

Owner's Manuel

XQ-4860D5P Digital Signal Processor Amplifier



Precautions

Warning: To prevent unit be short circuit, please do not put it in the wet or damping places.



If unit catch water and any liquid that please turn off power immediately and do not open cover by yourself. Please contact with professional engineer for checking to avoid accident happen.

Packing List

For every package including below items, Please noticed retailer and Factory if shortage:

XQ-4860DSP unit	1PC
User Manual	1PC
USB computer tuning cable	1PCS
Head unit Cable	1PCS

Mobile Applie	ation Inst	ructions	.1-4
1. Features			
1.1	Audio sp	pecification、main audio signal process diagram	5
1.2	Input an	d output side panel	6
1.3	Software	Introduction	6
1.4	Function	Introduction	7
2. Installation			
2.1	System o	classic connecting reference	8
2.2	Unit con	nection	9
2.3	Low leve	l RCA input/output	9
2.4	USB2.0 F	Port	10
3. Software O	peration		
3.1	Software	Installation	11
3.2	Run and	turn off	11
3.3	Software	interface	12
	3.3.1	Input signal select	12
	3.3.2	Output switch	14
	3.3.3	Output voice, delay, type, mute and phase setting	14
	3.3.4	Output signal equalizer and crossover operation	16
	3.3.5	Output signal function operation	17
3.4	Setting in	troduce	19
	3.4.1	Original setting change	19
	3.4.2	Load and Save to store scene files on your computer	21
	3.4.3	Load and save the whole store a scene	22
3.5	Operation	ns Introduction	23
	3.5.1	Firmware Update Setting	23
	3.5.2	Source Volume Setting	23
	3.5.3	Information about the inquiry	24
	3.5.4	Boot source selection	
	3.5.5	Lock setting	24
4. Common ti	ouble sho	outina	25

Mobile Application Instructions

Android mobile scan Qrcode on gift box to download the application to install XQ-4860DSP app. Turn on the unit and plug in external bluetooth, then the external bluetooth will be power on and auto enter into a paring mode with blue light flash alternately. Open the bluetooth of your android mobile, searching DSP to pairing it to finish the connected.





1.User Operation Instruction

Main Interface



Main volume adjustment

● The main volume can be adjusted by pressing the main volume scale clockwise or counterclockwise by hand.



Input Source

1. Click Hi.Level button to switch input source.



E.g : Head unit input source is high level, then the Input source on app choice Hi.Level $\,^{\circ}$

Preset

There are 1~6 presets to choose from.



Connection Status

[Disconnected] means not connected;
 [connected] means connected.

When the mobile phone is connected to Bluetooth, open the mobile phone software and it will be connected automatically. The Bluetooth symbol turns green. The software can control the host playback and data adjustment.



- 2, click the mobile phone to Exit.
- 3 · Click to enter the main interface. The main menu is at the bottom of the interface.



4 · Slide [to adjust the main / subwoofer volume. The main volume is 0-60

Click [EQ] to enter EQ interface



Setting EQ Output channel

1、EQ curve(gain, Q value and frequency)



2. 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. PEQ mode (the equalizer frequency,Q value and gain are restored to their initial values).



3、Click each channel Freq in the pop-up dialog box to adjust the adjustment range: -20dB~+20dB



Equalization settings

1. 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).



Channel settings

1.Choose from 8 channels to choose from2.Output channel volume setting, Click the speaker button to mute.





2. Click phase for every output channel:

In Phase or Out Phase (0 °/180 °)

Under each channel label, there are phase buttons to select. Click the "button to enter the phase setting diagram, where you can set all pass filtering ,Q value and Frequency settings, as shown in Figure



Crossover settings

Default Value : [MS], can switch to [CM] or [INCH]



- 1. Channel high-low-pass crossover setting with high-low-pass independent filtering.
- 2. Frequency Range: 20Hz~20KHz. Slope selection: 6 dB/Oct 、12dB/Oct 、24dB/Oct 、30dB/Oct 、36dB/Oct 、42dB/Oct 、48dB/Oct 、OFF.

Output Signal Function

Click [Link] to synchronize the data.



