PAMP-2300PROC

PAMP-2300PROCD
(with DANTE)

Network DSP POWER AMPLIFIER



User Manual V1.0

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Chapter 1 Introduction

ADERTECH PAMP-2300PROC/ PAMP-2300PROCD is a DSP digital amplifier of 2*500W@4 Ω /2*300W@8 Ω , Bridge 1*1000W@8 Ω , support constant pressure 70V/100V(1000W@10Ω). It can monitor the status of amplifier and adjust the function of DSP in real time and remotely. DSP functions of built-in: noise gate, matrix mixer, PEQ, crossover, delay, compressor etc. Support 2 channels Dante Network audio, suitable for various occasions in the PA project.

Applications

Meeting Room

Medium/Big conference room

School

Restaurant

Shopping mall

Features

▲Optional 2-channel Dante network audio input (PAMP-2300PRPCD)

▲0dBu/6dBu sensitivity adjustment for each input

▲Remote standby, call amplifier

▲Colorful IPS LCD display

▲Support balanced XLR input and unbalanced RCA input

▲Support software select working mode: stereo, bridge, mono, free matrix

▲Control interface: USB and RJ45 by TCP/IP protocol, configuring RS232, RS485 central control interface, supporting GPIO external expansion control interface

▲Support Mconsole and app TCON network control

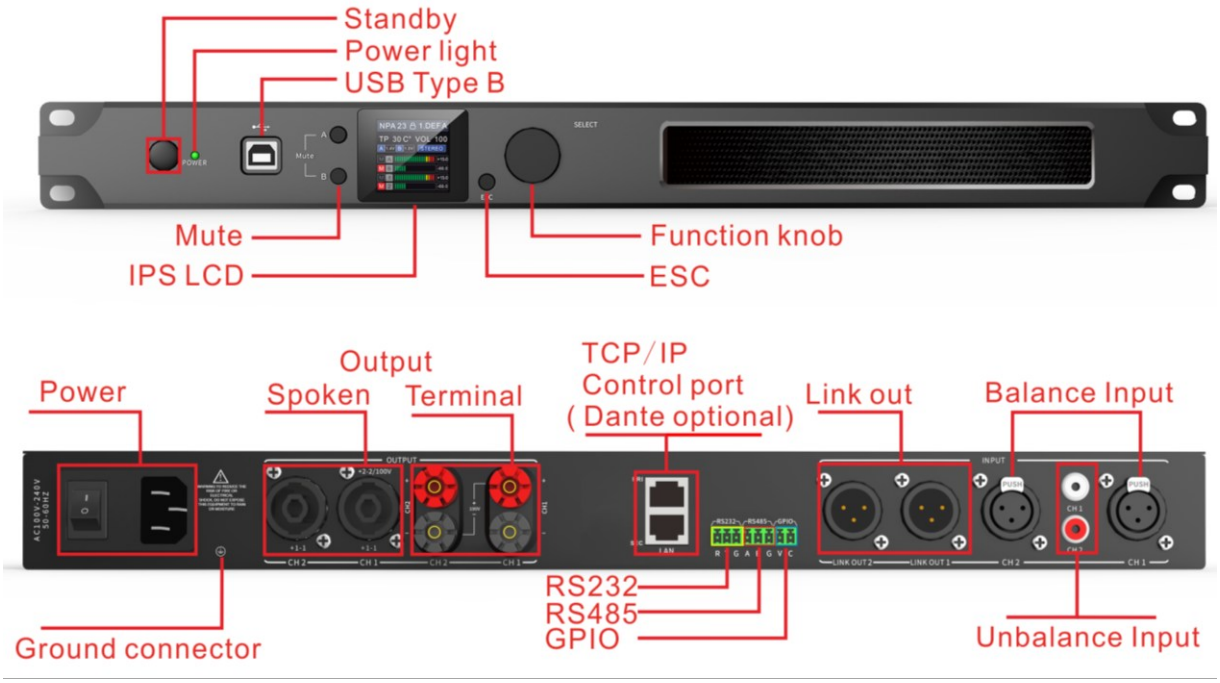
▲Support Constant Pressure and Resistance : 100V, 70V, 8ohm, 4ohm

Chapter 2 Technical parameters

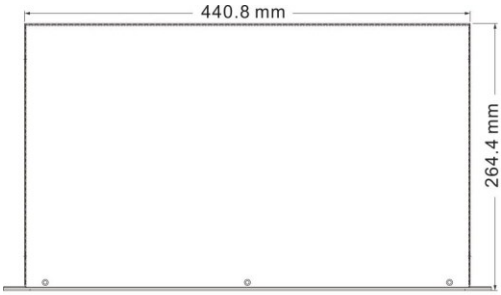
Input PEQ	5 PEQS
Output PEQ	9 PEQS
Crossover	Butterworth、Bessel、Linkwitz 6~24dB
Output Delay	16ms
Output Compressor	Knee, Threshold, Attack, Ratio, Release
Output Limiter	Threshold-90dBu~21dBu、Release 1~2895ms
DSP Presets	30 (one for factory preset)
Control port	TCP/IP、USB、RS485、RS232、GPIO
Network Specification	2*RJ45，TCP/IP、1000base-T/100base-TX
Channel	2
Power	2*300W@8Ω 2*500W@4Ω
Bridge Power	1*1000W@8Ω
Input Interface	Balance 2*XLR；Unbalance 2*RCA
Output Interface	2*Speakon；2*Terminal
Cooling Mode	2*fans intelligent control
Gain	6dBu：30dB（29.5 times）；0dBu：36dB（31.1 times）
Maximum Input Level	6dB：16dBu（4.9V）

SNR	6dBu：94dB；0dBu：94dB
Frequency Response	20Hz ~ 20kHz （±0.5dB)@1W，8Ω
THD+N	<0.1%@1W-full power
Sample Rate	48K/24bit
Channel Isolation	<-70dB
Work Mode	Stereo, Bridge, Mono, free Matrix
Remote Control	Standby、Call，DSP functions
Amplifier Monitor	Temperature、Power、Current and Voltage
Constant Pressure and Resistance	100V、70V、8Ω、4Ω
DANTE（Optional）	2 channels
Display	240x240pixel、IPS LCD
Protection Mode	DSP limiter、High temperature, DC, high frequency, short circuit, back EMF, peak current limiter、Back EMF、Surge current limiter, startup delay, power circuit breaker protection, power over voltage / under voltage protection
PC Software	Mconsole
Weight	3kg
Size	483*300*44.5
Power Supply	180~260VAC

