




EUPHORIA™



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Designed and Engineered in the U.S.A.  Made in China



EUPHORIA™



EDSP31-610

**31 BAND - 10 CHANNEL
DIGITAL SOUND PROCESSOR**

Installation Instructions | Owner's Manual

Due to continuous improvement of the product, specifications are subject to change without notice.

INTRODUCTION

Congratulations on your purchase of a **EUPHORIA EDSP31-610**. Your selection of a EUPHORIA car audio product indicates a true appreciation of fine musical reproduction. Whether adding to an existing system or including your EUPHORIA DSP in a new system, you are certain to notice immediate performance benefits.

Keep Your Sales Receipt

Take this time to attach your sales receipt to the manual and put in a safe place. In case of any unforeseen reason this product may need warranty service, your receipt will be necessary to establish purchase date.

Recommendation

A DSP's performance is only as good as its installation. Proper installation will maximize the system's overall performance. It is recommended that you have our product installed by an authorized **EUPHORIA** retailer. However, if you decide to install it yourself, please carefully read through this manual and take your time to do a quality installation. Due to continuing product improvements and possible manual revisions, we recommend checking our website for latest product information at www.euphoriacaraudio.com

IMPORTANT!

Before making any connections, disconnect the car's battery until the installation is completed to avoid possible damage to the electrical system.

Serial # _____ Model # _____

EUPHORIA™ LIMITED WARRANTY

Euphoria™ warrants any products purchased in the U.S.A. from an authorized **Euphoria™** dealer.

All products are warranted to be free from defects in material and workmanship under normal use and service for a period of **two (2) years**.

This warranty applies to the **original purchaser only**.

Euphoria™ will either repair or replace (as its option) any unit that has been found to be defective and under warranty provided the defect occurs within the **two (2) years warranty period**.

This limited warranty does not extend to units that have been subjected to misuse, abuse, neglect, or accident. In **Euphoria™**'s judgment, products that show evidence of having been altered, modified, or serviced without **Euphoria™**'s authorization, will be ineligible under this warranty.

To obtain warranty service please contact your retailer or visit our website at **www.euphoriacaraudio.com** for more details.

