



Eco-Network Digital Amplifier



TC-4500DT
TC-4700DT

Please read this user manual in detail before use

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1.Product description

It is a multifunctional network DSP digital amplifier, which can monitor the real-time status of the amplifier remotely, and set up various DSP functions in real time, such as compressor, limiter, noise gate, parametric equalization, matrix router, delayer, etc. The user-friendly software interface brings customers a simple setting and operation experience, and the diversified connection methods make it well configurable and extendable, and suitable for various use environments.

1.1.Applicable scenarios

- Performing arts center
- Gymnasium
- Convention center
- Retail store
- Theatre
- Hotel
- Shopping mall
- Restaurant

1.2.Product features

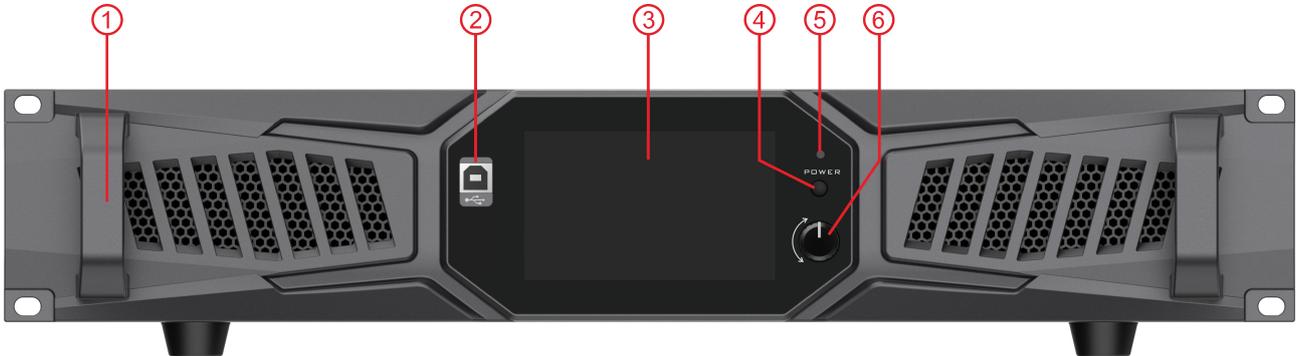
- 1.Standard 19-inch cabinet design with a height of 2U;
- 2.Adopt high-efficiency PFC + switched power supply + class D digital amplifier, providing extremely low output distortion and high efficiency;
- 3.Adopt high-end DSP processor, built-in compressor, limiter, FIR processor, noise gate, parametric equalizer, matrix router, delayer, high and low pass processing and other DSP functions;
- 4.Support various working modes: stereo and bridge connection, support free switching between bridge and matrix mode, the simple interface is more convenient for different users;
- 5.Constant voltage and constant resistance: 100V, 70V, 16 Ω , 8 Ω , 4 Ω ;
- 6.Adopt 4.3-inch IPS capacitive touch screen; display device status: mains voltage/current/amplifier status, amplifier temperature, output mode, amplifier real-time voltage/current/power, channel volume, and speaker impedance, which can be viewed and controlled by switching menus on the panel touch screen;
- 7.Support various connection methods: TCP/IP; support remote monitoring of device status display and settings;
- 8.The input sensitivity is adjustable: 2dBu/6dBu/12dBu, set through PC software or LCD screen;
- 9.Supports free switching of various input sources: analog input, AES3 digital audio input, Dante network audio input. The analog audio interface can be cascaded;
- 10.When the working mode is switched, the device will automatically detect the speaker impedance and set the corresponding parameters;
- 11.Support remote power on/off; when the amplifier has no output, it will automatically enter the standby state after 30 minutes, the standby power consumption is low, and the amplifier can be restarted normally within 5s;
- 12.Network TCP/IP control can realize the management of multiple devices, and the network interface can be cascaded; USB, RS485 support external protocol control;
- 13.Support DANTE network audio input;
- 14.Support Chinese and English language switching;
- 15.Load overcurrent alarm: buzzer alarm when the current of the channel is greater than the set current.
- 16.Wide voltage operation: 180-264VAC.

2. Technical parameter

Model	TC-4500DT	TC-4700DT
Output power (20-20KHz/THD≤1%)	Stereo/Matrix@8Ω×4: 500W×4 Stereo/Matrix@4Ω×4: 700W×4 Bridge@16Ω×2: 1000W×2 Bridge @8Ω×2: 1400W×2 Bridge constant voltage 100V@10Ω: 1000W×2	Stereo/Matrix 8Ω×4: 700W×4 Stereo/Matrix 4Ω×4: 1000W×4 Bridge 16Ω×2: 1400W×2 Bridge 8Ω×2: 2000W×2 Constant voltage 70V@6.1Ω: 800W×4 Bridge constant voltage 100V@6.6Ω: 1500W×2
Connecting interface	XLR, DANTE interface	
Input sensitivity	2dBu/6dBu/12dBu	
Input resistance	20kΩ balanced	
Frequency response (@1W power)	20Hz-20KHz /+1/-1dB	
THD+N (@1/8 power)	≤0.05%	
SNR (A-weighted)	≥99dB	
Damping coefficient (@ 1KHz)	≥200@ 8 ohms	
Isolation (@1KHz)	≥97dB	
Protection method	Over-current protection, DC protection, short-circuit protection	
Indicator light	Power, Protection, Distortion	
Cooling method	Fan cooling	
Power supply	<input type="checkbox"/> ~110V 50Hz <input type="checkbox"/> ~120V 50Hz <input type="checkbox"/> ~220V 50Hz <input type="checkbox"/> ~230V 50Hz <input type="checkbox"/> ~240V 50Hz	<input type="checkbox"/> ~110V 60Hz <input type="checkbox"/> ~120V 60Hz <input type="checkbox"/> ~220V 60Hz <input type="checkbox"/> ~230V 60Hz <input type="checkbox"/> ~240V 60Hz
Max power consumption	2400W	3300W
Dimension (L×D×H)	483×450×88mm	
Weight	14Kg	14.6Kg

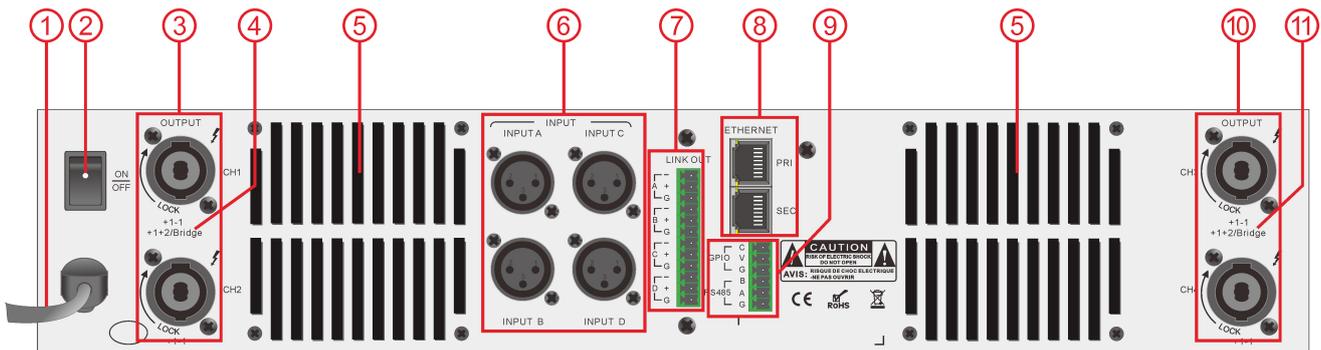
3.Functional structure

3.1.Front panel



- ① Panel handle.
- ② USB connection interface: reserved protocol connection interface.
- ③ 4.3-inch IPS capacitive touch screen.
- ④ Power switch: When the device is powered on, press and hold this button for 2 seconds to switch between standby and power-on status.
- ⑤ Power indicator: blue: power on; orange: standby.
- ⑥ Gain adjustment knob and selection button: slow rotation for 0.1dB adjustment; fast rotation for 1-5dB adjustment; **no adjustment is made when the rotation speed is slow to a certain extent**; press the knob to switch between channel mute and normal playback mode.

3.2.Rear panel

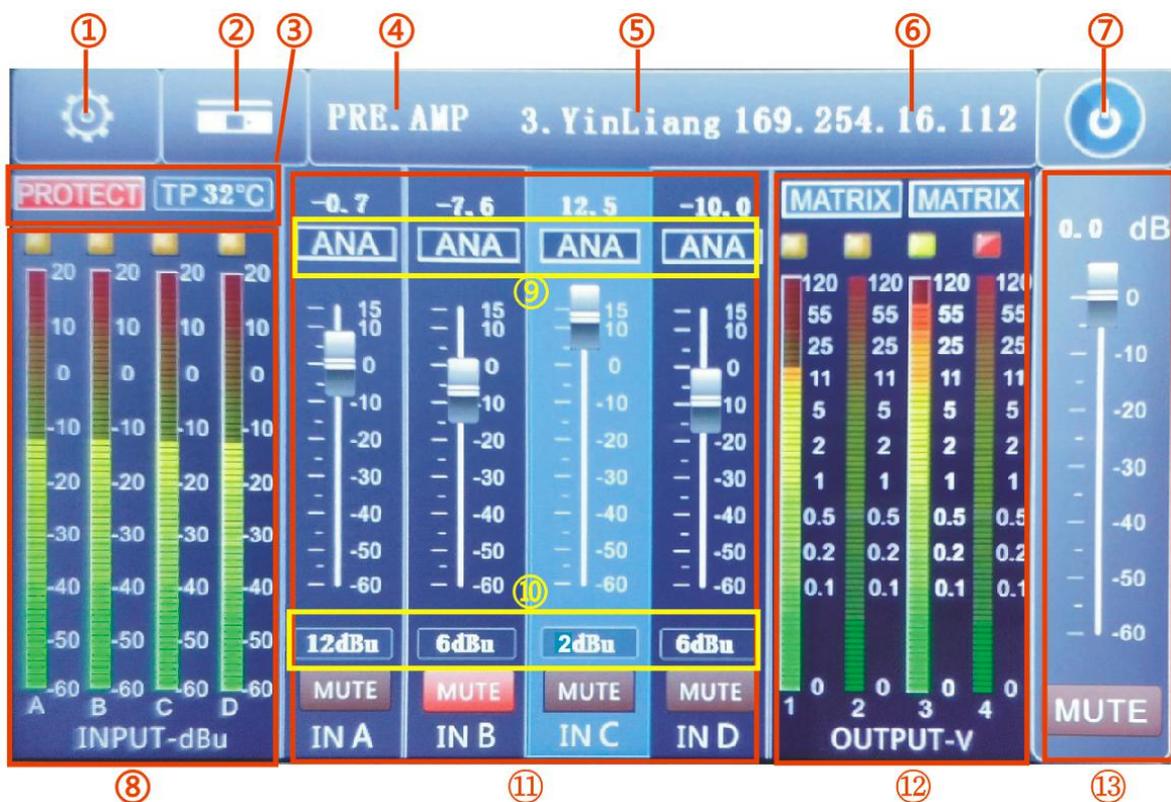


- ① AC input power cable
- ② AC power switch: ON; OFF
- ③ Amplifier output channel 1, 2 (Spoken)
- ④ Bridge interface mode (CH1)
- ⑤ Air outlet
- ⑥ Input channel A/B/C/D, channel A and channel C support AES3 digital audio input.
- ⑦ LINK OUT: parallel with the input channel, it can be cascaded to the next amplifier.

- ⑧Control and Dante transmission interface (hand-in-hand): connect PC software and Dante audio transmission; PRI is the main network port, SEC is the secondary network port, which can be used for cascade of multiple devices.
- ⑨GPIO interface (reserved control interface); RS485 interface: used to connect PC software and central control.
- ⑩ Power amplifier output channel 3 and 4 (Spoken).
- ⑪Bridge interface method (CH3).

3.3.Display panel

3.3.1.Homepage



- (1) System setting bar: Click to enter the input, output, channel joint adjustment, read archive, network IP setting, and machine information setting pages. Click again to return to the home page;
- (2) Amplifier setting bar: Click to check the amplifier setting and amplifier status;
- (3) Amplifier status display and amplifier temperature display: When the amplifier status is all normal, it will be displayed in gray ; when one or more of the amplifiers are faulty, it will display ; the amplifier temperature is displayed as the highest temperature value among the four channels.

- (4) Device name: It can be modified through the "Device Name" on the PC terminal and the machine information interface. Only English, numbers and some characters are supported, and Chinese input is not supported.
- (5) Current loading archive: Display the information of the currently read archive, and the archive information can be saved through the PC software settings.
- (6) Device IP address: The current IP address of the device, used for PC software connection, modified through "Network Settings".
- (7) Standby button: After clicking, the display interface will display . After standby, the screen will turn off and the power indicator will turn orange.
- (8) Input channel level indication: the maximum input signal is 20dBu, the display scale is based on the input sensitivity of 12dBu, and if the sensitivity is set to 2dBu/6dBu, it needs to be converted into 12dBu correspondingly.
- (9) Audio input type: Display the current audio input source. ANA is analog input, AES is AES3 digital audio input, DAN is DANTE network audio input; you can select ANA, AES, DAN in the input source of the input interface. If ANA and DAN are input at the same time, the currently selected audio takes precedence.
- (10) Audio input sensitivity: Select the appropriate input sensitivity according to the input source; 2dBu, 6dBu and 12dBu are optional, which can be selected in the sensitivity setting of the input interface.
- (11) Input channel gain adjustment: Click to select the current channel, adjust the current channel gain through the knob on the right side of the display, ranging from -60db~+15db; press the knob  to mute the channel.
- (12) Output level display and working mode: Display the output amplitude of the channel. When the output amplitude reaches around 90%, the yellow light  will be on, and when the amplifier fails, the red light  will light up; MATRIX is working in matrix mode, BRIDGE is in bridge mode.
- (13) Master volume adjustment: Control the output of 4 channels at the same time, click to select the master volume, adjust the master volume gain through the knob on the right side of the display, the adjustment range is -60db~0db, press the knob  to mute all channels.

