

## Model APX2 Crossover Module

### SPECIFICATIONS

#### Channel Configuration:

Monaural two-way (each unit may be stacked with other APX2 modules)

#### Filter Type:

Fourth-order Linkwitz-Riley  
(24-dB-per-octave attenuation)

#### Crossover Frequencies, Switch Selectable:

50, 63, 80, 100, 125, 160, 200, 250,  
315, 400, 500, 630, 800, 1000, 1250,  
1600, 2000, 2500, 3150, 4000, 5000,  
6300, 8000, 10,000 Hz

#### Input,

##### Type:

Active differential

##### Maximum Level:

+18 dBu

##### Impedance:

30,000 ohms

##### Common-Mode Range:

±24 V (net of signal voltage)

##### Common-Mode Rejection Ratio,

Typical:

-55 dB

##### Connector:

Octal plug

#### Main Outputs,

##### Maximum Level:

+18 dBu

##### Impedance:

<100 ohms

##### Connector,

LF Output:

Octal plug

HF Output:

Screw-terminal strip

#### Gain:

Unity

#### Frequency Response, Sum of Outputs, 2,000-Ohm Loads:

20-20,000 Hz ±0.5 dB

#### Total Harmonic Distortion, 20-20,000 Hz,

Typical:

0.02%

Maximum:

0.05%

#### Noise, Each Output, 20-20,000 Hz Noise

##### Bandwidth, Typical:

-90 dB

#### Channel Crosstalk, Typical:

-78 dB

#### Transient Performance:

Not limited by slew rate or power  
bandwidth under any normal operating  
condition, 20-20,000 Hz

#### Chassis Construction:

Cold rolled steel

#### Color:

Black

#### Mounting:

Single octal plug

#### Power Requirements:

±15 V dc

#### Overall Dimensions (see Figure 1),

Height: 69.09 mm (2.72 in.)

Width: 90.93 mm (3.58 in.)

Depth: 32 mm (1.25 in.)

#### Net Weight:

0.25 kg (8.5 oz)

#### Shipping Weight:

0.40 kg (14 oz)

### DESCRIPTION

The APX2 is a two-way output crossover module which may be used in several different configurations. Some of the ways the APX2 may be used are:

- Several crossovers may be stacked to form 3-, 4-, to N-way systems.
- With the APX2, power amplifiers may be used in the bridge mode.
- The crossovers and amplifiers may be connected in parallel to provide a stereo crossover system.

The APX2 crossover is designed for use with Electro-Voice amplifiers such as the AP2600 and 7300.

The module plugs into Amplifier Channel 1 eight-pin octal sockets, splitting the input signal into high- and low-frequency portions. The low-frequency output is in turn directed to the Channel 1 amplifier output; high frequencies appear at the terminal strip (see Figure 2).

The APX2 provides 24 switch-selectable crossover frequencies on the ISO one-third-octave centers from 50 to 10,000 Hz. Filter response shape is fourth-order Linkwitz-Riley (24-dB-per-octave slopes). See Figure 4.

### CROSSOVER FREQUENCY SELECTION

**CAUTION:** Do not change the crossover frequency setting while the APX2 is mounted to the power amplifier. Turn the power amplifier off and remove the APX2 before changing the crossover frequency.

