

BOSS[®]
AUDIO SYSTEMS



Rage

**CAR
AMPLIFIERS**

Classic High Performance
High Performance MOST Compact
BOSS[®]

dynamic metering system

REV-485

REV-585

REV-685

20W
REV-785

REV-885

REV-985



CONTENTS



Rage



USER MANUAL

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MODEL

RMS Watts/CH at 4 Ohms

MAX Watts/CH at 2 Ohms

Bridged Power at 4 Ohms

S/N Ratio

Low Pass Crossover

High Pass Crossover

Bass Boost

Frequency Response

THD (4 Ohm)

Channel Separation

Damping Factor

Phase Shift

Fuse

Dimensions(11 11/16" W x 2 3/8"H x ... L)

Rage

Congratulations on your purchase of a BOSS® Audio Systems RAGE car audio amplifier. RAGE amplifiers are designed, engineered and manufactured in the USA to the highest level of quality, and will afford you years of listening enjoyment.

All RAGE amplifiers utilize fully-regulated MOSFET power supplies, which assure that switching response is extremely fast and output power is clean.

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Thank you for making BOSS® Audio Systems your choice for car audio equipment!

| REV-485 | REV-585 | REV-685 | REV-785 | REV-885 | REV-985 |
|---------------------|----------------|----------------|----------------|----------------|----------------|
| 120W x 2 | 150W x 2 | 220W x 2 | 100W x 4 | 190W x 4 | 220W x 4 |
| 250W x 2 | 350W x 2 | 600W x 2 | 200W x 4 | 300W x 4 | 350W x 4 |
| 240W x 1 | 300W x 1 | 440W x 1 | 200W x 2 | 400W x 2 | 480W x 2 |
| 105dB | | | | | |
| 45Hz - 90Hz | | | | | |
| 80Hz - 500Hz | | | | | |
| 0 - +18dB | | | | | |
| 5Hz - 50KHz(+/-3dB) | | | | | |
| 0.01% | | | | | |
| 90dB | | | | | |
| 150+ | 180+ | 200+ | 150+ | 180+ | 200+ |
| 0° - 180° | • | • | • | • | • |
| 15A | 25A | 30A | 25A | 20Ax 2 | 25Ax 2 |
| 7 3/4" | 11" | 15" | 11 4/5" | 13 3/4" | 18 7/8" |

Rage

F E A T U R E S

Two Channel Amplifiers: REV-485, REV-585, and REV-685 Amplifiers

- Heavy Duty Aluminum Alloy Heatsink
- Class A-B Operation
- Variable Low and High Pass Crossovers
- Variable Bass Boost Control (0dB ~ 18dB)
- Gold Plated RCA Low Level and High Level Inputs
- Line Out
- Variable Phase Shift Control (0° ~ 180°)
- Remote Turn On/Turn Off Circuit
- MOSFET Pulse Width Modulated Power Supply
- 2 Ohm Stable Stereo Operation with Output Power Increase
- Soft Turn-On Circuit
- Thermal and Speaker Short Protection Circuitry
- LED Power and Protection Indicators

Four Channel Amplifiers: REV-785, REV-885, and REV-985 Amplifiers

- Heavy Duty Aluminum Alloy Heatsink
- Class A-B Operation
- Variable Low and High Pass Crossovers
- Variable Bass Boost Control (0dB ~ 18dB)
- Gold Plated RCA Low Level and High Level Inputs
- Line Out
- Variable Phase Shift Control (0° ~ 180°)
- Remote Turn On/Turn Off Circuit
- MOSFET Pulse Width Modulated Power Supply
- 2 Ohm Stable Stereo Operation with Output Power Increase
- Soft Turn-On Circuit
- Thermal and Speaker Short Protection Circuitry
- LED Power and Protection Indicators

Built in Crossover

All RAGE amplifiers feature built-in electronic crossovers.

The 2 Channel (REV-485/585/685) amplifiers feature an adjustable low pass and high pass crossover and +18dB variable Bass Boost.

The 4 Channel (REV-785/885/985) amplifiers feature a pair of individually adjustable low pass crossovers and high pass crossovers, as well as +18dB variable Bass Boost.

