
SVX4

2-Way/3-Way

Front/Rear

Staggered Frequency

Electronic Crossover

OWNER'S MANUAL

SOUNDSTREAM[®]
TECHNOLOGIES

SVX4

2-Way/3-Way Front/Rear

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Thank you for purchasing the Soundstream SVX4. You now own one of the finest automotive electronic crossovers made, a precision component with audiophile performance.

For maximum performance, we suggest you take a few moments to read through this manual, to better acquaint yourself with the design features and capabilities of your new SVX4.



This Soundstream product is the result of American craftsmanship and the highest quality control standards. You can expect the SVX4 to deliver many years of listening pleasure. To further help protect your investment and to aid us with service questions, please fill in and retain the following requested information:

Model Number: _____

Serial Number: _____

Dealer's Name: _____

Date of Purchase: _____

Date of Installation: _____

DESIGN FEATURES

We've designed the SVX4 to be a flexible component for planning and building your ideal car audio system. This three-channel electronic crossover is equipped with separate front and rear stereo inputs and includes controls for configuring two-way or three-way crossover systems. With this design, the fader control (on the head unit) always remains active, allowing you to achieve a desired front/rear sound balance.

In the 2-way configuration, the SVX4 provides high pass and subwoofer outputs. In the 3-way mode, incoming stereo audio is divided into band-limited outputs for front tweeter and mid-range speakers, a high pass output for rear speakers, and low frequency outputs for subwoofers.

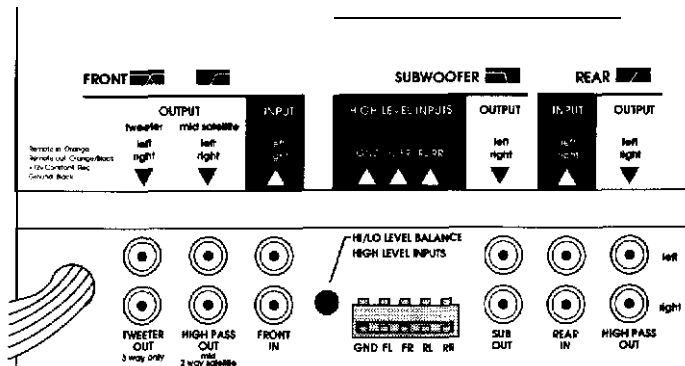
The individual level controls and continuously-variable, 12 dB per octave filters give you a wide range of adjustment options. High input levels (e.g., from a factory radio) are easily accommodated via plug-in terminal strip and associated level match control.

The subwoofer channel also contains a selectable 12 dB or 24 dB (mono) per octave filter to set the "tightness" contour of bass frequencies. The subwoofer channel has separate On/Off controls on both front/rear outputs for constant or fadeable buss, and on 18 dB per octave filter to suppress harmful subsonic signals.

We use only premium parts to build each SVX4, including double-sided masked gloss epoxy circuit boards, film capacitors, sealed immersible potentiometers, gold-plated RCA input/output connectors, and a rugged painted steel enclosure. And to insure stable, noise-free operation, we incorporate a switching power supply with a High Current Remote Output delay circuit for timed turn-on of power amplifiers.

CONNECTIONS AND CONTROLS

Figure 1. Rear panel of SVX4 contains Power connections, Input and Output connections, and High level input connections with Level Match control.



Power Connections

Red: Connect to constant +12 V dc.

Block: Connect to Chassis Ground.

Orange: Connect to head unit remote turn-on.

Orange/Black Remote Out for amplifier turn-on delay.

Input Connections

Low Level: RCA jacks – Left/Right IN for Front and Rear inputs.

High Level: Five-conductor plug-in terminal strip-G (ground), FL (front-left), FR (front-right), RL (rear-left), and RR (rear-right) input connections from a high level source (e.g., factory radio).

Level Balance control: Stereo potentiometer for balancing incoming high level inputs to the low level system.

Output Connections

2-way Mode

High Pass: RCA jacks – Left/Right HIGH PASS OUT for Front and Rear.

Subwoofer: RCA jacks – Left/Right SUB OUT.

3-way (Front) Mode

Tweeter: RCA jacks Left/Right TWEETER OUT for Front.

Mid-range: RCA jacks – Left/Right MID OUT for Front.

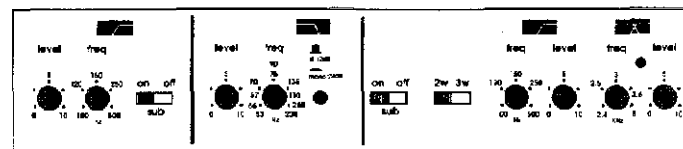
High Pass: RCA jacks Left/Right HIGH PASS OUT for Rear.

