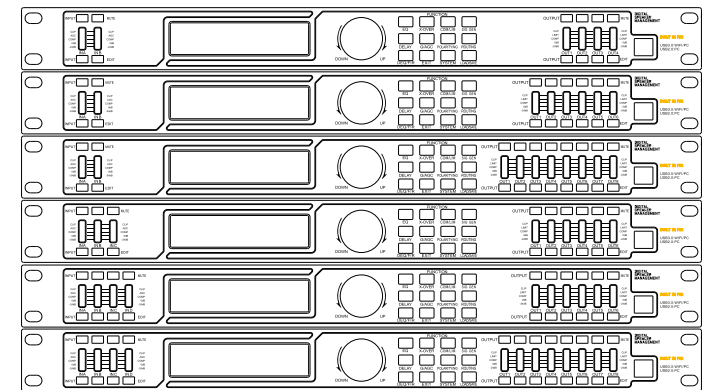


OPERATING INSTRUCTION

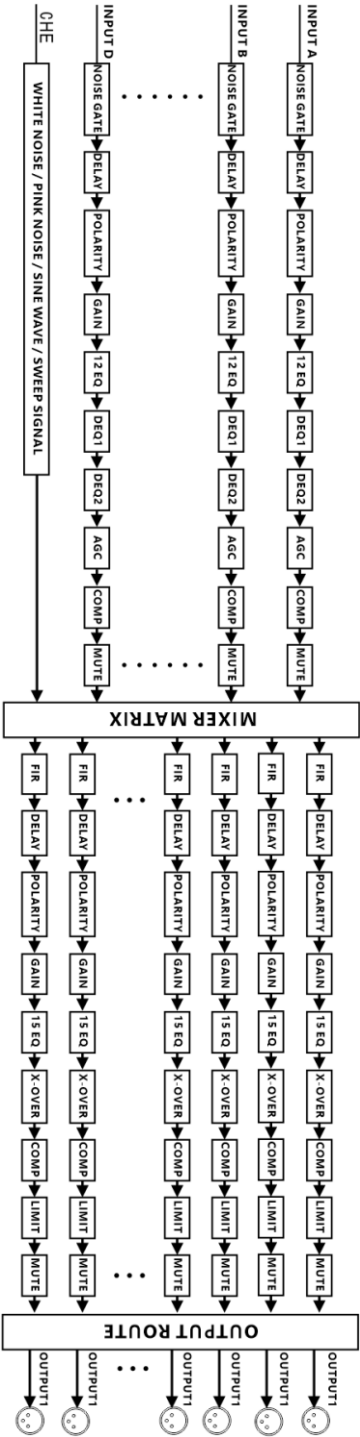
DISTRIBUTED BY



DIGITAL SPEAKER MANAGEMENT

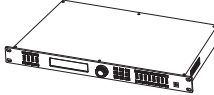
■

■



Packing list

Make sure all the items are in the package



① Device
Quantity: 1



② Operating Instruction
Quantity: 1



③ CD
Quantity: 1



④ USB2.0 cable
Quantity: 1



⑤ Phoenix inserted
Size: KF2EDGR3.81-3P
Quantity: 1



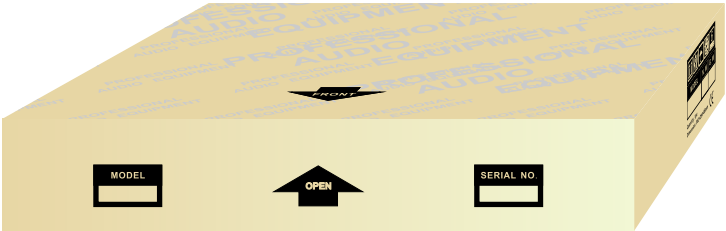
⑥ Warranty card and certificate
Quantity: 2



⑦ Power cable
Quantity: 1



⑧ It has been placed in the fuse socket of the AC power input socket. Please refer to the description of the rear panel for details



The version number of the instructions is 1-BE-BOOK-0188-0. The information in the instructions is subject to change without notice.

Directory

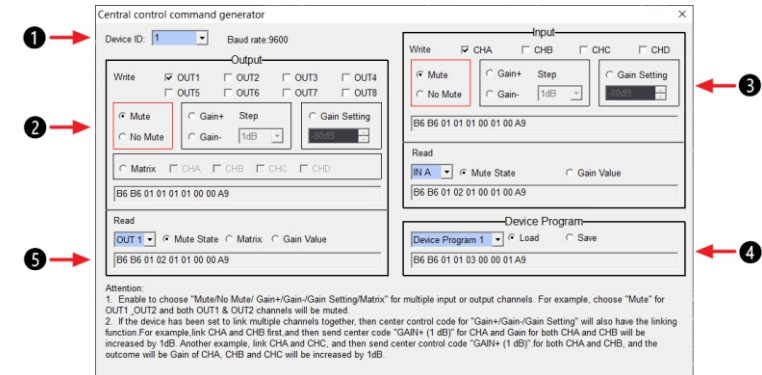
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Click on [Central Control Code] to pop up the following window



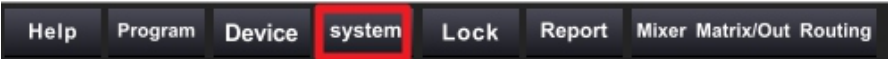
Picture 3.6.3

- ① When multiple devices are connected to a computer, they can be changed here to the device ID to be connected to
- ② Output channel central control code automatic generation area
You can choose to mute, gain, or perform matrix operations on any output channel port here
- ③ Input channel central control code to automatically generate area
You can choose to mute or gain any input channel port here
- ④ Automatic generation of control codes in device programs
You can choose to call and save program operations here
- ⑤ Central control code
This is the automatically generated central control code



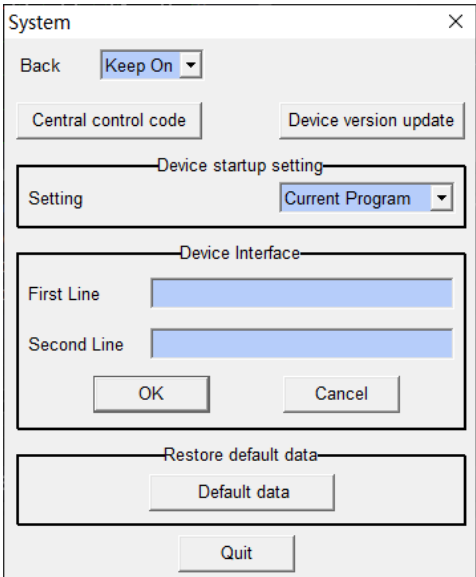
Picture 3.5.3

3.6 Central Control Command Generator



Picture 3.6.1

Click on [System] to pop up the following window



Picture 3.6.2

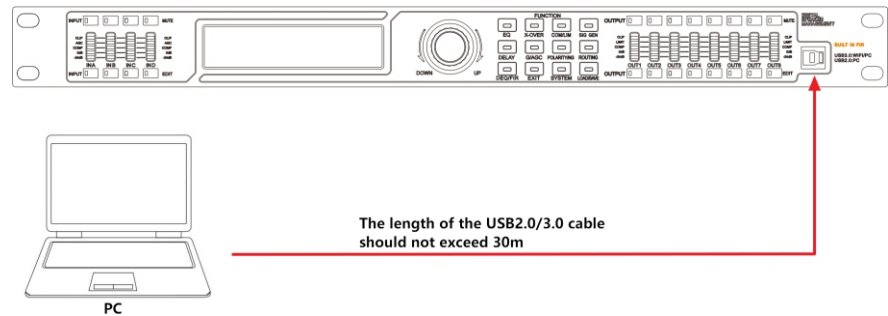
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Part 1: The connection between the device and the PC

1.1 A single device is connected to a computer via USB drive-free

Use the included USB cable to connect the USB port on the PC to the USB port on the device panel, turn on the power, and wait for the boot to complete. The connecting method is suitable for controlling a single device with a PC at close range.



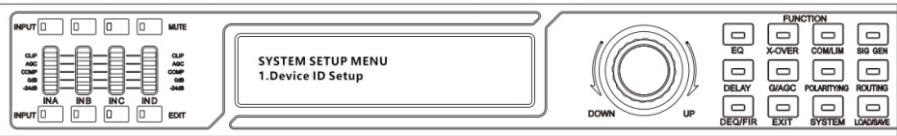
Picture1.1.1

1.2 Multiple devices are connected to the PC through the UTWR1

1. Connect multiple devices (up to 250) in series through the RS485 standard serial interface on the rear board of the device (Picture 1.2.3)
(Tip: remember that the ID number of each device must be set to different, if the ID number is the same, the computer cannot be connected)

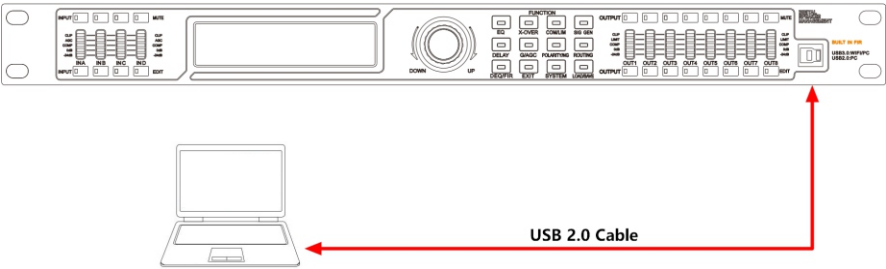
2. the computer connects the device through USB UTWR1, and its driver is the same as the USB driver.

3. To set the ID number on the device, click [SYSTEM] to display the menu (Picture 1.2.1).
The ID number can also be set using software.



Picture1.2.1

3.5 Device Software Version Update



Picture 3.5.1

When the device software version does not match the computer software version, the device software version can be updated according to the following method (USB connection does not require a driver, automatically recognized).

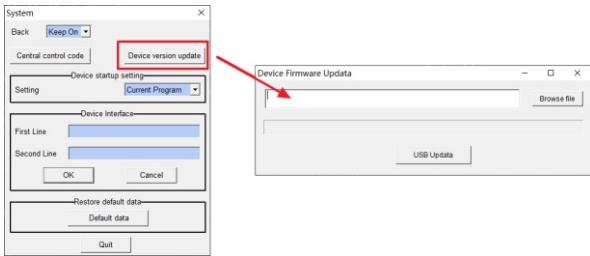
Step 1: Refer to Figure 3.5.1 for the connection method to connect the computer and device. The USB cable length should not exceed 30 meters.

Step 2: Open the software, click [Not Connected], click "USB Connection", and the software will be connected to the device.

Step 3: Click on [System], click on [Device Version Update] as shown in picture 3.5.2

Click on [browse file] as shown in picture 3.5.2, select the upgrade file, Click on [USB Update]. The device display interface is shown in picture 3.5.3. Please be patient and wait at this time. Do not operate the device during the update process.

After the update is completed, the device will automatically restart. After the device restarts, you can click the [EXIT] button on the device to view the current device version number.



Picture 3.5.2

3.4.3.10.7 Frequency division setting



Picture 3.4.3.10.7.1

Frequency division setting (refer to picture 3.4.3.10.7.1)

Mode settings:

1. Contains three modes (Butter Worth, Bessel, Ning Ke), click the down arrow to select, select Butter Worth, and the mode adjustment is completed

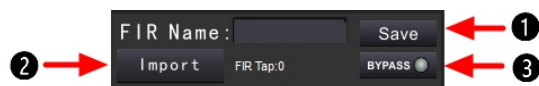
Frequency setting:

1. Move the mouse cursor to the frequency adjustment input box, delete the original data and modify it to the desired data, then press Enter to complete the adjustment
2. Click the up and down arrows with the mouse (you can also press the up and down keys on the keyboard, or scroll the mouse wheel up and down) to adjust to the desired data and complete the adjustment

Slope setting:

1. Butter Worth and Bessel contain seven slopes (12oct, 18oct, 24oct, 30oct, 36oct, 42oct, 48oct), while Ning Ke contains four slopes (12oct, 24oct, 36oct, 48oct). Click the down arrow to select the desired slope and complete the adjustment

3.4.3.10.8 FIR function settings



Picture 3.4.3.10.8

1. Click inside the box to modify the FIR name. After modifying the name, click the [Save] button to save it

2. Click on [External Import] and select a FIR file with a .txt suffix format to import FIR parameters. After successful import, the current order of FIR data will be displayed

3. The FIR function can be directly turned on or off. When the green light is on, it is on, and when the green light is off, it is off

Note: Different FIR orders have different delays

At this point, click the encoder to enter the next level menu (Picture 1.2.2)

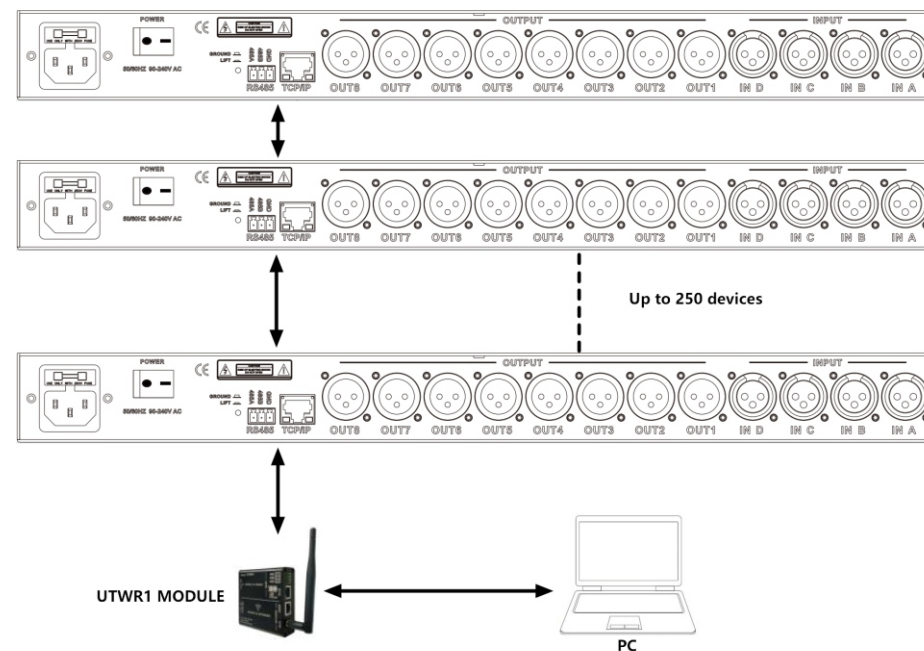


Picture1.2.2

At this time, the rotary encoder can select the ID number, and the number when clicking the encoder to confirm is the ID number of the current device.

The connecting method is suitable for PC to remotely control multiple devices. PC can select one ID number to connect one device at a time, and the distance of the furthest one device can reach 1500m. ID number selection and connecting method will be described below.

(Tip: Some PCs do not have RS485 standard serial interface, generally only USB port, so you need to convert the USB port to RS485 standard serial interface to allow PC and equipment to communicate through RS485 standard serial interface)



Picture1.2.3

1.3 This section describes how to connect a single device to the central controller

1.3.1 Central Control Code Description

Processor module central control protocol (for RS485 interface)

(Tip: 485 baud rate 9600, data bit 8, stop bit 1, check bit None)

Applicable version: AZ-SV1.00 or later

One frame data format: Frame header (2) + device ID (1) + frame type (1) + function type (1) + channel number (2) + Parameter value (1) + frame tail (1)

Instructions:

1. The length of the sent packet is 9 bytes in total, and the number of bytes is fixed.

2. When the frame type is write, the device returns the sent instruction after successful operation; when it is read, it returns the specific state frame data.

3. If the device does not respond after sending a frame of data packet to the device, check whether the line or data packet is correct.

4. In order to ensure normal traffic, please send the next frame of data packet after receiving the operation success packet or operation success.

The following instructions operate on output channel 1

1. Mute

B6 B6 01 01 01 01 00 00 A9

2. not silent

B6 B6 01 01 01 01 00 01 A9

3. increase the gain

B6 B6 01 01 05 01 00 01 A9

4. Gain reduction

B6 B6 01 01 06 01 00 01 A9

5. Set the gain to -80dB

B6 B6 01 01 04 01 00 00 A9

6. Set the matrix as input channel CHA

B6 B6 01 01 02 01 00 01 A9

The following instructions operate on input channel A

1. Mute

B6 B6 01 01 01 00 01 00 A9

2. not silent

B6 B6 01 01 01 00 01 01 A9

3. increase the gain

B6 B6 01 01 05 00 01 01 A9

4. Gain reduction

B6 B6 01 01 06 00 01 01 A9

5. Set the gain to -80dB

B6 B6 01 01 04 00 01 00 A9

Threshold setting:

1. Move the mouse cursor to the threshold adjustment input box, delete the original data and modify it to the desired data (between -80dBu and 20dBu), then press Enter to complete the adjustment

2. Click the up and down arrows with the mouse (you can also press the up and down keys on the keyboard, or scroll the mouse wheel up and down) to adjust to the desired data and complete the adjustment

Target level setting:

1. Move the mouse cursor to the target level adjustment input box, delete the original data and modify it to the desired data (between -80dBu and 20dBu), then press Enter to complete the adjustment

2. Click the up and down arrows with the mouse (you can also press the up and down keys on the keyboard, or scroll the mouse wheel up and down) to adjust to the desired data and complete the adjustment

Ratio settings:

1. Click the up and down arrows with the mouse (you can also press the up and down keys on the keyboard, or scroll the mouse wheel up and down) to adjust the ratio (between 1:1.0 and 1:20), click the arrow to adjust to the desired data, and complete the adjustment

Response time setting:

1. Move the mouse cursor to the ratio adjustment input box, delete the original data and modify it to the desired data (between 0.3 and 1000 milliseconds), then press Enter to complete the adjustment

2. Click the up and down arrows with the mouse (you can also press the up and down keys on the keyboard, or scroll the mouse wheel up and down) to adjust to the desired data, and then complete the adjustment

Release time setting:

1. Move the mouse cursor to the release time adjustment input box, delete the original data and modify it to the desired data (between 50-5000 milliseconds), then press Enter to complete the adjustment

2. Click the up and down arrows with the mouse (you can also press the up and down keys on the keyboard, or scroll the mouse wheel up and down) to adjust to the desired data and complete the adjustment

Note that the operation methods for input automatic gain, input compression, output compression, and output limiting are the same as described above

Ratio setting:

1. Click the up and down arrows with the mouse (you can also press the up and down keys on the keyboard, or scroll the mouse wheel up and down) to adjust the ratio (between 1:1.0 and 1:20), click the arrow to adjust to the desired data, and complete the adjustment
2. Click the DEQ button to restore the ratio from the adjusted data to the default 1:1.0

