

LIMITED WARRANTY

Before shipping this product back for service call for a Return Authorization number. This number must be clearly marked on the outside of the box.

Terms & Conditions: ARC Audio warrants the unit to be free of any material defects or defects in workmanship for a period of one year and will repair or replace this unit or any part thereof only if it proves to be defective as a result of normal use. In order to receive warranty service on this product, the owner must promptly register by filling in and mailing the Warranty Registration Card.

Our obligation under this warranty is limited to repairing only the defective components of the unit thereof when it is returned, shipping prepaid, to ARC Audio.

This warranty is to be considered void if the unit has been tampered with, connected contrary to the installation instructions in the owner's manual, altered, damaged by improper input voltages or polarity, defaced, or treated in a negligent manner.

All returns must be sent freight prepaid, along with \$10.00 to cover return shipping and handling.

Out of warranty service is available after the warranty expires. Cost of repair is based on current repair labor rates, plus the cost of shipping and handling. When returning for repair, pack the unit securely and send prepaid and insured to the address below. ARC Audio is not responsible for damage incurred during shipping.

For warranty and non-warranty repairs, send to:

ARC Audio
4719 Green Leaf Cr. #4
Modesto CA, 95356
Tel. 209.543.8706



KAR SERIES



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Congratulations!

Thank you for purchasing an ARC Audio Hi-Performance Amplifier.

ARC Audio amplifiers are conservatively rated and produce more power per channel than others in there class. Manufactured to the highest standards of quality and reliability to deliver years of listening enjoyment.

ARC Audio...SOLID CONSTRUCTION for SOUND Car Audio Systems.

Features

- Built in variable 12 db per octave Crossover
- Crossover Range 55Hz-5.5kHz
- Stereo / Bridged / Mono Input mode selector switch
- Bass Boost 0-18 dB @ 45Hz
- Short circuit, thermal, reverse voltage, over voltage and DC offset protection.
- Very high damping factors.
- Optically Isolated Mosfet Power Supply.
- Symmetrical, discrete power amplifier circuitry.
- Engineered to drive highly reactive loads.
- Built in variable 12 db per octave crossover.
- 12db / 24db per octave sub woofer crossover.
- Remote Bass Boost 0-18 dB @ 45Hz.

Installation Instructions

ARC Audio KAR Series Amplifiers are designed for easy installation in your vehicle. To ensure proper operation of your new purchase, please follow the suggestions we have listed below:

Locating the Amplifier

The amplifiers must be securely mounted to a solid surface. Please select a dry location in the trunk or passenger compartment only. Do not mount the amplifier to any area that may have excess vibration (like the subwoofer box).

Position the amplifier in an area that receives sufficient airflow for proper heat dissipation.

Running the Cables

Carefully run the power and signal cables through the passenger compartment of the vehicle. Always use a rubber grommet to prevent the power wire from shorting and to reduce the risk of fire.

An 8 gauge or larger wire (4 gauge on the KAR 600.4, KAR 900.1 and KAR 1000.2) should be used for power and ground connections. We recommend a fuse be installed on the power wire within 18 inches of the battery for safety.

The Ground!!!

Warning: Read this Carefully

The ground wire should be connected directly to the chassis of your vehicle. Find a clear location close to the amplifier and remove all the paint and sound deadener. Use a #10 or larger screw to secure it. Never use seatbelt bolts for grounding.

Remember, the ground must carry the same high current as the positive power wire.

Installation Instructions

To reduce the risk of noise, run all signal cables away from any vehicle or power supply wiring.

Supplying Enough Power

The Laws of Nature

Your amplifier Does NOT make power. It converts power, or current, from your cars electrical system and turns it into a high power musical energy.

If the amp can't get all the power it needs it will not produce its full output.

Your ARC Audio amplifier will produce Full output for longer then other amps on the market today.

If the Voltage or Current drops too low even our amplifiers will drop below their rated output.

Make sure your vehicle charging system is in good working order. Any Hi-Performance audio amplifier will increase the demand on your alternator and battery. If you are unsure have your charging system tested by a professional technician.

Setting the Gains

So you're worried that your 8 Volt output head unit will be too much for the ARC Audio's 2.5 Volt input stage.

Don't Be

ARC Audio Amplifiers input stage is rated to 2.5 volts RMS @ 1KHz without clipping.

The KAR-200.2, KAR-400.2 and KAR-400.4 2 and 4-channel car audio amplifiers can be used in a variety of system applications. Here are some examples to help plan your own installation.