Subwoofer: RCA jacks Left/Right SUB OUT.

Subwoofer: RCA jacks Mono 1/Mono 2 SUBWOOFER OUTPUTS.

Crossover Controls

Figure 2. Front panel of SVX4 contains crossover controls for Rear, Subwoofer, and Front Channels and includes a power indicator.



Rear Channel

LEVEL: Continuously-variable output level control for adjusting the stereo level from the Rear HIGH PASS OUT jacks.

FREQ: Continuously-variable, 100 to 500 Hz crossover frequency control for stereo high-pass audio from the Rear HIGH PASS OUT jacks.

SUB: Slide switch to track subwoofer frequencies on or off with the rear channel. When SUB is Off, bass will fade as you adjust the fader control toward the front channel. When SUB is On and the front SUB switch is Off, bass will track the rear channel. For constant bass, set both [Front and Rear] SUB switcher to On.

Subwoofer Channel

LEVEL: Continuously-variable output level control for adjusting the stereo level from the SUB OUT jacks.

FREQ: Continuously-variable crossover frequency control for stereo or mono low-pass audio from the SUB OUT jacks. The aqua scale, 66 to 240 Hz, applies when 12 dB per octave filter is selected. The white scale, 53 to 209 Hz, applies when 24 dB per octave filter is selected.

12 dB/24 dB: Pushbutton for setting the slope of the low-pass filter in the subwoofer channel. When the button is out, the slope is 12 dB per octave, SUB OUT is stereo, and the FREQ control uses the aqua scale. When the button is in, the slope is 24 dB per octave, SUB OUT is mono (i.e., each SUB OUT jack is a mono signal), and the FREQ control uses the white scale.

Front Channel

SUB: Slide switch to track subwoofer frequencies (on or off) with the front channel. When SUB is Off, bass will fade as you adjust the fader control toward the rear channel. When SUB is On and the rear SUB switch is Off, the bass will track front channel. For constant bass, set both [Front and Rear] SUB switches to On.

2W/3W: slide switch for setting the front channel to either 2-way or 3-way operation.

TWEETER FREQ (aqua): Continuously-variable, 2.4 to 5.6 kHz crossover frequency control for stereo high-pass audio from the Front TWEETER OUT jacks. This control is active when the 2W/3W switch is in 3W position.

TWEETER LEVEL (aqua): Continuously-variable output level control for adjusting the stereo level from the Front TWEETER OUT jacks. Control is only active when 2W/3W is in the 3W position.

SATELLITE/MID FREQ: When 2W/3W is set to 2W, this control becomes a continuously-variable, 100 to 500 Hz satellite crossover fre-

quency control for stereo high-pass audio from the Front SATELLITE OUT (white).

When 2W/3W is set to 3W, this control (same frequencies) sets the starting crossover point for stereo audio from the Front MID OUT (aqua). The ending crossover point is automatically set as a symmetrical value determined by the setting made on the TWEETER FREQ control.

SATELLITE/MID LEVEL: Continuously-variable output level control for adjusting the stereo level from the Front SATELLITE/MID OUT jacks.

Power Indicator

Red LED lights when power is on.

APPLICATIONS The SVX4 can be used in either 2-way or 3-way system designs, as shown in Figures 3 and 4.

Figure 3.
An example of a system using an SVX4 configured for 2-way operation.

If using both High and Low Level Source Inputs, turn off one source before turning on the other.