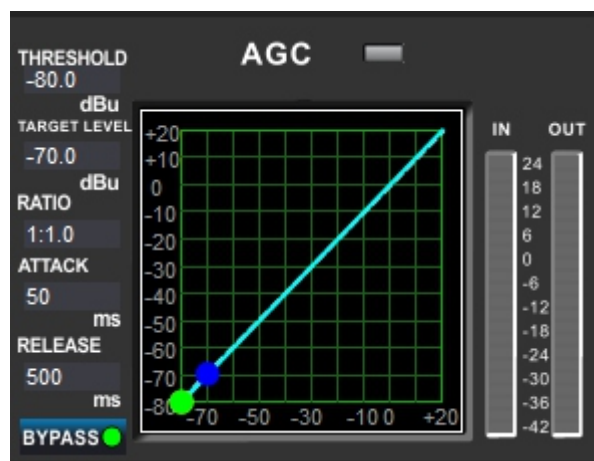
Response time setting:

1. Move the mouse cursor to the response time adjustment input box, delete the original data and modify it to the desired data (between 0.3-1000 milliseconds), then press Enter to complete the adjustment
2. Click the up and down arrows with the mouse (you can also press the up and down keys on the keyboard, or scroll the mouse wheel up and down) to adjust to the desired data and complete the adjustment

Release time setting:

1. Move the mouse cursor to the release time adjustment input box, delete the original data and modify it to the desired data (between 50-5000 milliseconds), then press Enter to complete the adjustment
2. Click the up and down arrows with the mouse (you can also press the up and down keys on the keyboard, or scroll the mouse wheel up and down) to adjust to the desired data and complete the adjustment

3.4.3.10.6 Automatic gain setting



Picture 3.4.3.10.6.1

Automatic gain setting (refer to picture 3.4.3.10.6.1)

Set the automatic gain window and click the through button. In the ON state, the signal goes through without processing

The following instructions operate on output channel 1

1. Read the silent state
B6 B6 01 02 01 01 00 00 A9
2. Read the matrix Settings
B6 B6 01 02 02 01 00 00 A9
3. Read the channel gain
B6 B6 01 02 04 01 00 00 A9

The following instructions operate on input channel A

1. Read the silent state
B6 B6 01 02 01 00 01 00 A9
2. Read the channel gain
B6 B6 01 02 04 00 01 00 A9

The following instructions operate on the device program

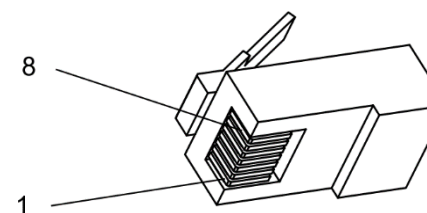
1. Call device program 1
B6 B6 01 01 03 00 00 01 A9
2. Save device program 1
B6 B6 01 01 07 00 00 01 A9

Note:

1. select input or output multiple channels "mute, unmute, gain +, gain -, gain Settings, matrix", will be selected for the channel at the same time. For example: select two channels, select "mute", then will be silent at the same time.
2. the device is set to the joint adjustment, gain +, gain -, gain setting of the central control code will also have the joint adjustment function. For example, if the INA and INB of the device are set for joint modulation, the INA gain + (1dB) central control code is sent, and the INA gain will be increased by 1dB, and the INB will also be increased by 1dB.
3. the INA, INC of the device, send INA, INB gain +(1dB) control code, then the gain of INA, INB, INC will increase by 1dB at the same time.

1.3.2 Pin Connections of the UTWR1 Port This section describes

1. RJ-45 pin distribution diagram:

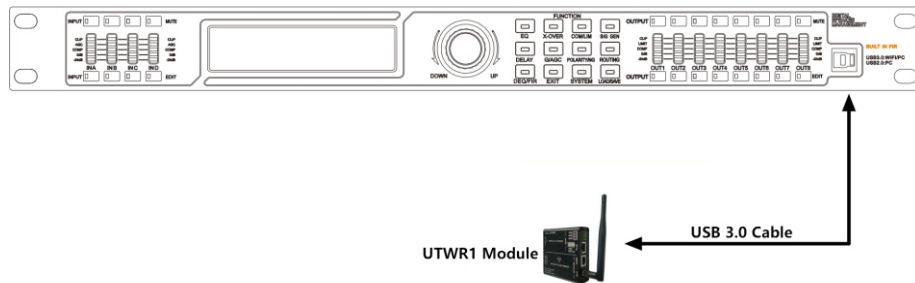


Picture1.3.2.1

2. RJ-45 pin connection is as follows:
 RJ-45 seat 5 feet =RT+;
 RJ-45 seat 4 feet =RT-;
 Remaining legs of RJ-45 seat =GND.

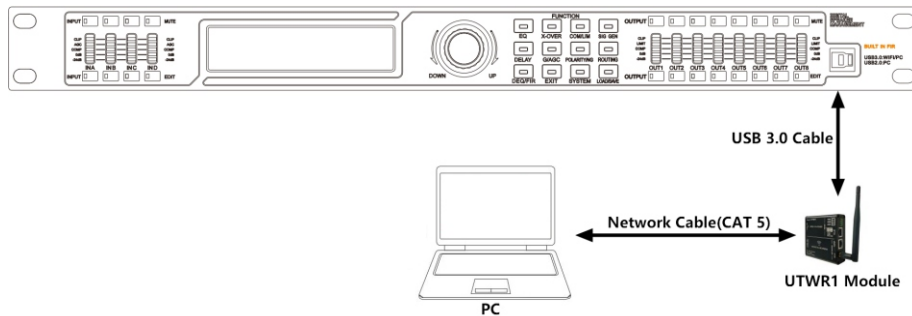
1.4 Network (including wifi) connection mode

Network connection Computers can be connected in 7 ways:
 Note: The network connection requires an external UTWR1 module, and the UTWR1 module is connected to the host (Picture 1.4.1).



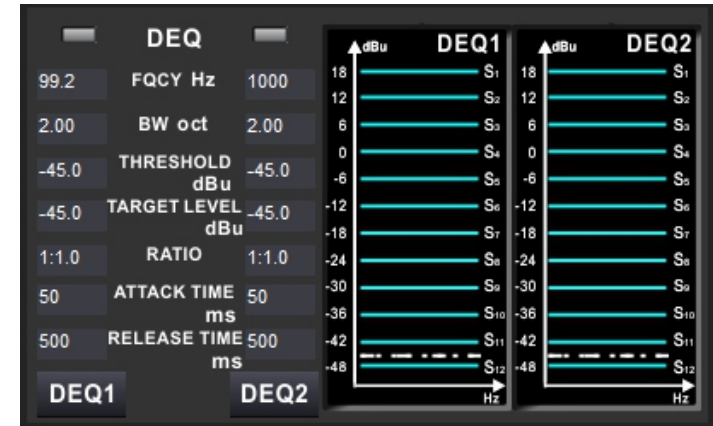
Picture1.4.1

USB3.0 Cable Net Cable (cable 5)
 The first way: device ----->UTWR1 module -----> computer



Picture1.4.2

3.4.3.10.5 Dynamic Equilibrium DEQ and DEQ Parameter Settings



Picture 3.4.3.10.5.1

Click on DEQ1 or DEQ2 to activate the dynamic balancing DEQ function

Frequency setting:

1. Move the mouse cursor to the frequency adjustment input box, delete the original data and modify it to the desired data, then press Enter to complete the adjustment
2. Click the up and down arrows with the mouse (you can also press the up and down keys on the keyboard, or scroll the mouse wheel up and down) to adjust to the desired data and complete the adjustment

Bandwidth settings:

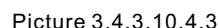
1. Move the mouse cursor to the framed adjustment input box, delete the original data and modify it to the desired data (between 0.05 and 3.00), then press Enter to complete the adjustment
2. Click the up and down arrows with the mouse (you can also press the up and down keys on the keyboard, or scroll the mouse wheel up and down) to adjust to the desired data and complete the adjustment

Target level setting:

1. Move the mouse cursor to the target level adjustment input box, delete the original data and modify it to the desired data (between -45dBu and 15dBu), then press Enter to complete the adjustment
2. Click the up and down arrows with the mouse (you can also press the up and down keys on the keyboard, or scroll the mouse wheel up and down) to adjust to the desired data and complete the adjustment

Threshold setting:

1. Move the mouse cursor to the threshold adjustment input box, delete the original data and modify it to the desired data (between -45dBu and 15dBu), then press Enter to complete the adjustment
2. Click the up and down arrows with the mouse (you can also press the up and down keys on the keyboard, or scroll the mouse wheel up and down) to adjust to the desired data and complete the adjustment



Picture 3.4.3.10.4.3

Mode settings:

Frequency adjustment:

- Bandwidth adjustment:

- Q-value adjustment:

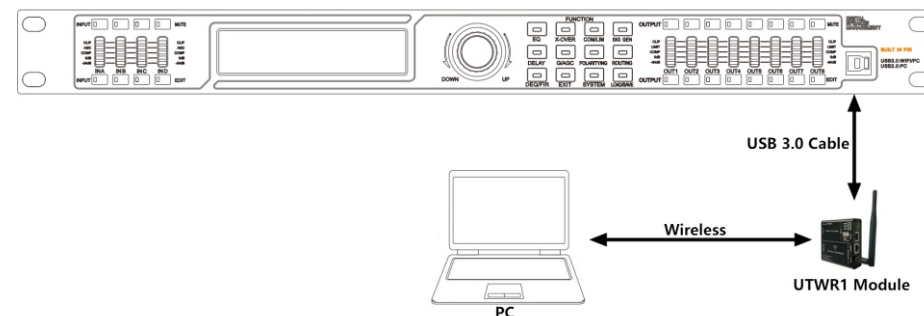
- Gain adjustment:

- EQ1 adjustment:

Connect the device according to the above figure, you must change the way the computer obtains the IP address to automatic (if your computer obtains the IP address automatically, there is no need to change) After the above steps are completed, you can connect the control software to the device (Software connection operation refer to "3.4.2 Software Connection").

Wireless

The second way: device ----->UTWR1 module -----> computer



Picture1.4.3

Example of connection in windows 7:

- Currently connected to:
-  **tes-01**
Internet access
- Wireless Network Connection
- tes-01** **Connected**
- TES-002
- UTW1-1.00-000001**
- Raywen
- KKK
- Open Network and Sharing Center

Picture1.4.4

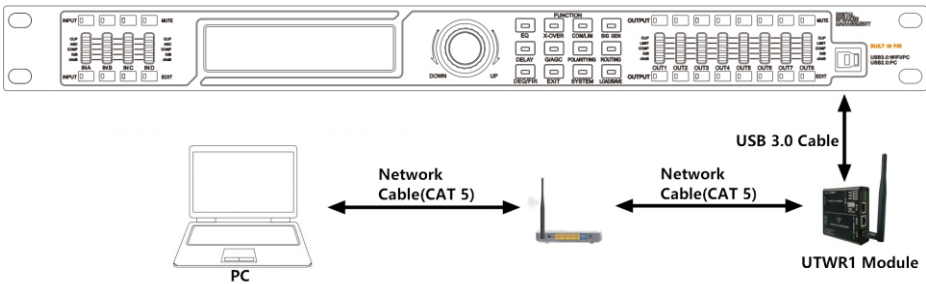
Connect the corresponding device network name, if the connection is normal (Picture 1.4.5)



Picture1.4.5

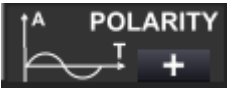
USB3.0 Cable Net Cable (Type 5) Net Cable (Type 5)

The third way: device -----> UTWR1 module-----> router ----->computer



Picture1.4.6

3.4.3.10.3 Phase setting



Picture 3.4.3.10.3.1

Phase setting:
Open the phase function in the red box, and a phase setting window will pop up.
"+" indicates the same phase as the original signal, and clicking once will display
"-" indicating the opposite phase to the original signal

3.4.3.10.4 Balance setting

MODE	aramete ▾	aramete ▾	aramete ▾	aramete ▾	aramete ▾	aramete ▾	aramete ▾	aramete ▾	aramete ▾	aramete ▾	aramete ▾	aramete ▾
FREQ/Hz	28.7	51.1	91.0	158	273	472	841	1456	2520	4362	7551	13454
Bw oct	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
QF/SLOPE	4.800	4.800	4.800	4.800	4.800	4.800	4.800	4.800	4.800	4.800	4.800	4.800
Gain/dB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHASE CURVE												
EQ	EQ1	EQ2	EQ3	EQ4	EQ5	EQ6	EQ7	EQ8	EQ9	EQ10	EQ11	EQ12

Picture 3.4.3.10.4.1

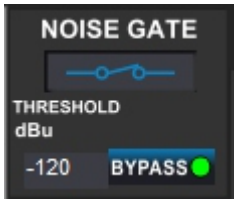


Picture 3.4.3.10.4.2

Phase curve setting:
Click on the "Phase Curve" in the red box, and the "Phase Curve" will display gray.
The built-in processor function of the device is invalid, and the "Phase Curve" will display blue. The internal processor of the device will correct the phase curve of the signal source (Picture3.4.3.10.4.2)

3.4.3.10 Channel Editing Area Detailed Adjustment Area for Channel Parameters

3.4.3.10.1 Noise Gate Setting



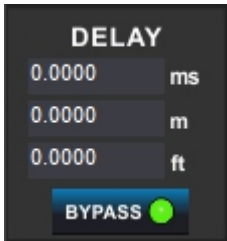
Picture 3.4.3.10.1.1

Noise Gate Setting:

Set the noise gate window and click the through button. In the ON state, the signal goes through without processing

1. Move the mouse cursor to the threshold adjustment input box, delete the original data and modify it to the desired data, ranging from -120dBu to 0dBu, then press Enter to complete the adjustment
2. Click the up and down arrows with the mouse (you can also press the up and down keys on the keyboard, or scroll the mouse wheel up and down) to adjust to the desired data and complete the adjustment
3. When the noise gate is in the straight through OFF state, if the signal is greater than the threshold, the switch is connected; if the signal is less than the threshold, the switch is disconnected

3.4.3.10.2 Delay setting



Picture 3.4.3.10.2.1

Delay setting:

Set a delay window to display 0.000 "milliseconds," "meters," and "feet." Click the through button, and in the ON state, the signal goes through without processing

1. Click the up and down arrows of "milliseconds," "meters," and "feet" with the mouse to adjust the delay time. Change any item in "milliseconds," "meters," and "feet" to adjust the corresponding value of internal automatic operations
2. Adjustment range: "Milliseconds" 0.000-1000 milliseconds, "meters" 0.000-331 meters, "feet" 0.000-1086.011 feet

In this connection mode, you can think of the device as a computer in the local area network, and the communication between the computer and the device is communicated through the local area network.

Step 1: Add the device to the LAN and assign a static IP address to the device. For details, see 1.7.1.1 How to Change the IP Address in AP Mode.

Step 2: Connect the device according to the figure above, and make the computer and the device in the same network segment (if the gateway of the LAN is 192.168.1.1, the gateway of the device and the computer must be 192.168.1.1).

After the preceding steps are complete, you can connect the control software to the device (for details about how to connect software, see 3.4.2 Software Connection).

This connection method is similar to the third method, except that the connection method between the router and the computer is changed to wireless connection, and other Settings are the same.

USB3.0 Cable Wireless Net Cable (Type 5)

The fifth way: device -----> UTWR1 module-----> router ----->computer

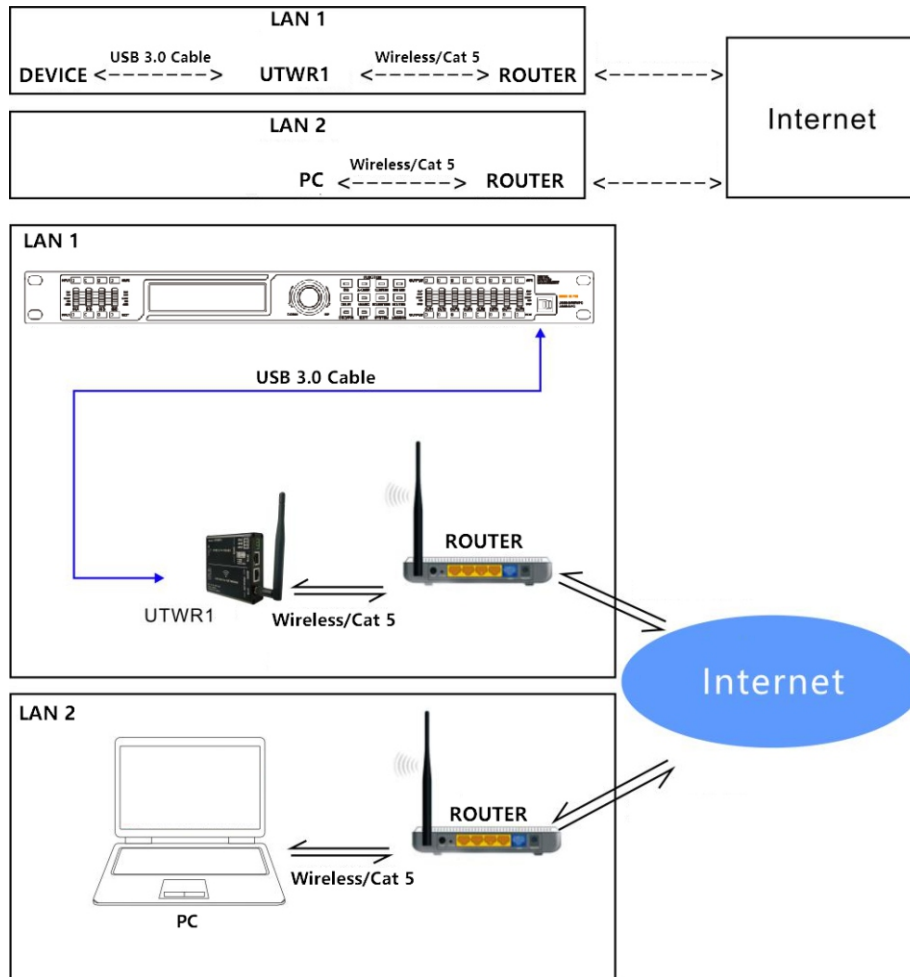
The connection mode is similar to the third mode, except that the connection mode between the router and the UTWR1 module is changed to wireless connection, and other Settings are the same.

USB3.0 Cable Wireless Wireless

The sixth way: device -----> UTWR1 module-----> router ----->computer

This connection method is similar to the third method, except that the connection method between the router and the UTWR1 module and the connection method between the router and the computer are changed to wireless connection, and other Settings are the same.

