ELEKTRA
MOBILE AUDIO

Thank you for using an Elektra Mobile Audio product.

Enjoy your system!

www.elektramobileaudio.com

ELEKTRA
MOBILE AUDIO

www.elektramobileaudio.com

DSP4.8 User's Manual

DSP4.8

4 Input, 8 Output Digital Sound Processor

High Level Input Connection Diagram

Instructions:

1) With the main power disconnected, mount the DSP to the vehicle and connect the negative terminal to a chassis ground.
2) Connect the power to a fused +12V cable from the battery
3) Connect the REM IN from the system's head unit
4) Connect the high level inputs and RCA outputs to the head unit and amplifiers
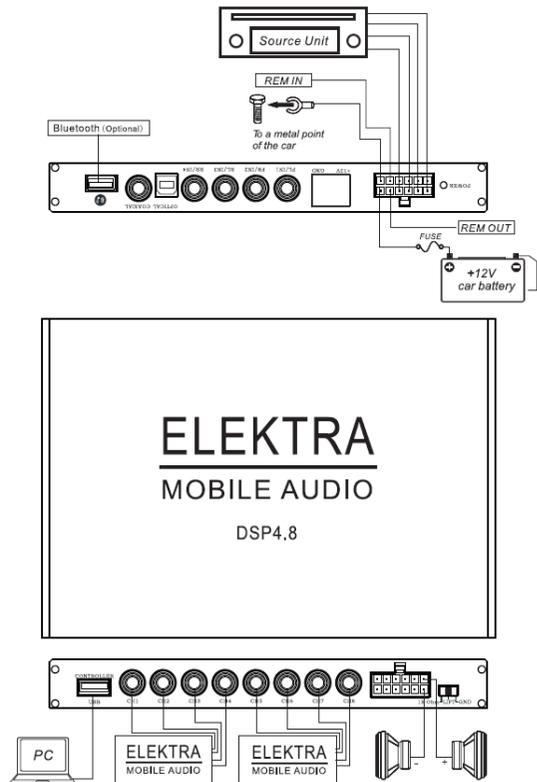
RCA Input Connection Diagram

Instructions:

1) With the main power disconnected, mount the DSP to the vehicle and connect the negative terminal to a chassis ground.
2) Connect the power to a fused +12V cable from the battery
3) Connect the REM IN from the system's head unit
4) Connect the RCA inputs and outputs to the head unit and amplifiers
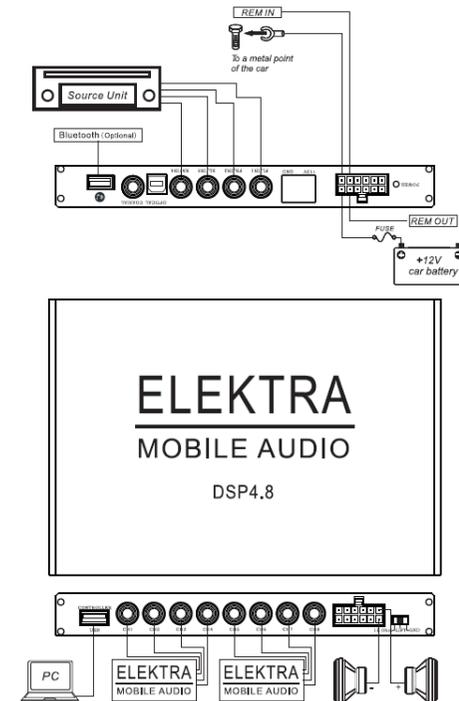
Optical/Coaxial Input Connection Diagram

Instructions:

