

ALPINE

PXE-M640-4

6-Sound Track Audio Processing Amplifier



- For iPhone users, please search "Alpine Music" in APP Store to download and install it; for Android users, please scan the QR code on the right to download and install it directly.
- Or you may use a wired controller sold separately for easy



Alpine Music

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Operating Instructions

Type of precautions

 Prohibited	Indicates a prohibited action (must not be performed).
 Prohibited	Indicates that disassembly is prohibited.
 Mandatory	Indicates a mandatory operation (must be performed).
 Warning	Indicates that it should draw your close attention.

Warning

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 for repair.

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

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

Please call a professional for wiring and installation

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

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 device function that may influence your attention must be used only when the vehicle is stopped completely. To use these functions, make sure to stop your vehicle in a safe area first. 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 a railway crossing) and may result in an accident. Moreover, a too large volume may damage your hearing.

Caution

Product cleaning

Please clean the product regularly with a soft dry 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 them by yourself. Please return the product to the authorized Alpine dealer or nearby Alpine service center to repair.

System matching

When PXE-640E-EL is used with active division mode to assign signals for speakers, please ensure that the frequency division point of high pitch is above 1500 Hz to avoid damage to high pitch speakers

Installation site

The device cannot be installed at the following locations:

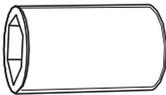
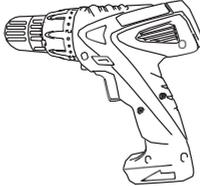
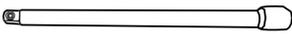
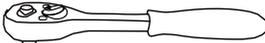
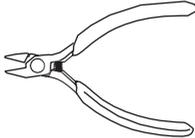
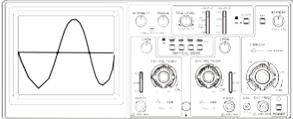
- Under direct sunlight and near a hot source.
- With high humidity and near a water source.
- Dusty sites.
- Environments with violent vibration.

Copyright notice

The text mark and logo of Bluetooth® are the registered trademarks held by Bluetooth SIG, Inc. Alpine Electronics has been authorized to use these text marks and logos. Other trademarks and names all belong to their holders.

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

Tools that may be required (depending on the vehicle)

Panel removal tool 	Socket 	Electric drill 	Torx screwdriver 
Phillips screwdriver 	Sleeve wrench 	Wrench 	Wire cutter 
Wire crimper 	Wire stripper 	Spectrum analyzer 	Oscilloscope 

Accessory list

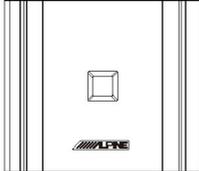
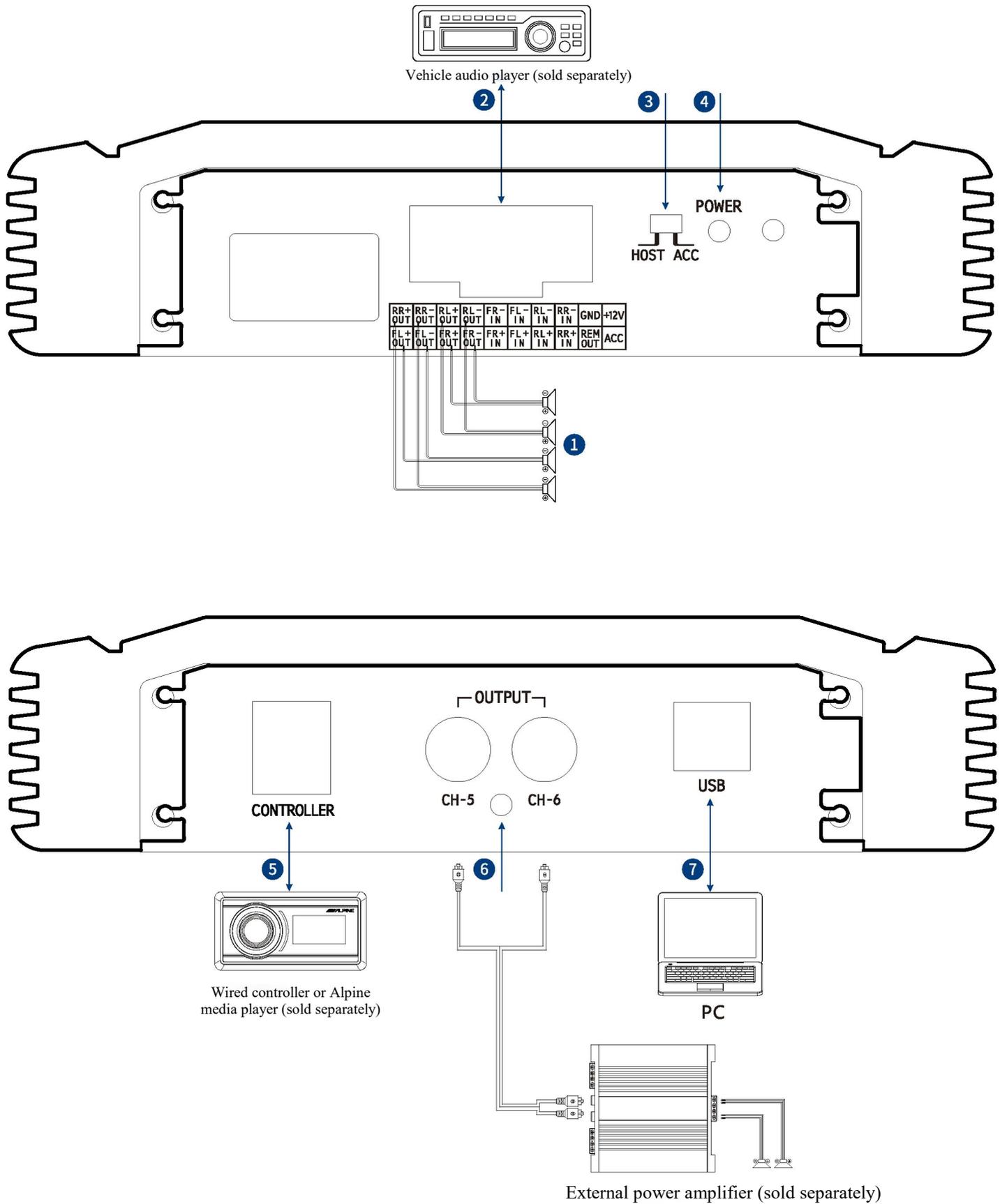
USB 2.0 cable 	Mounting bracket × 2 	Machine tooth screw × 4 
Self-tapping screw × 2 	Host machine 	

