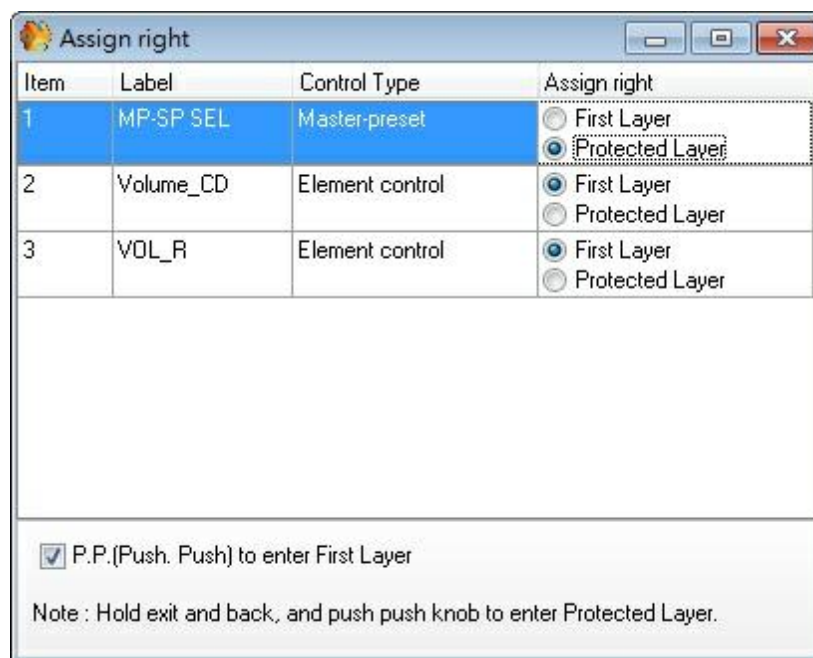
Now, to access to the protected layer on the URC, the user will have to hold exit and back buttons and push the knob. Then enter the "IDM user", select [apply], enter the "IDM password" and select [apply].

4.2.3.4.2 Sub-preset

Now that we have create the Sub-Preset parameter (Sub Preset and Parameters tab chapter), we have to assign this control the sub-presets.
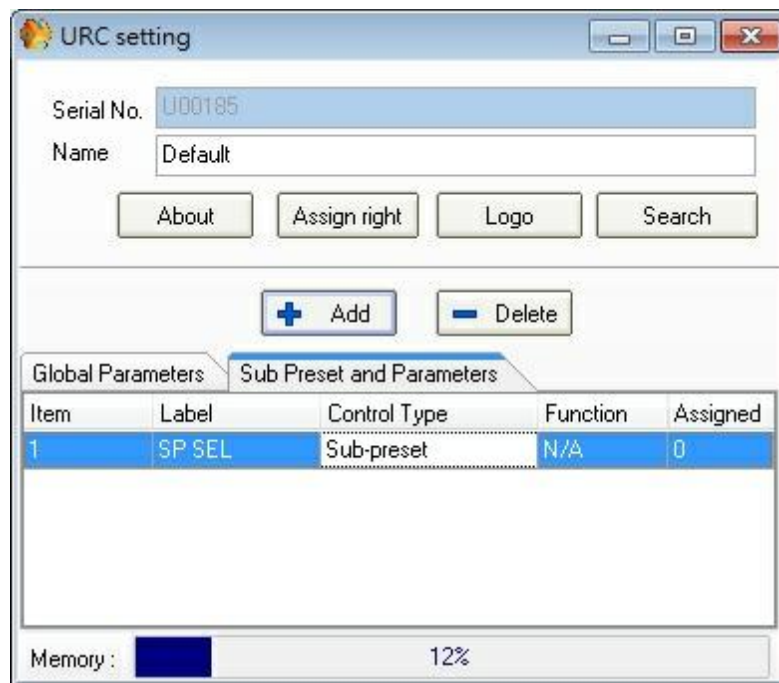
The Sub-Presets must be created before. Check the Sub-Preset tool bar in the main window.

If there is no name next to "Sub-Preset" that means that there is no Sub-Preset already created. In this case see Sub Preset chapter to create a sub-preset. You can display the Sub-Presets list by clicking on [Name] in the sub-preset tool bar.

On the URC settings window, click on the three dots ( ) on the right of the "Assigned" space, a window opens and you can choose which Sub-Preset is accessible with this function.
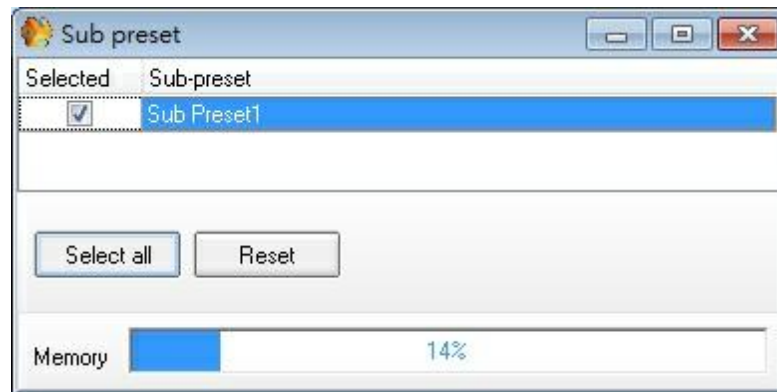
Close this window. Now you can see the number 1 under "Assigned".
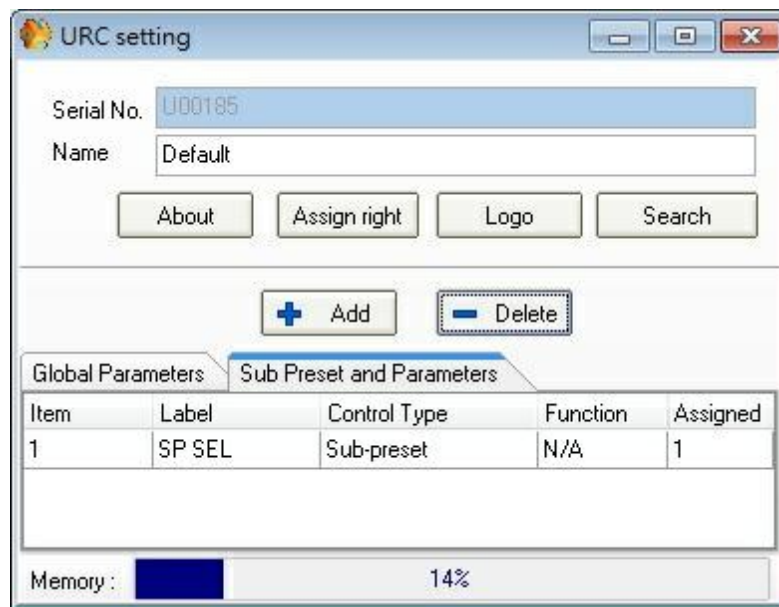
The setting is complete.

To activate this parameter, compile and store the configuration into UAP.

With this adjustment, you can then choose to load a sub-preset by clicking twice on the rotate knob of the URC and clicking on "sub 1" (the Label) on the URC.

4.2.4 URC200 TPC

The URC200 is an programmable remote controller (TCP/IP) for the UAP G2, IDA8 system, LAPG2T and ECS DSP audio matrix System. It allows users to customize the menu items for the control parameters, master/sub presets of Ateis audio processors.

The URC200 contains a color 2" TFT panel, and with the well designed user interface it gives the user the best experience of using this control console. Two buttons and one encoders make menu controlling very simple and easy.

The URC200 is powered over IP and easy to integrate with current demands for room controllers like light, curtains, sound and video control. The full color display is easy to read and has a low-power

consumption to allow for long lines and multiple devices into one system.

4.2.4.1   Control panel

① TFT Panel:

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

② IR Receiver:

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

③ Back Button:

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

④ Encoder:

Rotate this encoder for select the item of the menu.

⑤ Enter Button:

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

4.2.4.2   Characteristics

❖ Case

Dimension = 140mm (W) x 108mm (L) x 34mm (H).

Weight = 0.35Kg.

Color = RAL7016.

❖ Screen

Diagonal = 2".

Resolution = 176 x 220.

❖ Power

Item	Voltage	Current Consumption	Comment
PoE	19V	-	-
DC Input	18V~26V, Typical 24V	50mA	-

❖ Maximum Cable Length

100m on Category 5 cable

4.3   Junction box

The junction box (JB) is the device that contains the wiring junctions and allows the peripherals such as PPM-SP and URC be wired in chain using STP CAT5/6 cable with metal shielded connector.
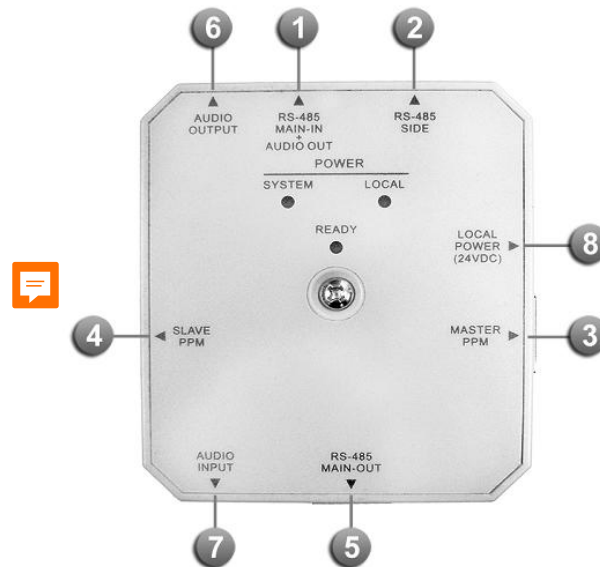
❖ 5 x RJ45 connectors

1. RS-485 MAIN-IN + AUDIO OUT: Connect to the RS485 terminals of UAP G2 or connect to the previous JB.

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

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

4. SLAVE PPM: The Slave PPM function is not available for PPM-SP.

5. RS-485 MAIN-OUT: Connect to the next JB.

❖ 2 x internal screw connectors for 0 dB audio

6. AUDIO OUTPUT: Audio output from PPM microphone to UAP G2 processor.

7. AUDIO INPUT: Audio input from UAP G2 processor to the speaker of PPM-SP for monitoring surveillance.

8. 1 x input for external 24VDC power supply. Depending on the distance between the UAP G2 processor and PPM-SP/URC devices.

❖ 2 x internal switches

9. 1 x internal switch inside the JB for PPM Master/Slave selection (Slave PPM function is not available for PPM-SP).

10. 1 x internal switch inside the JB for System Power or External Power, see Figure 1.
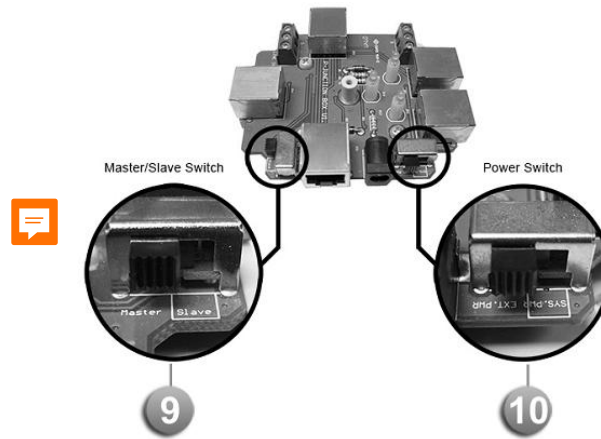
Figure 1

❖ LEDs:

- POWER SYSTEM: Light up when the power comes from a local power supply.

- POWER LOCAL: Light up when the power comes from UAP G2

- READY: Light up when the Junction Box is powered correctly.

4.4 Amplifier

4.4.1 SPA

4.4.1.1 Overview

The SPA (Security Power Aamplifier) is designed for perfect integration into the SINAPS system, but thanks to its flexibility, it can also be used for any Public Address application.

SPA 2060

SPA 2120

SPA 2240

The SPA were specifically developed to meet the requirements of EN 60849 for safety installations. Each amplifier module is fitted with its own 220 VAC/24 VDC power supply for increased system reliability. To avoid handling errors, the volume output is set using the potentiometer located at the back of the apparatus. In addition to standard protection via fuses, SPA amplifiers also have electronic and thermal protection to protect them from all potential hazards.

A fan provides forced cooling for the final power shelves and internal parts of the apparatus. It starts up automatically when the temperature reaches a certain threshold, and stops when it returns to normal values.

Four LEDs display the status of each amplifier: AC or DC power supply, Line Overload and Temperature overload.

Furthermore, a three LEDs Vu-Meter indicates the presence and level of audio signal.

A surveillance circuit continuously monitors the temperature and the presence of AC and DC power supplies for both amplifiers. In case of a problem, the overload LEDs will be switched ON and the Fault relay will be activated.

The SPA series(SPA 2060, 2120, 2240) can be ordered with optional 115V power supply. Please contact your local dealer or your regional ATEÏS branch office.

❖ **Main Characteristics**

- 2 audio outputs (selectable 100 /70 / 8 Ohm outputs)

- Fault reporting outputs

- Two audio input gain control

- Supervision of the amplifiers using DIVA8 or IDA8 controllers

- Advanced audio processing for each amplifier channel using DIVA8 or IDA8 systems

- Amplifier supervision and spare amplifier switching through DIVA8 or IDA8 systems

- Loudspeaker line and loudspeaker supervision through DIVA8 or IDA8 systems

❖ Specifications

- Output power:

  o SPA 2060 : 2ch X 60W

  o SPA 2120 : 2ch X 120W

  o SPA 2240 : 2ch X 240W

- Output voltage: 8 Ω / 70 V / 100 V

- Power type: 24 (range 21-28) VDC and 220 VAC

- Connector (electronically balanced): 3-pin XLR and 3-pin phoenix

- Frequency response: +/-3 dB @ 40 Hz and 20 kHz

- S/N: 86dB@ 1 kHz at full power

- THD: < 1% @ 1 kHz

- Input range: -6 dBV to 6 dBV / 770mV

- Input impedance: 22k ohm

4.4.1.2 Front Panel

🅐 VU Meter

The VU-meter is composed of three LEDs that represent three different level thresholds: -40dB, -20dB and 0dB. When the input signal reaches those thresholds, the corresponding LED will blink.

🅑 Overload

The overload LED will blink as soon as the output power exceeds the nominal value. If the Overload LED is blinking, check that the output load is well connected and still in good condition as well as checking the level of the input signal.

C Temp.

If the device internal temperature exceeds 95 degrees C, the TEMP LED will light and the pre-amp will stop working until the temperature falls below 95 degrees C. The pre-amp will come back to a working state automatically. To avoid temperature failure, please insert an external fan to the rack system.

D DC

The DC LED indicates that the SPA amplifier is powered by a 24VDC power supply.

E Power

The Power LED indicates the ON/OFF status of the SPA amplifier.

4.4.1.3 Rear Panel

A Fuse Receptacles

Two fuse receptacles are located on the left of the amplifier's rear panel.

B Power Switch

The power switch is located at the left of the rear panel and is a two position switch. Pushing up the power switch (I is pushed) will power on the device, pushing it down (0 is pushed) will power it off. When the power switch is on the I position, the front panel power LED will be lit.

C Channel 1/2 24VDC battery backup connector

The SPA amplifier can be operated with battery backup. Use the channel 1 and channel 2 "24VDC Battery Backup" connector to do so. These connectors are located on the upper part of the channel connectors on the rear panel.

This 24VDC power supply can be used where no AC power is available. When in use, the front panel Power LED will be lit as well as the front panel DC LED.

D AC Power Inlet

The 3 pin IEC connector is located on the left of the amplifier's rear panel. It accepts a standard mains power lead fitted with an IEC connector.

For 115 V, fuse rating:

- SPA 2060: 2.5A

- SPA 2120: 5A

- SPA 2240: 8A

For 230 V, fuse rating:

- SPA 2060: 1.25A

- SPA 2120: 2.5A

- SPA 2240: 5A

E Channel 1/2 Audio Output

For each amplifier channel, there is a dedicated Audio Output connector for connection of either 8 Ohm speakers, 75V speakers or 100V speakers. For the 8 Ohm connection and if you are using more than 1 speaker, please ensure that speakers are wired in a way that the total impedance load is between 8 Ohm and 16 Ohm. The Com point is the – terminal and 8 Ohm, 75V and 100V are the + terminals.

F Fault Contact

The fault contact indicates an amplifier fault by an opening contact.

G Channel 1/2 Outputs

Each channel outputs a replica of the corresponding balanced audio input signal either on XLR or on Euro-terminal block.

H Channel 1/2 Inputs

For each channel, there is an XLR balanced input and a Euro-terminal block balanced input. Each input can be gain adjusted to suit the user's needs. The On/Off gain switch can instantaneously bypass the gain controller and set the channel gain amplifier to maximum.

4.4.1.4 Characteristics

❖ Case
- Dimension:
  - SPA2060, SPA2120 = 483mm (W) x 305mm(D) x 88mm(H)
  - SPA2240 = 483mm (W) x 420mm(D) x 88mm(H)
- Weight :
  - SPA2060 = 10.6 Kg (23.3 lbs)
  - SPA2120 = 12.3 Kg (27.1 lbs)
  - SPA2240 = 18.5 Kg (40.8 lbs)
- Color = RAL7016.

❖ Power

Item	Voltage	Current Consumption	Comment
AC Input	230V +/- 10%	1.2A	Frequency:47Hz~63Hz
DC Output	24~27V, Typical: 24V	1A	-

❖ Audio

- Frequency response = 40 - 20 000 Hz

- Distortion at nominal power: < 1%

- Signal/noise ratio: > 90 dB

❖ Inputs/Outputs

- Power output = 100 V

- Main line input = 770 mV

- Input impedance = 20 KOhms

❖ Current consumption

		Current consumption with 28 VDC supply (per channel)				
		Standby	1/8 Nominal Power (Audi Messages)	1/4 Nominal Power (50% Message, 50% Siren)	1/2 Nominal Power Siren	Nominal Power
Power Consumption	SPA2060	0.19 A	1.5 A	1.8 A	2.75 A	3.2 A
	SPA2120	0.25 A	2.9 A	3.9 A	5.5 A	6.4 A
	SPA2240	0.30 A	5.47 A	7.5 A	10.4 A	12.3 A
	Current consumption with 230 AC supply (per channel)					
	SPA2060	0.07 A	0.32 A	0.42 A	0.53 A	0.67 A
	SPA2120	0.12 A	0.65 A	0.89 A	1.15 A	1.4 A
	SPA2240	0.28 A	1.25 A	1.65 A	2.20 A	2.85 A

❖ Working Temperature.

- 0°C ~ 40°C

4.4.1.5 Parallel Output

To combine 60W x 2 Channel to be 120W power, Simply do the following:

1. Turn the input gain to "OFF" position on channel 2, but keep the channel 1 Input gain adjustable.

2. Connect channel 1 output to channel 2 input.

3. Parallel the output of channel 1 and channel 2 (COM to COM, 70.7V line to 70.7V line).

Please refer to the example connection below:

4.4.1.6 Maintenance and Troubleshooting

This chapter will help you to diagnose the common problems for troubleshooting and how to solve. The maintenance of the device and peripherals are also told here.

If none of the solution way works, please contact your ATEIS dealer.

❖ **Hardware maintenance:**

1. Be sure to keep the case clean and away from any heat source.

2. The operating temperature is 0°C ~ 40°C.

3. Keep it clean, especially air filters and ventilation paths (If the device has a fan).

4. Avoid vibrations and shocks.

4.4.2 BPA

4.4.2.1 Overview

Thanks to its flexibility, the BPA (Basic Power Amplifier) is designed for perfect integration for any Public Address application.

The BPA is a 2U 19" rack-mountable, 2-channel amplifier, transformer isolated for 100 V, 50 V and 8 Ohm distributed loudspeaker systems. There are three models in the coverage of BPA :

- BPA2120 : 2 x 120 W

- BPA2240 : 2 x 240 W

- BPA2480 : 2 x 480 W

The BPA amplifier has a 230 V AC mains supply input and a 48 V DC battery back-up input which allows it to be used in combination with a battery backup system for maximum availability and reliability in an emergency evacuation system. BPA amplifiers have short-to-ground, short-circuit detection and

line-impedance surveillance up to 5% deviation using the DIVA8 or IDA8 systems for loudspeaker-line surveillance. They support both single-spure and redundant loop cabling (A/B) and have a switchover facility that automatically reroutes power to a backup amplifier (if present) via the SONAES charger in the event of failure. BPA amplifiers have a rear-panel selector switch for amplifier monitoring according to EN 54-16.

Main Characteristics

- 2 audio outputs for BPA2120, 2240 and 2480 (100 V / 50 V / 8 Ohm selectable outputs)

- Fault reporting outputs

- Two audio input gain control

- Supervision of amplifiers through DIVA8 or IDA8 systems

- Advanced audio processing for each amplifier channel through DIVA8 or IDA8 systems

- Amplifier supervision and spare amplifier switching through DIVA8 and IDA8 systems

- Loudspeaker line and loudspeaker supervision through DIVA8 and IDA8 systems

4.4.2.2   Front Panel
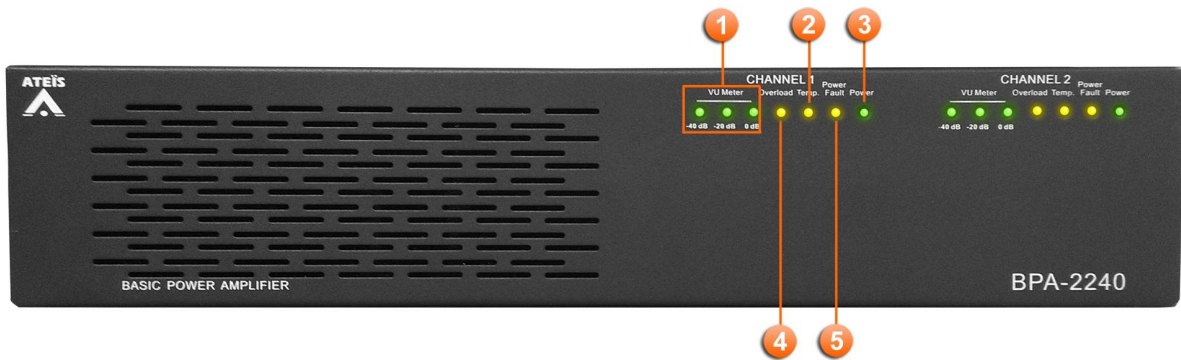
① VU Meter:

The VU-meter is composed of three LEDs that represent three different level thresholds: -40dB, -20dB and 0dB. When the input signal reaches those thresholds, the corresponding LED will blink.

② Temp.:

If the internal temperature of device reaches 95 degrees C, the TEMP LED will light up and the pre-amp will stop working until the temperature falls down under 95 degrees C. The pre-amp will come back to a working state automatically. To avoid temperature failure, please insert an external fan to the rack system.

③ Overload:

The overload LED will blink as soon as the output power exceeds the nominal value. If the Overload LED is blinking, check that the output load is well connected and still in good condition as well as checking the level of the input signal.

④ Power:

The Power LED indicates the ON/OFF status.

⑤ Power fault:

This LED indicates the main/backup power supply, the LED lights up when one of them is lost and the system will switch to the working one as well.

📝There is a button on the rear panel for disabling/enabling this LED indicator. It's required to enable this LED for the PAVA system.

4.4.2.3   Rear Panel
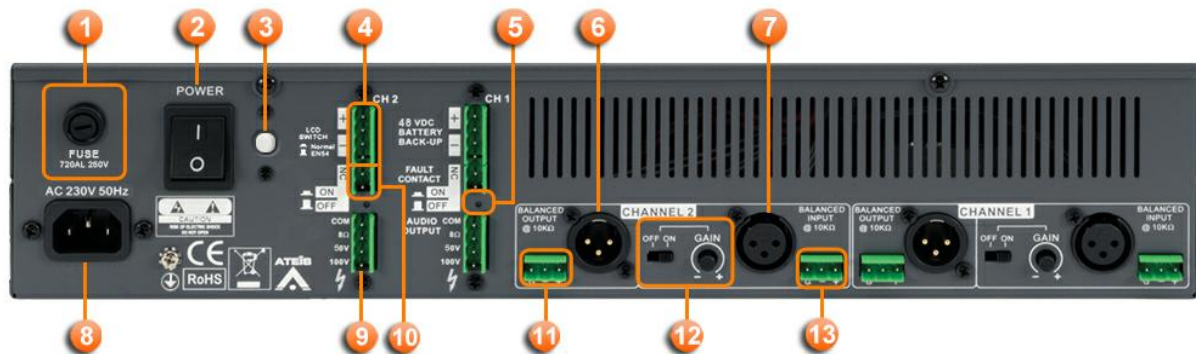
① Fuse Receptacle:

A fuse receptacle is located on the left of the amplifier's rear panel.

② Power Switch:

The power switch is a two position switch. Pushing up the power switch (I position) will power on the device, pushing it down (O position) will off the power. When the power switch is on the I position, the front panel power LED will light up.

③ En54 -16 LED Switch:

• Push on : Normal type.

• Push off : EN54-16 type.

④ Channel 1/2 48VDC battery backup connector:

The BPA amplifier can be operated with battery backup. Use the channel 1 and channel 2 "48VDC Battery Backup" connector to do so. This 48VDC power supply can be used when it's unavailable with AC power supply. The Power and DC LED shall light up when in use of Battery Backup.

⑤ Fault LED On/Off:

Enables/Disables the Fault Power LED indicator. In need of turning off the indicator, use a thin screwdriver to press the retractable button.

6 & 11 Channel 1/2 Outputs:

Each channel outputs a replica of the corresponding balanced audio input signal either on the XLR connector or on the Euro-terminal block.

The following table shall list the pins of XLR connector (Female and Male):

Item	Description
Pin1	Chassis ground (cable shield).
Pin2	Positive polarity terminal for balanced audio circuits (aka "hot").
Pin3	Negative polarity terminal for balanced circuits (aka "cold").

7 & 13 Channel 1/2 Inputs:

For each channel, there is an XLR balanced input and a Euro-terminal block balanced input. Each input gain control can be adjusted to suit the users' needs. The ON/OFF gain switch can instantaneously bypass the gain controller and set the channel gain amplifier to maximum.

8 AC Power Socket:

Main 230V~253V, 50/60Hz AC power input with fuse. It accepts a standard mains power lead fitted with an IEC connector.

For 230 V, fuse rating:

- BPA 2120: 5A

- BPA 2240: 10A

- BPA 2480: 20A

9 Channel 1/2 Audio Output:

For each amplifier channel, there is a dedicated Audio Output connector for connection of either 8 Ohm speakers, 50V speakers or 100V speakers. For the 8 Ohm connection and if you are using more than 1 speaker, please ensure that speakers are wired in a way that the total impedance load is between 8 Ohm and 16 Ohm. The Com point is the negative terminal and 8 Ohm, 50V and 100V are the positive terminals.

10 Fault Contact:

The fault contact indicates an amplifier fault by an opening contact.

12 Channel 1/2 Inputs GAIN and ON/OFF switch:

The ON/OFF switch is mainly for the parallel output and the knob is for adjusting the amplifier gain.

4.4.2.4 Characteristics

❖ Case:

- Dimension:

  o DPA4125 / DPA4250 = 2RU, 88.5 x 483 x 370 mm

- Weight :

  o DPA4125 = 14 Kg (31 lb)

  o DPA4250 = 18 Kg (40 lb)

- Color = RAL7016

❖ Power:

Item	Voltage	Power Consumption		Comment
AC Input	115 or 230V +/- 15%	DPA4125	Standby: 1W	Frequency: 50/60Hz
			Idle: 38W	
			Full Power: 600W	
		DPA4250	Standby: 1W	
			Idle: 44W	
			Full Power: 1169W	
DC Output	19~30V	-		-

(Total Mains-power consumption @ 230 VAC)

(Alarm cycle + 10 V pilot-tone @ 24 VDC)

❖ Audio:

- Frequency response = ±3dB@50Hz ~ 20KHz

- Distortion at nominal power: <0.1% (@ 1 kHz) @ -10dB of rated output power

- Signal/noise ratio: > 90 dB

❖ Inputs/Outputs:

- Power output = 100 V

- Main line input = 770 mV

- Input impedance = 20k Ohm

❖ Loudspeakers outputs:

- DPA4125: (per channel)

  o Rated load resistance = 80 ohm (100 V)

  o Rated load capacitance = 62,5 nF (100 V)

  o Rated output power = 125 W (cont. at 40°C)

  o Two channels bridged = 250 W (cont. at 40°C)

- DPA4125: (per channel)

  o Rated load resistance = 40 ohm (100 V)

- o Rated load capacitance = 120 nF (100 V)

- o Rated output power = 250 W (cont. at 40°C)

- o Two channels bridged = 500 W (cont. at 40°C)

- Frequency response = 40 Hz to 20 kHz(-3 dB)

- S/N = >90 dB (no pilot tone)

- Crosstalk = <70 dB at nominal load for 1 kHz

- Distortion = <0,1% (@ 1 kHz) @ -10dB of rated output power

❖ Current consumption:

Current Consumption	Current consumption with 48 VDC supply (per channel)		
	Standby	Idle	Full Power
DPA4125	0.03 A	1.45 A	22.5 A
DPA4125	0.03 A	1.65 A	43.85 A

**(Total Mains-power consumption @ 230 VAC)

*(Alarm cycle + 10 V pilot-tone @ 24 VDC)

❖ Working Temperature:

- Operating temperature: -5 °C to +55 °C (+23 °F to +131 °F).

- Storage temperature: -40 °C to +70 °C (-40 °F to +158 °F).

- Relative humidity: 15% to 90%.

- Air pressure: 600 to 1100 h Pa.

4.4.2.5 Parallel Output

❖ In this chapter, we can combine 2 or more channels into one. For example, 120W x 2 Channels to be one channel with 240W power, see the listed description below:

- BPA-2120 (120W x 2 Channel to be 240W power)

- BPA-2240 (240W x 2 Channel to be 480W power)

- BPA-2480 (480W x 2 Channel to be 960W power)

1. Turn the input gain to "OFF" position on channel 2, but keep the channel 1 Input gain adjustable.

2. Connect channel 1 output to channel 2 input (XLR connector or Euroblock connector)

3. Parallel the output of channel 1 and channel 2 (COM to COM, 100V line to 100V line).

Please refer to the example connection below:

o Via XLR connectors:
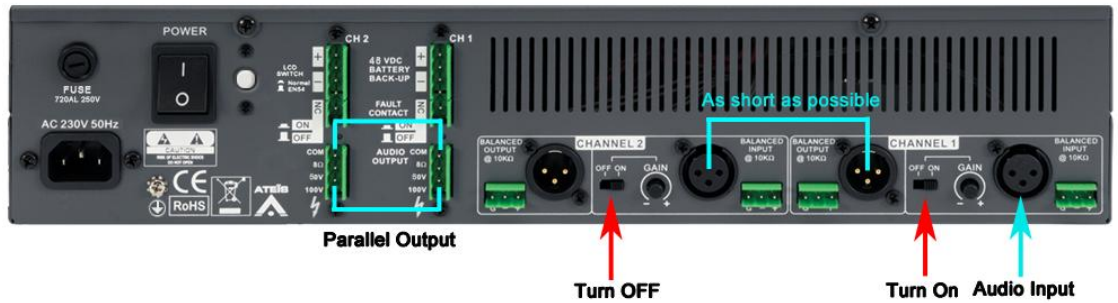
o Via Euroblock connectors:
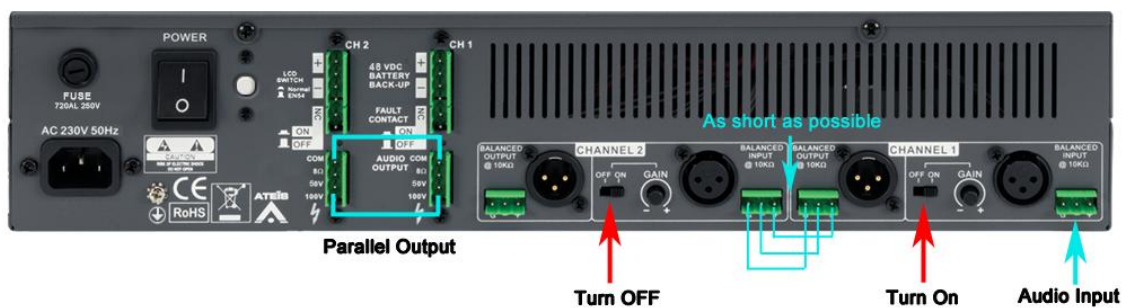
4.4.2.6   Maintenance and Troubleshooting

This chapter will help you to diagnose the common problems for troubleshooting and how to solve. The maintenance of the device and peripherals are also told here.

If none of the solution way works, please contact your ATEIS dealer.

❖ **Hardware maintenance:**

1. Be sure to keep the case clean and away from any heat source.

2. The operating temperature is 0°C ~ 40°C.

3. Keep it clean, especially air filters and ventilation paths (If the device has a fan).

4. Avoid vibrations and shocks.

4.4.3   DPAfour

4.4.3.1   Overview

The DPAfour is a 2U 19" rack mountable, 4-channel class-D power amplifier, transformer isolated for 100 V, 70 V, 50 V and 4 Ohm distributed loudspeaker systems. There are two models in the DPAfour range:

- DPAfour 125 rated at 4 x 125 W

- DPAfour 250 rated at 4 x 250 W

Each channel can deliver up to 125/250W as a separate channel or can be bridged to deliver higher power. The amplifier has a dual-voltage mains supply 115/230V AC (selectable internally) and a 24 VDC battery back-up connection. In combination with DIVA8G2 and IDA8 the DPAfour amplifiers have the following features: Loudspeaker line monitoring for Shortcut / Open line / Ground leakage / Single spur A/B loudspeaker lines individually monitored. By adding a Sonaes to the system a fully EN54-16 certified Voice Alarm system will be created, with extensive PA capabilities.

❖ **Main Characteristics**

- 4 audio outputs (100V / 70V /50 V / 4 Ohm selectable)

- Fault reporting outputs

- Four audio input gain control

- Advanced audio processing for each amplifier channel using DIVA8 or IDA8 systems

- Supervision of the amplifiers through DIVA8G2 or IDA8 systems

- Back up amplifier switching through DIVA8G2 or IDA8 systems

- Loudspeaker line monitoring with DIVA8G2 or IDA8

- Output bridging for higher power

4.4.3.2   Rear Panel
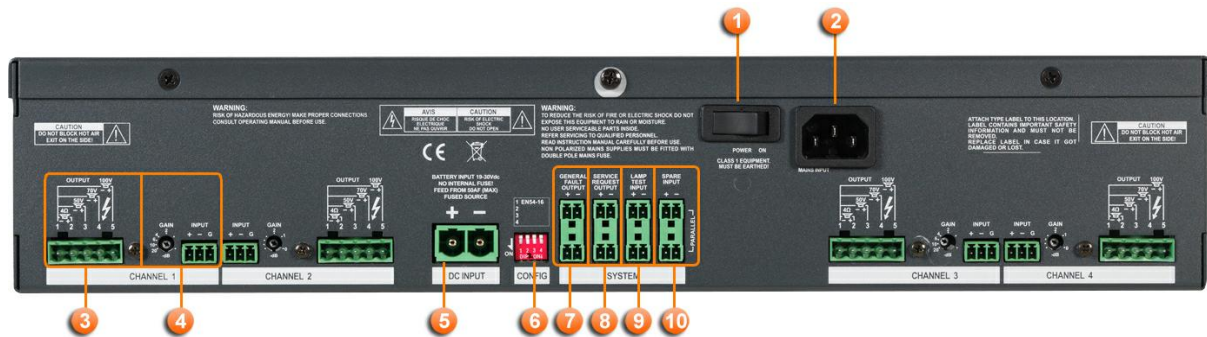
Power Switch:

The power switch is located next to the AC power socket on the rear panel. When the power switch is on the "on" position, the front panel power LED will be lit.

AC Power Socket:

Main 115V~230V, 50/60Hz AC power input with fuse. It accepts a standard mains power lead fitted with an IEC connector.

Channel 1-4 Audio Output:

For each amplifier channel, there is a dedicated Audio Output connector for connection of either 4 Ohm speakers, 50V speakers, 70V speakers or 100V speakers. The Com point is the – terminal and 4 Ohm, 50V, 70V and 100V are the + terminals.

Channel 1-4 Inputs GAIN and ON/OFF switch:

For each channel, there is a Euro-terminal block balanced input. Each input gain control can be adjusted to suit the users' needs and the ON/OFF switch is mainly for the parallel output and the knob is for adjusting the amplifier gain.

24VDC battery backup connector:

The DPA amplifier can be operated with battery backup. This 24VDC power supply can be used when it's unavailable with AC power supply or as a secondary supply which is referred to the EN54 type. The Power and DC LED shall light up when in use of Battery Backup.

CAUTION: This connection should be externally fused with 50AF max. when directly connects to a battery unit. This is not required when connected to the BECS150 Charger and Supply unit.

Configuration switches:

1 – by setting this switch to "ON", the indicators on the front panel will comply to the EN54-16. In case of technical maintenance, this switch may be temporarily set to the "OFF" position.

2 - For future use.

3 - For future use.

4 - For future use.

General Fault Output Contact:

The fault contact indicates an amplifier fault by an operating contact. (NC)

8 Service Request Output Contact:

The Service Request contact indicates that maintenance is needed.

This is indicated by an operating contact. (NC)

9 Lamp Test Input Contact:

By shutting down this input contact, all LEDs on the front panel of the amplifier will light up.

10 Spare Input Contact:

For extra input contact use.

4.4.3.3 Characteristics

❖ Case:

- Dimension:
    - o DPA4125 / DPA4250 = 2RU, 88.5 x 483 x 370 mm
- Weight :
    - o DPA4125 = 14 Kg (31 lb)
    - o DPA4250 = 18 Kg (40 lb)
- Color = RAL7016

❖ Power:

Item	Voltage	Power Consumption		Comment
AC Input	115 or 230V +/- 15%	DPA4125	Standby: 1W	Frequency: 50/60Hz
			Idle: 38W	
			Full Power: 600W	
		DPA4250	Standby: 1W	
			Idle: 44W	
			Full Power: 1169W	
DC Output	19~30V	-		-

(Total Mains-power consumption @ 230 VAC)

(Alarm cycle + 10 V pilot-tone @ 24 VDC)

❖ Audio:

- Frequency response = ±3dB@50Hz ~ 20KHz
- Distortion at nominal power: <0.1% (@ 1 kHz) @ -10dB of rated output power
- Signal/noise ratio: > 90 dB

❖ Inputs/Outputs:

- Power output = 100 V
- Main line input = 770 mV
- Input impedance = 20k Ohm

❖ Loudspeakers outputs:

- DPA4125: (per channel)

    o Rated load resistance = 80 ohm (100 V)

    o Rated load capacitance = 62,5 nF (100 V)

    o Rated output power = 125 W (cont. at 40°C)

    o Two channels bridged = 250 W (cont. at 40°C)

- DPA4125: (per channel)

    o Rated load resistance = 40 ohm (100 V)

    o Rated load capacitance = 120 nF (100 V)

    o Rated output power = 250 W (cont. at 40°C)

    o Two channels bridged = 500 W (cont. at 40°C)

- Frequency response = 40 Hz to 20 kHz(-3 dB)

- S/N = >90 dB (no pilot tone)

- Crosstalk = <70 dB at nominal load for 1 kHz

- Distortion = <0,1% (@ 1 kHz) @ -10dB of rated output power

❖ Current consumption:

Current Consumption	Current consumption with 48 VDC supply (per channel)		
	Standby	Idle	Full Power
DPA4125	0.03 A	1.45 A	22.5 A
DPA4125	0.03 A	1.65 A	43.85 A

**(Total Mains-power consumption @ 230 VAC)

*(Alarm cycle + 10 V pilot-tone @ 24 VDC)

❖ Working Temperature:

- Operating temperature: -5 °C to +55 °C (+23 °F to +131 °F).

- Storage temperature: -40 °C to +70 °C (-40 °F to +158 °F).

- Relative humidity: 15% to 90%.

- Air pressure: 600 to 1100 h Pa.

4.4.3.4 Maintenance and Troubleshooting

This chapter will help you to diagnose the common problems for troubleshooting and how to solve. The maintenance of the device and peripherals are also told here.

If none of the solution way works, please contact your ATEIS dealer.

❖ **Hardware maintenance:**

1. Be sure to keep the case clean and away from any heat source.

2. The operating temperature is 0°C ~ 40°C.

3. Keep it clean, especially air filters and ventilation paths (If the device has a fan).

4. Avoid vibrations and shocks.

5 System configuration

5.1 UAP G2 software

The UAPG2 software is a powerful, yet easy to handle tool to assist you creating, controlling and monitoring DSP-Designs for UAPG2 systems, supporting up to 12 processors including all the controlling gear connected to it.
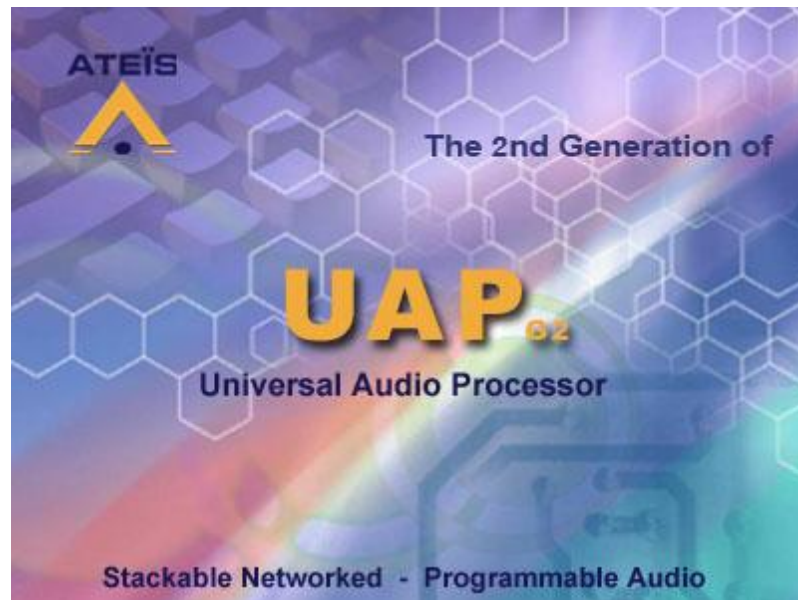
After the determination of which type and how many units would make up your network, you can start designing signal paths with all the exiting features the huge component library offers simply by drag and drop and connect different audio component.

This all is done in a straight forward and clear manner, helping you to concentrate on creating state-of-the-art electro-acoustic environments. After a Design is successfully compiled and loaded into the machine(s), you have full access to all the parameters in the system.

There are a lot of controlling features starting from simple TTL I/O's over analogue voltage control to advanced data communication. You can choose from a range of controlling devices or remote microphones suitable to access parameters within the whole networked system.

UAPG2-Design also provides a multi level user management administrating up to 40 different sets of user privileges. You also can create unique bespoke graphical environments that only consist of control elements you want operators to have access to.

Many of the concepts in this program are based on modern graphic design environments, using similar tools and techniques to provide the functionality, speed and intuitive feel of contemporary user interfaces.

The UAPG2 Software gives you control over all the design features needed to build and control a DSP System using UAPG2 Processors and all its accessories. Also it provides a graphical design environment to create custom user interfaces.

5.1.1 System requirement

- IBM compatible computer with Pentium III MMX CPU, 400 MHz or faster

- 256 MB RAM

- Hard drive with at least 20 MB of free space

- CD-ROM or DVD drive or a connection to the www (for installation only)

- VGA display (1024 x 768, 256 color or better recommended)

- One free USB-port

- Operating system: Windows 2000R Professional (Service Pack 3 or greater), Windows XP Home or Professional (Service Pack 2 or greater), Windows 7.

📝 If you use Windows VISTA, be sure to be in compatibility mode.

5.1.2 Install

Before installing the UAPG2 software, check if your PC meets the system requirements.

Turn on your PC and allow Windows to start up Insert the supplied CD-ROM into your drive. If the content of the CD-ROM is not displayed automatically double click the 'My Computer' icon and navigate to the 'DVD/CD' drive.

1. Copy the file 'ATEIS UAPG2 v.1.x.x setup' using the copy and paste commands or by drag and drop to the 'Desktop'. Wait until the task has finished.
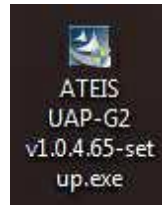
2. Start the program 'ATEIS UAPG2 v.1.x.x setup' by double click on its icon and follow the instructions to install the UAPG2 software onto your hard drive.
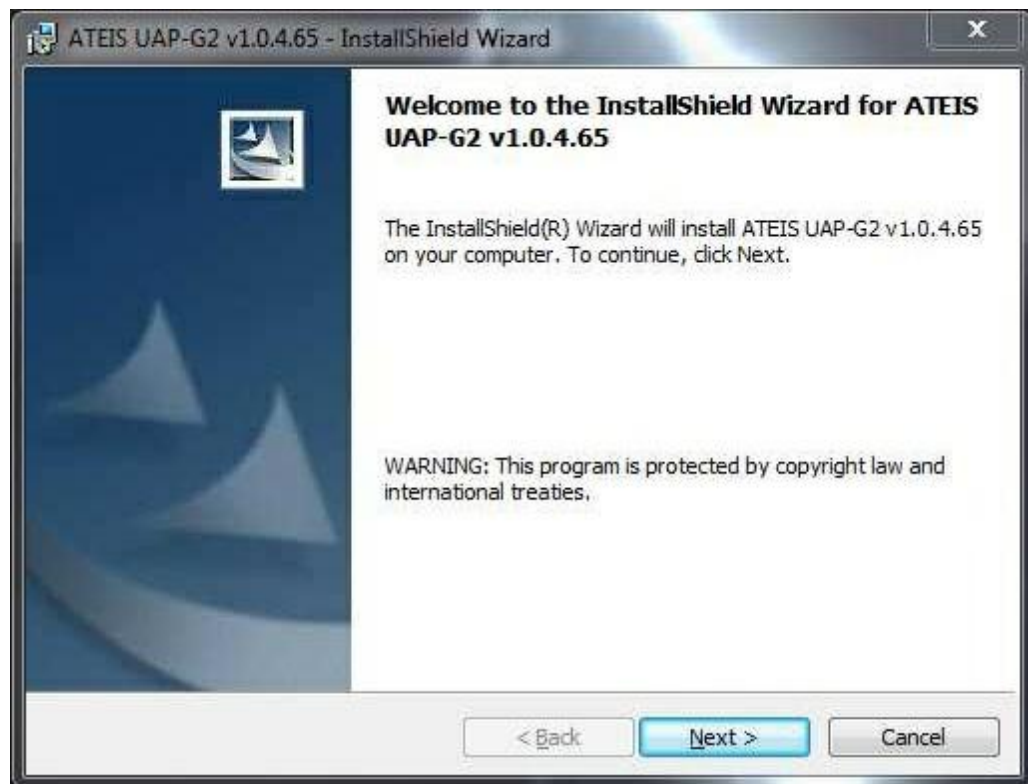
And Click "Next".

3. Type in user name and your organization name if you want and click "Next" By default the program 'UAPG2-PPM v1.x.x.exe' is installed under the path <<C:\Program Files\ATEIS\ATEIS UAPG2>>.

4. Change installation path (by clicking Change) if required, and click "Next".
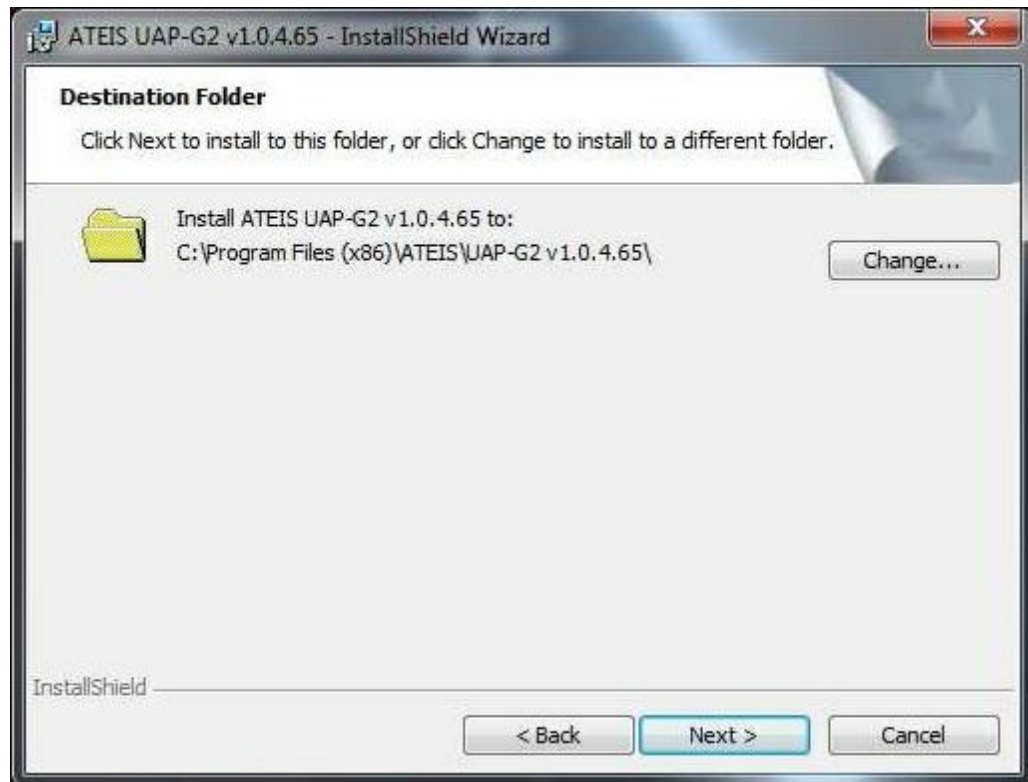
5. As usual with the install shield wizard a window appears showing all information before the actual

installation. You can enter corrections at this point by clicking "Back". If there is nothing to change click "Install" to execute the installation.

6. After all installation tasks have been finished successfully click "Finish" to exit wizard. The installation program creates a shortcut to the 'ATEIS UAPG2 v.1.x.x .exe' named 'UAPG2 v1.x.x' on your 'Desktop' with the UAPG2 icon. Double click the icon to start the program.

UAP-G2
v1.0.4.65

The newest version will be published on the Ateis website for users to update. Before you can upgrade or reinstall UAPG2 software you have to remove the older version from your applications folder.

To do this, follow the instructions below:

- Choose: > Start > Program files > ATEIS > UAPG2-G2 > UAPG2-G2 v1.x.x-(yyy)_Uninstall.
- Follow the instructions.

You can also Choose: > Start > Settings > Control Panel.

- Double click the 'Add or Remove Programs' icon, Locate and choose 'ATEIS UAP-G2 v1.x.x' and click the 'Remove' button.
- Follow the instructions to remove the 'ATEIS UAP-G2 v1.x.x' software from your hard drive.

5.1.3 Windows layout
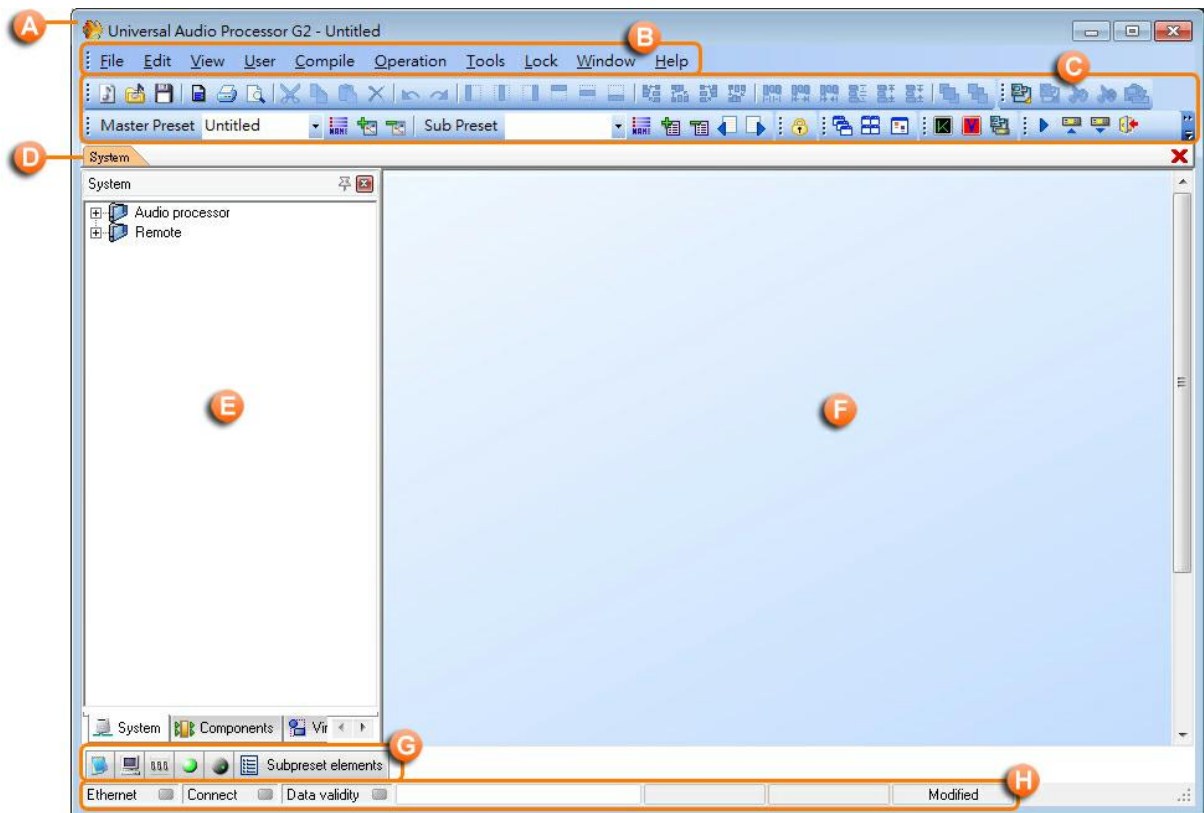
A **Title Bar:**

Displays the path name of the current file.

It displays UNIVERSAL AUDIO PROCESSOR G2- untitled, if you start a new system design, or the full path name of the current saved file.

At the right hand corner you can find the usual Windows minimize button and the close box (in red), which exit the program.

B **Menu Bar:**

Holds all the functionalities of the software (windows and tools), arranged by topic.
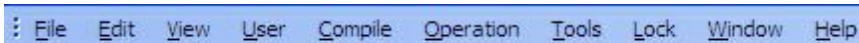
C **Tools Bar:**

Short access to main functionalities that are hidden into menu bar.

D **Tab Bar:**

Shows the window title of all opened windows (design, components control windows) for quick access.

E **Design Components Area:**

Contains all "virtual devices" you can use to build up and design your system.

F **Working Area:**

It is the space where you create your "virtual system" and make your design.

G **Properties Control Area:**

Access to some information (summaries) and functionalities regarding all communications aspects (RS-232, TTL I/O analogue Input, etc..)

H **Status Bar:**

Indicates connections status between UAPG2 and PC, and also compilation process.

5.1.4   System/component
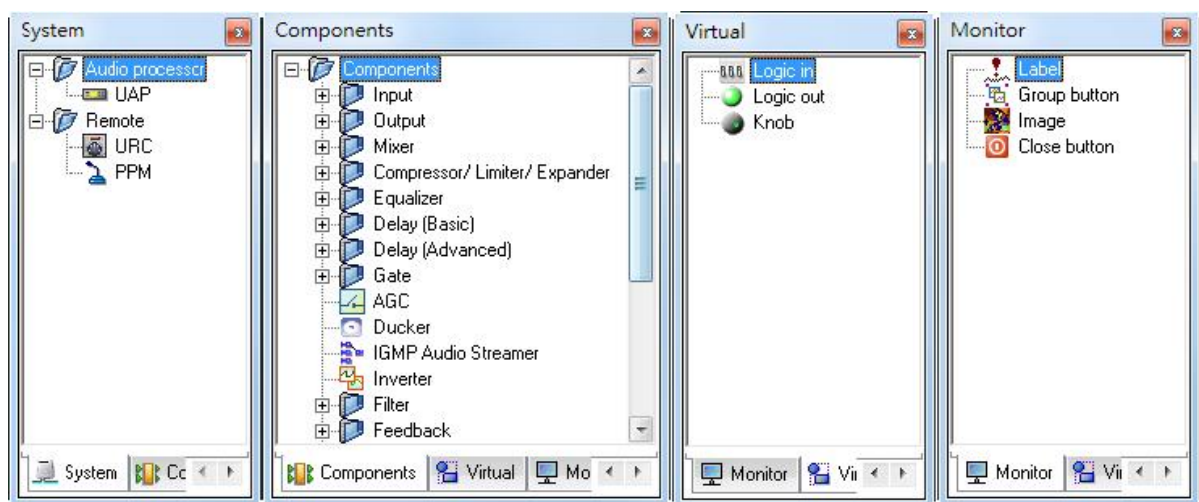
1. Dock Panel-Component Template:

A dock panel on the left side of UAP G2 software which contains all the devices and DSP components you can use to build up and configure into your system.

5.1.5   File

In this menu, you will find everything related to system/design files as well as printing command.
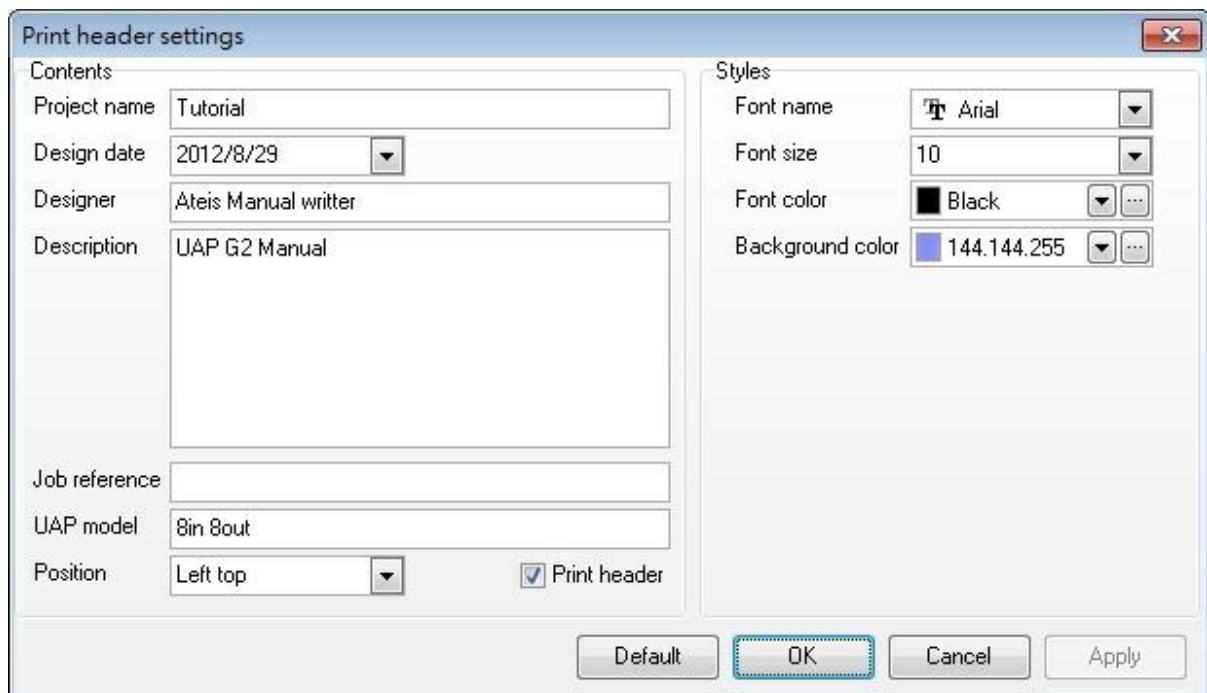
All the UAPG2 files are saved under the *.UAPG2 extension.