All RAGE amplifiers have been designed with 100% MOSFET power supplies, ensuring extremely quick switching response for cleaner power.

Protection Circuitry

The amplifier protection circuitry will disable the amplifier if input overload, short circuit or extremely high temperature conditions are detected. When the protection mode is in operation, the LED indicator on the PC Board will be illuminated, indicating the amplifier has gone into a self-preservation mode.

If you observe that the Protection LED is lit, please check the system carefully to determine what has caused the protection circuit to engage. The amplifier can be reset by turning the remote power off and then on again. If the amplifier shut down due to a thermal overload condition, please allow it to cool down before restarting. If the amplifier shut down because of an input overload or short circuit, be sure to repair these conditions before attempting to power up the amplifier again.

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2 Ohm Operation

Your RAGE amplifier was designed to operate efficiently into 2 Ohm loads in the stereo mode. This means that you can install four 8 ohm speakers per channel when using parallel wiring. Increasing the number of woofers per channel at low frequencies (up to 100 Hz) produces an acoustic coupling effect. This acoustic coupling increases your power output by 3 dB per speaker.

When operating at 2 ohms, the amplifiers will increase their output power by approximately 50%. The current draw will also increase by about the same amount, so be sure you have enough current to run the amplifiers into a 2 ohm load. If you lack adequate current, your music reproduction will be distorted.

Please note: The gain control of any car audio amplifier should not be mistaken for volume control. It is a sophisticated device, designed to match the output level of your audio source unit to the input level of the amplifier. Do not adjust this input level to maximum unless your input level requires it. Ignoring these instructions will result in an input overload to the amplifier, and excessive audio distortion. It can also cause the protection circuit to engage.

Electrical Wiring

All Boss RAGE amplifiers are equipped with easy top access screw terminals. These terminals are 14K Gold Plated in order to ensure excellent electrical contact and resist corrosion.

When making electrical connections to the amplifier, please observe the following:

- Use at least 8 gauge or heavier wires for power and ground connections.
- Wire the amplifier directly to the car battery.
- For the ground connection, use the shortest possible wire to a good chassis ground point.
- Wire the Remote connection to the remote turn-on lead of your equalizer or source unit. (This is sometimes also used as the power antenna lead.)

Fuses

Power fuses protect both the amplifier and the electrical system of your vehicle from fault conditions. If you must replace the fuse in your RAGE amplifier, use a fuse of exactly the same type and rating. A different type or rating of fuse may result in damage or fire. ↑

