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AUDIO SYSTEMS



**GT1180**

**GT1380**

**GT1480**

**GT1580**

## AMPLIFIERS



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

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

Thank you for making BOSS Audio Systems your choice for mobile audio entertainment.



MODEL	GT 1180	GT 1380	GT 1580	GT1480
Power Max (2 Ohms)	400W x 4	500W x 4	500W x 4 + 500W x 1	600W x 4
Power RMS (4 Ohms)	100W x 4	150W x 4	80W x 4 + 150W x 1	200W x 4
Bridged Power (4 Ohms)	800W x 2	1000W x 2	1000W x 2 + 500W x 1	1200W x 2
S/N Ratio	103 dB	103 dB	103 dB	103 dB
Low Pass Crossover (Variable)	Continuously-Variable, 45Hz-90Hz			
High Pass Crossover	150Hz	150Hz	150Hz	150Hz
Bass Boost (Variable)	0 - +18dB	0 - +18dB	0 - +18dB	0 - +18dB
Tri-mode Operation	YES	YES	YES	YES
Inputs	Line Level and Speaker Level			
Remote Subwoofer Level Control	YES	YES	YES	YES
Frequency Response	9Hz - 50KHz (+/- 3dB)			
THD (at RMS Output)	0.01%	0.01%	0.01%	0.01%
Channel Separation	90dB	90dB	90dB	90dB
Damping Factor	150+	150+	150+	150+
Fuse Rating	20A x 2	25A x 2	35A x 2	80A x 1
Dimensions (9-5/16"W x 2-3/16"H x ...)	12-1/4" (L)	16-1/2" (L)	19-1/4" (L)	20-1/2" (L)

AMPLIFIERS

**F E A T U R E S**

**GT**

#### **Four Channel Amplifiers GT1180, GT 1380, GT1480**

- Four Channel Bridgeable MOSFET Amplifier
- Tri-Mode Capable
- Heavy-duty Aluminum Alloy Heatsink
- Class A-B Operation
- Continuously-Variable Low Pass Crossover: 45Hz-90Hz
- Bass Boost Switch: 0 to +18dB
- Remote Subwoofer Level Control
- Continuously-Variable Input Gain Control
- High Pass Crossover: 200Hz
- Nickel Plated RCA And Speaker Level Inputs
- 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

#### **Five Channel Amplifier GT1580**

- Five Channel Bridgeable MOSFET Amplifier
- Tri-Mode Capable
- Heavy-duty Aluminum Alloy Heatsink
- Class A-B Operation
- Continuously-Variable Low Pass Crossover: 45Hz-90Hz (all channels)
- Bass Boost Switch: 0 to +18dB (CH1-CH4)
- Variable Bass Boost: 0 to +18dB (CH5)
- Remote Subwoofer Level Control
- Continuously-Variable Input Gain Control
- High Pass Crossover: 200Hz (Channels 1-4)
- Nickel Plated RCA And Speaker Level Inputs
- 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 GT amplifiers feature built-in electronic crossovers.

The MonoBlock amplifier (GT1000M) features an continuously-variable low pass and an +18dB Bass Boost switch.

The 2 Channel, 4 Channel and 5 Channel GT amplifiers feature continuously-variable low pass crossovers and fixed high pass crossovers. They also all feature a +18 dB Bass Boost switch.

All GT amplifiers have been designed to utilize 100% MOSFET power supplies, ensuring extremely rapid switching response for plenty of clean power.

#### **Protection Circuitry**

The amplifier protection circuitry will disable the amplifier if the inputs are overloaded, short-circuited or if extremely high temperature conditions are detected. When the protection mode is in operation, the LED indicator on the front panel 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 shuts down due to a thermal overload condition, please allow it to cool down before powering up. If the amplifier shuts down because of an input overload or short circuit, be sure to repair these conditions before attempting to power up the amplifier again.

#### **2 Ohm Operation (in stereo mode)**

Your GT amplifier was designed to operate effectively at loads as low as 2 Ohms. 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 100Hz) 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 a 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.*

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## Electrical Wiring

All BOSS GT series power amplifiers are equipped with easy top access screw terminals. These terminals are nickel-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 wire for power and ground connections.
- Wire the amplifier directly to the car battery. Make sure there is circuit protection (such as a fuse) on the positive power lead, within 18 inches of the 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 head unit. In some cases cases this may be the power antenna lead of the head unit.

