

SOUNDSTREAM[®]
T E C H N O L O G I E S
GRANITE

Granite 110.2

**POWER
AMPLIFIER**

Mixed Mono Capable so you can simultaneously drive a stereo and mono load (satellites and subwoofer).

2 Ohm Drive Ability - The Granite amplifiers are designed to drive loads down to 2 Ohms stereo and 4 Ohms bridged.

Built-in Staggered Asymmetrical Crossover - Built in 2-way electronic crossover is designed to send either high or low pass information to the 110.2. Outputs are included to drive another amplifier with either high or low pass information.

Bass **EQ** - Adjustable bass equalization circuit allows you to boost bass by as much as **+9dB** at 45 Hz. A built in subsonic filter protects speakers (defeatable).

Drive Delay Muted Turn-on/off Circuit - A unique circuit which completely eliminates any amplifier-related turn-on/off noises.

Flexible Input Sensitivity - accepts input voltages from 100 mV to 2.5 V. which permits maximum output from amplifier with virtually any source unit.

“Balancing Act” Input Topology for added immunity to ground loops caused by component and vehicle electrical system interaction.

WARRANTY

Your Granite amplifier comes with a limited warranty. Refer to the enclosed warranty card for length of warranty and conditions.

SPECIFICATIONS

POWER OUTPUT

Power info

4 Ohms

55w x 2

Power info

2 Ohms

80w x 2

Bridged Power info

4 Ohms

160w x 1

THD: <0.1%, 20 Hz - 20 kHz at rated power into 4 ohms

SIN Ratio: >90 dB

Damping: >200

Input Sensitivity: 100 mV - 2.5 V

Dimensions: 8-1/2" x 8-3/16" x 2-3/16"

Bass EQ: 0 - +9 dB boost at 45 Hz

12 dB/octave Passive Crossover Chart

Key: L = high quality (DCR <1 Ohm) inductor/coil
 C = non-polarized 50 V (or greater) capacitor

XXX LOW & HIGH PASS DIAGRAMS XXX

| FREQ | 2 Ohms | | 4 Ohms | | 8 Ohms | |
|---------|---------|--------|---------|--------|---------|--------|
| | L1 | C1 | L1 | C1 | L1 | C1 |
| 80 Hz | 5.5 mH | 680 µF | 11 mH | 330 µF | 22 mH | 180 µF |
| 100 Hz | 4.7 mH | 560 µF | 9.1 mH | 270 µF | 18 mH | 150 µF |
| 130 Hz | 3.3 mH | 400 µF | 6.8 mH | 200 µF | 15 mH | 100 µF |
| 200 Hz | 2.2 mH | 300 µF | 4.7 mH | 150 µF | 9.1 mH | 75 µF |
| 260 Hz | 1.8 mH | 200 µF | 3.6 mH | 100 µF | 6.8 mH | 50 µF |
| 400 Hz | 1.1 mH | 150 µF | 2.2 mH | 68 µF | 4.7 mH | 33 µF |
| 600 Hz | 0.75 mH | 100 µF | 1.5 mH | 47 µF | 3.0 mH | 26 µF |
| 800 Hz | 0.5 mH | 68 µF | 1.0 mH | 33 µF | 2.0 mH | 15 µF |
| 1000 Hz | 0.47 mH | 50 µF | 0.91 mH | 27 µF | 1.8 mH | 13 µF |
| 1200 Hz | 0.33 mH | 44 µF | 0.75 mH | 22 µF | 1.5 mH | 11 µF |
| 1800 Hz | 0.27 mH | 30 µF | 0.50 mH | 15 µF | 1.0 mH | 6.8 µF |
| 4000 Hz | 0.10 mH | 15 µF | 0.22 mH | 6.8 µF | 0.47 mH | 3.3 µF |

WIRING

You will need the following tools for the wiring of the amplifier:

- Phillips or slotted screw driver
- wire strippers
- wire crimpers

When baring the wires for connection to the amplifier, remove **3/8"** to **1/2"** of the insulation. For the speaker leads, use the supplied **1/4"** insulated female crimp connectors and slide the connector onto the terminal on the amplifier. One the power, ground, and remote connections, loosen the screws on the terminal block, slide the bared wire into the connector, and tighten the screw. Determine from the chart below the minimum gauge power and ground wire required. **Be sure to fuse the amplifier positive power lead within 18" of the battery.**

| up to 10' | up to 20' |
|--------------------|--------------------|
| 12 gauge or larger | 10 gauge or larger |

A. Carefully run the audio and remote turn-on cables to the amplifier.

B. Connect the speakers as shown in "Speaker Wiring Configurations." Use at least 16 gauge speaker wire, preferably a flexible multi-strand cable, such as Soundstream Speaker 120 or Speaker 160.