1) With the main power disconnected, mount the DSP to the vehicle and connect the negative terminal to a chassis ground.
2) Connect the power to a fused +12V cable from the battery
3) Connect the REM IN from the system's head unit
4) Connect the Optical/Coaxial input and RCA outputs to the head unit and amplifiers
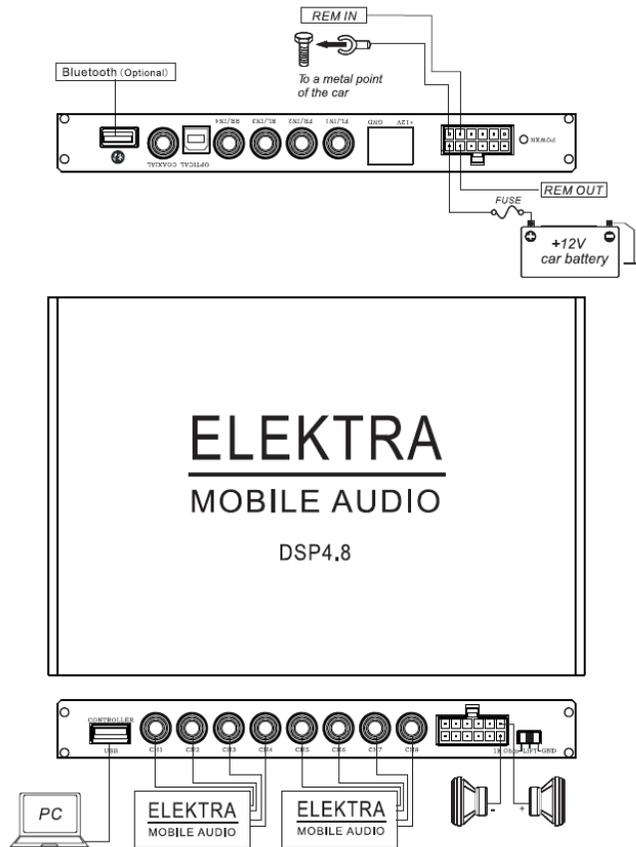
DSP Overview

The Elektra Mobile Audio DSP 4.8 is a mobile audio DSP and amplifier with 4 inputs and 8 outputs designed to enable you to correct the audible issues in your mobile audio system. The DSP can be controlled via a mobile app (Android) and via a Windows PC.

This DSP also features a 6 channel amplifier which can be used to power an entire system with DSP corrections in one device.

Technical Specifications

Model NO.:	DSP4.8
Power Supply	9.8V-16V
Control mode	DSP controller; PC software; APP software
Filter mode	HPF/LPF
HPF	20-20KHZ, 1/6 oct step
LPF	20-20KHZ, 1/6 oct step
Filter slope	6dB/oct-24dB/oct
EQ band	10-band per channel
EQ gain	-12dB ~ +12dB
EQ Q value	0.404~+28.85
S/N Ratio	102dB
Time delay	5.396MS per channel 0.021ms step
Product size	220X154X31MM

DSP Configuration

Ensure that the DSP4.8 is powered, and verify the power light is on.

Connect the PC to the DSP4.8's USB port using the supplied USB cable. If it's the first time connecting the DSP to the PC, the PC will then automatically detect and install the drivers for the DSP.

To verify that the hardware was successfully installed on the PC, open the Device Manager and check if a device called "HID-compliant device" is shown as installed. The following figure demonstrates this:
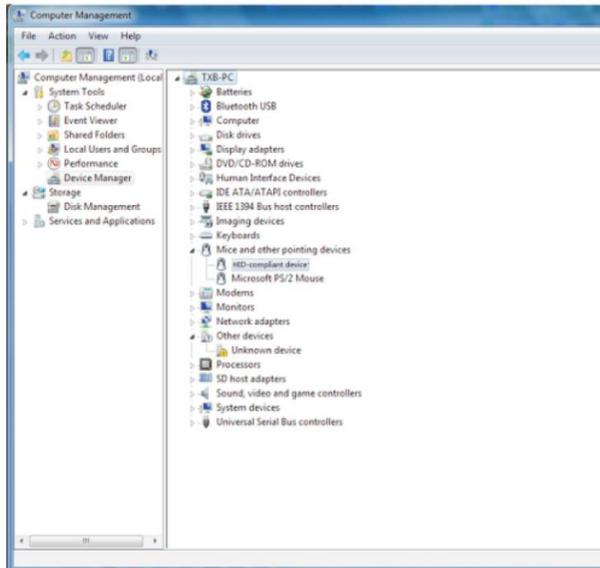
With the DSP still connected, open the **DSP4.8.exe** software and verify that the status button at the lower right hand corner shows ON Line. If the device is not connected, it will be shown as OFF Line.