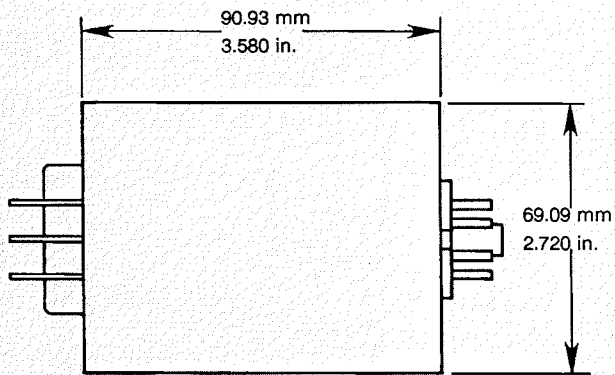


FIGURE 1 — APX2 Dimensions

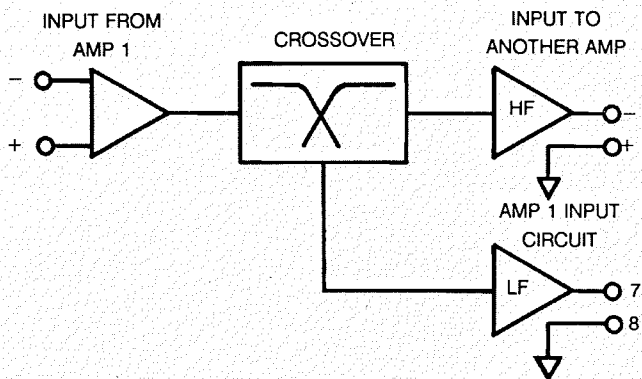


FIGURE 2 — APX2 Block Diagram

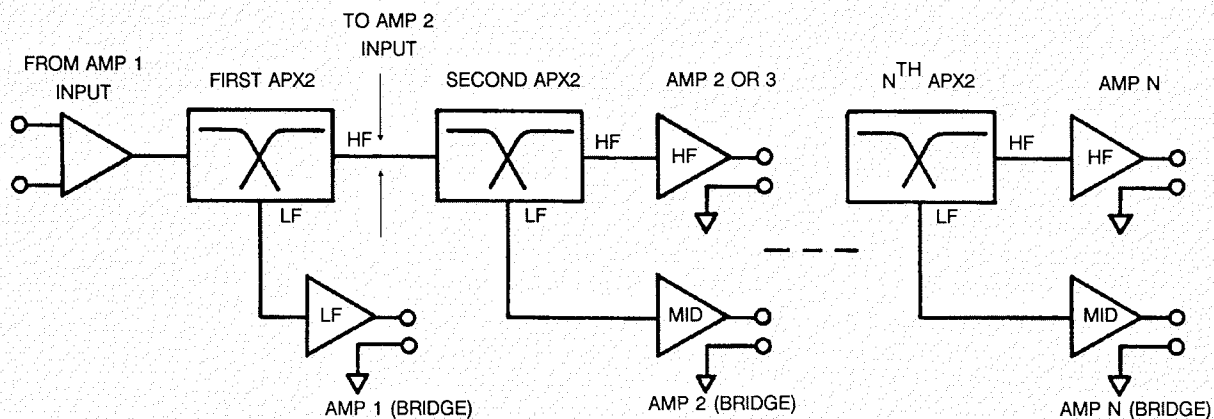


FIGURE 3 — Block Diagram Starting with a Three-Way System to the N<sup>th</sup> Crossover System (Optional Bridge Mode)