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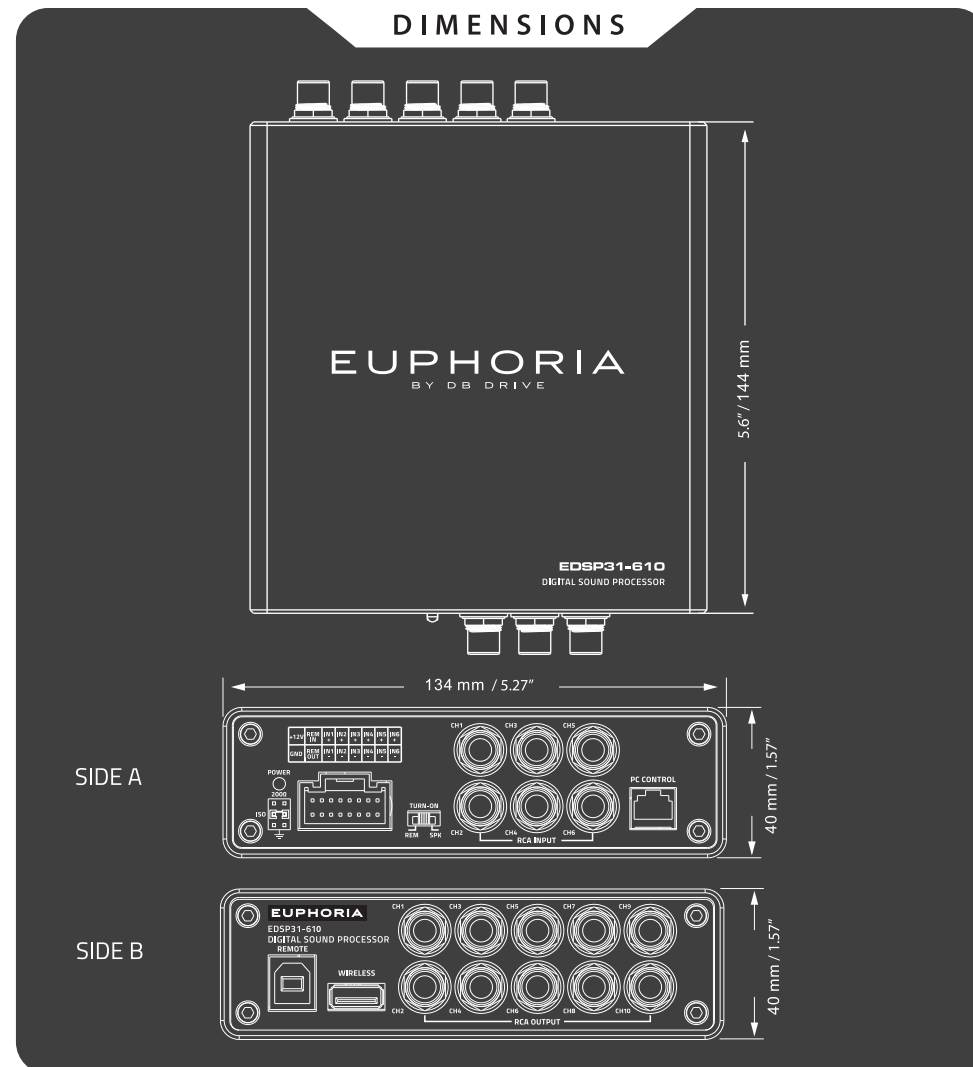
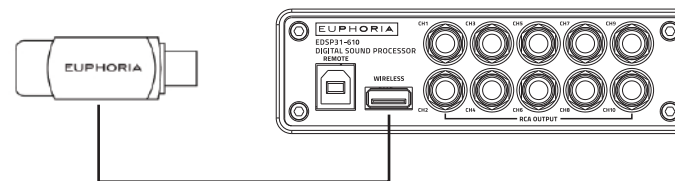
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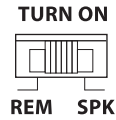
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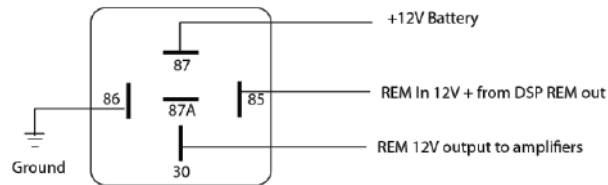


3.9.2 Software Operation

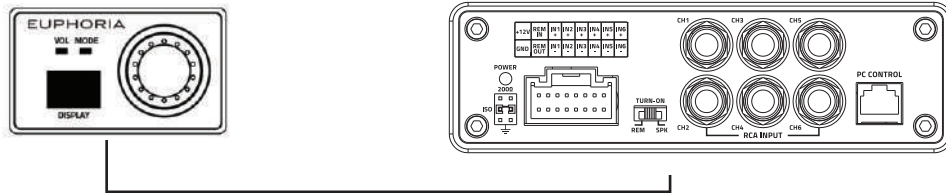
3.9.2 The REM Out is triggered either by the High-level audio sensing when using factory radio or the **REM In** when using aftermarket radio. Make sure to select the appropriate Turn on mode on the **EDSP31-610** chassis.



NOTE: REM OUT is only 0.2A, if you are connecting multiple amplifiers, you will need to use a relay .. see diagram bellow



EDSP31-REM Remote dash control: An optional remote dash control is available. (Sold Separately) the **EDSP31-REM** remote allows you to control the system master gain control, select through the user programmed presets and control the subwoofer level output gain.



EDSP31-BTD Dongle: An optional Wireless audio streaming and smart phone control are available. (Sold Separately) the dongle will allow you to stream audio from your smartphone as well as allow you to use the downloadable **EDSP31-610 DSP** control app. *The free apps are compatible with both iOS and Android devices.*

Please refer to the Euphoria website for the download links.

www.euphoriacarudio.com

About

1.1 EDSP31-610

The Euphoria **EDSP31-610** features a sampling rate of **48KHz**. The Digital signal processor is a high resolution **170MHz**, 64-bit dual floating point (DSP). It features 10 channel digital audio processing, separate gain controls, signal phasing, 31 Band parametric equalization, input, delays, and fully customizable frequency filters with selectable filter slopes.

