

EJ1-X

Above-Screen Passive Two-Way Speaker System

- Designed for cinema use
- High fidelity in a compact coaxial design
- Premium components including the DL12X mid-bass reproducer, DH1A high-frequency driver and XEQ-EJ1X crossover
- Very-high output capability for the dynamics of digital audio

Description and Applications

The Electro-Voice EJ1-X above-screen speaker system is a two-way passive factory-assembled cinema system that consists of two coaxially mounted horns. The low/mid horn is loaded with a DL12X mid-bass woofer enclosed within a 1.0 ft³ sealed chamber. The high-frequency section features a DH1A compression driver mounted to a HP940 constant-directivity horn. Crossover is accomplished by using the XEQ-EJ1X crossover. The enclosure is constructed of 16-mm (5/8-in.) medium-density fiberboard (MDF) covered in a black vinyl which can be painted to complement any interior. The horns are constructed from polyester resin and glass-fiber laminate and finished with a dark-grey gelcoat. System suspension shall be achieved through the use of the EJ1-Mb bracket. The EJ1-Mb bracket provides four hanging points for adjustability and ensures a safe installation. The intended use of the EJ1-X is within medium-to-large movie theatres when an above-screen sound system can provide superior fidelity.

Connections

The connections are made via a terminal block on the XEQ-EJ1X crossover.

Sensitivity

Sensitivity was measured with a 1-watt input (2.83 volts into an 8-ohm load) from a distance of 1 meter, and resulted in a high-frequency output of 110 dB and a low-frequency output of 103 dB.

Power Handling

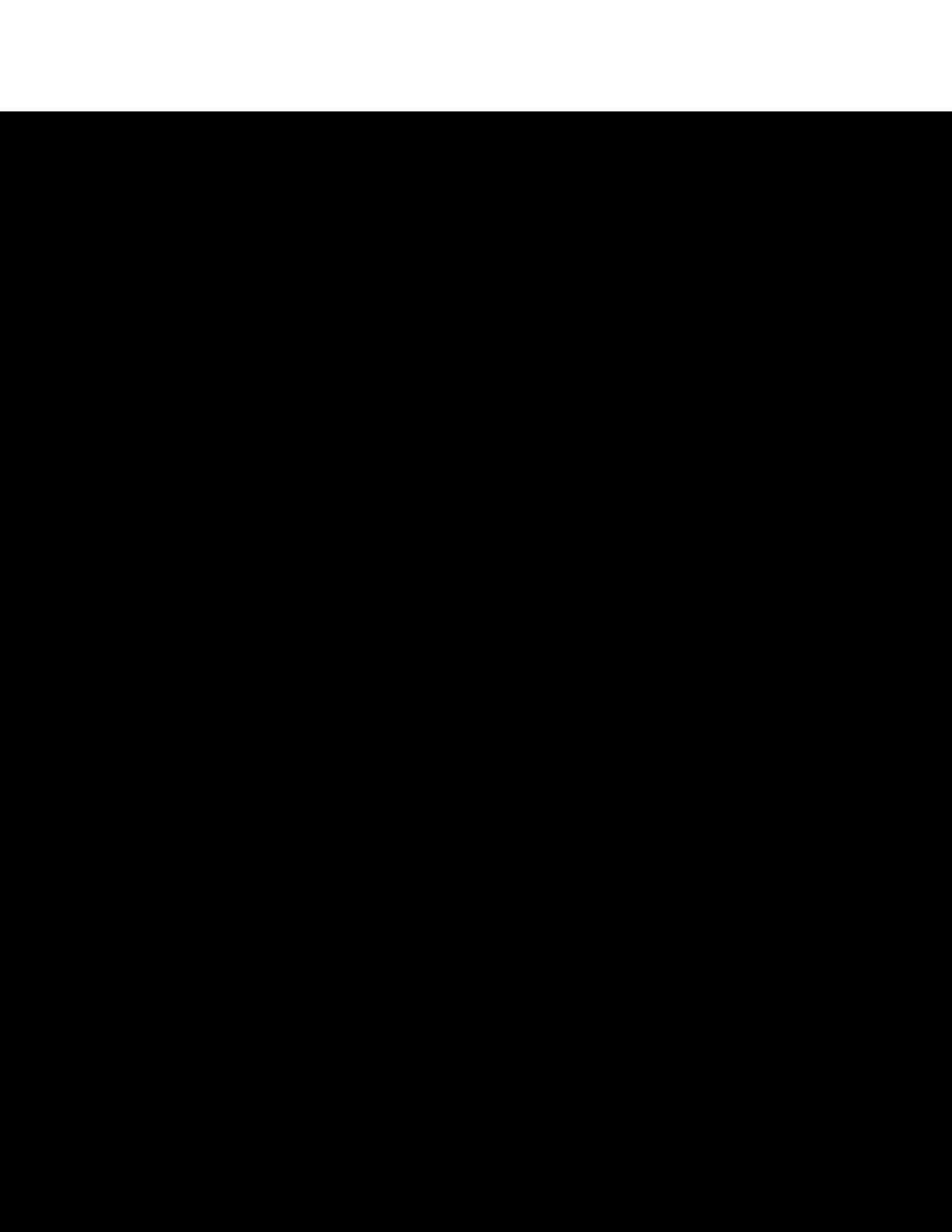
Electro-Voice determines the long-term and short-term power handling based upon the standard provided by the EIA (specifically, ANSI/EIA RS-426-A 1980). The EJ1-X high-frequency section passes this EIA specification with a long-term power-handling capacity of 50 watts and a short-term power-handling capacity of 300 watts; the low-frequency section passes with a long-term power-handling capacity of 300 watts, and a short-term power-handling capacity of 1,200 watts.

