

APOGEE ACOUSTICS INC.

ORIGINAL ACTIVE CROSSOVER

**OWNER'S MANUAL
AND
SETUP INSTRUCTIONS**

APOGEE ACOUSTICS INC.

ACTIVE CROSSOVER

INTRODUCTION

The Apogee Acoustics, Inc active crossovers is designed to provide electrical separation of woofer and midrange/ tweeter signals for bi-amped or tri-amped systems. This is accomplished at the signal level between the pre-amplifier and power amplifiers in a manner to provide the most coherent and musically accurate result. The active crossover approach provides a high impedance to the pre-amp drive and low source impedance to drive the power amplifiers. The audio system with the active crossover consequently provides excellent resolution and overall performance plus the convenience readily working with a brand range of amplifiers

ADJUSTMENTS AND USE

The active crossover is set at the for factory for proper operation with the following Apogee speakers, large Full Range, Scintilla and the Duetta Series II. The active crossover may be operated as a two-way or a tree-way crossover when used with the Full Range Apogee's. The active crossover or may be operated as a two-way crossover for use with the Scintilla and Duetta Series II.

Be certain that you are utilising the active crossover that is designed for use with the correct Apogee speaker model. Each speaker model requires a different active crossover network. You may select either and active crossover that is compatible with both the Full Range Apogee and the Scintilla or an active crossover that is compatible with the Duetta Series II.

The control pots on the front of the crossover, when used in the dedicated bi-amped configuration, provide for attenuation of the woofer and midrange/tweeter channels. The attenuation has a resolution of approximately 1/4 dB with an infinite range. The active control pots are the left and right channel woofer and the tweeter pots. The midrange pot is inoperative in a bi-amped configuration.

The frequency response slope at the crossover frequency is 6dB per octave. The slope well beyond the crossover frequency is increased to provide greater separation between the woofer and midrange transducers.

IMPEDANCE

The crossover input, impedance is river 100K ohms and the output impedance loss than 1K ohms. These impedance levels will function properly with most modern pre and power amps.

FULL RANGE APOGEE/SCINTILLA ACTIVE CROSSOVER

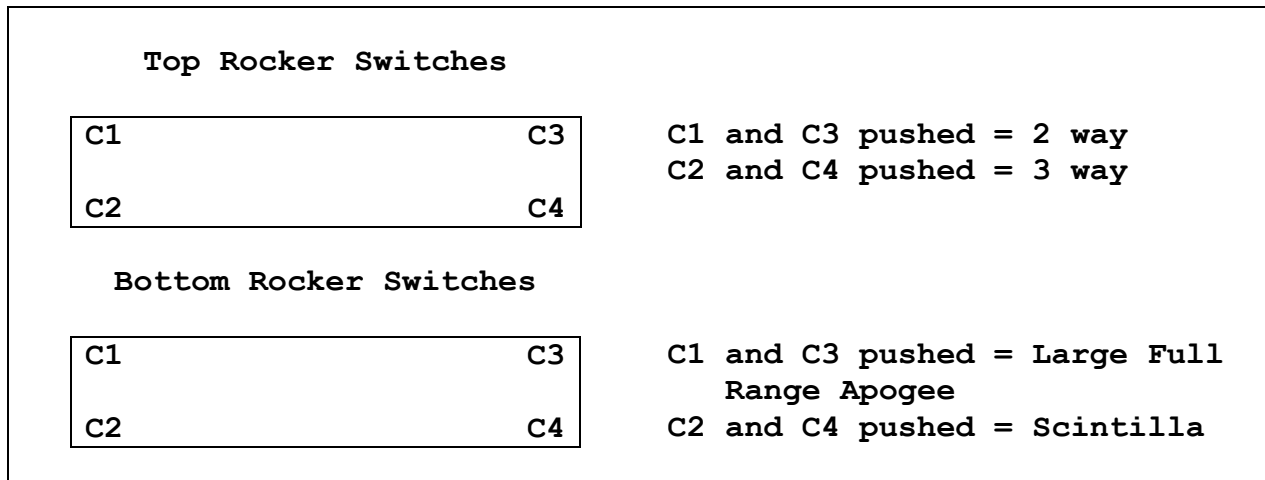
Setting the crossover networks and two-way or three-way operation will be performed at the factory if the system configuration is specified in advance of purchasing the crossover.

