SOUNDSTREAM®

Stealth Amplifier Series

Owner's Manual

CONGRATULATIONS !

You now own a Stealth Amplifier, the product of an uncompromising design and engineering philosophy. We suggest you take a moment to document the information below, which will be helpful in the event of theft or if service is needed. Please retain this manual and your sales receipt for future reference.

SOUNDSTREAM amplifiers are the result of American innovation and the highest quality control standards. When properly installed, they will provide you with many years of listening pleasure. Should your amplifier ever need service or replacement due to theft, Please record your information on the following lines to refer to in the event that you may need it later.

Serial# _____
Dealer's Name_____
Date of Purchase_____
Installation Shop_____
Installation Date _____

CAUTION !
Prolonged listening at extremely high levels may result in hearing loss. Even though your new Soundstream Stealth Amplifier sounds better than anything you've heard, exercise caution to prevent hearing damage .

FEATURES

- STACKABLE INSTALLATION.
- COMPACT SIZE AND TINY FOOTPRINT.
- DOUBLE SIDE PCB AND SMD COMPONENTS.
- FULL MOSFET DESIGN.
- LPF AND SUBSONIC CROSSOVER.
- ADJUSTABLE BASSBOOST FREQUENCY AND LEVEL.
- INFINITELY VARIABLE PHASE CONTROL FOR MONO MODEL.
- ACTIVE X-OVER FUNCTION.
- HEAVY-DUTY ALUMINUM ALLOY HEATSINK.
- HIGH (Speaker) OR LOW (RCA) LEVEL INPUTS.
- OVERLOAD, OVERHEAT, HIGH/LOW VOLTAGE PROTECTION.
- RoHS COMPLIANT.

CONTROL FUNCTIONS

1. SPEAKERS

Connect speakers/subwoofers to these terminals. Be sure to check wire for proper polarity. Never connect the speaker cables to chassis ground.

2. +12 Volt Power

Connect this terminal through a FUSE or CIRCUIT BREAKER to the positive terminal of the vehicle battery or the positive terminal of an isolated audio system battery.

Warning: Always protect this power cable by installing a fuse or circuit breaker of the appropriate size within 18 inches (45cm) of the battery terminal connection.

3.Remote Turn On

This terminal turns on the amplifier when (+)12 volt is applied to it . Connect it to the remote turn on lead of the head unit or signal source.

4.GND

Connect this cable directly to the frame of the vehicle. Make sure the metal frame has been stripped of all paint down to the bare metal. Use the shortest distance possible. It is always a good idea to replace the factory ground at this time with a larger cable equal to the new amplifier power cable or larger. **CAUTION:** Do not connect this terminal directly to the vehicle battery ground terminal or any other factory ground points.

5. RCA input jacks

These RCA input jacks are for use with source units that have RCA outputs. A source unit with a minimum level of 200mV is required for proper operation. The use of high quality twisted pair cables is recommended to decrease the possibility of radiated noise entering the system.

6. High level inputs

The high level inputs are for use with speaker level wiring. Some source units do not have RCA outputs, so use this terminal for speaker level signal input. **CAUTION:** Never use high level input when RCA inputs available.

CONTROL FUNCTIONS

7. REMOTE

Connect the remote controller to control the subwoofer amplifier volume from the driver seat location, for ease of adjustment during playing.

8. LEVEL Control

The level control will match the amplifiers sensitivity to the source units signal voltage. The Operating range is 200mV minimum to 5V maximum. This is NOT a volume control!

9. Low Pass Filter Control (Mono)

This control is used to select the desired low pass x-over frequency. The frequency can be adjusted from 40Hz to 220Hz for all bass mono models.

10. Subsonic Filter Control

This control can filter out unwanted low frequency from 10Hz (OFF) to 50Hz. This function will increase the power handling of your woofers.

11. Bass Boost Frequency and Level Control (Mono and 2-ch)

By adjusting these two knobs, you can boost a wanted frequency to a wanted level. The center boost frequency is adjustable from 30Hz to 90Hz, the boost level is adjustable from 0dB to 12dB.

12. Phase Control

This control can adjust speaker output phase from 0 to 180 degrees infinitely to match your system phase characteristics.

13. X-over mode and frequency Control (4-ch)

These controls allow control over the frequencies played for the front channels. There is an option for Low Pass, Full Range or High Pass. In LP or HP mode the frequency range is from 50Hz to 4kHz.