Delay setting

Click [Channel] to enter the delay interface. Then click [delay] to enter the delay setting, Slide the corresponding direction of the dot to the left and right to set the delay. for the CH1 to CH8 speakers.



Output link delay setting

In the link delay of channels 1-8 channel, the corresponding channel sequence group can be selected for joint debugging from left to right or from right to left.



Player settings

Click [Player] to enter system interface, It can Perform to select lossless music playback/ pause/previous/next song



Mixer settings

Click [Output] to enter Mixer interface, It can USB-L, USB-R, digital left and digital right,Bluetooth left and Bluetooth right mix selection and adjustment.



Main menu settings

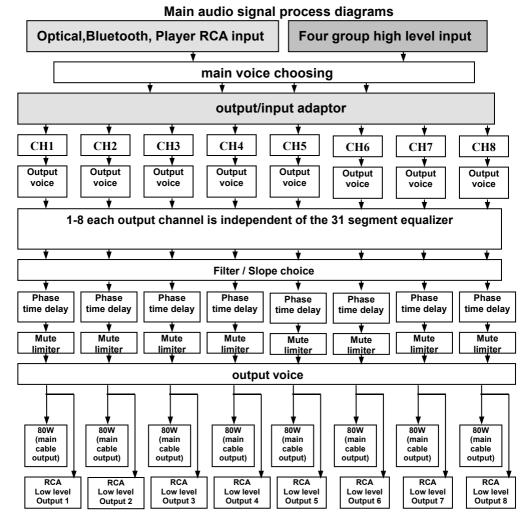
Click Enter the menu at the upper left corner, It can Perform for Encryption/input Source volume /boost source/Noise gate/Reset to factory default /about /exit etc setting.



1. Feature User Manual

1.1 Audio specification, main audio signal process diagram

This equipment adopts the audio extraction method with high sampling rate of 48KHz. The core processor is the digital signal processor (DSP) with high resolution 64 bit double precision floating point and 170 section 31 parametric equalizer or graphic equalizer, delay and frequency device (low shear and high cut filter, the types of specialized division include: Ning g / Bessel / Butterworth, CH1-CH8 nine slope 6dB and 12dB /18dB/ 24dB/30dB /36dB/ 42dB/ 48dB/off optional) etc..



1. Feature User Manual

1.2 Input and output side panel

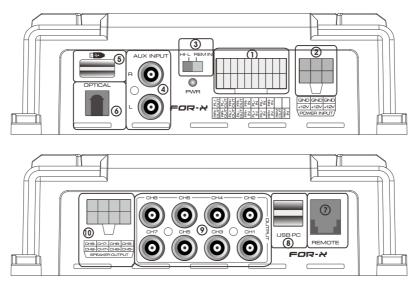


Figure 1.2.1

- 1.) Head unit connecting port
- 3.) HI-L/REM IN convertor
- 5.) USB Player port
- 7.) Remote Control
- 9.) Low level RCA output

- 2.) Power input
- 4.) Low level RCA input
- 6.) Optical connection
- 8.) USB2.0 port
- 10.) Speaker output

1.3 Software Introduction

XQ-4860DSP PC software control: (please check 3. Software Operation detail)

- 1) Autometically detect whatever the hardware is connecting with USB cable, if ready and will connect with head unit autometically.
- 2) Display resolution over than 1280*760, or else cannot show fully.
- 3) Only for windows system's computers.

1. Feature User Manual

1.4 Function Introduction

Specification

Active Range	≥110dB	
S/N Ratio	≥100dB	
T.H.D.	≤0.05%	
Freq. Response	20Hz ~ 20KHz	
Input Impedance	Low level input:20K Ω , High level input:240 Ω	
Low level output impedance	100Ω	
Power Output (4Ω)	RMS 60W X8 , Power Output (2Ω): 80W X 8	
Signal input/output range	RCA Input: 6Vpp; High level: 26Vpp; RCA Output: 9Vpp; Amplifier: 26Vpp	
Temperature	-20 ~ 70℃	
Supply Voltage	DC 9V ~ 16V	
Sampling rate	48KHz/24Bit	
Turn-on REM output	+12 V starting voltage output(0.2A)	
Power consumption	≤0.1W	