Software Installation and Operation

The software supplied with this unit is used to control, save and recover the DSP4.8 from a graphical user interface.

Download the software executable file called **DSP4.8.exe** located on the Elektra Mobile Audio website on a Windows 7/8 or 10 Operating system.

Double click the **DSP4.8.exe** file to open the program

If you are unable to open the program, you can download the software again from the DSP4.8 product page on the website www.elektramobileaudio.com

You should see a window opened as shown below:
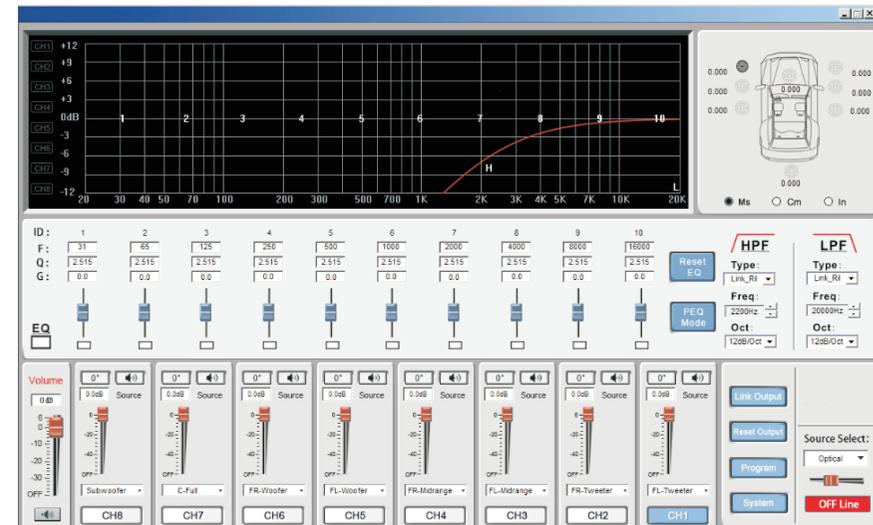
This is the graphical user interface program that you will use to modify the settings on the DSP and customise the sound of your system to your preference.

Using the Graphical User Interface
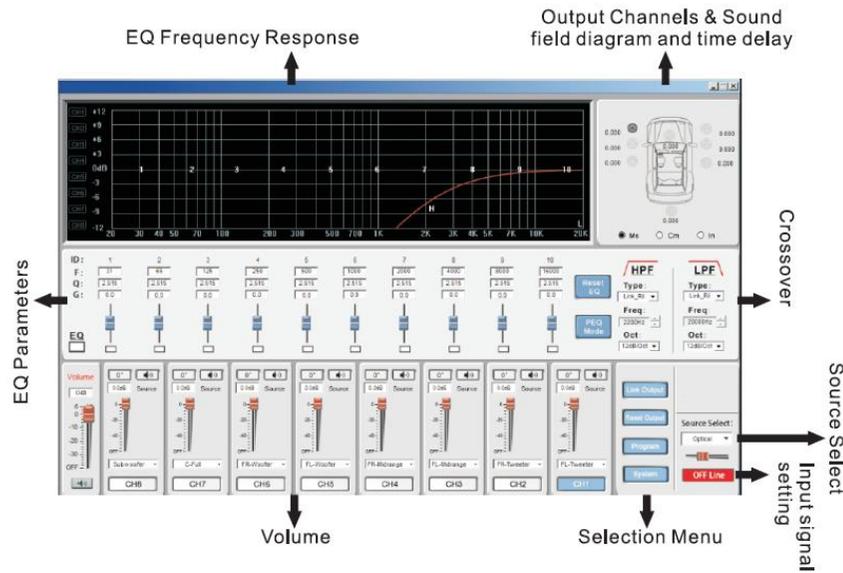
EQ Frequency Response

