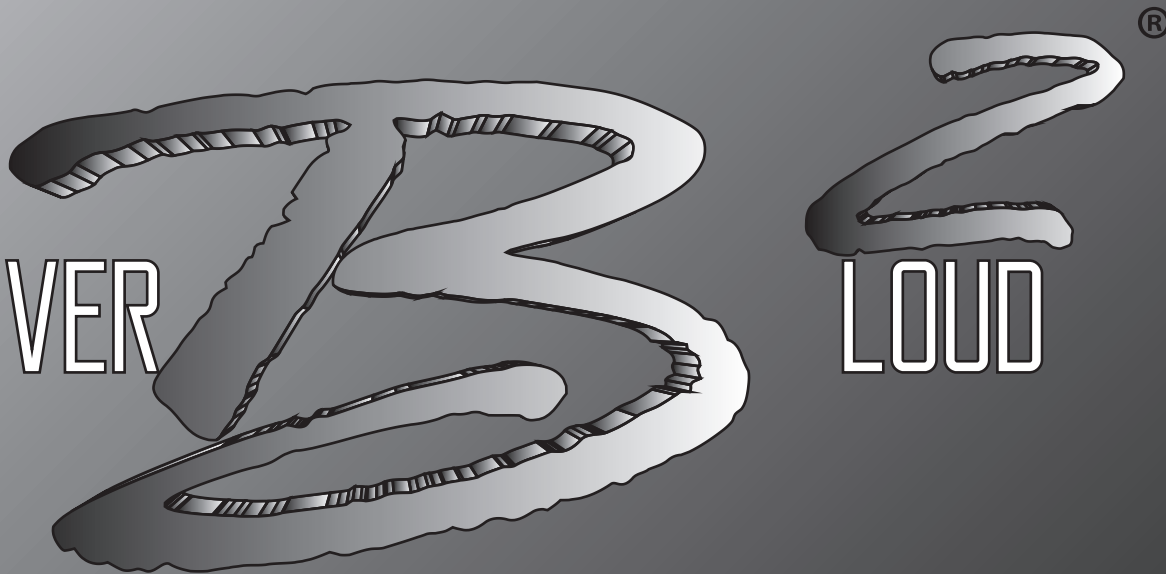


IT CAN NEVER



LOUD

RIOT 2500 RGB

RIOT 1800.4 RGB

MANUAL

INTRODUCTION

Since the beginning of this millennium, we have had a vision of pushing the envelope and not settling for less. This relentless pursuit of excellence has driven us to create groundbreaking products that not only meet but exceed expectations. Our commitment to innovation is reflected in every detail, from the initial concept to the final product. We believe that true differentiation comes from a deep understanding of our customers' needs and a dedication to solving their most pressing challenges. By staying ahead of the curve and continuously improving, we ensure that our products stand out in a crowded market, making a statement that resonates with both our customers and the industry.

RIOT RGB

These new RIOT amplifiers introduce features and performance enhancements that are new to this lineup. Designed to cater to a wide range of users with various needs, they offer both mono and 4-channel options. The focus on efficiency, versatility, and compact design ensures that these amplifiers deliver powerful performance without taking up too much space. The RGB feature is the final touch, making your installation look professional with just the flick of a switch.

To obtain the full potential of any amplifier & to minimize failure, it is advised to upgrade your stock electrical system. Don't take any shortcuts, a better electrical equals enhanced performance and stability.

Stay updated on B2 audio, follow us on social media & visit our website.

B2audio.com - B2audiousoa.com - facebook.com/b2audio - Instagram.com/b2audiogram - youtube.com/b2audio - X:@b2_audio



AUDIOPHILE ACOUSTICS

IS THE DNA OF B2 AUDIO. ANY PRODUCT IS DEVELOPED BY ADDING THE UNIQUENESS AND THOUGHT OF EVOLUTION IN THE SPECIFIC APPLICATION OF THE PRODUCT'S DESIGN.

KEEP IN MIND THAT CONTINUOUS EXPOSURE TO SPL ABOVE 100 DB CAN SERIOUSLY DAMAGE YOUR HEARING. TODAY'S HIGH POWER AUTO SOUND SYSTEMS CAN EASILY PRODUCE SPL ABOVE 140 DB. ENJOY YOUR PASSION WITH SENSE AND RESPECT FOR THE ENVIRONMENT.

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■ DESIGN SPECIFICATIONS

MODEL:	<u>RIOT 2500 RGB</u>	<u>RIOT 1800.4 RGB</u>
CIRCUIT CONFIGURATION:	HI-EF CLASS D	HI-EF CLASS D
FREQUENCY RESPONSE:	10 HZ-250 HZ	10 HZ-40 KHZ (-3 DB)
SIGNAL TO NOISE RATIO:	>98 DB	>90 DB
INPUT SENSITIVITY:	6 V-0.2 V	6 V-0.2 V
HIGH LEVEL INPUT:		9 V - 2.2 V
CROSSOVER CIRCUIT:	12 DB/OCT	12 DB/OCT
LOW PASS CROSSOVER:	50 HZ-250 HZ	50 HZ-5 KHZ
HIGH PASS CROSSOVER:	N.A.	50 HZ-5 KHZ
SUBSONIC CROSSOVER:	10 HZ-50 HZ	
PHASE:	0-180 °	
BASS BOOST:	0-12 DB	
LEVEL CONTROL		
• WITH CLIP:	INCLUDED	N.A.
POWER TERMINAL GAUGE:	1 GAUGE / 42.4 MM ²	1 GAUGE / 42.4 MM ²
OPERATIONAL VOLTAGE:	10 V - 16 V	10 V - 16 V
FUSE RATING:	200 A	150 A
DIMENSIONS METRIC:	370 X 126 X 57 MM	351 X 126 X 57 MM
IMPERIAL:	14.57" X 4.92" X 2.24"	13.82" X 4.92" X 2.24"