Chapter 3 Functional Structure

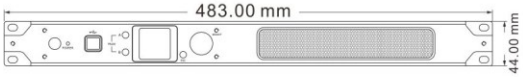


Structure



TOP VIEW

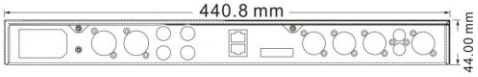




FRONT VIEW



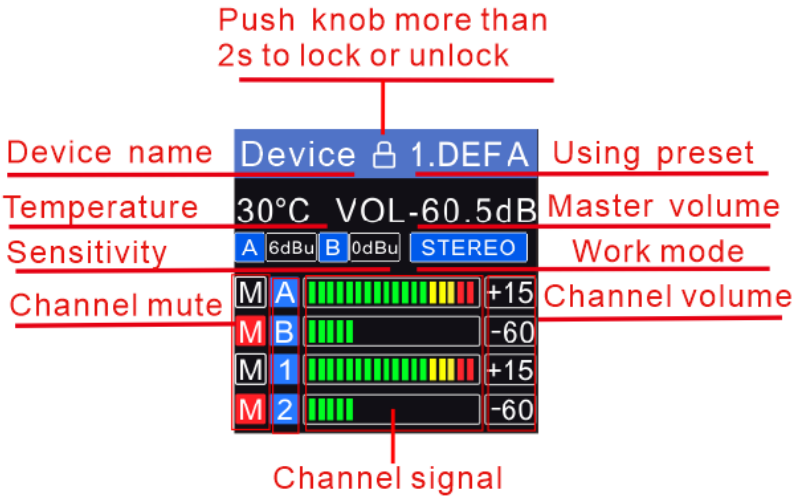
RIGHT VIEW

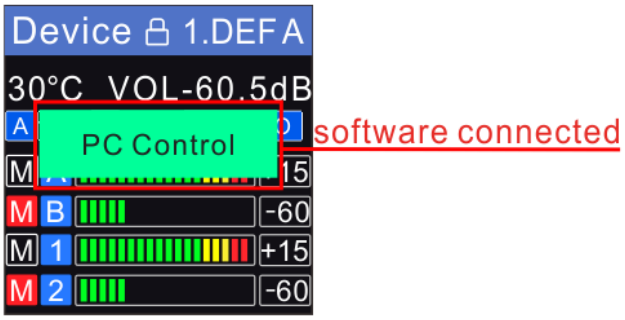


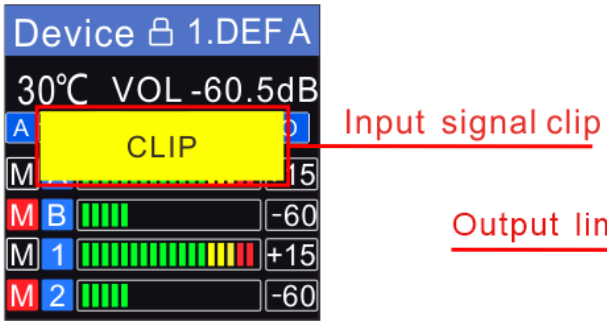
BACK VIEW

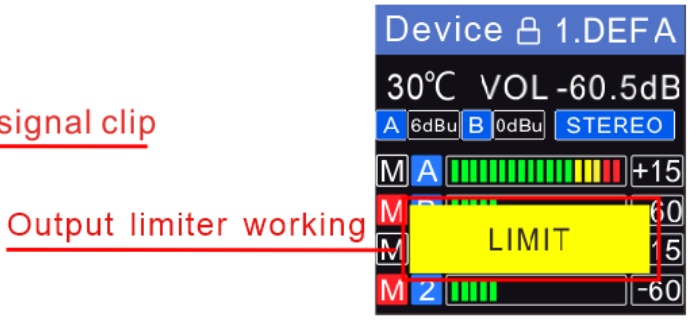
3.1 Display interface

Main page

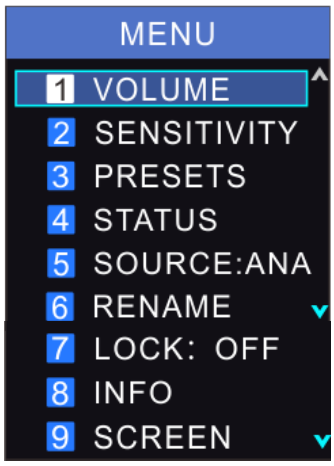




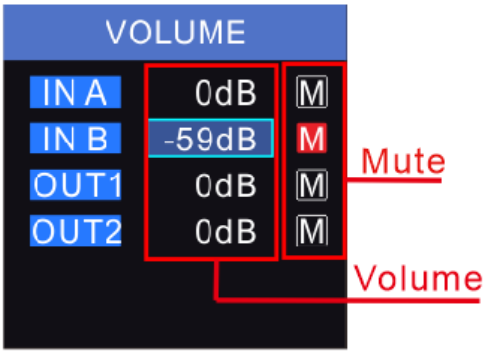




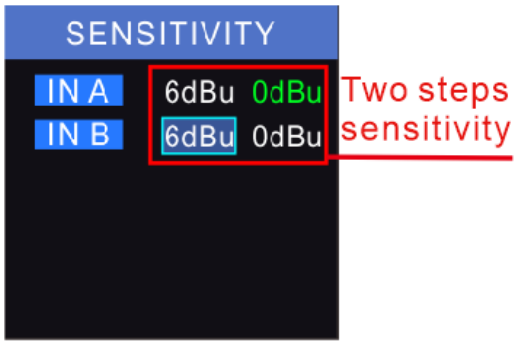
Menu page


MENU
1 VOLUME
2 SENSITIVITY
3 PRESETS
4 STATUS
5 SOURCE:ANA
6 RENAME
7 LOCK: OFF
8 INFO
9 SCREEN

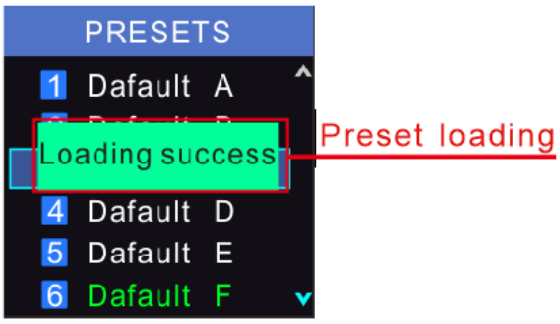
1


VOLUME
IN A
IN B
OUT1
OUT2
0dB
-59dB
0dB
0dB
M
M
M
M
Mute
Volume

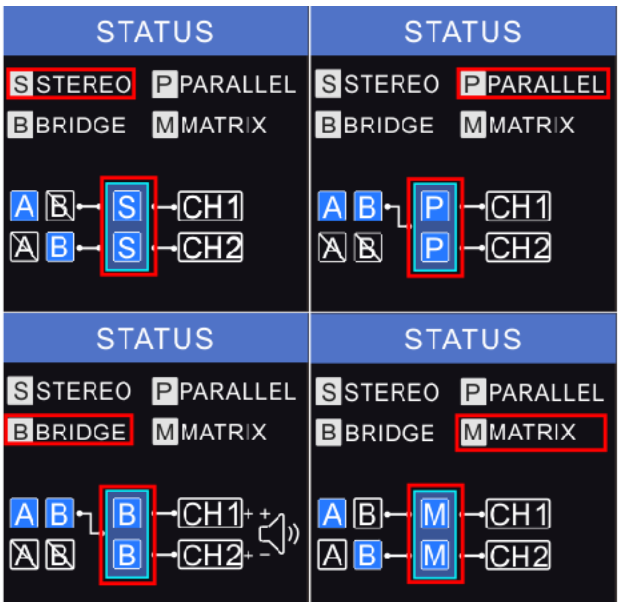
2


SENSITIVITY
IN A
IN B
6dBu 0dBu
6dBu 0dBu
Two steps sensitivity

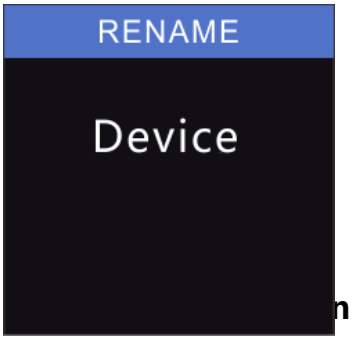
3


PRESETS
1 Dafault A
Loading success
4 Dafault D
5 Dafault E
6 Dafault F
Preset loading

4


STATUS
S STEREO
P PARALLEL
B BRIDGE
M MATRIX
CH1
CH2
STATUS
STATUS
STATUS

6



8



Chapter 4 n

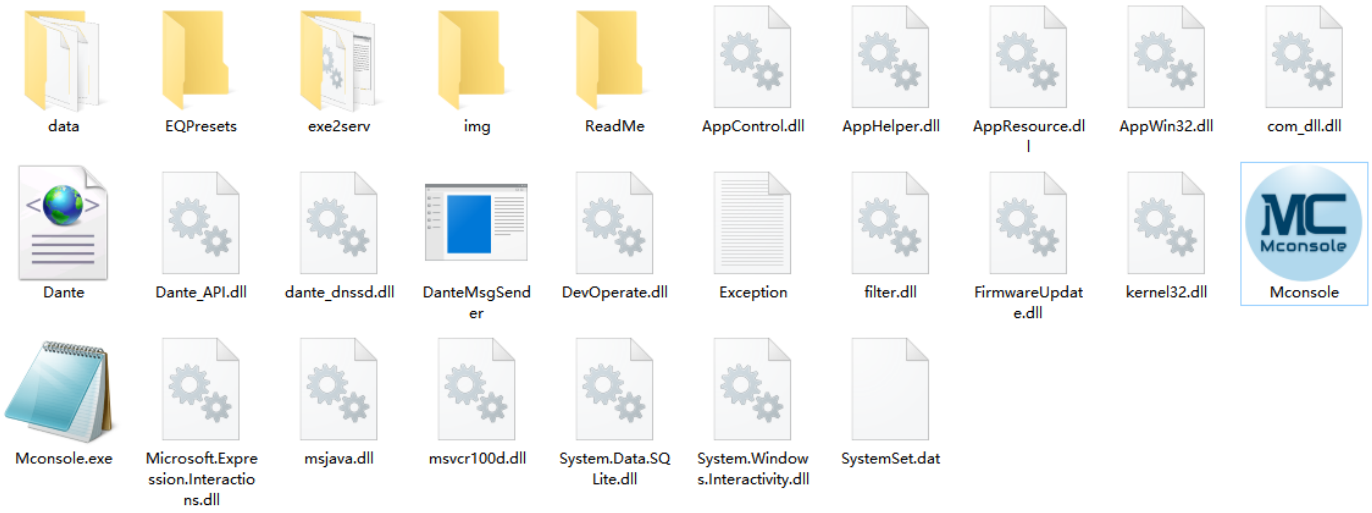
The Mconsole software provides users with a fast interface to control one or more machines, the configuration parameters can be stored in the preset files, it is convenience for recall or reset different applications.

4.1 Operating Environment

Mconsole supports installation on Windows systems with win7/win8/win10 arbitrary x86/x64 which must be operating with Microsoft. NET Framework 4.0.

4.2 Installation

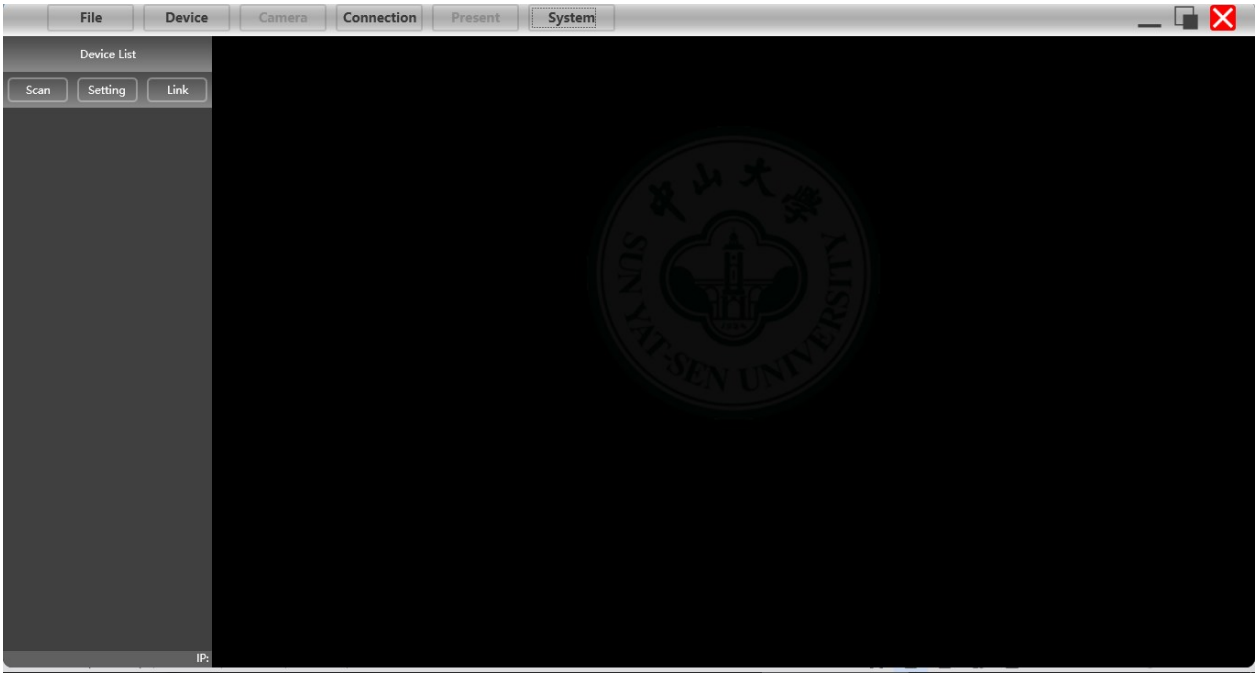
The Mconsole is a installation-free software, just open the Mconsole.exe in the below file.



