



Quadro DSP 6.4

User Manual

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Chapter 1: Introduction

This series is a multi-functional network DSP digital power amplifier. It can monitor the status of amplifier and adjust the function of DSP in real time remotely. Built-in DSP functions with compressor, limiter, noise gate, PEQ, matrix mixer, delay etc. Mconsole software with its elegant interface provides people with easy setup and nice operation experience. Varieties of connection methods make it configurable and extensible. Suitable for various occasions in the PA project.

Applications

- Performance & Art Center
- Theater
- Stadium
- Hotel
- Meeting Room
- Shopping Mall
- Retail Store
- Restaurant

Chapter 2: Technical Parameters

2.1 Features

Network TCP/IP control and manage multiple devices

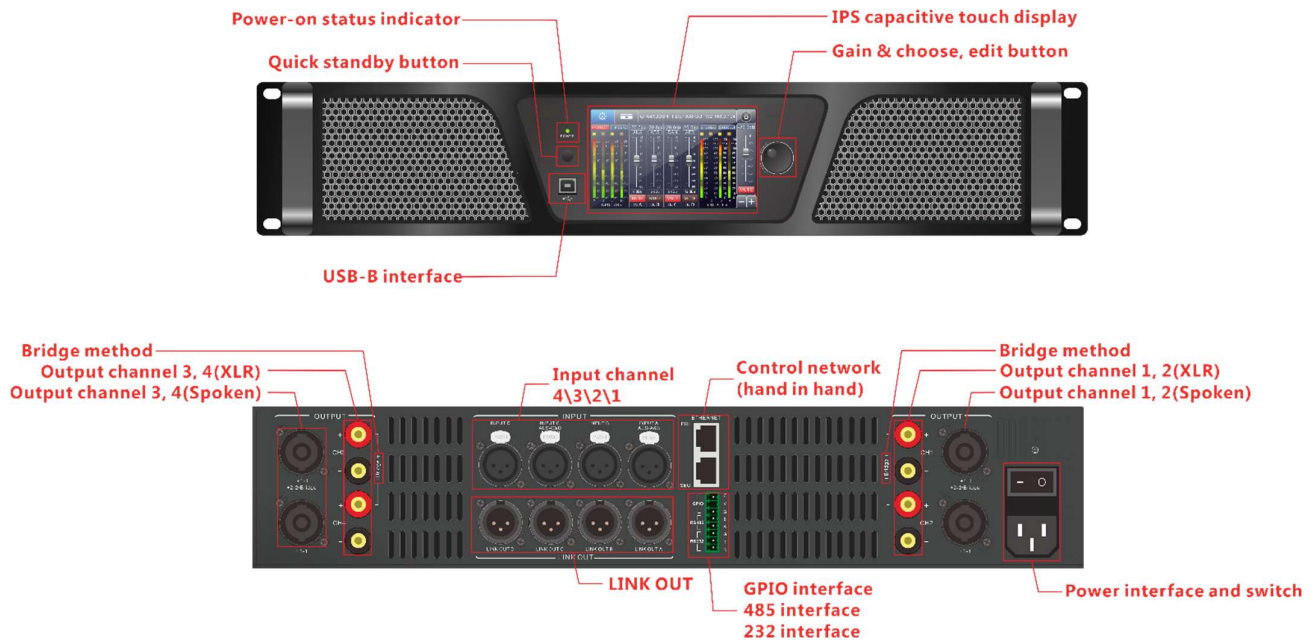
- Remote on/off amplifier
- 4.3"IPS colorful capacitive touch display
- Build-in DSP processor
- Support multiple connection: USB, TCP/IP, RS232, RS485
- Real time remotely monitor status of amplifier
- Support identified by software on site
- Support working mode: Matrix, Bridge, free switch
- Support 0dBu/6dBu/12dBu sensitivity three level adjustment, you can adjust it in software or display
- Standard configured with FIR function, support 4x2048 Taps
- Support constant pressure and resistance: 100V, 70V, 8Ω, 4Ω
- Mconsole software can control media matrix processor, professional speaker processor at the same time
- Wide voltage operation through 180 ~ 264VAC

2.2 Technical Parameters

Model	4*1500W
Power	4*1500W@8Ω 4*2000W@4Ω
Bridged Power	2*3200W@8Ω
Input Audio Source	Analog, Sine wave, Pink noise, White noise, AES
Input Volume	Mute, Phase, Level detector
Input EQ	31 bands EQ
Input Noise Gate	Attack time 1 ~ 2895ms, Release time 1 ~ 2895ms, Threshold level -120dBu ~ 0dBu
DSP Matrix	4*4 matrix zone
Output EQ	10 bands EQ
Frequency Divider	Butterworth、Bessel、Linkwitz-Riley
Delay	Input delay: 4×80ms Output delay: 4×20ms
Output Compressor	Soft knee, Threshold level, Attack time, Compression ratio, Releasing time
Output Limiter	Voltage 0.01V ~ 89.50V, Power 0.01W ~ 1000W, Release time 1~2895ms
Output Volume	Mute, Phase, Level detector
DSP Preset	80 packages
Control Mode	Ethernet, USB, RS485, RS232
Network Model	TCP/IP、1000base-T/100base-TX、RJ45
Channels	4
Minimum output impedance	Each channel 4Ω, bridged mode 8Ω
Input Interface	Balanced input 4×XLR
Output Interface	Spoken*4, XLR×4
Cooling System	Dual fans intelligent control
Gain	6dB sensitivity: 30dB (×29.5); 0dB sensitivity: 36dB (×31.1)
Max input level	20dB sensitivity: 20dBu (7.75V)
SNR	12dB sensitivity: 94dB; 6dB sensitivity: 94dB; 0dB sensitivity: 94dB
Frequency Response	20Hz ~ 20kHz (±0.5dB)@1W, 8Ω
THD+N	<0.1%@1W to full power
Sampling	48K/24bit
Channel Isolation	<-70dB
Operating Mode	Matrix, Bridge
Remotely Control	Remote boot, standby, DSP monitor
Amplifier Monitor	Temperature, Power, Voltage, Current
Constant Pressure and Resistance	100V, 70V, 8Ω, 4Ω

Display	4.3"IPS colorful capacitive touch display
Audio Source Topology	Phoenix terminal Line-out
Protection	Audio limiter, high temperature, DC, high frequency, short circuit, back electromotive force, peak current limiter, surge current limiter, start delay, power breaker protection, power supply overvoltage/undervoltage protection
PC Software	Mconsole for controlling all these devices: media matrix processor, audio processor, DSP power amplifier, DSP active amplifier module
Net Weight	12.35kg
Packaged Weight	16.15kg
Products Dimensions	483mm*460mm*89mm, 2U
Packaged Dimensions	570mm*550mm*165mm
Power Supply	Supply input 180~264VAC

Chapter 3: Functions and Structure



3.1 Display panel description

Protect indicator

Temperature display

Amplifier setting

Current name, preset, IP

System setting

Standby

Operate modes

Input channel
Level display

Total volume

All mute

Input channel
Gain adjustment

Output channel
Level display

Home screen

Sensitive adjustment

Sensitive adjustment



Test signal
support pink noise,
white noise, sine wave

Select input source

Select input source
Support ANA, AES, Dante



Operating mode

Support stereo, bridge
parallel, matrix mode



Support channels link



Preset interface



Control and Dante
IP setting

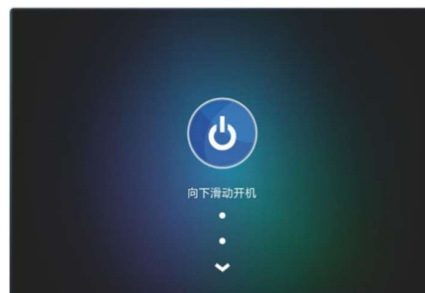


Select screen saver mode freely



Select screen saver mode

Screensaver 1



Screensaver 2

		OUT 1	OUT 2	OUT 3	OUT 4
(C)	温度 ·	40.0	40.0	40.0	40.0
(W)	功率 ·	240	240	240	240
(V)	电压 ·	30.0	30.0	30.0	30.0
(A)	电流 ·	8.0	8.0	8.0	8.0
(Ω)	阻抗 ·	8.0	8.0	8.0	8.0