1.2 Software Computer Screen

PC software control: Please check (2.) for Software operation details

- 1) Automatically detect whatever the hardware is connecting with the USB cable, if ready it will connect with the DSP unit automatically.
- 2) Display resolution over **1280*760**, or else the software will not show fully.
- 3) Compatible with Windows system's computers.

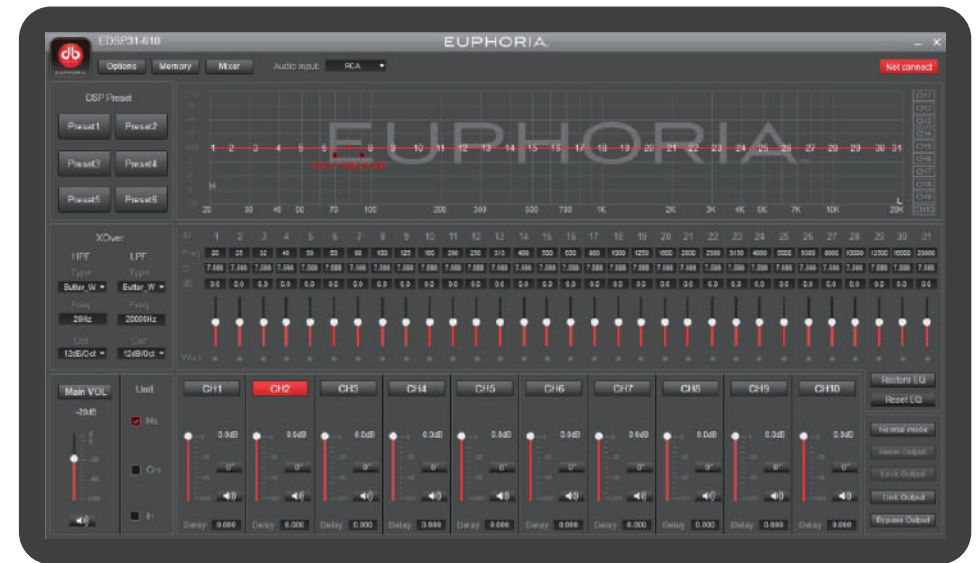


Figure 3.2.1

1.3 Specifications

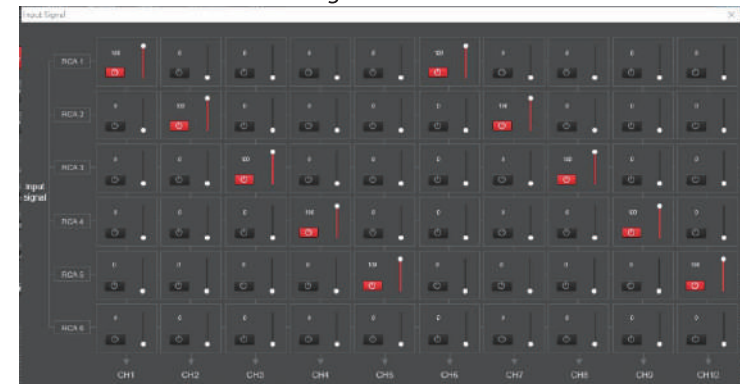
Active	≥110dB
S/N Ratio	≥100dB
T.H.D.	≤0.05%
Freq.	10Hz ~ 20KHz
Input Impedance	Low level input: 20KΩ, High level input: 180Ω
Low level output Impedance	100 Ω
Signal input/output range	RCA Input : 4.0 VAC High level : 18.5 VAC Output : 4.2 VAC
Temperature	-40 ~ 70 °C
Supply Voltage	DC 8.5V ~ 16.5 V
Turn-on REM input	
Turn-on REM output	+12 V starting voltage output
Power consumption	≤0.1W

FUNCTION

Input signal type	6 Ch high level, 6 Ch low level, Wireless Stream
RCA output location	10 Ch low level output
Output signal gain	Gain range: Mute, -59.9dB to 0.0dB
Output signal equalizer	Independent 31-band equalizer per channel 1. Frequency range: 20Hz ~ 20KHz 2. Q (Range): 0.404 ~ 28.85 3. Gain: -12.0dB ~ +12.0dB, resolution 0.1 dB
Output signal crossover	1. Filter type: Butterworth, Linkwitz-Riley, or Bessel 2. Filter crossover range: 20Hz - 20KHz 3. Filter slope setting: 6/12/18/24/30/36/42/48dB per Octave
Output phase and time delay	Independent adjustments per Channel Phase: 0° /180° Time delay: 0.000-7.354ms, 0.00-254cm, 0.00-100inch
Memory Preset	6 User programmable presets