Diagram of device interfaces

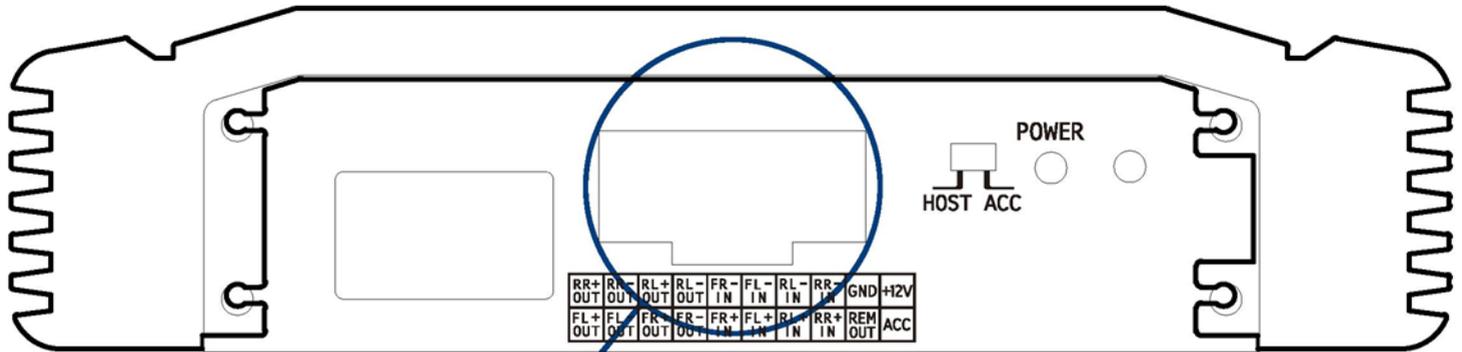


* The device is embedded with Bluetooth.

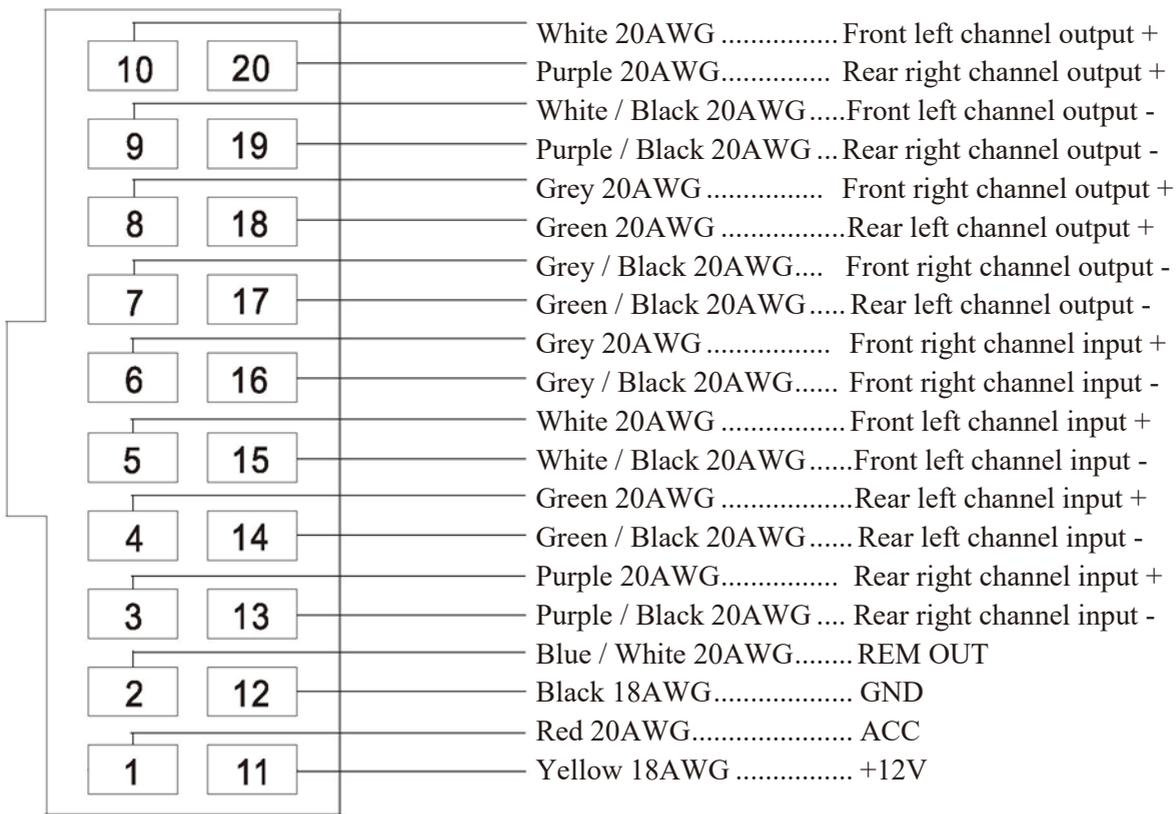
Description of device interfaces and their functions

1, 2	High voltage level input / output and power interface	The high voltage level input is connected to the power output of the vehicle audio player and the high voltage level output is connected to the loudspeaker.
3	Input select switch interface	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+.
4	Power lamp	Power lamp.
5	Wired controller interface	System extension interface
6	RCA audio out	One set of RCA audio signal output which can be connected to the external power amplifier.
7	USB 2.0 interface	A USB2.0 cable can be used to connect the computer and perform tone tuning and setting in detail.