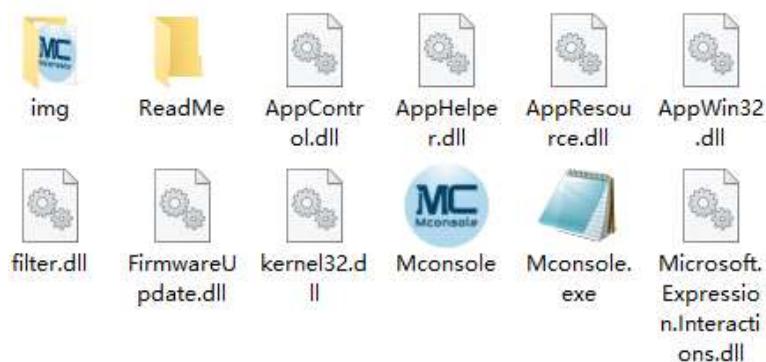
Chapter 4: Software Introduction

Mconsole is a software for users to quickly interact with the parameters of one or more machines. It can store the configuration parameters of the device in a disk file to configure and parameter preset scenes for multiple machines or different places of use. This provides users with its convenient switching and restoring. 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 the needs of customers, which enhances the user experience.

Chapter 5: Software Installation

5.1 Operating environment

The software is suitable for WIN7/WIN8/WIN10 x86/x64 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 need to install the main program, the folder contains the following files or folders, all of 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 operating

Steps: Double-click the executable file in the folder to enter the software theme interface as shown in Figure 5.1.



Precautions:

Some connection methods do not support multiple host computers to be turned on at the same time. Please keep at most one software for each PC.

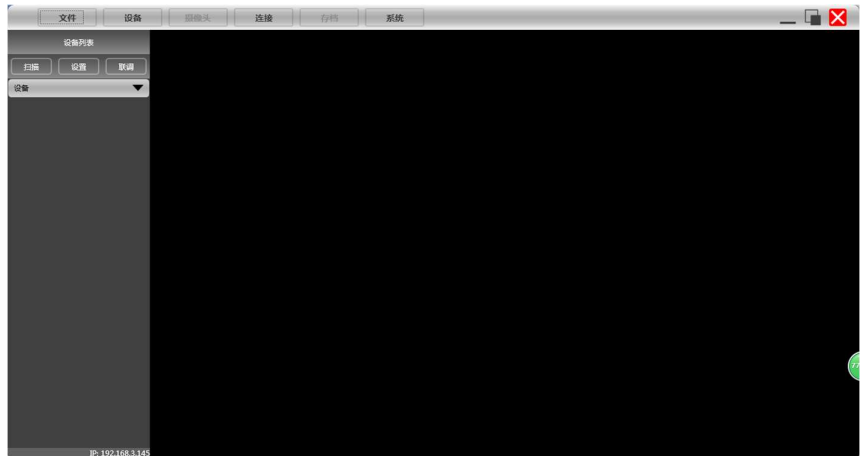


Figure 5.1

Chapter 6 Software Interface Description

1



Figure 6.1

As shown in Figure 6.1, main screen all parts in yellow corresponding position as follows:

- (1) Menu bar
- (2) Scan button
- (3) Setting button
- (4) Link button
- (5) Device list
- (6) Module button
- (7) Homepage monitor area
- (8) Module function interface
- (9) List of input and output channels
- (10) IP address in this machine

6.1 Initial interface

Device setting



Figure 6.1.1



1. Shown in Figure 6.1.1, click  , the device can be switched of POWER ON or STANDBY, green means POWER the ON state, yellow means STANDBY state.



2. Click  , you can make the display screen and status light of the connected device flash, and you can quickly find the connected device from the power amplifier device stack.



3. Initial power on state can be selected.  , After selecting, it will be directly switched to the selected state after the hard switch is turned on.
4. Click the button in the frame to quickly switch the routing status. There are 4 options available: stereo, parallel, bridge, and matrix.

6.1.1 Device info

1. As shown in Figure 6.1.2, the device name, group, and IP can be modified in the upper left corner of the initial interface, and then "device"- "devices", information can be changed according to actual needs.
2. The device model and LINK ID cannot be changed. The LINK ID is the corresponding ID when the host computer is connected to multiple devices:
3. Preset name is the name of the currently used preset.



DEVICE INFO	
NAME	Device1
MODEL	
GROUP	
LINK ID	1
IP	
PRESENT	

Figure 6.1.2

6.1.2 Input setting

INPUT SETTING				
	In A	In B	In C	In D
CLIP	☐	☐	☐	☐
GAIN	0.0	0.0	0.0	0.0
MUTE	☐	☐	☐	☐
PHASE	+ +	+ +	+ +	+ +
SOURCE	Analog Analog	Analog Analog	Analog Analog	Analog Analog
SENS LV	0dBu 0dBu	0dBu 0dBu	0dBu 0dBu	0dBu 0dBu

Figure 6.1.3



1. As shown in Figure 6.1.3, is the total volume push button, you can use the mouse to drag, or you can directly

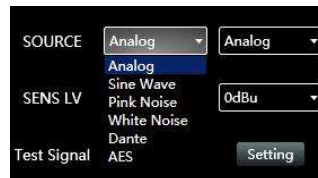
enter the exact value in the input box  is the mute button.



2. When the input is overloaded, the indicator light will light up as follows



3. You can quickly set the gain, mute, and phase



4. Multiple input sources are available



5. Support 0dBu, 6dBu two level sensitivity switch

6.1.3 Amplifier status

AMP STATUS									
	Out 1	Out 2	Out 3	Out 4	Out 1	Out 2	Out 3	Out 4	
LIMIT	ON	ON	ON	ON					
	Fixed-R	Fixed-R	Fixed-R	Fixed-R	0.00	0.00	0.00	0.00	°C
POWER	0.01	0.01	0.01	0.01					W
VOLTAGE	0.01	0.01	0.01	0.01					V
CURRENT	0.01	0.01	0.01	0.01					A
IMPEDANCE	8 ▾	8 ▾	8 ▾	8 ▾					Ω

Figure 6.1.4

As shown in Figure 6.1.4,



you can choose according to

your needs. When the limiter is in the on-control state, the overload light will light up.



6.2 Menu bar

6.2.1 File

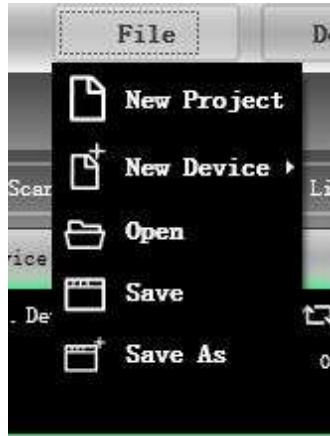


Figure 6.2.1 File menu

As shown in Figure 6.2.1 "File" menu:

New Project: the software can create a model of demo device in this menu when the device is not connected.

New Device: increase simulation equipment, simulation equipment will not affect the existing equipment.

Open: open an existing device management project from the computer disk.

Save: save the current device management project in the computer disk.

Save as: save the current equipment management project as a file.

6.2.2 Device



Figure 6.2.2 Device menu

As shown in Figure 6.2.2 Device menu:

Devices: view or modify the upper and lower computer software information, device name and device IP address of the device.

Channels: set the name of each input and output channel.

Channel copy: copy the parameters of the same type of channel.

