
MC 140^x

Multi-Channel 140 Watt Amplifier
with Staggered Electronic Crossover

MC 245

5-Channel 240 Watt Amplifier
with Staggered Electronic Crossover

OWNER'S MANUAL



MC140^x

Multi-Channel

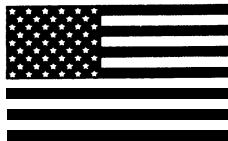
140 Watt Amplifier with
Staggered Electronic
Crossover Network

MC245

S-Channel

240 Watt Amplifier with
Staggered Electronic
Crossover Network

OWNER'S MANUAL



Thank you for purchasing the Soundstream MC140^x or MC245. You now own one of the finest amplifier/electronic crossover combinations made, a precision component capable of audiophile quality performance.

To get the most out of your unit, we suggest that you acquaint yourself with its capabilities and design. Please retain this manual for future reference.

Model Number: _____

Serial Number: _____

Dealer's Name: _____

This Soundstream Product is the result of American craftsmanship and the highest quality control standards; your amplifier/electronic crossover will deliver many years of pleasure.

Should it ever require service or replacement, recording the information below for your own records will help protect your investment.

Date of Purchase: _____

Date of Install: _____

DESIGN FEATURES

The MC140^x is conservatively rated at 140 watts. This power can be divided into: Four channels (4 x 35 watts), Three channels (2 x 35 watts, 1 x 90 watts), Two channels (2 x 90 watts).

The MC245 is conservatively rated at 240 watts. This power can be divided into; Five channels (4 x 35 watts, plus 1 x 100 watts), Four channels (2 x 35 watts, plus 1 x 90 watts, plus 1 x 100 watts), Three channels (2 x 90 watts, plus 1 x 100 watts).

The design topology of both amplifiers utilize multiple **Darlington** output devices with a total output capability five times the total rated output of the amplifier. With such reserves and no current limiting, both amplifiers operate without strain even at maximum output. **Power, ground,** and speaker connectors are rated to handle **up to 80 amps** and accommodate up to 8 gauge stranded cable. **To** prevent potentially damaging turn-on and turn-off thumps, a built-in delay circuit allows these amplifiers to **fully stabilize** before sending the audio signal to the loudspeakers.

The MC 140^x/245 provide superior, non-intrusive protection from overheating in two ways: First, the Soundstream "Chassisink" has been custom designed to guarantee the lowest possible thermal resistance (maximum cooling), greatly reducing the possibility of overheating. Secondly, if this should occur, all Soundstream amplifiers incorporate our "Smart Power Supply" which temporarily modifies the power supply's operating parameters, allowing the amplifier to run much cooler. Full output **capability is restored once the** amplifier returns to normal operating temperature. This entire process is automatic and inaudible.

In the case of an actual amplifier malfunction, secondary fuses will shut down these amplifiers in a conventional manner. **Only** premium parts are used, such as 1% metal film resistors, gold-plated input connectors, double-sided masked glass epoxy circuit boards and immersible sealed potentiometers. Input sensitivity is **adjustable** to match any tuner/deck, these amplifiers can even be interfaced with most OEM speaker level signals. Both the MC140^x and MC245 incorporate built-in Staggered Asymmetrical Electronic Crossover. The high pass crossovers are set at **180Hz** with a slope of 6dB per octave. The low pass crossovers **are set** at 75Hz with a slope rate of **12dB** per octave. **By** selecting two staggered frequencies, a dip in the acoustic response is created, which is most useful to compensate for common vehicle response peaks between these **two fixed points**.

INSTALLATION

Proper installation and **adjustment** will reward you with reliable operation and optimum performance. Automotive sound system installations can be tricky, especially for first-timers. **For** this reason, you may want to consider using a professional installer who has the tools and more importantly, the experience to do the job right.

If you decide to install your equipment yourself, we hope this manual will **serve** as a helpful guide.

Making Terminations at the Amplifier

The only tool needed to make wire terminations at the amplifier **will** be an insulated flat blade screwdriver. Do not use a non-insulated screwdriver since this may short against the heat sink and damage the amplifier. The screwdriver used should be one with a long enough shank to allow clearance between the fins of the heat sink. Moreover, this will prevent unwanted damage or scraping.

Location and Mounting

The first step in an installation is thorough planning. Choose the location for your amplifier **carefully**. The amplifier should be located in either the passenger compartment or the trunk, never in the engine compartment or in any outside location exposed to dirt and moisture. Adequate ventilation is important; allow enough space so that air can circulate around the heat sinks. Make **sure that the installed amplifier will not interfere with** normal operation of the vehicle. It is best not to locate an amplifier near your vehicle antenna, since the switching power supply can interfere with AM reception. Your amplifier should be mounted to your vehicle's chassis with the four screws provided. Use your amplifier as a template for making pencil marks where you intend to drill. (Make sure the location you are planning to drill through is free of any obstacles such as factory vehicle wiring or gas tanks.) It's a good **idea** to bench test your system before mounting the components. If you have a 12 volt power source, you can connect and test all components outside the vehicle. Or, you can connect them inside the vehicle prior to final mounting. Either way, connect **all** components exactly the way you intend to in the system to ensure proper installation; then disconnect all power connections until the installation is complete.

Wiring

Determine how your vehicle's wiring is laid out. Keep all wiring inside the vehicle. Good standard audio practice suggests keeping all low level wiring away from wires carrying twelve volts. If you drill a new hole through any metal, be sure to install a grommet to prevent shorting. It is a good idea to paint the bare metal to prevent rust. All wires should be hidden under carpet; an exposed wire can inadvertently be pulled, causing disconnection or shorting. Wires should never be under tension or subject to moisture. Use cable ties to bundle excess wire.

Amplifier Configuration Diagrams

In the last nine pages of this manual you will find several system configuration diagrams. Please review the pages appropriate to the amplifier model you have purchased. Both these Soundstream amplifiers offer a variety of available configurations. Please use the configuration that best suits your installation needs.

MC140^x – Selecting Operating Mode

The 140 watts available from the MC 140^x can be divided into two channels (stereo) three channels (stereo plus a single mono channel) or four channels (front and rear stereo; or stereo bi-amp).

To select any of these modes, remove the access hatch on the **bottom** of the amplifier and set the internal switches marked stereo/mono to the desired mode of operation. (Do not close the access hatch if you are going to be using the internal electronic crossover capabilities of this amplifier.)

For two channel operation, set both internal switches to the **mono** position.

For three channel operation, set one switch to mono operation and the other to stereo.

For four channel operation, leave both switches in the stereo position.

MC140^x – Internal Electronic Crossover

Your MC140^x is equipped with a Staggered Asymmetrical Electronic Crossover. Based on the selected operating mode, you can operate a pair of satellites and a pair of subwoofers in the four channel mode, or a pair of satellites and a mono subwoofer in three channel mode. The crossover points are preset as follows; High pass is set at 180Hz permitting only frequencies of 180Hz and higher to be passed on to the **satellites**. Low pass is set at 90Hz permitting only frequencies of 90Hz and lower to be passed on to your **subwoofer(s)**. The net **result** is an effective Two-way Staggered Asymmetrical Crossover. To set up the electronic crossover for your system, again go to the access area on the bottom of the amplifier. Right next to the Stereo/Mono switches, you **will find** the crossover switches. They are labeled Full Range/High Pass, and Full Range/Low Pass. When using the on-board crossover, the satellite speakers must be connected to the outputs labeled Channels 3/4, and your subwoofers should be connected to the outputs **labeled Channels 1/2**. This is how the crossover is configured. For a visual reference, please consult the Amplifier *Configuration Diagrams* at the end of this manual.

MC245 – Selecting Operating Mode

The 240 watts available from the MC245 can be divided into three channels (stereo plus a single **mono channel**), **four channels (stereo plus two mono channels)**, and **five channels (front and rear stereo plus a single mono channel)**. To **select any of these modes**, remove the access plugs labeled stereo/mono on the bottom of the amplifier and set the switches to the desired setting.

For five channel operation, set both switches to the stereo position.

For **four channel operation**, set one switch to **mono operation**, and the other to stereo.

For three channel operation, set both switches to the mono.

MC245 – Internal Electronic Crossover

Your MC245 is equipped with a Staggered Asymmetrical Crossover. Based on the selected operating mode, you can operate two pairs of satellites and one to four subwoofers in five channel mode, one pair of satellites, a center channel, and one **to** four subwoofers in four channel mode, or one pair of satellites and one to four **subwoofers** in three channel mode. To set up the electronic crossover for your system, again go to the access **plugs** on the bottom of the amplifier and locate those marked; Full Range/High Pass and Full Range/Low Pass.

When using the on-board crossover, the satellite speakers must be connected to the outputs labeled Channels 1, 2, 3, 4, and the subwoofers must be connected to the outputs labeled Mono Subwoofer Channel. This is how the crossovers are configured. For a visual reference as to how all selections should be made for **your application**, please consult the Amplifier Configuration *Diagrams* at the end of this **manual**.

MC140^x – input Connections

Inputs to your amplifier attach by means of standard RCA type iacks. When using the amplifier in the stereo mode, use both the left and right input iacks. When using a portion of the amplifier in bridged mode, use only the right input jack for the side of the amplifier that is to be bridged.