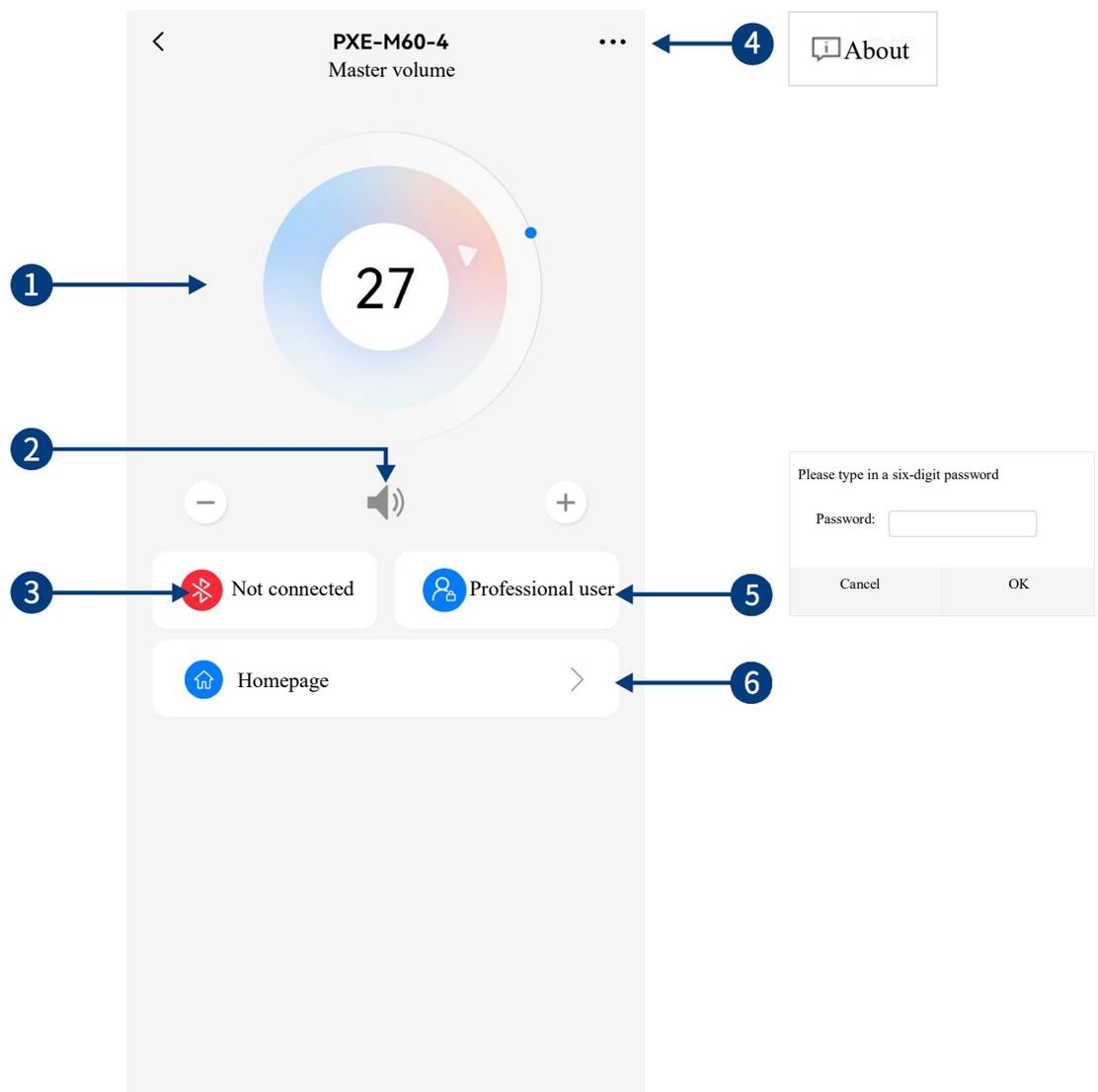
Wire pin arrangement



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

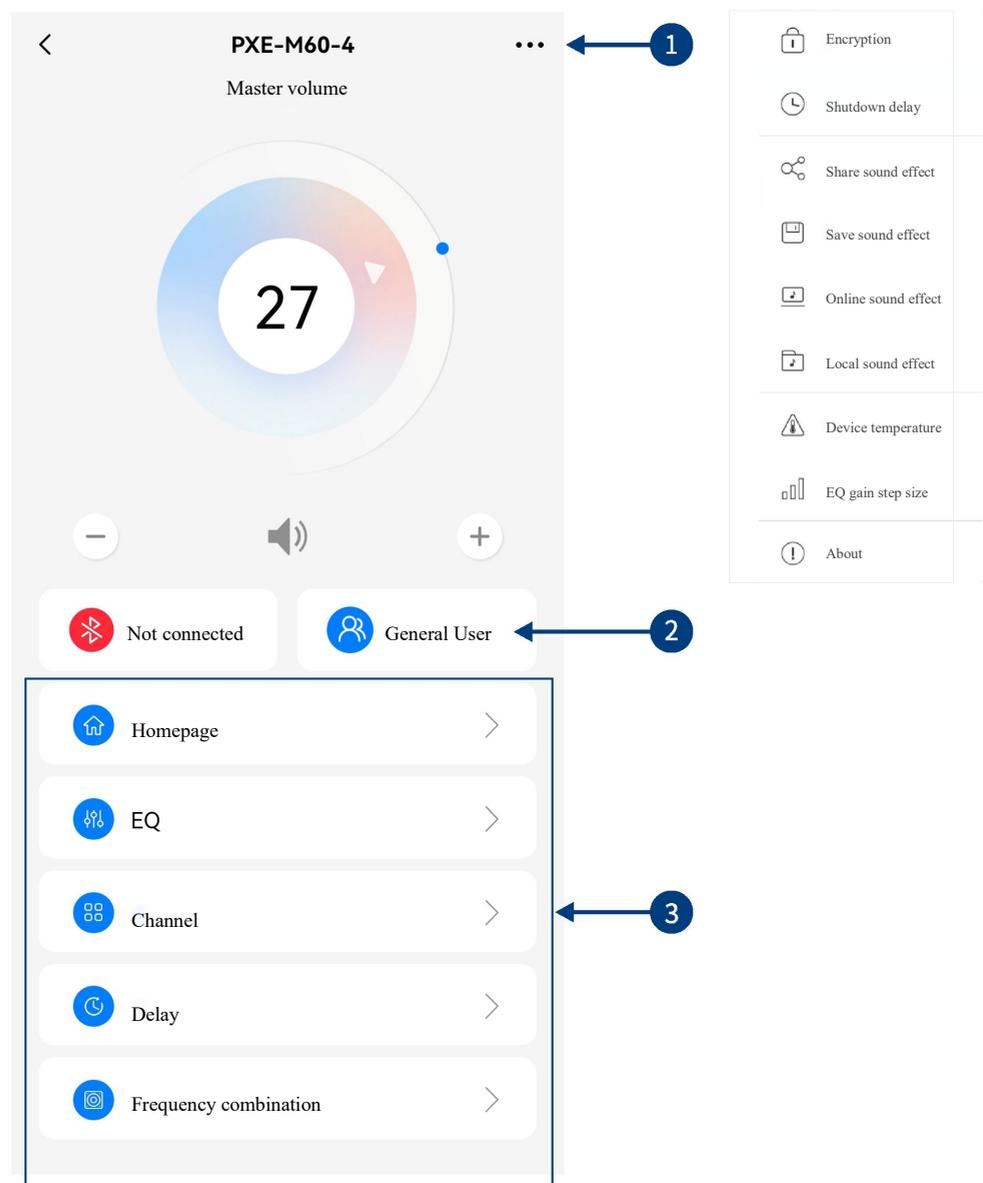


Description of mobile APP - General User



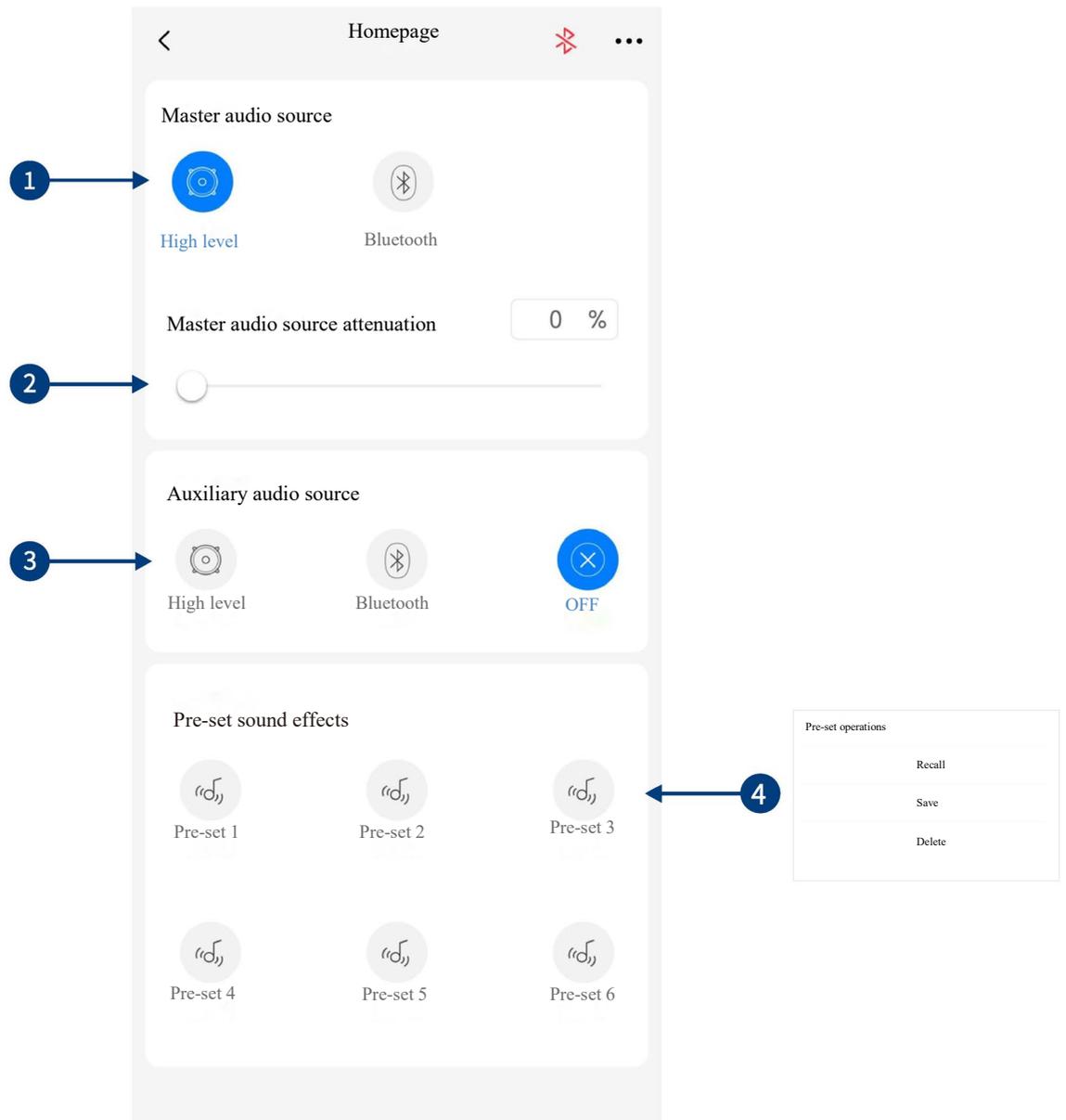
1	Master volume	Drag and rotate the volume adjustment fader or click "+" and "-" to adjust the master volume. The volume adjusting range is 0~35.
2	Mute button	Mute the master volume
3	Connection indicator	When the Bluetooth icon is red, the mobile phone Bluetooth is not connected; when it is green, the mobile phone Bluetooth is connected.
4	Menu bar	Check device version.
5	Mode switch	Switch between General User mode and Professional User mode (General User is selected by default).
6	Homepage	General User mode only supports quick operations including audio source switch, pre-set sound effects recall and saving, and device version check.

Description of mobile APP - Professional User