6.2.3 Connection



Figure 6.2.3 Connection menu

As shown in Figure 2.5 "Connect" menu:

Port: set the connection mode, port number and baud rate.

Connect: connect and download the device parameters.

Disconnect: disconnect the connected device.

Connect all devices: connect and download the device parameters of all devices in the device list.

Disconnect all devices: disconnect all connected devices in the device list.

6.2.4 Preset



Figure 6.2.4 Preset menu

As shown in Figure 6.2.4 Device preset:

Save: select the saved gear and save all the current parameters of the device to the preset.

Recall: call the existing preset in the device.

Delete: delete existing preset, default presets cannot be deleted or overwritten.

Clear: delete all presets in the device.

Boot: select a certain preset, after set to boot file, each time the device is powered on, the preset parameter is automatically called.

Import Preset: import a single preset file from the computer.

Export Preset: export all the parameters of the current state to the computer, and generate a single preset file.

Import Package: import multiple preset package files from the computer.

Export Package: pack multiple presets in the device archive into one preset package and export to the computer to generate the preset package file.

6.2.5 System

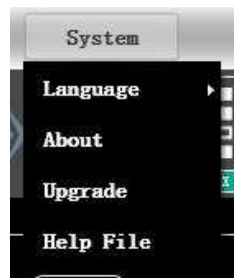


Figure 6.2.5 System menu

As shown in Figure 6.2.5 "System" menu:

Language: multi-language switching.

About: the current host computer and device version information.

Upgrade: upgrade the firmware of the device.

Help File.

6.3 Scan

As shown in the following figure 6.2.6 progress display box, click the "Scan" button to directly scan all devices in the currently set connection mode, and display the scanning progress.



Figure 6.2.6 Progress display box

6.4 Setting

Set the connection mode of the scanning device, click the "Settings" button, and the port connection interface as shown in Figure 6.2.7 will pop up, select the corresponding mode, set the corresponding parameters and confirm. If the device port changes, click "Refresh" in the lower left corner "Button instantly updates the port list.



Figure 6.2.7 Port connection interface

6.5 Link

To set the parameters of multiple devices at the same time, click the "Link" button, and the network link interface as shown in Figure 6.2.8 will pop up. Select the device that needs to be set at the same time in the left frame, move to the link group in the middle frame, and then select the grouping setting parameters on the right, finally press the "OK" button to make the grouping function effective. You can also use the same operation to correct the network grouping settings.

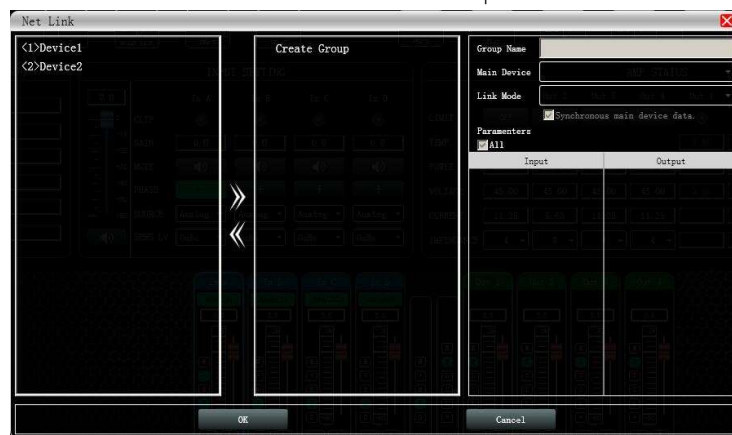


Figure 6.2.8 Net link interface

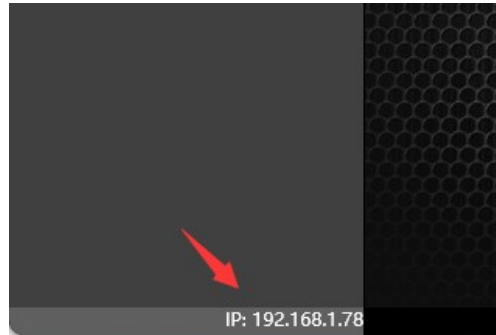
6.6 Device List



When the software scans or manually adds a new analog device, it will automatically add the corresponding device to

the device list, which is convenient for the user to interact with the required device and to operate multiple devices at the same time.

6.7 Local IP address



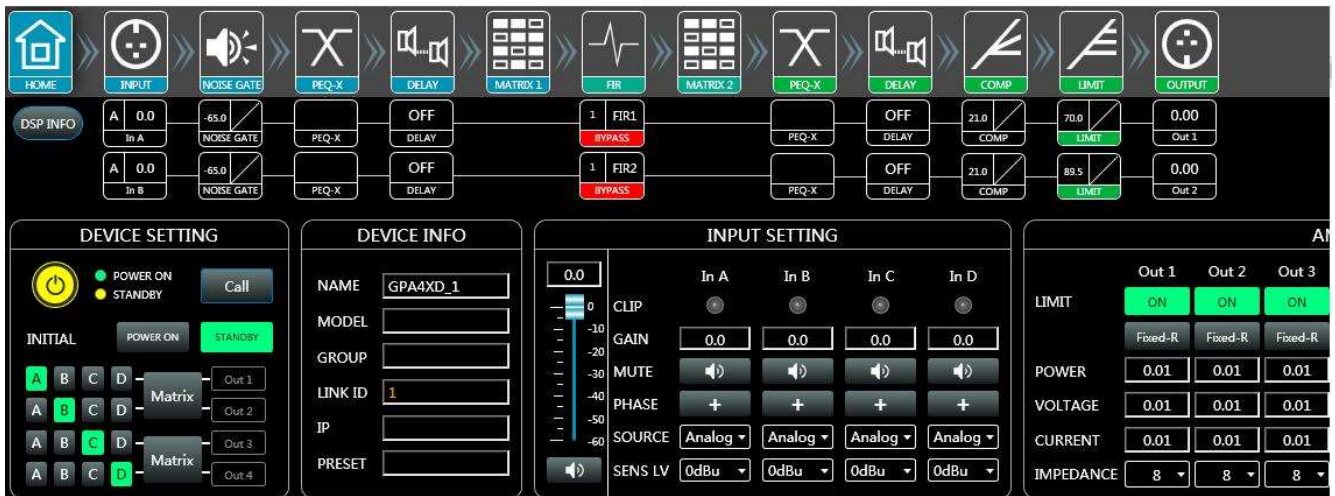
When the software is opened, it will automatically obtain the IP address of the network connection corresponding to the network adapter of the current computer system, and display it in the lower left corner of the software to facilitate the management of the device IP address.

6.8 Function module control button



In order to facilitate the interaction of different parameters of the device, the software is divided into multiple modules according to the order of function. 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 open/close the module interface. Click for positioning.

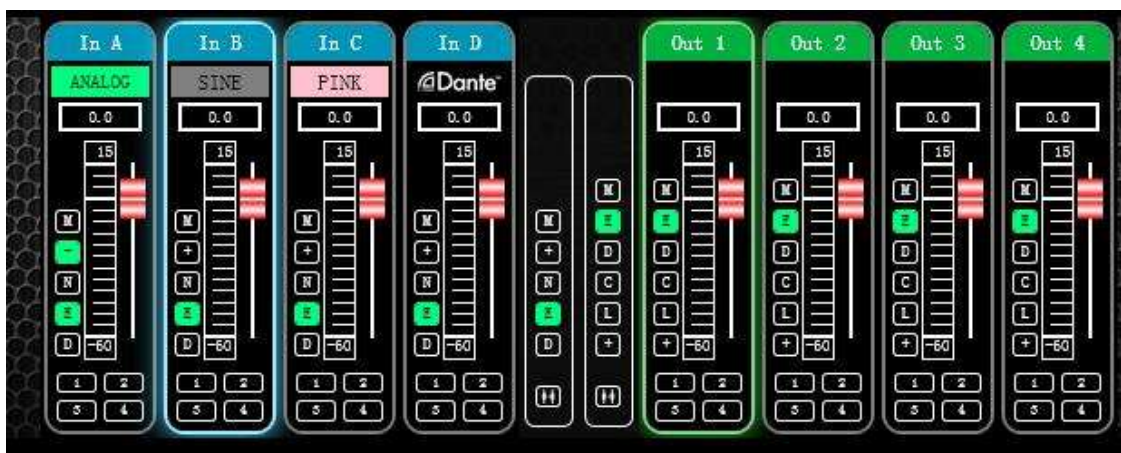
6.9 Function module interface



Each function module is opened and closed by the control key, and the function page and detailed parameters are displayed, and detailed settings can be made, and single or multiple functions can be operated freely. You can drag left and right to switch pages with different functions.

