Owner`s Manual

User's Manual

Qtex

Multifunctional Network DSP Digital Power Amplifier

QAA MA1000TDV2

Agent

WARNING

This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit.

This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.

1. **FOR OUTDOOR USE:**

To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

2. **UNDER WET LOCATION:**

Apparatus should not be exposed to dripping or splashing and no objects filled with liquids, such as vases should be placed on the apparatus.

3. **SERVICE INSTRUCTIONS:**

CAUTION - These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

Specifications are subject to be changed without notice.

CE

1.Introduction

This device is a multifunctional network DSP digital constant resistance and constant voltage power amplifier 2 * 500W @ 4Ω, 2 * 300W @ 8Ω, bridge 1000W @ 8Ω, and constant voltage 100V-1000W @ 10Ω. Real-time remote monitoring of power amplifier status, real-time setting of compressor, limiter, noise gate, parametric equalization, matrix routing, delayer and other DSP functions. The concise software interface provides customers with simple settings and operation experience, and multiple connection methods make it configurable and expandable, suitable for various use environments.

Application occasion

- Performing Center
- Theater
- Stadium
- Hotel
- Conference Center
- Shopping Center
- Retail store
- Restaurant

Features

- DANTE network audio
- Network TCP / IP control, can realize management of multiple devices
- Remote power on / off
- High resolution full color IPS LCD display
- Built-in DSP digital processor
- Support multiple connection methods: USB, TCP / IP, RS232, Rs485
- Real-time remote monitoring of the working status of the power amplifier
- Amplifier can be identified on site by software
- Support balanced XLR input and unbalanced RCA input
- Support stereo, bridge, mono, free matrix mode, one-button switching
- Two levels of adjustable input sensitivity: 0dBu / 6dBu, software or color LCD screen setting
- Power-on status can be set, Power On / Standby
- Constant voltage and resistance support: 100V, 70V, 8 ohm, 4 ohm
- Software control, can control media matrix and professional processor at the same time
- Wide voltage operation 90-260VAC

7.20 Firmware upgrade

Click "System"-"Firmware Upgrade" in the menu bar of the software main interface, and the firmware upgrade interface shown in Figure 24.1 will pop up.

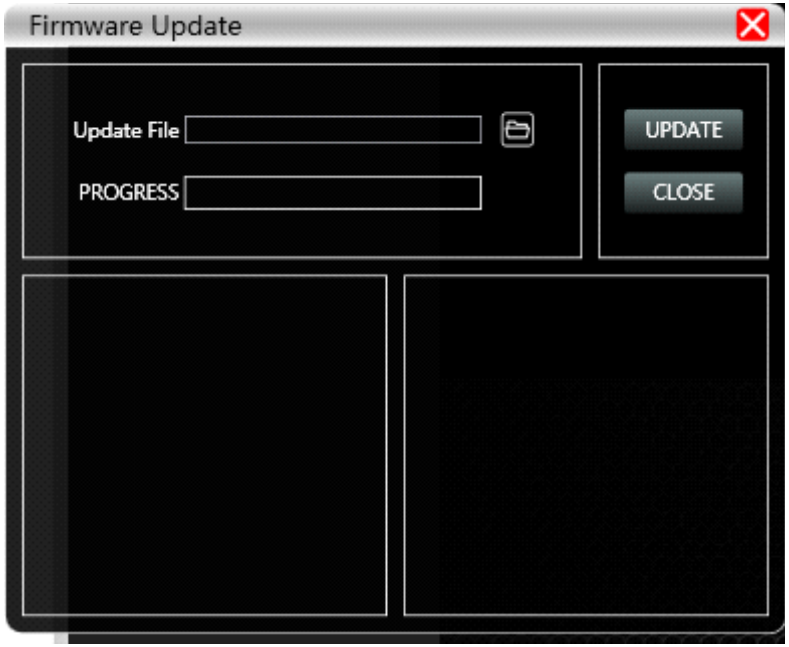


Figure 24.1 Firmware Upgrade Interface

When the lower computer system of the device is updated, after obtaining the upgrade file, you can open the firmware upgrade interface as shown above. Select the corresponding upgrade file in the "Upgrade File" column and click "Start Upgrade" in the upper right corner. The system will automatically transfer the upgrade file to the lower computer for the upgrade operation, and display the operation log in the progress box below. After the upgrade is completed, the lower machine will automatically restart or manually restart the machine to complete the upgrade.

As shown in the figure above, the left side of the archive interface is the gear position, of which "0 automatic gear" is the system gear position and cannot be used directly. "1 (default)" is the default file of the device, which can only be recalled, and cannot be deleted and overwritten. After the recall, the device parameters will be restored to the factory default parameters. Other gears can be freely saved, recalled, and deleted.

The function buttons on the right side of the archive interface are as follows:

①Save: Save the existing equipment parameters to the corresponding selected archive.

②Recall: Retrieve the selected archive into the parameters of the current device.

③ Delete: Delete the selected archive parameter.

④ Clear: Clear all archive parameter records that are not archived by the system.

⑤ Set as the startup file: Set the selected file as the archive that will automatically call the archive to work when the device is next turned on.

⑥ Import archive: Import a single device parameter file in the computer system, directly covering the existing parameter data.

⑦Export Archive: Save the parameters of the current equipment to the computer system, and produce a single equipment parameter archive file

⑧Import archive package: Import multiple archive parameter packages in the computer system

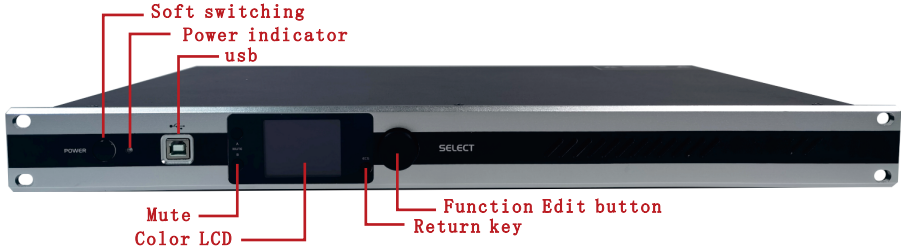
⑨Export archive package: Export the parameters of all gears in the equipment archive to the computer system, and produce multiple archived parameter package files.