CONTINUOUS OUTPUT POWER (RMS) @ 14.4V <1% THD

	4 OHM	2 OHM	1 OHM
RIOT2500 RGB	<i>800 W</i>	<i>1400 W</i>	<i>2500 W</i>
			4 OHM BRIDGE
RIOT1800.4 RGB	<i>4 X 300 W</i>	<i>4 X 450 W</i>	<i>2 X 900 W</i>

DESCRIPTIONS OF SPECIFICATIONS

OPERATION BELOW MINIMUM IMPEDANCE WILL STRESS THE AMPLIFIER & VOID THE WARRANTY. EXCESSIVE HEAT WILL OCCUR, CAUSING THE AMPLIFIER TO GO INTO THERMAL PROTECTION. THE CIRCUIT MAY SUSTAIN PERMANENT DAMAGE AND PROTECTION LIGHTS WON'T TURN OFF OR FLASH SEQUENTIALLY.

PROTECTION MAY ALSO BE CAUSED BY THE FOLLOWING

- *INPUT VOLTAGE FROM HEADUNIT BEING TOO HIGH / LOW / POWER SUPPLY VOLTAGE TOO HIGH / LOW.
- *SPEAKER OVERLOAD
- *SHORT CIRCUIT
- *THERMAL PROTECTION (HEATSINK ABOVE 75° CELCIUS / 167° FAHRENHEIT)

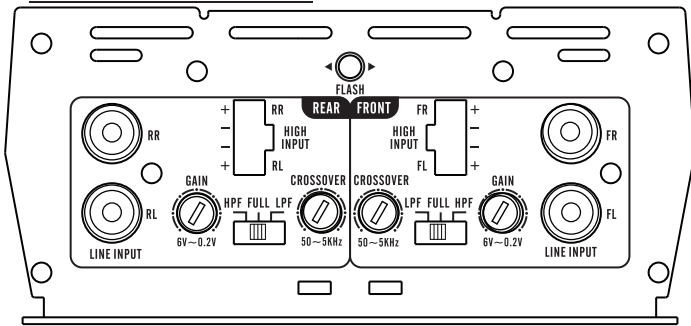
*FULL OUTPUT POWER ACCORDING TO THE SPEC IS BASED ON A SUFFICIENT ELECTRICAL SUPPLY SYSTEM. IF YOUR SYSTEM IS INADEQUATE, THE EFFICIENCY OF THE AMPLIFIER DECREASES, HURTING THE PERFORMANCE!

THE RIOT2500 RGB WILL NEED A DEDICATED AGM BATTERY SUPPLY OF MIN 150 AH AND 2000 CCA. IF YOU ARE USING A COMMON LITHIUM SOURCE OF 6C, A 30 AH LITHIUM BATTERY WILL SUFFICE.

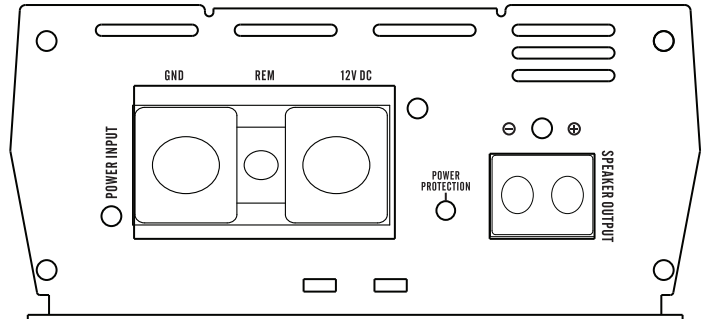
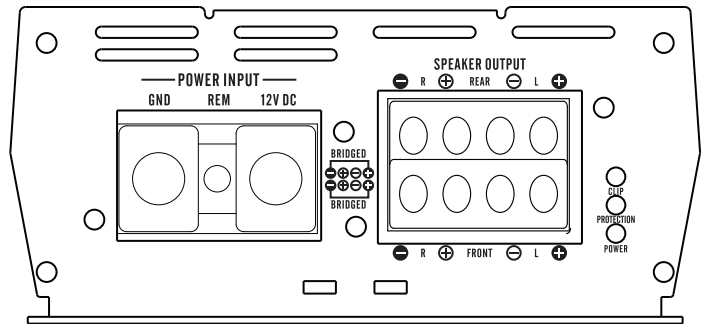
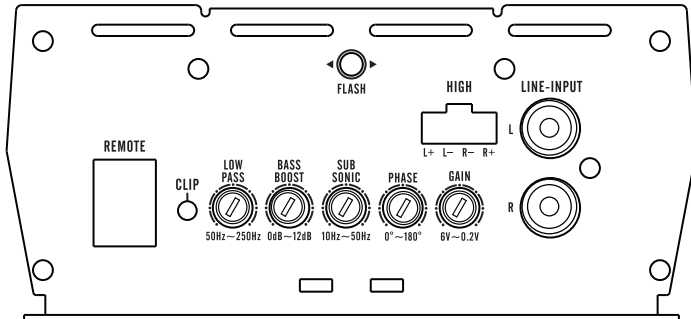
THE RIOT1800.4 RGB WILL NEED A DEDICATED AGM BATTERY SUPPLY OF MIN 120 AH AND 1500 CCA. IF YOU ARE USING A COMMON LITHIUM SOURCE OF 6C, A 20 AH LITHIUM BATTERY WILL SUFFICE.

PANEL LAYOUT

RIOT 1800.4 RGB



RIOT 2500 RGB



INPUT

RCA signal input for left & right channel.
A minimum of 0.2V input signal is required for correct operation.

POWER & PROTECTION INDICATOR

Power LED, blue light shows correct operation,
Protect LED, red light shows general malfunction, faulty connection or thermal protection.

CLIP INDICATOR

The LED will light up if signal is clipped. An occasional flashing light is acceptable, a constant lit diode is not.

