DIGITAL SIGNAL INTEGRATOR DSI-1

Introduction

Thank you for purchasing the DD Audio DSI-1(Digital Signal Integrator). The DSI-1 is a feature rich audio signal processor that will allow you to precisely tune the acoustics of your car audio system for maximum listening pleasure. It can be used in conjunction with aftermarket systems or integrated into factory systems to realize the full potential of your audio components. To ensure ease of use and proper setup please take a moment to thoroughly read through this operation manual.

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Features/Specifications

1. GUI (graphical user interface) operation.

2. Adjustable Crossovers
    - LPF (20Hz-20kHz, Linkwitz~Butterworth, Slope: 6dB. 12dB, 24dB, 36dB)
    - HPF (20Hz-20kHz, Linkwitz~Butterworth, Slope: 6dB. 12dB, 24dB, 36dB)
    - BPF (20Hz-20kHz, Linkwitz~Butterworth, Slope: 6dB. 12dB, 24dB, 36dB)

3. Adjustable 10 Band Parametric Equalizer
    - (20Hz-20kHz, +/- 15 dB, Q-Factor 0.5~10)

4. Phase Adjustment: 0~180 degrees

5. 2,4,6 Channel analog RCA input, with input summing capability

6. 8 Channel RCA Analog Output: 3v rms

7. AUX 2 Channel analog input

8. SPDIF Digital Optical Input

9. Adjustable RCA Input Sensitivity: 0.5V~22V
    - Selectable Low~High Level Input
    - High Level to RCA adaptors included

10. Adjustable Time Alignment: 0~168.2ms

11. Power Supply Input Voltage: 8v~16v

Dimensions/Connections

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Input Connections

REM: Turn-on power input for the DSI.

B+: 8v-16v constant positive power supply input

REM OUT: Provides a 130-mA 12v turn-on signal for connected amplifiers. May require an additional relay for multi amp turn-on.

GND: Negative power supply input

AUX1 & AUX2: Use these low-level inputs to connect external sources such as mobile phones

1Ch-6Ch : Use these inputs for integrating into factory or aftermarket audio systems. (see pg 07-09)

RS-485: Port for connecting an optional remote control to the DSI-1 via a modular cable