4.3 Software operation

Steps：Double-click Mconsole.exe file 

in a folder，as shown in Pictured 4.1

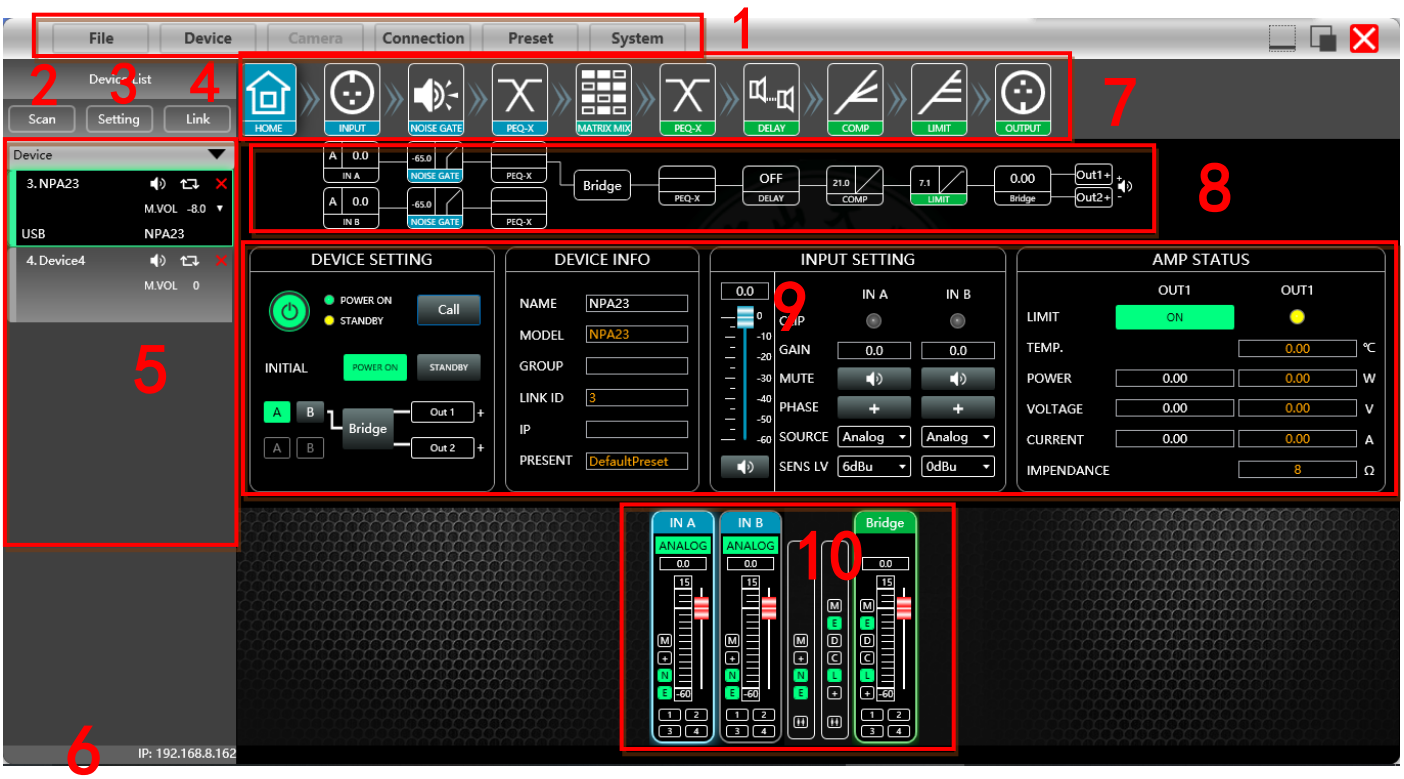


Pictured 4.1 Software Main Interface

Notes:

Please keep only one software open in one computer.

Chapter 5 Software introduction



Pictured 5.1 Software Theme Interface

Module details as Pictured 1.2 shown in RED number

(1) Menu

(2) Scan

(3) Connect Setting

(4) Device Link setting

(5) Device List

(6) PC IP Address

(7) DSP functions button

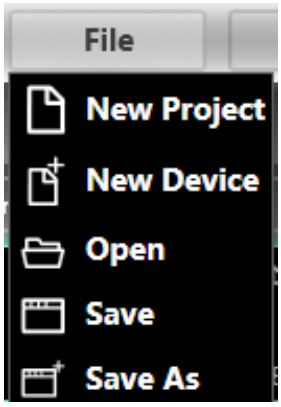
(8) Functions' interface

(9) Device setting and status monitor

(10) Input & Output channels' gain

5.1 Menu

File



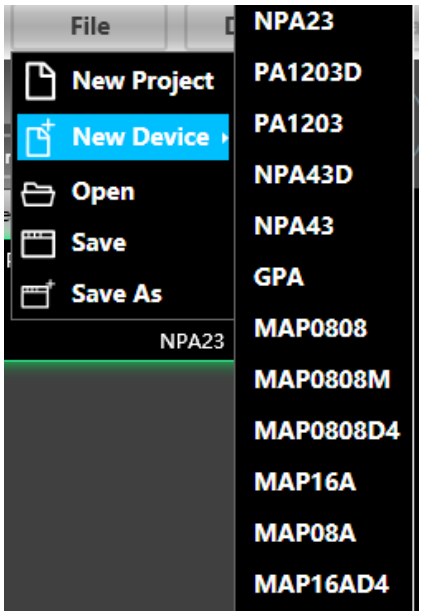
Pictured 5.2

As Pictured 5.2 :

1. Build a new project
2. Add a demo device

   Click the "File" menu and "New Device", show the following Pictured 5.3 demo

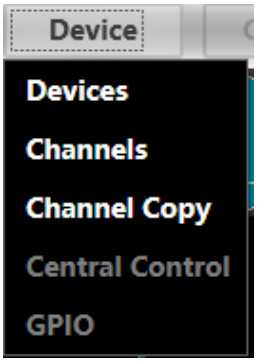
Device Interface and select a demo device and add it to the device list. Note: demo devices do not connect to real devices



Pictured5.3 Demo Device Interface

3. Open a project from PC
4. Save current project to PC
5. Save current project as another project to PC.

Device



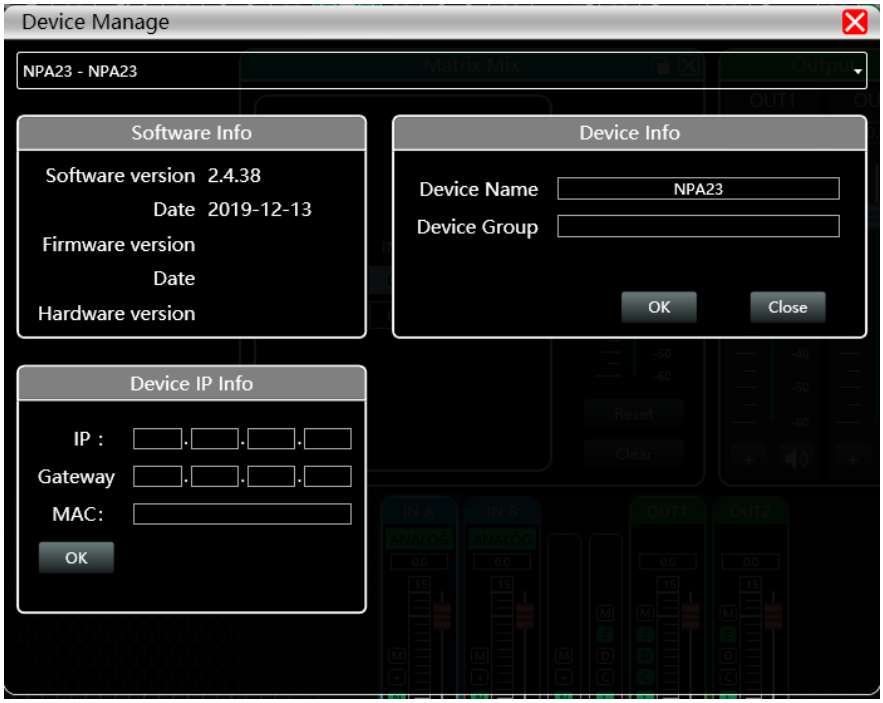
Pictured 5.4

As Pictured 5.4:

1. Device information management

Click "Device"-"Devices" on Pictured 5.4, that will show as Pictured 5.5 Device manage

interface.



Pictured 5.5 Device Manage Interface

As shown above, the device manage interface is divided into four pieces below:

Device selection: you can select every connecting device to check the device information.

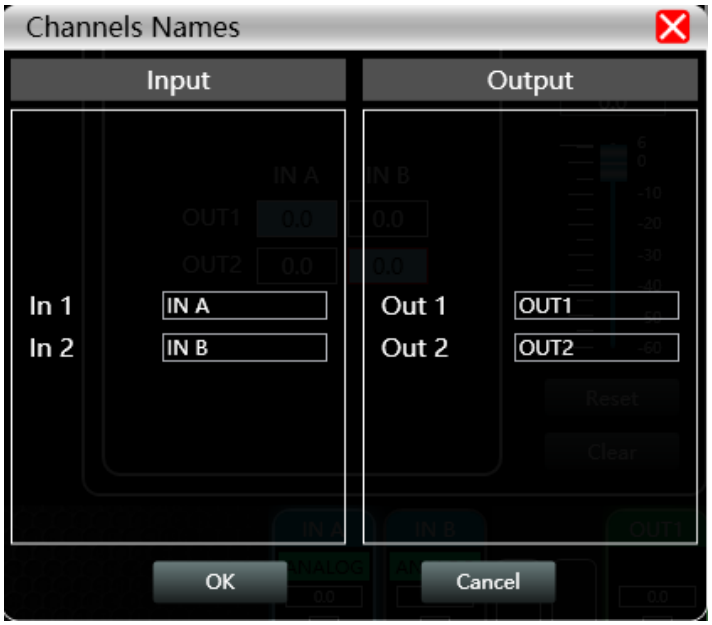
Software information: software version, current device's firmware version and hardware version.