Recommended Crossover Points

The EJ1-X is designed to be crossed over a 500 Hz using the XEQ-EJ1X crossover.

Architects' and Engineers' Specifications

The loudspeaker system shall be a two-way active all horn-loaded coaxial loudspeaker system. The system shall be comprised of a 12-inch low/mid-frequency loudspeaker with a coaxially mounted 2.0-inch compression driver and 90° x 40° constant-directivity horn. Crossover is achieved using the XEQ-EJ1X crossover. The loudspeaker system shall meet the following performance criteria. Power handling, 300 watts of pink noise with 6-dB crest factor, band limited from 200-1,500 Hz (12-inch driver) and 50 watts of pink noise with a 6-dB crest factor, band limited from 500-20,000 Hz. Pressure sensitivity, 103-dB SPL when measured at one meter on axis with one watt of band-limited pink noise from 200-1,000 Hz (low/mid section). Pressure sensitivity, 110-dB SPL one meter on axis with one watt of band-limited pink noise from 200-20,000 Hz (high section). Nominal impedance, 8.0 ohms. The enclosure shall be of the sealed type, constructed of 16-mm (5/8-in.) medium-density fiberboard (MDF) lined with sound-absorbent wool. The horns are constructed from dark-grey polyester resin with a fiberglass core. Four hanging



EJ1-X Above-Screen Passive Two-Way Speaker System

points are provided for safe installation with the use of the optional EJ1-Mb bracket. It is the responsibility of the installer to ensure the integrity of the mounting surface and suspension cabling. The dimensions shall be 584 mm (23.0 in.) high by 1,194 mm (47.0 in.) by 724 mm (28.5 in.) deep at the center. The loudspeaker shall weigh 60.1 kg (132.5 lb). The loudspeaker system shall be the Electro-Voice EJ1-X.