GAIN (6V~0.2V)

Adjusts signal input voltage from the input source to match the amplifiers input stage.
0.2 V ~ 6 V is the operational voltage.
Voltages beyond may cause errors or damage to the input section.

FLASH

Enables the sound activated LED sequences with multiple patters and colors. The led can be switched off by keeping the button pressed for a few seconds.

LPF (LOW PASS FILTER 50 HZ~5KHZ, 12 DB/OCT) / 50 HZ ~ 250 HZ

Adjusts the cut off point for the low pass crossover at the frequency chosen.

PHASE (RIOT2500 RGB ONLY)

Variable phase adjustment from 0 ~ 180°

HPF (HIGH PASS FILTER 50 HZ~5KHZ, 12 DB/OCT)

Adjusts the cut off point for the high pass crossover at the frequency chosen.

REMOTE

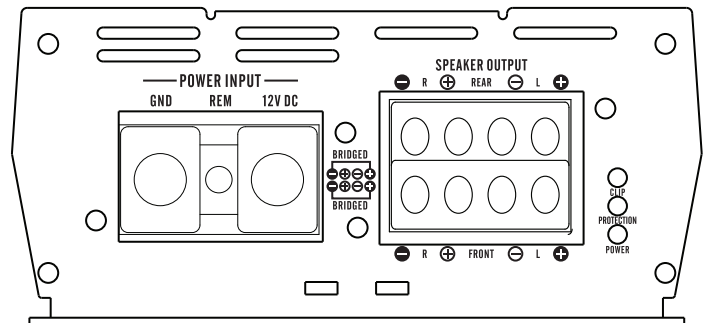
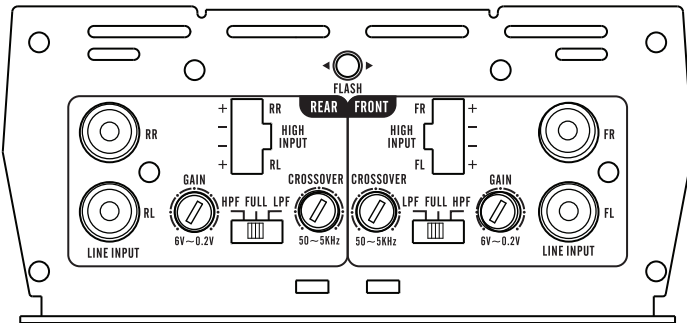
Remote level control port with clip sensor.

HIGH / HIGH INPUT

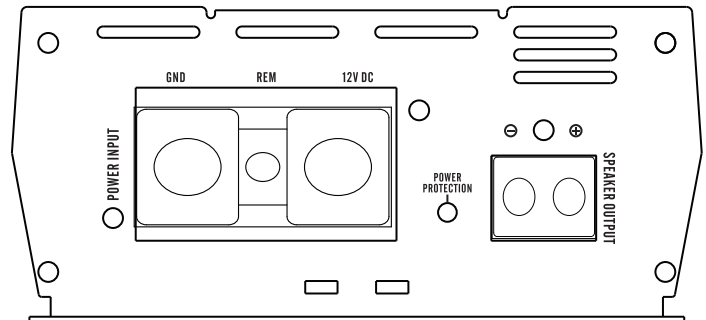
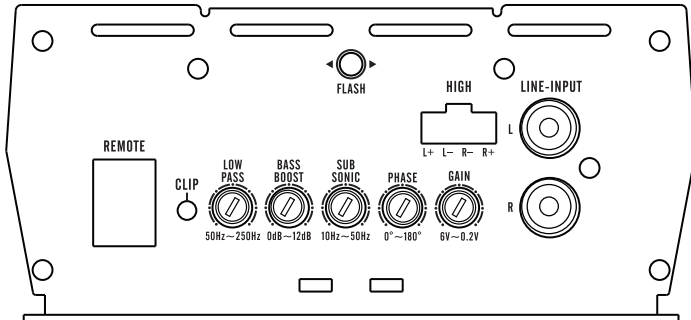
High level input from the OEM speaker harness, would be used where RCA connectors aren't available. Using high level mode, the amplifier will use a current sensing mode, connection of a switched remote wire is not necessary.

POWER & SPEAKER TERMINALS

RIOT 1800.4 RGB



RIOT 2500 RGB



GROUND CONNECTION (GND)

Connect to the vehicle's chassis. Keep as short as possible. Less than 20" / 50 cm for the designated 2 AWG cable.

REM (12V SIGNAL / SWITCHED INPUT)

Run a remote turn on cable from the switched +12 V source. This may be a toggle switch, a relay, the source unit's remote output cable or power antenna trigger cable. Connect the remote turn on cable to the power terminal labeled as REM.

+12V (POWER CONNECTION)

Connects to the positive terminal of the power source. Use minimum 2 AWG to obtain specified performance. Fuses shall be placed within 8" / 20 cm of the battery.

SPEAKER OUTPUT TERMINALS

Ensure the polarity of the cables are correct when connecting the loudspeakers. Use min. 10 AWG cables for the subwoofer connection & min. 14 AWG for the loudspeakers. Only the 2500 mono is 1 ohm stable. The remaining channels of the amplifiers are stable into 2 ohm stereo.

! CAUTION

INSTALLATION OF THE AMPLIFIER SHALL BE DONE IN THE FOLLOWING STEPS:

1. Connect the +12V wire, keep in mind this wire has to be fused at the battery as well.
2. Ensure the ground is appropriate, then connect it to the amplifier.
3. Connect the switched remote.
4. Reattach negative wire (ground) to the battery.
5. Operation over 16.0V will cause the amplifier to go into protect & can void the warranty!