3. Software Settings

Figure 3.4.12

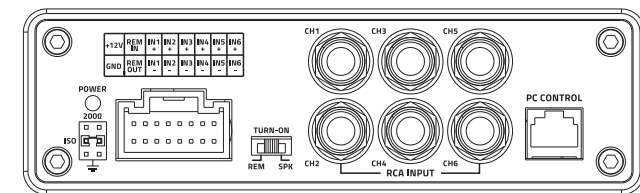


3.9 Saving DSP setting to PC or device

After the EDSP31-610 has been fully configured by the user it is recommended that the user saves all the settings to the PC for safekeeping. This can be done by clicking the memory tab on the top left corner of the GUI screen. When the pop-up window appears click the Save all presets tab.

This will save all settings on to your PC. *Your PC will then ask you to name the file.*

* **Speaker | Power | Remote | Dongle**



Connection Diagram

3.9.1 High - level inputs and power connections: Use the Molex connector to connect your high-level speaker wires from your factory head-unit. See the diagram below for the configuration

In 1+ Left front
In 1- Left front
In 2 + Right front
In 2 - Right front
In 3 + Left rear
In 3 - Left rear
In 4 + Right rear
In 4 - Right rear

- **+12V** connect to 12v positive battery constant power
- **GND** connect to chassis ground.
- **REM IN** connect to aftermarket head unit REM out wire.
- **REM out** connect to aftermarket amplifier or audio accessory requiring switched turn on.

3.7 Deleting Preset

As shown in figure 3.4.9., right-click the preset #, and select "Delete DSP preset" from the menu to erase a preset setting you do not need.

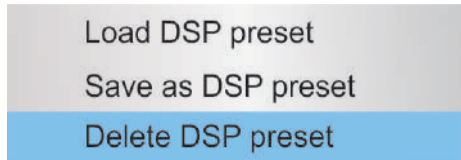


Figure 3.4.9

Confirm "Yes" on (Figure 3.4.10) to confirm the delete operation, once deleted the preset setting will be erased.

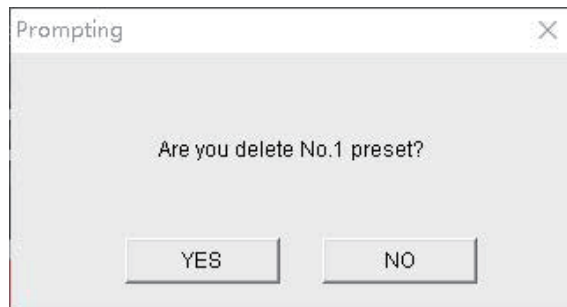


Figure 3.4.10

3.8. Mixer setting :

Select the button on the top left corner of the GUI screen. A pop-up window (Figure 3.4.12) will allow users to route inputs to which outputs they prefer and adjust the input level to each output.

2.1 Software Installation

Plug and play PC tuning software.

Operating system compatibility: Suitable for Windows 8-10.

The installation procedure describes:

Simply download the **EDSP31-610** software from the website, double-click the installation file, and follow the on-screen guide. Once installed follow through with steps 2.2

2.2 PC to EDSP31-610 First Time Connection

The PC to **EDSP31-610** connection must be made through a USB cable between the PC and the **EDSP31-610**.

Ensure that the **EDSP31-610** is powered on and connected with the supplied USB cable to the computer through the USB interface, the computer will find the new device and automatically install the equipment, after a few seconds the installation is complete. Double-click the **EDSP31-610** icon on your PC to open the software. The main interface is shown in figure 3.2.1. Refer to the status icon in the top right corner. Blue is for a successful connection to the PC, and red is for unconnected to the PC.