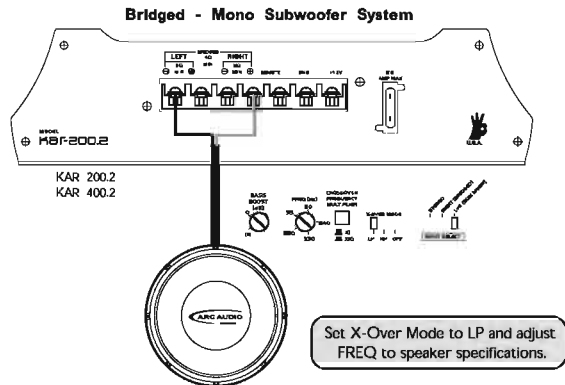
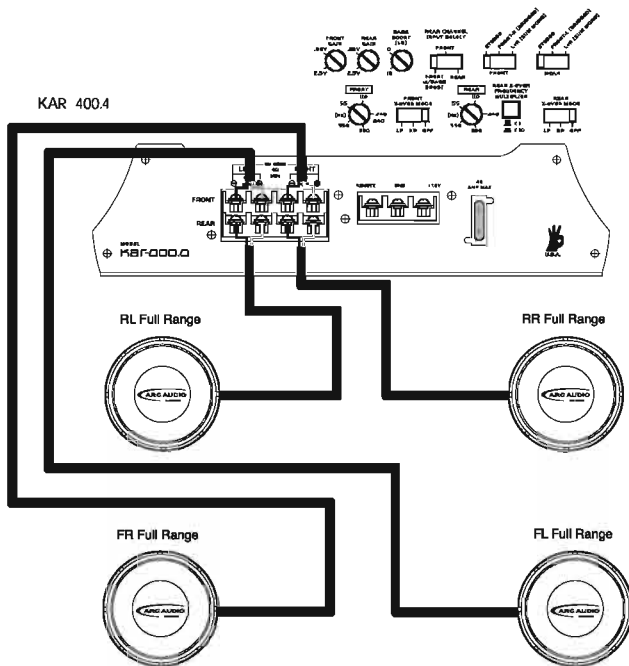
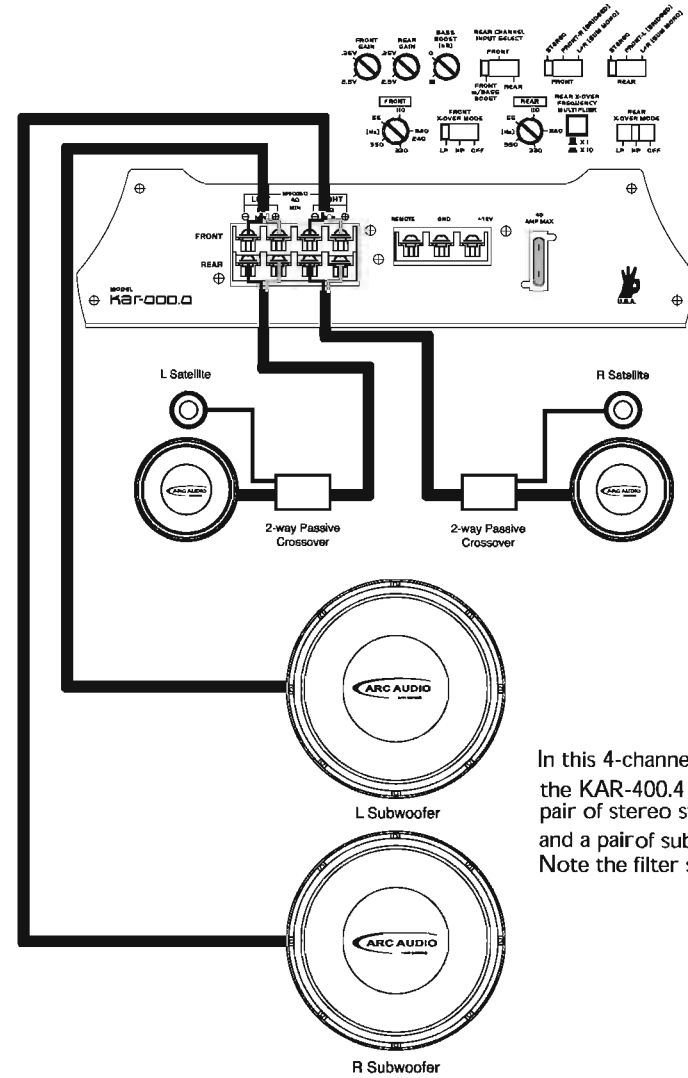


Figure 5 - In this application the amplifier is bridged for mono operation to drive a subwoofer.