1	Menu bar	You can encrypt data, set shutdown delay, share sound effect, save sound effect, select online effect, select local effect, check device temperature, set EQ gain step, and check version number.
2	Mode switch	Switch between General User mode and Professional User mode. Type in 6-digit password "888888" to enter Professional User mode, which supports professional tuning operation.
3	Interface selection	Profession User mode has 5 pages of different functions of tuning, namely Homepage, EQ, Channel, Delay and Frequency combination.

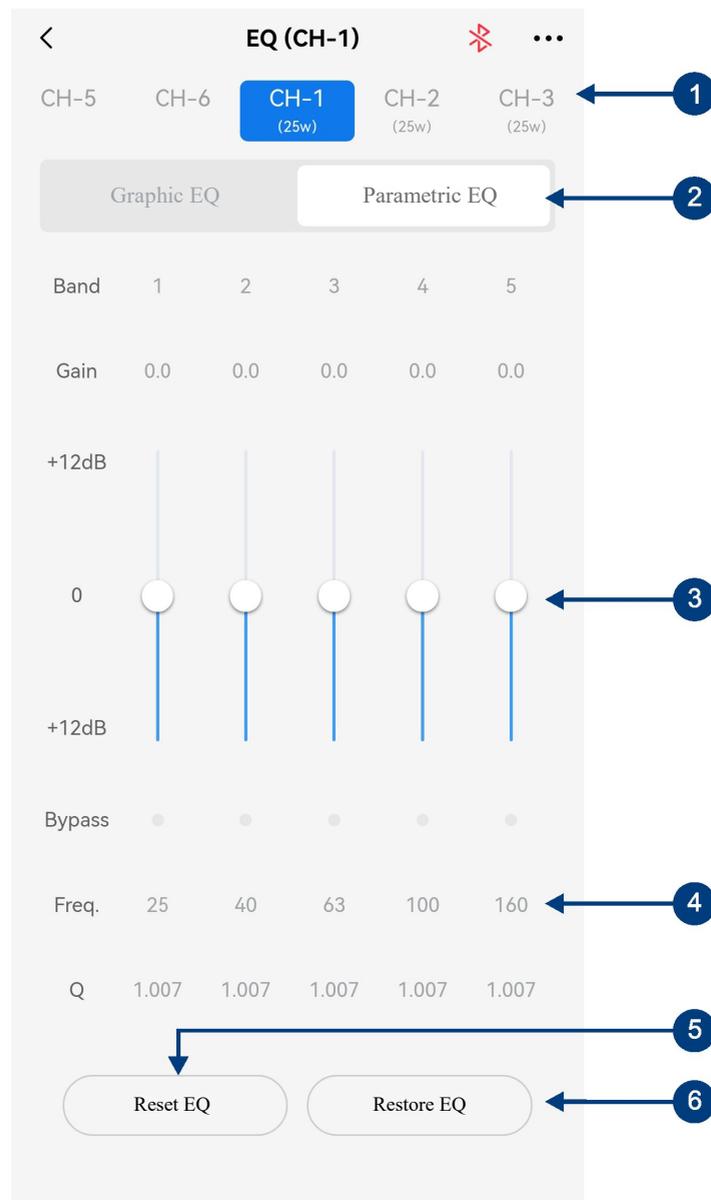
Description of mobile APP - Homepage



1	Master audio source	Select master audio source (High Level and Bluetooth).
2	Master audio source attenuation	The higher the attenuation of master audio source, the lower the master volume is. The range of attenuation is 0% ~ 100%.
3	Auxiliary audio source	Select auxiliary audio source (High Level, Bluetooth and OFF).
4	Pre-set sound effects	Save or recall multiple pre-set sound effects.

