SPEAKER CONNECTION DIAGRAM

TWO CHANNEL SPEAKER CONNECTIONS (XR-222)

MULTI SPEAKER PARALLEL MODE

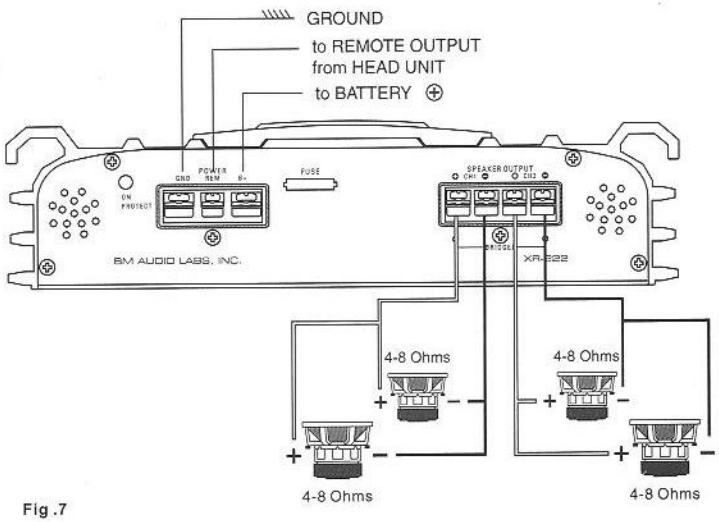


Fig .7

If using speakers of different impedances, please observe the following calculation before connecting.

R_T - Total equivalent load impedance at amplifier terminal
R_n - Speaker nominal impedance

$$R_T = \frac{1}{\left(\frac{1}{R_1} + \frac{1}{R_2} + \cdots \frac{1}{R_n}\right)}$$

CAUTION :
$R_T \geqslant$ Minimum amplifier stable operating equivalent load impedance.

Connecting too many speakers with improper speaker connections and operating amplifier at below stable load impedance will damage the amplifier.

SPEAKER CONNECTION DIAGRAM

FOUR CHANNEL SPEAKER CONNECTIONS (XR-888 / XR-999 / XR-1000)

2 CHANNEL BRIDGED STEREO

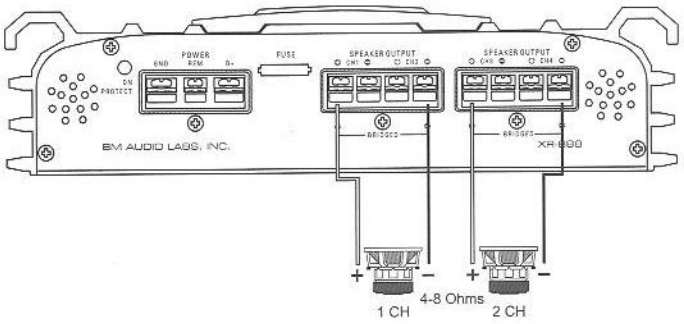


Fig .8

Caution: $\frac{\text{Nominal Speaker Impedance}}{2} \geqslant$ Minimum amplifier total stable operation equivalent load impedance

Attempting to use an amplifier at an unstable load will damage the amplifier. Observe speaker nominal impedance and do not operate amplifier at below stable equivalent load.

3 CHANNEL STEREO

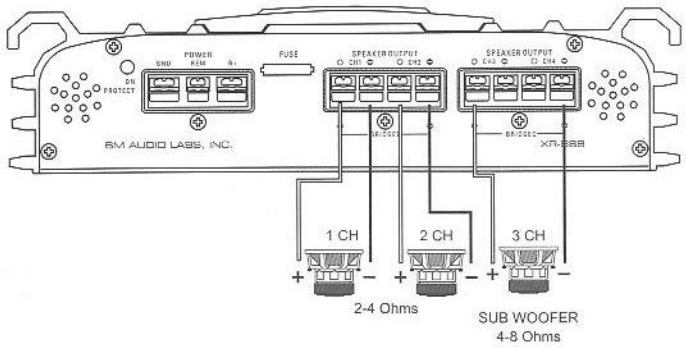


Fig .9

SPEAKER CONNECTION DIAGRAM

FOUR CHANNEL SPEAKER CONNECTIONS (XR-888 / XR-999 / XR-1000)