INSTALLATION

INSTALLATION CONSIDERATIONS

Installing an amplifier on your own can be a rewarding project, but it's important to approach it with caution and thorough preparation. Reading the owner's manual thoroughly will provide you with the necessary knowledge and precautions to take before beginning the installation process. If you find yourself uncertain at any point, seeking assistance from authorized distributors or dealers is a wise choice to ensure that your setup is correctly configured and your warranty remains valid. Remember, safety and proper functioning should always be your top priorities when handling electronic equipment.

PREPARATION

When installing an amplifier in a vehicle, it's crucial to disconnect the negative battery cable to prevent any electrical shorts or damage. Ensure that the battery and alternator have secure and corrosion-free ground connections is vital for the system's performance. The amplifier should be mounted in a location that allows for proper cooling and is safe from excessive vibration, mounting otherwise can cause damage & hurt the performance.

Mounting the amplifier vertically helps dissipate heat through the heatsink fins effectively. It's also important to ensure the installation area is dry and well-ventilated. Careful routing of cables, especially the RCA cables, away from high current wires minimizes interference and alternator whine. Keeping a good distance between RCA, power, and speaker cables can further reduce potential noise and safety hazards.

POWER CONNECTORS

12V (POWER CONNECTION)

Before mounting the amplifier, disconnect the negative (-) wire from the battery to protect any accidental damage to the amplifier or the audio system. The amplifier is equipped with 2 AWG power & ground terminals. It is crucial that all terminals are used with the adequate cable to ensure correct operation. Connect the power cables to the power terminal labeled as +12V.

The amplifier is not equipped with fuses, so external fuses are required at both the battery and the amplifier. Connect one end of the fuse holder to the power cable and the other end of the fuse holder to the positive battery terminal within 8" / 20 cm of the same cable. The same shall be done at the other end of the cable that connects to the amplifier. The fuses will protect the system and the vehicle against the possibility of a short circuit in the power cable. Make sure that the fuses and the fuse holder is according to the system requirements.

GND (GROUND CONNECTION)

Locate a secure grounding connection as close as possible to the amplifier. Make sure the location is clean and provides a direct electrical connection to the chassis of the vehicle. Connect one end of an equal sized cable as the positive cable to the location of ground. It is important that the ground cable is as short as possible, but no longer than 20" / 50 cm at maximum. Run one end of the cable to the grounding point. Run the other end of the cable to the mounting location. Connect the ground cable to the terminals labeled as GND.

REM (REMOTE CONNECTION)

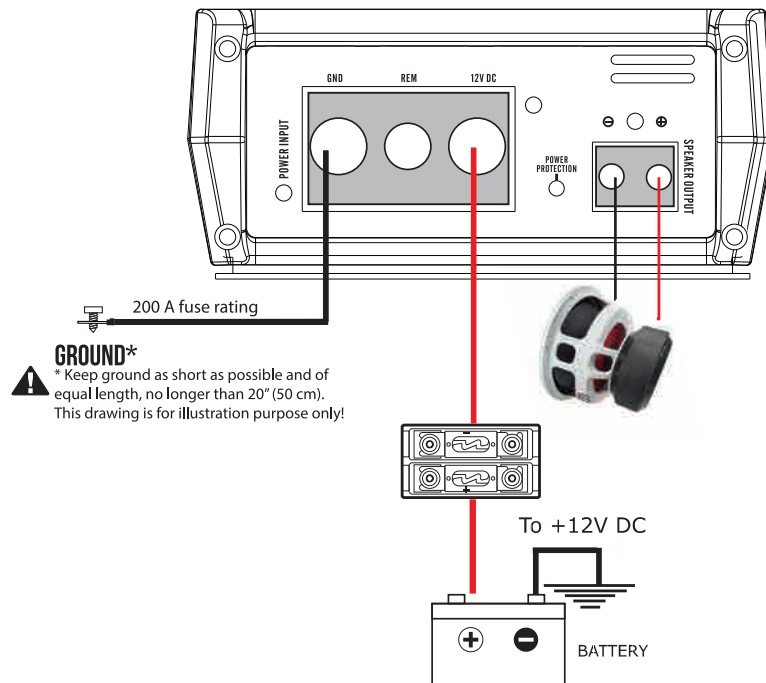
Run a remote turn on cable from the switched +12 V source. This may be a toggle switch, a relay, the source unit's remote output cable or power antenna trigger cable. Connect the remote turn on cable to the power terminal labeled as REM. The REM out terminal is mainly intended for connection of another amplifier ran in a chain, but it can also be used for other units.

INPUT (RCA CABLE)

Run the RCA cables away from the high current cables / speaker cables and connect to the amplifier. Use high quality cables with a secure grounding point to avoid amplifier malfunction and / or alternator whine.

POWER & SPEAKER CONFIGURATION

MONO



SPEAKER IMPEDANCE 1 ~ 8 OHM

Speaker loads under the specified will cause excessive heat & the amplifier will reach the thermal shutdown at a faster rate. Ultimately it can cause damage to your amplifier.

IMPEDANCE LOAD UNDER 1 OHM IS NOT WARRANTED ON THE 2500 RGB

We recommend using minimum 10 Ga speaker cables to acquire the intended performance & efficiency. Run the speaker cables from your speakers to the amplifier's mounting location. Ensure these are ran separately and away from high current cables and if possible the RCA cables as well. In all cases where cables are penetrating the vehicle's chassis use grommets to protect the cable.

Connect the speaker wires according to the terminals on the speaker(s). Strip 3/8" / 1 cm of insulation of the end of each cable and twist the cable strands together tightly. Make sure there are no stray strands that could touch other cables or terminals as it can cause a short circuit. Crimp spade plugs over the end of the cable or tin the ends with solder to provide a solid terminal. Connect the cable ends to the amplifier as shown in the diagram.