File

♪	New	Ctrl+N
💾	Save	Ctrl+S
	Save As...	
📂	Open...	Ctrl+O
	Open autosaved	
	Recent files	▶
📄	Print Header Settings	
🖨	Print...	Ctrl+P
🔍	Print Preview...	
🖨	Print Setup...	
⊙	Exit	Ctrl+Q
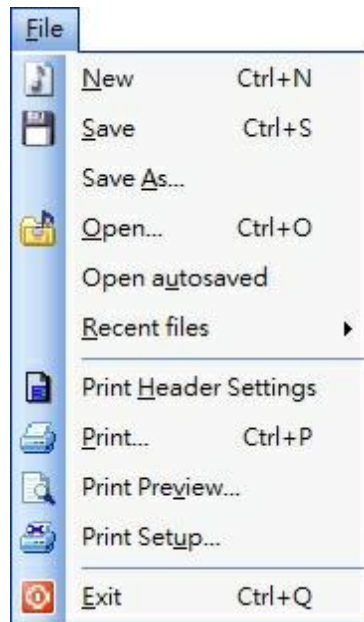
The File menu contains the following items:

- New: Opens a new blank project (new system/design file)

- Save: Saves the current file you are currently working with

- Save As: Opens the "Save as…" dialog box to save the current working project with a different name and/or path

- Open: Opens the "Open..." dialog box which allows you to select a path and open a saved file

- Open auto saved: Opens the last auto saved file

- Recent files: Quick access to the last opened files

- Print Header Settings:

  Opens the "Print header settings" window which allows you to set the headers (name, company, etc.) for the printed design. You have the possibility to print your project either for site technical documentation or for filing. You can enter project name, date, and name of the designer, a description for the project, the reference and the model of UAPG2 used. You can choose the position of this header on the paper. You can also choose Font size, type and color and also background color of the header. Finally you have the choice to display this header or not when you print your design.

- Print: Open your "Windows print" dialogue box which allows you to print the design file.

- Print Preview: Opens the "Print preview "dialog box which allows you to see before printing what your print will look like. Here is an example with a factice simple design:
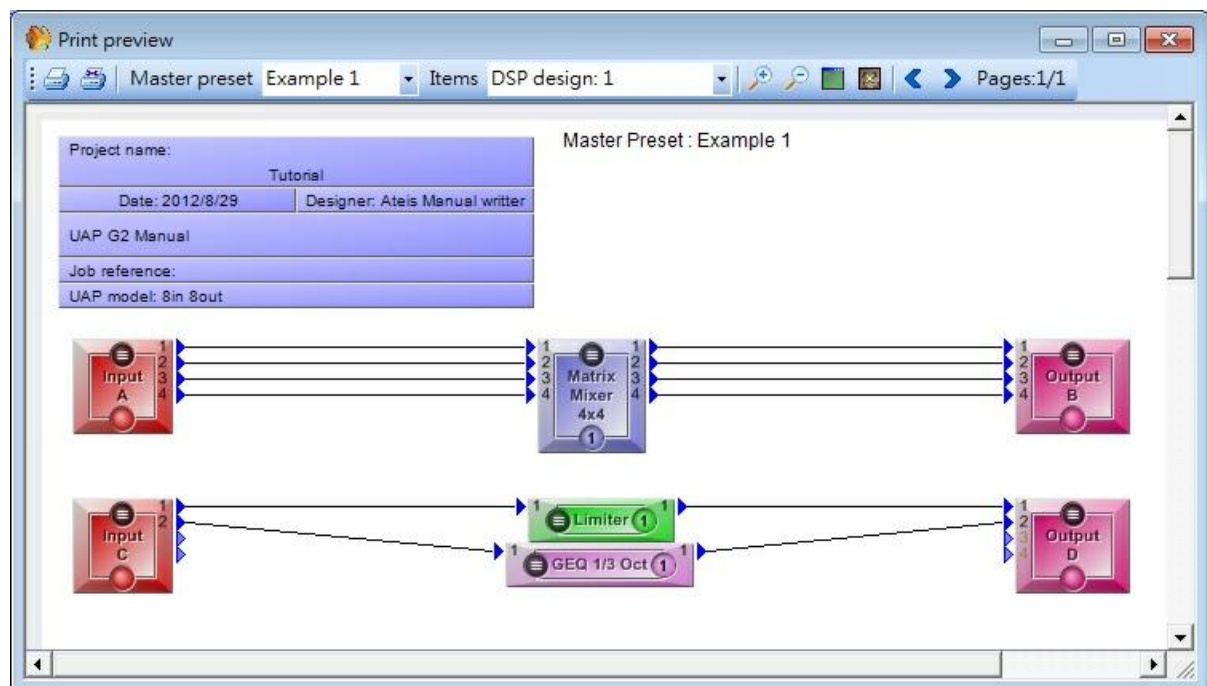
- Top left you can see the header (purple box), defined via the "print header settings" window.

- Opens the "Windows Print" dialog box to print the file

    o Opens the "Windows Print settings" dialog box to set your printer

    o Choose which master preset you want to preview

    o Choose which Items you want to preview

    o Zoom in and zoom out.

    o See the complete page

    o See only the part of the page where there is the design

    o Navigates between all the printable pages

- Print Setup:

  Opens the "Windows Print settings" dialog box to set your printer. This dialog box allows you to select which printers you will use and set your printer by clicking on properties.

  You can also choose the size of paper and if you want it normal or landscape. This window is generated by your OS.

- Exit: Terminates the current UAPG2 session after asking to save modified files.

5.1.6   Edit

Here you will find all the common basic edition tools of windows based software.

The Edit menu contains the following items:

- Undo: Will undo the last actions

- Redo: Will redo the last action or will retrieve the last state in case undoing too far

- Cut: Cuts out the active selection and copies it to the operating system's clipboard

- Copy: Copies the active selection to the operating system's clipboard

- Paste: Pastes the content of the operating system's clipboard

- Delete: Deletes (erases) the active selection

- Alignment

    You can select several elements (by maintaining left click and move the mouse you will have a selection square) then you can align all the elements.
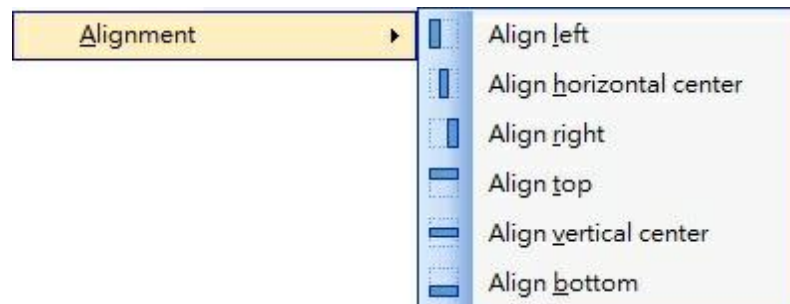
- Pack

    You can select several elements (by maintaining left click and move the mouse you will have a selection square) then you can pack the elements.

- Space

  You can select several elements (by maintaining left click and move the mouse you will have a selection square) then you can define the space between all the elements. It is interesting if you pack the elements first.
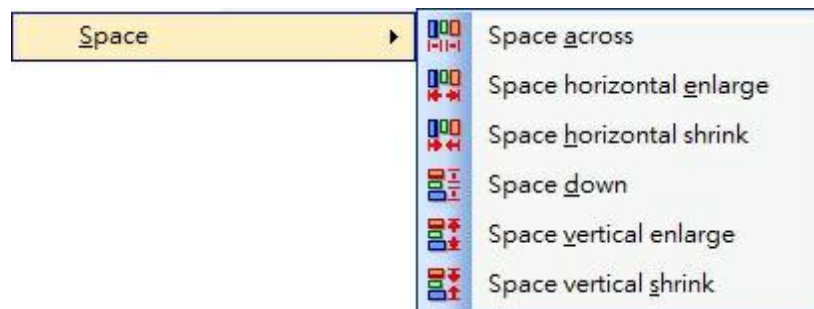
- Order

  If you have elements which are under other elements, you can define by selecting one element if this will be to the front or to the back. Pay attention sometimes element can be totally hidden with this action. It is useful with background image and buttons for example.

5.1.7   View

In this topic you will find practically every windows of the software. Most part of those windows has short access from the TOOL BAR. We are going to introduce you every items.

The View menu contains the following items:
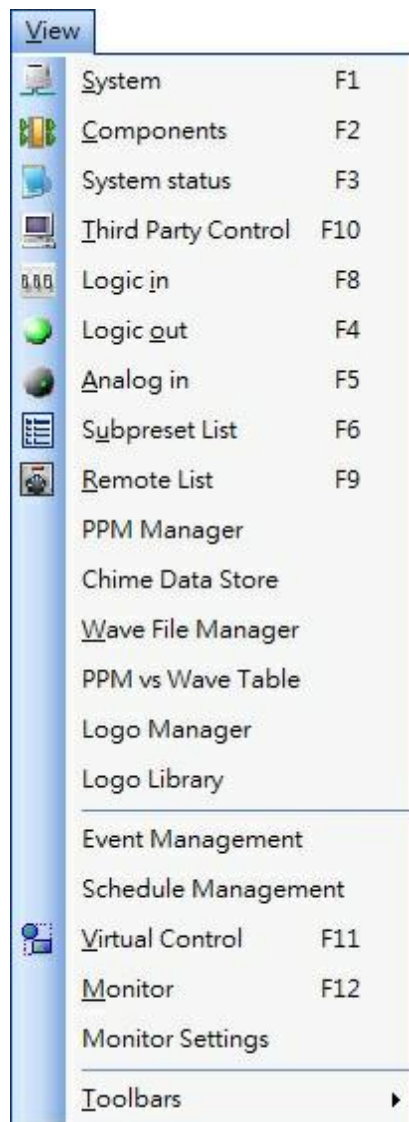
- System

    Opens the system window, in the Design Component Area.

    You have to explain to the software which Hardware will be used for you project. Here you can find the virtual system machines:

    o The processor (UAPG2)

    o The paging microphone (PPM)

    o The remote controller (URC)
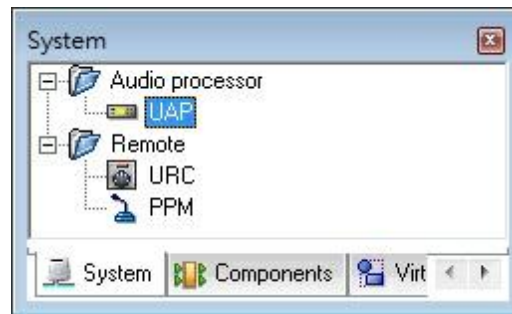
When you define your system you will drag and drop those virtual machines in the WORKING AREA. For example if you use three linked UAPG2 you will drag and drop three virtual UAPG2 from this window. Then if you use PPM you will drag and drop virtual PPM and "virtually connect" them in desired inputs of the virtual UAPG2s (be sure to connect them in the same way as the hardware).

- Components

    Opens the Components window, in the Design Component Area.
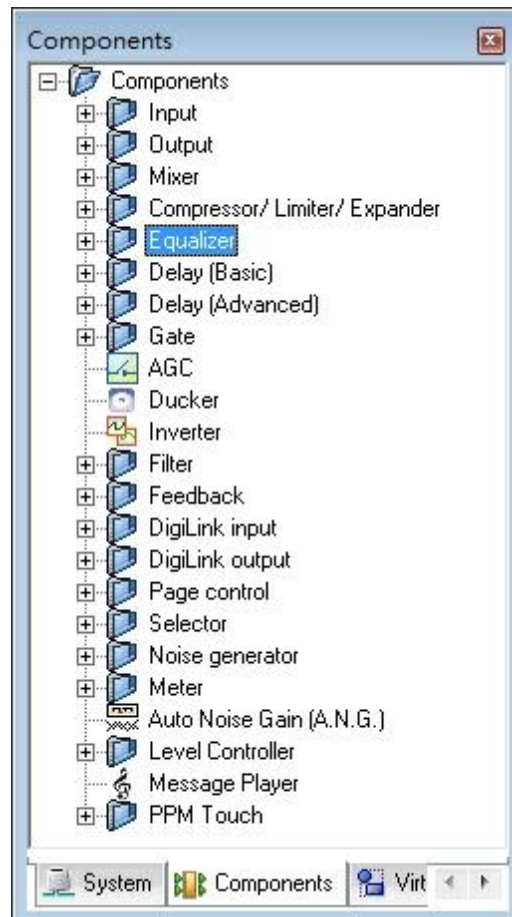
Once your (virtual) system has been defined you will define what the processor will do between Inputs and Outputs. Here are all the tools you can use for signal processing and for Audio routing etc. Simply double connect in the UAPG2 (defined in the System window in the Working Area) and then drag and drop the desired components and create wiring between inputs and

outputs.

All those components are going to be explained in the Component chapter.

- System status
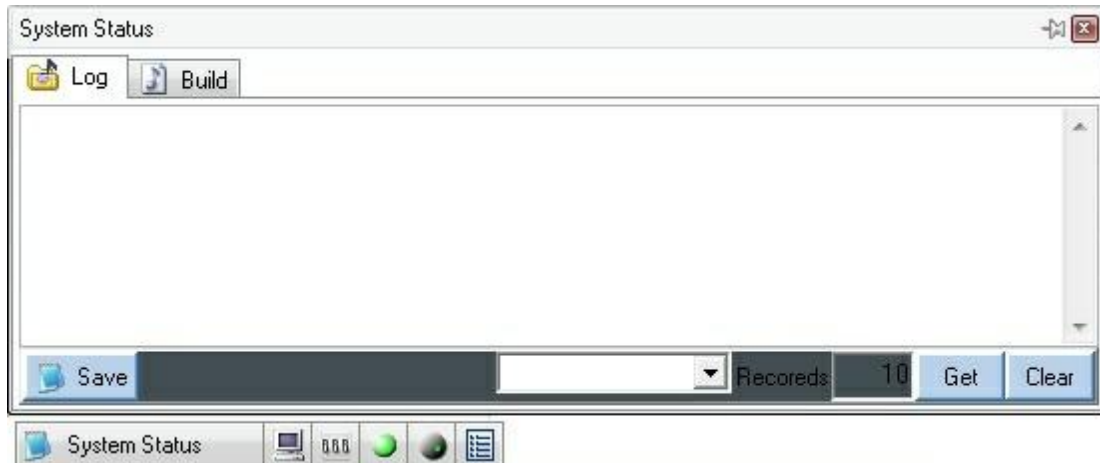
The first TAB contains the "Log file" and the second TAB shows the compilation results (error and warnings).

You can save log file by clicking "Save" or you can see the different recorded events selecting the number and by clicking "Get" or you can clean the Log file (click"Clear").

- Third Party Control

Opens the Third Party Control window in the Properties Control Area.

This section shows you all the detail of all the elements or events which are designated to be controlled via third party device (Crestron, AMX, VITY, ...)

Two different TABS, One's showing the Elements controlled via third party protocol and the second 's showing the Events controlled via third party protocol
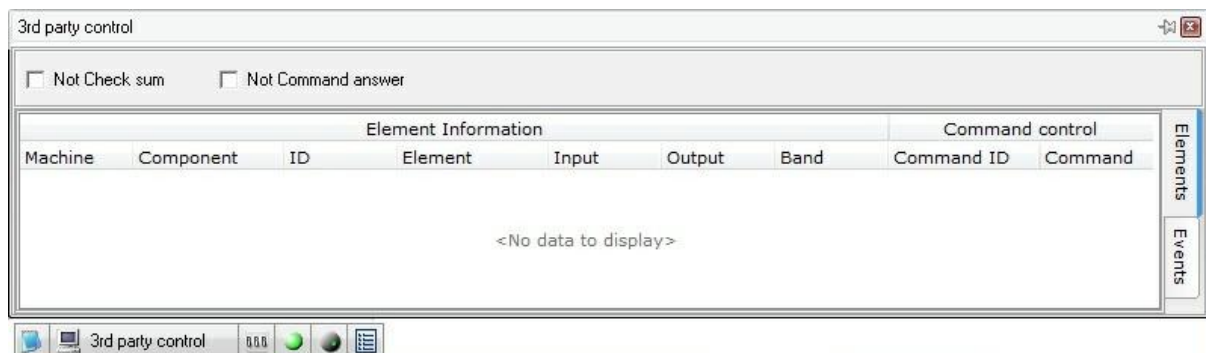
For more information, see the Third Party Control chapter.

- Logic in

Opens the Logic IN Control window in the Properties Control Area.

You have a lot of possibilities to use the 16 controlled inputs (either analogue or Logic) If you need to use Logic inputs you can control and do a lot of different things. Following windows

shows you the details of what is controlled and what you are doing with Logic input:

1. The contact input must be assigned to a group to be available. You can also use Logic inputs as "bit" for different choice (not available at the moment).
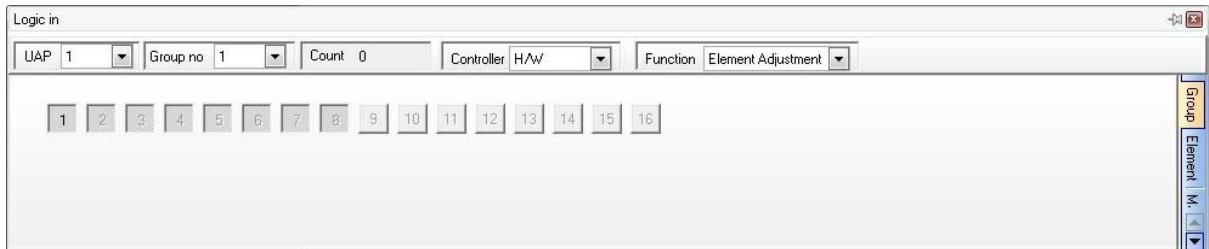
2. You can use Logic input in order to change preset:
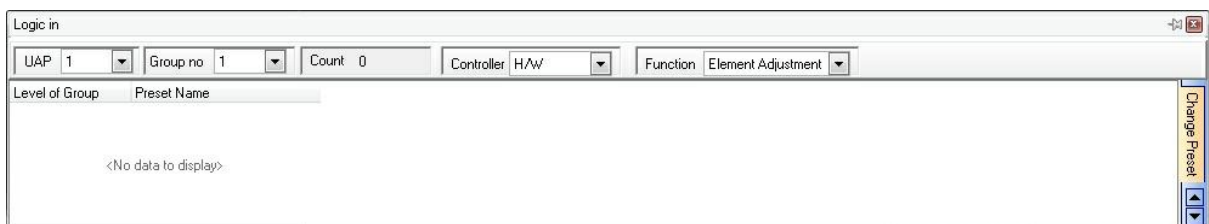
3. You can use logic in to pilot every logic adjustments in every UAPG2 of the system (bypass, mute, routing, solo,…)
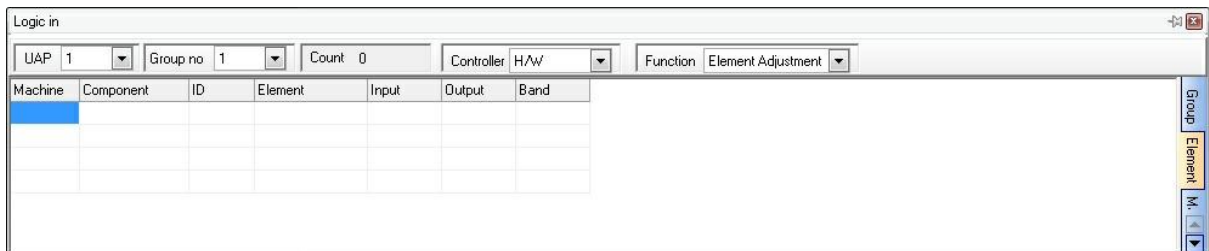
4. Finally you can choose to start events with logic input
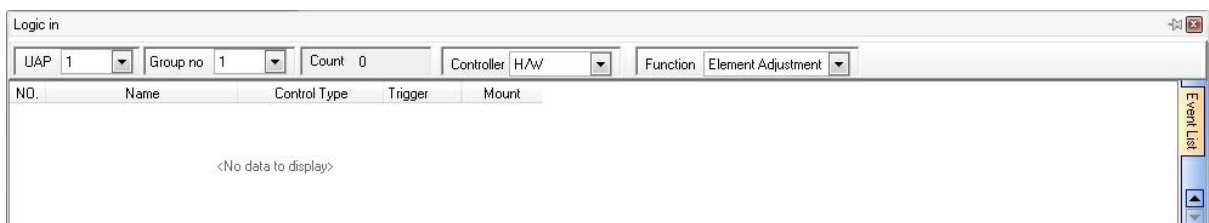
For more information, see the Logic Input chapter.

- Logic out

Opens the Logic Out Control window in the Properties Control Area.
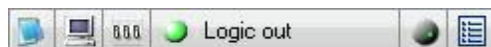
You have two possibilities to control the 8 logic outputs of one UAPG2. The window shows you which output is controlled by what.

1. Elements can control a logic output (mute, bypass, signal, routing,…)
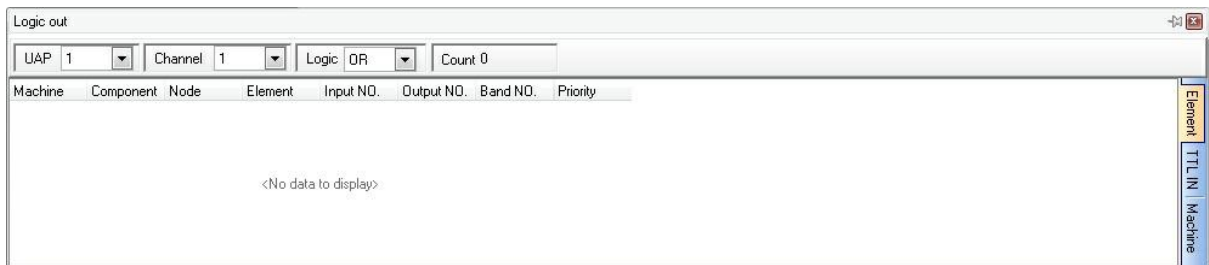
2. Logic inputs of a UAPG2 can control a Logic output of a remote UAPG2 (in order to give some logic signal to a remote device for example):
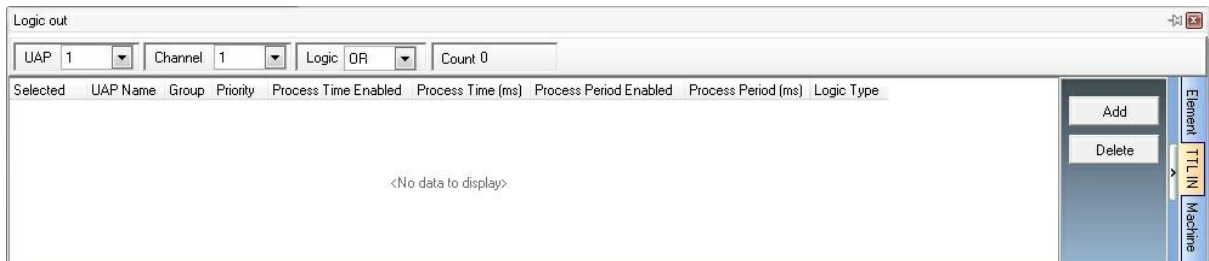
For more information, see the "HOW TO: use Logic Output" chapter of this manual.

- Analogue in

Opens the Analogue in window in the Properties Control Area.

You can control some analogical elements with remote 10kOhm potentiometer (volume, attack time or threshold of a compressor, gate,…). This window shows every analogue adjustment you have defined:

For more information, see the "Analogue Input" chapter.

- Sub-preset List

Opens the Subpreset elements window in the Properties Control Area.
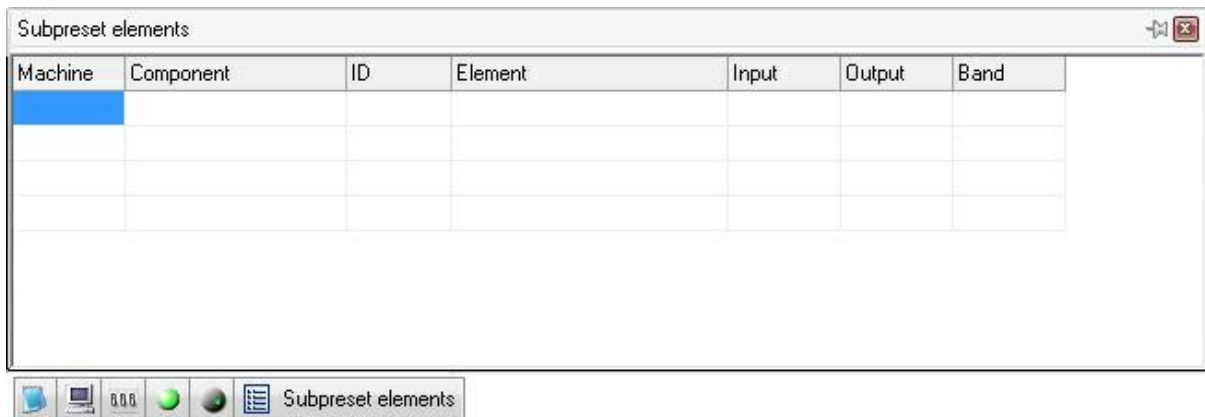
Show all the elements controlled ("virtually photographed") for each subpreset. This window is a kind of reminder.

- Remote List

Opens the Remote List window in the Properties Control Area.
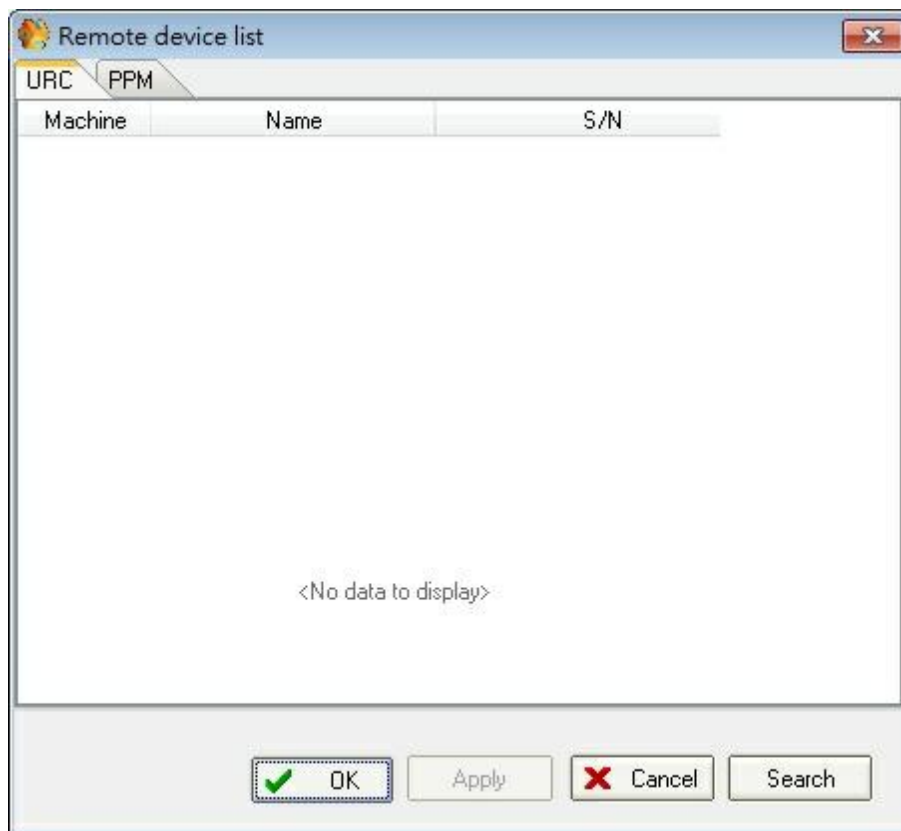
When you want to use Ateis remote device (PPM or URC, through RS485 network), you have to follows few steps (see Remote chapter), one of those step is the searching process:The UAPG2 scans the system and attributes a specific IP address for each remote device (PPM and URC) automatically.

From those windows you will have a summary of each PPM and URC with their serial number and where they are connected. You can also start the search process by clicking .

- PPM Manager

    Opens the PPM Manager window in the Properties Control Area.
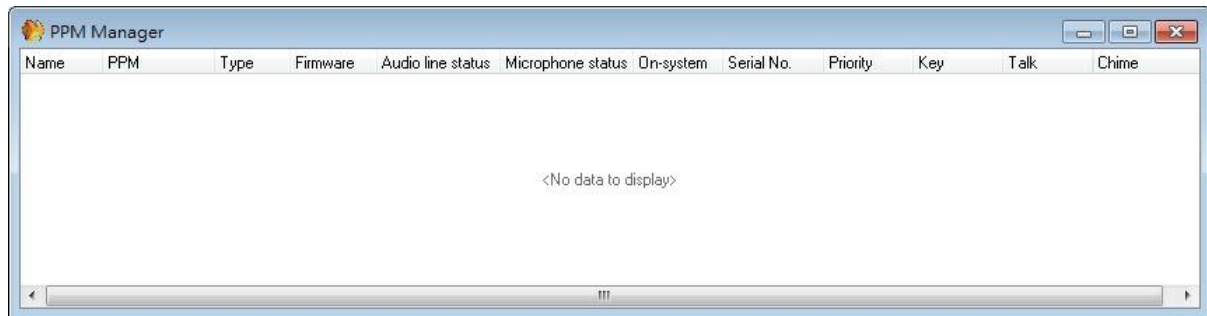
    This window gives all the details of each PPM you are using in the system.

- Chime Data Store

    Opens the Chime Data Store window (floating window)
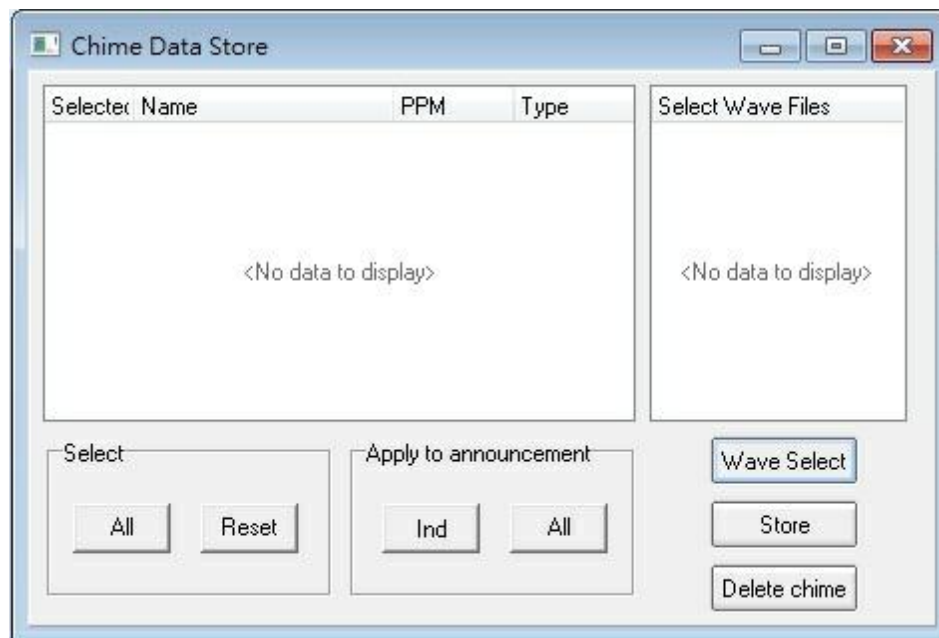
    With this window you can load chime (format: 16k, 16bit WAV, storage: 128kbits) in PPM. First you will have to define the wave file by using the wave file manager.

- Wave File Manager

    Opens the Wave Files List window (floating window)

    With this window you select which wave file will be used with your project.
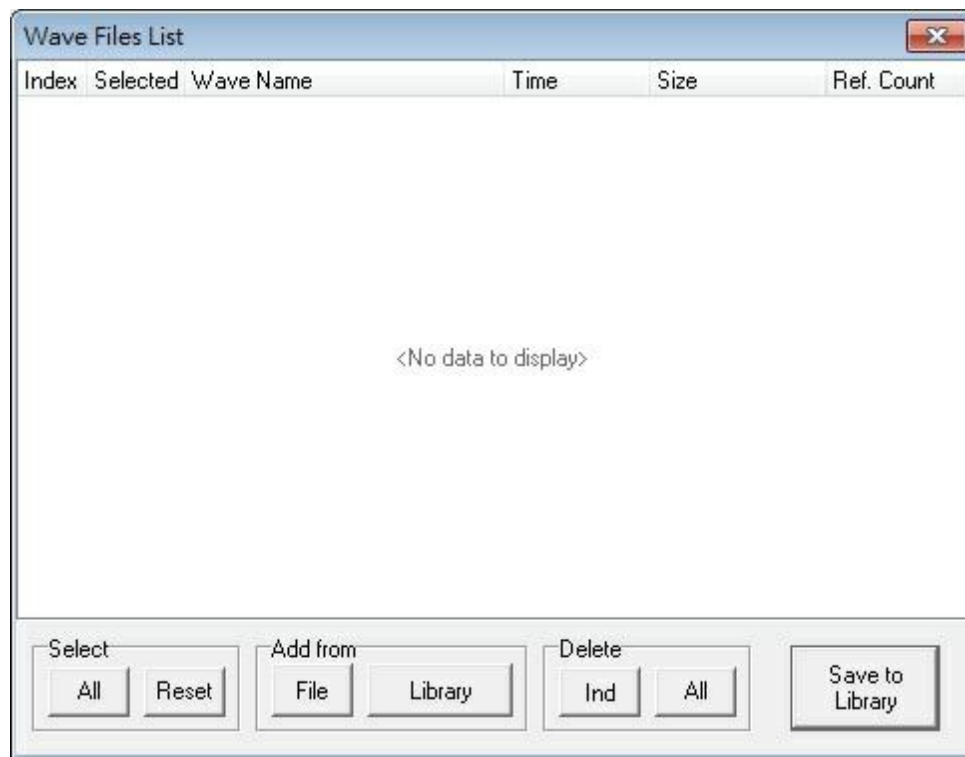
- PPM vs Wave Table

  Opens the PPM vs Wave Table window (floating window)

  Gives details about which wave file is loaded in which PPM (wave file associated to which UAPG2 and input's number)

- Logo Manager

  You can post two different logos on the URC's display.

  This window shows you which logo is in your project and you will define which logo you will use with the URC.
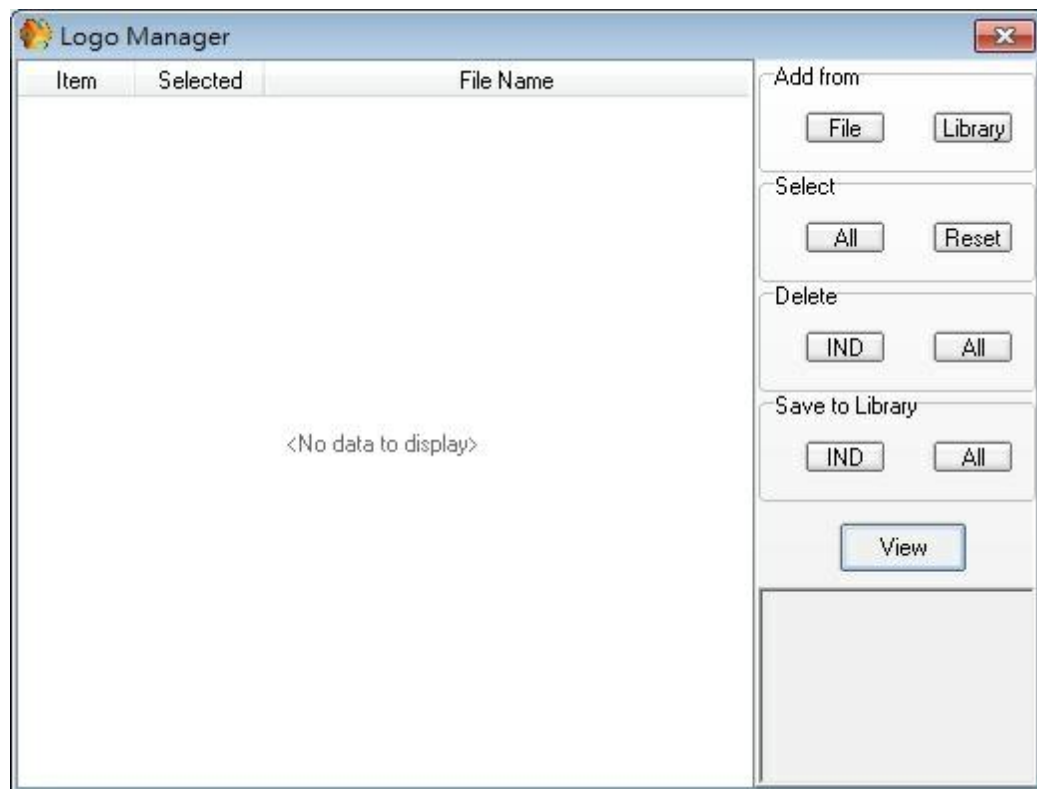
- Logo Library

    Opens the Logo Library window (floating window)

    With this window, you choose which logo you will use in your project.

- Event Management

Opens the Event Management window (floating window)

NO.	Name	Control Type	Third Party Cont.	Logic IN (H)	Logic IN (L)	Mount	Select

<No data to display>

Add   Delete   Select   Clear
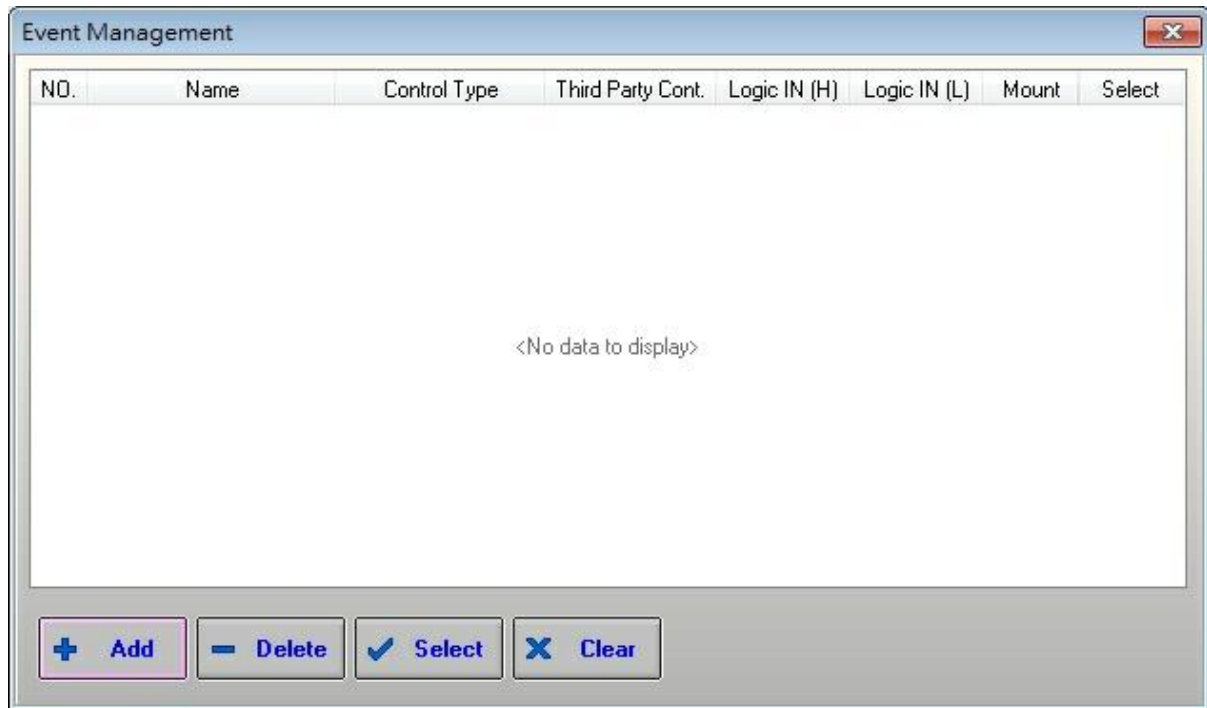
Here you can add, define, select or clear some events. You cans choose between five different kinds of events:

- Change master preset
- Change subpreset
- Adjust element (volume change, mute…)
- Pilot TTL Output (Logic output)
- Stop event

You can also choose to command events via third party protocol.

- Schedule Management

    Opens the Schedule Management window (floating window)
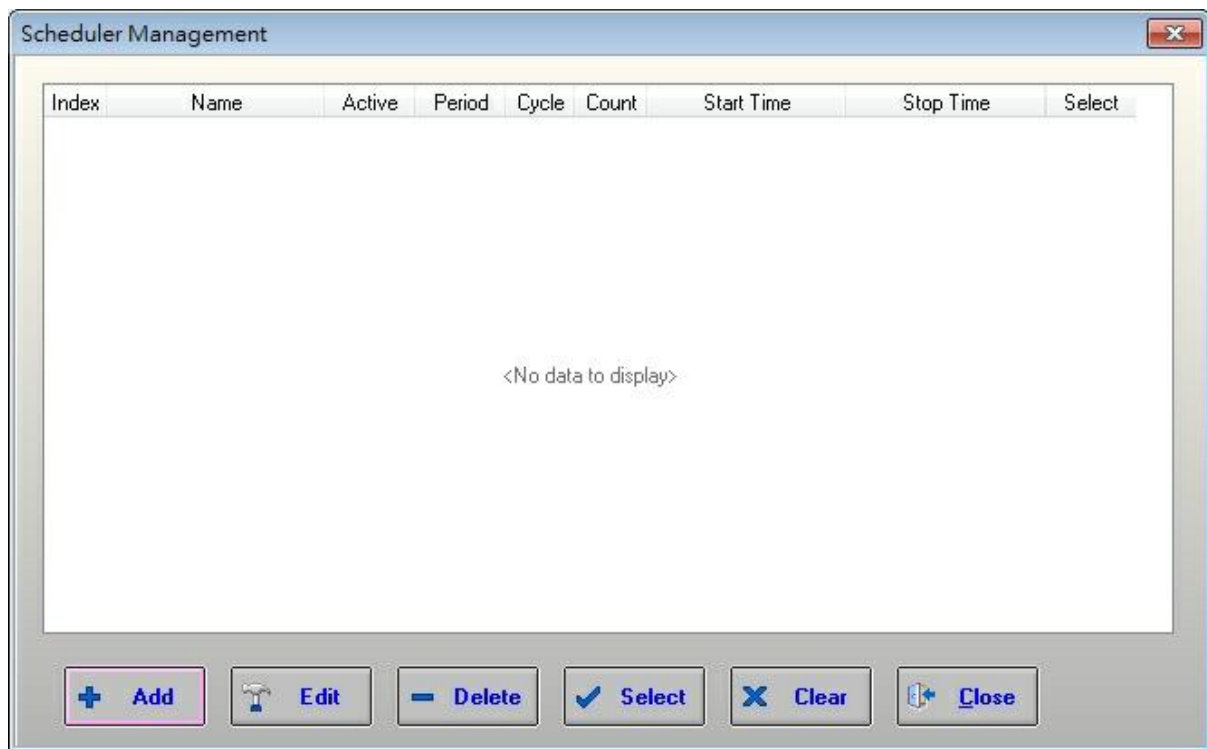
Here you can define to start events automatically (you define when you want and how many times you want to start events or an event sequence (addition, sequence, of several different events).
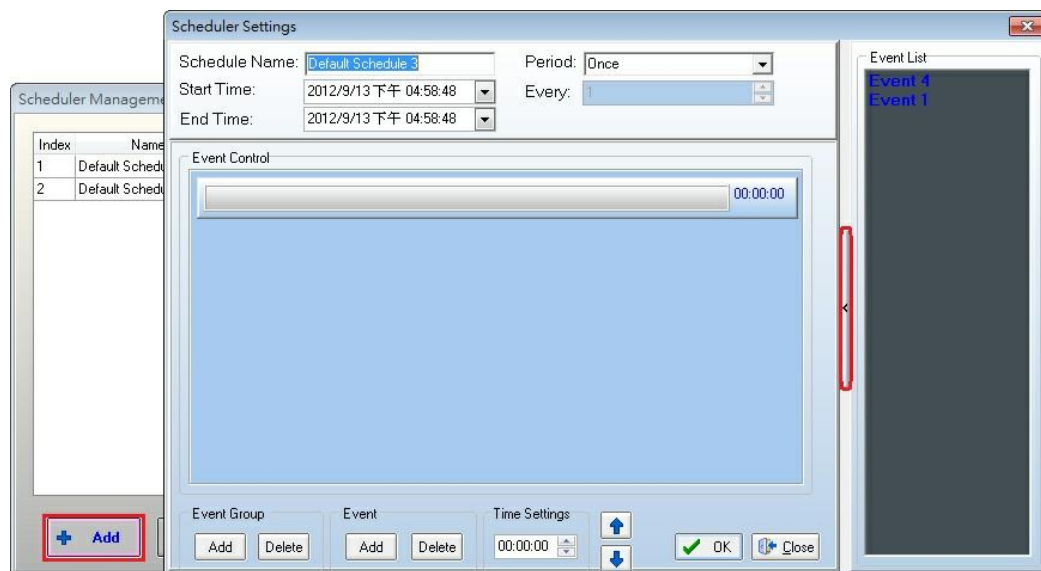
The arrow is here the event list can be opened or closed, see how to use Scheduler to trigger.

• Virtual Control

Opens the Virtual Control window (floating window) and Virtual tools in the Design Components Area

The "virtual Control" allow you to define group of buttons, LEDs, or faders. You can import these

groups in the Monitor Window.

You can add as many "virtual logical in", "virtual logical out" and "virtual analogical in" as required. Simply drag and drop object from the virtual tools menu in the PROPERTIES CONTROL AREA
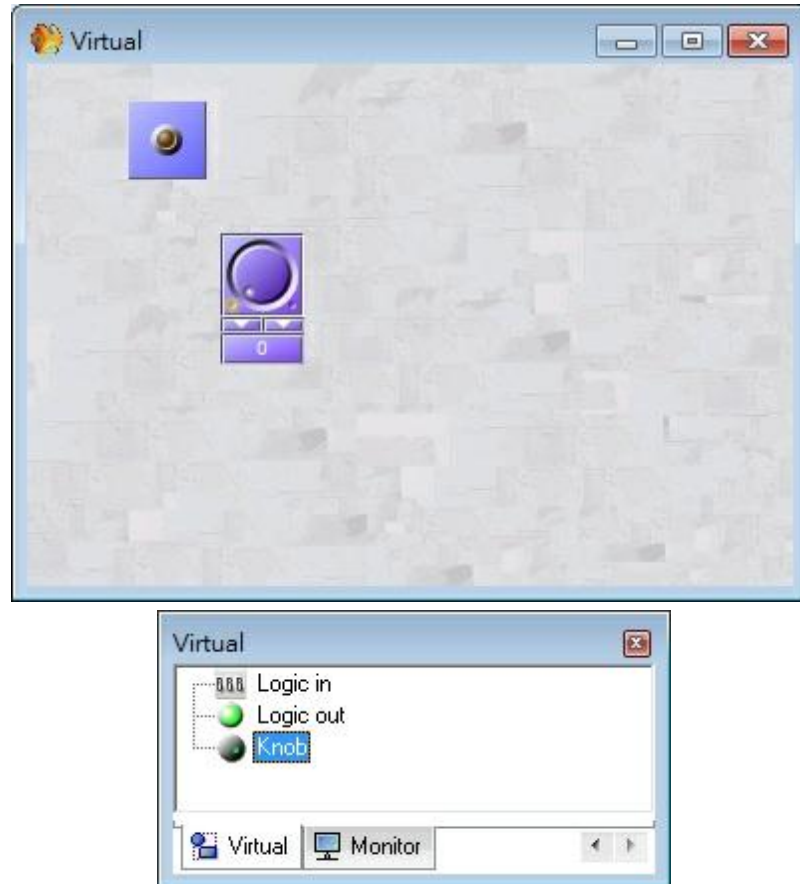
- Monitor

Open the Monitor window (floating window) and the Monitor tools window in the Design Components Area.
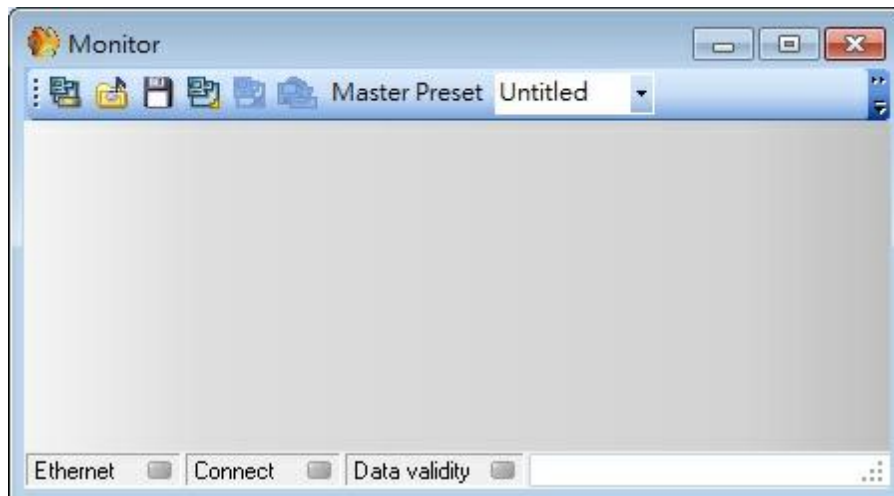
The Monitor window is a window in which you can bring all the adjustments and indicators you need for your project. This is helpful if you want to have a graphical control interface. You can define users whom have restricted access to the software; they will have access to this window (monitor) only. So you can put in this window all the adjustments the users will need in order to prevent improper use of the program.
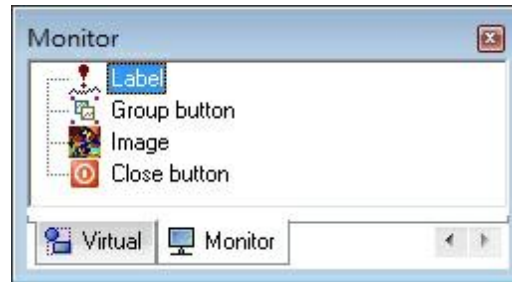
You can add as many "monitor logical in", "monitor logical out" and "monitor analogical in" as required. Simply drag and drop object from the Monitor tools menu in the Properties Control Area.

When a specific restricted access user will start the software he will see the monitor window. So it is why there are a lot of small sized tools (the same as in the Tool Bar).

Here is a picture of the virtual soft keyboard:

For more information, please see the Monitor chapter.

• Monitor Settings

Opens the Monitor settings window (floating window)

When you use monitor window you can choose to hide some tools (of the monitor window tools bar)

- Change Master\Sub Preset: Disable the possibility to change Master or Sub presets from the monitor window.

- Save\Load File: The master-Preset menu on the monitor window is greyed out.

- Exit Software: Disable the possibility to save or load UAPG2 design file The software connects (live) automatically to the UAPG2 master-preset by using the default IDM (ADMIN) which has an access to all master-presets.

- Auto Connect: Disable the possibility to close the software from the monitor window

For more information, please see the Monitoring Settings chapter.

- Toolbars

Choose which kind of tools will be "shortcuted" in the Tool Bar.

5.1.8 User

In this topic you will find windows related to system communication (Ethernet: ID and UAPG2 system: User). Most part of those windows has short access in the Tool Bar. We are going to introduce you every items in User Management chapter.

The User menu contains the following items:
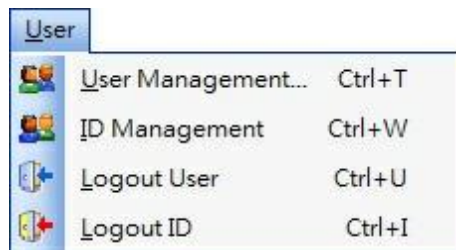
- User Management (user right)
- ID Management (Master-preset access)
- Logout User

- Logout ID

5.1.9 Compile

Start the compile process.
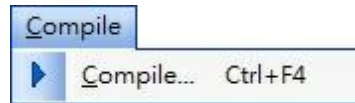
The software verifies that no major errors remain before uploading the design into UAPG2 system.
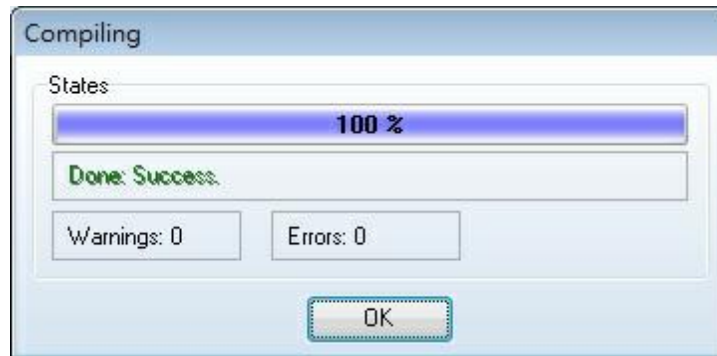
5.1.10 Operation

In this topic you will find windows related to system connection. Most part of those windows has short access in the TOOL BAR. We are going to introduce you every items.

The Operation menu contains the following items:
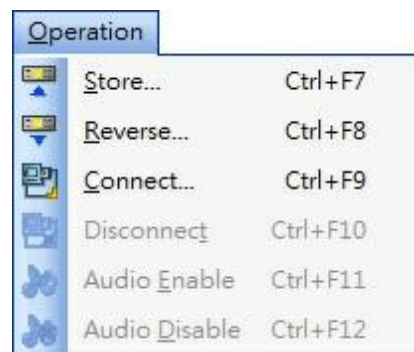
- Store: Starts the Store process which upload your design into the UAPG2 system.

- Reverse: Starts the reverse process which download the design from the UAPG2 system into your computer.

- Connect: Connects your computer to the UAPG2 system.

You have to have opened the good corresponding design file to connect to UAPG2 system.

- Disconnect: Disconnects your computer from the UAPG2 system, Allow you to change settings and re-upload them into UAPG2 system.

- Audio Enable: Activates the Audio (Outputs) of the UAPG2 g2 system.
- Audio Disable: Stops every audio signals going out of the UAPG2 system.

5.1.11 Tools

In this topic you will find windows related to system configuration and software settings. We are going to introduce you every items. To learn how to use those items please refer to the "create a project" and "how to" sections.

The Tools menu contains the following items:

	Update	Shift+F2
	Machine Configuration	Shift+F3
	Parameter Setting	Shift+F4
	Clear Remote IP	Shift+F5
	Delete current operation preset	Shift+F6
	VR Calibration	Shift+F7
	Options	Shift+F8
	Establish Ethernet Link	Shift+F9
	Reset	Shift+F10
	Configure machine IP	Shift+F11
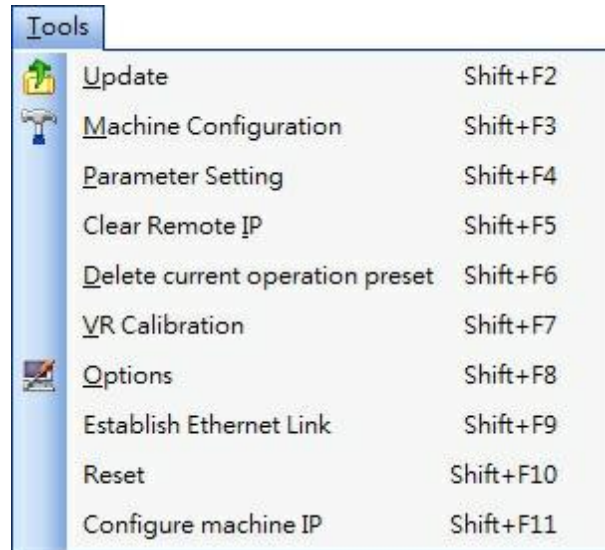
- Update:

    Opens the Firmware update window (floating window)

Firmware Update

DSP | MCU | URC | PPM-SP | PPM

File

C:\Program Files (x86)\ATEIS\UAP-G2 v1.0.4.79\dsp_update   Open

Status

	ID	Name	Machine No.	Status
☐	1	1	1	

0 %

Select All   Update   Cancel
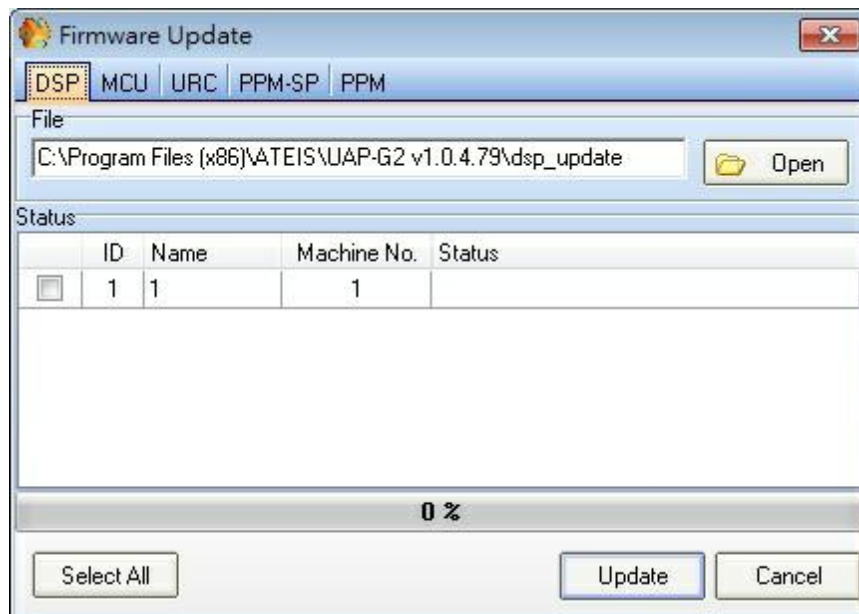
The software contains every updated firmware. If you have to update UAPG2 or PPM or URC,

just click on [update] button.

📝Always update DSP before MCU and never reset between the two update processes.

- Machine Configuration:

    Opens the Machine Configuration window (floating window)

    When you are connected to the UAPG2 system. This window allows you to read and set some internal UAPG2 information.