The seventh way:



Picture1.4.7

3.4.3.9 Signal Generator

Click on [Signal Generator CHE] to switch to the following window



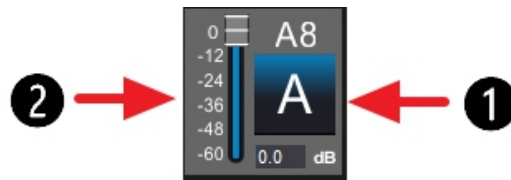
Picture 3.4.3.9.1

① Signal generator, capable of self checking and debugging the system or engineering

Signal type and parameters:

1. White noise generator
Output level: -80dbu to +12dbu, with a step size of 0.1 dbu
2. Powder noise generator
Output level: -80dbu to +12dbu, with a step size of 0.1 dbu
3. Pure tone generator
Output level: -80dbu to +12dbu, with a step size of 0.1 dbu
Frequency range: 19.7Hz to 20KHz
4. Sweep frequency mode
Output level: -80dbu to +12dbu, with a step size of 0.1 dbu
Sweep frequency period: 1s to 60s, with a step distance of 1s

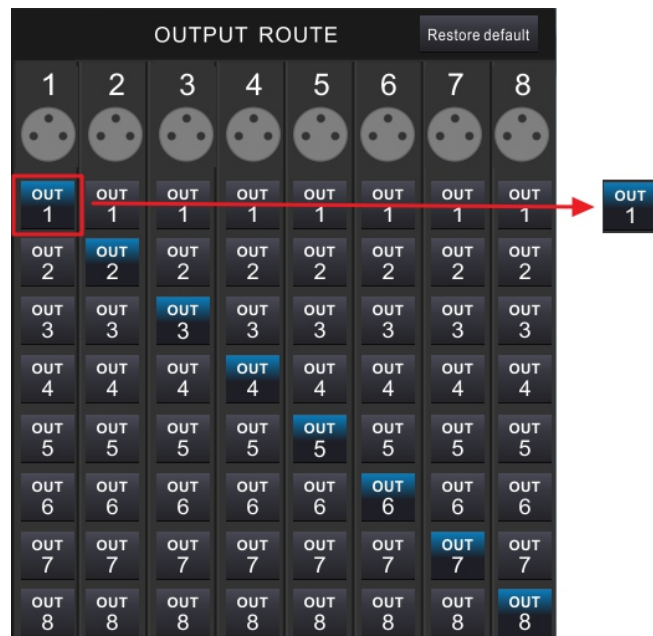
3.4.3.8.2 Introduction to Component Matrix Regions



Picture 3.4.3.8.2.1

- ❶ Channel button, blue gradient to select the current input signal channel
- ❷ Component adjustment, adjusting channel components

3.4.3.8.3 Introduction to Output Routing Regions



Picture 3.4.3.8.3.1

- ❶ Channel button, blue gradient to select the current output signal channel

The third, fourth, fifth, and sixth connection is to communicate within the network of the same network segment, and when the device is in another network segment, or even when the device is placed in a distant place, the seventh way can be used to connect and communicate.

Connect the device according to the figure above, generally LAN 2 computers can not connect to LAN 1 devices, we need to do the following Settings.

Step 1: Connect the UTWR1 module to the LAN

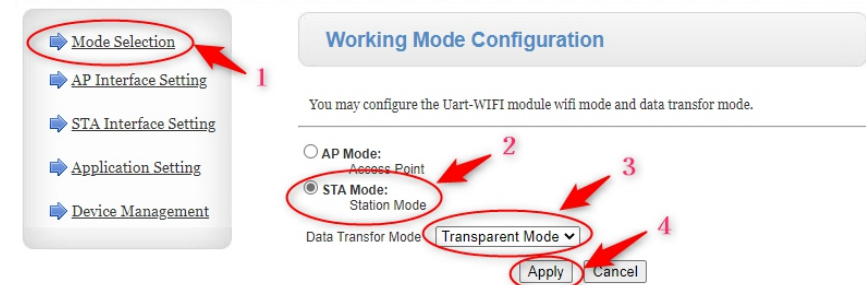
Take a network cable to connect one end of the computer, one end of the UTWR1 module, open the web browser after the connection, the address bar input: 10.10.100.254

(The initial URL of the system, please use the modified address after modification, do not modify easily, lest you forget the address) Enter the UTWR1 module setting interface, the default user admin, the default password admin, log in.

After logging in to the UTWR1, set the following parameters:

a. Mode setting (Picture 1.4.8)

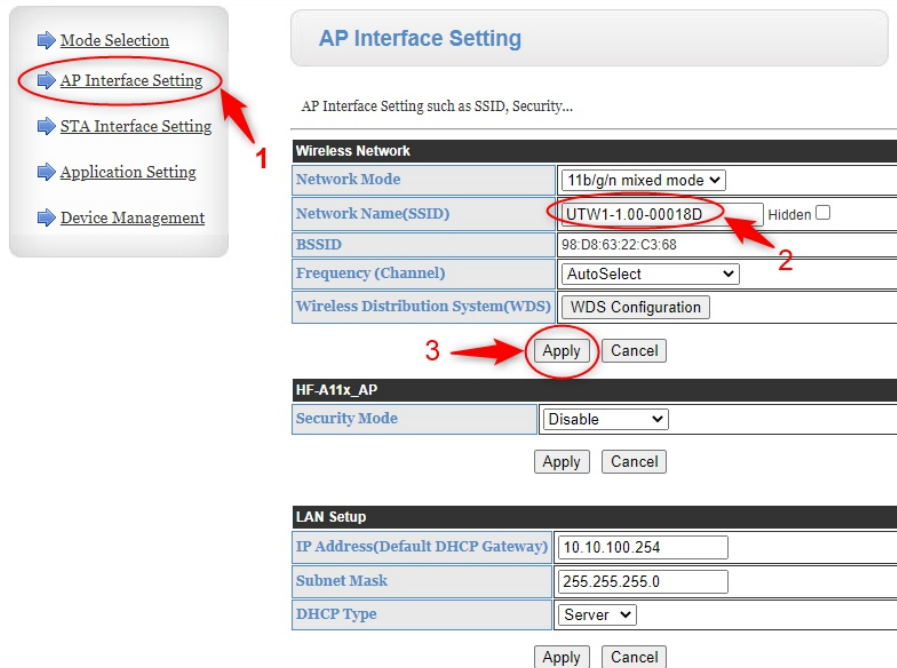
1. Click "Mode Selection" in the left column.
2. choose "station mode" (the purpose of station mode is to let the device as a customer service client, access the LAN 1)
3. select "Transparent transmission mode" (not required operation, here you can choose other modes)
4. Click OK to save the configuration parameters



Picture1.4.8

b. Wireless access Point Settings (Picture 1.4.9)

1. click on the left column "Wireless Access Point Settings"
2. Fill in the network name (give the device a name that is easy to identify)
3. Click OK to save the configuration parameters



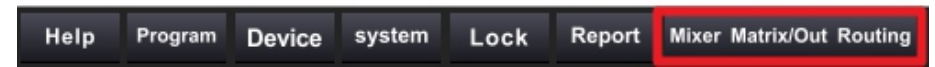
Picture1.4.9

c. Wireless terminal Settings (Picture 1.4.10)

1. click the left column "Wireless terminal Settings"
2. click "Search" to search the WIFI hot spot in the LAN, select the WIFI hot spot and fill in the password to join the LAN 1
3. encryption mode, select the default, or select the mode you need
4. Enter the WIFI hot spot password
5. Click OK to save the configuration parameters
- Module IP address setting (select Static Fixed IP)
6. set the IP address (this IP address is used when accessing the Internet)
7. Set the sub net mask (consistent with the mask in LAN 1)
8. Set the gateway of the LAN (consistent with the mask in LAN 1)
9. Press OK to save the configuration parameters

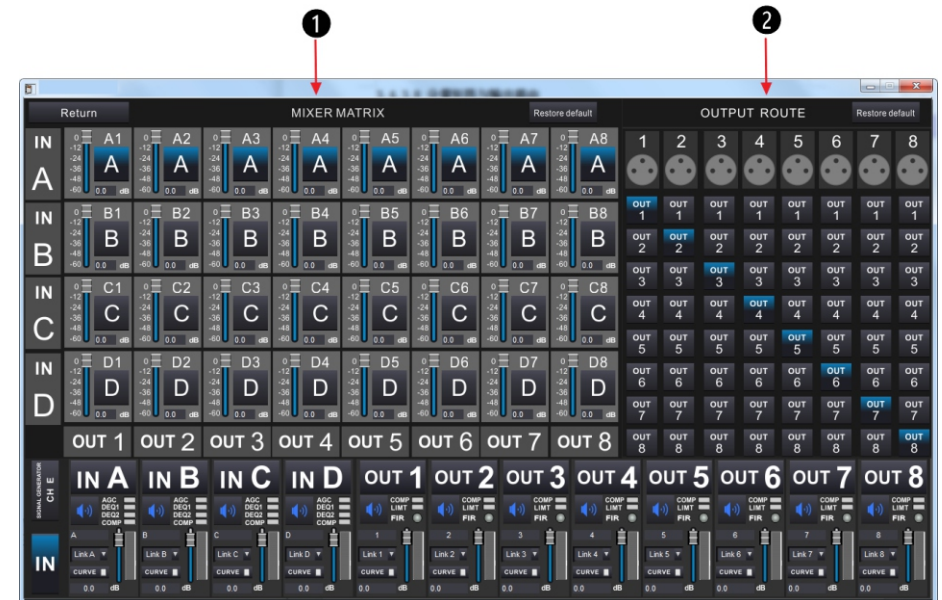
3.4.3.8 Component Matrix and Output Routing

3.4.3.8.1 Viewing Component Matrix and Output Routing



Picture 3.4.3.8.1.1

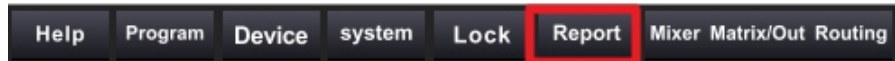
Click on [Component Matrix/Output Routing] to pop up the following window



Picture 3.4.3.8.1.2

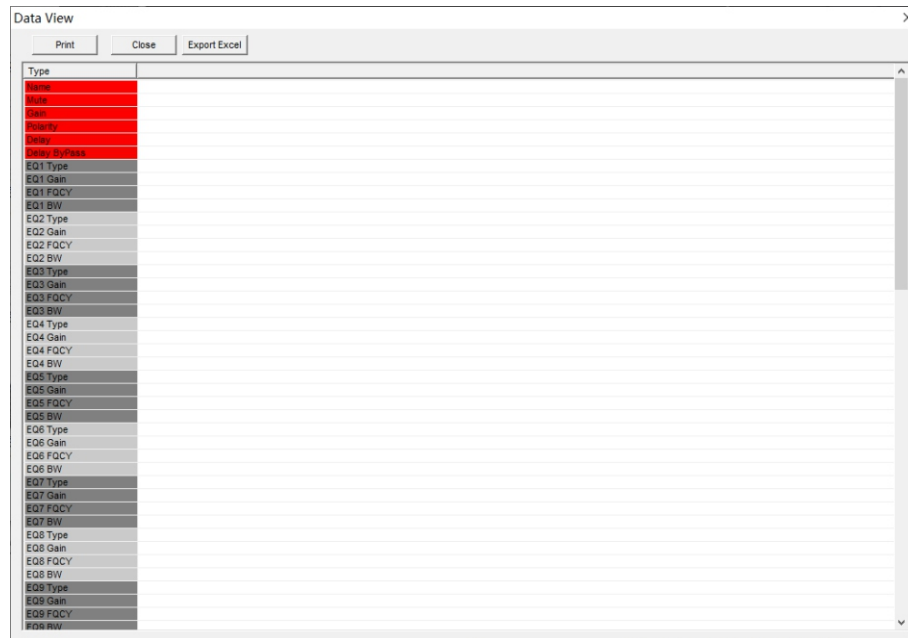
- ①Component matrix, output channels can be individually selected for different input signal channels, with green indicating the current input signal channel is selected
- ②Output route, output channel can be combined with other output signal channels, green indicates the current output signal channel is selected

3.4.3.7 View or backup all parameter data of the current device



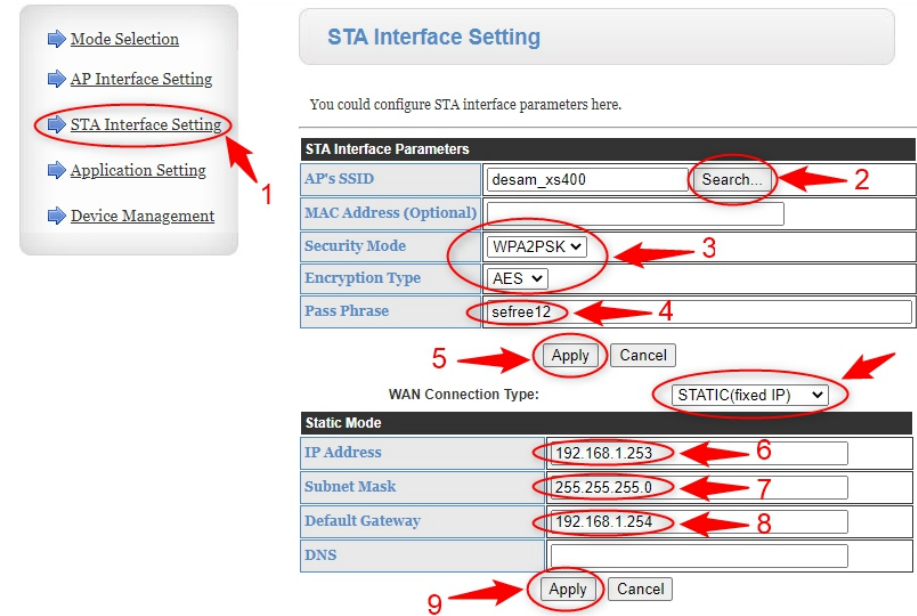
Picture 3.4.3.7.1

Click on [Report] to pop up the following window



Picture 3.4.3.7.2

① Can print or export all parameter data of the current device to Excel



Picture1.4.10

d. Serial port and other Settings (Picture 1.4.11)

1. click the left column "Serial port and other Settings"
- 2.the network mode is selected "server" (the purpose of setting the server is to set the device as a server)
3. Click OK to save the configuration parameters

Wifi-Uart Setting

You could configure the Uart parameters and network parameters of the wifi-uart application.

Uart Setting	
Baudrate	57600 ▼
Data Bits	8 ▼
Parity	None ▼
Stop	1 ▼
CTSRTS	Disable ▼
Apply Cancel	

UART AutoFrame Setting	
UART AutoFrame	Disable ▼
Apply Cancel	

Network Setting	
Mode	Server ▼
Protocol	TCP ▼
Port	8899
Server Address	10.10.100.100
MAX TCP Num. (1~32)	32
TCP Time out (MAX 600 s)	300
Apply Cancel	

Picture1.4.11

e. Module management Settings (Picture 1.4.12)

1. Click "Module Management" in the left column.
2. Follow the parameters set in the steps before the update takes effect in Restart

Select Lock Data

System Lock

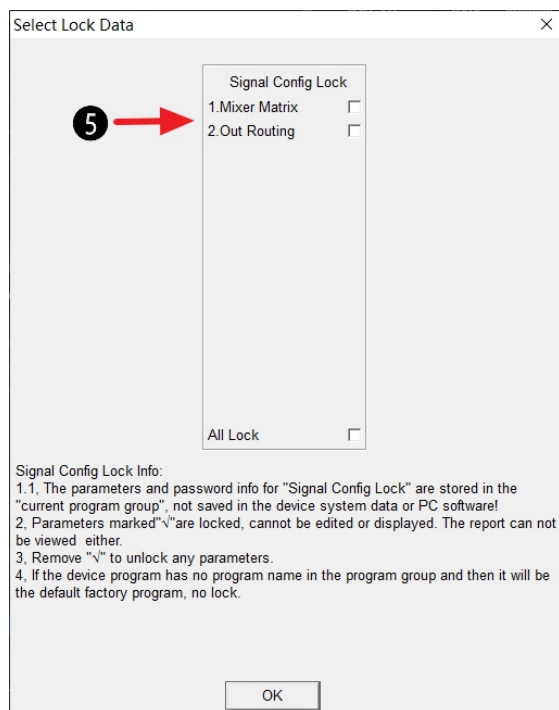
- 1.Load Program ☐
- 2.Save Program ☐
- 3.Delete Program ☐
- 4.Copy Program ☐
- 5.Device ID ☐
- 6.Interface ☐
- 7.Back Light ☐
- 8.Key Edit ☐
- 9.Power On ☐
- All Lock ☐

System Lock Info:
 1.The parameters and password info for "System Lock" are stored in the "Device System Data", not saved in the current program group or PC software! This will not be changed by calling, saving or deleting the data.
 2. Parameters marked "✓" are locked, cannot be edited.
 3. Remove "✓" to unlock any parameters.
 4."Device System Data" is the default and cannot be locked.

Picture 3.4.3.6.7

⑥ System lock:

1. Call program,
2. Save program,
3. Delete program,
4. Copy program,
5. Device ID,
6. Interface editing,
7. Backlight,
8. Panel editing,
9. Power On



Picture 3.4.3.6.6

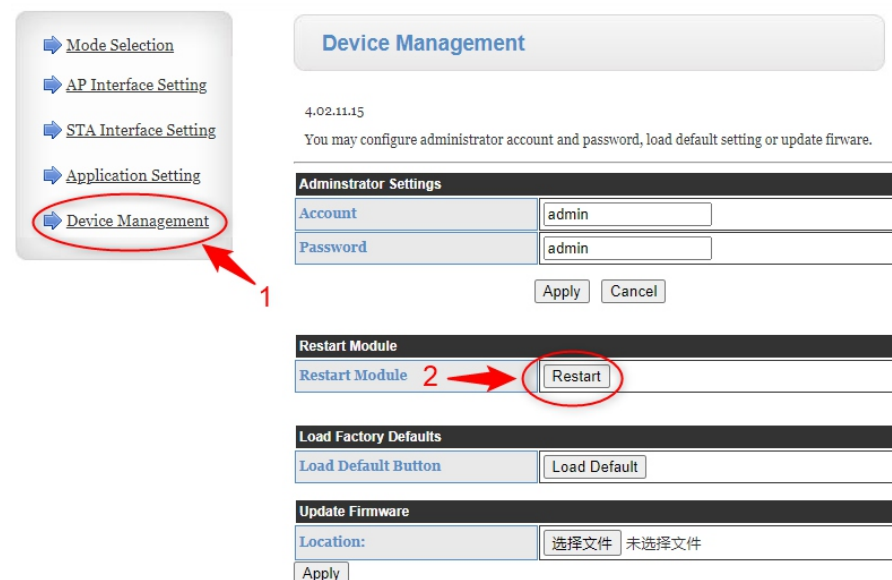
⑤ Signal allocation lock:

1 component matrix, 2 output routes

(Note: After the function is locked, the data A saved to the computer will be locked.

When the software calls this locked data A, the locked function is neither adjustable nor displayed, and it needs to be called again with an empty data to be adjusted.)