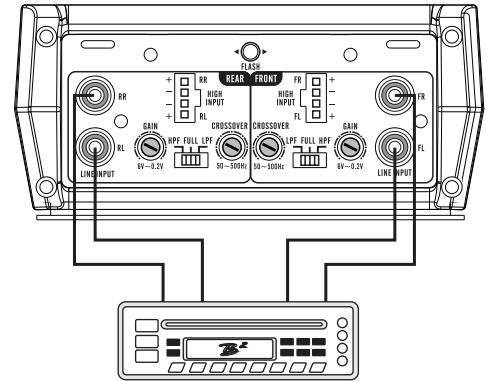
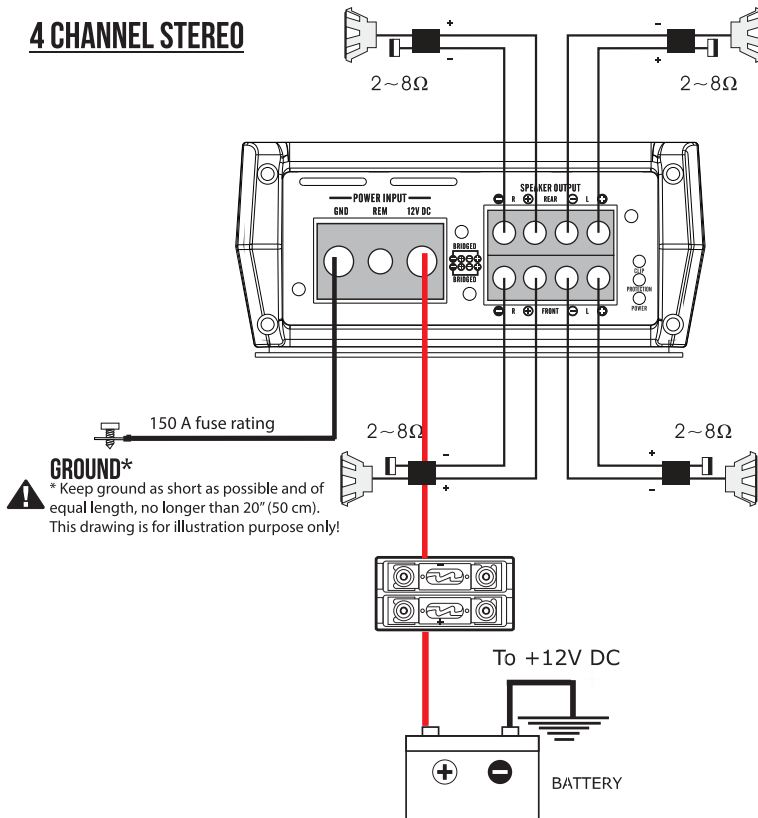
! CAUTION

INSTALLATION OF THE AMPLIFIER SHALL BE DONE IN THE FOLLOWING STEPS:

1. Connect the +12V wire, keep in mind this wire has to be fused at the battery as well.
2. Ensure the ground is appropriate, then connect it to the amplifier.
3. Connect the switched remote.
4. Reattach negative wire (ground) to the battery.
5. Operation over 16.0V will cause the amplifier to go into protect & can void the warranty!

POWER & SPEAKER CONFIGURATION

4 CHANNEL STEREO



SPEAKER IMPEDANCE 2 ~ 8 OHM

Speaker loads under the specified will cause excessive heat & the amplifier will reach the thermal shutdown at a faster rate. Ultimately it can cause damage to your amplifier.

IMPEDANCE LOAD UNDER 2 OHM IS NOT WARRANTED ON THE 1800.4 RGB

We recommend using minimum 10 Ga speaker cables to acquire the intended performance & efficiency. Run the speaker cables from your speakers to the amplifier's mounting location. Ensure these are ran separately and away from high current cables and if possible the RCA cables as well. In all cases where cables are penetrating the vehicle's chassis use grommets to protect the cable.

Connect the speaker wires according to the terminals on the speaker(s). Strip 3/8" / 1 cm of insulation of the end of each cable and twist the cable strands together tightly. Make sure there are no stray strands that could touch other cables or terminals as it can cause a short circuit. Crimp spade plugs over the end of the cable or tin the ends with solder to provide a solid terminal. Connect the cable ends to the amplifier as shown in the diagram.

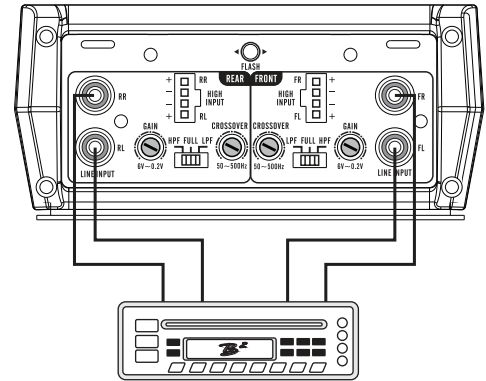
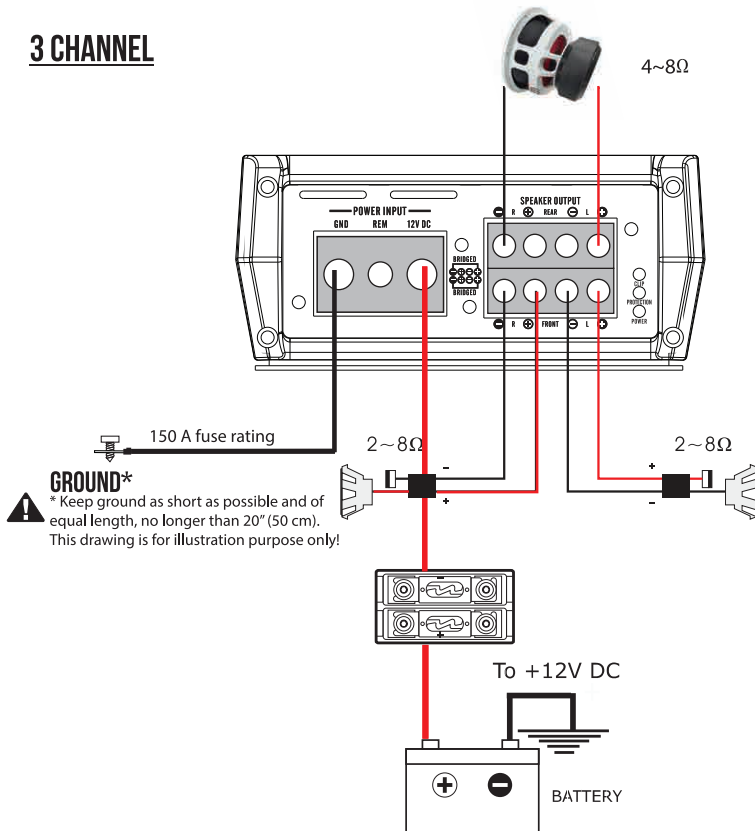
CAUTION