6.10 List of input and output channels

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



Chapter 7 Introduce of function interface

7.1 Interface of input channel module



Double-click in the module button , and the following figure 7.1 channel input module will pop up.

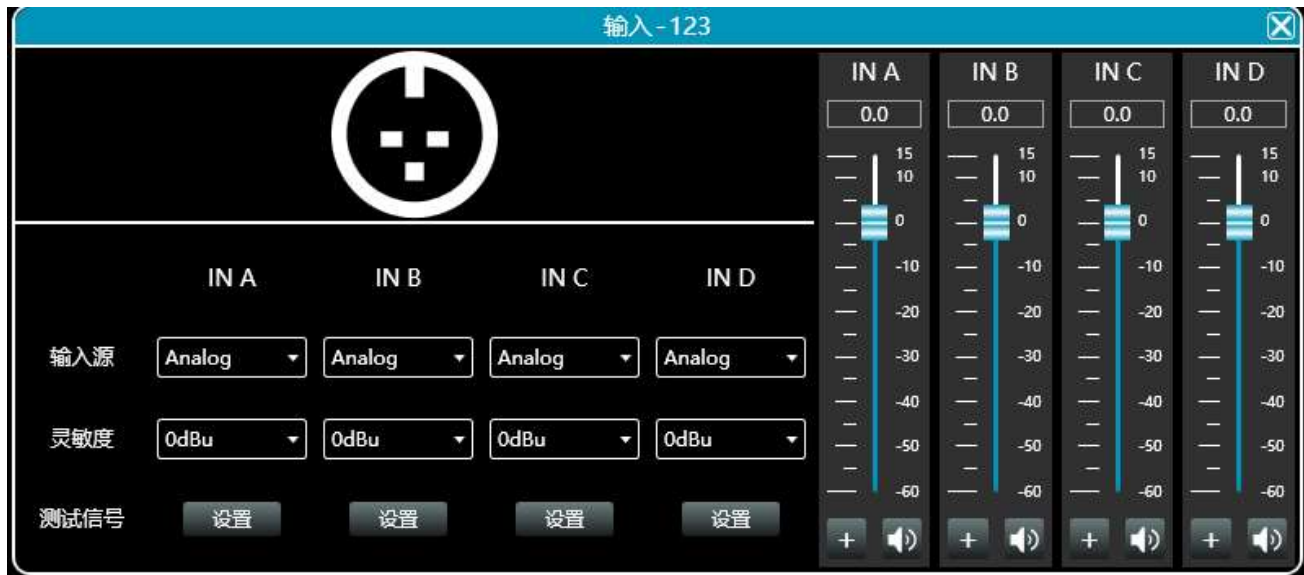
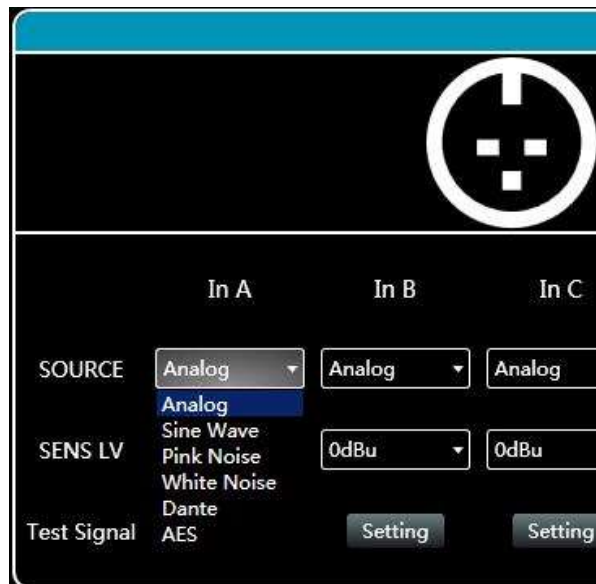


Figure 7.1 input channel module

As shown in Figure 7.1, you can operate the polarity, mute, and input source sensitivity in the corresponding input channel; In the sensitivity setting, you can choose between 0dBu and 6dBu two gears

7.2 Test signal function



Select sine wave, pink noise, white noise in the input source, and then set the corresponding parameters in the test signal settings according to your requirements to test the channel.



In the test signal generation setting, the three test signals can be set to generate the corresponding gain value of the test signal. The switch button on the right side of each test signal can control whether the test signal is effective. Green is on, red is off, and you can set frequency of sine wave.

7.3 Input channel noise gate



Double-click noise gate button, the figure 7.2 below input channel noise gate setting module pops up.

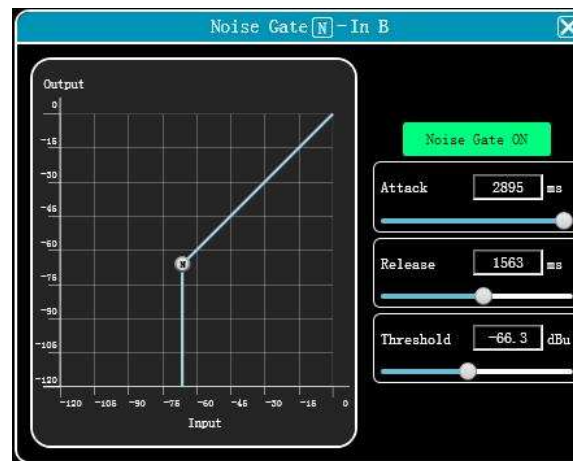


Figure 7.2 input noise gate setting module

As shown in Figure 7.2 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. The green is on, the red is off. The attack time, release time, and threshold level are the parameter corresponding to the noise gate. You can drag the slide bar 

or enter the corresponding value in the value box 

When the noise gate function is turned on, the point  in the graph on the left can be dragged diagonally to adjust

the value.

7.4 Input channel PEQ



Double-click in the module button to pop up the input equalizer setting module as shown in Figure 7.3. The

button in the upper right corner of the module can magnify this module, and the interface display will be clearer after magnification.