Each output channel has 10 bands of EQ, and each band can be manipulated by the sliders and input fields to vary the centre frequency and Q factor.

Output Channels & Sound Field diagram
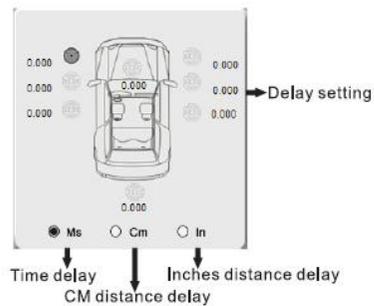
You can vary the delay settings for each output channel by selecting the channel and then entering the desired time delay. Delays can be set to be entered by time in milliseconds (from 0.00ms to 8.00ms) or distance in centimeters (0cm to 277cm) or inches (0" to 109"). While the channel is selected, you can type in the delay or use the arrow keys or mouse to modify the settings.

Crossover Settings
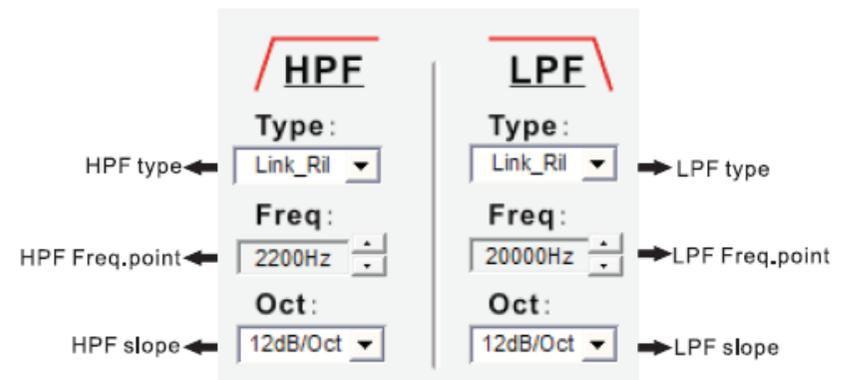
The crossover settings can be modified using the drop down menu to select the following options:

Filter Type: Butterworth, Linkwitz-Riley, Bessel

Frequency Settings: HPF/LPF: 20Hz to 20kHz

Crossover Slope: 6/12/18/24 dB/octave

Volume Adjustment
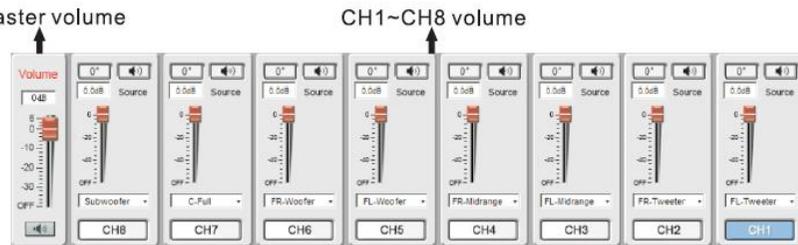
In the volume adjustment area, you can adjust the master volume with the control to the left from +6.0dB to -39.9dB or turn off the volume

Additionally, you can adjust the volume level of each of the 8 output channels. The channels can be adjusted from 0.0dB to -59.9dB, or turned off.

The [🔊] button can be pressed to mute each channel. A muted channel will be displayed as [🚫], and can be pressed to be unmuted.

The phase of each channel can also be controlled by pressing the 0° button to modify the phase accordingly.