2.Technical Parameters

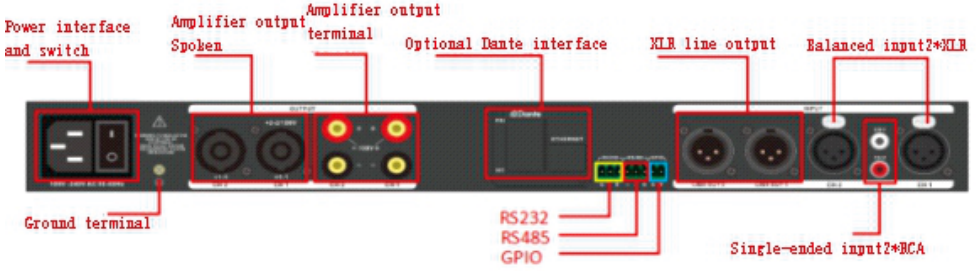
Model:	QAA MA1000TDV2				
Output Power	4 OHM	8 OHM	16 OHM	100V	70V
All Channel	2*500W	2*300W	4*150W	/	/
Bridged	/	1*600W	1*300W	1*600W	1*600W
Input volume:	mute, phase, level detection				
Input EQ:	5-band parametric equalization				
Input noise gate:	start control time 1 ~ 2895ms, release time 1 ~ 2895ms, start control level -120dBu ~ -0dBu				
DSP matrix:	2 * 2 matrix				
Output EQ:	9-band parametric equalization				
Crossover:	Butterworth, Bessel, Linkwitz slope 6 ~ 48				
Output delay:	2 * 16ms				
Output compressor:	soft knee, start control level, start control time, compression ratio, release time				
Output limiter:	start control level -90dBu ~ 21dBu, release time 1 ~ 2895ms				
Output volume:	mute, phase, level detection				
DSP presets:	30 preset positions				
Control method:	Ethernet, USB, RS485, Rs232				
Network specifications:	TCP / IP, 1000base-T / 100base-TX, Rj45				
Channels:	2				
Minimum output impedance:	4Ω per channel, 8Ω in bridge mode				
Input interface:	balanced input 2 * XLR; single-ended input 2 * RCA				
Output interface:	2 * Spoken; terminal				
Cooling:	Dual fan intelligent control				
Gain:	6dBu sensitivity: 30dB (29.5 times); 0dBu sensitivity: 36dB (31.1 times)				
Maximum input level:	6dB sensitivity: 16dBu (4.9V)				
Signal to noise ratio:	6dBu sensitivity: 94dB; 0dBu sensitivity: 94dB				
Frequency response:	20Hz ~ 20kHz (± 0.5dB) @ 1W, 8Ω				
THD + N:	<0.1%@1W to full power				
Sampling rate:	48K / 24bit				
Channel isolation:	<-70dB				
Working modes:	stereo, bridged, mono, free matrix				
Remote control:	remote start, standby, DSP monitoring				
Amplifier monitoring:	temperature, power, voltage, current				
DANTE (optional):	2-channel DANTE				
Display:	320x240 pixel, IPS colorful				
Source topology:	XLR Line-out				
Protection:	Audio limiter, high temperature, DC, high frequency, short circuit, back-EMF, peak current limiter, inrush current limiter, start-up delay, power circuit breaker protection, power supply over / under voltage protection				
PC software:	software can control media matrix, audio processor, DSP power amplifier, active DSP module				
Weight:	Netweight1:3.2kg;Packagedweight:4.2kg				
Size:	483 * 300 * 44.5				
Power supply:	voltage input (180~264VAC)				

3.Functional structure

Front Panel



Rear Panel



As shown above, after entering the new name of the channel in the corresponding channel, click the OK button to save and update the name of the channel immediately. Note: The length of the channel name is limited to 5 English letters and numbers.

7.19 Archive

Click "Archive" in the menu bar of the main interface of the software, and the archive interface shown in Figure 23.1 is displayed.

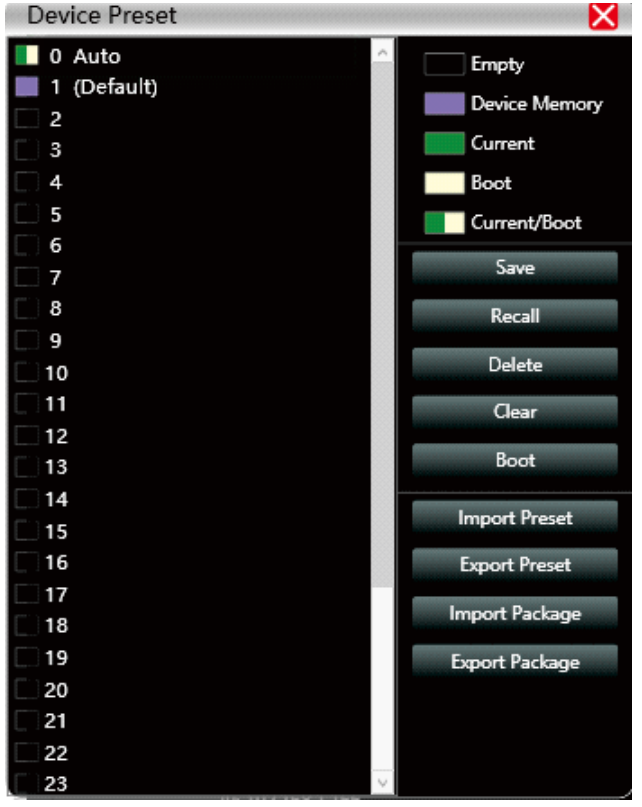


Figure 23.1 Archive interface

As shown in the figure above, the channel copy is to select the channel parameters of a source device and copy to the target channels of other target devices. Input channels and output channels cannot be copied to each other. The left is the corresponding channel, and the right is the copied parameter. The "Input" and "Output" buttons at the top of the interface can switch the type of channel copied.

7.17 Channel name management

Click "Device"-"Channel Management" in the menu bar of the main interface of the software, and the channel name management interface shown in Figure 21.1 is displayed.

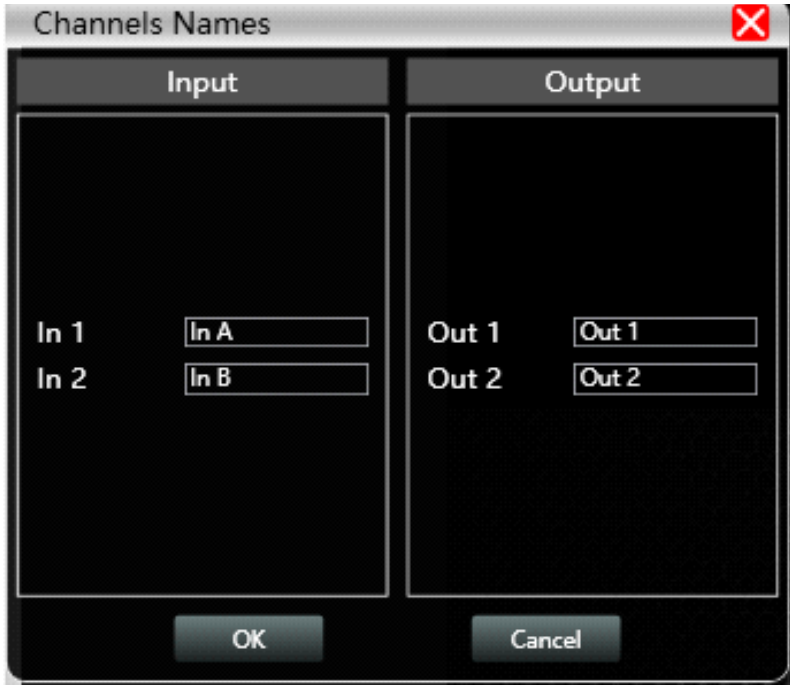


Figure 21.1 Channel name management

4.PC software introduction

Equipment management software is software for users to quickly interact with each parameter of one or more machines. The configuration parameters of the machine can be stored in a disk file, which provides a very convenient method for presetting the scene configuration and parameter switching and restoration of multiple machines or different use places. This product has high execution efficiency and clear interface structure. The UI of this product adopts a self-developed control library, and can be customized and modified according to customer needs, enhancing the user experience.