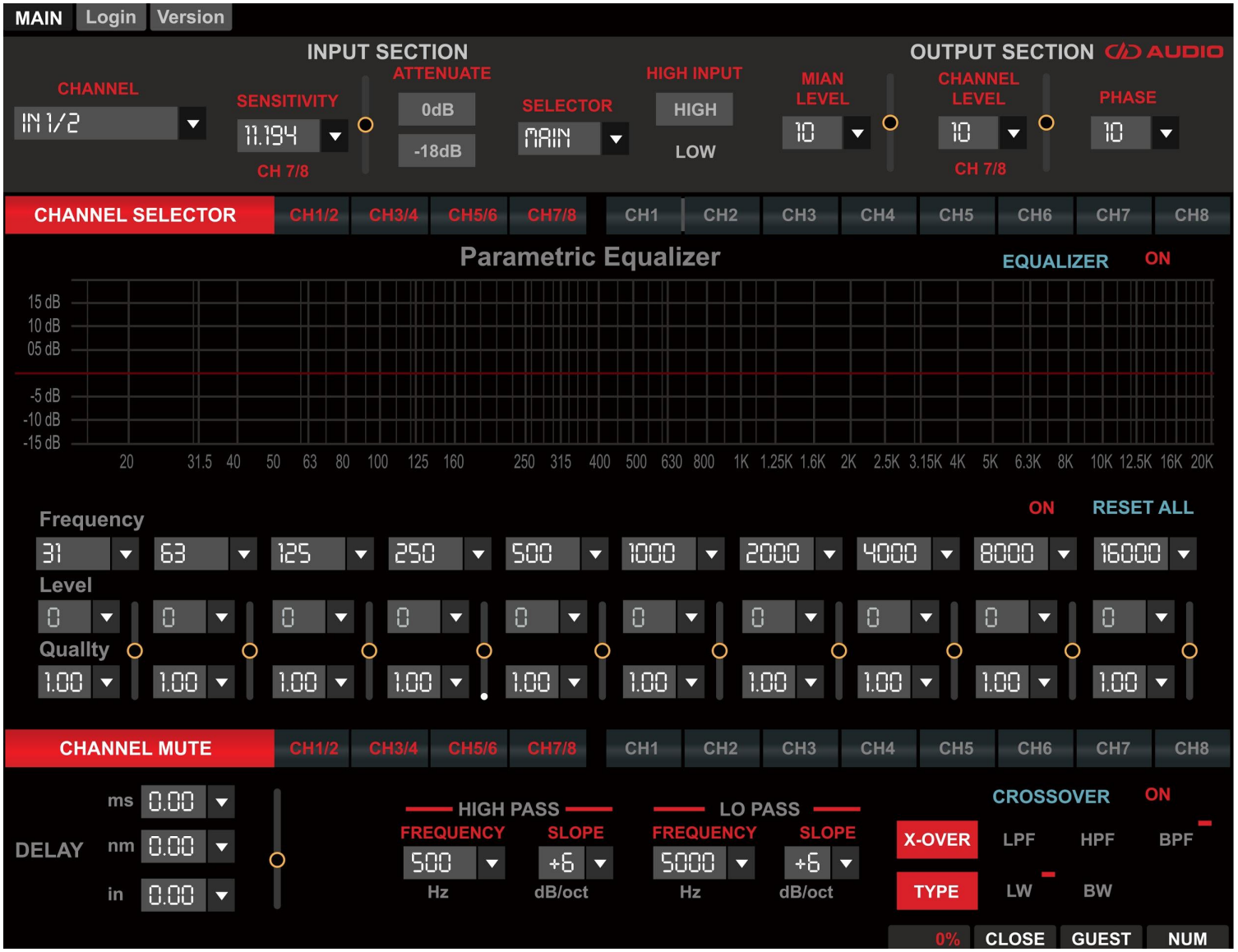
PC-USB: USB (type B) Port for connecting a PC to the DSI-1 via a USB Cable

Optical: For connecting the DSI-1 to a source unit with SPDIF Digital Optical output

Output connections

1Ch-8Ch: Low-level analog signal outputs for connecting to amplifiers.