Your MC140^x has also **been equipped with a unique feature that** allows you to use just the Channels 3/4 input and distribute the signal to all four channels of the amplifier. This is accomplished by using the switch labeled ***Internal Audio Input/External Audio Input***. This switch is located with the crossover and bridging switches behind the access hatch on the bottom of the amplifier. When set to the ***External*** position, the amplifier must receive input on both the Channel 1/2 and Channel 3/4 side. When set to the ***Internal*** position you need only use inputs on the Channel 3/4 side of the amplifier. The major benefit of this switch is twofold, you can use it when you are interfacing with a head unit equipped with only one set of pt-eamp outputs, and when you are using the **full** crossover capability of the amplifier in a full bi-amp system, where there is no need to have head unit fading capability.

MC245 – Input Connections

Inputs to your amplifier connect by means of standard RCA type iacks. When using Channels 1/2 and Channels 3/4 in stereo **you must use all four of the left and right inputs**.

When using either pair of amplifiers bridged, only the right input is to be used for that pair. Your MC245 has also been equipped with optional separate subwoofer inputs. You can use either or both of the inputs since this is a paralleled mono input. You can also feed this amplifier a stereo signal and it will automatically sum it into a mono signal.

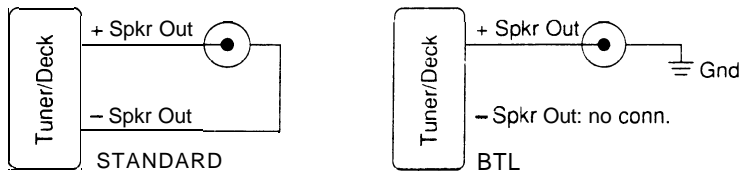
If you plan to use the external subwoofer inputs for your particular application, it will be necessary for you to first locate the switch labeled ***Internal Audio Input/External Audio Input*** located behind an access plug or hatch on the bottom of the amplifier. Set the switch to the ***External*** position, this will activate the external inputs. If you are going to use just the four inputs, set the switch to the ***Internal*** position. This will automatically distribute signal to the subwoofer portion of the amplifier. **Please** consult the *Amplifier Configuration Diagrams* for the application that best suits your needs.

General Guidelines – Input Connections

For connection from your **head** unit to the amplifier(s), we recommend the **use of** Soundstream **DL•1** or an equivalent premium cable. In most cases, the signal source **will be** the preamp output jacks of a head unit. However, some head units use preamp output connectors other than the RCA type. In this case you will need a special adapter to convert from the source configuration to RCA. This adapter should be available from the dealer who sold you your head unit. If your head unit has speaker outputs but no preamp outputs, your Soundstream amplifier has been equipped with “Adapter-free” interface capability. This allows you to wire an RCA connector directly to the **end** of your head units speaker wires. However, before doing so, determine if your head unit has standard or BTL type output. A

good rule of thumb is that any head unit producing 5 or more true watts a channel is BTL. Once you determine the type of output your head unit has, follow the appropriate diagram below for hookup.

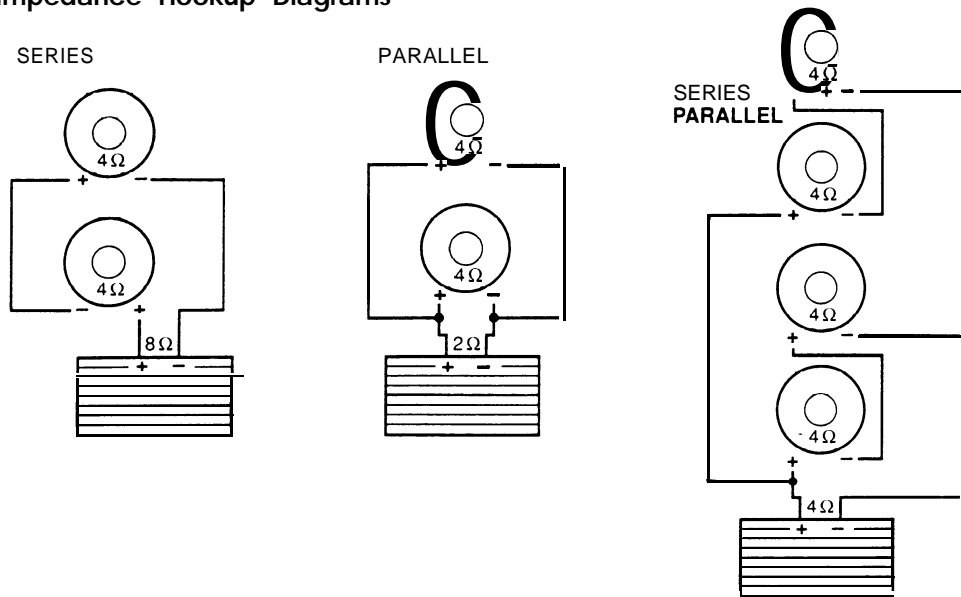
If you have an equalizer or low level crossover network(s), these components will be inserted between your head unit and the amplifier(s). Refer to the manuals of those items for the proper connection.



Output Connections

Use Soundstream High Definition speaker cable (such as Speaker 120 or 160) or an equivalent for best results. **The terminals of your loudspeakers are marked** for polarity, and the speaker wire should be coded by color or markings on the **jacket**. Be sure to connect the **left** and right channels with the same polarity. Loudspeaker manufacturers are not very consistent in their polarity markings, so if you have loudspeakers of different types connected to the same amplifier terminal, verify correct polarity by ear. Correct polarity produces the most bass response while incorrect produces less bass and a strangely dislocated image on mono material. For your specific hookup, please carefully review the *Impedance Hookup Diagrams* that follow, as well as the *Amplifier Configuration Diagrams* at the end of this manual.

Impedance Hookup Diagrams



Power Connections

Your amplifier **can only be operated from** 12 volt negative ground electrical system. If your car was produced before 1970, or if you have any doubts, make sure of the type of electrical system your car has prior to attempting installation.

The MC 140^X may draw up to 20 amperes and the MC245 may draw up to 30 amperes, if

they are used to their full output capability. Determine the alternator rating of your car to make sure your charging system is capable of delivering *the* necessary current to operate these products. If either one of these amplifiers is being used without any additional amplifiers, odds are you have **more than enough current**. If these amplifiers are part of a multi-amplifier system, investigate **your potential current consumption**. It may be necessary for you to add a second battery or upgrade the existing alternator.

For Power, Ground and Remote connections, we recommend Soundstream premium cable (such as Power 80 or 100), or an equivalent. A minimum of 10 gauge power and ground cable should be used on both of these amplifiers in order to realize maximum performance. An in-line fuse should also be installed under the hood approximately 12 inches from the battery. For the MC140^X a 20 amp fuse should be installed, and for the MC245 a 30 amp should be installed

Remote Power-on Connection

If your head unit has a remote power-on **control** wire, connect it to the remote terminal on your amplifier. This is a control line, not a power line, so a small gauge wire, such as Soundstream Remote 200 Sensing cable is ideal for this connection.

If **your** head unit has no remote power-on control labeled as such, **look** for a power antenna control, this may be used instead. If your head unit has **neither** a remote power-on control **wire or** a usable power antenna control, it will be necessary either to connect the remote terminal to a 12 volt source which is switched by the ignition key, or to connect a 12 volt source through an on/off switch you install in series with the ignition switch in a location accessible to the driver.

NOTE: *If an **outboard** switch is used, make sure it is in the OFF position **whenever** you leave the vehicle. **This** will prevent extended drain on the **battery**.*

Before Powering Up the System

To prevent unnecessary labor and damage to your components, be sure to proof your system and all of its connections prior to attempted operation. **Also** double-check to see that **you have** selected all of the correct amplifier settings.

Powering Up the System

Once all connections have been checked, turn on the system. Be sure to keep the volume low. You should be hearing music at this point. If not, turn off the system immediately and again check for shorts and poor connections. If all wiring is in order, check the fuse installed at the battery and then the speaker output fuses located on the bottom of the amplifier. If any of these are blown, replace them with the same value only.

Input Level Adjustments

Input levels are **adjusted** by **means of independent controls** located directly above the inputs, **between the ~~the~~ **inputs****. **to set your amplifier levels**, begin by turning all level controls to minimum (full counter-clockwise). Turn the **system on**, and **set** the volume on your head unit at its mid-point. Advance the amplifier input level controls until you have reached a comfortable listening **level and all channels are balanced**.

NOTE: *With many head units, the radio output **level** is **significantly different** than that of the other source. Check both sources and set levels using the lesser of the outputs.*

Protection Circuits

Your amplifier is protected against both overheating and short circuits. Because of the "Smart Power Supply", it is unlikely that the amplifier will shut down due to thermal overload.

SERVICE

Your Soundstream amplifier is protected by a limited warranty. Please read the warranty information enclosed with this product.