## Remote Subwoofer Level Control

All BOSS GT series power amplifiers are equipped with a dashboard mount remote subwoofer level control. Run the supplied dashboard remote control from the front panel of your amplifier. By turning the level knob clockwise, you will increase the output of low frequencies.

## Fuses

Fuses protect both the amplifier and the electrical system of your vehicle from faulty conditions. If you must replace the fuse in your GT amplifier, use a fuse of exactly the same type and rating. A different type or rating may result in damage or cause a 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 the 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.

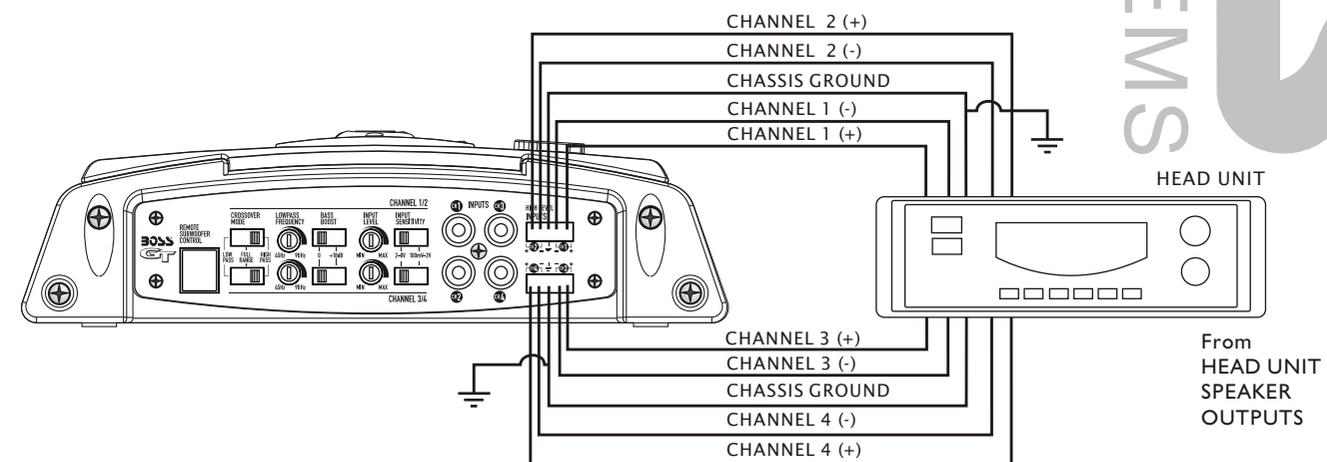
*Note: Before beginning your installation, be sure to take note of any wires, lines or other devices in your vehicle which may be located behind any mounting surface.*

## High Level Inputs

The GT 4-Channel amplifiers utilize a separate connector for Channels 1/2 and Channels 3/4.

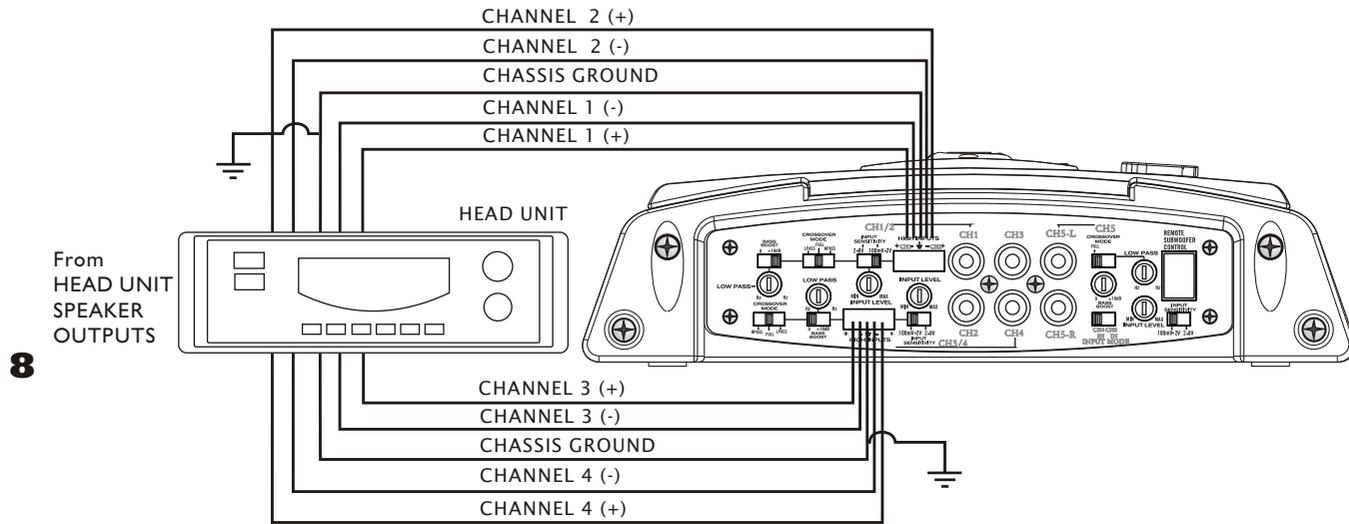
*WARNING: If you use the HIGH LEVEL (speaker) inputs, do not use the LOW LEVEL inputs at the same time.*