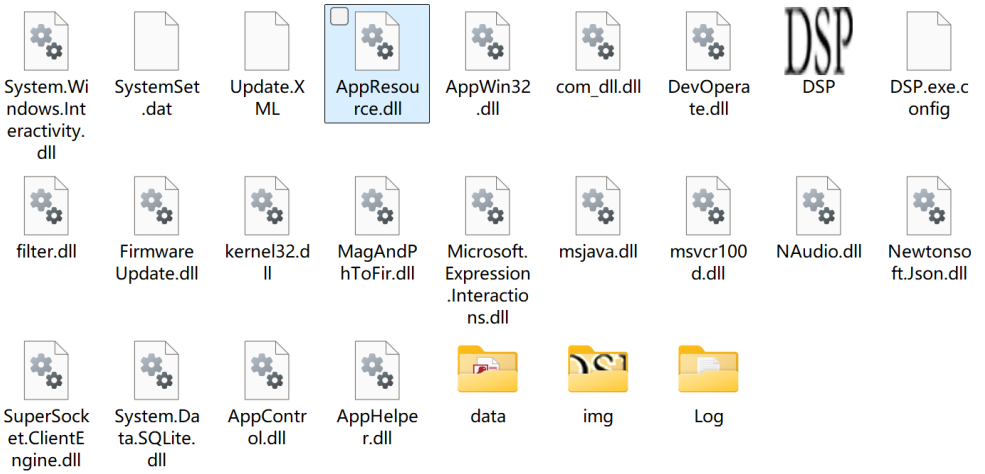
5.Software Installation

5.1 Operating environment

The software is suitable for WIN7 / WIN8 / WIN10 any x86 / x64 Windows operating system with Microsoft .NET Framework 4.0 runtime.

5.2 Software Installation

This software is a green version. The green version of the software does not require the installation of the main program. The folder contains the following files or folders, which are indispensable. The green version of the software does not include the Microsoft .NET Framework 4.0 runtime. If necessary, please download and install it from the official Microsoft website.



5.3 Software running

Operation steps: Double-click the executable file on the folder to enter the software theme interface as shown in Figure 1.1.

Precautions:

Some connection methods do not support multiple PCs being opened at the same time. Please keep at most one PC open this software.

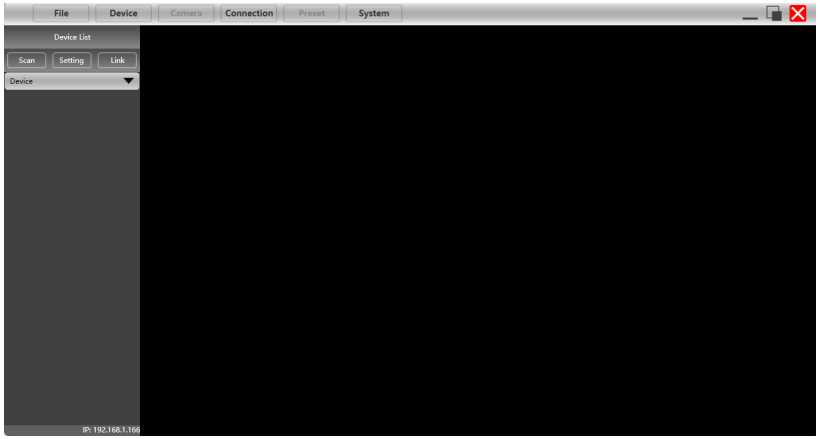
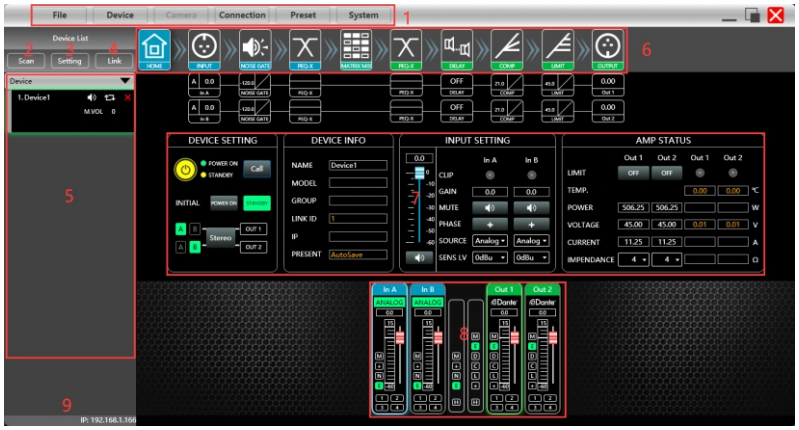


Figure 1.1

6.Software interface description



7.16 Equipment management

Click "Device"-"Device Management" in the menu bar of the main interface of the software, and the device management interface shown in Figure 20.1 will pop up.

Figure 20.1 Device Management Interface

As shown above, the device information displayed on the target device management interface can be selected in the device list at the top. The device management interface is divided into the following four blocks:

①Software information: Display the version number and date information of the upper and lower computer of the current device.

② Device information: Display the device name, device group, and factory name information of the current device. To display the factory name, you need to press the hidden shortcut CTRL + ALT + F12. Among them, "device name" and "factory name" can be entered in the new name and click the button to save.

③ Device IP information: If the current device is connected with network information, the device's IP address, gateway, and MAC address will be displayed here. IP and gateway can enter new information and click the OK button to save and restart the device network module. , The newly entered network information will take effect immediately.

④Software Logo: Logo of the software itself.

7.18 Channel copy

Click "Device"-"Channel Copy" in the menu bar of the main interface of the software, and the channel copy interface shown in Figure 22.1 is displayed.

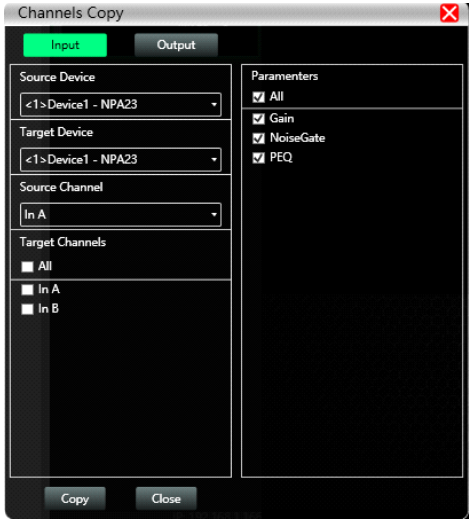


Figure 22.1 Channel copy

In the figure above, <1> it is the device number on the connection, Device1 it is the device name, Factory it is the factory name (the user cannot modify it). If the connection method is TCP, the network IP address of this device will be displayed in the space to the left of the factory name after connecting. If the connection method is USB, USB is displayed. If the connection method is a serial port, the specific COM port is displayed.

 From left to right are the Mute button, Status refresh button and Remove device button. The Mute button can directly control the mute of all input and output channels of the entire device. The Status button refreshes the status of the device instantly. If the device is online, the leftmost position  will turn green. The Remove button  removes this device directly in the software.

If you need to debug different devices, you can click to select the target device, and it will update to the function page of that device.

7.15 Add device

Click "File"-"Add Device" in the menu bar of the main interface of the software, and the interface for adding a device as shown in Figure 19.1 below will pop up. Select the virtual device model to be added and add it to the device list. Note: Virtual devices are not connected to real devices.

