



# NDSR350A

User Manual



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## DIGITAL SIGNAL PROCESSOR

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## INTRODUCTION AND TROUBLESHOOTING

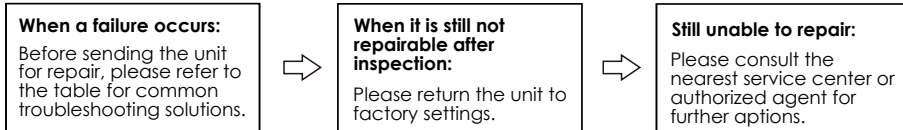
Thank you for your purchase and welcome to the world of Nakamichi! Please keep your original proof of purchase or invoice in a safe place in case of any warranty claims. Do also mail or register your warranty with the official Nakamichi service centers and/or agents to ensure that you are provided with the relevant technical support if required.

### NOTICE

1. To prevent short circuit, please keep the device away from water or damp places.
2. If water or any other liquid enters the device, cut off the power immediately, and inform the nearest Nakamichi Service Center or Agent to inspect the product.
3. Users are not recommended to disassemble the device as there are no user serviceable parts inside, please contact the nearest Nakamichi Service Center if necessary.

### TROUBLESHOOTING

Ensure all cables and prts are securely connected before turning on the power. Shown below is the basic troubleshooting procedure that you should follow.



Troubleshooting method:

No.	Malfunction	Reason and Solution
1	No Power	<ul style="list-style-type: none"> <li>• Check the power connection and make sure it's secure.</li> <li>• Check the ACC connection and make sure it's secure.</li> </ul>
2	No Sound	<ul style="list-style-type: none"> <li>• Double check if the unit is in MUTE mode.</li> <li>• Check if you have choose the correct input channel.</li> </ul>
3	Unable to connect through USB	<ul style="list-style-type: none"> <li>• Check the USB connection and make sure it's secure.</li> <li>• Check if the driver "HID-compliant device" has been properly installed in your PC.</li> </ul>

### WHAT'S IN THE BOX

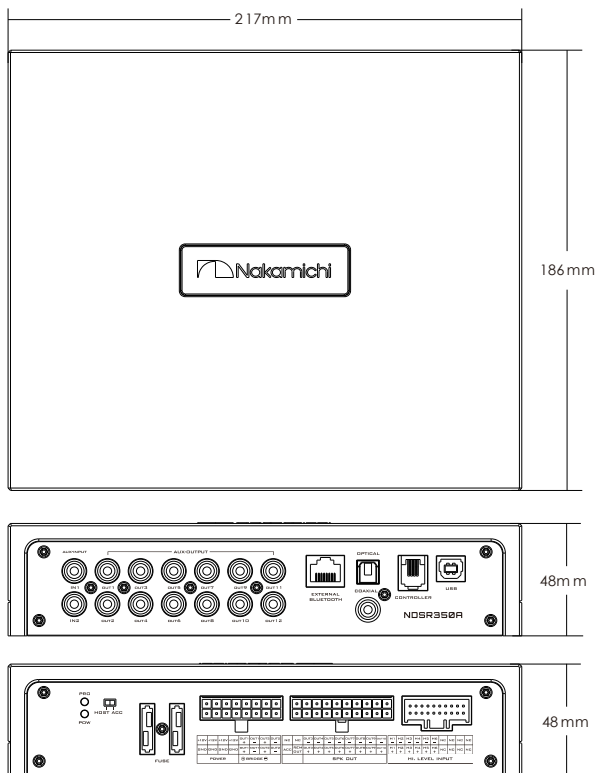
NDSR350A	1pc
User Manual	2pcs (1 Chinese, 1 English)
USB2.0 Cable(1.5m)	1pc
Mechanical round head screws (PM3*6mm)	8pc
Self-Tapping Oval Head Screws (PA4*40mm)	4pc
Mounting brackets	4pcs
Velcro	2Prs