CONTROL FUNCTIONS

14. X-over mode and frequency Control (4-ch)

These controls allow control over the frequencies played for the rear channels. There is an option for Low/BandPass, Full Range or High Pass. In HP mode, the frequency range is from 15Hz to 500Hz. In LP mode, the frequency range can be switched from 50Hz to 800Hz, or 250Hz to 4kHz. In the higher range, the LPF can be set at 4kHz for a midbass while the front channels are also set at 4kHz for a tweeter resulting in a 2-way xover and eliminating the need for a passive xover. Even with a set up like this, the midbass can still be protected by the HPF which is not defeatable. It can be set anywhere in the 15Hz to 500Hz range creating a bandpass filter for the midbass by eliminating any damaging lower frequencies in the subbass region.

15. Bass Boost Level switch (4-ch)

This switch can boost bass level by 0dB, 6dB or 12dB. The boost frequency is centered at 50Hz.

16. Input mode switch (4-ch)

This function is for switching the rear channels' signal path. When switched to 4CH, all 4 RCAs inputs are required. When switched to 2CH, the rear channels get their signal input from the front channels in parallel.

17. X-over mode and frequency Control (2-ch)

These controls allow control over the frequencies played for STL2.350 & STL2.560. There is an option for Low Pass, Full Range or High Pass. In LP mode the frequency range is from 50Hz to 200Hz, In HP mode the frequency range is from 15Hz to 200Hz.

18. Power Indicator

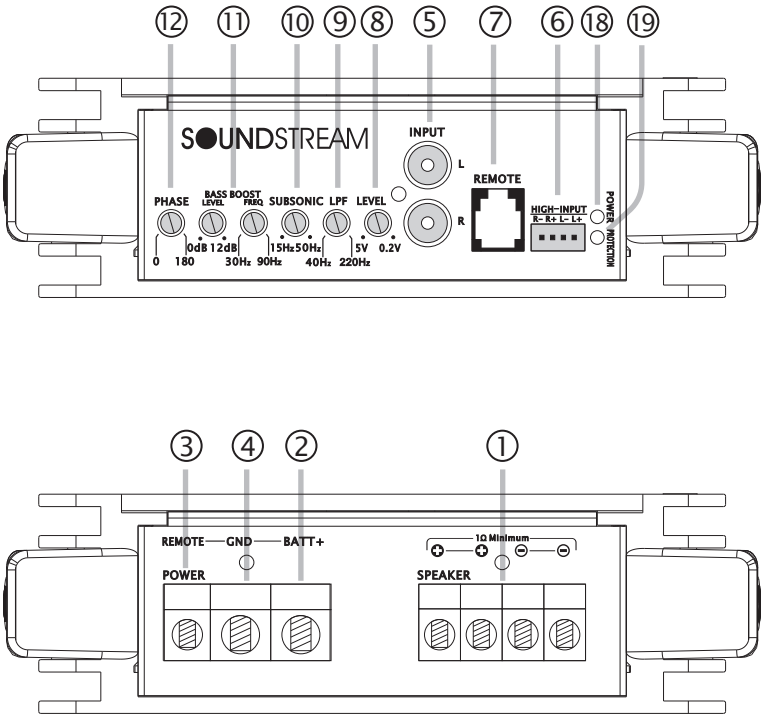
This LED will light up when amplifier works properly.

19. Protection Indicator

The red LED will light up and will be flashing if there is a fault presented to the amplifier. Please disconnect the amplifier and resolve the fault before reconnecting the amplifier.