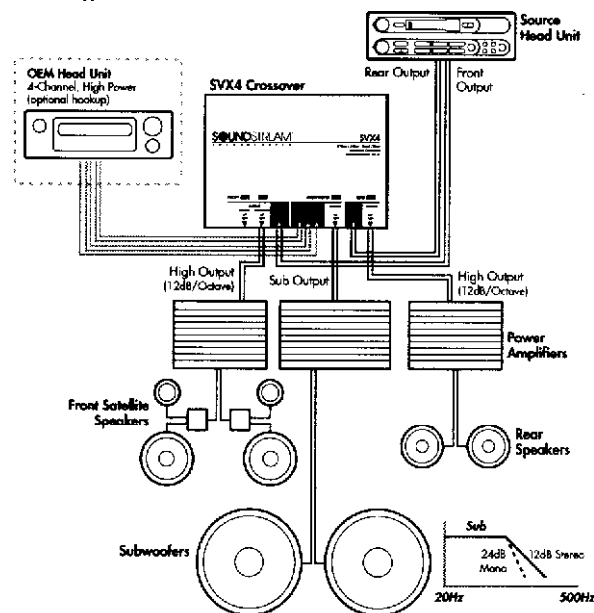


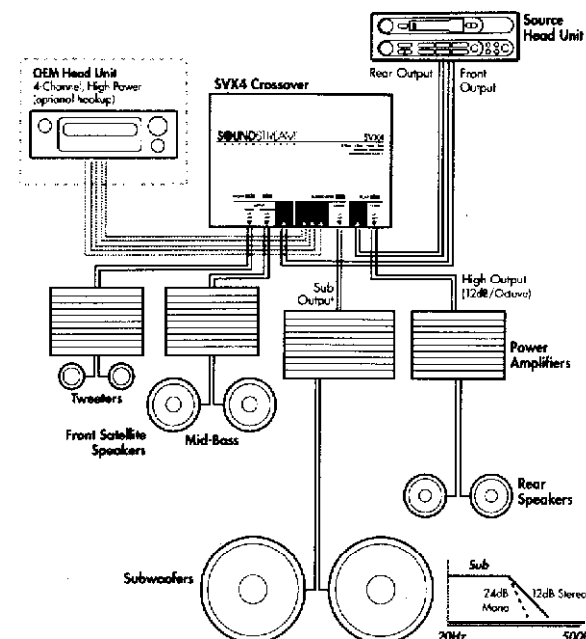
Figure 3 shows a basic system that uses satellite speakers for front and rear sound staging. The SVX4 is configured for 2-way operation by sliding the 2W/3W switch to 2W.

Audio signals from Front and Rear HIGH PASS OUT drive front and rear amplifiers. Passive crossovers on each amplifier's outputs further divide the amplified signals to the satellites' mid-range and tweeter speakers. The SUB OUT channel drives an amplifier and subwoofer speakers.

Figure 4 shows a design that uses separate tweeter and mid-bass systems for the front channel and satellite speakers for the rear channel. The SVX4 is configured for 3-way operation by sliding the 2W/3W switch to 3W.

Figure 4.
An example of a system using an SVX4 configured for 3-way operation.

If using both High and Low Level Source Inputs, turn off one source before turning on the other.



The Front TWEETER OUT drives a front amplifier and a pair of tweeters. The Front HIGH PASS OUT drives a second front amplifier and a set of mid-bass components. The Rear HIGH PASS OUT drives a (third) rear amplifier and a pair of satellite speakers containing passive crossovers feeding tweeters and mid-bass components. The SUB OUT channel drives a fourth amplifier and subwoofer speakers.

INSTALLATION

Automotive sound system installations can be tricky, especially for first-timers. For this reason, we recommend using a professional installer, who has the tools and, more importantly, the experience to do the job right. If you decide to install the equipment yourself, we hope this manual will serve as a helpful guide.

Before attempting on installation, study the applications shown in Figures 3 and 4. Use either proven design as a "blueprint" for your system installation, or as a starting point for creating your own custom system. With proper installation and adjustment, the SVX4 will reward you with reliable operation and optimum performance.

Recommended Signal Cables

The SVX4 uses gold-plated RCA type jacks for all audio connections, except for certain high level inputs (see Connections and Controls). For best signal transfer, we recommend using Soundstream DL•1 Audio Cable, Streamline Audio Cable, or an equivalent premium cable.

Wiring Layout

Determine how your vehicle's wiring is laid out, and plan to run your new wiring along the same routes. Be sure to keep power wires away

from all audio signal wires. [NOTE: Wires containing audio signals can cross a power wire, but not run alongside it.)

You can route the new wires under the carpeting, but make sure they do not interfere with the vehicle's normal operation. Keep all wires inside the vehicle, hidden from passengers. An exposed wire can inadvertently be pulled out, and may cause disconnection or shorting.

Location and Mounting

The SVX4 is compact in size and it generates virtually no heat. It can be located almost anywhere within the passenger compartment, trunk, or storage area. However, do not install the SVX4 in the engine compartment, or in any outside location exposed to dirt and moisture.

Use the SVX4 as a template to mark drill holes. Before mounting the SVX4 to your vehicle's chassis, inspect the site for any hidden brake or gas lines, wires, or cables.