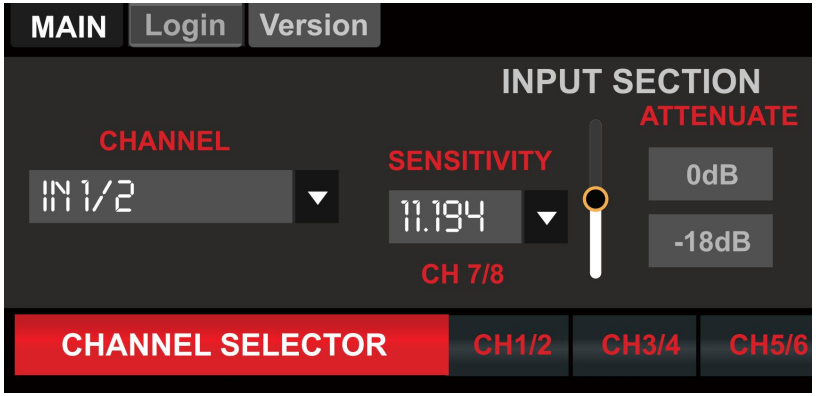
GUI Configuration



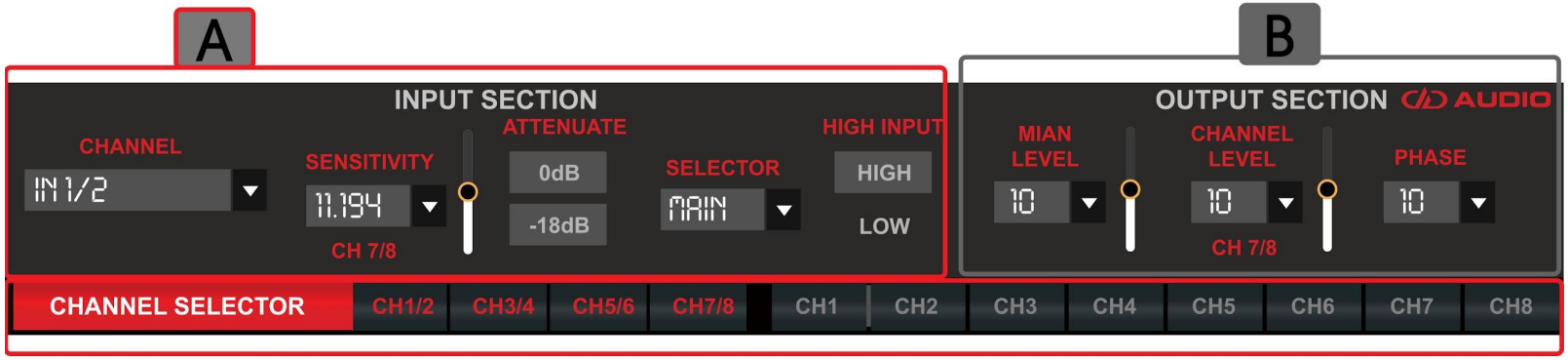
Accessing the DSI-1 GUI

1. Install the DSI-1 software on your computer.*/**
2. Connect the DSP unit to your PC using a USB cable. *
3. From your desktop, run the DSI-1 icon.**
4. To login, click Login and input default Password 0000.

*Not Mac Compatible
**Certain PC Anti-virus software may recognize the DSI-1 GUI program as harmful to your computer. If you receive a Warning message disregard it and Allow your computer to run the program.



Input/Output Configuration



A) INPUT SECTION

CHANNEL: Use the CHANNEL drop down menu to assign an input, pair of inputs, or set of summed inputs to your selected output channel/s.

For example. If you want output CH1/2 to mate with input channels 1 & 2, simply select IN 1/2 from the CHANNEL drop down menu. Channels 3/4 and 5/6 can also mate with their own corresponding input pair (ie CH 3/4 will mate with IN 3/4). CH 7/8 is the exception and can only receive inputs from IN 1/2 and IN 3/4.

If you only have input for 2 channels, and you want to have 8 channels of output, assign output channels CH1/2, CH3/4, CH5/6, and CH7/8 from the CHANNEL SELECTOR to IN 1/2 from the CHANNEL drop down menu.

The DSI-1 also has a summing capability to create 1 pair of full range output signals from a variety of partial range input signals. For example, if 2 output channels from the factory audio system are high passed (have no low end frequencies) and have been wired to IN 1/2 and 2 additional channels from the factory audio system are low passed (have no high end frequencies) and have been wired to IN 3/4, these channels may be summed to CH 1/2 from the CHANNEL SELECTOR to create a full ranged signal by selecting IN 1/2, 3/4 from the CHANNEL drop down menu. The same thing may be done for factory 3-way systems that have high passed, band passed, and low passed signals by selecting IN 1/2, 3/4, 5/6 from the CHANNEL drop down menu.

Input/Output Configuration

Channels 3/4, 5/6, and 7/8 from the CHANNEL SELECTOR cannot be used to form summed signal outputs. They may instead, only be used from a single pair of inputs. These inputs can include IN 1/2, or their own corresponding input pair (ie CH 3/4 will mate with IN 3/4). CH 7/8 is the exception and can only receive inputs from IN 1/2 and IN 3/4.

To create a mono output pair the IN 1+2, IN 3+4 or IN 5+6 may be selected from the CHANNEL drop down menu. If CH 7/8 will be used as a subwoofer output, you may select IN 1+2 or IN 3+4 to create a non-balancing (no difference in output from left to right) output from the input pair.
Independent outputs (1-8) from the CHANNEL SELECTOR cannot have their input selected separately. Selecting CH 1 from the CHANNEL SELECTOR will result in the CHANNEL drop down menu being greyed out. Input channels may only be selected for paired outputs from the CHANNEL SELECTOR.

WARNING: Program does not auto-save! Please save often to avoid losing adjustments. (see pg 14)

Input/Output Configuration

SENSITIVITY: This feature is used to match your DSI-1 RCA inputs to your source unit's outputs. The higher your source unit's output level is, the higher the number in the SENSITIVITY box needs to be.