4. Click on [System Lock], then click on [No Password]/[Set Password] to enter the following window:



Picture1.4.12

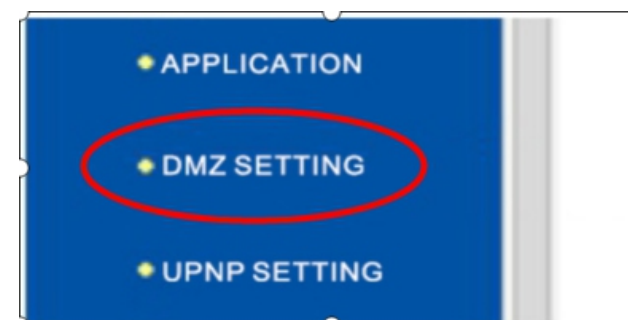
Step 2: Configure the UTWR1 module to access the Internet

Open a web browser, enter the gateway of the router connected to the Internet in the address bar, for example, 192.168.1.1.

Because the router has a firewall, computers outside the Internet cannot directly access the devices on the LAN 1. Therefore, an IP address must be opened on the router.

The DMZ host of the router can achieve this function.

The DMZ is short for "demilitarized zone," and its Chinese name is "Separation Zone," also known as "demilitarized Zone." It is a buffer between the non-secure system and the secure system in order to solve the problem that the users of the external network cannot access the internal network server after the firewall is installed.



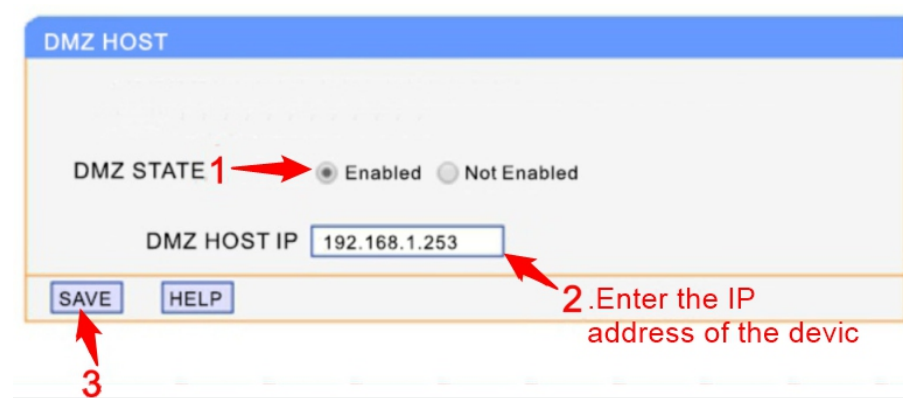
Picture1.4.13

DMZ host Settings:

Picture 1.4.14, DMZ status: Select Enable

DMZ Host IP address: Enter the static IP address of the external WIFI to be added to the LAN

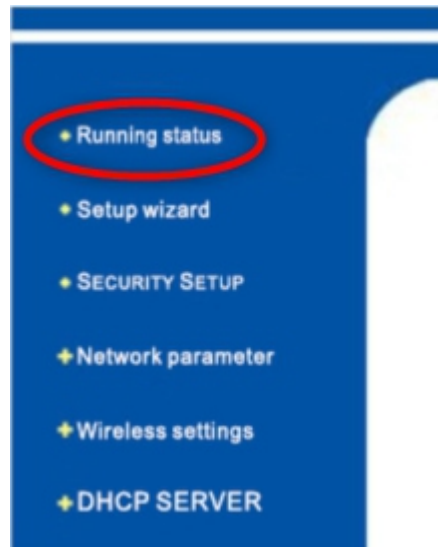
Save parameter Settings



Picture1.4.14

Find the IP address of the LAN on the Internet

Click "Running Status" in the left column (Picture 1.4.15)



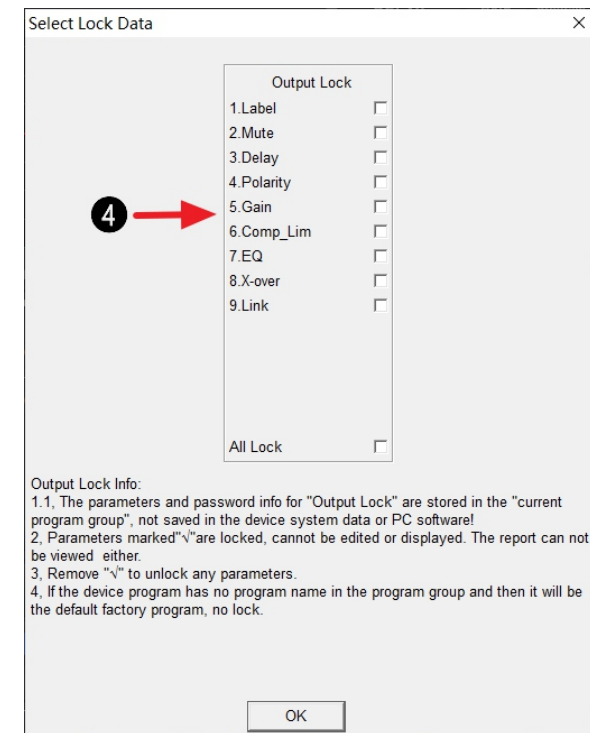
Picture1.4.15

③ Input channel function lock:

1 tag, 2 mute, 3 delay, 4 phase, 5 gain, 6 noise gate, 7 automatic gain, 8 compression, 9 dynamic equalization, 10 equalization, 11 joint debugging

(Note: After the function is locked, the data A saved to the computer is called by the software to lock the data A.),
The locked function is neither adjustable nor displayed, and needs to be unlocked in order to be adjusted

2. Click on [Output Lock], then click on [No Password]/[Set Password] to enter the following window:



Picture 3.4.3.6.5

④ Output channel function lock:

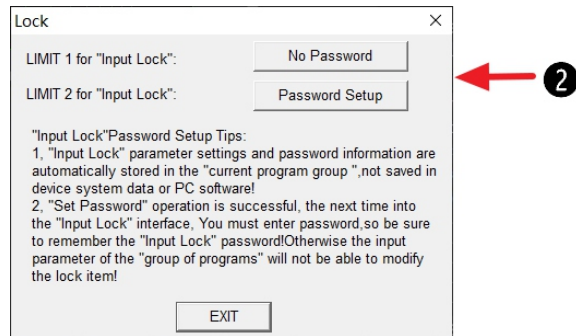
1 label, 2 mute, 3 delay, 4 phase, 5 gain, 6 compression-limited, 7 equalization, 8 division, 9 joint debugging

(Note: After the function is locked, the data A saved to the computer will be locked. When the software calls this locked data A, the locked function is neither adjustable nor displayed, and it needs to be called again with an empty data to be adjusted.)

3. Click on [Signal Allocation Lock], then click on [No Password]/[Set Password] to enter the following window:

❶ Select the project that needs to be set here.

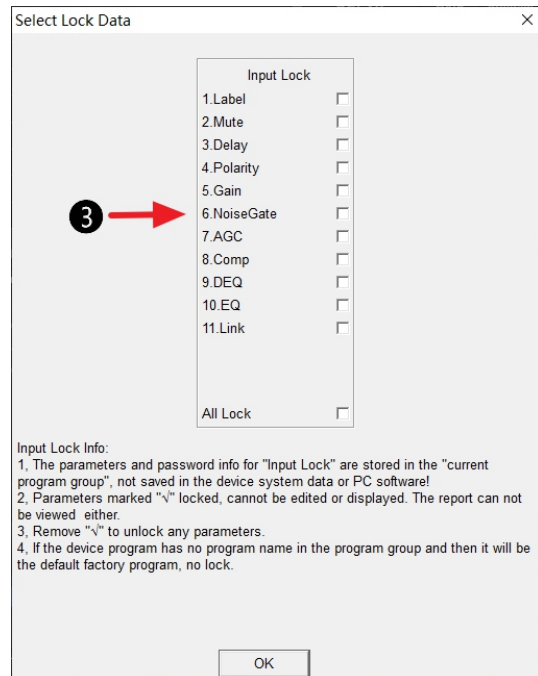
Step 2: After clicking on one of the locking methods, the following window will pop up



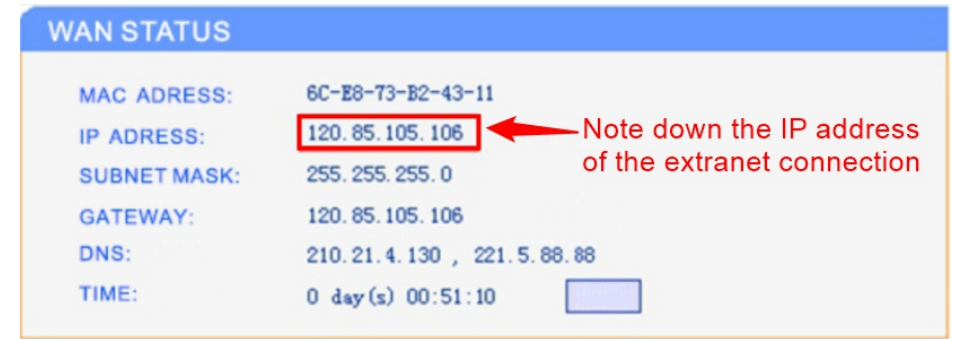
Picture 3.4.3.6.3

❷ Here, select whether you have a password or no password to enter the lock setting

1. Click [Input Lock], then click [No Password]/[Set Password] to enter the following window:



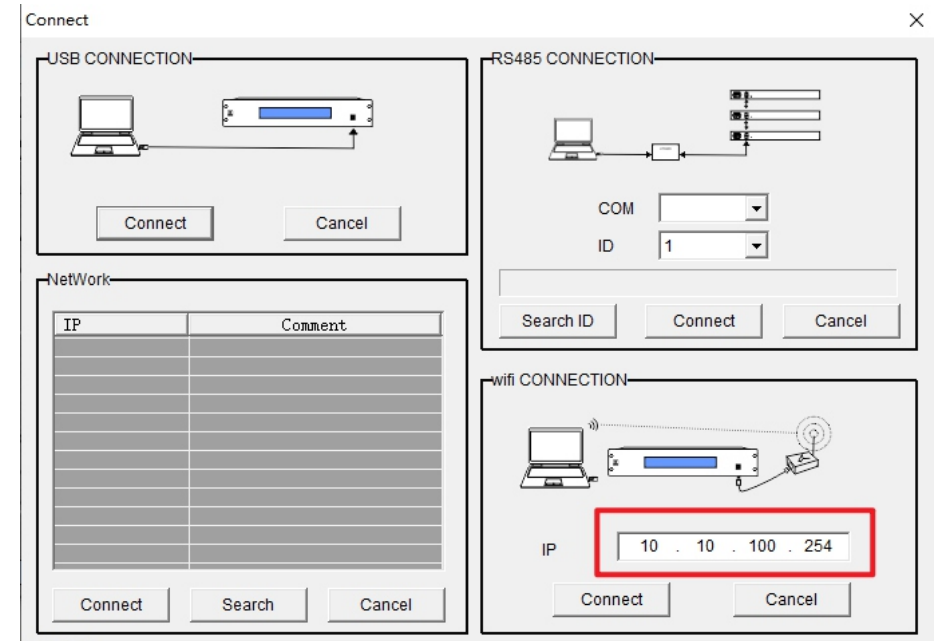
Picture 3.4.3.6.4



Picture 1.4.16

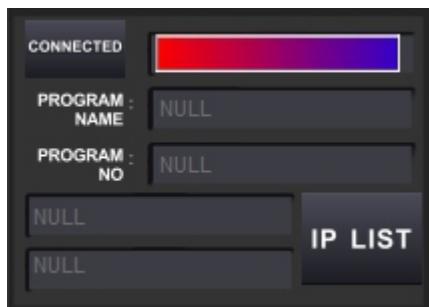
Step 3: Use software to connect devices via the Internet

Open the software and click the connection, as shown in picture 1.4.17. Fill in the external IP address in the column of "UTWR1: WIFI|TCP/IP" (this tutorial is the IP address in the picture above).



Picture 1.4.17

If the point connection appears as shown in picture 1.4.18, it means that the connection is successful, and the parameters of the device can be adjusted.



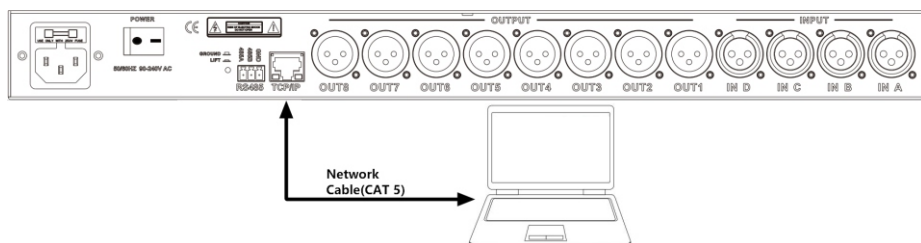
Picture 1.4.18

1.5 TCP/IP Connection Mode

TCP /IP connection Computers can be connected in 4 ways:

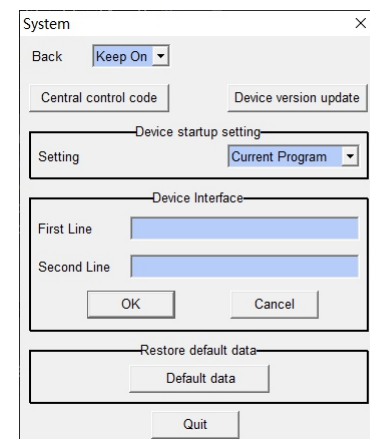
Net cable (Type 5)

Method 1: Device -----> Computer



Picture1.5.1

Click on [System] to pop up the following window



Picture 3.4.3.5.2

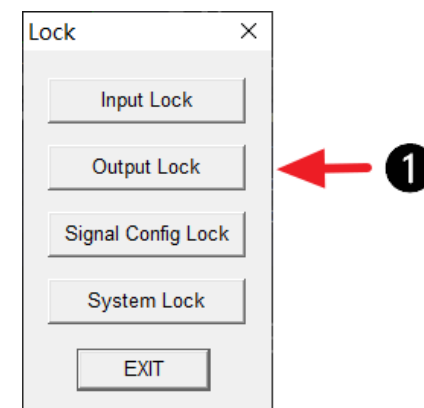
① Fill in the device display screen display characters here

3.4.3.6 Function locking and system locking



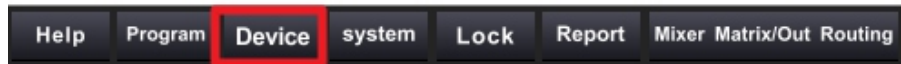
Picture 3.4.3.6.1

Step 1: Click [Lock] to pop up the following window



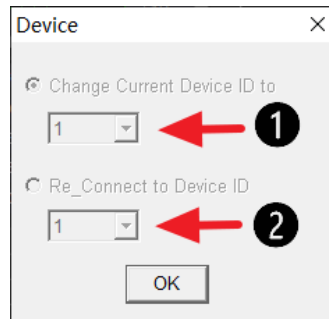
Picture 3.4.3.6.2

3.4.3.4 Changing device ID number and selecting device ID number when multiple machines are connected



Picture 3.4.3.4.1

Click on [Device ID] to pop up the following window

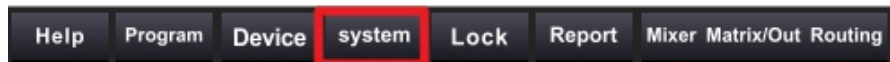


Picture 3.4.3.4.2

① Change the device ID number here

② Select the device ID number to reconnect when multiple machines are connected online

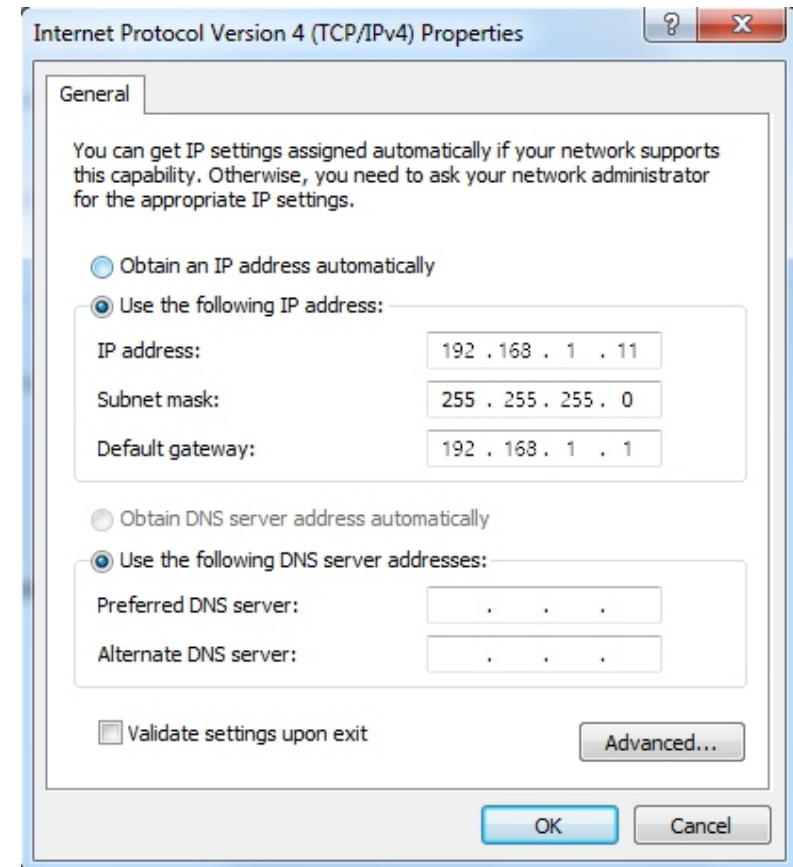
3.4.3.5 Modifying Characters on Device Display Screen



Picture 3.4.3.5.1

Step 1: If the computer is wireless, click Select  on the computer, click Change  Internet Protocol Version 4 (TCP/IPv4) adapter Settings, click Disable wireless network connection, and then click Local connection to start; Or if you already have a local connection  on your computer, click to change the adapter Settings.

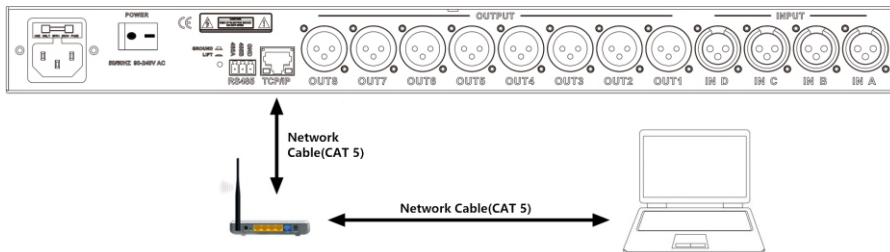
Step 2: Click Local connection properties, double-click to modify the IP address, and click OK. Note: The computer must be in the same gateway as the device (Picture 1.5.2).



Picture1.5.2

After the above steps are complete, you can connect the control software to the device.