Mounting the Amplifier

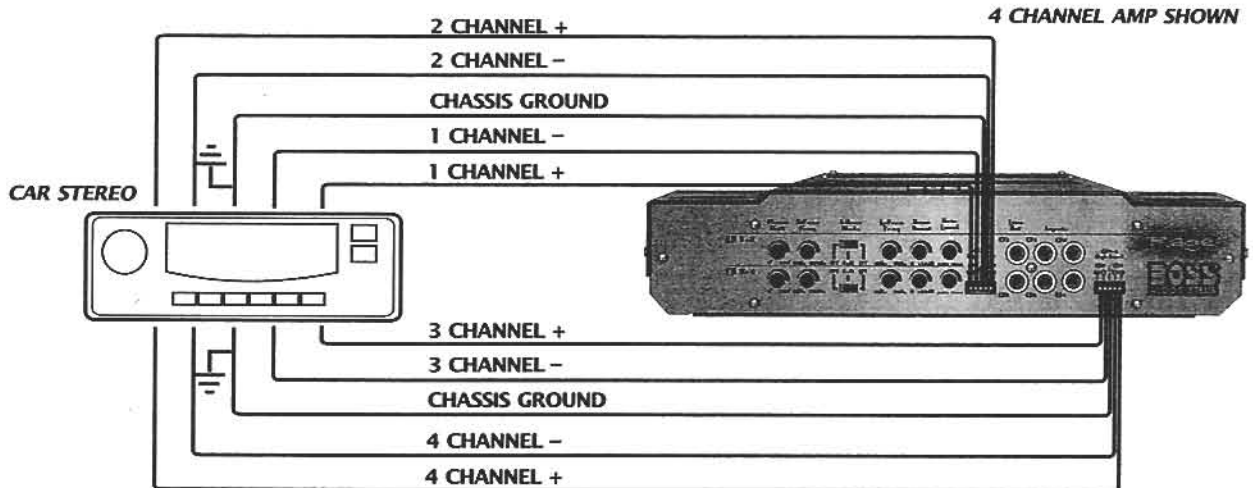
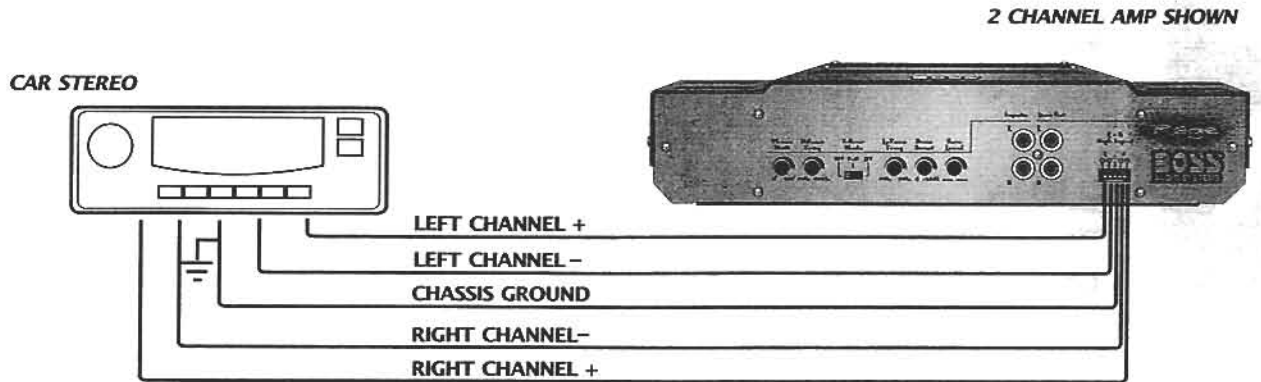
Mark the location for the mounting screw holes by positioning the amplifier where you wish to install it and use a scribe(or one of the mounting screws) inserted in each mounting hole to mark the mounting surface. If mounting surface is carpeted, measure the hole centers and mark with a felt tip pen.

Drill pilot holes in the mounting surface for the mounting screws and insert the mounting screws into these holes. Tighten them securely.

Note: Be sure to take note of any wires, lines or other devices in your vehicle which may be located behind any mounting surface!

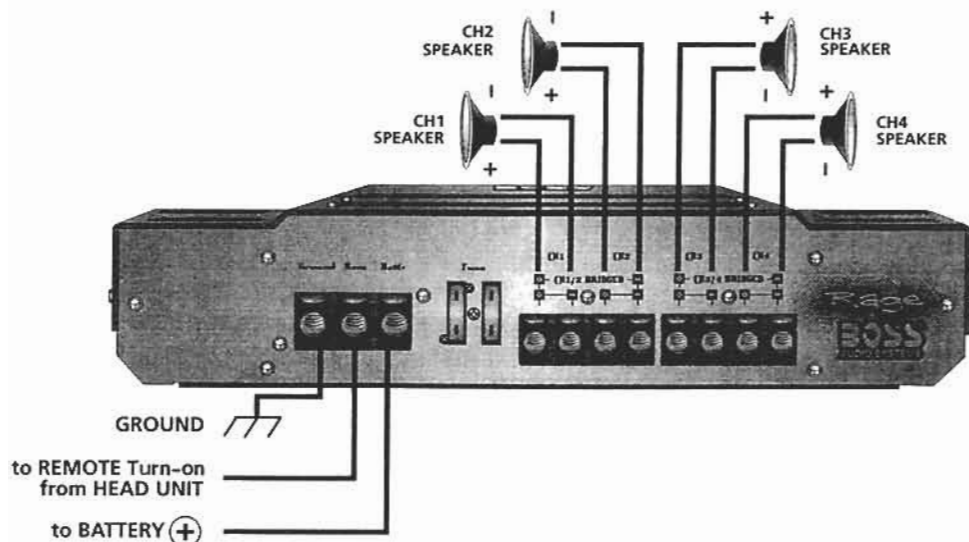
High Level Inputs

If the HIGH LEVEL INPUTS are used, do not use the LOW LEVEL RCA inputs at the same time. The RAGE 2-Channel amplifiers use ONE High Level input for both channels and the RAGE 4-Channel amplifier use TWO of these connectors-one for each pair of channels.



