



⚠ WARNING

**PLEASE READ CAREFULLY BEFORE INSTALLING OR OPERATING THIS UNIT,
AND KEEP IT WELL FOR NECESSARY REFERENCE DURING USE.**

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WARNING

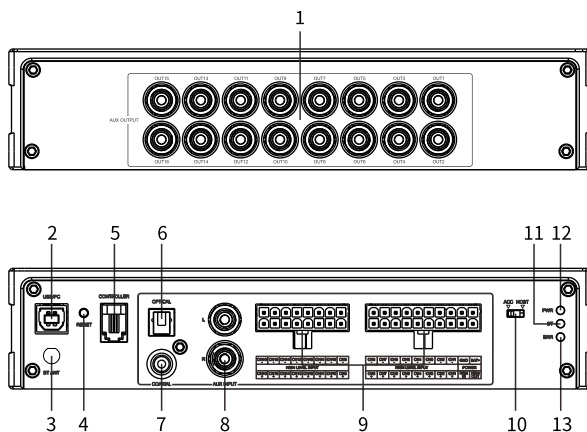
- To prevent short circuit, please keep the device away from water or wet places.
- If water or any other liquid soak into the device, cut off the power immediately, and call our service engineer of inspection, in case of emergency.
- There is no repairing unit inside for user, please do not try to disassemble 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-16Pure	· 1pc
· User Manual (English)	· 1pc
· User Manual (Simplified Chinese)	· 1pc
· Power And High Level Composite Cable	· 1pc
· High Level Input Cable	· 1pc
· Installation Bracket	· 4pcs
· Tapping Screws	· 4pcs
· Machine Screws	· 8pcs

Hardware Interface Introduction



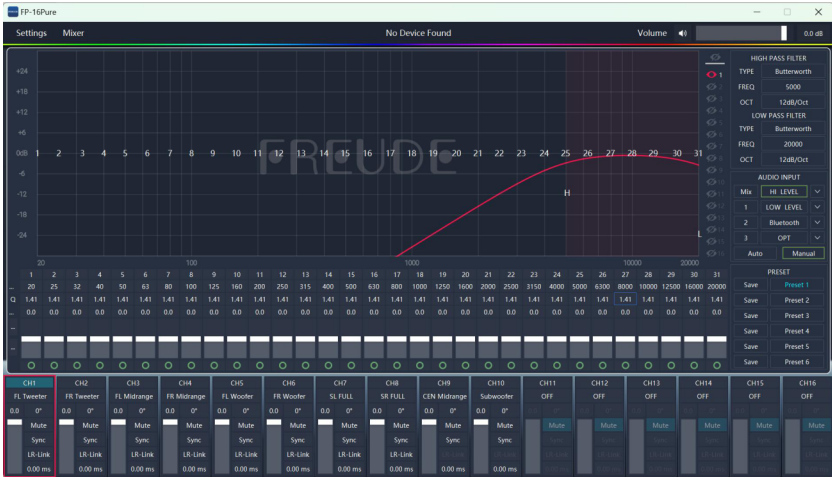
1. **Low level output interface:** Up to 16 Channel low level output.
2. **USB2.0 interface:** Connect to the computer tuning software.
3. **Bluetooth antenna**
4. **Reset:** Press to reset the system. Hold down for more than 5 seconds to enter the forced upgrade mode.
5. **Wire controller interface**
6. **Optical fiber input port:** Connect the optical line.
7. **Coaxial input port:** Connect the coaxial line.
8. **Low level input interface:** Connect two input channels.
9. **High level input and power interface:** "+" positive terminal; "-" negative terminal; "GND"negative power terminal or grounding terminal; "BAT+" positive power terminal; "REM OUT" output control terminal; "REM IN" input control terminal.
10. **Machine start mode switch:** When it is switched to the "ACC" terminal the "ACC" starts the machine, when it is switched to the "HOST" terminal, the high level all channels input signal starts the machine.
Attention: for some vehicle models, the speaker level control has no direct signal output terminal, in that case, control the unit with "ACC"; for some vehicle models, direct-current level of speaker only turned off after turned off by car key and vehicle door locked.
11. **Power indicator:** normal work green light.
12. **Bluetooth indicator:** Bluetooth to be connected, blue light slowly flashing; Bluetooth connection successful, blue light on.
13. **Error indicator:** When encountering a fault or protection, the red light is on.

User Interface Software Introduction

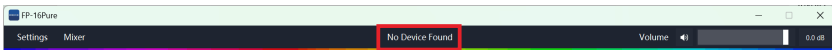
User Interface (we call "UI" in the following)

System requirements:

Computer Configuration Requirements: Screen resolution higher than 1366 x 768 otherwise the Software UI is incomplete, only suitable for windows operation system laptop, desktop and tablets. The higher computer configuration, the better operation experience obtained.