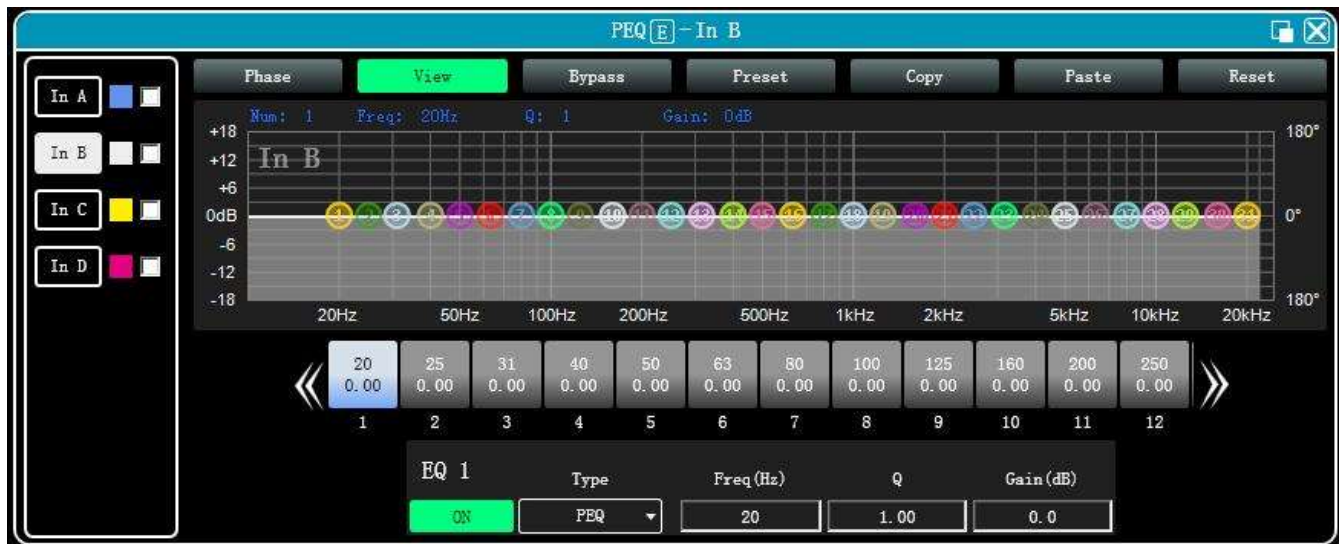


Figure 7.3 Input PEQ setting module

7.4.1 Function button

As shown in Figure 7.3 above, the functions of the top buttons are:

Phase curve: display the phase curve of the current channel.

Show control points: show or hide all balance control points.

Full bypass: turn on or off all equalizer EQ of the current channel at the same time

EQ preset: save the current equalizer setting parameters to the computer, and recall and 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 equalizer parameter values copied by the copy function to the current channel.

Reset: reset the equalizer parameters to the default parameter values.

7.4.2 Multi-channel EQ curve display

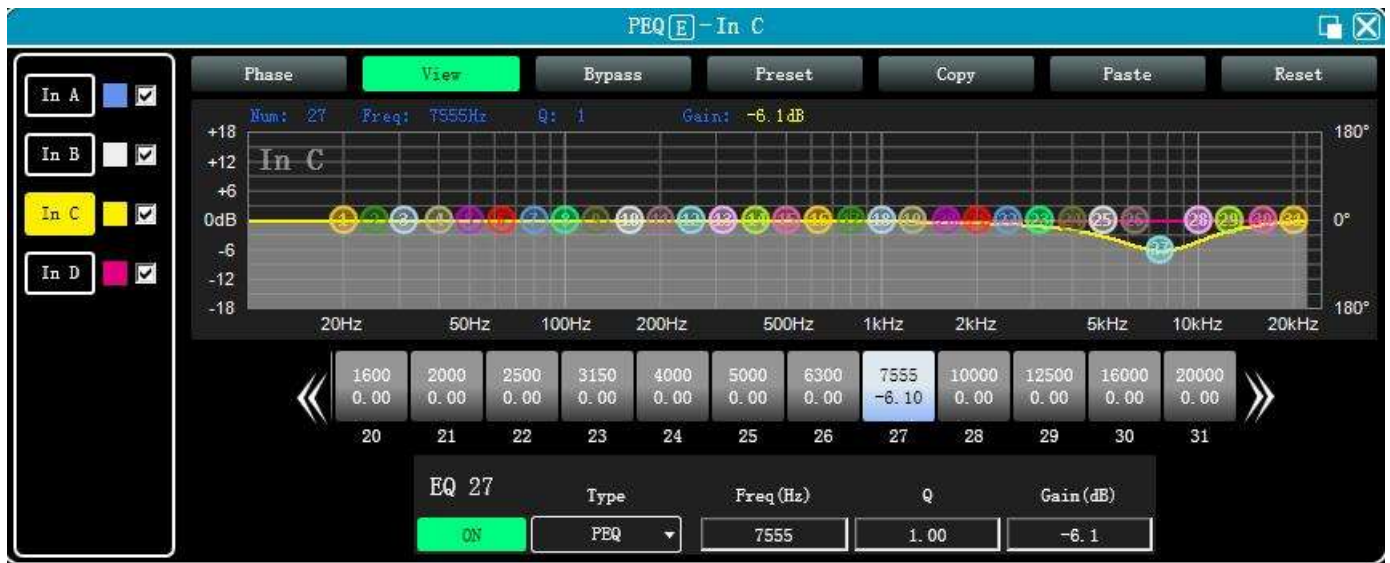
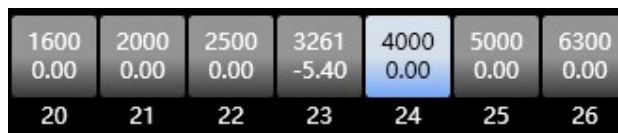


Figure 7.4.1

As shown in Figure 7.4.1, on the left is the EQ curve display switch of 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 control



As shown in Figure 7.4.1, under 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 following EQ parameter adjustment items, the parameter value of each EQ can be precisely adjusted.

7.4.4 EQ parameter adjustment item



As shown in Figure 7.4.1 above, below the EQ control is the EQ parameter adjustment item, which can precisely control the EQ switch, type, frequency, Q value, gain and other parameters.

7.4.5 EQ preset button

As shown in Figure 7.4.1 above, when you click the EQ preset button, the following interface will pop up as figure 7.4.2.



Figure 7.4.2 EQ Preset

Select the item corresponding to the gear list on the left, and then click the function button on the right to realize the archive, call, delete, and rename functions of the equalizer setting parameters.

7.5 Matrix mix



Double-click in the module button **MATRIX MIX**, the following Figure 7.5 matrix mixing setting module will pop up.

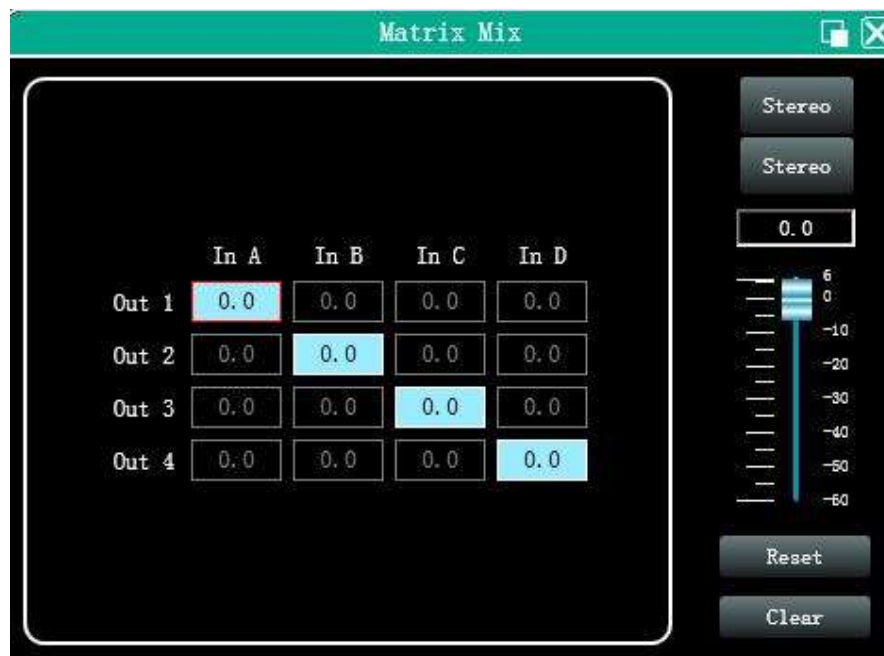


Figure 7.5 Matrix Mix setting module

In the above figure, the left side corresponds to the output channel, and the upper side corresponds to the input channel.

The numerical value box with the value is the input and output channel mixing key. When the mixing key is lit (double-click the value box to switch the state), the input channel and the output channel signal realizes the mixing function.