ATTENUATE: Use this feature in conjunction with SENSITIVITY level setting. 0dB will allow you to set your sensitivity level between 0.500~3.155, -18db will allow you to set your sensitivity level between 3.540~22.334.

SELECTOR: Use to select the desired input. Analog Main, Analog AUX-A or Digital SPDIF AUX-D.

HIGH INPUT: Use to select between High level input (speaker level) or Low level input (RCA level).

When using a high/speaker level signal to integrate the DSI-1 into a factory system use the included speaker wire to RCA adaptors.

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B) OUTPUT SECTION:.

MAIN LEVEL: This will adjust the output level of all channels.

CHANNEL LEVEL: This will adjust the output level for individual channels or stereo pairs.

PHASE: You can select 0 or 180 degrees to invert the phase of individual channels or stereo pairs.

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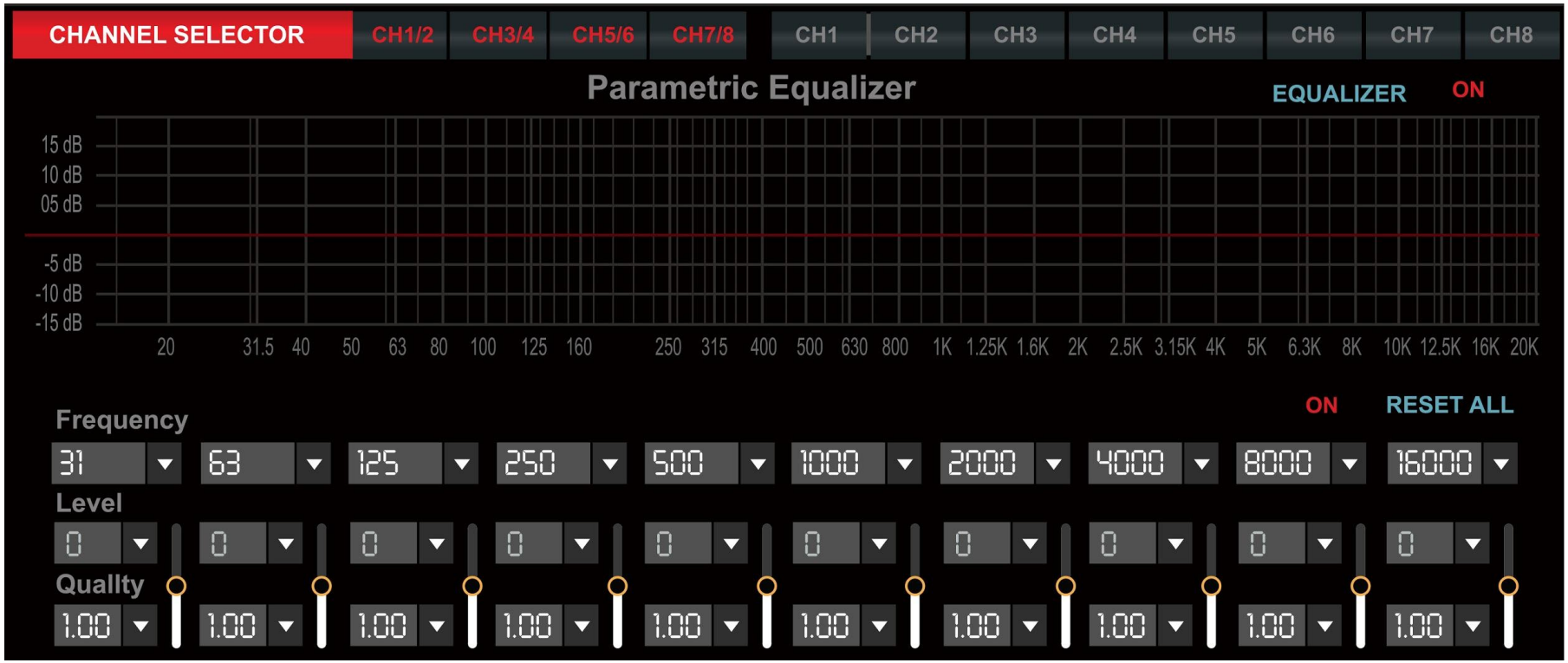
EQ Configuration



EQ Configuration

1- Channel Selector: Use to select the channels to be adjusted. You can adjust the channels individually, or in stereo pairs.