1. DSP Connection Status



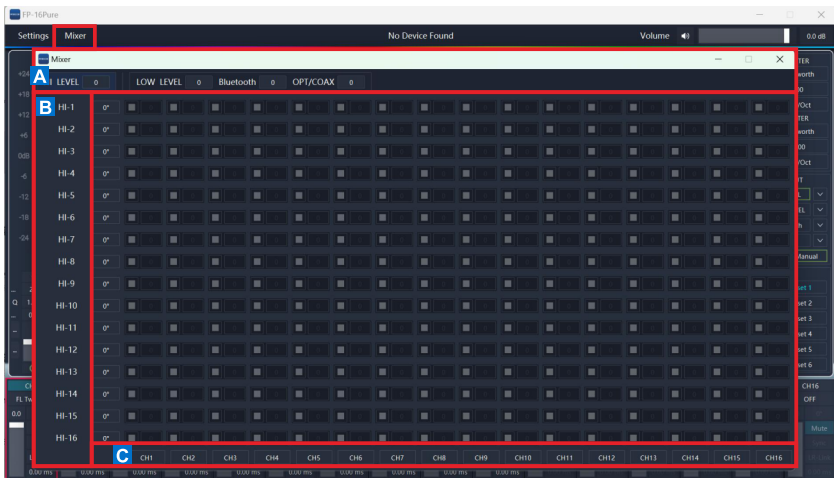
When the computer is not connected to the FP-16Pure, it shows: No Device Found;
When the computer is connected to the FP-16Pure, it shows: Device is Connected.

2. Setting:



1. **Save configuration file:** Save the DSP parameters set on the current interface.
2. **Open configuration file:** Open the DSP parameter configuration file.
3. **English/Chinese switching:** The language can be switched to Chinese/English;
4. **Delay unit:** switchable delay unit is Ms/cm;
5. **Upgrade DSP:** When updated original factory firmware available, you can upgrade the unit by this button.;
6. **Restore factory Settings:** You can use this button to restore factory Settings.

3. Mixer:



A. Input of 4 audio sources:

High Level/low Level/Bluetooth/Optical Fiber (coaxial), and you can enter the volume in the box;

B. 16 high level input

C. 16 output channels

In a mixer, the nodes of the audio matrix are switches that transferring from input channel to the output channel.

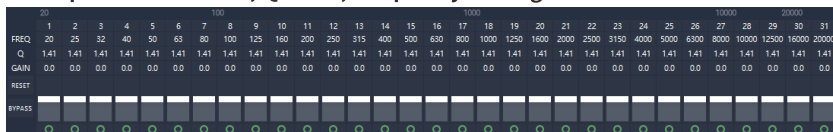
4. Output Signal Channel Graphical Display Of Frequency Response Curve Editing Area.



There are 31 bands of EQ adjustable in the editing area of the output signal channel graphical display of the frequency response curve. When the mouse moves to the small point on the serial number position, hold down the left mouse button, drag the mouse up and down to adjust the equalizer gain; drag the mouse left and right to adjust the equalizer frequency; when the mouse moves to the left and right blue square icons, hold down the mouse to drag left and right adjusting the equalizer's Q-value.

All above adjustments will be indicated as the real time equalizer parameters, in the parameter display and editing area below the serial number, and the values in the equalizer parameter editing area will be updated as well.

5. Output Channel Gain, Q Value, Frequency Editing Area



- (1) Frequency: In the editing area, you can directly enter the value, scroll the mouse wheel and the up and down keys on the keyboard to adjust the frequency.
- (2) Q: Adjusting Q value same way as above .
- (3) Gain: Adjusting Gain same way as above.
- (4) Reset: Click this button to reset the frequency /Q value/gain parameter.
- (5) Bypass: Click this button to switch from EQ channel to the Bypass mode
- (6) Green circle: Bypass EQ unit

6. Frequency Divider Editing Area

HIGH PASS FILTER	
TYPE	Butterworth
FREQ	5000
OCT	12dB/Oct
LOW PASS FILTER	
TYPE	Butterworth
FREQ	20000
OCT	12dB/Oct

Can be set for high and low pass frequency:

- (1) Click the slope drop-down list to close 6dB/Oct, 12dB/Oct, 18dB/Oct, 24dB/Oct, 30dB/Oct, 36dB/Oct, 42dB/Oct, 48dB/Oct.
- (2) Frequency adjustment range: 20Hz~20KHz;
- (3) Type: Butterworth, Bessel and Linkwitz-Riley .

7. Output Channel Type Editing Area

CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8	CH9	CH10	CH11	CH12	CH13	CH14	CH15	CH16
FL Tweeter	FR Tweeter	FL Midrange	FR Midrange	FL Woofer	FR Woofer	SL FULL	SR FULL	CEN Midrange	Subwoofer	OFF	OFF	OFF	OFF	OFF	OFF

Output channel name edit:

As shown in the figure above: CH1=FL high range; CH2=FR high range; CH3=FL mid range; CH4=FR mid range; CH5=FL low range; CH6=FR low range; CH7=BL full range; CH8=BR full range; CH9=centered mid range; CH10=mono channel subwoofer;

CH5	CH6
CEN FULL	L-Subwoofer

Click the drop-down list box under channel number to set the channel name.