SPECIFICATIONS MC 140^x

Power Output

4 Channel – 35w x 4, 20Hz–20kHz, into 4 ohms
3 Channel – 35w x 2, plus 90w x 1, 20Hz–20kHz, into 4 ohms
2 Channel – 90w x 2, 20Hz–20kHz, into 4 ohms

THD: <0.1%, 20Hz–20kHz at full rated output into 4 ohms

S/N Ratio: 100dB

Damping Factor: >200

Input Impedance: 10 kOhm

Input Sensitivity: 250mV–2.5V

Idle Current Draw: 0.5 A

Maximum Current Draw: 20 A

Dimensions: 8-1/8" W x 7-13/16" D x 2-1/8" H (including mounting flange)

SPECIFICATIONS MC245

Power Output

5 Channel – 35w x 4, plus 1 00w x 1, 20Hz–20kHz, into 4 ohms
4 Channel – 35w x 2, plus 90w x 1, plus 1 00w x 1, 20Hz–20kHz, into 4 ohms
3 Channel – 90w x 2, plus 1 00w x 1, 20Hz–20kHz, into 4 ohms

THD: <0.1%, 20Hz–20kHz at full rated output into 4 ohms

S/N Ratio: 100dB

Damping Factor: >200

Input Impedance: 10 kOhm

input Sensitivity: 250mV–2.5V

Idle Current Draw: 1.5 A

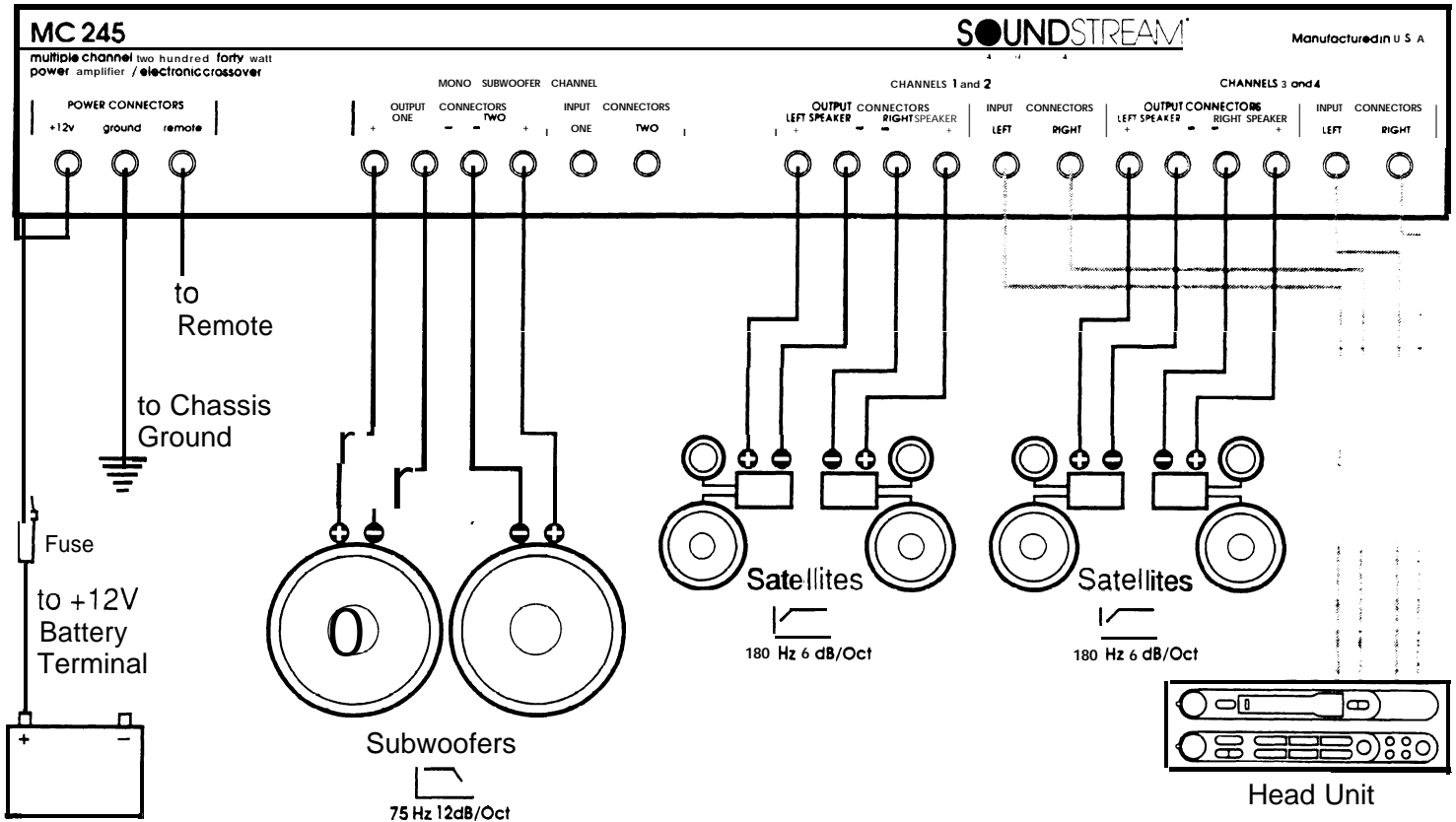
Maximum Current Draw: 30 A

Dimensions: 13-1/8" W x 7-13/16" D x 2-1/8" H (including mounting flange)

