

QUICK START

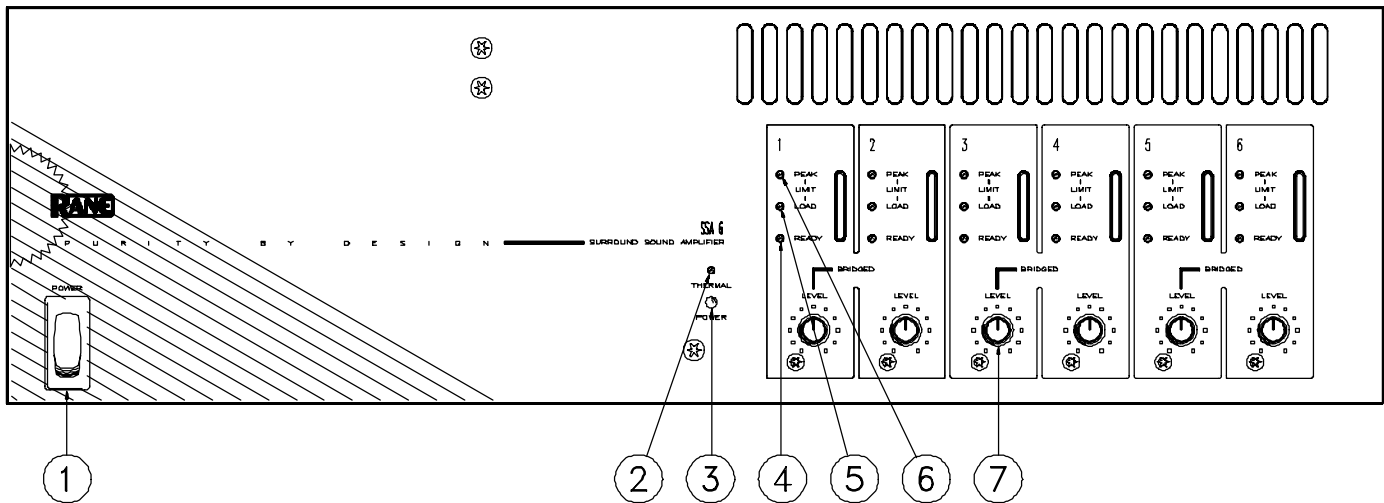
You got your good habits, and you got your bad habits. A good habit is to read at least this much of the manual. A bad habit is not to read any of this manual. Reading just this section can prevent grief worse than your worst nightmare. Grief that's hard to get rid of—harder than a bad habit.

Be sure the amplifier is *off* before making any connections. Euroblock speaker connectors make connecting the amplifier easy. They are just like little snap-on terminal blocks that take up to 12 gauge wire. Gold plated RCA connectors take standard unbalanced sources. See Rane Note 110 for more information about other connectors. Keep your input cable lengths as short as possible. Speaker loads should be no less than four ohms per output. If you are running multiple speakers per Channel in series or parallel, *check your final impedances*.

If you are running six separate Channels (unbridged), be sure all the **BRIDGED** switches on the rear panel are *depressed*. If you are running any Channels bridged, you are obviously a power user and we highly recommend you read further into the manual regarding this issue.

