

Electro-Voice

ELECTRO-VOICE, INC.
BUCHANAN, MICHIGAN



INTRODUCTION

In modern stereo recording three microphones are normally employed to insure complete coverage of the sound stage. The sound from the microphone in the center is then apportioned to both left and right channels of recorded sound.

From this "Master" recording emerges the commercially available 2-channel stereo tape or disc.

In these "two track" stereo tapes and discs the element of this third channel remains and can be reformed by means of the Electro-Voice XT1 Stereo Mixer Transformer. The XT1, connected as shown, recovers the center sound from the left and right channels, adds them together in the correct proportion and passes these tones to the central speaker. (Technically, the third channel signal actually consists of sum tones (A+B) different in phase from the two outside channels and identical in character to those picked up by the central microphone during the recording.)

Thus a still broader curtain of sound is created, giving good stereo over a larger area and making critical listener positioning totally unnecessary.



Figure 1 XT-1 Stereo Mixer Transformer

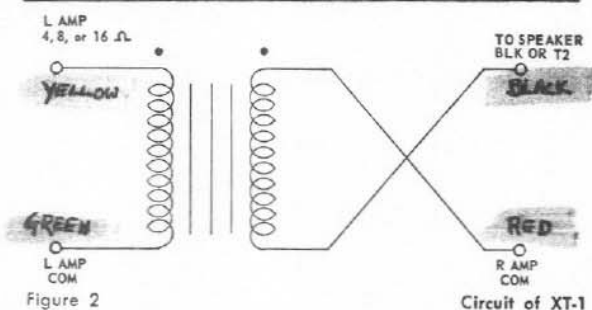


Figure 2 Circuit of XT-1

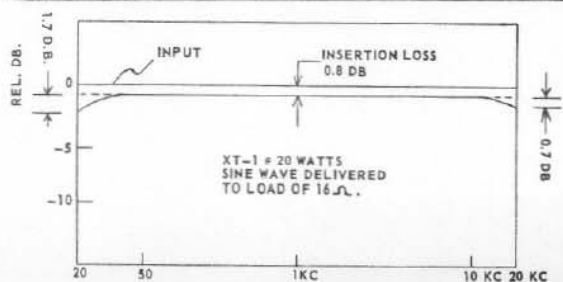


Figure 3 Frequency Response curve of XT-1 Stereo Mixer Transformer

Specifications and Instructions

Model XT1

Stereo Mixer Transformer

Applications

The versatility of 3-channel component high fidelity stereo makes it possible to connect three loudspeakers in many varied forms. Illustrations of typical applications appears overleaf—three factors must be observed:

- Nature of 3 speakers to be used (Three full range: Two full plus one limited range: One full plus two limited range).
- Impedance of these speakers.
- Phasing of units is important. Most good quality loudspeaker systems indicate correct connection at speaker terminals (T1 and T2 etc.).

Specifications

Power Rating:

(Full Range Power Response)	50 Watts
Continuous Program Sine Waves	28 Watts

Impedances: 4 ohms through 16 ohms

Insertion Loss: (Figure 3) with 4-ohm load, 2.8 db; with 8-ohm load, 1.5 db; with 16-ohm load, 0.8 db

Construction: Low loss silicon steel laminated core

Turns Ratio: 1:1

Terminals: Slotted Binding Head Screws

Size: H 4 3/4" x W 3 3/4" x D 3 1/4"

Weight: 2 1/2 lbs.

Connections

Connections should be made using #18 wire or larger (lamp cord is good). If distance between speakers and amplifier is greater than 20', use 300-ohm TV Twin Lead to reduce shunt capacity which might cause amplifier oscillation.

For convenient 3-channel hookup, Electro-Voice offers the Model 511 Stereo Wiring Harness with easy-to-follow color coding, fitted terminals and easily concealed flat appearance. (EV Model 511 harness available from your dealer at Audio Net \$5.00).