INSTALLATION OF THE AMPLIFIER SHALL BE DONE IN THE FOLLOWING STEPS:

1. Connect the +12V wire, keep in mind this wire has to be fused at the battery as well.
2. Ensure the ground is appropriate, then connect it to the amplifier.
3. Connect the switched remote.
4. Reattach negative wire (ground) to the battery.
5. Operation over 16.0V will cause the amplifier to go into protect & can void the warranty!

POWER & SPEAKER CONFIGURATION

3 CHANNEL



SPEAKER IMPEDANCE 2 ~ 8 OHM

Speaker loads under the specified will cause excessive heat & the amplifier will reach the thermal shutdown at a faster rate. Ultimately it can cause damage to your amplifier.

IMPEDANCE LOAD UNDER 2 OHM IS NOT WARRANTED ON THE 1800.4 RGB IN STEREO MODE. AND 4 OHM IN BRIDGE MODE.

We recommend using minimum 10 Ga speaker cables to acquire the intended performance & efficiency. Run the speaker cables from your speakers to the amplifier's mounting location. Ensure these are ran separately and away from high current cables and if possible the RCA cables as well. In all cases where cables are penetrating the vehicle's chassis use grommets to protect the cable.

Connect the speaker wires according to the terminals on the speaker(s). Strip 3/8" / 1 cm of insulation of the end of each cable and twist the cable strands together tightly. Make sure there are no stray strands that could touch other cables or terminals as it can cause a short circuit. Crimp spade plugs over the end of the cable or tin the ends with solder to provide a solid terminal. Connect the cable ends to the amplifier as shown in the diagram.

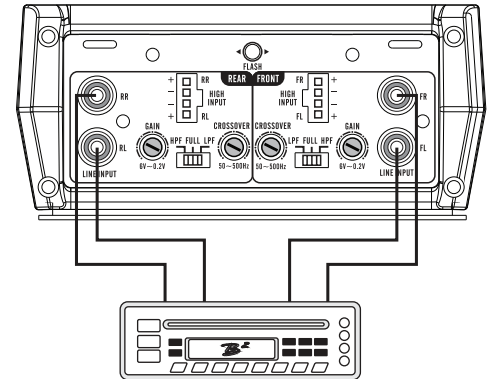
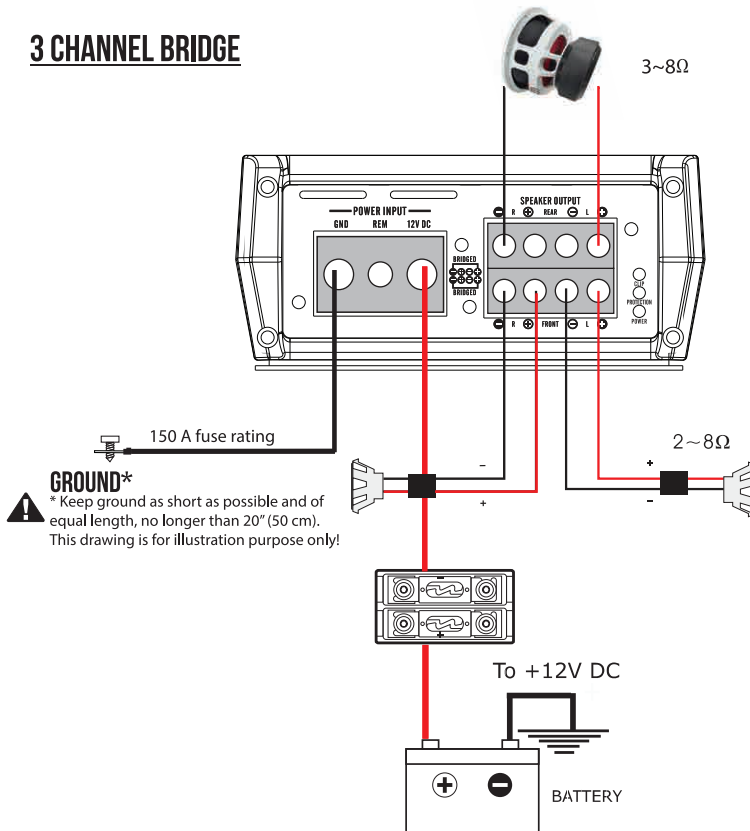
CAUTION

INSTALLATION OF THE AMPLIFIER SHALL BE DONE IN THE FOLLOWING STEPS:

1. Connect the +12V wire, keep in mind this wire has to be fused at the battery as well.
2. Ensure the ground is appropriate, then connect it to the amplifier.
3. Connect the switched remote.
4. Reattach negative wire (ground) to the battery.
5. Operation over 16.0V will cause the amplifier to go into protect & can void the warranty!

POWER & SPEAKER CONFIGURATION

• 3 CHANNEL BRIDGE



SPEAKER IMPEDANCE 2 ~ 8 OHM

Speaker loads under the specified will cause excessive heat & the amplifier will reach the thermal shutdown at a faster rate. Ultimately it can cause damage to your amplifier.