Output Linking

In the Selection menu area, you can choose the link the outputs from the right channel to the left, or from the left channel to the right:
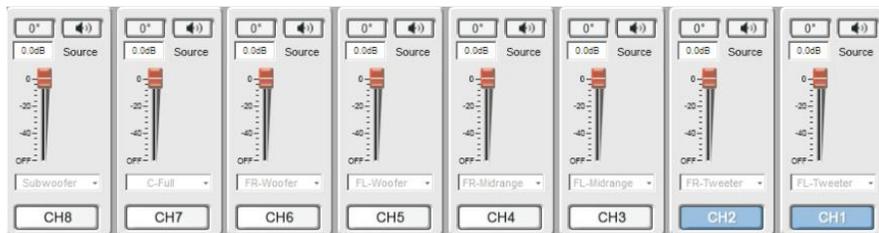
EQ Parameters
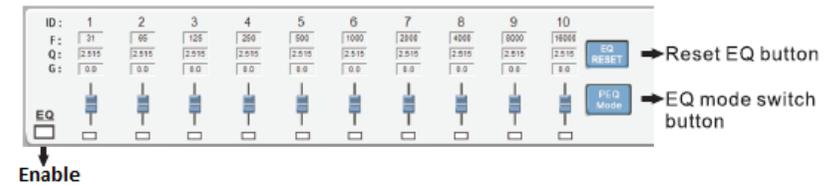
Frequency Settings - In parametric equaliser mode, frequencies to be adjusted can be entered between 20Hz and 20kHz using the mouse or keyboard. In graphic equaliser mode, the frequencies are adjusted in 1/3 octave increments.

Q value - In parametric equaliser mode, you can adjust the Q factor from 0.404 to 28.85 by using the keyboard or mouse.

Gain – The gain cab be adjusted for each EQ band from -12dB to +12dB

Enable – There is a master enable and an enable button per band.

Reset EQ – This button will prompt you to reset all EQ settings to default!

EQ mode switch – This button will toggle between Parametric and Graphic EQ modes. A prompt will come up to ask to switch between modes.

A graphic EQ is designed to cut or boost level on equally spaced frequencies, such as 1/3-octave or octave spacing, with a preset bandwidth value.

Parametric EQ, on the other hand, gives you fewer EQ bands, but with more control, letting you vary the center frequency of the boost or cut, as well as the bandwidth of the adjustment.

Reset Output – This button will prompt you to restore output settings to default.

Signal Input – This section will indicate the status of the Signal

Signal Select – Use this section to select the source input type

System - This button allows you to restore factory settings, change the system language, or update the firmware.

Option Menu

Program - This button allows you to save, import or delete settings.
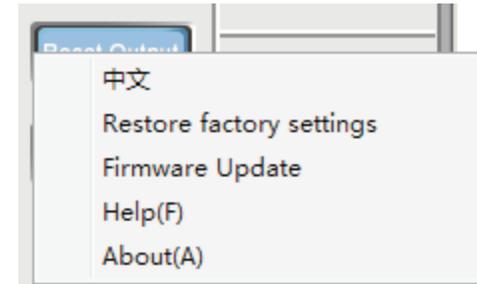
Starting the App – Turn on your phone's Bluetooth and find the DSP device and click connect.