## PRODUCT TECHNICAL DATA

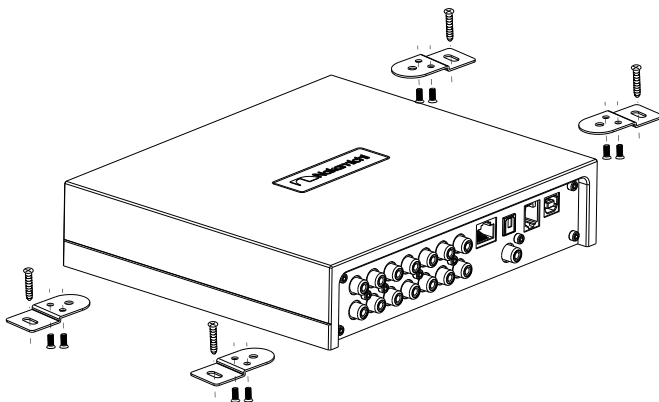
Product Data	
Dynamic Range(RCA Input)	≥100dB
S/N (RCA Input)	≥98dB
THD	≤0.05%
Frequency Response	20Hz~ 20KHz
Input Impedance	High Level: 51Ω
Low Level Output Impedance	51Ω
Signal Input Range	RCA: 7.5Vpp; High Level: 26Vpp
Signal Output Range	RCA: 7.5Vpp; Amplifier Maximum Power : 2CH×80W(Bridging 1×160W)+4CH×40W+4CH×25W
Working Temperature	-20~ 70℃
Power	DC 9V~15V
REM Input	High Level Input Signal:H1+/H1- or ACC control cable
REM Output	+12V Start up Voltage Output(0.1A)
Standby Power	≤0.1W
Net Weight	Approx. 2.24kg
Product Dimension	217(L) *186(W) *48(H)mm

Technical Sheet	
Input Type	6 Channels High Level, 2 Channels Low Level, Built-in and external digital Bluetooth, Optical /Coaxial
Output Type	12 Channels Low Level, 2CH×80W(Bridging 1×160W)+4CH×40W +4CH×25W Power
Output Gain	Gain Range: Mute,-59.9dB ~ 0.0dB
Output Signal EQ	31 Band Equalizer Engine : 1. Frequency range: 20Hz~20KHz, 1Hz Accuracuy 2.Q value (slope): 0.404~28.852 3.Gain: -12.0dB ~ +12.0dB, 0.1dB Accuracuy
Output Signal Crossover	Each output is equipped with multi-order high and low pass independent filters. 1. Filtering types: Link-Ril, Butter-W, Bessel 2. Filtering frequency division point: 20Hz~20KHz. Resolution 1Hz 3. Filter slope (slope) setting: 6dB / Oct to 48dB / Oct and OFF
Output Phase and Time Alignment	Each output channel can be adjusted for phase and delay, parameter range: Phase: in-phase or reverse-phase (0° / 180°) Delay: 0.000 to 20.000ms, 0 to 692 cm, 0 to 273 inch
Presets	6 Presets into the device