Figure 19.1 Add Device Interface

Modules of the main interface of the software:
(1) Menu
(2) Scan
(3) Setting
(4) Link
(5) Device list
(6) Module
(7) Module function interface
(8) List of input and output channels
(9) Local IP address

6.1Initial interface

Device settings

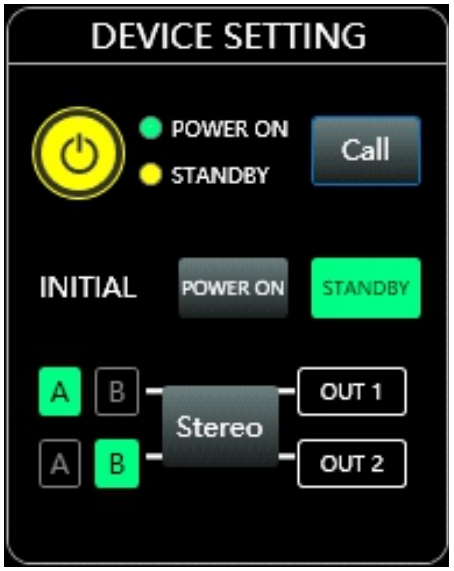


Figure 1.2

①As shown in Figure 1.3, click  to switch the device between POWER ON and STANDBY. Green is POWER ON and yellow is STANDBY.

②Click  to flash the display and status lights of the connected device. You can quickly find the connected device from the "Amplifier Device Stack".

③The power-on state can be selected.  After the selection, the hard switch will directly switch to the selected state.

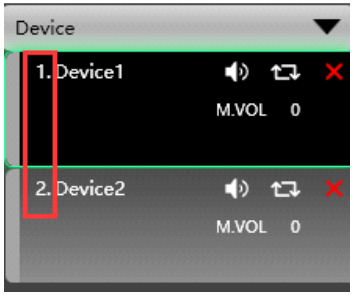
④Click the frame button to quickly switch the routing status. There are 4 types of options: stereo, mono, bridge, and matrix.

Device Information:

Figure 1.4

①As shown in Figure 1.4, the device name, group, and IP can be modified. Modification method: find the Device button in the upper left corner of the initial interface, and then change it according to actual needs in the device management.

②The device model and LINK ID cannot be changed. The LINK ID is the corresponding ID when the host computer connects to multiple devices.



③The archive name is the name of the archive currently in use.

As shown in the figure above, the three lists from left to right are Channel list, Group list, and Parameter list:
The Channel list has listed all the channels that can be tuned. After selecting the corresponding channels, click the Add button » to move to the Group list. There are already 2 groups in the group list. Select the corresponding group directly, if you add a channel, it will be directly divided into the selected group. To remove, select the channel to be removed, and then click the Remove button « to remove it to the channel list.
The parameter list is a parameter that can be tuned during group link. Ticking indicates that when one channel in the same group is adjusted, the other channels will make the same adjustment at the same time.

7.14 Device List

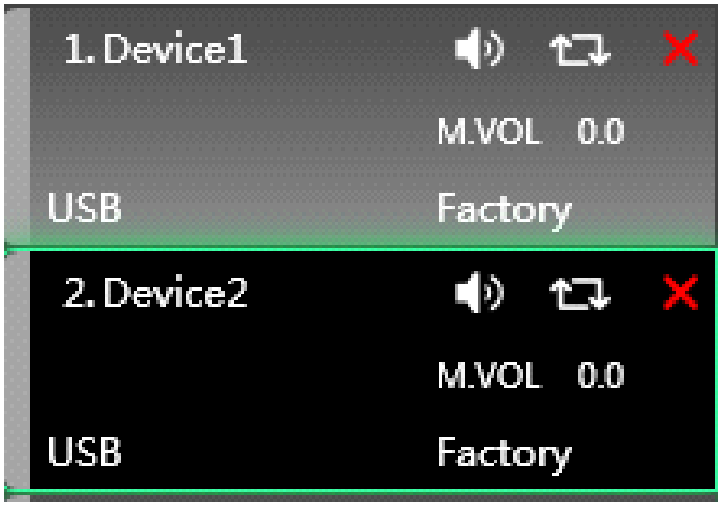


Figure 18.1 Device List

①The output channel interface from top to bottom includes: Channel name  , Channel gain, Function buttons  , and Channel group joint debugging  .

②Among them, the Channel name, Digital output status and Channel group joint debugging can only be viewed without editing function. In the channel gain, you can see the level status  of the output channel signal. The other two parts (gain value box and gain slider) are for adjusting the gain value of this channel.

③Among the function buttons, from top to bottom are: Mute  , Equalizer bypass  , Delay  , Compressor  , Limiter  , and Polarity  . If the Mute button is red, it is muted. If the other buttons are green, they are in effect.

④The channel group joint tuning situation shows the default 4 channel joint tuning group. When the background of the corresponding number box turns yellow  , it means that this channel has been added to the second group for joint tuning.

7.13 Channel Link

Click the link button  between the input and output channels on the software homepage to pop up the channel link interface as shown in Figure 17.1 below.

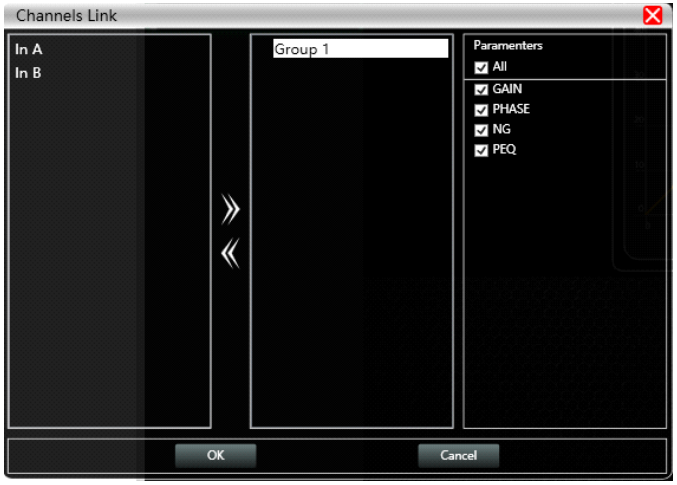


Figure 17.1 Channel Link Interface

Input settings

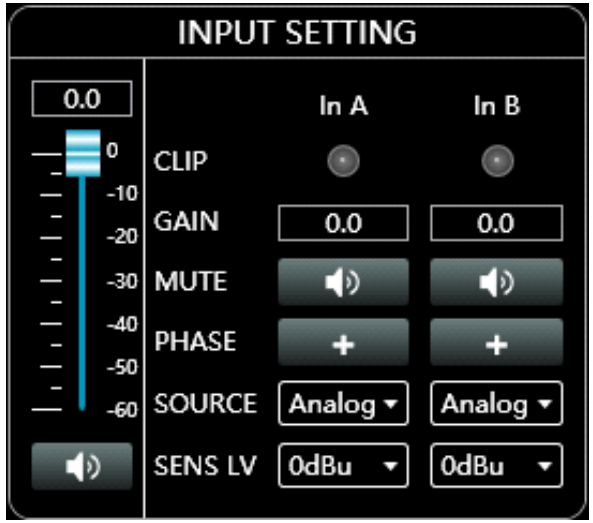
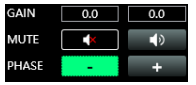


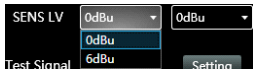
Figure 1.5

①As shown in Figure 1.5 above,  it is the total volume push finger, which can be dragged with the mouse, or you can directly input the exact value in the input box  .  It is the mute button.

②When the input is overloaded, the indicator will light up, the effect is as shown in the figure. 

③Quickly set the gain, mute, and phase. 

④Multiple input sources. 

⑤Support 0dBu, 6dBu sensitivity switch. 