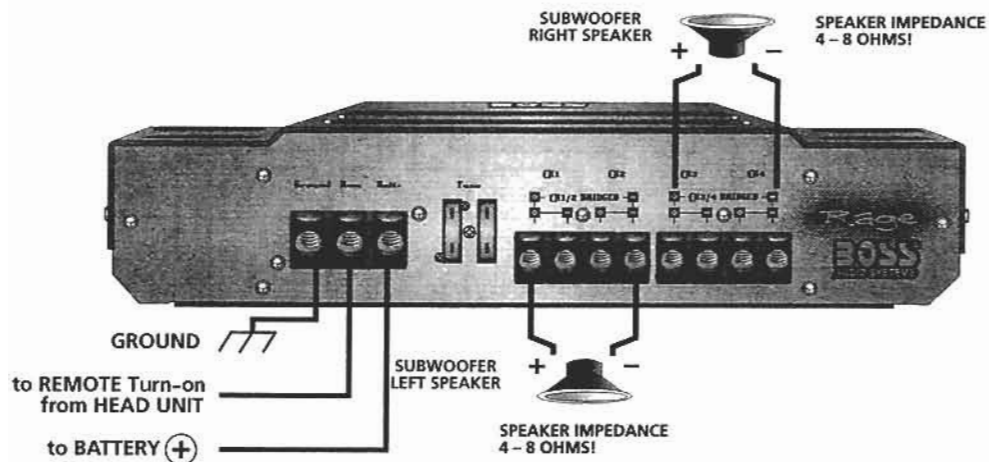
Four channel Speaker Wiring

**Four Channel Amplifiers:
REV-785, REV-885, and REV-985 Amplifiers**



Bridged Speaker Wiring

**Four Channel Amplifiers:
REV-785, REV-885, and REV-985 Amplifiers**



Dual Tri-Mode Speaker Wiring

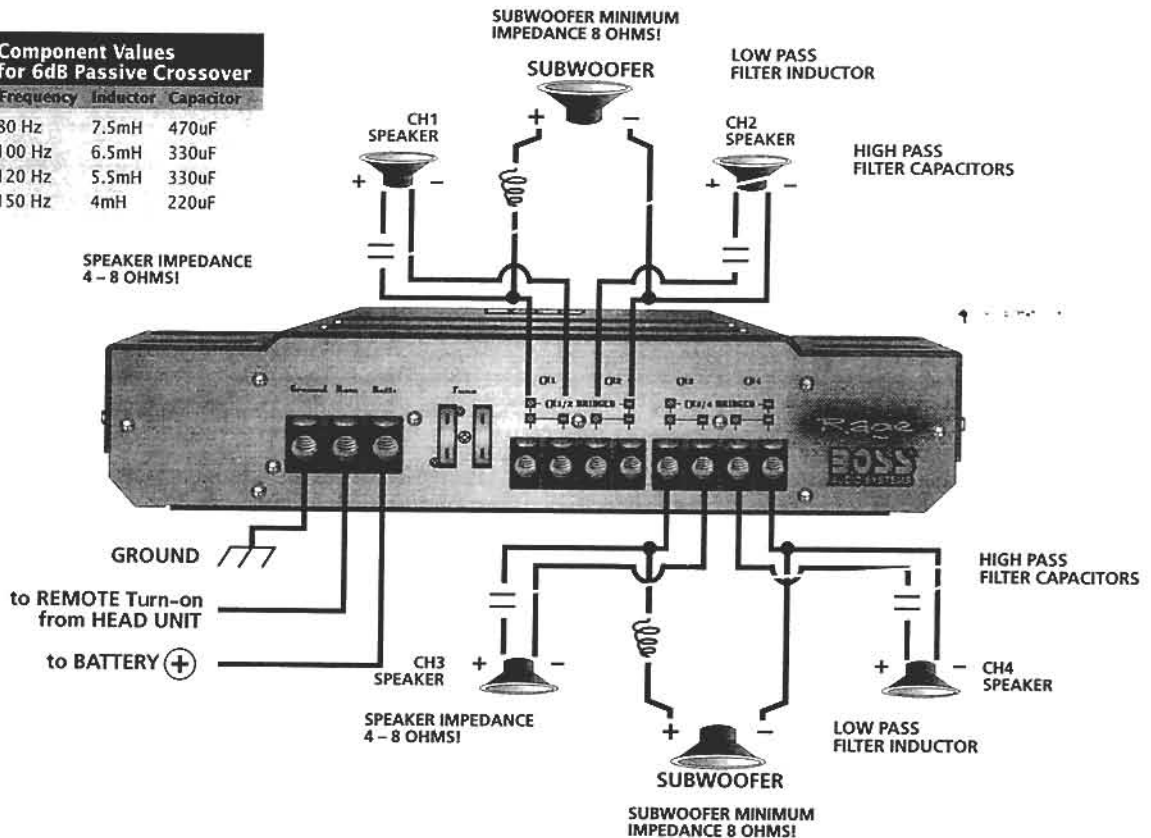
Four Channel Amplifiers: REV-785, REV-885, and REV-985 Amplifiers