    - o Date/time: set the internal date and time of the UAPG2g.
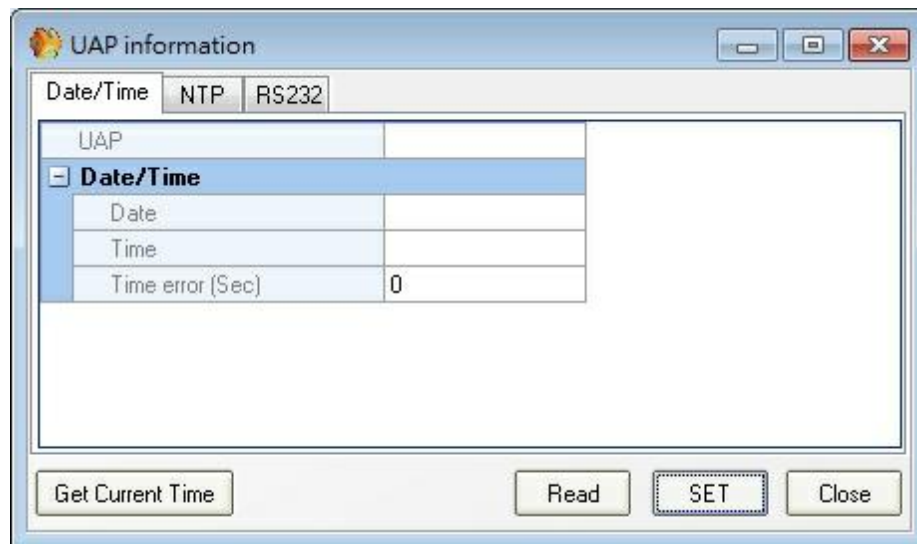
    - ▪ Read: To see which settings are into each UAPG2 of the system

    - ▪ Set: To load some settings changes

    - ▪ Get Current Time: To get computer date and time directly.

    - ▪ Time adjustment:

        If you use the UAPg2 connected to internet, our advice is to synchronize the time with NTP protocol.

        If you use the UAPg2 in stand alone, then the only way to adjust the time if needed is to use the parameter "Time error (Sec)".

        1. At first, set the time (from the PC or with NTP), and remember this time.

        2. Leave the machine working in stand-along during one month.

        3. After one month, record the current time and see the formula.

        4. Time Error(sec)=(current time -previous time)/30.

        5. Set time error sec in machine configuration.

        6. Every day at 00:00, the machine will automatically increase/decrease the time(calibration time).

    - o RS-232 SET: Set the RS232 communication, Baud rate, parity, Stop bit and connected target.
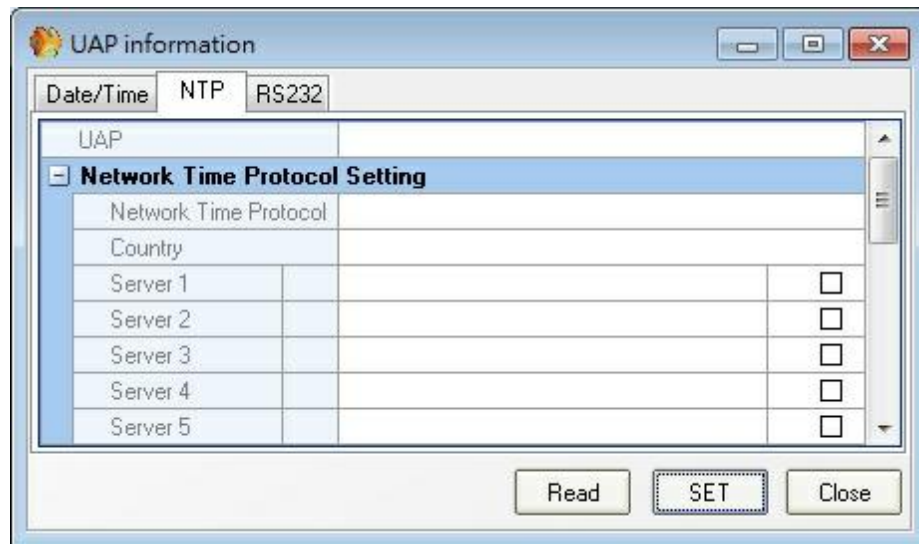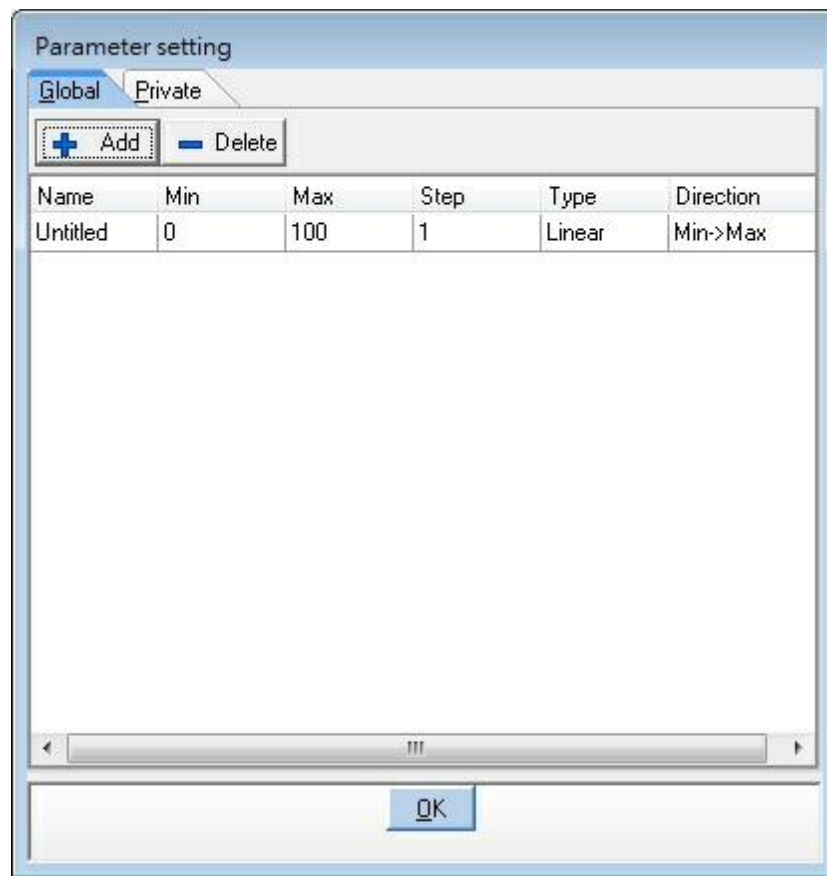
- Read: To see which settings are into each UAPG2 of the system.

- Set: To load some settings changes.

o NTP: Set the UAPg2 to have the date/time updated in real-time by the NTP servers. NTP means Network Time Protocol.
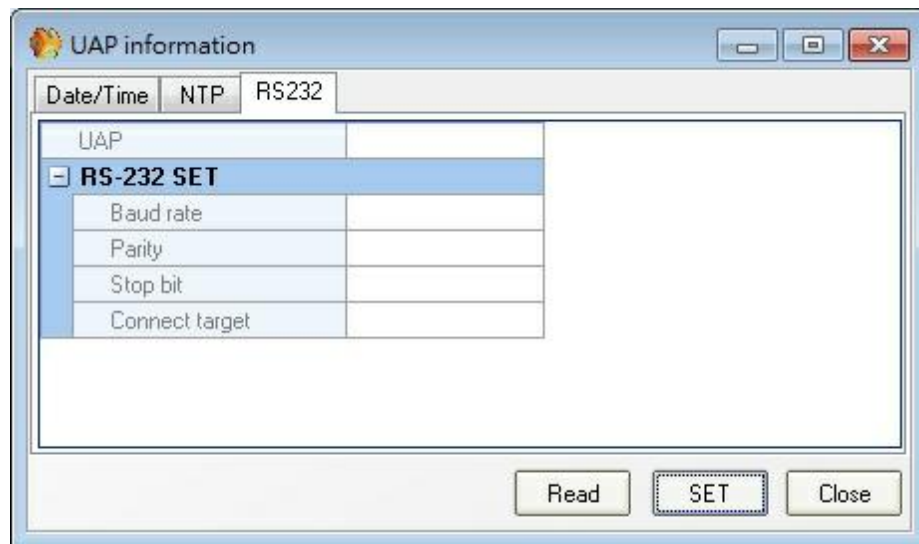
- Read: To see which settings are into each UAPG2 of the system.

- Set: To load some settings changes.

- Parameter Setting:

  Opens the Parameter setting window (floating window)

  This window is applied to setting the parameter of dsp elements with maximum and minimum value.

  There are two tab sheets:

  o Global:

Here you can define a range or specifics values and give a name to this specific range then in the Private tab you can assign this specific range to specific component.

o Private:

Here you can assign specific range (define in global) to a component in the design.
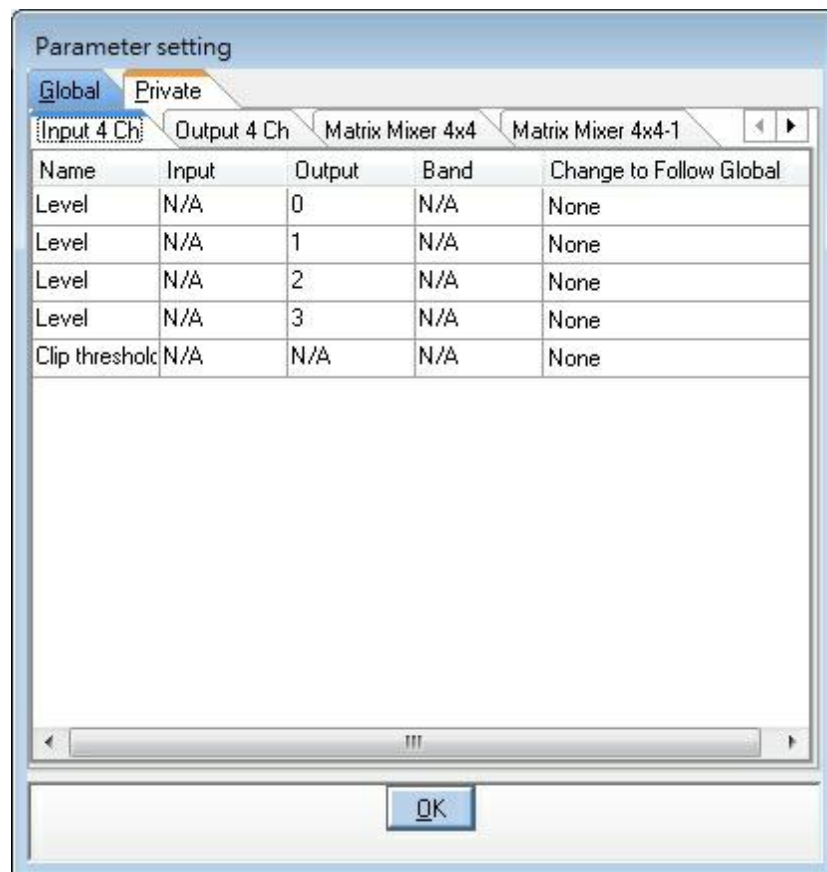
For example if there is a element ranged from 20 to -90, if we add a row on the Global tab and set maximum as 50 and minimum as 0 then give it a name "mm". Next, change to private tab and select the "mm" item in Change to follow global and click ok. The element will have a new maximum 50 and minimum 0 now.

- Clear Remote IP:

Opens the Parameter setting window (floating window)
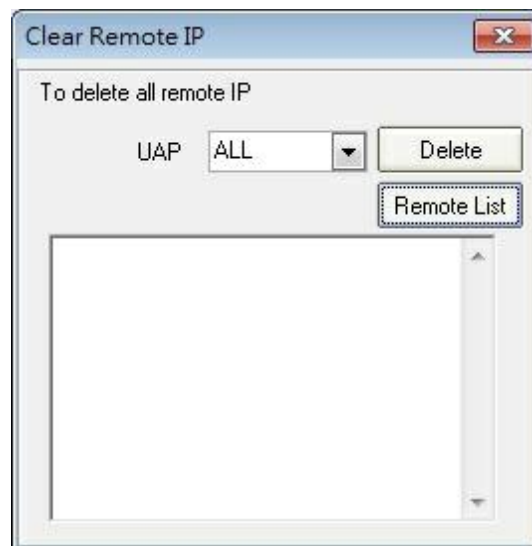
Clear the IP addresses of the remote devices (PPM, URC) connected to the selected UAPG2 (s). If you add new remote device or change something in the system you may have to clean all IP addresses and re-give addresses (Search process in the remote list window: sheet 41). Click on Delete several time.

- Delete Current Operation Preset

    Opens the Delete Current Operation Preset window (floating window)
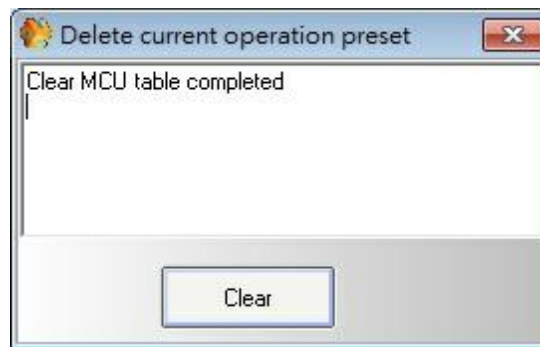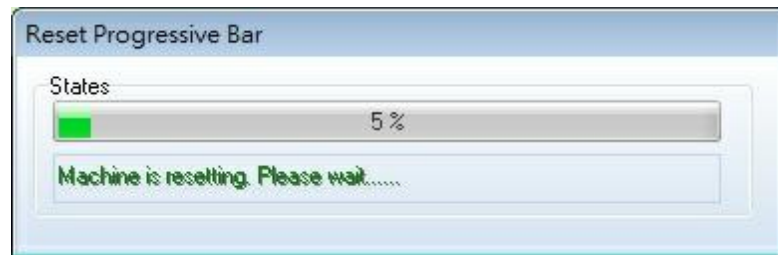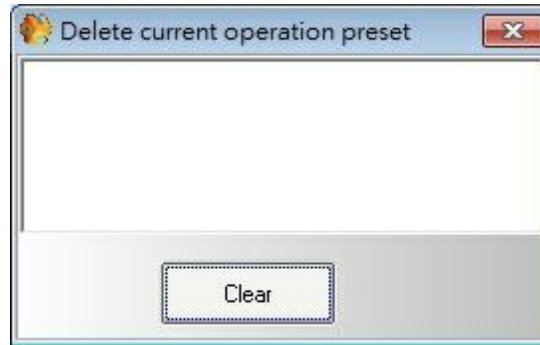
Clean the memory (design) of the connected UAPG2. This feature is useful when the UAPG2 have strange behaviours due to a error during data transfers or an old improper design.

- VR Calibration:

    Opens the VR Calibration window (floating window)

VR Calibration

Set

UAP   1 ▼

VR Number   Analog ch1 ▼

‹‹ Minimum   **›› Maximum**   **Clear**
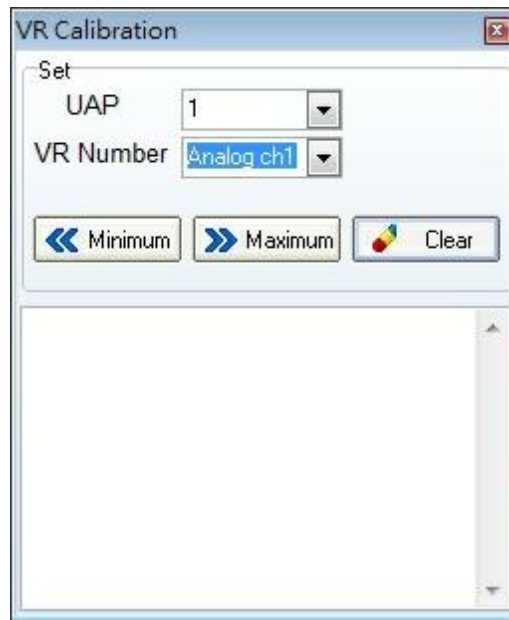
Here you calibrate all the remote potentiometer (Variable Resistors) connected in the control inputs (defined as analogue inputs) and the 8 front knobs of the UAPG2.

Simply choose the UAPG2 of the system and the control input (or the front knob) then put it at the minimum and click on [Minimum]'s button then put the potentiometer (or the front knob) to the maximum and press the [Maximum]'s button. After that switch off/on the UAPG2 and the potentiometers are calibrated.

· Options:

Opens the options window (floating window)
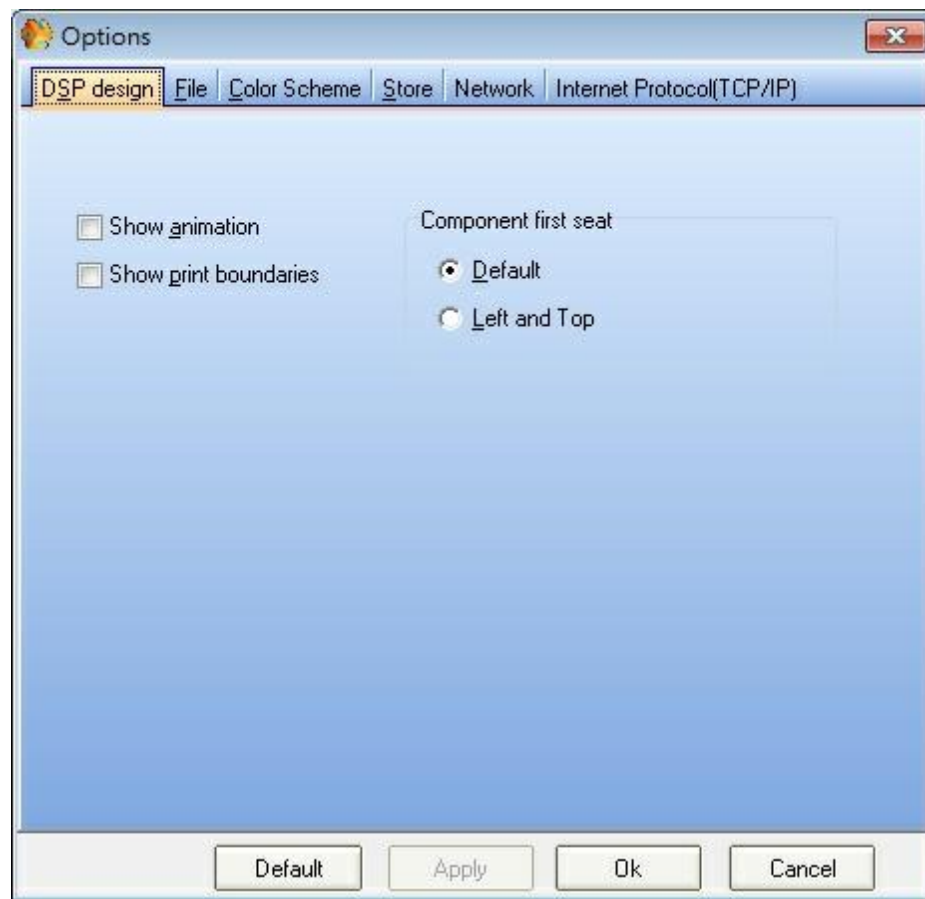
This option window contains 6 different tabs. Here are the details of each tab:

○ DSP design(see the picture above):

Active some option regarding design (working area):

1. Show animation, the Icons are animated.

2. Show print boundaries, you will see on the working area the limits of each page. So you can be sure that your design is not between two pages if you want to print it.

3. Component first seat, when you drag and drop the component from the component system windows (design component area) you can choose either that every components are put on top left or are put where your mouse is when you release the right button after drag and dropping.

○ File:
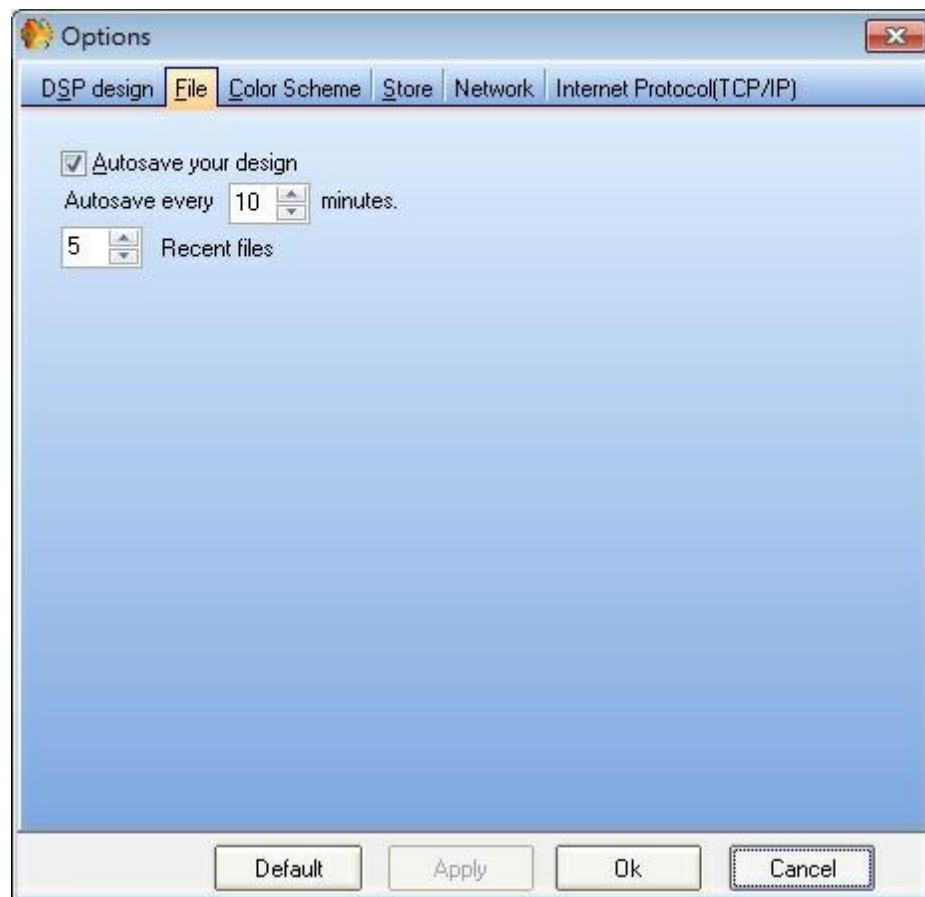
1. Autosave your design, notch it if you want that UAPG2 software auto save your current project

2. Autosave every XX minutes, choose the time between two project saves

3. YY recent files, Choose the number of files which will be accessible from the "recent files" option in the <u>file menu.</u>

o Color Scheme:
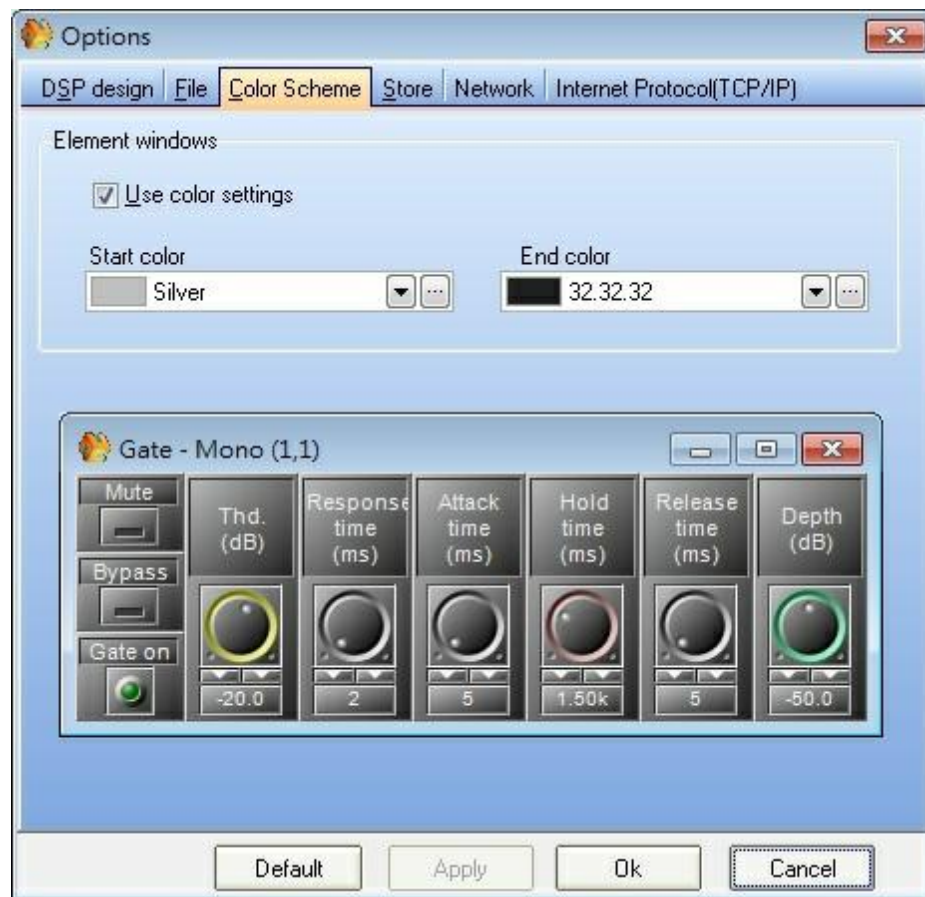
Change the color of the audio component windows.

o Store:
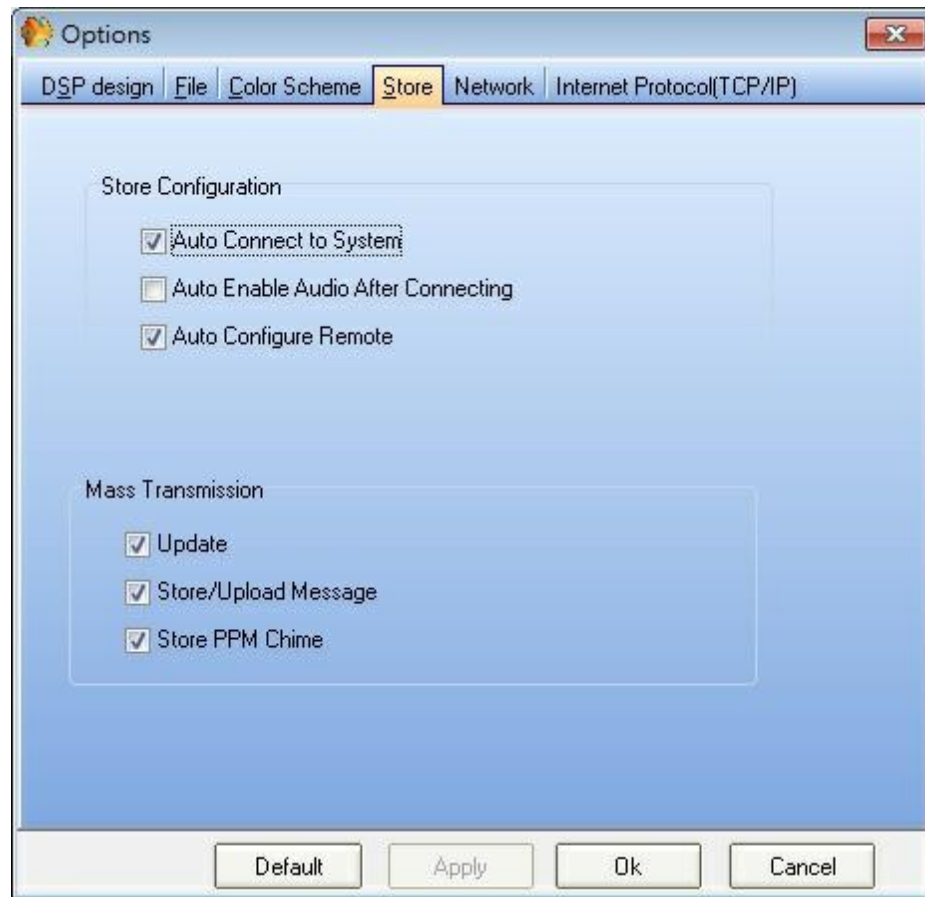
1. Auto Connect to system, notch it if you want that UAPG2 software auto connect after uploading a design file into UAPG2 system. If you do not active this option a message box will appears asking you if you want to connect or not.

2. Auto enable Audio after connecting, notch if you want that audio can go out from UAPG2 after uploading a design. If you do not active this, a message box will appears asking you if you want to order audio enable.

3. Auto configure remote, If you have remote devices (PPM, URC) the software will ask you if you want to configure them each time you upload (store) a design file. By activating this option the configuration will be automatic.

o Network:
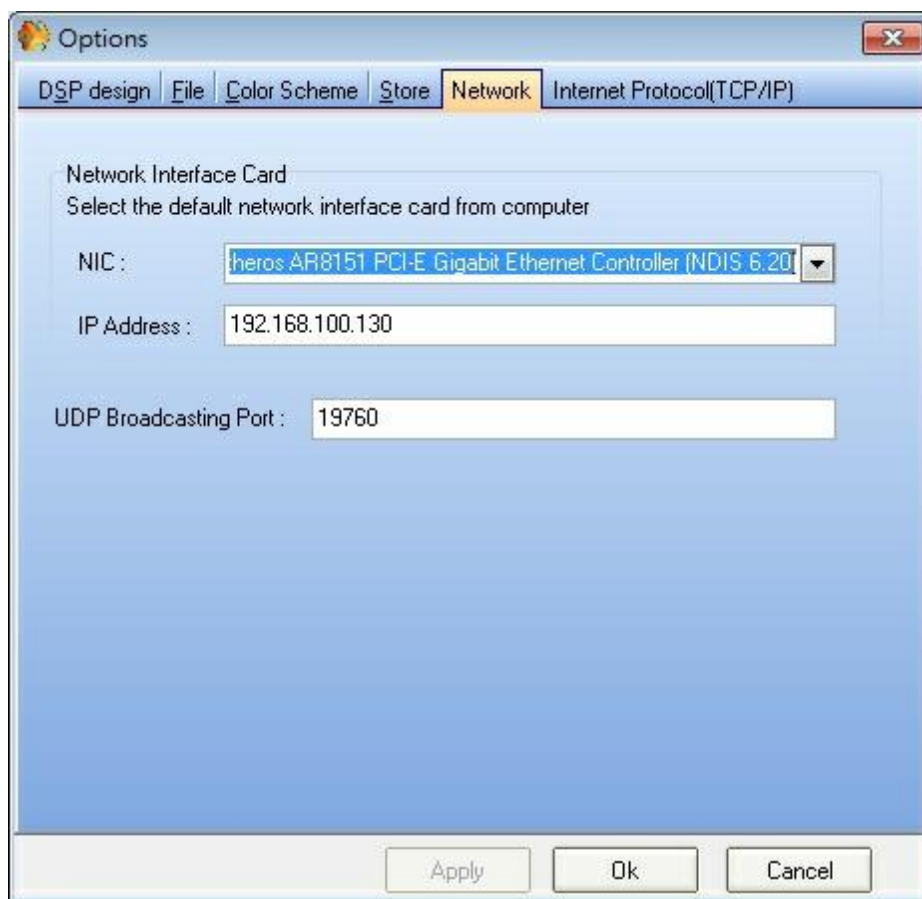
1. NIC, Define which net-card of your computer is used by the UAPG2. Be sure the right card is used.If you are connected directly be sure that is not the WIFI card which are define here.

2. IP Address gives you the IP address used by your Net-card. By default UAPG2 is set on address: 192.168.100.XY, be sure your computer is also set on this network and be sure the computer is not using the same as a UAPG2. To be sure use 192.168.100.1 for your computer.

3. UDP Broadcasting Port, be sure to use same UDP port between your computer and UAPG2... (Try as possible to keep the 19760)

o Internet Protocol (TCP/IP):
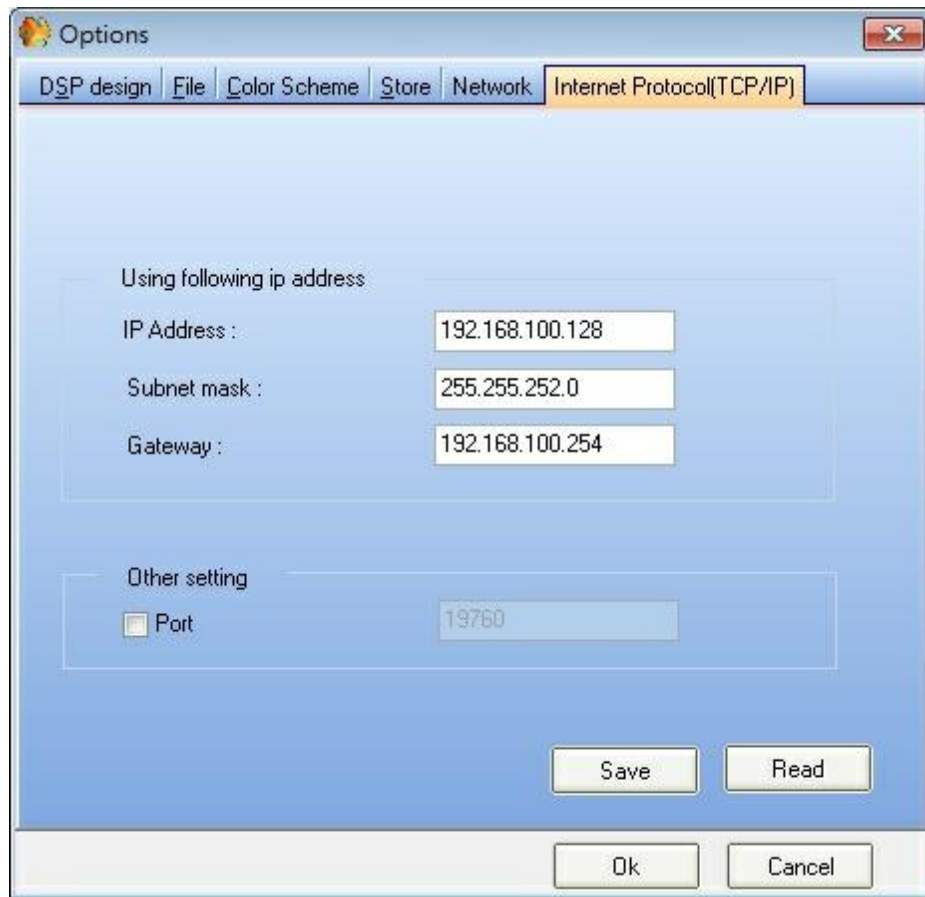
Here are options to change default TCP/IP parameters. Be sure you know TCP/IP basics and use to change settings. You can change IP parameters of UAPG2 here.

Here for example the address of the UAPG2 is: 192.168.100.6

- Establish Ethernet Link:

Opens the IP Setting window (floating window)

When you want to use UAPG2 system you have first to open communication (Ethernet link) between your computer and the UAPG2 system.

1. If you do not know the UAPG2 IP address click on [search]. Be sure to be on right network: 192.168.100.XY (factory settings)

2. If you know the IP address enter it and click [connect]

- Reset:

Opens the Machine List windows (floating window)
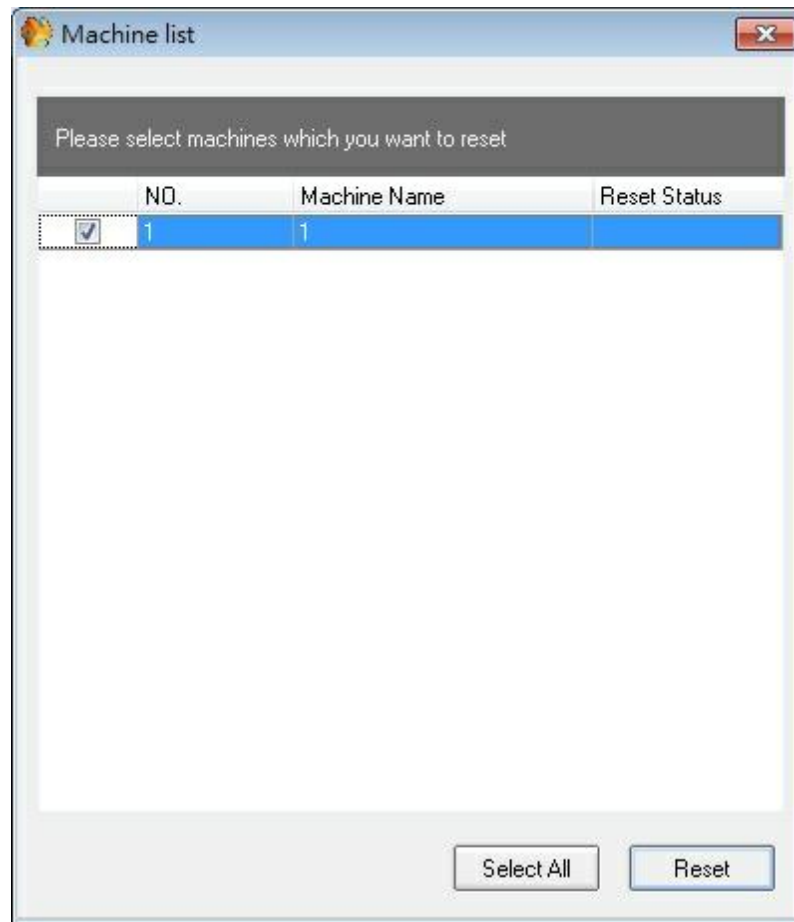
You can select a UAPG2 of your system and reset all the parameters. Use it if you have some trouble with your system and you do not know why.

- Configure machine IP:

Opens the UAPG2 Machine Configuration windows (floating window)
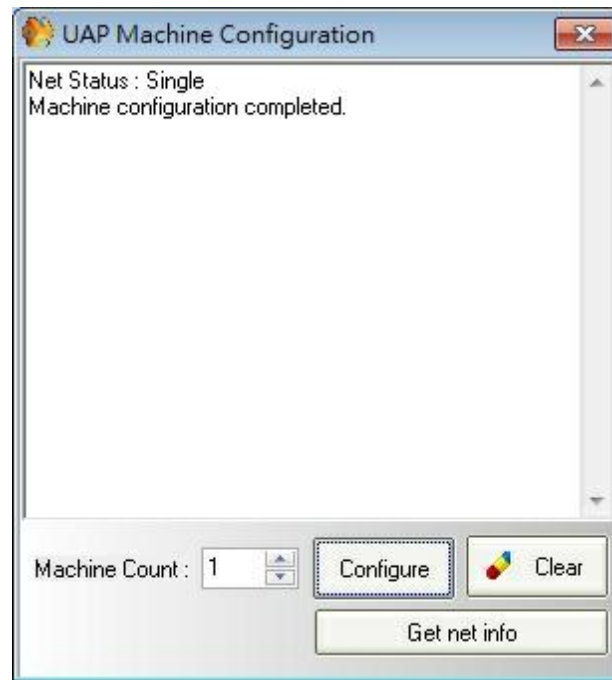
This options is used when you use linked UAPG2 (A system of UAPG2) in order to get and set the order of the several devices on the network (give a unique number to each UAPG2, identification number)

Write the numbers of UAPg2 under "Machines Count", and then click on [Configure]. Wait until you see a proper Net status.

5.1.12 Lock

In this topic you will find windows related to secure the software when you leave it. You have the possibility to lock the software in order to prevent unwanted use when you are away from it.

The Lock menu contains the following items:

- Lock

Block the computer. First define a password by clicking "Password Setup" Then click "Lock".

To unlock software, click [Unlock] button. And enter the password defined in the password setup window.

You have to re-define a password each time you lock the software.

· Password Setup

Set Password

Password

Retype

Keyboard   ✓   OK

Choose a password to lock Software.

You will have to enter a password each time you want to lock software.

5.1.13 Window

In this topic you will find tools to re-arrange windows or find hidden opened windows.

The Window menu contains the following items:

Window

Cascade   Shift+Ctrl+F2
Tile   Shift+Ctrl+F3
Arrange Icons   Shift+Ctrl+F4
✓ 1 System
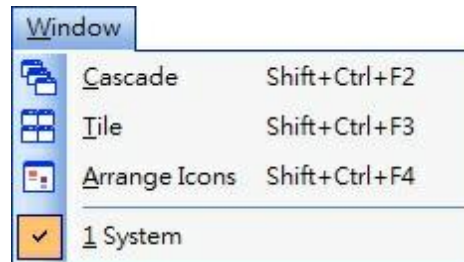
· Cascade

Arrange every opened window in cascade mode.

· Tile

Arrange every opened window in tile mode.

· Arrange Icons

If you have a lot minimized windows everywhere on the working area, this Items will arrange them.

5.1.14 Help

In this topic you will find some features.

The Tools menu contains the following items:

- Version

    Opens the Version window (floating window)

    This window allows you to know which versions are installed into UAPG2, PPM, URC and which version has to be used with the current software.

    If the version is displayed in red it means the version is mismatching and you will have to update the UAPG2 o

- Activate

    This feature is not used in Europe. You do not have to activate your product when you receive it.

- About

    Some information about the software.

- Soft-Keyboard

    Opens a Soft-Keyboard in order to use UAPG2 software with touch screen computer or with computer without

5.1.15 System status

This function allows users to read the log of the UAP G2 Audio Processor.
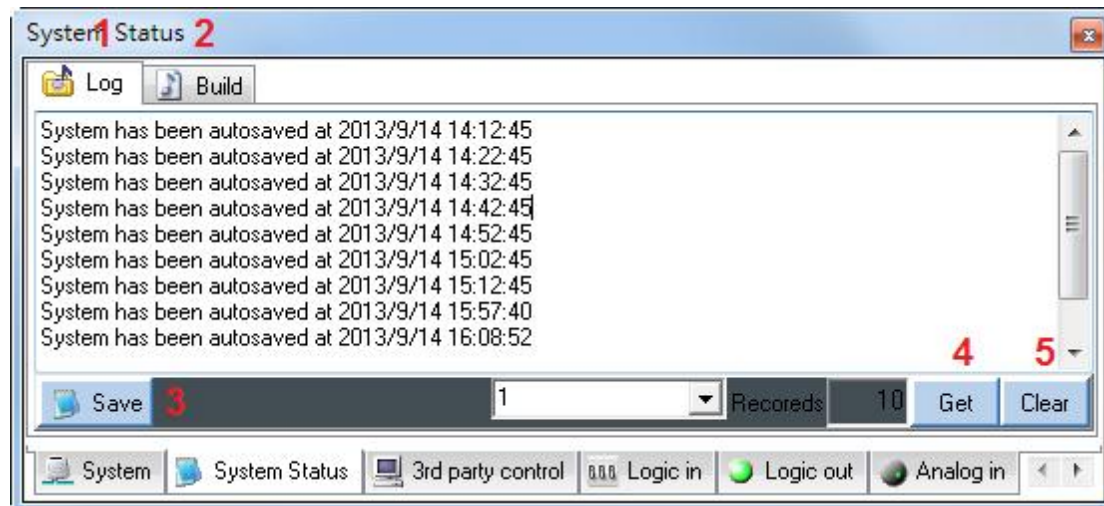
🟠 Log

Display the system log data in the below table.

🟠 Build

Display data whether there's any fault on [Compile] procedure.

③ Save

In case of sending the log data to your technician, click the [Save] button to generate a .txt file.

④ Get

Click to show the system log data.

⑤ Clear Log

Click to clear the system log data.

5.1.16 3rd party control

❖ Use Third party Control

Select the adjustments you want to pilot with third party control:

1. Double click on the component's icon then right click on the adjustment you want to control and select > Third party control.
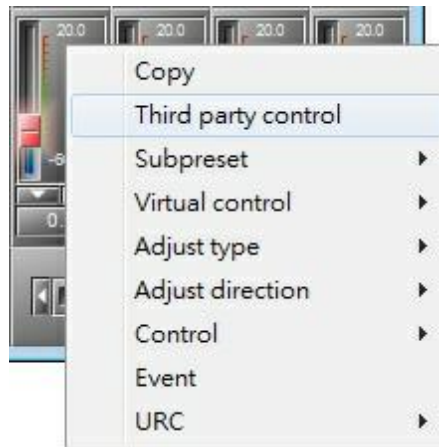
2. Repeat this step for each adjustment you want to control.

3. Then open the third party control window: > View > 3rd party control.

You can change the command ID in the Command_id field, in order to make the names of parameters more explicit. (for example C001 --> INP1) Command_id must be 4 characters long.

To see which frame you have to send from the third party controller to pilot the UAPG2, simply click on the three dots (⬚) in the Command field.

Move the cursor on the left to see how to change value. For example: if you want to increase volume of the parameter C001 by step of 2 dB the "command" frame is IC0012.

For all the received command, the UAP acknowledge with ACK (0x06) or DLE (0x10).

⚠ Each preset has its own third party command. For example, the packet for increasing the level of input A1 in the preset 1 is different with the packet for input A1 in preset 2.

❖ Read a Parameter Value

In this example, the third party window of command C001 displays the packet which must be sent

to read the level value.

STX=0x02, ETX=0x03, CR=0x0D

	Command Type	Command frame					Packet
		STX	Command	EXT	CS	CR	
	Read	0x02	RC001	0x03	294	0x0D	02 52 43 30 30 31 03 26 0D
	Write	0x02	WC0010	0x03	347	0x0D	02 57 43 30 30 31 30 03 5B 0D

In HEX format: [TX] - 02 52 43 30 30 31 03 26 0D

In DECIMAL format: [TX] - <STX> RC001 <ETX> & <CR>

Here you can see the response of the UAP (in this example the result is +09,9 dB).

In HEX format: [RX] - 02 52 43 30 30 31 2B 30 39 2E 39 03 0D

In DECIMAL format: [RX] - <STX> RC001+09.9 <ETX> <CR>

❖ Checksum calculation

The checksum is the sum of all data between STX and ETX. And keep only the least significant byte.

In the following example:

Command Type	Command frame					Packet
	STX	Command	EXT	CS	CR	
Read	0x02	RC001	0x03	294	0x0D	02 52 43 30 30 31 03 26 0D
Write	0x02	WC0010	0x03	347	0x0D	02 57 43 30 30 31 30 03 5B 0D

Data = WC0010 = 57 43 30 30 31 30 (in hexa)

Sum of Data (in hexa) = 57+43+30+30+31+30 = 15B

Checksum = the least significant byte of 15B = 5B

❖ Set RS232 Third party control parameters

Select Tools > Machine configuration

UAP information		
Date/Time	NTP	RS232
UAP	1	
RS-232 SET		
Baud rate	9600	
Parity	None	
Stop bit	1	
Connect target	3rd Party	

Read | SET | Close
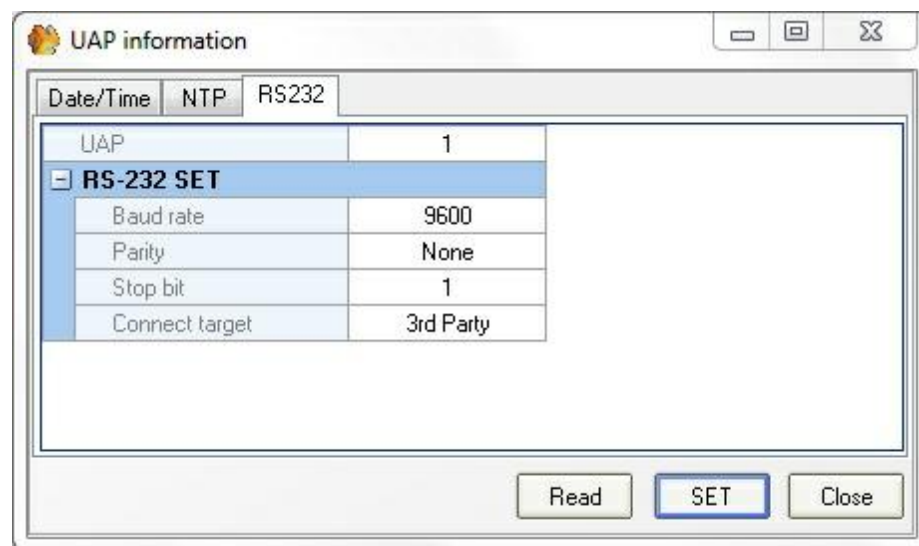
Click [Read] to load the UAP G2 values, if you want to change values and load it into the UAP G2 click [SET]

To set RS232 click on each serial parameters field "Baud rate", "Parity", "Stop bit" and choose the setting in accordance with your third party device.

You can use the RS232 connection for two tasks:

1. To control UAP G2 with a third party controller (Vity, Crestron, AMX, etc.).

2. To select the type of task, select in the "Connect target" field between IDA4 and 3rd party

These settings are also applied on the Ethernet 3rd party.

❖ Use third party over IP

Since UAP G2 software version 1.0.4.65, the UAP G2 can be control by third party equipment, through the IP network.

Both third party over RS232 and UDP/IP work together.

The way to define the third party control is the same as with RS232. Please read "Define third Party control" chapter on page 108.

• On UAP side:

There is no parameter to set on the UAPg2. You just need to know the IP address of the UAP G2.

The UDP port used is always 19761.

• On the third party device:

The IP address of the third party device must be on the same network than the UAP G2 (by default 192.168.100.x). If not, the IP routers must be set to establish links between the different networks.

The UDP port used is always 19761.

Example:

As example, I use UDP Test Tool software which is free on internet. In the third party window, copy the string of the command.

Command Type	Command frame					Packet
	STX	Command	EXT	CS	CR	
Increase	0x02	IC0011	0x03	334	0x0D	02 49 43 30 30 31 31 03 4E 0D
Decrease	0x02	DC0011	0x03	329	0x0D	02 44 43 30 30 31 31 03 49 0D

In the third party device, set its IP address to be on the same network then the UAP. Write the UAP IP address as remote IP, with UDP port 19761. The local UDP port is the same, 19761.
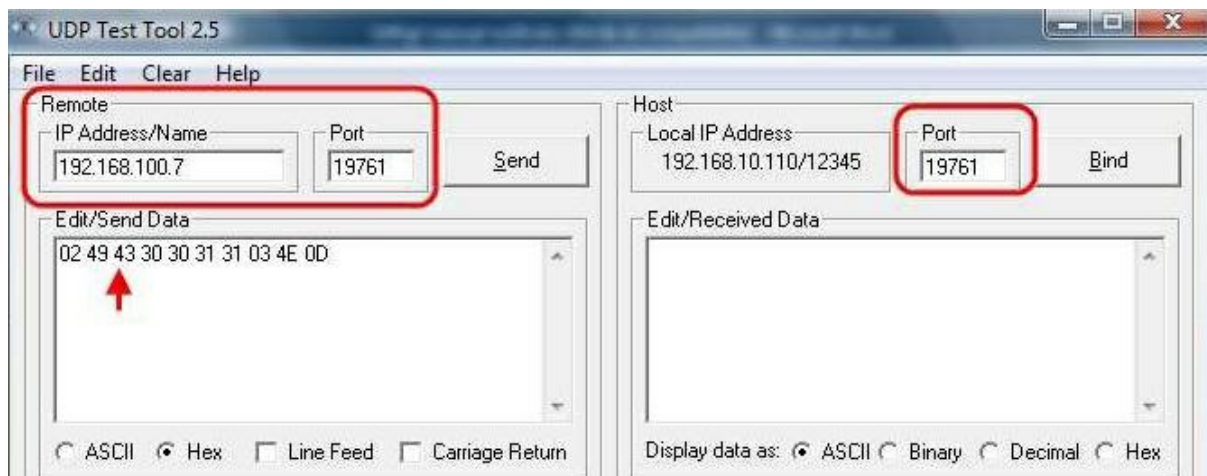
Now you can past or write the command string in the Data area.

Then click on "Send" to send the string to the UAP. You can see the answer in the received data area.
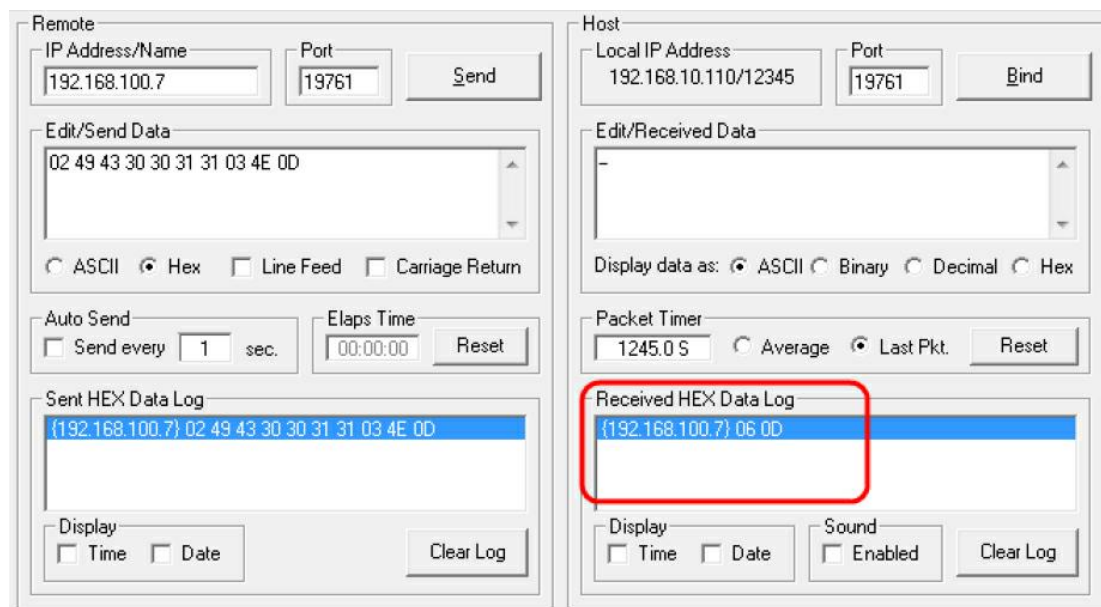
The UAP answer "06 0D" as acknowledge, otherwise it answer "10D" or nothing.

You can also use the test command "02 54 03 54 0D". The UAP will just acknowledge if the connection is working.

⚠ This test software is limited for Checksum max. up to 7D, If it's bigger than 7D, it will result error.

So if you want test some function with checksum bigger than 7D, Set UAP command only with "NOT Checksum".

3rd party control

☐ Not Check sum   ☐ Not Command answer

5.1.17 Logic inputs

The analogue/logic input must be set as TTL IN in the external settings.

Each used TTL IN must be assigned to a group to be available (Logic IN floating window).

Second step right click on the software adjustments you want to pilot with the control input and choose control option:
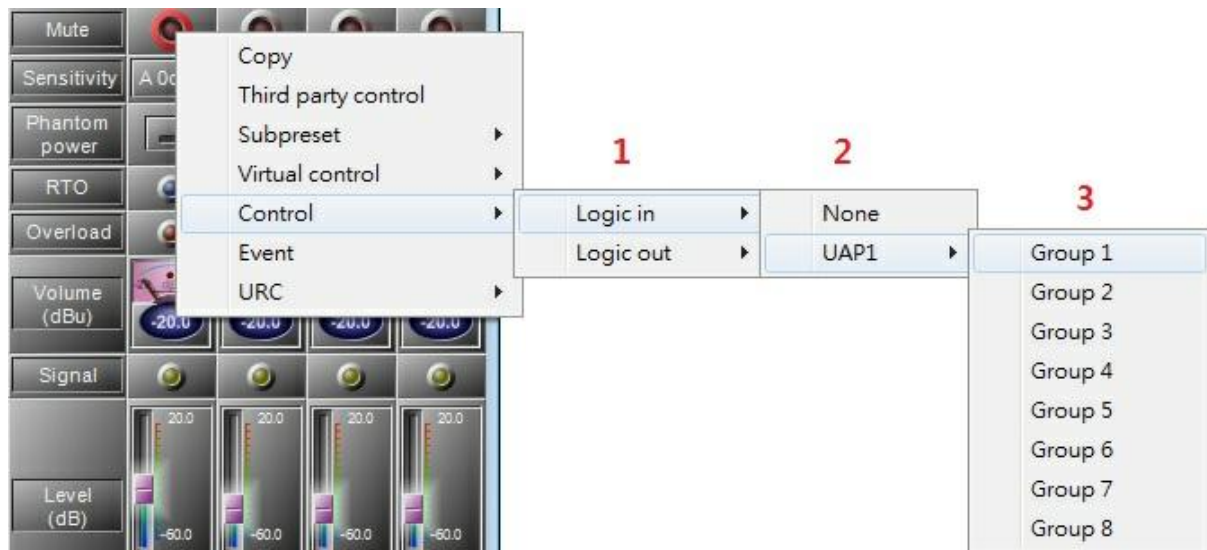
1. Type of control you can assign to this software control (adjustments).

2. Name of the UAPG2 in the system.

3. Connector channel number (FP = front panel knob).

When you open the hardware contact this will active the selected software button.

If you want to active a parameter when the contact closes, then you have to use the event Management (in menu View), to create "Element control" event. Then you can assign this event either to an opened or closed contact.

❖ Logic inputs in binary mode (group, only for selector component or presets selection)

The binary mode means use Logic inputs as "bit" for different choice. The analogue/logic input must be set as TTL IN in the external settings.

To use the TTL IN in binary mode, several TTL IN must be assigned to a group. Open the Logic IN floating window:
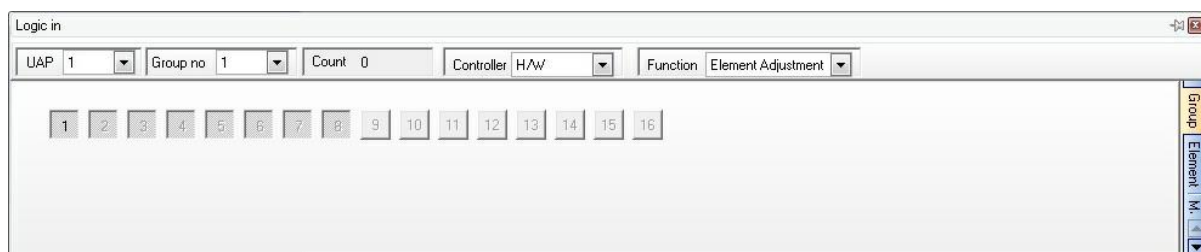
Assign several TTL IN to a group. In this example the TTL IN 2,3, and 4 have been unassigned to the group 2,3 and 4 (to make them free). Then all of them have been assigned to the group 1.

The TTL IN number in black means "TTL IN selected for the group".

Second step right click on the selector you want to pilot with the control input and choose control option:
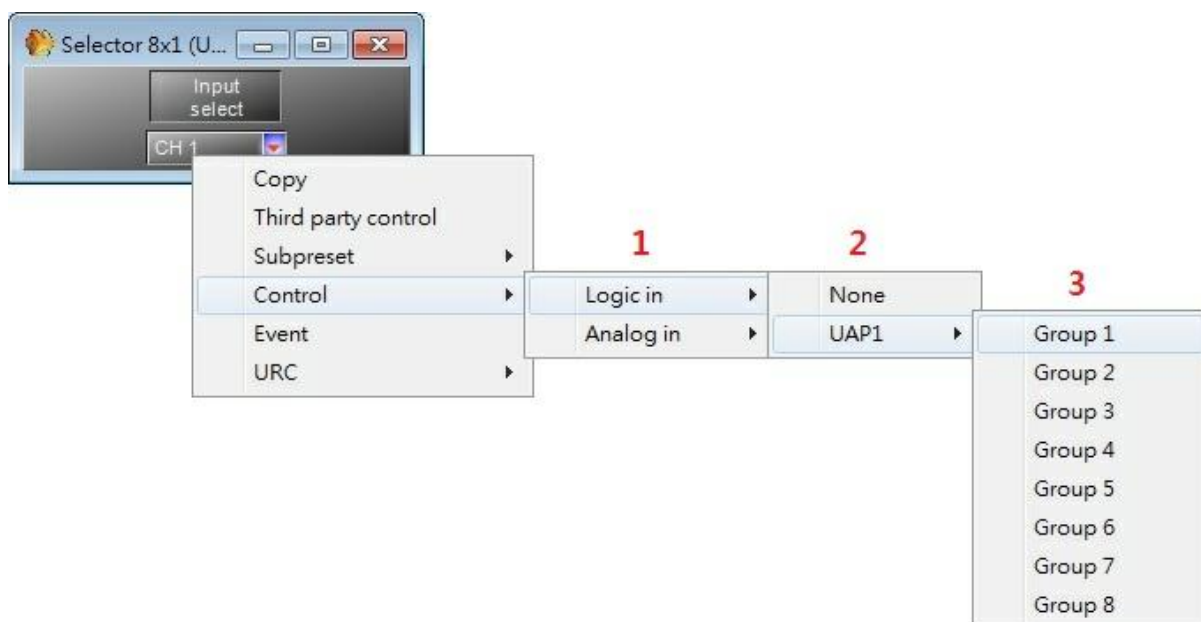
1. Select Logic IN.