## Four Channel Amplifiers: GT 1180, GT 1380, GT 1480



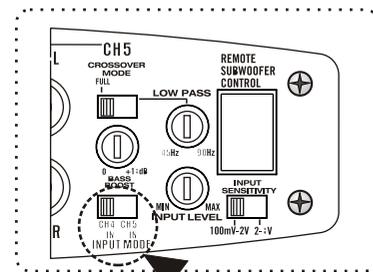
### High Level Inputs (5 Channel Amplifier) - GT 1580

**WARNING:** If you use the HIGH LEVEL (speaker) inputs, do not use the LOW LEVEL inputs at the same time.



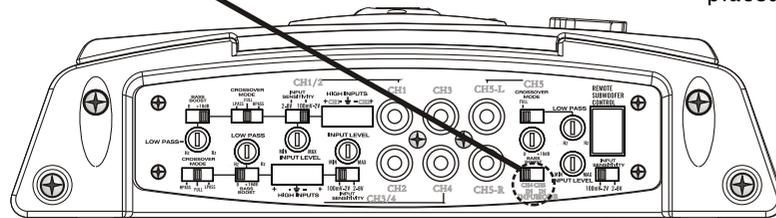
Note: Use the 4CH mode when using high level (speaker) inputs and the 5CH mode use with for low level (RCA) inputs.

### Mode Switch Settings

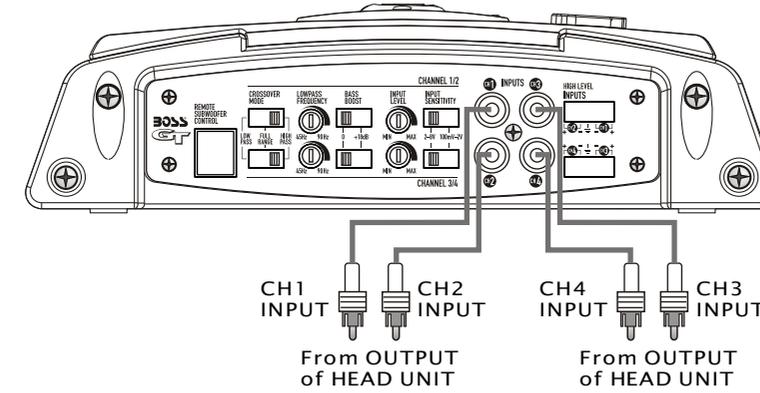


MODE SWITCH	INPUT	OUTPUT
5CH IN	1CH/2CH/3CH/4CH/5CH	1/2/3/4/5CH
4CH IN	1CH/2CH/3CH/4CH	1/2/3/4/5CH
2CH IN	1CH/2CH	1/2/5CH