3.3.2. Amplifier setting interface



(1) Limiter switch: It can be turned on or off. When set to constant voltage mode, the limiter will be automatically turned on.

(2) Mode selection: Optional constant resistance mode and constant voltage mode

★ In matrix mode: 1) Constant resistance 4Ω, 2) Constant resistance 8Ω, 3) Constant resistance 16Ω, 4) Constant voltage 70V (Note: 500W power has no constant voltage 70V setting);

★ In bridge mode: 1) Constant resistance 8Ω, 2) Constant resistance 16Ω, 3) Constant voltage 100V;

(3) Output channel parameter setting: only when the limiter is turned on can the modification be effective;

★ Set output power (W), output voltage (V), output current (A): Click the value in the box, an input box will pop up, enter the value, click OK to complete the modification (when the input value exceeds the upper limit of this parameter, the maximum value will prevail). If you do not make changes, click ESC to exit. When modifying one of the parameters, the other parameters will change correspondingly according to the selected load impedance;

★ Set load impedance (Ω): Click the down triangle symbol  to select the same impedance value as the speaker connected to the current channel. If there is no need to change the channel impedance, click  to exit. To set fixed impedance value in constant voltage mode, the selection is invalid.

(4) View the status of each channel of the current amplifier output in real time: you can view the current peak clipping status  of the amplifier, the fault status  of the amplifier, and the effective power, voltage, and current of the amplifier.

(5) Output channel load impedance: Display the current channel impedance, which is detected when it is turned on or when the working mode is changed, but not in constant voltage mode.

Note: When switching the bridge to the matrix mode, the output power/voltage/current is not the maximum output value in this mode, you can click the limiter switch on the display to turn off and then turn on the mode to restore the value.

The specific operation steps to detect the speaker impedance: connect the device to the power supply, keep pressing the "POWER" button on the panel when the power switch on the rear panel of the device is turned off, turn on the power switch of the amplifier for about 5 seconds, and then release the "POWER" button, and you can switch on/off the impedance detection function of the amplifier. When the impedance detection of the amplifier is turned on, each time the device is turned on, the amplifier will play an audio signal to the speaker to detect the impedance of the corresponding channel speaker; when the impedance detection is turned off, the device will turn off the audio detection signals of all channels, and will not perform impedance detection on the speakers, and the audio output impedance will be displayed as ∞ .

3.3.3. Input setting interface



(1) Input source selection: Click the down triangle symbol , support ANA (analog input), AES (AES3 digital audio input), Dante (Dante audio input) three input source selection; A/B or C/D channel changes simultaneously when changing the input source; if you do not change the input source, click  to exit.

(2) Sensitivity adjustment: The sensitivity of the analog input can be set, and it supports 2dBu (about 1V), 6dBu (about 1.5V), and 12dBu (about 3V) sensitivity switching. This sensitivity setting for other input sources is invalid.

(3) Test signal: Support pink (pink noise), white (white noise), sine (sine wave) signal output, click the test signal switch , the amplifier has corresponding signal output, test signal volume

, touch and slide to adjust the output volume. The Sine (sine wave) signal is set to any

frequency output on the PC interface. For details, please refer to the introduction of the PC interface.

(4) Input channel gain adjustment: Click to select the current channel, adjust the current channel gain through the knob on the right side of the display, the adjustment range is -60db~+15db; press the knob **MUTE** to mute the channel.

3.3.4. Output setting interface



(1) Working mode and matrix routing settings:

★Working mode setting: BRIDGE sets the output as bridge mode, MATRIX sets the output as matrix mode. When set to bridge mode, the OUT2 output interface and the OUT4 output interface are disabled. Please refer to the bridge connection diagram of **OUT1/OUT3**.

★Matrix routing settings: All volume inputs are routed to all outputs via matrix selection. For example, the output channel 3, **A B C D - OUT3** the input channel A/C mix is output to OUT3.

(2) Output channel gain adjustment: Click to select the current channel, adjust the current channel gain through the knob on the right side of the display, the adjustment range is -60db~+15db; press the knob **MUTE** to mute the channel.

3.3.5.Channel joint adjustment interface



- (1) Input channel joint adjustment: If set in the same group, the gain and mute status of input channels can be adjusted at the same time.
- (2) Output channel joint adjustment: If set in the same group, the gain and mute status of output channels can be adjusted at the same time.
- (3) After the working mode is set to bridge, the output channel of the device does not support channel joint adjustment.

3.3.6.Archive loading



- (1) Default configuration, cannot be deleted. When the parameters are wrong, the factory settings

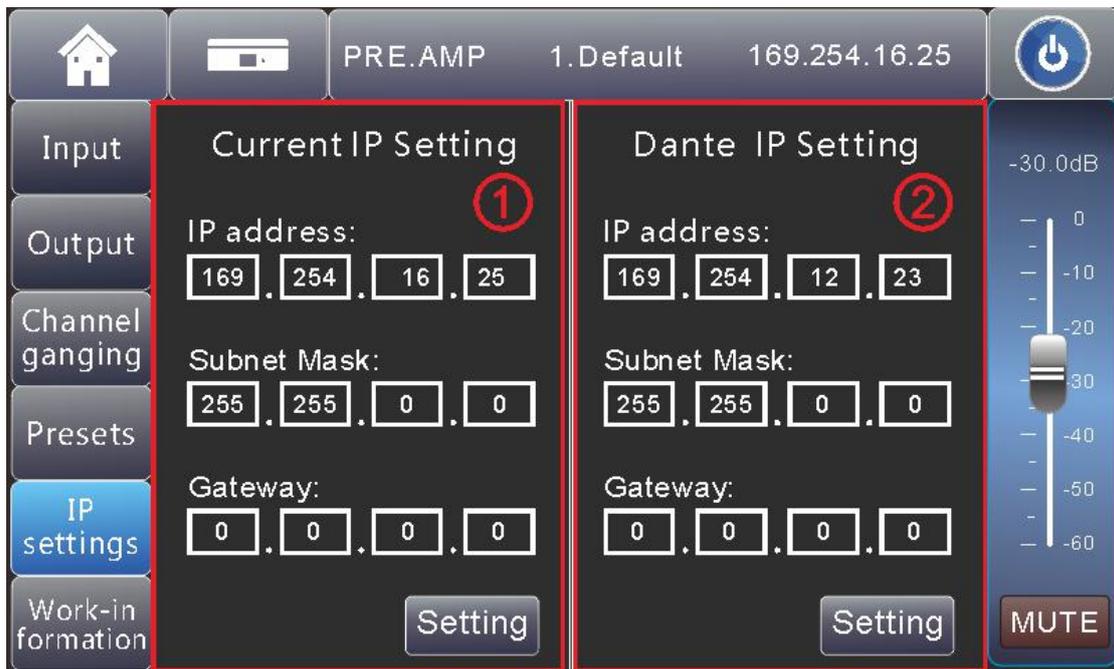
can be restored by loading this configuration.

(2) Load archives, click the archive to be applied, when the background color is blue, it is selected, click the Load button to load the current configuration, and an empty archive cannot be loaded; when the background is green, it is the current configuration.

(3) View the archived information on the next page, up to 79 archived information.

Note: Archives can be saved and deleted on the PC interface, and the touch screen can only load archives.

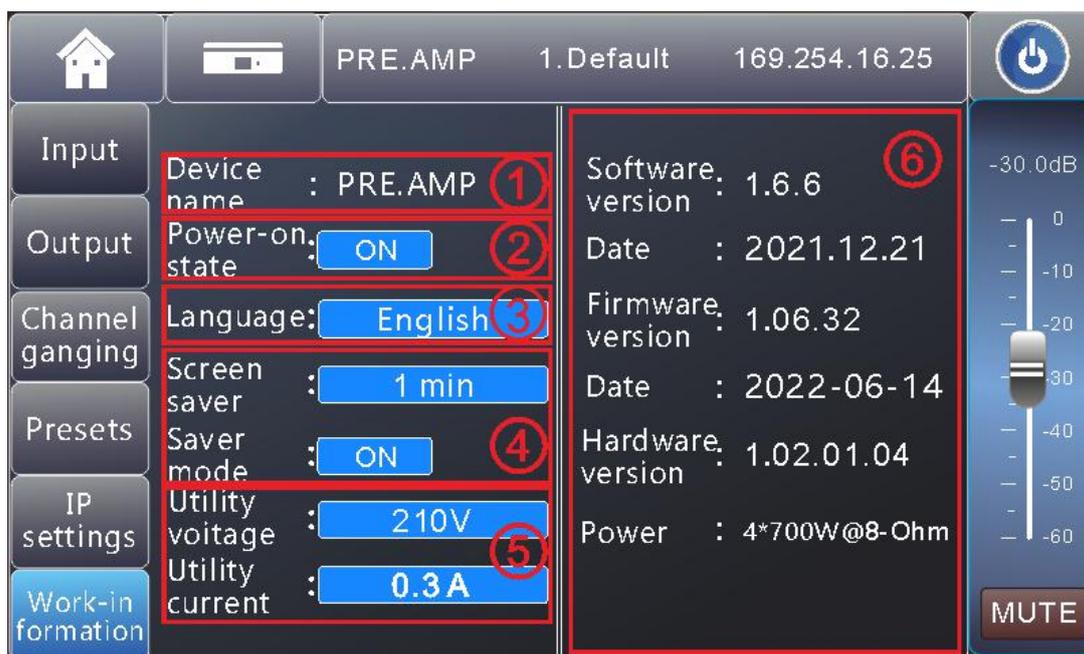
3.3.7. Network setting interface



(1) Current IP setting: DSP network IP address, used for PC software connection configuration. Click the value to enter the input interface, enter the value and click OK, click Settings and it appears , which indicates that the configuration is in progress. After the icon disappears, the IP address modification is completed. The factory default IP address is: 169.254.16.25, subnet mask: 255.255.0.0, gateway: 0.0.0.0.

(2) Dante IP setting: Dante network audio transmission IP address. Click the value to enter the input interface, enter the value and click OK, click Settings and it appears , which indicates that the configuration is in progress. After the icon disappears, the IP address modification is completed. The factory default IP address is: 169.254.12.23, subnet mask: 255.255.0.0, gateway: 0.0.0.0.

3.3.8. Machine information interface



(1) Device name: The device display name, the default is PRE.AMP, the device name can be modified, the operation is as follows: Click PRE.AMP, a keyboard will pop up for input, and then click Complete to complete the device name modification; if no modification is required, click ESC to exit.

(2) Power-on state: The device state when the power switch is turned on, it is the power-on state by default.

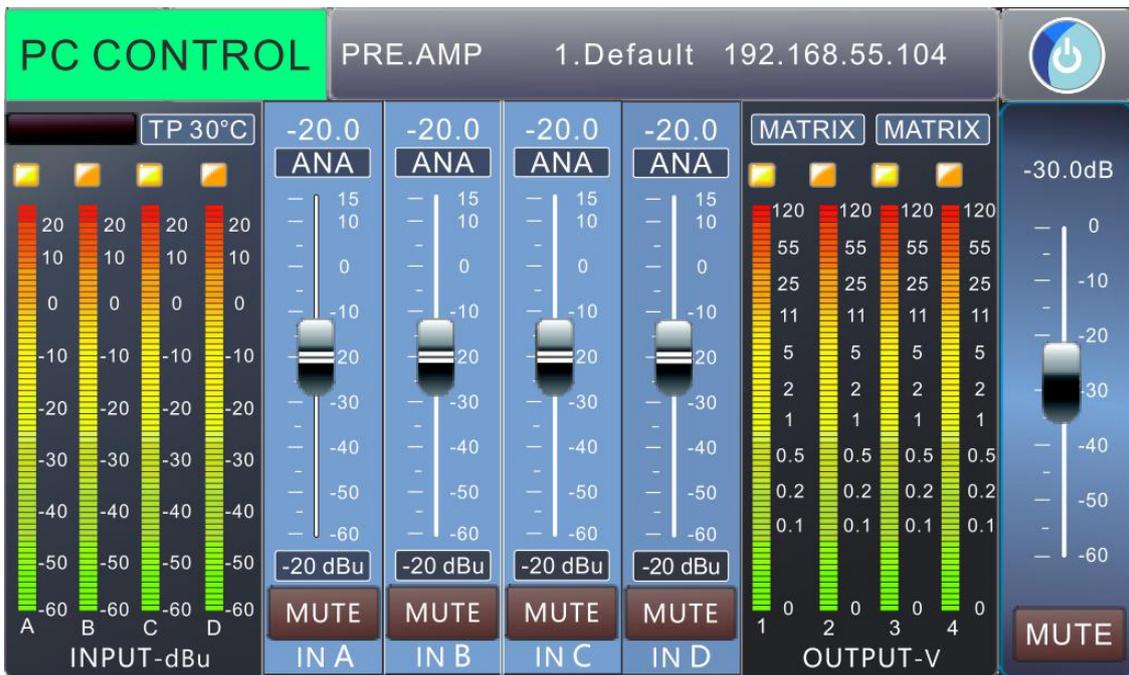
(3) Language selection: Set the display language, you can choose Simplified Chinese and English.

(4) Screen saver time and screen saver mode: Set the screen-off time of the display, optional: 1 minute, 5 minutes, 10 minutes, MAX (non-screen off); the screen saver mode is the energy-saving mode by default.

(5) Mains voltage and mains current: Real-time display of the power supply voltage and current of the current equipment.