2. Select the name of the UAPG2.

3. Select the "multi-logic" group .

The value of the controlled parameters will depend of the binary value of the group.

TTL IN 4 MSB	TTL IN 3	TTL IN 2	TTL IN 1 LSB	Binary value	Selector position
0	0	0	0	0000	1
0	0	0	1	0001	2
0	0	1	0	0010	3
0	0	1	1	0011	4
0	1	0	0	0100	5
0	1	0	1	0101	6
0	1	1	0	0110	7
...	...	...	...	...	...
1	1	1	1	1111	16

Now if you open the Machine tab of the Logic In floating window you can see the multi-logic selector

Multi-logic (Binary mode)   Single logic
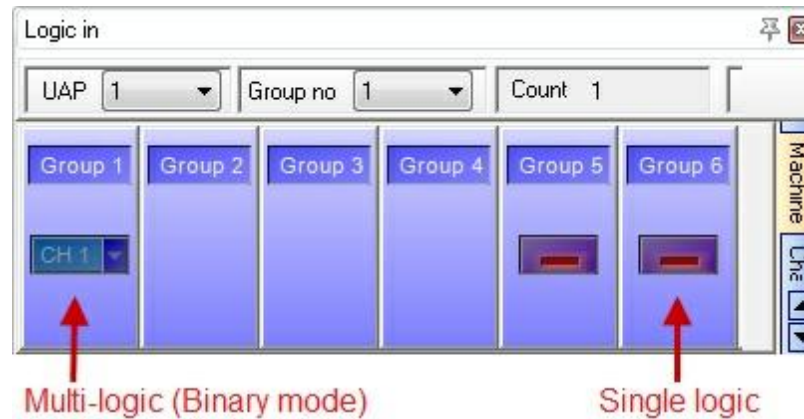
5.1.18 Logic outputs

Right click on the software adjustments you want to pilot with the control input and choose control option:
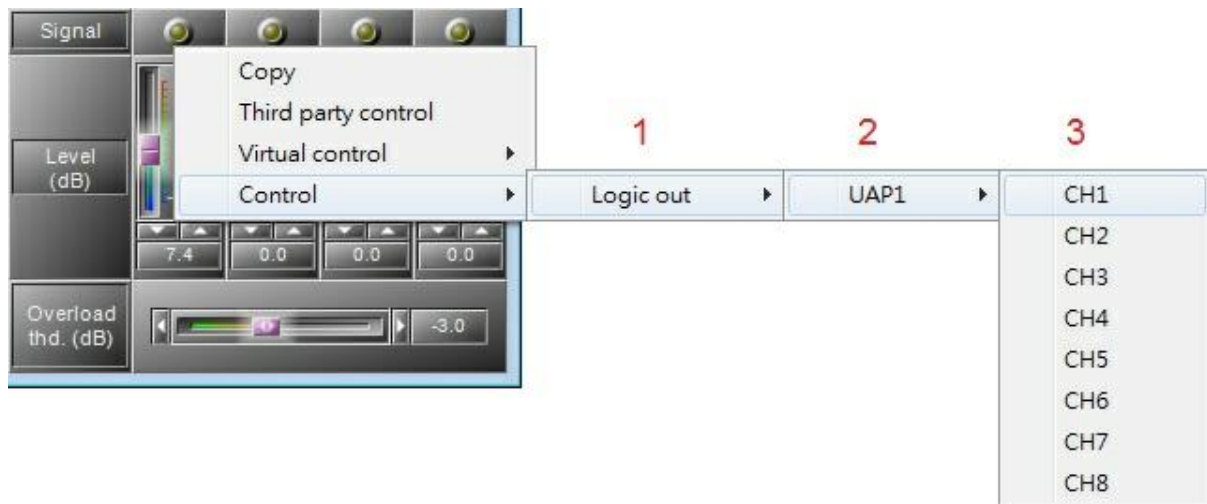
1. Type of control you can assign to this software LED.

2. Name of the UAPG2 in the system.

3. Connector channel number (here we have define control 9 to 16 as analogue input) FP = front panel knob.

These logic output are simple dry contact, there is no voltage on the output. The output contact is closed when the logical value is "1". It is open when logical value is "0".

For example, if the logical output is assigned to a "signal led", which lit when an audio signal is above the threshold (logical value = 1), so the output contact will be closed. And it will be open when there is no audio signal.

The "Machine" tab of the logic out floating window able to check the logical outputs.
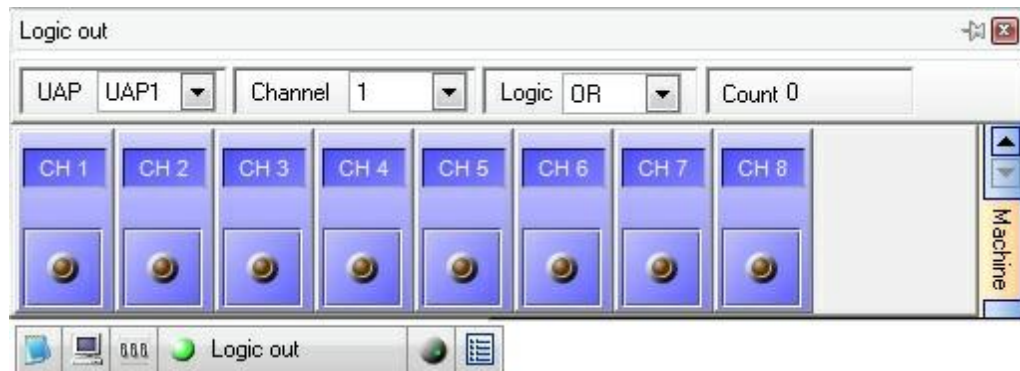
5.1.19 Analog in (control input)

First you have to define if rear control input is logic or analogue input.

⚠️ Make sure the system is fully connected to.

Right click on the desired UAPG2 (if you have several UAPG2 units in a system) and choose "ExternalSelect" option in the working area of the system window.
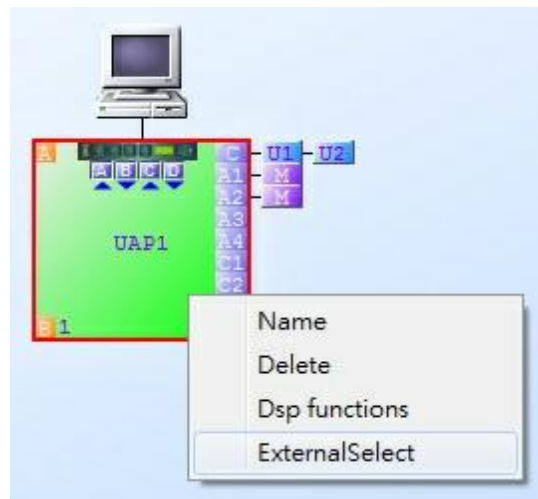
Then in the "External channel type settings: #name of the UAPG2#", select for each connector if it is a TTL IN (logic) or an Analogical IN.

If you set the others channel (9 to 16) in TTL IN mode, than you have to configure the groups 9 to 16 in the Logic IN window (that means assign TTLin 9 to group 9, and TTLin 10 to group 10, etc).

⚠️ You cannot switch the TTL and Analogue freely. The TTL IN must go before all the analog IN.

❖ Analogue Inputs

Second step right click on the software adjustments you want to pilot with the control input and choose control option:
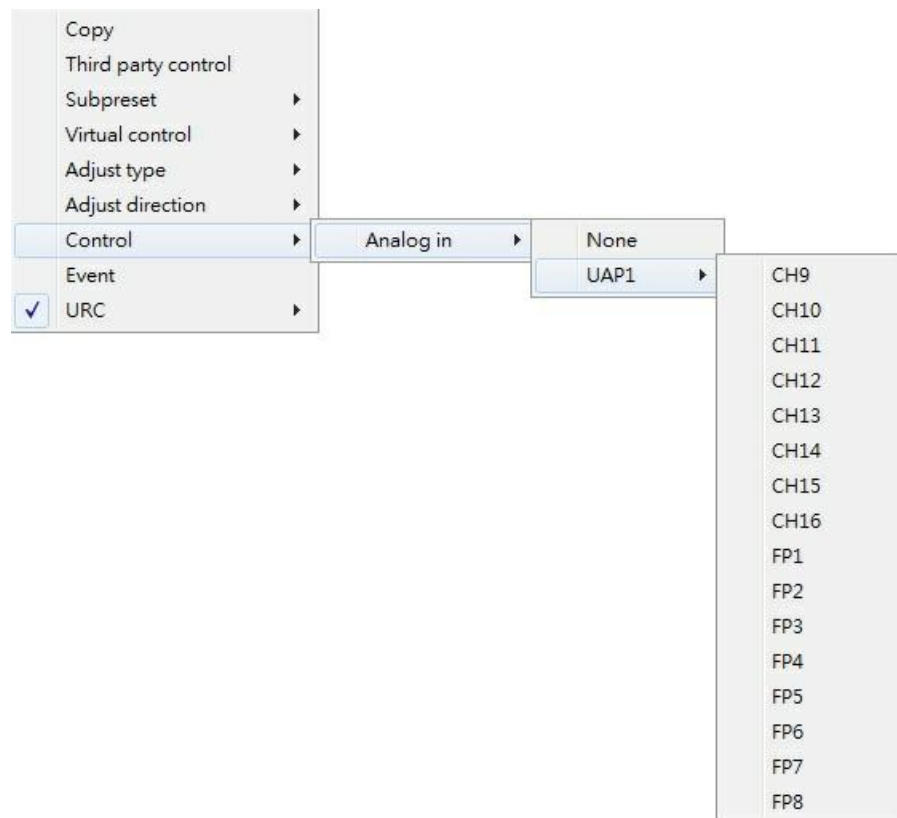
- Type of control you can assign to this software control (adjustments).

- Name of the UAPG2 in the system.

- Connector channel number (FP = front panel knob).

An analogue input can control a component's parameter only if his corresponding component's input or output are linked to something in the design.

Don't forget to calibrate your external "variator resistance": Tools/VR calibration.

The "Machine" tab of the Analogue IN floating window able to check the analogue input.
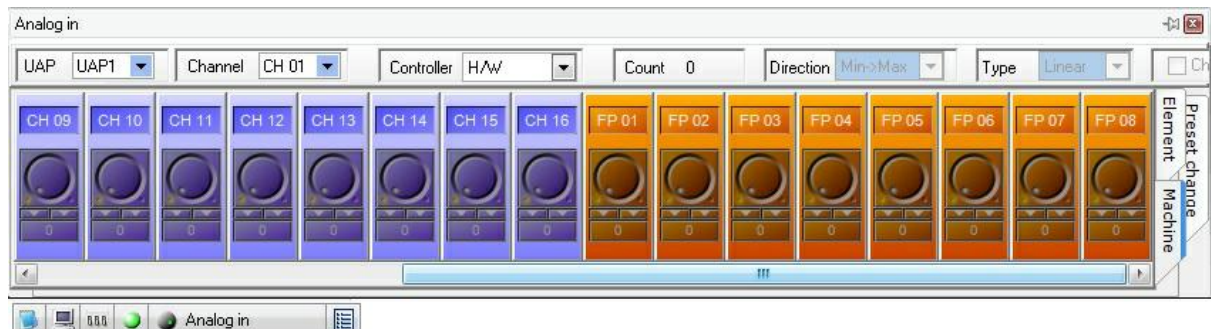
5.1.20 Sub-preset elements

The Sub-Preset function allows the storing of values of different component elements (volume gain, frequency, mute, etc.) in one Sub-Preset. By loading a Sub-Preset, all of the elements associated will

---

take the predefined values. The Sub-Presets are different in each Master Preset and in each System (Device).

The idea is to create a Sub-Preset, define which element of which component you want to associate with the Sub-Preset, then to the elements to their target values, and then to memorize that in the Sub-Preset.

1 Sub-preset Combo Box

   Select and switch to the desired sub-preset.

2 Sub-Preset:

   List all the sub-preset.

3 Add / Delete:

   Add a sub-preset.

4 Save:

   Save a value of linked elements to the sub-preset. Those values are kept in the memory in the sub-preset.

5 Load:

   Load values from the storage of the sub-preset and set to linked elements.

Click on the [Add] button to create a new sub-preset setting, see the picture below,

❖ Assign an element to be controlled by sub-presets

   Right click on the element of the component you want to control, and select your sub-preset.
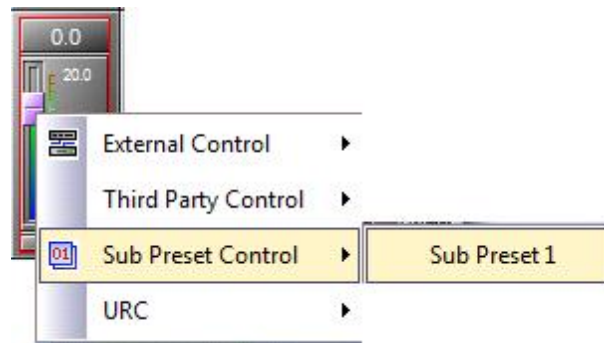
❖ Table of linked elements

Subpreset elements						
Machine	Component	ID	Element	Input	Output	Band
1	Delay (Basic) 5ms	1	Delay time	N/A	1	N/A
1	Input A	1	Level	N/A	1	N/A

This table lists all elements controlled by the sub-preset. Each field is described in sections below.

- Device

    Indicates the device containing the linked element.

- Component

    Indicates the component containing the linked element.

- ID

    Display the ID for component.

- Element

    The element could be controlled by the sub-preset.

- Input / Output / Band

    Three kinds of type to control the component.

5.1.21 Wave file manager

❖ This function allows you to manage the Wave files stored in your device. By clicking menu [View > Wave File Manager] to open the control window.
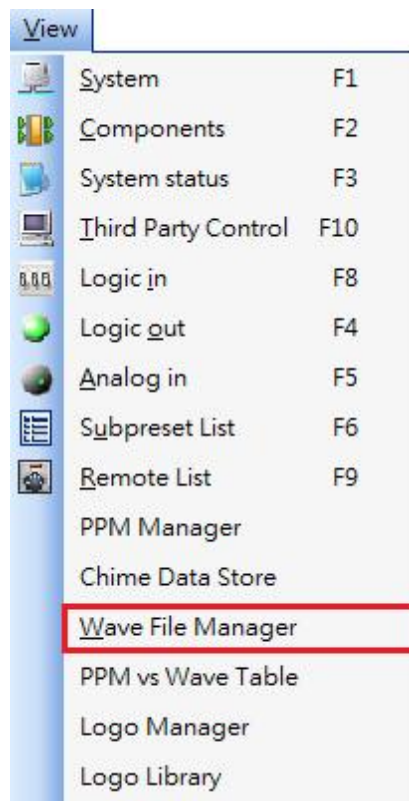
❖ The menu of Wave File Manager contains in the following items:
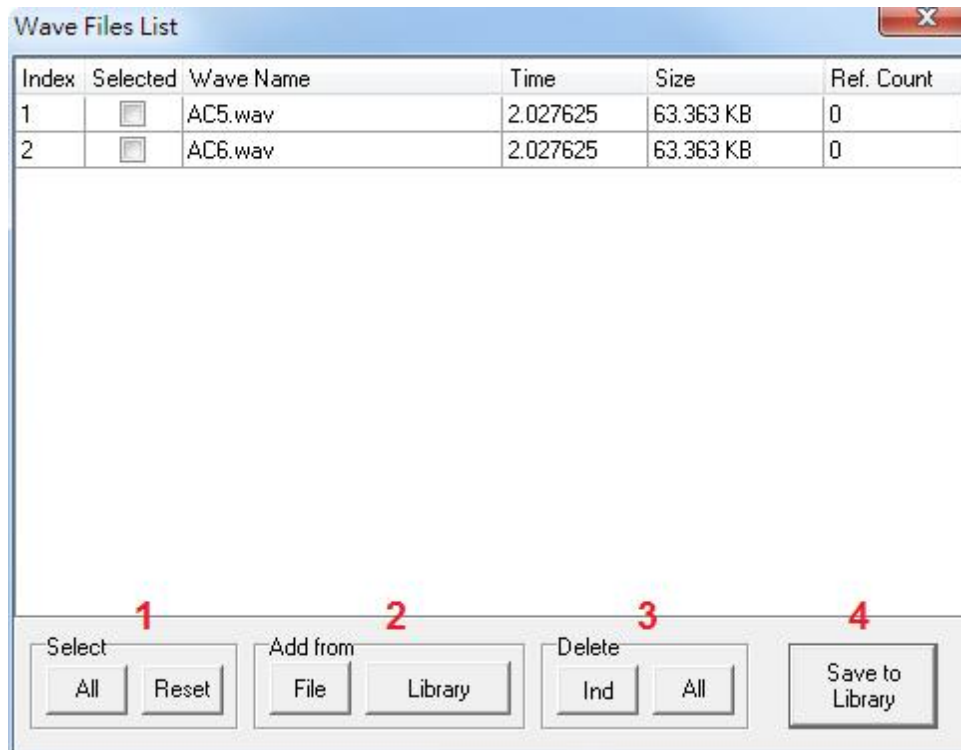
❶ Select

All / Reset: Select / Cancel all the selected file.

②Add from

File / Library: Click to add a new file from the PC or from Wave Library.

③Delete

Ind. / All: Delete the selected individual files or all the files.

④Save to Library:

Save the selected files to Wave Library.

❖ The menu of Wave Library contains in the following items:
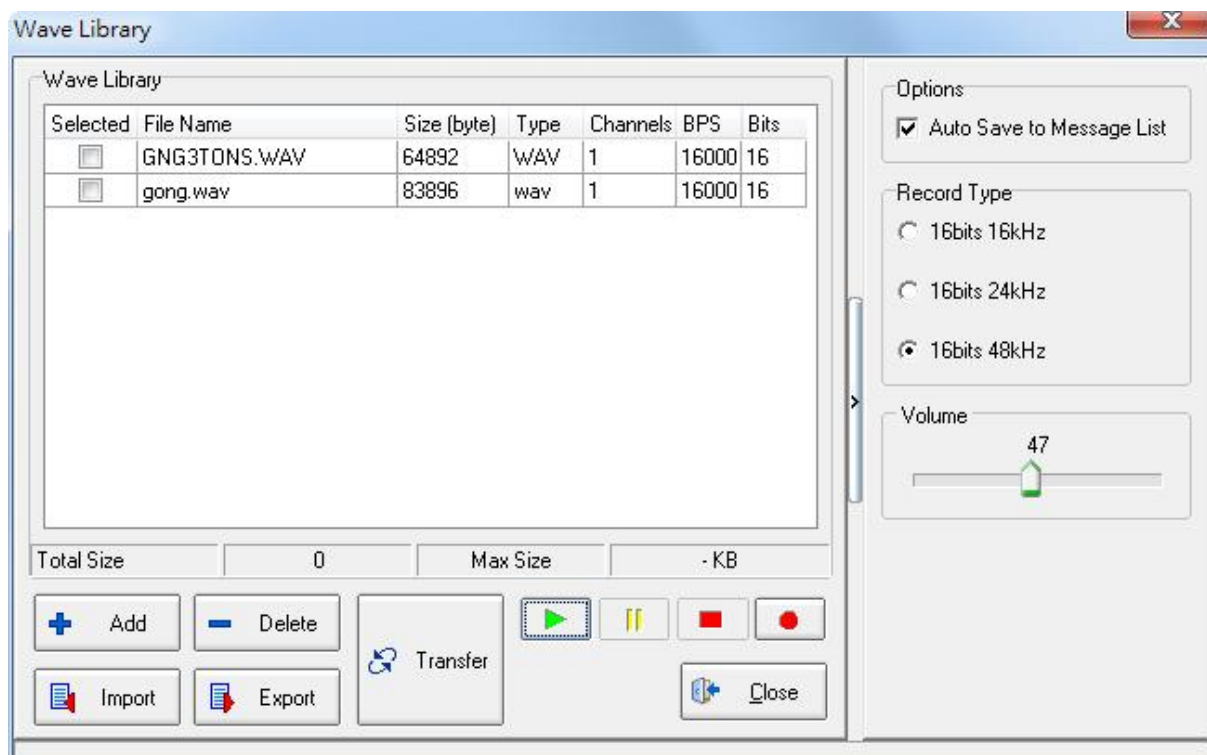
- Add / Delete:

    Add or delete the Wave file into the Wave Library.

- Import / Export:

    Import or export the Wave file into the Wave Library or from your PC or laptop.

- Transfer:

    Upload the selected Wave file to the [Wave File List].

- Play / Pause / Stop / Record:

    o Play / Pause / Stop the selected Wave file.

    o Record the the selected Wave file into your PC or laptop.

- Options:

    Click to auto save the files to [Wave File List].

- Record Type:

    Select the types of recording file.

- Volume:

    Adjust the volume on selected Wave file.

- Close:

    Close the Wave Library window.

5.2   Connection

5.2.1   UAP G2 to PC

Once you connect your PC to the UAPG2 through Ethernet port. There are one type of connection with UAPG2 software:

❖ Ethernet connection

This connection allows PC to discuss with UAPG2 (one or several UAPG2 in a network) once this connection established you can:

- Check version of UAPG2 system or remote device (PPM, URC)

- Update UAPG2 system or remote device (PPM, URC)

- Upload design file in UAPG2 system

- Connect PC to UAPG2 to adjust parameters in live

❖ Connect the device

Connect your computer to the Ethernet connector of the UAPG2 using a straight Cat5cable.

You can also using an Ethernet HUB (router) to connect your computer to several UAPG2. And switch on the UAPG2.

1. Define IP address

    By default (factory settings) the address of the UAPG2 is 192.168.100.6. First of all you have to be sure that your computer net card is set on this network. Please refer to your network card user manual to set it. You can safely choose 192.168.100.50 as network address for your computer.

    With Windows XP you can proceed as follow to change your network address (With Windows VISTA you should do similar steps).

    - Click [Start] button choose "parameters" > "network connection"

    - Right click on the icon of your connection (normally it is your local network) and choose "PROPERTIES"
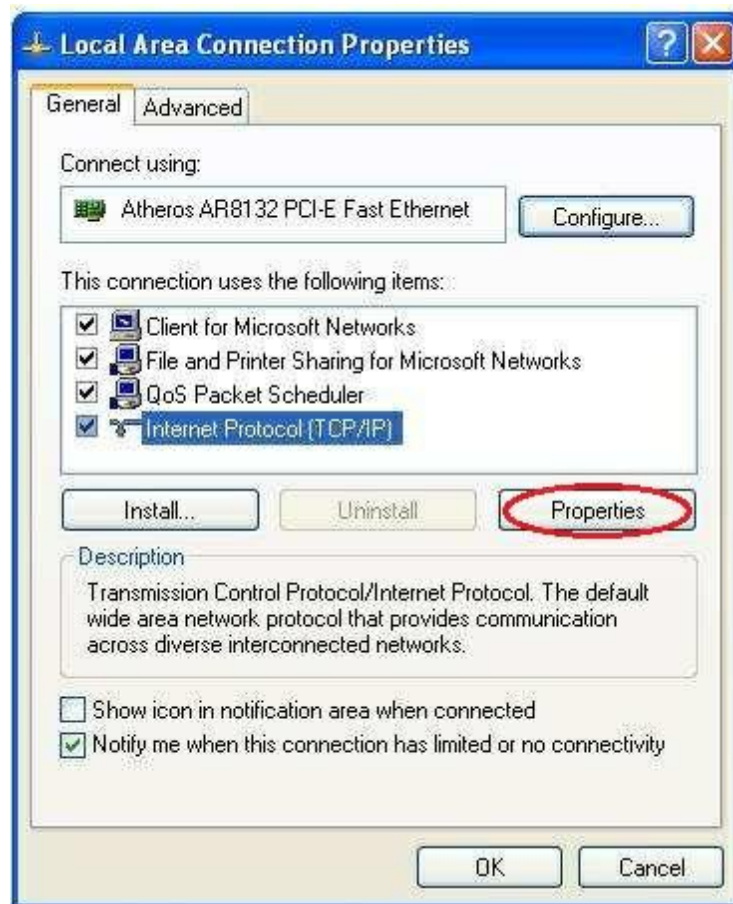
- Use the following IP address And enter the desired IP address for your computer.
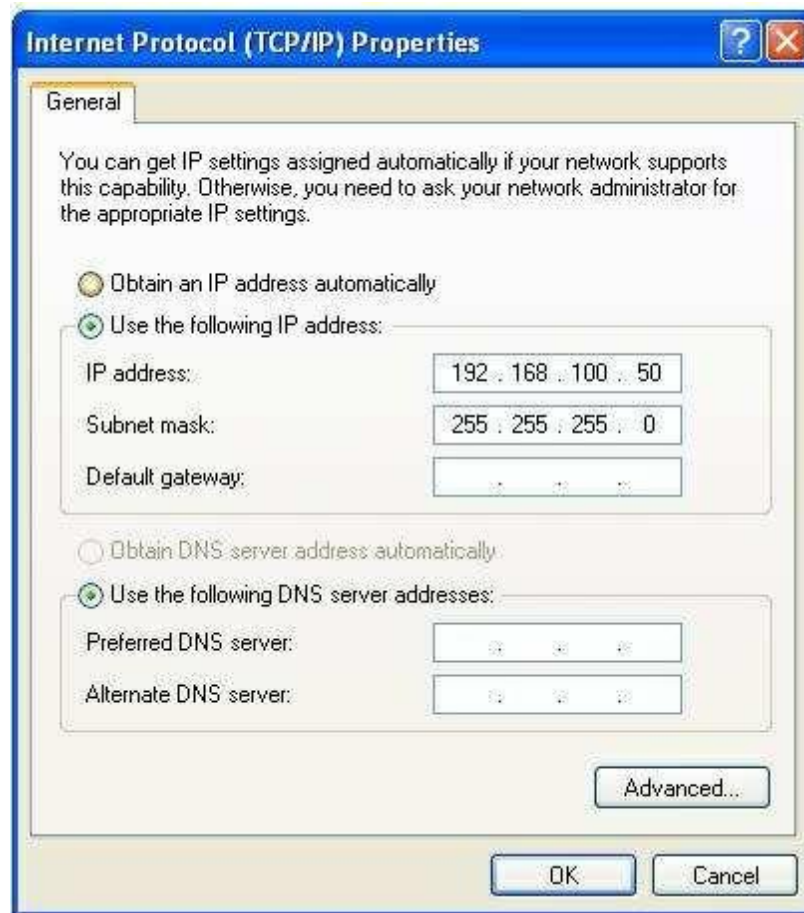
2. Set Ethernet connection

Now the computer is set for the right network let's see how to choose which computer net card will be used by the UAPG2 software.

Open the option window (menu tools) and choose the Network Tab

Here you can see which net card is used by UAPG2 software. And also which address and UDP Port are used by computer.

Be sure to choose the right net card (NIC) (for example here we have the choice between the VirtualBox Host and Local network)
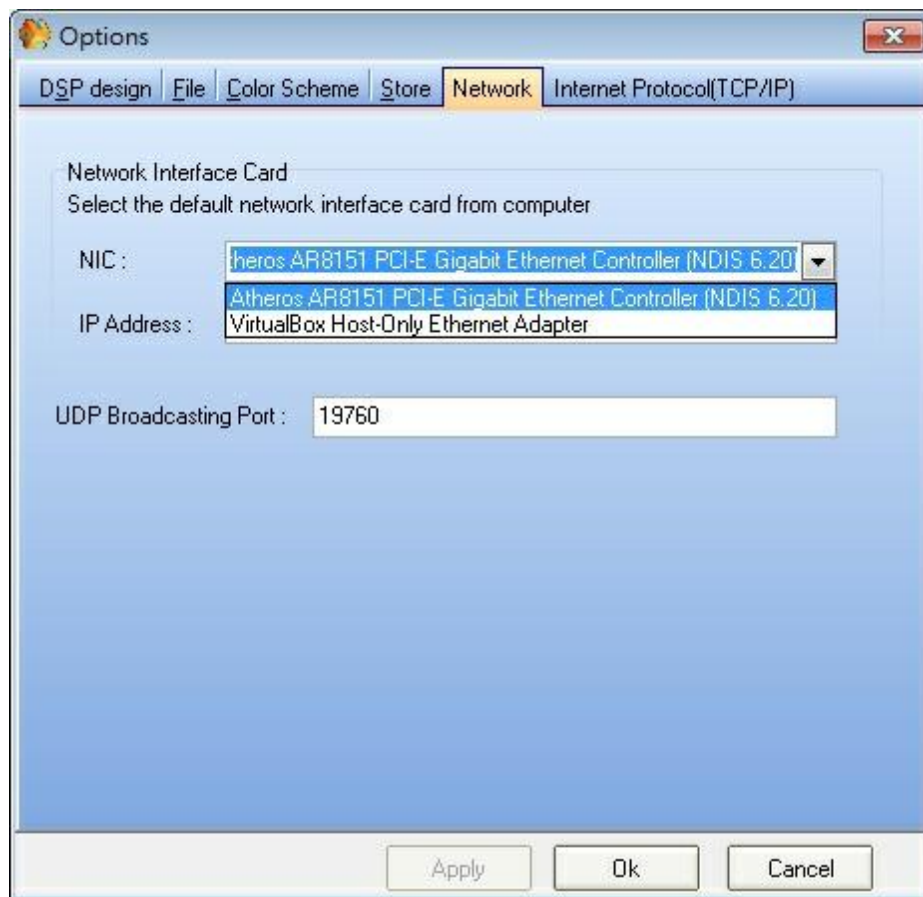
3. Search every UAPG2 in the network

Open the Establish Ethernet Link window (menu Tools, or Shift+F9)

If you know the IP address of the UAPG2 you can enter it in the IP address field.
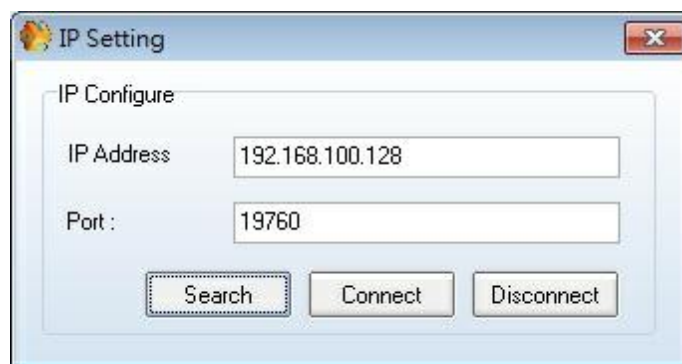
If you don't know the address or you have several UAPG2 connected in the network, leave the field blank.

Be sure the port field is the same as the one define in the (option window > network tab). And click search to find your UAP G2, see the following pictures.

If you have this message box "No Devices Found". Verify the step 1 and 2, close UAPG2 software and re-open it.
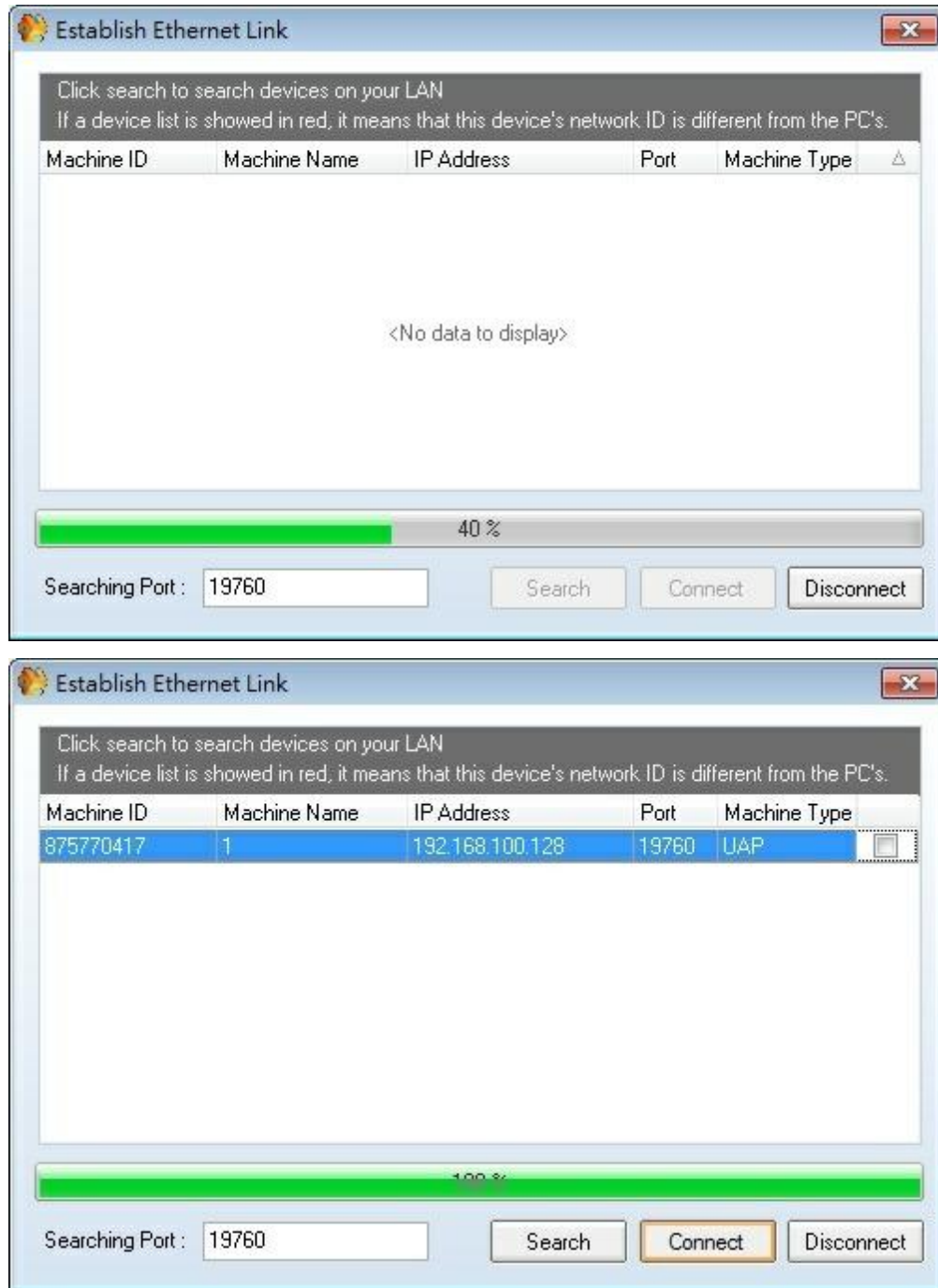
5.2.2 UAP G2 system

❖ Open Ethernet connection

Select the UAPG2 you want to connect to (it makes sense when you have several UAPG2) and click [connect] button.

✎ Make sure that each UAPg2 has unique IP addresses in the list. If not, disconnect one UAPG2 and

change the IP address of the other before connecting both again.
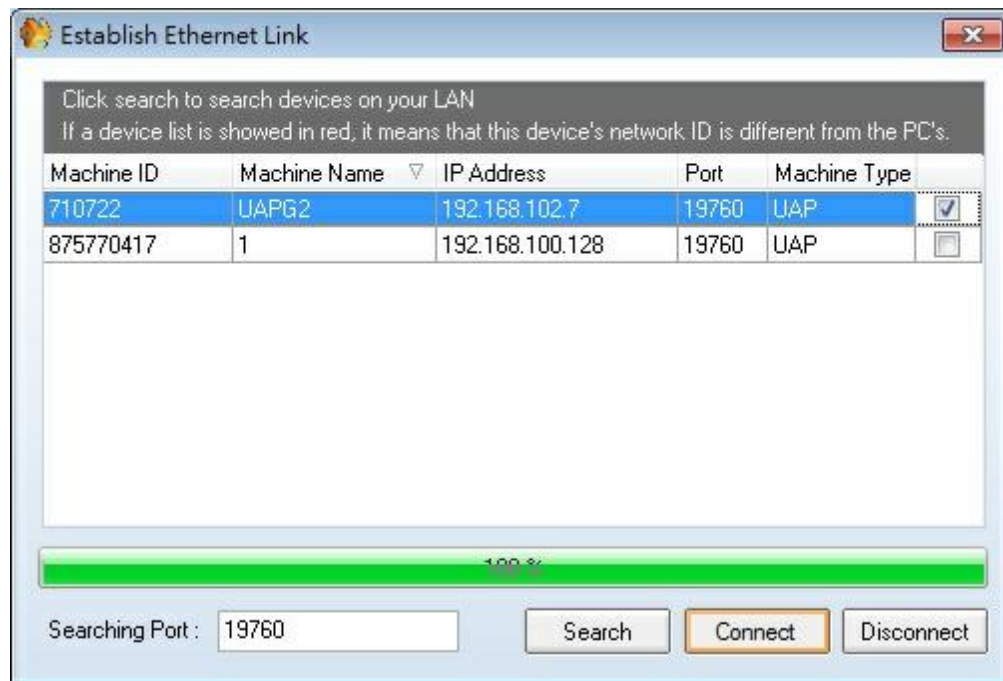
Once the connection process complete (successful) the computer is ready to communicate with the UAPG2.
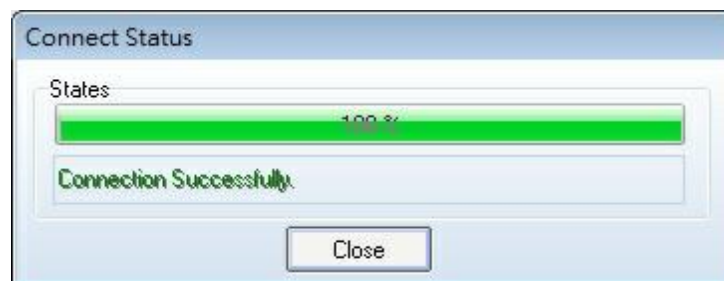
To know if the Ethernet link is activated a green Ethernet led appears in the bottom left of the UAPG2 software.
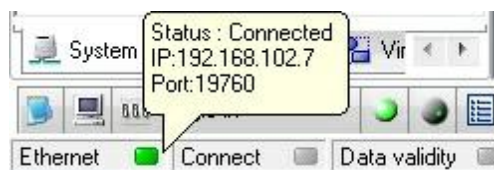
❖ UAPG2 system connection

This connection allows you to pilot audio settings of UAPG2 system, change sub preset or master preset, use monitor window.

To connect to the UAPG2 you have to be sure that the configuration file in the UAPG2 is the same

as the file opened with the software. Then simply click on connect icon (or operation connect). This will start the connection process.

Connect

100 %

Read net information successful
Read version information successful
Read activate information successful
Read check code successful
Read Machine 1 name : UAP1
Load machine name completed.
Check ID management successful
Read MCU parameter successful
Audio enable successful.
Connect successfully!

Close

3rd party control

| Ethernet | ■ | Connect | ■ | Data validity | ■ |

❖ Change IP address of UAPG2

To change the IP address of an UAPG2

1. Connect to the UAPG2 locally (UAPG2 have to be alone)

2. Open the "option" window (menu tools)

3. Choose the Internet Protocol (TCP/IP) Tab.

4. Enter the information you need and press save. If you need click on [Read] to know what the address of the connected UAPG2 is.

Make sure that the Ethernet indication is on.

5. RESTART the UAPG2 to make changes effective. If you start the search process the new address will appear.

❖ Set Up several UAPG2 Linked together

You can link up to 12 UAPg2 together, see the picture below:
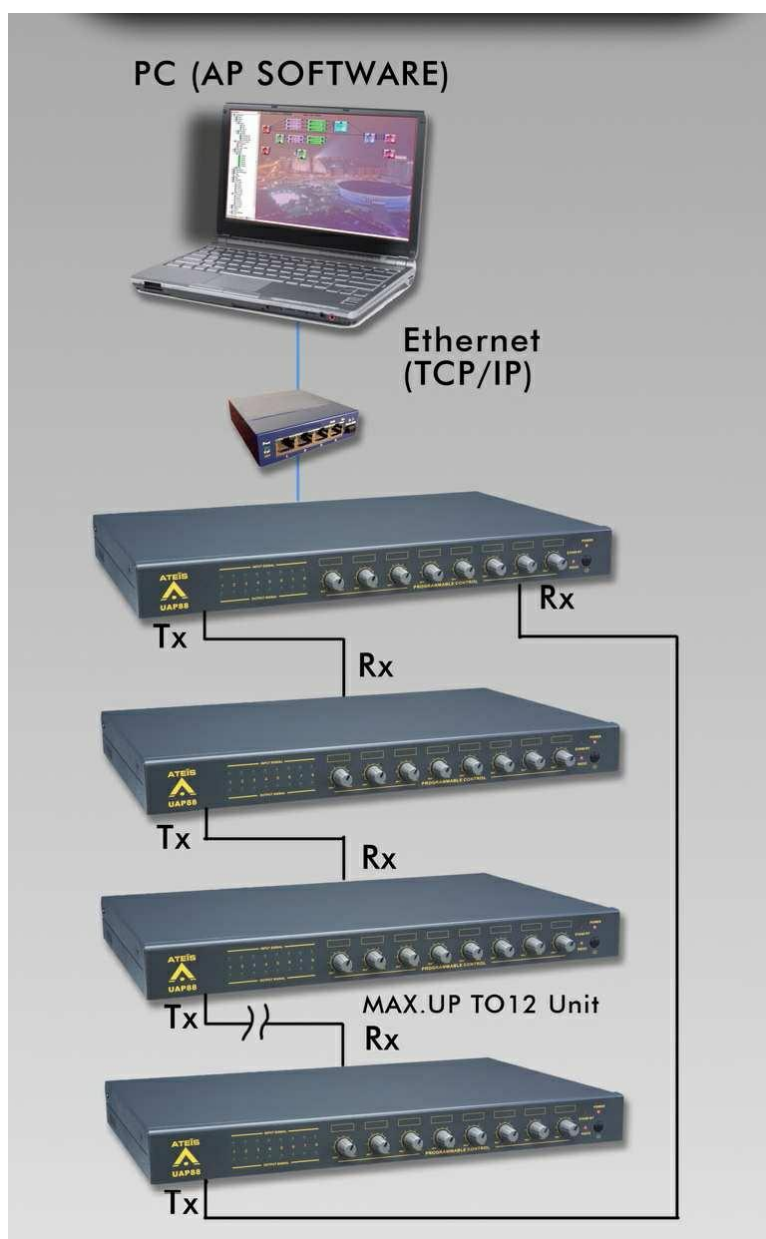
Please be aware that it is not a redundant network, if one link fails, the system fails.

- Link all the UAP together :

  Connect each Digilink output to the Digilink input of the next UAP, with RJ45 shielded CAT5 STP cable.

  Close the loop by connecting the last UAP to the first (called master).

- with the master UAP : Tools/Establish Ethernet link

- If the UAP already has a configuration inside : Tools/clear the MCU data

- All the UAP must be in the same version (MCU and DSP). Check all your UAP's version, if necessary you may have to connect with each one UAP, establish Ethernet link and update.

- The master must know the physical configuration : open Tools / Configure machine IP.
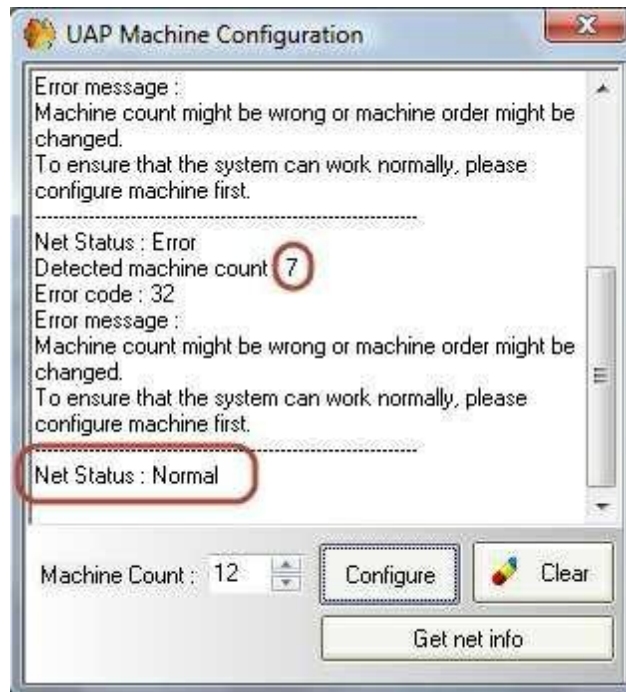
You can plug and unplug the link and see instantly in this window how many machines are detected. Check your cable until the detected machine count becomes match with the number of UAP. If one of the links is broken or absent, the detected machine will be 1. As soon you see the right machine count, write the number of UAP in the Machine Count box, and click on "Configure" button. If you cannot get the "Normal status", the problem can come from the UAPg2 version. In that case establish the connection with each UAPg2 individually, and then update them to the latest version. (see Read version)

Also a possibility is to power down the complete system and power up. Give in the number of UAPG2s again. The system is configured properly, "when Net Status: Normal" is displayed.

- Then draw your design by drag and drop the UAP icon to the design area. For each UAP the "Configure Modules" window ask you about the Audio modules. As the system is configured, the Inputs/Outputs choice appears already correctly. (Check it).

To send audio between the UAP, you have to use the Digilinks components. You can send 16 channels at 48kHz (5 at 96kHz) from each UAP to the next UAP. Now your system is ready.

- The Ethernet led lit on the master.

- All the link led lit.

Make a link between two UAPG2's is broken this can also be seen on the front of the UAPs. The UAP with a blinking red/green power led has the broken link on the input.
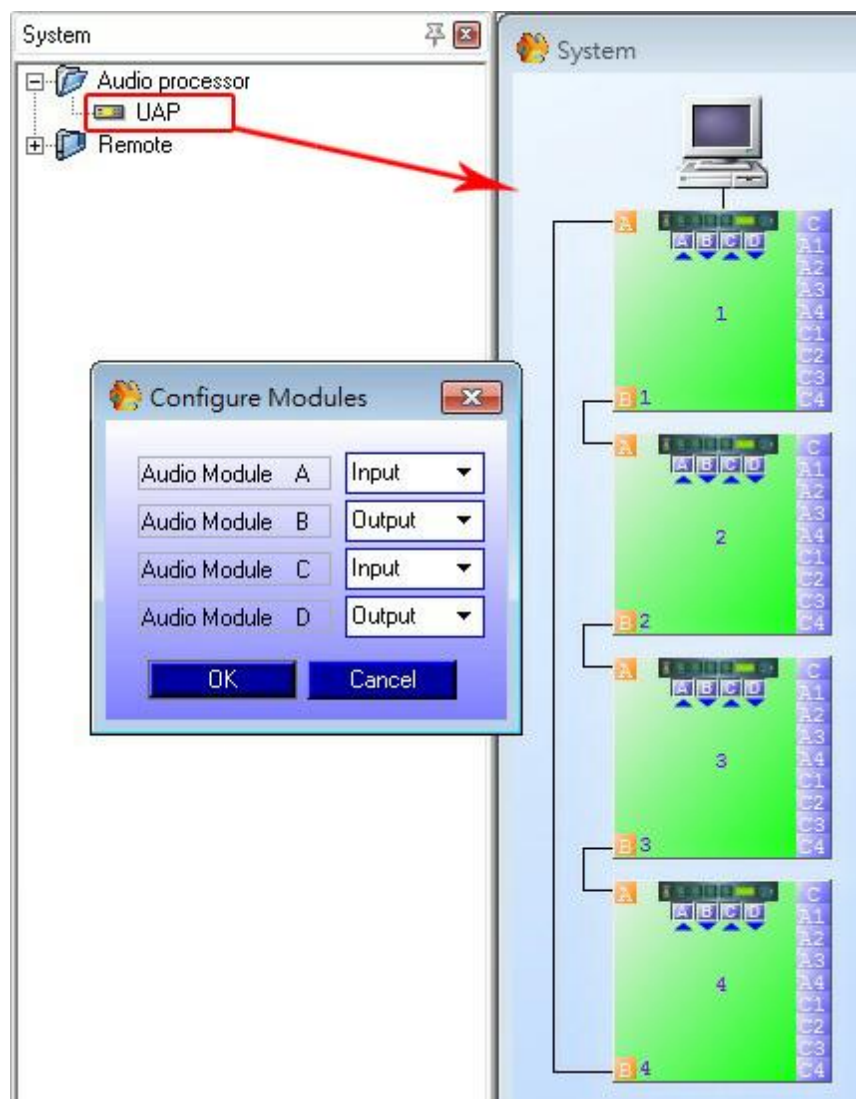
❖ Machine Configuration Error

If a Digilink is absent or broken, this error message appears:

- Check your RJ45 wiring.
- Look on the front LED:
    - ○ If a link led is off (the others led should blink), it means there is a problem with the input Digilink.

    ○ If the power led blink in red and green, that means the configuration of this UAP doesn't match its the physical connection.

When you do something to resolve the problem (like exchange a cable), the UAPs need some times to get the system in a normal state. You have to wait several seconds. I can also try to store again the configuration to wake up the system.

5.3 Event management

❖ Event Triggering

There are several ways to trig (start) the events as "message play event" or "Stop Event":

- With Contact input > <u>see Use Control Inputs to trigger Events (as messages)</u>

- Scheduler > <u>see Use scheduler to trigger Events (as messages)</u>

- With Third Party > see <u>Use third party to trigger Events (as messages)</u>

- With PPM-KP keypad > <u>see Use PPM-KP keypad to trigger Events (as messages)</u>

At the moment, there is no way to use the virtual button to trig events.

❖ Events types

If you have several master preset you will have to re-do the operation for each master preset.

Click menu view > Event management

NO.	Name	Control Type	Third Party Cont.	Logic IN (H)	Logic IN (L)	Mount	Select
1	Event 1	Change Master Preset	☐	0	0	0	☐
2	Event 2	Change Sub Preset	☐	0	0	0	☐
3	Event 3	Element Adjustment	☐	0	0	0	☐
4	Event 4	Set TTL-OUT	☐	0	0	0	☐
5	Event 5	Stop Event	☐	0	0	0	☐
6	Event 6	ange Master Preset ▼	☐	0	0	0	☐

Change Master Preset
Change Sub Preset
Element Adjustment
Set TTL-OUT
Stop Event

＋ **Add**   － **Delete**   ✓ **Select**   ✕ **Clear**

- Columns:

    ○ NO.: Number of the event

    ○ Name: Name of the event (click on this filed to change name, click enter to finish)

    ○ Control

Type: Here you can define all events you need we have 5 different type of event.

1. Change master preset: This event will load the selected master preset

2. Change Sub preset: This event will load the selected Sub preset

3. Element adjustment: This event will adjust one or several adjustments (elements) to a designed state.

4. Set TTL-Out: This Event will pilot one TTL output during a designed time period.

5. Stop event: This event will stop another event.

o Third party Cont.: Select here if you want to start event also with Third party control.

o Login IN (H): define here if a TTL input will start the event, when TTL is High.

o Login IN (L): define here if a TTL input will start the event, when TTL is Low.

o Mount: Number of parameters assigned to this event (clique on this field to assign or set some parameters or adjustments).

o Select: Select event for further operations.

5.3.1   Control type

❖ Control Type:

- Change master preset: Once you have define several master preset and define an event which control master preset (Control Type) click on "Mount field":

NO.	Name	Control Type	Third Party Cont.	Logic IN (H)	Logic IN (L)	Mount	Select
1	Event 1	Change Master Preset	☐	2	2	0 ⋯	☐

And select which master preset will be called by this event (notch select box and click OK)

#	Preset Name	Seleted
1	Master Preset 1	☑
2	Master Preset 2	☐

✔ OK   ✘ Cancel

- Change master preset:

Once you have define several master preset and define an event which control master preset (Control Type) click on Mount field:

| 2 | Event 2 | Change Sub Preset | ☐ | 0 | 0 | 0 ⋯ | ☐ |

And select which master preset will be called by this event (notch select box and click OK)

- Element adjustment:

Choose which adjustments (elements of a component) will be adjusted by the event. Right click on the adjustments and choose event > name of the event.
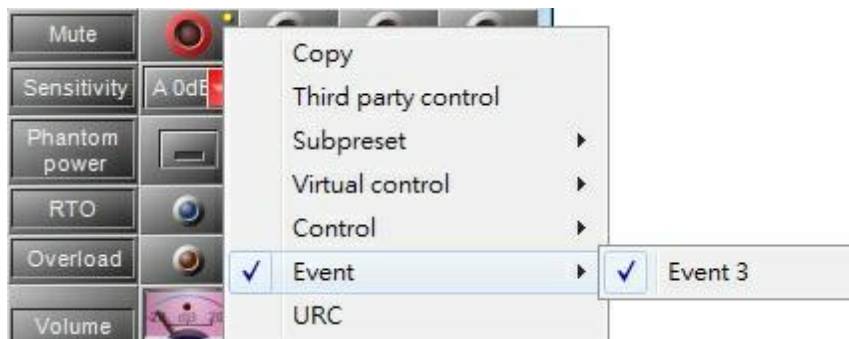
You can assign more than on adjustments to an event (several events of several components)

A yellow dot appears next an assigned adjustment.

Once all the adjustment s are assigned to desired events go on the Event manager window (menu view) and click on the Mount field of the event

You will see the number of adjustments assigned to the event in this mount field And adjust the value of each element (click on the virtual button or knob to fix the value).
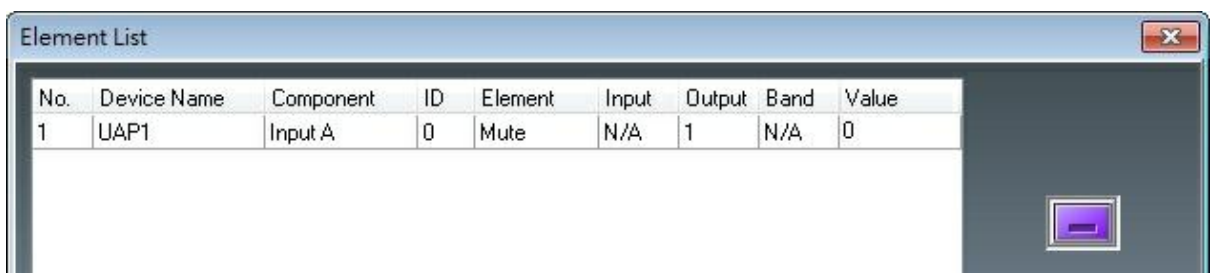
- Set TTL-Out:

    This event pilot a Logic output of any UAPG2 of the system.

    Create an event which control TTL out (control type) then click in the Mount field of this event.

    Select which output of which UAPG2 (if several UAPG2 in a system) will be open (and also the kind of pulse capability)

Enabled	UAP Name	Channel	Priority	Process Time Enabled	Process Time (ms)	Process Period Enabled	Process Period (ms)	Logic Type	
☐	UAP1	1	5	☑	500	☑	500	☑	✔ Save
☐	UAP1	2	5	☑	500	☑	500	☐	
☐	UAP1	3	5	☑	500	☑	500	☐	✗ Cancel
☐	UAP1	4	5	☑	500	☑	500	☐	
☐	UAP1	5	5	☑	500	☑	500	☐	
☐	UAP1	6	5	☑	500	☑	500	☐	
☐	UAP1	7	5	☑	500	☑	500	☐	
☐	UAP1	8	5	☑	500	☑	500	☐	
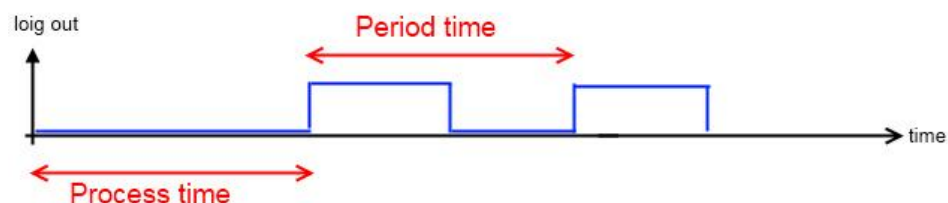
    o Enable: Notch it to active the Logic output channel.

    o Process Time Enabled: If not notched, the process time will be ignored. The pulse will start directly.

○ Process Time: Time before the beginning of the first pulse.

○ Process Period Enabled: Notch this option if you want have cyclic pulses. If not notched, the pulse will be permanent.

○ Process Period: Select here the time of the period.

○ Logic: If notched, the default value during the process time is "1". The pulses are inversed.

📝 Be sure to click [save] to enable your action.

- Stop event:

Two kind of event can be stopped by Stop event: TTL output activation and Message play.

To stop an event, create an event which stop event (control type). Then click in the Mount field of this event.

| 5 | Event 5 | Stop Event | ☐ | 0 | 0 | 1 [...] | ☐ |

And then select which event you want to stop.

NO.	Name	Control Type	Third Party Cont.	Login IN (H)	Login IN (L)	Select	
3	Event 4	Set TTL-OUT	☐	0	0	☐	✔ Save
6	Event 7	Message Play	☐	0	0	✔	✖ Cancel

Stop Event Settings

- Message play event:

    (see Use the message component)

    First of all, Load messages into UAPG2 by using wav file manager and Message storage component.