Amplifier status

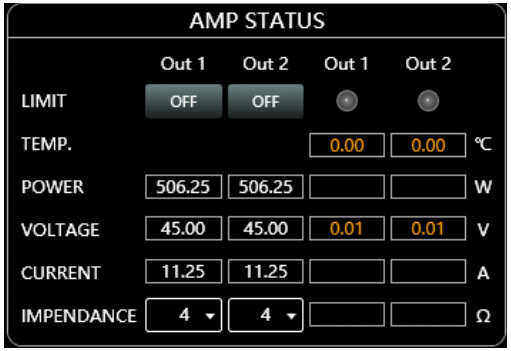


Figure 1.6

As shown in Figure 1.6 above, the limiter and impedance can be selected as required. When the limiter is on, the

6.2Menu

File

Figure 2.2 "File" menu

As shown in Figure 2.2 "File" menu:
1. New: When the software is not connected, the model of each device can be created in this menu.
2. New equipment: Add analog equipment, which will not affect existing equipment.
3. Open: Open an existing device management project from the computer disk.
4. Save: Save the current equipment management project in the computer disk.
5. Save as: Save the current equipment management project as a file.

①The input channel interface from top to bottom includes: Channel name , In A Input mode ANALOG , Channel gain, Function buttons , and Channel group joint debugging.

②The Channel name, Input mode, and Channel group joint debugging can only be viewed, and there is no editing function.

③In the Channel gain, you can see the level status of the input channel signal .

④Among the function buttons, from top to bottom are: Mute M , Polarity + , Noise gate N , and Equalizer bypass E . If the mute button is red, it is muted. If the other buttons are green, they are in effect.

⑤Channel group joint tuning shows the default 4 channel joint tuning group. When the background of the corresponding number box turns yellow, it means that this channel has been added to the second group for joint tuning.

⑥The button bar in the middle of the input and output channels is the master switch of the function button corresponding to all input and output channels. It will directly operate all input and output channels simultaneously.

7.12 Output channel

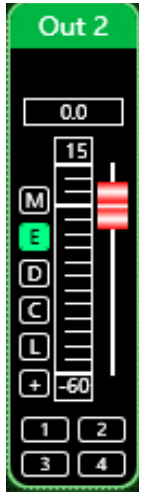


Figure 16.1 Output Channel

7.10 Output module

Double-click  in the module button to pop up the output setting module as shown in Figure 14.1.

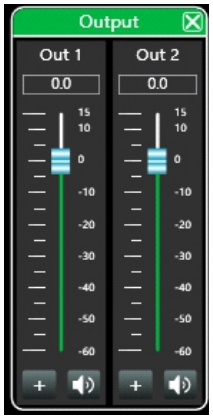


Figure 14.1 Output setting module

As shown above, you can control the polarity and mute of the corresponding output channel.

7.11 Input channel

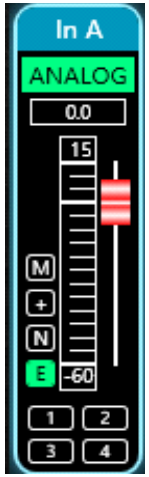


Figure 15.1 Input Channel

Device

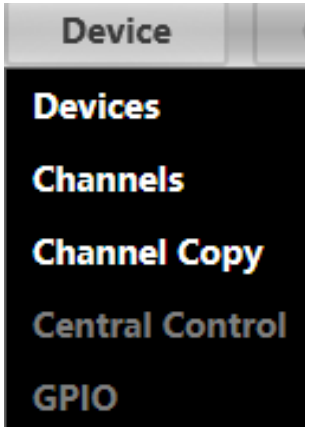


Figure 2.3 "Device" menu

As shown in Figure 2.3 "Device" menu:

1. Device management: View or modify the software information, device name, and IP address of the device.
2. Channel management: Set the name of each input and output channel.
3. Channel copy: copy the parameters of the same type of channel.

Connection

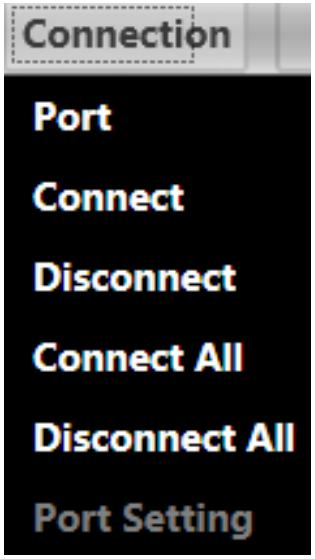
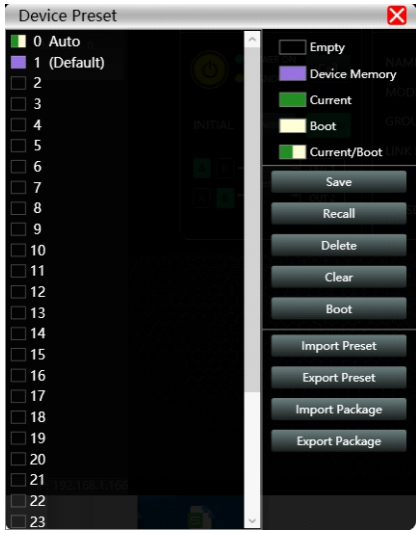


Figure 2.5 "Connection" menu

As shown in Figure 2.5 "Connection" menu:

1. Connection port: Set the connection method, port number and baud rate.
2. Connect the device: Connect and download the device parameters.
3. Disconnect device: Disconnect the connected device.
4. Connect all devices: Connect and download the device parameters of all devices in the device list.
5. Disconnect all devices: Disconnect all connected devices in the device list.

Archive



Machine equipment archive operation:

1. Save: Select the saved gear to save all the current parameters of the machine to the machine archive
2. Recall: Recall the existing archive in the machine archive
3. Delete: delete the existing archive, the default file cannot be deleted and overwritten
4. Clear: delete all archives in the machine
5. Set as boot file: Select a certain archive. After setting it as the boot file, each time the machine is powered on, the archive parameters are automatically called.
6. Import Archive: Import a single archive file from your computer
7. Export archive: Export all the parameters of the current state to the computer to generate a single archive file
8. Import Archive: Import multiple archive files from your computer
9. Export archive package: Multiple archives in the machine archive are packaged into an archive package and exported to a computer to generate an archive package file

System

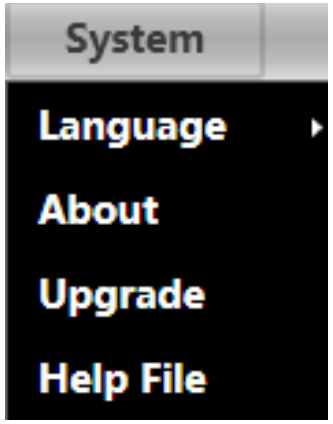


Figure 2.6 "System" menu

As shown in Figure 2.6 "System" menu:

1.Language: Multi-language switching.
2. About: For the current host computer and device version information.
3. Firmware upgrade: upgrade the firmware of the device.

7.8 Output compressor

Double-click 

in the module button to pop up the following figure 12.1 Output compressor setting module.

