



E-V STEREO-4™ SYSTEM PERMITS:

- Playback of 4-channel phonograph records
- Reception of 4-channel FM Broadcasts
- Dramatic enhancement of ordinary 2-channel stereo records, tapes and broadcasts

ENGINEERING DATA E-V 1244X **STEREO-4** AMPLIFIER

DESCRIPTION

The E-V 1244X amplifier provides easy expansion of an existing stereo system into 4-channel operation. In addition to two complete amplifier channels with full controls, the E-V 1244X includes the Electro-Voice STEREO-4 integrated circuit decoder. By decoding records and FM stereo broadcasts which have been previously encoded with 4-channel material, four distinct sources of sound can be recreated in the home using conventional stereo phono cartridges and standard FM stereo tuners. No portion of an existing stereo system becomes obsolete.

In addition to the recovering of four channels from a STEREO-4 encoded program, the E-V 1244X decoder creates a remarkable enhancement of conventional two-channel program material. While this enhancement is not "real" four-channel, the effect ranges from pleasing to astounding, depending upon the information contained in the stereo signal. If four-channel playback or enhancement is not desired, the decoder is easily bypassed for conventional system operation.

Because the E-V 1244X has full switching and control facilities, it may be used with an existing stereo system for 4-channel tape playback. Either open reel or cartridge machines may be used. The E-V 1244X may also be used independently as the heart of a fine 2-channel stereo system.

SPECIFICATIONS

Power Output,	
IHF Music Power:	65 watts into 4 ohms, 50 watts into 8 ohms
Continuous Sine Wave:	18 watts per channel
Frequency Response:	± 1.5 dB, 20–20,000 Hz at rated output ± 1.5 dB, 20–30,000 Hz at 1 watt

Harmonic Distortion:	Less than 1.0% at rated output
Hum and Noise,	
High Level Inputs:	Better than 70 dB below rated output
Magnetic Phono Input:	Better than 60 dB below rated output
Channel Separation:	40 dB minimum at 1,000 Hz
Inputs:	Mag. Phono, Tuner, Aux, Tape (high level)
Input Sensitivity,	
Phono:	3 mv
Tuner, Aux, Tape:	150 mv
Controls (Rotary),	
Volume:	with on/off switch
Balance:	with Pull/Mono switch
Selector:	Phono–Tuner–Aux
Bass:	+ 10 dB, –12 dB at 50 Hz
Treble:	+ 10 dB, –12 dB at 10 kHz
Controls (Switches),	
Decode	On/Off
Source/Tape	
Speaker	On/Mute
Loudness	On/Off
Amp. Selector	Front/Back
Tape Monitor	Tape Mon 2/Normal
Outputs,	
Speakers:	4–16 ohms per channel
Line Outputs:	to other amplifiers
Stereo Tape Recorder	
Stereo Headphones:	on front panel
Output Damping Factor:	35 at 8 ohms
Auxiliary AC Outlet:	one switched
Power Requirements:	110–120 volts, 50–60 Hz AC
Dimensions:	3-3/8" h., 8-3/8" w., 10¼" d.

SYSTEM REQUIREMENTS

For four independent sound channels to exist, there must

be four separate power amplifiers (two stereo amplifiers) and four speakers. The E-V 1244X is designed primarily to add two Back channels to an existing stereo system. Connection to the existing stereo electronics are easily made if your present unit includes a tape monitor (also called tape-source) switch. Through the use of the tape monitor connection, and with the flexibility provided on the E-V 1244X, a wide range of 4-channel operation is available, and yet your system can be returned to its original stereo form in just a second.

The E-V 1244X has a switch on the chassis which permits selection of either Front or Back amplifier operation. For the purposes of the connection and operating instructions, it is assumed that the E-V 1244X will be used to power the Back speakers and that your present stereo system will become the Front channels.

While the selection of equipment for a 4-channel system is a concern to many, the criteria for good performance are less severe than for 2-channel stereo. As is the case with 2-channel stereo, acoustical performance is best balanced if all four speakers are the same. However, the results are still excellent if the Back channels have more modest speakers. For best results, however, the two Front speakers should be closely matched, as should the Back pair.

