GTA

High Performance Two and
Four Channel Amplifiers

502

802

504

Boston®
mobile audio

Introduction

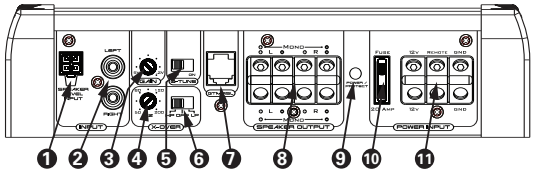
Thank you for choosing Boston Acoustics and congratulations, you've made the right choice. You're now equipped for the open road. Your high performance GTA amplifiers are engineered to perform and built to last. These products represent the pinnacle of performance and innovation that Boston Acoustics is famous for. We hope you enjoy your amplifier and the road ahead.

Technical Specifications:	GTA-502	GTA-802	GTA-504
Rated Power (CEA-2006-A):			
@ 4-Ohm (Stereo):	50 Watts x 2	80 Watts x 2	50 Watts x 4
@ 2-Ohm (Stereo)	80 Watts x 2	130 Watts x 2	80 Watts x 4
@ 4-Ohm (Mono)	160 Watts x 1	260 Watts x 1	160 Watts x 2
Impedance Stability:			
Stereo:	2Ω	2Ω	2Ω
Mono:	4Ω	4Ω	4Ω
Frequency Response (-3dB):	10Hz–50kHz	10Hz–50kHz	10Hz–50kHz
Signal-to-Noise Ratio: (A Weighted)	>90dB	>90dB	>90dB
THD+N:	0.05	0.05	0.05
Highpass Crossover:			
Frequency Range:	50Hz - 200Hz	50Hz - 200Hz	50Hz - 200Hz
Slope (dB Per Octave):	12dB	12dB	12dB
Lowpass Crossover:			
Frequency Range:	50Hz - 200Hz	50Hz - 200Hz	50Hz - 200Hz
Slope (dB Per Octave):	12dB	12dB	12dB
Signal Voltage Input Range:			
Low Level (RCA) Input:	200mv - 5v	200mv - 5v	200mv - 5v
Speaker Level Input:	400mv - 10v	400mv - 10v	400mv - 10v
Fuse Amp Rating (ATC):	20 Amp	30 Amp	2 x 25 Amp
Dimensions:			
Width:	9 3/8" (238mm)	11 3/4" (298mm)	14 3/8" (358mm)
Height:	2 3/8" (60mm)	2 3/8" (60mm)	2 3/8" (60mm)
Depth:	8 3/8" (211mm)	8 3/8" (211mm)	8 3/8" (211mm)

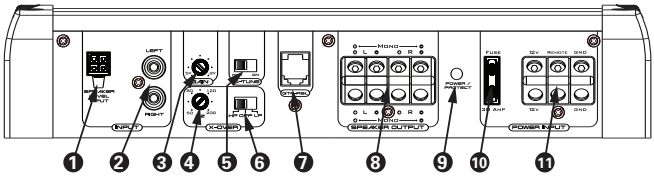
Parts List:	GTA-502	GTA-802	GTA-504
Owners Manual:	x 1	x 1	x 1
3mm Hex Wrench:	x 1	x 1	x 1
2mm Hex Wrench:	n/a	n/a	x 1
Speaker Level Input Cable:	x 1	x 1	x 2
Mounting Screws:	x 4	x 4	x 4
Replacement Fuses (ATC):	x 1 (20 amp)	x 1 (30 amp)	x 2 (25 amp)

Connections and Controls

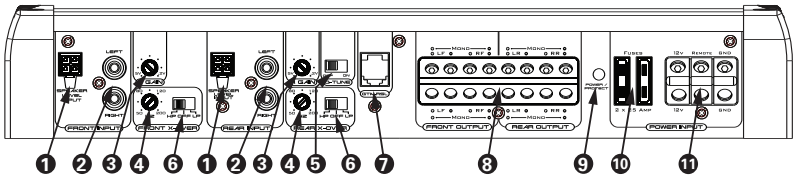
GTA-502



GTA-802



GTA-504



❶ Speaker Level Input
❷ RCA Input (Left and Right)
❸ Gain (250mv to 5.0v - continuously variable)
❹ Crossover Frequency Adjustment (50Hz to 200Hz - continuously variable)
❺ Q-Tune™ Equalization Boost (+6dB @ 45Hz)
❻ Crosssover Filter Switch (HP / Off / LP)
❼ GTA-RSL Port (Remote Gain)
❽ Speaker Output Block (Left / Right) or (LF / RF / LR / RR on GTA-504)
❾ Status LED (Blue = Normal / Red = Fault Mode)
❿ Fuse (Replace with same value only, refer to specifications on page 2)
⓫ Power Block (12v / Remote / Ground)