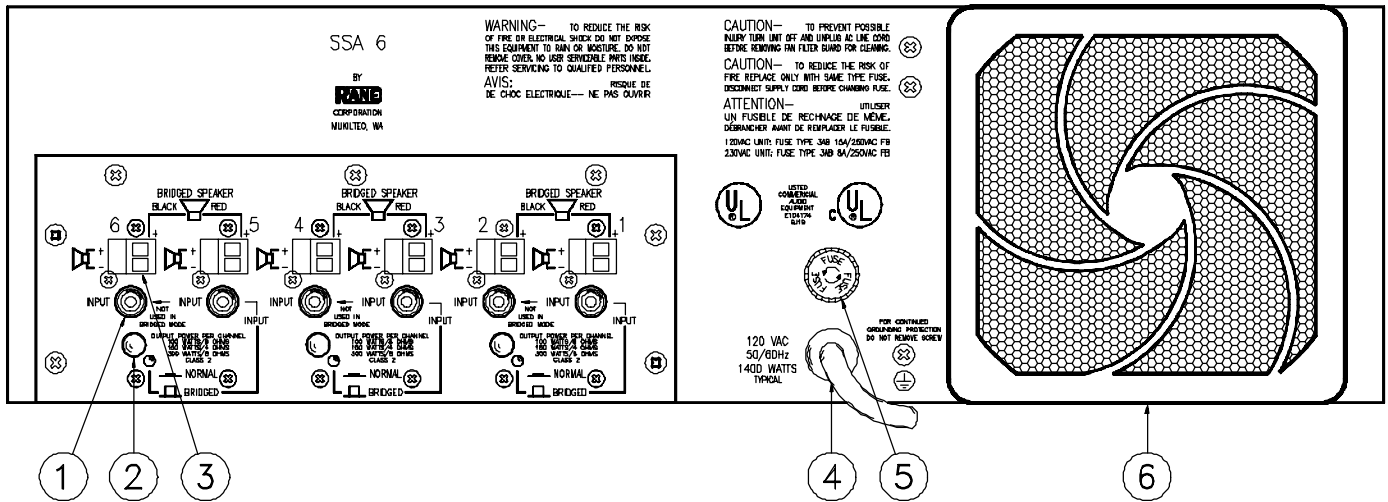
With Input and Output connections completed, be sure all front panel **LEVEL** controls are all the way counterclockwise. Now flip the **POWER** switch and after hearing the relays click in after a second, notice that the **READY** lights come on. Slowly turn up each Channel's **LEVEL** control to the desired gain and if all is well you should hear something pleasant. If not, re-check connections, put on a better CD, and read more of the manual.

FRONT PANEL DESCRIPTION



- 1. POWER switch:** Obediently turns the SSA 6 on and off every time you poke it with your finger (or other suitable object). All six Channels have delayed turn-on/instant turn-off relays to eliminate any switching transients.
- 2. THERMAL overload indicator:** This red LED lights up if the SSA 6 becomes too hot, indicating that power has been removed from all six Channels. Be sure to check the fan filter and actual speaker impedances if this lights up.
- 3. POWER indicator:** This magnificent blue LED lights whenever the SSA 6 POWER switch is turned *on*.
- 4. READY indicators:** Each of these green LEDs light whenever the mute relay is passing the signal through to the speaker. Normal operation is the *on* status.
- 5. LOAD LIMIT indicators:** Each of these red LEDs lights whenever a Channel leaves the Safe Operating Area (SOA). This means the amplifier turned down the Input level quickly and automatically, avoiding over-dissipation. Input signals 30 dB over a safe limit will cause the READY indicator and mute relay to turn off until the amplifier has been turned off and the problem corrected. Normal operation is the *off* status.
- 6. PEAK LIMIT indicators:** These red LEDs light whenever a Channel's Output cannot follow its Input. The amplifier has turned down the Input level quickly and automatically, avoiding audible distortion. Normal operation is the *off* status.
- 7. Channel LEVEL controls:** Each of these rotary controls determines the Input sensitivity of each respective Amplifier Channel. At its full clockwise position, an Input signal of 0 dBu (.775 vrms) drives the Amplifier to full power. As the controls are rotated counterclockwise, more Input signal level will be needed to achieve full power.

