



# PXE-R500

Built-in 6-sound track power-audio processor



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## Warning

**The symbol indicates important notes. If ignored, it may result in severe personal injury or death.**

### **In case of problems, please stop using the device immediately.**

Otherwise, it may result in personal injury or damaged product. Please return the product to the authorized Alpine dealer or nearby Alpine service center to repair.

### **The product is only suitable for the 12V negative-grounded vehicles.**

Otherwise, it may lead to an accident like fire, etc.

### **Please call the professionals to wire and install.**

It needs professional expertise and experiences to wire and install the product. For safety, please contact the dealer from whom you bought the product to install it.

### **Please do not disassemble or refit.**

Otherwise, it may result in an accident, fire or electric shock.

### **Small items like bolts or screws should be kept out of the reach of child.**

If ingested, it may result in severe damage. Once ingested, please seek medical attention immediately.

### **Please do not use any function that may distract you during driving.**

Any function that may influence your attention should be used only when the vehicle is stopped completely. To use these functions, please first stop your vehicle in a safe area. Otherwise, it may result in an accident.

### **During driving, you must maintain the volume at a level such that the noise outside can still be heard.**

It is very dangerous not to clearly hear an emergency vehicle alarm and road warning signal (such as railway crossing) and may result in an accident. Moreover, a too large volume may damage your hearing.



## Caution

**The symbol indicates important notes. If ignored, it may result in personal injury or damaged equipment.**

### **Product cleaning**

Please clean the product regularly with a dry soft cloth. For any dirt difficult to clean, only water can be used to soak the cloth. Any other solvents may lead to dissolution.

### **Temperature**

Before starting the device, please ensure that the temperature inside the vehicle is between +60°C and -20°C.

### **Repair**

In case of problems, please do not repair by yourself. Please return the product to the authorized Alpine dealer or nearby Alpine service center to repair.

### **Installation site**

The device cannot be installed at the following locations:

- Under direct sunlight and near hot source.
- With high humidity and near water source.
- Dusty sites.
- Environments with violent vibration.

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## Copyright notice

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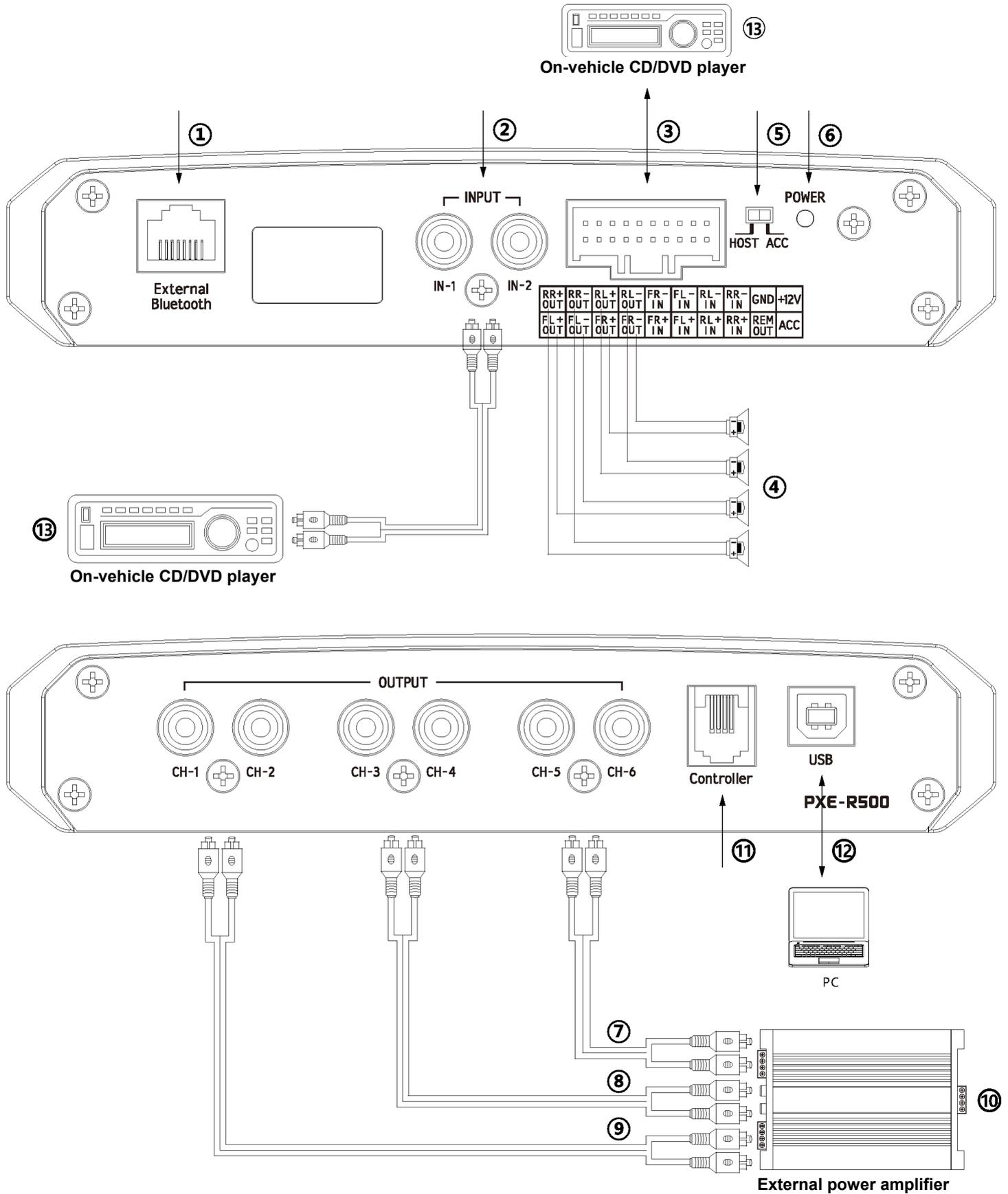
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\* The electronic products should be discarded via an appropriate recycling channel to reduce electronic waste pollution.