2- Parametric Equalizer Graph: From this window you can visually monitor adjustments in real time.

3- EQUALIZER: From this window, you can switch the signal processing functions on/off to audibly compare the difference. Select the EQUALIZER box to activate the equalization circuit. De-select the EQUALIZER box to turn equalization circuit off.

4- Frequency: Use to set the center frequency to be adjusted. (20Hz~20kHz)

5- Level: Use to set the gain level of the center frequency. (-15 dB~+15 dB)

6- Quality: Use to set the Q (wave form) of equalization. A low Q affects a wide range of frequencies while a high Q affects a narrow range of frequencies.

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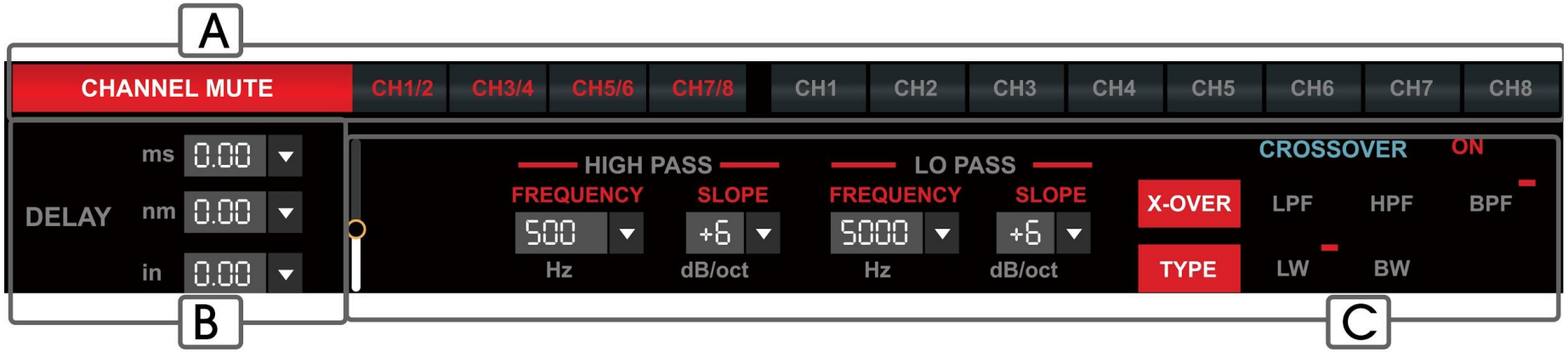
Crossover Configuration



Use **Channel Selector** to select the channels to be adjusted: You can adjust the channels individually, or in stereo pairs.

A) CHANNEL MUTE: Use this button to mute individual channels or stereo pairs. This function is useful if you want to hear the response of an individual channel.

B) DELAY: To compensate for various speaker locations and listening positions, adjustments can be made in milliseconds of delay for proper time alignment. In a properly time aligned install all speakers will sound equidistant from the main listening position.

DELAY can only be adjusted in millimeters from the listening position. The program will automatically show the conversion to inches and milliseconds.

C) CROSSOVER: Select the CROSSOVER box to activate the crossover circuit. De-select the CROSSOVER box to turn crossover circuit off.
For each channel/s you can choose to run a High Pass, Low Pass, or Band Pass crossover. You can also choose a crossover slope of 6dB,12dB, 24dB, or 36dB per octave, and you can choose to use a Butterworth or a Linkwitz-Riley filter.