Observe wiring diagram carefully to ensure correct connection in accordance with color coding. PHASING IS IMPORTANT.

Testing for Correct Connection of Center Channel

Amplifier output terminals may be found to be out of phase. A simple acoustical test will ensure correct phasing of the center speaker connections.

- Complete connection in accordance with appropriate diagram EXCEPT final hookup to XT1 Transformer.
- Play a monaural source with both channels of amplifier at the same volume setting. Turn down or disconnect one lead from both left and right side speakers leaving center unit connected.
- Reverse leads 1 and 2. (Fig. 4 Example Shown) and connect in position giving maximum volume in center channel.
- Restore connections to side channels.

Balancing Your System

Where the loudspeaker has an overall level or volume control (as on Electro-Voice Stereon 1A and III units) and, where fitted, a Brilliance Control (highs only), testing for center channel connection should be completed with level or volume controls on outside units turned off. When center channel test is completed, turn up level or volume controls and proceed as follows:

Leave level (volume) controls on STEREOs fully on. If brilliance control fitted, adjust brilliance controls on all three units to suit acoustics of room in which the system is being used. In a room with the normal amount of soft furnishings, drapes and carpet, this would be approximately a quarter turn anti clockwise. In "hard" rooms (plaster walls, tiled floor, etc.) the brilliance should be turned down further. Center speaker brilliance should be adjusted to the same point.

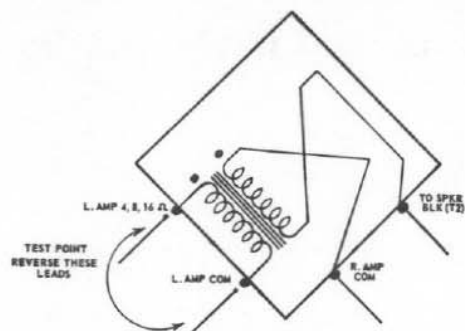


Figure 4

Center Channel Hookup Test Point

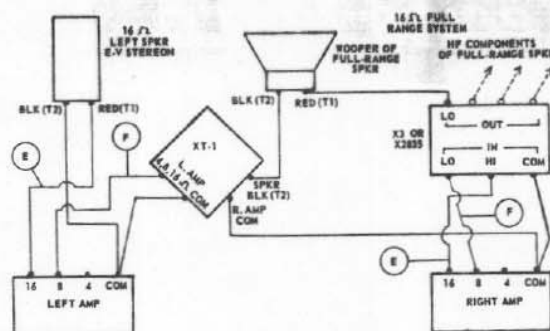


Figure 7

2 channel with 1 Full-range speaker and 1 limited range

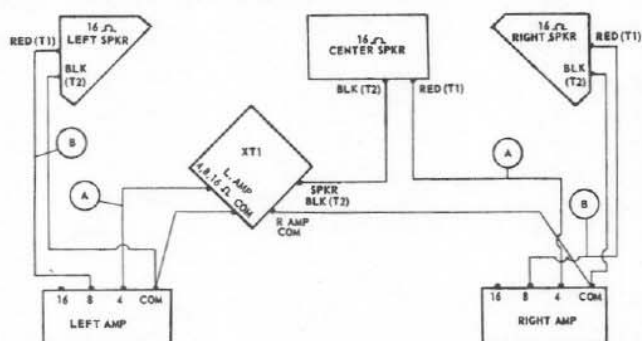


Figure 5

3 Channel with 3 Full-range Speaker Systems

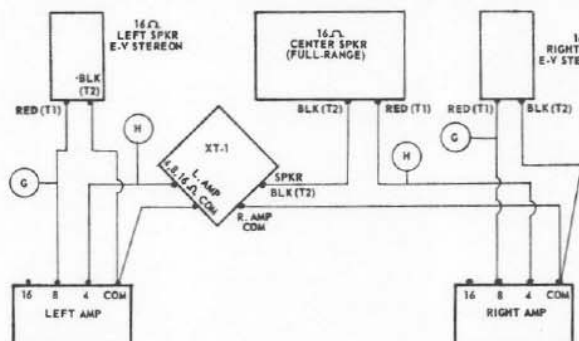


Figure 8

3 channel with one Full-range and two limited range units.