# Description of device

## Diagrams of device interfaces



\* The device is embedded with bluetooth.

# Description of device

## Description of device interfaces and their functions

### ① System extension interface 1

### ② RCA audio input

One set of RCA audio signal input which can connect the RCA audio signal output of the on-vehicle CD/DVD player.

### ③④ High voltage level input / output and power interface

The high voltage level input is connected to the power output of the on-vehicle CD/DVD player and the high voltage level output is connected to the loudspeaker.

RR+ OUT	RR- OUT	RL+ OUT	RL- OUT	FR- IN	FL- IN	RL- IN	RR- IN	GND	+12V
FL+ OUT	FL- OUT	FR+ OUT	FR- OUT	FR+ IN	FL+ IN	RL+ IN	RR+ IN	REM OUT	ACC

### ⑤ Input select switch

If the switch is put to "ACC," the device will be started by ACC. If put to "HOST," the device will be started by the high voltage level input signal FL-/FL+.

### ⑥ Power lamp

### ⑦⑧⑨ RCA audio out

Three sets of RCA audio signal outputs which can be connected to the external power amplifier.

### ⑩ External power amplifier

### ⑪ System extension interface 2

### ⑫ USB 2.0 interface

A USB2.0 cable can be used to connect the computer and perform tone tuning and setting in detail.

### ⑬ On-vehicle CD/DVD player

## Accessory list

The PXE-500 packing box should contain the following accessories. If missing, please contact the authorized dealer of Alpine.

Accessory                      Quantity

USB 2.0 cable                      One (1)

Fixing bracket                      Four (4)

QSG (quick start guide)                      One (1)



USB 2.0 cable x 1



Fixing bracket x 4

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# Operating instructions of computer software

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Once the PXE-R500 software is installed, you can perform the tone tuning and setting for PXE-R500 on the computer.

*\*The function is only available to the manufacturer and dealers.*

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## Precautions of software installation

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- The software can only be used with Microsoft® Windows® operating systems.  
Operating systems: Windows XP, Windows Vista, Windows 7, Windows 8, Windows 10  
CPU: 1.6GHz or higher  
Memory card: 1GB or larger  
Hard disk: 512MB or more free space  
Computer screen resolution: 1280\*768 or higher
- Please properly install the PXE-R500 computer software before connecting PXE-R500 device to the computer.

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## Description of interface

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Open the PXE-R500 computer software, then first enter the start interface and enter the tone-tuning main interface.



Start interface



Main interface

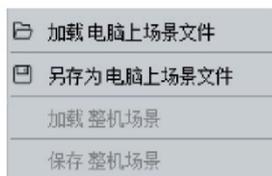
## Function menu

Before the device is connected, the connection icon shows red . If connected successfully, the connection icon turns green .

Menu bar: File, Options and Encryption functions



1. Click "File":



- a、 Select "Load scene file from your computer" to load a scene file previously saved in the computer as the current device working scene.
- b、 Select "Save as scene file on your computer" to save the current device working scene into the computer for use later.
- c、 Select "Load all scene files" to load all the scene files previously saved on your computer to the device (including current working scene, pre-set device scene and output channel configuration data, etc.), *i.e.*, copy all the device data debugged previously to the connected device.
- d、 Select "Save all scene files" to save all the data on the connected device as the

computer files (including current working scene, preset device scene and output channel configuration data, etc.) to be used for device copy later.