App interface
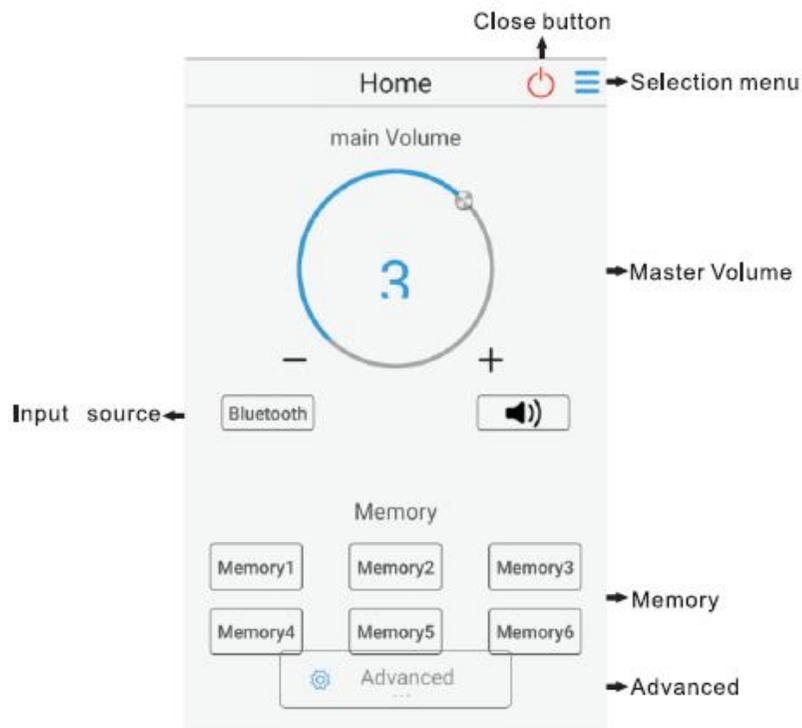
Close Button – This exits the app

Selection Menu – You can exit and find app information here

Installing the App

The DSP4.8 can be controlled via an Android phone using Bluetooth connectivity to the DSP.

The app can be installed from the product's page on the website www.elektramobileaudio.com

Download the dsp4.8.apk file to your mobile phone and install it. Double click the app to open it and enter the main interface.
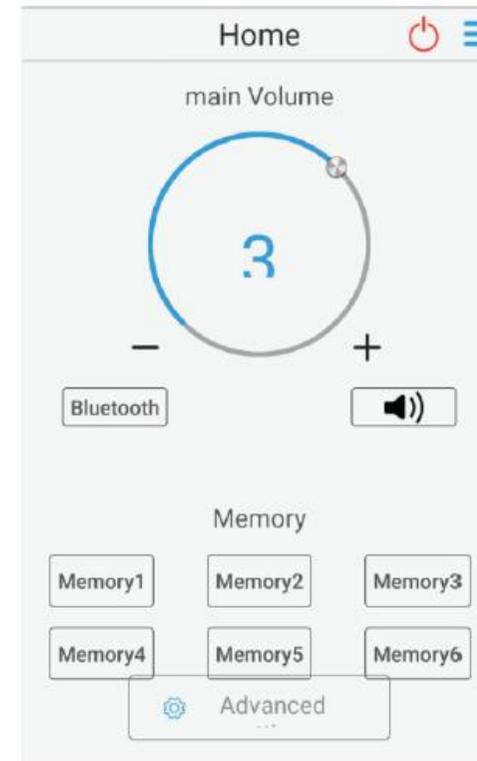
Master Volume – You can adjust the master volume by clicking the "+"/"-", or using the phone to adjust the level.

Memory – This section can be used for storing different presets for the DSP. You can store up to 6 presets.

Input Selection – The Audio Input Source can be selected here
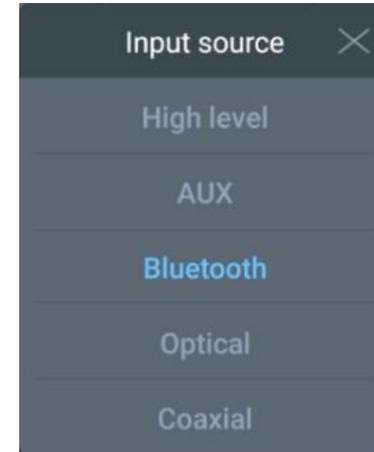
Advanced – Enter Advanced mode to adjust Time Alignment, Crossover and EQ Settings. These are similar to adjust to the computer software settings.