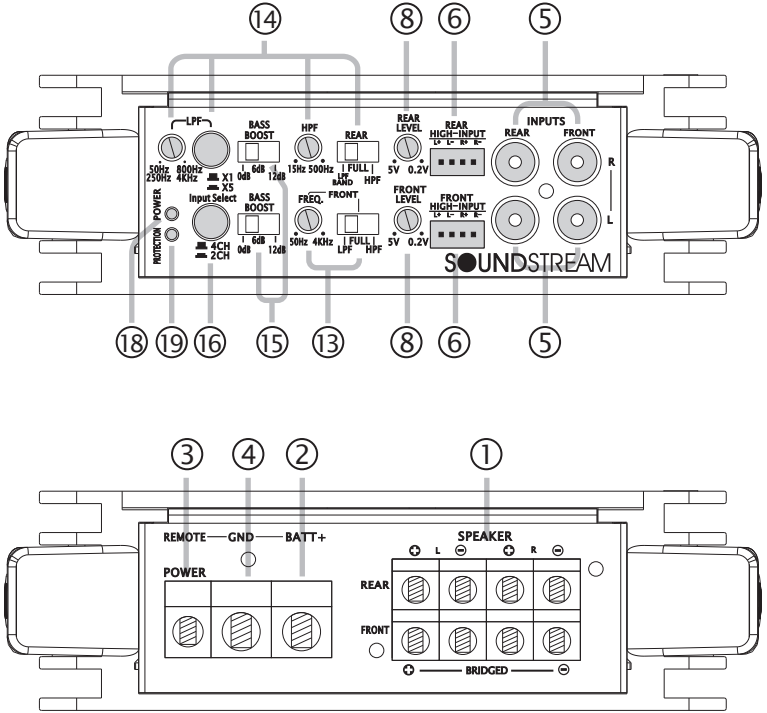
PANEL LAYOUT

Fig 1. STL1.600D/STL1.1200D Panel layout



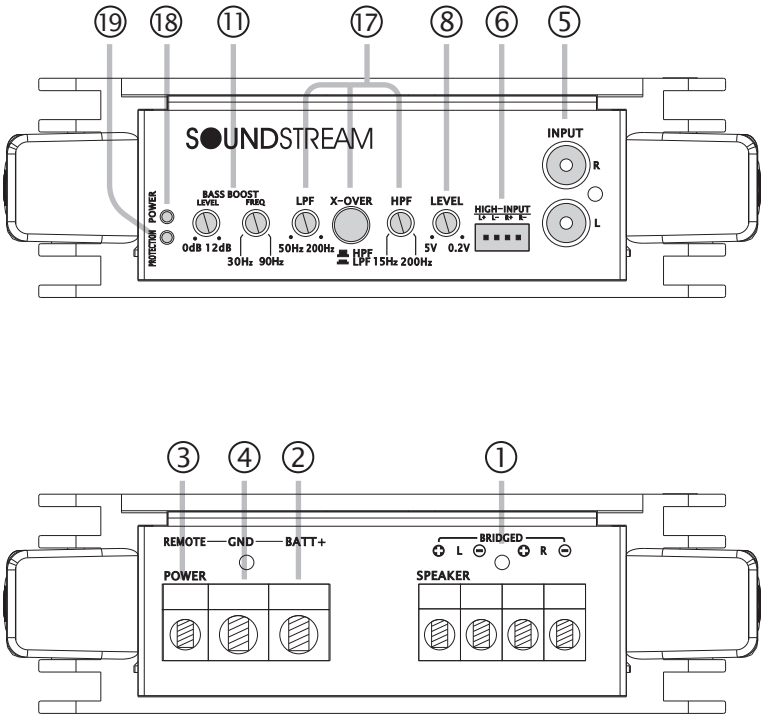
PANEL LAYOUT

Fig 2. STL4.320/STL4.500 panel layout



PANEL LAYOUT

Fig 3. STL2.350/STL2.560 panel layout



INSTALLATION PRECAUTIONS

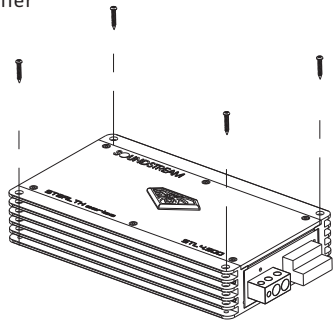
Before you install the amplifier, investigate your car's layout very carefully. Take special care when you work near the gas tank, fuel lines, hydraulic lines and electrical wiring. Before making or breaking power connections in your system, disconnect the vehicle battery. Confirm that your head unit or other equipment is turned off while connecting the input jacks and speaker terminals. If you need to replace the power fuse, replace it only with a fuse identical to that suggested by this manual. Using a fuse of a different type or rating may result in damage to your audio system or your amplifier which is not covered by warranty .

MOUNTING AMPLIFIER

1.Soundstream Stealth amplifiers can be stacked. Models STL4.500, STL2.560 and STL1.1200D are the same size; and models STL4.320, STL2.350 and STL1.600D are a smaller size. Make sure your amplifiers are the same size when you stack them. Plan the installation of the amplifiers and find a suitable location with sufficient air circulation.