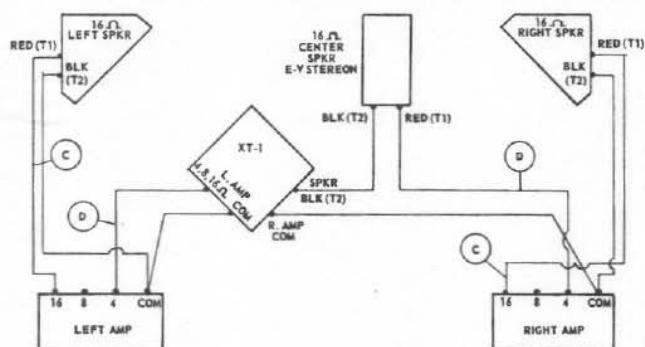


Figure 6

3 channel with 2 Full-range speaker systems and 1 center limited range speaker

- A If center speaker is 8 ohm or 4 ohm, connect to 4 ohm amplifier tap.
- B If right and left speakers are 16 ohm, connect to 8 ohm tap on respective amplifiers. 8 ohm, connect to 4 ohm on respective amplifier taps.
- C If right and left speakers are 16 ohm, connect to 16 ohm taps on respective amplifiers. 8 ohm, connect to 8 ohm taps on respective amplifiers.
- D If center speaker 8 or 4 ohms, still connect to 4 ohm tap.
- E If right and left speaker systems are 16 ohms, connect to amplifier 16 ohm taps. 8 ohms connect to amplifier 8 ohm taps.
- F If full range speaker is 16 ohm, connect to 8 ohm tap on respective amplifier. 8 ohm, connect to 4 ohm taps on respective amplifier.
- G If right and left systems are 16 ohm, connect to amplifier 8 ohm taps. 8 ohm, connect to amplifier 4 ohm taps.
- H If full range system in center is 8 or 4 ohm still connect to amplifier 4 ohm taps.

Figure 9

Permutation of impedances

Balance of Alternative Non E-V Systems

This may be accomplished normally without difficulty even on systems not having individual level controls by careful adjustment of the amplifier volumes and/or balance. If the center speaker tends to predominate in sound level (because of differing efficiencies), it will be necessary to include a level control into the line feeding this speaker. A good quality L pad should be used, these are obtainable from any electronic service supply at about \$3.00 (your EV dealer stocks a quality unit, EV Model AT37 level control at \$3.60 with complete wiring instructions.) Level or volume control on center unit should be turned down to the point where "the hole in the middle" is just filled.

Shipping Damage

Your Electro-Voice components are packed in accordance with all shipping requirements of the Interstate Commerce Commission plus extra protection. If shipping damage occurs, contact the carrier directly, requesting inspection and instructions.

Warranty Card

To register the purchase of your Model XT1 Stereo Mixer Transformer, fill out the Warranty Registration Card and send it to the factory within ten days after your purchase.



ELECTRO-VOICE, INC. / BUCHANAN, MICHIGAN

Technical Service

The distributor from whom you purchased your equipment knows thoroughly the application of Electro-Voice products and high fidelity techniques. His advice on the installation of Electro-Voice components and on the selection of associated high-fidelity equipment will be invaluable. Technical problems which cannot be answered locally may be referred to:

The Manager
High Fidelity Division
Electro-Voice, Inc.
Buchanan, Michigan

When writing, please list the manufacturer and model number of all components used in your high-fidelity system.

Repairs

Should your XT1 become damaged or develop faulty operation from unusual conditions of employment, Electro-Voice maintains a complete service department to put equipment in factory new condition. If it becomes necessary to return the equipment for repair, please write for instructions.