Status LED

The Boston Logo will illuminate "Blue" under normal operating conditions.

The LED will illuminate "Red" during start-up and under fault conditions. If the LED is still red after start-up, please refer to troubleshooting on page 12.

Speaker Level Input Cable

GTA amplifiers offer a dedicated speaker level input for ease installation into factory systems when an RCA (low level) signal is not available. Wiring code for the cable is industry standard;

White Solid = Left Positive **White w/ Black Stripe = Left Negative**

Gray Solid = Right Positive **Gray w/ Black Stripe = Right Negative**

Warning: Do not connect both Speaker Level and RCAs into the amplifier at the same time as damage to the amplifier may occur.

Installation - General

WARNING! *Before driving the amplifier mounting screws through any surface, be sure of what is behind that surface. Check for the gas tank, brake lines, and any vehicle wiring harness. Never run wires outside or under the vehicle or where they could become broken or interfere with the safe operation of the vehicle.*

Before You Install

Before you install the unit, disconnect the negative (–) battery cable in the engine compartment of the vehicle. Doing so will prevent damage to both the electrical system of the vehicle and the amplifier during installation.

Battery and Charging System

In order for the amplifier to function correctly, the electrical system of the vehicle should be professionally checked for overall electrical capacity. When used, the amplifier will increase the demand on the battery and alternator. Therefore, both should be thoroughly evaluated before installing the amplifier to ensure they are in normal operating condition and able to handle the increased demand the amplifier will present to the vehicle's electrical system.

Wire Routing

Do not run the power wire near any low-level signals or audio cables such as the RCAs from the head unit. Noise can be introduced into the amplifier when this occurs. It is helpful to diagram the wire layout first before any installation is initiated.

Choose the Mounting Location

Plan your installation so that the amplifier is mounted where adequate ventilation is available. ***Never mount an amplifier in the engine compartment of a vehicle!***

Passenger and Trunk Compartment Mounting

If the amplifier is mounted under a seat, be sure that there is adequate space around the amplifier once installed, 1" (25mm) recommended minimum. Do not allow seat padding or other obstructive material to press down on the amplifier.

When mounting in a trunk, choose a location that will be protected from sliding cargo or other materials. Mount the amplifier to solid surfaces only. Do not mount to plastic trim panels. Do not mount the amplifier with Velcro, double-stick tape, or by wedging into position. Amplifier should be mounted using the screw mounts in the endpanels and with the provided mounting screws.

Cooling

Position the amplifier so that there is adequate space around the amplifier once installed, 1" (25mm) recommended minimum.

Installation - Wiring

Amplifier Fuses

Although the amplifier has an internal fuse (s), additional fuse protection should be installed as close as possible to the battery on the positive (+) power wire going to the amplifier. An inline fuse should be installed at no more than 18" (46cm) on the positive (+) power wire. The rating of the inline fuse should equal the value of the internal fuse of the amplifier if only the single amplifier is connected to this wire. If other devices are connected to this wire, the fuse value should be of sufficient capacity to handle the demand.

Wire Gauge

The amplifier accepts up to 8-gauge stripped wire at the DC power and ground input terminals, and 8-gauge is recommended as a minimum. Wire runs should be kept to the minimum practical length.

Power 12v and Ground (GND) Connection

Strip approximately 5/8" (16mm) of insulation. The positive (+) power wire is installed into the amplifier terminal marked "12v". The negative (–) wire is installed into the terminal marked "GND". The ground wire should be as short as possible and connected directly to the chassis of the vehicle. Make sure that the chassis connection point is free of rust, grease, dirt, paint, and other materials that may insulate the ground wire from making proper connection. Tighten the 12v and GND terminals with the supplied 3mm hex wrench to secure the wire into the terminals. If the power wire must be routed through a drilled or existing hole, use a nylon panel grommet to prevent the insulation from fraying. Failure to do so could lead to an electrical short if the wire insulation is worn through and the power wire is shorted to ground.