In this application, the KAR -400.4 was used as a 4-channel amplifier to drive four full-range speakers in stereo.

4-Channel Stereo System 2-Channel High-Pass, 2-Channels Low-Pass



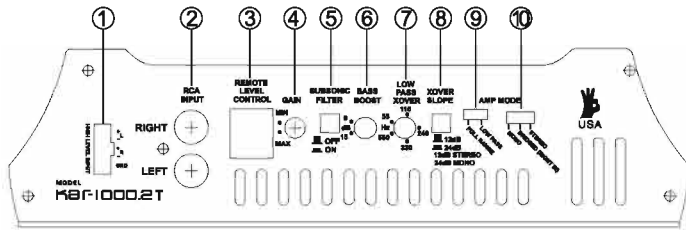
In this 4-channel system, the KAR-400.4 drives a pair of stereo satellites and a pair of subwoofers. Note the filter settings.

Specifications

	KAR 200.2	KAR 400.2	KAR 400.4
Stereo @ 4 ohms	2 X50 watts	2 X100watts	4 X 50 watts
Stereo @ 2 ohms	2 X100watts	2 X 200 watts	4 X 100 watts
Bridged @ 4 ohms	1 X200 watts	1 X 400 watts	2 X 200 watts
Bridged @ 2 ohms	Not Recommended	Not Recommended	Not Recommended
THD %	<.05%	<.05%	<.05%
Frequency Response	20 Hz – 20KHz	20 Hz – 20KHz	20 Hz – 20KHz
Signal to noise ratio A wtg	100db	98db	95 db
Separation	>75db	>72db	>65db
Transient Dist.	<.01	<.01	.<.01
Input Sensitivity	250 mv – 2.5v	250 mv – 2.5v	250 mv – 2.5v
Bass Boost	+18 db @ 45Hz	+18 db @ 45Hz	+18 db @ 45Hz
Crossover (Butterworth)	55Hz - 5.5KHz 12db stereo	55Hz-5.5KHz 12db stereo	55Hz-5.5KHz 12db stereo
Max Current Draw	28 amps	43 amps	46 amps
Damping Factor	>300 @ 1Khz	>300 @ 1Khz	>300 @ 1Khz
Dimensions	8.75x8x3.35"	12x8x3.35"	13x8x3.35"

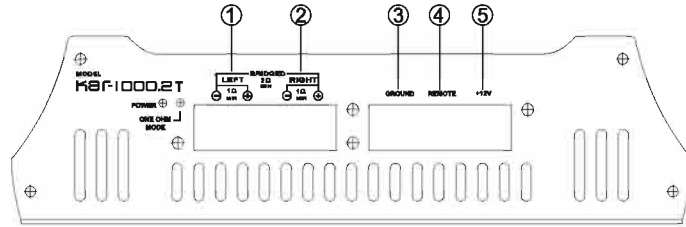
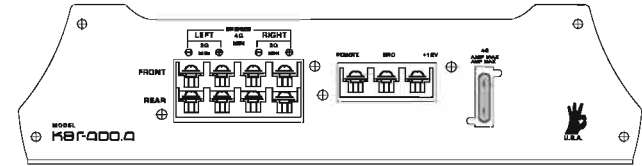
Specifications

	KAR 600.4	KAR 900.1	KAR 1000.2
Stereo @ 4 ohms	4 X80watts	1 X 450 Mono Block	2 X240 watts
Stereo @ 2 ohms	4 X 160 watts	1 x 750	2 X450 watts
Bridged @ 4 ohms	2 X 320 watts	1x 900	1 X900 watts
Bridged @ 2 ohm	Not Recommended	N/A	1 X 1000 watts
Sub Channel	N/A	N/A	N/A
THD %	<.03%	<.2%	<.07%
Frequency Response	20 Hz – 20KHz	20 Hz – 250Hz	20 Hz – 20KHz
Signal to noise ratio A wtg.	93db	78db	98db
Separation	>65db	N/A	>65db
Transient Dist.	<.02	<.2	<.055
Input Sensitivity	250 mv – 5v	250 mv – 5v	250 mv – 2.8v
Bass Boost	+18 db @ 45Hz	N/A	+18 db @ 45Hz
Crossover Butterworth	40Hz-250Hz 12db	50Hz-250Hz	55Hz-550Hz 12db/24db
Max Current Draw	82 amps	90 amps	120 amps
Damping Factor	>300 @ 1Khz	N/A	>300 @ 1Khz
Dimensions	17.5x8x3.35"	3x8x3.35"	15.25x8x3.35"