4 CHANNEL STEREO

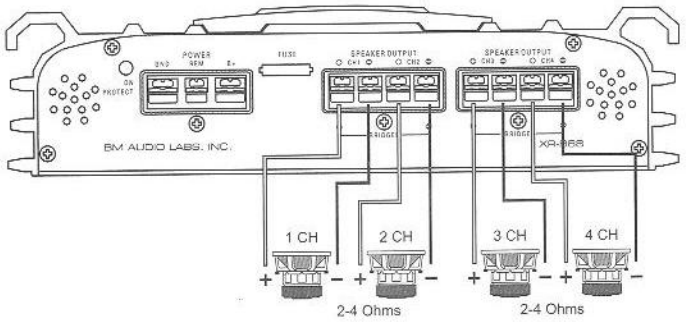


Fig .10

6 SPEAKER HEX MODE

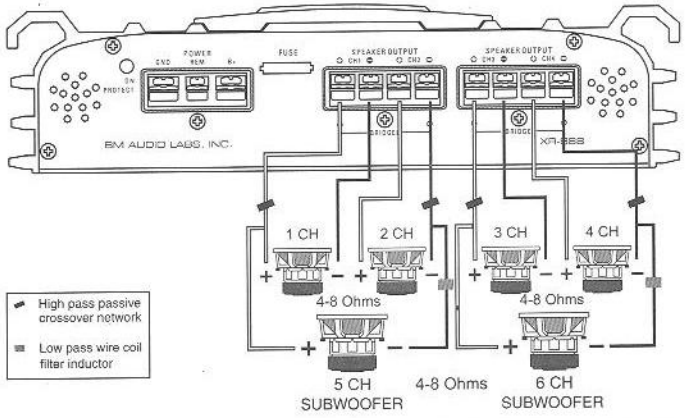


Fig .11

Dual Tri - Mode Operational output is a unique BM Audio feature which allows a subwoofer to be operated in MONO mode, while the main speakers are player in STEREO. To engage the amplifier in this mode, place the CH-1/2 and CH-3/4 crossover switches in the "OFF" position. Use a highpass passive crossover network for each of mid/high speakers for Channels 1 - 4, and a low pass wire coil filter inductor to block high frequencies from each of the subwoofers as shown in Fig.11.

SPEAKER CONNECTION DIAGRAM

FOUR CHANNEL SPEAKER CONNECTIONS (XR-888 / XR-999)

MULTI SPEAKER PARALLEL MODE

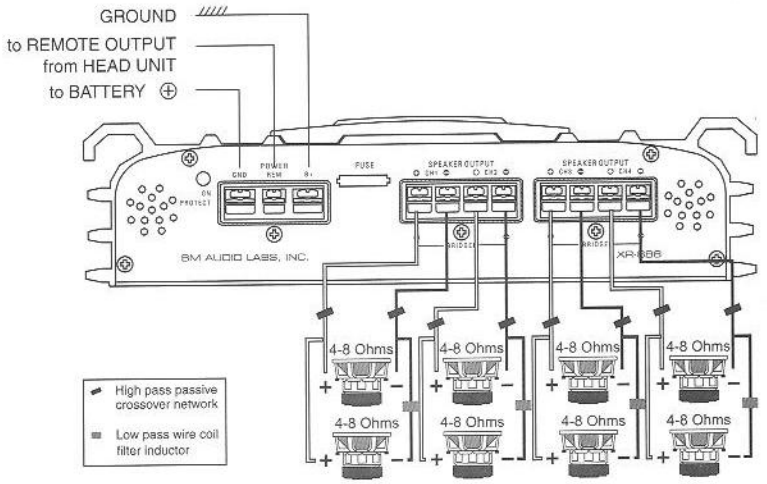


Fig .12

If using speakers of different impedances, please observe the following calculation before connecting.

R_T - Total equivalent load impedance at amplifier terminal
R_n - Speaker nominal impedance

$$R_T = \frac{1}{\left(\frac{1}{R_1} + \frac{1}{R_2} + \cdots \frac{1}{R_n}\right)}$$

CAUTION :

$R_T \geq$ Minimum amplifier stable operating equivalent load impedance.

Connecting too many speakers with improper speaker connections and operating amplifier at below stable load impedance will damage the amplifier.

Troubleshooting

Troubleshooting Guide

This section provides you a list of amplifier symptoms and their probable causes and solutions. Make sure the vehicle's electrical system is working properly by verifying that other electrical components (e.g.headlights, windows, etc.) still function correctly. Before removing your amplifier refer to the list below. Follow the suggested procedures. Always test the speakers and their wires first.