(6) Machine information: Display firmware information and device information.

3.3.9.Device connection



After connecting to the PC software through TCP/IP, the **PC CONTROL** appears in the upper left corner of the screen interface, and the interface automatically jumps to the homepage. For PC operation, see the Host computer software.

Note: The UI interface of the display screen is subject to upgrades and changes without prior notice. Please refer to the actual UI interface of the device.

4.Host computer software

The equipment management software is a software for users to quickly interact with the parameters of one or more machines. It can store the configuration parameters of the machine in a disk file, and provide a very convenient means for the preset scene configuration and parameter switching and restoration of multiple machines or different places of use. 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.

5.Software installation

5.1.Operating environment

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

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 indispensable files or folders. The green version of the software does not contain the Microsoft.NET Framework 4.0 runtime library, if necessary, please download and install it from the Microsoft official website.



5.3. Software operation



Operation steps: Double-click the executable file **Mconsole** on the folder to enter the software theme interface as shown in Figure 5.1.

Note: Some connection methods do not support multiple host computers to open at the same time. Please keep only one software open for each PC.

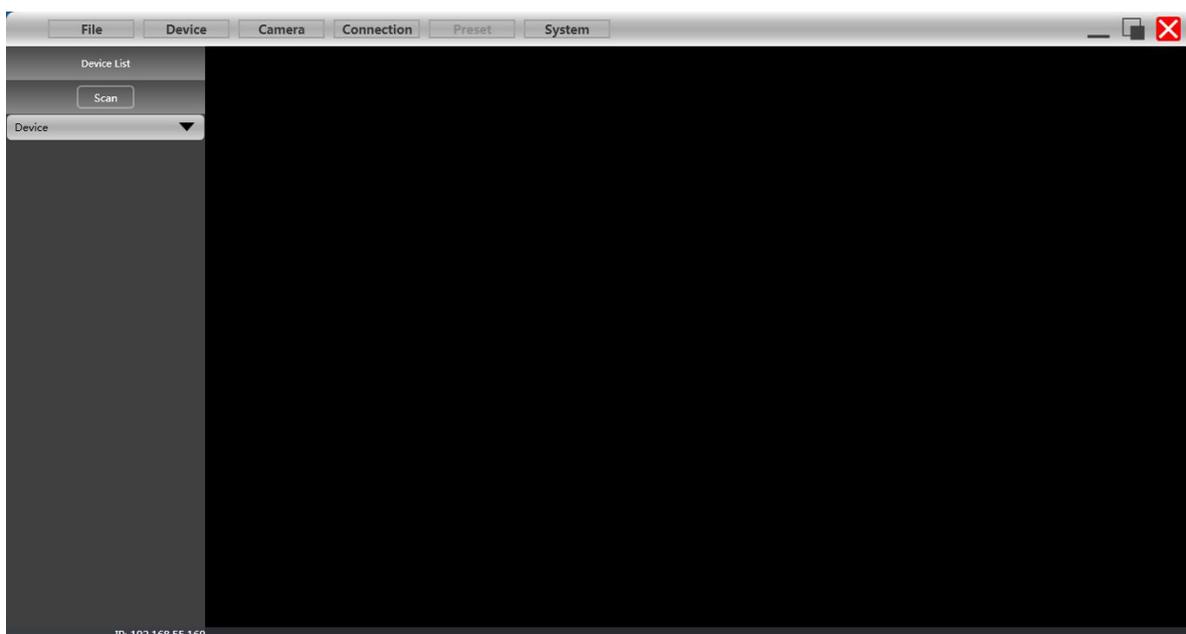


Figure 5.1

6. Software interface description

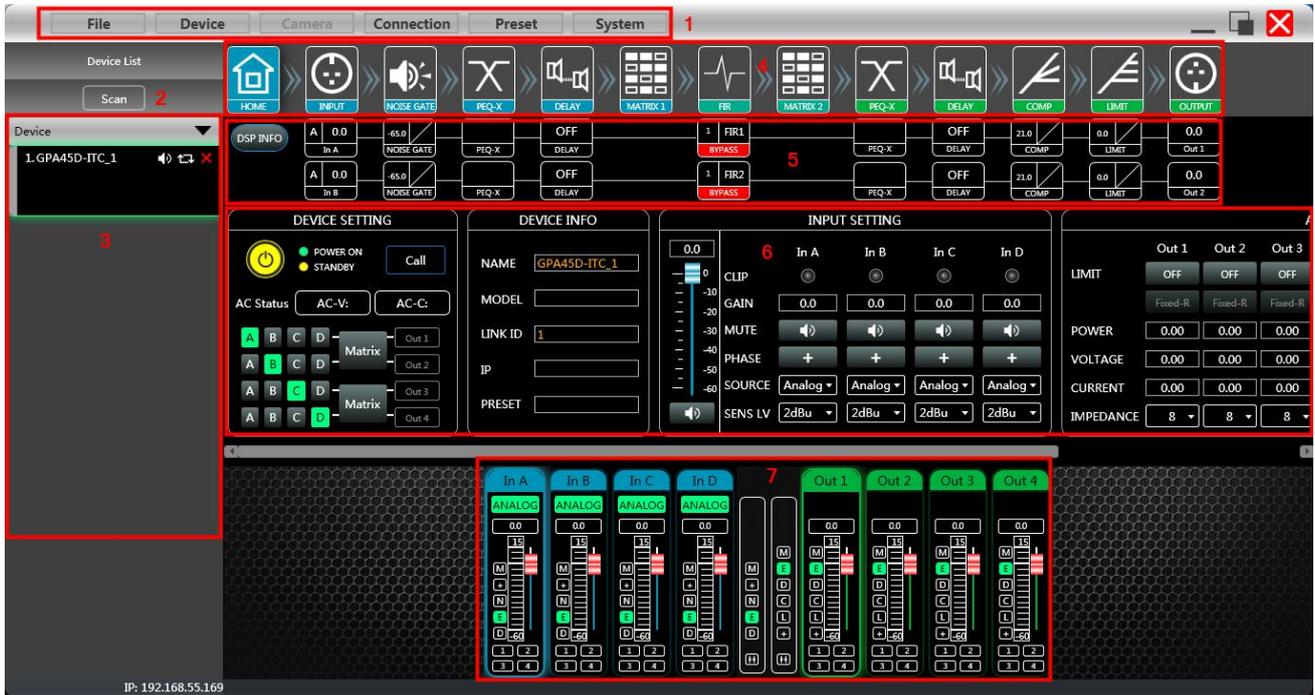
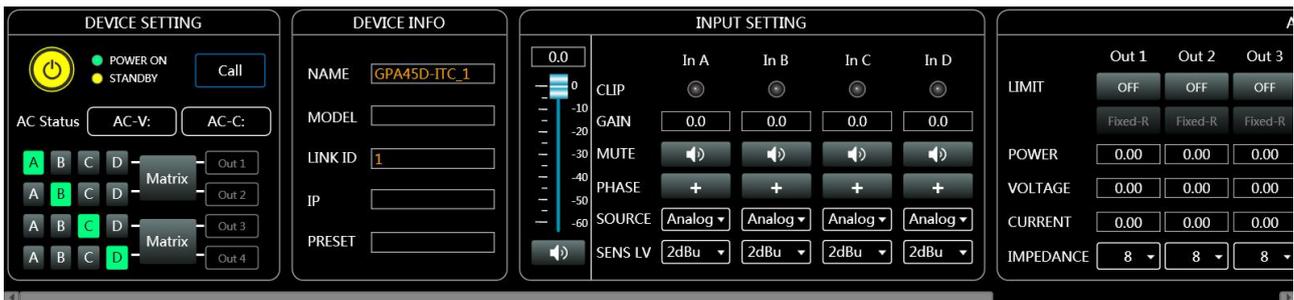


Figure 6.1

As shown in Figure 6.1, the modules corresponding to the red words in the main interface of the software are as follows:

- ① Menu bar
- ② Scan button
- ③ Device list
- ④ Module button
- ⑤ Homepage monitoring area
- ⑥ Homepage function interface
- ⑦ Input and output channel list
- ⑧ PC IP address

6.1. Initial homepage function interface



It includes device settings, device information, input settings and amplifier status, left-click and drag

the mouse [REDACTED] at the bottom of the interface to view the interface that cannot be displayed in the interface.

6.1.1. Device settings



Figure 6.2

- ① As shown in figure 6.2, click [REDACTED] to make the device switch between POWER ON and STANDBY; green indicates POWER ON state, yellow indicates STANDBY state.
- ② Click [REDACTED], you can make the connected device display and status light flash, and you can quickly find your connected devices from the "Amplifier Device Pile".
- ③ Real-time display of the power supply status [REDACTED], AC-V is the mains supply voltage, and AC-C is the mains current.
- ④ Click [REDACTED] in the box to quickly switch the routing status. There are two options: bridge and matrix.

6.1.2. Device information

① As shown in Figure 6.3, the device name and IP are displayed, which can be modified in the device management modification.

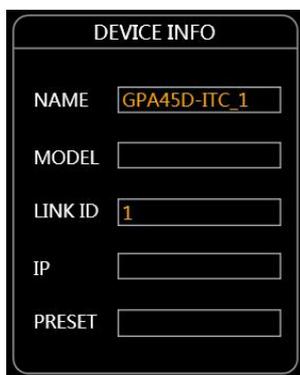


Figure 6.3

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



③The name of the archive is the name of the currently used archive.

6.1.3.Input setting

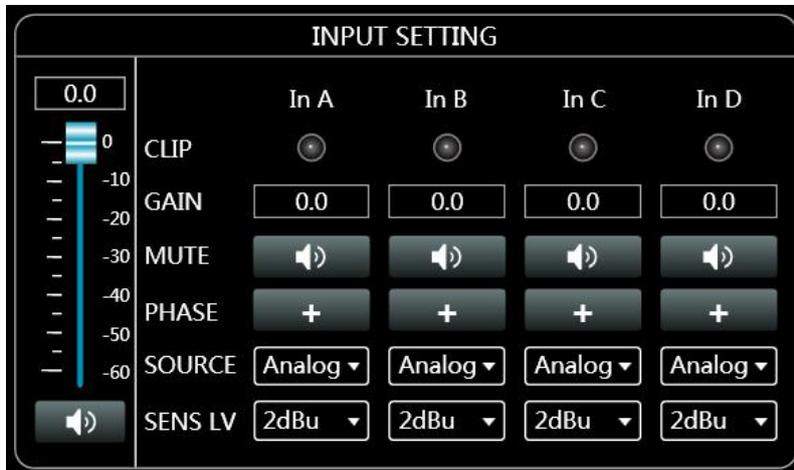


Figure 6.4



①As shown in Figure 6.4 above,  is the master volume slider, you can drag it with the mouse,

or you can directly input the exact value in the input box  .  is the mute control button.

②When the input signal value is too large, the indicator light will light up, the effect is as follows





③ You can quickly set channel gain, mute, phase.



④ There are various optional input sources.



⑤ There are optional 2dBu, 6dBu, 12dBu sensitivity switching ; this sensitivity setting is only valid for analog input.

6.1.4. Amplifier status

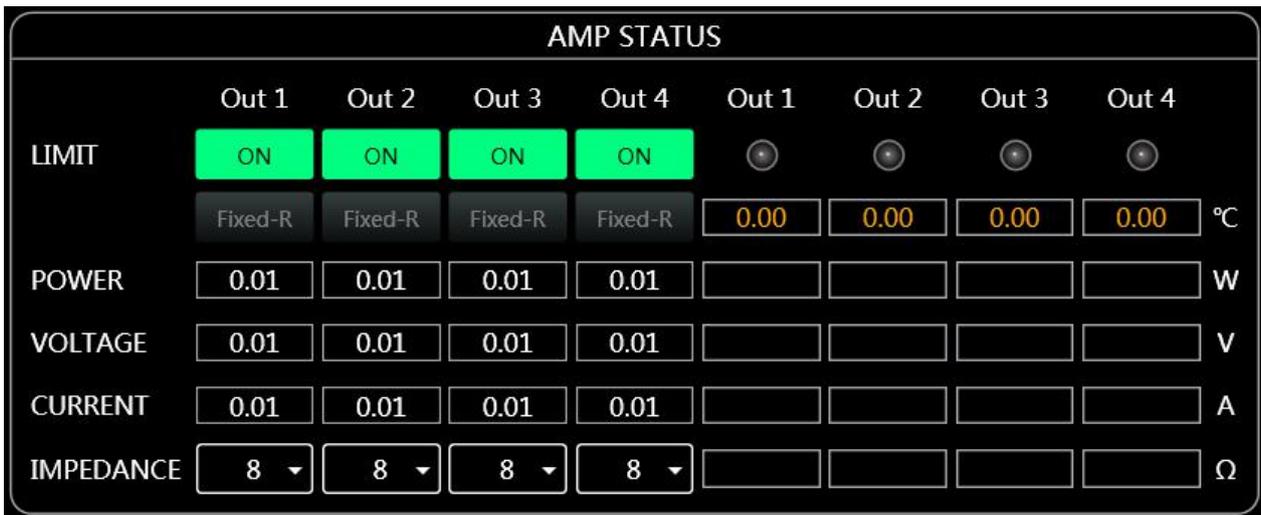
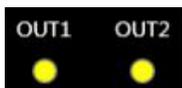


Figure 6.5

As shown in Figure 6.5 above, IMPEDANCE 8 8 LIMIT OFF ON you can choose as needed. When the limiter is in the control state, the peak clipping light will light up



when it reaches the set value.