Device information: device name, device group, you can enter a new name and click OK to save.

Device IP Information: If the device is connected with TCPIP network, it will show the device's IP address, gateway, MAC address. Notice: it is necessary to keep device and computer are in the same network segment.

2. Channel information setting

Click the "Device"-"channels" on Pictured 5.4, pop-up below Pictured 5.6



Pictured 5.6 Channels Name Management

As shown above, after set new name of the channel, click the OK button to save in the machine. Notice: channel name is limited of 5 English letters or numbers length .

3. Channel parameters copy

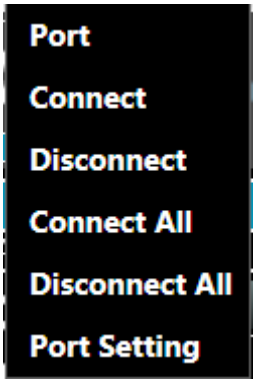
Click "Device"-"channels copy" on Pictured 5.4, Pictured5.7 pop-up as below



Pictured 5.7 Channels copy

As shown above, first to choose a source device -target device- source channel - target channel - parameters, than click copy. The input channel and the output channel can not mix copy.

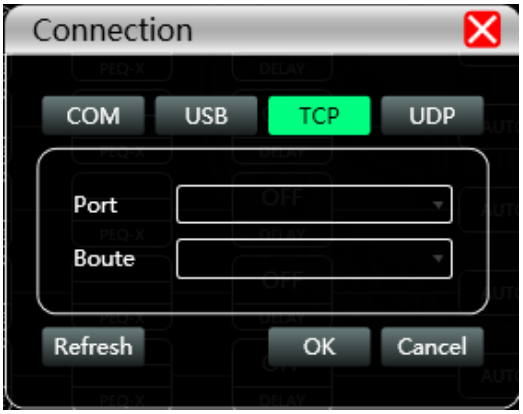
Connection



Pictured 5.8 connection menu

"Connection" as Pictured 5.8 shown:

1. Port selection: connect port selection COM(RS232,RS485)/USB/TCP/UDP



2. Connect devices button

3. Disconnect devices button

4. Connect all devices

5. Disconnect all devices

6. Port Setting: set RS232/RS485 baud rate, for central control

Presets

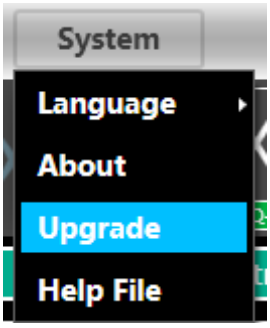


Pictured 5.9 Device Preset

Machine presets

1. Save： select a number and save all current parameters to machine
2. Recall: select a preset and recall it to current state
3. Delete: delete the selecting preset
4. Clear: delete all presets in the machine
5. Boot: set the preset as boot preset, it will recall the boot preset every time when the machine power on
6. Import preset: Import a preset from PC
7. Export the preset: Export the selecting preset to PC
8. Import package: Import the presets' package from PC
9. Export package: Export the presets' package to PC

System



Pictured 5.10 "System" Menu

"System" as Pictured 2.6 shown:

1. Language selection: English/ Chinese
2. About: The information of software and firmware of the machine.
3. Upgrade : Firmware upgrade tool.

Click on the menu bar "System"-"Upgrade" on Pictured 5.1, that will pop up the following as

Pictured 5.11.



Pictured 5.11 Firmware Upgrade Interface

When the machine need to update firmware, keep the machine and software connected, then select the upgrade bin file from PC, click "Update", the system will automatically load the upgrade file to the machine, and display the operation progress. After the upgrade is complete, the machine would be rebooted automatically or manually to complete the upgrade.

4.Help File: open user manual

5.2 Scanning

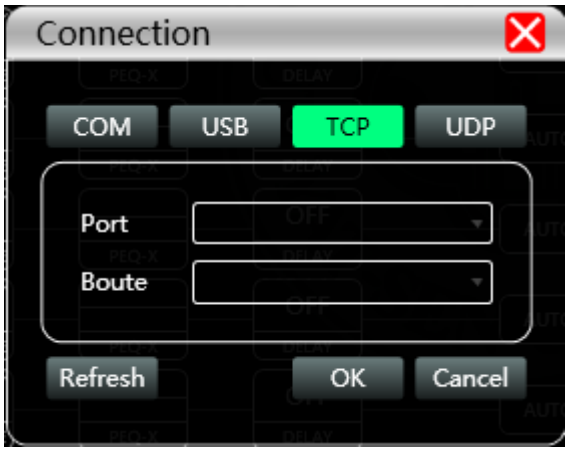


Pictured 5.12 Scan devices progress display

Scan all connecting devices, if there are too many devices, you need to scan several times.

5.3 Setting

Set device connection port, click the "Settings" will show like Pictured 5.13, select the corresponding mode, and confirm, if the device port changes, click the "Refresh" button to update the port list.

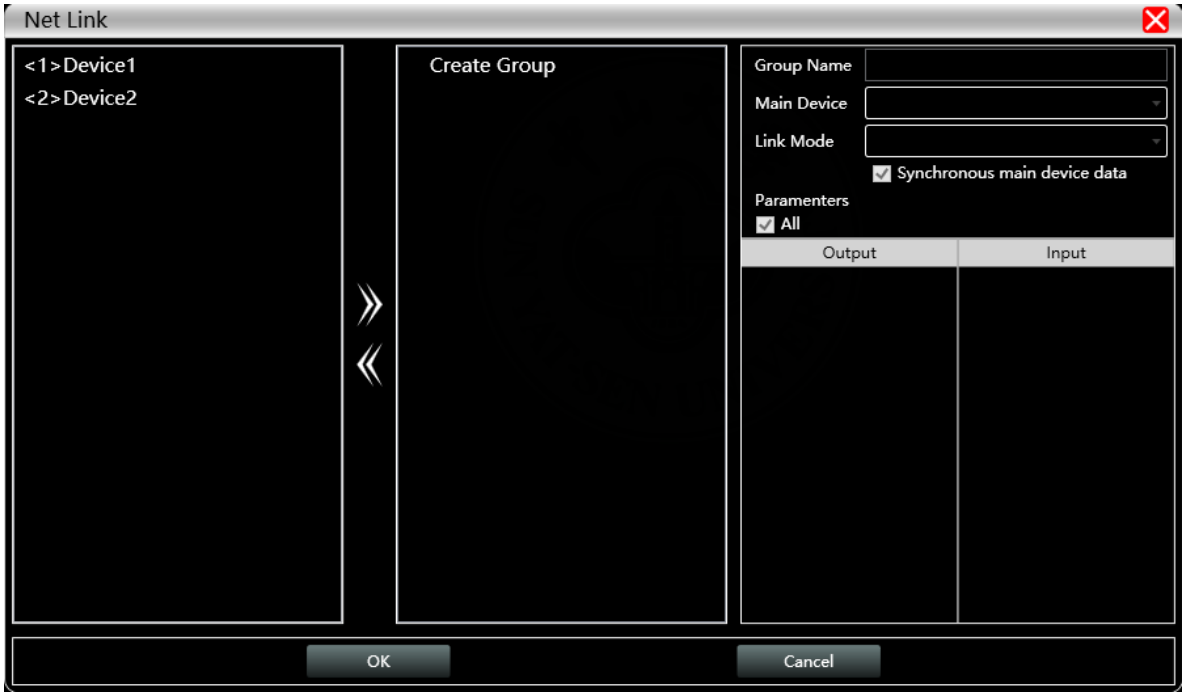


Pictured 5.13 Device connection

5.4 Link button

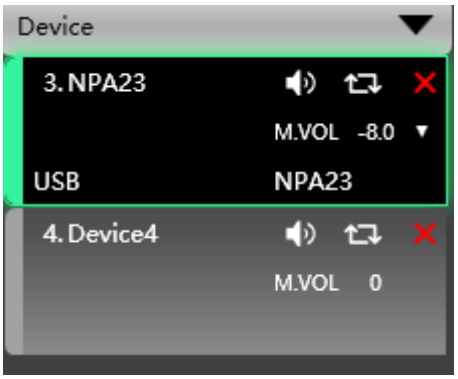
Link button will open the interface Pictured 5.13, set up the devices group adjusting. You can select the connecting devices(same module), move to the group frame and select the parameters to combine adjust.

You can set the group name, select a device as main device which will be showed on the software, link mode:Synchronous(All parameters are adjusted to the same value) /Asynchronous(All parameters are adjusted by the same difference)



Pictured 5.14 Devices link setup display

5.5 Device list



When you press scan devices, it will automatically add the connecting devices to the list. It support all model devices shown in the list . 

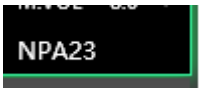
this means the device is connected, and connect port is USB; 

this means device is disconnected.

In the above Pictured, 

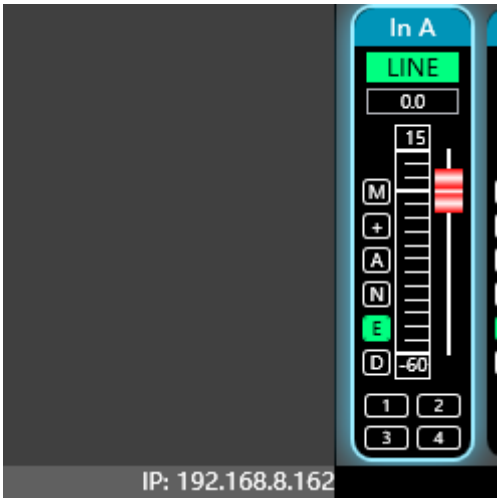
is the device number on the list; 

is the Device name;



is the factory name (user cannot modify);  From left to right, they are mute button, connect or disconnect button, and delete device button. The mute button can directly control mute of master output gain.