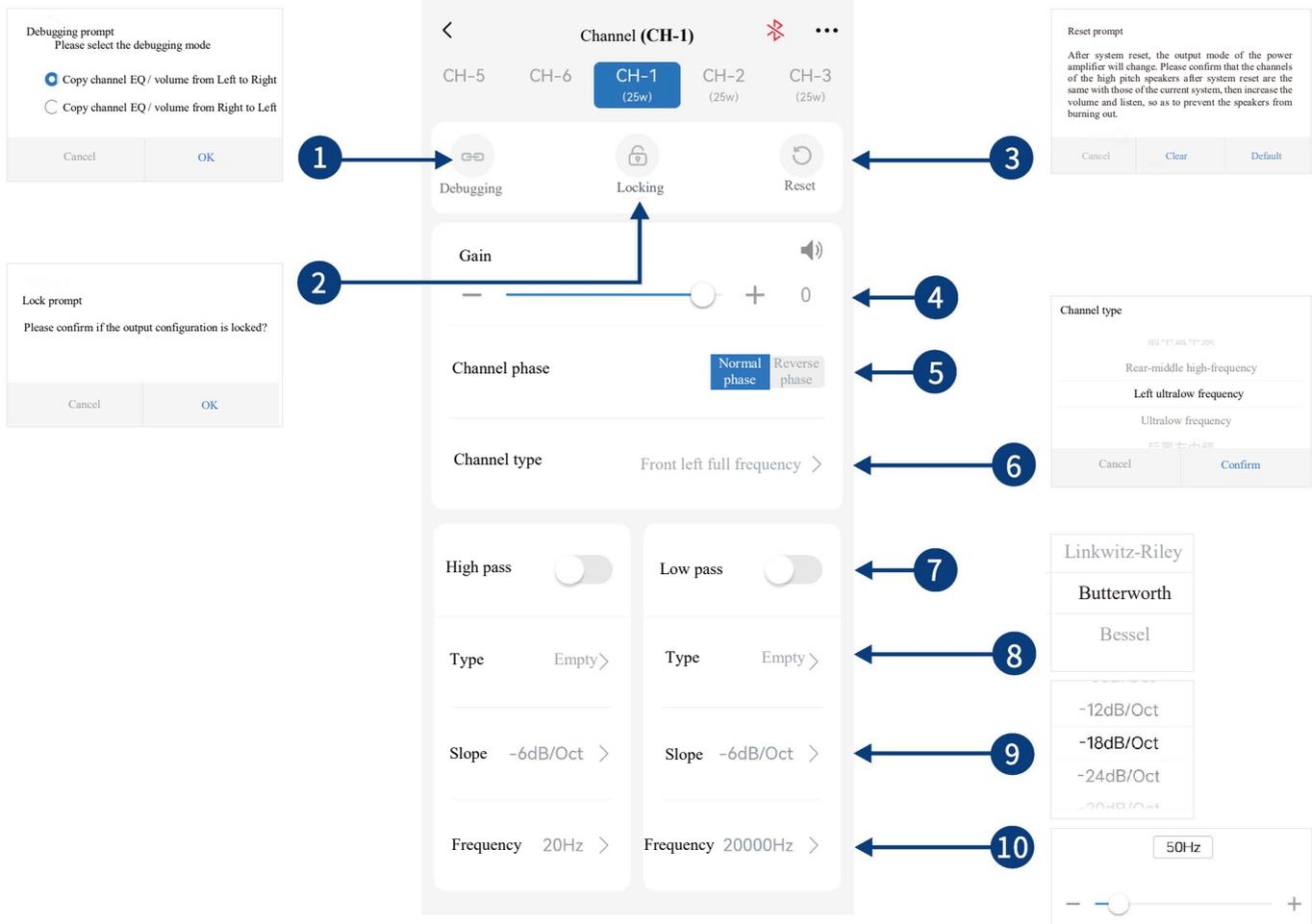
Caution: If the current audio source mode is selected, this mode cannot be superimposed any more. Otherwise, the auxiliary audio source will be invalid.