2. Check the drawing below to mount the bottom amplifier.

Fig 4. Mount bottom amplifier

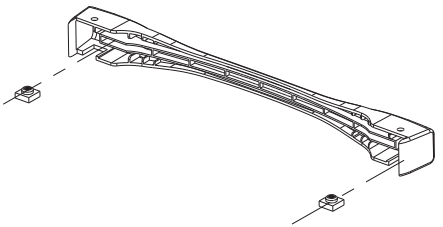


MOUNTING AMPLIFIER

3. Prepare side bars.

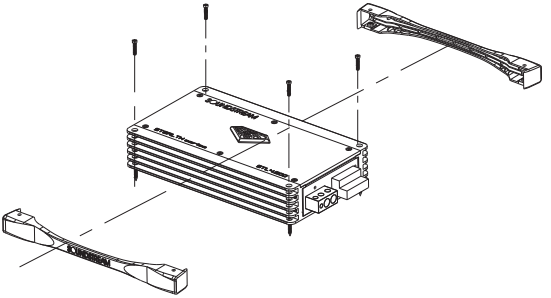
Insert the rectangle nuts into the side bars as in Fig 5.

Fig 5. Insert nuts into side bars.



4. Insert the ready side bars into the heatsink fins, then fasten side bars with supplied screws.

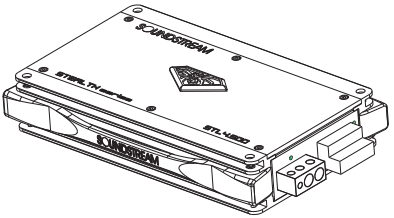
Fig 6. Install side bars.



MOUNTING AMPLIFIER

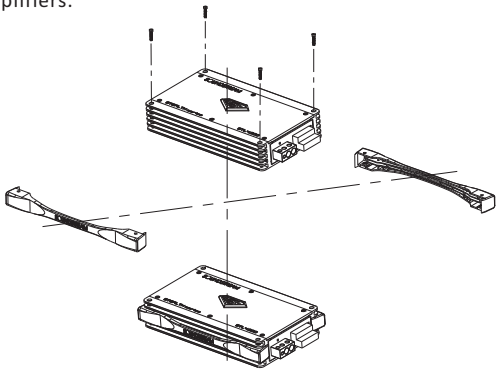
5. The bottom amplifier is now mounted.

Fig 7. Mounted bottom amplifier



6. Stack two amplifiers. Prepare another two side bars with nuts. Then clamp two side bars between two amplifiers as in Fig8, make sure there's a gap about 1/4 inch between two amplifiers. Fasten the side bar as in step 4 with supplied screws.

Fig 8. Stack two amplifiers.



MOUNTING AMPLIFIER

7. Mount the third pair side bars. After step 6 two amplifiers have already been mounted securely. Now install the third pair side bars on the top amplifier as in step4.

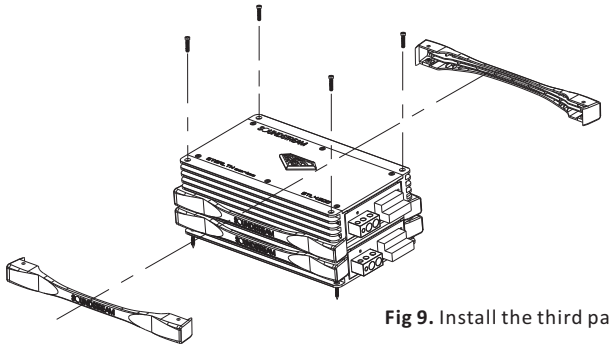


Fig 9. Install the third pair side bars.

8. Now you have stacked two amplifiers!

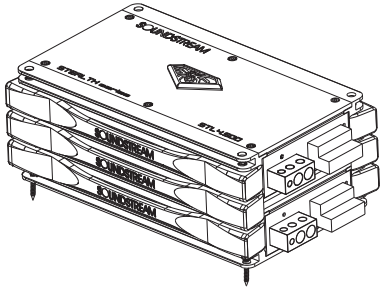


Fig 10. Stacked amplifiers.