The second way: device -----> router -----> computer



Picture1.5.3

Step 1: Check the device IP address

Click [SYSTEM], rotate [encoder] to {7.TCP/IP Set}, click [encoder], enter {1.IP address set}, the default IP address of the device is 192.168.1.10

Step 2: Connect the device to the router

Connect one end of a network cable to the TCP/IP interface on the rear board of the device and the other end to the LAN interface of the router

Step 3: Connect your router to your computer

Take a network cable and connect one end of it to your router's LAN port and one end to your computer

Step 4: Modify the router IP address so that the router and the device are on the same gateway

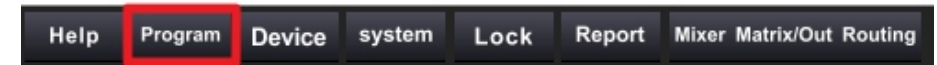
If the computer is connected to a wireless network, disable the wireless network connection in Picture 1.5.4 and turn on the local connection



Picture1.5.4

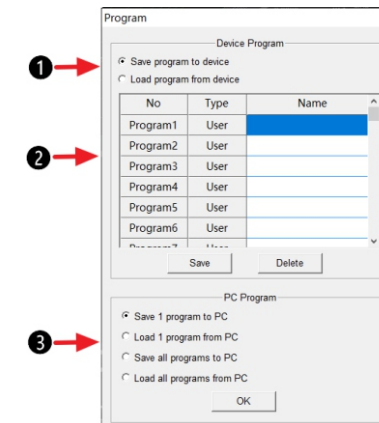
The above figure is a screenshot of a channel in the output selection area, similar to the input channel selection above, except for an additional FIR indicator light. When there are imported FIR parameters in the channel, the indicator light changes from gray to white.

3.4.3.3 Data calling and saving



Picture 3.4.3.3.1

Click on [Program] to pop up the following window



Picture 3.4.3.3.2

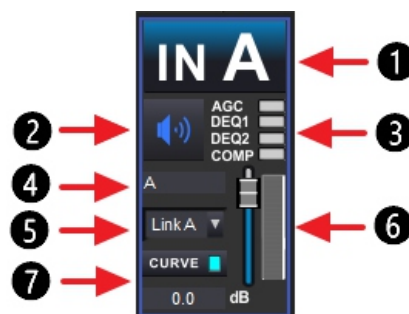
① Device program: Call and save selection when saving data on the device

② List the data stored within the device. If there is data stored on the device, it can be displayed here. You can specify a number and name to save or load data to the device, or delete a certain set of data

③ Computer program: calling and saving selection when saving data on the computer

3.4.3 About Software

3.4.3.1 Introduction to Input Selection Area



Picture 3.4.3.1.1

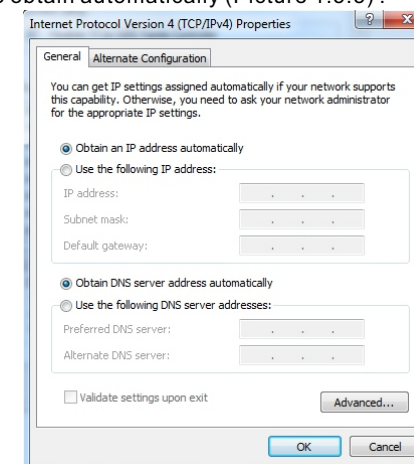
- ① Channel button, the current color indicates that the channel is being adjusted
- ② Click the [Mute] button to turn off or on the channel audio
- ③ Function indicator light, which lights up when the corresponding function is enabled
- ④ Tag, set a representative name for the channel, and if the channel is a high pitched signal, mark it as "HIGH"
- ⑤ Joint debugging, make the parameters of the joint debugging channels the same, adjust one of the channel parameters, and change the parameters of the other channels accordingly. When debugging, except for the "curve", "mute", and "label" parameters that are not joint debugging (the output channel "matrix" is also not joint debugging), all other parameters are synchronously changed
- ⑥ Gain adjustment, adjusting channel gain
- ⑦ [Curve] button, the color on the button is the curve color, click the [Curve] button to turn off or light up the curve

3.4.3.2 Introduction to Output Selection Area



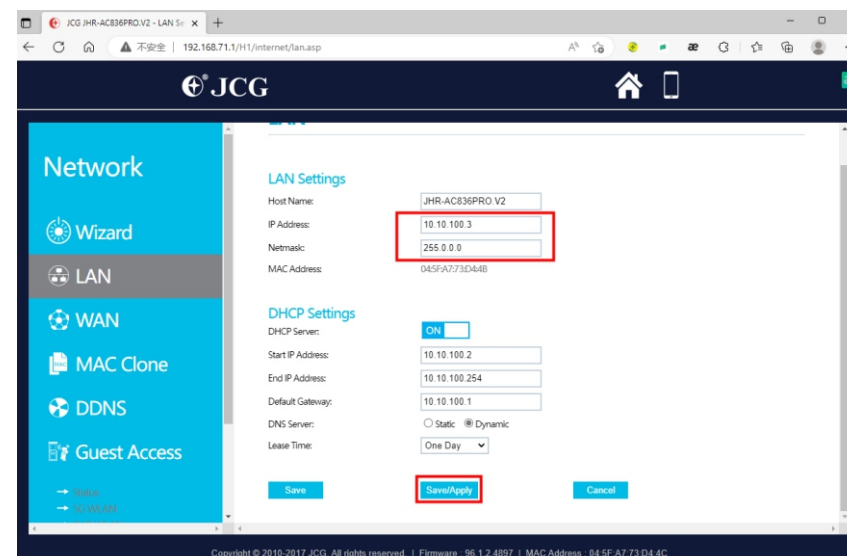
Picture 3.4.3.2.1

Set the computer IP to obtain automatically (Picture 1.5.5) :



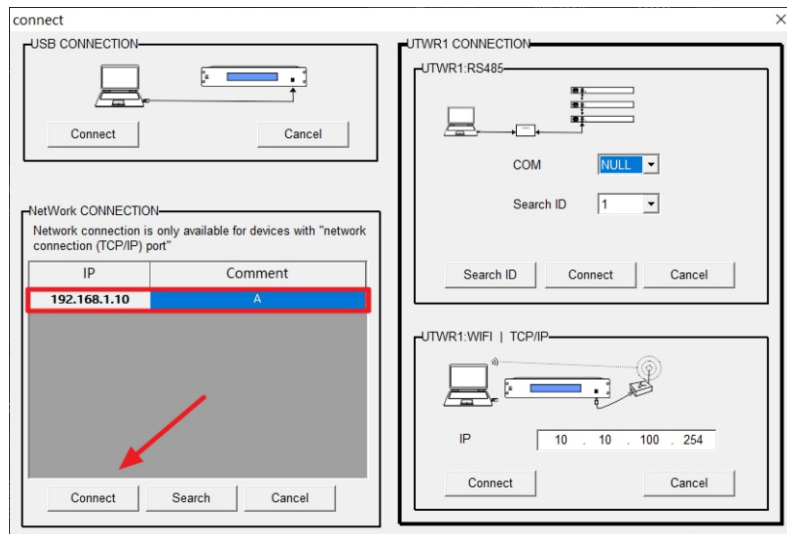
Picture1.5.5

If the router address is 192.168.1.(1-254), you do not need to change it. Otherwise, follow the following steps to change the router IP address. Enter the router IP address in the browser address bar, press enter, enter the router password, go to the home page of the router and click Network parameters to change the LAN port IP, which can be set to 192.168.1.1-254(Hint: the last digit of the router IP must be different from the device IP), as shown in Picture 1.5.6



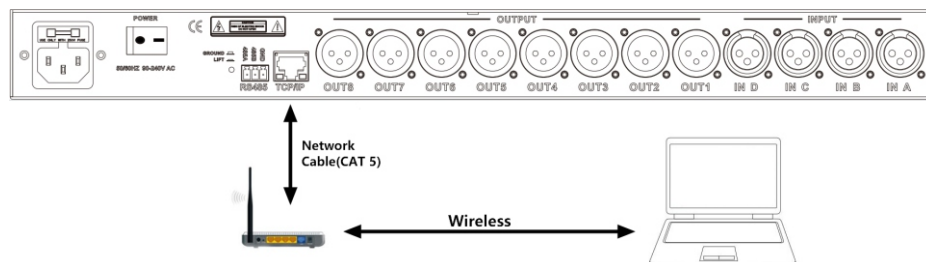
Picture1.5.6

After the setting is successful, open the PC software, click "Connect" button, click "search" button in "Network connection", you can see the IP of the device, click "Connect" on the line



Picture1.5.7

Net cable (Type 5) Wireless
The third way: device -----> router -----> computer



Picture1.5.8

3.4.2 Software Connection

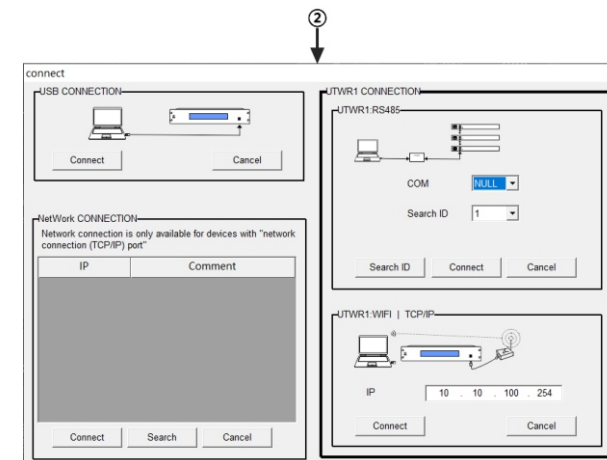
① Open the software and click the [Not Connected] button



Picture 3.4.2.1

② Pop up connection dialog box

1. When the connection method is 1.1 Connecting a Single Device to a Computer via USB Driver Free, click the [Connect] button in the "USB Connection" column to connect the device.
2. When the connection method is "1.2 Multiple Devices Connected to Computers through UTWR1", in the "UTWR1: RS485" column, select the corresponding port (refer to "1.6 Port Query Method" for port viewing) and device ID, and press the "OK" button to connect the device



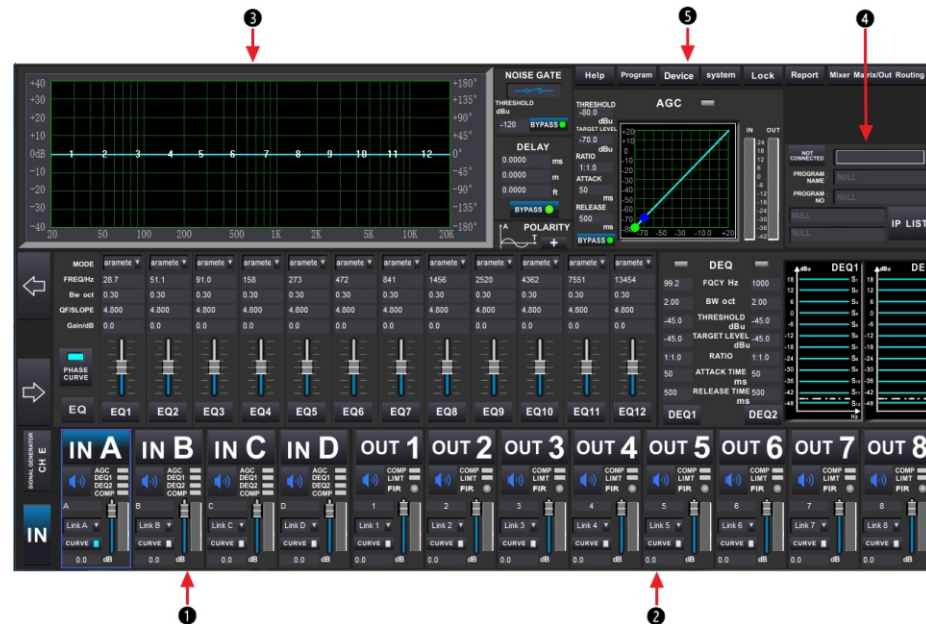
Picture 3.4.2.2

Attention:

1. When the connection method is the first or second method in "1.4 Network (including WiFi) Connection Method", in the "UTWR1: WIFI | TCP/IP" column, press the [OK] button to connect the device (note that the IP address of the computer should be set to automatically obtain)
2. When the connection method is the third, fourth, fifth, sixth, or seventh method in "1.4 Network (including WiFi) Connection Method", click the "Search" button in the "Network Connection" column, and the interface will display the searched devices. Click the "OK" button to connect the devices.

3.4 Software Interface Introduction

3.4.1 Software Interface 5 Regions



Picture 3.4.1.1

1 Input channel selection area

Perform input channel selection, debugging, labeling, mute, curve, and gain operations

2 Output channel selection area

Select output channels, debug, label, mute, curve, and gain operations

3 Channel editing area

Detailed adjustment area for channel parameters

4 Connection area

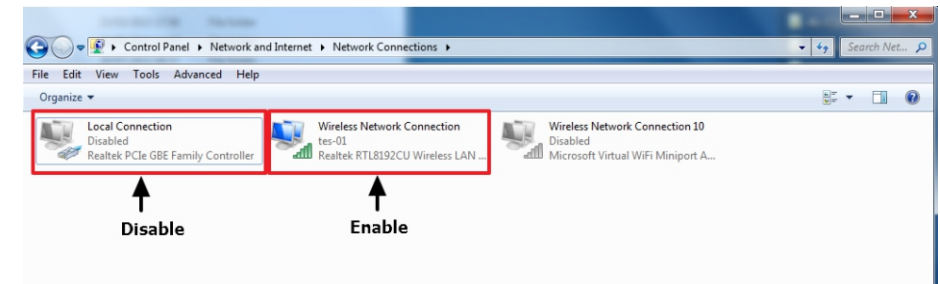
The connection area of the device

5 Set Help Area

Step 1: Refer to the second step

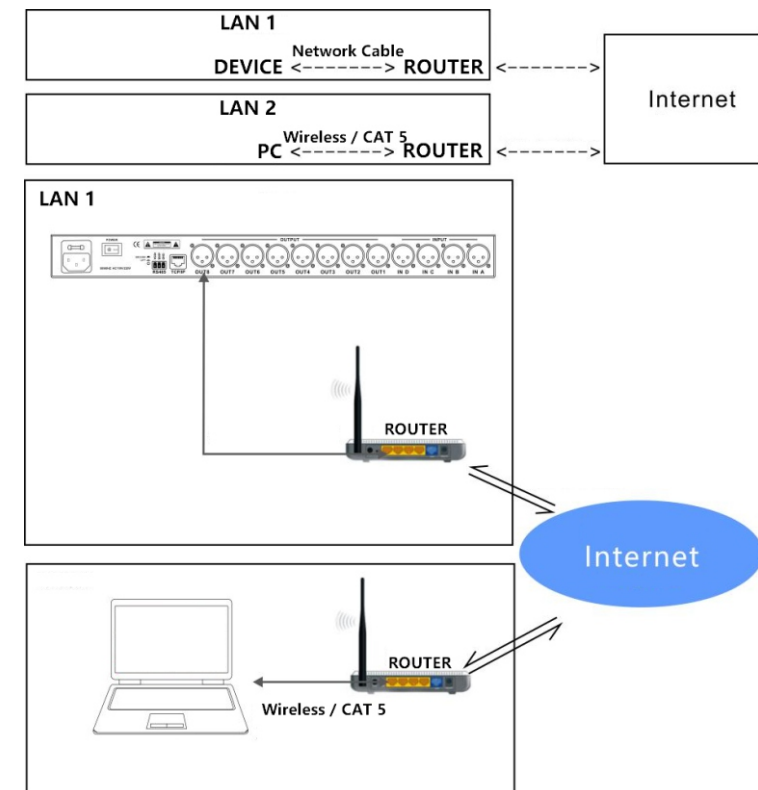
Step 2: Follow the second method Step 2

Step 3: Refer to Step 4 of the second method. If the computer is connected in local connection mode, please disable "local connection" in the interface of Figure 1.5.9, and open "Wireless network connection", and then connect to the router WIFI. Finally, open the software and connect the device



Picture 1.5.9

Net cable (Type 5) Internet Net cable (Type 5)
The fourth way: device -----> router----->router-----> computer

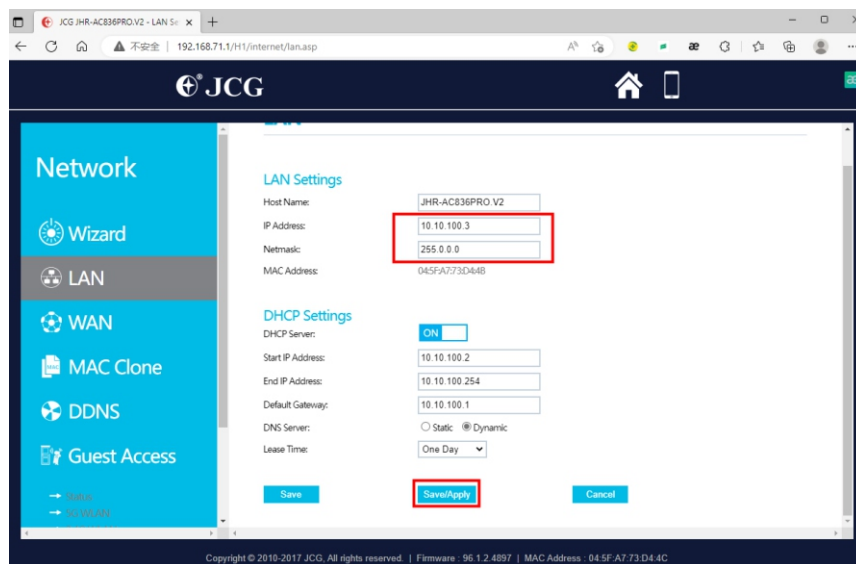


The first, second, and third kinds of connections are communicated within the network of the same network segment, and when the device is in another network segment, or even when the device is placed in a distant place, the fourth way can be used to connect and communicate.