C. Carefully run the positive power cable from the battery to a fuse or circuit breaker and then to the amplifier. Connect the lead to the battery via either a fuse or a circuit breaker within 18 inches of the battery, Leave the fuse out or the circuit breaker off until the installation is otherwise finished. If the circuit breaker cannot be shut off manually, do not make the final power connection to it. See below for recommended fuse ratings to be used.

| Amplifier Fuse | Battery Fuse/Circuit Breaker |
|-----------------------|-------------------------------------|
| 25 amp automotive | 30 amp |

D. Run a ground cable for the amplifier and securely connect it to a solid chassis ground on the vehicle. The ground cable should be the **same gauge** as the power cable.

E. Double check each and every connection!

TROUBLESHOOTING

PROBLEM

No sound and LEDs are not lit

CAUSE

no power or ground at amp

no remote turn-on signal

blown fuse near battery

blown power supply fuse

(accessible through access cover on bottom of amp)

speaker or leads may be shorted

verify adequate cooling of the amplifier

speaker load may be less than 2

Ohms

Repeatedly blown amp fuse or frequent activation of thermal shut-off

F. Re-connect the fuse or circuit breaker. Power up the system and the red LED should be lit. There may be a 2 -3 second delay from the time that the source unit is turned onto the time that the LED on the amp lights. This is normal. Once the amplifier power LED is on and the source unit is playing, you should have sound coming from the speakers.

Wiring Tips

- Use grommets when running cables through any metal or sharp plastic to prevent accidental shorting or shearing.
- Be certain that the cables don't interfere with normal operation of the vehicle's high current circuits and vehicle management systems (engine computers, relays, etc.).

LEVEL SETTING

The input levels are adjusted by means of a stereo level control located next to the input connectors. When the amplifier is operated in the mono/bridged mode, only the right channel input is active.

- A. Turn the input level control on the amp to a minimum position (fully counter-clockwise).
- B. Set source unit volume to approximately 3/4 of full volume.
- C. While playing dynamic source material, slowly increase the amplifier's input level until a near maximum undistorted level is heard in the system.
- D. If you are using the amplifier to drive subwoofers, you may want to use the bass boost circuit. First, engage the switch on the bottom of the amplifier, secondly, slowly adjust the level on the front panel to your preference.

PROTECTION CIRCUITS

Your Granite amplifier is protected against both overheating and short circuits by means of the following circuits:

A main power supply fuse

A fail-safe thermal protection circuit activating at **85°C**

Over-current Channel Circuit Breakers

Short-circuit shutdown

AMPLIFIER LOCATION AND MOUNTING

The Soundstream Granite 110.2 amplifier employs highly efficient circuitry and a unique Chassisink™ design to maintain lower operating temperatures. **When** mounting the amplifier, it should be securely fastened to the vehicle, away from moisture, stray or moving objects, and major electrical components (electrical motors, fuel pumps, etc.). To provide adequate ventilation, mount the amplifier so that there are at least two inches of freely-circulating air above and to the sides of it.

Before mounting the amplifier, make certain the amplifier is configured correctly for your system.

BRIDGING/MONO

If used in dedicated mono, set the switch to the mono setting and follow the wiring diagram below.

If used in Mixed Mono, set the switch to the stereo position and follow the wiring diagram below.

XXX DIAGRAMS XXX

BASS EQUALIZATION

If the Granite 110.2 is being used to drive a subwoofer, you may want to activate the subwoofer equalization circuit by throwing the switch to the "XXX" position. Activating the circuit also engages a subsonic filter at 45 Hz. The subsonic filter is designed to remove the very low frequency bass information that may damage subwoofers.