CONNECTING THE AMPLIFIER

1. Select cable and fuse according to the following table.

MODEL	STL1.1200D	STL1.600D	STL4.500	STL4.320	STL2.560	STL2.350
CABLE	4	6-4	6-4	6	6-4	6
FUSE	100A	80A	80A	60A	80A	60A

2. Connect the amplifiers ground cable to a close, bare metal part of the frame or chassis. Use a nut and bolt, NOT a screw! The ground cable must be at least the same size as the +12volt cable.

3. Connect the remote terminal to remote output of the head unit using 16 gauge (or heavier) wire.

4. Connect the fuse holder within 18"(45cm) of the car battery, and run the selected cable from this fuse to the amplifier.

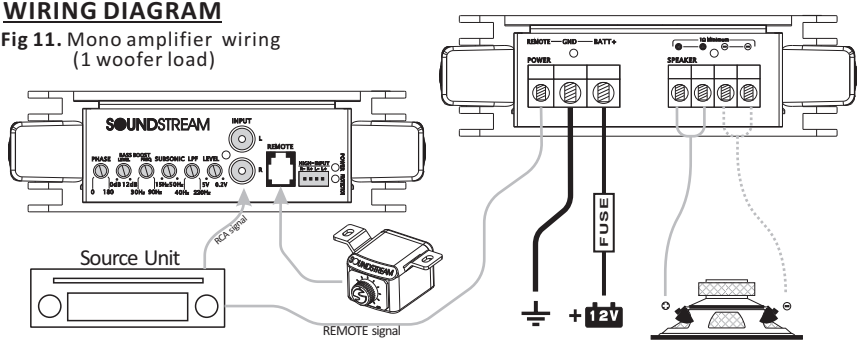
5. Connect all the inputs with high-quality cables. Connect Remote Control if necessary.

6. Insert fuse(s) into the battery fuse holder(s).

7. If using a subwoofer for 2-CH and 4-CH, bridge the channels by using the Left "+" and the Right "-" terminals.

WIRING DIAGRAM

Fig 11. Mono amplifier wiring (1 woofer load)



WIRING DIAGRAM

Fig 12. Mono amplifier wiring
(High level input mode)

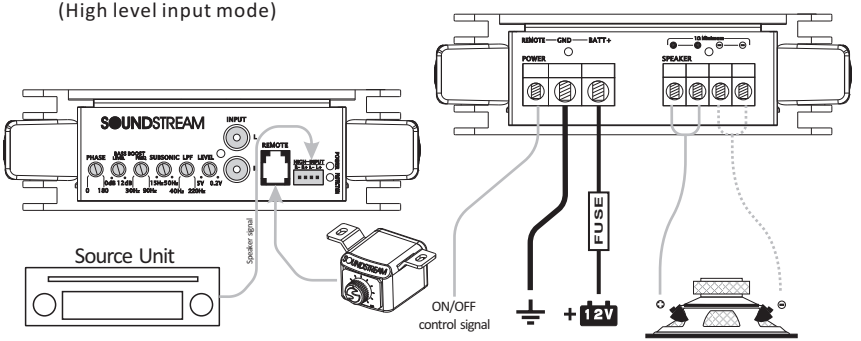
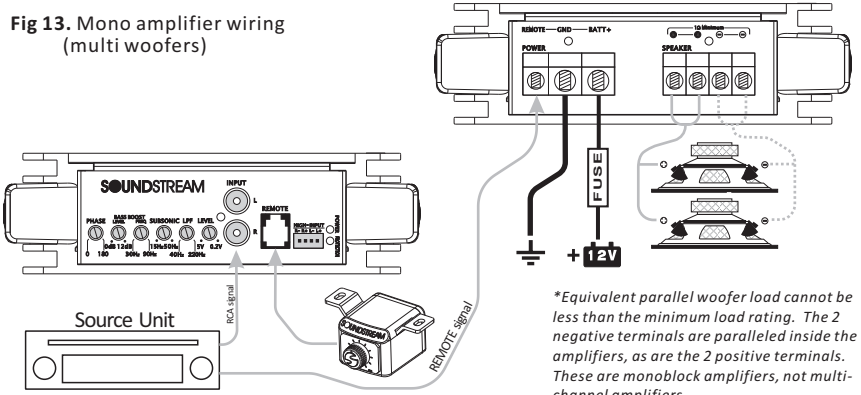


Fig 13. Mono amplifier wiring
(multi woofers)



**Equivalent parallel woofer load cannot be less than the minimum load rating. The 2 negative terminals are paralleled inside the amplifiers, as are the 2 positive terminals. These are monoblock amplifiers, not multi-channel amplifiers.*

