



Digital Signal Processor Amplifier

User Manual



DSP Amplifier

FP-6A Mini

Before using this product, please read the instruction carefully and keep it for reference.

Contents

1. Hardware Interface Introduction
2. User Interface software Introduction
3. Technical Specification
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Notice

Warning:

1. To prevent short circuit, please keep the device away from water or wet places.
2. If water or any other liquid soak into the device, cut off the power immediately, and call our service engineer of inspection, in case of emergency.
3. There is no repairing unit inside for user, please do not try to disassemble the bottom cover. Any problem please contact our service engineers in time.

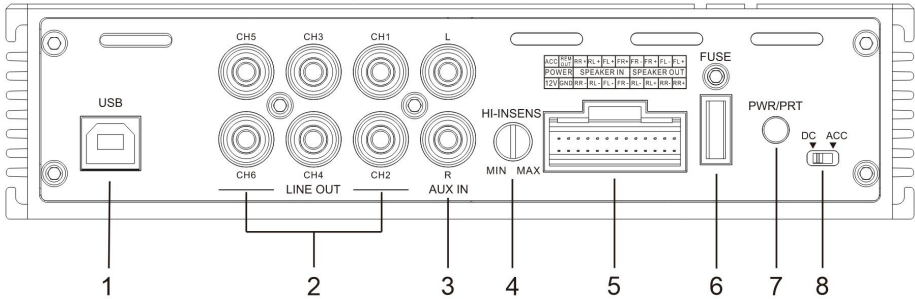


Packing List

The following items should be placed in the gift box according to the model you purchased. If there is any missing, please inform the seller or manufacturer as soon as possible.

FP-6A Mini	1pc
User Manual	2pcs(1Chinese,1 English)
power+high level composite cable	1pc
Installation Bracket	4pcs
Tapping Screws	4pcs
Machine Screws	8pcs

The machine interface diagram shown below:



1. USB Port:

By the USB port, this amplifier can be controlled by a PC which has the user interface software installed for tuning, and the amplifier is driver free designed and can be identified automatically as it is connected with the PC.

2. Line output: up to 6-channel line output.

3. Line(AUX) input: 2-channel line input.

4. HI-IN SENS ADJ: Sensitivity adjustment for High-level input.

5. Power+high level composite connector:

① "+" is positive terminal, "-" is negative terminal, "GND" is negative terminal of the power supply or ground, "12V" is positive terminal of the power supply.

② "REM OUT" is the output control terminal and "ACC" is the input control terminal.

③ Only the special cable for the original vehicle is selected, or it can be defined by user.

Refer the table below for more details.

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

6. FUSE(15A):

When you need to replace the FUSE , please use the same type(15A) fuse, Otherwise, the equipment may be damaged and may cause accidents such as fire, electric shock, etc.

7. Power/Protection LED indicator:

The LED green shows the amplifier are working and the red shows in protection or fault.

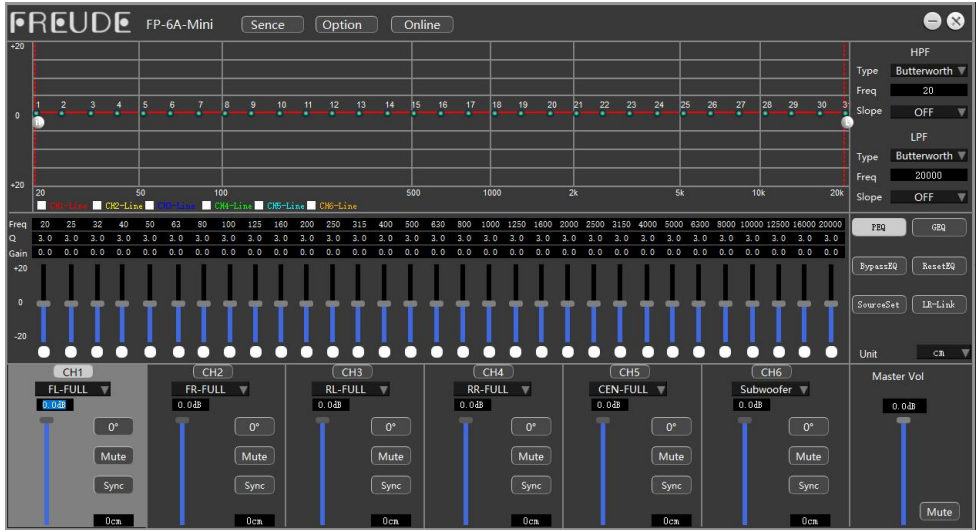
8. The turn on/off mode switch

Set the switch on “ACC”mode to start the device by ACC,and set the switch on “DC” mode to start the device by high level FL IN+/FL IN- input signal,witch from the head unit speaker out.