Function

Input signal type	Choice: 4ch high level, 2ch RCA, Bluetooth, Optical, Player,	
RCA output location	Freely definable output sound position and speaker type	
Output signal gain	Gain range: Mute, -60dB to 0.0dB	
Output signal equalizer	 1-8 Each output channel 31 band equalizer engine: 1. Equalizer type:1st equalizer for Q and low pass option. 2nd equalizer for Q and high pass option others for Q balance 2. Frequency range: 20Hz ~ 20KHz, resolution 1Hz. 3. Q (slope or gradient): 0.429 ~ 16.052 4. Gain: -20.0dB ~ +20.0dB, resolution 0.1dB 	
Output signal crossover	Each output with 2 rank's high/low pass indepandent filter1 1. Professional filter type: Butterworth, Linkwitz-Riley, Bessel 2. Filter crossover: 20Hz - 20KHz , Resolution 1Hz 3. Filter slope setting: 6/12/18/24/30/36/42/48dB/Off/Oct。	
Output phase and time delay	Each output channel can be adjusted for phase and time delay, parameter range Phase: 0 °/180 ° Time delay: 0.000-20.0ms, 0.00-692cm, 0.00-273inch	
Scene operations	Unit can keep 6-style of music scenes by preset.	

2.1 System classic connecting reference

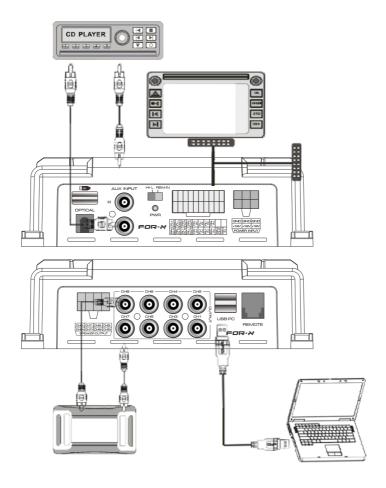


Figure 2.1

this connecting method is for two units input, please refer below:

- 1. Please use Plug & Play cable to connect original car unit and XQ-4860DSP for upgrade audio system effects. Please use OUT7 and OUT8 RCA output when Install bass amplifier or subwoofer
- 2. with the player, using RCA low level input connection, mobile phone use standard AUX special line.

2.2 Unit connection

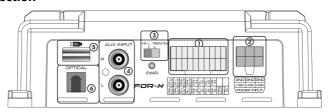


Figure 2.2

indication "1", "2" is the plug connecting position and assort with connecting cable which is matching unit.(figure 2.2) Connecting wire specifically defined in the following table:



indication "10", Speaker output for Connecting wire specifically defined in the following table:

Direction:

- 1. only for the original Plug & Play cables, or user using others directly.
- 2. REM input, when the toggle switch to ACC, only ACC input; When the toggle switch is switched to HOST, the two high level input lines of FL+/FL- are defined. When there is original car or other high level input, the machine will detect the audio signal to start the machine.

Note: when do not use high level input (only RCA low level input), the toggle switch dial in DC, defined in FL+/FR+/RR+ arbitrary a all can access REM or ACC input, can be normal to start the machine.

2.3 Low level RCA input/output indication

- "4" "9" position where is "low level RCA input/output" (figure1.2.1)
- 1. Low level RCA inputs, usually followed by an external player RCA output as the auxiliary input, maximum input level is10VPP.
- 2. the low level RCA output, CH1 to CH8 signal with the original car interface is the same, but there is without power amplifier, The default output types for OUT5 and OUT6 are NULL, while the default output type of CH7 and CH8 is ultra-low left and ultra-low right, usually external bass amplifier, as bass strengthened. Of course, users can configure their own initiative RCA low level output to complete more high-end divided by two or three-way system.

2.4 USB2.0 Port

As shown in figure 1.2.1, the "8" indicator bit is the "USB2.0" position.