# PRODUCT DIMENSIONS

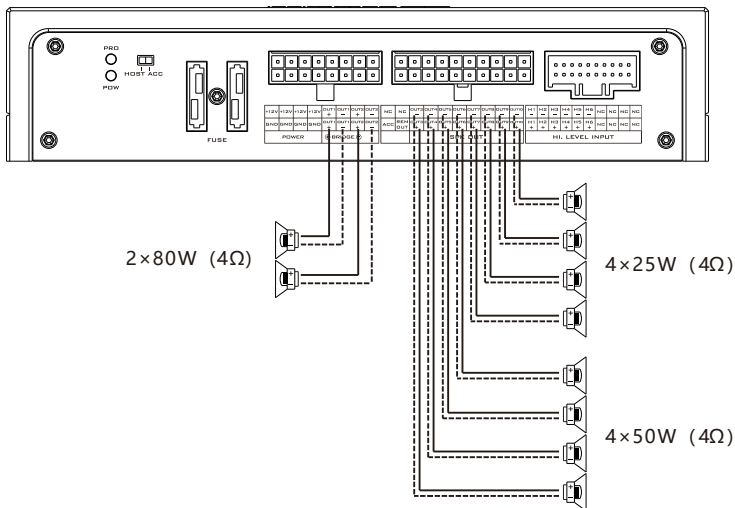


# INSTALLATION INSTRUCTIONS



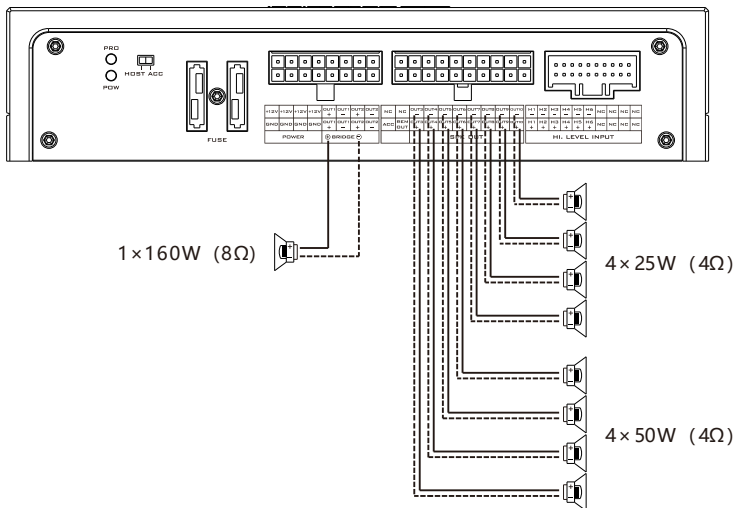
## THE SPEAKER WIRING IN NORMAL MODE

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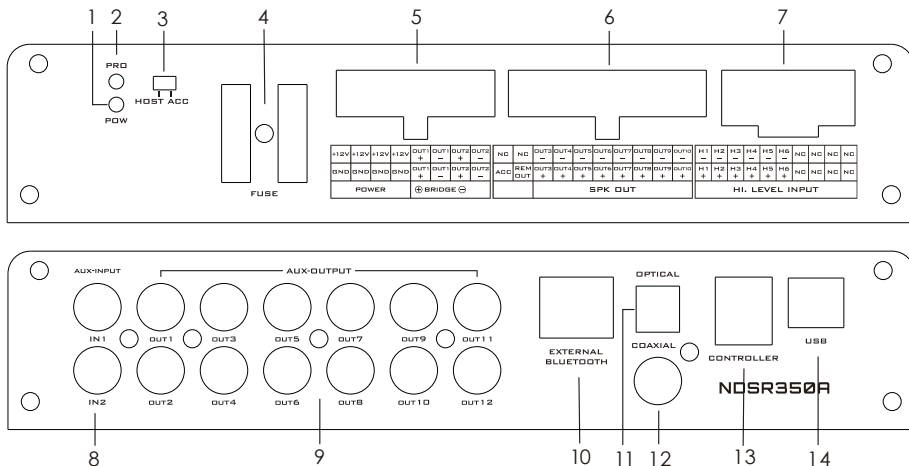
## THE SPEAKER WIRING IN BRIDGE MODE

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# INTRODUCTION

The machine interface diagram is as follows:



1. Power indicator light
2. Protection indicator light
3. Machine start mode switch

When the switch is turned to the "ACC" terminal, the machine is started by ACC, and when it is turned to the "HOST" terminal, the machine is started by the high level H1+/H1- input signal.

**4. The fuse**

Two 25A fuses.

**5. High level output and power port**

1, 2 power amplifier output, can be bridged.

+12V	+12V	+12V	+12V	OUT1	OUT1	OUT2	OUT2
				+	-	+	-
GND	GND	GND	GND	OUT1	OUT1	OUT2	OUT2
				+	-	+	-
POWER				⊕ BRIDGE ⊖			

**6. High level output port**

3~10 power amplifier output.