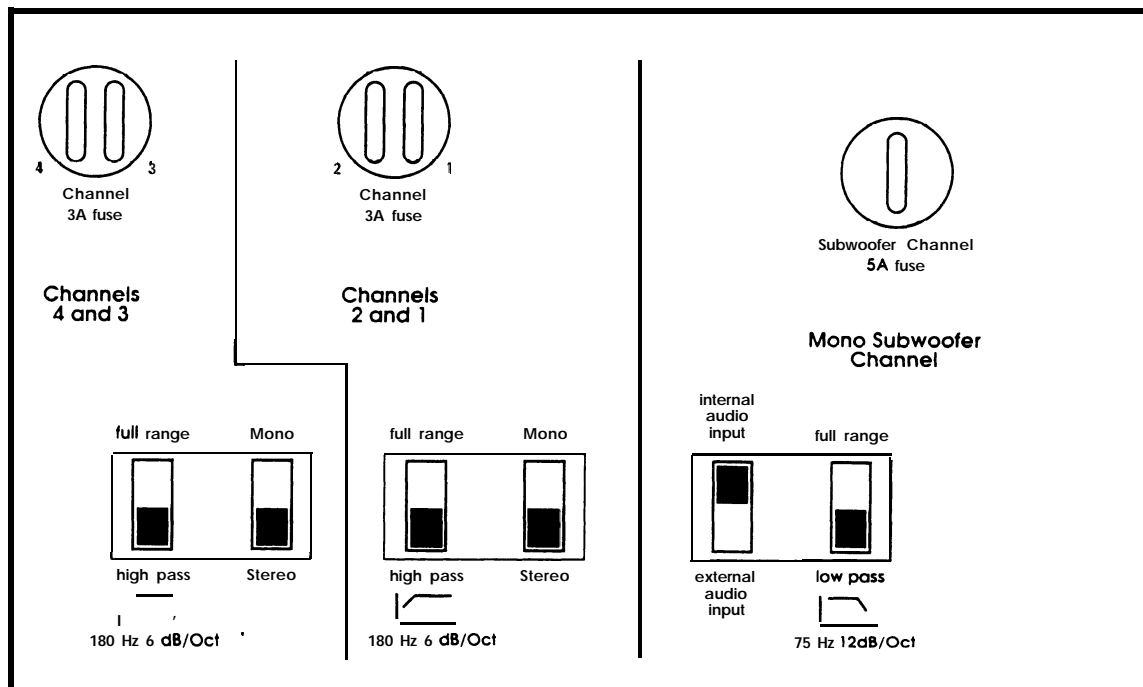
MC245

S-Channel Using Internal Crossovers

Front Panel Connections



Bottom Panel Switch Settings

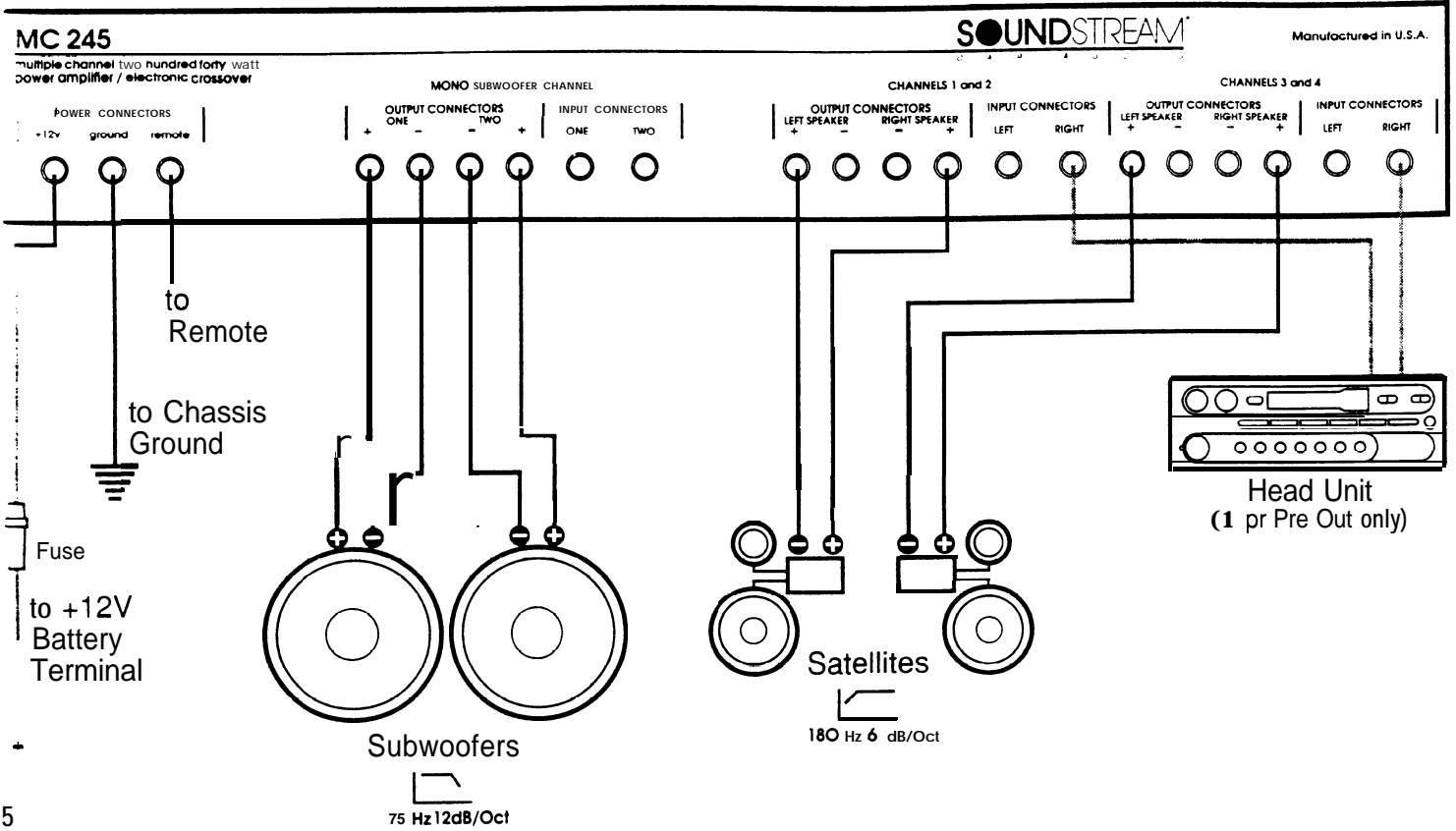


AMPLIFIER CONFIGURATION DIAGRAM #2

MC245

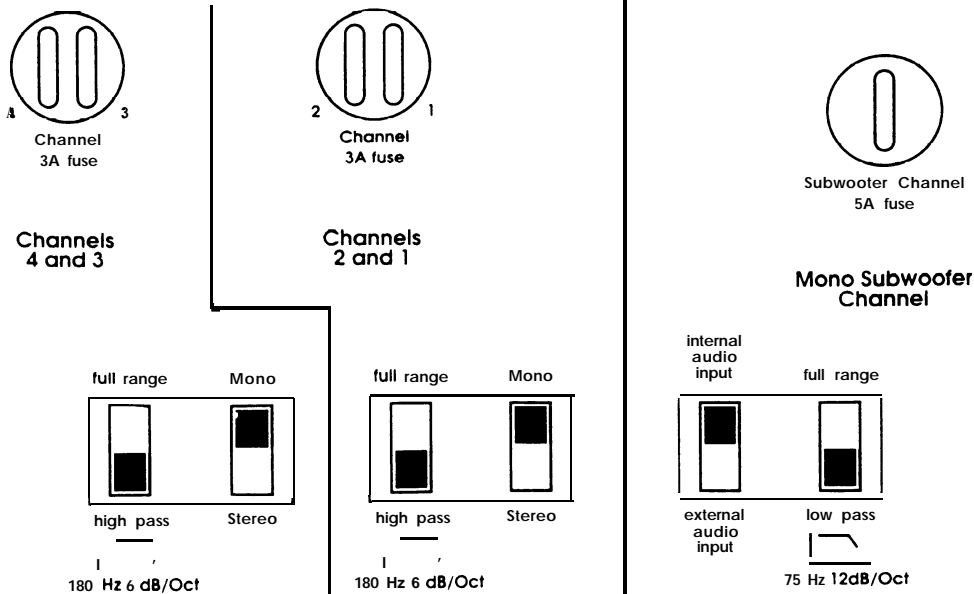
3-Channel Using Internal Crossovers

Front Panel Connections



5