For New Installations

If you are installing the SVX4 as part of a new system, we suggest "bench testing" your entire system prior to mounting any components. By connecting the system to an external +12 V dc power source, you can test the components outside the vehicle to verify your installation scheme. Otherwise, try connecting the system components to your vehicle's electrical system before actually mounting each component.

In either case, connect the components exactly as intended in the final installation. Make all power connections first, test the system, and then disconnect all power until final installation is complete.

Connecting Audio Signal Cables and Power Wires

1. Make sure power to your audio system is off.
2. Connect audio signal cables according to your system plan.

NOTE: For high level inputs, insert the bare-end wires from the factory radio harness into the openings located on the enclosed mole barrier strip connector. Follow the wire codes screened on the SVX4's rear panel, as shown in Figure 1. After tightening the screws at each opening, insert the connector into the matching female connector on the SVX4.

3. Connect the black wire to good chassis ground (e.g., bare metal or bolt, not painted or coated).
4. Connect the orange wire to your head unit's remote turn-on connection. This enables the SVX4 to follow a timed sequence for minimal turn-on and turn-off thumps.
5. If desired, connect the orange/black wire (from the High Current Remote Output delay circuit) to the power amplifier's remote input connection (for amplifier turn-on delay).
6. Connect the red wire directly, through a 0.5 A in-line (fast-blow) fuse, to a constant +12 Vdc source, so that it is "hot," even when the ignition is off. Try connecting it to the battery cable itself, or tapping into a power lead on an amplifier.

SETTINGS AND ADJUSTMENTS

Level Settings

1. Set all SVX4 output level controls to their minimum positions (i.e., full counter-clockwise). Set all frequency controls to their respective 12 o'clock positions. Turn the system on and verify that the SVX4 Power indicator is on.

NOTE: If you are using the high input connections, set the level match control initially at the mid-point position. After completing step 4, listen to the overall level to determine if you need to further boost or cut the initial setting.

2. Set the head unit volume control to its mid-point position, play your favorite CD or tape, and turn up the SVX4 front output level controls (i.e., Sot/Mid and Tweeter in 3W), until the music reaches a comfortable listening level.
3. Next, turn up the SVX4 rear level control until it is almost at the same level as the front channel. This setting will create a more realistic soundstage.
4. Set the subwoofer level control for a desired amount of bass, according to your taste in music.

Crossover Adjustment

The optimum crossover settings depend on two factors; the characteristics of your loudspeakers and the acoustics of your vehicle. Before making any adjustments, check the loudspeaker owner's manual for any specific crossover recommendations. Otherwise, follow these steps to adjust the SVX4 crossover controls:

5. Adjust the tweeter and mid frequency controls (or satellite frequency control in 2W) while listening to music. Try setting the control to either side of the initial 12 o'clock position and note any differences in the vocals. With some experimentation, you'll find the setting that sounds best.
6. Adjust the subwoofer frequency in the same way described in step 5. This time listen to the bass. You should find a setting that will give you a solid sound with minimum "boom" from resonating frequencies. Experiment with the 12 dB/24 dB button. The 24 dB slope will produce a "tight" mono bass, while the 12 dB slope will create a "loose" stereo bass.

SERVICE Your SVX4 is protected by a limited warranty. Please read the enclosed warranty information carefully. Should any problem occur, contact your local Soundstream dealer.

SPECIFICATIONS	Total Harmonic Distortion	< 0.05%, 20 Hz – 20 kHz
	Crossover Slopes	
	Low Pass	12 dB per octave
	High Pass	12 dB per octave
	Subwoofer	12 dB per octave (stereo) or 24 dB per octave (mono)
	Crossover Frequencies	
	Low Pass (mono)	Variable 53 Hz – 209 Hz
	Low Pass (stereo)	Variable 66 Hz – 240 Hz
	High Pass (2W)	Variable 100 Hz – 500 Hz
	Mid-Range (3W)	Variable 100 Hz– 500 Hz (ran frequency) and 2.4 kHz – 5.6 kHz (end frequency, symmetrically set by Tweeter frequency control)
	Tweeter (3W)	Variable 2.4 kHz – 5.6 kHz
	Signal-to-Noise Ratio	>100 dB
	Gain	+4.5 dB maximum, +3 dB with Level Match control set at mid-position
	Input Impedance	
	High Level	10 kOhms
	Low Level	15 kOhms
	Output Impedance	6 kOhms
	Maximum Input Level	+8 dB, (2.5 V ac rms)
	Maximum Output Level	+12 dB, (4.19 v ac rms)
	Maximum Current how	65 mA
	Dimensions	8-1/8" W x 5-1/8" D x 1-5/8" H