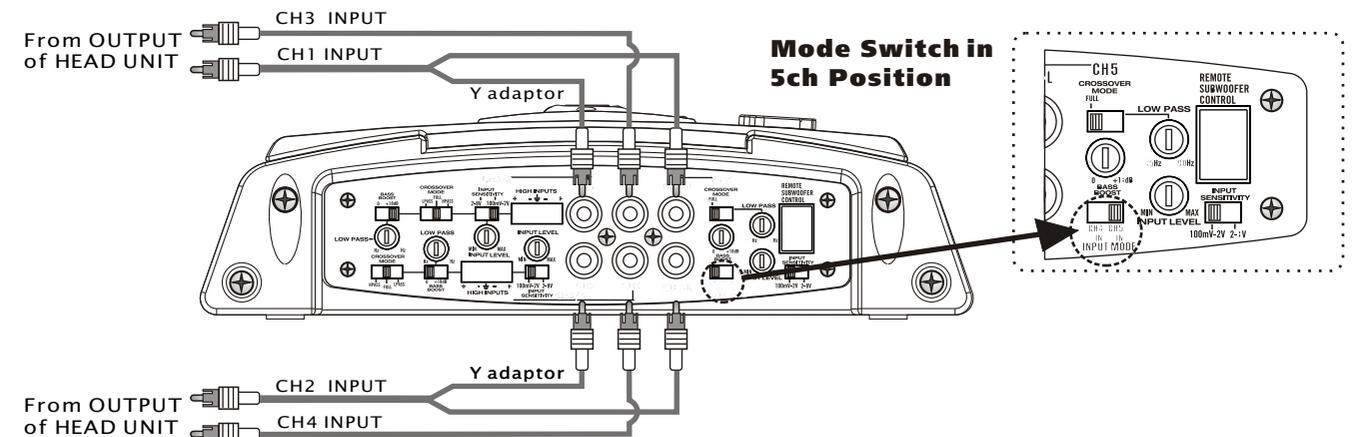
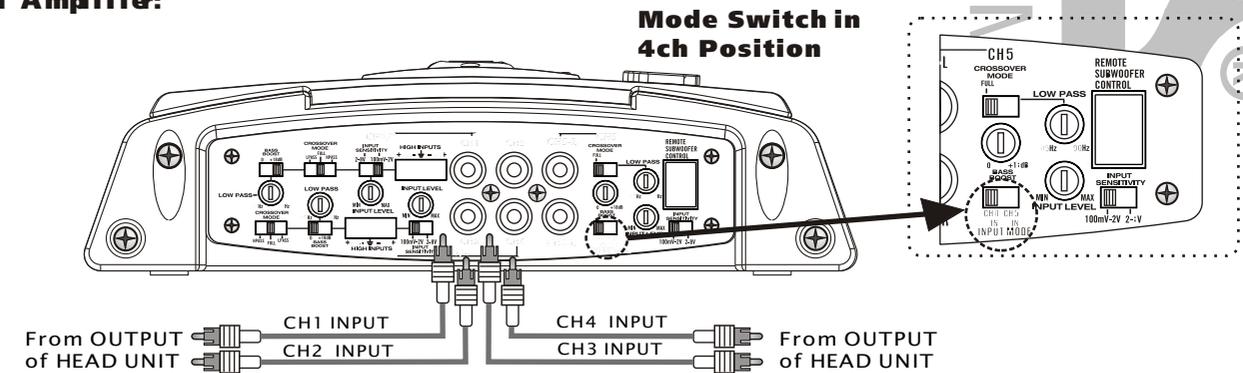
When the high level (speaker) inputs are used, or when there is no input for CH5, the Mode switch should be placed in the 5CH position.