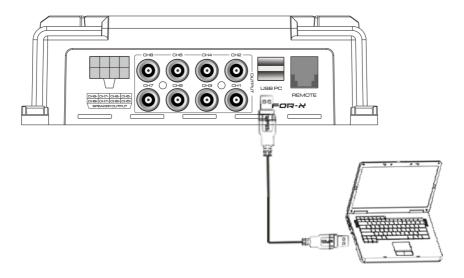


Figure 2.3

Use Random accessories USB cable into this hole on a computer connected to the PC, open tuning software to debug the sound system.

3.1 Software Installation

PC tuning software is no need to install drive program, plug and play.

Operating environment: Suitable for Windows XP / Vista / WIN7 / WIN8 / WIN10 operating system.

The installation procedure describes:

After you install the software and downloading, double-click the installation file, step down can be achieved by tuning the software is installed.

3.2 Turn on and turn off

Double-click the XQ-4860DSP icon to open the software, and the main interface before online is shown in figure 3.2.1 :(the upper right corner refers to the unconnected state)



Figure 3.2.1

XQ-4860DSP provides only wired USB PC software connection. Wired USB connection:

Ensure that XQ-4860DSP power state, with a USB cable to connect to a computer through the USB interface, the computer will find the new device and automatically install the update equipment, after a few seconds the installation is complete. Mixer software will automatically line up with the hardware. Right corner refers to "connected" state.

3.3 Software interface



Figure 3.2.2

Software interface XQ-4860DSP unit divided into the following functional:

- 1. as shown in figure 3.2.2, "1", input signal selection: high level,Bluetooth, Optical,RCA,Player.
 - 2. as shown in figure 3.2.2 "2", shows the main menu and connection status.
 - 3. as shown in figure 3.2.2 "3", the high-pass and low-pass Settings of the divider.
 - 4. as shown in figure 3.2.2, "4", area is output channel EQ setting.
 - 5. as shown in figure 3.2.2, "5", shows the setting of delay space.
- 6. as shown in figure 3.2.2, "6", output channel configuration and common parameter adjustment area.
 - 7. as shown in figure 3.2.2, "7", shows the setting of Mixer space.

3.3.1 Input signal select

In the online mode, in Figure 3.2.2 "1", click the appropriate input source, you can switch the audio input signal.

8. Optional: high level, RCA, Bluetooth, Optical, Player. The default audio source can be selected in the option of "2" zone. The default power source is high level. Users can choose AUX and player as the default power source.

The volume can be directly pushed left and right, or input volume value, scroll the mouse wheel, etc. Adjustable range: 0-60

3.3.2 Output channel switch and operations

"6" area, click on the corresponding channel number in Figure 3.2.2 (CH1, CH2 CH8), you can switch to the corresponding channel to adjust relevant parameters when changing the channel editing, where there are only 3.2. 2 "3" zone (crossover and equalization parameters) will vary depending on the channel and change the parameter values.

3.3.3 Output volume, delay, type, mute and phase setting

In Figure 3.3.1, there are six output channels commonly used parameters are displayed, the user can quickly adjust the parameters directly here. Of course, users can also customize the horn type of each output channel.

Specifically adjusted as follows:



Figure 3.3.1

- 1. the output volume control, volume control for each channel independently and the master volume, pushing the volume fader below each channel label can be in OFF (off), adjust between -60dB to 6dB; while on the right also has a total volume of all output is adjustable, adjustment range is OFF (off), between -39dB to 6dB.
- 2. mute and phase adjustment, also under the label of each channel are phase and mute both buttons select, and click on the button you can be between "positive phase" and "inverted" Switch, click the mute button You can switch between "open tone" and "off the sound." Figure 3.3.2 as follows:

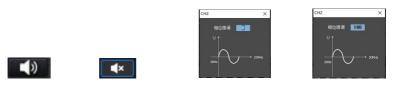


Figure 3.3.2

- 3. Select delay units, which are in milliseconds, centimetres, and inches. The range of milliseconds: 0.000~20; Range of mm: 0~692; Range of inches: 0 to 273;
- **4.** XQ-4860DSP processor output signal path can be any type of configuration freedom to any sound field point and the speaker type. The system defaults to