5.6 IP Address



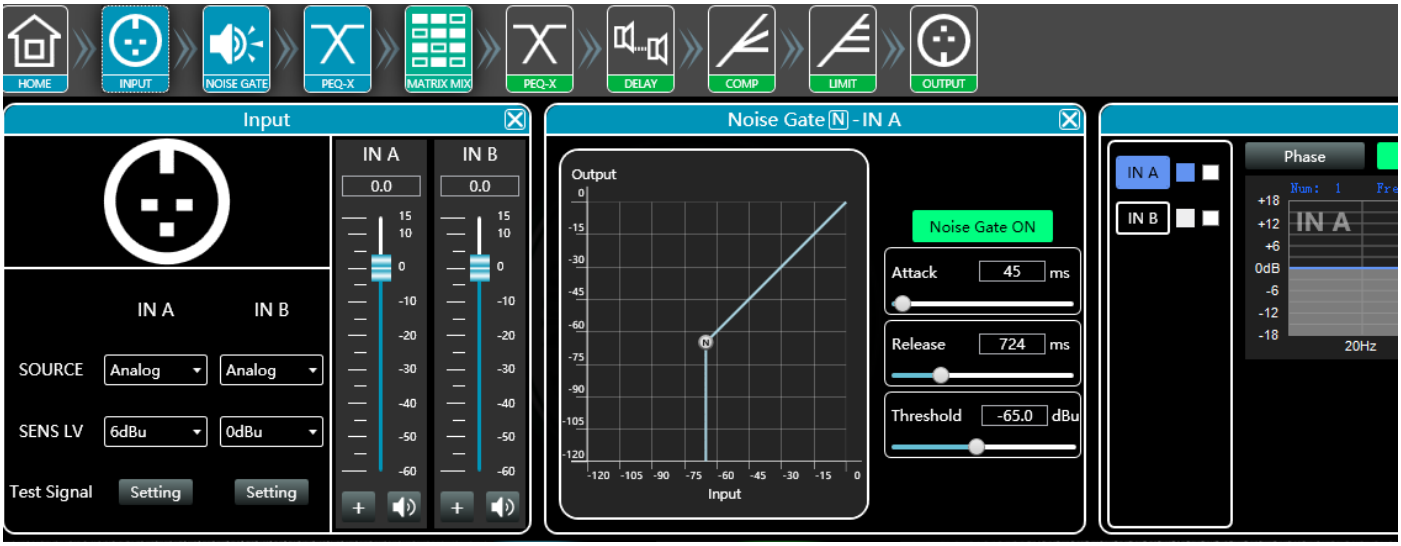
Mconsole can read the PC IP address and show on the bottom left. It is easy to check whether the device and computer’ s IP are in the same network segment.

5.7 Function Button



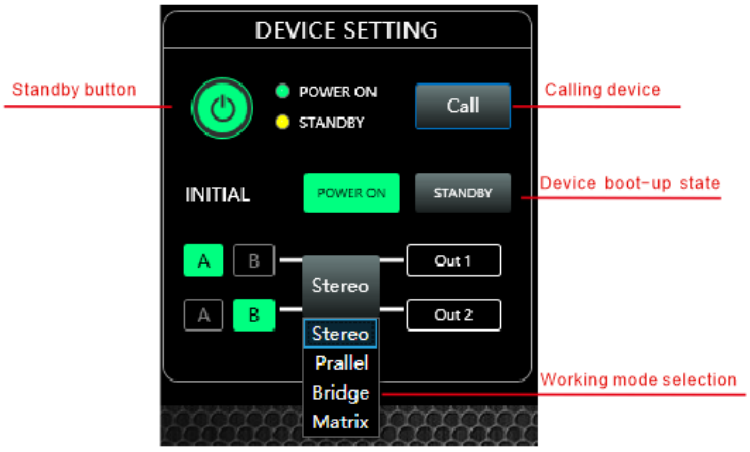
You can open DSP function through the function buttons, double-click for open/close, one click for positioning. Double-click HOME button will open/close all functions. See Chapter 6 for details.

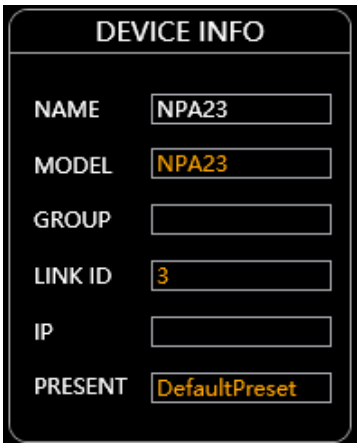
5.8 Function module interface

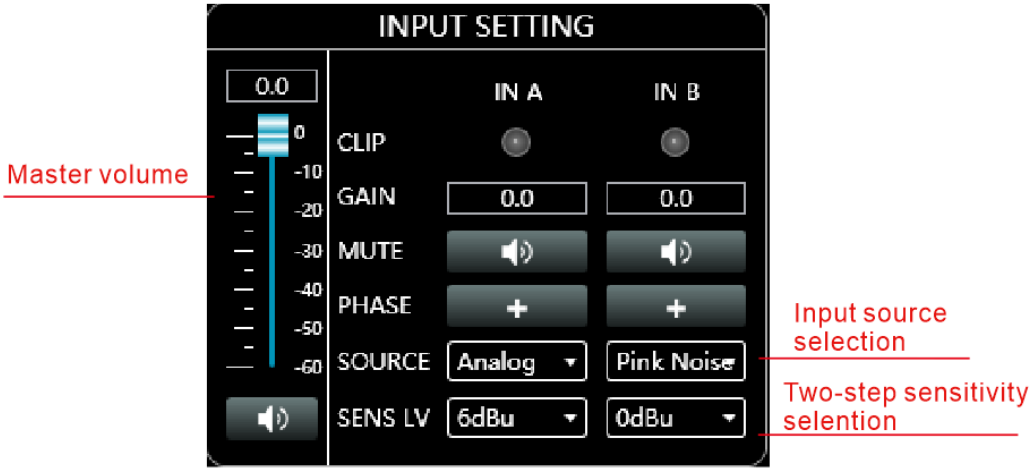


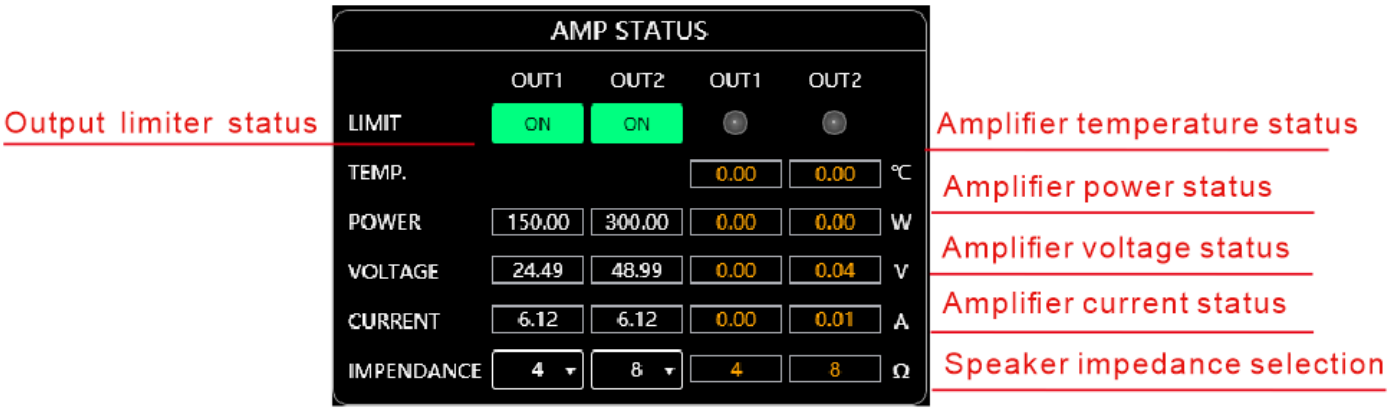
Each function button opens the function page to set detailed parameters.

5.9 Device setting and status monitor

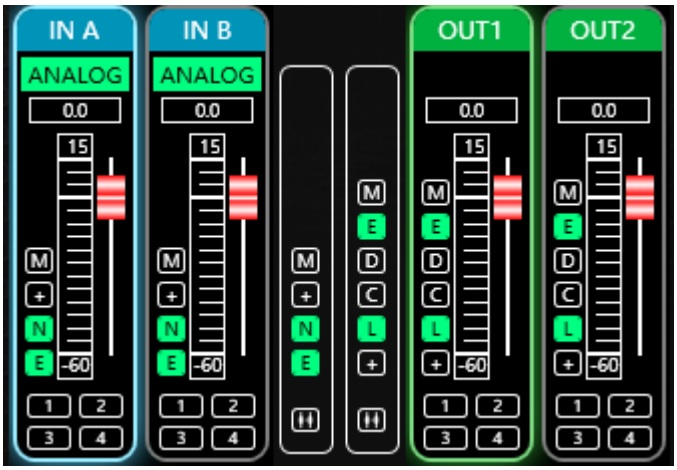








5.10 Inputs & Outputs' Gain



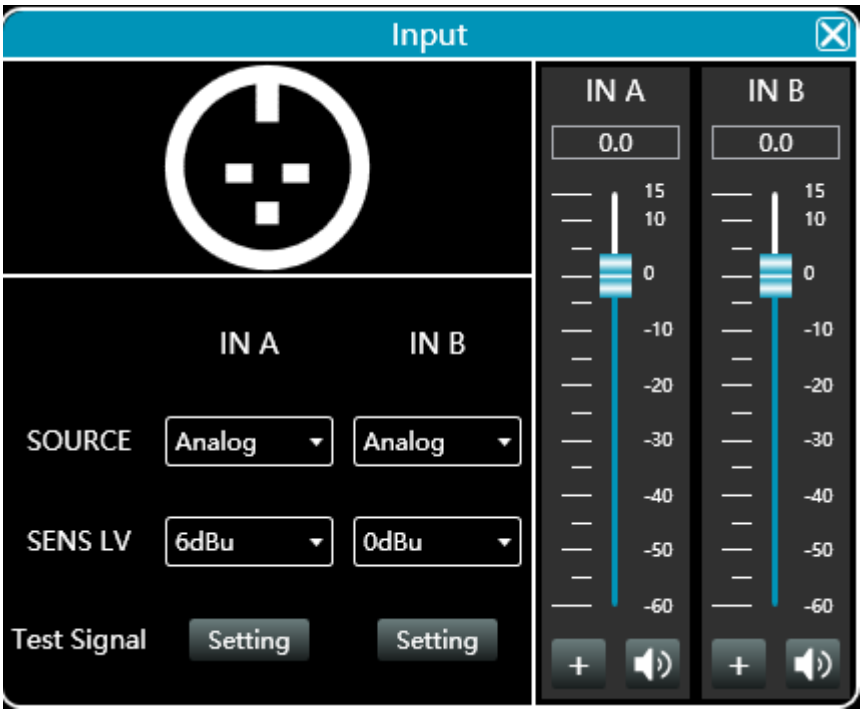
Display channel level, gain, input source, channel name, channel alignment, and Shortcut for DSP functions (M for mute, +/- for polarity, N for noise gate bypass, E for EQ all bypass, D for delay bypass, C for compressor bypass, L for limiter bypass)