Description of mobile APP - EQ



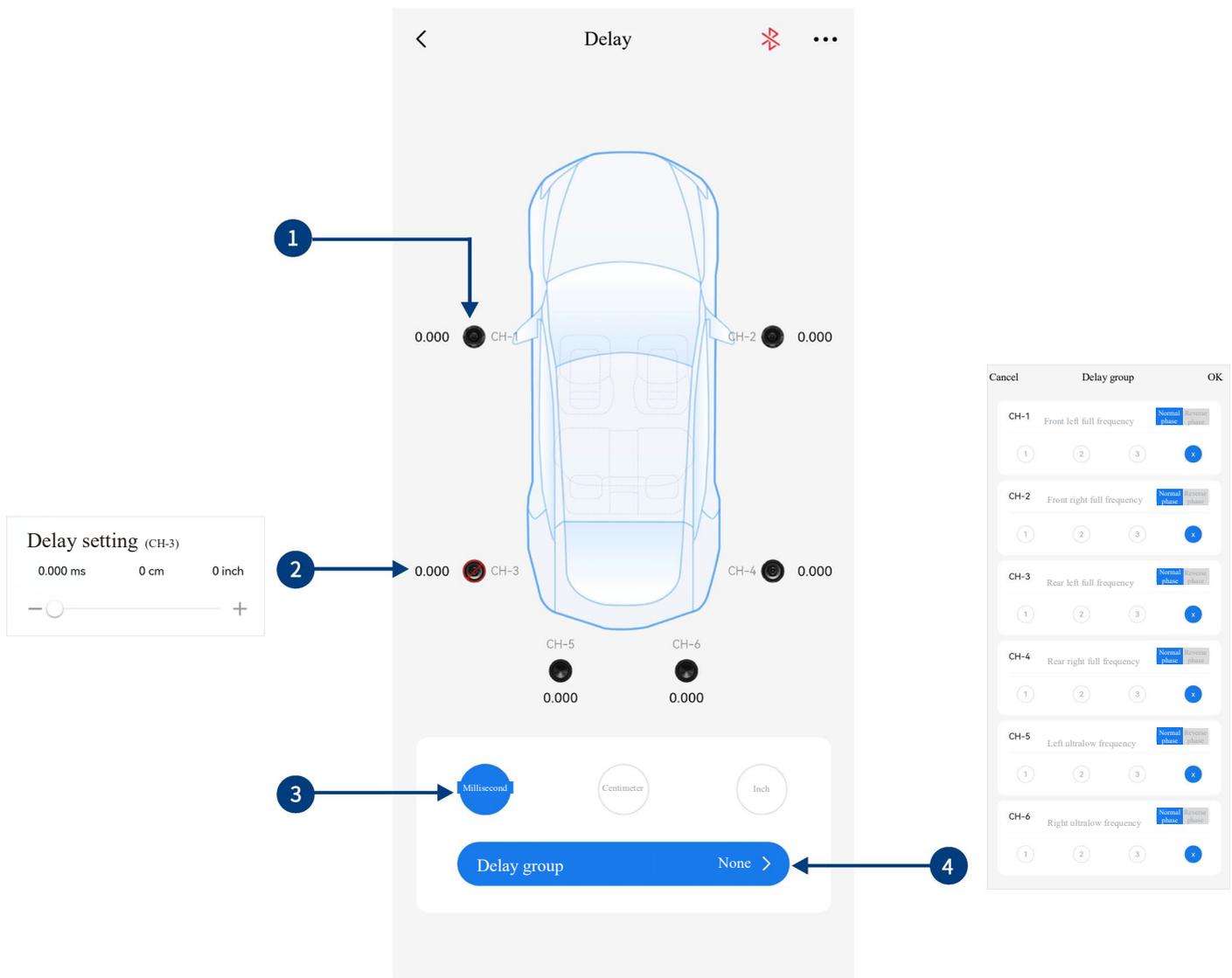
1	Output channel	Slide left and right to select the output channel for EQ adjustment. There are 6 channels to choose from.
2	Parametric EQ, Graphic EQ	Switch between Parametric EQ mode and Graphic EQ mode. Mode switch would lead to loss of all settings.
3	Gain	Pull the fader up and down to adjust the gain. The adjustable range is: -12.0dB ~ +12.0dB.
4	Frequency, Q value, Gain	Adjust the frequency, Q value and gain of the output channel. 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.
5	Reset EQ	Reset EQ setting.
6	Restore EQ, Direct EQ	Switch the tuned EQ data to direct state, click it again to restore the EQ data before Direct EQ setting.

Description of mobile APP - Channel



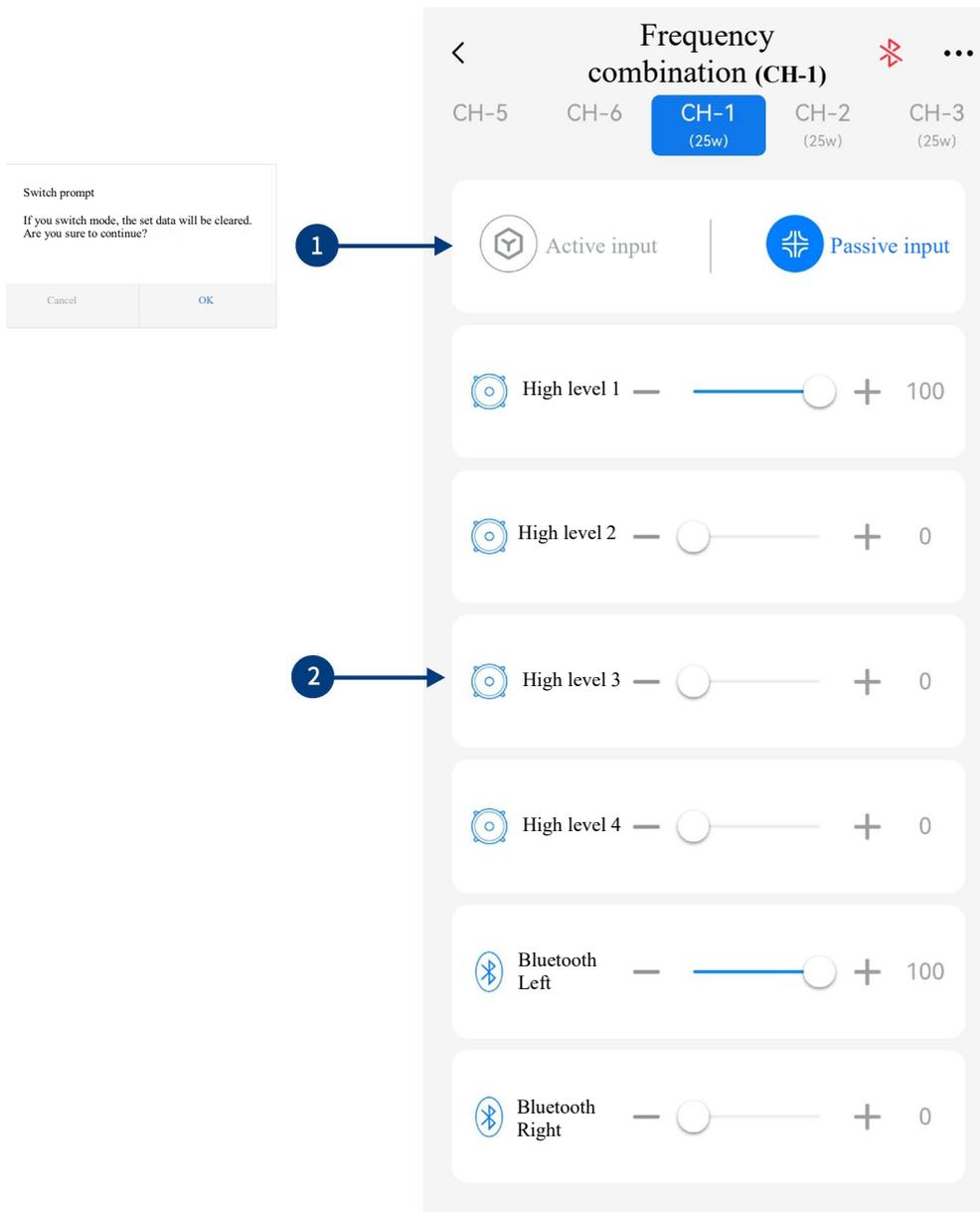
1	Debugging	The debugging modes to choose from include “Copy channel EQ / volume from left to right” or “Copy channel EQ / volume from right to left”.
2	Locking	You can lock the current channel type.
3	Reset channel type	Select "Clear" to set the current channel type as Empty; select "Default" to set the current channel type as Factory setting.
4	Channel gain	Push the fader left and right to adjust the channel volume in the range of -60dB ~ +6dB; click the speaker button to mute.
5	Channel phase	Select the channel phase (normal phase or reverse phase).
6	Channel type	Select the output channel type in the pop-up window.
7	Divider	Turn on or off the low-pass filter.
8	Filter type	Select filter type (Linkwitz-Riley, Butterworth or Bessel). Caution: If the slope is -6dB/Oct, the type is not settable.
9	Frequency divider slope	Select the divider slope (-6dB/Oct, -12dB/Oct, -18dB/Oct, -24dB/Oct, -30dB/Oct, -36dB/Oct, -42dB/Oct, or -48dB/Oct).
10	Divider frequency	Select the divider frequency (between 20Hz and 20kHz).