### Four Channel Amplifiers: GT1180, GT1380, GT1480

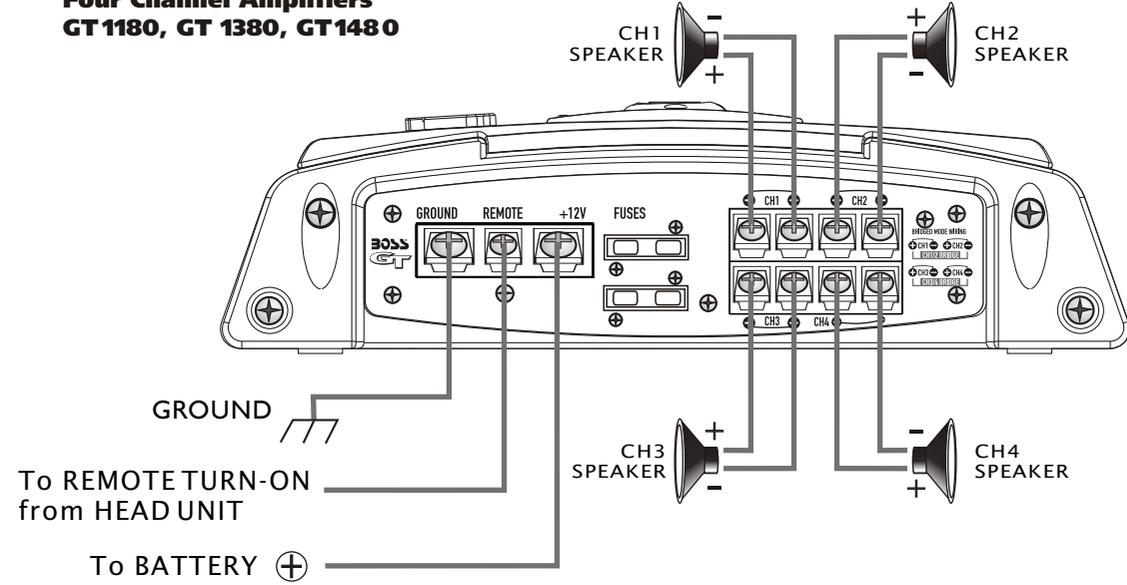


### Five Channel Amplifier: GT 1580



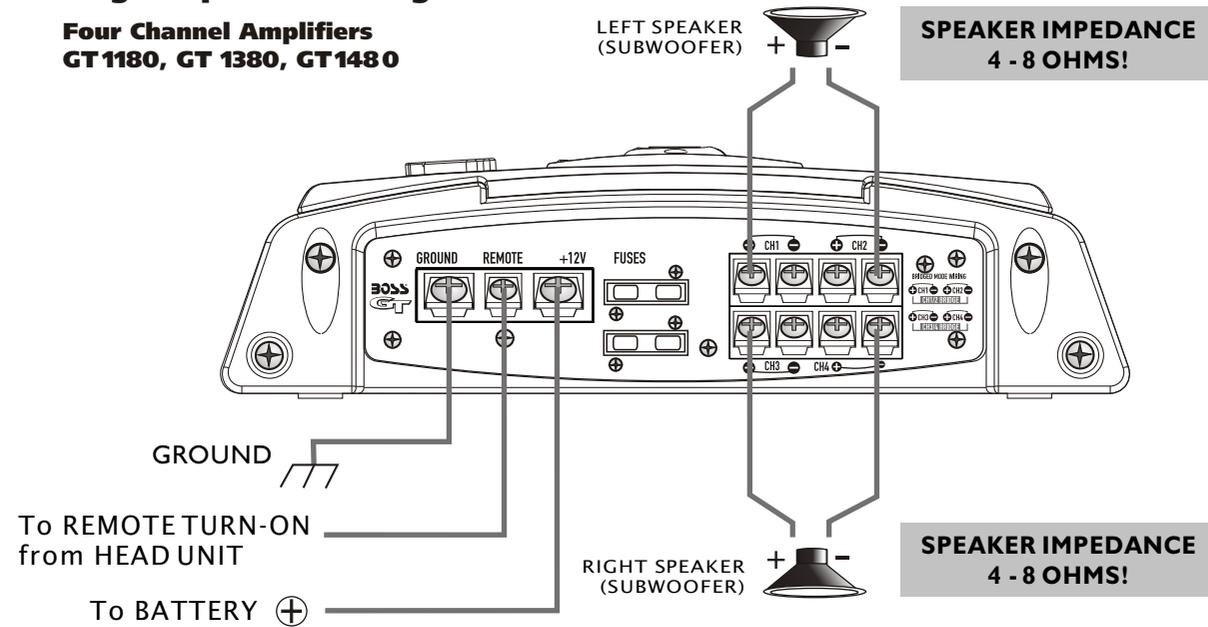
## Four Channel Speaker Wiring

Four Channel Amplifiers  
GT 1180, GT 1380, GT 1480



## Bridged Speaker Wiring

Four Channel Amplifiers  
GT 1180, GT 1380, GT 1480



## Dual Tri-Mode Speaker Wiring

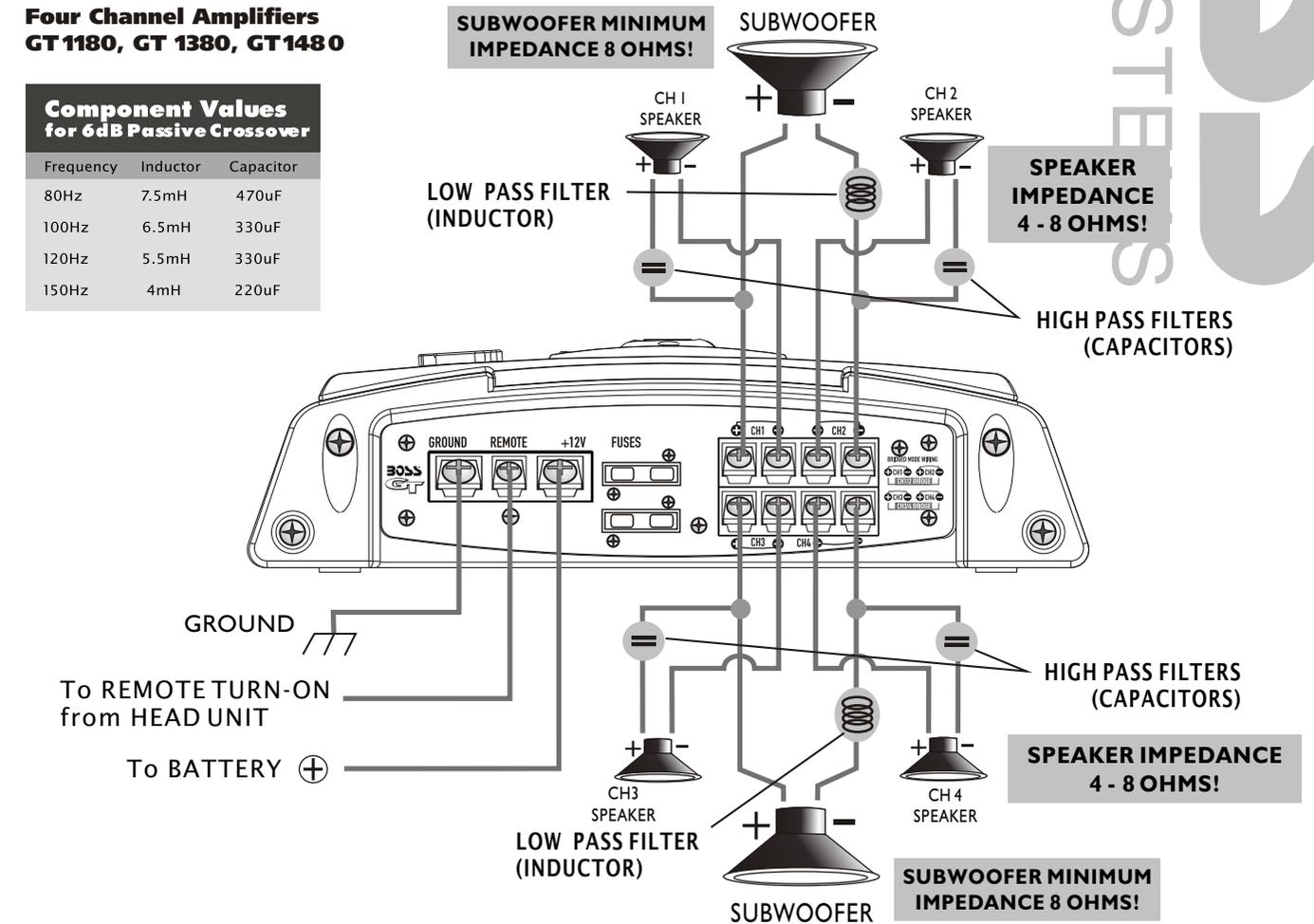