4.1 full-range passive mode. Figure 3.3.3 as follows;



Figure 3.3.3

CH1: front left output CH2: front right output

CH3: After a left-field output CH4: right after the sound field output

CH7: left subwoofer output CH8: Right subwoofer output

Users can be customize the speaker type for each output channel, the specific methods of operation:

The first step: Click on the right side of the "Reset Output Configuration" button in the dialog box, select the "Clear" button, return to the main interface, all channels are reset to "empty" (no connection to any speaker, there is no output of), as shown below 3.3.4:



Figure 3.3.4

The second step, the channel number beneath each, click on the type drop-down menu box, select the option in the pop-up users locate the type of speaker. Figure 3.3.5 as follows:



Figure 3.3.5

The system will be based on the user has selected the type of output signal path, the shielding portion of the signal path type option (as a shadow, the user is not

optional). Specific options are:

Front » left, right » high/ mid/ low/ mid-high/ mid-low/ and full frequency

Rear » left, right » high/ low/ and full frequency

Center » high-frequency, low frequency and full frequency

Super low 》 left super low, right super-low and super-low

The third step, after the user has configured all of the output signal path, click on the right side of Figure 3.3.4 "Lock Output Configuration" to lock the configured output channel speaker sound field position. So that users and then in the bottom of each channel label, click on the type of drop-down menu box, type options will not pop up.

5. the output delay adjustment, is set in the delay space area to the left of the illustrated adjustment, as follows (Figure 3.3.6), click on the value of the input box next to the corresponding speaker can be entered after the delay value corresponding units.



Figure 3.3.6

6. Output link delay setting

In the link delay of 1-8 channel , one channel sequence group can be selected to adjustment with any other seven channel groups with the same sequence number. as follows (Figure 3.3.7)

7. Low Shelf/High Shelf adjustment

Click on the left or right side of the "Low Shelf/High Shelf" button at the bottom to adjust the frequency.

3.3.4 Output signal equalizer and crossover operation

Output channel equalizer and crossover editor mainly in the following areas of regulation, as shown in 3.3.7:



Figure 3.3.7

Gain, drag around to adjust the equalizer frequency points; when the mouse is moved to the left and right of the small red box, press and drag left and right to adjust the equalizer Q. All parameters are displayed simultaneously adjust the current real-time equalizer is also updated value EQ parameters editing area.

 the output channel EQ editing method, all 31 equalizer will work for the next parametric equalizer. When the parametric equalizer curve, if available in the box below the corresponding input parameter values can be (frequency, Q value, and gain) adjusted in real time will also be revealed at the top (as shown in Figure 3.3.8 parametric equalizer case).

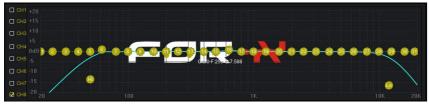


Figure 3.3.8

Straight balanced: the button shown in Figure 3.3.4, the current channel as long as there is an equalizer in the open state, this button will appear highlighted in green state, indicating that you can click this button to make all the equalizer

current channel change to not start moving (directly). Click the button that will return to "restore the balance." Then click on "restore the balance" button will allow all current equalizer channel back to the last activated state.

Note: This operation will change the equalizer gain.

Reset balanced: the button shown in Figure 3.3.4, click this button to make all current channel equalizer parameters return to the initial state: uniform distribution of frequency, Q value is 1.2, a gain of 0dB.

2. the output channel divider editing method



Figure 3.3.9

In the column of "frequency divider" in figure 3.3.9, the parameter value of the device frequency divider.

Type setting: drop-down menu to select the way, there are (Linkwitz-Riley), (Bessel) and (Butterworth) and other three options.

Frequency setting: via direct input value, scroll the mouse wheel up and down keys on the keyboard and other ways to adjust low-cut or high-cut frequency. Adjustment range: 20Hz ~ 20KHz.

Slope(slope)settings:6dB/Oct,12dB/Oct,18dB/Oct,24dB/Oct,30dB/Oct,36dB/Oct,42dB/Oct, 48dB/Off/Oct and other 9 options.