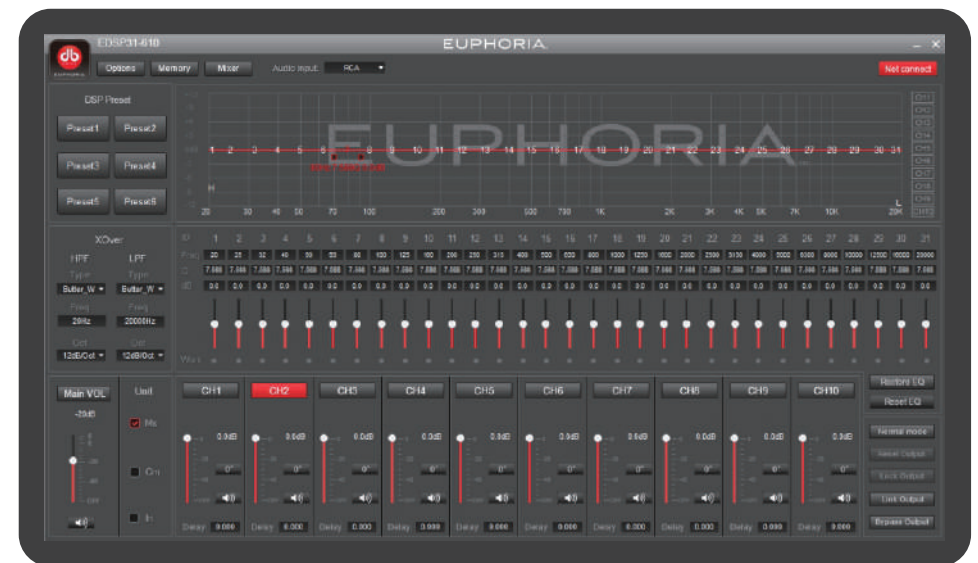


Figure 3.2.1

2.3 Software



Figure 3.2.2

Software interface units are divided into the following sections:

1. As shown in figure 3.2.2, "1" (Input Signal Selection)
2. As shown in figure 3.2.2, "2" (Connection Status)
3. As shown in figure 3.2.2, "3" (Crossover Settings)
4. As shown in figure 3.2.2, "4" (Time Delay)
5. As shown in figure 3.2.2, "5" (Output Channel EQ Selection)
6. As shown in figure 3.2.2, "6" (Equalization Selection)

2.4 Input Source Settings

On figure 3.3.2 "1", switch the audio input source to the audio input source of your choice.

Optional: High-Level, **RCA, wireless streaming**. The default audio source can be selected in the option of "1" zone. The default signal source is high level, but users can choose the RCA default signal source while setting up with the PC.



Figure 3.4.4

3.6 Loading presets: Select the preset you want to load and then click the preset button. A pop-up will appear to indicate the preset is loading, and the loading data window will show you the progress. (Figure 3.4.6)

Loading data window will show you the progress.

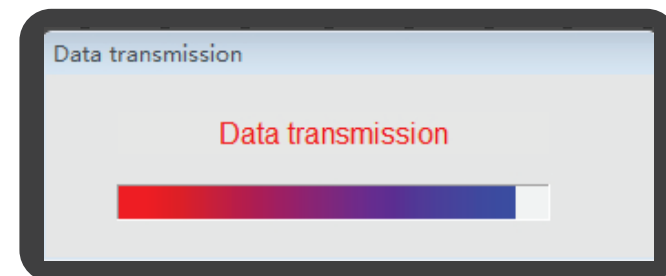


Figure 3.4.6

3. Setting Introductions

3.2 Reset Output Configuration

This button is to re-configure the output signal of the channel type of operation

3.3 Lock output Configuration

Click this button to configure the channels CH7 to CH10 to lock or unlock the operation, it indicates that the configuration settings are locked.

3.4 Memory

Click this ICON to save all system configurations to the PC hard drive or to load a saved PC customized labeled setting.

Preset Buttons 1-6

Right-click/click preset buttons 1-6 to individually save or load 6 fully customizable DSP settings.

1. Computer-stored scene data operation: The amplifier can run in the scene data saved as a computer file or load a previously saved scene computer file.

2. Preset 1-6 : Right-click preset buttons 1-6 **“Load/Save/Delete”** item will pop up (Figure 3.4.2)

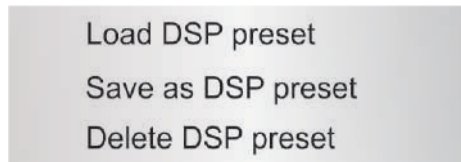


Figure 3.4.2

3.5 Naming Presets: Select "Save as DSP preset" (Figure 3.4.2) which will bring up a preset naming box (Figure 3.4.4). Enter a name (such as 4-abc) in the preset number you want displayed to save. Select the OK button in Figure 3.4.4 to complete the save as preset.