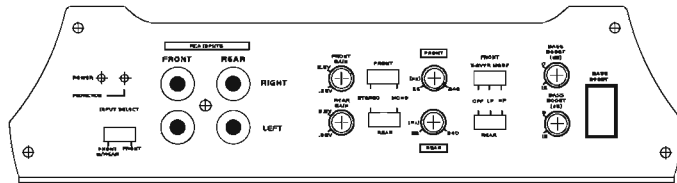
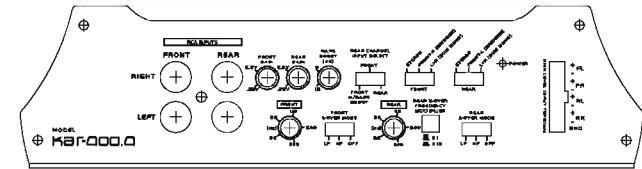
1. Speaker Level Inputs
2. RCA Input Jacks
3. Remote Sub level Connector
4. Gain Control
5. Subsonic Filter Selection
6. Bass Boost Control
7. Freq (Hz) Selection Control
8. X-Over Slope Select Switch
9. Output Select Switch
10. Input Select Switch

1. Left Front Speaker Output
2. Right Front Speaker Output
3. Remote Turn-on Input
4. Ground Input
5. Battery + 12v Input
6. 40 Amp Fuse
7. Left Rear Speaker Output
8. Right Rear Speaker Output



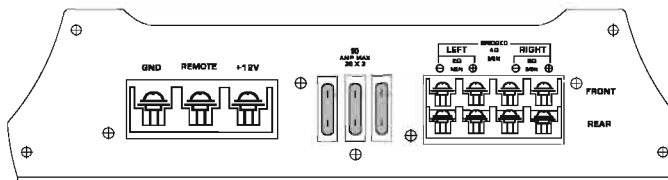
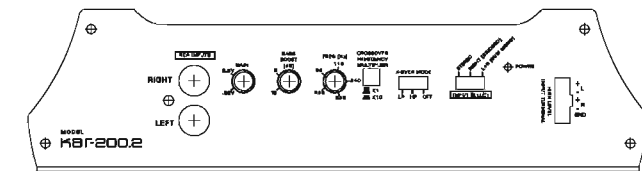
1. Left Speaker Output
2. Right Speaker Output
3. Ground Input
4. Remote Turn-on Input
5. Battery + 12v Input

1. Front RCA Input Jacks
2. Rear RCA Input Jacks
3. Front Gain Control
4. Rear Gain Control
5. Bass Boost Control
6. Rear Channel Input Selector
7. Front Input Mode Switch
8. Rear Input Mode Switch
9. Speaker Level Inputs
10. Front Frequency Control
11. Front X-Over Mode Switch
12. Rear Frequency Control
13. Multiplier Switch
14. Rear X-Over Mode Switch



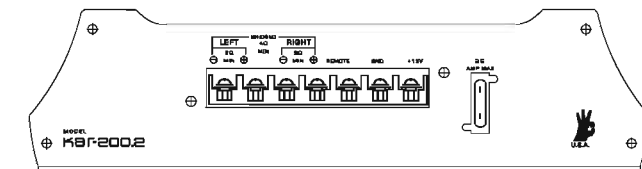
1. Rear Channel Input Selector
2. Front RCA Input Jacks
3. Rear RCA Input Jacks
4. Front Gain Control
5. Rear Gain Control
6. Front Input Mode Switch
7. Rear Input Mode Switch
8. Front Frequency Control
9. Front X-Over Mode Switch
10. Rear Frequency Control
11. Rear X-Over Mode Switch
12. Bass Boost Control
13. Remote Sub level Connector

1. RCA Input Jacks
2. Gain Control
3. Bass Boost Control
4. Freq (Hz) Selection Control
5. Crossover Frequency Multiplier
6. X-Over Mode Switch
7. Input Select Switch
8. Speaker Level Inputs