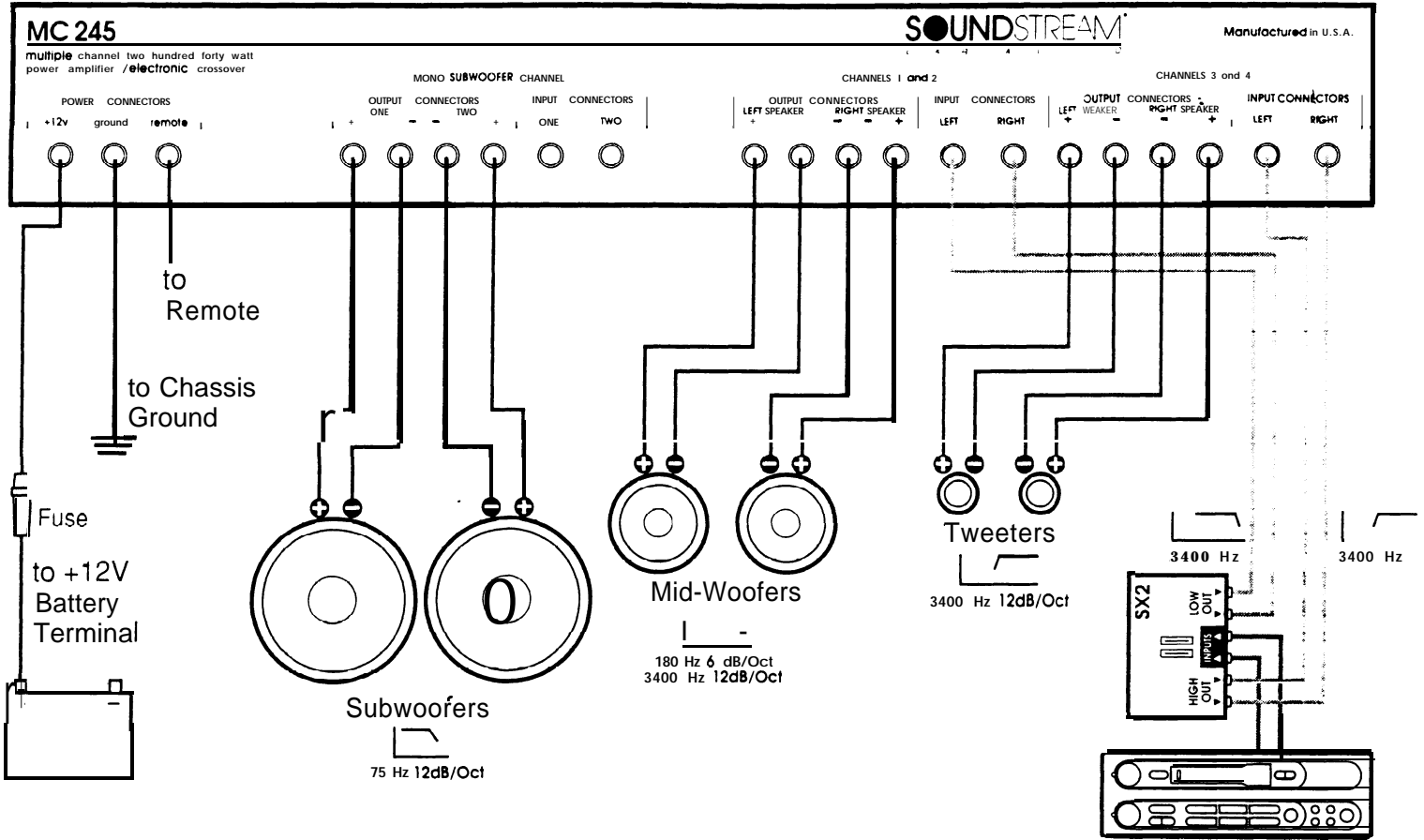
Bottom Panel Switch Settings



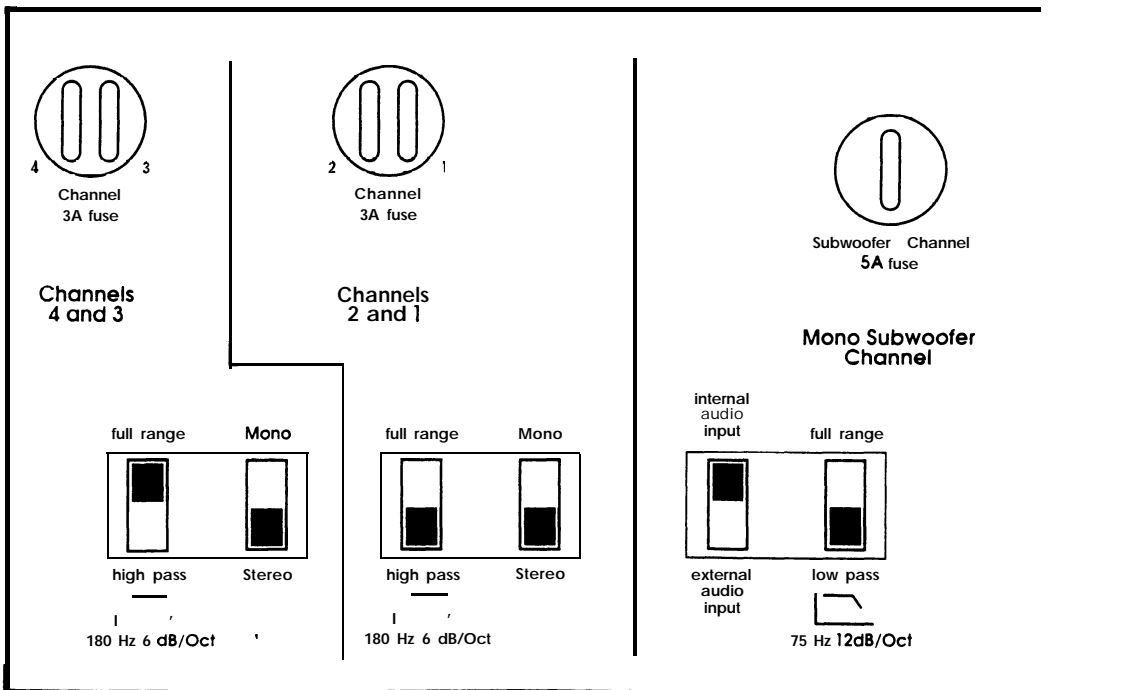
MC245

S-Channel Tri-Amp Using Internal and 2-way External Crossovers

Front Panel Connections



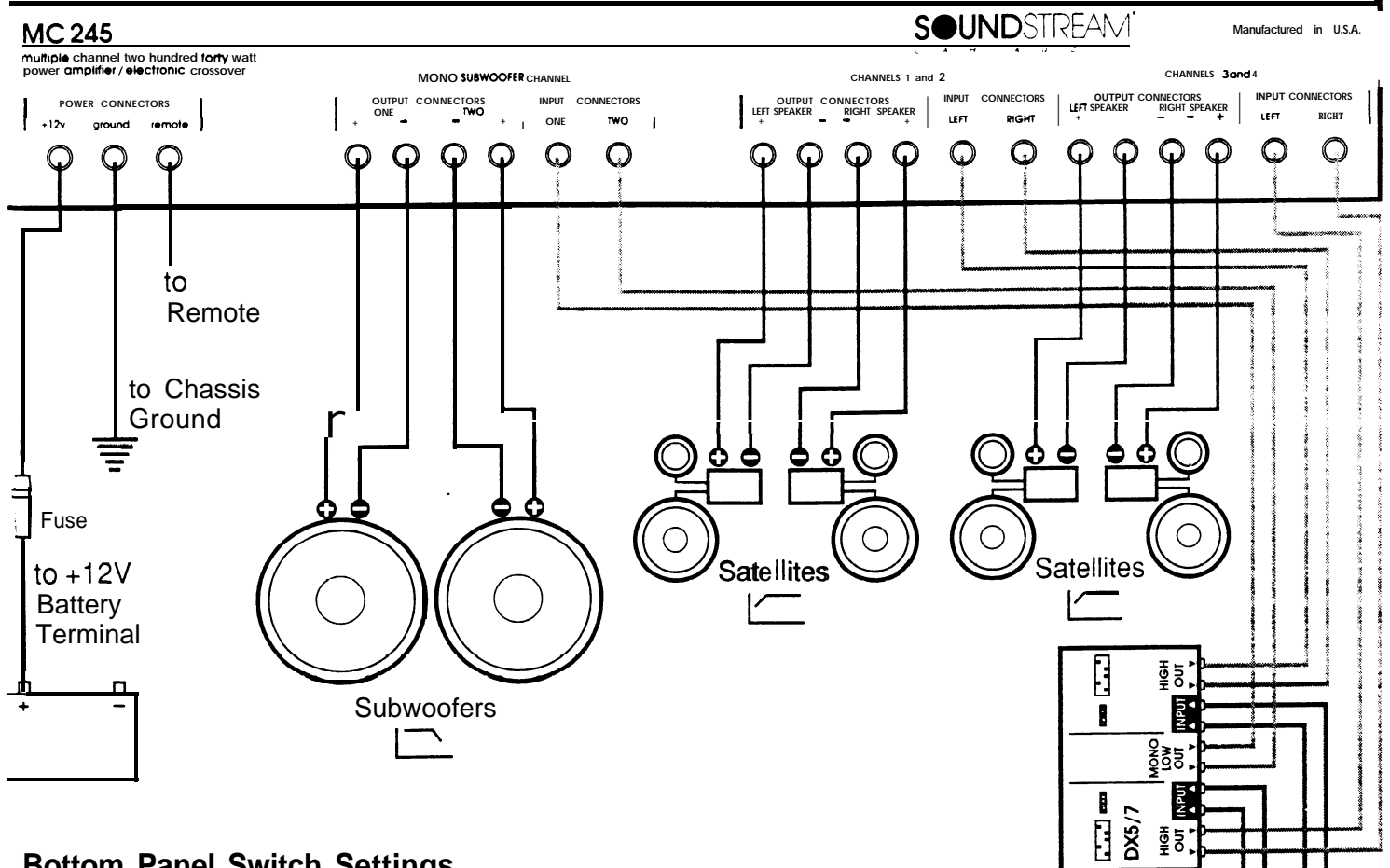
Bottom Panel Switch Settings



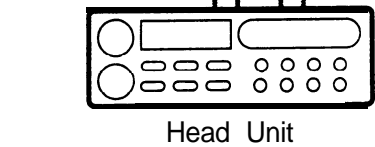
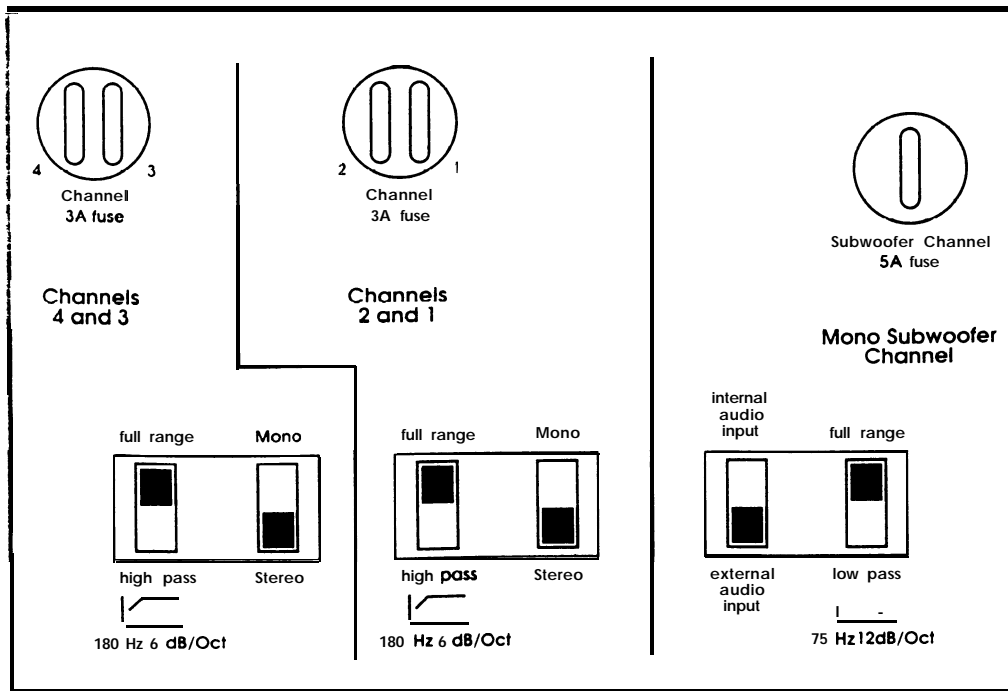
MC245