2. Software Settings

2.5 Output channel switch and operations

*Select the corresponding channel in the "5" section of figure 3.2.2 (CH 1, CH2, CH4, etc.). You can switch the corresponding channel to adjust relevant parameters when editing channels. The crossover and equalization will vary depending on the channel and change in parameter values.

2.6 Output gain, delay, mute and phase setting

Figure 3.3.1 shows 10 output channels commonly used when parameters are displayed. The user can adjust the parameters here and customize the drive type of each output channel.



Figure 3.3.1

1. The output gain control for each channel can be set independently as well as the master gain.
2. Each channel can be muted, and the phase can also be aligned independently. This can be done by selecting the buttons under each channel section.
3. Delay selection units are in milliseconds, centimeters, or inches. The range of milliseconds is from **0.000~7.354**; the Range of mm is from: **0~254**; the Range of inches is from **0 to 100**.

2. Software Settings

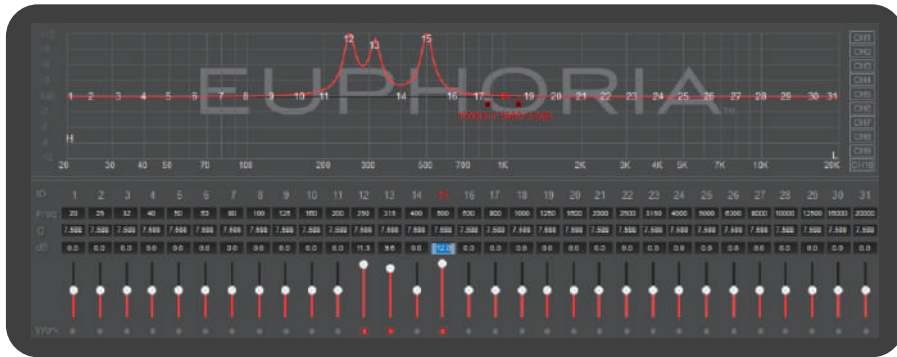


Figure 3.3.7

2.7 Output signal equalizer and crossover operation.

Simply drag the slider 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 and adjust the current real-time equalizer. The value EQ parameters are also updated.



Figure 3.3.8

2.8 Bypass EQ/Restore EQ :

The button shown in Figure 3.3.8, the current channel as long as there is an equalizer in the open state, this button will appear highlighted in a red state, indicating that you can click this button to make all the equalizer bypass. The button will change to Restore EQ in a white state after that and is ready to "return" back to the last activated state by clicking on it again.

3. Setting Introductions

Click on the "restore" button to allow all current equalizer channels back to the last activated state.

Note: This operation will change the equalizer gain.

3.1 Reset EQ: To make all current channel equalizer parameters return to their initial state, select the button shown in Figure 3.3.8. Uniform frequency distribution, **Q Value is 7.588, a gain of 0.0dB.**

The output channel crossover selection.

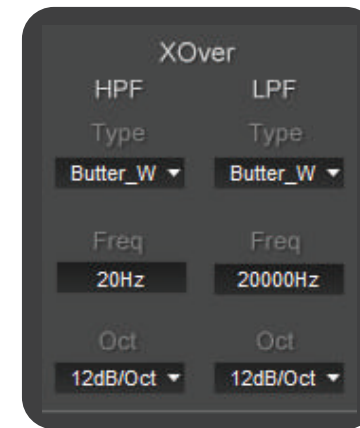


Figure 3.3.9

The parameter value of the crossover for the given driver channel or channel selected is shown in the "frequency selection" column in Figure 3.3.9.

Filter type setting: Drop-down menu to select the type, options are **(Linkwitz- Riley), (Bessel), or (Butterworth).**

Frequency setting: You can directly type the input frequency value, select and scroll with the mouse, or use the up and down keys on your keyboard and other ways to adjust the low-cut or high-cut frequency.

Slope (slope) settings: **6dB, 12dB, 18dB, 24dB, 30dB, 36dB, 42dB, 48dB per octave.**