NC	NC	OUT3	OUT4	OUT5	OUT6	OUT7	OUT8	OUT9	OUT10
		-	-	-	-	-	-	-	-
ACC	REM OUT	OUT3	OUT4	OUT5	OUT6	OUT7	OUT8	OUT9	OUT10
		+	+	+	+	+	+	+	+
SPK OUT									

**7. High level input port**

H1	H2	H3	H4	H5	H6	NC	NC	NC	NC
-	-	-	-	-	-				
H1	H2	H3	H4	H5	H6	NC	NC	NC	NC
+	+	+	+	+	+				
HI. LEVEL INPUT									

# INTRODUCTION

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- a. "+" is positive or positive; "-" is negative or inverted (ground).
- b. Before connecting the power supply, you must confirm that the power supply meets the designed power requirements and connect in strict accordance with the equipment instructions. Otherwise, the equipment may be damaged and may cause accidents such as fire, electric shock, etc.

## **8. Low level input port**

Connect up to 2 channels low level input.

## **9. Low level output port**

Connect up to 12 channels low level output.

## **10. External digital Bluetooth input port**

Connect the external Bluetooth, the LED indicator will flash, the indicator will stop flash and will be always on once you have connected your Mobile phone to the device, then you can play music in your phone, and the device will change the high level input to Bluetooth Input.

## **11. Optical input port**

When the optical input cable of in-car CD or DVD player is connected, the sound source of the DSP is switched to digital input, and optical digital signals can be played.

## **12. Coaxial input port**

When the Coaxial input cable of in-car CD or DVD player is connected, the sound source of the DSP is switched to digital input, and coaxial digital signals can be played.

## **13. The controller port**

Data call and total volume adjustment can be performed by the line controller.

## **14. USB2.0 Port, Connect to the computer tuning software**

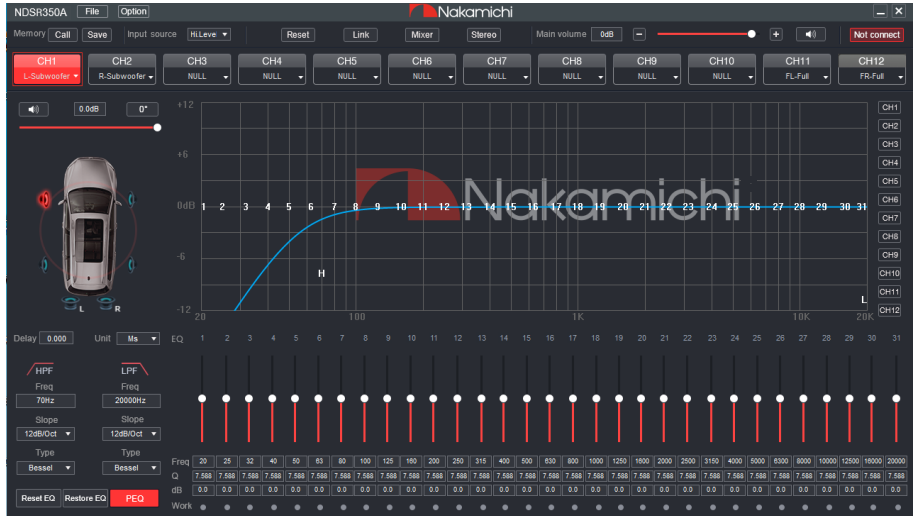
No need to download the driver installation, connected to the computer sound software installed automatically.



# SOFTWARE INTRODUCTION

## PC Software Operation Introduction

(PC can be downloaded from the official website (<http://www.nakamichicaraudio.com>, CONTACT, Downloads))  
Computer Configuration Requirements: Screen resolution higher than 1280 x 768, otherwise the software UI is incomplete, only suitable for windows operation system laptop, desktop and pads.

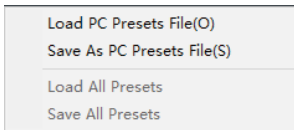


### 1. Menu editing area



Main functions: File, options operation.

- Click the "File" pop-up window, and select to load the scene on your computer, save it as a scene on your computer, load the whole machine scene or save the whole machine scene.