6.2.Menu bar

6.2.1.File

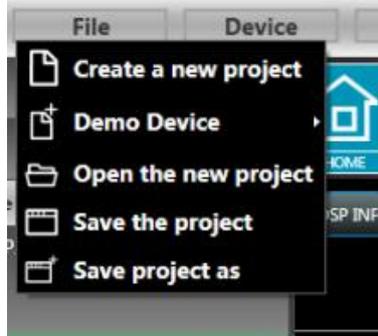


Figure 6.6 "File" menu

As shown in Figure 6.6 "File" menu: it is used to manage the parameter settings of the on-site device, and it can remotely analyze whether the parameters of the device are normal.

1. Create, the software can create a model of each device in this menu when the device is not connected.
2. Virtual device, add simulated device, check the device function when there is no physical device, and the newly added simulated device will not affect the existing connected device.
3. Open, open an existing device management project from the computer disk. If there is a device currently connected, you need to disconnect the device before opening the project management file.
4. Save, save the current device management project in the computer disk.
5. Save as, save the current device management project as a project file.

6.2.2.Device



Figure 6.7 "Device" menu

As shown in Figure 6.7 "Device" menu:

1. Device management, view or modify device software information, device name and IP address, etc. Support English, numbers and some characters and symbols.
2. Channel management, set the name of each input / output channel, support English, numbers and some character symbols.
3. Channel copy, copy the parameters of the same type of channel.

6.2.3.Connect



Figure 6.8 "Connect" menu

As shown in Figure 6.8 "Connect" menu:

1. Connect the device, connect and download the device parameters.
2. Disconnect the device, disconnect the connected device.
3. Connect all devices, connect and download the device parameters of all devices in the device list.
4. Disconnect all devices, disconnect all connected devices in the device list.

6.2.4.Archive/Preset

Click "Archive" in the menu bar of the main software interface in Figure 6.1, and the following figure 6.9 Archive interface will pop up:

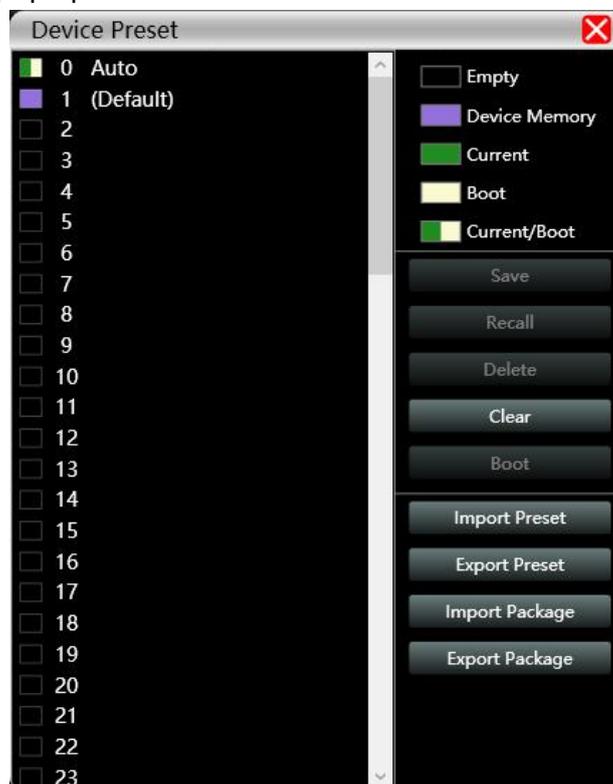


Figure 6.9 Archive interface

As shown in the figure above, the left side of the archive interface is the values, among which "0 auto" is the system value, which cannot be used directly; "1 (default)" is the default value of the device, which can only be called, but cannot be deleted or overwritten. After calling, the device parameters will all be restored to the factory default parameters; other values can be freely saved, called, deleted, etc.

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

- ① Save: Save the existing device parameters to the corresponding selected archive.
- ② Recall: Recall the selected archive to the parameters of the current device.
- ③ Delete: Delete the selected archive parameter.
- ④ Clear: Clear all archived parameter records that are not archived by the system.
- ⑤ Set as boot file: Set the selected file as the file that will automatically call the file for work when the device is turned on next time.
- ⑥ Import archive: Import a single device parameter file in the computer system, directly overwriting the existing parameter data.
- ⑦ Export archive: Save the parameters of the current device to the computer system to produce a single device parameter archive file.
- ⑧ Import archive package: Import parameter packages of multiple archives in the computer system.
- ⑨ Export archive package: Export the parameters of all values in the device archive to the computer system, and produce multiple archived parameter package files.

6.2.5. System

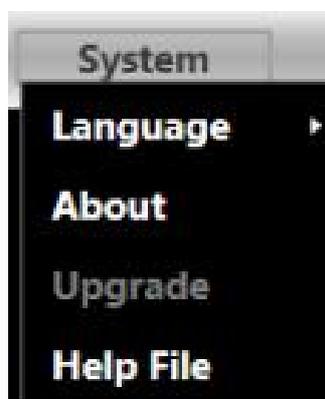


Figure 6.10 "System" menu

As shown in Figure 6.10 "System" menu:

1. Language: multi-language switch, optional English, Simplified Chinese.
2. About: the current host computer and device version information.
3. Firmware upgrade: upgrade the firmware of the device.
4. Help file: software instructions.

6.3. Scan button

As shown in Figure 6.11, the progress display box, click "Scan" to directly scan all devices in the currently set connection mode, and display the scan progress. If the device cannot be scanned, you need to select the current connection method (TCP/IP) to connect, **if the device cannot be scanned,**

check and select the same connection method as the device connection, or scan several times and then close the PC software to reconnect to troubleshoot the problem.



Figure 6.11 Progress display box

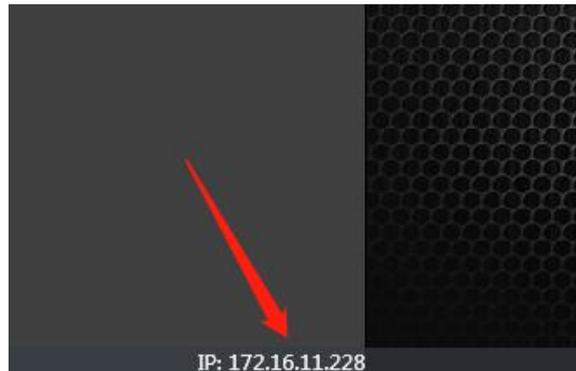
6.4. Device list



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

1.  Click this control to mute the master volume of this device;
2.  Click this control to connect or disconnect this device;
3.  Click this control to remove this device;
4.  Click the lower triangle position to adjust the master volume;
5.  When the green light is on at the far left, the device is connected; the gray indicates it is disconnected.

6.5.PC IP address



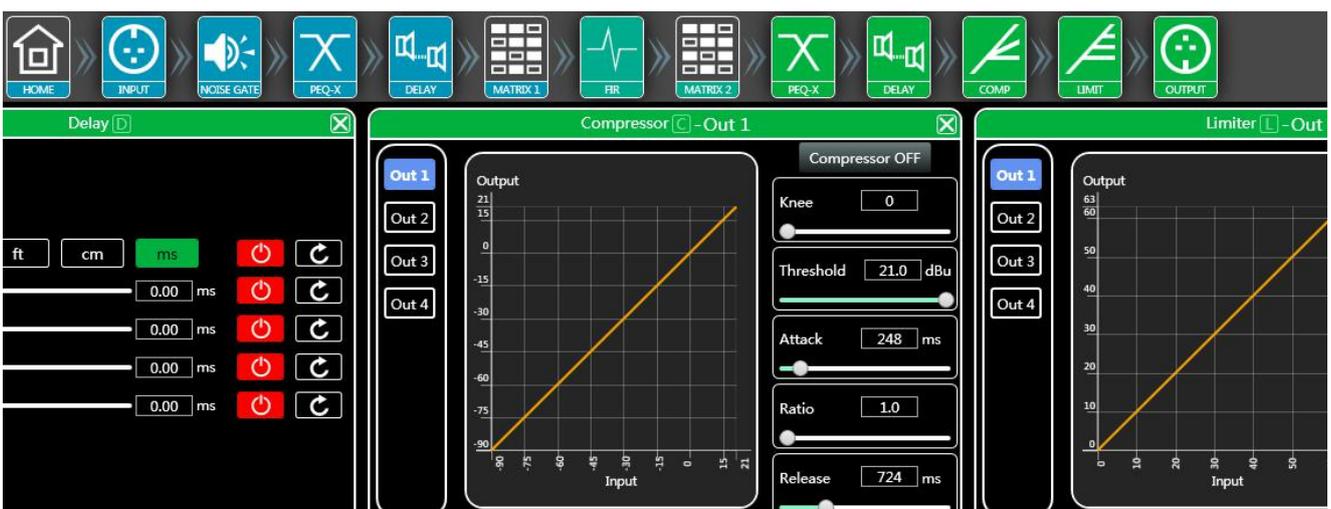
When the software is opened, it will automatically obtain the IP address corresponding to the network connection of the network adapter that has taken effect in the current computer system, and display it in the lower left corner of the software, which is convenient for managing the IP address of the device.

6.6.Function module controls



In order to facilitate the interaction of different parameters of the device, the software is divided into multiple modules according to the functional sequence. If users want to operate the corresponding modules, they can use these module controls to open, close, and locate the module interface. Double-click to open/close. Click to locate.

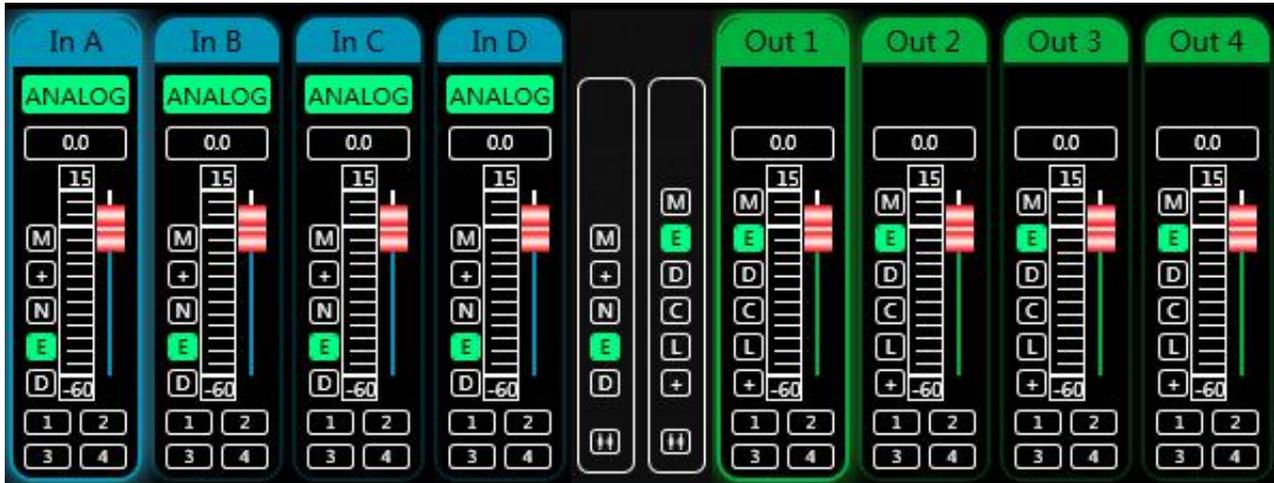
6.7.Function module interface



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

6.8.I/O channel list

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 enable the input and output channel grouping and joint adjustment function to achieve more powerful operation convenience.



7.Function interface introduction

7.1.Main interface of input module



Double-click  in the module button, the Channel input module in Figure 7.1 will pop up.

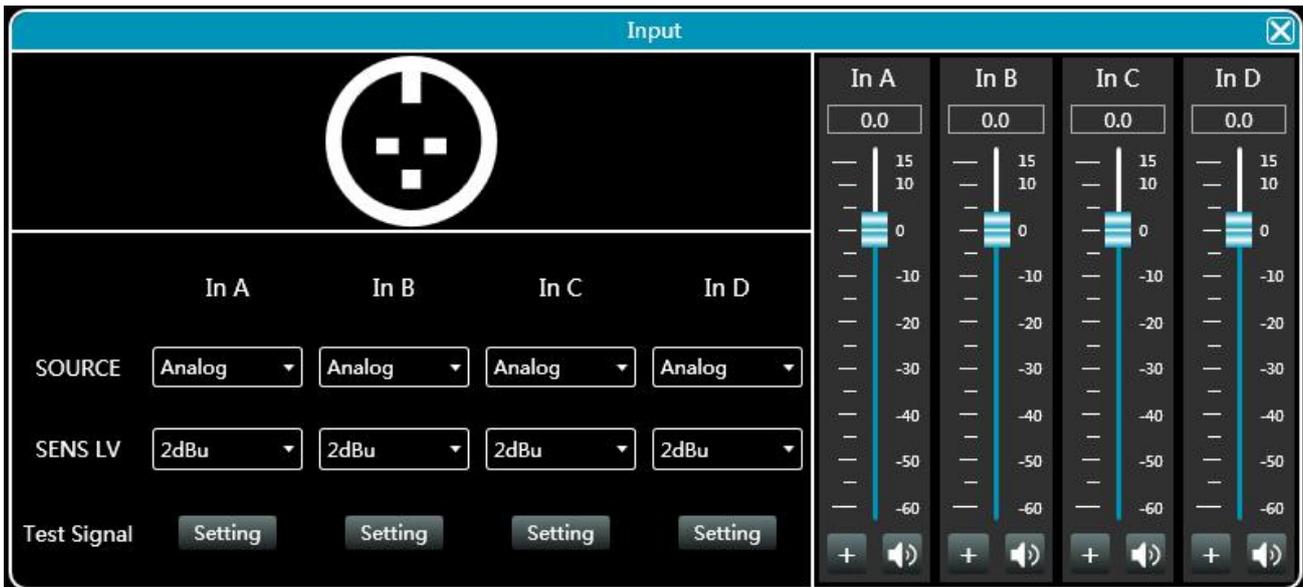
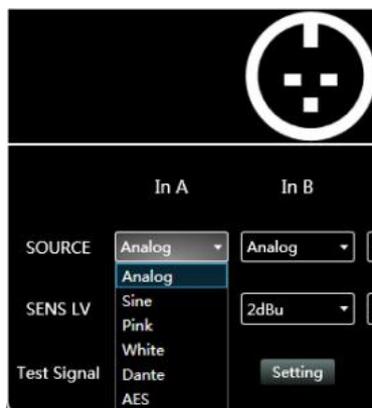


Figure 7.1 Channel input module

As shown in Figure 7.1, the polarity, mute, and input source sensitivity of the corresponding input channel can be modified;

In the sensitivity setting, you can choose 2dBu, 6dB, or 12dBu.