SYMPTOM	PROBABLE CAUSE	SOLUTION
No Audio	Low or N.C Remote Turn-on connections Blown Fuse Power wires not connected Blown speaker or not connected	Check remote turn-on voltage at amp and head unit Replace with new ATC/MAXI fuse Check butt splices or solder joints; Check ground and battery connections Use VOM or DVM to measure speaker coil Impedance;check speaker wiring connections Confirm that all terminal strip connections are secure and tight. Check both in-line and built-in fuses.Both the "+12V"and the"REMOTE" terminates must have +12V referenced to chassis ground. Confirm that the audio signal source (car radio,equalizer,etc.) is connected and is supplying output signal. 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.
Distorted Audio	Input Sensitivity not set properly Or damaged speaker cones Low turn-on voltage	See adjustment procedure and check each step; Inspect each speaker for damage and repair or replace suspected component Refer to head unit owner's manual
Audio level low	Mute mode is on (head unit)	Check electrical system for low voltage; Check ground connection Readjust the Input Level Control to better suit the input signal .
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.
Audio lacks	Speakers wired with wrong polarity causing cancellation of bass frequencies	Check polarity of wires from amplifiers to each speakers as defined by the system design; Check battery voltage at amplifier during operation
External fuse blown	Incorrect wiring or short circuit	Refer to electrical installation and check each installation step CAUTION:one of the main reasons that amplifiers fail is improper speaker connection. If too many speakers are connected to an amplifier, the amplifier will be more likely to fail. BM Audio laboratories strongly recommend to always adhere to amplifier's minimum safe equivalent load at the terminal connecting in parallel mode.
Whining noise on audio with engine running	Amplifier is picking up alternator noise	Install a line noise filter on the head unit's power wire; Check alternator routing diodes or voltage regulator For proper operation check all grounds, check battery voltage, check RCA cables. 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.
Ticking noise on audio with engine running	Amplifier is picking up radiated noise	Check RCA audio cable;install an in-line noise filter on the head unit's power wire. Check spark plug wires. 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 moblie audio installer.

Specification

Specifications	XR-222	XR-888	XR-999	XR-1000
Peak Power Output @2 ohms	800 W	1200 W	1500 W	2000 W
Bridged Power Output (RMS) @4 ohms	250Wx1CH	200Wx2CH	250Wx2CH	350Wx2CH
Rated Cont. Power Output(RMS) @2 ohms	125Wx2CH	95Wx4CH	110Wx4CH	150Wx4CH
Rated Cont. Power Output(RMS) @4 ohms	75Wx2CH	60Wx4CH	75Wx4CH	100Wx4CH
Rated Cont. Power Output(RMS) @1 ohms	-	-	-	-
THD (1 kHz)				
4 ohms	< 0.05%	< 0.05%	< 0.05%	< 0.05%
2 ohms	< 0.1%	< 0.1%	< 0.1%	< 0.1%
SIGNAL / NOISE RATIO	>100 dB	>100 dB	>100 dB	>100 dB
CHANNEL SEPARATION	>100 dB	>100 dB	>100 dB	>100 dB
FREQUENCY RESPONSE ±1dB	5Hz-50kHz	5Hz-50kHz	5Hz-50kHz	5Hz-50kHz
24dB/oct Variable High PASS CROSSOVER	80Hz-1.2kHz	80Hz-1.2kHz	80Hz-1.2kHz	80Hz-1.2kHz
24dB/oct Variable Low PASS CROSSOVER	50Hz-250Hz	50Hz-250Hz	50Hz-250Hz	50Hz-250Hz
Variable BASS boost	0 dB~12dB	0 dB~12dB	0 dB~12dB	0 dB~12dB
Adjustable Sensitivity Range Low/ High	0.2V ~ 6V	0.2V ~ 6V	0.2V ~ 6V	0.2V ~ 6V
Input Impedance	22K Ohms	22K Ohms	22K Ohms	22K Ohms
Damping Factor	200	200	200	200
Operation Voltage (negative Ground)	DC12V	DC12V	DC12V	DC12V
Speaker Impedance @ Stereo Driven	4 Ohms	4 Ohms	4 Ohms	4 Ohms
FUSE RATING	20A	40A	25A X 2	40A X 2
DIMENSIONS (mm) (D) x (248) x (59.5)	180	250	350	420

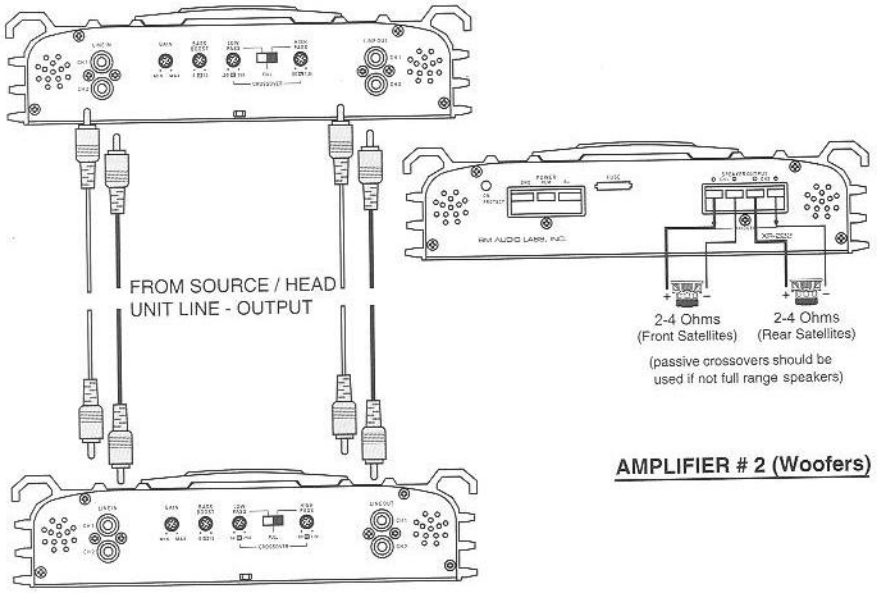
■ NOTE: Specifications & design subject to change without notice .