- Click on "Option" to select Chinese and English switching, advanced, firmware Update, restore factory settings, help and about settings.



# SOFTWARE INTRODUCTION

## 2. Function editing area

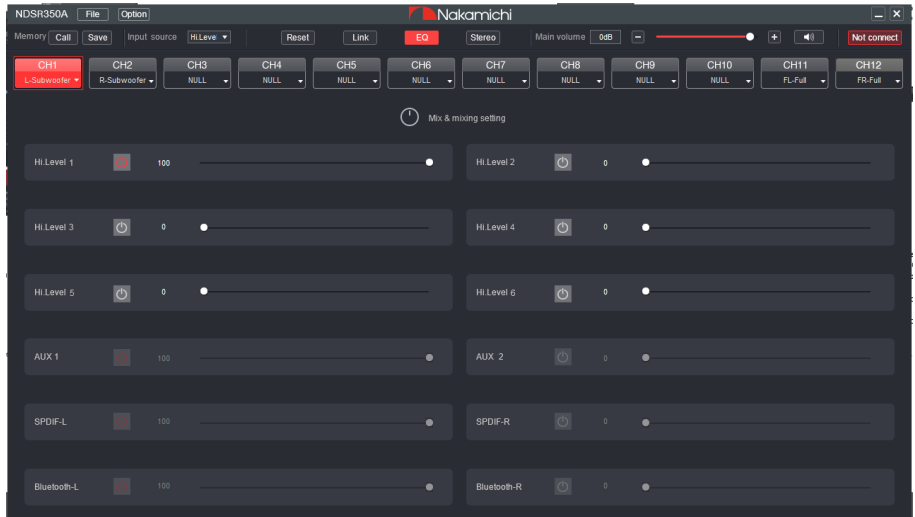


Main functions: scene, master source, mixer source, channel type, link, mixer and mode settings.

- a. Scene: 6 sets of scene data can be recalled or stored.
- b. Master source: Click the input audio source drop-down list to select the input audio source. There are S/PDIF, Phone, AUX and Hi.Level.



- c. Reset: Click Reset to clear the channel type or restore the default channel type.
- d. Link: Click the Link to set the Link synchronization mode: copy from left to right or copy from right to left.
- e. Click "Mixer" to enter the mixing interface, the interface is as shown below.



- f. Click "Stereo" to switch between stereo or bridge.

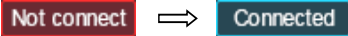
## 3. Main volume and software connection editing area



# SOFTWARE INTRODUCTION

Main functions: master volume and computer software connection settings.

- a. Main volume adjustment range: off, -59dB ~ 0dB. Click the speaker button to mute the main volume.
- b. Click the "Not Connected" button to connect the host with a PC.



## 4. Output channel type editing area



Main function: configure the type of output channel.

## 5. Channel delay, volume, phase editing area



- a. Push the fader left or right to adjust the sound size, or enter a value or roll the mouse wheel in the volume input box to adjust the sound size. Click the speaker button to switch mute.
- b. Positive phase adjustment: Click [0°] or [180°] to switch between positive phase and reverse phase.
- c. Delay: set the delay value by scrolling the mouse wheel in the delay input box, or enter the value to set the delay value.
- d. Delay Unit button: Click the drop-down list to select milliseconds, centimeters, and inches.

## 6. Channel divider editing area

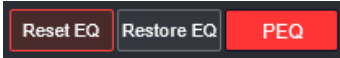


Main Function Setup: Channel High & Low Pass Filter Setup.

Adjustable: Filter Type, Frequency point and Q Value (Gradient or Slope).