Chapter 6 Function Introduction

6.1 The Main interface of Input module

Double click on 

, show as Pictured 6.1



Pictured 6.1 input module

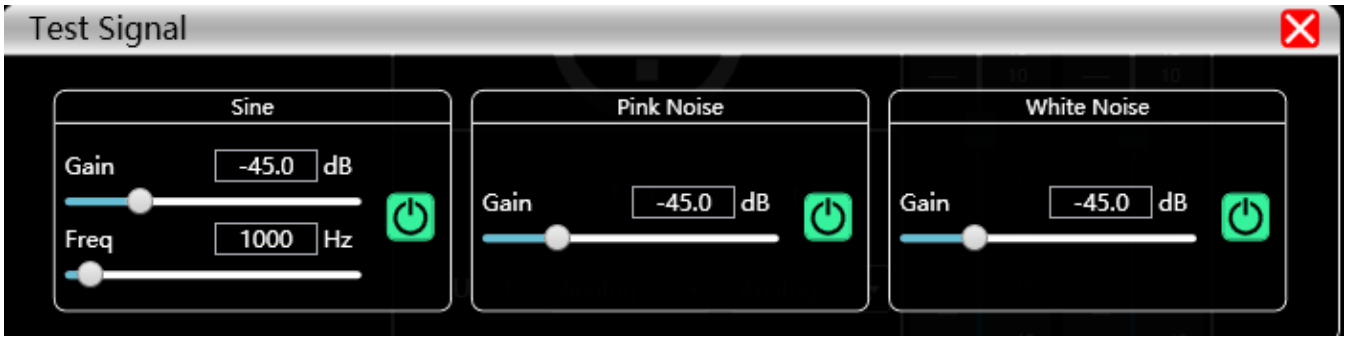
As shown in the Pictured, can operate the polarity, mute, input source

In this module, there are three choices, analog input, Dante input(optional) and test signal, one channel can only have one input source.

There are two steps of sensitivity in each channel: 0dBu/6dBu

Test signal

See Pictured 6.1, click on Test Signal "setting" will show Pictured 6.2



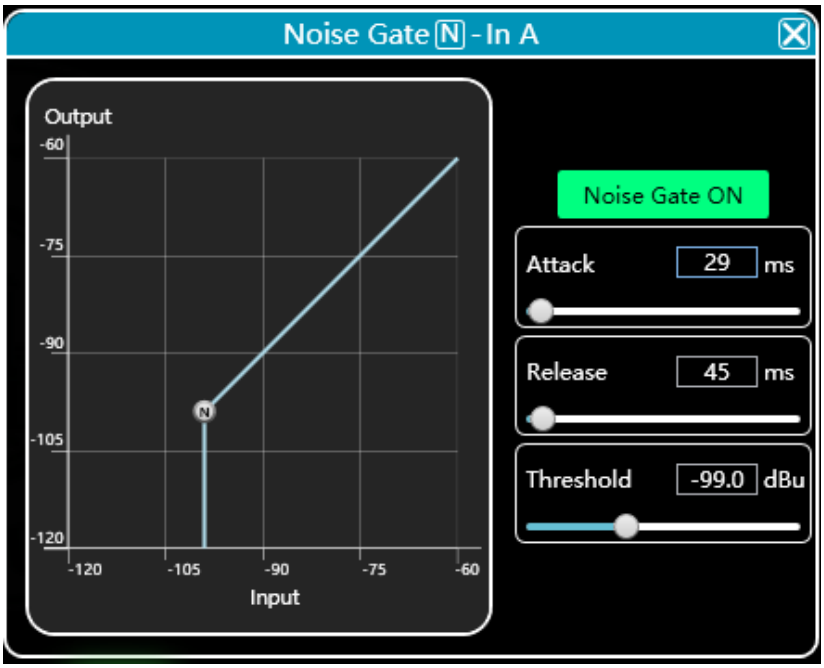
Pictured 6.2 Setup Interface

Three kinds of test signals:Sine, Pink noise, White noise,  the switch button, green for on, red for off.

6.2 Input Noise Gate

Double click on 

, show as Pictured 6.3



Pictured 6.3 setting module for input noise

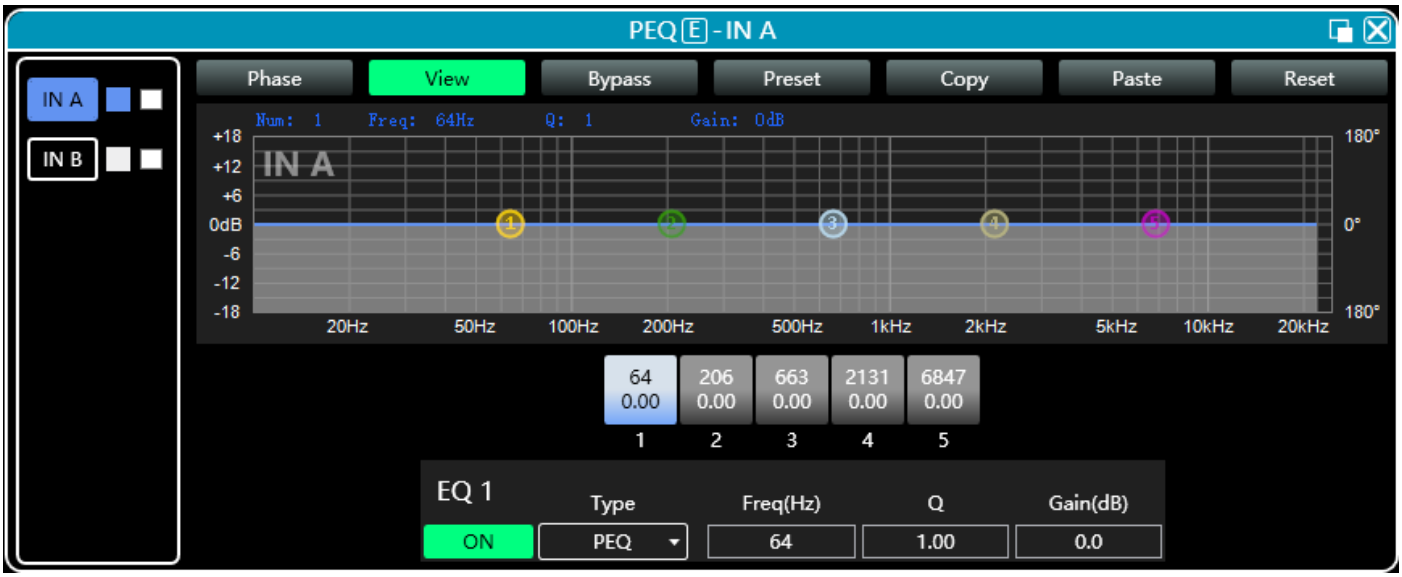
As shown above, click 

open/close the function of noise-gate, green for open, red for close.

6.3 Input Equalizer (PEQ)

Double click on 

, show as Pictured 6.4, The upper-right corner of the module 
can enlarge the frame interface, which will be more clear.



Pictured 6.4 Input Equalizer Setup Module

6.3.1 Function button

As Pictured 6.4 shown, the function for top button are:

Phase : Shows the phase curve of the current channel。

View: Show or hide all EQ points。

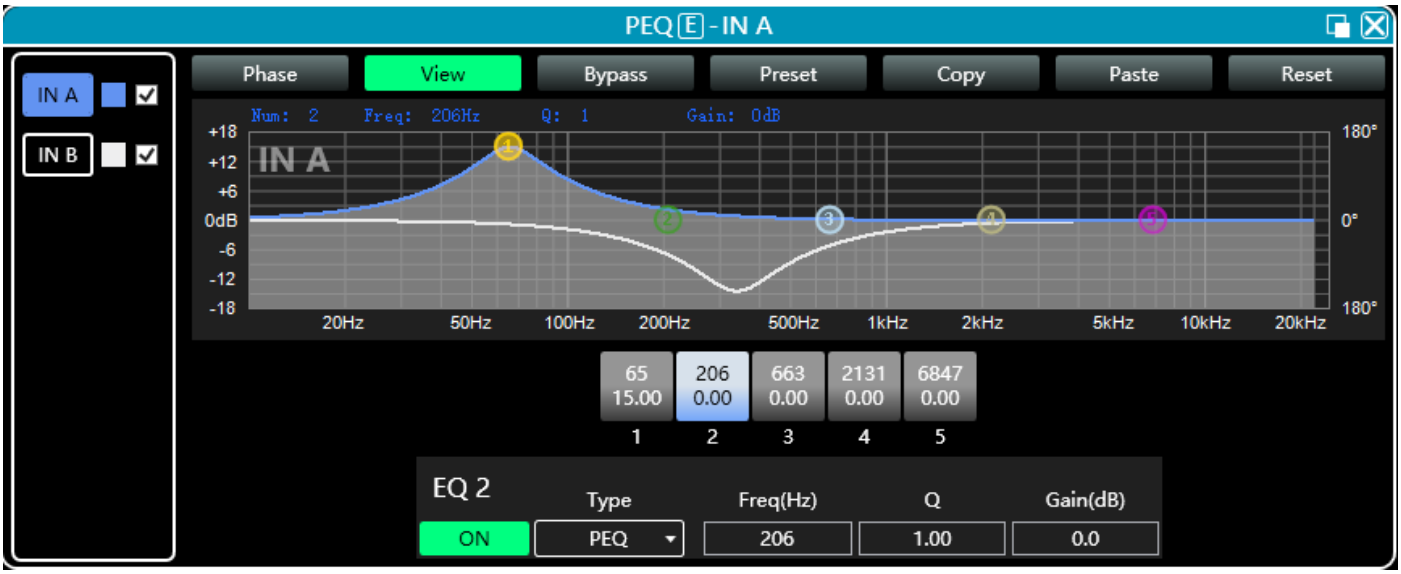
Bypass: bypass all EQS for the current channel at the same time

Preset: Saves the current equalizer settings parameter to PC and recall EQ preset from PC. Copy: Copy current equalizer parameter

Paste: Paste the copied EQ parameters to the current channel.