7.2.Test signal function



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

In the test signal generation setting, the gain value of the corresponding test signal can be set for all three test signals. The switch button on the right side of each test signal can control whether the test signal is valid or not. Green is on, red is off, and the sine wave can be set output frequency.



7.3. Input noise gate



Double-click  in the module button, and the input noise gate setting module in Figure 7.2 will pop up.

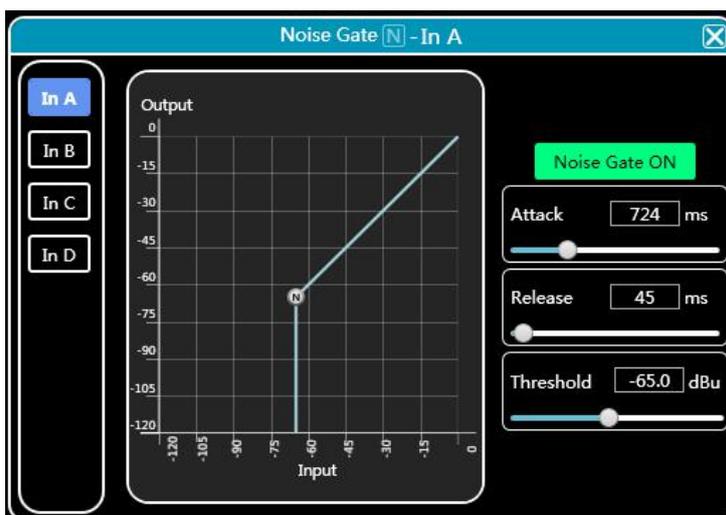


Figure 7.2 Input noise gate setting module

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 input signal of the channel. Green is on, red is off, and the start-up time, release time, and start-control level are the parameters corresponding to the noise gate function, you can drag the slider  or enter the corresponding value in the value box  to adjust the value.

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

7.4. Input equalizer (EQ)



Double-click



will pop up. The button in the upper right corner of the module can scale up this module, and the interface display will be clearer after scaling up.

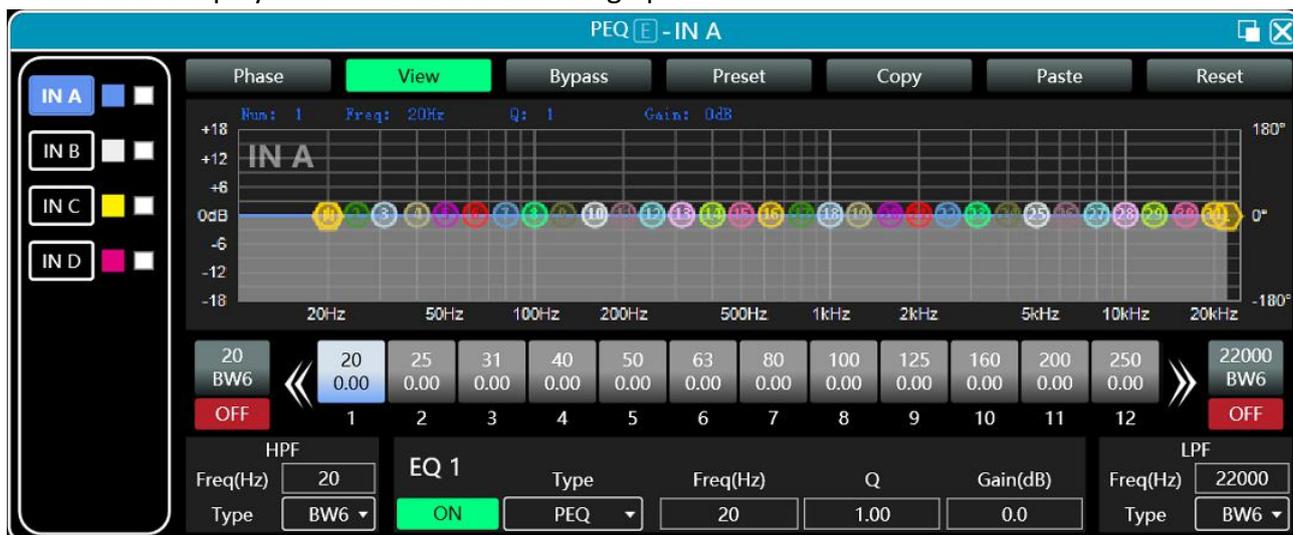


Figure 7.3 Input equalizer setting module

7.4.1. Function button

As shown in Figure 6.1 above, the top button functions are:

Phase Curve: Display the phase curve of the current channel.

Show Points: Show or hide all EQ control points.

Full Bypass: Turn on or off all equalizer EQ for the current channel at the same time.

EQ Archive: Save the current equalizer setting parameters to the computer, and recall the overwritten parameters of the existing equalizer. Chinese fonts are not supported, it is recommended to save within 20 characters, otherwise it will exceed the display range and cannot be displayed.

Copy: Copy the current equalizer parameter values, which can be pasted to other input channels.

Paste: Used with the Copy button to paste the equalizer parameter values copied by the Copy button to the current channel.

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

7.4.2. Multi-channel EQ curve



Figure 7.4

As shown in Figure 7.4 above, the left side is the EQ curve display switch of each channel. When turned on, the curve of the corresponding channel will be drawn in the EQ curve graph.

7.4.3. EQ controls



As shown in Figure 7.4 above, below the curve graph 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 values of each EQ can be adjusted precisely.

7.4.4. EQ adjustment parameter



As shown in Figure 7.4 above, below the EQ control are the EQ parameter adjustment items, 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 above, when you click the EQ preset button, the following Figure 7.5 EQ preset window will pop up:

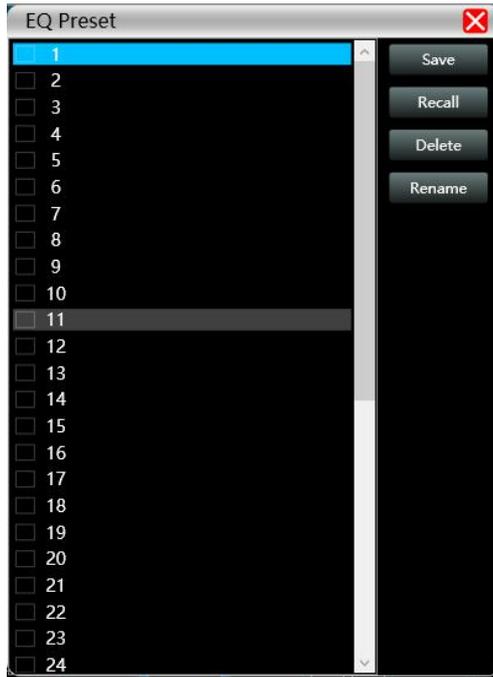


Figure 7.5

Select the item corresponding to the value list on the left, and then click the function button on the right to realize the functions of archiving, recalling, deleting, and renaming the equalizer setting parameters.

7.5.Matrix mixing



Double-click  in the module button, and the Figure 7.6 Matrix mixing setting module will pop up.

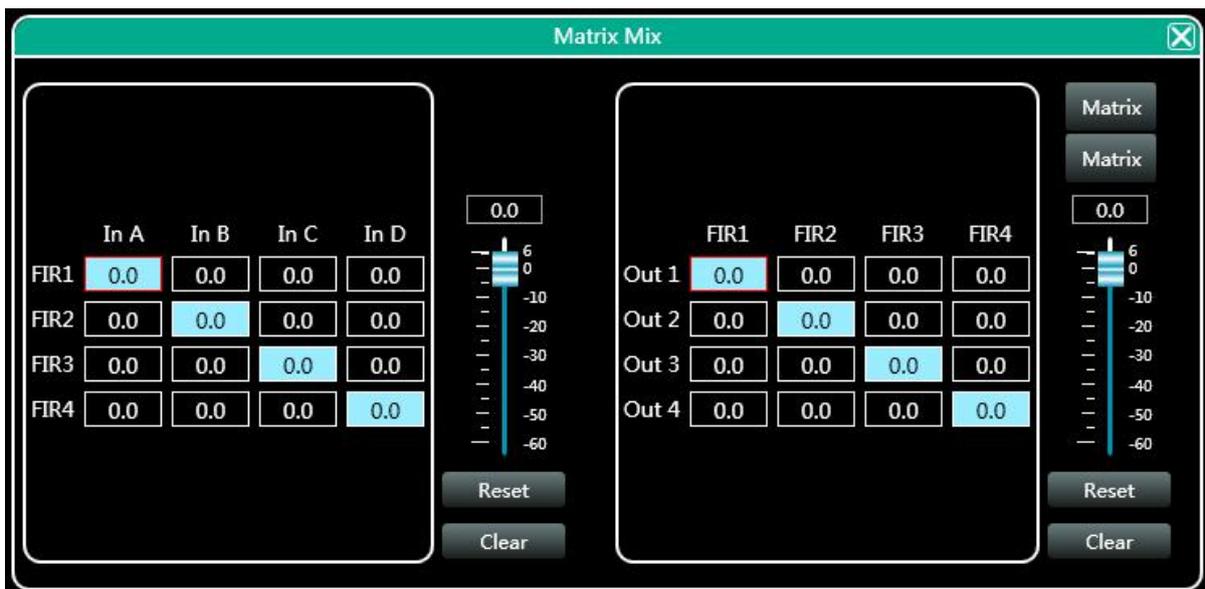


Figure 7.6 Matrix mixing setting module

In the above figure, there are the left corresponding output channel and the upper corresponding input channel. The value box with the value is the input and output channel mixing button. When the mixing button is on (double-click the value box to switch the state), and this input channel and output channel signal implements the mixing function.

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

7.6. Output equalizer



Double-click  in the module button to pop up the module interface of Figure 7.4 Input equalizer setting module, the function and operation method are the same as 7.4 Input equalizer.

7.7. Output delay



Double-click  in the module button, and the module interface of Figure 7.7 Input delay setting module will pop up.

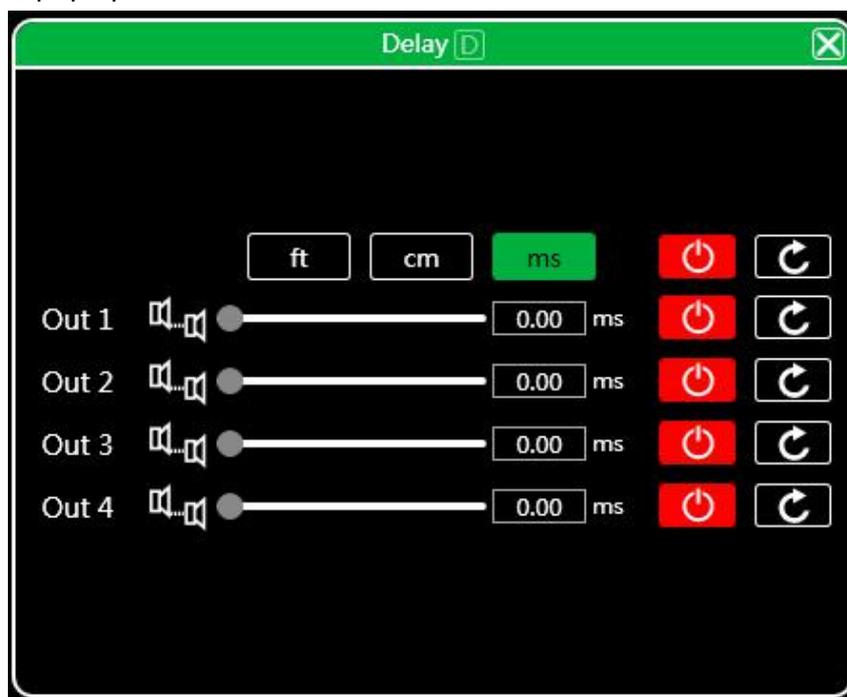


Figure 7.7 Input delay setting module

As shown in Figure 7.7 above, the delay control content of all input 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 ms; the right side is the Delay function switch, red is off, green is on; the reset button on the far right  can directly reset the default value of the channel delay.

7.8. Output compressor



Double-click  in the module button, and the following Figure 7.8 Output compressor setting module will pop up.

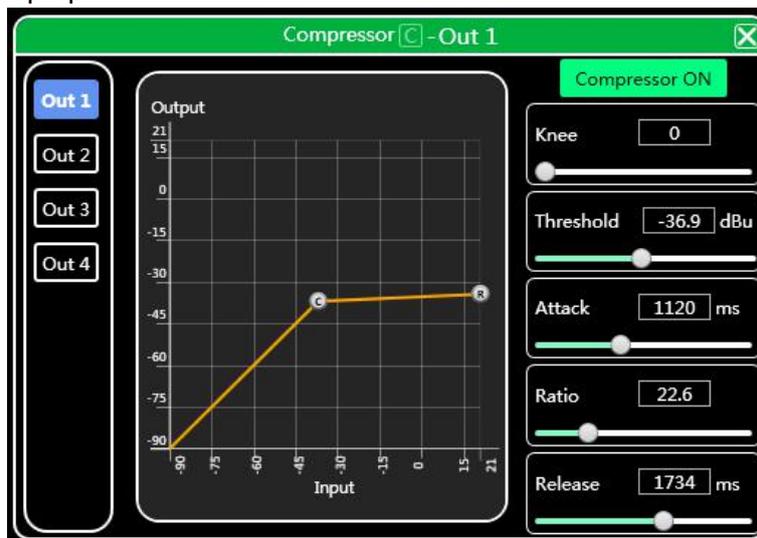


Figure 7.8 Output compressor setting module

7.9. Output limiter



Double-click  in the module button, the following Figure 7.9 Output limiter setting module will pop up.