SYSTEM WIRING

Your present system may include an amplifier or receiver, and you may have a variety of program sources (phono, tuner, tape, etc.). To keep these instructions as simple as possible, your present electronic unit is considered to drive the Front pair of speakers and will be called the Front amplifier; the E-V 1244X will be connected to drive the Back speakers.

First, a few hints for a successful hookup.

1. Program sources (phono, tuner, etc.) should be connected to the Front amplifier.
2. If the two pairs of speakers are not identical, the better pair should be considered the Front speakers.
3. Follow the hookup directions slowly and carefully. With so many cables to connect, it is easy to become confused. Observe the Left and Right channel connections scrupulously. In fact, it may be less confusing to go through the hookup steps for the Left channel only, and then repeat the operation for the Right channel. This way there is less chance of interchanging channels.

CONNECTIONS

1. Using convenient length shielded audio cables, connect the Front amplifier's Tape Out jacks to the E-V 1244X AUX inputs.
2. Connect the E-V 1244X Out To Other Amp jacks to the Tape In jacks on the Front amplifier. At this point you should have cables going to and from the Front amplifier's Tape Out and Tape In jacks.

3. Connect the four speakers to the appropriate amplifier output terminals. Just as the fenders of a car are identified from the driver's seat, the speaker locations are named while facing the "front" of the 4-channel system. Thus, the Left Back speaker is connected to the Left speaker terminals of the Back amplifier (E-V 1244X). The positive (+, T1, red) terminal of the Back speakers should be connected to the L or R speaker output terminals on the E-V 1244X. The speaker common terminals should be connected to the terminals marked "C" on the amplifier output strip. Be sure that the Front speakers are connected "in phase" to the Front amplifier, as outlined in your electronics and speaker instructions.
4. Connect the AC line cords to a convenient outlet. The Front amplifier line cord may be plugged into the switched outlet on the E-V 1244X, thus turning on both amplifiers with the E-V 1244X power switch.

TAPE CONNECTIONS

Two-Channel Tape. Connect a 2-channel tape recorder or player to the Tape In and Tape Out jacks on the E-V 1244X. These jacks duplicate the jacks previously used on the Front amplifier, and additionally, allow you to decode the output of your tape recorder into four channels.

Four-Channel Tape. A 4-channel discrete open reel or cartridge machine may be connected to play through all four amplifier channels without decoding. Connect the front channels (1 and 3) to the Front amplifier's AUX inputs, and connect the back channels (2 and 4) to the E-V 1244X Tape Inputs.

E-V 1244X CONTROL FUNCTIONS

VOLUME/POWER OFF

Adjusts listening level and controls the main AC power to the amplifier in addition to any equipment connected to the switched AC outlet on the rear panel. This control should be in the Off position whenever any connection change to the amplifier or associated equipment is made.

When the Decode switch is On, this Volume control acts as Master Gain Control for the complete 4-channel system. Front-to-back balance is adjusted with the Volume control on the Front amplifier. Once the proper front-to-back balance is established, the volume of all four speakers will be controlled simultaneously with the E-V 1244X Volume control.

When the Decode switch is Off, this control adjusts the volume of the two Back speakers, while the Volume control on the Front amplifier adjusts the volume of the two Front speakers. There is no Master Gain Control during discrete 4-channel operation, unless it is provided on the associated tape machine.

BALANCE

Adjusts the relative volume of the Left and Right speakers connected to the E-V 1244X. The center, or "12 o'clock"

position of the control will provide normal balance in most instances. This control affects only the speakers connected to the E-V 1244X, regardless of other control settings.

SELECTOR SWITCH

Selects desired input signal in conjunction with the Source/Tape switch. The program source selected by Selector switch also is fed to the Output To Tape Recorder jacks which are not affected by any other operating control.

BASS AND TREBLE CONTROLS

Provide adjustment of low frequency and high frequency response, respectively. Normal or flat response is obtained with both controls in the center, or "12 o'clock" position. Each of these controls varies the response of left and right channels simultaneously.