Remote Input Connection

Connect the REMOTE trigger lead from the head unit to the amplifier using the 3mm hex wrench to tighten the connector on the power block of the amplifier. (refer to the diagram on page 3).

Speaker Output Connection

Prepare each wire by stripping approximately ⅝" (16mm) of insulation. The positive (+) speaker wires are installed into the amplifier terminals marked "SPEAKER OUTPUT" / "+" (refer to the diagram on page 3). The negative (–) speaker wires are installed into the amplifier terminals marked "SPEAKER OUTPUT" / "-". Tighten the "SPEAKER OUTPUT", "+", and "-" terminals with the supplied 3mm hex wrench (2mm on GTA-504) to secure the wires into the terminals. If the speaker wires must be routed through a drilled or existing hole, use a nylon panel grommet to prevent fraying the wire insulation. Failure to do so could lead to an electrical short if the wire insulation is worn through and the speaker wires are shorted to ground.

Note: Speaker outputs are marked "Front Output" and "Rear Output" on the GTA-504.

Mono Subwoofer Operation

When the amplifier is configured for mono operation, use the speaker output terminals marked for mono use (refer to the diagram on page 3).

WARNING! Subwoofer impedance must not fall below 4 ohms when in MONO mode.

Tuning The Amplifier - Front or Rear Speakers

1) Music

The material chosen for head unit/amplifier system setup must be both clear in recording quality and dynamic in amplitude. Many audiophile "test" discs have musical tracks with both of these characteristics and should be used.

2) Input Sensitivity Control (Gain)

Turn control all the way counterclockwise (minimum position). In this position, the amplifier will be less sensitive to the input signal from the head unit (refer to the diagram on page 3).

3) Crossover Control

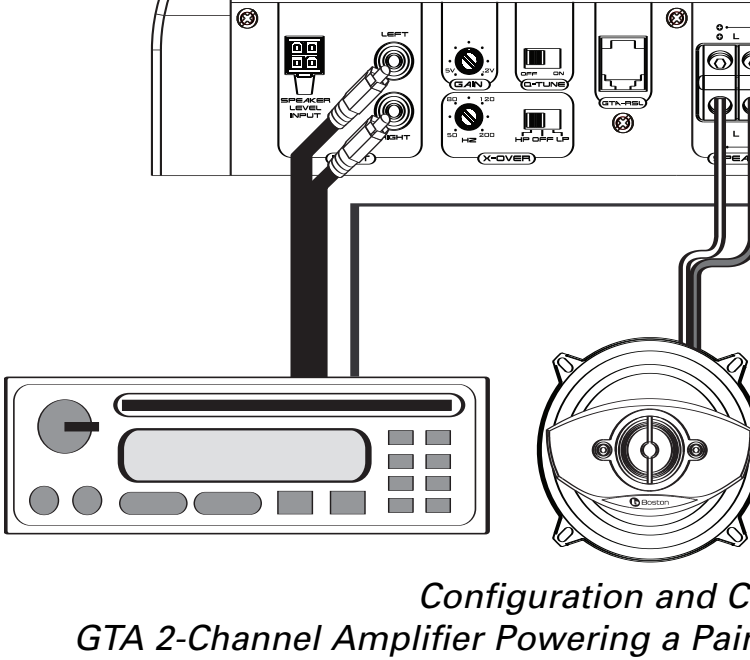
Crossovers should be turned "OFF" during this phase of setup . Move the X-OVER switch to the "OFF" position (refer to the diagram on page 3), with these settings, full-range signal is sent to the speaker outputs. If over-excursion is detected from speakers, move the switch to "HP" and slowly rotate clockwise until over-excursion is eliminated.

4) Head Unit

The head unit should have all controls such as bass, treble, balance, and fader set to the flat or centered position. The volume control should be at the minimum setting. If the head unit has any equalization or bass management features such as boost, they should be defeated at this time. Turn head unit on, and verify that the BLUE status LED is illuminated on the amplifier.