CROSSOVER SETTINGS

The Granite 110.2 can be configured to operate full range (for a set of satellite speakers or coaxials), low pass (for subwoofers), or high pass (for satellites or coaxials while another amp driving the subwoofers).

XXX DIAGRAMS XXX

- A. Using the amplifier as a template, mark the mounting surface.
- B. Remove the amplifier and drill the holes.
- C. Mount the amplifier to the surface using the provided hardware.

PASSIVE AND ELECTRONIC CROSSOVERS

Your Granite amplifier is capable of driving a complete subwoofer and satellite system in the Mixed Mono configuration. However, for the lowest distortion and the maximum output and sound quality, we recommend you use electronic crossovers and multiple channels of amplification. The Granite 110.2 amplifier incorporates an electronic crossover with outputs. This amplifier, in conjunction with another amplifier, will competently drive an entire bi-amplified system.

If you plan to use the Granite 110.2 in the Mixed Mono configuration, it is important to use the appropriate passive crossovers. Below are charts for 6 and 12 dB/octave crossovers.

6 dB/octave Passive Crossover Chart

Key: L = high quality (DCR <1 Ohm) inductor/coil
 C = non-polarized 50 V (or greater) capacitor

XXX LOW & HIGH PASS DIAGRAMS XXX

| FREQ | 2 Ohms | | 4 Ohms | | 8 Ohms | |
|---------|---------|---------|---------|--------|---------|--------|
| | L | C | L | C | L | C |
| 80 Hz | 4.1 mH | 1000 µF | 8.2 mH | 500 µF | 16 mH | 250 µF |
| 100 Hz | 3.1 mH | 800 µF | 6.2 mH | 400 µF | 12 mH | 200 µF |
| 130 Hz | 2.4 mH | 600 µF | 4.7 mH | 300 µF | 10 mH | 150 µF |
| 200 Hz | 1.6 mH | 400 µF | 3.3 mH | 200 µF | 6.8 mH | 100 µF |
| 260 Hz | 1.2 mH | 300 µF | 2.4 mH | 150 µF | 4.7 mH | 75 µF |
| 400 Hz | 0.8 mH | 200 µF | 1.6 mH | 100 µF | 3.3 mH | 50 µF |
| 600 Hz | 0.5 mH | 136 µF | 1.0 mH | 68 µF | 2.0 mH | 33 µF |
| 800 Hz | 0.41 mH | 100 µF | 0.82 mH | 50 µF | 1.6 mH | 26 µF |
| 1000 Hz | 0.31 mH | 78 µF | 0.62 mH | 39 µF | 1.2 mH | 20 µF |
| 1200 Hz | 0.25 mH | 66 µF | 0.51 mH | 33 µF | 1.0 mH | 16 µF |
| 1800 Hz | 0.16 mH | 44 µF | 0.33 mH | 22 µF | 0.68 mH | 10 µF |
| 4000 Hz | 0.08 mH | 20 µF | 0.16 mH | 10 µF | 0.33 mH | 5 µF |

OWNER'S MANUAL & INSTALLATION GUIDE

CONGRATULATIONS

You now own the Soundstream Granite 110.2 Amplifier, the result of a unique design and engineering philosophy.

To maximize the performance of your system, we recommend that you thoroughly acquaint yourself with its capabilities and features. Please retain this manual and your sales and installation receipts for future reference

Soundstream amplifiers are the result of American craftsmanship and the highest quality control standards, and when properly installed, should provide you with many years of listening pleasure. Should your amplifier ever need service or replacement due to **theft**, please record the following information which will help protect your investment.

Serial # _____

Dealer's Name _____

Date of Purchase _____

Installation Shop _____

Installation Date _____

CAUTION!

*Prolonged listening at high levels may **result** in hearing loss. Even though your new Soundstream amplifier sounds better than anything you've ever heard, exercise caution to prevent hearing damage.*

DESIGN FEATURES

Handcrafted in the U.S.A. with mil-spec glass epoxy circuit boards, low-loss connections, gold plated input connectors, and metal film resistors.

Darlington High Current Discrete Output Topology - Soundstream's "overbuilding" of the output section incorporates Darlington output devices sandwiched between the circuit board and the heat sink in a design called **Chassisink™** to ensure cool, efficient amplifier operation.

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