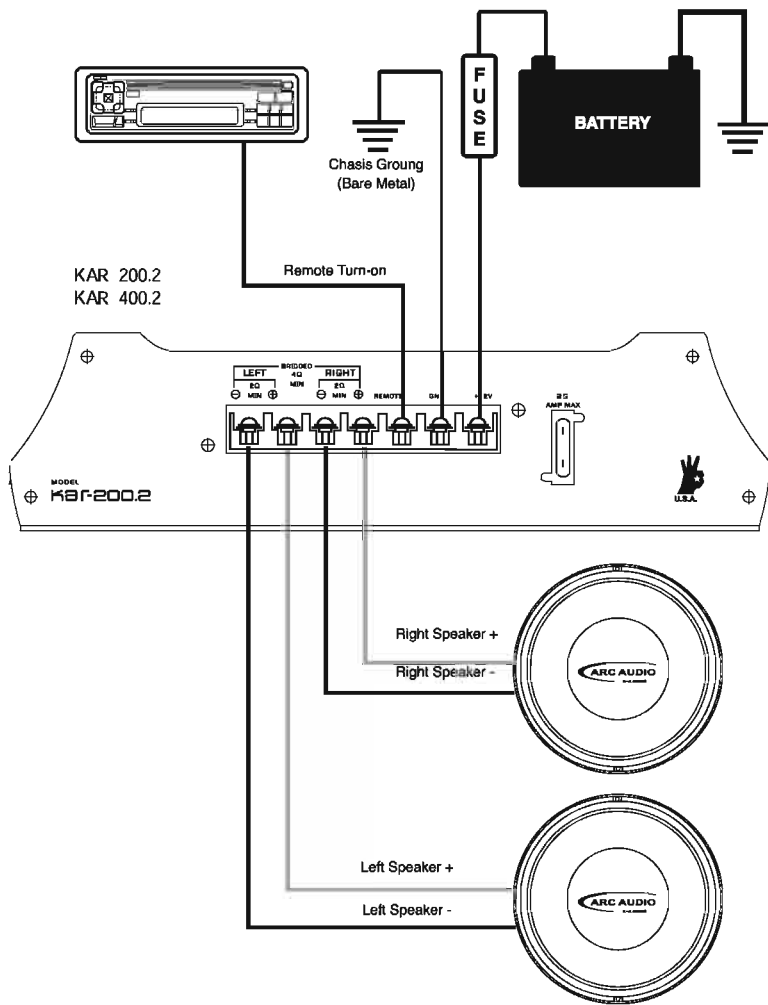


1. Ground Input
2. Remote Turn-on Input
3. Battery + 12v Input
4. 30 Amp Fuse x 3
5. Left Front Speaker Output
6. Right Front Speaker Output
7. Left Rear Speaker Output
8. Right Rear Speaker Output

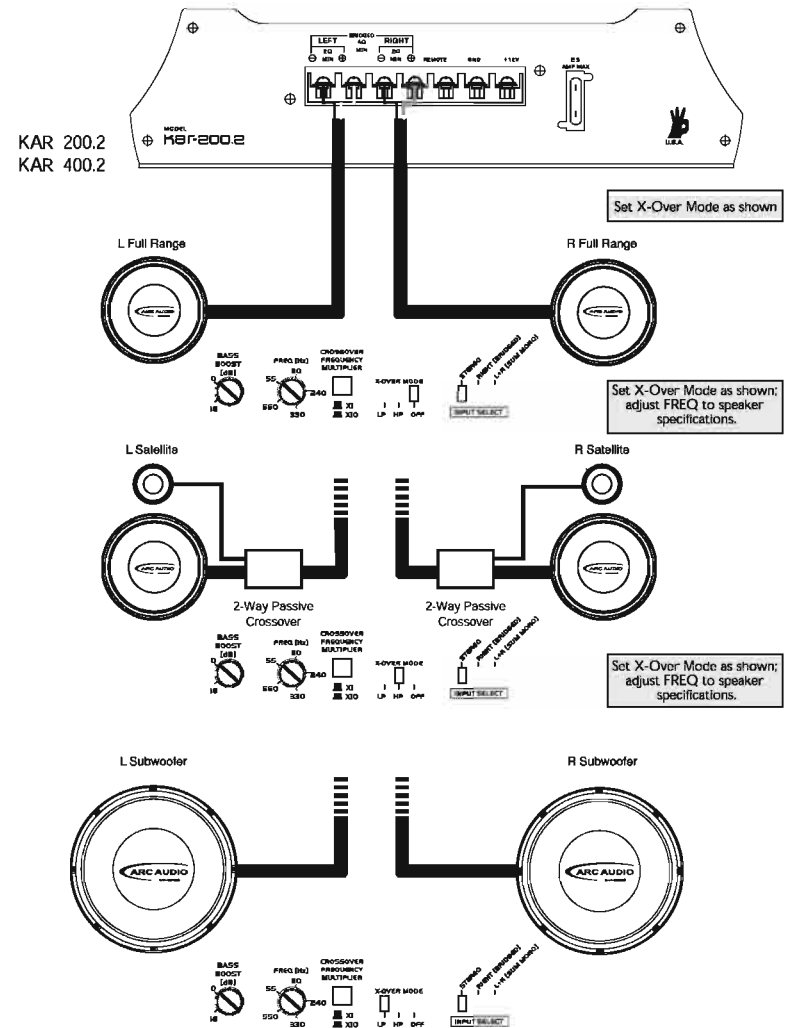
1. Left Speaker Output
2. Right Speaker Output
3. Remote Turn-on Input
4. Ground Input
5. Battery + 12v Input
6. 25 Amp Fuse / 40 Amp Fuse