    Then into the message storage component, choose the Event Settings tab:

    Click [Add] to add a message play event (events which start the selected message)

UAP1 - Message Settings

Event Settings | UAP Music Management

Message Play

No	Name	Control Type	Channel	Priority	Repeat	Forever	Assigned	Selected	
1	Event 4	Message Play	1	10	0	☐	0	☐	➕ Add
2	Event 5	Message Play	1	10	0	☐	0	☐	➖ Delete
3	Event 6	Message Play	1	10	0	☐	0	☐	✔ Select
									✖ Cancel

| Playing Event | | Playing Message | | Position | | % |
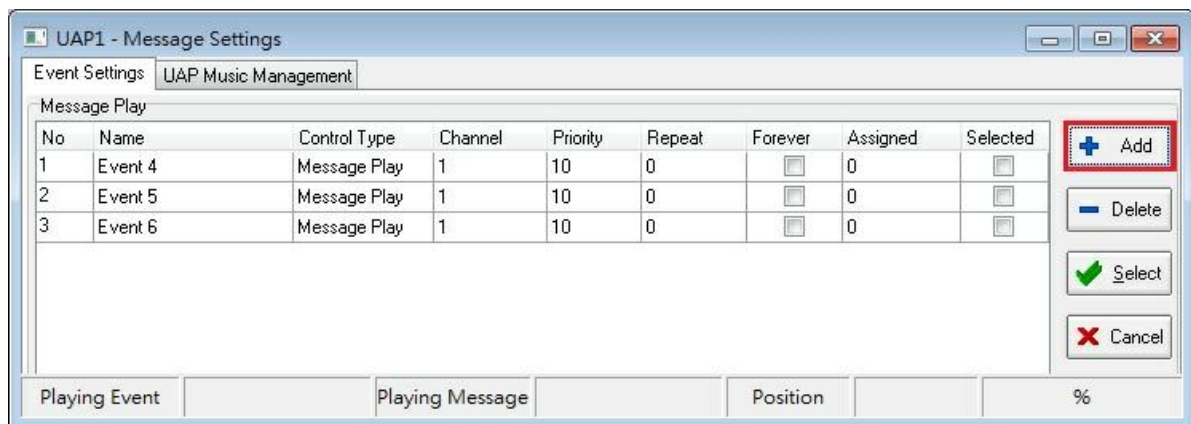
○ Delete: Tick the box in the Selected column and click to delete event(s).

○ Select: select all event(s).

---

o Cancel: unselect all selected event(s).

Now you have created message play event you will have to assign wave file to event(s):

Click on "Assigned field" of the desired event:
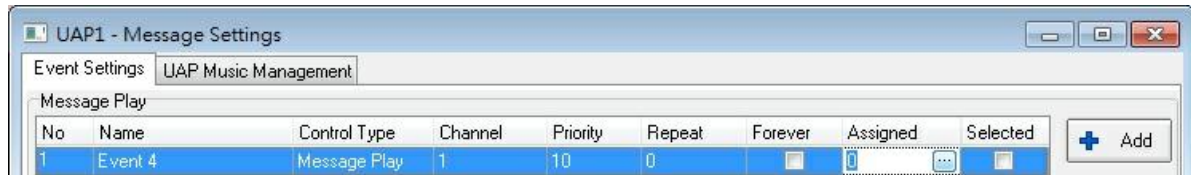
Choose the wave file which will be played.

You can choose to repeat the message a fixed number of times: (Repeat field) or until a stop event appears (Forever field).

(In the assigned field you will see the number of wave file assigned). Priority allows you to fix if the event has a higher priority regarding another message event. For more information, see Message Selection.

5.3.1.1 Message Selection

❖ Message selection from UAP
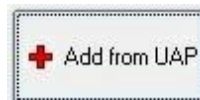
As to be played, the message must be in the UAP G2, my advice is to click on "+Add from UAP" to open this window.
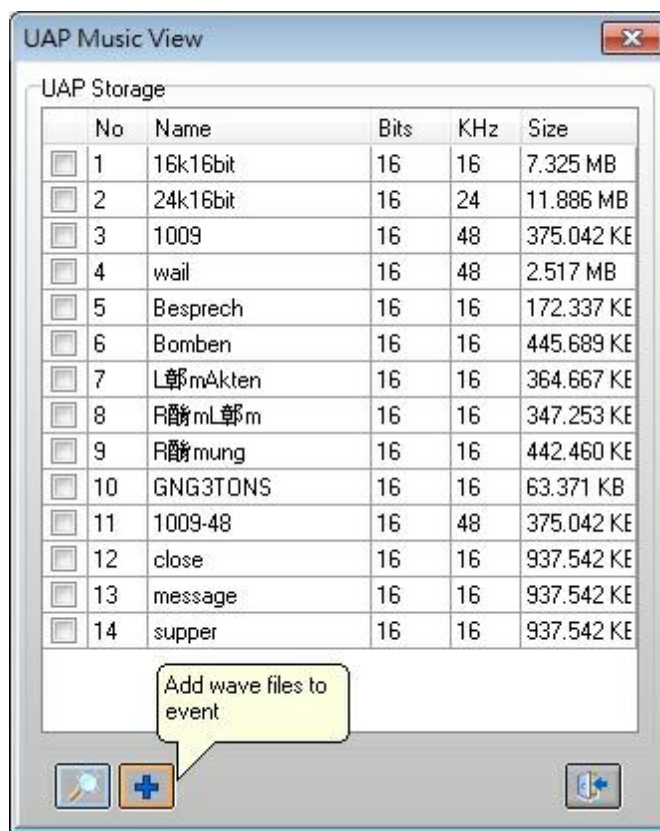
Click on the reading glass to display the files, select one and then click on "+" to assign the message file to the message event.

Click on the doors to quit this window.

❖ Message selection from Wave Library

If you want to import a file from your PC, click on "+Add from Wave library":

Then click on "+Add" to open the browser which allows you to select the file to import.
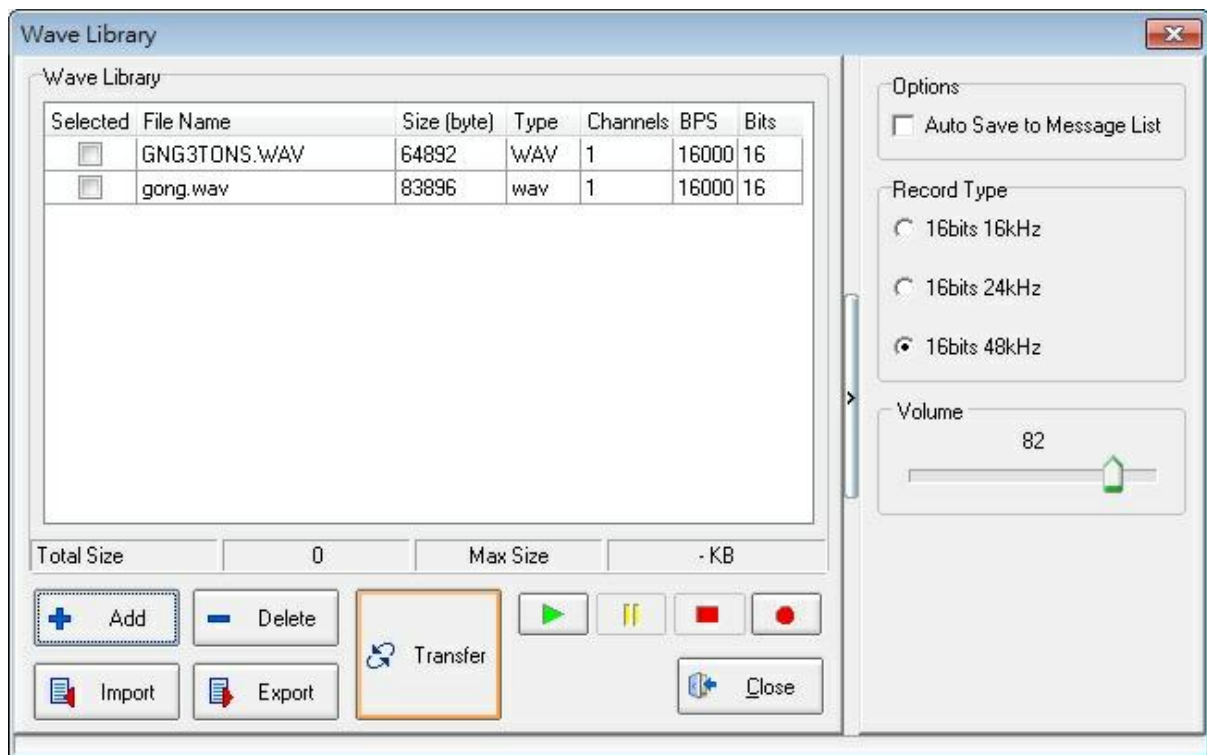
Select the files and click on "Transfer" to assign the message file to the message event.

Click "Close" to close this window.

5.3.2   Use third party to trigger

Use Third Party to trigger an event as messages.

Open View > Event management:

1. Here you can see the list of your events. To control an event from a third party, notch the "Third Party Cont." function of the event.
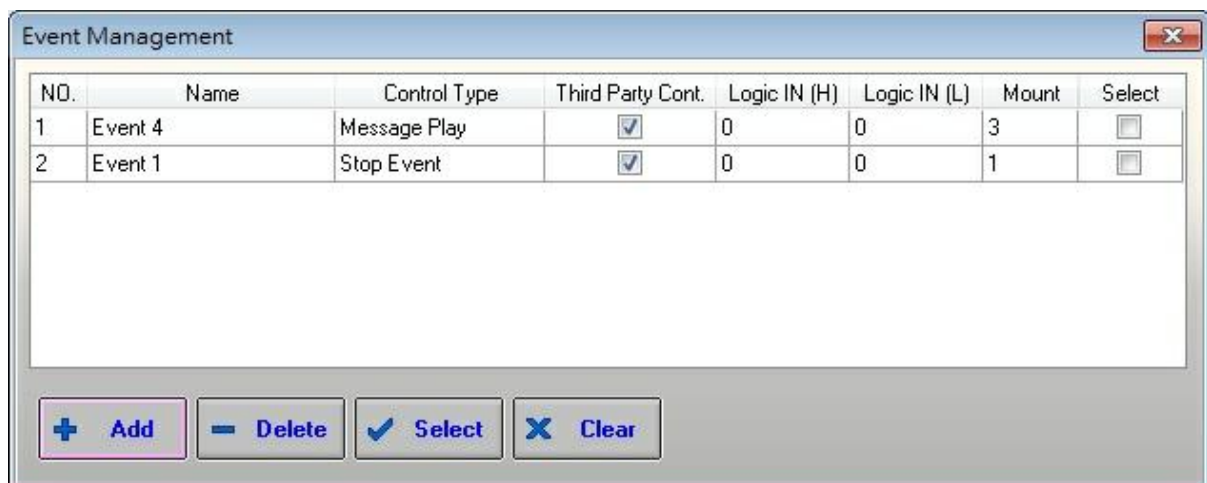
2. Close this window.

3. Open View > Third Party Control. Select the "Events" tab.

4. To see which frame you have to send from the third party controller to pilot the UAPG2, simply click on the three dots (⬚) in the Command field.
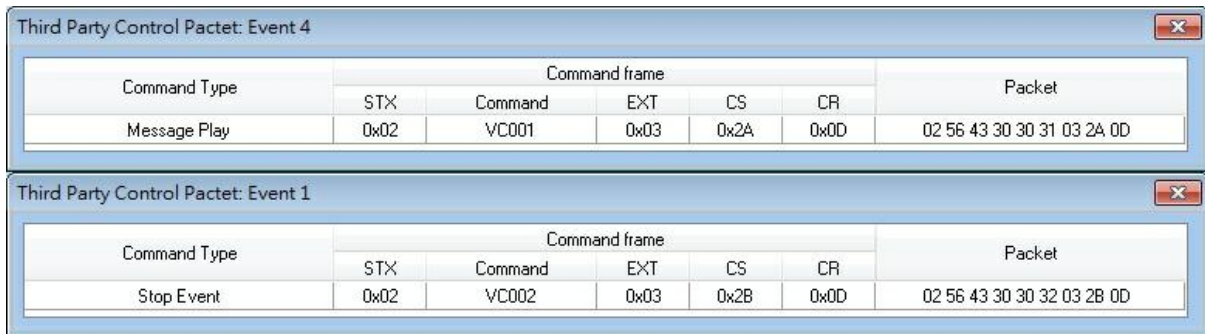
5.3.3   Use scheduler to trigger

Use Scheduler to trigger an event as messages.

Open the schedule management window: menu view > Schedule management. This windows lists all the programmed schedule(s)

- [Add]: to add a schedule.
- [Edit]: open the Schedule setting window to edit an existing schedule.
- [Delete]: erase an existing schedule.
- [Select]: select all schedules.
- [Clear]: Clear all selected schedules.
- [Close]: Close this window.

Click [Add] to create a new schedule (open the Schedule Settings):

- **Occurrences field:**

   Gives name to the schedule and set time period etc.
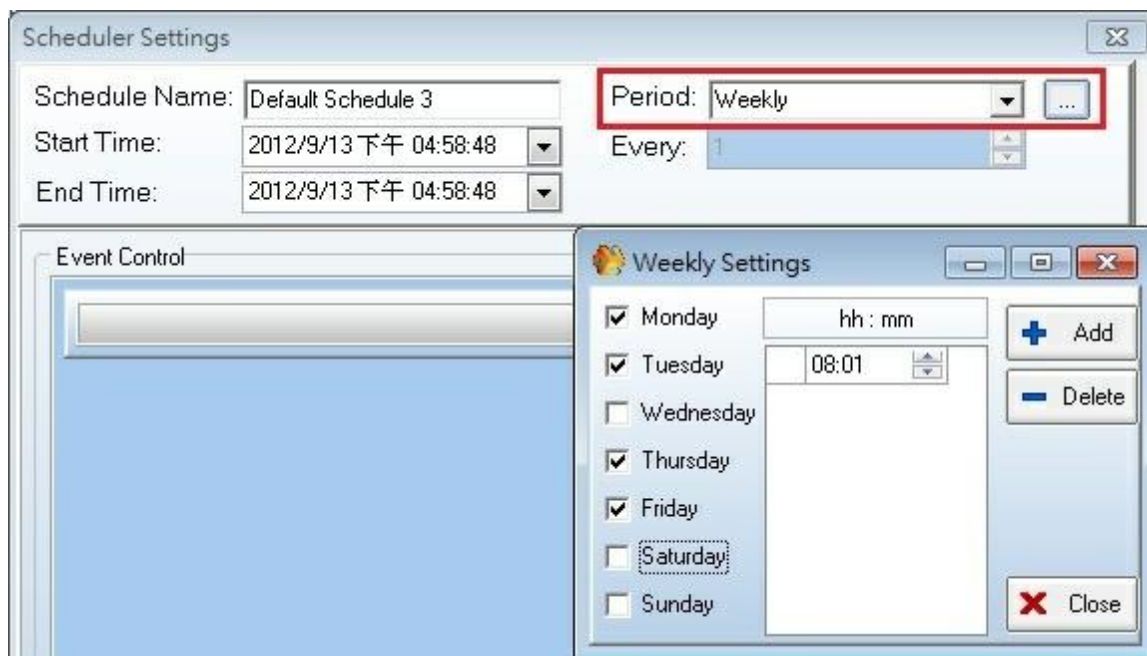
o Schedule Name: Name of the current schedule.

o Start time: Beginning date of the current schedule.

o End time: Ending of the current schedule.

o Enable: Active the schedule.

o Period: Gives the repetition frequency for the event sequence (schedule).

- **Event List:**

  List of all the defined events (here we do not have any event created, menu: view > event management). You can find the event list on the right side at the small arrow.

- **Event control:**

  Define which event will be start by the schedule. You can also create a string of several events and define time between event's launch.

  Here you assign which event(s) will be started with the schedule.

  First create event group:

  - Click [Add] to add Event group, click [Delete] to clear the selected group.

  Then, create an event sequence (Event).
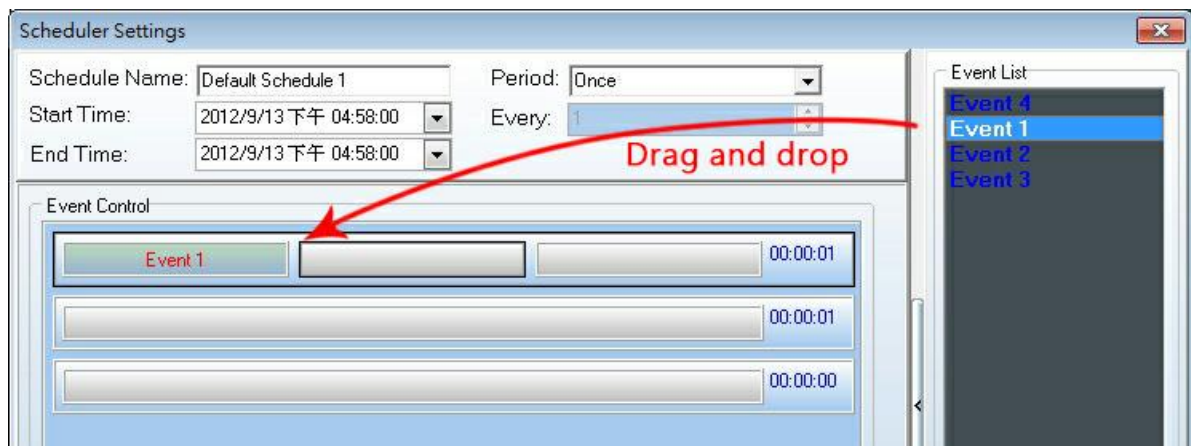
- Click [Add] Event, click [Delete] to clear selected event.

Simply drag and drop event from the event list to the event group or event field.

By double clicking on the event field in the sequence you will open the event setting window.

A time setting allows you to fix interval time between event groups (time displayed at the right of the event group) :

Be carefully if you start a message before the end of the previous message, it won't be played.
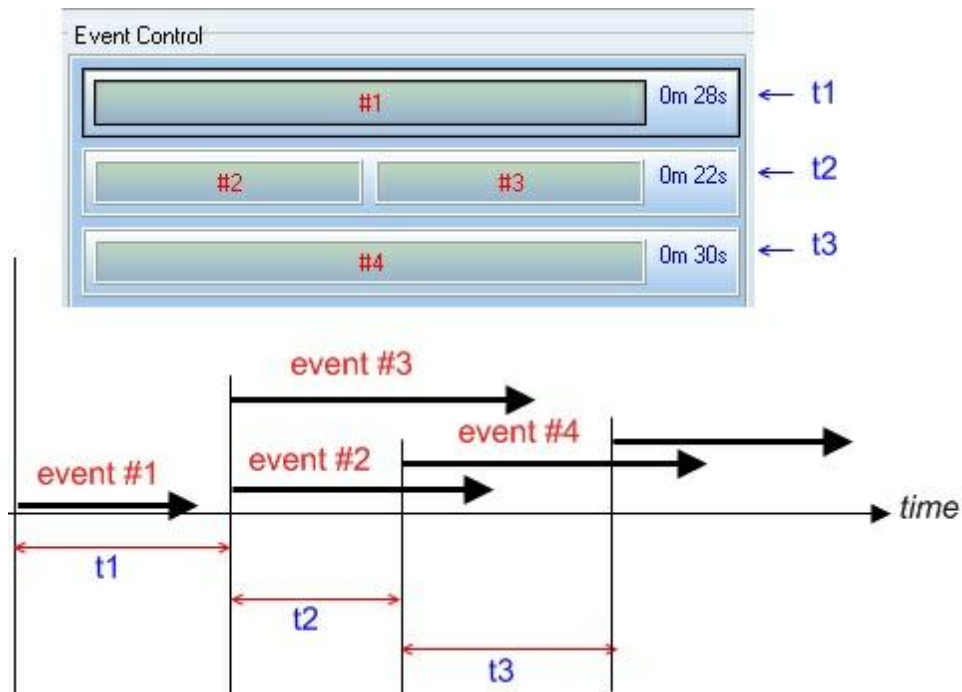
After all is defined, do not forget to click [ok]
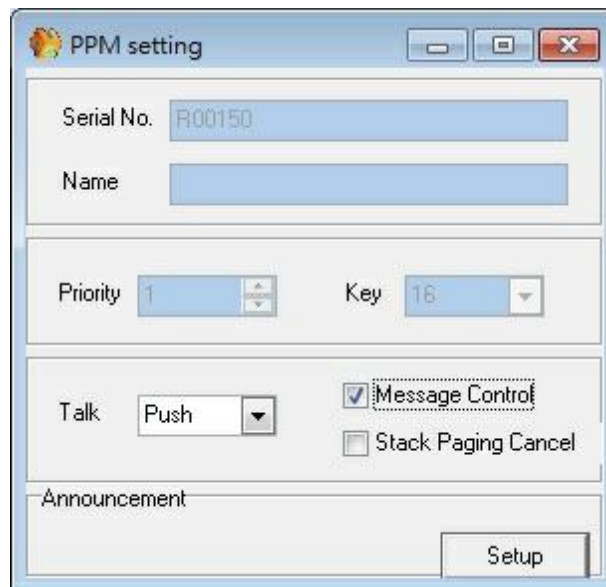
Then check the active box in the Schedule Management window: NO= inactive, YES= active.

5.3.4 Use PPM-KP to trigger

1. Connect to your PPM-SP (not PPMV2~V4) and PPM-KP. Wire it physically to the UAP G2. Only the last PPM-KP will be used to trig messages.

2. In the System page, add the remote PPM icon to an input.

3. In the menu Tools, clear the remote IP and search the PPM device.

4. Double click on the PPM icon and select to number of Key that you have (1 PPM-SP +1 PPM-KP = 16 Key / 1 PPM-SP +2 PPM-KP = 24 Key etc.). When you will be connected (after compilation and storing), you will have to notch the "Message control" option.

5. Double click on the UAP to enter in the draw window, and drag and drop the "Message Player", and LPC component. The message player must send its audio to the input of the LPC. If the PPM is also used as microphone, you have to mix the both microphone input and message player, you can do that by several way, Matrices, Ducker, etc.
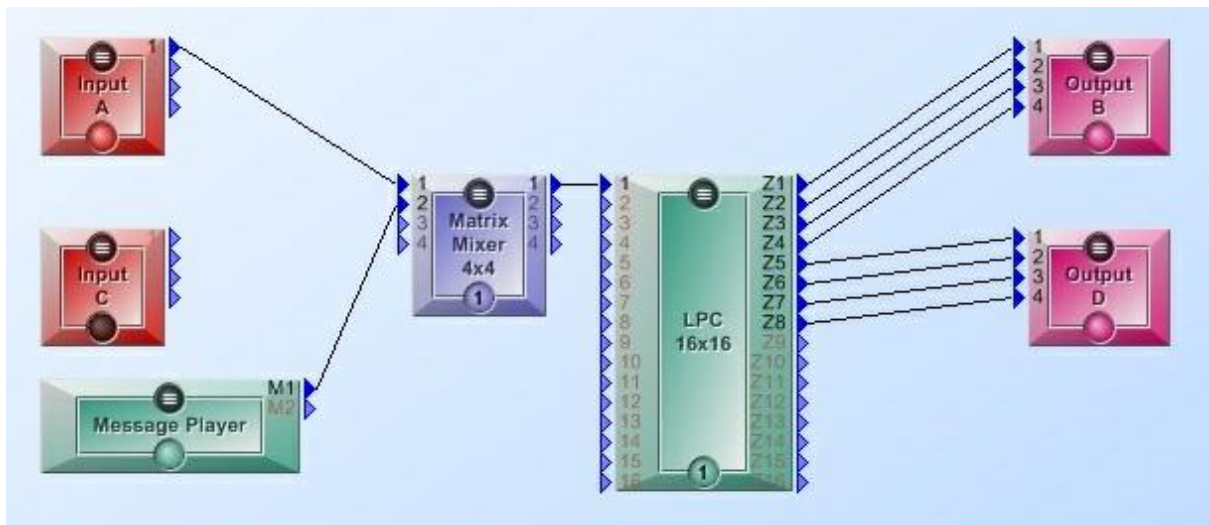
6. Then double click on the LPC component, and notch the table to make the routing as you which. Select the good audio input in the Audio Module Box. You cannot have fixed route for the messages, so don't assign zones to the keys on PPM-KP keypad. In the message player component, add several Message events, and assign them to audio files.
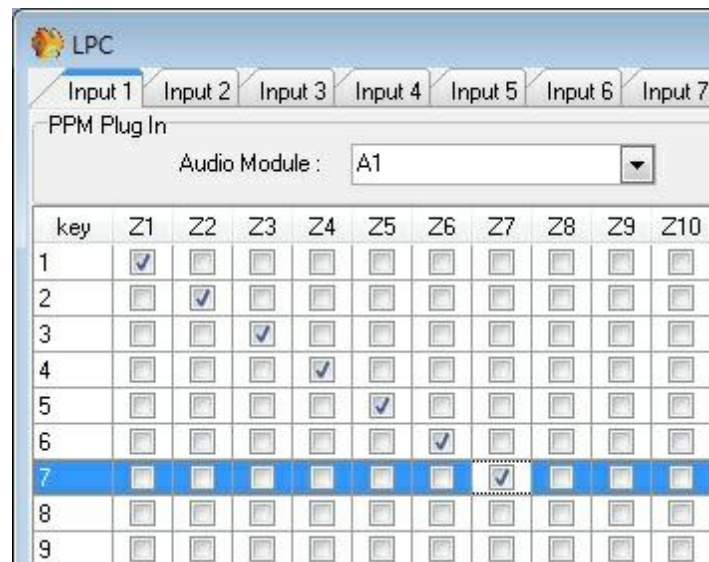
7. Double click on the "Message player" component, add several "Message Play" events and assign them to audio files.
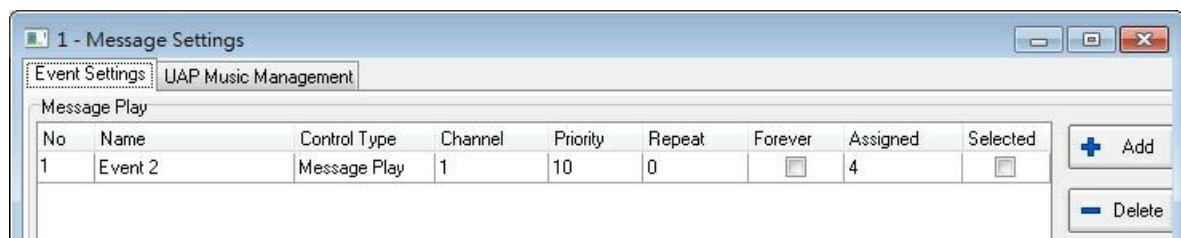
8. Open the Event management windows, and notch the "Third Party Cont." option for each message event.

9. Open the "Third Party Control" floating window. Write PPMx under "Command_id" , where x is the Key number of the last PPM-KP (from 1 to 8). By this way you can chose which Key of the last PPM-KP will start which message.

10. After compilation and storing you can trig messages:

- Select the zones where the message will be played by pushing some key on the PPM-SP, and then push the key of the PPM-KP (that's the message selection).

5.3.5   Use control inputs to trigger

❖ Use Control Inputs to trig Events (as messages)

Open Event management window menu view:
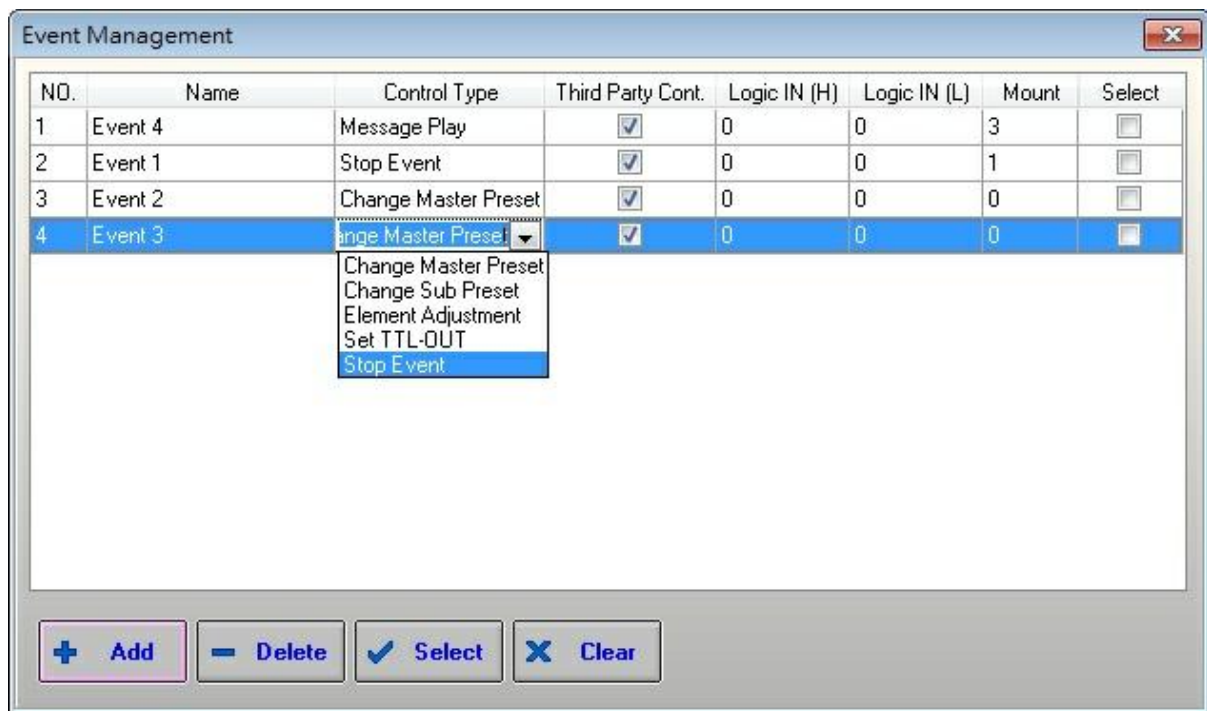
According to the TTL state (High or Low) click on one of the two fields: Login IN (High or Low)

And select the logic channel number:
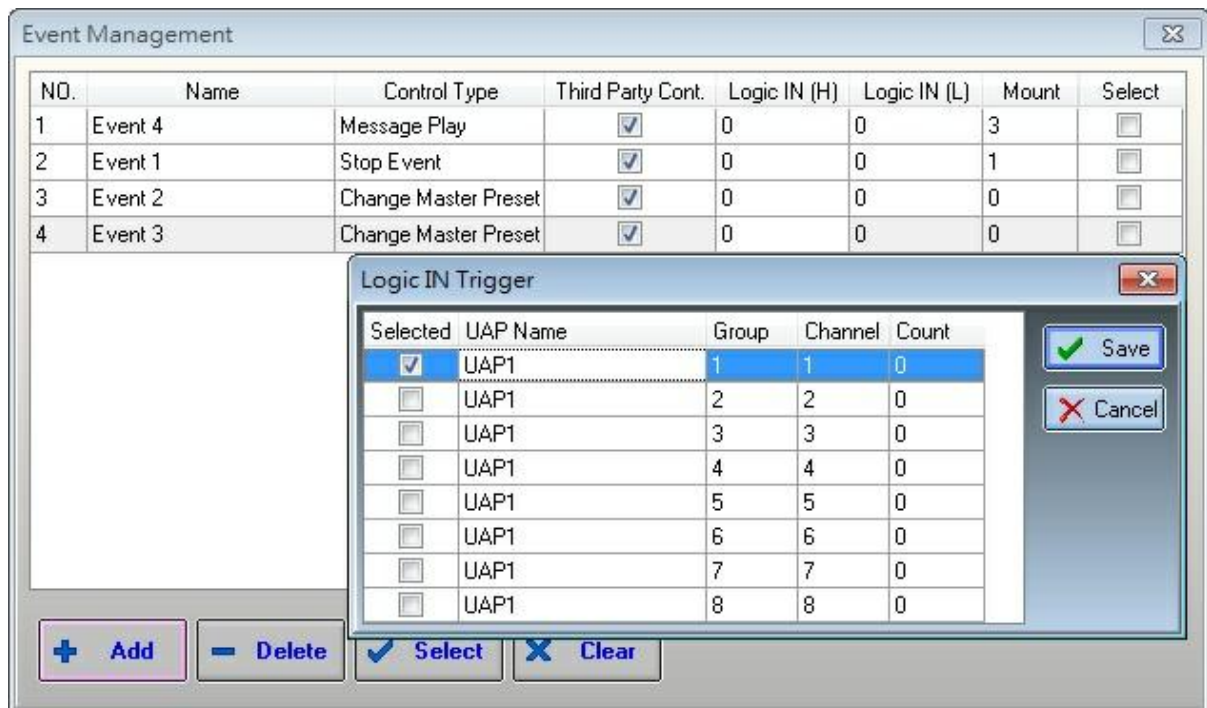
Do not forget to activate your choice by clicking [Save].

For more details, please see <u>How to use Events</u> chapter.

5.4　Device management

5.4.1　Read version

To know which versions are loaded in the devices and which version are available with the UAPG2.

software:

- Choose Menu: > Help > Version

If you have trouble to read version it is probably due to the fact that the system is not configured. It means that the software doesn't know how many UAPG2 are connected to it and the UAPG2s doesn't know their place in the network (even if you have one UAPG2) to set up the system:

1. Clean MCU.

2. Make a simple design (just define UAPG2 system).

3. Compile it and load it. (If the system is not configured, the software will ask you if you want to do it. Click [yes]) The software will check if the version between the AP and the UAPG2 are matching, and tell you if it is not the case.

4. After those Steps you can read the version.

During the Store process, the software verify the different versions (DSP, MCU, NET, PM and URC) If the version are not correct, a message appears. Connect UAPG2G ?to your PC Launch the UAPG2 software

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Connect UAPG2G to your PC Launch the UAPG2 software

- Choose menu: > Help > Version.
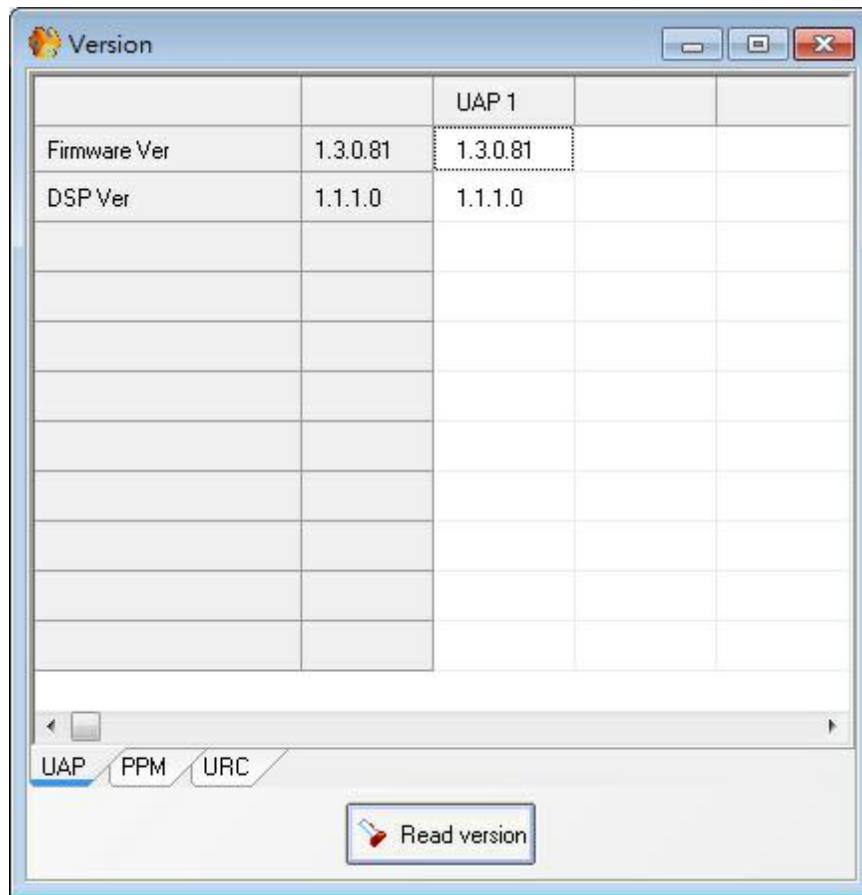
- Click "Read Version".

   o Firmware Ver: if red indicates that MCU has to be updated.

   o DSP Ver: if red indicates that DSP has to be updated.

Version mismatch is displayed in red, indicates that you have to update the Firmware. When you have URC or PPM defined and connected you can also check if versions are OK.

Updating the UAPG2 software makes necessary to update the UAPG2's firmware also.

5.4.2   Update

Updating Software UAPG2/URC/PPM firmware version.

- For the software:

   New versions are available on the net. Read carefully the release note in order to determinate if updating is required or not for your specific system

- For the firmware:

   The purpose is to match the version contained in your UAPG2-PPM software with the version contained in UAPG2's hardware.

First, performing "Read Version" to know if there is versions mismatching. Then proceed to the update if needed.

We need to update following:

- DSP

- MCU

- PPM or URC

❖ Update DSP

Updating the UAPG2 software sometimes makes necessary to update the UAPG2's firmware also. To do this follow these steps:

Note: Update DSP always BEFORE a MCU firmware update; even if there is no MCU firmware mismatch when reading the firmware versions.

- Open the Ethernet connection

- Choose menu: > Tools > Update... (DSP Tab)

- Select the UAPG2 you want to update (click on the box on the left)

- Click [Update]

❖ Update MCU

Note: Update MCU always after a DSP firmware update; even if there is no MCU firmware mismatch when reading the firmware versions.

- Open the Ethernet connection.

- Choose menu: > Tools > Update... (MCU tab).
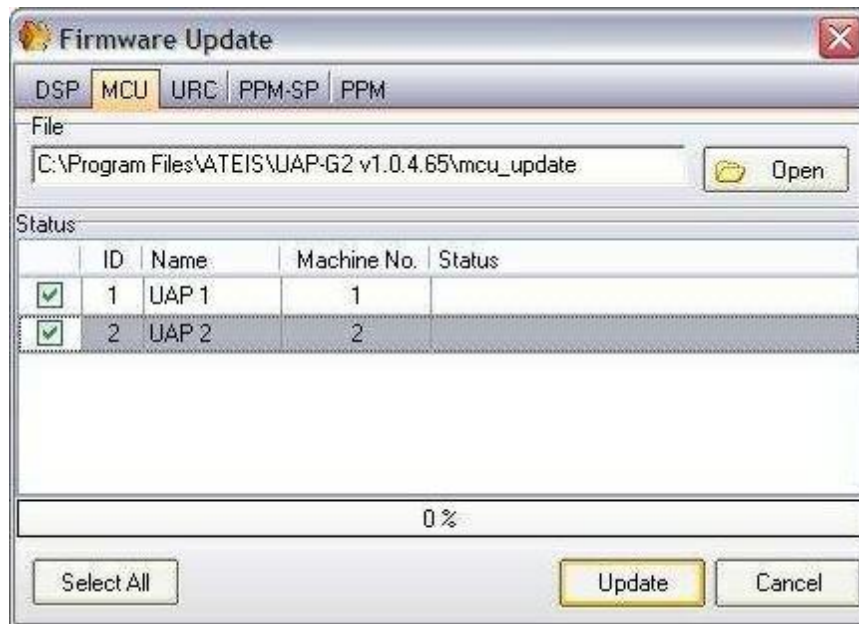
- Select the UAPG2 you want to update (click on the box on the left).
- Click [Update].

Note: you can update several UAPG2 at same time.

❖ Update URC

- Open the Ethernet connection.
- Be sure the URC is detected (search process and IP address given) and connected.
- Choose menu: > Tools > Update... (URC tab).
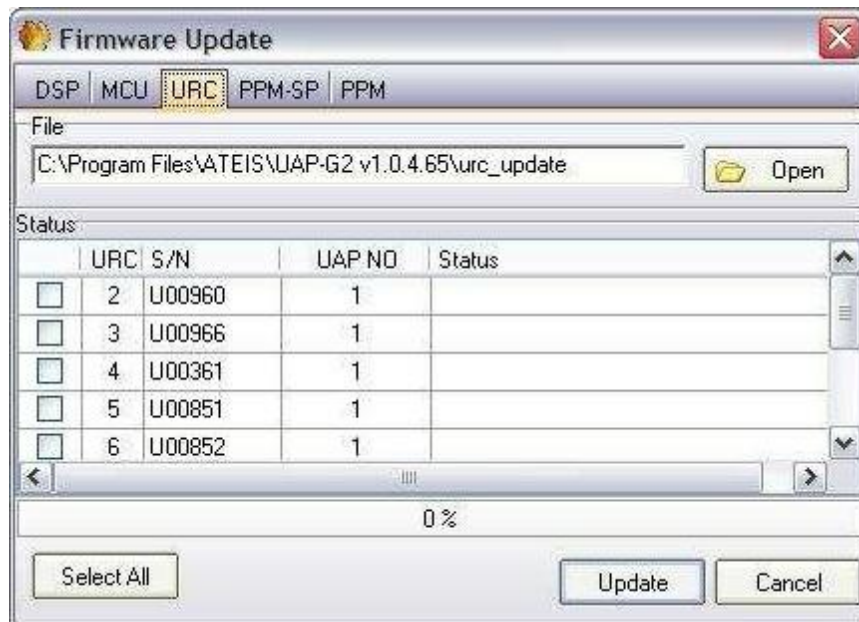
- Select the URC you want to update (click on the box on the left) (you can update several URC at same time).

· Click [Update].

❖ Update PPM or PPM-SP

· Open the Ethernet connection.

· Be sure the PPM is detected (search process and IP address given) and connected.

· Choose menu: > Tools > Update... (PPM or PPM-SP tab).
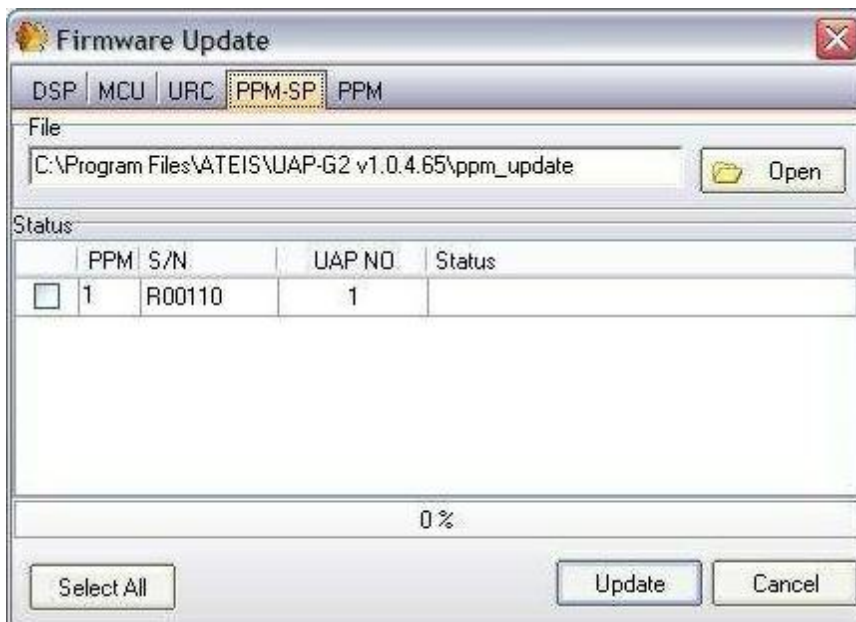
· Select the PPM or PPM-SP you want to update (click on the box on the left).

· Click [Update].

5.4.3   Adjust time/date

Select Tools > Machine configuration, this window opens:
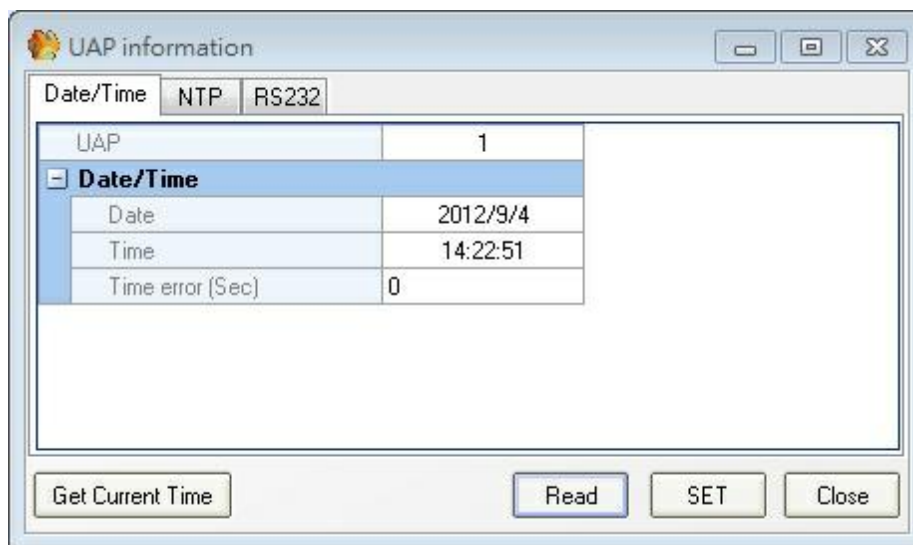
Click [Read] to load the UAPG2 values.

- Set Date&Time manually:

    Click on (respectively) "Date" field and "Time" field, write the wished date & time.

    Then click [SET] to load these values into UAPG2.

- Get Date&Time from the computer:

    Click on [Get Current Time] will display the date & time of the computer.

    Then click [SET] to load these values into UAPG2.

❖ Time adjustment:

- If you use the UAPG2 connects to internet, our advice is synchronizing the time with NTP protocol.

    ○ Adjust Time/Date with NTP

    Set the UAPg2 to have the date/time updated in real-time by the NTP servers. NTP means Network Time Protocol.

    First of all, Select Tools > Option, check the IP address on the both "Network" and "Internet Protocol" tab.

    The IP address of your PC (Network tab) must be in the same network than the IP address of the UAPG2 (Internet Protocol tab). The Gateway must match with the gateway of the local network where is connected the UAPG2.

    If you change a parameter, then the UAPG2 must be restarted.

    Unroll the "country" menu and select your time zone. Then next to "Network Time Protocol", select "On".
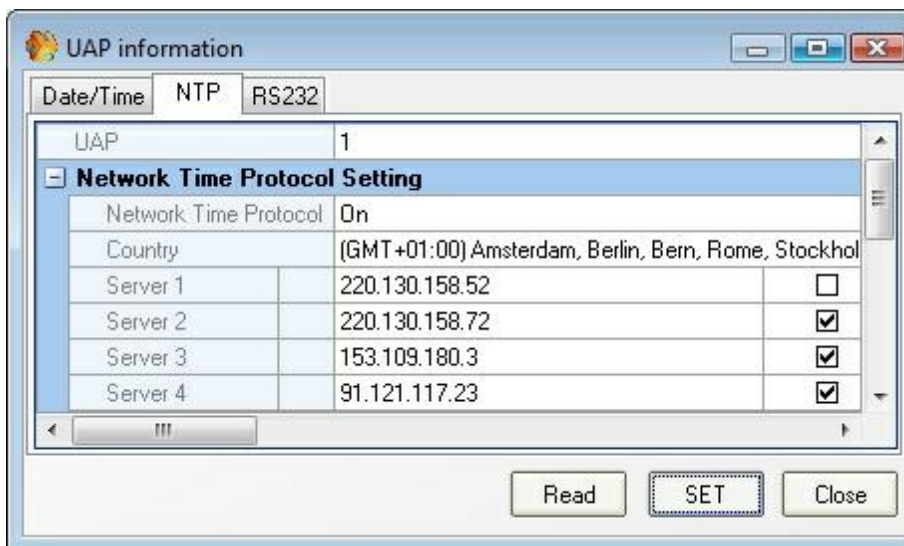
Click [read] to see which settings are into each UAPG2 of the system, click [SET] to load some settings changes

- If you use the UAPG2 is not connected to internet, then the only way to adjust the time if needed is to use the parameter "Time error (Sec)". At first, set the time (from the PC or with NTP), and remember this time. Leave the machine working in stand-along during one month. After one month, record the current time and see the formula. Time Error(sec)=(current time -previous time)/30 Set time error sec in machine configuration. Every day at 00:00, the machine will automatically increase/decrease the time(calibration time).

When using the NTP protocol on an internet NTP server do not update the time or date within 5 sec of each other. You will risk getting you IP address band by the NTP server.

5.5   Store

When all the settings (signal path) are OK, we just have to upload them into the UAPG2 system.

1. Compile your project: menu: "Compile >Compile..." or hit Ctrl+F4 or click on this icon :

2. When this window appears click OK.
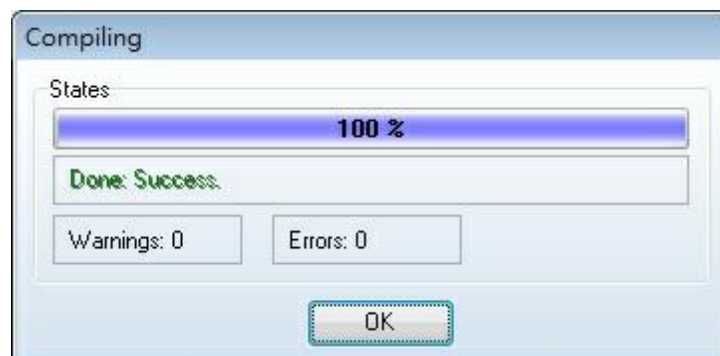
If this window does not appear, or if there are warnings, there is some trouble with the configuration (design). Check it and correct the mistakes.

3. Now we are going to load the UAPG2 with our configuration: menu "Operations > Store" or hit ctrl+F7 or click on this icon .

4. This window appears
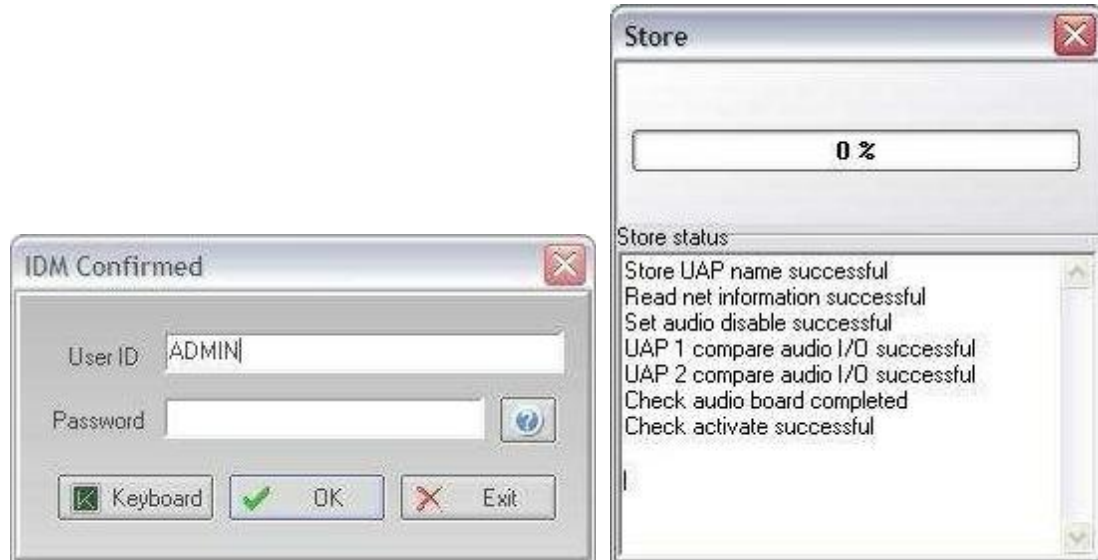
5. Type user ID (in a new setup this is always ADMIN no password)Click [ok], you will see the load process.

Steps 6, 7 and 8 are FOR URC AND PPM only

6. At the end, if the remote is well configured this dialogue box appears:

For PPM, if this dialogue box does not appear, it means that the PPM is not recognized by the UAPG2. A yellow light flashes on the PPM (Fault led). You have to restart the research procedure.

7. Click Yes, the URCs and PPMs are configured when this dialogue box appears:

8. Click Ok. A dialogue box appears and asks if you want to connect to the machine. Click Yes if you want to pilot some settings with your computer.

9. Another dialogue box appears and asks if you want to "order audio_enable". Click Yes if you want inputs and outputs to be active.

5.6   User Management

❖ User Management

Opens the User Management window (floating window)
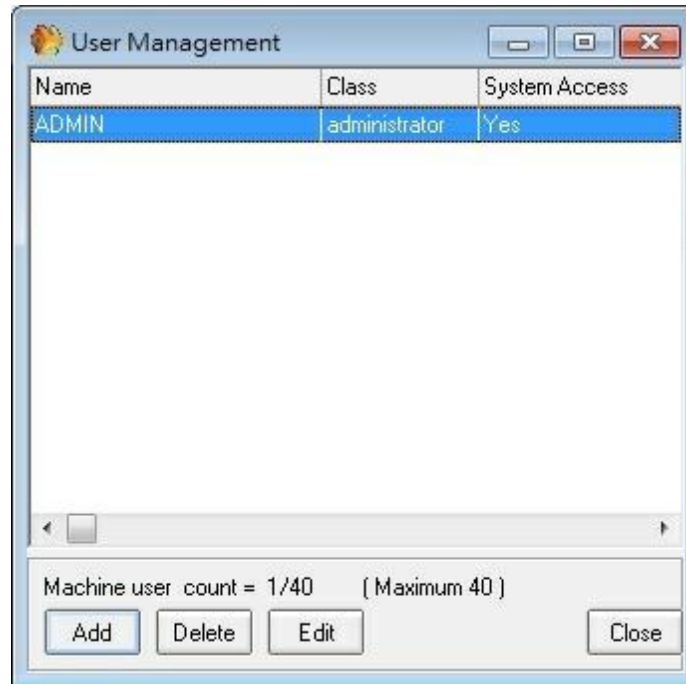
You have the possibility to define up to 40 different users with different access privileges.

- Add: To add a new User (open the "Add new user window").

- Delete: To delete one user,

- Store: To load new user in UAPG2 system.

- Close: To close window.

If you select a User and click [Edit] you will have access to "Add new user window" to modify access privilege or change code:

This window allows you to give access password, name and to define access privileges.

Simply read what you want to allow as rights and notch the corresponding blank square.

Bottom of the window you can define which UAPG2 file will be opened when the user will log in.

You need to setup both Use ID and User management for a working user in the virtual/monitor window mode of the software. If the software asks to save the changes, click save.

❖ ID Management:

Opens the ID Management window (floating window)

This feature is available to prevent all unauthorized people to connect to the system via the network.

The ID management allows to gives access to the Master-Preset with an user name and password. With this window you can:

- Add: create new user.

- Delete: Erase users.

- Close: Close the window.

Finally Edit user's right [Edit]) this last button opens the following ID Information window.
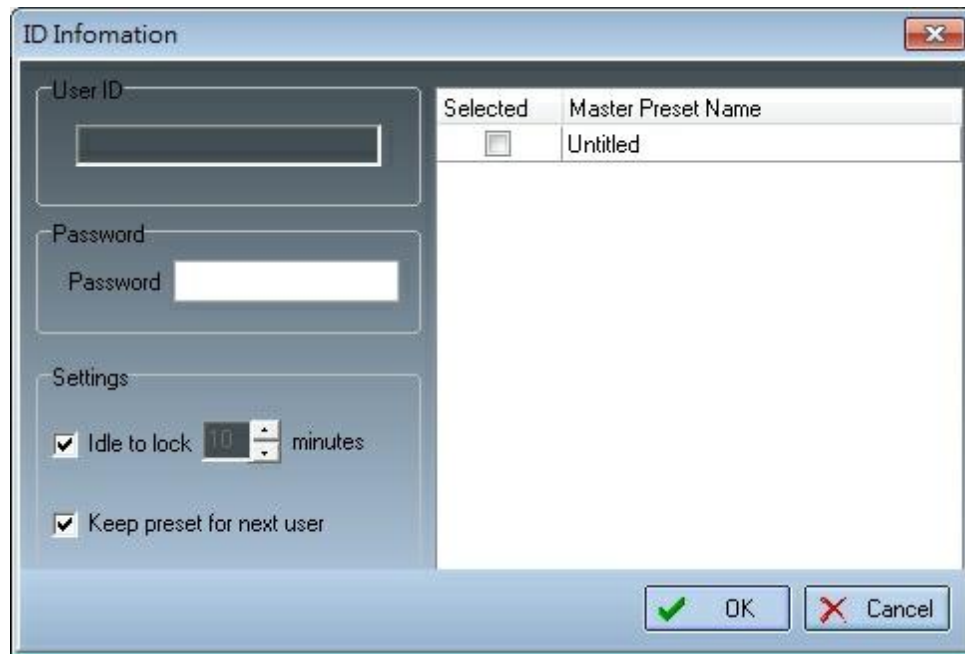
- Password field:

    Enter desired password

- Idle to lock *XX* minutes:

    If the user doesn't use software during *XX*, the connection will be closed and user will have to log again.

    When the software was locked, users should enter an account with a correct password. Or the software will be locked permanently.

- Keep preset for next user:

    It is possible that a user doesn't have the right to log in with the last preset used by another user (the one who just logged out).

    By clicking this option, you assign the right to this user to log in and use the system even without the right for this preset.

- Box at the right part of the window: Show all master presets of the system. Choose which master preset the IDM user will have right to access and operate.

❖ Logout User

    Opens the User Login window (floating window)

    In this window, it allows user to logout or change users, and is available only if unconnected.

❖ Logout ID

Opens the IDM Confirmed window (floating window). It allows user to logout or change ID users.

5.6.1   Edit User

You can define up to 40 users. Each user is protected by password. Different user's right are adjustable for each user.

❖ To set users right:

Click menu: "User > User management"

A windows appears you can add new users click "Add" or you can delete user by selecting it and clicking "Delete".

By clicking "Edit" you can adjust the user privileges and define password, these privileges are coupled on the design file selected on the bottom.
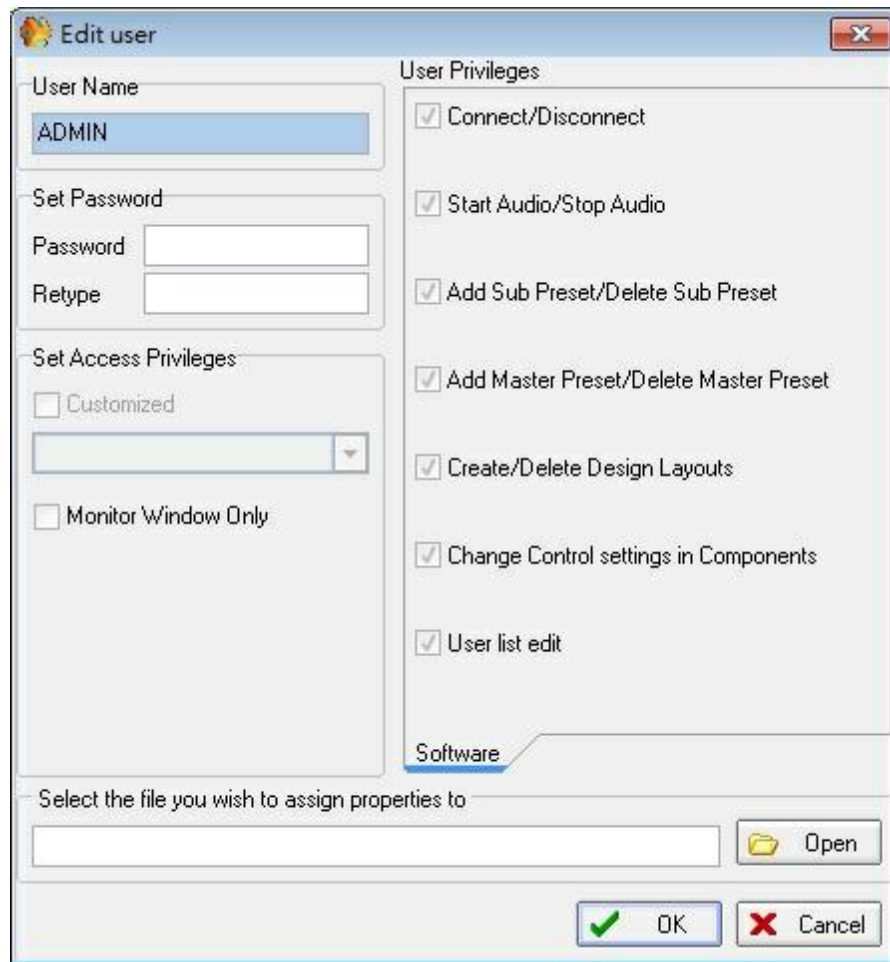
First enter User name then password. If you check Customized in the Set Access Privileges, By notching the white square you can select which are the privileges of this user (by notching what do you want). Than couple the file by selecting it in the bottom line. Now the software has all the known privileges to the users.