Tri-Mode Operational Output is a unique feature which allows a subwoofer to be operated in MONO mode, while the main speakers are playing STEREO simultaneously on one pair of amplifier output channels.

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.

Four Channel Amplifiers  
GT 1180, GT 1380, GT 1480

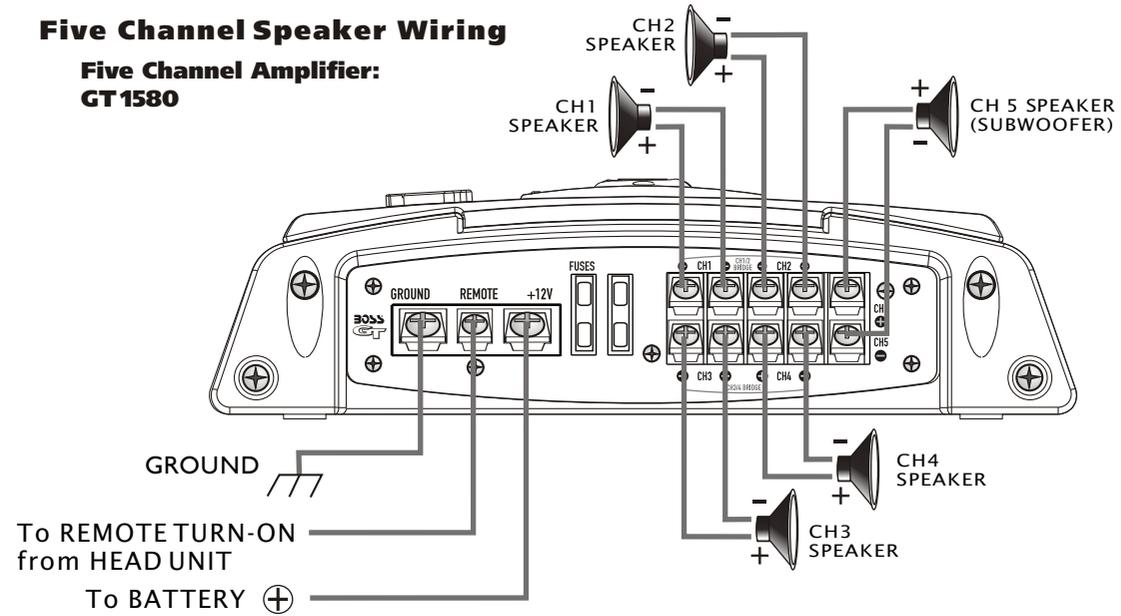
### Component Values for 6dB Passive Crossover