The right part of the above figure contains the gain, reset button, and clear button of the matrix mix. Click the value box on the left, and then drag the sliding block of the matrix mix gain or enter a value in the value box to adjust the matrix block. Click the reset button to reset the matrix mixing function to the initial one-to-one state; click the clear button to clear all the matrix mixing functions, and there is no correspondence between the input and output of the device.

7.6 Output PEQ



Double-click the module button , and the module interface of the output equalizer setting module will pop up. The function and operation method are the same as the 7.5 input equalizer.

7.7 Output delay



Double-click the module button , the module interface of the output delay setting module will pop up.

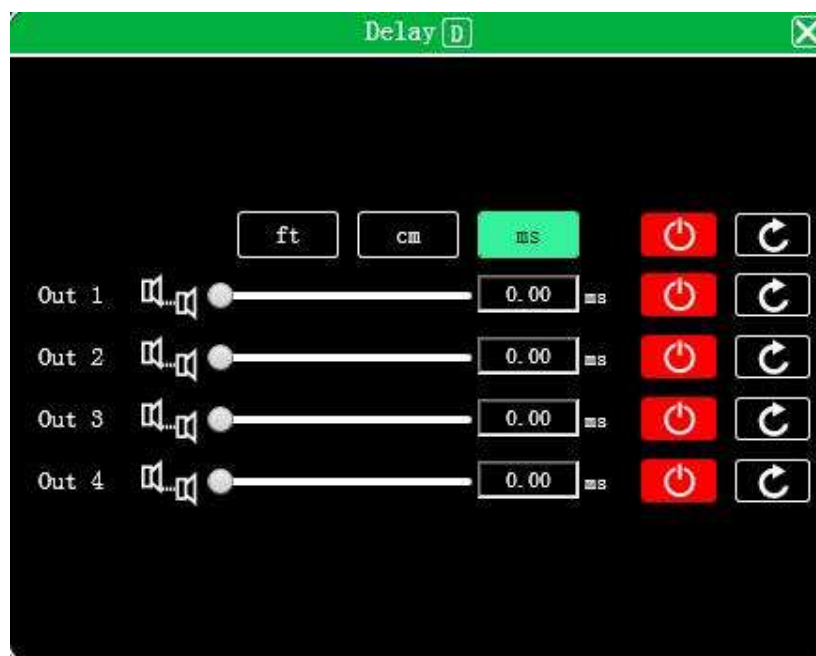


Figure 7.6 Output delay setting module

As shown in Figure 7.6 above, the delay control content of all output channels is listed. Drag the slider on the left



to intuitively adjust the delay value of the corresponding channel, or enter the corresponding value in the value box **6.55 ms**, and the delay function is on the right. Switch, red is off, green is on,

the reset button  on the far right can directly reset the default value of the channel delay.

Note: ft = inches, cm = centimeters, ms = milliseconds

7.8 Output compressor



Double-click in the module button, the following Figure 7.7 output compressor setting module will pop up.

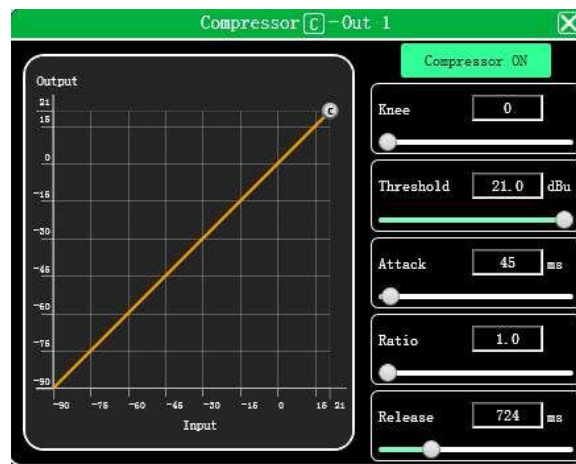


Figure 7.7 Output compressor setting module

7.9 Output limiter



Double-click in the module button, the following Figure 7.7 output limiter setting module will pop up.

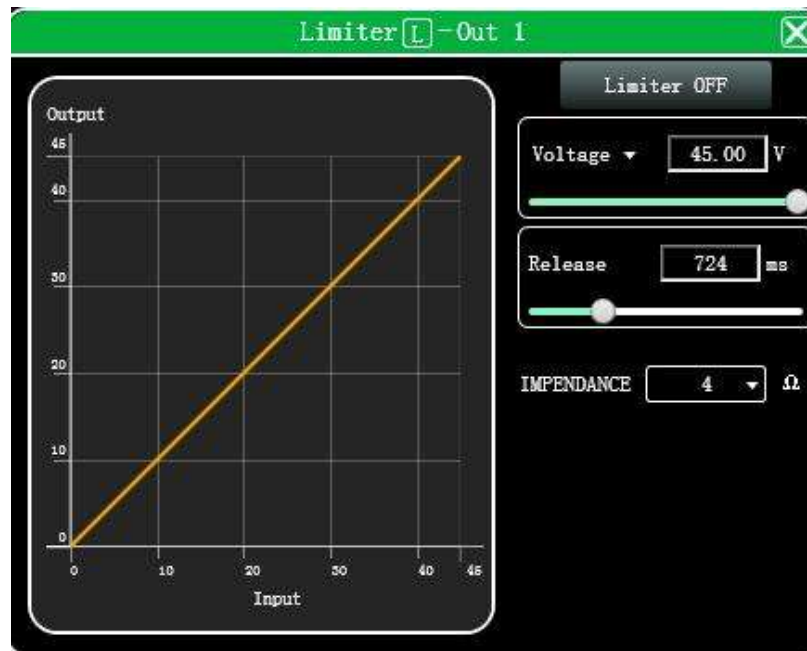


Figure 7.7 Output limiter setting module

7.10 Output module



Double-click in the module button , and the output setting module shown in Figure 7.8 pops up.



Figure 7.8 Output setting module

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

7.11 Input channel

As shown in Figure 6.1, list of input and output channels homepage, the left part is the input channel as shown in Figure 7.9.



Figure 7.9 Input channel

1. The contents from top to bottom in the input channel interface include: channel name , input mode

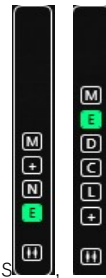
, channel gain, function buttons , and channel grouping joint adjustment situation .

2. The channel name, input mode, and channel grouping can only be viewed, and there is no editing function.

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

4. Among the function buttons, the buttons from top to bottom are: mute , polarity , noise gate , equalizer bypass , if the mute button is red, it is in the mute state, and if the other buttons are green, it is in the effective state.

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



6. In the button bar between the input and output channels, is the master switch corresponding to the function button of all input and output channels, which will directly operate all input channels at the same time.

7.12 Output channel

As shown in Figure 6.1, list of input and output channels homepage, the right part is the output channel as shown in Figure 7.10.



Figure 7.10 Output channel

The content from top to bottom in the output channel interface includes: channel name **Out 2**, channel gain, function



buttons, and channel grouping and joint adjustment

1. The channel name, digital output status, and channel grouping status can only be viewed without editing function; in



the channel gain function, the level status of the output channel signal can be seen. The other two parts (gain value

box, gain slider) are for adjusting the gain value of this channel.

2. Among the function buttons, the buttons from top to bottom are: mute , equalizer bypass , delay , compressor , limiter , polarity , if the mute button is red, it is in mute state, and if the other buttons are green, it is the effective state.

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

7.13 Channels link

Click the joint adjustment button  between list of input and output channels shown in Figure 6.1, and the following Figure 7.10 channels link interface will pop up.