5) Volume

With the chosen musical track playing, turn the head unit volume control up until the maximum level of undistorted signal is heard from the speakers. (For most head units, this will be near the end of the volume control range.)



Configuration and C

GTA 2-Channel Amplifier Powering a Pai

Tuning The Amplifier - Front or Rear Speakers

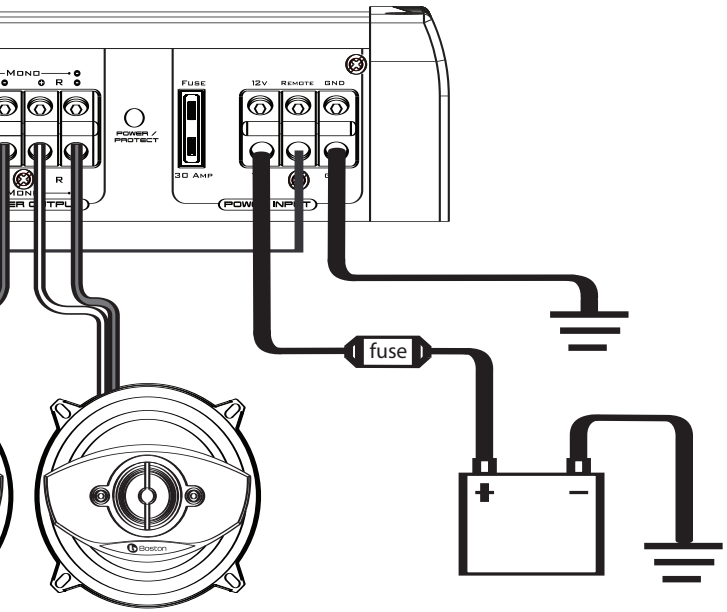
WARNING! *A distorted signal from the head unit sent to the amplifier can cause loudspeaker failure at higher listening levels.*

6) Input Sensitivity Control (Gain)
Slowly rotate the control clockwise (refer to the diagram on page 3) until maximum undistorted playing level is heard from the speakers. Listen closely for bottoming from the speakers. If detected, rotate the input sensitivity control counterclockwise until it is eliminated.

7) Crossover Controls
To achieve higher undistorted playing levels from the main speakers, the Highpass crossover must be engaged. Rotate the crossover control fully clockwise (refer to the diagram on page 3). The highpass crossover point is now set at 200Hz. Q-Tune should be set to off.

Slowly rotate the input sensitivity control clockwise until maximum undistorted playing level is heard from the speakers. Listen closely for bottoming from the speakers. If detected, rotate the input sensitivity control counterclockwise until it is eliminated. Slowly rotate the highpass crossover control counterclockwise while listening for bottoming. You are lowering the crossover point, which means that more bass signal is being sent to the speakers. If bottoming is detected, rotate the input sensitivity control counterclockwise until it is eliminated and/or rotate the Highpass crossover control clockwise to raise the crossover point.

8) Q-Tune™ Control
Q-Tune allows for +6dB boost of bass information centered at 45Hz and is not typically needed for full range speaker applications.



onnection Diagram:
r of Full Range Speakers (80Hz Highpass)

Tuning The Amplifier - Subwoofer(s)

1) Head Unit

The head unit should have all controls such as bass, treble, balance, and fader set to the flat or centered position. The volume control should be at the minimum setting. If the head unit has any equalization or bass management features such as boost, they should be deactivated at this time. Turn head unit on, and verify that the Blue status LED (logo) is illuminated on the amplifier.