5-Channel Using External Subwoofer Input / External Crossovers

Front Panel Connections



Bottom Panel Switch Settings

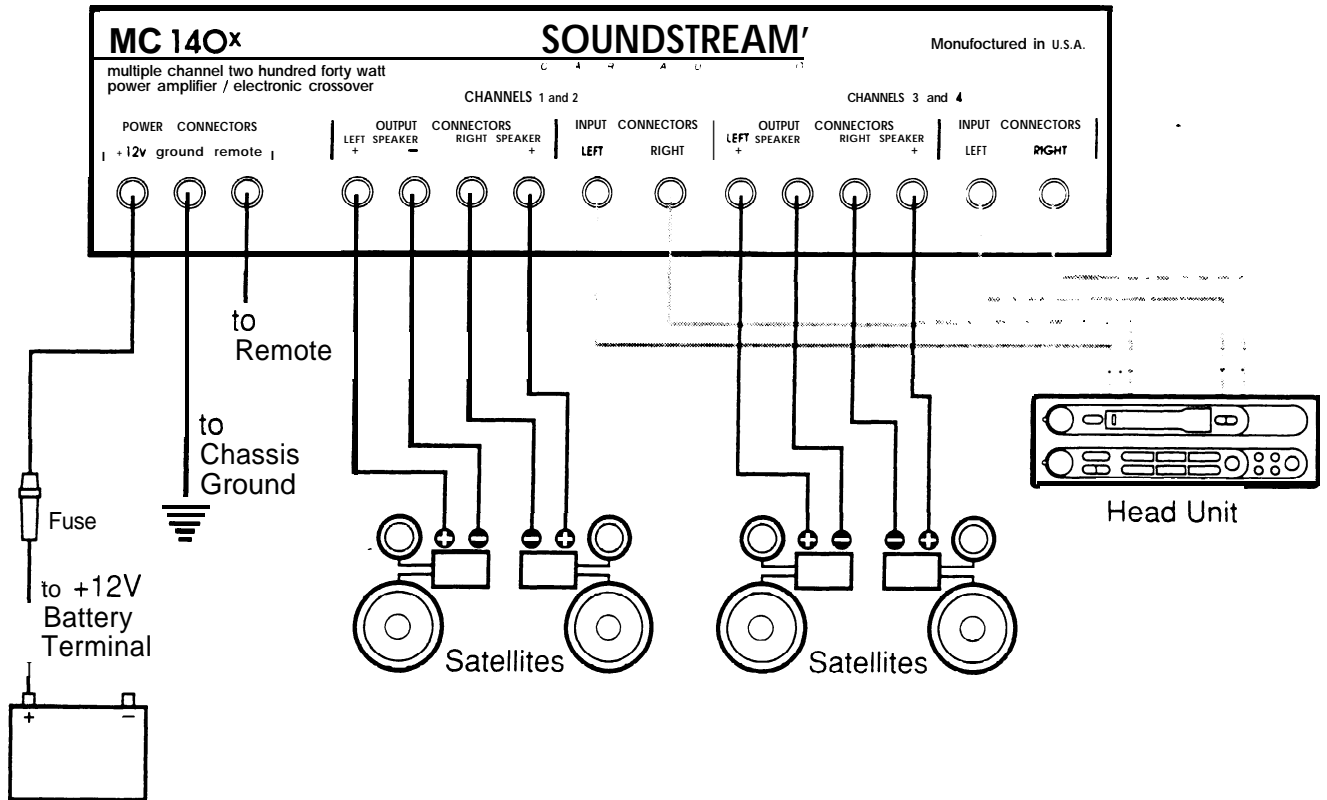


AMPLIFIER CONFIGURATION DIAGRAM #5

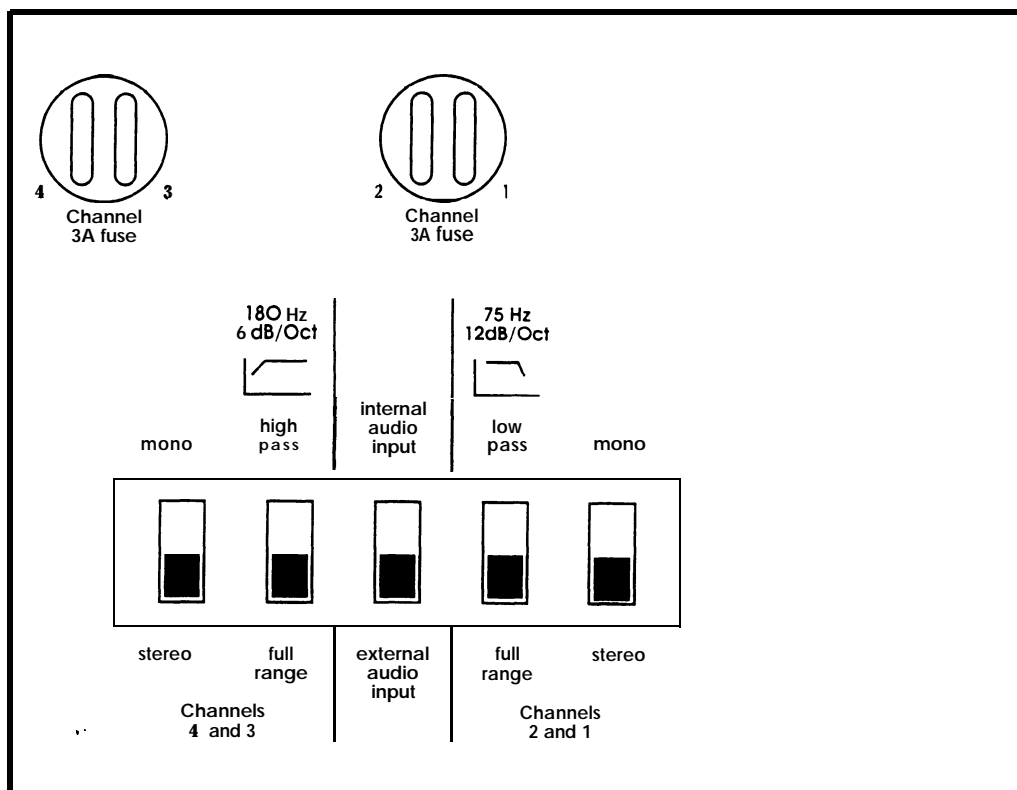
MC 140^x

4-Channel Full-Range System

Front Panel Connections



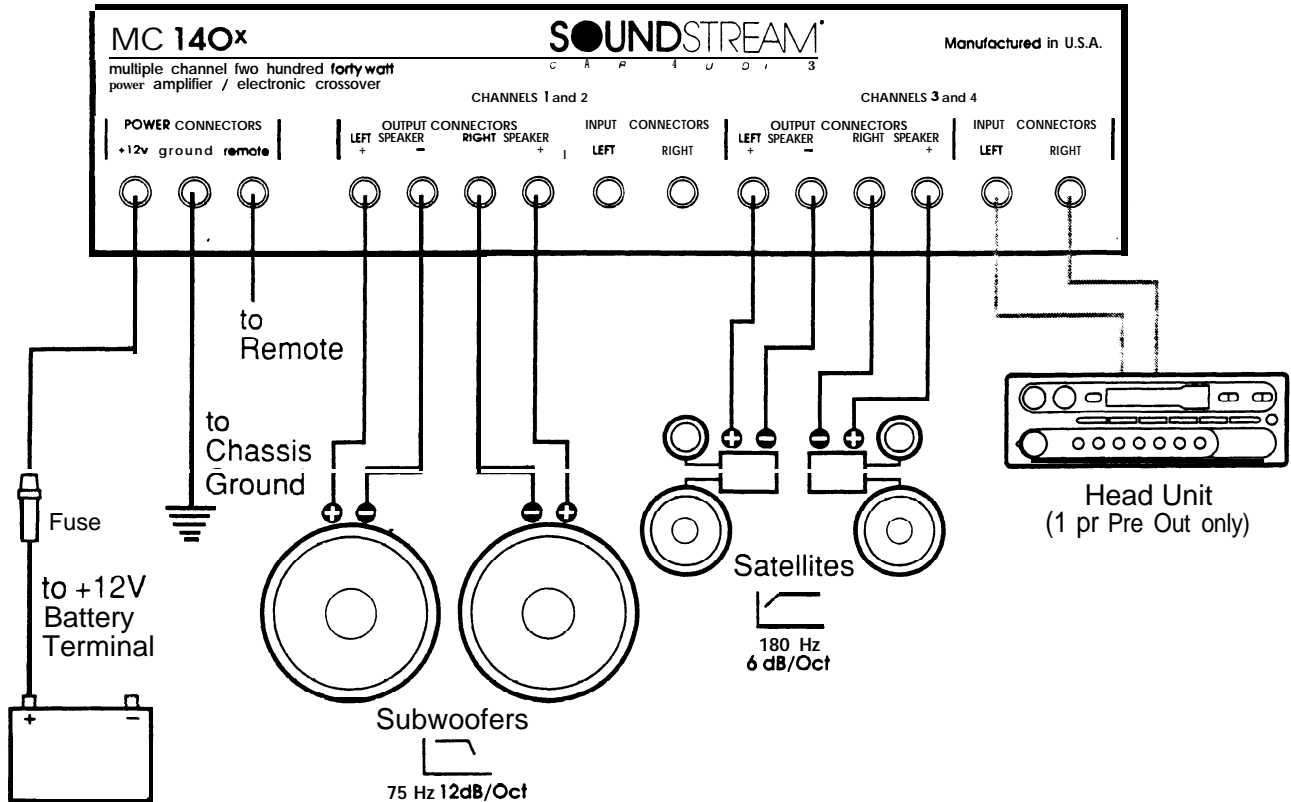
Bottom Panel Switch Settings