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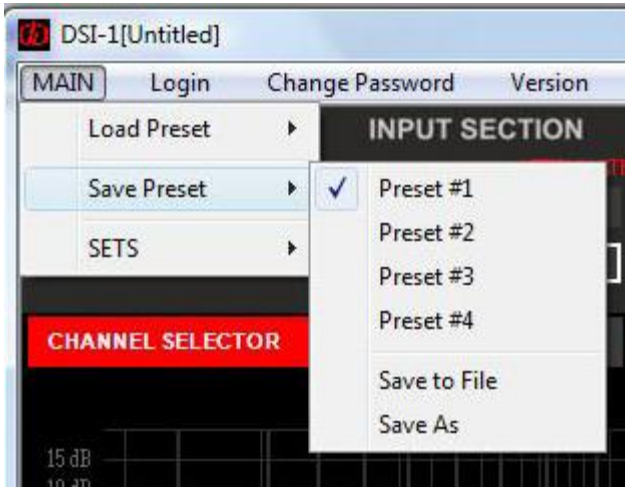
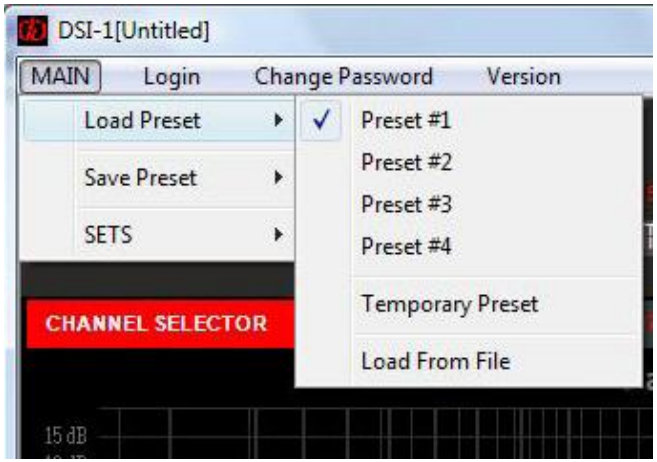
File Save & Load Configuration

1- Save Preset : You can save up to four tuning presets.

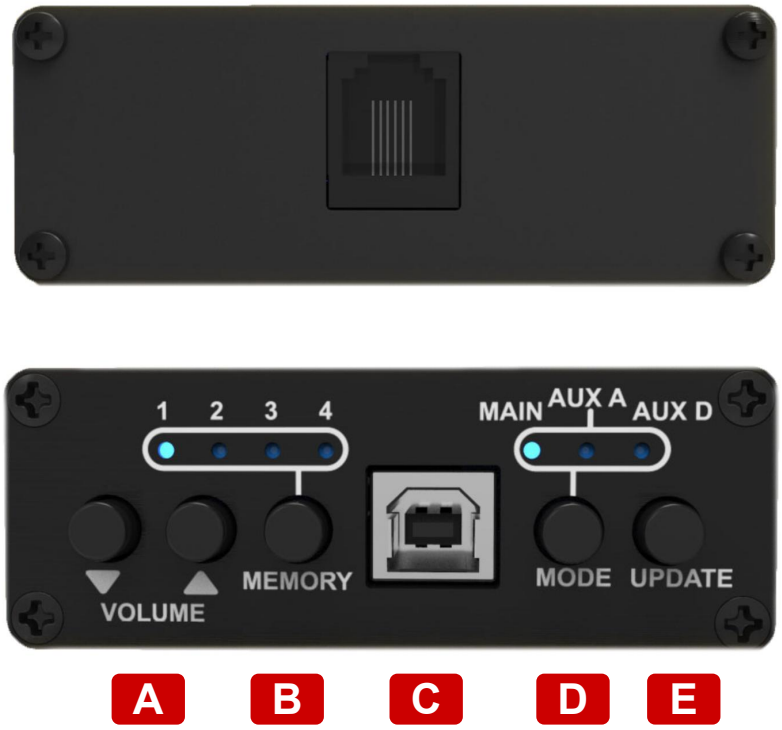


2- Load Preset : This function is used to load the desired tuning preset to the DSI-1.



REMOTE CONTROLLER *Sold Separately

REMOTE CONTROL FUNCTION



The optional remote control allows for installation flexibility, and easy operation of the main DSI-1 functions w/out having a PC connected. The control connects to the DSI-1 via a supplied modular cable.

A) Use **VOLUME** to adjust the main volume of the DSI-1.

B) Use **MEMORY** to select from a saved tuning preset.

C) Use the **USB port** to conveniently connect your PC to the DSI-1 for tuning adjustments.

D) Use **MODE** to select the desired input mode.

E) Use **UPDATE** to update the remotes firmware after a firmware update has been downloaded to the DSI-1

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