2. Click on "Options":

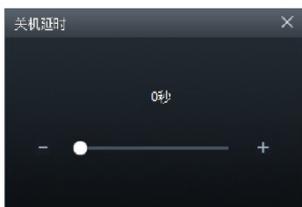


- a、 Select "Frequency combination setting" and enter the frequency-combination interface. The volume of various sound sources in the channel can be adjusted to perform sound mixing and frequency mixing.
- b、 Select "Firmware update" to popup the dialog box and select the file to update in the box. Then click on "Update" key to upgrade the firmware. Once the upgrading progress reaches 100%, it indicates that the firmware has been upgraded successfully. After the update is finished, the device will re-start automatically.



- c、 Select "Restore factory setting" to restore all the data set in the device to factory default status.

- d、 Select “Switch-off delay” to set the switch-off delay: 0~255s.



- e. Select “Language” to switch between Chinese and English.
- f. Select “About” to check the device version.



### 3. Click on “Encryption”:

Enter 6-digit encrypted password in the popup dialog box to encrypt the tuned sound effect data. The data including EQ frequency, Q value and gain, delay, channel volume and phase, etc. can be encrypted.

Only the single set of sound effect data being used now will be encrypted, rather than all the data in the device. The encrypted sound effect data can be saved as a pre-set sound effect or computer file.



The encrypted data can be decrypted by clicking on “Decryption” and entering the correct password. On the decryption interface, click on “Clear data” to decrypt the encryption status with just one key and restore the data to the factory default status.



## Sound source selection



1. Master sound source: click on the right key of the master sound source and select the master sound source in the popup window: high level, blue tooth or low level.
2. Auxiliary sound source (sound mixing):
  - a、 Click on the right key of the auxiliary sound source and select the auxiliary sound source in the popup window: high level, blue tooth, low level or close.
  - b、 The higher the attenuation of master sound source, the lower the master volume is. The tunable values are 0%, 30%, 50%, 80% or 100%.

\* If the current sound source mode is selected, this mode cannot be superimposed any more. Otherwise, the auxiliary sound source will be invalid.



Master sound source



Auxiliary sound source

## Master volume setting



The left mouse button can be pressed on to drag the volume fader left or right or the mouse wheel can be scrolled to adjust the master volume. The volume adjusting range is 0~35 and the default is 27. Click on the Master volume speaker key to mute the master volume . Click again to cancel the mute (the mute mode will be cancelled automatically if the master volume is adjusted).

## Sound effect setting

There are memories to save 6 sets of preset sound effects in the device. Click on the Call key or Save key to select the 6 sets of sound effect data.



## Channel type, mute and debugging

## setting

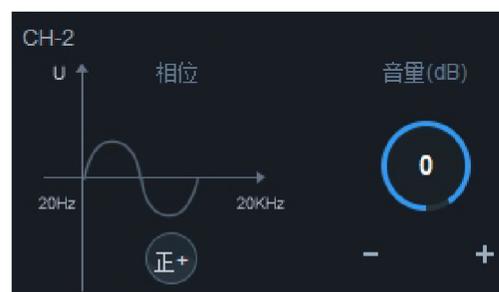


1. Type: click on the Output channel type key [前右全频] to select the channel type in the pull-down menu. There are high frequency, medium frequency, low and medium frequency, low frequency and all frequency available for the front speakers. There are also high frequency, medium frequency, low and medium frequency, low frequency and all frequency available for the rear speakers. There are front center high frequency, front center medium frequency, rear center high frequency and rear center medium frequency available for the center speakers. There are left ultra-low frequency, right ultra-low frequency and ultra-low frequency available for the subwoofer speakers and left surround and right surround available for the surround speakers.
2. Mute: click on the Volume speaker key [🔊] to mute the channel [🔇].
3. Debugging: click on the Debugging key [🔧 联调]. There are debugging modes of “Copy channel EQ / volume from left to right” or “Copy channel EQ / volume from right to left” available.
4. Lock: click on the Lock key [🔒 锁定] to lock the current channel type.
5. Reset: click on the Re-set key [🔄 重置], then click on the Clear key [🗑️ 清空] in the popup window to set up the current channel type as Empty. Click on the Default key [🏠 默认] to set up the current channel type as Factory setting.