When the Decode switch is Off, the Bass and Treble controls affect only the speakers connected to the E-V 1244X. When the Decode switch is On, all four speakers are affected equally by the Bass and Treble controls on the E-V 1244X.

MONO/STEREO SWITCH

A push-pull switch on the balance control parallels the two amplifier channels for Mono operation. Pulling outward on the balance control knob will switch the amplifier to Mono. When the balance control knob is pushed in (nearest the panel), normal operation will result.

DECODE SWITCH

In the Off position, the Decode switch connects the various sections of the E-V 1244X as a standard stereo amplifier. When the Decode switch is moved to the On position, the two signals passing through the E-V 1244X are decoded into four signals, two of which pass on to the E-V 1244X power amplifier sections, while the other two are directed to the Out To Other Amp jacks.

SOURCE/TAPE SWITCH

In the Source position, the signal being fed to the speakers (phono, tuner, auxiliary) is selected by the Selector switch. The Tape position selects the tape input (regardless of the position of the Selector switch).

LOUDNESS SWITCH

To obtain normal or "flat" response at normal listening volume, this control should be in the Off position. However, at reduced volume settings, the ear is less sensitive to low-frequency sounds. Placing this switch in the On position will provide a compensating boost in the bass range to correct this condition without disturbing the regular tone control settings.

SPEAKER ON/MUTE SWITCH

In the Mute position, the switch silences both Back speakers so that headphones may be used for private listening.

AMP SELECTOR (Bottom Panel)

This switch selects which pair of decoder outputs is connected to the E-V 1244X power amplifiers. In the Back position, this switch directs the Left Back and Right Back signals to the E-V 1244X amplifiers. The two Front signals are directed to the Front amplifier by way of the Out To Other Amp jacks.

If it is desired to use the E-V 1244X as the front amplifier (if, for example, you wish to use it with an existing E-V 1244 amplifier), place the Amp Selector switch in the Front position. This will direct the two back channels to the Out To Other Amp jacks.

TAPE MONITOR (Bottom Panel)

Selects signal that is directed to the Out to Other Amp jacks. In the Normal position, decoder output is connected to the Out To Other Amp jacks. In the Tape Mon 2 position, the Out To Other Amp jacks are connected directly to the Tape In jacks. This permits monitoring a two channel tape recording without decoding.

PHONES JACK

Provides output for high-quality stereo headphones. Output is available at all times, regardless of the setting of the Speaker On/Mute switch.

OPERATION

After double-checking the initial settings of the controls, the system may be connected to a convenient AC power source. The position of the controls may be varied to compensate for room acoustics, speaker characteristics, and personal listening preferences. Occasionally a "thump" or "pop" may be heard when the amplifier power is turned on. This is a natural result of the time constants employed in the power-supply filters and will not harm either the amplifiers or speakers.

CAUTION NOTES

If the amplifier connections have been made correctly, the E-V 1244X amplifier should now be reproducing sound with the utmost fidelity—and will continue to do so for years to come. Inherently stable design combines with completely reliable fusing to provide the most rugged and foolproof equipment available.

An MDL-1.5 (1½-amp) fuse is located in the output circuit of each channel amplifier to protect the speaker and output transistor stage from continued overload. The MDL-1.5 fuse provides maximum protection with a safety margin for any program material played through a speaker with 4-ohm or greater impedance. If additional speakers are desired, make certain that the combined impedance of all speakers connected to a channel is not less than 4 ohms. Effective output impedance lower than 4 ohms will cause excessive current flow and continual blowing of fuses.

If the amplifier is to be checked for sine wave power

output, it is recommended that the output fuses be changed temporarily to MDL-3 (3-amp). At the conclusion of testing, MDL-1.5 fuses should be reinstalled to maintain maximum protection with the program material. The AC primary circuit is protected by a fuse which should never blow unless component failure has occurred and the amplifier requires servicing. The AC convenience outlet is not fused.