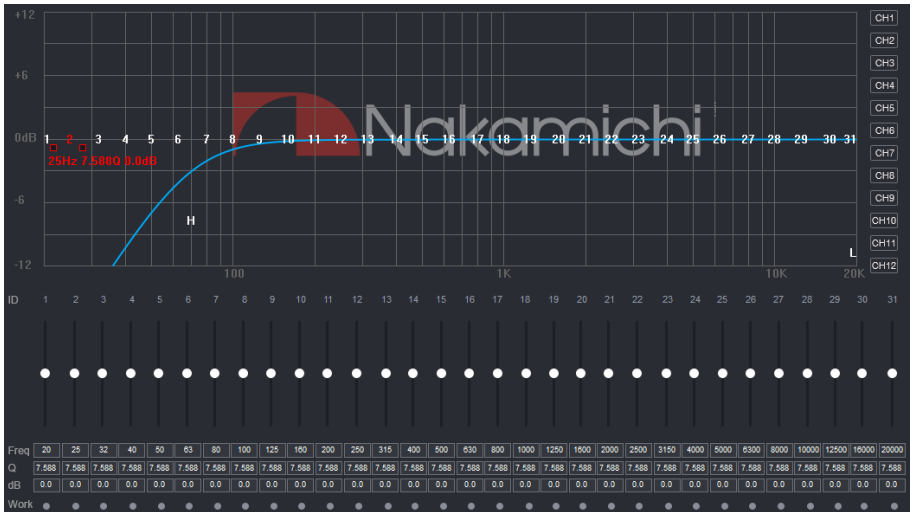
# SOFTWARE INTRODUCTION

## 7. Equalizer editing area



- a. Reset EQ: It is used to restore the parameters of the all equalizer to the original pass-through mode (the frequency of the equalizer, the Q value and the gain are restored to the initial value).
- b. Restore EQ: Switch between the currently designed equalizer state parameters and the pass-through mode (the gain of all equalization points is restored to 0 dB, the frequency and value are unchanged).
- c. Click PEQ Mode to switch GEQ Mode. The Q value and frequency cannot be adjusted in the PEQ Mode interface.

## 8. Channel EQ editing area



Main function configuration: Equilibrium design of current output channel, 31-band equalization adjustable: frequency, Q value (response bandwidth) and gain (increasing or decreasing the frequency response amplitude near the frequency point).

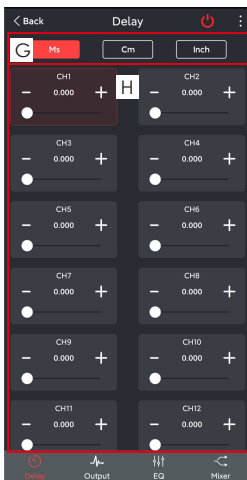
# SOFTWARE INTRODUCTION(SMARTPHONE)

## Smart-phone Software Operation Instruction

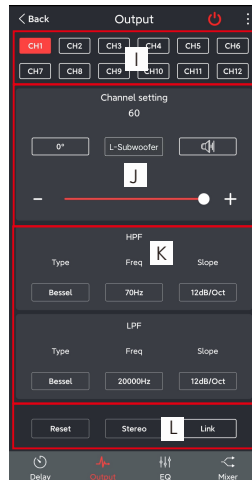
(APP can be downloaded from the official website(<http://www.nakamichicarudio.com>, CONTACT, Downloads))



Home



Delay



Output

### 1. Home interface

It can restore factory settings, share sound effects, save sound effects, turn on local sound effects, check the model and version number of the unit, and exit the software operation; volume, master source, storage and recall of 6 sets of preset scenes.

#### A.Connection Status:

Red means not connected, green means connected.

#### B.Menu:

You can restore factory settings, share sound effects, save sound effects, turn on local sound effects, view the model and version number of the machine, and exit the software operation.

#### C.Master source:

Master source: S/PDIF,Phone,AUX and Hi.Level to choose from.

#### D.Volume adjustment:

Press and hold the volume scale clockwise or counterclockwise to adjust the volume. The main volume range is 0 ~ 66, The subwoofer range is 0 ~ 60, The medium, high

and low volume range is -12dB ~ + 12dB.

#### E. Scene preset:

There are 1~6 presets to choose from.

#### F. Advanced settings:

Click [Advanced Settings] to enter the settings of the delay interface, channel interface, EQ interface and mixing.

### 2. Delay interface

Sound field positioning output delay adjustment.