If it is desired to perform the changes in the field then this may simply be accomplished by setting the rocker switches.

The active crossover rocker switches are located inside the active crossover. To set the rocker switches the following procedure should be followed.

- a. Unplug the active crossover power plug.
- b. Unscrew the top plate.
- c. For the two-way operation push the top rocker switches C1 and C3.
(See Figure.1)
For three-way operation push the top rocker switches C2 and C4.
- d. Large Full Range Apogee frequency shaping network insertion requires pushing the bottom rocker panel switches C1 and C3.
- e. Scintilla two-way operation and frequency shaping network insertion requires:
 1. Top Rocker Switch - push C1 and C3.
 2. Bottom Rocker Switch - push C2 and C4.

FIGURE 1



DUETTA SERIES II

The Duetta Series II has a dedicated active crossover. The crossover is set for operation as a two-way crossover with the correct frequency shaping networks for the Duetta Series II speaker.

SYSTEM CONFIGURATION FOR OPERATION OF ACTIVE CROSSOVER WITH LARGE FULL RANGE APOGEE (See Figure 2)

Bi-Amp Operation

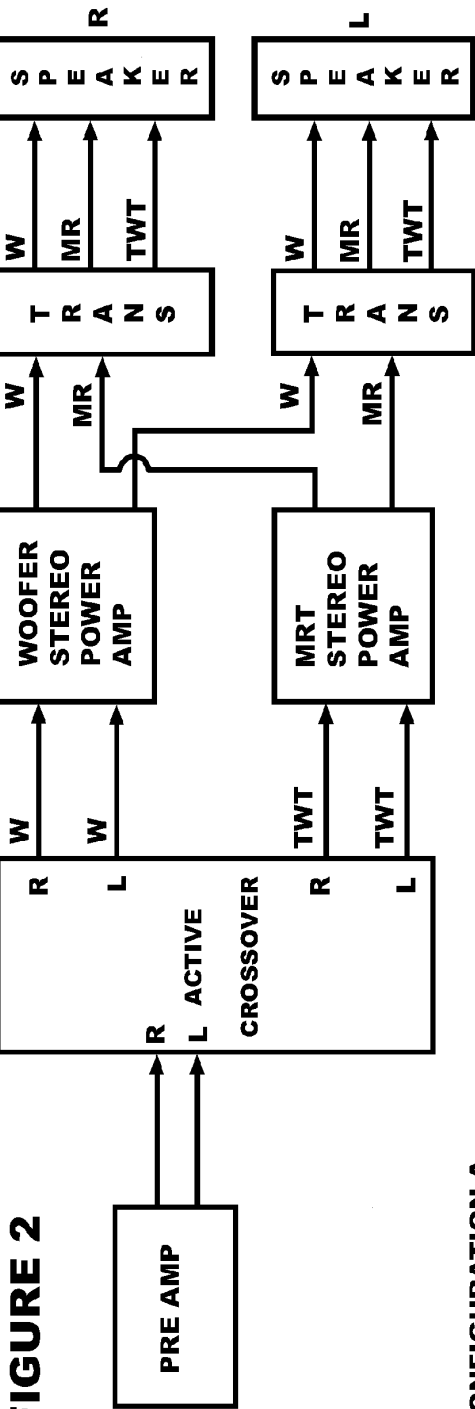
Configuration A or Configuration B may be utilised for the bi-amp operation. The selection of the most satisfactory configuration is based on a number of system considerations such as the amplifier, interconnects, cable characteristics and overall acoustic properties resulting from the selected configuration.

- a. Connect crossover between pre-amp and power amps.
- b. Connect pre-amp output to crossover input. Connect active crossover woofer output to the woofer amp input and active crossover TWT output to the MRT amp input.