User Interface Software Operation Introduction(we call “UI” in the following)

System requirements:

Screen resolution higher than 1366x768, otherwise the UI is displayed incomplete, only suitable for windows operation system laptop, desktop and pads with Windows 7 or higher.



1.Main menu



Main features: Scene, Option, Online

- ①Scene: save preset sound effects to the amplifier or computer, and load from the computer.
- ②Option: This menu contains Noise gate, Chinese and English switching, System reset, About and Machine firmware upgrade.
- ③Online: Click the "Online" button to connect/disconnect to the PC.

2.The output channel diagram shows the frequency response curve in the edit area

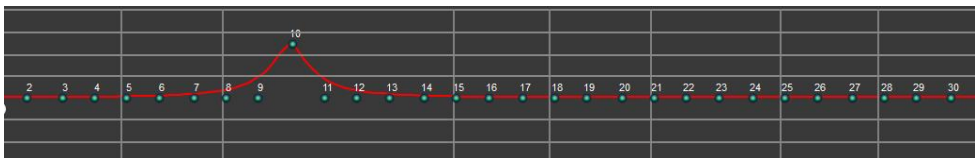


Figure 1

EQ is adjustable in 31 bands of the frequency response curve display edit area in the output signal channel diagram. In figure 1,press and hold the left button of mouse when the cursor moves to the point of EQ band, and drag the mouse up and down to adjust the equalizer gain; Drag the mouse around to adjust the equalizer frequency.When the mouse moves to the left or right little blue triangle, press and hold and drag left or right to adjust the Q value of the equalizer. All the above adjustments will display the parameters of the current equalizer in real time in the parameter display and edit area corresponding to the sequence number below, and also update the values in the parameter edit area of the equalizer. The parameter display and edit area are shown in figure 2.

3.Output channel gain, Q value, frequency editing area

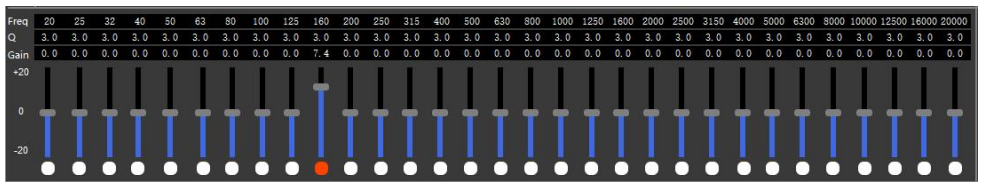


figure 2

- ①Frequency:In the edit area, you can enter values directly, scroll the mouse wheel and the up and down keys on the keyboard to adjust the frequency.
- ②Q value:In the editing area, the Q value can be adjusted by directly entering the value, the mouse wheel and the up and down keys on the keyboard(The adjustable range:0.5~10)
- ③Gain:In the edit area, you can enter values directly, scroll the mouse wheel and the up and down keys on the keyboard to adjust the gain(adjustment range: -12dB~12dB)..

4.Setup the equalizer and input source

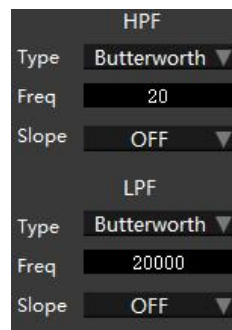
- ①PEQ:The parameter EQ,all parameters can be adjusted by user.
- ②GEQ:The graphic EQ,only Gain can be adjusted, the other parameter are locked.
- ③EQ Bypass:Click to by pass the EQ effect,(Generally to compare the sound quality of the EQ on/off)
- ④Rest EQ:To reset the parameters of EQ to the factory preset mode.
- ⑤LR-Synchronize:This function allows user to copy parameters of EQ or filter between L and R channels,this is very useful and flexible for tuning.
- ⑥Source Set: Simply to set the input source to output.



5.Filter editing area

There High & Low Pass Filters for each channel:

- ①Click the slope drop down list, and you can select
6dB/Oct,12dB/Oct,18dB/Oct,24dB/Oct,30dB/Oct,
36dB/Oct,42dB/Oct,48dB/Oct,and Bypass.
- ②Frequency adjustment range: 20Hz~20KHz.
- ③Types:Bessel, Linkwitz-Riley and Butterworth.