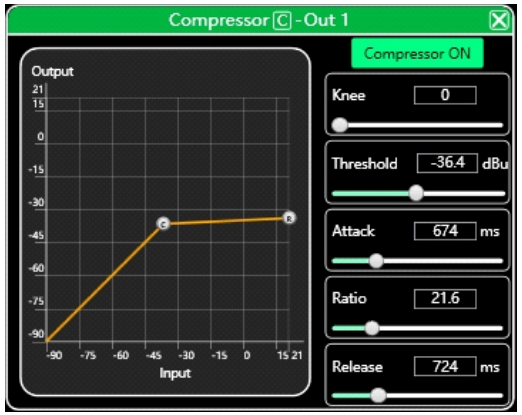


Figure 12.1 Output compressor setting module

7.9 Output limiter

Double-click 

on the module button to pop up the following figure 13.1 Output Limiter Setting Module.

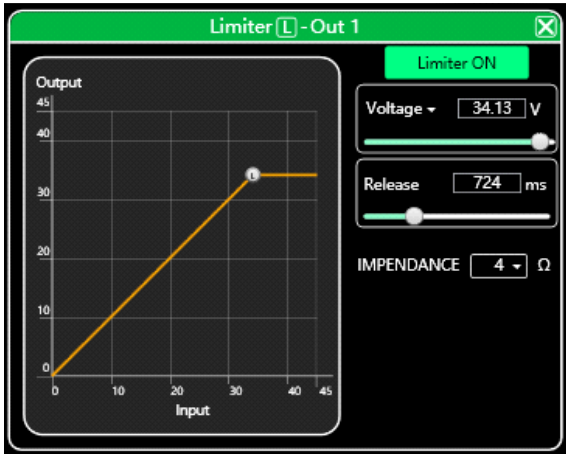


Figure 13.1 Output limiter setting module

7.6 Output equalizer

Double-click  on the module button to pop up the module interface of the input equalizer setting module shown in Figure 6.1. The functions and operation methods are the same as those of the 7.4 input equalizer.

7.7 Output delay

Double-click  in the module button to pop up the module interface of Figure 7.1 Input Delay Setting Module.

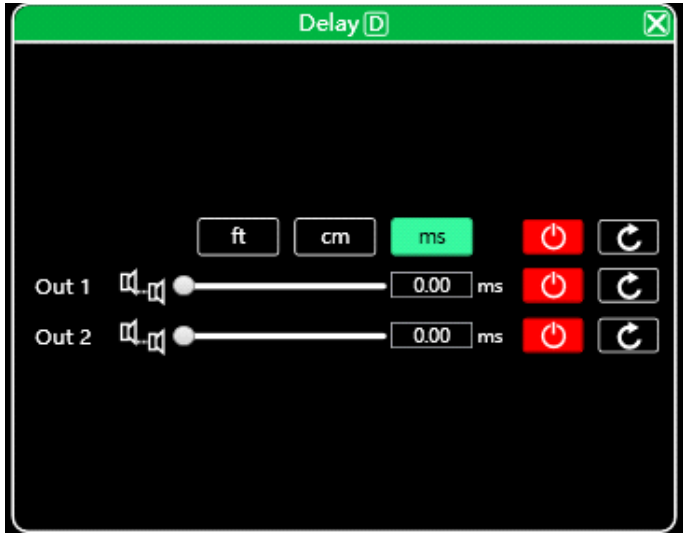


Figure 7.1 Input delay setting module

As shown in Figure 7.1 above, the delay control content of all input channels is listed. Drag the slider  to intuitively adjust the delay value of the corresponding channel, or enter the corresponding value in the value box .  This is the switch of the delay function. Red is off and Green is on. The reset button  can directly reset the default value of the channel delay.

6.3 Scanning

As shown in the following figure 2.7 progress display box, click the "Scan" button to directly scan all devices in the currently set connection mode, and display the scanning progress.

Figure 2.7 Progress display box

6.4 Set up

Set the connection mode of the scanning device, click the "Settings" button, and the port connection interface as shown in Figure 2.8 will pop up. Select the corresponding mode and set the corresponding parameters to confirm. If the device port changes, you can click "Refresh" in the lower left corner to update the port list instantly.

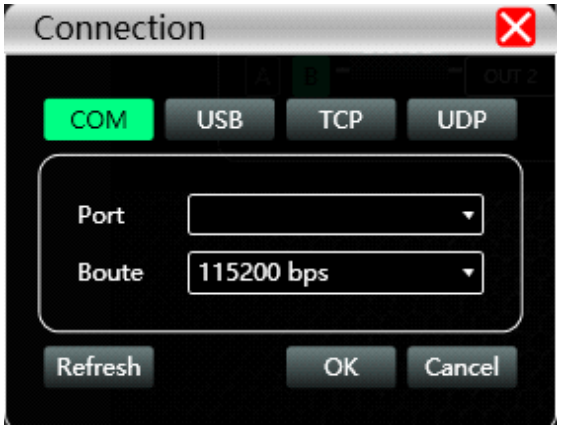


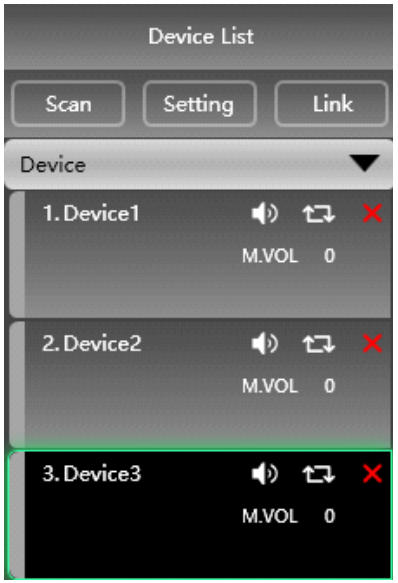
Figure 2.8 Port connection interface

6.5 Net link

The function of setting multiple device parameters at the same time. Click "Net link", and the following figure 2.9 Net link interface will pop up. First select the devices that need to be set on the left, then move to the middle, then select the group setting parameters on the right, and finally press "OK", the group function takes effect. You can also correct the network grouping settings with the same operation.

Figure 2.9 Net link interface

6.6 Device List



7.5 Matrix mixing

Double-click  on the module button, and the matrix mixing setting module shown in Figure 9.1 will pop up.

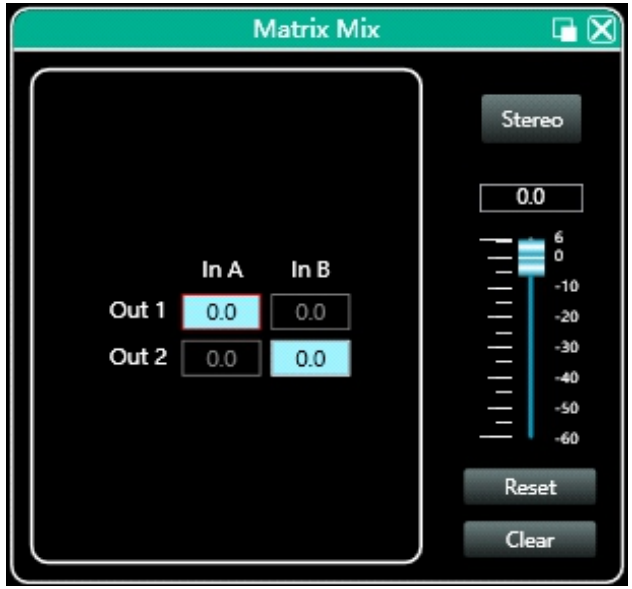


Figure 9.1 Matrix Mixer Setting Module

In the figure above, Out 1, Out 2 on the left correspond to the output channel, In A, In B correspond to the input channel, and the value box with a value on the right is the input and output channel mixing key. When the mixing key is on (double-click to switch the state), this input channel and output channel signals realize the mixing function.