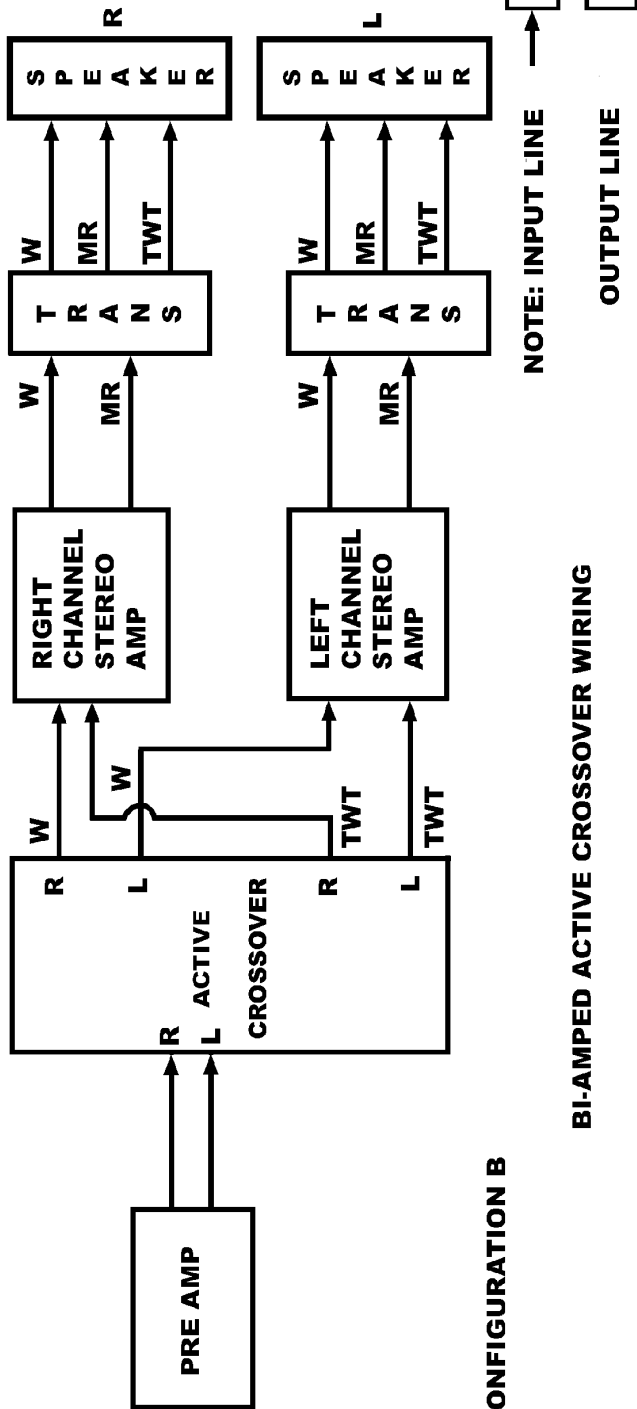
CAUTION!! Prior to making power amplifier connections to the speaker insure that all front end connections have been properly made in full accordance with the manufacturers' instructions. Pre-amp gain should be set low and then adjusted to listening level.

Do not make front end system changes while the power is on and speaker connected. All such changes should be made with power off and the speaker disconnected.

- c. Connect the left channel woofer amplifier to the terminals labelled "Woofer" of the left speaker transformer box. (See Figure 2.1)
- d. Connect the right channel woofer amplifier to the terminals labelled "Woofer" of the right speaker transformer box.
- e. Connect the left channel of the midrange/tweeter amplifier to the terminals labelled "Midrange" of the left transformer box.
DO NOT CONNECT anything to the tweeter terminals. The midrange and tweeter crossovers are contoured within the transformer box.
- f. Connect the right channel of the midrange/tweeter amplifier to the terminals labelled "Midrange" of the right the transformer box.