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



## Five Channel Speaker Wiring

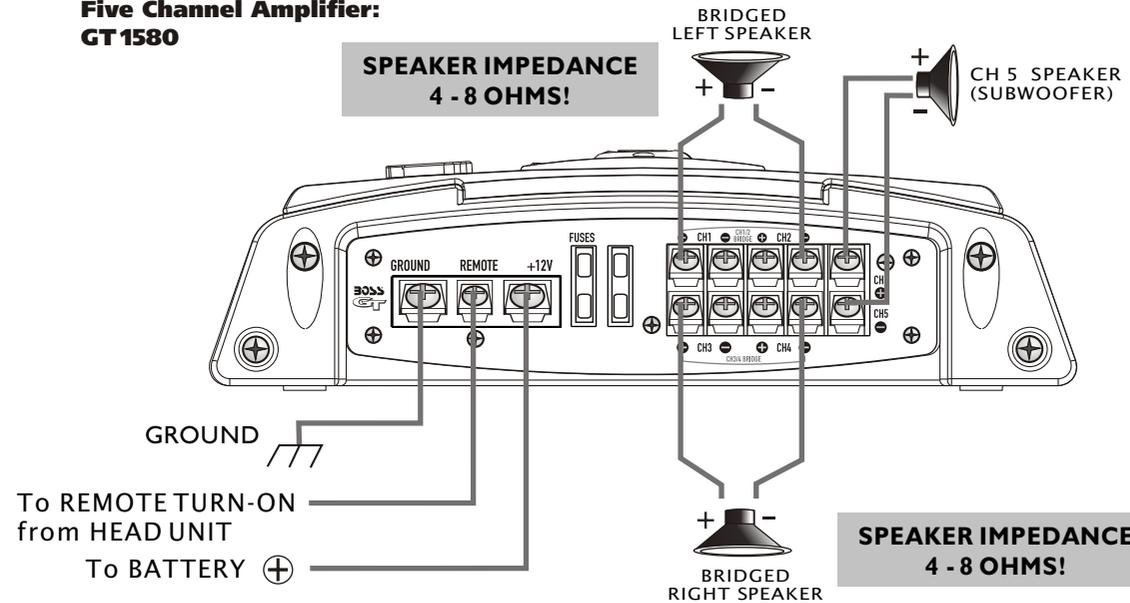
Five Channel Amplifier:  
GT 1580



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## Bridged Speaker Wiring

Five Channel Amplifier:  
GT 1580



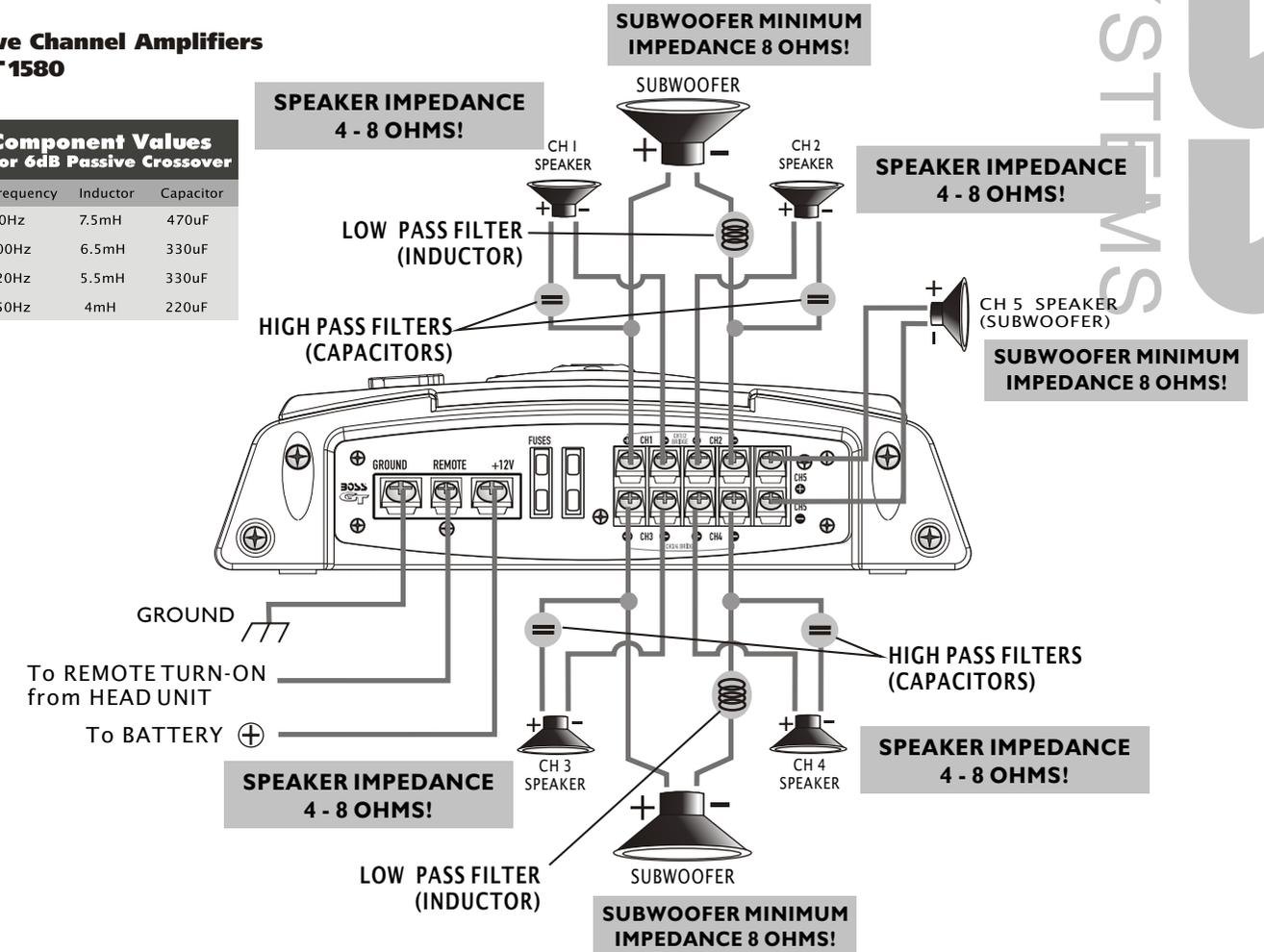
## Dual Tri-Mode Speaker Wiring

Tri-Mode Operational Output is a unique feature which allows a subwoofer to be operated in MONO mode, while the main speakers are playing 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.

Five Channel Amplifiers  
GT 1580

Component Values for 6dB Passive Crossover		
Frequency	Inductor	Capacitor
80Hz	7.5mH	470uF
100Hz	6.5mH	330uF
120Hz	5.5mH	330uF
150Hz	4mH	220uF



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## 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 not mounted. Attach all audio system components securely within the automobile to prevent damage, especially in case of an accident.

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 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, replace it only with a fuse identical to that supplied with the system. Using a fuse of 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              | <p>Confirm that all terminal strip connections are secure and tight.</p> <p>Check both in-line and built-in fuses. Both the "+12V" and the "REMOTE" terminals must have +12V referenced to chassis ground.</p> <p>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). Gently tap the center pin of each of the disconnected RCA plugs with your finger. This should produce a noise (feedback) in your speakers.</p> |
| Only one channel works | <p>Confirm that all speaker strip connections are secure and tight.</p> <p>Check the BALANCE control on the head unit (or other source) to verify that it is set to its midpoint.</p> <p>If you are using the Low Level RCA Inputs, reverse the input plugs at the amplifier (switches the R with the L). If the channel which is silent switches to other side, the problem is either in the head unit/other source or the connecting cables.</p>   |
| Weak Output            | <p>Readjust the Input Sensitivity Control to better suit the input signal.</p>   |
| Noise in the Audio     | <p>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.</p> <p>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.</p> <p>Check the routing of the speaker and input wires to make sure they are not adjacent to wires which interconnect lights and other accessories.</p>   |