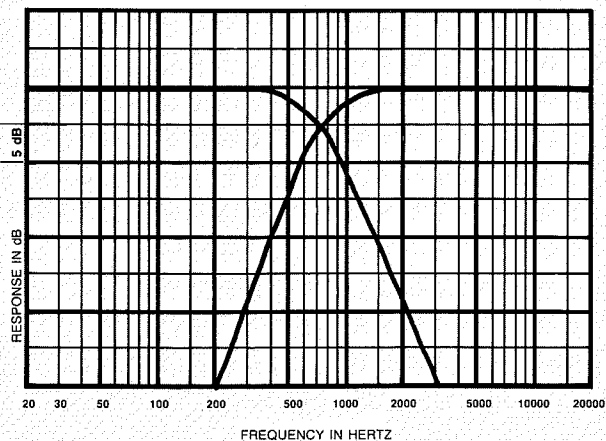


FIGURE 4 — Typical Crossover Curve

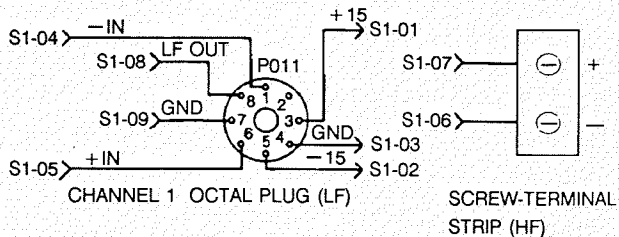


FIGURE 5 — Octal Plug/Screw Terminal Connections

1. Remove the four screws that secure the cover to the module.
2. Locate dip switch block "C." It is oriented 90° with respect to the other four switches.
3. See Table 1 for a list of crossover frequencies and associated switch positions (this table also appears inside the cover of the module).

NOTE: An example of a 500-Hz crossover setting is shown in Figure 6.

4. Move each switch in block "C" to the position (on or off) that corresponds to the desired crossover frequency.
5. There are four "R" switch blocks. For each "R" block move each of the eight switches to the position (on or off) that corresponds to the desired crossover frequency.
6. Reinstall the module cover with the four screws.

### INSTALLATION

Two-way system or high-power bridging configuration (see Figure 2).

1. Turn the bridging amplifier off and turn the input attenuators down (full counterclockwise).
2. Remove the two jumper pins from the Channel 1 octal socket on Amplifier 1.
3. Orient the APX2 module so that the octal connector keys are aligned and plug the module into Amplifier 1.
4. Install the HF output wire from the screw-terminal strip of the APX2 to the input of Amplifier 2.
5. Turn the level (attenuator) controls up and check the clip indicators. If the clip indicators are on, turn the amplifier off and go back to the beginning of the Crossover Frequency Selection section. Check all switch settings. If the clip indicators are not on, there is a good chance that the crossover frequency was selected properly.
6. Turn the level controls down.
7. Connect the low-frequency speaker to Amplifier 1 and the high-frequency driver driver to Amplifier 2.
8. Apply pink noise or a music signal to input 1.
9. Slowly increase (clockwise) Amplifier 2's level control to verify that a high-pass signal is coming from the high-frequency driver.
10. Rotate Amplifier 1's level control clockwise until the low-end signal is balanced with the high-end signal.

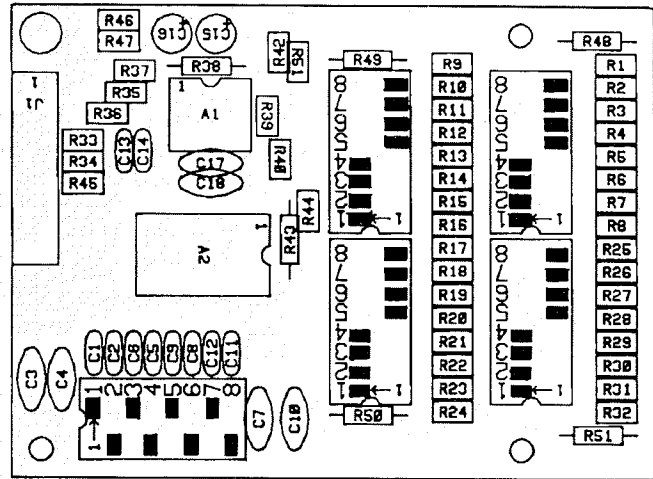


FIGURE 6 — Switch Settings for 500-Hz Crossover

CAUTION: Speaker damage may occur if switches are improperly set or changed while amplifier is on.