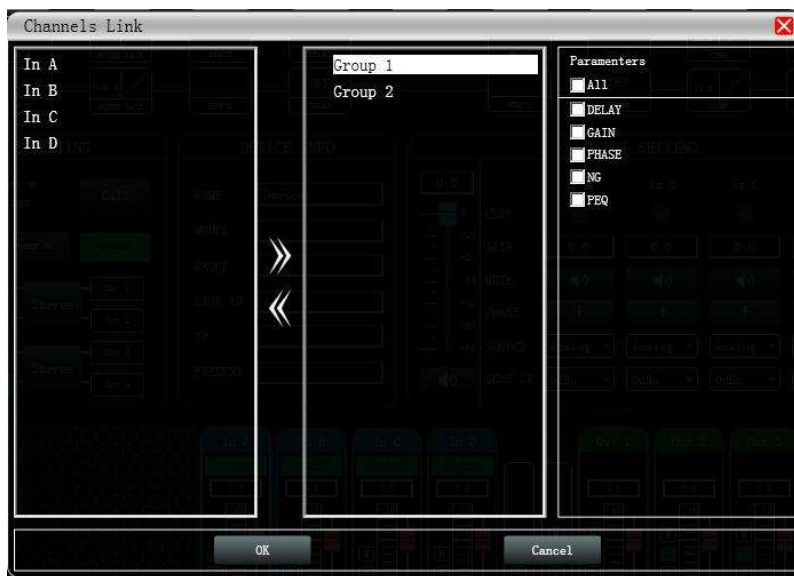


Figure 7.10 Channels link interface

As shown in the figure above, the three lists from left to right are divided into channel list, group list, and parameter list: The channel list has listed all the channels that can be tuned together. After selecting the corresponding channel, click

the Add button  to move to the group list.

There are already 2 groups in the group list, directly select the corresponding group. If you add a channel to the channel list, it will be directly divided into the selected group. If you want to remove the channel you want to remove, click Add

and press the remove button  below the button. It can be removed to the channel list.

The parameter list is the parameters that can be adjusted jointly in the grouping list. After checking, it means that when several channels in the same group adjust the parameters, other channels will make the same adjustment at the same time.

7.14 Device list

The device list is on the left of software homepage shown in Figure 6.1, shown in Figure 7.11 Device List below:



Figure 7.11 Device List

The above figure **<1>** is the connected device number; **Device1** is the device name; **Factory** is the factory name (the user cannot modify); if the connection method is TCP, the left side of the factory name will display the network IP address of the device; if it is USB Mode, it will display USB; serial port connection, it will display the specific COM port used.



From left to right, it is divided into 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 can refresh



the status of the device instantly. If the device is online, the leftmost  will turn green, and the remove button  can directly remove the device in the software.

If you need to debug different devices, you can click to select the target device, and the function interface will be updated to the device function page.

7.15 Add device/New device

Click "File"-"New Device" or "Demo Device" in the menu bar of the software homepage interface in Figure 6.1, and the following Figure 7.12 Add Device Interface will pop up. Select the virtual device model to be added and add it to the device list. Note: The virtual device will not connect to the real device.

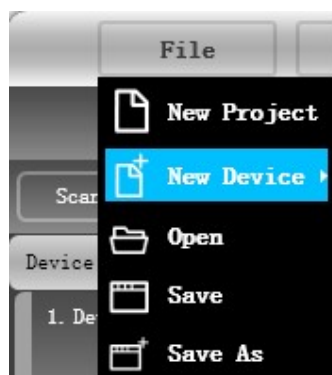


Figure 7.12 Add new device interface

7.16 Device management

Click "Device"->"Devices" in the menu bar of the software homepage interface in Figure 6.1, and the device manage interface shown in Figure 7.13 will pop up.

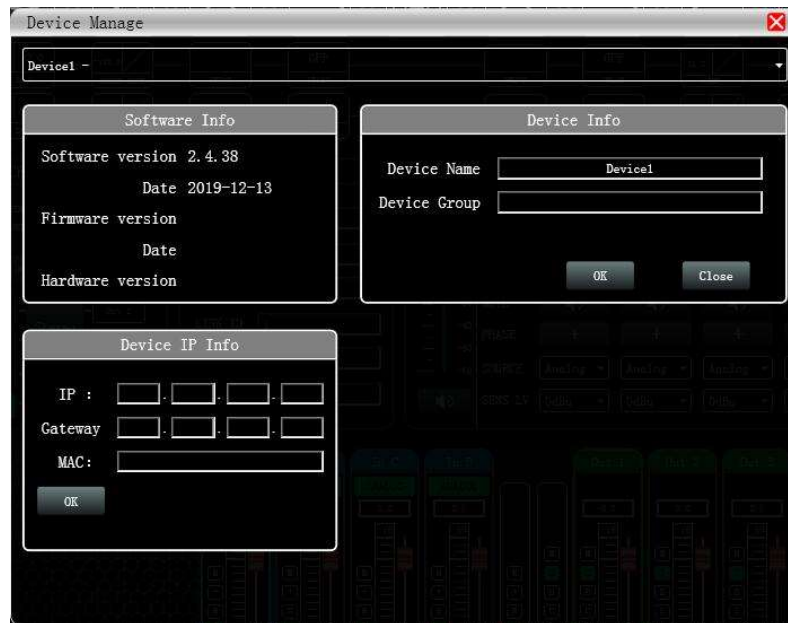


Figure 7.13 Device manage interface

As shown in the figure above, the device information content displayed on the target device management interface can be selected in the device list at the top. The device management interface is divided into four parts as follows:

Software information: display the current device's upper and lower computer version number and date information.

Device information: display the current device name, device grouping, and factory name information. If the factory name is to be displayed, you need to press the hidden shortcut key CTRL+ALT+F12, where "device name" and "factory name" can be entered after the new name Click the button to save.

Device IP information: if the current device is connected by network, the device's IP address, gateway, and MAC address will be displayed here. The 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.

Software Logo: logo of the software itself

7.17 Channel names management

Click "Device"->"Channel Management" in the menu bar of the software homepage interface in Figure 6.1, and the following Figure 7.12 channel names management interface will pop up.

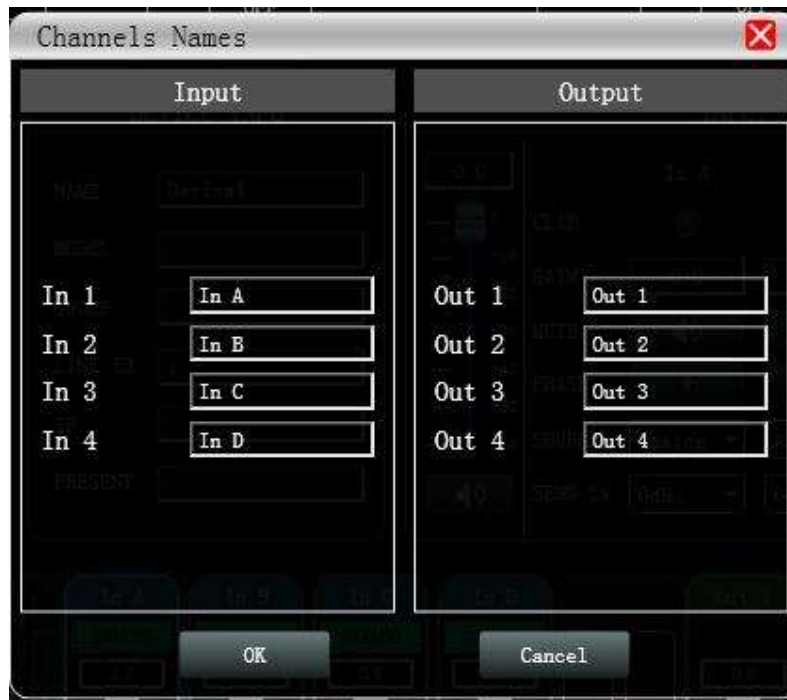


Figure 7.12 Channels names management

As shown in the figure 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 that the length of the channel name is limited to 5 English letters and numbers.