Reset: Reset all equalizer parameters to default state

6.3.2 Multichannel EQ curve Display

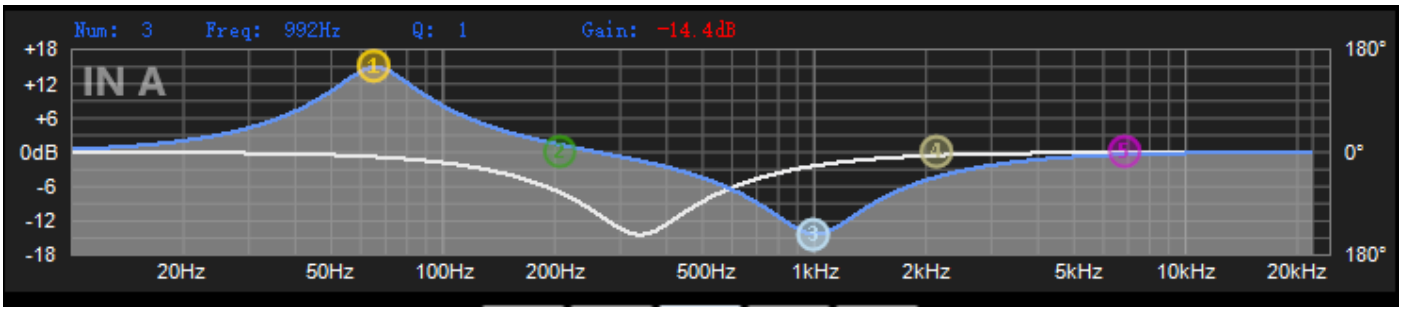


As shown in Pictured 6.4 above, the EQ curve for each channel on the left side



can show in current channel curve.

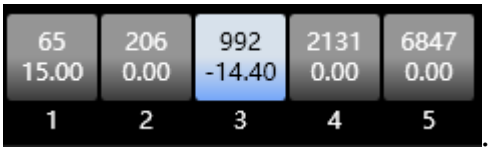
6.3.3 EQ Curve Chart



As shown in Pictured 6.4 , to control and display the current channel EQ curve, the EQ points in the graph can be adjusted up and down with mouse left-click to adjust gain, left and right to adjust frequency, Right-click holding to adjust Q.

6.3.4 EQ Value

As shown in Pictured 6.4, all EQ detail values are displayed below the curve chart



6.3.5 EQ Parameter adjuster



As shown in Pictured 6.4 , below EQ value is the EQ parameter adjuster, which can accurately control the EQ switch 

, type, frequency, Q value, gain.

6.3.7 EQ Preset button.

As shown in Pictured 6.4, clicking the EQ preset button show up the Pictured 6.5



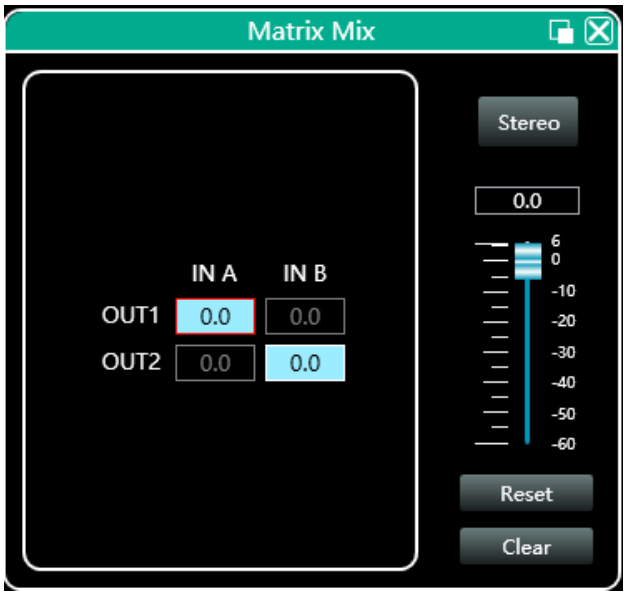
Pictured 6.5 EQ Preset module

Select the list of the items in the left side, and then click on the right button, you can implement the equalizer setting parameters of the device, recall, delete, rename and export to pc or import from pc.

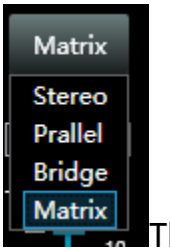
6.4 Matrix Mixer

Double click on the 

button，The following Pictured 6.6 “Matrix Mixing Settings Module” pops up。



Pictured 6.6 Matrix Mix Settings Module

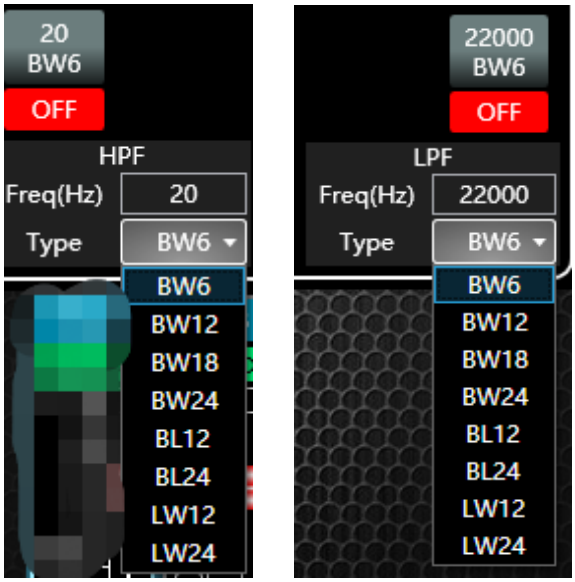


This button is for selecting amplifier working mode: Stereo, Parallel, Bridge, Matrix, and just in Matrix mode, routing can be changed.

6.5 Output Equalizer

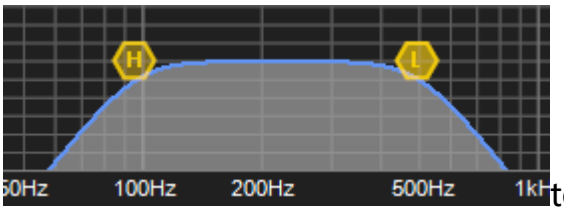
Double click on the 

button. The output Equalizer Setup interface will pop up. Refer to the previous details of section 6.3 (It is the same as Input Equalizer) . High and Low pass filter are locate on the bottom left and bottom right of output equalizer interface.



The high pass(HPF) and Low pass(LPF) section, they can be changed frequency and type. The default state is off 

.

Also you can drag the H and L points 

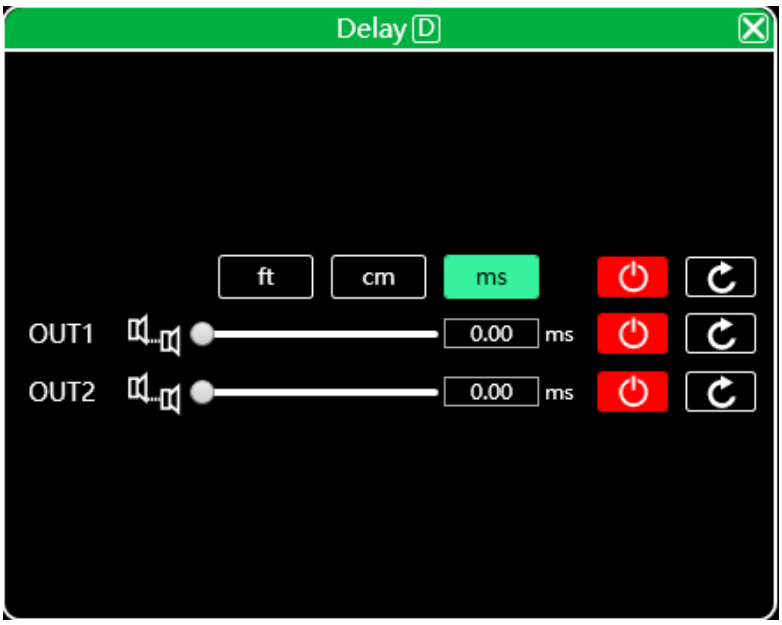
to change the frequency.

6.6 Output Delay

Double click on the 

button, refer to Pictured 6.7 which shows the module

interface of the output delay setting module.



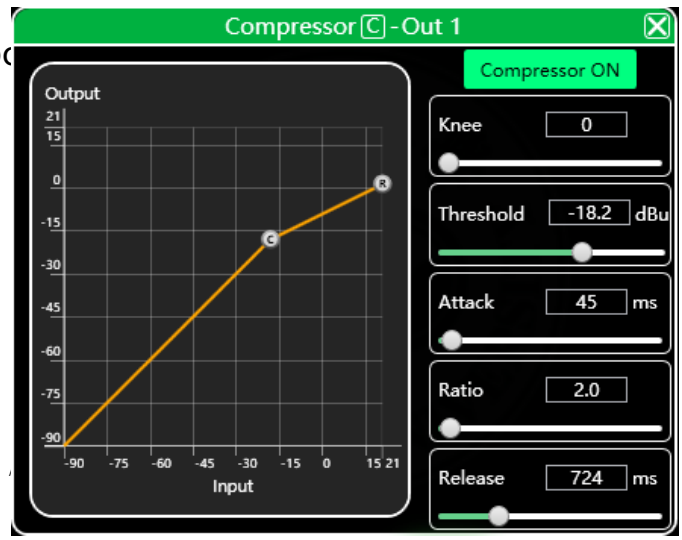
Pictured 6.7 Output delay

As shown above, you can dragged  to adjust the channel delay value, or enter the value on the value box , on the right is the delay function switch, red is off, green is on, click  for reset the default value. It support 3 different units: ft/cm/ms.