## Channel delay, phase and volume setting



Channel setting



Phase and volume

1. Click on the speaker to enter the Delay adjustment area. Then adjust the delay by directly entering a value, scrolling the mouse wheel or using the up / down keys on the keyboard. In the delay display area, you can scroll the mouse wheel, move the up / down key, directly drag the volume fader or click on “+” / “-“to adjust the delay.
  - a、Delay group: front sound field, rear sound field, subwoofer, full sound field or none.
  - b、Delay unit: ms, cm, inch.
  - c、Adjusting range: 0.000~7.354ms, 0~254cm and 0~101 inches.
2. Volume: the channel volume can be set by directly entering the value, scrolling the mouse wheel and moving the up / down keys. The adjusting range is -60dB~6dB and the default is 0dB.
3. Phase: click on the Normal phase key [正+] or Reverse phase key [反-] to switch between the normal / reverse phases.

## Frequency divider setting



1. Type: Linkwitz-Riley, Butterworth or Bessel.
2. Frequency: the frequency can be adjusted by directly entering a value, scrolling the mouse wheel, moving the up / down keys or clicking “H” or “L” with

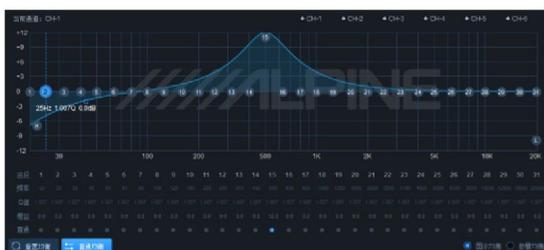
pressing on the left mouse key to drag. The adjusting range is : 20Hz~20000Hz.

3. High-pass switch: if the frequency is 20Hz, the high-pass switch will be in off state . If the frequency is higher than 20Hz, it will be in on state .
4. Low-pass switch: if the frequency is 20Hz, the low-pass switch will be in off state . If the frequency is lower than 20Hz, it will be in on state .
5. Slope: 6dB/Oct, 12dB/Oct, 18dB/Oct, 24dB/Oct, 30dB/Oct, 36dB/Oct、42dB/Oct or 48dB/Oct.

\* If the slope is 6dB/Oct, the type is shown as "Empty."

## Channel EQ setting

The channel EQ has two interfaces as Graphic EQ and Parametric EQ.



Graphic EQ



Parametric EQ

There are 31 sections of EQ adjustable.

Move the mouse to SN and press on it, then drag it up or down to adjust the equalizer gain or drag it left or right to adjust the equalizer frequency. Move the mouse to the small blue box on the left or right and press on it and then drag left or right to adjust the Q value of the equalizer. Also, you can directly enter a value, scroll the mouse wheel or move the up / down keys to set up the frequency, Q value and gain.

1. Frequency adjusting range: 20Hz ~ 20kHz.
2. Q value adjusting range: 0.404~28.852.
3. Gain adjusting range: -12dB ~+12dB.

If the EQ adjustment is available, the Direct EQ key  will appear. Click on "Direct EQ" or Direct "Dot" to change all the equalizers of the current channel into the inactive state. Click on the Restore EQ key  to restore all the equalizers of the current channel to its startup state last time. Click the Re-set EQ key  to reset all the equalizer parameters of the current channel to its initial state: the frequency is evenly distributed, the Q value is 1.007 and the gain is 0.0dB.

Click on the Parametric EQ key  to switch the "Graphic EQ" to "Parametric EQ". Click the Graphic EQ key  to switch the "Parametric EQ" to "Graphic EQ".

\* The gain is adjustable but the frequency and Q value are fixed in the Graphic EQ interface. The frequency, Q value and gain are all adjustable in the Parametric EQ interface.

## Description of frequency combination setting function

After the PXE-R500 device setting sound source signals enter the audio processor, the volume frequency of various output channels will be divided. The sound source volumes in the channel can be adjusted to perform sound mixing and frequency mixing. In the passive input mode, the frequency division will be set from PC. In the active input mode, the frequency division will be set from the main device of the vehicle.