❖ To get connected to the UAPG2 with the new user the UAPG2 also has to know the user.

Click menu: "User > ID management"

Type the same User ID and Password and click ok.

The UAPG2 has to be connected to the PC to set this item.

5.7   Preset

❖ Master preset allows storing of several different DSP design in a same configuration. For example if you have room which can be separated into two smaller sized rooms etc.

• Icon from left to right:

   o Indicates which current Master Preset you are working with.

○ Names each Master Preset

○ Add or Delete Master Preset

1. Define (Add and Name) the number of Master Preset that you need.

2. Select the Master Preset you want to work with and make your design.

3. Do the same for each Master Preset.

To change Master preset simply change the current Master preset when the PC is connected, or use URC or Logical connectors.

❖ Sub Preset allows you to store different adjustments (Level, mute) but not (as Master preset) to change DSP design (no possibility to change routing, modules...)
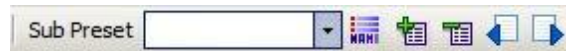
- Icon from left to right:

  ○ Name of the current Sub Preset

  ○ Add or Delete a Sub Preset

  ○ Manages Sub Preset name

  ○ Saves or Load Sub Presets

- Example for use:

  We are going to define two sub-presets:

  ○ The first with all the C inputs on +20dB (Sub preset's name: A + 20dB).

  ○ The second with C inputs set to -90dB and Mute on (Sub preset's name: A mute).

1. Define the two Sub-Presets. Click on the "Subpreset add" twice to add two Sub-presets and enter the name of them.
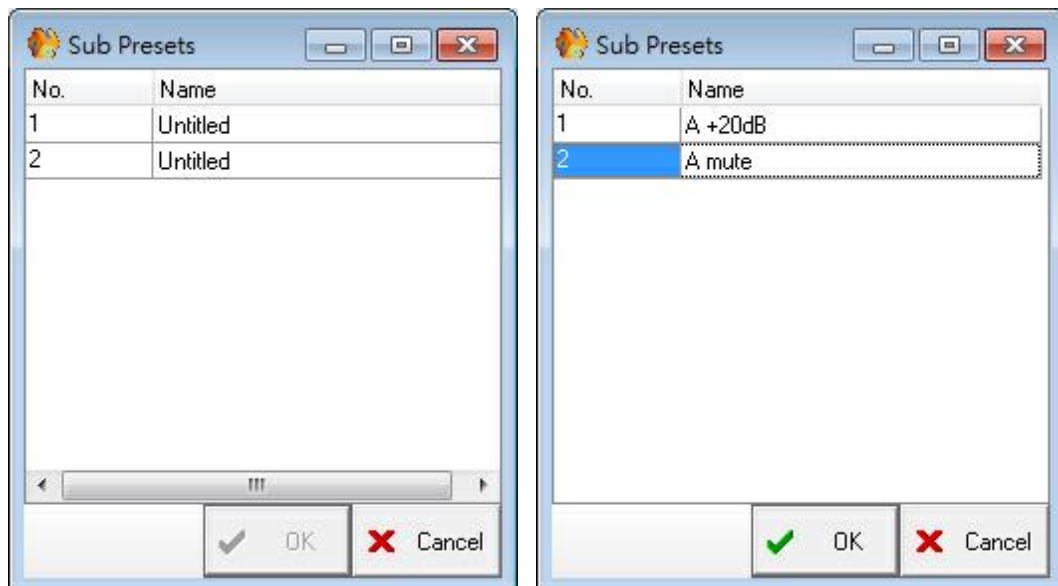
2. Click "OK", the name of the current Sub-Preset appears:

Sub Preset | A mute |

3. Then we are going to choose which adjustments we want to assign to the Sub preset:

Double click on the component you want, (for our example double click input C), then right click on the adjustments and assign the adjustment to the sub-preset. A purple dot appears if there is a sub-preset assigned to the adjustment. Repeat that for all the adjustments.
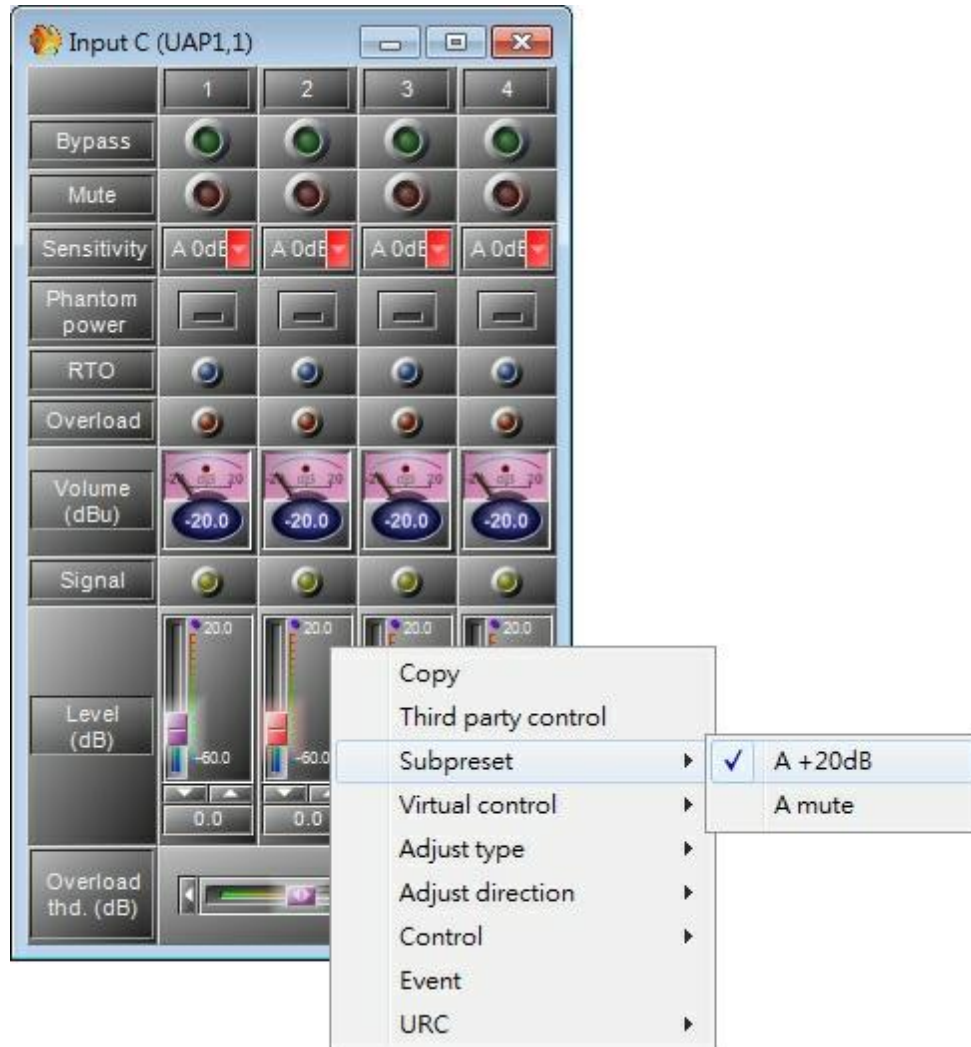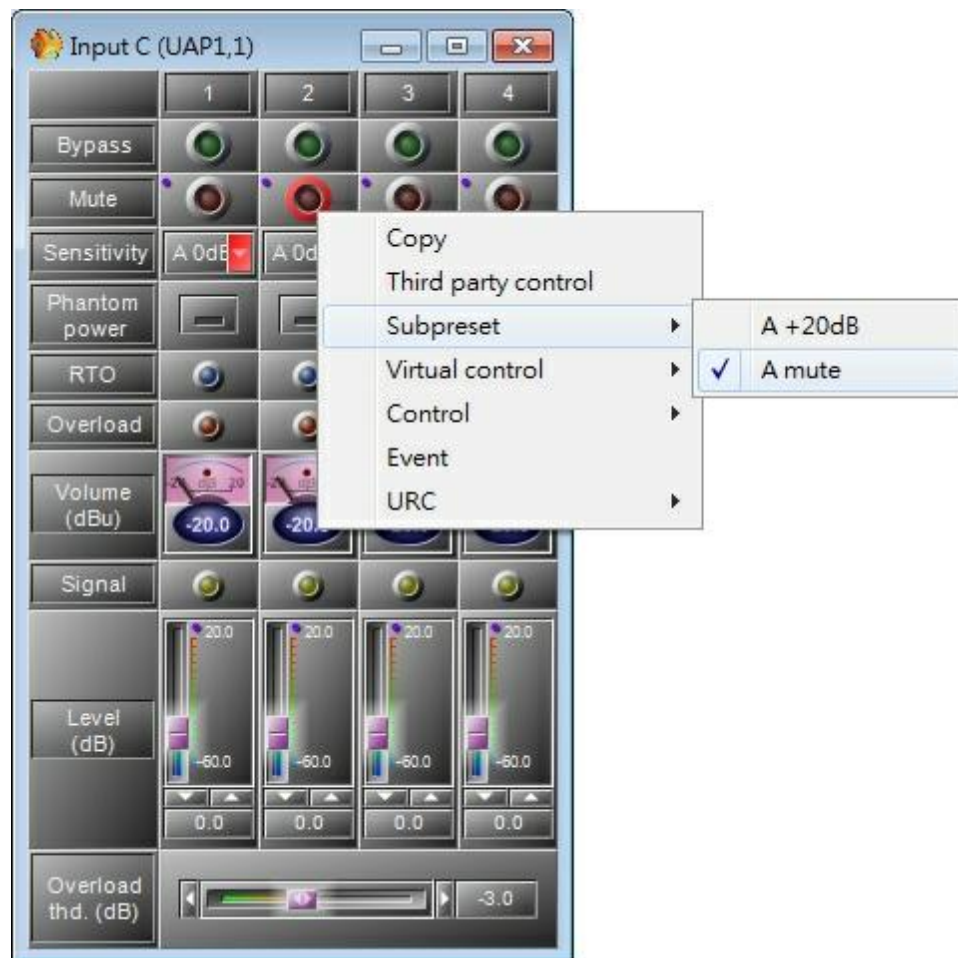
4. Set the adjustments: click on the Sub preset you want to store the adjustments:

For example we use "A mute", adjust the parameters as you want, here we turn on the "Mute" and decrease the Level.
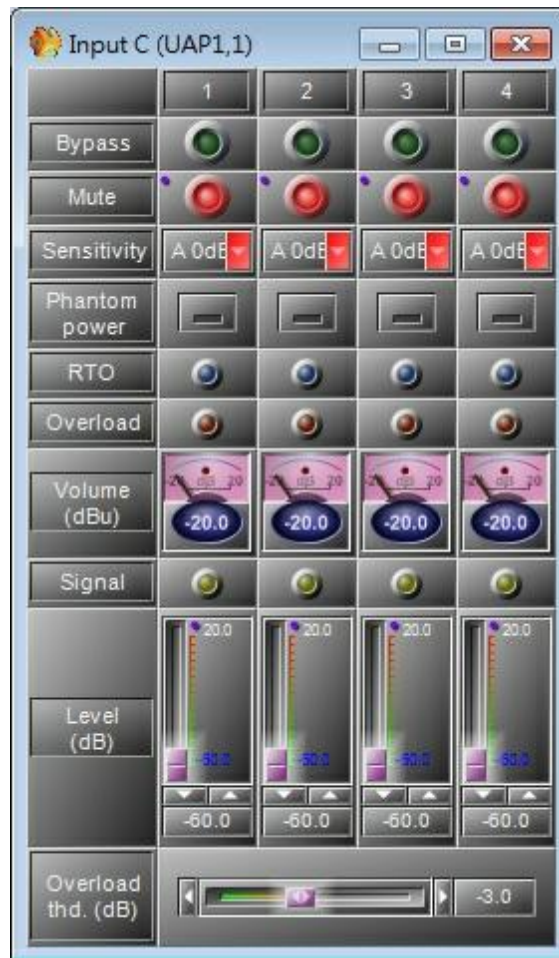
5. When the adjustments are OK. Click "Subpreset save" in order to store your adjustments in the current Sub Preset (you make a kind of photocopy of the adjustments you have selected in this Sub-preset). Repeat those actions with the other Sub preset.

6. If you want to load saved Sub Preset select the Sub Preset you want and click "Subpreset load".

5.8 Virtual Control

The Virtual Control allows you to define group buttons, LEDs, or Fader. You can import those groups in the Monitor Window.

Open Virtual Window: "Menu: > View > Virtual control" (or press F11)

1. Select by drag and drop (from the Design Control Area to the Virtual control window) which kind of controls or indicators (Logical In, Logical Out or Knob) you want.
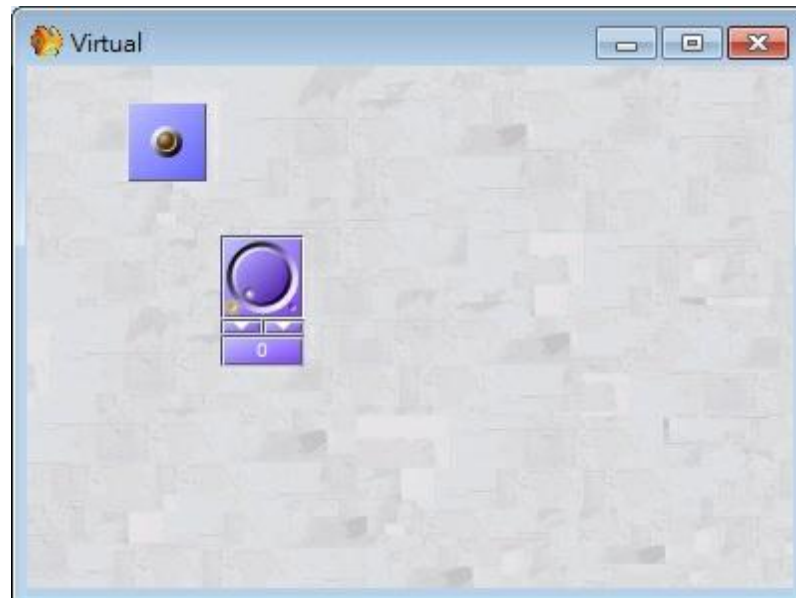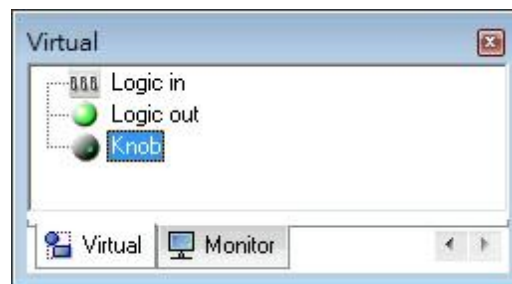
2. Name the virtual adjustment by right-clicking on it: > Properties > "Function field". You can also adjust some settings, in the properties window.
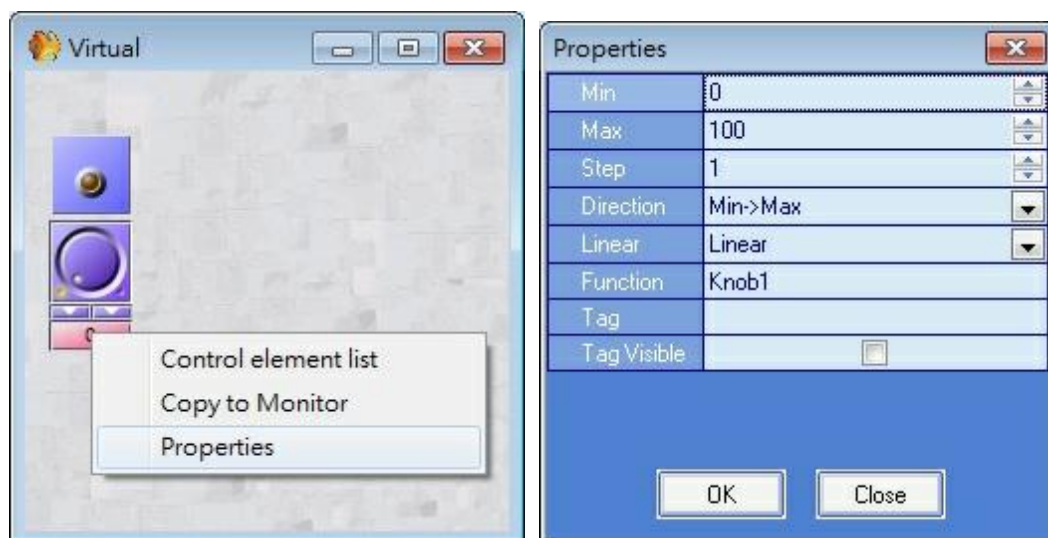
3. Assign which adjustments you want to control with this virtual adjustment (double click on the component icon then right-click on the adjustment and select Virtual control > analogue in, logic in or logic out (depends on which kind of adjustment you want to control) > name of the virtual adjustment.
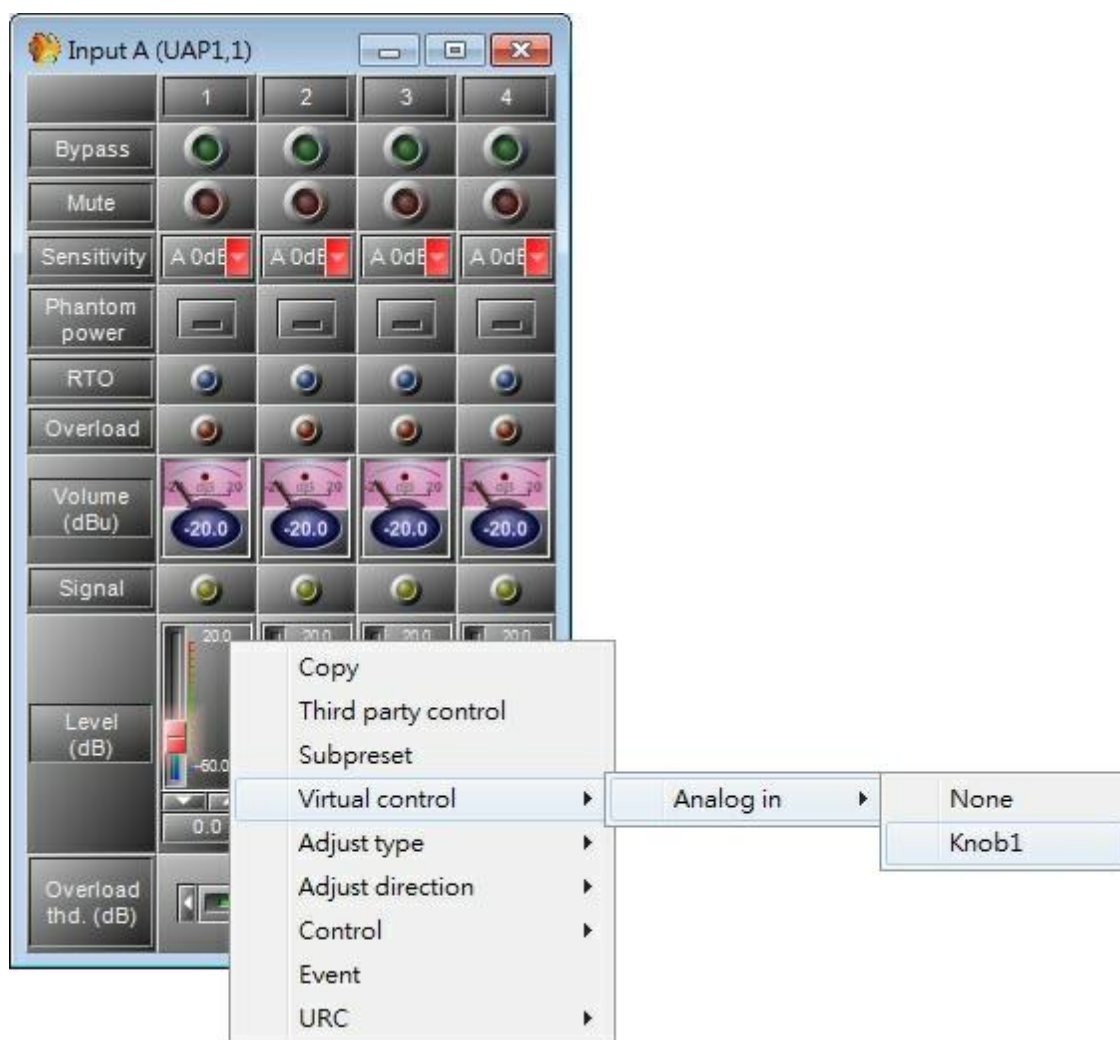
4. If you want to use the virtual adjustment in the Monitor window right click on the virtual adjustment and select > copy to Monitor then paste it on the monitor window.
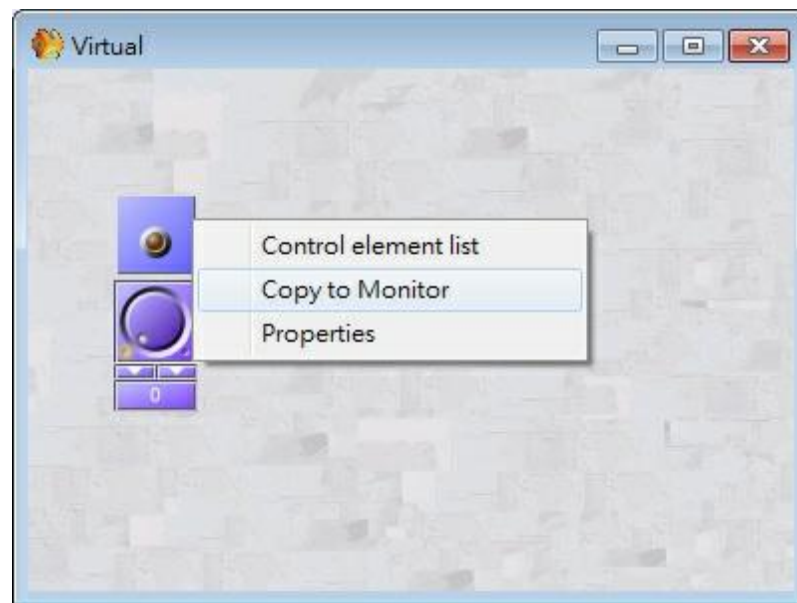
5.9   Monitor

The Monitor window is a window in which you can bring all the adjustments and indicators you need for your project. This is helpful if you want to have a graphical control interface.

See <u>View/Monitor settings</u> to set the options of the monitor window.

    1. Open the Monitor Window: > View > Monitor (or F12)
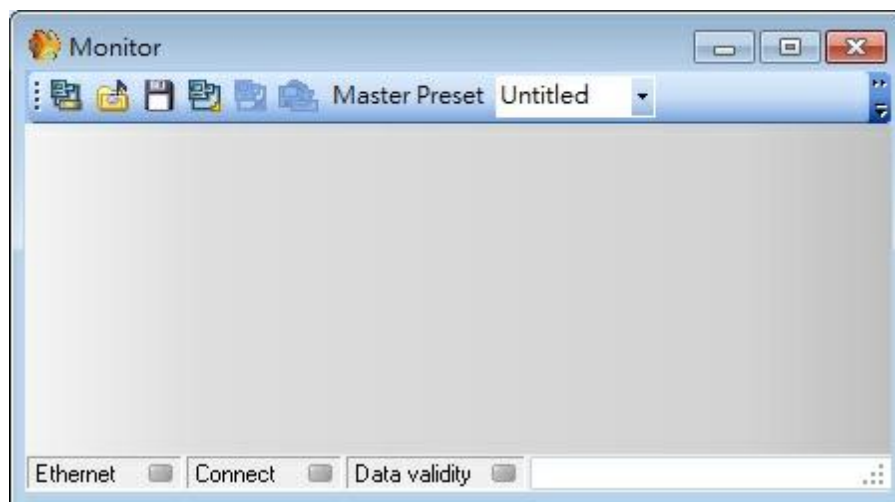
    2. For each adjustment you want to import in the monitor window:

        a. Double click on the component icon

        b. Right-click on the adjustment you want to import

        c. Select > Copy

d. Then go to the Monitor window

e. Right-click where you want to paste the adjustment

f. Select > Paste

❖ In the "Design Control Area" you have three choices (drag and drop to the monitor window):

- Label: Adds a written message.

- Group button: Adds a button which opens a sub-monitor window.

- Image: Adds a background Image.

- Close button: Adds a close button to close the virtual window or sub-monitor window.
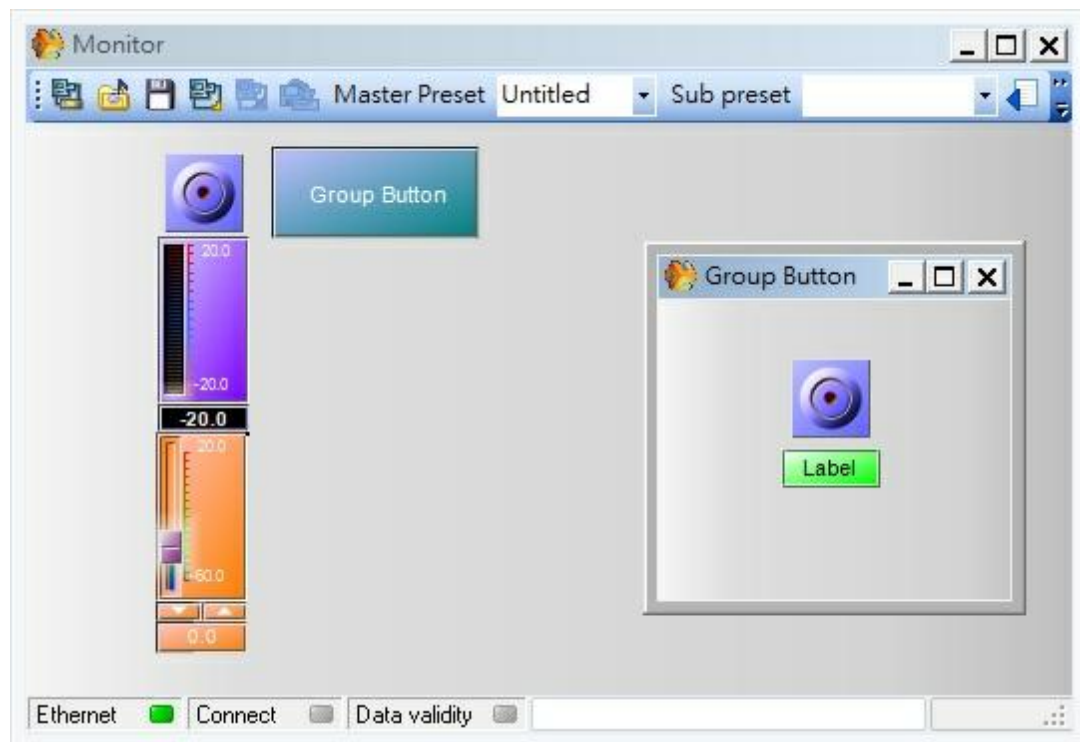
❖ Password Setup / Lock

If you want to protect the access to the UAP, click on 🔑 (Ctrl+M).

Chose and type two times a password (this is not an user or ID user management).

Now you can lock the system by clicking on 🔒 (Ctrl+L).

To unlock, click on the button and type the password.

Tips: If you want to create a complex Monitor window (for operator only) create all the parameters you'll need in Administrator mode. Then create another user with the following rights, and made the window directly with the right window size (it is more convenient)

5.10 Monitor Settings

Use the monitor window in auto-login. You can create a specific user to have only an access to the monitor window.

This user must be associate with a configuration file (*.uap).

At first, disconnect with the UAP, and open File -> Save As. Save the configuration.

    1. Open User -> User Management:
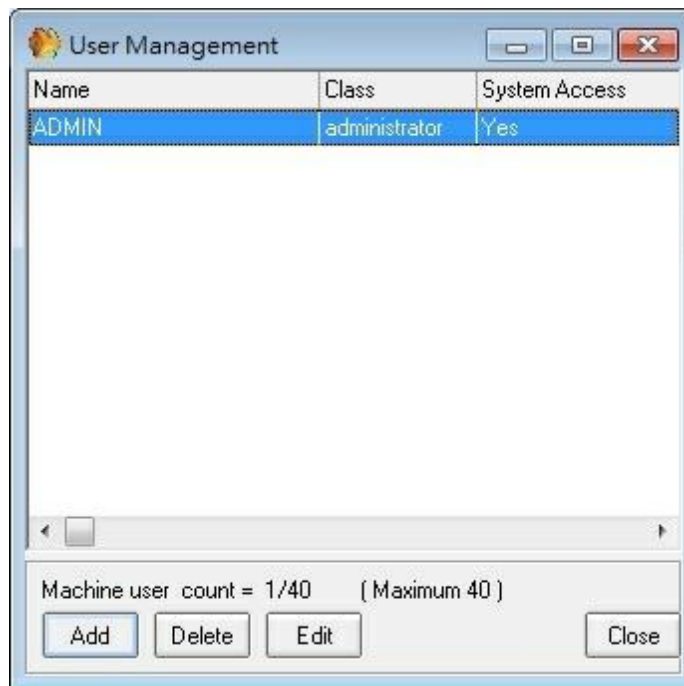
Click [Add] to create a new user:

- Write the User Name and the Password.

- Unroll the menu and select "Operator", this predefined user has an access only to the monitor. This allows user to connect or disconnect UAPG2, enable/disable the audio and change the control settings in the components.

- Click [Open] to open the browser and select your configuration file. This configuration will be automatically loaded when the user will type its user name and password.

- Click [Ok] to save and click [Close] to close the window.
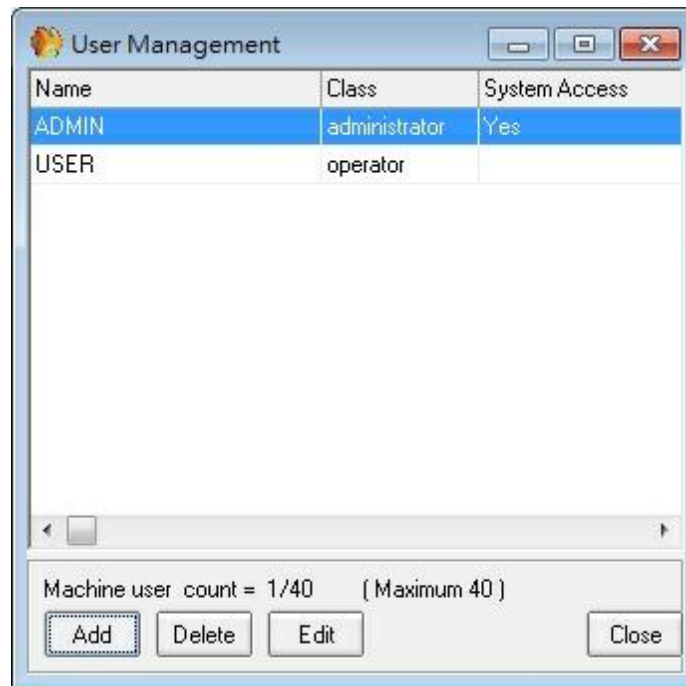
2. Open View -> Monitor Settings:

Notch the options of the monitor window. See [View/Monitor settings](#) for more details.

To have an automatic logon, notch at least "Auto Connect".

After the monitor settings, compile the design then save your configuration in the file and store the configuration.

If the IDM is required (access to the Master-Presets), type the default IDM user "ADMIN" (no password).

The system is ready. Disconnect and close the software.

3. Now to access to the machine, the monitor user has to follow these steps:

• Open the UAPG2 software.

• Type the User and Password:

• The ethernet connection and also the machine connection will be done automatically:

    ○ Auto ethernet connection :
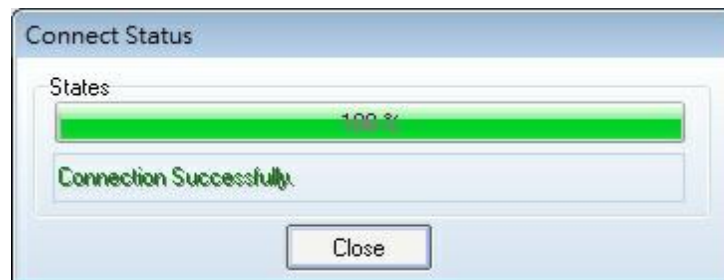
    ○ Auto machine connection:
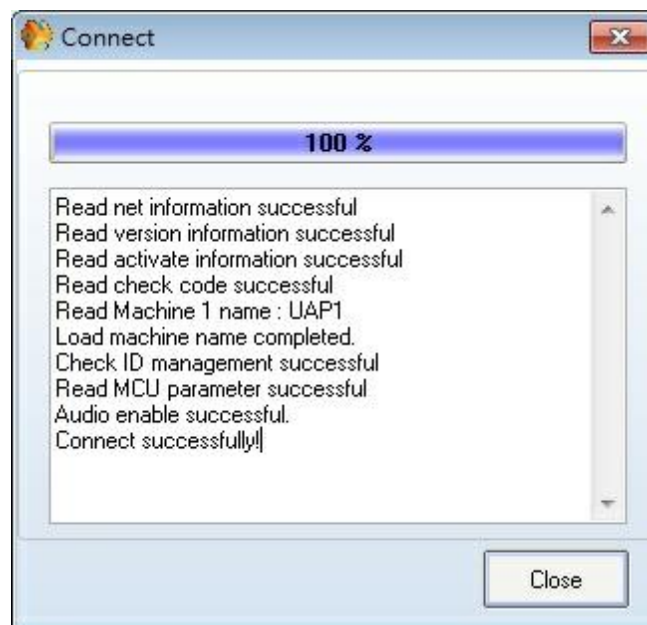
Close these windows. Now the monitor window is opened, and the user is connected (ethernet and machine).

To return in administrator mode, the user has to disconnect with the machine , Click on the "User Login" , and then type the default user ADMIN.

If you find trouble check the following points:

    ○ Control the settings in View > Monitor Settings.

○ Be sure to save the configuration file after compilation (needed after every change in the config).

4. Master-Preset access limitation:

If you want to limit the Master-Preset access depending of the user, then don't select the "auto connect" option in the Monitor Setting window. Create an IDM (User -> ID Management) and select for this IDM the authorized Master-Presets.

Now when the user will start the software, he will have to type the UserID. The ethernet connection will be done automatically, and the configuration will be loaded but the machine won't connected.

The user has to click on the "Machine connection" icon and type the IDM.
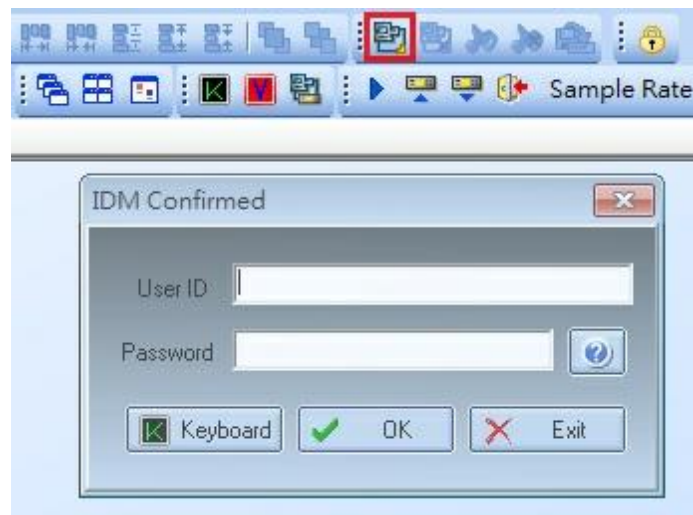
Only the Master-Presets associated to the IDM will be loaded.

5.11 How To

5.11.1 Create paging of PPM with LPC

❖ Component Appearance
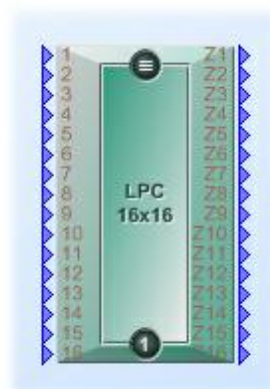
❖ Description

LPC (Link Page Control) is the component for paging the audio signal of PPMs.

Be aware that you cannot add more than one LPC per UAPG2. If you have several PPMs on a UAPg2, then you have to use the different input of the LPC component.

❖ Control Window

For example if we have two PPMs on UAPG21 and one PPM on UAPG2:
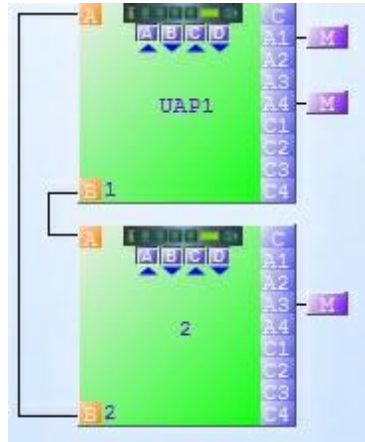
Choose one of the LPC in the LPC list. No matter which LPC you choose, it's not necessary to use all the inputs or outputs of the LPC. Even if you use one PPM (so one input of the LPC) you can use for example the LPC 4x28.
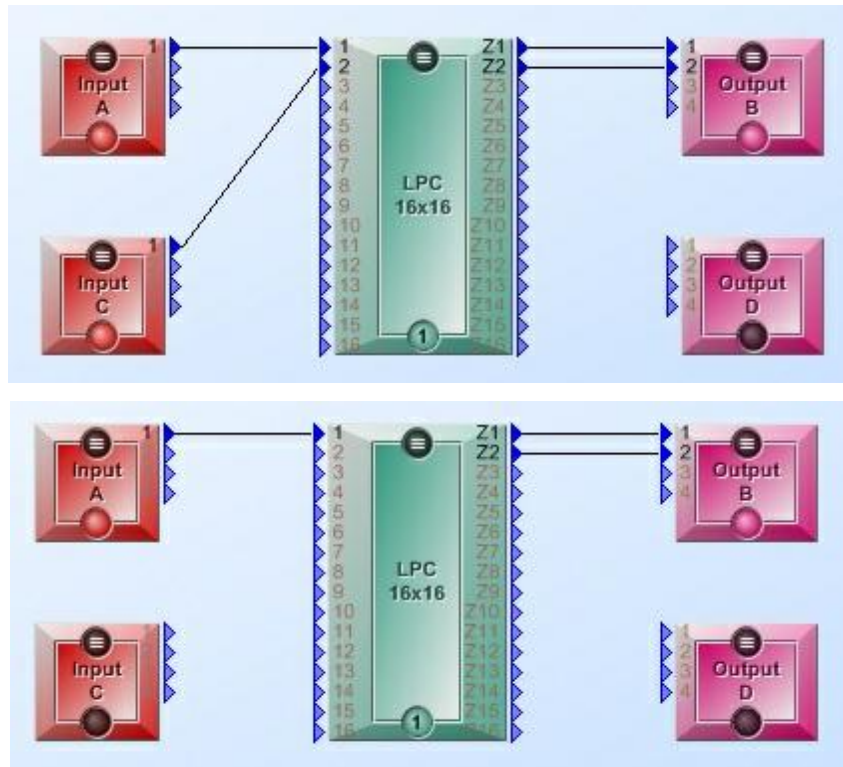
Then Double click on the component (LPC) to tell where the inputs are connected.

Each PPM which use one input has to be configured in its tab.

First select the "input 1" tab to set the first PPM.
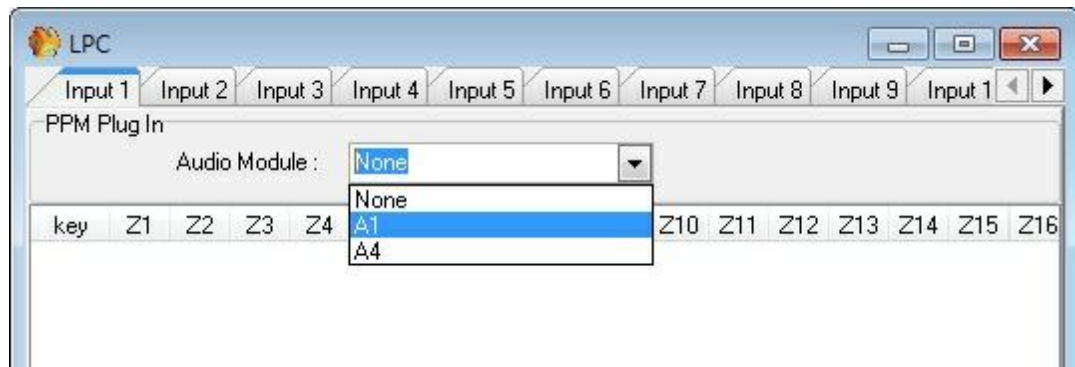
Unroll the menu "Audio Module" and select the input used by this PPM.

As soon as the input is selected, the paging matrix is displayed.Here you can choose on which zones you will have microphone signal when a key is pressed by notching the boxes:
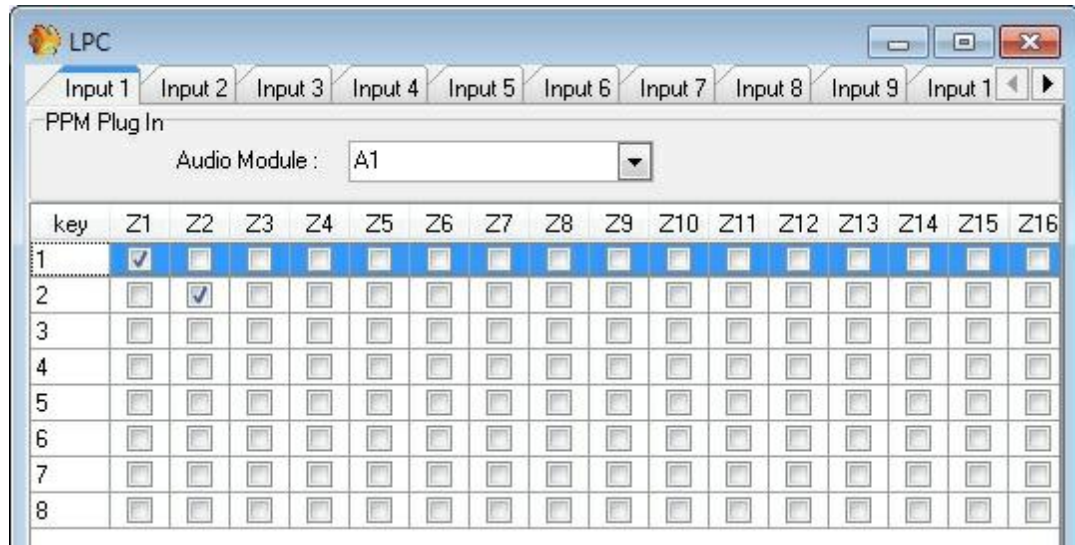
Then do the same for the second PPM. Select the tab number 2 to set the second PPM. Unroll the Audio Module menu and select the input used by the second PPM. And then notch the boxes you want to associate the outputs with the PPM Keys.
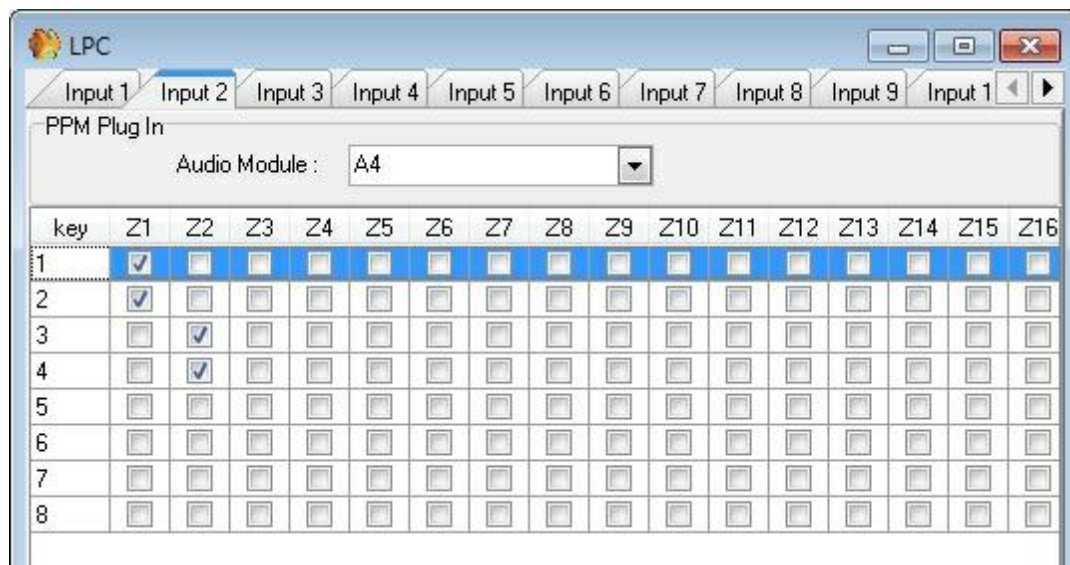
Now do the same in the second UAPG2, double click on the component (LPC) to tell where the input is connected. First select the "input 1" tab to set the PPM. Unroll the menu "Audio Module" and select the input used by this PPM.

5.11.2 Use front knobs

Right click on the software adjustments you want to pilot with the control input and choose control option:

1. Type of control you can assign to this software control (adjustments).

2. Name of the UAPG2 in the system.

3. Connector channel number (control input 9 to 16 defined as analogue input), FP = Front Panel knob.)

Copy	
Third party control	
Subpreset	▶
Virtual control	▶
Adjust type	▶
Adjust direction	▶
Control	▶
Event	
✓ URC	▶

| Analog in | ▶ |

| None | |
| UAP1 | ▶ |

| CH9 |
| CH10 |
| CH11 |
| CH12 |
| CH13 |
| CH14 |
| CH15 |
| CH16 |
| FP1 |
| FP2 |
| FP3 |
| FP4 |
| FP5 |
| FP6 |
| FP7 |
| FP8 |
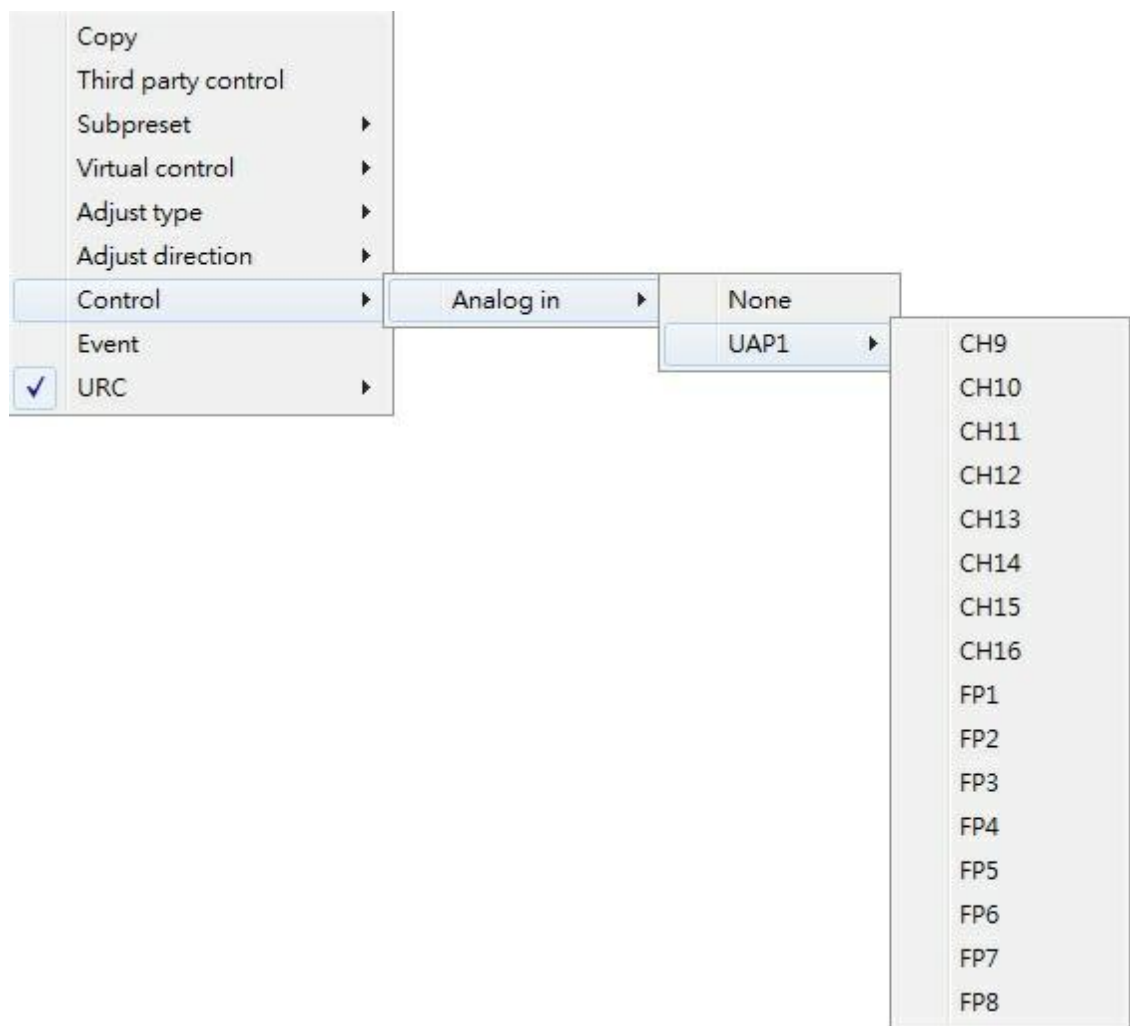
6 Components

6.1 Input

❖ Component Template
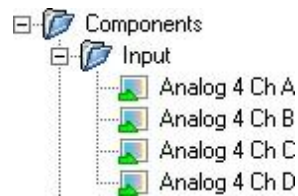
❖ Component Appearance

❖ Description

Control the input signals parameters and monitor it. The analogue input modules represent the physical analogue inputs accessible on the rear panel of the UAPG2. There are four separate modules for use with each of the audio board slots A, B, C and D. Analogue input and output modules are added automatically to the DSP window of the relevant processor by defining their module configuration at the time you create them and should not be altered.

❖ Control Window

The main control window of the input module is opened by a double click on the icon in the UAPG2 design window and appears like this:

The sensitivity and phantom power can be set and changed when connected.

Analogue Input Adjustments

Parameter	Range	Comment
Bypass	On/Off	Bypasses the channel fader settings. The channel gain will be equal to unity gain (0 dB); LED, lit green when activate.
Mute	On/Off	Mutes or un-mutes the input channel; LED, lit red with channel muted.
Sensitivity	0dB, 12dB, 24dB, 40dB, 54dB	Sets the input gain of the channel preamplifier.
Phantom Power	On/Off	Applies 48 VDC phantom power to the channel input for use with condenser mikes.
RTO	LED, Lit blue	Indicates an input channel 'Routed To Output(s)'.
Clip	LED, lit red	Indicates channel level above 'Clip Threshold (dB)'.
Volume (dB)	-20 to +20 dB	Meter showing the channel RMS level.
Signal	LED, lit yellow	Indicates audio signal presence above -30 dB from chosen 'Sensitivity'.
Level (dB)	-60.0 to +20.0 dB	Signal output level of the module
Clip Threshold	-20.0 to +20.0 dB	Sets the threshold of the Clip indicator.

6.2   Output

❖ Component Template
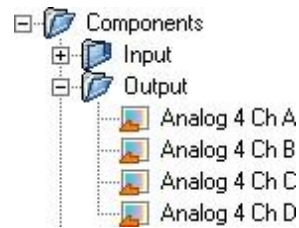
❖ Component Appearance

❖ Description

Control the output signals parameters and monitor it. The analogue output modules represent the physical analogue outputs accessible on the rear panel of the UAPG2. There are four separate modules for use with each of the audio board slots A, B, C and D. Analogue input and output modules are added automatically to the DSP window of the relevant processor by defining their module configuration at the time you create them and should not be altered.

❖ Control Window
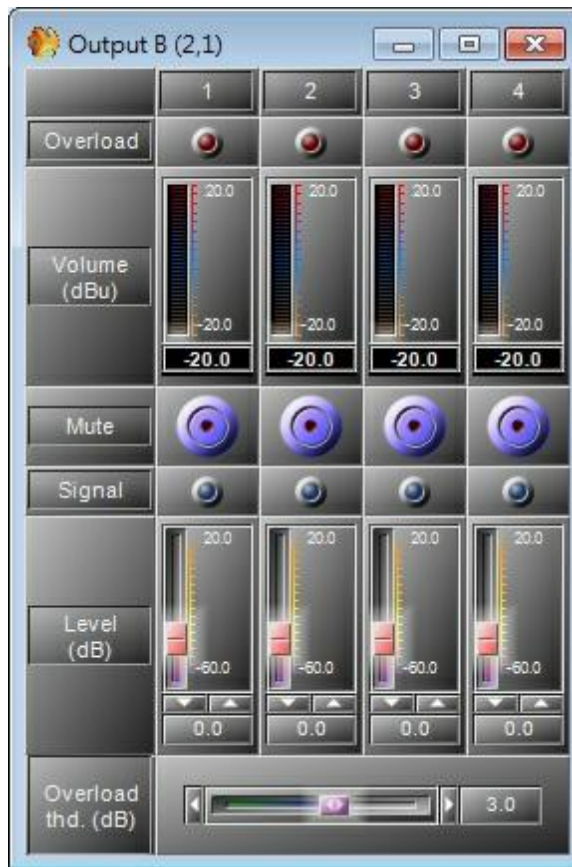
Analogue Output Parameters

Parameter	Range	Comment
Clip	lit red	Indicates channel level above chosen 'Clip Threshold (dB)'.
Volume (dB)	-90.0 to +20.0 dB	Mutes or un-mutes the input channel; LED, lit red with channel muted.
Mute	On/Off	Mute On/Off Mutes or un-mutes the output channel; LED, lit red with channel muted.
Signal	LED, lit blue @ -30 dB	Indicates audio signal presence above -30 dB.
Level (dB)	-60.0 to +20.0 dB	Signal output level of the module
Clip Threshold	-20.0 to +20.0 dB	Sets the threshold of the Clip indicator.

6.3 Mixer

Mix or route several signal to an Output.

Since the UAPG2 software only compiles active nodes, there is no use having a whole bunch of mixers, like 2x1, 3x1, to (n)x1, then 2x2, 3x2, to (n)x2, etc. It simply makes no difference if you take a 4x4 from the 4x4 component or the 16x16.

The mixer folder in the 'Component' control window holds three items:

Within these items you can find the following modules:

- Standard:
    - 4x4: 4 inputs mixing to 4 outputs.
    - 8x8: 8 inputs mixing to 8 outputs.
    - 16x16: 16 inputs mixing to 16 outputs.
- Matrix:
    - 4x4: 4 inputs routing to 4 outputs.
    - 8x8: 8 inputs routing to 8 outputs.
    - 16x16: 16 inputs routing to 16 outputs.
- Automixer:
    - 4x1: mixing/priority switching of 4 inputs to 1 output.
    - 8x1: mixing/priority switching of 8 inputs to 1 output.
    - 16x1: mixing/priority switching of 16 inputs to 1 output.

6.3.1   Matrix

❖ Component Template

❖ Component Appearance

Mix several signals to Output(s). The mixer components are organized in a sub-folder named 'Standard' holding the modules '4x4', '8x8' and '16x16'.
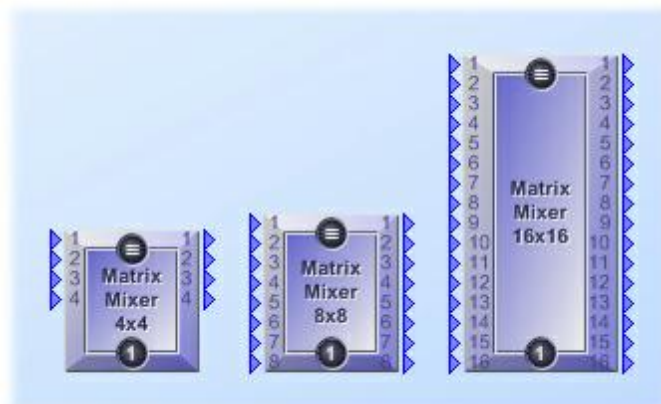
❖ Description

This component mix several signals to Output(s).

❖ Control Window

The only difference of these modules is their number of in- and outputs, let's take a detailed look just to the smallest one, the 4x4. The control window of the 'Standard Mixer' module is opened by a double click on the icon in the 'UAPG2' design window and appears like this:

Clicking the orange colored function [Output(n)] buttons under the label 'Variable Matrix' in the middle of the window opens the sub control windows of the particular output channels.

In here you can create an individual mix of the input signals independently for the specified output. By default all levels are set to 0 db, which basically means, that all audio signals at the input are mixed with no attenuation and appear like this on every output.

Standard Mixer (Master) Parameters

Parameter	Range	Comment
Input Mute	On/Off	Mutes or un-mutes the input channels.
Input Level (dB)	-60.0 to +20.0 dB	Sets the input level of the channel.
Variable Matrix	Button	Opens the sub control window 'Standard Mixer for routing and mixing input channels to the specified output
Output Level (dB)	-90.0 to +20.0 dB	Sets the master output level of the channel
Output Mute	On/Off	Mutes or un-mutes the output channel.

Standard Mixer Parameters

Parameter	Range	Comment
Level (dB)	-60.0 to +20.0 dB	Sets the input levels mixed to the particular output.

6.3.2   Standard

❖ Component Template
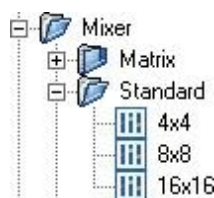
❖ Component Appearance

Route several signals to Output(s). The matrix components are organized in a sub-folder named 'Matrix' holding the modules '4x4', '8x8' and '16x16':
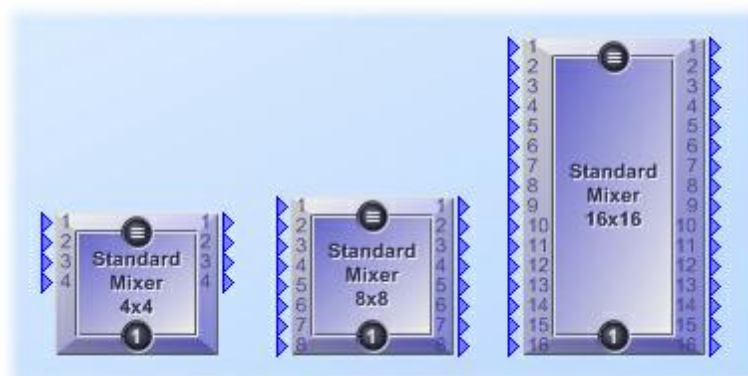
❖ Description

This component routes several signals to Outputs.