Note: In 6dB / Oct, there is no type of algorithm, but a common type (displayed as NULL).

3.3.5 Output signal equalizer and crossover operation





figure 3.3.10

Reset EQ button:

It is used to restore the parameters of the 31-band equalizer to the original pass-through mode (the frequency of the equalizer, the Q value and the gain are restored to the initial value).

Restore All Equalizations button:

pass-through mode (the gain of all equalization points is restored to 0 dB, the frequency and value are unchanged).

Link output Configure button:

Click the "Link" button to select the synchronization method; Clicking this button again will deactivate the left and right channel tuning function. (Note: When the left or right channels are tuned together, the software automatically locks the output channel, and the output equalizer, frequency divider, and output volume data can be tuned together. Mute, phase, space, and delay will not be tuned together.) Under locked tuning, there is a tuning flag displayed in the relevant tuning item. (Figure 3.3.11):



figure 3.3.11

Mixer settings: click "mixer" in the "7" area in Figure 3.2.2, then you can switch to (Figure 3.3.14) the relevant parameter settings for the corresponding adjustment.



figure 3.3.14

3.4 Setting introduce



Figure 3.4.1

As shown in Figure 3.4.1 XQ-4860DSP software of the scene in three major types of actions: the machine stored scene data, computer data stored scene and the whole scene data manipulation.

1. the machine data stored scene operation: refers to the scene data is now running the machine and set aside six in one scene between the data stored load, save, and delete operations

(Note: the choice of input signal sources, the output signal and the output channel type configuration for the machine stored total volume not save scene data load operation)

2. the computer stored scene data operation: the machine is now running in the scene data is saved as a computer file, or to load a previously saved scene computer files to the machine running.

(Note: the choice of input signal sources, the output signal and the output channel type configuration for the computer stored a total volume not save scene data load operation).

3. the whole scene data: is to copy all the data in the machine to machine, or save all of the data on existing machines as computer files, of course, including all of the input and output configuration data and advanced options data. This is mainly used for data storage and copy machine.

3.4.1 Original setting change

1.save for the machine preset

This function is to save existing work scene preset scene for the machine data (total of 6).

Step1: Click on the main interface to the top menu " File " button will pop up all the scenes action item (see Figure 3.4.1).

Step2: Click "Save " item will pop up after the Save As dialog window machine preset (Figure 3.4.2).

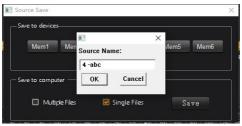


Figure 3.4.2

Step 3: Figure 3.4.2 dialog box, does not show the name of the data indicates that this scene is the factory default data, select the user preset number you want to save the machine location (such as Source 4), and then point below the "save "button, you pop up as shown in Figure 3.4.2," enter the scene name "box.

If you select the number of the existing scene name, it will overwrite the original data!!!

2.loading machine preset scenarios

This feature is to preset scene previously saved machine data (saved as a machine preset) out of tune as the machine is currently running scene.

step1: Click on the main interface to the top menu " File " button will pop up all the scenes action item (see Figure 3.4.1).

Step2: Click "import " item will pop up after loading machine preset scene window dialog box (Figure 3.4.3).



Figure 3.4.3

Step3: as dialog box of figure 3.4.3, select the machine where the user wants to load a preset number (as selected on the 3rd), and then point below the "Load" button on

the pop-up shown 3.4.4 loading data transfer progress shown in the wait window.



Figure 3.4.4

Step 4: After data transfer is completed, the machine load preset scene is complete, but you can see the upper left corner of the software will appear as the currently running preset scene the name ,but once in the console interface parameters changed, it will become the" Custom "in the name, because this time the machine is running and the data has been loaded set of data that is different).

3.4.2 Load and Save to store scene files on your computer

1.save as a scene file on the computer

This function is to save the current machine working scene data to a computer in order to prepare the late call.

step 1: Click on the main interface to the top menu "File" button will pop up all the scenes action item (see Figure 3.4.1).

Step 2: Click "Save as PC Presets File " will bring up the file after item Save As dialog window (Figure 3.4.5).