Electrical connections for the KAR 200.2 or the KAR 400.2



2-Channel Full-Range, Satellite, or Subwoofer Stereo System
(Set INPUT SELECT Switch to STEREO)



In this application, the amplifier is used in stereo and drives two full-range (or satellite or subwoofer) speakers. NOTE: A passive crossover must be used with satellite speakers.

Music is very dynamic. Nothing like a 1KHz test tone. It would be rare to see a peak as high as a test tone. Furthermore, your head unit produces its output at full volume but when you tune your system you always set the head unit to 70% of maximum volume.

Because of part tolerance, most amplifier's left and right gain may not be the same. One channel may have higher output than the other. By using this 2.5 volt input stage we eliminate this problem.

Crossovers

Arc Audio KAR Series amplifiers have very advanced crossovers. Here is an overview of their features.

KAR 400.4

All 4 Arc Audio channel amplifiers share these features.

By moving the Source Select switch to 2 CH. Or 2CH. W/BASS you can direct all the signal to come from the front channel inputs. In 2 CH. W/BASS all 4 channels will receive bass boost.

By selecting Bridged on both the Input Mode switches your right front channel input will drive the front outputs. The left front channel will drive the rear outputs. All the channels will use the front crossover.

KAR 200.2, KAR 400.2 & KAR 1000.2

The KAR 200.2 and KAR 400.2 share the same crossover features. They can be configured for Full range, High Pass or Low Pass.

1. Using the X-Over Control switch, select the desired mode, LP or Low Pass, HP for High Pass and Off for Full Range.

2. Using the Freq (Hz) Control, select the desired frequency. This will depend on the type of speakers being driven and the overall system configuration.

3. If the desired frequency exceeds the range of the Freq Control, press the Crossover Frequency Multiplier button to increase the value by a multiplier of 10.

Note: $55\text{Hz} \times 10 = 550\text{Hz}$ or $550\text{Hz} \times 10 = 5.5\text{KHz}$

The KAR 1000.2 has the option of using a 24dB per octave slope. Just push the button to activate this mode.

KAR 600.4

The KAR 600.4 has adjustable crossovers from 40Hz to 250Hz with independent bass boost controls for front and rear.

1. Using the X-Over Control switch, select the desired mode, LP or Low Pass, HP for High Pass and Off for Full Range.

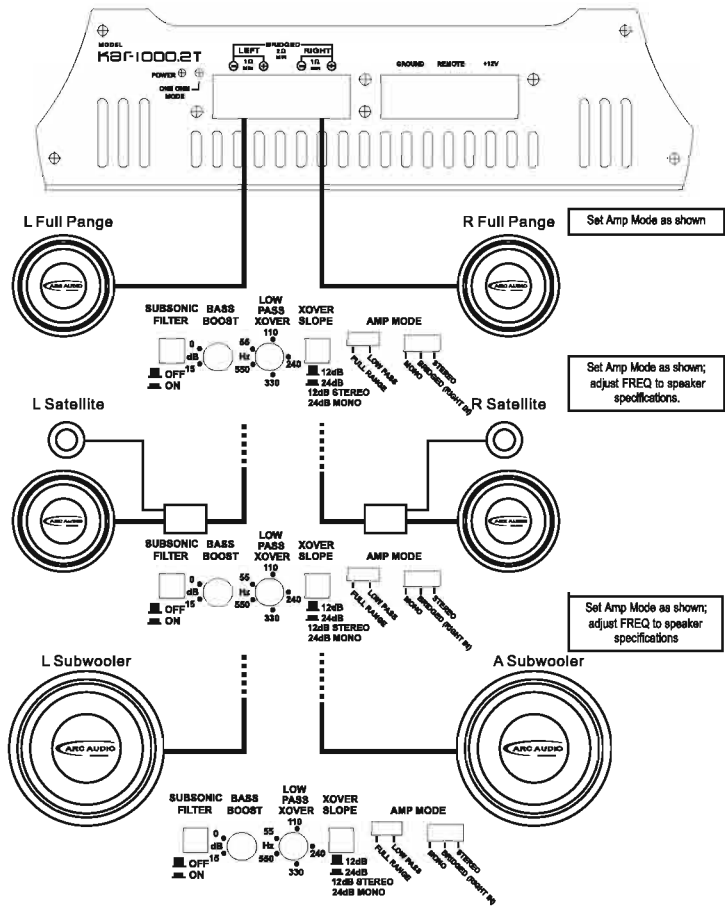
2. Using the Freq (Hz) Control, select the desired frequency. This will depend on the type of speakers being driven and the overall system configuration.