REAR PANEL DESCRIPTION



1. **INPUTS:** These are standard unbalanced RCA connectors. For balanced sources consult Rane Note 110.
2. **NORMAL/BRIDGED switches:** With the switch in the *out* position and the LED indicator *on*, the SSA 6 is operating in BRIDGED mode. The SSA 6 utilizes the BRIDGE switch to make internal connections between each pair of Channels: 1&2, 3&4, and 5&6. Whenever a signal is connected to an odd numbered Channel (say channel 1), the next even-numbered Channel is driven *inverted* when the BRIDGE switch is activated. When the BRIDGE switch is inactive, the internal connection is defeated and both Channels operate independently. Inputs should be connected to Odd Amplifier Channels only (1,3,5), and speakers connected to the “+” terminals of each Channel pair as shown on the SSA 6 chassis silk-screen.
3. **OUTPUTS:** Connect the speaker(s) to each of the six Channels by means of the Euroblock connectors with 18 to 12 AWG wire (See #2 for Bridged operation).
4. **AC line cord:** Plug this into a *grounded* AC outlet of 120VAC (or 240VAC if the SSA 6 is internally wired for 240V operation). *NOTE: If you use an adapter to plug the SSA 6 into a non-grounded outlet (three-to-two prong adapter), be sure to screw the ground adapter to the outlet by means of the cover plate screw.*
5. **Line fuse:** Use only a 15 amp 250 volt *Fast-blow* (or Normal blow—*not Slow blow*) fuse, 1.25" long, such as Buss ABC-15 (120 volt) or equivalent. For 240 volt use Buss ABC-8 or equivalent.
6. **Fan filter:** This washable filter may easily be removed for periodic cleaning by gently pulling on the black plastic housing and then lifting it away—perform this feat with the fan *off*, of course. Once the filter is removed, rinse it under hot tap water; and use dish soap to cut through particularly stubborn pollution deposits.
IMPORTANT: Keep this filter clean to ensure proper cooling and reliability of the SSA 6. Never remove the filter with the unit plugged in.
The SSA 6 draws a tremendous amount of air to ensure proper cooling and resultant long term reliability. Check and clean the filter as often as necessary, especially if the thermal overload indicator ever comes on.

OPERATING INSTRUCTIONS

Voltage Controlled Attenuators

The voltage controlled attenuators (VCAs) in the SSA 6 allow a significant increase in usable volume levels without excessive clipping or interference from conventional distortion causing muting circuits. The VCAs *do not* affect dynamic response, distortion or noise levels of any material within the rated output specifications of the amplifier. They simply monitor the difference between Input and Output signals, and the power dissipated in the output devices. In the event of clipping or excessive dissipation in the output devices, the VCAs “jump in” (out of hiding, as it were) and turn down the Input level to correct the overdrive condition.

This means that whenever a PEAK LIMIT LED flashes, a musical peak has been quickly turned down to avoid excessive clipping. This allows you to run the amplifier at a higher continuous level, typically about 4dB SPL higher than without VCAs. And that 4dB of increased SPL is the equivalent of a 250 watt amplifier without VCAs. If a LOAD LIMIT LED flashes, the Input level has been quickly turned down to prevent over-dissipation in the output devices due to excess phase shift or abnormally low impedances which may occur at some frequencies. This protection occurs without distorting or interrupting the musical program.

Keep an eye on the LEDs on the SSA 6 front panel. Occasional flashing of the LIMIT LEDs means you are getting the most SPL out of the amplifier. Continual lighting of either LED indicates excessive input overdrive, or too low impedance of load. If the green READY LED goes *off*, a load has been encountered that could not be corrected by the VCAs, or the amplifier has offset. If this occurs, the amplifier must be turned *off* and the problem corrected before the Channel can be operated. If the READY LED will not light with the load disconnected, then an internal fault has occurred and the amplifier is in need of repair.

Adapting the SSA 6 to Your Changing Needs

With six Channels to choose from and built-in Bridging, there are a number of different combinations available to suit your present and growing needs. The nice thing about the SSA 6 is that you can re-configure it instead of losing money on an obsolete, used piece of gear you no longer need.

Basically, you can start out with six Channels at 100 watts or three Channels at 300 watts. When the time comes, you can step up to six Channels at 300 watts by obtaining another SSA 6 and keeping the original. Upgrading to biamped speakers becomes easy as well, by simply adding a second SSA 6, both taking up only 10.5" rack space.

Rack Ears

Ears are available as an accessory. The SSA 6RM Rack Mount Kit replaces the side panels to install the SSA 6 in a 19" rack. The SSA 6RM panels replace the side panels on the SSA 6. Because electronics are exposed during this simple procedure, we must issue the following warning...**CAUTION:** *Rack ears should be installed by qualified personnel only. To avoid electric shock do not perform installation unless qualified to do so.*

Wait ten minutes before removing the side panels for the power supply caps to safely discharge.