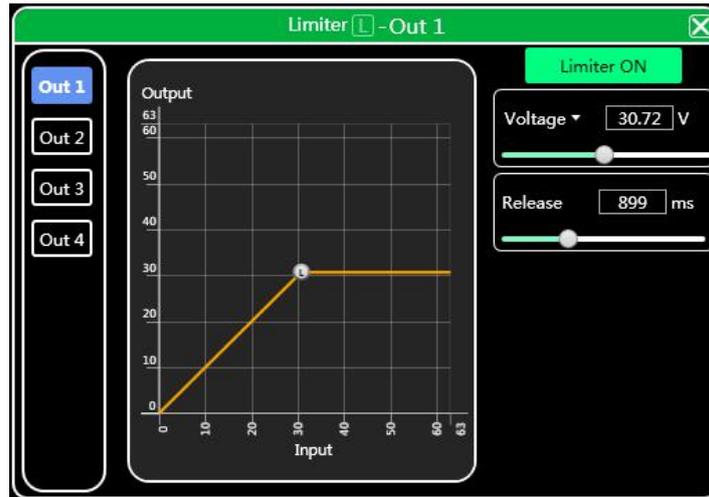


Figure 7.9 Output limiter setting module

7.10. Output module



Double-click  in the module button, the following Figure 7.10 Output setting module will pop up.

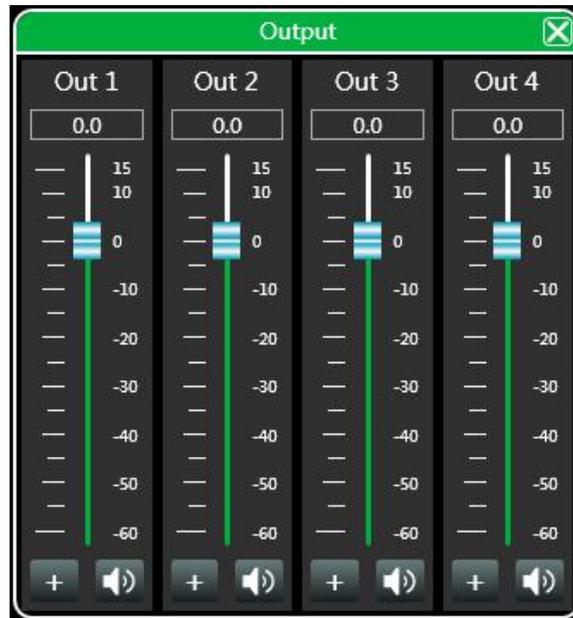


Figure 7.10 Output setting module

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

7.11. Input channel

As shown in the list of input and output channels on the main interface of the software in Figure 6.1, the left part is the input channel as shown in Figure 7.11 Input channel.



Figure 7.11 Input channel

- ① The contents from top to bottom in the input channel interface include: channel name

In A, input mode **LINE**, channel gain, function button **M**, **+**, **N**, **E**, and joint adjustment **1**, **2**, **3**, **4**.

- ② Among them, the channel name, input mode, and joint adjustment can only be viewed, but not edited.

- ③ In the channel gain function, you can see the level status of the input channel signal **15**.

- ④ Among the function buttons, the buttons from top to bottom are: mute **M**, polarity **+**, noise gate **N**, and equalizer bypass **E**. If the mute button is red, it is in the mute state, or it is in the active state if the other buttons are green.

- ⑤ The joint adjustment shows the default 4-channel joint adjustment. When the background color of the corresponding number box turns yellow **2**, it means that this channel has been added to the second group for joint adjustment.

- ⑥ In the button bar between the input and output channels **M**, **+**, **N**, **E**, **1**, **2**, **3**, **4** and **M**, **+**, **N**, **E**, **1**, **2**, **3**, **4**, it is the main switch of the function button corresponding to all input and output channels, which will directly operate on all input channels at the same time.

7.12. Output channel

As shown in the list of input and output channels on the main interface of the software in Figure 6.1, the right part is the output channel as shown in Figure 7.12 Output channel.

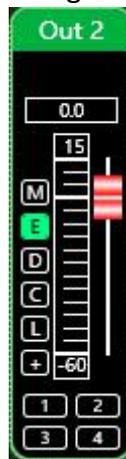
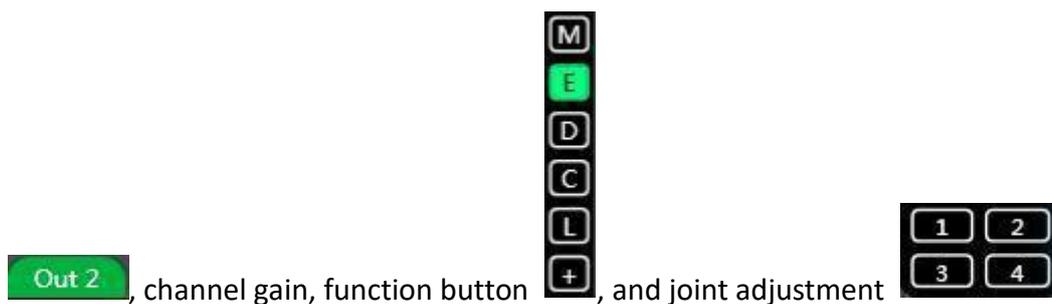


Figure 7.12 Output channel

① The contents from top to bottom in the output channel interface include: channel name



, channel gain, function button



② Among them, the channel name, digital output status, and joint adjustment can only be viewed, but not edited; in the channel gain function, you can see the level status of the output channel

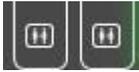


signal. The other two parts (gain value box, gain slider) are to adjust the gain value of this channel.

③ Among the function buttons, the buttons from top to bottom are: mute **M**, equalizer bypass **E**, delay **D**, compressor **C**, limiter **L**, polarity **+**. If the mute button is red, it is in the mute state, or it is in the active state if the other buttons are green.

④ The joint adjustment shows the default 4-channel joint adjustment. When the background color of the corresponding number box turns yellow **2**, it means that this channel has been added to the second group for joint adjustment.

7.13.Channel joint adjustment

Click the joint adjustment button  between the input and output channels on the main interface of the software in Figure 6.1, and the following Figure 7.13 Channel joint adjustment interface will pop up.

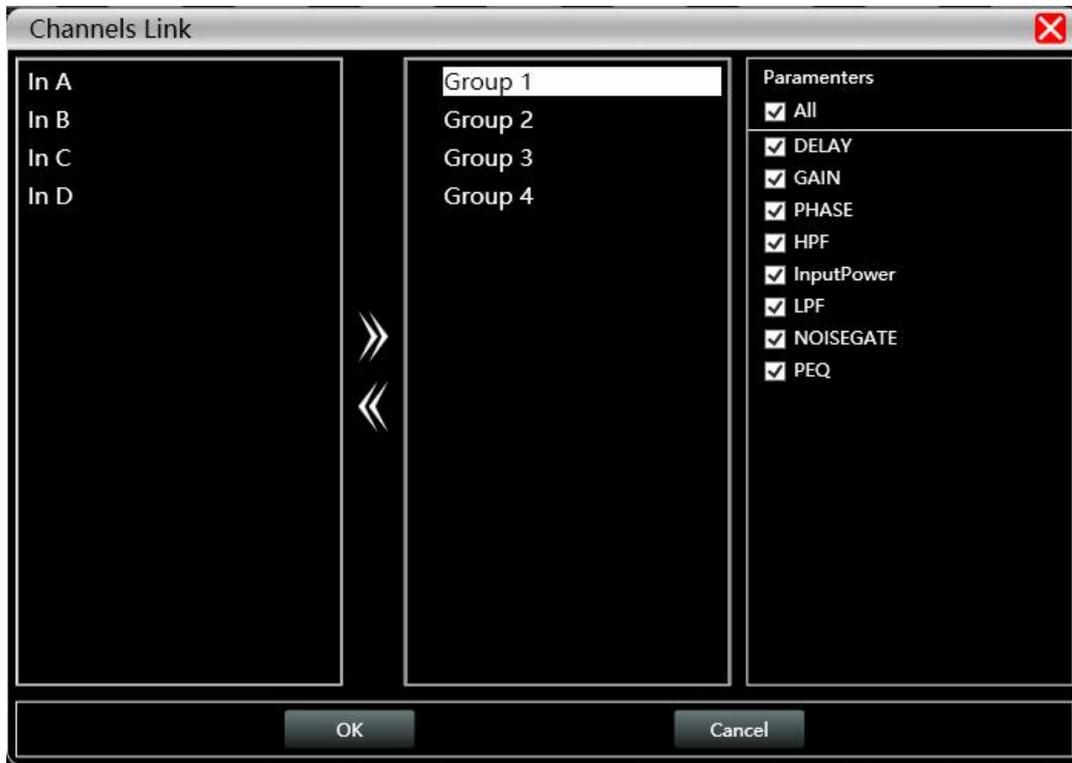


Figure 7.13 Channel joint adjustment interface

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 joint adjustment channels. After selecting the corresponding

channel, click the Add button  to move it to the group list.

There are already 2 groups in the group list. Select the corresponding group directly. If you add a channel to the channel list, it will be directly assigned to the selected group. If you want to remove

the channel you want to remove, click the Remove button  below the Add button.

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

7.14.Device list

The device list on the main interface of the software in Figure 6.1, as shown in Figure 7.14 Device list below.

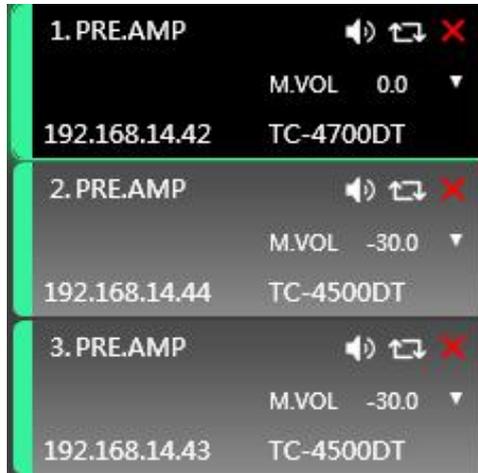


Figure 7.14 Device list

In the figure above, **1** is the connected device number; **PRE.AMP** is the device name;

TC-4700DT is the factory name (the user cannot modify it); the network IP address of the device will be displayed if the left side of the factory name is empty after connection;

 From left to right, they are Mute button, Disconnect and Reconnect button, and Remove button. The mute button can directly mute all input and output channels of the device; as for the disconnect and reconnect button, If the device is online, it is to disconnect; if the device is not online, reconnect; the leftmost position will turn green , and the  remove button can directly remove the device in the software.

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

7.15.Add virtual device

Click "File" - " Virtual Device" in the menu bar on the main interface of the software in Figure 6.1, and the following Figure 7.15 Add device interface will pop up. Select the virtual device model to be added, and then add it to the device list. Note: Virtual devices do not connect to real devices.

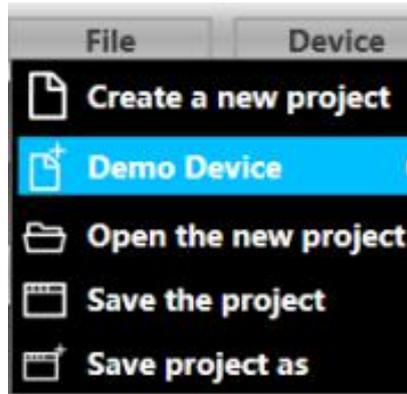


Figure 7.15 Add device interface

7.16. Device management

Click "Device" - "Device Management" in the menu bar on the main interface of the software in Figure 6.1, and the following Figure 7.16 Device management interface will pop up.



Figure 7.16 Device management interface

As shown in the figure above, in the device list at the top, you can select the device information content displayed on the target device management interface. The device management interface is divided into the following three parts:

- ①Software information: Display the version number and date information of the upper and lower computers of the current device.
- ②Device information: Display the current device name and device group information. Names can be modified and added. Click OK in the box to save.
- ③Device IP information: If the current device is connected by network information, the IP address, gateway, and MAC address of the device will be displayed here. The IP and gateway can be entered new information, click OK to save and restart the device network module. The newly entered network information will take effect immediately.

7.17.Channel name management

Click "Device" - "Channel Name" in the menu bar on the main interface of the software in Figure 6.1, and the following Figure 7.17 Channel name management interface will pop up.