IMPEDANCE LOAD UNDER 2 OHM IS NOT WARRANTED ON THE 1800.4 RGB IN STEREO MODE. AND 3 OHM IN BRIDGE MODE.

We recommend using minimum 10 Ga speaker cables to acquire the intended performance & efficiency. Run the speaker cables from your speakers to the amplifier's mounting location. Ensure these are ran separately and away from high current cables and if possible the RCA cables as well. In all cases where cables are penetrating the vehicle's chassis use grommets to protect the cable.

Connect the speaker wires according to the terminals on the speaker(s). Strip 3/8" / 1 cm of insulation of the end of each cable and twist the cable strands together tightly. Make sure there are no stray strands that could touch other cables or terminals as it can cause a short circuit. Crimp spade plugs over the end of the cable or tin the ends with solder to provide a solid terminal. Connect the cable ends to the amplifier as shown in the diagram.

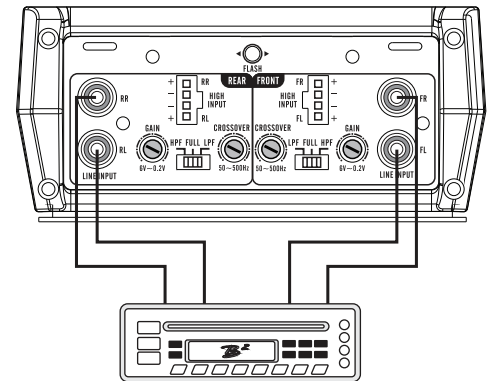
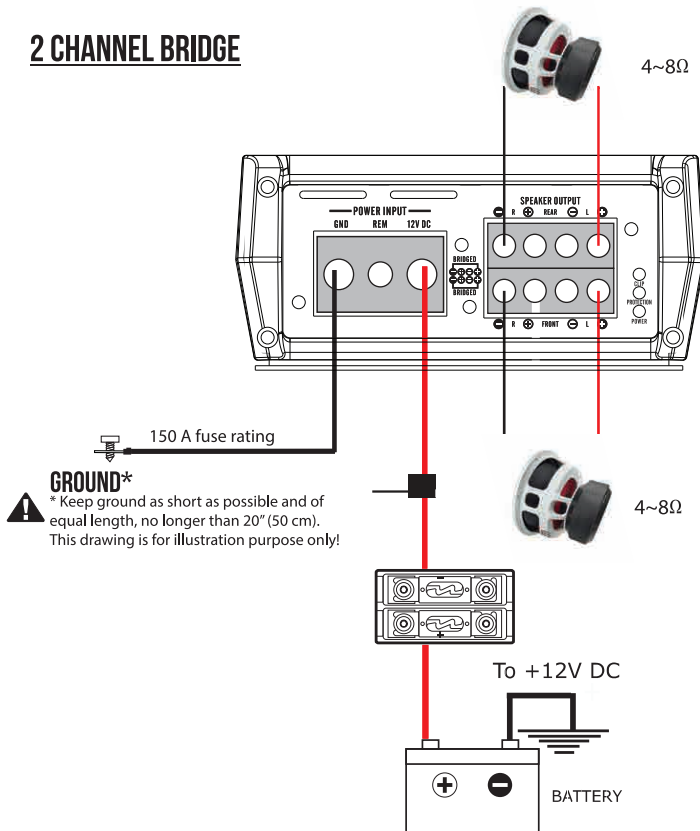
⚠ CAUTION

INSTALLATION OF THE AMPLIFIER SHALL BE DONE IN THE FOLLOWING STEPS:

1. Connect the +12V wire, keep in mind this wire has to be fused at the battery as well.
2. Ensure the ground is appropriate, then connect it to the amplifier.
3. Connect the switched remote.
4. Reattach negative wire (ground) to the battery.
5. Operation over 16.0V will cause the amplifier to go into protect & can void the warranty!

POWER & SPEAKER CONFIGURATION

• 2 CHANNEL BRIDGE



SPEAKER IMPEDANCE 4 ~ 8 OHM

Speaker loads under the specified will cause excessive heat & the amplifier will reach the thermal shutdown at a faster rate. Ultimately it can cause damage to your amplifier.

IMPEDANCE LOAD UNDER 2 OHM IS NOT WARRANTED ON THE 1800.4 RGB IN STEREO MODE. AND 4 OHM IN BRIDGE MODE.

We recommend using minimum 10 Ga speaker cables to acquire the intended performance & efficiency. Run the speaker cables from your speakers to the amplifier's mounting location. Ensure these are ran separately and away from high current cables and if possible the RCA cables as well. In all cases where cables are penetrating the vehicle's chassis use grommets to protect the cable.

Connect the speaker wires according to the terminals on the speaker(s). Strip 3/8" / 1 cm of insulation of the end of each cable and twist the cable strands together tightly. Make sure there are no stray strands that could touch other cables or terminals as it can cause a short circuit. Crimp spade plugs over the end of the cable or tin the ends with solder to provide a solid terminal. Connect the cable ends to the amplifier as shown in the diagram.

! CAUTION

INSTALLATION OF THE AMPLIFIER SHALL BE DONE IN THE FOLLOWING STEPS:

1. Connect the +12V wire, keep in mind this wire has to be fused at the battery as well.
2. Ensure the ground is appropriate, then connect it to the amplifier.
3. Connect the switched remote.
4. Reattach negative wire (ground) to the battery.
5. Operation over 16.0V will cause the amplifier to go into protect & can void the warranty!