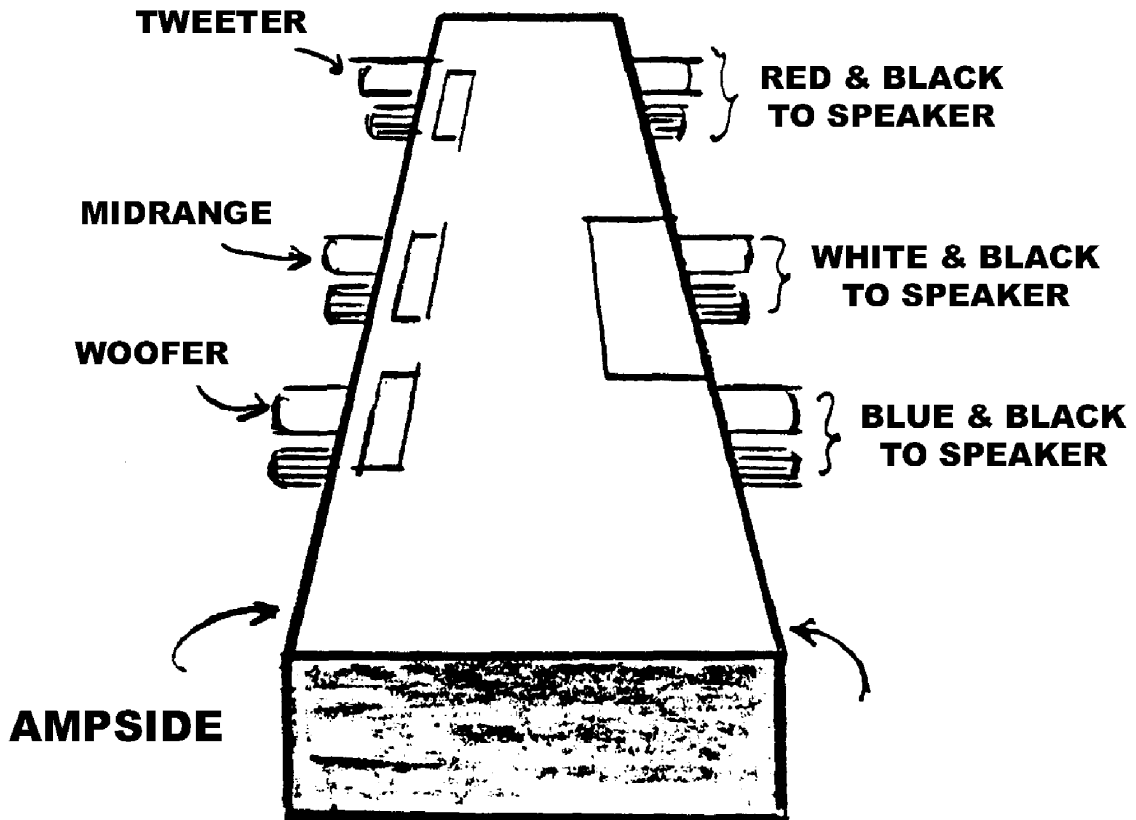
CONFIGURATION A



CONFIGURATION B

BI-AMPED ACTIVE CROSSOVER WIRING

FIG 2.1



LEFT INTERFACE BOX

Note: RIGHT INTERFACE BOX IS THE EXACT REVERSE OF THE ABOVE

SPEAKER CONNECTIONS FOR BI-AMP

1. Connect the woofer cables to the woofer binding posts of the transformer box. Blue cable to blue binding post and black cable to black binding post.
2. Connect midrange cables to the midrange binding posts. White cable to white binding post and black cable to black binding post.
3. Connect the tweeter cables to the tweeter binding posts. Red cable to red post and black cable to black post.

SCINTILLA BI-AMP OPERATION WITH AN ACTIVE CROSSOVER NETWORK

The Scintilla may be operated in a bi-amped mode utilising an active crossover network in the signal path between the pre-amplifier output and the power amplifier input. The internal speaker wiring is shown in the binding post table. The system wiring is shown in Figure 3.

The internal speaker wiring, for use with the signal level crossover network, removes the speakers internal woofer and midrange power crossover networks. This configuration consequently provides a resistive speaker load to the amplifier in the bass and midrange/tweeter audio regions and subsequently improved amplifier performance and headroom.