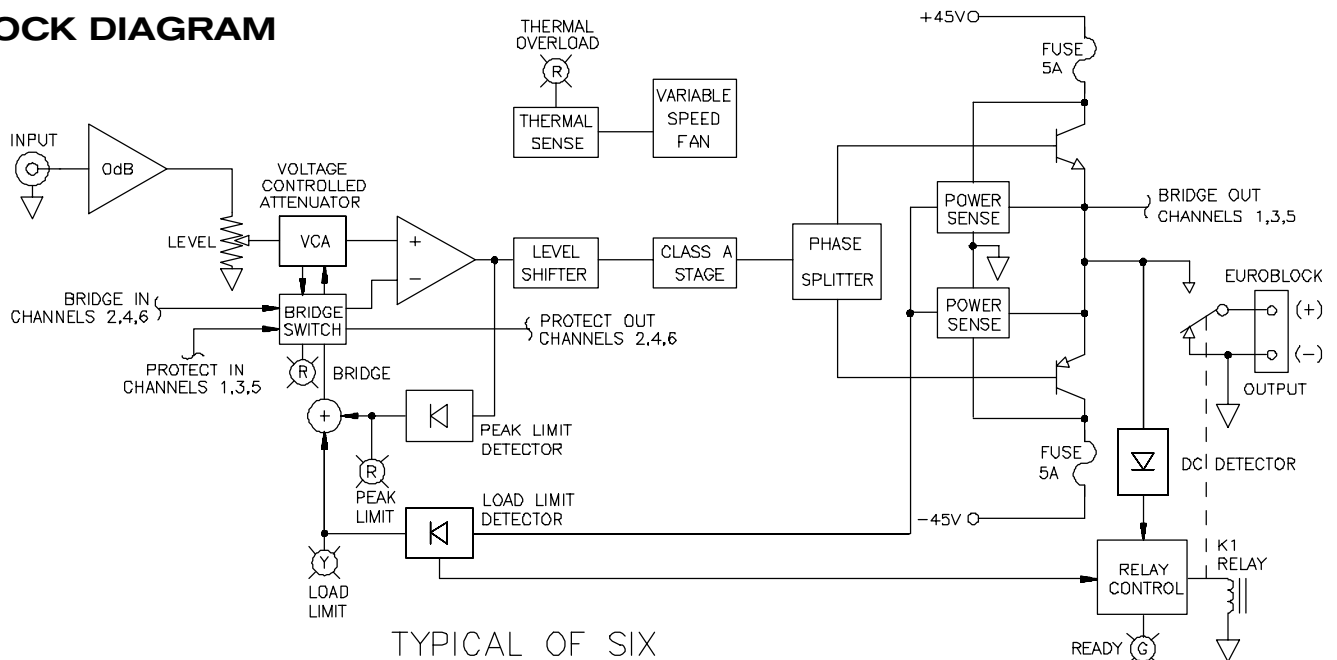
About the SSA 6 and Circuit Breakers...

The SSA 6 will easily deliver over 900 watts of audio power, which requires as much as 15 amps of current from the AC outlet. 15 amps is not an uncommon value for household and some institutional circuitbreakers, though 20-amp versions are becoming more common. The bottom line is that the SSA 6 is capable of tripping a 15 amp circuit breaker *under normal operation*. An amp that delivers a lot of power, drinks a lot of power to do so.

It is not likely that you will trip a breaker, but it is wise to be aware of the possibility so you don't panic if it happens.