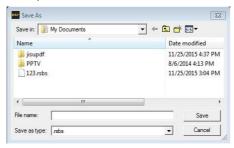


Figure 3.4.5

step 3: Enter the file name in the pop-up window you want, save point on it.

2.loading scene files on your computer

This function is previously stored in the scene file on the computer the machine work load for the current scene

step1: Click on the main interface to the top menu "File" button will pop up

all the scenes action item (see Figure 3.4.1)

Step2: Click "Import " after entry window will pop open file dialog box (Figure 3.4.6).

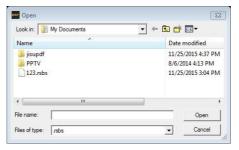


Figure 3.4.6

step 3: open the pop-up window, select the file name of the user you want to call, point to open it.

3.4.3 Load and save the whole store a scene

1, save the whole store the scene

This function is to save all the data on the machine is now on-line for a computer file data (data file of the whole machine, including the current job scenario, six groups of all machine data preset scene, output channel configuration data and advanced data and other options), to when copying machine call late the whole device. This action does not change any data now on-line machine Specific methods of operation and the "Save the scene file on the computer is" basically the same, please refer to the operation on their own.

2. load the whole scene

This function is to load previously saved on the computer the whole machine to machine data files (data file of the whole machine, including the current job scenario, six groups of preset machine all the scenes, the output channel configuration data scenario, six groups of preset machine all the scenes, the output channel configuration data and advanced data and other options data). That is, the previous overall good debugging machine data copied to now coupled machines.

We recommend similar models when making audio system, for the whole replication functions.

The specific operation method is basically the same as "loading the scene file on the computer", please refer to the operation by yourself.

3.5 Options Introduction

After click on the main interface to the top menu "Setup" button in Figure 3.5. it will pop up "Setup" of each menu item, You can choose: Firmware update /advanced/Boot default source /Source Volume/customaudio source/ Chinese/About. And you can choose language: Chinese /English.



Figure 3.5

3.5.1 Firmware update Setting

In the options menu, click the "Firmware update" option with the mouse, and a message dialog box will pop up, in which you can set the password for encryption. shown in Figure 3.5.1.

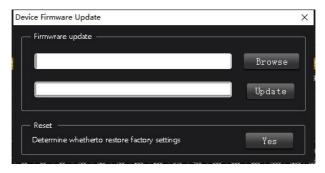


Figure 3.5.1

3.5.2 Source Volume Setting

In the options menu, click the "Source Volume" option with the mouse, and a message dialog box will pop up, in which you can set the volume for

Hi.Level/RCA/Bluetooth/Optical/player, shown in Figure 3.5.2

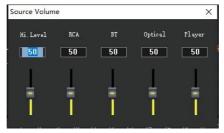


Figure 3.5.2

3.5.3 Information about the inquiry

In the Options menu, use the mouse to click on the "About" option the system will pop up a message Query dialog box, in which you can query to: SEQ ID letter version information of the device, the software version information and device information.

3.5.4 Boot source selection

In the options menu, click the "Boot source" option with the mouse, will can select the sound source you need. shown in Figure 3.5.4.



Figure 3.5.4

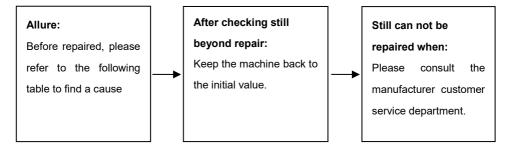
3.5.5 Lock Setting

In the options menu, click the "Lock" option with the mouse, and a message dialog box will pop up, in which you can set the password for encryption. shown in Figure 3.5.5.



Figure 3.5.5

Before applying power, carefully check the cable is normal, we must ensure that all interfaces as a normal connection. Common Fault diagnosis and treatment



Troubleshooting methods:

No.	Symptom	Reason and solutions
1	No electricity	 pls check if power linking correct? pls check if REM IN if linking correct?
2	No voice	 pls check if turn on mute style pls check if input channel is correct?
3	cannot link USB	 pls check if USB cable is setting correct pls cehck if find name as "HID-compiling device" in the computer

