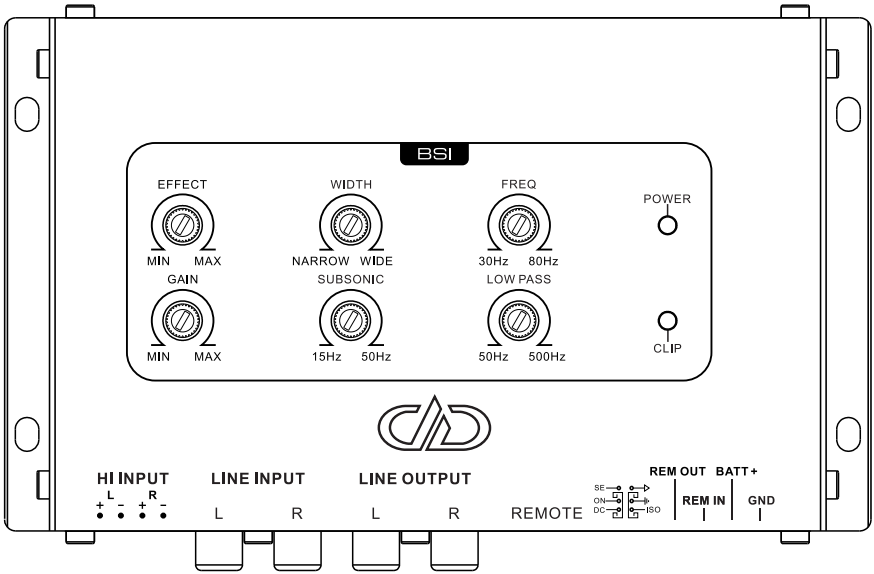




BSI

OWNER'S MANUAL

INTRODUCTION



Thank you for purchasing the DD Audio BSI (BASS SIGNAL INTEGRATOR). The BSI is a signal processor designed for the sole purpose of enhancing the performance of your system's subwoofer stage. It can be used in conjunction with aftermarket systems or integrated into factory systems to realize the full potential of the connected audio components. To ensure ease of use and proper setup please take a moment to thoroughly read through this manual. We hope you thoroughly enjoy this product, and if you have any questions regarding the installation or setup please contact the DD Audio technical support team.

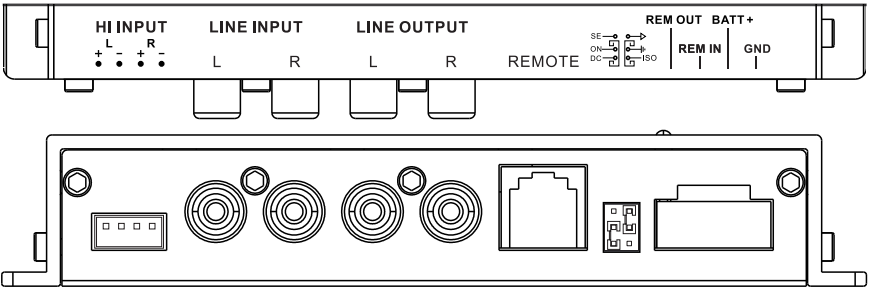
DESIGN FEATURES

- Variable Parametric Bass Processing
 - Frequency
 - Effect (Boost)
 - Width (Q Factor)
- Variable 24dB/Oct Subsonic and Low Pass Filter
- Multifunction Remote Control
 - Master Volume
 - Effect On/Off
 - Effect Level
- 2ch Differential Balanced RCA & Speaker Level Inputs
- Selectable Input Voltage Sensitivity Range
- Signal Sens, 12v, and DC Offset Turn On
- Variable Gain Adjustment with Output Clip Indicator
- Selectable Ground Isolation
- Aluminum Chassis