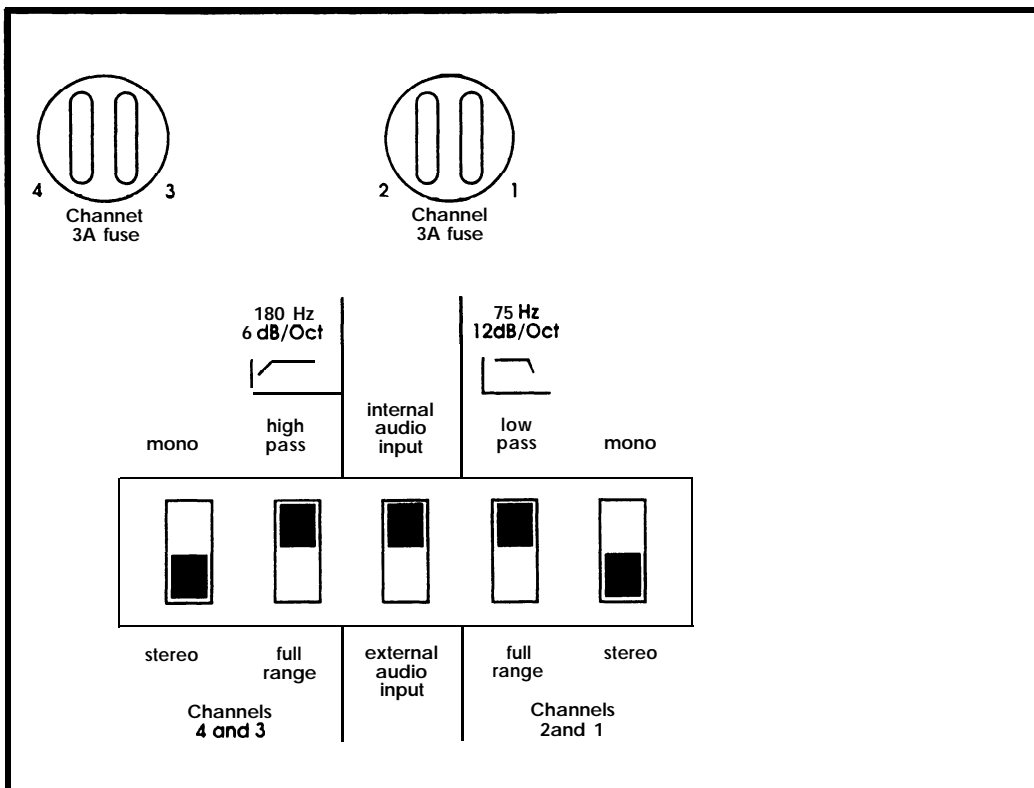
MC 140^x

4-Channel Two-way Bi-amplified System Using Two Inputs

Front Panel Connections



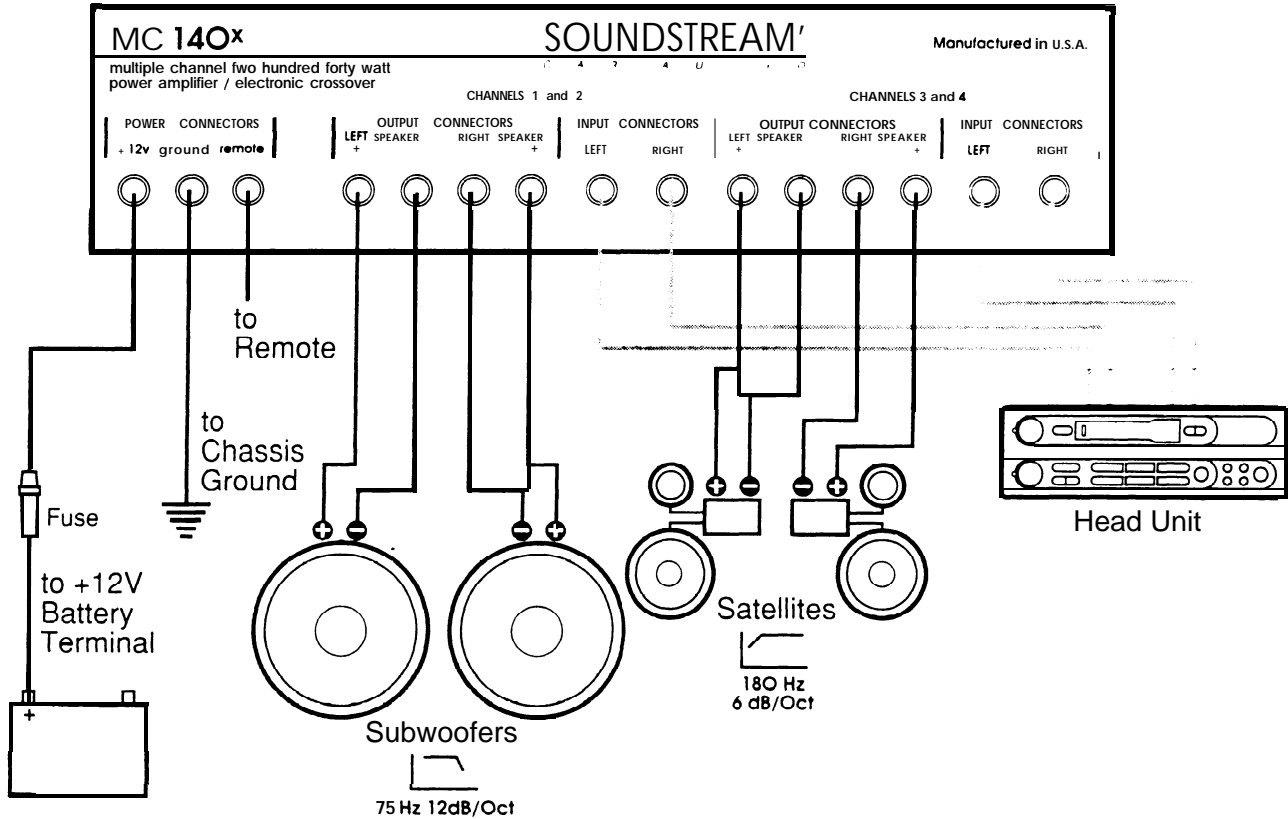
Bottom Panel Switch Settings



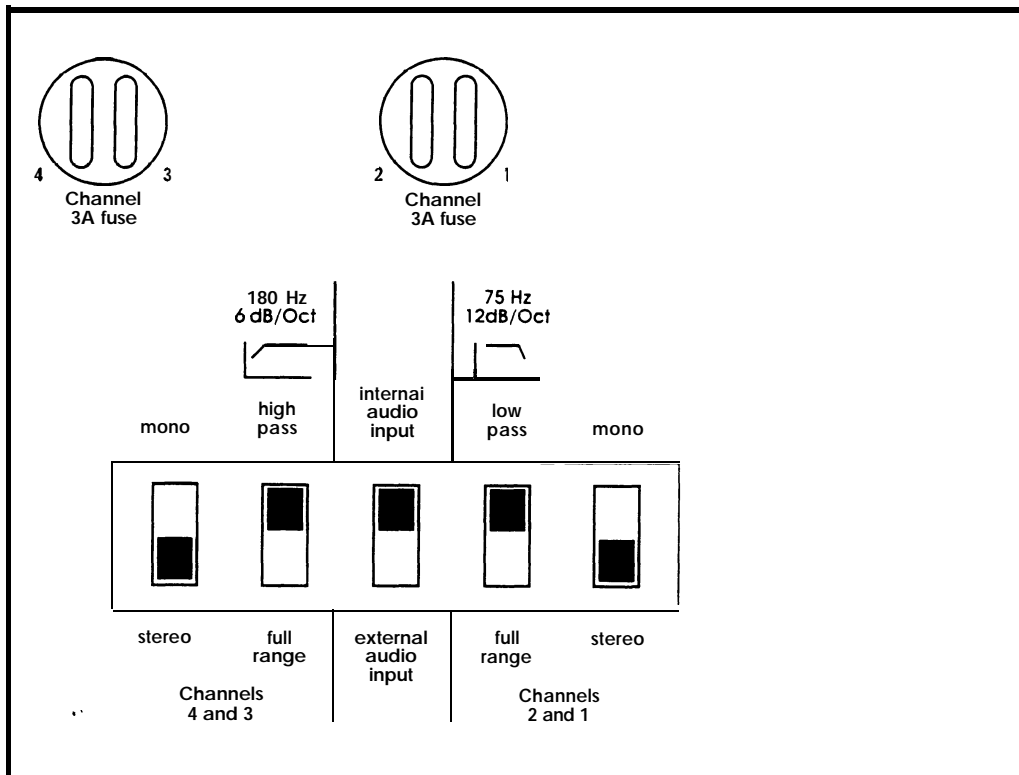
MC 140^x

4-Channel Two-way Bi-amplified System Using Four Inputs

Front Panel Connections



Bottom Panel Switch Settings