Step 1: Check that the default IP address of the device is 192.168.1.10

Step 2: The device is wired to the router. Change the IP address of the router so that the router and the device are on the same gateway

If the router address is 192.168.1.(1-254), you do not need to change it. Otherwise, follow the following steps to change the router IP address. Enter the router IP address in the browser address bar, press enter, enter the router password, go to the router home page and click Network parameters to change the LAN port IP, which can be set to 192.168.1.1-254 (Note: the last digit of the router IP must be different from the IP of the device), as shown in picture 1.5.10



Picture 1.5.10

3.3 Solutions for Online Errors

1. Any problem with the computer, USB cable, or device will cause the single machine to be unable to connect
2. If multiple machines cannot be connected, it may also be a problem with the UTWR1 converter
3. Possible issues with the computer:
 - a. The USB port is damaged. Please replace it with another USB port before connecting again
 - b. Unable to detect COM port, indicating incorrect installation of USB driver. Please reinstall the USB driver program before connecting again
 - c. The computer software is not starting properly. Please close the software, reopen it, and then connect again
 - d. There is a problem with the computer system. Please reinstall the system or replace it with another computer before connecting
4. Possible issues with USB cable:

- a. The USB plug is damaged. Please replace the USB cable and reconnect it at this time
 - b. USB port not detected. Please unplug the USB cable and reinsert it before connecting again
5. Possible issues with the device:
 - a. The device has not started. Please open the device and connect again at this time
 - b. The device is still in the startup process and has not entered normal working mode. At this point, you can click on the channel button on the panel. If the button does not light up, it indicates that the device is not working properly. Please wait for the device to work properly before connecting
 - c. The USB port of the device is faulty. Please apply for repair at this time
 6. Possible issues with UTWR1 converter:
 - a. There is an error in the network cable connection between the UTWR1 converter and the device. Please replace the network cable before connecting again
 - b. The UTWR1 converter is damaged. Please replace the UTWR1 converter before connecting again
 7. Possible issues when searching for UTWR1 module signal:
 - a. Check if the wireless mode is in AP mode. For modification methods, please refer to 1.7.1.4 Methods for Swapping Station Mode and AP Mode
 8. The issue of software version mismatch with device version:
 - a. When the software version does not match the device version, online errors may also occur. To view the correspondence between software versions, you can go to the official website view corresponding relationships in the download section of online software

Part 3: Introduction to Software Installation and Operation

The first time using this device, you need to install 1. USB driver program; 2. PC control software

3.1 Installation of RS485 driver in UTWR1 module

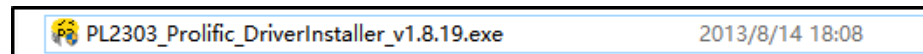
Find the randomly carried CD and insert it into the computer CD drive.

Open the optical drive and open the folder "AUDIO PROCESS" in the optical drive (Picture 3.1.1)



Picture 3.1.1

Open the folder "USB Driver" in the copied folder "AUDIO PROCESS", Find the "USB Driver" file (Picture 3.1.2) and double-click to run it, then install the RS485 driver program



Picture 3.1.2

(Tip: The RS485 driver installation in the UTWR1 module does not require any settings. Press "Next" until the installation is completed.)

3.2 Software Installation

Find the randomly carried CD and insert it into the computer CD drive.

Open the CD drive and open the folder "Application" in the CD drive,

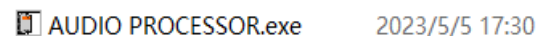
Copy the "AUDIO PROCESS" in the folder to any location on the computer (Picture 3.2.1)



Picture 3.2.1

Open the "AUDIO PROCESS. exe" file in the copied folder "AUDIO PROCESS" (Picture 3.2.2)

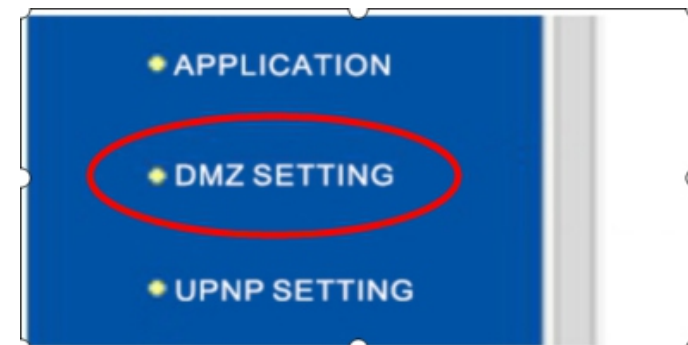
You can run the software now.



Picture 3.2.2

Step 3: The device enters the Internet Settings

Because the router has a firewall, computers outside the Internet cannot directly access the devices on the LAN 1. Therefore, an IP address must be opened on the router. The DMZ host of the router can achieve this function.

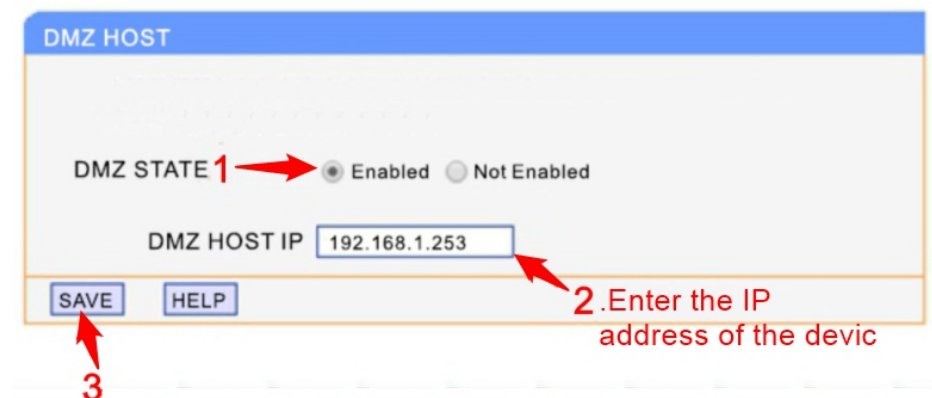


Picture 1.5.11

DMZ host Settings:

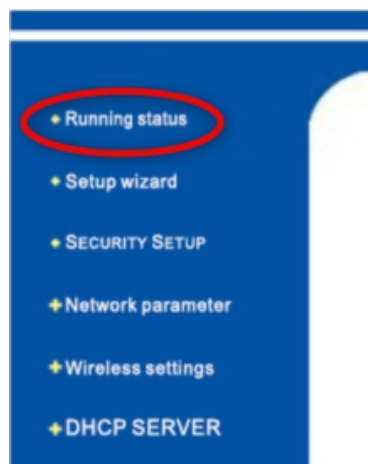
Picture 1.5.12, DMZ status: Select Enable

DMZ Host IP address: Enter the static IP address of the device added to the LAN
Save parameter Settings



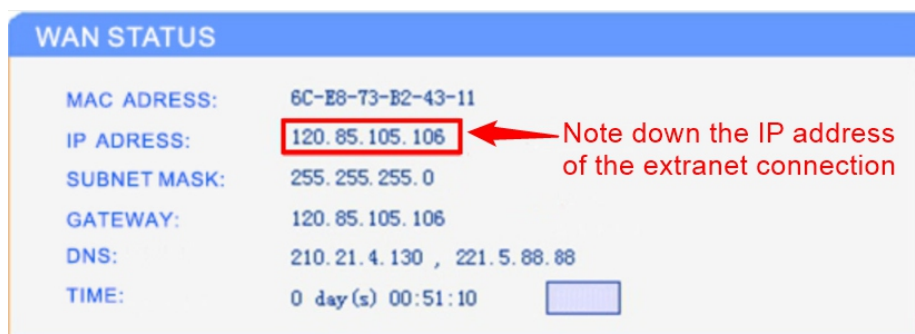
Picture 1.5.12

Find the IP address of the LAN on the Internet
Click "Running Status" in the left column (Picture 1.5.13)



Picture 1.5.13

In Picture 1.5.14, note down the IP address of the LAN to the Internet
(Note: This IP address must be a public IP address. Open the website WWW.ip138.com and find that your IP address is the same as the external IP address of your router. Your IP address is the public IP address.)



Picture 1.5.14

2.8.4 Copying data from one channel to another channel

Press the [LOAD/SAVE] key to enter the program menu

Rotate the encoder and select the sub menu {1. Load Program}

Enter the menu {Channel Copy} to copy the corresponding channel data to another channel

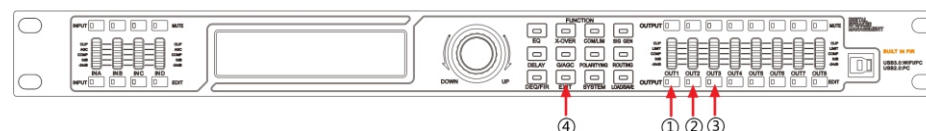
Press the [Encoder] confirmation button to return to standby mode

2.9 Others

2.9.1 Multi channel joint debugging

Example: Set OUT1 for joint debugging of OUT2 and OUT3. When adjusting the parameters of OUT1, OUT2 and OUT3 change accordingly

(Note: The channels for joint debugging must be both input and output channels)



Picture 2.9.1.1

① [OUT1] edit key, the yellow edit light of [OUT1] edit key lights up, and the system defaults to the EQ1 submenu of the EQ menu

② Simultaneously press and hold the [OUT1] and [OUT2] editing keys, and the yellow editing light of the [OUT2] editing key will also light up

③ Simultaneously press and hold the [OUT1] and [OUT3] editing keys, and the yellow editing light of the [OUT3] editing key will also light up
The editing lights for [OUT1], [OUT2], and [OUT3] are all on, indicating that OUT1, OUT2, and OUT3 are already in a joint debugging state. When adjusting the parameters of OUT1, OUT2 and OUT3 change accordingly

④ Press the [EXIT] key to exit the joint debugging mode, and the editing lights of OUT1, OUT2, and OUT3 will all turn off and return to standby mode

2.9.2 Labels

You can use PC software to add and modify labels for each channel, and display labels after the channel number when editing parameters.

If the label "1-LOW" is added to OUT1, the EQ menu will display as follows

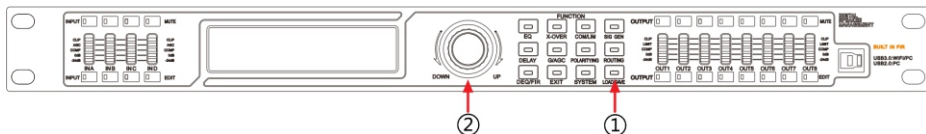


Picture 2.9.1.2

2.8 Program Operation

2.8.1 Save Program

Example: Save to set the current parameter as a program, numbered 10, named my program 10



Picture 2.8.1.1

- ① In any state, you can press the [LOAD/SAVE] key to enter the program menu
 - ② Rotate the encoder and select the submenu {2. Save Program}
- Press the [Encoder] confirmation key to enter the menu {2. Save Program}
- Rotate the encoder and select menu {Save}
- Press the [Encoder] confirmation key to enter the menu {Save}, the cursor flashes at the program number, and rotate the [Encoder] to select number 10
- Press the [Encoder] confirmation key to confirm, and enter the name "my program 10"
- Long press the encoder to prompt "Save Successfully"
- Automatically return to standby mode

2.8.2 Loading Programs

Press the [LOAD/SAVE] key to enter the program menu

Rotate the encoder and select the submenu {1. Load Program}

Enter the menu {Group Load} and find the program that needs to be loaded to load

2.8.3 Erase Program

Press the [LOAD/SAVE] key to enter the program menu

Enter menu {2. Save Program}

Rotate the encoder and select {Delete}

Enter the menu {Delete}, rotate [Encoder] to select the program name and program number to be erased

Press the [Encoder] confirmation button and prompt "Delete Successful"

Delete completed, prompt whether to continue the operation, press the [Encoder] confirmation button to continue

Automatically return to the previous menu, you can see that the program name with number 10 is already blank

Press the [EXIT] button multiple times until you return to standby mode

You can also rotate the encoder and select "NO" to cancel the operation and return to standby mode

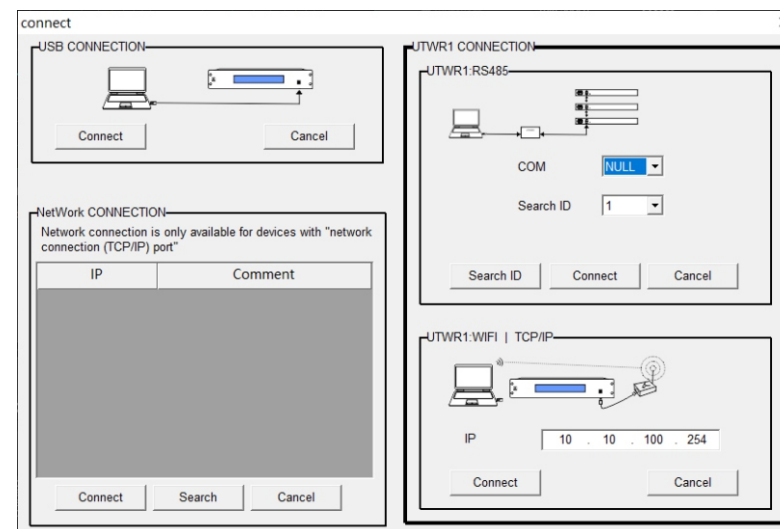
After connecting by the above method

Step 1: Click the corresponding software of the machine and click the button in the red box



Picture 1.5.15

Step 2: In the "UTWR1: WIFI|TCP/IP" field, enter the external IP address

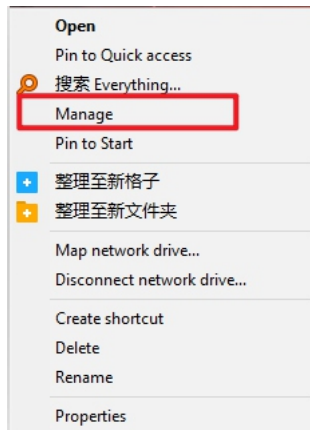


Picture 1.5.16

1.6 Port Query Methods

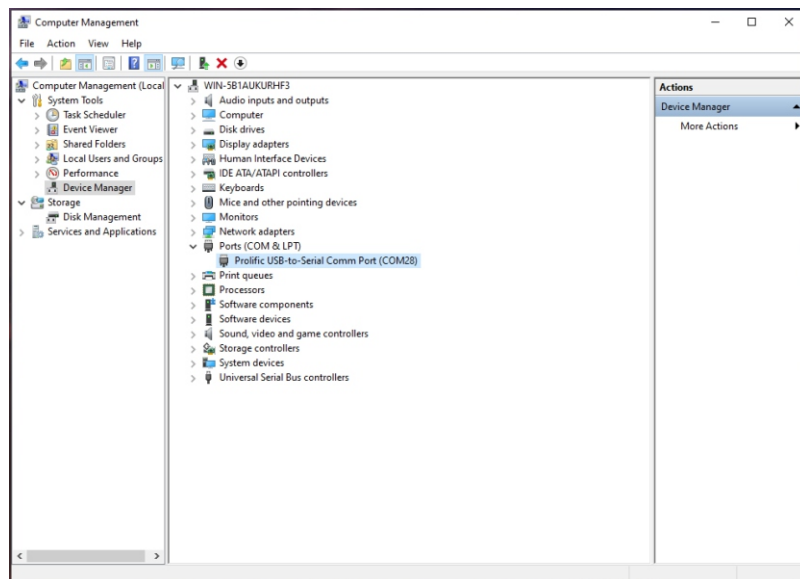
To open the Device Management window, do as follows:

Right-click [My Computer] and the following window will pop up (Picture 1.6.1)



Picture 1.6.1

At this time, the left mouse button clicks [management], and the system properties window pops up (Picture 1.6.2).



Picture 1.6.2

2.7.2.4 Changing and erasing passwords

Press the [SYSTEM] key to enter the system menu

Select the menu {1. Input Set}, {2, Output Set}, {3, Signal Set}, {4, System Set} that you want to modify

Click on [Encoder] and enter a 6-digit password to enter the menu

Rotate the [Encoder], select {1. Change Passwords} to change the password, press [Encoder] to enter the modification interface, enter the duplicate 6-digit password twice, press [Encoder], and the modification is successful

Select {2. Erase Passwords} and press [Encoder] to erase the password

Note: Users must remember their password!!

2.7.3 Startup Settings

Press the [SYSTEM] key to enter the system menu

Rotate the encoder to enter the menu {3. Power On Setup} settings

{A: Keep State} Start up and call the current program

{B: ALL Mute} All channels are muted when turned on

{C: Load Program 1:} Call program 1 when booting up

2.7.4 Backlight settings

Press the [SYSTEM] key to enter the system menu

Rotate the encoder to enter the menu {4. Backlight Setup} settings

{1.Open}LCD Always on

{2.10s}Turn off the backlight of the LCD after the device has been left unattended for more than 10 seconds

2.7.5 View Current Program

Press the [SYSTEM] key to enter the system menu

Rotate the encoder to enter the menu {5. Current Program} to view the current program

2.7.6 Viewing System Information

Press the [SYSTEM] key to enter the system menu

Rotate the encoder to enter the menu {6. System Information} to view system information (system version)

2.7.7 Viewing Device IP Address

Press the [SYSTEM] key to enter the system menu

Rotate the encoder to enter the menu {7. TCP/IP Set} to view the current device IP address

(1) IP address set: View/modify device IP

(2) Gateway address set: View/modify device gateway

(3) Device Name Set: Device Name Set

Press [Encoder] to confirm entering the submenu {2. Create Password}, and the cursor will remain at {1.};

Set a 6-digit password

a. The cursor flashes at the first character, rotate [Encoder], and select a character

b. Press the [Encoder] confirmation key to confirm the first character of the password, and move the cursor to flash at the second character

Repeat steps a and b and enter the 6-digit password

Next, enter the same password at {2.}

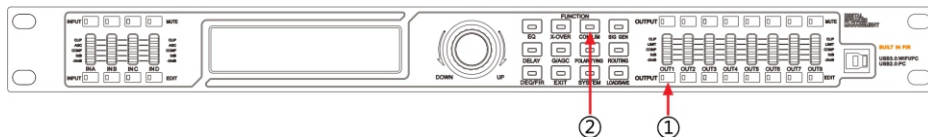
Long press [Encoder], release it, and the interface will prompt that the password has been successfully set, and it will automatically enter the lock menu

Rotate the encoder and select {6, Comp-Lim}

Press the [Encoder] confirmation key and the cursor will flash on {OFF}. Rotate [Encoder] to select {ON}

Press the [Encoder] confirmation button, and the adjustment is completed. Press the [EXIT] button multiple times until you return to standby mode

2.7.2.2 Phenomenon of parameter locking



Picture 2.7.2.2.1

① Press the [OUT1] key, and the system will enter the EQ1 submenu of the EQ menu by default. Press the [LIMITED] key, and {Limiter Has Locked} will be displayed, indicating that the output channel 1 limit is locked

② Press the [EXIT] button until you return to standby mode

2.7.2.3 Modifying Locked Items

Press the [SYSTEM] key to enter the system menu

Select {2. Lock Menu Setup} and press [Encoder] to enter

Select the menu {1. Input Set}, {2, Output Set}, {3, Signal Set}, {4, System Set} that you want to modify

Click on [Encoder] to enter the submenu, enter the password with a password, and enter directly without a password.