TROUBLESHOOTING

The protection circuits of the amplifier prevents severe damages from faulty conditions & improper use. The protection indicator will switch on due to short circuit connection & speaker overload, thus the amplifier will be turned off. Prior to inspecting the occurred problem, turn all levels down & all power off, then carefully check the installation for wiring mistakes, shorts or faulty ground (GND). If the amplifier shuts down due to excessive heat, the protection indicator will light up; please allow time for the unit to be cooled off. Before removing your amplifier, refer to the list below and follow the suggested procedures step by step. If not at ease, contact an authorized installer which can assist you.

AMPLIFIER DOESN'T TURN ON

- Measure voltage on the +12V terminal.
- Ensure that the remote terminal has min. 13.8 V DC remote connection.
- Recheck the ground (GND) connection. Inspect the in-line fuses.
- Check the protection LED is not on.

PROTECTION LED IS LIT ONCE THE AMPLIFIER IS TURNED ON

- Check shorts on speaker wires & the connected load / impedance. Check power cables & GND.
- Disconnect the speaker cables and reset the amplifier.
- High / Low voltage, operation voltage is 10 V~16 V. Voltages below / beyond this will cause the amplifier to go into protect.

FUSE BLOWING

- Measure the speaker impedance & that it is in accordance with the configuration.
- Inspect the power cable for shorts along with vehicle chassis.

OVERHEATING

- Measure the speaker impedance & that it is in accordance with the configuration.
- Check speaker shorts.
- Ensure airflow around the amplifier is sufficient & that the amplifier is not installed in areas of excessive vibration & upside down!

AUDIO OUTPUT INSUFFICIENT - DISTORTED SOUND

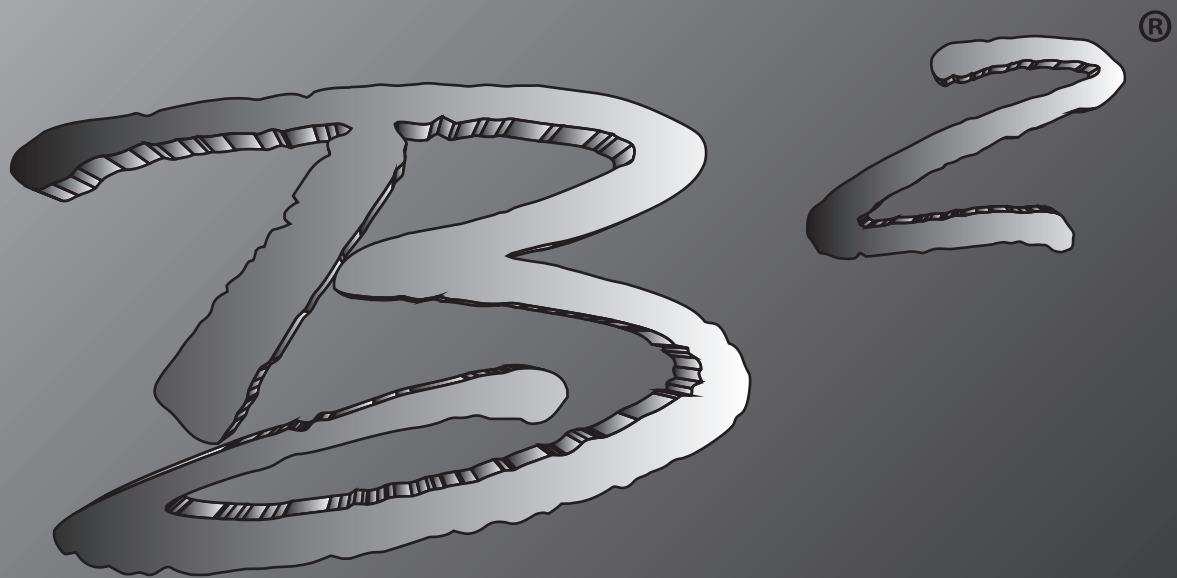
- Ensure that the gain settings on the amplifier is matched with the output level of the head unit.
- Adjust the head unit volume.
- Check speaker shorts.
- Adjust the crossover frequencies in accordance with the setup.
- If no output at all, check the RCA connections & the cable itself.

TURN ON THUMP

- Disconnect the signal input to the amplifier, then turn it on and off.
 - a) If the noise is cancelled, then connect a delay turn on module on the REM wire running from the source unit to the amplifier.
 - b) Use another 12V source for REM lead to the amplifier. If the noise is cancelled, use a relay to isolate the amplifier from the turn on thump.

HIGH HISS - ALTERNATOR WHINE

- Ensure that all signal transferring wires (RCA, speaker cables etc) are kept separately / away from the power and the ground wires.
- Bypass all electrical components between the Head unit and the amplifier.
Connect the Head unit directly to the amplifier's input. If the noise is eliminated, the unit bypassed is the one causing the noise.
- Remove the existing ground wires for all electrical components installed. Ensure that the point of ground is 100% metal which has been grinded free of rust, paint etc.
- Replace the ground cable from the OEM battery / alternator and ensure it is grounded accordingly.
- Test the battery and alternator load (can be carried out by a professional).
Ensure that the vehicle's electrical system is in a good condition, this includes distributor, alternator, spark plugs / wires, voltage regulators etc.



LIMITED WARRANTY INFORMATION

B2 audio offers a limited warranty under the following terms:

The product is to be free of defects in material & workmanship under normal use for a period of 1 year from the date of the original purchase, when installed by an authorized dealer. Items not installed by authorized dealers will be warrantied for 30 days from the original purchase. Original sales receipts must be accompanied with all returns. The warranty applies to the original purchaser of the product & it being sold by authorized B2 audio dealers.

The warranty does not cover: 1. Damage caused by accident, abuse, misuse, improper operation, water / solvents & shipping.

2. Product modification, neglect, failure to follow installation instructions & misrepresentation by the seller.

3. Products used for competition purposes or are of such a character 4. Any product that has been opened.

5. Products that has had the serial number defaced, altered or removed.

6. The cost of shipping the product back for repair to an authorized repair centre & cost of return of non-defective items.