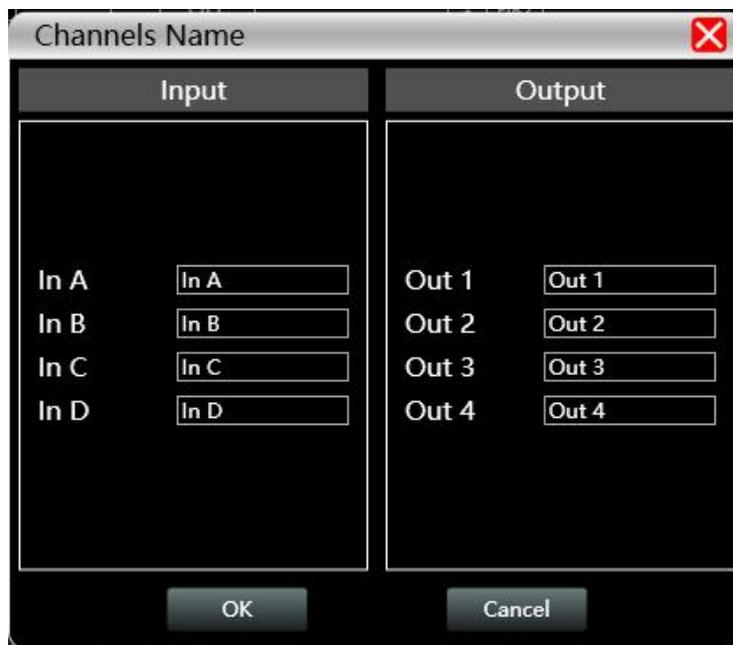


Figure 7.17 Channel name management interface

As shown in the figure above, after entering the new name of the channel in the corresponding channel, click OK to save and update the name of the channel immediately. Note that the length of the channel name is limited to 6 English letters and numbers.

7.18.Channel copy

Click "Device" - "Channel Copy" in the menu bar on the main interface of the software in Figure 6.1, and the following Figure 7.18 Channel copy interface will pop up.

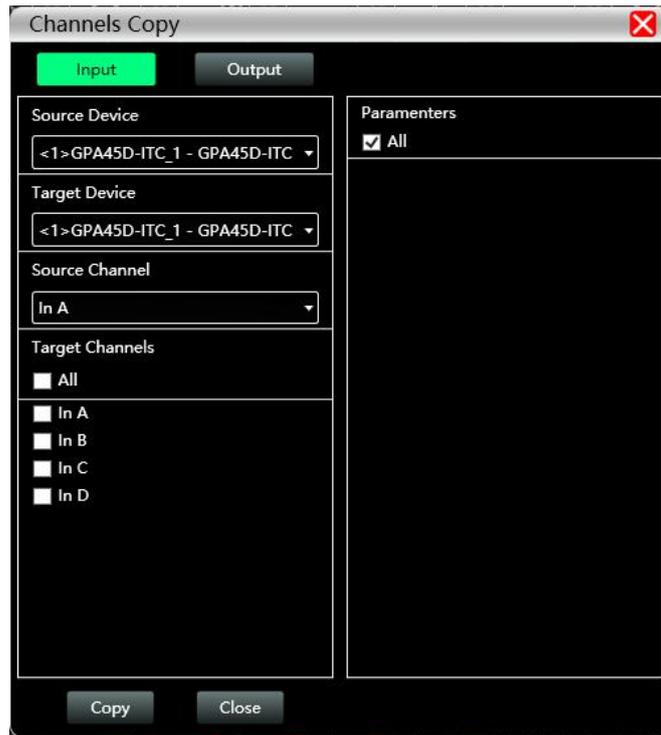


Figure 7.18 Channel copy interface

As shown in the figure above, channel copy is to first select the channel parameters of a source device and copy it to the target channel of other target devices. The input channel and output channel cannot be copied to 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 be used to switch the channel type to copy.

7.19. Firmware upgrade

Click "System" - "Firmware Upgrade" in the menu bar on the main interface of the software in Figure 6.1, and the following Figure 7.19 Firmware upgrade interface will pop up.

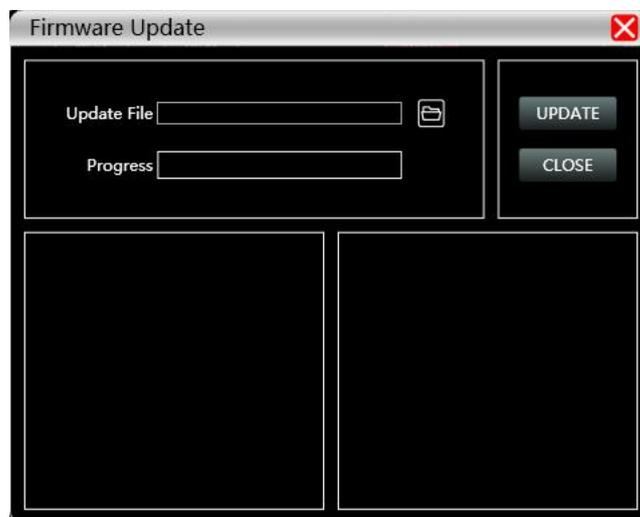


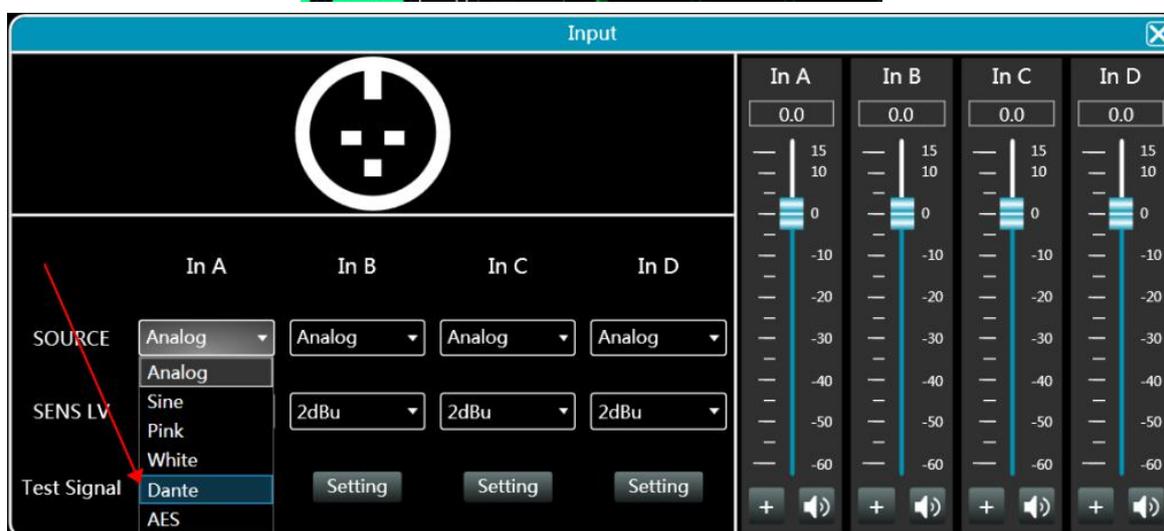
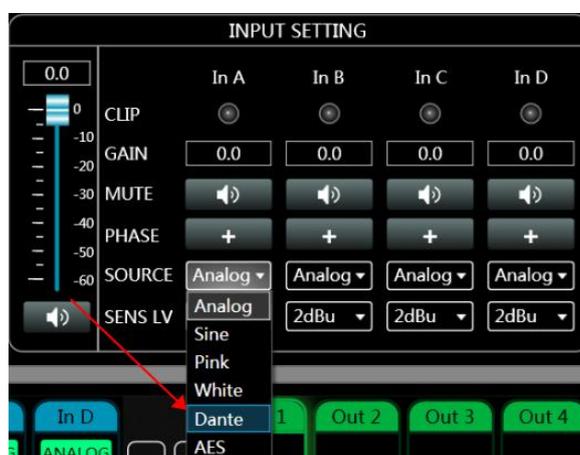
Figure 7.19 Firmware upgrade interface

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, and display the operation log in the progress box below. After the upgrade is completed, the machine needs to be manually restarted to complete the upgrade operation.

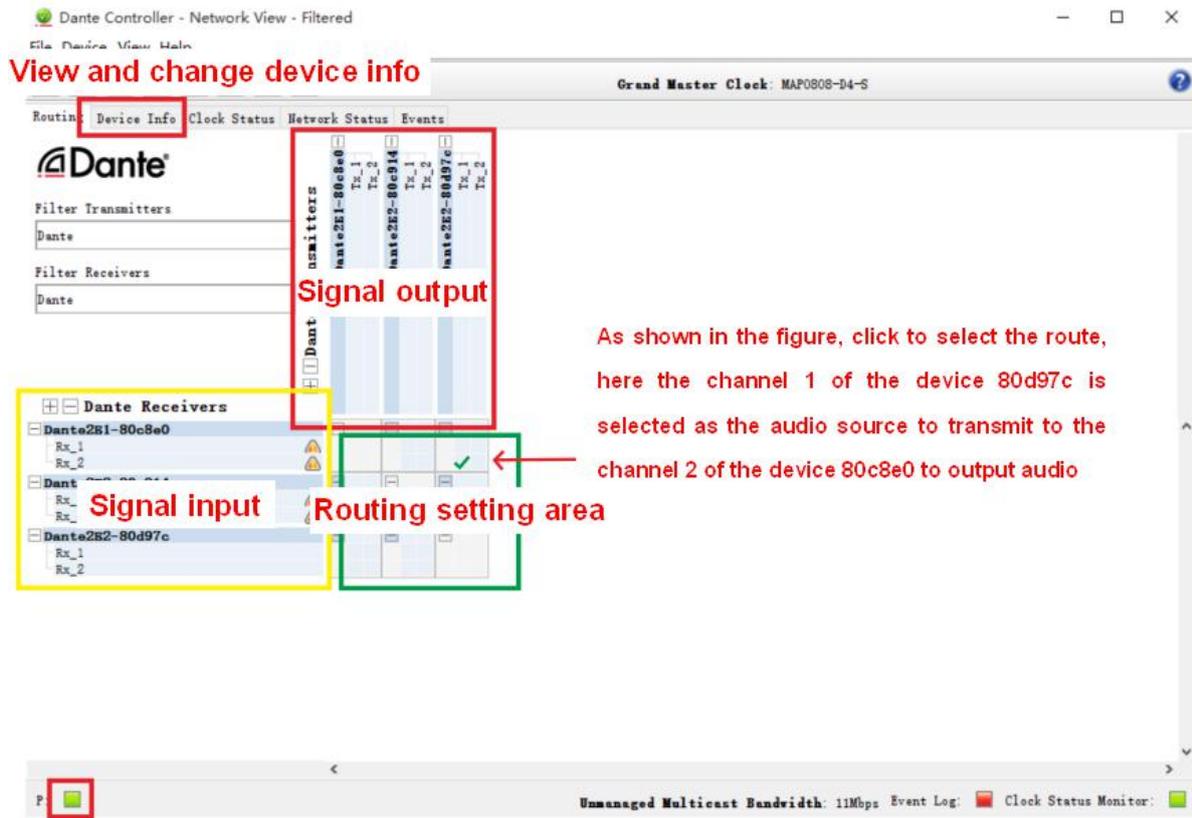
7.20. Dante instructions



Enter the settings in the main interface, or in the function area INPUT , and set the channel input source to Dante mode.



- ① There are two ways to connect DANTE, the first is to connect to the local area network with other Dante devices, and the second is to connect through a virtual sound card (Dante Virtual Soundcard, DVS for short). Both connection methods require the wired connection through a switch or router.
- ② No matter which connection method is used, routing configuration is required through the official Dante Controller computer software. Dante Controller software can be downloaded for free on the official website www.audinate.com.



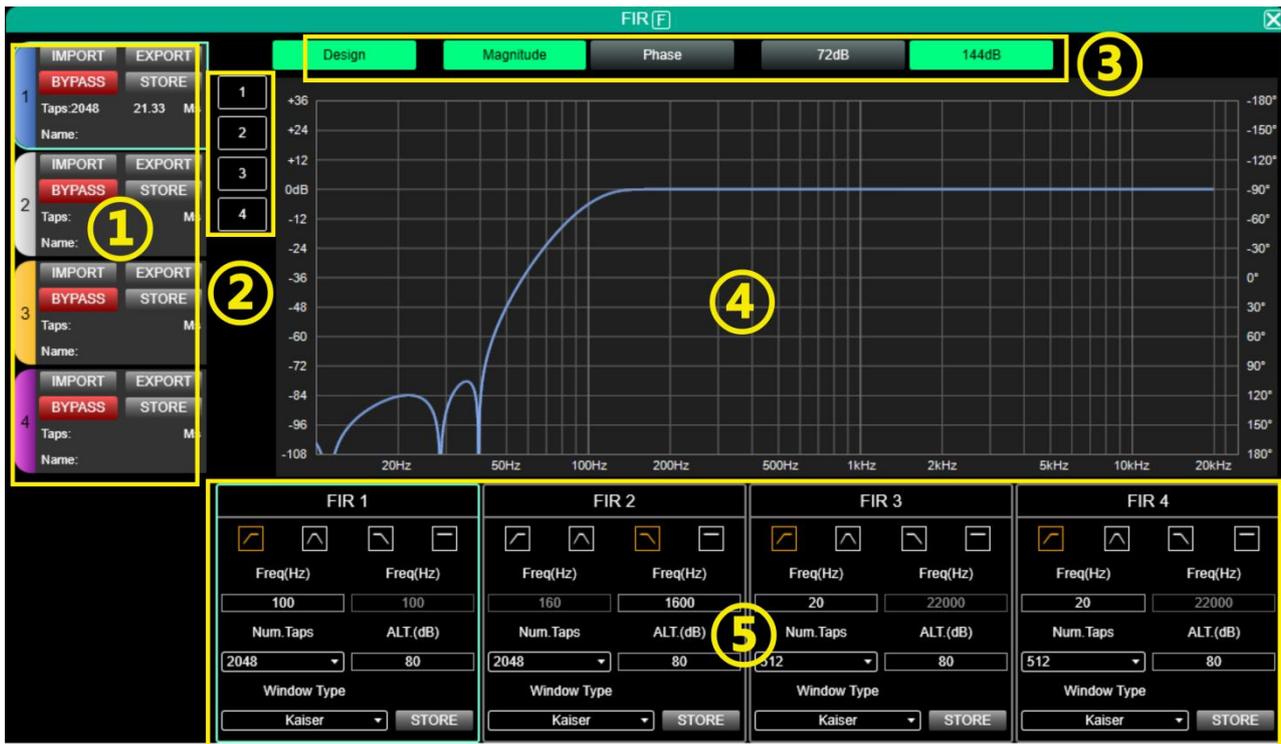
As shown in the figure, click to select the route, here the channel 1 of the device 80d97c is selected as the audio source to transmit to the channel 2 of the device 80c8e0 to output audio

7.21.FIR instructions



In function area of the main interface, enter the FIR function interface. Click Design to enter the design interface of FIR.