If, after reading our Instructions, you have additional questions, please contact our technical department for assistance.

ARC Audio Technical Assistance
Phone: (209) 543-8706
Fax: (209) 543-9269

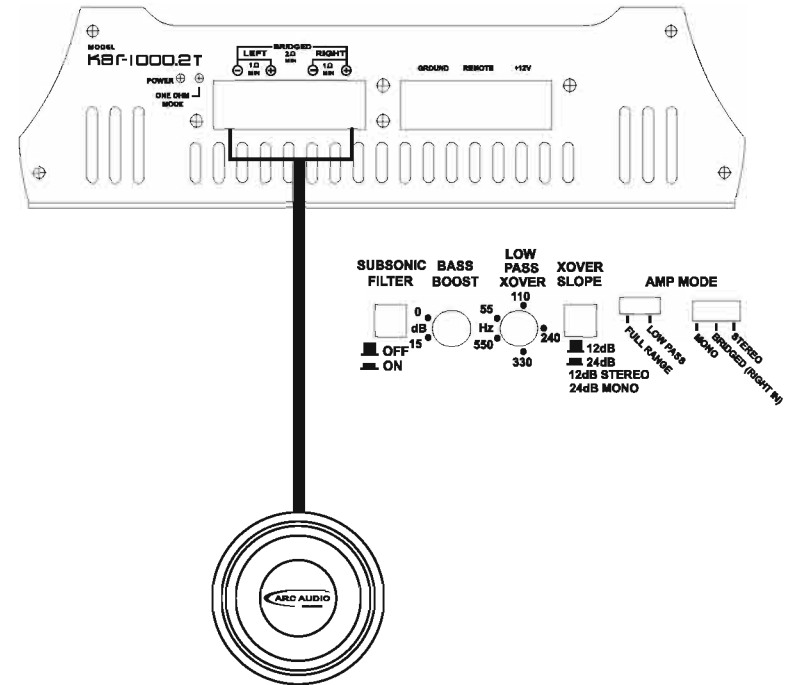
Or visit our Website at www.Arcaudio.com

2-Channel Full Range, Satellite, or Subwoofer Stereo System



In this application, the amplifier is used in stereo and drives two full-range (or satellite or subwoofer) speakers. NOTE: A passive crossover must be used with satellite speakers. Minimum load in the stereo mode is 1ohm.