For example, to set CH5 as “centered full range”, set CH6 as “left subwoofer”, etc.

CH1	
FL Tweeter	
0.0	0°
<input type="checkbox"/>	Mute
	Sync
LR-Link	
0.00 ms	

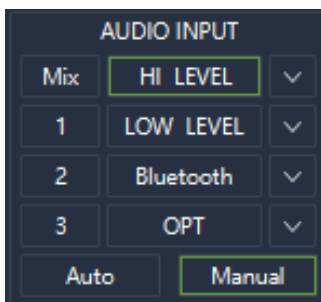
Separate output channel adjustment area, adjust each channel normal and reverse phase, volume, mute, delay and so on.

- (1) Volume adjustment: adjust the channel volume by sliding scroll bar up and down, or inputting value directly, or scroll the mouse pulley in volume input box.
- (2) Delay: use the mouse wheel, keyboard up and down keys or directly enter the value to set the delay value, range from 0~680cm, or 0~20ms: Unit: millisecond, centimeter (set in upper left corner of the interface).
- (3) Normal and reverse phase adjustment: switch between [0°] and [180°].
- (4) Mute: Click the mute button to turn off the channel output, and click again to restore.
- (5) Synchronization*: it's incremental synchronization, that volume and delay parameters of selected channel can be increased or decreased simultaneously.

(6) Inter-modulation: The EQ and filter parameters of the left and right channels can be copied to each other and adjusted in unison.

*Note: All parameters are relative additions or subtractions from the original values, not absolute.

8. Input Source Configuration



(1) **Mix**: When clicking the "Mix" button, the channel will be mixed with the high-priority channel audio in automatic mode, and the channel will be mixed with the lower enabled channel in manual mode.

(2) **Input Selection**: When debugging the whole system, switch to different audio sources to check the debugging effect. Priority is according to ranking.

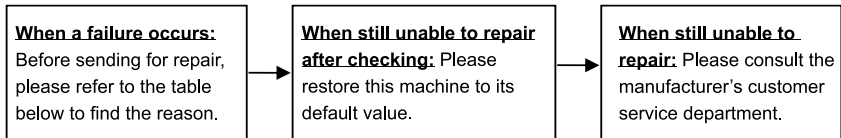
(3) **Auto/Manual Mode**: If without external panel connected, switch to the Auto mode. The panel supports automatic switching to manual mode. Under the Auto Mode, it will transfer to Manual Mode when the panel is operated; Auto Mode can be only restored after restarting the device.

Technical Specification

· Power:	· DC 10V~26V
· REM Input:	· High Level Input Signal or ACC control cable
· Input Signal Type:	· 16 Channels high level, 2 Channels Low Level, Optical Fibre, Digital BT, Coaxial
· Signal Input Range:	· Low Level Input: 2.8Vpp; High Level Input: 28Vpp/45Vpp (Configuration via internal jumpers)
· Input Impedance:	· Low Level Input: 15KΩ; High Level Input: 22Ω
· Dynamic Range(RCA Input):	· ≥114dB
· S/N (RCA Input):	· ≥116dB
· T.H.D.:	· ≤0.0018%
· Frequency Response:	· 10Hz~44kHz
· Decoding Capability:	· 24bit/44.1kHz/48kHz/96kHz/192kHz
· Standby Power:	· ≤0.1W
· Net Weight:	· Approx 2.16KG
· Product Dimension:	· 222(L) x 210(W) x 46(H)mm
· Output Signal Type:	· 16 Channels Low Level Output
· Output Signal Gain:	· Gain Range: Mute,-60dB~+6dB
· Output Signal EQ:	· 31 Levels EQ · 1.Frequency Range20Hz~20kHz, 1Hz Accuracy · 2.Q Value(Slope)0.05~16 · 3.Gain -24.0dB~+24.0dB, 0.1dB Accuracy
· Output Signal Crossover:	· Every output channel 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:	· Phase and time alignment adjustable for every output channel. · Phase: In Phase or Out Phase(0°~180°) · Time Alignment: 0.000 to 20.000ms, 0 to680cm
· Presets:	· Save 6 presets into the device.

Troubleshooting

Before powering on, you should carefully check whether the connection line is normal, and you must ensure that all interfaces are properly connected. Common fault judgment and treatment methods.



Troubleshooting method:

No.	Malfunction	Reason and Solution
1	No Power	① Is the power connection properly connected? ② Is the connection method correct?
2	No Sound	① Has the mute operation been activated? ② Is the signal input channel selected correctly?
3	USB connection is not available	① Is the USB cable inserted in place? ② Is there any discovery in the ergonomic input device of the computer device manager named "HID-compliant device" equipment.

The contents of this manual and the specifications of this product are subject to change without notice. SICHERHEIT reserves the right to make changes to the specifications and materials contained therein without notice.



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