METHOD OF INSTALLATION

The E-V 1244X has been tested for proper operation for extended periods in high temperature environments. However, the advantages inherent in a transistor unit's cool operation will be partially negated if the E-V 1244X is tightly enclosed or installed directly above a heat generating device such as a radiator or conventional tube-type equipment. Only normal circulation of air is required.

WARRANTY

Electro-Voice high fidelity electronics are guaranteed for three years from date of purchase against failures due to defects in workmanship and materials. If such failure occurs, unit will be repaired or replaced (at our option) if delivered to Electro-Voice or its service agency. There will be no charge for parts or return freight during the entire length of the warranty period; no charge for labor will be

made during the first year of the warranty period. Warranty does not cover finishes or failures due to abuse or operation at other than specified ratings. Repair by other than Electro-Voice or its authorized service agencies will void this guarantee.

CUSTOMER SERVICE

E-V electronics are packed to provide maximum protection—well in excess of shipping requirements of the Interstate Commerce Commission. If shipping damage does occur, contact the carrier immediately, requesting inspection and instructions, or contact the dealer from whom the unit was purchased.

UNPACKING INSTRUCTIONS

The screws which hold the packing cardboard on the bottom of the amplifier for shipping should be removed before operation. The carton may be retained for amplifier storage or reshipping.

EXPORT MODEL

Electro-Voice Model E-V 1244X amplifiers manufactured for export purposes carry specifications and operating instructions identical to those contained in this manual except for their power requirement which is 220 volts AC, 50–60 Hz.

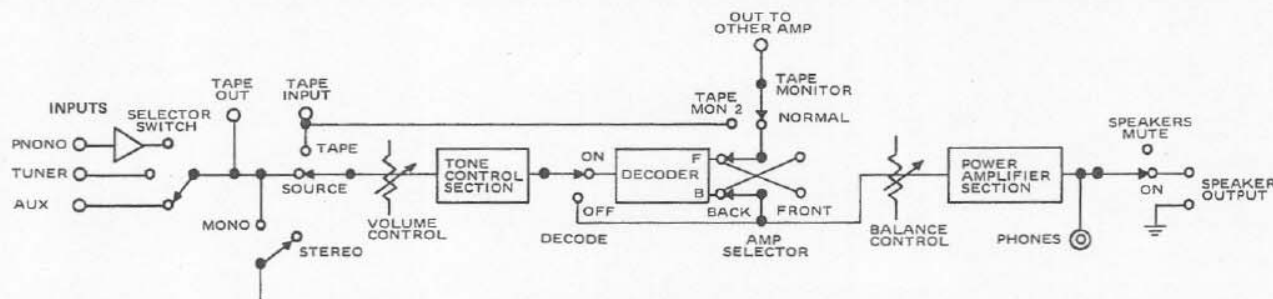


FIGURE 1 – Simplified Block Diagram, one channel shown. Controls set for decoding, with the E-V 1244X driving the back speakers.

TABLE 1 – CONTROL SETTINGS

OPERATION	FRONT AMPLIFIER		E-V 1244X Decoder/Amplifier				
	SELECTOR SWITCH	TAPE/SOURCE SWITCH	SELECTOR SWITCH	SOURCE/TAPE SWITCH	VOLUME CONTROL	DECODE SWITCH	TAPE MONITOR
Decode Records	Phono	Tape	AUX	Source	Master	On	Normal
Decode FM Stereo Broadcast	Stereo FM	Tape	AUX	Source	Master	On	Normal
*Decode 2-channel (or encoded) tapes	Any	Tape	Any	Tape	Master	On	Normal
*Play 2-channel tapes without decoding	Any	Tape	Any	Tape	Back only	Off	Tape Mon 2
**Decode 2-channel (or encoded) tapes	AUX	Tape	AUX	Source	Master	On	Normal
**Play 2-channel tapes without decoding	AUX	Source	AUX	Source	Back only	Off	Either
**Play 4-channel discrete tapes	AUX	Source	Any	Tape	Back only	Off	Either
Decode back only (Hall Sound)	Phono or FM Stereo	Source	AUX	Source	Back only	On	Either

*2-channel Tape Machine **4-channel Tape Machine



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