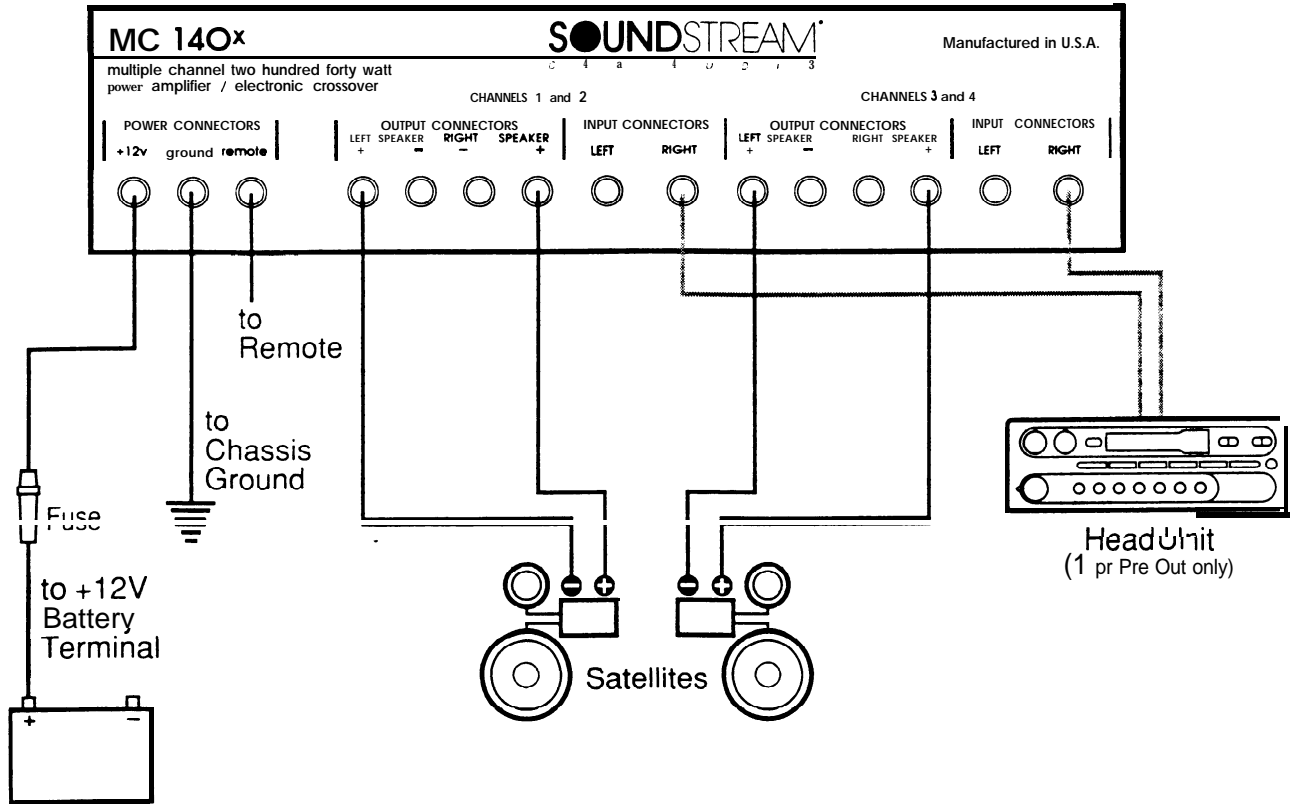


AMPLIFIER CONFIGURATION DIAGRAM #8

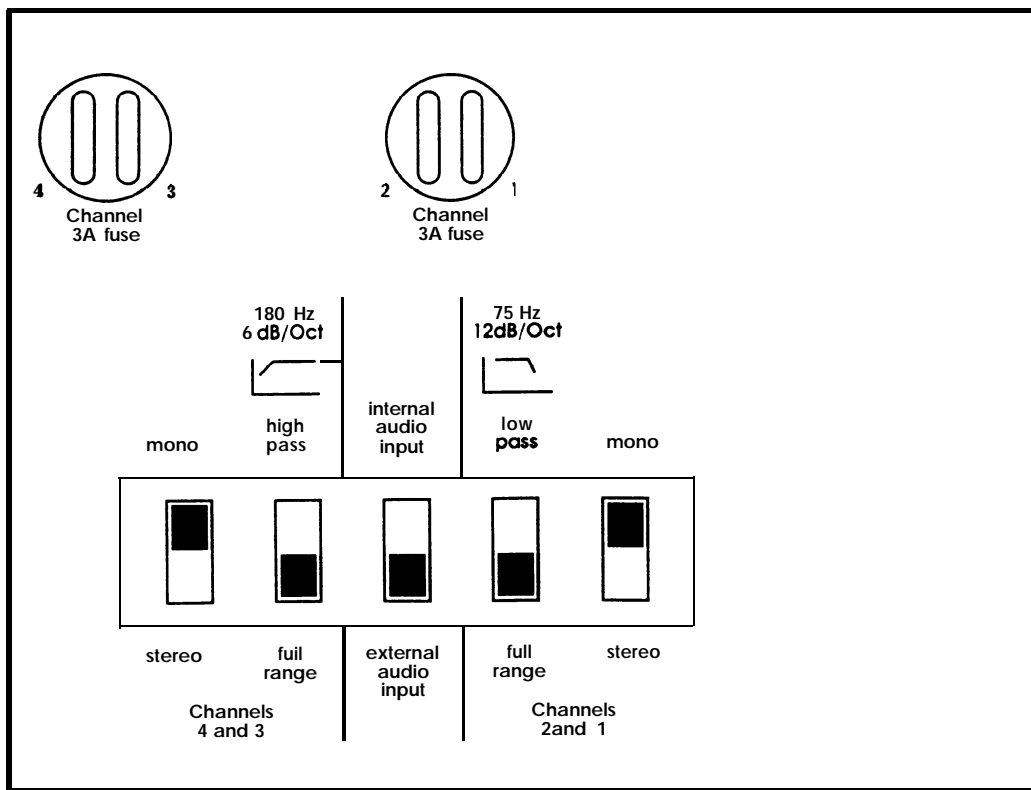
. MC140^x

Z-Channel Full-Range System

Front Panel Connections



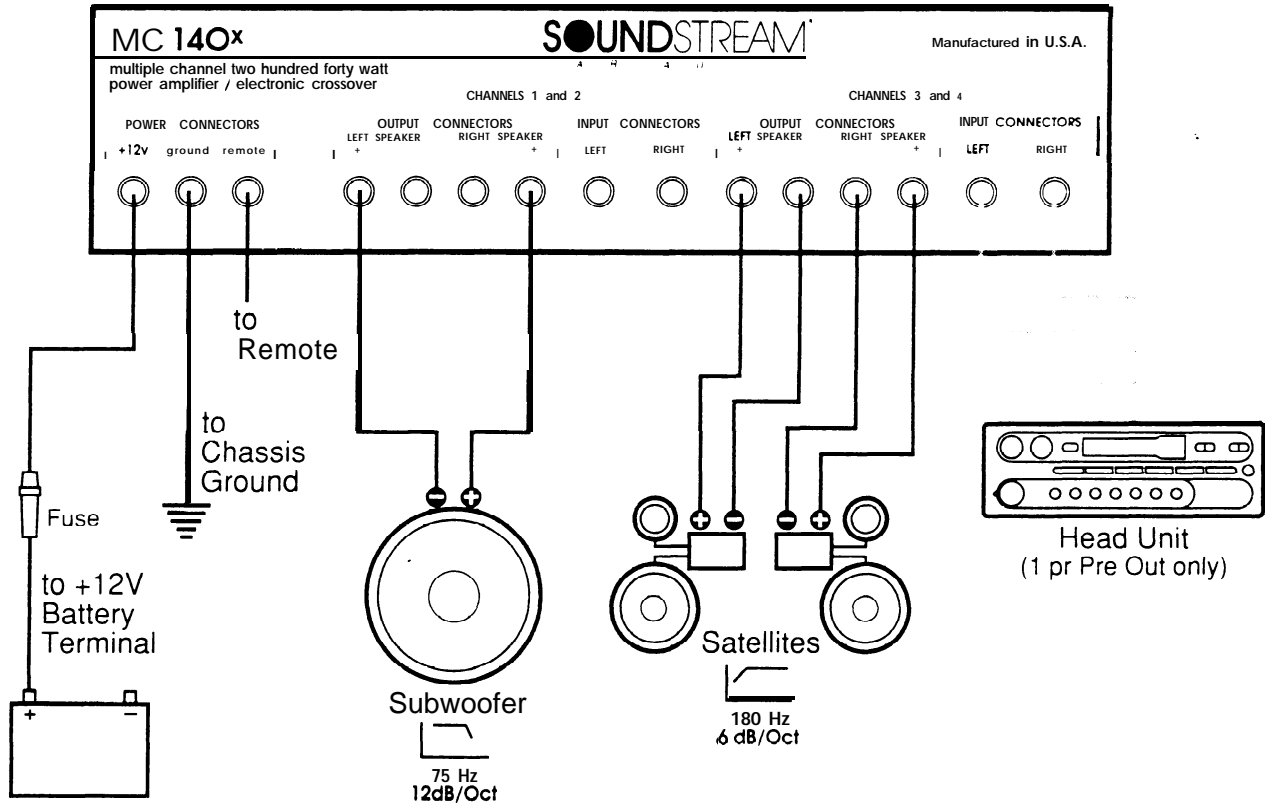
Bottom Panel Switch Settings



MC 140^x

3-Channel Two-way Bi-amplified System

Front Panel Connections



Bottom Panel Switch Settings