The right part contains the gain, reset button, and clear button of the matrix mix, click the value box on the left, and then drag the slider of the matrix mix gain or enter a value in the value box to adjust the Gain value. Clicking the reset button will reset the matrix mixing function to the initial one-to-one state. Clicking the Clear button will clear all the matrix mixing functions, and there is no corresponding relationship between the input and output of the device.

As shown in Figure 6.1 above, below the EQ control is EQ parameter adjustment items, which can precisely control the EQ's switches, type, frequency, Q value, and gain parameters.

7.4.5 EQ archive button

As shown in Figure 6.1 above, the EQ archive shown in Figure 6.2 will pop up when you click the EQ Archive button.

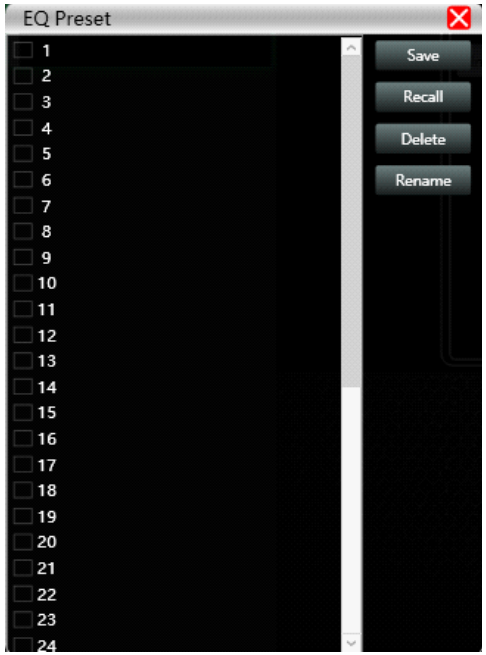


Figure 6.2

Select the corresponding gear in the gear list on the left, and then click the function button on the right to archive, recall, delete, and rename the equalizer setting parameters.

When the software scans or manually adds a simulated device, it automatically adds the corresponding device to the device list, which is convenient for users to interactively operate the required device and to operate multiple devices at the same time.

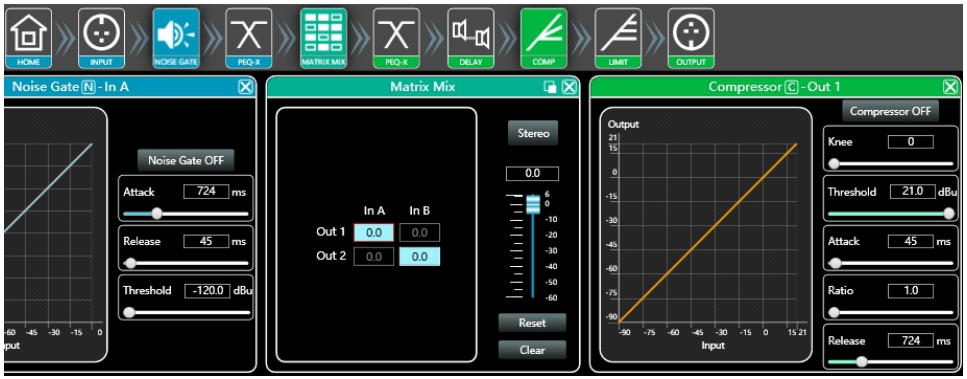
6.7 Local IP address

When the software is opened, it will automatically obtain the IP address corresponding to the network connection of the network adapter that is currently in effect on the computer system, and it will be displayed in the lower left corner of the software to facilitate the management of the device IP address.

6.8 Function module control keys

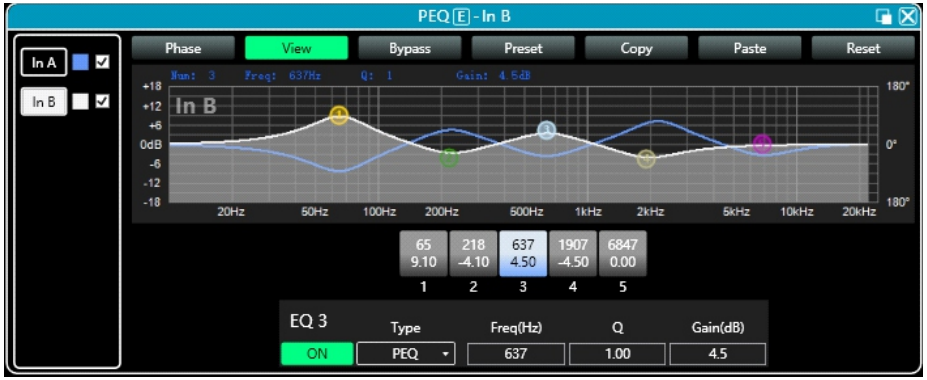
In order to facilitate the interaction of different parameters of the device, the software is divided into multiple modules according to the functional order. If the user wants to operate the corresponding module, he can use this module control key to open, close, and locate the module interface. Double-click to turn on / off, and click to locate.

6.9 Function module interface



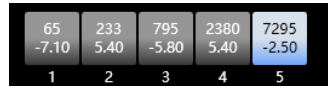
Each function module is turned on and off by the control key, the function page and detailed parameters are displayed, and detailed settings can be made to operate single or multiple functions freely. You can drag left or right to switch between different function pages.

7.4.2 Multi-channel EQ curve display



As shown in Figure 6.1 above, the left side is the EQ curve display switch for each channel. When it is turned on, the curve of the corresponding channel will be drawn in the EQ curve chart.

7.4.3 EQ controls



As shown in Figure 6.1 above, below the curve chart , all EQ controls and their detailed values are displayed, which can be used to locate the position of the controls. Combined with the EQ parameter adjustment items below, each EQ parameter value can be precisely adjusted.

7.4.4 EQ parameter adjustment

7.4 Input equalizer (EQ)

Double-click on the module button, the following figure 6.1 input equalizer setting module pops up. The button in th per right corner of the module can enlarge this module, and the interface display will be clearer after being enlarged.

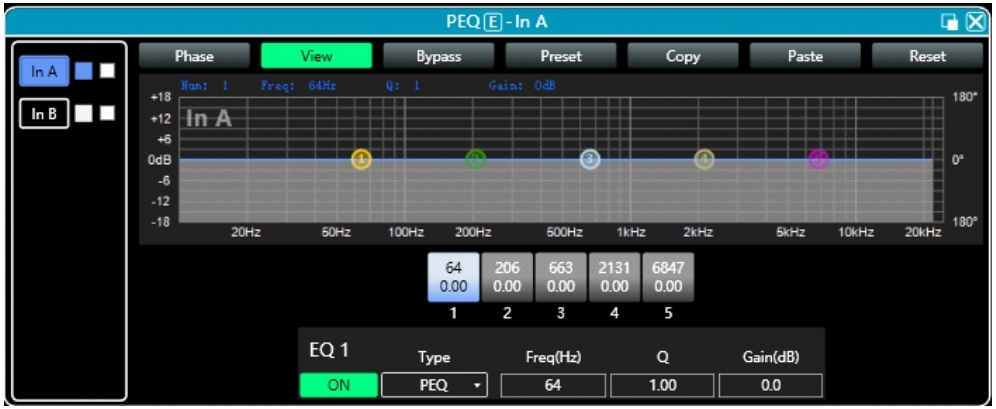


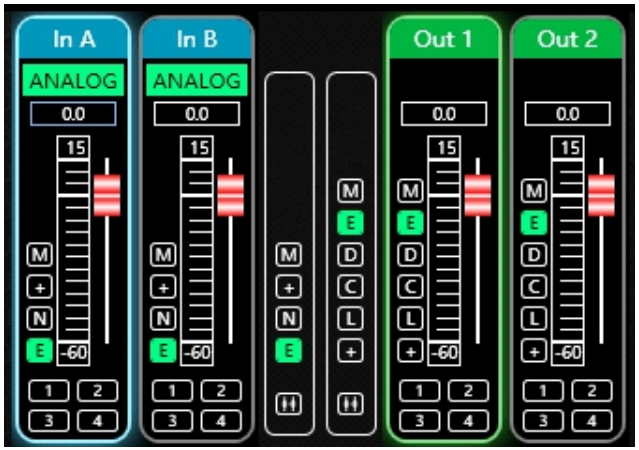
Figure 6.1 Input equalizer setting module