FIR is mainly divided into 5 areas:

Setting area ①	IMPORT	Import the FIR preset file into the current channel
	EXPORT	Export current channel FIR file
	BYPASS	Full bypass function, channel EQ is a straight line after it is turned on; red is on by default, and it needs to be turned off manually when using FIR
	STORE	Store FIR parameters in the device
	Taps	Number of taps of the current channel
	Ms	Delay of current channel
	Name	Current channel FIR preset file name
Channel area ②	1, 2, 3, 4	After clicking, FIR curve of the corresponding channel will be displayed, and multiple curves can be displayed at the same time.
Interface area ③	Design	Design interface switch button
	Magnitude	Display the amplitude curve
	Phase	Display the phase curve
	72dB	Display the content within 72dB of amplitude accuracy
	144dB	Display the content within 144dB of amplitude accuracy
Display area ④	- 108 ~+ 36	Amplitude accuracy, the value used for reference when currently displayed as an amplitude curve
	- 180 °~+ 180 °	Phase accuracy, the value used for reference when currently displayed as a phase curve
	2 0Hz~20KHz	Frequency band
Design area ⑤		High pass

		Frequency band
		Low pass
		Straight
	Freq(Hz)	Start frequency setting, high pass on the left and low pass on the right
	Num. Taps	Taps, a total of 8 levels. Optional 256 ~ 2048
	ALT.(dB)	Depth, only available in Kaiser window
	Windows Type	Window type selection
	STORE	Set the parameters and click to save to the device channel

Note: The PC interface is subject to upgrade and changes without prior notice, please refer to the actual interface of the device.

8. Device wiring instructions

1. Power cable



The grounding end of the AC power cable shall be well grounded, otherwise there is a risk of electric shock!

The AC power cable must have sufficient over-current capability, the AC power voltage must be within $\pm 10\%$ of the nominal operating voltage of the device, and the AC power frequency must be within the nominal frequency range of the device (the nominal value is marked on the rear panel of the device).

2. Wiring notes

Use shielded wires as much as possible for the input signal, and the higher the shielding layer density, the better.

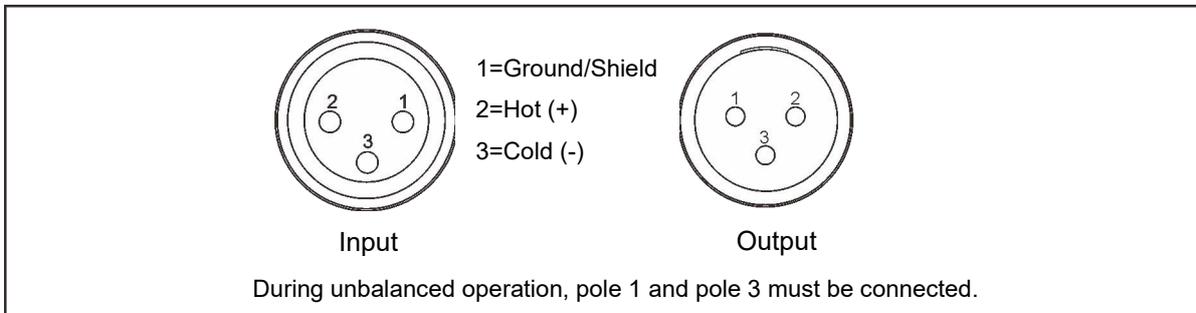
The input signal should use balanced connection as far as possible to reduce noise interference.

If using an unbalanced connection, the wire should be as short as possible, preferably no more than 3m.

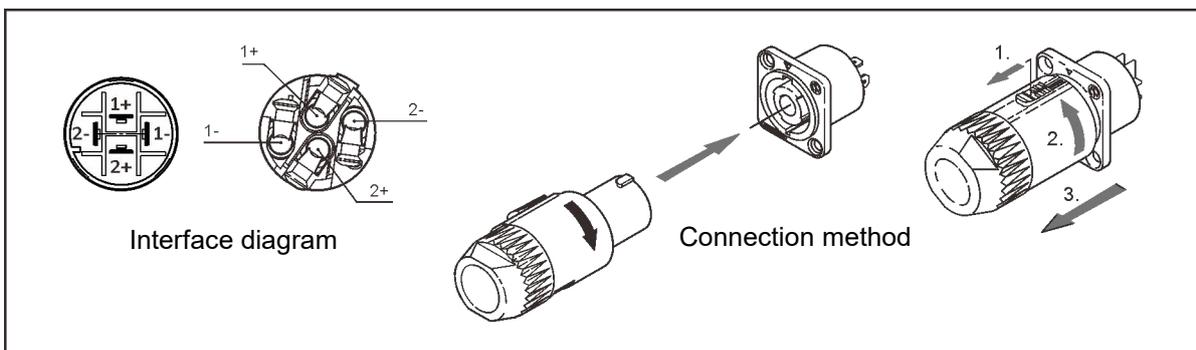
Weak signal lines should not lay together with strong signal lines such as power lines and amplifier output lines, otherwise noise may be generated.

Turn off all equipment before changing any connections, as this may cause damage to speakers and even your hearing.

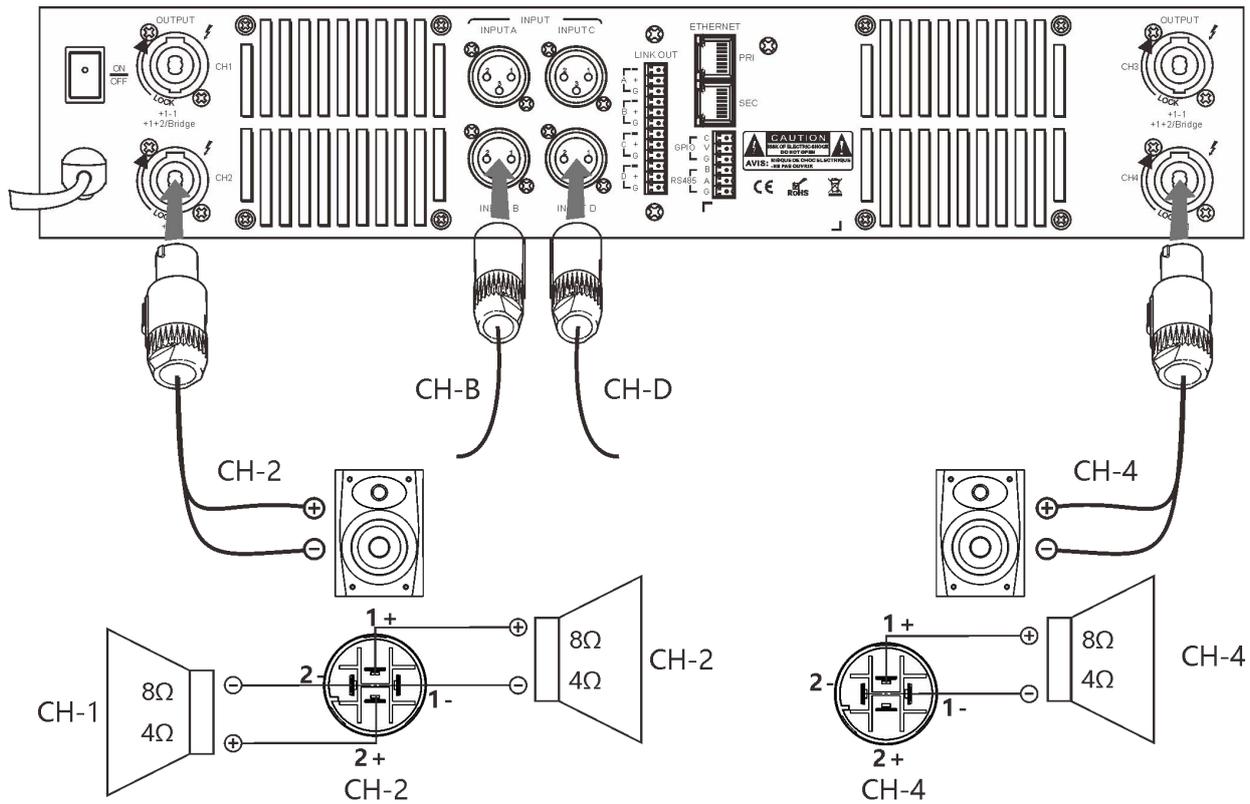
Balanced connection of the three-pin XLR plug, as shown in the figure below:



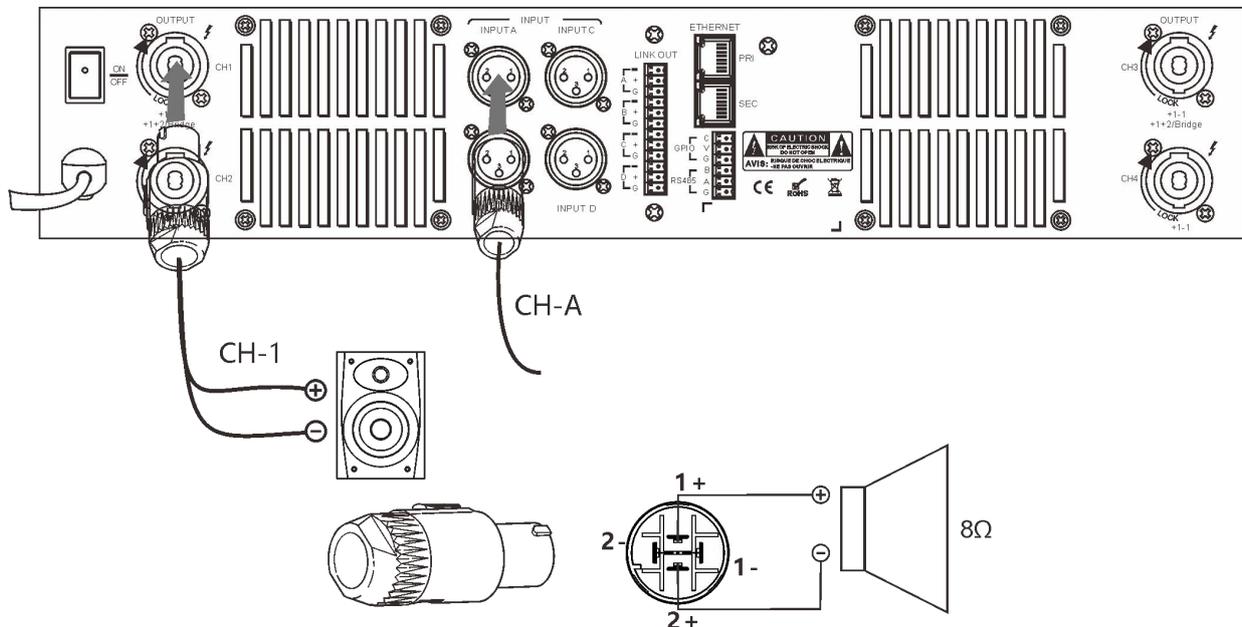
Four-pin SPEAKON plug connection, as shown below:



3. STEREO mode



4. BRIDGE mode



9. Precautions



Due to the high power density of this device and the strong magnetic field around it, please keep away from weak signal sensitive devices (preferably $\geq 20\text{CM}$), otherwise noise may be generated.



Before installation, make sure that the power cable of the device is not connected to the power outlet; the power switch is turned off; the volume knob is fully closed (turn counterclockwise to the limit).

Although the amplifier will be protected under abnormal conditions, in order to achieve the best performance and highest safety of the amplifier, please pay attention to:

1. Before use, the amplifier needs to be configured, including the connection of input and output lines. Improper wiring can cause the device to not work properly.
2. Be careful when making connections, selecting input signals, and controlling output levels, as this can avoid unnecessary troubles.
3. Do not short-circuit the ground wire of the output cable and the ground wire of the input signal. This will create a ground loop and causes oscillations.
4. Never connect the output terminal to power, battery or mains. Failure to do so may result in electric shock.
5. Tampering with the circuit and unauthorized modification of the circuit is dangerous and invalidates all services provided by the agent.
6. Do not overload the mixer or it will send a clipped signal to the amplifier. The amplifier will accurately reproduce such signals and the speakers may be damaged.
7. Do not use the amplifier below the nominal load. Too low a load can damage the speaker by causing the amplifier output protection and premature clipping.
8. After the amplifier is turned on and a signal passes through, there may be a fatal voltage on the output interface, please do not touch it with your hands or metal objects.

Heat dissipation instructions

The heat dissipation method of the device is as follows: cold air is sucked in from the front panel vent, flows through the heat sink inside and takes away the heat, and is discharged from the rear panel fan vent. In order to ensure good heat dissipation, please place the device in an environment of 0°C - 40°C , and make sure that the front and rear panel air ducts are unobstructed.

If the temperature of the heat sink inside the device exceeds 70°C , the power limit function will be activated, and the output power of the amplifier will be reduced to avoid temperature rise. If the temperature of the radiator continues to rise above 85°C , the amplifier output will be turned off. When the temperature drops to a safe temperature, the amplifier will automatically restart.

Statement of Design Changes

We reserve the right to change the design of any product at any time without notice and assume no obligation to make corresponding changes to previously manufactured products.

Eco-Network Digital Amplifier