TECHNICAL SPECIFICATIONS

BSI	
Operating Voltage	10v-16v
High-Level Input Impedance	180Ω
RCA Input Impedance	≥20KΩ
RCA Output Impedance	≥50Ω
RCA Output Voltage	>10v
High-Level Input S/N	≥106 dBA
RCA Input S/N	≥105 dBA
High-Level Input THD	0.05%
RCA Input THD	0.05%
High-Level Input Sensitivity Max	2-20V / 4-40V
RCA Input Sensitivity	0.5-5V / 1-10V
REM OUT Output Current	12V >500 mA
Turn-On	>10V(REM), >1.3V(SPK/DC), >15mV(RCA)
Input Channels	2
Output Channels	2
Frequency Response	15Hz-20kHz
Low Pass Filter	50Hz-500Hz 24dB/Oct
Sub Sonic Filter	15Hz-50Hz 24dB/Oct
Effect Boost Level	0-18db
Frequency Effect Range	30Hz-80Hz
Dimensions in (LxWxH)	6 x 3.4 x 1
Dimensions mm (LxWxH)	155 x 87.4 x 27

SIDE PANEL CONNECTIONS



HI INPUT:

Connect to hi-level (speaker level) signal source when integrating into OEM audio systems.

NOTE: The HI INPUT sensitivity default is set to accept signals up to 20V. If using the BSI with a higher voltage signal source use the internal jumper to set the sensitivity to 40V.

LINE INPUT:

Connect to RCA (line level) signal source.

NOTE: The LINE INPUT sensitivity default is set to accept signals up to 5V. If using the BSI with a higher voltage signal source use the internal jumper to set the sensitivity to 10V.

LINE OUTPUT:

Connect to RCA (line level) inputs of your amplifier via RCA interconnect cable.

REMOTE:

Port for connecting the remote control via modular cable.

TURN ON SELECTION JUMPER:

Use this jumper to select the turn on mode for your application.

- Remove the jumper if your source unit provides a switched +12V turn on signal.
- **SE (Audio Signal Sense)** Can be used with the HI INPUT or LINE INPUT to turn the BSI on and off if there is no switched +12V turn on signal available.
- **DC (DC Offset Sense)** Use with the HI INPUT to turn the BSI on and off if there is no switched +12V turn on signal available. DC Offset is the preferred auto turn on method when using the HI INPUT.

AUDIO SIGNAL GROUND JUMPER:

Occasionally alternator whine may appear in a system due to audio components using different signal grounding. In some installations switching the signal grounding method from Chassis to Isolated will help eliminate the unwanted noise. The BSI default setting is Chassis and will work for most applications. Make sure your system is turned OFF before you move these jumpers.

REM OUT:

Provides a >500mA 12v switched turn-on signal for connected amplifiers or other connected components. May require an additional relay for multi component turn-on.

REM IN:

Connect to a switched +12V turn-on source to turn the BSI on and off. No connection is required if using auto turn on. Remove the Turn On Selection Jumper to disable auto turn on when this turn on method is desired.

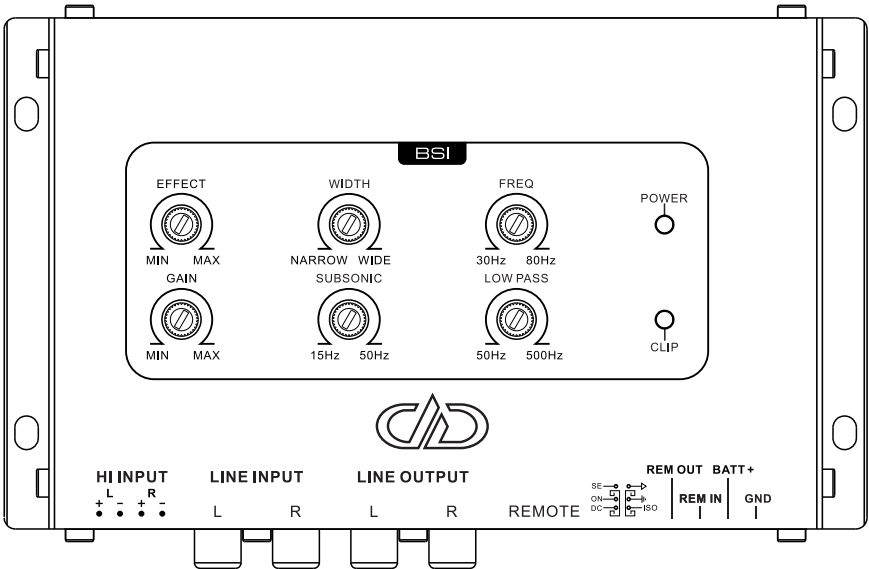
BATT+:

Connect to a constant positive power supply within the operating input voltage range. Direct connection to the vehicle's battery is preferred.

GND:

Connect to a verified chassis ground. Run a separate ground wire vs connecting it to a factory ground wire. Factory ground wires usually have multiple devices connected to them and are not recommended because this can lead to ground loop issues.

TOP PANEL CONTROLS



EFFECT:

Adjusting EFFECT increases or decreases the amount of boost applied to the center frequency.

WIDTH:

Adjusting WIDTH narrows or widens the Q Factor. The Q Factor is the affected frequency bandwidth surrounding the boosted center frequency.

FREQ:

Adjusting FREQ sets the center frequency. The center frequency is the frequency where the highest level of boost will be applied.

GAIN:

Adjust the GAIN to match the inputs of the BSI to the outputs of your signal source.

SUBSONIC:

Adjusting the SUBSONIC control sets the desired subsonic filter point to remove low frequencies that are unwanted or below the sub enclosure's tuning. To avoid subwoofer damage from over excursion it is very important to properly set your subsonic filter when using the BSI. We recommend setting the subsonic now lower than a half octave below a ported enclosure's tuning frequency.

LOW PASS:

Adjusting the LOW PASS control sets the desired low pass filter point to remove high range frequencies that are unwanted.

Note: Setting the subsonic and low pass filter points too close will result in little no output due only allowing a narrow band of frequencies to pass through.

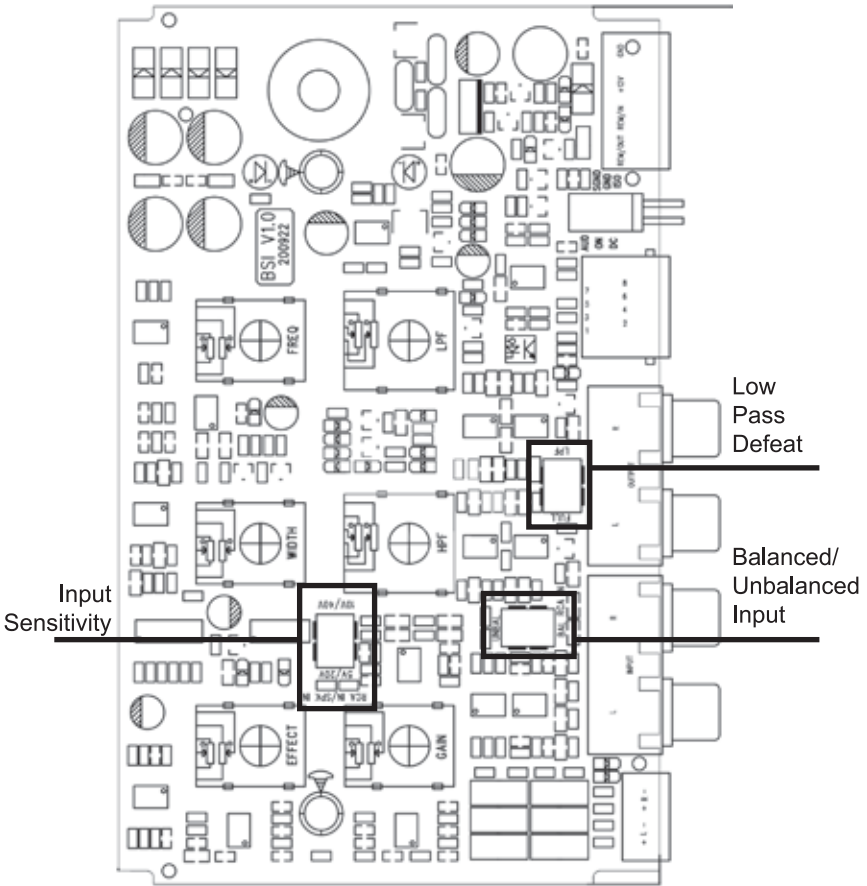
POWER LED:

When illuminated indicates the unit is powered on.