7.18 Channels copy

Click "Device" - "Channels copy" in the menu bar of the software homepage interface in Figure 6.1, and the channels copy interface in Figure 7.13 will pop up.



Figure 7.13 Channels copy interface

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

7.19 Preset

Click "Preset" in the menu bar of the software homepage interface in Figure 6.1, and the preset interface in Figure 7.14 will pop up.



Figure 7.14 Device preset interface

As shown in the above picture, the left side of the archive interface is the gear position, among which "0 automatic gear" is the system gear position and cannot be used directly; "1 (default)" is the default gear of the device, which can only be recalled, cannot be deleted or overwritten, and the device parameters after recall All of them will be restored to the factory default parameters; other gears can be freely saved, recalled, deleted and other operations.

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

Save: Save the existing device parameters to the corresponding selected archive.

Recall: Recall the selected archive to the parameters of the current device.

Delete: delete the selected archive parameter.

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

Set as boot file: Set the selected file as the device will automatically call the file to save the work when the device is turned on next time.

Import Preset: Import a single device parameter file in the computer system, and directly overwrite the existing parameter data.

Export Preset: save the current equipment parameters to the computer system to produce a single equipment parameter archive file

Import Package: import multiple archive parameter packages in the computer system

Export Package: Export the parameters of all gears in the equipment archive to the computer system to produce multiple

archived parameter package files.

7.20 Firmware update

Click "System"-"Upgrade" in the menu bar of the software homepage interface in Figure 6.1, and the firmware upgrade interface shown in Figure 7.15 will pop up.



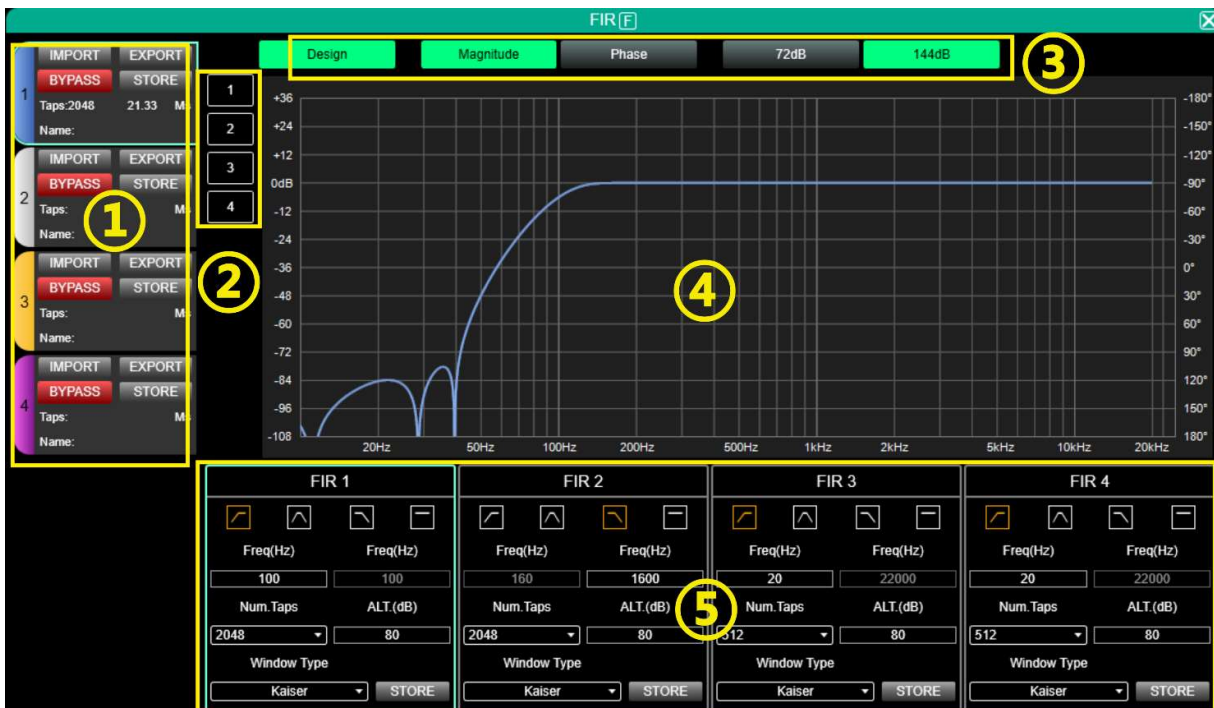
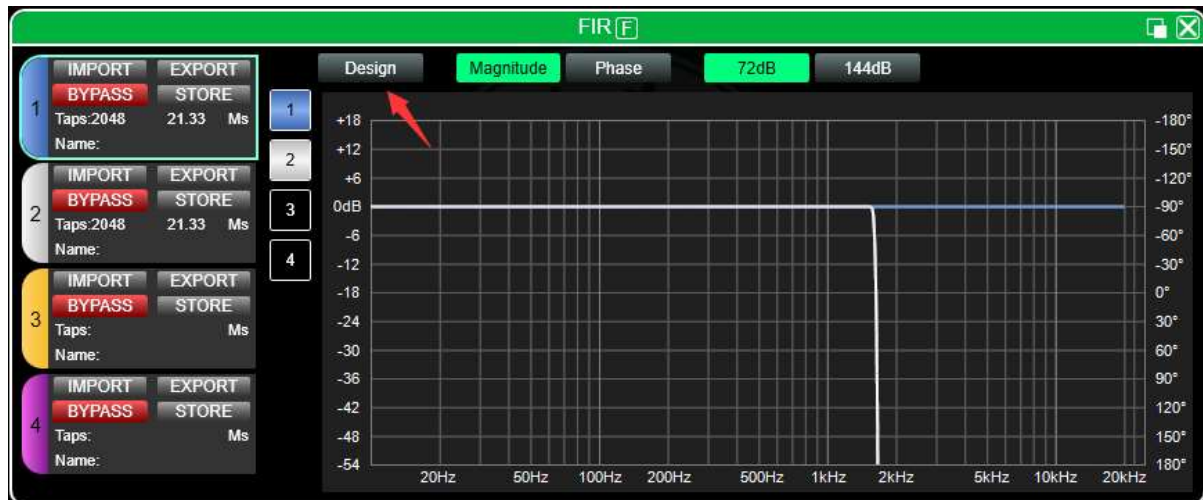
Figure 7.15 Firmware upgrade interface

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

7.22 FIR using introduction



Double click FIR module button, enter into FIR function interface, click Design to enter into design interface.



There are 5 area in FIR interface:

Setting ①	IMPORT	Import FIR preset files to the current channel
	EXPORT	Export current channel FIR file

	BYPASS	Bypass function, the channel EQ is straight after turned on, default red state means turned on, and it needs to be turned off manually when using FIR
	STORE	Save FIR parameters in the device
	Taps	Tap numbers of current channel
	Ms	Delay of current channel
	Name	FIR preset file name of current channel
Channels ②	1, 2, 3, 4	Click to display the FIR curve of the corresponding channel, and support multiple curves to be displayed at the same time
Function ③	Design	Design interface switch button
	Magnitude	Interface show with amplitude curve
	Phase	Interface show with phase curve
	72dB	Show content within 72dB of amplitude accuracy
	144dB	Show content within 144dB of amplitude accuracy
Curve ④	-108 ~ +36	Amplitude accuracy, the value used for reference when the current display is an amplitude curve
	-180° ~ +180°	Phase accuracy, the value used for reference when the current display is a phase curve
	20Hz~20KHz	Frequency band
Design ⑤		High pass
		Frequency band
		Low pass
		Flat
	Freq(Hz)	Start frequency setting, high pass on the left, low pass on the right
	Num.Taps	Taps numbers, total 8 steps, optional 256 ~ 2048
	ALT.(dB)	Depth, only available in Kaiser window
	Windows Type	Window type selection
	STORE	Save, after setting the parameters, click to save to the device channel