Description of mobile APP - Delay



1	Speaker	Select the speaker of the corresponding channel, click the speaker to mute it, click it again to cancel mute.
2	Delay setting	Select the corresponding speaker, push the fader left and right on the pop-up window to adjust the delay, or click "+" and "-" to adjust the delay.
3	Unit of delay	Units of delay to choose from include ms, cm, and inch. Adjusting range: 0.000 ~ 7.354 milliseconds, 0 ~ 254 centimeters, and 0 ~ 100 inches.
4	Delay group	There are 3 delay groups to choose from for each channel.

Description of mobile APP - Frequency



1	Active or passive output	Keep the default setting as "Passive". Warning: if changed, you will lose the sound mixer setting of this channel.
2	Input channel	Push the fader left and right or press "+" and "-" to adjust the volume of each audio source in the channel to achieve the purpose of sound mixing and frequency mixing.

Caution: It is strongly recommended to set the total volume of a channel to 100 to avoid clipping.

Interface of PC software

This screenshot shows the main interface of the ALPINE PXE-M60-4 software. It features a top menu bar with '文件' (File), '选项' (Options), and '加密' (Encryption). Below the menu is a status bar showing temperature (0°C) and volume (27). The main area is divided into several sections:

- Left Panel (25):** Channel selection for CH-1 to CH-6, each with a speaker icon and a '静音' (Mute) button.
- Center Graph (13):** An EQ frequency response graph with a grid. The x-axis represents frequency from 30 to 20K Hz, and the y-axis represents gain from -12 to +12 dB. A table below the graph lists parameters for 31 bands, including frequency, Q value, and gain.
- Bottom Panel (16-24):** Controls for channel settings, including gain (0dB), phase (正相), and filter settings (高通滤波器 and 低通滤波器) with type, frequency, and slope options.
- Top Right (8-11):** Navigation buttons for '主页' (Home), 'EQ', '延时' (Delay), and '台历' (Calendar).

 Callouts 1-7 point to various UI elements like the power button, volume slider, and EQ gain settings. Callouts 8-11 point to the top navigation buttons. Callouts 12-15 point to the channel list, graph grid, and EQ table. Callouts 16-24 point to the bottom control panels.

This screenshot shows the '台历' (Calendar) section of the software. It displays a grid of icons for different audio sources: '主音源选择' (Main Source Selection), '辅助音源选择' (Auxiliary Source Selection), and '声道源选择' (Channel Source Selection). Each source has a corresponding icon and a '静音' (Mute) button. Callout 8 points to the top navigation bar.

This screenshot shows the '延时' (Delay) section of the software. It features a central car diagram with speaker positions for CH-1 through CH-6. Each channel has a delay slider and a '静音' (Mute) button. Callout 10 points to the top navigation bar.

This screenshot shows the 'EQ' section of the software. It displays a grid of sliders for adjusting the gain of 31 frequency bands. The sliders are arranged in rows for different channels (CH-1 to CH-6) and are labeled with '前置' (Front) and '后置' (Rear) settings. Callout 11 points to the top navigation bar.

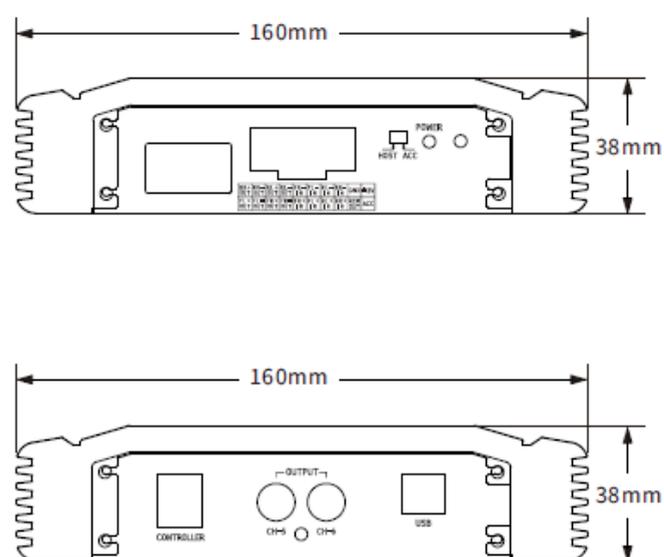
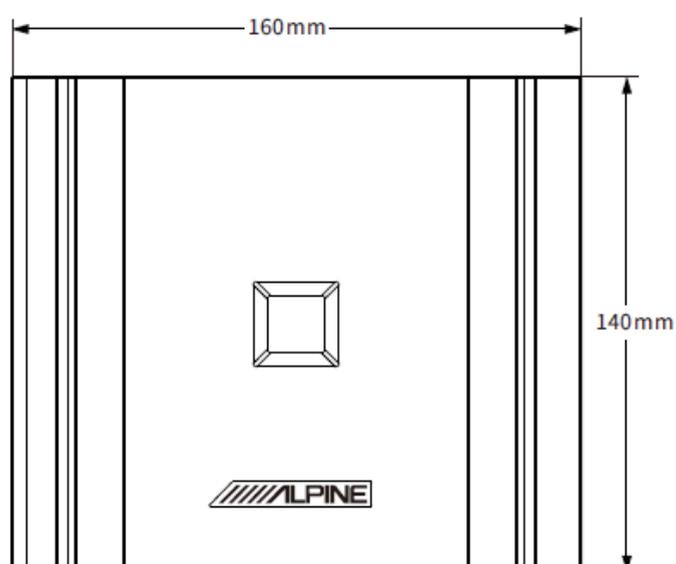
文件	File
选项	Options
加密	Encryption
温度	Temperature
总音量	Master volume
主页	Homepage
延时	Delay
合频	Frequency combination
前左全频	Front left full frequency
前右全频	Front right full frequency
后左全频	Rear left full frequency
后右全频	Rear right full frequency
左超低频	Left ultralow frequency
右超低频	Right ultralow frequency
EQ增益步径	EQ gain step size
波段	Band
频率	Frequency
Q值	Q value
增益	Gain
直通	Direct
重置均衡	Reset EQ
恢复均衡	Restore EQ
通道设置	Channel setting
联调	Debugging
锁定	Locking
重置	Reset
增益	Gain
相位	Phase
正相	Normal phase
高通滤波器	High-pass filter
类型	Type
频率	Frequency
斜率	Slope
空	Empty
低通滤波器	Low-pass filter
图示均衡	Graphic EQ
参量均衡	Parametric EQ
主音源选择	Master audio source selection
辅助音源选择	Auxiliary audio source selection
高电平	High level
蓝牙	Bluetooth
主音源衰减量	Master audio source attenuation
关闭	OFF
预置音效	Pre-set sound effects
在线音效	Online sound effects
预置1	Pre-set 1
预置2	Pre-set 2
预置3	Pre-set 3
预置4	Pre-set 4
预置5	Pre-set 5
预置6	Pre-set 6
鼠标右键可删除预置音效	Click the right mouse button to delete pre-set sound effects
正相	Normal phase
延时群组	Delay group
高电平1	High level 1
高电平2	High level 2
高电平3	High level 3
高电平4	High level 4
蓝牙左	Bluetooth Left
蓝牙右	Bluetooth Right
被动输入	Passive input
主动输入	Active input

