

# XVR2/XVR4 Instruction Sheet

Congratulations on purchasing the ultimate passive crossover network. In doing so you've demonstrated a desire to own the very finest in car audio equipment.

**IMPORTANT!** Read this entire installation manual before installing your XVR. Remember the XVR passive crossover network is designed to be installed with any amplifier capable of operating stereo and bridged mono simultaneously. Most amplifiers are capable of running in this configuration, but some **cannot!** The XVR uses the L+ and R- speaker terminals as the mono channel with proper phasing. Please make sure your amplifier bridges in this manner. Check with your local retailer or the amplifier manufacturer if you are in doubt.

The **XVR2** is designed for use with a 2 ohm mono subwoofer load.

The **XVR4** is designed for use with a 4 ohm mono subwoofer load.

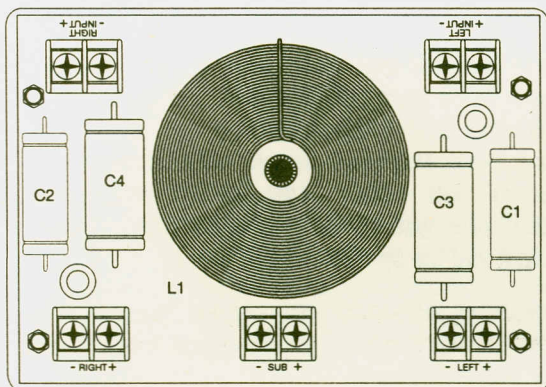
Do not confuse these two XVR systems! Both versions of the XVR are rated for 250W continuous and 500W peak in **bridged mono** operation. Using amplifiers which are capable of higher power levels than those stated above may cause premature failure of the XVR and will void its warranty.

## FEATURES

- 2 way stereo passive crossover network
- 24kt Gold plated glass epoxy PC board
- 24kt Gold plated terminals
- Computer optimized for the best possible impedance matching & frequency response
- Low frequency protection for front speakers

## SPECIFICATIONS

- 250W continuous/500W peak power handling capability
- Stereo 6dB per octave High Pass at 160Hz
- Mono 12dB per octave Low Pass at 80 Hz
- Asymmetrical subwoofer crossover to overcome standing waves



## CAPACITORS

- C1 250 $\mu$ F/100WV
- C2 250 $\mu$ F/100WV
- C3 (XVR2) 370 $\mu$ F/100WV
- C3 (XVR4) 100 $\mu$ F/100WV
- C4 (XVR2) 370 $\mu$ F/100WV
- C4 (XVR4) 250 $\mu$ F/100WV

## INDUCTORS

- L1 (XVR2) 5.5mH
- L1 (XVR4) 11.0mH

## INSTALLATION INSTRUCTIONS

1. Find an appropriate location to install the XVR. The location should allow for easy access to all connections and mounting hardware.
2. Remove the plexi cover, then use the XVR as a template to mark mounting holes with a pencil.
3. Once the mounting surface is marked, remove the XVR and drill 1/8" inch holes for the mounting screws.

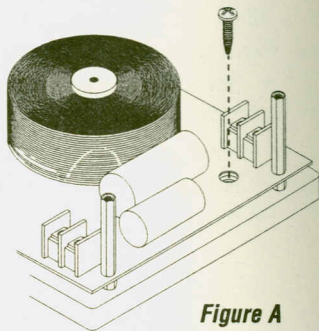


Figure A

4. Mount the XVR with two phillips panhead screws or use our MBS 24kt Gold plated wood screws. (See Figure A)
5. Separate and mark all the speaker cables so they are ready for connection to the **correct** speaker terminals on the XVR. The left channel is connected to the LEFT output, the right channel to the RIGHT output and so on. Check and verify that the nominal impedance of your speakers match the XVR output.
6. Next connect the speaker cables directly into the XVR. We recommend you strip the insulation and crimp our PRO404 spade terminals to our 12 gauge (SS122) or 16 gauge (SS162) speaker cable. The use of spade terminals makes for a cleaner installation and better connections.
7. It's now time for the sound check! Please check and make sure that all of the speakers are connected and functioning properly. If the system sounds unusual, you probably have speakers out of phase. Using an RTA (Real Time Analyzer) will allow you to double check all of your speaker phasing.
8. If the front mids and highs are too loud compared to your woofers, you may want to attenuate these outputs. There are two ways of achieving this:

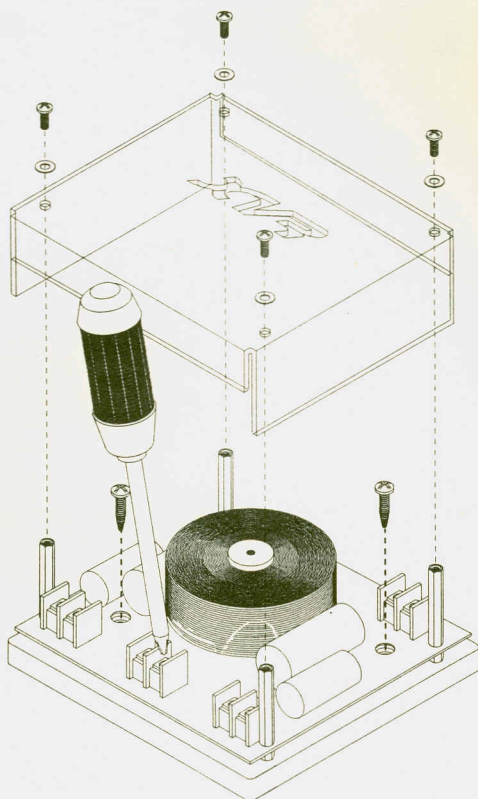
**Use power resistors** to lower the output level. Make sure you use the proper 25 watt ceramic resistors. Refer to the chart in Figure C which lists the correct resistor arrays for -3dB, -6dB, -9dB, and -12dB attenuation.

**Use L-Pads** to attenuate output levels. Make sure that the L-Pad is rated for at least 100 watt RMS. Use our 100 watt, 4 ohm model #LPAD1. Please make sure to use the correct L-Pads in your system. The L-Pads must be connected between the XVR speaker output and the speaker itself.

**NOTE:** This may affect the frequency response of the speaker because of the interaction of the L-Pad on the speaker's own crossover circuit. Consult your loudspeaker manufacturer for optimum results.

9. Once you have finished the installation, attach the cover using the captive nylon washers on both sides of the plexi-glass. (See Figure B) Remember, do not over tighten the 24kt gold phillips head screws. **Broken plexi-glass covers or bases will not be covered under warranty.**

10. Because of your particular system design you may desire to change the crossover frequencies for either the high pass or low pass of the XVR crossover. The information below is for your information only. **Any field modifications to the XVR voids the warranty.** If you decide to change the crossover values, be careful not to damage the gold plated PC board when soldering.



**Figure B**

**Front High Pass  
(Left and Right at 6dB per octave)**

	<u>4 Ohm Load</u>	<u>2 Ohm Load</u>
C1,C2 • Capacitor	250 $\mu$ F	500 $\mu$ F

**Low Pass (Subwoofer at 12dB per octave)**

	<u>4 Ohm Load</u>	<u>2 Ohm Load</u>
C3 • Capacitor	100 $\mu$ F	370 $\mu$ F
C4 • Capacitor	250 $\mu$ F	370 $\mu$ F
L1 • Inductor	11mH	5.5mH

The XVR crossover is designed to be a turnkey device. This installation guide offers basic installation procedures as well as tips for achieving greater system performance. The final installation depends on the individual components used throughout your audio system. If you have any further questions, please feel free to call us for technical assistance at (503) 288-2008.



# System Diagram

	8 ohm		4 ohm		2 ohm	
	R <sub>1</sub>	R <sub>2</sub>	R <sub>1</sub>	R <sub>2</sub>	R <sub>1</sub>	R <sub>2</sub>
-3dB	2.2	20	1.2	10	0.62	4.7
-6dB	3.9	8.2	2.0	3.9	1.0	2.0
-9dB	5.1	4.3	2.7	2.2	1.3	1.1
-12dB	6.2	2.7	3.0	1.3	1.5	0.68

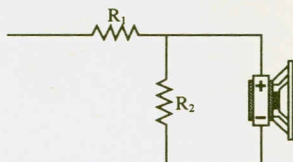
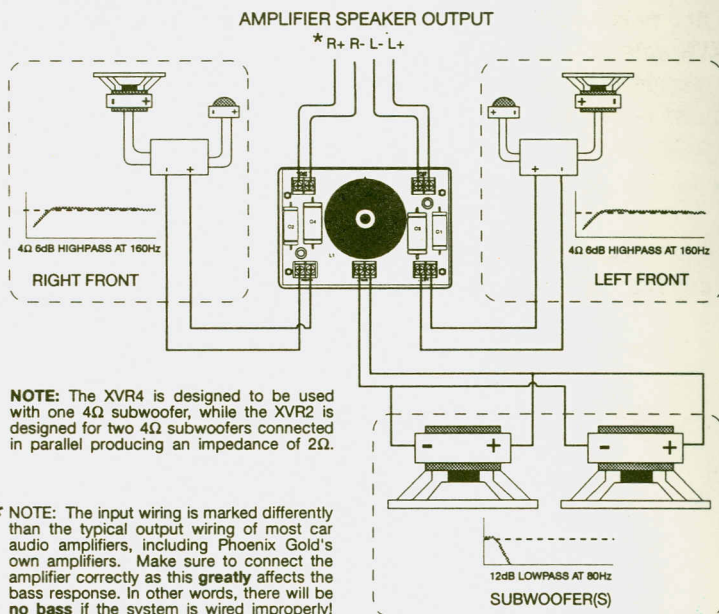


Figure C: Schematic and Attenuation Chart



*Phoenix Gold*