合频设置

被动输入 主动输入

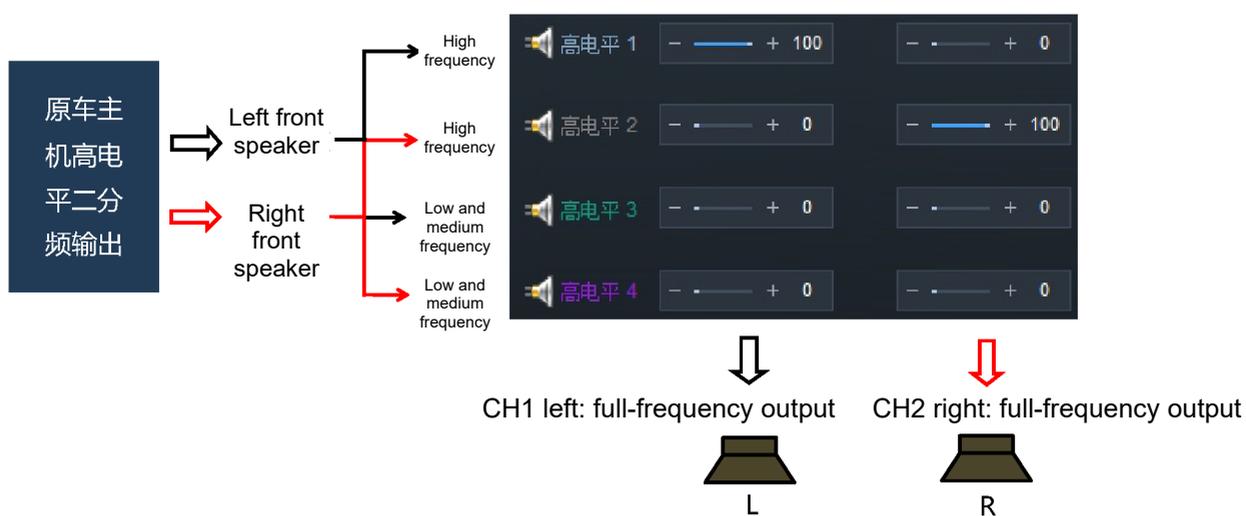
高电平 1	+ 100	+ 0	+ 0	+ 0	+ 100	+ 100
高电平 2	+ 0	+ 100	+ 0	+ 0	+ 100	+ 100
高电平 3	+ 0	+ 0	+ 100	+ 0	+ 0	+ 0
高电平 4	+ 0	+ 0	+ 0	+ 100	+ 0	+ 0
低电平左	+ 100	+ 0	+ 100	+ 0	+ 100	+ 100
低电平右	+ 0	+ 100	+ 0	+ 100	+ 100	+ 100
蓝牙左	+ 100	+ 0	+ 100	+ 0	+ 100	+ 100
蓝牙右	+ 0	+ 100	+ 0	+ 100	+ 100	+ 100
	CH-1	CH-2	CH-3	CH-4	CH-5	CH-6

CH-1 CH-2 CH-3 CH-4 CH-5 CH-6

Example 1: stereo input at low level from main device of original vehicle and stereo full-frequency output.



Example 2: active two-way frequency mixing input at high level from main device of original vehicle and stereo full-frequency output.



# Specification parameters

Dynamic range	≥100dB
SNR (RCA)	≥100dB
Background noise	High level: 66uVrms; RCA : 13.92uVrms
Channel resolution	≥75dB
THD	≤0.01%
Input voltage	High level: 30Vpp; RCA : 6.3Vpp
Output voltage	High level: 28Vpp; RCA : 8Vpp
Rated power	4CH×25W (4Ω, 14.4V, 1kHz, 10%THD)
Maximum power	4CH×50W (4Ω, 14.4V, 1kHz, 10%THD)
Input / output sensitivity (RCA)	1:1.125 (no power amplification)
Frequency response	20Hz~20kHz
System sampling rate	48kHz/24bit
Input impedance	High level: 240Ω; RCA : 20kΩ
Output impedance	51Ω
Operating voltage	9~16V
Quiescent current	≤2.3mA (in off state)
Stand-by power consumption	≤0.1W
REM startup input	ACC or high level (FL-/FL+)
REM startup output	12V (0.2A)
Uptime	10s
Operating ambient temperature	-20~60°C
Storage temperature	-40~85°C
Net weight	0.8kg
Dimensions	183.5mm×136.9mm×36.8mm

# Functional parameters

Input signals	4 channels of high level, 2 channels of RCA audio and high resolution blue tooth
Output signals	4 channels of high level, 6 channels of RCA audio
Output signal gain	Range: mute, -60dB~+6dB
Output signal equalizer	Type: parametric EQ, graphic EQ Frequency: 20Hz~20kHz, resolution: 1Hz Q value( slope): 0.404~28.852 Gain: -12.0dB~+12.0dB, resolution: 0.1dB
Output signal frequency divider	Each output channel is equipped with independent multi-order high-pass filter, Filter type: Linkwitz-Riley, Bessel or Butterworth Filter cross-over frequency: 20Hz~20kHz, resolution: 1Hz Filter slope: 6dB/Oct~48dB/Oct
Output phase	Normal phase or reverse phase (+/-)
Output delay	0.000~7.354ms, 0~254cm, 0~101inch
Pre-set sound effects	6 sets of pre-set sound effect data can be saved in the device