BI - AMP SYSTEM WITH 2 AMPLIFIERS

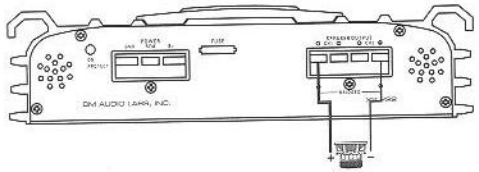
The high pass/low pass crossover on Amplifier #1 (CH - 1/2 for 4 - channel models) may be set to "OFF". This allows the LINE OUT to deliver a fall - range signal to Amplifier #2. Use the crossover on Amplifier #2 to set the desired cutoff level for the rear speakers or woofers.

TWO CHANNEL WIRING DIAGRAM (XR-222)

AMPLIFIER # 1 (Full Range)



AMPLIFIER # 2 (Woofers)



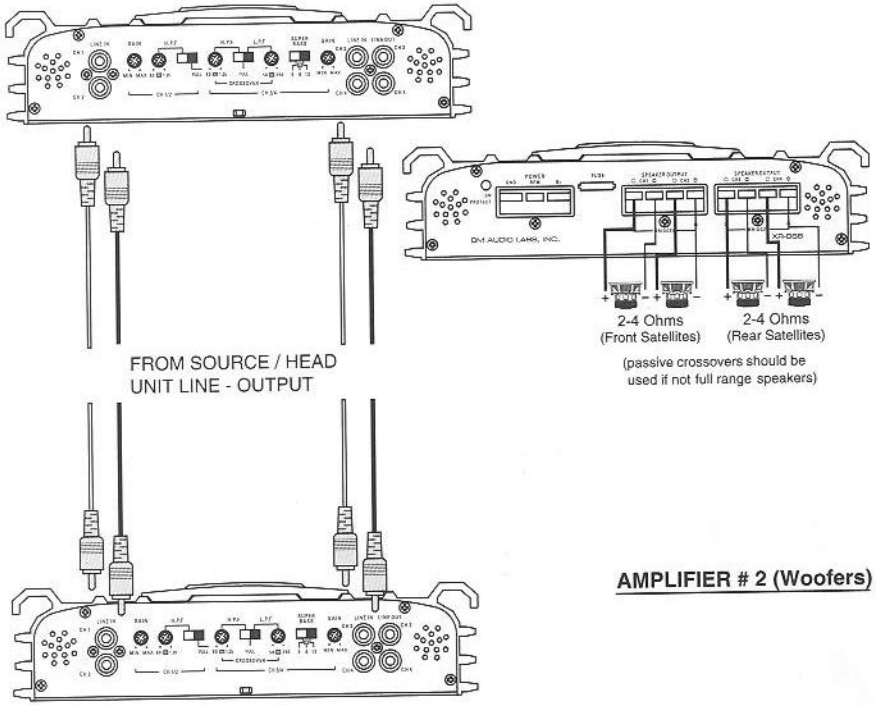
Note:
For optimum designed performance, work best with BM Audio Labs models on Amplifier #2 only. For mono or Dual - Mono Block, use the same model on Amplifier #2
only

Fig .13

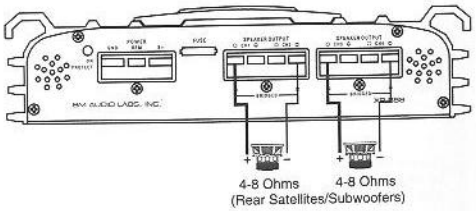
BI - AMP SYSTEM WITH 2 AMPLIFIERS

FOUR CHANNEL WIRING DIAGRAM (XR-888 / XR-999 / XR-1000)

AMPLIFIER # 1 (Full Range)



AMPLIFIER # 2 (Woofers)



Note:
For optimum designed performance, work best with BM Audio Labs models on Amplifier #2 only. For mono or Dual - Mono Block, use the same model on Amplifier #2
only

Fig .14