#### G.Unit switching:

Switch between milliseconds, centimeters, and inches.

#### H.Delay setting:

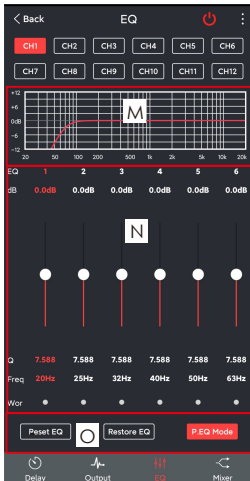
Click setting window of the corresponding channel. Slide the dots left and right to set the delay value. Delay settings can be made for CH1~CH12 speakers.

Delay range: millisecond range: 0.000 ~ 20.000; cm range: 0 ~ 692; inch range:0~273.

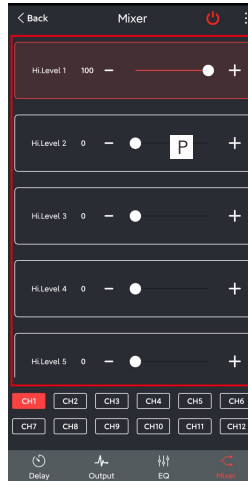
### 3. Channel interface

Channel high-low-pass crossover setting with high-low-pass independent filtering.

# SOFTWARE INTRODUCTION(SMARTPHONE)



EQ



Mixer

Adjustable: Filter type, frequency and Q value (slope or slope).

I. Output channel selection:

Twelve channels are available.

J. Output channel volume setting:

You can adjust the volume by sliding left and right. The volume range is 0~60. Click the speaker button to mute. Configurable output channel type, forward and reverse switching.

K. Channel divider selection:

Channel type: Choose from Link-Rill, Butter-W and Bessel.

Frequency Range: 20Hz~20KHz.

Slope selection:

6dB/Oct, 12dB/Oct, 18dB/Oct, 24dB/Oct, 30dB/Oct, 36dB/Oct, 42dB/Oct, 48dB/Oct and OFF can be selected.

L. Joint tuning and channel type settings:

Click [Reset] to reset the output channel type so that the output type can be customized.

Click [Stereo] to switch between stereo mode and bridge mode.

Click [Link] , the joint debugging window

will pop up, and select the joint debugging method.

## 4. EQ interface

Corresponding to the adjustment of the output channel EQ curve (gain, Q value and frequency); reset equalization, pass-through equalization or parametric equalization operation settings.

M. EQ display:

Edit the display area.

N. Output EQ gain, Q value and frequency settings:

Output EQ gain setting: A total of 31 EQ, left and right sliding screen can select EQ, you can drag the slider up and down. Select the first line value, and drag the slider bar left and right in the pop-up dialog box to adjust the adjustment range: -12dB~+12dB. Q value: Click the second line value, and drag the slider bar left and right in the pop-up dialog box to adjust, the adjustment range is 0.404~28.852. Frequency setting: Click the third line value, and drag the slider bar left and right in the pop-up dialog box to adjust it. The adjustment range is 20Hz~20KHz.

## SOFTWARE INTRODUCTION(SMARTPHONE)

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O. Reset equalization, restore equalization, pass-through equalization settings:  
Click [Reset EQ] to restore the parameters of the 31-band equalizer to the original pass-through mode (the equalizer frequency, Q value and gain are restored to their initial values). When there is channel adjustment, display [straight-through equalization], click [straight-through equalization], click [OK], all values (frequency, Q value and gain) will return to the initial value. At this time, the [straight-through equalization] button will become [recovery

equalization]. Press the button and click [Resume Equilibrium], all values (frequency, Q value and gain) will be restored to the value before the pass-through.  
Click [P.EQ Mode], click [OK] to switch to Graphic Equalization, click [G.EQ Mode], click [OK] to switch to Parametric Equalization.

### 5. Mixing interface

6 high level, 2 AUX, digital left and digital right, Bluetooth left and blue right mixing selection and adjustment can be performed. The adjusting range is 0 ~100.



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