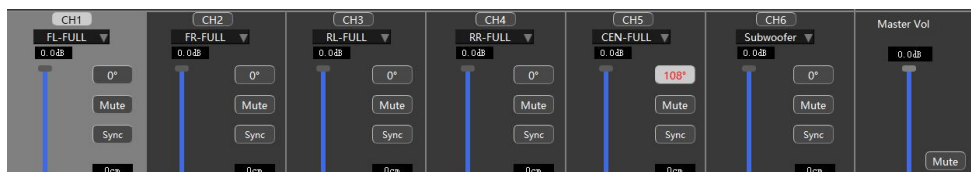


6.Output channel adjustment area



The alias of output channel can be edited:

As the above picture shows:CH1=FL full range,CH2=FR full range,CH3=RL full range,CH4=RR full range,CH5=CEN full,CH6=Subwoofer(L+R).



Output Main Volume:To adjust to control the Main volume of all output channels.

Each output channel can be adjusted independently,include volume,delay(0~500CM or 0~15ms),phase(0° or 180°) and mute.

The unit of delay can be set on the bottom right corner.

Technical specifications

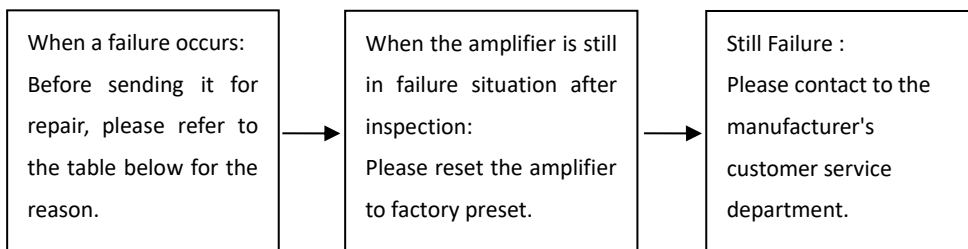
Dynamic Range(RCA Input)	≥91dB
S/N (RCA Input)	≥91dB
THD	≤0.03%
Frequency Response	20Hz ~ 20KHz
Decoding Capability	24bit/44.1Khz
Input Impedance	Low Level input: 15KΩ, High Level input: 9Ω
Low Level Output Impedance	82Ω
Output Rms Power	4x25W
Output Max Power	4x50W
Signal Input Range	RCA input: 1.2Vrms;High level input: 4.5V ~ 9Vrms
Signal Output Range	RCA output: 2Vrms;High level output: 10Vrms
Working Temperature	-20 ~ 45°C
Power	DC 11V ~ 15.5V
REM Input	High Level Input Signal(FL+/FL-) or ACC control cable
REM Output	+12V DC Output,0.1A max.
Standby Power	≤0.1W
Net Weight	Approx 0.85KG
Product Dimension	189(L) *110(W) *44.6(H)mm

The Functions of DSP

Input Signal Type	4 Channel high level, 2 Channel Line input , Digital Bluetooth
Output Signal Type	4 Channel power amplifier, 6 Channel Line output
Output Signal Gain	Gain Range: Mute,-60dB ~ 0dB
Output Signal EQ	31 Bands of EQ 1.Frequency Range 20Hz~20KHz,1Hz resolution 2.Q Value(Slope) 0.5~10 3.Gain -12.0dB~-+12.0dB, 0.1dB resolution
Output Signal Crossover	Each output is equipped with a multi-order high-low pass independent filter. 1.Professional filter type: Butterworth, Linkwitz-Riley,Bessel 2.Filter Crossover Point: 20Hz ~ 20KHz,Resolution 1Hz 3.Filter Slope Setup: -6dB/Oct ~ -48dB/Oct.
Output Phase and Time Alignment	Adjustable phase and time alignment for every output channel. Phase: In Phase or Out Phase(0°~180°) Time Alignment: 0 to 15ms, 0 to500cm
Presets	Save 9 presets into the device.

Troubleshooting

Check all the cables and connectors/terminals are absolutely safe before you switch on the power. General troubleshooting procedure:



Troubleshooting method:

No.	Malfunction	Reason and Solution
1	No Power	①Check the power connection ②Check the ACC connection
2	No Sound	③Is it in mute mode ? ④Check whether connected to correct input signal channel.
3	Unable to connect USB	①Check the USB connection. ②Check if the driver “HID-compliant device”has been installed in your PC.

All information and the specifications herein of this product are subject to change without notice. SICHERHEIT reserves the right to make changes of the specifications and materials contained therein without notice.



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