7.4.1 Function button

As shown in Figure 6.1 above, the functions of the top buttons are:
Phase curve: Displays the phase curve of the current channel.
Show Control Points: Show or hide all equalization control points.
Full bypass: Turn on or off all equalizer EQs of the current channel at the same time
EQ Archive: Save the current equalizer setting parameters to the computer, and recall to overwrite the existing equalizer parameters.
Copy: Copy the current equalizer parameter value and paste it into other input channels.
Paste: Used in combination with the Copy button to paste the copied equalizer parameter values into the current channel.
Reset: Reset the equalizer parameters to the default parameter values.

6.10 List of input and output channels

It can display the channel level, gain, input mode, channel name and other information, control the corresponding channel gain, DSP function master switch, and can turn on the input and output channel grouping and tuning function to achieve more powerful operation convenience.



7.Function interface introduction

7.1Input module main interface

Double-click on the module button, the channel input module shown in Figure 3.1 below will pop up.

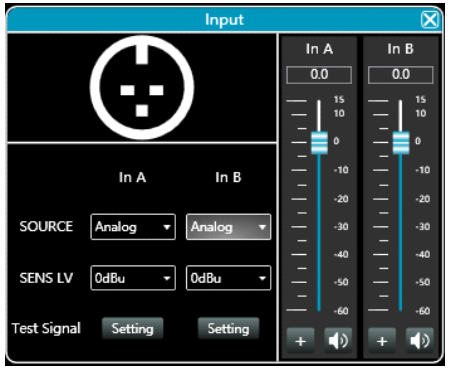
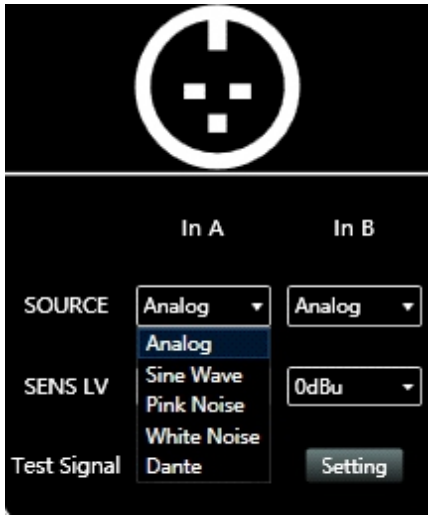
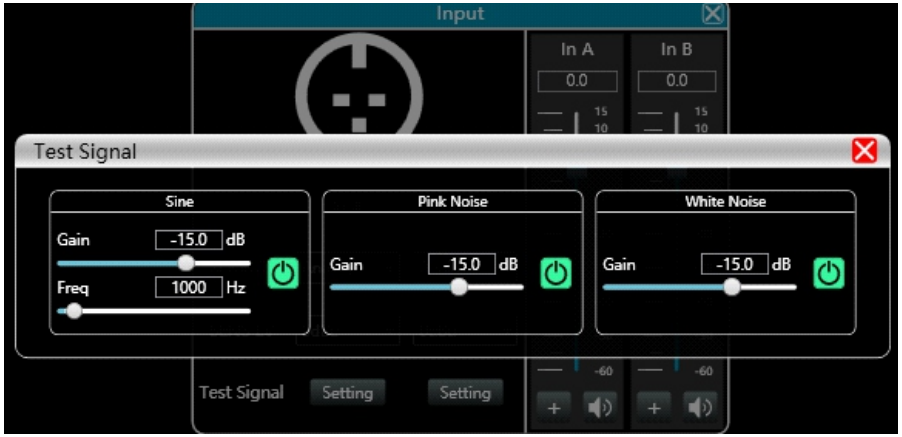


Figure 3.1 Channel input module
As shown in Figure 3.1, you can operate the polarity, mute, and input source sensitivity in the corresponding input channel. In the sensitivity setting, you can choose two gears: 0dBu and 6dBu.

7.2Test signal function



Select the sine wave, pink noise, and white noise in the input source, and then set the corresponding parameters to test the channel according to your own requirements in the test signal settings.
In the test signal setting, all three test signals can adjust the gain value. The switch button on the right side of each test signal can control whether the test signal is effective. Green is on and red is off. In addition, the sine wave test signal can also adjust the frequency.



7.3 Input noise gate

Double-click  in the module button to pop up the following figure 5.1 Input Noise Gate Setting Module.

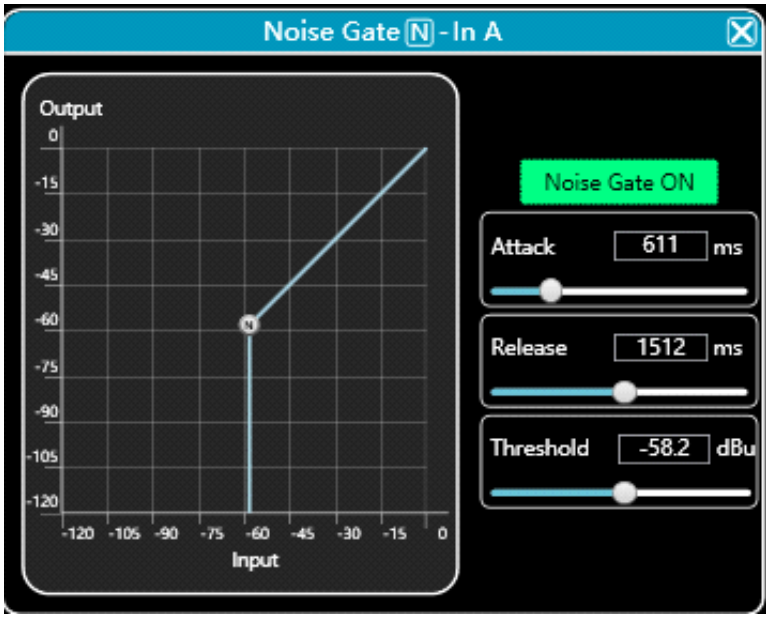


Figure 5.1 Input Noise Gate Setting Module

As shown in Figure 5.1 above, click the noise gate switch  in the upper right corner to turn on or off the noise gate function of the channel input signal. Green is on and red is off.

The start-up time, release time and start-up level are parameters corresponding to the noise gate function. You can drag the slider  or enter the corresponding value  in the value box.

When the noise gate function is turned on, you can drag the points  in the graph on the left to adjust the value obliquely.