Description of PC software

1	Temperature display	Detect the temperature on the device surface.
2	File	Load or save scene files on PC, load or save all scene files.
3	Options	Firmware update, noise gate, restore factory settings, shutdown delay, switch between English and Chinese, check the version number.
4	Encryption	Enter a 6-digit encryption password to encrypt the tuned sound effect data.
5	EQ gain step size	Step size can be chosen from the range: 0.1dB ~ 0.5dB ~ 1.0dB.
6	Mute button	Mute the master volume
7	Master volume	Push the fader left and right to adjust the master volume in the range of 0 ~ 35.
8	Homepage	Master audio source selection (High Level and Bluetooth), auxiliary audio source selection (High Level, Bluetooth and OFF), master audio source attenuation adjustment, pre-set sound effects recall and saving, and recall of multiple sets of online sound effects are supported.
9	EQ	Enter the EQ interface to go to the professional tuning interface.
10	Delay	Enter the Delay interface, set the delay value, unit of delay and delay group.
11	Frequency combination	Enter the Frequency combination interface, Sound mixing and Frequency mixing setting.
12	Output channel display	Display the output channel curve.
13	EQ curve	Display the current EQ curve status, set the frequency, Q value and gain.
14	Frequency, Q value, Gain	Adjust the frequency, Q value and gain of the output channel. 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.
15	Parametric EQ, Graphic EQ	Switch between Parametric EQ mode and Graphic EQ mode. Mode switch would lead to loss of all settings.
16	Low-pass filter	Turn on or off the low-pass filter to cut off high frequency. Select filter type (Linkwitz-Riley, Butterworth or Bessel). Select the divider frequency (between 20Hz and 20kHz). Select the divider slope (-6dB/Oct, -12dB/Oct, -18dB/Oct, -24dB/Oct, -30dB/Oct, -36dB/Oct, -42dB/Oct, or -48dB/Oct).
17	High-pass filter	Turn on or off the high-pass filter to cut off low frequency. Select filter type (Linkwitz-Riley, Butterworth or Bessel). Select the divider frequency (between 20Hz and 20kHz). Select the divider slope (-6dB/Oct, -12dB/Oct, -18dB/Oct, -24dB/Oct, -30dB/Oct, -36dB/Oct, -42dB/Oct, or -48dB/Oct).
18	Channel phase	Select the channel phase (normal phase or reverse phase).
19	Channel gain	Push the fader left and right to adjust the channel gain, that it, to adjust the volume of the output channel; the adjustable range is: -60dB ~ +6dB.
20	Reset channel type	Select "Clear" to set the current channel type as Empty; select "Default" to set the current channel type as Factory setting.
21	Locking	You can lock the current channel type.
22	Debugging	The debugging modes to choose from include "Copy channel EQ / volume from left to right" or "Copy channel EQ / volume from right to left".
23	Direct EQ, Restore EQ	Switch the tuned EQ data to direct state, click it again to restore the EQ data before Direct EQ setting.
24	Reset EQ	Reset EQ setting.
25	Output channel	There are 6 output channels to choose from. Configure the type of output channel. Click the speaker button to mute.
26	Connection indicator	Connect the PC and the host machine with a USB cable. Open the software to connect the device. Click it again to turn off the connection.

Specification parameters

Dynamic range	≥98dB
SNR (RCA)	≥95dB
Background noise	High level: 75uVrms; RCA: 12uVrms
Channel resolution	≥75dB
THD	≤0.01%
Input voltage	High level: 28Vpp
Output voltage	High level: 28Vpp; RCA: 6.5Vpp
Rated power	4CHX25W (4Ω, 14.4V, 1kHz, 10%THD)
Maximum power	4CHX50W (4Ω, 14.4V, 1kHz, 10%THD)
Input / output sensitivity	1:1.25 (no power amplification)
Frequency response	20Hz ~ 20kHz
System sampling rate	48kHz/24bit
Input impedance	High level: 20Ω
Output impedance	51Ω
Operating voltage	9 ~ 16V
Quiescent current	≤2.3mA (in off state)
Stand-by power consumption	≤0.1W
REM startup input	High level (FL-/FL+) or AAC optional
REM startup output	12V (0.2A)
Startup time	10s
Operating ambient temperature	-20~60°C
Storage temperature	-40~85°C
Net weight	1.2kg
Dimensions	160mmX140mmX38mm



Functional parameters

Input signals	4 channels of high level, high resolution Bluetooth
Output signals	4 channels of high level, 2 channels of RCA audio
Signal gain of output channel	Range: mute, -60dB ~ +6dB
Output signal equalizer	Type: parametric EQ, graphic EQ Frequency: 20Hz ~ 20kHz, resolution: 1Hz Q value (slope or gradient): 0.404~28.852 Gain: -12.0dB ~ +12.0dB, resolution: 0.1dB ~ 0.5dB ~ 1.0dB
Output signal frequency divider	Each output channel is equipped with independent multi-order high-pass filter, Filter type: Linkwitz-Riley, Bessel, Butterworth Filter cross-over frequency: 20Hz ~ 20kHz, resolution: 1Hz Filter slope (gradient): -6dB/Oct~-48dB/Oct
Output phase	Normal phase or reverse phase (0°/180°)
Output delay	0.000~7.354ms, 0~254cm, 0~100inch
Pre-set sound effects	Multiple sets of pre-set sound effects data can be saved in the device, call of online sound effects is supported