❖ Control Window

Since the only difference of these modules is their number of in- and outputs, let's take a detailed look just to the smallest one, the 4x4. The control window of the 'Matrix' module is opened by a double click on the icon in the 'UAPG2' design window and appears like this:

The matrix module is similar to the standard mixer, with the main difference, that there is no ability to make independent mixes for each output channel. So the module primary is used for simple routing purposes.

By default routing is set 1 to 1; audio at each input channel only appears on the particular output channel with unity gain. In short: The module does nothing at all.

Matrix Parameters

Parameter	Range	Comment
Input Mute	On/Off	Mutes or un-mutes the input channels.
Input Level (dB)	-90.0 to +20.0 dB	Sets the input level of the channel.
Routing Buttons	On/Off	Turns on/off the input on the particular output channel.
Output Level (dB)	-90.0 to +20.0 dB	Sets the master output level of the channel
Output Mute	On/Off	Mutes or un-mutes the output channel.

6.3.3 AutoMixer

❖ Component Template

❖ Component Appearance
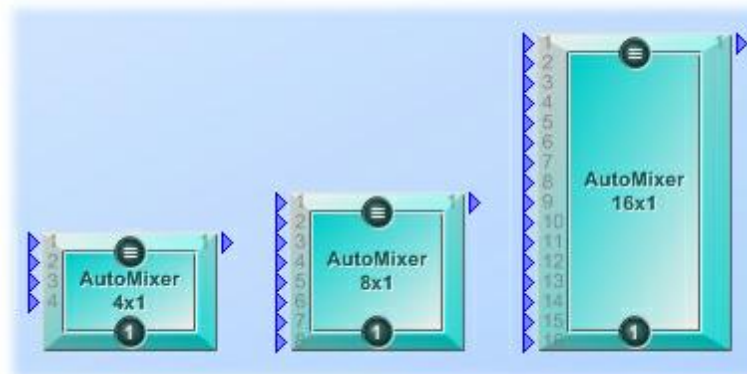
❖ Description

This component allows mix several signals to one output. The Activation of channel(s) can be done manually or automatically by signal threshold and priority.

❖ Control Window

Since the only difference of these modules is their number of inputs, let's take a detailed look just to the smallest one, the 4x1. The control window of the 'Automixer' module is opened by a double click on the icon in the 'UAPG2' design window and appears like this:

The auto mixer adjusts the signal output level on the output node depending on the number of activated input channels. This function can be useful in conference applications or houses of workshop, where usually unattended mixing has to be executed. A special feature of this component is the priority function, which can be used for auto-paging applications or to implement a voice triggered chairman's mike in a small conference system.

Automixer Parameters

Parameter	Range	Comment
Mute	On/Off	Mutes or un-mutes the input channel
Invert	0°/180°	Inverts the polarity of the input channel.
Solo	On/Off	Solos the input channel. (the channel goes directly to the output)
Gate On	LED, lit green	Shows activation status of the input channel.
Level (dB)	-90.0 to +20.0 dB	Adjusts the level of the output channel.
Manual Mode	On/Off	Only used in manual mode (see "Manual/Automatic") It allows manual channel activation.
Automatic Mode Priority Level	1 to (n)	Sets the priority level of the channel. 1 is the most priority.
Output mute	On/Off	Mutes or un-mutes the module's output.
Output level (dB)	-90.0 to +20.0 dB	Sets the module's output level.
Threshold (dB)	-90.0 to +20.0 dB	Sets the threshold for channel activation.
Hold time (s)	0 to 10 s	Sets a hold time for the gate deactivation.
Attenuation Response time (ms)	10 ms to 10.0 s	Sets a pre delay time for automatic attenuation. That's means the transition time of the attenuation when a channel is added or removed.
Background threshold (%)	0.0 to 100.0%	Sets how the input signal is interpreted to open a gate. The background level will increase the input activation level.
NOM attenuation step (dB)	0.0 to 6.0 dB	Sets the amount of attenuation to be applied each time the number of activated channels increases.
NOM attenuation	0.0 to 100.0 dB	Limits the amount of attenuation to be applied.

Parameter	Range	Comment
max (dB)		
Attn. Gain (dB)	-100.0 to +20.0 dB	Indicates the amount of current gain reduction
Last Mic. On	On/Off	Enables the last mic on function. If activate, even if there is no audio on the inputs, one channel will stay open. (see "Last Mic.On designated" parameter)
Last Mic. On designated	Ch 1 to (n), Last Mic.	Defines which channel will stay open (Only if "Last Mic. On" is activated). Caution the channel will stay open even if it's muted.
Open Mic. Limits	1 to Non Limit	Chooses the maximum number of simultaneously activated channels.
Manual/Automatic	Manual or Automatic	Select the mode, manual or automatic. Manual mode : Only manual channel activation (threshold and priority are ignored) Automatic mode : With priority and threshold channel activation.
NOM attenuation mode	Eq1 or Eq2	Chose here if you want a linear attenuation or a logarithmic attenuation which is more near of the reality. Eq1 : (NOM-1) x step (same attenuation for each addicting channel), Eq2: log2(NOM) x step

- Channel activation:

    At first, on the "Manual/Automatic" selector chose if you want manual or automatic channel activation.

    o Manual: The activation is only done manually with the "Manual" buttons. The threshold and the priority are ignored.

    o Automatic: The activation is depending of the threshold, and of the priority. It will pass only highest priority channel out. If several channels have the same priority, they all will be mixed to the output together when they will be priority.

- Attenuation:

    The attenuation is always active. It doesn't depend of the mode.

- The background threshold:

    The background threshold allows adjusting the input level activation depending on the background level.

    If the background threshold is more than at 0%, the background level will increase the input activation level. You can adjust the relation between the background and the activation level by move the background threshold knobs.

    Threshold' = Threshold+(mixing input*Background threshold percent).

    PS: The used values to calculate are not in dB.

    o Example 1:

        One input in 0.5db => mixing input=1.059253725177289*1= 1.059253725177289

        Threshold=0dB =1

        Background threshold percent=5%

        Threshold'=1+(1.059253725177289*0.05)=1.052962686258864

In this case input=0.5db is almost critical point

Input >=0.5dB then on,

Input<0.5dB then off.

o Example 2:

Two input in 9.5db => mixing input=2.985382618917960*2=5.970765237835919

Threshold=5dB =1.778279410038923

Background threshold percent=20%

Threshold'=1.778279410038923+(5.970765237835919*0.05)=2.972432457606106

In this case input=0.5db is almost critical point

Input >=9.5dB then on,

Input<9.5dB then off.

6.4   Compressor/Limiter/Expander

The 'Compressor/Limiter/Expander' folder in the 'Component' control window holds for items:

They represent the dynamic section and consist of the following modules:

- Limiter: Single channel limiter, triggered by input level (Feed-Forward type).
- Compressor" Single channel compressor, triggered by input level (Feed-Forward type).
- Expander: Single channel expander, triggered by input level (Feed-Forward type).
- Comp-Limiter: It provides a simplified compressor and a limiter together.

6.4.1   Compressor

❖ Component Appearance

The first module within the 'Compressor/Limiter' folder is a simple single channel 'Feed-Forward' type compressor device:

❖ Description

A compressor is an automatic volume control. Loud sounds over a certain threshold are reduced in level while quiet sounds remain untreated. In this way it reduces the dynamic range of an audio signal. This may be done for aesthetic reasons, to deal with technical limitations of audio equipment, or to improve audibility of audio in noisy environments. Compression reduces the level of the loud sounds, but not the quiet sounds, thus, the level can be raised to a point where the quiet

sounds are more audible without the loud sounds being too loud.

❖ Control Window

The control window of the 'Compressor' module is opened by a double click on the icon in the 'UAPG2' design window and appears like this:

The compressor's control window features a graphical display/editor window which is opened by a click on the [Graph] button at the top left side of the control window and looks like this:

The display/editor window displays an output to input graph, where the vertical axis corresponds to the output signal level in dB, while the horizontal axis displays the input signal level in dB. The green line reflects the currently set dynamic response graph of the compressor.

The small squares act as handles that can be dragged to the desired position and show the following parameters:

- Red Ratio x:1

- Blue Threshold (dB)

o Yellow Threshold range (dB)

Compressor Parameters

Parameter	Range	Comment
Graph…	Button	Opens the graphical display/editor window.
Ratio x:1	0.10 to 1.00	Sets compression ratio.
Threshold (dB)	- 60.0 to +20.0 dB	Sets 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) (Attack)	10 to 1000 ms	Sets the time it takes to respond to the input signal.
Release time (ms) (Release)	10 to 1000 ms	Sets the time it takes to release gain reduction.
Gain reduction (dB)	0.0 to -25.0 dB	Reflects the current amount of gain reduction.
Bypass	On/Off	Bypasses the compressor's function.
Soft knee	On/Off	Enables/disables the "Soft Knee" mode.
Compress	LED, lit green	Indicates compression.

6.4.2   Limiter

❖ Component Appearance

❖ Description

The second module within the 'Compressor/Limiter' folder is a simple single channel 'Feed-Forward' type limiter.

❖ Control Window

The control window of the 'Limiter' module is opened by a double click on the icon in the 'UAPG2' design window and appears like this:

The limiter's control window features a graphical display/editor window which is opened by a click on the [Graph] button at the top left side of the control window and looks like this:

The display/editor window displays an output to input graph, where the vertical axis corresponds to the output signal level in dB, while the horizontal axis displays the input signal level in dB. The green line reflects the currently set dynamic response graph of the compressor.

The small squares act as handles that can be dragged to the desired position and show the following parameters:

- Blue Threshold (dB)

Hard Clipping mode:

This is an example of a sinusoidal signal limited with and without Hard Clipping.

Without Hard Clipping   **with Hard Clipping**
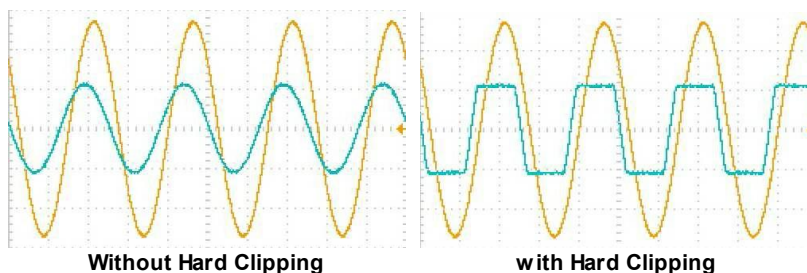
If the input signal is a lot higher than the threshold the signal will be almost identical to the hard clipping. The limiter is a crude way of limiting. For smoother limiting a compressor is a better solution.

Limiter Parameters

Parameter	Range	Comment
Graph...	Button	Opens the graphical display/editor window.
Threshold (dB)	- 60.0 to +20.0 dB	Sets the threshold level above which limiting begins.
Release time (ms)	10 to 1000 ms	Sets the time it takes to release gain reduction.
Bypass	On/Off	Bypasses the limiter's function.

Parameter	Range	Comment
Hard Clipping	On/Off	Enables/disables the "Hard clipping" mode.
Limiting	LED, lit red	Indicates limiting.
Gain reduction (dB)	0.0 to -45.0 dB	Reflects the current amount of gain reduction.

6.4.3 Comp/Limiter

❖ Component Appearance

The third module within the 'Compressor/Limiter' folder is a combination of the compressor and the limiter modules described earlier:
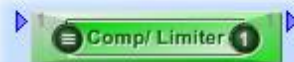
❖ Description

This component is the combination of the compressor and the limiter.

❖ Control Window

The control window of the 'CompLimiter' module is opened by a double click on the icon in the 'UAP G2' design window and appears like this:

As this component is works exactly like the separately described modules please refer to the parameter list of Compressor and Limiter.

6.4.4 Expander

❖ Component Appearance

The only module within the 'Expander' folder is a simple expander of the same 'Feed-Forward' type like the compressor:

❖ Description

An expander works in an opposite fashion than the compressor, the threshold is set and any part of the signal dropping below this threshold will be affected by the expander and this level will be raised. The expander therefore like the compressor balances out the signal making it sound more professional. The expander allows having a signal with a bigger dynamic range.

❖ Control Window

The control window of the 'Expander' module is opened by a double click on the icon in the 'UAPG2' design window and appears like this:

The compressor's control window features a graphical display/editor window which is opened by a click on the [Graph] button at the top left side of the control window and looks like this:

The display/editor window displays an output to input graph, where the vertical axis corresponds to the output signal level in dB, while the horizontal axis displays the input signal level in dB. The green line reflects the currently set dynamic response graph of the compressor.

The small squares act as handles that can be dragged to the desired position and show the following parameters:

- o Red Ratio x:1

- o Blue Threshold (dB)

- o Yellow Threshold range (dB)

<u>*Expander Parameters*</u>

Parameter	Range	Comment
Graph…	Button	Opens the graphical display/editor window.
Ratio x:1	0.10 to 1.00	Sets expansion ratio.
Threshold (dB)	- 60.0 to +20.0 dB	Sets the threshold level above which expansion begins.
Threshold range (dB)	0.0 to 40.0 dB	Sets 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) (Attack)	10 to 1000 ms	Sets the time it takes to respond to the input signal.
Release time (ms) (Release)	10 to 1000 ms	Adjusts the time to stop the gain reduction.
Gain reduction (dB)	0.0 to -25.0 dB	Reflects the current amount of gain reduction.
Bypass	On/Off	Bypasses the compressor's function.
Soft knee	On/Off	Enables/disables the "Soft Knee" mode.
Expand	LED, lit red	Indicates that the function is active.

6.5   Equalizer

The 'Equalizer' folder in the 'Component' control window holds two sub-folders containing parametric and graphic EQs:
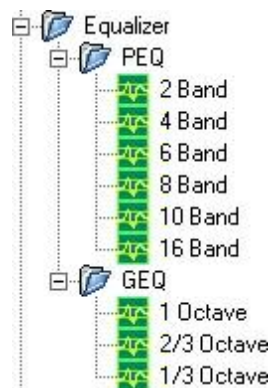
6.5.1   PEQ

❖ Component Appearance

You have six different PEQ modules, 2, 4, 6, 8, 10, 16 bands:
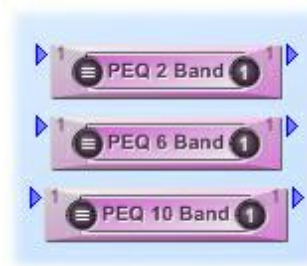
❖ Description

PEQ is abbreviation of parametric equalizer, PEQs are multi-band variable equalizers which allow users to control the three primary parameters: amplitude, center frequency and bandwidth. The amplitude of each band can be controlled, and the center frequency can be shifted, and bandwidth ("Q") can be widened or narrowed. PEQs are capable of making much more precise adjustments to sound than other equalizers, and are commonly used in sound recording and live sound reinforcement.

❖ Control Window

The control window of the 'PEQ' module is opened by a double click on the icon in the 'UAPG2' design window and appears like this (example for 4 bands):

The display/editor window displays an output to input graph, where the vertical axis corresponds to the output signal level in dB, while the horizontal axis displays the frequencies. The green line reflects the currently set dynamic response graph of the equalizer.

The small squares act as handles that can be dragged to the desired position and show the following parameters (example: 4 bands):

- Orange Bandwidth (-)
- Yellow Frequency (Hz)

Equalizer Parameters

Parameter	Range	Comment
Symmetry	-	Not available on next versions.
Bypass all	-	To bypass the EQ (all the frequency channel).
Bypass	-	Bypasses only the selected frequency channel.
Bandwidth	-	Set the width around the frequency (Q factor)
Frequency	-	Selects the frequency to adjust
Gain	-	Set the gain (attenuate or increase the selected frequency)
Graph	-	Open the graphic window

6.5.2   GEQ

❖ Component Appearance

You have three different GEQ modules, 1 Octave, 2/3 octave, 1/3 octave:

❖ Description

GEQ is abbreviation of graphic equalizer, in the graphic equalizer, the input signal is sent to a bank of filters. Each filter passes the portion of the signal present in its own frequency range or band. The amplitude passed by each filter is adjust using a slider in control window of UAPG2 software control to boost or cut frequency components passed by that filter. The vertical position of each slider thus indicates the gain applied at that frequency band.

The number of frequency channels (and therefore each one's bandwidth) affects the consuming DSP power of audio processor, and may be matched to the requirements of the intended application. An equalizer for professional live sound reinforcement typically has some 25 to 31 bands, for more precise control of feedback problems and equalization of room modes. There are three types of GEQ, 1 Octave, 2/3 Octave and 1/3 Octave. 1/3 Octave GEQ (spoken informally as "third-octave EQ") because the center frequency of its filters are spaced one third of an octave apart, three filters to an octave. Equalizers with half as many filters per octave are common where less precise control

is called a 2/3-octave equalizer, and so on the 1 Octave GEQ, that is one filters to an octave.

❖ Control Window

The control window of the 'GEQ' module is opened by a double click on the icon in the 'UAPG2'

design window and appears like this (example: 1 octave):
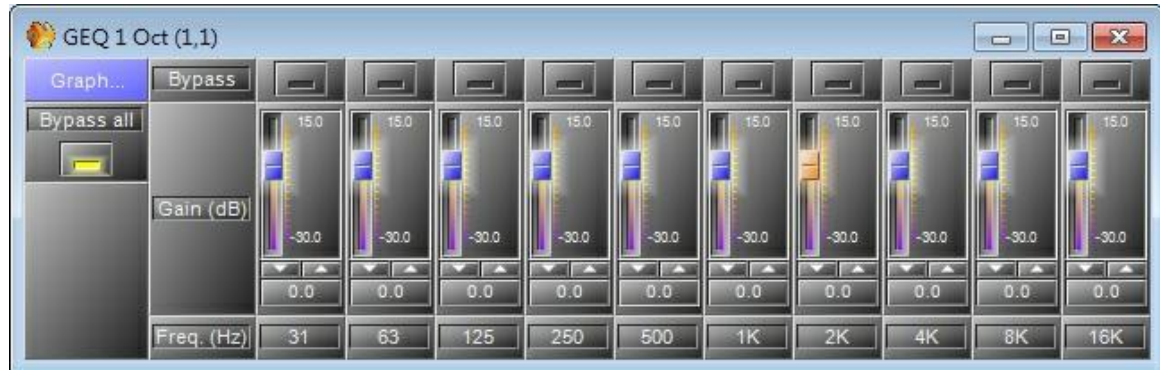
The display/editor window displays an output to input graph, where the vertical axis corresponds to the output signal level in dB, while the horizontal axis displays the frequencies. The green line reflects the currently set dynamic response graph of the equalizer. The small squares act as handles that can be dragged to the desired position and show the following parameters (example: 1 octave):

- Yellow Frequency (Hz)
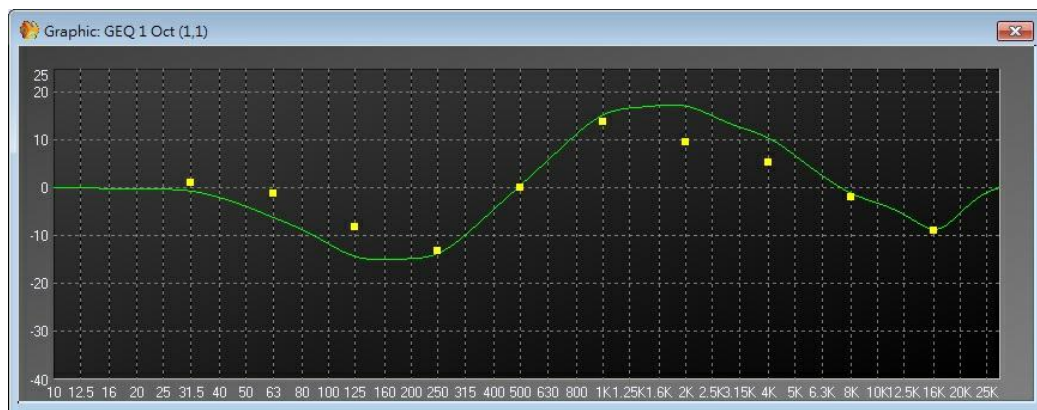
Equalizer Parameters

Parameter	Range	Comment
Bypass all	-	To bypass the EQ (all the frequency channel).
Bypass	-	Bypasses only the selected frequency channel.
Frequency	-	Show the frequency
Gain	-	Set the gain of the frequency
Graph	-	Open the graphic window

6.6   Delay Basic

❖ Component Template
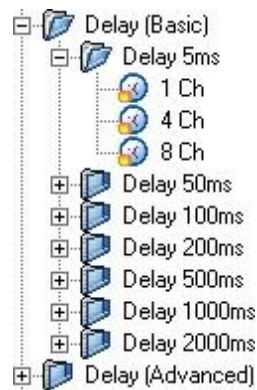
❖ Component Appearance
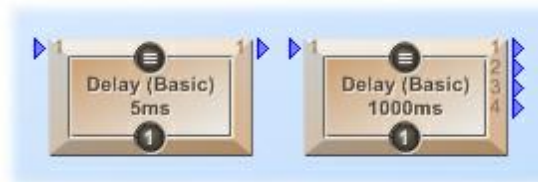
❖ Description

Delay (basics) provides all to delay the signal. You have choice between seven times (you can adjust precise time) and each sub-folders contains three components with various numbers of outputs. The difference between basic and advanced is that for the advanced you can mute or bypass delayed channels.

❖ Control Window

Delay Parameters

Parameter	Range	Comment
Type	Button	Chose between adjustments with Time or with Distance and temperature
Delay time (us)	-	Adjust the delay time (Type: switch on)
Temp (C)	-	Enter the ambient temperature in Celsius degrees (Type: switch off)
Gain	-	Adjust the distance in meter (Type: switch off)

6.7   Delay Advanced

❖ Component Template
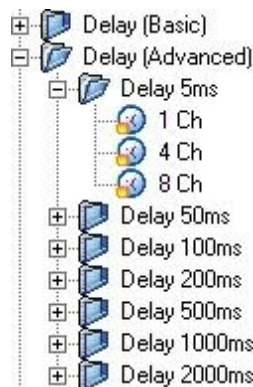
❖ Component Appearance
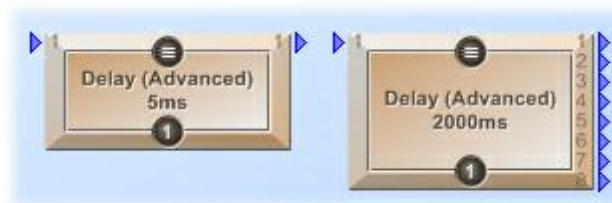
❖ Description

Delay (Advanced) provides all to delay the signal. You have choice between seven times (you can adjust precise time) and each sub-folders contains three components with various numbers of outputs. The difference between basic and advanced is that for the advanced you can mute or bypass delayed channels.

❖ Control Window

By double-clicking on the component's icon (for example: 50ms 4 Ch.) a settings window appears:

Delay Parameters

Parameter	Range	Comment
Type	Button	Choose between adjustments with Time or with Distance and temperature
Mute all	Button	Mute all channels
Bypass all	Button	Bypass all channels (disable the delay function)
Mute	Button	Mute the channel
Bypass	Button	Bypass the channel (disable the delay for this channel)
Delay time (us)	-	Adjust the delay time (Type: switch on)
Temp (C)	-	Enter the ambient temperature in Celsius degrees (Type: switch off)
Gain	-	Adjust the distance in meter (Type: switch off)

6.8   Gate

The gate allows you to cut off the signal below a chosen threshold.

You can choose between four different gates:

- Mono

- With Sidechain

- Stereo

6.8.1   Gate Mono

❖ Component Appearance

The first module within the "Gate" folder is a simple single channel:

❖ Description

The gate allows you to cut off the signal below a chosen threshold.

❖ Control Window
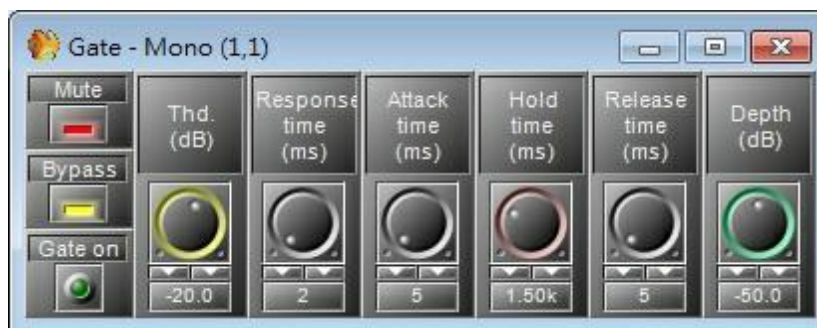
Gate Parameters

Parameter	Range	Comment
Mute	Button	Mute the gate's module
Bypass	Button	Switch off the gate's operation
Gate on	LED, lit green	Flash when the gate is active (open)
Thd. (Threshold) (dB)	-60.0 to +20.0 dB	Sets the threshold level above which the Gate will open.
Response time	0 to 5000 ms	Adjust the time between the level's detection and the beginning of the Gate operation
Attack time (ms)	0 to 1000 ms	Adjust the fade-in time of the signal when Gate is working.
Hold time	0 to 5000 ms	Adjust the time between the end level's detection and the end of the Gate operation
Release time (ms)	10 to 10000 ms	Adjust the fade-out time of the signal when Gate is no longer working
Depth (dB)	-100 to 0 dB	Attenuate the level when the Gate is active.

6.8.2 Gate With Sidechain

❖ Component Appearance

❖ Description

With this gate, you can control a gate on an audio channel (I) with an external sidechain signal(S).

When the Sidechain input (S) input goes above the threshold, the gate becomes active and the signal on Input (I) goes to the output.

❖ Control Window

Gate Parameters

Parameter	Range	Comment
Mute	Button	Mute the gate's module
Bypass	Button	Switch off the gate's operation
Gate on	LED, lit green	Flash when the gate is active (open)
Sidechain gain (dB)	-35.0 to + 35.0 dB	Set the volume of the signal connected in the input S
Input gain (dB)	-35.0 to + 35.0 dB	Set the volume of the signal connected in the input I
Thd. (Threshold) (dB)	-60.0 to +20.0 dB	Sets the threshold level above which the Gate will open.
Response time	0 to 5000 ms	Adjust the time between the level's detection and the beginning of the Gate operation
Attack time (ms)	0 to 1000 ms	Adjust the fade-in time of the signal when Gate is working.
Hold time	0 to 5000 ms	Adjust the time between the end level's detection and the end of the Gate operation
Release time (ms)	10 to 10000 ms	Adjust the fade-out time of the signal when Gate is no longer working

Parameter	Range	Comment
Depth (dB)	-100 to 0 dB	Attenuate the level when the Gate is active.

6.8.3   Gate Stereo

❖ Component Appearance


❖ Description

Simple double channel Gate.

❖ Control Window

The control window of the "Gate - Stereo" module is opened by a double click on the icon in the'UAPG2' design window and appears like this:

When one of the inputs goes above the threshold, the gate becomes active and the both left and right input signals are routed to the output.

Gate Parameters

Parameter	Range	Comment
Mute	Button	Mute the gate's module
Bypass	Button	Switch off the gate's operation
Gate on	LED, lit green	Flash when the gate is active (open)
Left gain (dB)	-35.0 to + 35.0 dB	Set the volume of the signal connected in the input L
Right gain (dB)	-35.0 to + 35.0 dB	Set the volume of the signal connected in the input R
Thd. (Threshold) (dB)	-60.0 to +20.0 dB	Sets the threshold level above which the Gate will open.
Response time	0 to 5000 ms	Adjust the time between the level's detection and the beginning of the Gate operation
Attack time (ms)	0 to 1000 ms	Adjust the fade-in time of the signal when Gate is working.
Hold time	0 to 5000 ms	Adjust the time between the end level's detection and the end of the Gate operation
Release time (ms)	10 to 10000 ms	Adjust the fade-out time of the signal when Gate is no longer working
Left Depth (dB)	-100 to 0 dB	Attenuate the level when the Gate is active.
Right Depth (dB)	-100 to 0 dB	Attenuate the level when the Gate is active.

6.9   AGC

6.9.1   Example of AGC using

As example, we want to automatically adjust the gain of a kind of SM58 microphone.
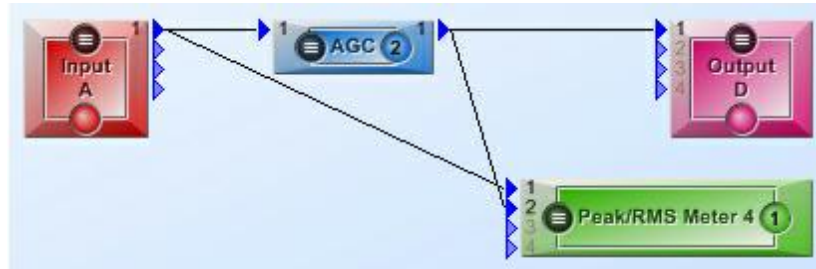
On the "Input A" component, the input sensitivity is set to -40dB for standard dynamic microphone.

- Threshold: Set at -25dB. The level is adjusted only when the input signal is above -25dB. This is to keep a natural dynamic.

- Target level: We want a final target level at -10dB.

- Maximum gain: Set at 10dB, because giving more gain will generate some uncomfortable level differences.

- Release time: Set at 800(ms), enough time to avoid hard transition when the speaker talks again, after a little break.

- Attack time: Set at 400(ms), enough time to avoid hard transition when the speaker begin to talks, and not too long because we want a stable level quickly (not since the middle of the sentence).

- AVG time: Set at 200(ms), not too long, to detect short peaks in the speech and to be responsive. Not too short to avoid level change too often.

You can see on the vu-meter that when the speaker talks at 18dBu, the final level is around -10.5dBu:

Left to right: Input Level, AGC level, RMS vu-meter (AGC in and AGC out)
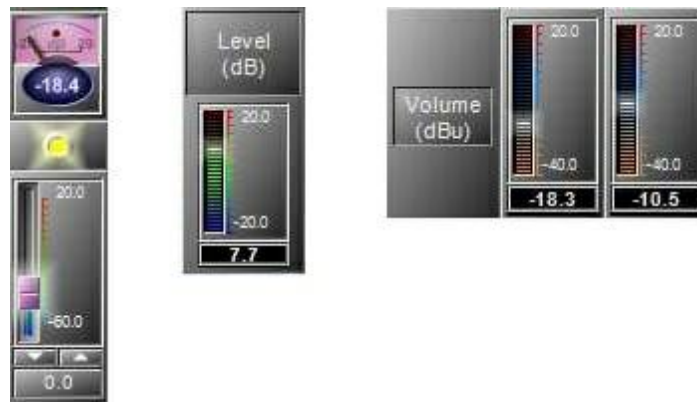
6.10 Ducker

❖ Component Template
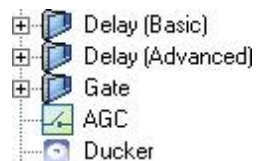
❖ Component Appearance

❖ Description

The ducker is a kind of "sophisticated switch" allowing to attenuate or switch off automatically the signal arriving in input A when a chosen level (in dB) is perceived in input S.

❖ Control Window
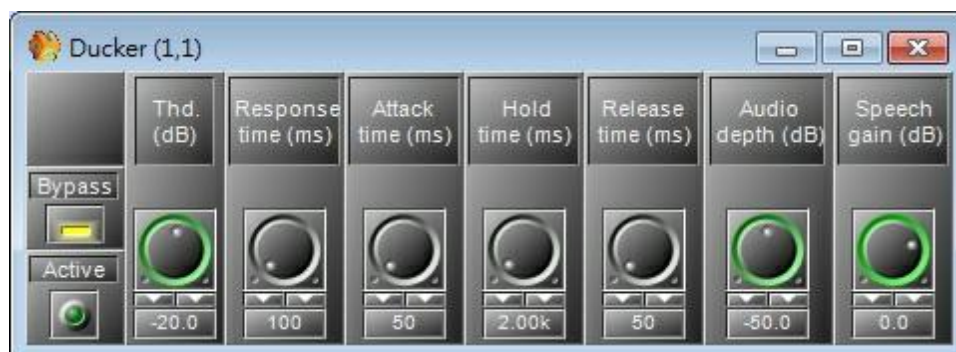
Ducker Parameters

Parameter	Range	Comment
Bypass	Button	Switches off the Ducker's operations
Active	LED, lit green	Flashes when the Ducker is active (Signal has been detected on input S)

Parameter	Range	Comment
Thd. (Threshold) (dB)	60.0 to 20.0 dB	Threshold of detection on the input (S). The input (A) is attenuate when input signal (S) goes above this threshold. Advice : To avoid unexpected attenuation, don't set a low threshold level
Response time	0 to 5000 ms	Adjust the time between the S level's detection and the beginning of the Ducker's operation on the A signal. Advice : Don't set a long "response time", otherwise you won't hear the beginning the (S) signal (as the first words of the speech).
Attack time (ms)	0 to 1000 ms	Adjust the fade-in time of the (A) signal when Ducker's is working.
Hold time	0 to 5000 ms	Adjust the time between the end (S) level's detection and the end of the Ducker's operation Advice : Set enough "Hold time" to avoid unexpected background level during the speech's breaks.
Release time (ms)	10 to 10000 ms	Adjust the fade-out time of the A signal when Ducker's is no longer working
Audio Depth (dB)	-100 to 0 dB	Adjusts the A level when the Ducker is active.
Speech gain (dB)	-60.0 to+ 20.0 dB	Adjusts the S level when the Ducker is active.

❖ Example:

As simple example, we will set a system for a speaker with background music.

When the speaker is talking, the background music must decrease its level.

The speaking is using a standard dynamic microphone type SM58. The microphone is connected to the channel 2 of the "Input A" component, with a input sensitivity at -40dB (set in the input A component). Then the microphone is linked to the input (S) of the ducker.

The music player (as a CD player) is connected to the input 1 of the "Input A" component. Then the music is linked to the input (A) of the ducker.
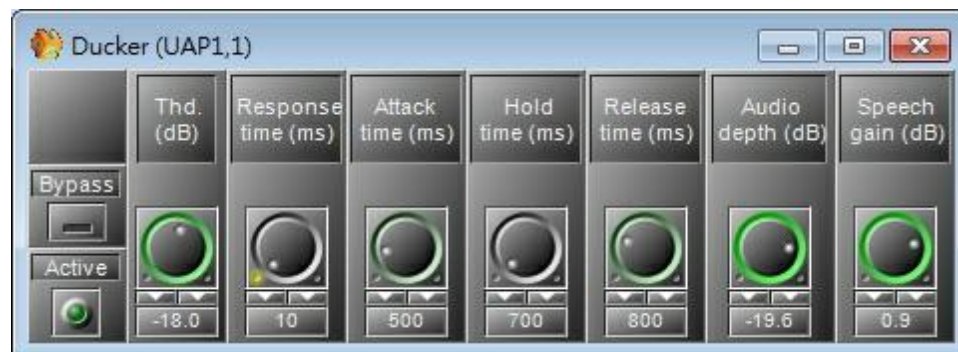
- **Threshold:** set at -18dB, because less would active the attenuation when the speaker is not talking if the microphone catch some unexpected noise.

- **Response time:** set very short, because the background music must be attenuated as soon

as the speaker is talking.

- **Attack and Release times:** Which are the "fade in" and "fade out" on the background music. Set almost one second for the hearing comfort, we want a kind music transition.

- **Hold time:** Set at 700(ms), enough to avoid the music back during the speech breaks.

- **Audio depth:** Set at -20dB, to hear the music during the speech, but at very low level (depending of the context).

6.11 Inverter

❖ Component Template

❖ Component Appearance

❖ Control Window

The control window of the "Inverter" module is opened by a double click on the icon in the 'UAPG2' design window and appears like this:

Inverter Parameters

Parameter	Range	Comment
Mute	Button	Mute the Inverter's module
Invert.	Button	Activate the inverter

6.12   Filter

The filters allow to attenuate or to select a specific frequency or band of frequency.
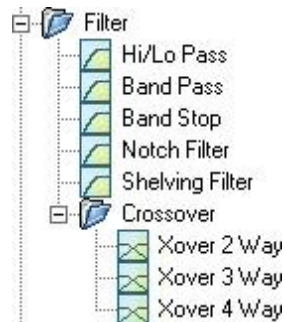
The Crossover splits the signal in sub-signal with 2, 3 or 4 Way. Each way contains a specific frequency band. For example:

Low, Bass medium, High medium and High (4 ways).

Useful for active loudspeaker system.

6.12.1   Hi/Lo Pass

❖ Component Appearance

❖ Description

This component allows you to filter Hi or low frequencies.
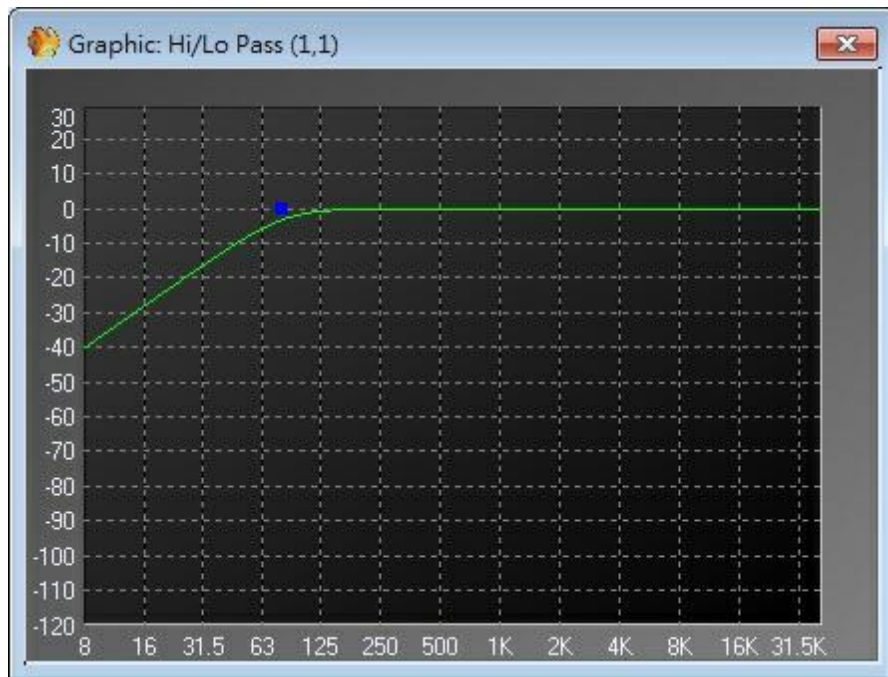
❖ Control Window

The small squares act as handles that can be dragged to the desired position and show the following parameters):

- Blue Frequency (Hz)

Hi/Lo Pass Parameters

Parameter	Range	Comment
Mode	-	Type of filtering
Slope [dB]	12, 24, 36, 48	Slope of attenuation
Type	Low/High	Low or High pass
Bypass	Button	Bypass the filter's module
Mute	Button	Mute the filter's module
Frequency [Hz]	20 to 20k	Frequency of cut
Level [dB]	-90 to +20	gain

6.12.2 Band Pass

❖ Component Appearance

❖ Description

This component allows you to filter to have only a band of frequency.
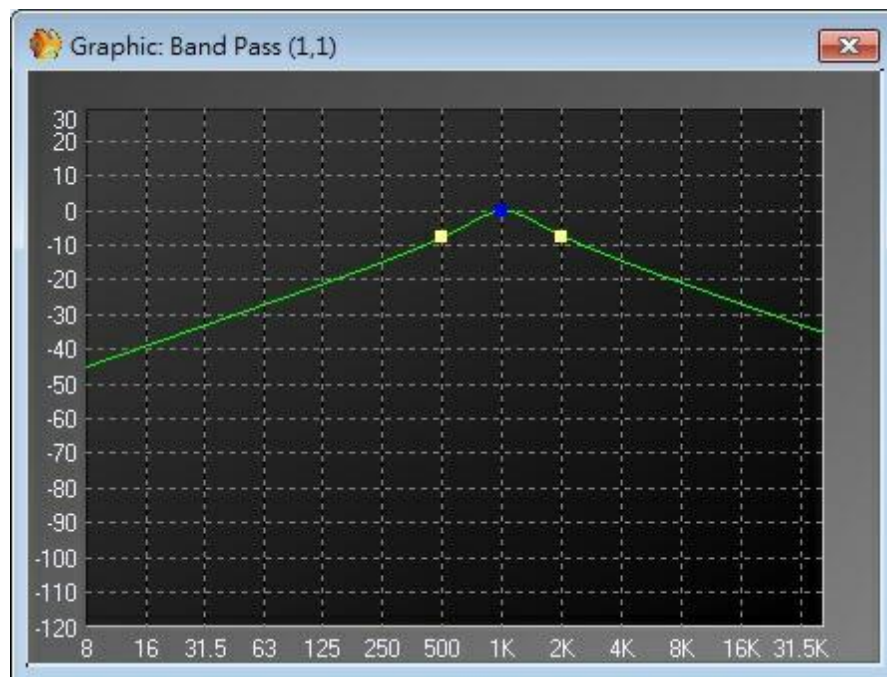
❖ Control Window

The small squares act as handles that can be dragged to the desired position and show the following parameters:

- Blue Frequency (Hz)

- Yellow Bandwidth (-)

Band Pass Parameters

Parameter	Range	Comment
Mode	-	Type of filtering
Slope [dB]	12, 24, 36, 48	Slope of attenuation
Type	Low/High	Low or High pass
Bypass	Button	Bypass the filter's module
Mute	Button	Mute the filter's module
Frequency [Hz]	20 to 20k	Frequency of cut
Level [dB]	-90 to +20	gain

6.12.3 Band Stop

❖ Component Appearance

❖ Description

This component allows you to filter to cut a band of frequency.
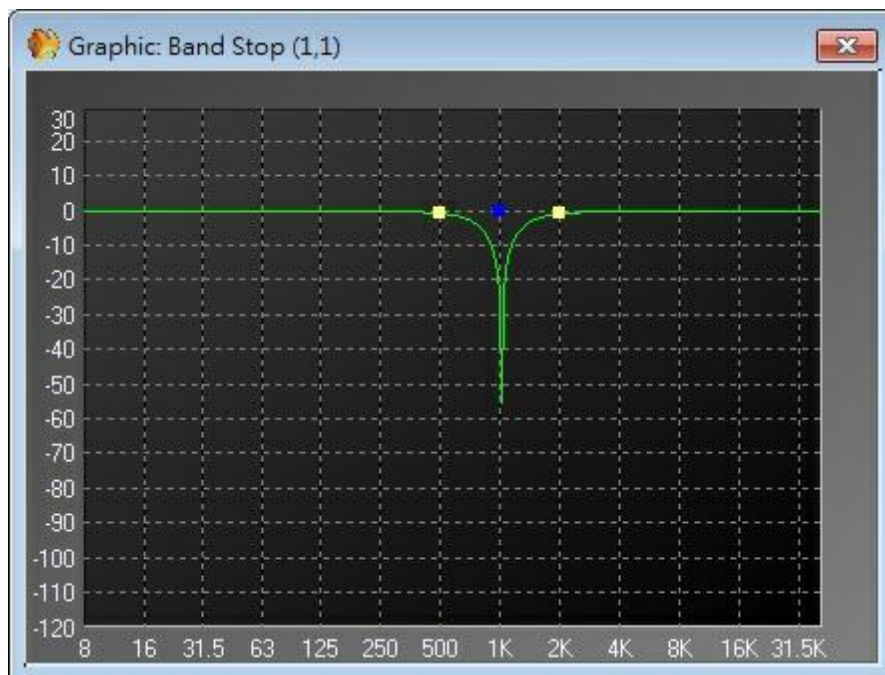
❖ Control Window

The small squares act as handles that can be dragged to the desired position and show the following parameters:

- Blue Frequency (Hz)

- Yellow Bandwidth (-)

<u>*Band stop Parameters*</u>

Parameter	Range	Comment
Mode	-	Type of filtering
Slope [dB]	12, 24, 36, 48	Slope of attenuation
Type	Low/High	Low or High pass
Bypass	Button	Bypass the filter's module
Mute	Button	Mute the filter's module
Frequency [Hz]	20 to 20k	Frequency of cut
Level [dB]	-90 to +20	gain

6.12.4 Notch Filter

❖ Component Appearance

❖ Description

This component allows you to filter to cut a frequency.

❖ Control Window
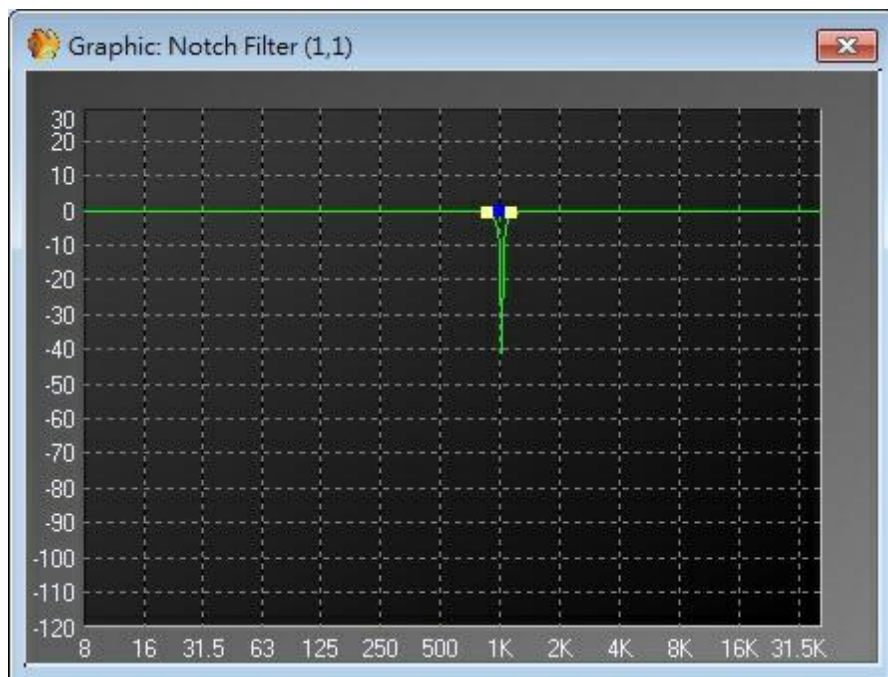
The small squares act as handles that can be dragged to the desired position and show the following parameters:

- Blue Frequency (Hz)

- Yellow Bandwidth (-)

Notch filter Parameters

Parameter	Range	Comment
Mode	-	Type of filtering
Slope [dB]	12, 24, 36, 48	Slope of attenuation
Type	Low/High	Low or High pass
Bypass	Button	Bypass the filter's module
Mute	Button	Mute the filter's module
Frequency [Hz]	20 to 20k	Frequency of cut
Level [dB]	-90 to +20	gain

6.12.5 Shelving Filter

❖ Component Appearance
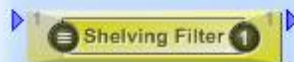
❖ Description

This component allows you to smoothly filter Hi or low frequencies.
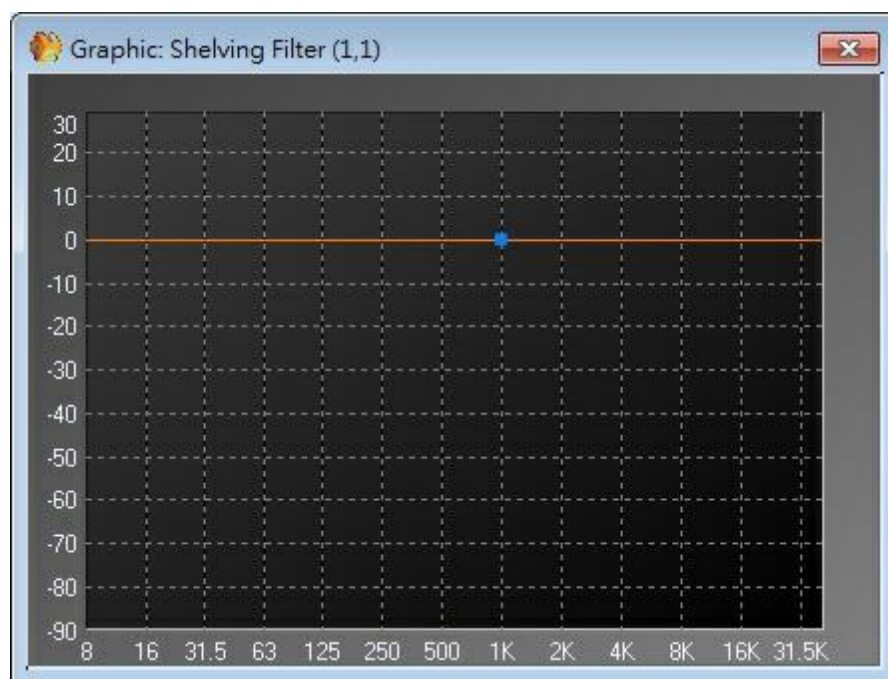
❖ Control Window

The small squares act as handles that can be dragged to the desired position and show the following parameters:

- Blue Frequency (Hz)

Shelving filter Parameters

Parameter	Range	Comment
Mode	Hi or Low	Type of filtering(high pass or low pass)
Bypass	Button	Bypass the filter's module
Frequency [Hz]	20 to 20k	Frequency of cut
Level [dB]	-90 to +20	gain

6.12.6 Crossover

❖ Component Appearance
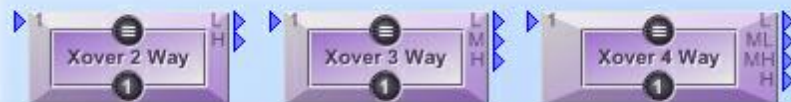
❖ Description

Use to filter signal for active audio pre amplifier for pro-audio sound. Three choice 2, 3 or 4 way In the example we have open the three way cross-over.

❖ Control Window

The small squares act as handles that can be dragged to the desired position and show the following parameters:

- Blue, yellow, red: Frequency of each way (Hz)

Hi/Lo pass Parameters (for each way)

Parameter	Range	Comment
Mode	Hi or Low	Type of filtering(high pass or low pass)
Invert	Button	Invert the phase of the signal
Slope [dB]	12, 24, 36, 48	Slope of attenuation
Mute	Button	Mute the filter's module
Frequency [Hz]	20 to 20k	Frequency of cut
Level [dB]	-90 to +20	gain

6.13 Feedback

❖ Component Template
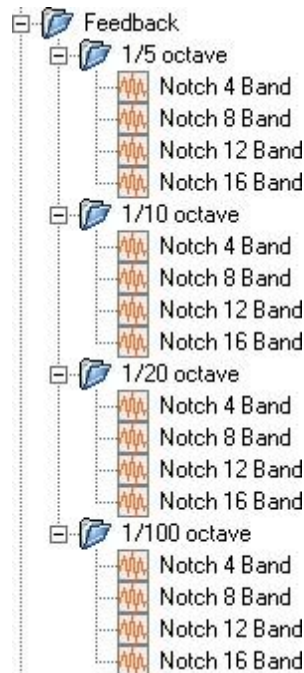
❖ Component Appearance
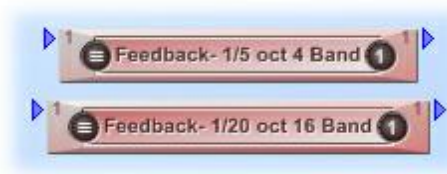
❖ Description

The feedback analyzes the signal, detects feedback and attenuates the responsible frequency. There is several kind of feedback component. The difference is only the bandwidth which are tuned for Music high than speech (between it the bandwidth is decreasing). Each category has 4 different feedback it is only the number of filter (4, 8 12 or 16) that the feedback will use. The treatment time is increased with the number of filter.

❖ Control Window

Tips: use feedback killers to detect feedback then note the frequency and replace feedback component with an Equalizer. And add a simply 4 notch feedback for security.

- Bypass: Bypass the feedback's module.

  Note: By clicking on Bypass you will erase the captured values such as frequencies, bandwidth and gain.

- Hold: when a Larsen is detected and a frequency locked the component hold this setting (like an EQ).

- Frequency: you can set the frequency.

- Bandwidth: bandwidth of the notch filter to attenuate the feedback.

- Gain: attenuation of the locked frequency.

- Lock: shows if the feedback killers channel has detected and is erased a frequency responsible of a feedback.

- Frequency: show the frequency locked.

- Bandwidth: show the bandwidth of the notch filter locked.

- Gain: show the attenuation of the frequency locked.

- Bypass all: bypass all channels.

- Hold all: hold all channels.

- Manual all: active manual settings (with Frequency, Bandwidth and gain knobs).

- Lock time: interval time during the filter will be active when a feedback is detected. After that the captured values will be loose.

- Detect level: level of feedback detection.

- Depth: means maximum reduction gain for filter.

⚠ By storing again the configuration, you will erase the captured values such as frequencies, bandwidth and gain.

6.14 DigiLink Input/Output

❖ Component Template
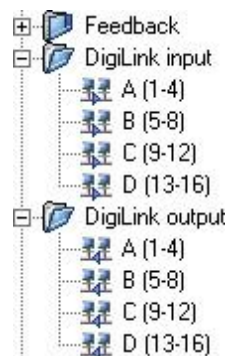
❖ Component Appearance
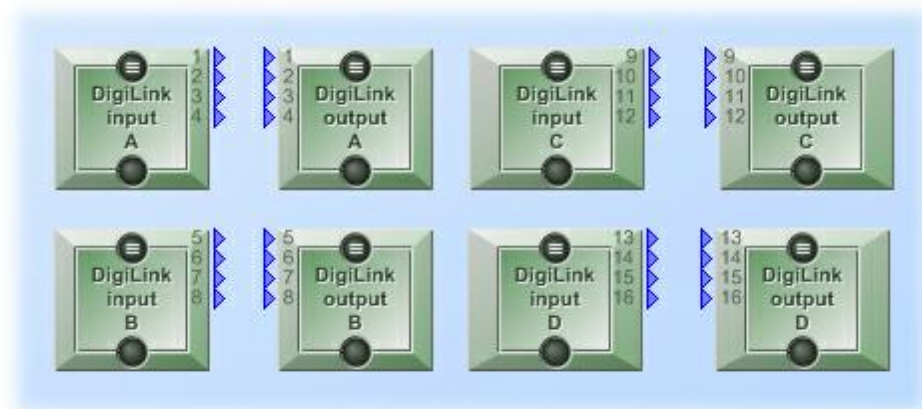
❖ Description

These components are for the connection of more than one UAPG2.

❖ Example

Create a virtual audio channel to send Audio through the Link protocol.

16 audio channels at 48 kHz are available from each UAP device to the next linked UAP, and 5 audio channel at 96 kHz.

- Send audio to the next UAP & Receive audio from the previous UAP

⚠ The Digilink component send the audio only to the next UAPG2 in the system (the first is connected to the PC), as in the following example.
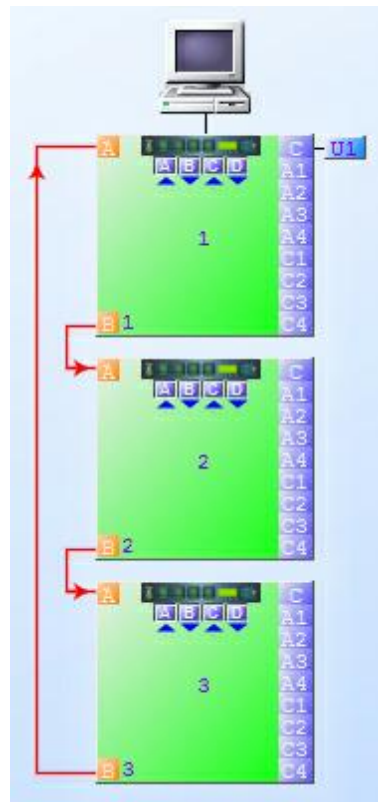
In this is an example, the paging microphone is able to page on the three UAPG2.
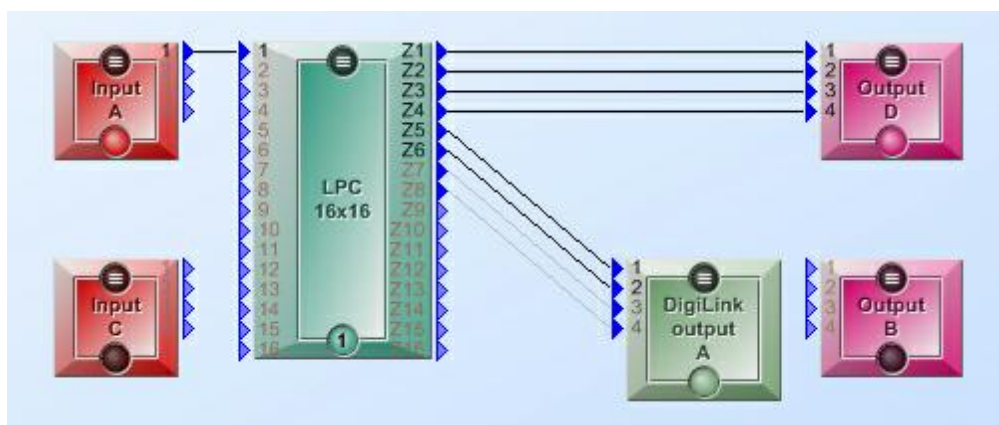
Components set in UAP1.
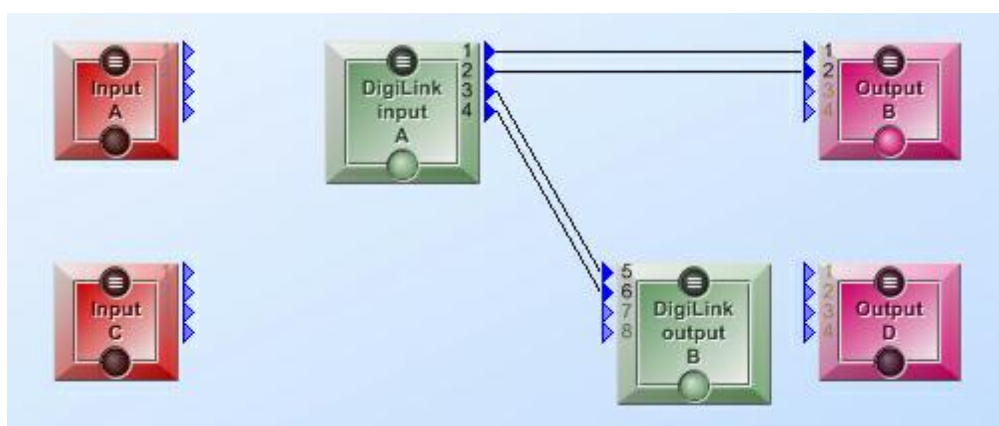
Components set in UAP2.

Components set in UAP3.

6.15 Page Control

This component allows you to route (page) audio signal to one or several desired outputs.
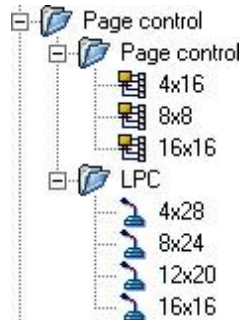
Two kinds of page control with various number of inputs and outputs

- S/W page control: for signal paging with contact IN and VOX.

- LPC: Only use with PPM (Ateis Programmable Paging Microphone) allows defining key's routing. (When you press one of the key of the PPM where the sound will be routed to.)

6.15.1 Page Control

❖ Component Appearance

❖ Description

With this component you can active and route the audio inputs to the outputs.