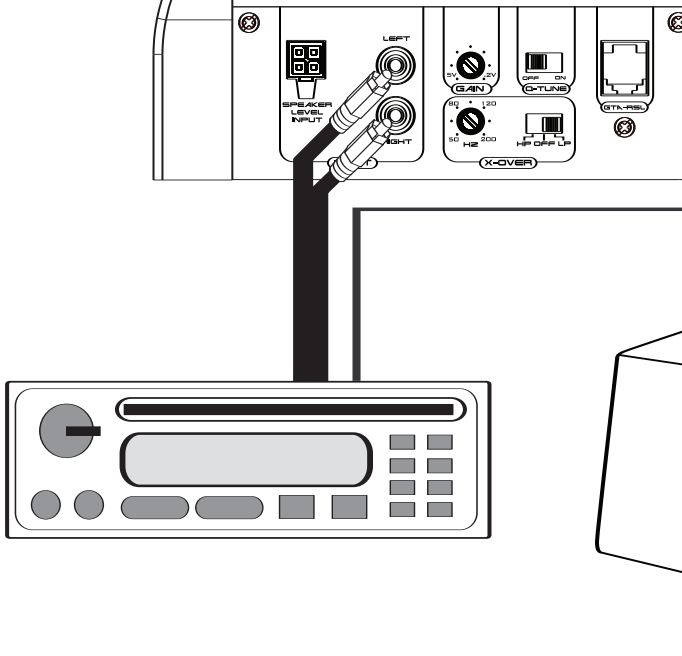
2) Volume

With the chosen musical track playing, turn the head unit volume control up until the maximum level of undistorted signal is heard from the speakers. For most head units, this will be at the end of the volume control range.

WARNING! *A distorted signal from the head unit sent to the amplifier can cause speaker failure at higher listening levels.*

3) Input Sensitivity Control (Gain)

Turn control (refer to the diagram on page 3) all the way counterclockwise (minimum position). In this position, the amplifier will be less sensitive to the input signal from the head unit. Slowly rotate this control clockwise until maximum undistorted playing level is heard from the subwoofer(s). Listen closely for faults such as bottoming from the subwoofer(s). If fault is detected, rotate input sensitivity control counterclockwise until fault is eliminated. At this point, the maximum undistorted subwoofer playing level has been defined.



Tuning The Amplifier - Subwoofer(s)

4) Crossover Control

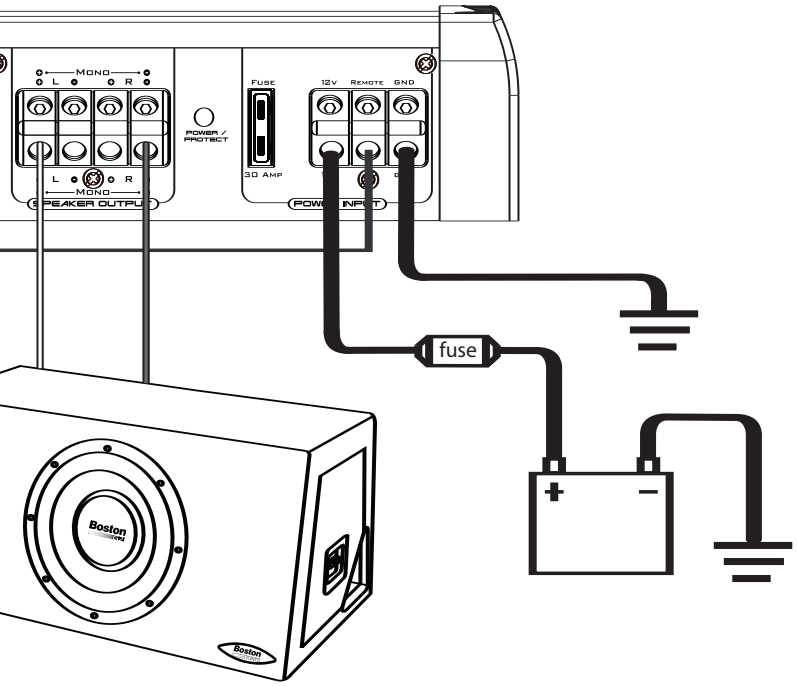
Move the selector switch to "LP" (refer to the diagram on page 3). In this setting, lowpass signal is sent to the speaker outputs. Experiment with the crossover point settings while the subwoofer is active. A higher setting will increase the perceived output, and a lower setting will make the bass response more omnidirectional.

5) Q-Tune™ Control

Once the crossover point has been determined, you may choose to use Q-Tune™ to increase the bass information. Q-Tune will offer a +6dB bass boost centered at 45Hz which can be beneficial if more low bass output is desired. To engage Q-Tune move the selector switch to the "ON" position (refer to the diagram on page 3).

6) GTA-RSL Control

The remote level control (GTA-RSL) gives you independent level adjustment of the subwoofer's output level beyond the standard system volume control. Please refer to the RSL's manual for installation instruction. The GTA-RSL is available separately, please consult your authorized Boston Acoustics dealer.