Parameter	Specification	Limit	Units	Conditions/Comments
Power Output				All Channels Driven, 20-20kHz
	100	Min	W	(6) 8 Ohm Loads
	150	Min	W	(6) 4 Ohm Loads
	300	Min	W	(3) Bridged Pairs into 8 Ohms
Inputs:	Active Unbalanced			Gold Plated RCA Connectors
.....Impedance	20k	1%	Ohms	
.....Sensitivity	0.6V input=100W/8 ohms		mV	Level Controls at Max
Outputs:				
.....Damping Factor	300:1	10%		1kHz
.....Minimum Load	No Less Than 4 Ohms			Single Channel Operation
	No Less Than 8 Ohms			Bridged Operation
Fan Cooling	Continuous Variable Speed		DC	Intake Rear; Exhaust Front
Output Protection	On/Off Transient Muting			Output Relays
Input Protection	Servo-Locked™ Input Atten.			
.....Peak Limit	1% THD			Attenuates Input to Maintain <3% THD for 15dB of Overdrive
.....Load Limit				Attenuates Input as much as -30dB to Maintain Safe Power Dissipation—Relay Cutout Fail-Safe
Frequency Response	10-55kHz	+0/-3	dB	
THD+Noise	0.07	.03	%	100W/8 Ohms, 20-20kHz
IM Distortion (SMPTE)	0.1	.05	%	60Hz/7kHz, 4:1
Signal-to-Noise Ratio	103	2	dB	re 100W, 0.775v sens., 20kHz BW
Crosstalk	-60	3	dB	1kHz, Any Channel to Any Channel
Maximum AC Power	2200		W	(6) Channels driven to full power
UL Listed	UL			Complies with UL 813
CSA Certified				Complies with C22.2 #1 M90
Unit: Construction	All Steel			
.....Size	5.25"H x 17.4"W x 11"D (3U)			(13.3cm x 44.1cm x 27.9cm)
.....Weight	32 lb			(14.5kg)
Shipping: Size	11" x 23" x 16"			(27.9cm x 58.4cm x 40.6cm)
.....Weight	37 lb			(17kg)
Note: 0dBu=0.775Vrms				

BLOCK DIAGRAM



IMPORTANT SAFETY INSTRUCTIONS



1. Read these instructions.
 2. Keep these instructions.
 3. Heed all warnings.
 4. Follow all instructions.
 5. Do not use this apparatus near water.
 6. Clean only with a dry cloth.
 7. Do not block any ventilation openings. Install in accordance with manufacturer's instructions.
 8. Do not install near any heat sources such as radiators, registers, stoves, or other apparatus (including amplifiers) that produce heat.
 9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
 10. Protect the power cord and plug from being walked on or pinched particularly at plugs, convenience receptacles, and the point where it exits from the apparatus.
 11. Only use attachments and accessories specified by Rane.
 12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
 13. Unplug this apparatus during lightning storms or when unused for long periods of time.
 14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
 15. The plug on the power cord is the AC mains disconnect device and must remain readily operable. To completely disconnect this apparatus from the AC mains, disconnect the power supply cord plug from the AC receptacle.
 16. This apparatus shall be connected to a mains socket outlet with a protective earthing connection.
 17. When permanently connected, an all-pole mains switch with a contact separation of at least 3 mm in each pole shall be incorporated in the electrical installation of the building.
 18. If rackmounting, provide adequate ventilation. Equipment may be located above or below this apparatus, but some equipment (like large power amplifiers) may cause an unacceptable amount of hum or may generate too much heat and degrade the performance of this apparatus.
 19. This apparatus may be installed in an industry standard equipment rack. Use screws through all mounting holes to provide the best support.
- WARNING:** To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture. Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

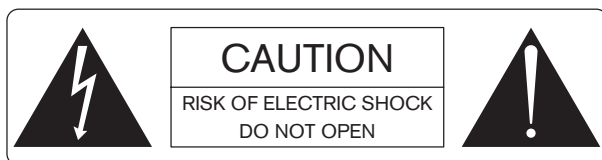
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION: Changes or modifications not expressly approved by Rane Corporation could void the user's authority to operate the equipment.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

WARNING



To reduce the risk of electrical shock, do not open the unit. No user serviceable parts inside. Refer servicing to qualified service personnel.

The symbols shown below are internationally accepted symbols that warn of potential hazards with electrical products.



This symbol indicates that a dangerous voltage constituting a risk of electric shock is present within this unit.



This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.