Caution, this is not a mixer, only one input can be routed to an output.

You can never have two inputs channels mixed to an output (even if they have the same priority), in this case the busy led of the lower channel number will light and theses channels won't be routed.

Each outputs work separately. On each one output, only the channels with the gate ON and with the highest priority will be routed.

❖ Control Window

- Outputs control (routing):

To route a channel to an output, click on an output button. This button can also be controlled.

So you can change the routing on the outputs by several ways. To choose what kind of control will activate or inactivate the "TTL In button", right click on an output button and choose in the list.

- Activation:

    o Fixed: The gate of the channel is always activated. Only the highest priority channel of the activated channels will be routed to the output.

    o VOX: The gate is activated when the audio signal on the input is above the threshold. (Choose the threshold with knobs on the bottom). Only the highest priority channel of the activated channels will be routed to the output.

    o Contact:The gate of the channel is activated when the "TTL In button" is activated. There is several ways to activate this button. Right click on the "TTL In button", and choose what control this button. Only the highest priority channel of the activated channels will be routed to the output.
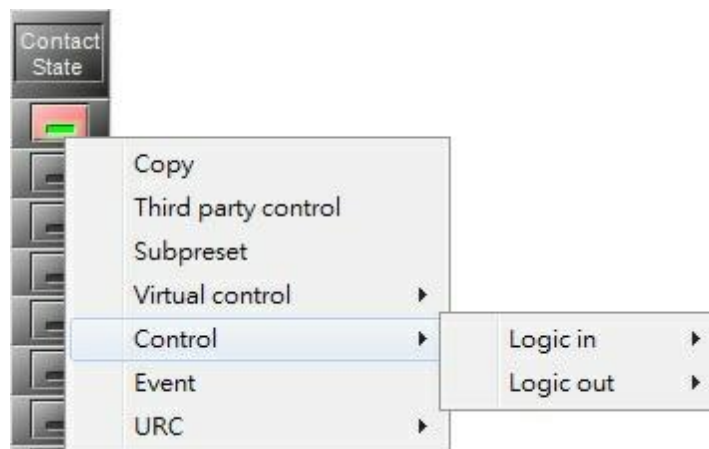
    o VOX + Contact:

    The gate of the channel is activated when the audio signal on the input is above the threshold, and if the "TTL In" button is activated. Only the highest priority channel of the activated channels will be routed to the output.

- Priority:

You can set a priority number for each channel. 1 is the biggest priority. When several channels are active (gate open), only one of the channel with the biggest priority will be routed.

If you have several channels with the same priority, only the highest channel number will be routed to the output.

Ducker Parameters

Parameter	Range	Comment
Input	-	Channel number of the input
Output	button	Click on the desired output's button to rout input to

Parameter	Range	Comment
		desired outputs
Activation	-	Type of activation of the routing (fixe, with TTL, or with a gate)
Contact State	Button	If you want to active the routing with a logical input (rear panel of UAP)
Priority	1 to 8	Choose the priority of this input (1 is the biggest priority)
Gate on	LED, lit green	Flash when the gate is active (open)
Solo	Button	Route this input
Busy	LED, lit red	Lit if the gate of the channel is open, but another channel with highest priority is already activate, and unable this channel to be routed to the output. Busy means: gate open, but channel not routed.
Thd. (Threshold) (dB)	-60.0 to +20.0 dB	Sets the threshold level above which Gate will open automatically route the signal.
Response time	0 to 5000 ms	Adjust the time between the level's detection and the beginning of the Gate operation
Hold time	0 to 5000 ms	Adjust the time between the end level's detection and the end of the Gate operation

6.15.2 LPC

❖ Component Appearance

There are several types of LPCs, various numbers of inputs as well as outputs.
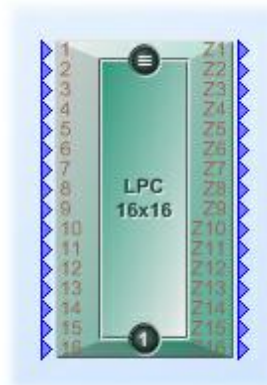
❖ Description

All the PPM connected to an UAPg2 will be configured in the same LPC component.

Connect the component's inputs to the virtual inputs of the UAPg2 where the PPMs are physically connected, then connect outputs of the component to virtual outputs (you can add audio component to adjust signal before and after the component: ducker, Eq, Mixer….).

❖ Control Window

Then in the component, select the right physique input of the PPM (to define key) in the PPM plug on.

After that create your paging (notch which key route where…)
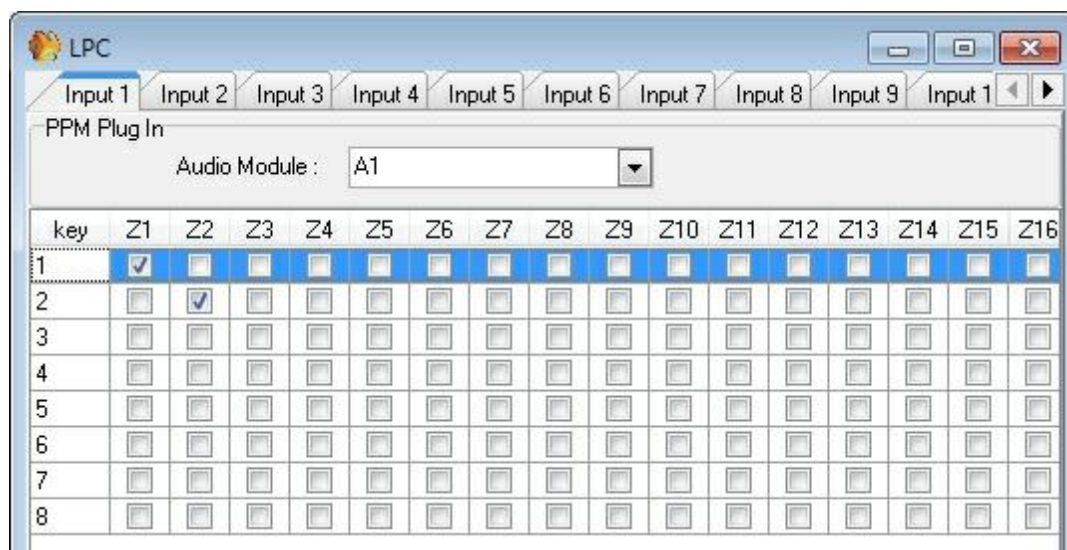
For more information please see "Create paging of PPM with LPC" chapter.

6.16   Slector

❖ Component Template
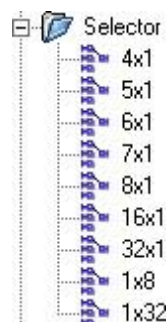
❖ Component Appearance
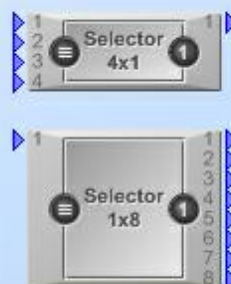
❖ Description

Simple selector to select different inputs to output. It can be used with URC, RAC, analogue input or contact input in binary mode.

❖ Control Window

6.17 Noise Generator
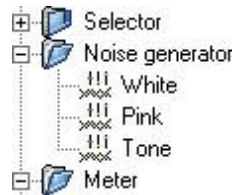
6.17.1 White Noise Generator

❖ Component Appearance
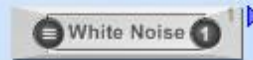
❖ Description

This component generates a White noise. The White noise is a random signal (or process) with a flat power spectral density. In other words, the signal contains equal power within a fixed bandwidth at any center frequency.

An infinite-bandwidth, white noise signal is purely a theoretical construction. By having power at all frequencies, the total power of such a signal is infinite and therefore impossible to generate. In practice, however, a signal can be "white" with a flat spectrum over a defined frequency band.

❖ Control Window

As example, it can be used to set up the equalization for a concert or other performance in a venue, a short burst of white or pink noise is sent through the PA system and monitored from various points in the venue so that the engineer can tell if the acoustics of the building naturally boost or cut any frequencies. The engineer can then adjust the overall EQ to ensure a balanced mix.

White Noise Generator Parameters

Parameter	Range	Comment
Mute	Button	Mute the sound coming out from the component
Level	-100 to +20 (dB)	Level of the white noise

Measured white noise spectrum
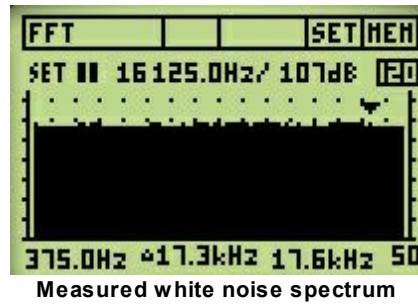
6.17.2 Pink Noise Generator

❖ Component Appearance

❖ Description

This component generates a Pink noise.

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

❖ Control Window
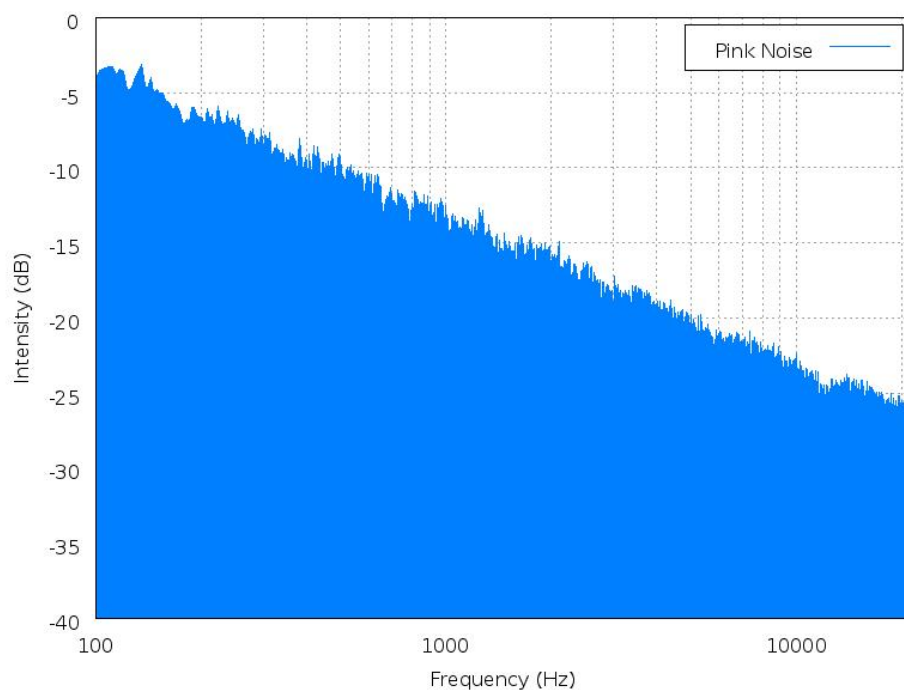
Pink noise spectrum

Pink Noise Generator Parameters

Parameter	Range	Comment
Mute	Button	Mute the sound coming out from the component
Level	-100 to +20 (dB)	Level of the pink noise
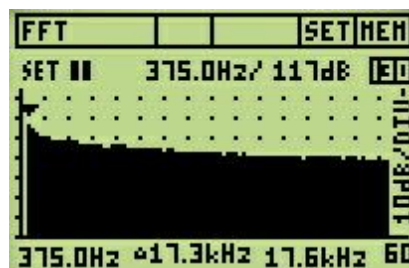
Measured Pink noise spectrum

6.17.3 Tone Generator

❖ Component Appearance

❖ Description

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

❖ Control Window

Tone Generator Parameters

Parameter	Range	Comment
Mute	Button	Mute the sound coming out from the component
Level	-100 to +20 (dB)	Level of the signal
Sweep	button	Active the sweep mode (sweep of frequency)
Tone	button	Active Tone mode (one single frequency played)
Sweep type	selector	Choose the interval between Min and Max frequencies (octave, 1/3 octave…)
Tone Freq.	20 to 10k (Hz)	If Tone mode is activated select the frequency played
Start Freq.	20 to 20k (Hz)	Select the minimum frequency in sweep mode
Stop Freq.	20 to 20k (Hz)	Select the maximum frequency in sweep mode
Inc. Time	(ms)	Select the time between the frequencies change in sweep mode

6.18   Meter

6.18.1   Peak/RMS Meter

❖ Component Template
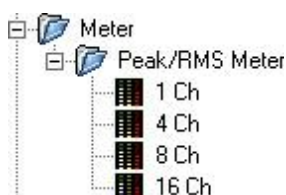
❖ Component Appearance
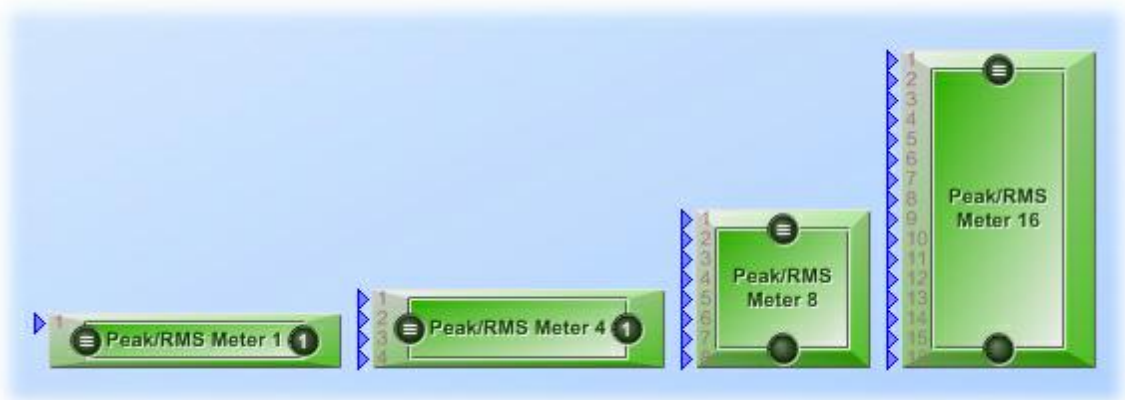
❖ Description

This component allows the user to see the audio level.

❖ Control Window

- Peak value : Maximum value of the signal

- RMS value : Power average of the signal

Meter Parameters

Parameter	Range	Comment
Indefinite	Button	Block the display of level value
Measure type	Rms/Peak	Type of measure
Hold time (ms)	10 to1000(ms)	Able to see keep displayed the value along a the hold time
Value (dBu)	Vu-meter	Measure

6.19 Auto Noise Gain

❖ Component Template
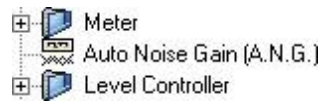
❖ Component Appearance

❖ Description

Adjust the audio level of the paging input (P.M.) depending of the ambient noise.

The ambient noise is measured with a sensing microphone connected to the sensing microphone input (S.M.). Our advice is to use the sensing microphone MSN (Ateis), but you can also use another one.

- S.M: sensing microphone input

- P.M: paging input

❖ Control Window

A.N.G Parameters

Parameter	Range	Comment
Calibration	Button	Click on to start the automatic calibration procedure
Calibration	LED, lit red	Lit all along the calibration procedure
Calibration	LED, lit green	Lit when the A.N.G is properly calibrate
Over	LED, lit red	Indicates the calibration result: The white noise level needed is over the range. A pop-up window will shows you what to do.

Parameter	Range	Comment
Under	LED, lit red	Indicates the calibration result: The white noise level needed is under the range. A pop-up window will show you what to do :
Response speed	Selector	Select here the reaction speed of the A.N.G. That's means the speed to adapt the P.M. audio level depending of the ambient noise.
Min Gain	-15 to 0 dB	The minimum AGC level compensation
Max Gain	0 to 15 dB	The maximum AGC level compensation
Sampling time	0.5 to 60 sec	Determine the period time between two ambient noise measures
Noise generator	Meter	White noise level, automatically Adjusted by the calibration
Ambiant noise	Meter	-
AGC Level	Meter	Display the current compensation gain
Hold time	1 to 5 sec	Holding time between when the P.M. signal passes below the mode threshold and the end of the paging activity.
Paging activity	LED, lit green	Light up when the paging is active. (when P.M. is above the mode threshold)
Decrease Zone	LED, lit blue	Indicates that the AGC gain is decreasing
Dead Zone	LED, lit green	Indicates that the AGC is not changing
Increase Zone	LED, lit yellow	Indicates that the AGC gain is increasing
Fast Increase Zone	LED, lit red	Indicates that the AGC gain is increasing fast
Sensing Mic Level	Indicator/RMS	Show the input level of the sensing microphone
C/Sensing Mic Level	Indicator	Show the input level of the sensing microphone through the calibration transfer function
Output Level	Indicator/RMS	Show the output level
Differential Level	Indicator	Difference between the Output level and C/Sensing Mic level.

For the procedures and use, please see the next topic: Use the Auto Noise Gain Component (A.N. G).

6.19.1 Use the A.N.G

❖ Procedure to set the ANG

Connect the sensing microphone to the S.M. input, and the paging audio source to the P.M. input. The NSM sensing microphone need an input sensitivity of 0dB (software). The max cable length between the NSM and the UAPg2 is 500 meter with CAT-5 STP cable.

Link the output of the ANG component to an UAPg2 output where is connected a loudspeaker.

Click on the Calibrate button, to start the calibration procedure. The system will start to estimate the acoustic transfer function between loudspeakers and microphone when user clicks the Calibration button, and it will automatically stop calibrating until the system find a better transfer function. The calibration red led light up, means the calibration procedure is running. During the procedure, don't move the physical installation, and don't make punctual noise. The calibration must be done in normal ambient conditions.

Wait until the end of the calibration. The red calibration led light off, and the green calibration led light up.

Now look the Over/Under red led:

- If both Over/Under led are OFF, it means the calibration has properly finished and the ANG is ready.
- If one of the Over/Under led light ON, it means the white noise level needed is out of range.

Depending of the issue, a pop-up window will show you what to do. Follow the most usefully advice and restart the calibration procedure until the both Over/Under led are OFF after the calibration.
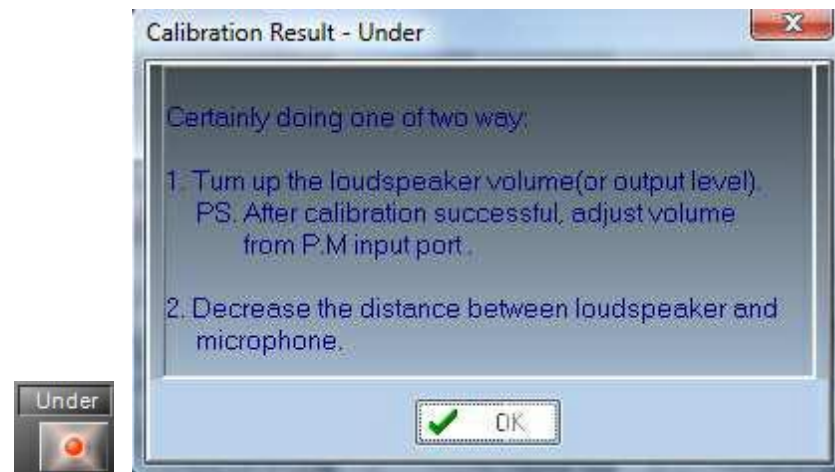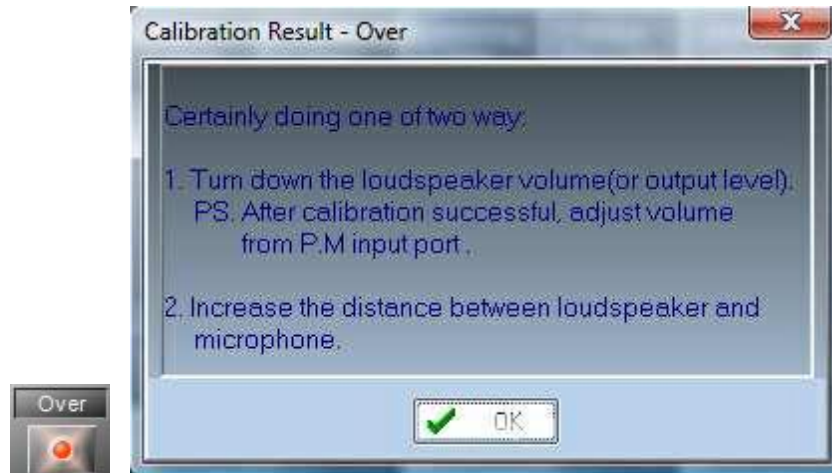
The system is properly set.

Even when the paging is not active, the ANG is still adjusting the AGC level with the ambient noise to be ready when the paging will begin.

Note:

- The calibration should be done in normal ambient noise (shouldn't have suddenly loud noise during calibration).
- Do not adjust the gain of output, amplifier or sensing microphone during or after calibration. (You can adjust volume of the audio source connected to P.M input.
- Theoretically, when the calibration has finished, the AGC level will be stable around 0 dB in the environment of no increasing noise. But every calibration might exist deviation, if the AGC level is not stable around0 dB, user could adjust the gain of output function, amplifier or

sensing microphone to let AGC level stable around 0 dB.

- When the system is calibrating, clicking on the calibration button will cancel the calibration at that moment. (The system will use the calibration result which was successfully calibrated at last time.)

- After calibration successful, the paging microphone shouldn't be placed nearly to sensing microphone. (because the user's voice will be also received into sensing microphone.)

- Inactive mode means that it is no paging. When the paging Microphone (or Music) input is inactive, in general, it needn't increase or decrease gain. But it is better to set an initial gain before outputs are active, then you become with a good approximation of gain. Suppose your AGC gain is -6dB and there is a lot of ambient noise. When outputs are active, but before it reach a correct gain, you won't hear the beginning of the announcement.

❖ Use the A.N.G

When the calibration green led lit, the system is ready. In our example, the A.N.G has detected an ambient noise average of -12dB. We choose a medium "response speed" and a short "sampling time" to be enough reactive quickly.

Now the A.N.G will automatically adjust the level on the (P.M) signal depending on the ambient noise detected on the sensing microphone. The A.N.G will working when the paging activity led will light, meaning that an audio signal is detected on the (P.M) input.

- Dead Zone:

    If the sensing microphone doesn't detect more noise than during the calibration, the A.N.G works in the "Dead Zone" which means that there is no need to adjust the gain.

As the noise level is near than during the calibration, the differential level is almost null. You can see the AGC level near from 0 dB, meaning no compensation.

- Increase Zone:

    If the sensing microphone detects more noise than during the calibration, the A.N.G works in the "Increase Zone" which means that the gain must be increased to compensate the ambient noise.

    In our example, the noise is now louder than during the calibration. The differential level is around 4.4dB. You can see the AGC level at 3.5dB, meaning the (P.M) signal is increased of 3.5dB. As soon as the AGC level reach the level needed to compensate the ambient noise (or the Max Gain), the A.N.G will goes back in the "Dead Zone".

- Fast Increase Zone:

    If the sensing microphone detects more noise than during the calibration, the A.N.G works in

the "Fast Increase Zone" which means that the gain must be quickly increased to compensate the loud ambient noise.

6.20 Level Controller

❖ Component Template
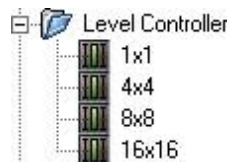
❖ Component Appearance

❖ Description

Various numbers of level controllers allows you to adjust the signal level after a signal treatments.

❖ Control Window
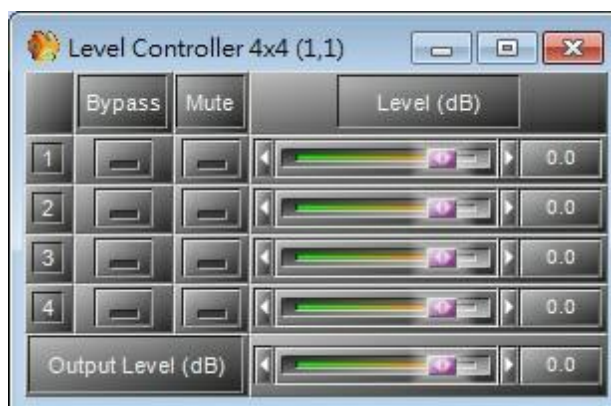
<u>*Level Control Parameters*</u>

Parameter	Range	Comment
Mute	Button	Mute the sound coming out from the component
Bypass	Button	Switches off the Ducker's operations
Level	-100 to +20 (dB)	Increase Level of the signal

6.21 Message Player

❖ Component Template

❖ Component Appearance

❖ Description

This component is an internal messages player. It is able to play two different messages in the same time on two separate outputs M1 and M2.

You will have to store your Wave messages into the UAPg2 device.

❖ Control Window

The component contains two Tabs:

- Events Settings

  To create and manage the message play event:
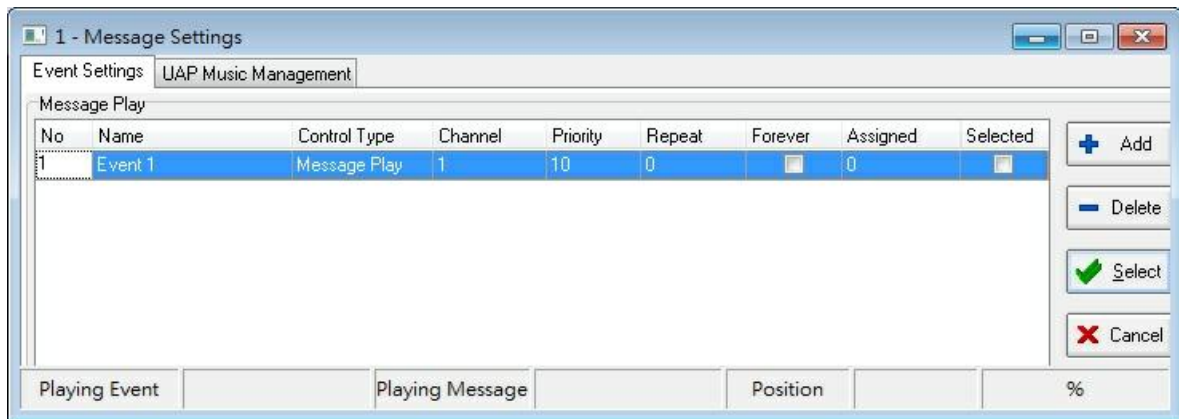
Playing a message is considered as an event: the "Message play" event.

Like every event, it can be controlled by a lot of ways (contact In, scheduler, third party, etc).

Here you can select the output used for each Message play event:
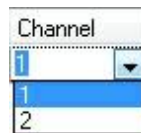
This component window allows creation and assignation of the "play message" event.

To set the control of this event, and also to create and use a "stop message event", you have to open

View->Events Management.
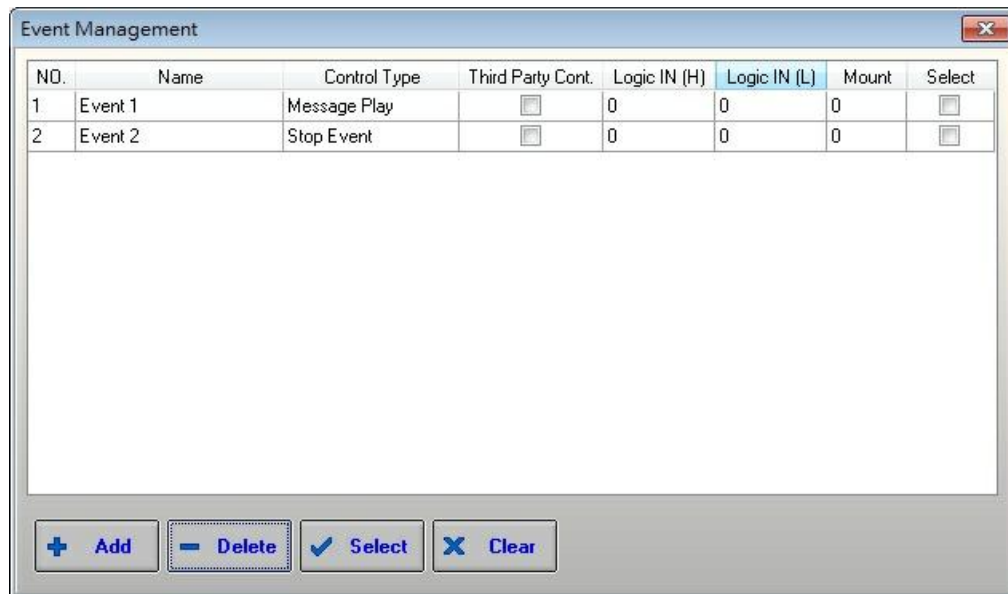
- UAP Music Management (which should be understood as "Messages management")

  load wave file into UAPG2 or recover wave file from UAPG2 to Computer. (Don't mind about "Music", it is the messages management)

This tab contains two sides:

  o Message Storage: files in the computer (in the wave library).

  o Machine Storage: files in the UAPG2.
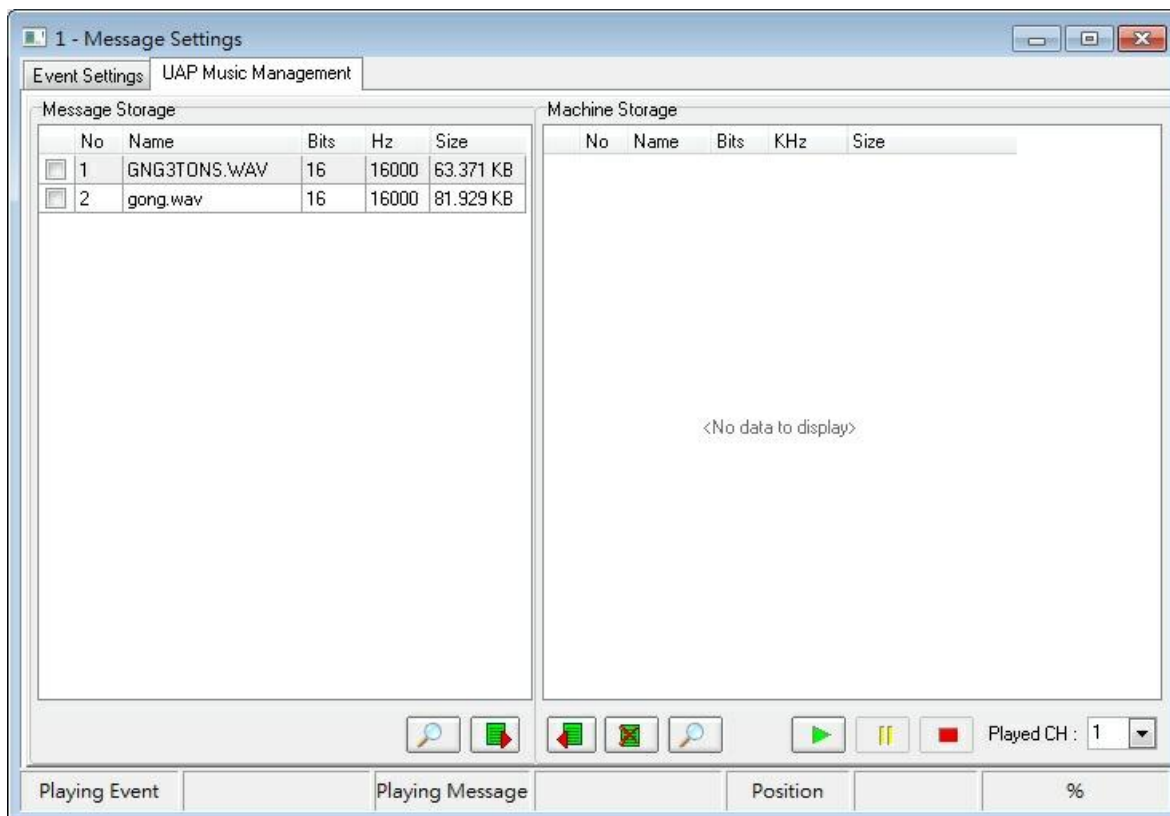
Message player Parameters

Buttons	Comment
🔍	Clicking on this button to display the messages either of the wave library or of the UAP G2 machine, depending of the side.
▣	To store the selected messages of the wave library into the UAP G2.
◀	To retrieve the messages from UAP G2 to the wave library
✖	To delete the selected messages.
▶ ‖ ■	To play/Pause/Stop the message listening
Played CH : 1 ▼ 1 2	Select here the output used for the messages listening.

6.22 PPM Touch

❖ Component Template

❖ Component Appearance

❖ Description

This component is for transferring audio from microphone input of PPM IT5 to output of UAP G2.

In order to assign which zones to paging for PPM IT5, it requires a LPC paging component too.

❖ Control Window
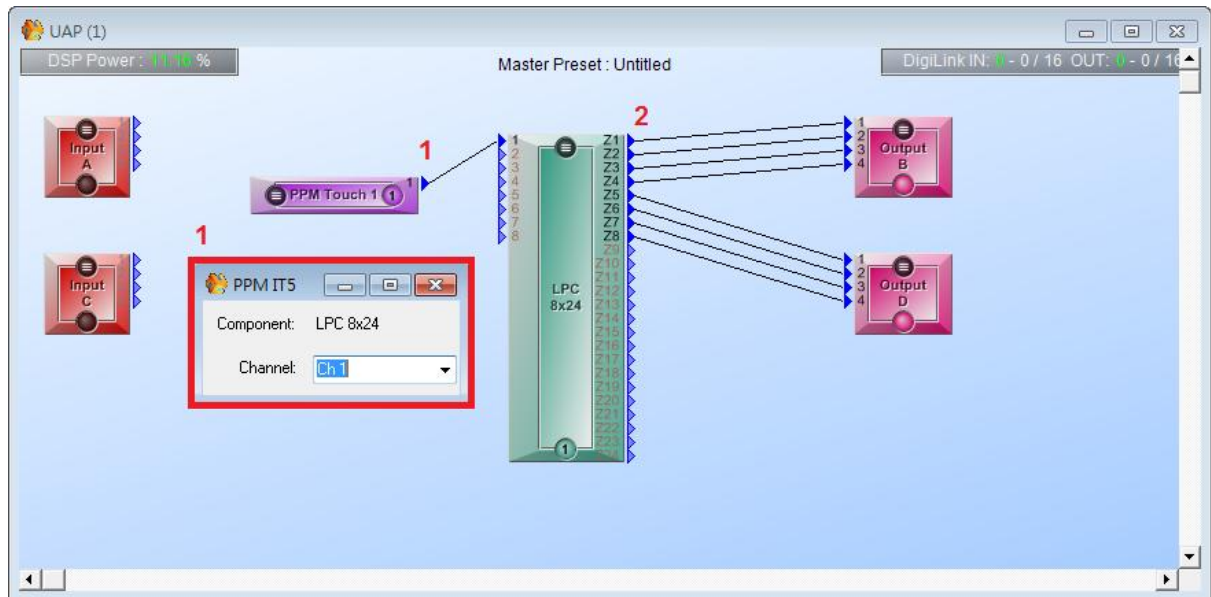
1. Connect to the pin of PPM Touch Component to corresponding pin and channel.

2. Connect to the pin of paging zone to corresponding output pin.

7   3rd party control

7.1   Where to access 3rd party control

❖ Go to the UAP G2 (Universal Audio Processor G2) to launch the software.

❖ Open the editing panel by clicking on the icon.
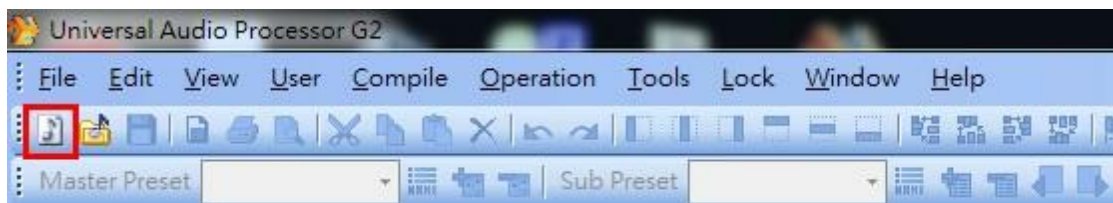
❖ After, please go the "System" on your left hand side of the page and drag the UAP G2 icon to the editing page.

❖ The "Configure Modules" window appears; users are free to select the components according to your device configuration and click on "OK" to open the System Page.
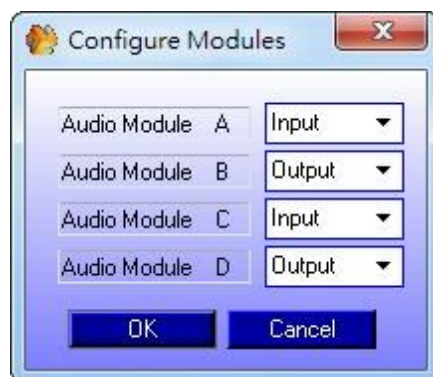
❖ On the System Page, the UAP G2 icon appeared in green, and double click on the icon to open its Component Window.
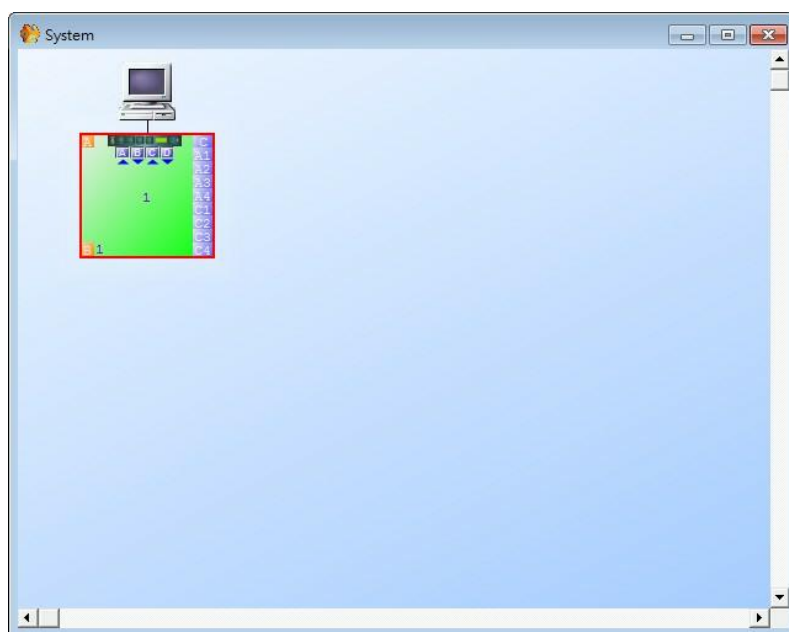
❖ In the Component Window, the components appear as the picture shown below.
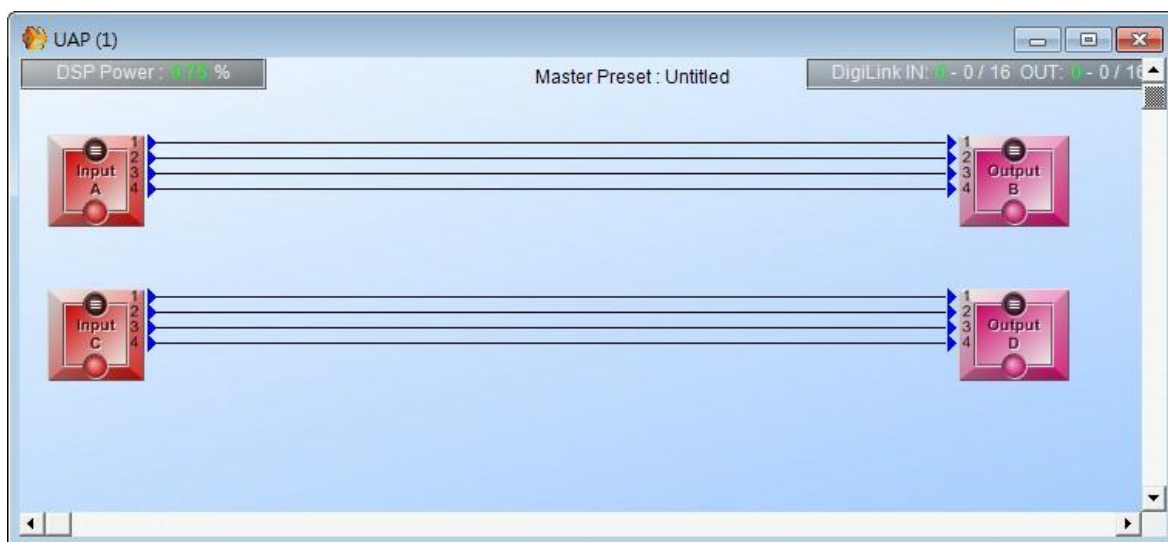
📝 Please note that the components are vary from different device configurations.

❖ Double click on the component to see open the Component Parameter Window.
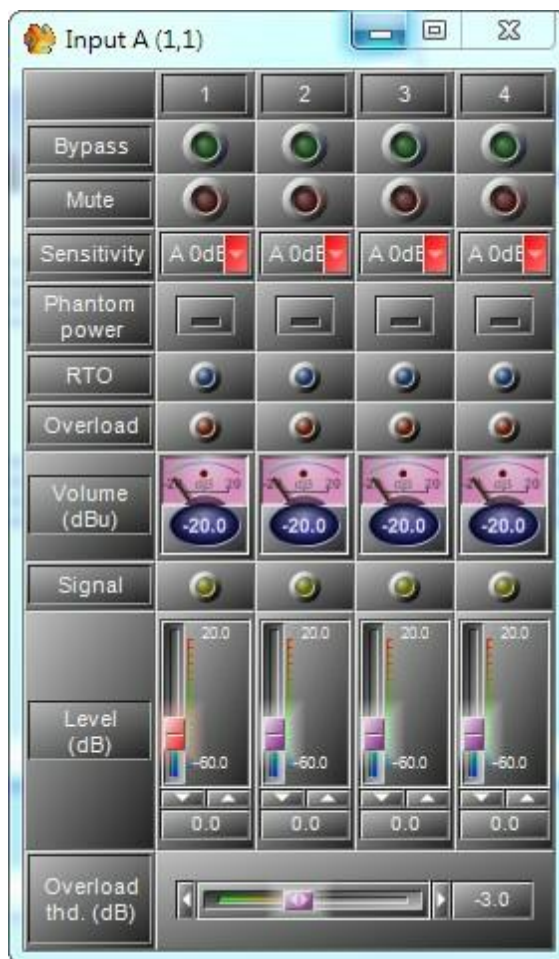
- Please note that the Component Parameter Window are vary from different components.

❖ Right click on the channels to apply the 3rd party control function.
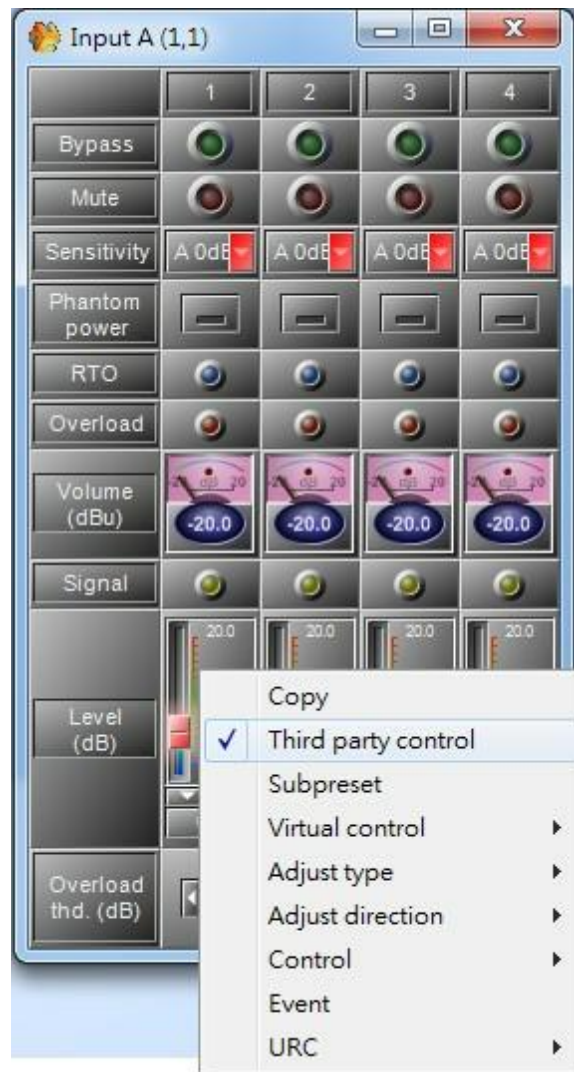
❖ The selected channels to do 3rd party control will automatically appears on the bottom of page.
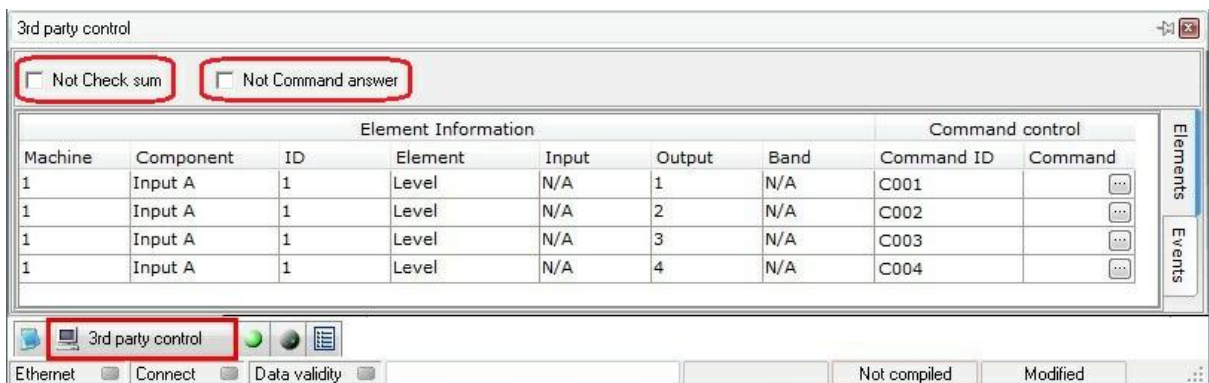
- What is "Check sum"?

  - "Check sum" is an error-detection method in a the transmitter computes a numerical value according to the number of set or unset bits in a message and sends it along with each message frame.

- Not Check sum :

  - Tick the "Not Check sum" box to NOT use the check sum calculation after sending/receiving command. User MUST input a value to set up the command.

    For command type "Increase", the check sum value must not be empty, users can fill in any number to set up the command.

    For command type "Decrease", the check sum value must not be empty, users can fill in any number to set up the command.

Command Type	Command frame					Packet
	STX	Command	EXT	CS	CR	
Increase	0x02	IC0014	0x03	337	0x0D	02 49 43 30 30 31 34 03 ?? 0D
Decrease	0x02	DC0014	0x03	332	0x0D	02 44 43 30 30 31 34 03 ?? 0D
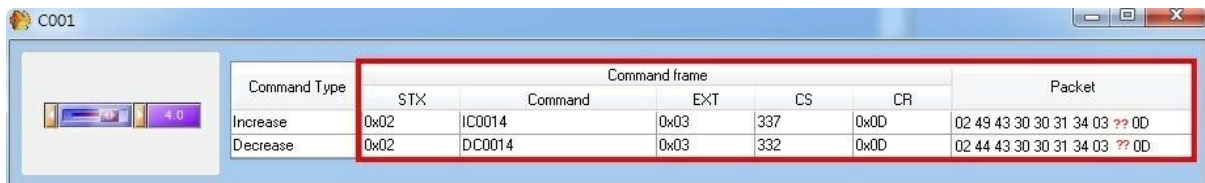
Note: The "??" is for users to enter a number under "CS" to set the command.

  - If you do not tick the box, the "check sum" function will be auto applied and users will see the calculation value on the "Packet".

    For command type "Increase", the check sum value is 51.

    For command type "Decrease", the check sum value is 4C.

Command Type	Command frame					Packet
	STX	Command	EXT	CS	CR	
Increase	0x02	IC0014	0x03	337	0x0D	02 49 43 30 30 31 34 03 51 0D
Decrease	0x02	DC0014	0x03	332	0x0D	02 44 43 30 30 31 34 03 4C 0D
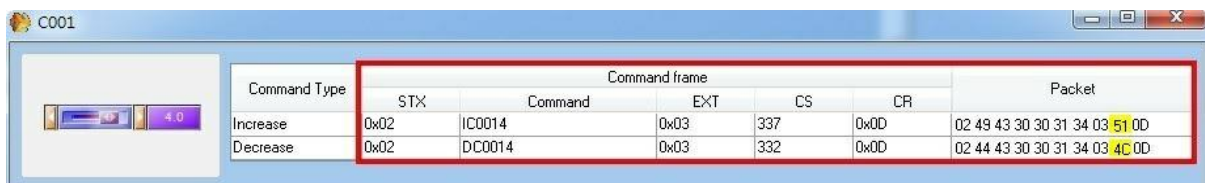
  - In the "Packet", a serial number is the calculated from the "Command frame", which is consisted of "Header section","Data Section", "EXT", "Check-sum" and "CR".

| **Header section** | **Data Section** | | **Check-sum** | |
| STX | Command string | EXT | CS | CR |

  - STX ： always be 0x02

  - EXT ： always be 0x03

  - Command string ： Number of Max is 50

  - Command code : 1 char, I/D/W/R/T/M/S/L/E/P/V/N/Y/U/B.

  - Function name : 4 char, named by user.

  - Value : depend on each command.

○ CS ： Sum of all all characters of command string

○ CR ： always be 0x0Dalways be 0x02

For each command, the answer can be ACK CR (executed), NACK CR (not executed), DLE CR (not executed), or none, depending on the communication protocol settings.
(ACK： 0x06   DLE： 0x10   NACK： 0x10

- Not Command answer : After sending a command, the receiver will automatically send out a message to let the sender know if the command has been successfully sent or failed.

Tick the box for not to send out the messages, or un-tick the box to agree with sending out the messages.

○ Sent successfully: 060D

○ Sent failure: 100D

❖ Or, users can click on the View tab to open the "Third Party Control" page and apply the 3rd party control function to the channels.
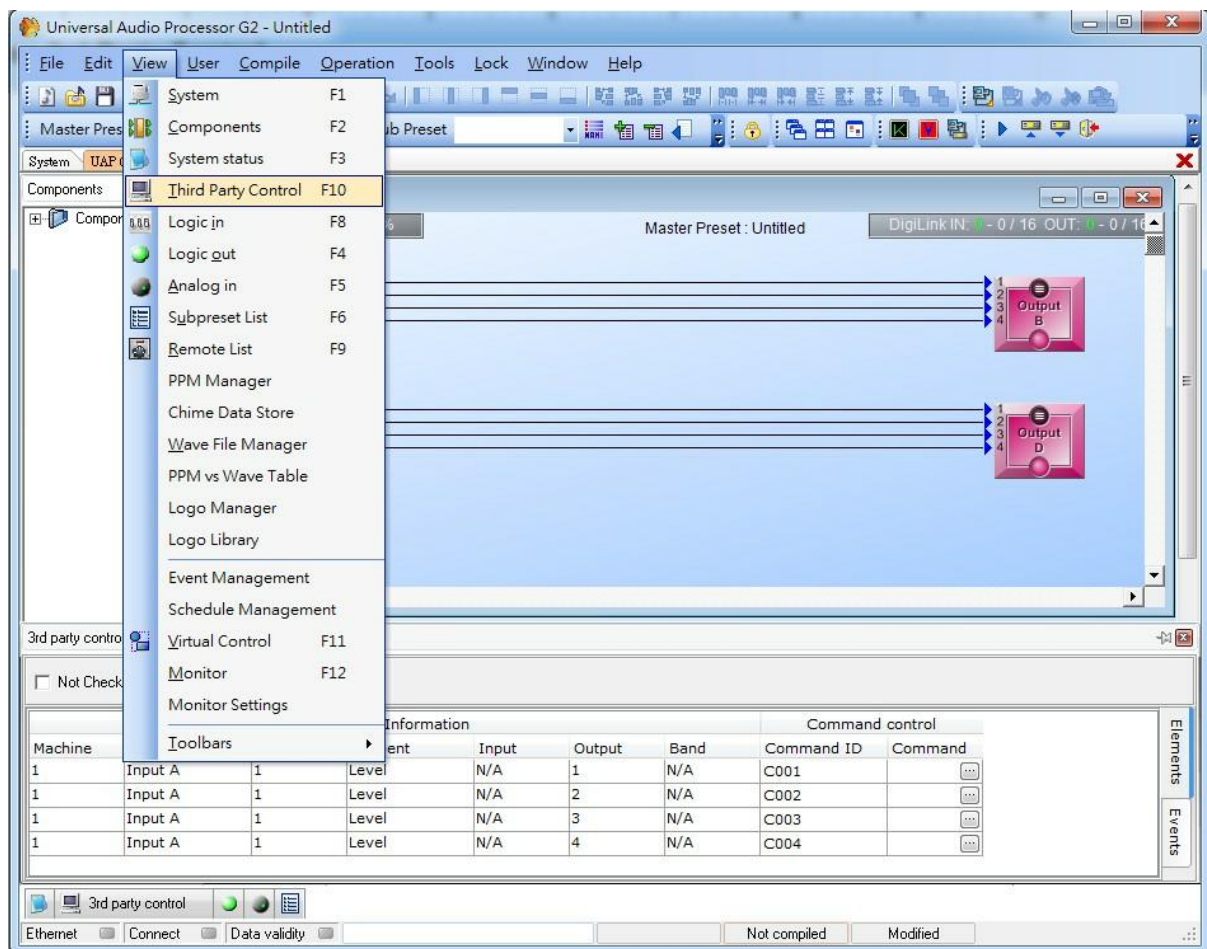
8   Various types of 3rd command

8.1   Increase/decrease command

Command string = I/D nnnn vv

STX	Data Section			
STX	**I/D nnnn vvvv**	EXT	CS	CR

STX	Data Section			
STX	**I/D nnnn vvvv**	EXT	EXT	CR

nnnn = function name (fixed 4 length)

vvvv = value (unfixed)

For example : Room1 volume, value = 3 dB

'STX' + IR0013 + 'EXT' + 'CS' + 'CR '

'STX' + IR0013 + 'EXT' + 'CR '

8.2   Write parameter command

Command string = W nnnn vv

STX	Data Section			
STX	I/D nnnn vv	EXT	CS	CR

STX	Data Section			
STX	I/D nnnn vv	EXT	EXT	CR

nnnn = function name (fixed 4 length)

vv = value (unfixed)

For example : cd1, value = 10 dB

'STX' + WCD1?10 + 'EXT' + 'CS' + 'CR '

'STX' + WCD1?10 + 'EXT' + 'CR '

8.3   Read parameter command

Command string =Rnnnn

STX	Data Section			
STX	Rnnnn	EXT	CS	CR

STX	*Data Section*			
STX	Rnnnn	EXT		CR

nnnn = function name (fixed 4 length)

Answer is always **Rnnnnvvvv (Reply Read Para. Com.)**

8.4   Connect test command

Command string = T

STX	*Data Section*			
STX	T	EXT	CS	CR

STX	*Data Section*			
STX	T	EXT		CR

Answer is always **ACK CR** or None, depend on communication protocol settings.

8.5   Control command

8.5.1   Change preset

Command string = Mww

STX	*Data Section*			
STX	Mww	EXT	CS	CR

STX	*Data Section*			
STX	Mww	EXT		CR

vvvv = Master preset number

8.5.2   Load sub-preset

Command string = Sww

STX	*Data Section*			
STX	Sww	EXT	CS	CR

STX	*Data Section*			
STX	Sww	EXT		CR

vvvv = Sub preset number

8.6   Reply read parameter command

Command string = Rnnnnww

STX	Data Section			
	Rnnnnvw			

STX	Data Section			
	Rnnnnvw			

DB element

nnnn = function name (fixed 4 length)

vvvv = sign + integer(fixed 2 length) + dot + decimal(fixed 1 length)

Other element

Answer is always **Rnnnnvvvv (Reply Read Para. Com.)**

nnnn = function name (fixed 4 length)

vvvv = value (unfixed)

8.7   Set machine system value

Command string =Lnnnn

STX	Data Section			
STX	Lnnnniivw	EXT	CS	CR

STX	Data Section			
STX	Lnnnniivw	EXT	CR	

nnnn = function name (fixed 4 length)

iiii = Machine IP number(fixed 2 length)

vvvv = value (unfixed)

8.8   Read machine system value

Command string =Ennnn

STX	Data Section			
STX	Ennnnii	EXT	CS	CR

STX	Data Section			
STX	Ennnnii	EXT	CR	

nnnn = function name (fixed 4 length)

iiii = Machine IP number(fixed 2 length)

8.9 Reply machine system value

Command string =Pnnnvvv

STX	Data Section			
	Pnnnvvv			

STX	Data Section			
	Pnnnvvv			

nnnn = function name (fixed 4 length)

vvvv = value (unfixed)

8.10 Event action

Command string =Vnnnn

STX	Data Section			
	Vnnnn			

STX	Data Section			
	Vnnnn			

nnnn = function name (fixed 4 length)

8.11 Ethernet reset command

Command string = N

STX	Data Section			
STX	N	EXT	CS	CR

STX	Data Section			
STX	N	EXT	CR	

8.12 Auto-reply control command

Command string = N

STX	Data Section			
STX	Sww	EXT	CS	CR

STX	Data Section			
STX	Sww	EXT	CR	

Reset Value

IP Address	192.168.100.230
Sub Mask	225.225.225.0
Getway	192.168.100.254
Receive Port	19760

8.13 Machine ID setting

Command string =Ykdddd

STX	Data Section			
STX	Ykdddd	EXT	CS	CR

STX	Data Section			
STX	Ykdddd	EXT		CR

k **=** Write kind

1	LAP G2
2	UAP G2
3	DIVA (Reserve Kind)
4	VNB (Reserve Kind)
5	PPM G2
6	ECS
7	DigiDrive

8.14 Firm wave version read

Command string = O

STX	Data Section			
STX	O	EXT	CS	CR

STX	Data Section			
STX	O	EXT		CR

Answer is always **Oaaaa-bbbb-cccc-dddd (Reply FirmWave Version Com.)**

aaaa **=** firmwave version 1

bbbb = firmwave version 2

cccc = firmwave version 3

dddd = firmwave version 4

8.15 Power on/off

Command string = Qnnnn

STX	Data Section			
STX	Qnnnn	EXT	CS	CR

STX	*Data Section*			
STX	Qnnnn	EXT		CR

nnnn **=** flag

0	Stand by
1	Reset
2	Read State

Answer is always **(Reply Power On/Off)**

8.16 Reply power on/off

Command string = Qnnnn

STX	*Data Section*			
STX	Qnnnn	EXT	CS	CR

STX	*Data Section*			
STX	Qnnnn	EXT		CR

nnnn **=** Standby Mode of System

8.17 Message state read

Command string = Gc

STX	*Data Section*			
STX	Gc	EXT	CS	CR

STX	*Data Section*			
STX	Gc	EXT		CR

c **=** Message Channel Number

Answer is always **(Reply Message State)**

8.18 Reply message state

Command string = Gcsnnnn

STX	*Data Section*			
STX	Gcsnnnn	EXT	CS	CR

STX	*Data Section*			
STX	Gcsnnnn	EXT		CR

0	Stop

1	Play
2	Pause

nnnn **=** Message Name(reply null when message stop)

9   Contact infomation

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