Connection Diagram:
ing a Subwoofer (80Hz Lowpass)

Tuning The Amplifier - Front Speakers and Subwoofer(s)

1) Head Unit

The head unit should have all controls such as bass, treble, balance, and fader set to the flat or centered position. The volume control should be at the minimum setting. If the head unit has any equalization or bass management features such as boost, they should be deactivated at this time. Turn head unit on, and verify that the BLUE status LED is illuminated on the amplifier.

2) Volume

With the chosen musical track playing, turn the head unit volume control up until the maximum level of undistorted signal is heard from the speakers. For most head units, this will be at the end of the volume control range.

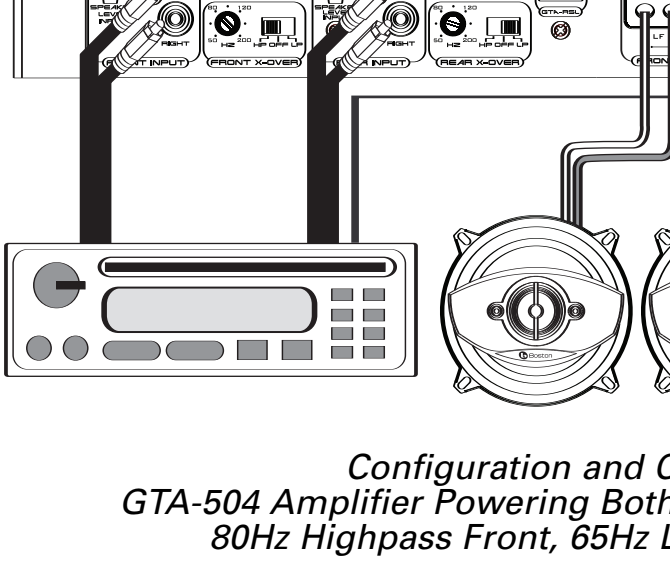
WARNING! *A distorted signal from the head unit sent to the amplifier can cause speaker failure at higher listening levels.*

3) Input Sensitivity Control (Gain)

Turn control (refer to the diagram on page 3) all the way counterclockwise (minimum position). In this position, the amplifier will be less sensitive to the input signal from the head unit. Slowly rotate this control clockwise until maximum undistorted playing level is heard from the subwoofer(s). Listen closely for faults such as bottoming from the subwoofer(s). If fault is detected, rotate input sensitivity control counterclockwise until fault is eliminated. At this point, the maximum undistorted subwoofer playing level has been defined.

4) Front Crossover Control

To achieve higher undistorted playing levels from the main speakers, the highpass crossover must be engaged. Rotate the crossover control fully clockwise (refer to the diagram on page 3). The highpass crossover point is now set at 200Hz. Q-Tune should be set to off.



Configuration and C
GTA-504 Amplifier Powering Both
80Hz Highpass Front, 65Hz L

Tuning The Amplifier - Front Speakers and Subwoofer(s)

4) Front Crossover Control Cont.

Slowly rotate the input sensitivity control clockwise until maximum undistorted playing level is heard from the speakers. Listen closely for bottoming from the speakers. If detected, rotate the input sensitivity control counterclockwise until it is eliminated. Slowly rotate the highpass crossover control counterclockwise while listening for bottoming. You are lowering the crossover point, which means that more bass signal is being sent to the speakers. If bottoming is detected, rotate the input sensitivity control counterclockwise until it is eliminated and/or rotate the Highpass crossover control clockwise to raise the crossover point.

5) Rear Crossover Control

Move the selector switch to "LP" (refer to the diagram on page 3). In this setting, lowpass signal is sent to the speaker outputs. Experiment with the crossover point settings while the subwoofer is active. A higher setting will increase the perceived output, and a lower setting will make the bass response more omnidirectional.