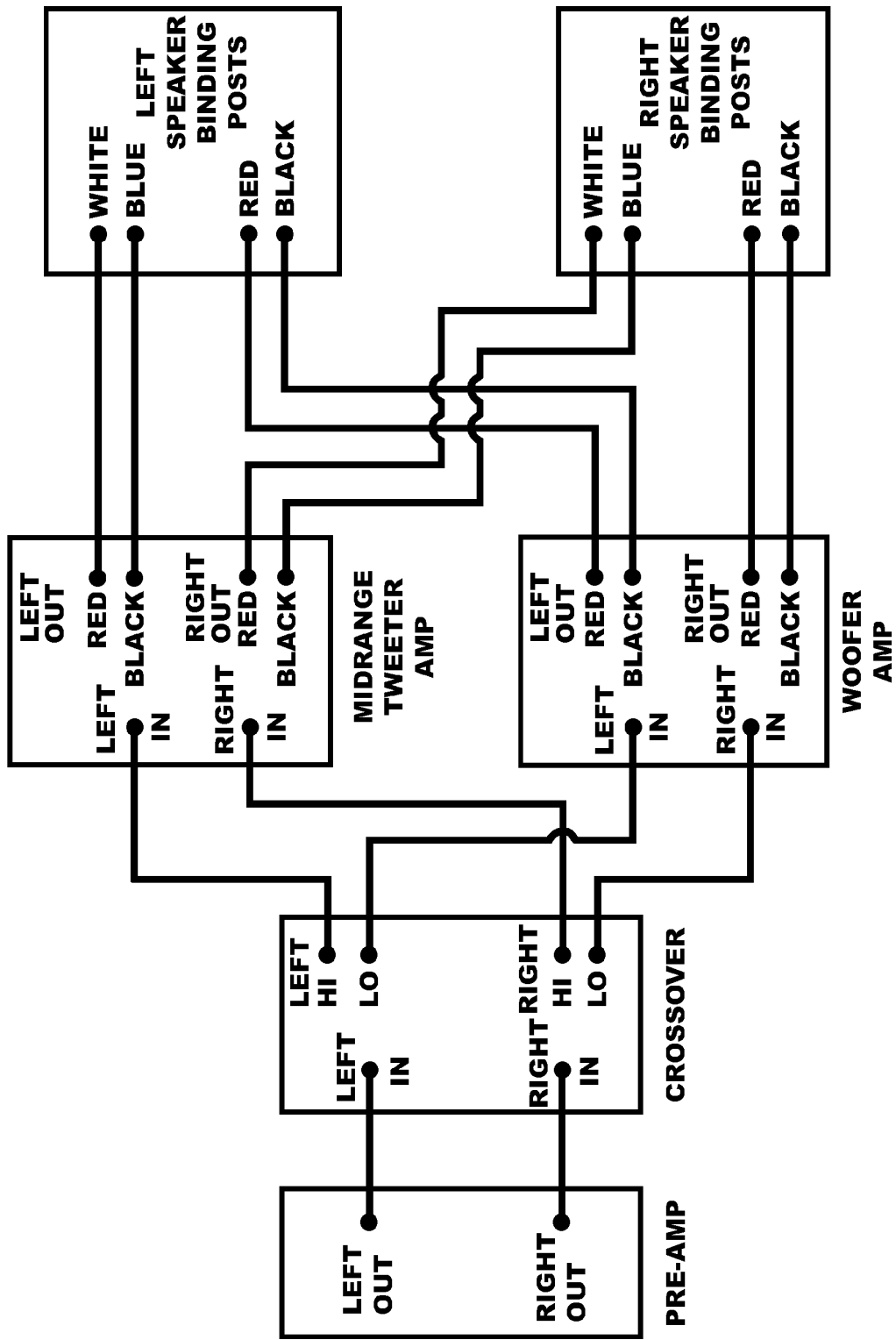
The woofer crossover is at 305 hertz with a 6 dB per octave slope. The midrange/tweeter crossover is at 700 hertz with a positive slope of 6 dB per octave.

SCINTILLA BINDING POST WIRING

BI-AMP OPERATION WITH ACTIVE CROSSOVER

<u>BINDING POST</u>	<u>SPEAKER WIRE</u>
Red -----	Green with Black Shrink
Black -----	Black
White -----	Blue
Blue -----	Grey, Orange

Note: Speaker wire lugs that are not terminated at the binding posts should be covered with the enclosed plastic tubing. Be certain that the lug is properly covered and that it will not short out. If the plastic tubing is not available, use electrical tape to cover the lugs that are not terminated at the binding posts.



**SYSTEM WIRING DIAGRAM
FOR BI-AMPED OPERATION WITH AN ACTIVE CROSSOVER**

ACTIVE CROSSOVER RELEASE STATUS

1. Full Range Apogee
2. Duetta Series II

The Full Range Apogee three-way active crossover system configuration and the Duetta Series II active crossover have not yet been released. The data for the active crossover will be amended as soon as the above stated designs have been released.