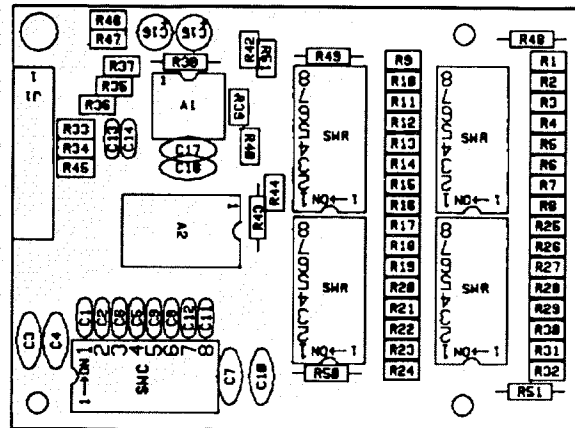


Chart shows switches on, all other switches off

FREQ.	SWITCH C	SWITCH R	FREQ.	SWITCH C	SWITCH R
50	all on	1	800	all on	12345
63	1357	1	1k	1357	12345
80	all off	1	1.25k	all off	12345
100	all on	12	1.6k	all on	123456
125	1357	12	2k	1357	123456
160	all off	12	2.5k	all off	123456
200	all on	123	3.15k	all on	1234567
250	1357	123	4k	1357	1234567
315	all off	123	5k	all off	1234567
400	all on	1234	6.3k	all on	12345678
500	1357	1234	8k	1357	12345678
630	all off	1234	10k	all off	12345678

TABLE 1 — Crossover Frequencies and Associated Switch Settings

**Three-way system or bridging option**  
(see Figure 3).

1. Turn the amplifier off and turn the input level controls down (full counter-clockwise).
2. Remove the two jumper pins from the Channel 1 octal socket on Amplifier 1.
3. Orient the APX2 module so that the octal connector keys are aligned and plug the module into Amplifier 1.
4. Connect a HF output cable from the screw-terminal strip of the APX2 to the input of Amplifier 2 which has the second APX2 installed.
5. The LF (midband) output is Amplifier 2, Channel 1.
6. Connect the HF output cable into Amplifier 2, Channel 2.
7. Turn the level controls up and check the clip indicators. If the clip indicators are on, turn the amplifier off and go back to the beginning of the Crossover Frequency Selection section. Check all switch settings. If the clip indicators are not on, there is a good chance that the crossover frequency was selected properly.
8. Turn the level controls down.
9. Connect the low-frequency speaker to Amplifier 1, the midband frequency speaker to Channel 1 of Amplifier 2, and

the high-frequency driver to Channel 2 of Amplifier 2.

10. Apply pink noise or a music signal to Amplifier 1, Channel 1.
11. Slowly increase (clockwise) Amplifier 2's (Channel 2) level controls to verify that a high-pass signal is coming from the high-frequency driver.
12. Slowly increase (clockwise) Amplifier 2, Channel 1's level controls to verify that a midband signal is coming from the midband driver. Rotate the attenuator until the midband signal is balanced with the high-pass signal.
13. Rotate Amplifier 1's level controls clockwise until the low-end signal is balanced with the both the midband and high-end signals.

NOTE: The above would apply for the bridge mode.

**N-way system or bridging option.**

An N-way system is possible by using the same procedure as in the three-way system and adding other APX2 modules and bridging amplifiers.

These are a few examples of how the APX2 module may be installed. Additional installation questions may be directed to our Technical Correspondent at (AC/616-695-6831).

**WARRANTY (Limited)**

Electro-Voice Professional Sound Reinforcement Electronic Components are guaranteed for two years from date of original purchase against malfunction due to defects in workmanship and materials. If such malfunction occurs, unit will be repaired or replaced (at our option) without charge for materials or labor if delivered prepaid to the proper Electro-Voice service facility. Unit will be returned prepaid. Warranty does not extend to finish, appearance items or malfunction due to abuse or operation under other than specified conditions, nor does it extend to incidental or consequential damages. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion may not apply to you. Repair by other than Electro-Voice or its authorized service agencies will void this guarantee. A list of authorized service centers is available from Electro-Voice, Inc., 600 Cecil Street, Buchanan, MI 49107 (AC/616-695-6831); and/or Electro-Voice West, 8234 Doe Avenue, Visalia, CA 93291 (AC/209-651-7777). This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Service and repair address for this product: Electro-Voice, Inc., 600 Cecil Street, Buchanan, Michigan 49107.

Specifications subject to change without notice.



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