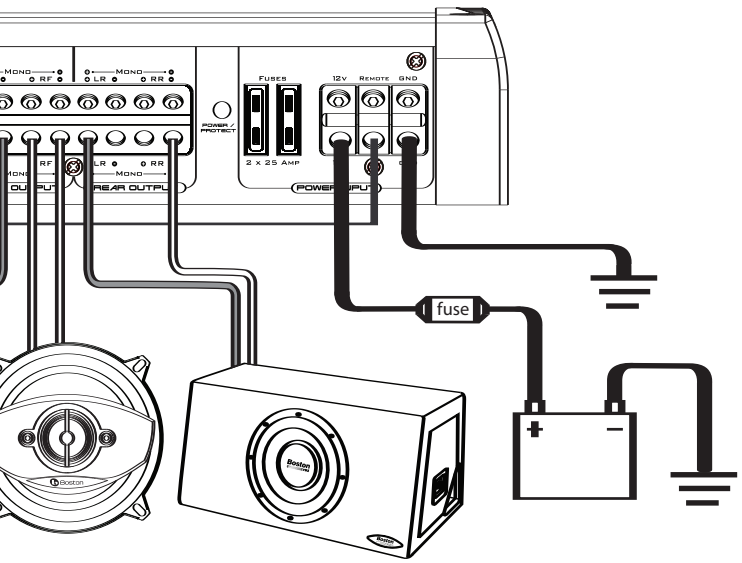
6) Q-Tune™ Control

Once the crossover point has been determined, you may choose to use Q-Tune™ to increase the bass information. Q-Tune will offer a +6dB bass boost centered at 45Hz which can be beneficial if more low bass output is desired. To engage Q-Tune move the selector switch to the "ON" position (refer to the diagram on page 3).

7) Optional GTA-RSL Control

The optional remote level control (GTA-RSL) gives you independent level adjustment of the subwoofer's output level beyond the standard system volume control. Please refer to the RSL's manual for installation instruction. The GTA-RSL is available separately, please consult your authorized Boston Acoustics dealer.

Note; If using the GTA-504 to run front and rear speakers, set rear X-over to HP and follow set up/tuning instructions for the front channels for rear.



Connection Diagram:
n Front Speakers and a Subwoofer
Lowpass Rear w/ Q-Tune™ On

Amplifier Troubleshooting Guide

Status LEDs on Amplifier not Lit—Head Unit (Source) Turned "ON"

Verify	Remote turn-on wire from source to amplifier has proper voltage
	Power (B+) connections at amplifier, terminal blocks, and battery are secure
	Ground (GND) connections at amplifier and vehicle chassis are secure
	Battery B+ fuse and amplifier fuse are OK
	B+ at battery and B+ at amplifier have proper voltage

Status LEDs Lit, no Output from Speakers—Speakers in Normal Operating Condition

Verify	High-level cables from speaker(s) to amplifier are securely connected
	RCA or Speaker Level Input from amplifier to source are securely connected
	Sensitivity adjustment on amplifier is correctly adjusted

Engine Noise from Speaker(s)

	Turn source "OFF" and disconnect RCA cables at amplifier
	If noise stops, check equipment and cables leading to amplifier
Verify	RCA cables are of good quality with no breakage to internal shields
	RCA cables from source to amplifier are not run alongside power

Amplifier Output Distorted—Music not Recorded with Intentional Distortion

Verify	Source output to amplifier is not distorted
	Amplifier input sensitivity is correctly adjusted

Amplifier Shutting Down, RED LED Lit—Amplifier in Thermal Protection Mode

Verify	Amplifier is mounted with adequate space around heatsink
	Amplifier is not mounted under carpet
	Speakers meet correct impedance for application (mono or stereo hookup)

Amplifier not Turning "ON", RED LED Lit—Amplifier not Connected to a Shorted Speaker

Verify	Speaker crossover is not defective
	High-level cables from speaker to amplifier are not shorted

Amplifier not Turning "ON", RED LED Lit—Speakers, Crossovers, and Cable OK

	Internal fuse needs to be replaced
Verify	Replace fuse with fuse of same value

Amplifier not Turning "ON", RED LED Lit—Speakers, Crossovers, and Cable OK

Amplifier requires service

If Service Seems Necessary:

First, contact the dealer from whom you purchased the product, or contact us via e-mail at:

USA and Canada: **support@bostona.com**
Europe: **support@bostona.com**
Japan: **ba_info@dm-holdings.com**
Asia/Pacific countries: **service@dm-singapore.com**

We will promptly advise you of what action to take.

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