WIRING DIAGRAM

Fig 14. STL4.320 / STL4.500 wiring
(4-channel mode)

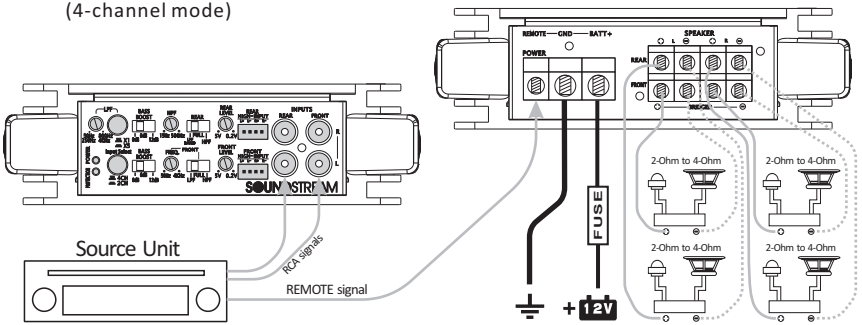
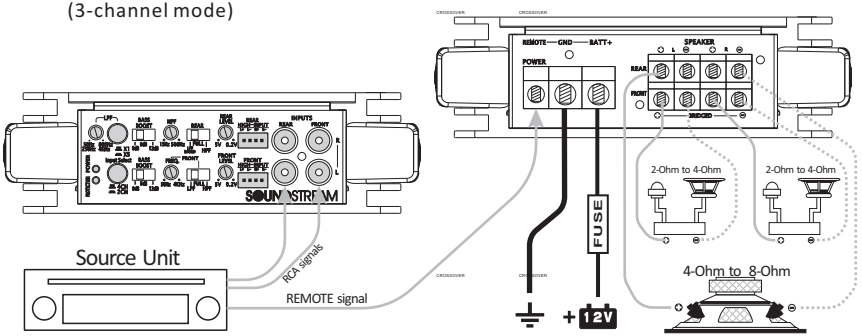


Fig 15. STL4.320 / STL4.500 wiring
(3-channel mode)



WIRING DIAGRAM

Fig 16. STL4.320 / STL4.500 wiring
(active x-over mode)

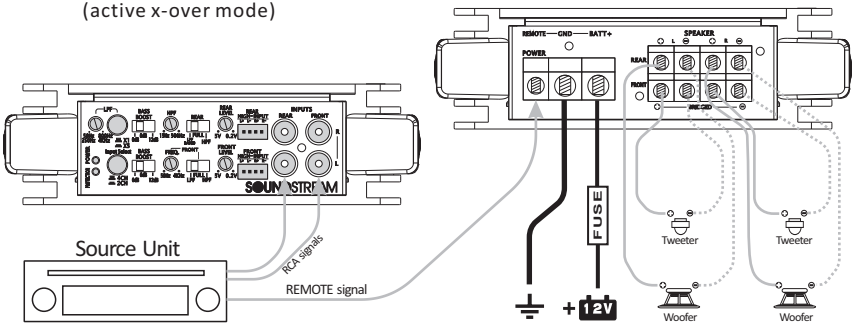
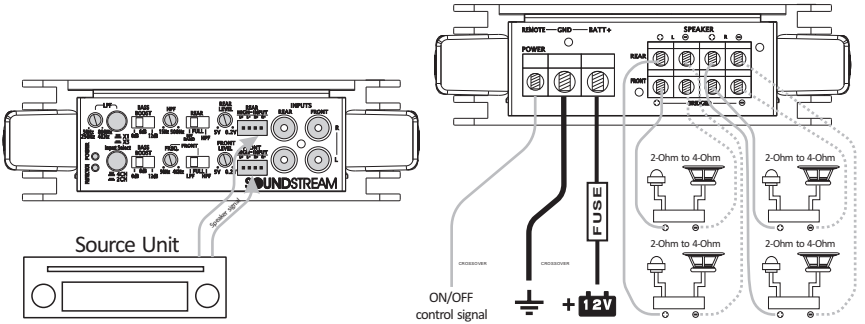


Fig 17. STL4.320 / STL4.500 wiring
(High level input mode)



WIRING DIAGRAM

Fig 18. STL2.350 / STL2.560 wiring
(2-channel mode)