CLIP LED:

The CLIP LED indicates when the BSI has reached its maximum clean output level.

INTERNAL JUMPERS



INPUT SENSITIVITY:

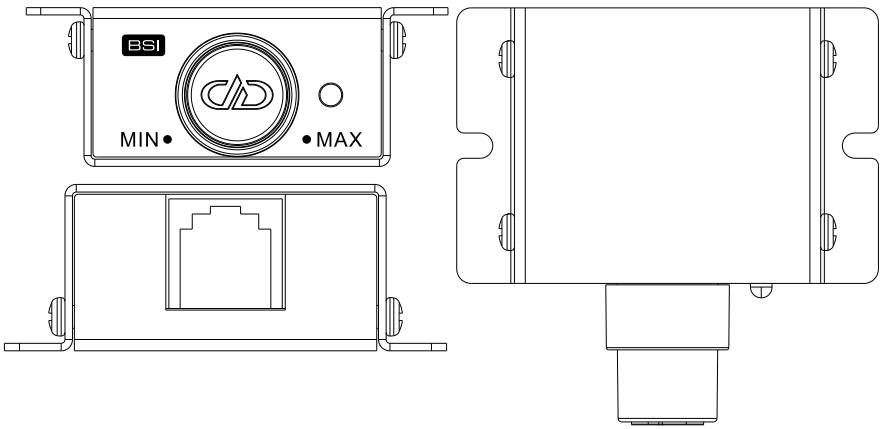
In certain applications the input sensitivity ranges for the HI INPUT or the LINE INPUT will need to be adjusted to properly accommodate the incoming signal voltage. The default setting is 5V/20V. To increase the maximum input voltage place the jumper in the 10V/40 position.

LOW PASS DEFEAT:

Adjusting WIDTH narrows or widens the Q Factor. The Q Factor is the affected frequency bandwidth surrounding the boosted center frequency.

BALANCED / UNBALANCED INPUT:

The default setting for the BSI's RCA inputs is balanced which will be compatible with the majority of applications. In some applications your source unit may require a ground on the RCA shield in this case set the jumper to unbalanced. If you are experiencing ground loop noise you can also try setting the unit to unbalanced to help eliminate noise.



The BSI remote is a multi functional control that allows for installation flexibility, and easy operation of the following functions.

- **Master Volume:** The outer knob allows you to control the output level adjustment. When the BSI effect is turned off it will still function as subwoofer level control.
- **Effect On/Off:** To turn the BSI effect on/off short press the outer knob. The LED will illuminate when the BSI effect is on.
- **Effect Level:** The inner ring allows control over the effect level, from full attenuation up to the maximum EFFECT level set on the BSI.

INSTALLATION TIPS

1. Before turning on the BSI turn down the bass levels on other components in your system. This includes bass tone controls and loudness settings on source units, equalizers and other secondary bass controls.
2. The BSI needs to be installed in the signal path as close to your source unit as possible. It should be installed before any crossover circuit. To function properly the BSI needs a full range signal input.
3. Disconnect the Negative Terminal from your battery.
4. Use 18 gauge power wire or larger for all power and ground connections. Use the same size wire for all power and ground connections.
5. Run the BATT+ wire directly to the positive terminal of the battery.
6. Run the GND wire directly to the negative terminal of the battery, or a verified chassis ground.
7. When the electrical connections are complete, you may reconnect the negative terminal to your battery.
8. To avoid damage to your subwoofers the subsonic filter should be set no more than a half octave below a ported enclosure's tuning frequency.

DD AUDIO

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