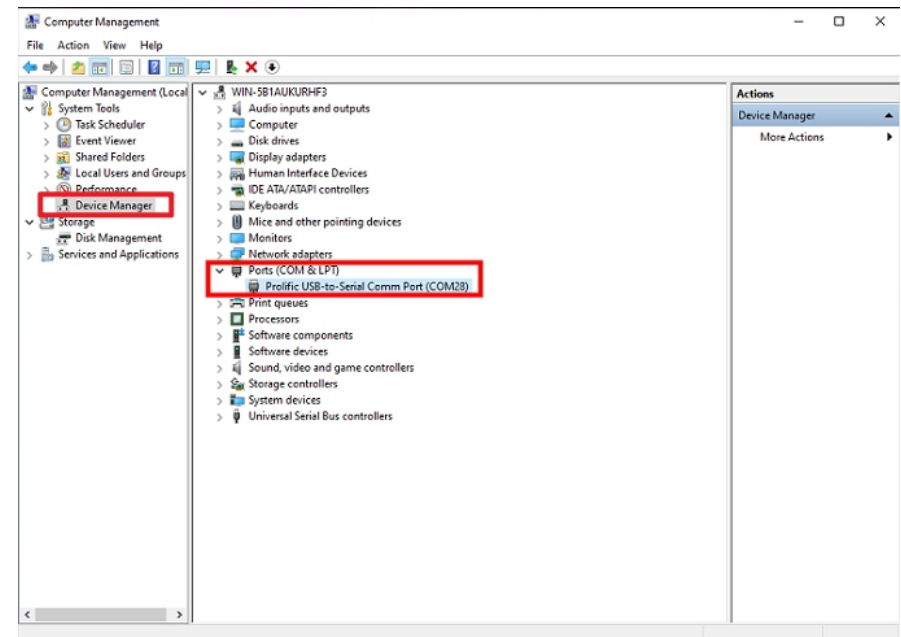
Rotate the encoder and select {3. Change Lock Menu}

Click on [Encoder], rotate [Encoder] to select the modification lock item

Click on [Encoder] to enter the modification lock

{ON} turned on, {OFF} turned off

Then click [Device Manager], then you can view the corresponding port (Picture 1.6.3) :



Picture 1.6.3

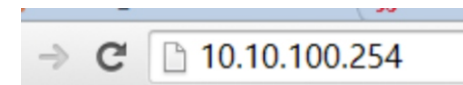
1.7 Query and Modify related parameters

1.7.1 Modifying and Querying Network Connection Parameters in the Device

1.7.1.1 How to Change IP Addresses in AP Mode

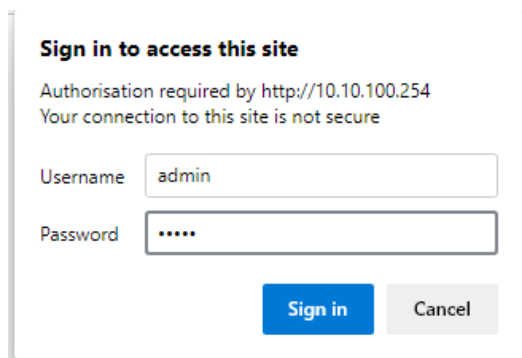
For example, change the IP address of the device to 192.168.1.2

Step 1: Connect the device through the first or second network connection method, and then enter the IP address of the device in the address bar of the Internet Explorer (the default IP address of the device is 10.10.100.254).



Picture 17.1.1.1

Press enter and the following dialog box appears (Picture 1.7.1.1.2)



Sign in to access this site

Authorisation required by http://10.10.100.254
Your connection to this site is not secure

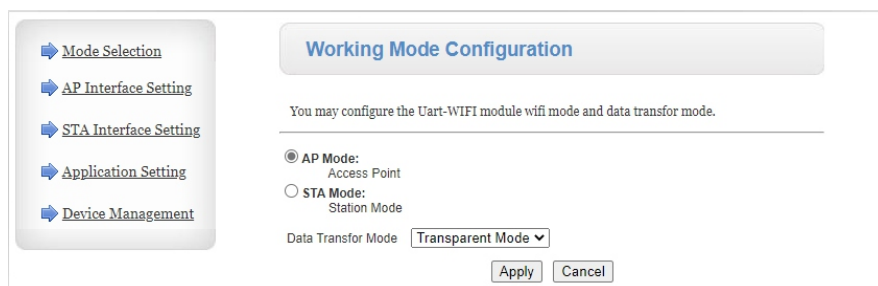
Username:

Password:

Sign in **Cancel**

Picture 17.1.1.2

Step 2: Enter user name: admin Password: admin Press enter to enter the web page configuration interface (as shown in Picture 1.7.1.1.3)



Working Mode Configuration

You may configure the Uart-WIFI module wifi mode and data transfer mode.

☒ **AP Mode:**
Access Point

☐ **STA Mode:**
Station Mode

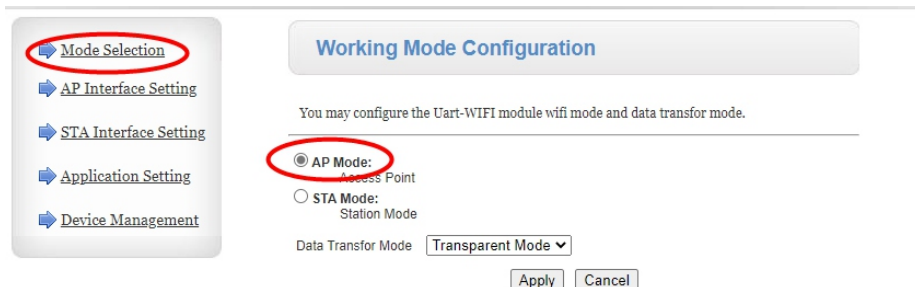
Data Transfer Mode: **Transparent Mode**

Apply **Cancel**

Left sidebar: Mode Selection, AP Interface Setting, STA Interface Setting, Application Setting, Device Management

Picture 17.1.1.3

Step 3: Click "Mode Selection" in the following interface (Picture 1.7.1.1.4):



Working Mode Configuration

You may configure the Uart-WIFI module wifi mode and data transfer mode.

☒ **AP Mode:**
Access Point

☐ **STA Mode:**
Station Mode

Data Transfer Mode: **Transparent Mode**

Apply **Cancel**

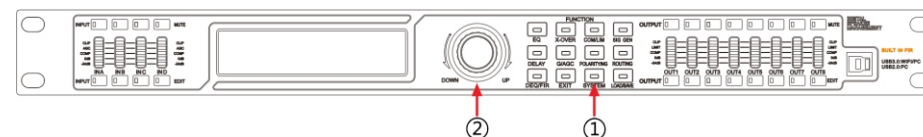
Left sidebar: Mode Selection, AP Interface Setting, STA Interface Setting, Application Setting, Device Management

Picture 17.1.1.4

2.7.1 Change device ID

Example:

Change device ID to 5

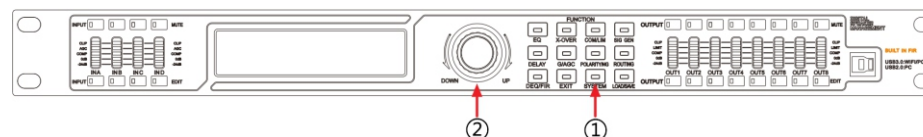


Picture 2.7.1.1

- ① In any state, you can press the [SYSTEM] key to enter the system menu
 - ② Press [Encoder] to enter the next menu: Device ID Setup
- Press [Encoder] to enter
- Rotate the encoder to adjust the ID to {5}
- Press [Encoder] to confirm
- At this point, the adjustment is complete. Press the [EXIT] button multiple times until you return to standby mode

2.7.2 Lock menu settings

2.7.2.1 Example of voltage limiter for locking output channels



Picture 2.7.2.1.1

- ① In any state, you can press the [SYSTEM] key to enter the system menu
 - ② Rotate the encoder and select the submenu {2. Lock Menu Setup}
- Press the [Encoder] confirmation button to enter the submenu
- Rotate the encoder and select {2. Output Set}
- Press the [Encoder] confirmation button to enter the submenu
- You can freely choose {1. No Password} to enter the lock menu directly without setting a password {2. Create Password} to create a password

Input Lock	Output Lock	Signal Lock	Input Lock
1.Label	1.Label	1.Mixer matrix	1.Load Program
2.Mute	2.Mute	2.Out Routing	2.Save Program
3.Delay	3.Delay	3.All Lock	3.Delete Program
4.Polarity	4.Polarity		4.Copy Program
5.Gain	5.Gain		5.Device ID
6.Noise Gate	6.Comp_Lim		6.Interface
7.AGC	7.EQ		7.Back Light
8.Comp	8.X-over		8.Key Edit
9.DEQ	9.Link		9.Power On
10.EQ	10.All Lock		10.All Lock
11.Link			
12.All Lock			

Picture 2.7.1

3. Power On Setup

Set the startup status: Set the program to be called upon startup

(1) Keep State: Keep State

(2) All Mute: Mute all channels

(3) Load Program: Select the program to be called upon startup

4. Backlight Setup

Backlight settings for LCD

(1) Keep On: Always on

(2) 10s: Turn off backlight after no operation for more than 10 seconds

5. Current Program

View the name of the currently loaded program

6. System Information

View system version information

7. Device IP Settings (TCP/IP Set)

View device IP

(1) IP address set: Device IP settings

(2) Gateway address set: Device gateway

(3) Device Name Set: Device Name Set

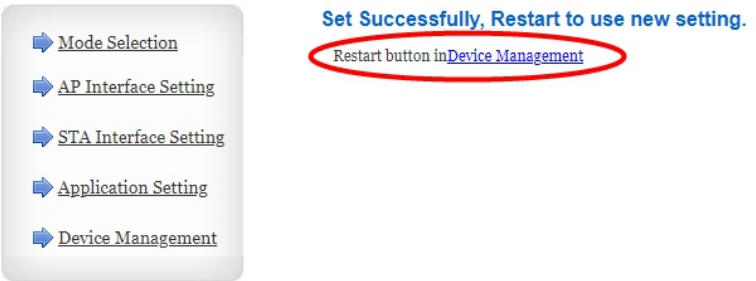
Step 4: Click [Wireless Access Point Settings] in the following interface to enter the following interface (Picture 1.7.1.1.5) :

Picture1.7.1.1.5

Step 5: After changing the IP address (IP address ranges from 0.0.0.0 to 255.255.255.255) in the IP address column under LAN Parameter Settings as shown in the figure above, continue to change the network name and click Set the wireless terminal (Picture1.7.1.1.6) :

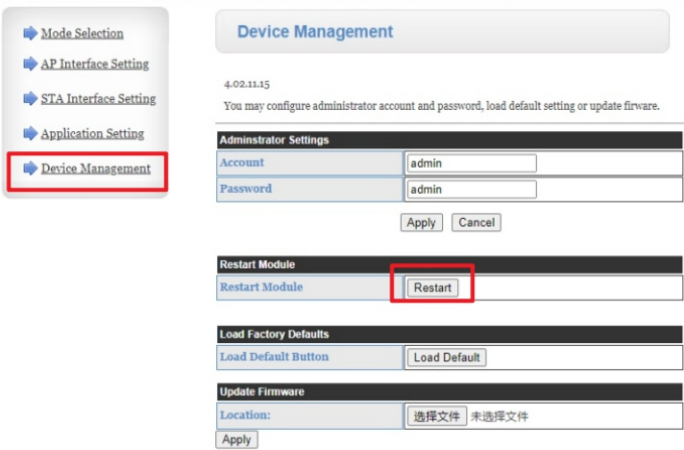
Picture1.7.1.1.6

Step 6: Click [OK] to enter the following interface (Picture 1.7.1.1.7) :



Picture1.7.1.1.7

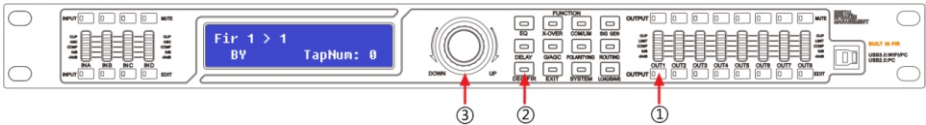
Step 7: Click [Module Management] to enter the following interface (Picture 1.7.1.1.8) :



Picture1.7.1.1.8

After the restart, the IP address of the device is changed to 192.168.1.2

2.6.1 FIR function through switch editing method



Picture 2.6.2

- ① Press the corresponding edit button for the output channel, such as pressing the [OUT1] key
- ② Press [DEQ/FIR] to enter the FIR function menu, and the display screen will display as shown in Figure 2.6.2



Picture 2.6.3

- ③ At this point, the cursor is flashing. When the cursor is flashing at the ">" position, long press [Encoder] to enter the FIR name editing menu, as shown in Figure 2.6.3. Select [Encoder] to select letters or numbers, short press [Encoder] to confirm and enter the next editing position. After input is completed, press and hold [Encoder] again to save, and display Modify Successfully; When the cursor is located below, rotating the [Encoder] can change the function status. "BY" means through, and "ON" means on

2.7 System Menu

Press the [SYSTEM] key to enter the system menu, which includes the following 7 sub menus:

1. Device ID Setup
PC software selects the specified device for connection through device ID
2. Lock Menu Setup
After the user sets the parameters, to prevent others from modifying them, they can set a lock parameter to prohibit modification and set a 6-digit password

The parameters that can be locked in the lock settings menu are as follows:

2.6 Editing methods for input and output channels

The editing methods for each function of the input and output channels are similar, roughly divided into the following steps:

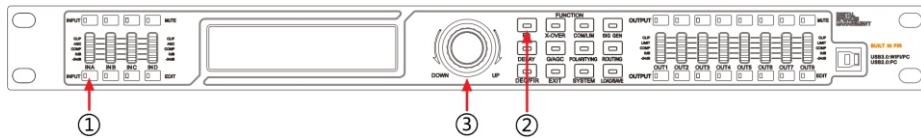
Step 1: Select input or output channel: Press the input or output editing button (such as INA or OUT1)

Step 2: Select the function buttons to be edited (such as EQ, X-Over, etc.)

Step 3: Press the encoder to confirm the selection, rotate the encoder to adjust the parameters, and after the adjustment is completed, exit and save

Example:

Adjust the parameters of the third equilibrium point EQ3 in INA to frequency: 397Hz, gain: 2dB, Q value: 0.8oct



Picture 2.6.1

① Press the [INA] editing button, the yellow editing light of the [INA] editing button will light up, and the system will default to the EQ1 submenu of the EQ menu

② Press the [EQ] key, the submenu will switch between EQ1 and EQ12. Press the [EQ] key repeatedly to select EQ1 to EQ12

③ The cursor flashes at the frequency value,

Rotate the encoder to adjust the frequency to {397Hz},

After confirming the frequency value by pressing the encoder, the cursor jumps to the gain value and flashes,

Rotate the encoder again, adjust the gain to {+2.0dB}, and then press the encoder to confirm the gain value,

The cursor jumps to the Q value and flashes,

Finally, rotate the encoder and adjust the Q value to {0.80oct}. The adjustment is now complete,

Press the [EXIT] button to return to standby mode, and at the same time, the yellow editing light of IN A goes out

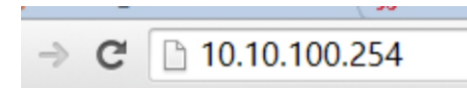
Frequency division, compression, amplitude limiting, delay, gain, and other operations are similar to EQ operations.

1.7.1.2 How to Change the IP Address in Station Mode

Change the IP address to 192.168.1.2 as an example

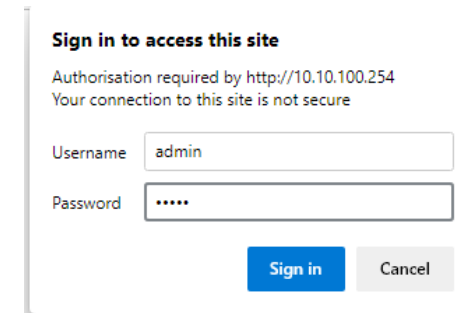
Step 1: After connecting the device through any network connection mode, enter the IP address of the device whose IP address needs to be changed (the default IP address of the device is 10.10.100.254) in the address bar of Internet Explorer or my computer (Picture 1.7.1.2.1).

Note: Before changing the IP address, check whether the device is successfully connected to the computer.



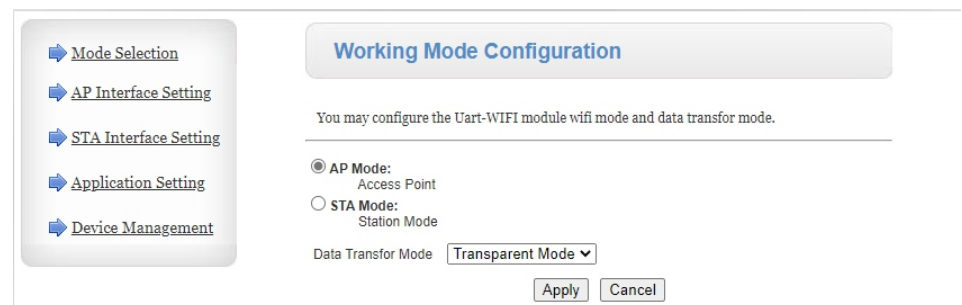
Picture 1.7.1.2.1

Press enter and the following dialog box appears (Picture 1.7.1.2.2)



Picture 1.7.1.2.2

Step 2: Enter user name: admin Password: admin Press enter to enter the web page configuration interface (Picture 1.7.1.2.3)



Picture 1.7.1.2.3

Step 3: Click [Wireless Terminal Settings] to enter the following interface (Picture 1.7.1.2.4)

Picture 1.7.1.2.4

Step 4: Select "Fixed (static IP)" in the above "Module IP Address Setting" (if it is already "fixed (static IP)", there is no need to select it) (Picture 1.7.1.2.5)

Picture 1.7.1.2.5

Divider setting	A low-pass filter (LPF) and a high-pass filter (HPF) can be set separately for each output channel. The adjustable parameters are: Filter type: Lin-Ril/Bessel/Butterw Frequency turning point: 19.7Hz-20KHz, a total of 241 frequency points; A.Attenuation slopes in the Bessel and Butterw states: 12 dB/oct, 18 dB/oct, 24 dB/oct, 30 dB/oct, 36 dB/oct, 42 dB/oct, 48 dB/oct. B. Attenuation slopes in the Lin-Ril state: 12 dB/oct, 24 dB/oct, 36 dB/oct, 48 dB/oct.
Limiter setting	Each output channel can be individually equipped with a limiter, and the adjustable parameters are: limiting level: -40dBu~+20dBu, with a step distance of 0.1dBu. Response time: 0.3ms~1000ms, with a step distance of 0.1ms when less than 1ms; When it is greater than 1ms, step by 1ms. Release time: 50ms~5000ms, step by 1ms
Compressor setting	Each output channel has a separate output compression setting, the adjustable parameters are as followed: compression level: -40dBu ~ +20dBu, stepover is 0.1dBu. Compression ratio: 1.0:1~20:1, 1.0:1 to 1:2 step 0.1, 1:2 to 1:20 step 0.5. Attack time : 0.3ms~200ms, less than 1ms, the step is 0.1ms; when it is greater than 1ms, the step is 1ms. Release time: 50ms ~ 5000ms Step 1ms
Output EQ	15 equalizations per output channel, PEQ/Lo-Shelf/Hi-Shelf/APF 1st/APF 2nd A. Adjust the parameters in PEQ state: center frequency point: 19.7Hz~20KHz, a total of 241 frequency points Bandwidth: 0.05oct~3oct, step size is 0.01oct Gain: -20dB~+20dB, step distance is 0.1dBu B. Adjustable parameters in Lo-Shelf and Hi-Shelf state: center frequency point: 19.7Hz-20KHz, a total of 241 frequency points Slope: 6dB/12dB Gain: -20dBu ~ +20dBu, stepover is 0.1dBu C. In the APF 1st state, the center frequency is 19.7 Hz to 20 kHz, and a total of 241 frequency points are selectable. D. Adjust the parameters in the APF 2nd state: center frequency point: 19.7Hz ~ 20KHz, a total of 241 frequency points Bandwidth: 0.05oct ~ 3oct, stepover is 0.01oct.
processor	96KHz sampling frequency, 32-bit DSP processor, 24-bit A/D and D/A converter
Support FIR order	Supports up to 1024 levels and is backward compatible
display	2×24 LCD blue backlight display setting, 5-band LED display input/output accurate digital level meter, mute and editing status
Power consumption	≤35
Power	AC90V ~ 240V 50/60Hz
Product size (W×D×H)	482×228×44mm
net weight	3.55kg
Shipping size (W×D×H)	1PC:555x325x98mm/0.0177m³ 6PCS:573x337x615mm/0.1188m³
Gross weight	1PC:4.55kg 6PCS:28.5kg