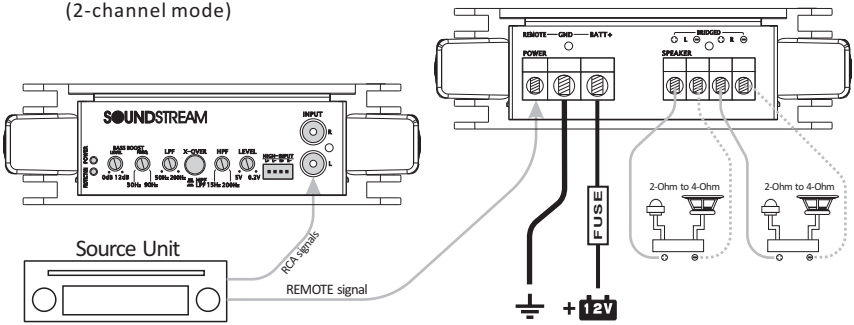
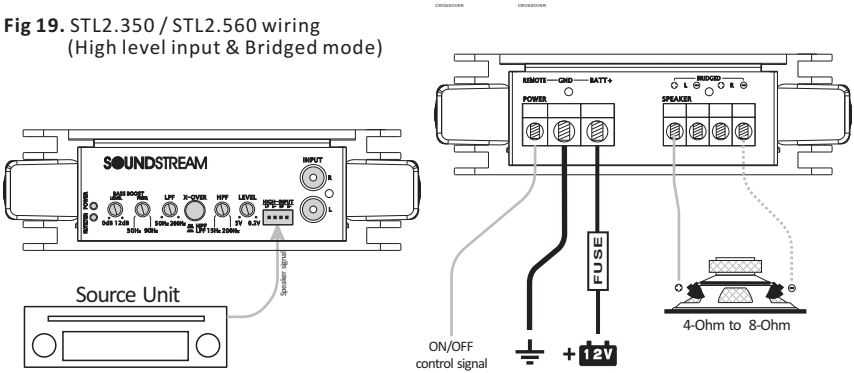


Fig 19. STL2.350 / STL2.560 wiring
(High level input & Bridged mode)



TROUBLE SHOOTING

Symptom	*Possible Remedy*
Amplifier will not power up	*Check to make sure you have a good ground connection.* *Check that there is battery power on the (+)terminal .* *Check all fuses, replace if necessary .* *Make sure that the Protection LED is not illuminated.*
Protection LED Comes on	*Check for short circuits on speaker leads.* *Check the speaker load not beyond the minimum load.* *Remove speaker lead, and reset the amplifier. If the protection LED still Comes on, then the amplifier is faulty and needs servicing .*
No output	*Check that the RCA audio cables are plugged into the proper inputs.* *Check all speakers wiring.* *Check the headunit output and the amplifier level setting.*
Low output	*Reset the level Control.* *Check the Crossover Control settings.*
High hiss in The speakers	*Check the RCA cable is not shorted to power ground at amplifier side.* *Check the amplifier grounding.*
Distorted sound	*Check that the Input level control is set to match the signal level of the head unit. Always try to set the Input level as low as possible.* *Check that all crossover frequencies are properly set.* *Check for short circuits on the speaker leads.*
Amplifier gets Very hot	*Check that the minimum load impedance for the amplifier model is correct.* *Check that there is good air circulation around the amplifier. In some applications, It may be necessary to add an external cooling fan.*