Bridged Subwoofer System. MINIMUM 2 Ohm Load

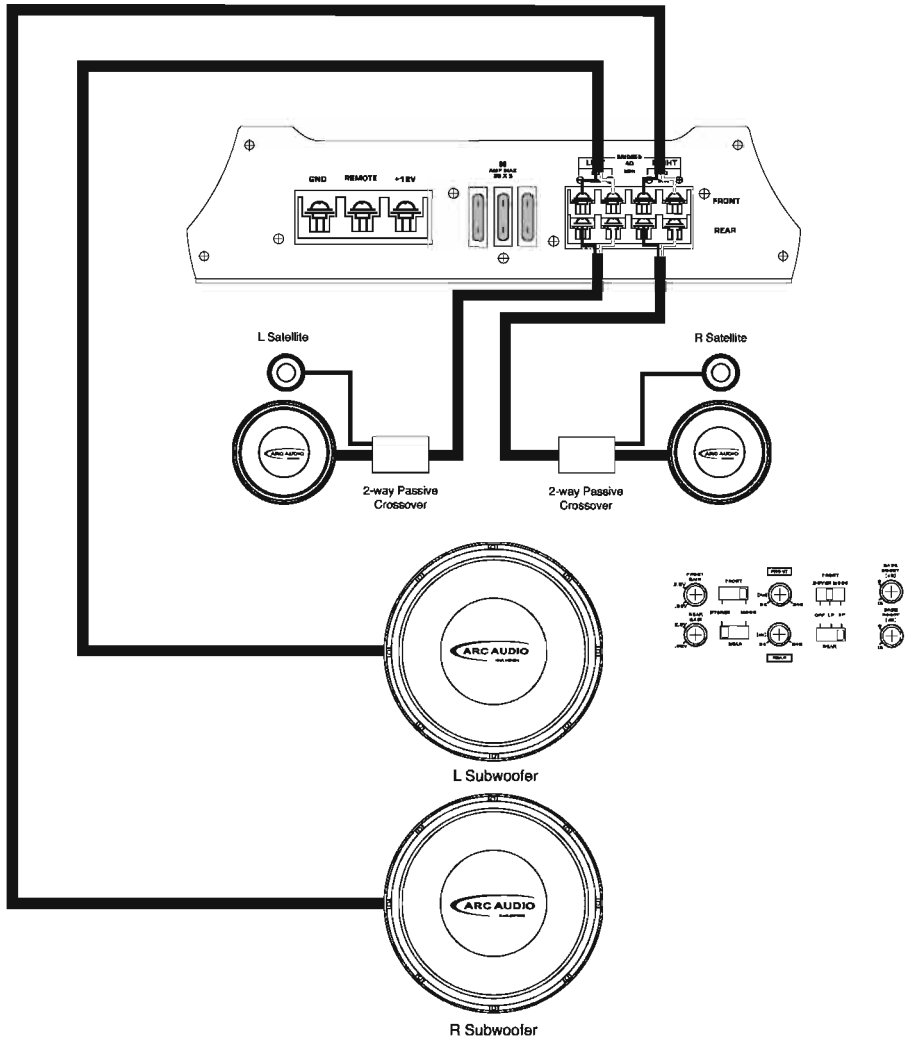


Set X-Over Mode to LP and adjust FREQ to speaker specifications.

In this application the amplifier is bridged for mono operation to drive a subwoofer.

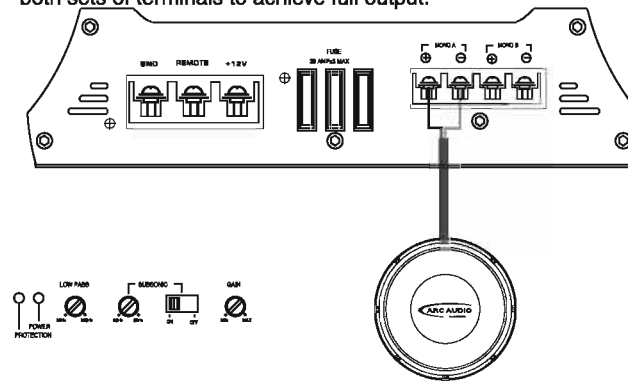
Minimum load in the bridged mode is 2 ohms.

KAR 600.4 Channel Stereo System.
 2-Channels High-Pass, 2 Channels Low-Pass



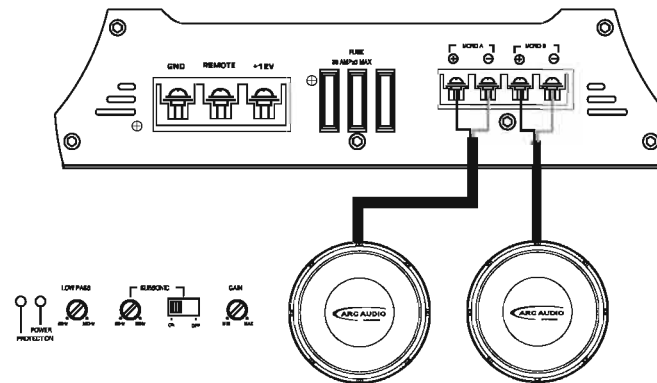
In this 4-channel system, the KAR 600.4 Drives a pair of stereo satellites and a pair of subwoofers.
 Note: 2 Ohms minimum per channel.

KAR 900.1 Single woofer system.
 Note: This is a 1 Channel MONO Block amplifier. You can use either MONO A or MONO B output DO NOT need to connect both sets of terminals to achieve full output.



TOTAL MINIMUM LOAD 1 OHM

KAR 900.1 Multiple woofer system.
 This amp is able to drive any number of woofers but the minimum load must not drop below 1 ohm.



TOTAL MINIMUM LOAD 1 OHM