Tri-Mode Operation is a unique feature which allows a subwoofer to be operated in MONO mode, while the main speakers are playing in STEREO simultaneously on one pair of amplifier output channels.

To engage the amplifier in this mode, place the Crossover (Subwoofer) switch in the "Full" position. Use a 100v non-polar capacitor for a high pass crossover and a wire coil inductor to block high frequencies from the subwoofer as shown in the figure below. Please review the table below for inductor and capacitor component values to determine the desired crossover frequencies.

Component Values for 6dB Passive Crossover

| Frequency | Inductor | Capacitor |
|-----------|----------|-----------|
| 80 Hz | 7.5mH | 470uF |
| 100 Hz | 6.5mH | 330uF |
| 120 Hz | 5.5mH | 330uF |
| 150 Hz | 4mH | 220uF |



Precautions

Before you drill or cut any holes, investigate your car's layout very carefully. Take care when you work near the gas tank, fuel lines, hydraulic lines and electrical wiring.

Do not operate the amplifier when it is unmounted. Attach all audio system components securely within the automobile to prevent damage.

Do not mount this amplifier so that the wire connections are unprotected or in a pinched condition, or likely to be damaged by nearby objects.

Before making or breaking power connections in your system, disconnect the negative terminal of 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, only replace it with a fuse identical to that supplied with the system. Using a fuse of a different type or rating may result in damage to your system which isn't covered by the manufacturer's warranty.

Troubleshooting

Before removing your amplifier, refer to the list below and follow the suggested procedures. Always test the speakers and their wires first.

No Output

Confirm that all terminal strip connections are secure and tight.

Check both in-line and built-in fuses. Both the "+12v" and the "REMOTE" terminals must have +12v referenced to chassis ground.

Confirm that the audio signal source (car radio, equalizer, etc.) is connected and is supplying output signal. To check if the amplifier is supplying signal, unplug the RCA cables from the signal source (but leave them plugged into the amp). Briefly tap the center pin of each of the disconnected RCA plugs with your finger. This should produce a noise (feedback) in your speakers.

Only one channel works

Confirm that all speaker strip connections are secure and tight.

Check the "BALANCE" control on the head unit (or other source) to verify that it is set to its midpoint.

If you are using the Low Level RCA input, reverse the input plugs at the amplifier (switch the R with the L). If the channel which is silent switches to the other side, the problem is either in the head unit/ other source or the connecting cables.

Weak output

Readjust the Input Sensitivity Control to better suit the input signal.

Noise in the Audio

If the noise is a "whine" whose pitch follows the engine speed, confirm that the amplifier and any other signal sources (head unit, etc.) are properly grounded.

If the noise is a "clicking" or "popping" noise whose rate follows the engine speed, this usually means that the vehicle is equipped with resistor spark plugs and wires, or that the ignition is in need of service.

Check the routing of the speaker and input wires to make sure they are not adjacent to wires which interconnect lights and other accessories.

If the above steps fail to improve or clear noise interference, the system should be checked by a professional mobile audio installer.