6.7 Output Compressor

Double Click on the 

button, The following Pictured 6.8 which shows the "Output compressor setting module" will po

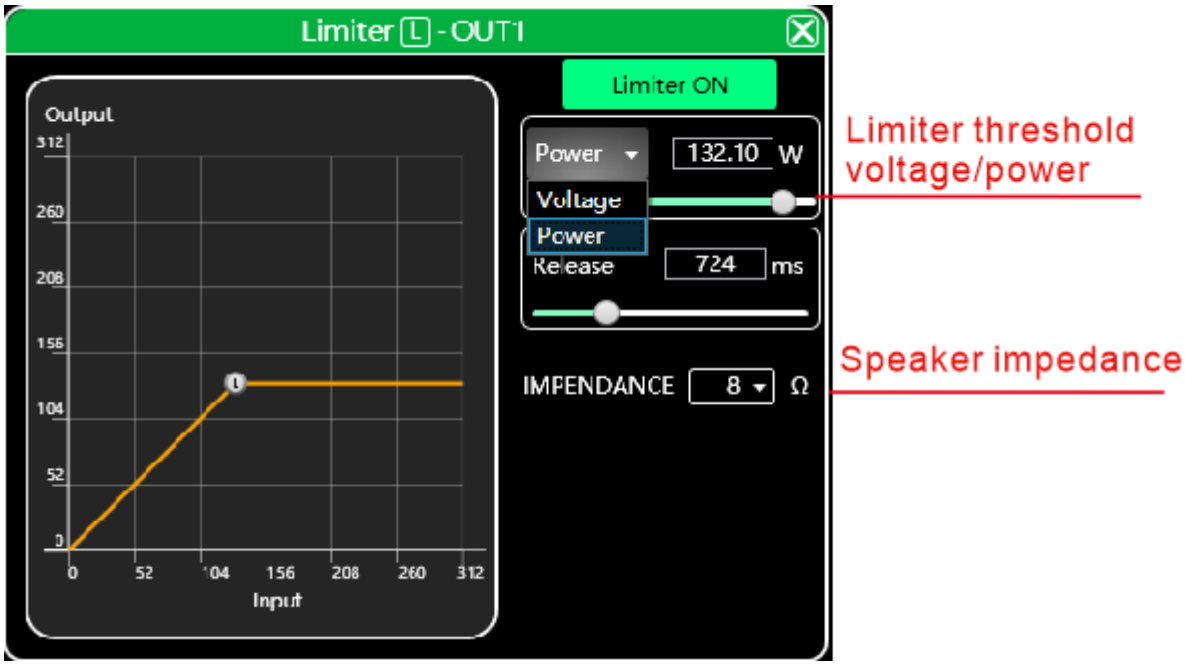


Pictured 6.8 Output compressor setting module

6.8 Output limiter

Double click on the 

button， The following Pictured 6.9 “Output Limiter setting module” pops up

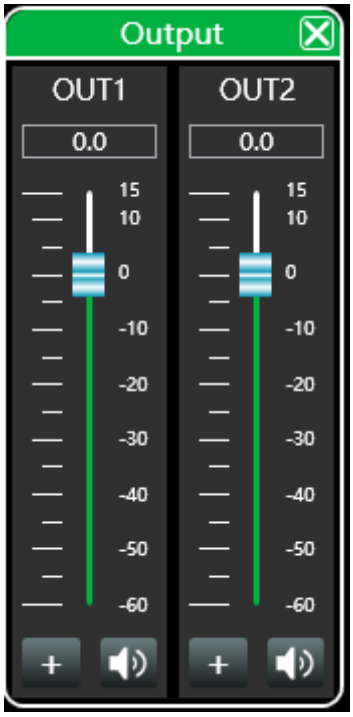


Pictured 6.9 Output Limiter Settings Module

6.9 Output Module

Double Click on the 

button， The following Pictured 6.10 output setting module pops up

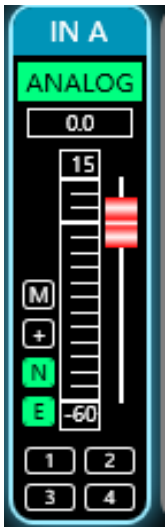


Pictured 6.10 Output Settings Module

As shown above, the polarity , mute and gain setting of the corresponding output channel can be modified.

6.10 Input Channel Gain

In Pictured 5.1, the software home page input/output channel list is shown. The left part is the input channel as shown in Pictured 6.11 Input channel



Pictured 6.11 Input Channel

The top-to-bottom contents of the input channel interface include:

Channel Name 

, Input Source 

Channel Gain, Functions shortcut switch 

, Channel Grouping status 

Channel gain function, you can see the input channel signal level status 

, the scale is just for input signal level, not for gain.

In the function buttons, the top-to-bottom buttons are: Mute 

、Polarity 

、Noise Gate 

、Equalizer Bypass 

. If the mute button is red, it is in the mute state. The other buttons are green, the function is working.

The channel grouping unit shows the default 4 groups. When the background of the number changes to yellow 

, it indicates that this channel has been added to the group 2.

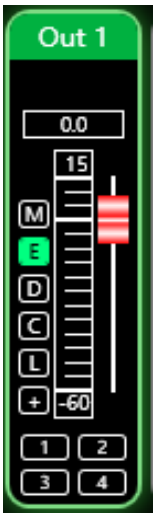
The button bar in the middle of the input and output channels 

,

is the master switch of all input or all output channels.

6.11 Output Chanel Gain

The input and output channels of the software home page in Pictured 5.1 are shown in the following table. The output channels on the right side are as shown in Pictured 6.12.



Pictured 6.12 Output Channel

The output channel interface includes:

Channel Name 

、

Channel gain, function shortcut switch 

、 Channel Grouping 

Channel gain function, you can see the output channel signal level status 

,the scale is just for signal level, not for gain. The other two parts (gain value box, gain slider) adjust the gain value of this channel.

In the function buttons, the top-to-bottom buttons are: Mute 

、Equalizer Bypass 

、Delay 

、Compressor 

、Limiter 

、Polarity 

, If the mute button is red, it is in the mute state. The other buttons are green, the function is working.

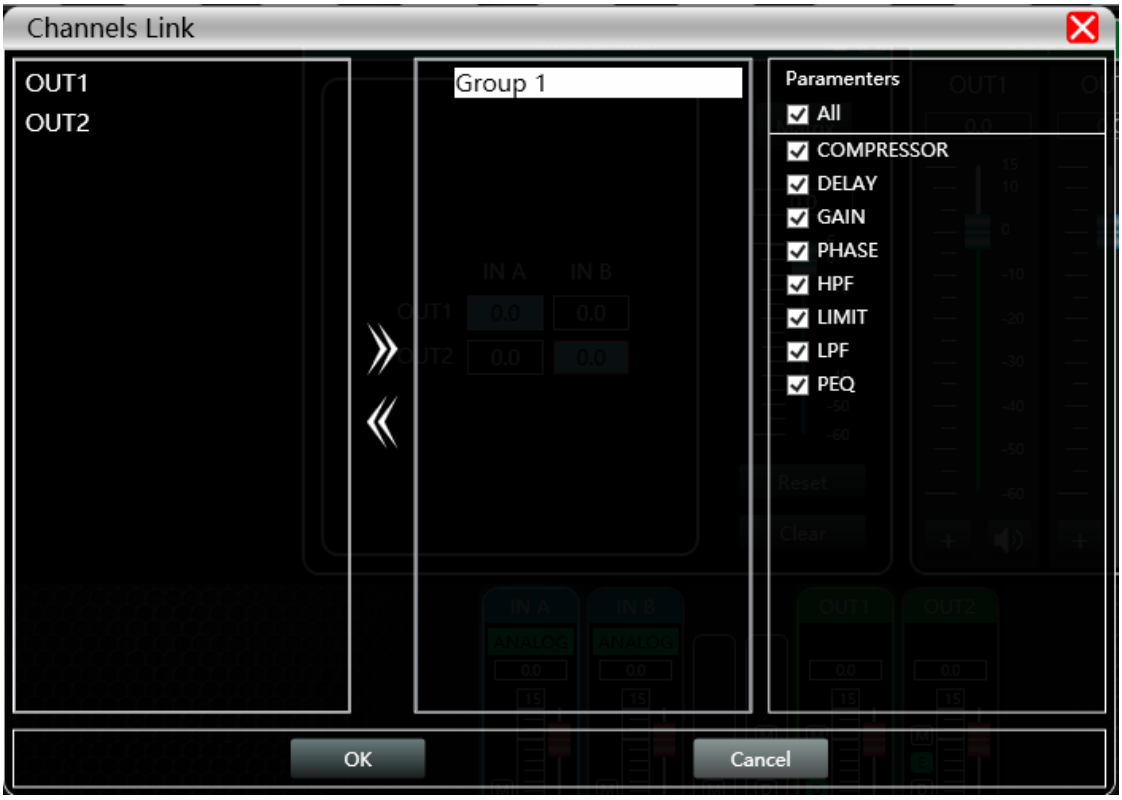
The channel grouping unit shows the default 4 groups. When the background of the number box changes to yellow 

, it indicates that this channel has been added to the group.

6.12 Channels Link

Click the button shown 

between the input and output channels of the software homepage:, and the Pictured 6.13 Channel link Interface will pop up.



Pictured 6.13Channel Link Interface

As shown above, from left to right：channel list, group list and parameter list.

Select the target channels and click the  button add to the group. And do the same to remove a channel, select the channel and click the button  to remove it back to channel list

The parameter list contains the device parameters that can be adjusted together. After the ticking the boxes to indicate several channel adjustment parameters in the same group, all the channels will make the same adjustment at the same time.

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