2.5 Technical parameters

Model	2 in and 4 out	2 in and 6 out	2 in and 8 out	3 in and 6 out	4 in and 6 out	4 in and 8 out
Input channel jacks	2 female XLR	2 female XLR	2 female XLR	3 female XLR	4 female XLR	4 female XLR
Output channel jacks	4 male XLR	6 male XLR	8 male XLR	6 male XLR	6 male XLR	8 male XLR
Input/Output impedance	Input: 13K Ω Output: 50 Ω					
PC port	Front panel with 1 USB interface (USB3.0 control interface can be expanded to WIFI control interface), rear panel with 2 RS485 interfaces (RJ-45 seat)					
CMRR	CMRR > 80dB(0dBu 1KHz)					
Input range	< +20.3dBu					
Frequency response	20Hz~20KHz(Deviation ± 0.4 dB)					
S/NR	> 116dB(20.2dBu , 1KHz)					
THD	< 0.003%(0dBu , 1KHz)					
Channel separation (crosstalk)	> 114dB(0dBu , 1KHz)					
Signal generator	White noise generator, pink noise generator, pure tone generator, sweep mode					
Input channel function						
Input noise gate	Each input channel has a noise gate function, the threshold level is -120dBu~0dBu, stepover: 1dBu					
Input mute	Each channel has independent mute control.					
Input gain	Input range : -80dB ~ +12dB,stepover:0.1dB					
Input delay	Each input channel has independent delay control,the adjustable range is 0~1000ms,the fine adjustable stepover is 10ms; the coarse adjustable stepover is 1ms.					
Input phase	Same phase(+) or reversed phase(-)					
Input equalization	Each input channel is set with 12 parameter equalization, and the equalization mode can be PEQ/Lo-Shelf/Hi-Shelf/APF 1st/APF 2nd A. In the PEQ state, the adjustment parameters are: center frequency point: 19.7Hz~20KHz, total 241 frequency point bandwidth: 0.05oct~3oct, step length: 0.01oct, gain: -20dBu~+20dBu, step length: 0.1dBu B. In Lo-Shelf and Hi-Shelf states, the adjustable parameters are: center frequency point: 19.7Hz~20KHz, total 241 frequency point slope: 6dB/12dB gain: -20dBu~+20dBu, step length: 0.1dBu C. In the APF 1st state, the center frequency is 19.7Hz~20KHz, and a total of 241 frequency points are optional. D. In the APF 2nd state, the adjustment parameters are: center frequency point: 19.7Hz~20KHz, total 241 frequency point bandwidth: 0.05oct~3oct, and step length: 0.01oct.					
Input dynamic equalization	There are 2 dynamic equalizations for each input channel,and adjustable parameters are as followed : frequency turning point: 19.7Hz~20KHz, 241 frequency points Bandwidth in total: 0.05oct~3oct The stepover is 0.01oct. Target level value: -45dBu ~ +15dBu.. Threshold: -45dBu~+15dBu. Ratio: 1.0:1~20:1, 1.0:1 to 1:2 step 0.1, 1:2 to 1:20 step 0.5. Attack time : 0.3ms~200ms, less than 1ms, the step is 0.1ms; when it is greater than 1ms, the step is 1ms. Release time: 50ms ~ 5000ms Step 1ms					
Input compression	Each input channel has a separate input compression setting, the adjustable parameters are as followed: compression level: -40dBu ~ +20dBu, stepover is 0.1dBu. Compression ratio: 1.0:1~20:1, 1.0:1 to 1:2 step 0.1, 1:2 to 1:20 step 0.5. Attack time : 0.3ms~1000ms, less than 1ms, the step is 0.1ms; when it is greater than 1ms, the step is 1ms. Release time: 50ms ~ 5000ms Step 1ms					
Input automatic gain	Each channel has a separate input with automatic gain function, the adjustable parameters are as followed : threshold: -80dBu ~ +20dBu, step is 0.1dBu. Target level: -80dBu ~ +20dBu. Ratio:1:1~1:20, 1:1 to 1:2 step 0.1, 1:2 to 1:20 step 0.5. Attack time : 0.3~1000ms,when it is less than 1ms, step is 0.1ms, when it is greater than 1ms, step is 1ms. Release time: 50 ~ 5000ms,					
Output channel function						
Output mute	Separate mute control for each channel					
Input selection	Each output channel can be separately selected for different input channels, or any combination of input channels can be selected.					
Output gain	Adjustment range: -80dB to +12dB, step size is 0.1dB					
Output delay	Each output channel has separate delay control, the adjustment range is 0~1000ms, the fine adjustment step is 21us; the coarse adjustment step is 1ms					
Output phase	same phase(+)or reversed phase(-)					

Step 5: Select "Fixed (static IP)" to enter the wireless terminal interface (Picture 1.7.1.2.6)

Mode Selection
AP Interface Setting
STA Interface Setting
Application Setting
Device Management

STA Interface Setting

You could configure STA interface parameters here.

STA Interface Parameters	
AP's SSID	HF-A11x_AP Search...
MAC Address (Optional)	
Security Mode	OPEN
Encryption Type	NONE

Apply Cancel

WAN Connection Type: STATIC(fixed IP)

Static Mode	
IP Address	192.168.1.2
Subnet Mask	255.255.255.0
Default Gateway	192.168.1.1
DNS	

Apply Cancel

Picture 1.7.1.2.6

Step 6: Configure the corresponding parameters in the dialog box shown below. IP address (IP address ranges from 0.0.0.0 to 255.255.255.255) Enter an address on the same network segment as the router. For example, If the IP address of the router is 192.168.1.1, the IP address of the device can be any of the IP addresses from 192.168.1.0 to 192.168.1.255 except the IP address of the router, but the IP address of each device should be different (for example, set the IP address of device 1 to 192.168.1.2, set the IP address of device 1 to 192.168.1.2, set the IP address of device 1 to 192.168.1.2, set the IP address of device 1 to 192.168.1.2). Click the IP address shown in the figure below). Enter 255.255.255.0 in the Sub net Mask text box and 192.168.1.1 in the Gateway Settings text box. Then click "OK". Configure the equalizer.2 Enter 192.168.1.3 (Picture 1.7.1.2.7).

WAN Connection Type:
STATIC(fixed IP)

Static Mode	
IP Address	192.168.1.2
Subnet Mask	255.255.255.0
Default Gateway	192.168.1.1
DNS	

Picture 1.7.1.2.7

Step 7: Click [OK] and restart the UTWR1 module. After the restart is complete, the IP address modification is complete.

1.7.2 Querying and Modifying Device ids

ID query

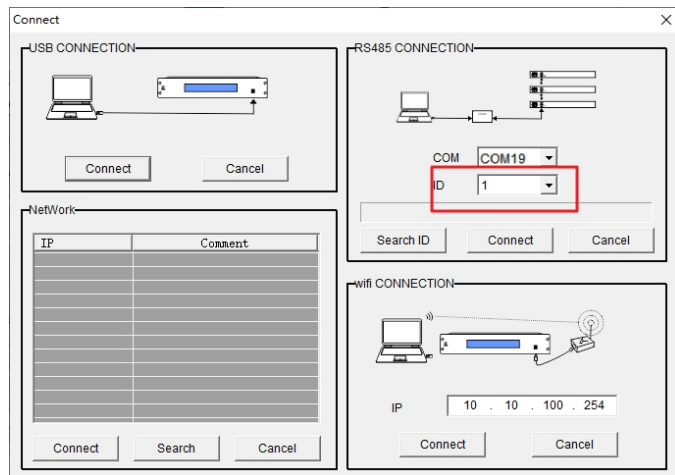
The method of querying the ID is as follows: First, connect a device to a computer in 1.2 Connecting Multiple Devices to a Computer Through UTRW1, and query the ID of the device as follows:

Click the "Not connected" button to enter the following interface (Picture 1.7.2.1)



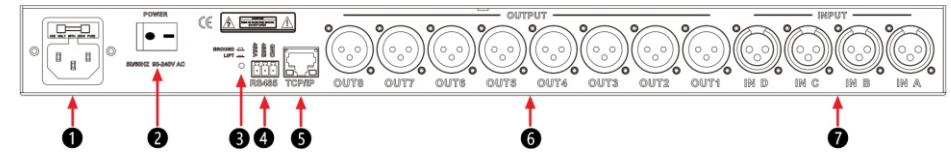
Picture 1.7.2.1

Click the [Search ID] button in the above interface (Picture 1.7.2.2).



Picture 1.7.2.2

2.4 Rear panel description



Picture 2.4.1

① AC power input socket

According to the gear indication of the power conversion switch, connect the corresponding AC input voltage

② Power switch

Connect the input voltage indicated by the power conversion switch, press the switch to operate normally

③ Ground wire selector switch

The connection/disconnection between the chassis ground and the signal ground is controlled by this switch

④ RS485 port

RS485 control connection port

⑤ TCP/IP

RJ-45 control connection port

⑥ Output channel

8 output channels, labeled as OUT1... OUT8, in order of channel 1, channel 2... channel 8

⑦ Input channel

4 input channels, labeled INA... IND, in order of channel A, channel B... channel D

(10) Return: [EXIT] (11) System: [SYSTEM] (12) Program: [LOAD/SAVE]
 When in parameter editing mode, press (1), (2), (3), (5), (6), (7), (8), (9) to enter the corresponding menu,
 In other states, buttons (1), (2), (3), (5), (6), (7), (8), and (9) are invalid.
 At any time, you can press (4) to enter the signal generator menu
 At any time, you can press (10) to perform a return or cancel operation
 At any time, you can press (11) to enter the system menu, and press (12) to enter the program menu

⑦ Output level and status indicator light

Accurate digital level meter with 5-segment LED display output and editing status

(1) CLIP (clipping) display, signal distortion. This light is on (red)

(2) Limit display, this light comes on (orange) when the limit function is activated

(3) COMP (compression) display, this light is on (yellow) when the compression function is activated

(4) 2-segment LED level display from -24dB to 0dB (green)

⑧ Mute Output

[OUT 1], [OUT 2] [OUT 8] Mute/Non Mute Switch

When silent, the red light above the key lights up; When not silent, the red light goes out

⑨ Output channel function editing

OUT 1 [EDIT], OUT 2 [EDIT] OUT 8 [EDIT]

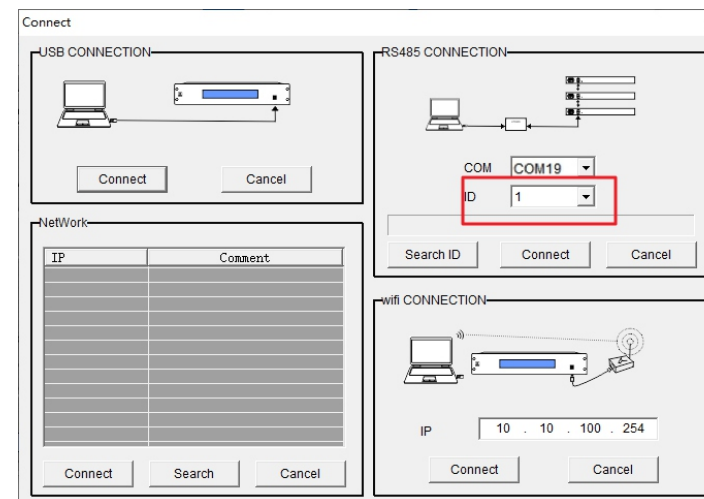
Enter the parameter editing status of this channel. For details, please refer to the "Output Control Function Settings" section

⑩ USB interface

Adjust relevant parameters through PC interface software (compatible with USB2.0 and USB3.0)

Connect the UTWR1 module via USB 3.0 cable, which can perform network connection control and Internet remote control

After the search is complete, the ID in the red box is the device (Picture 1.7.2.3).

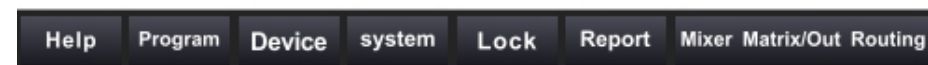


Picture 1.7.2.3

ID modification

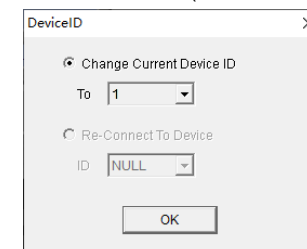
The method of changing the ID is to change the ID number of the device in the following way after the online control software is successfully connected to the device in 1.1 A Single Device is Connected to a Computer through USB Free Driver or 1.2 Multiple Devices are Connected to a Computer through UTWR1. The following uses 1.2 Multiple Devices are Connected to a Computer through UTWR1 as an example. Change the device ID of 1 to 5.

After the control software is successfully connected to the device, click [Device ID] (Picture 1.7.2.4).



Picture 1.7.2.4

Select 5 from "Change the current device ID" in the pop-up window, and then click "OK" to complete the modification of the ID number (Picture 1.7.2.5).



Picture 1.7.2.5

Part 2: device operation introduction

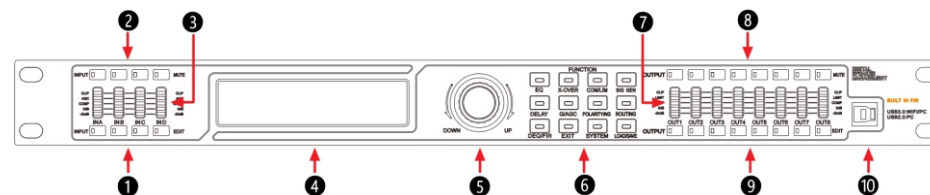
2.1 Description of Symbols

1. Symbol [] represents the buttons on the panel
2. Symbol { } represents the content on the panel display
3. Symbol  represents indicates functions
4. Symbols ①②③ represents the operation steps

2.2 Functional characteristics

- 96KHz sampling frequency, 64 bit DSP processor, 32 bit A/D and D/A conversion
- There are multiple models to choose from, including 2 inputs and 4 outputs, 2 inputs and 6 outputs, 2 inputs and 8 outputs, 3 inputs and 6 outputs, 4 inputs and 6 outputs, and 4 inputs and 8 outputs. Multiple division modes can be flexibly combined, and both high and low pass division points can reach 20Hz to 20KHz
- Each output channel has an independent FIR function, supporting up to 1024 orders of FIR parameter import and backward compatibility. The name can be edited and saved separately
- Provide USB2.0, USB3.0, RS485, and TCP/IP interfaces to connect to computers. The RS485 interface can connect up to 250 devices and control external computers at a distance of over 1500 meters
- It is very convenient, intuitive, and concise to directly use the function keys and encoder on the panel for function settings, or to connect to a computer and control it through PC control software
- A single machine can store up to 60 sets of user programs
- Password lock panel control function can be set through the SYSTEM button on the panel to prevent parameter modification
- Each input has 12 independent full parameter equalization segments, and each output has 15 independent full parameter equalization segments. The adjustable gain range can reach $\pm 20\text{dB}$, and there are also five equalization modes available: parametric, high modulation, low modulation, 1st order all pass, and 2nd order all pass
- Each input channel has an adjustable noise gate, and each input channel has two fully adjustable dynamic equalization (DEQ) segments with automatic gain control
- 2 × 24 LCD blue backlight display function settings, 5-segment LED display of precise digital level meter for input/output, mute and editing status
- Each input and output has delay, phase control, and mute settings, with a maximum delay of 1000ms. The delay units can be selected in milliseconds (ms), meters (m), and feet (ft), and the delay can be adjusted through coarse and fine adjustment modes
- The output channel can also control compression, amplitude limiting, and select input signal channels, and can copy all parameters of one channel to another channel for linkage control
- The mute of the matrix and channels can be controlled by connecting to the central control via USB or RS485 interface
- Support setting passwords for device input, output, signal distribution, and system functions to lock and achieve data confidentiality
- The device software is equipped with a built-in central control code generator, which can achieve one click switching between Chinese and English
- It can be connected to the computer through the external UTWR1 box, and can realize Internet remote control
- Equipped with a signal generator, it can self check and debug the system or project

2.3 Panel Description



Picture 2.3.1

① Input channel function editing

INA [EDIT], INB [EDIT] IND [EDIT]

Enter the parameter editing status of this channel. For details, please refer to the "Input Control Function Settings" section

② Input Mute

Press [IN A], [IN B] [IN D] Mute/Non Mute Switch

When silent, the red light above the key lights up; When not silent, the red light goes out

③ Input level and status indicator lights

Accurate digital level meter with 5-segment LED display input and editing status

- (1) CLIP (clipping) display, signal distortion. This light is on (red)
- (2) AGC (Automatic Gain) display, this light is on (orange) when the AGC function is activated
- (3) COMP (compression) display, this light is on (yellow) when the compression function is activated
- (4) 2-segment LED level display from -24dB to 0dB (green)

④ LCD display screen

Display operation interface and menu information

⑤ encoder

- (1) Clockwise rotation: parameter increase/next option
- (2) Reverse clock rotation: parameter decrease/previous option
- (3) Short press (press once to release immediately): [Confirm] key
- (4) Long press (hold for at least 2 seconds): Special confirmation

⑥ The menu selection key has the following functions

- (1) Equalization: [EQ] (2) Frequency division: [X-Over] (3) Compression/limiting: [COM/LIM]
- (4) Signal generator: [SIG GEN] (5) Delay: [DELAY] (6) Gain/automatic gain: [G/AGC]
- (7) Phase/Noise Gate: [POLARITY/NG] (8) Component Matrix/Output Routing: [ROUTING]
- (9) Dynamic balancing/FIR switch: [DEQ/FIR]