SPECIFICATIONS

Model	STL4.320	STL4.500	STL2.350	STL2.560	STL1.600D	STL1.1200D
RMS power at 14.4V						
1Ohm Load	N/A	N/A	N/A	N/A	N/A	1000W
2Ohm Load	75W x 4	120W x 4	160W x 2	230W x 2	300W	650W
4Ohm Load	50W x 4	80W x 4	100W x 2	150W x 2	500W	400W
Features						
Input Level	0.2~5V		0.2~5V		0.2~5V	
High level input	Yes		Yes		Yes	
Frequency Response	15Hz - 25KHz		15Hz - 25KHz		10Hz - 220Hz	
X-over Type	LPF/Full/HPF		LPF/Full/HPF		LPF/Subsonic	
LPF	Front 50Hz - 4kHz, Rear 50Hz - 800Hz or 250Hz - 4kHz		50Hz - 200Hz		40Hz - 220Hz	
Subsonic / HPF	Front 50Hz - 4kHz, Rear 15Hz - 500Hz		15Hz - 200Hz		10Hz - 50Hz	
Bass Boost Frequency	50Hz		30Hz - 90Hz		30Hz - 90Hz	
Bass Boost Level	0dB, 6dB, 12dB		0dB - 12dB		0dB - 12dB	
THD	<0.05%		<0.05%		<0.5%	
Damping Factor	>200		>200		>200	
S/N Ratio	>100dB		>100dB		>85dB	
Phase Shift	NA		NA		0 - 180	
Minimum Load	2 Ohm		2 Ohm		2 Ohm	1 Ohm
Voltage Protection	<8.4V		<8.4V		<8.4V & >16V	
Components & PCB	SMD Parts / Double-Sided FR-4 PCB					
Bass Remote	N/A		N/A		Yes	
DIMENSION						
Height	53mm / 2.1"		53mm / 2.1"		53mm / 2.1"	
Width	166mm / 6.5"		166mm / 6.5"		166mm / 6.5"	
Length	245mm / 9.6"	285mm / 11.2"	245mm / 9.6"	285mm / 11.2"	245mm / 9.6"	285mm / 11.2"

STEP	Front HPF (Hz)	Front LPF (Hz)	Rear HPF (Hz)	Rear LPF (Hz)	Rear LPF x5 (Hz)
1	56Hz	67Hz	11Hz	45Hz	231Hz
2	56Hz	67Hz	11Hz	45Hz	231Hz
3	57Hz	68Hz	11Hz	45Hz	231Hz
4	58Hz	68Hz	11Hz	45Hz	233Hz
5	58Hz	69Hz	12Hz	47Hz	241Hz
6	60Hz	69Hz	13Hz	49Hz	255Hz
7	62Hz	71Hz	15Hz	57Hz	287Hz
8	65Hz	73Hz	18Hz	60Hz	307Hz
9	70Hz	82Hz	21Hz	64Hz	323Hz
10	76Hz	90Hz	23Hz	76Hz	389Hz
11	82Hz	96Hz	25Hz	84Hz	417Hz
12	91Hz	103Hz	28Hz	99Hz	492Hz
13	102Hz	120Hz	34Hz	107Hz	540Hz
14	118Hz	141Hz	40Hz	132Hz	671Hz
15	143Hz	176Hz	42Hz	162Hz	809Hz
16	159Hz	198Hz	44Hz	188Hz	973Hz
17	186Hz	211Hz	48Hz	205Hz	1.03KHz
18	199Hz	225Hz	51Hz	214Hz	1.07KHz
19	206Hz	249Hz	54Hz	219Hz	1.1KHz
20	223Hz	278Hz	58Hz	233Hz	1.16KHz
21	235Hz	292Hz	62Hz	246Hz	1.22KHz
22	247Hz	308Hz	68Hz	260Hz	1.32KHz
23	286Hz	337Hz	73Hz	281Hz	1.41KHz
24	307Hz	379Hz	84Hz	305Hz	1.53KHz
25	332Hz	402Hz	91Hz	357Hz	1.78KHz
26	383Hz	436Hz	106Hz	381Hz	1.92KHz
27	421Hz	505Hz	112Hz	409Hz	2.05KHz
28	470Hz	574Hz	119Hz	421Hz	2.11KHz
29	533Hz	687Hz	135Hz	466Hz	2.32KHz
30	635Hz	792Hz	155Hz	550Hz	2.76KHz
31	800Hz	996Hz	190Hz	578Hz	2.91KHz
32	1.04KHz	1.38KHz	207Hz	622Hz	3.12KHz
33	1.23KHz	1.65KHz	215Hz	643Hz	3.22KHz
34	1.37KHz	1.82KHz	242Hz	668Hz	3.35KHz
35	1.65KHz	2.07KHz	290Hz	703Hz	3.52KHz
36	1.98KHz	2.32KHz	309Hz	772Hz	3.87KHz
37	2.3KHz	2.96KHz	388Hz	803Hz	4.02KHz
38	2.96KHz	3.4KHz	422Hz	818Hz	4.11KHz
39	3.12KHz	4.35KHz	501Hz	845Hz	4.24KHz
40	3.62KHz	4.46KHz	520Hz	863Hz	4.38KHz
41	4.05KHz	5.03KHz	529Hz	866Hz	4.4KHz