Uniform Limited Warranty

Electro-Voice products are guaranteed against malfunction due to defects in materials or workmanship for a specified period, as noted in the individual product-line statement(s) below, or in the individual product data sheet or owner's manual, beginning with the date of original purchase. If such malfunction occurs during the specified period, the product will be repaired or replaced (at our option) without charge. The product will be returned to the customer prepaid. **Exclusions and Limitations:** The Limited Warranty does not apply to: (a) exterior finish or appearance; (b) certain specific items described in the individual product-line statement(s) below, or in the individual product data sheet or owner's manual; (c) mal-

function resulting from use or operation of the product other than as specified in the product data sheet or owner's manual; (d) malfunction resulting from misuse or abuse of the product; or (e) malfunction occurring at any time after repairs have been made to the product by anyone other than EVI Audio Service or any of its authorized service representatives. **Obtaining Warranty Service:** To obtain warranty service, a customer must deliver the product, prepaid, to EVI Audio Service or any of its authorized service representatives together with proof of purchase of the product in the form of a bill of sale or receipted invoice. A list of authorized service representatives is available from EVI Audio Service at 600 Cecil Street, Buchanan, MI 49107 (800/234-6831 or FAX 616/695-4743). **Incidental and Consequential Damages Excluded:** Product repair or replacement and return to the customer are the only remedies provided to the customer. Electro-Voice shall not be liable for any incidental or consequential damages including, without limitation, injury to persons or property or loss of use. Some states do not allow the exclusion or limitation of incidental or consequential damages so the above limitation or exclusion may not apply to you. **Other Rights:**

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

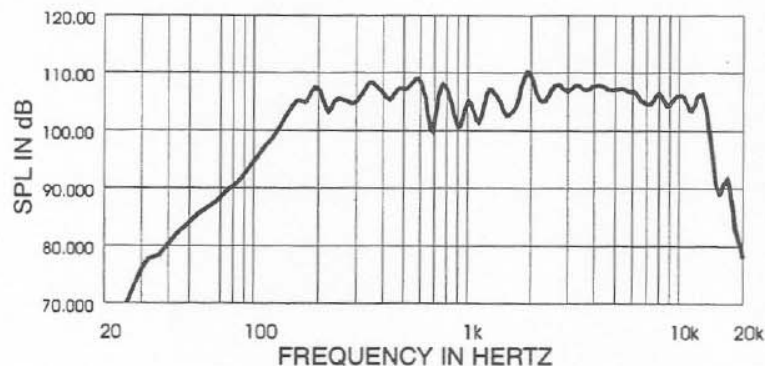
Electro-Voice Speakers and Speaker Systems are guaranteed against malfunction due to defects in materials or workmanship for a period of five (5) years from the date of original purchase. The Limited Warranty does not apply to burned voice coils or malfunctions such as cone and/or coil damage resulting from improperly designed enclosures. Electro-Voice active electronics associated with the speaker systems are guaranteed for three (3) years from the date of original purchase. Additional details are included in the Uniform Limited Warranty statement.

For warranty repair, service information, or a listing of the repair facilities nearest you, contact the service repair department at: 616/695-6831 or 800/685-2606.

For technical assistance, contact Technical Support at 800/234-6831 or 616/695-6831, M-F, 8:00 a.m. to 5:00 p.m. Eastern Standard time.

Specifications subject to change without notice.

Figure 1—EJ1-X frequency response



EJ1-X Above-Screen Passive Two-Way Speaker System

Specifications

Frequency Response (1 watt at 1 meter on axis, swept one-third-octave pink noise, anechoic environment; see Figure 1):

160-20,000 Hz

Low-Frequency 3-dB-Down Point:

160 Hz

Long-Term Average Power Handling Capacity per ANSI/EIA RS-426-A 1980 (see Power Handling section),

LF:

300 watts

HF:

50 watts

Sensitivity (SPL at 1 meter, 1 watt (2.83 volts) input, anechoic environment, band-limited pink-noise signal),

LF:

103 dB

HF:

110 dB

Dispersion Angle included by 6-dB-Down Points on Polar Responses, Indicated One-Third-Octave Bands of Pink Noise,

500-20,000 Hz Horizontal:

90° (+20°, -10°)

1,200-20,000 Hz Vertical:

40° (+20°, -10°)

Directivity Factor R_0 (Q), Median over Indicated Range, 1,250-20,000 Hz:

11.8

Directivity Index Di (10 log R_0) 1,250-20,000 Hz:

10.7 dB

Transducer Complement,

High Frequency:

DH1A, 2-inch exit driver mounted to a HP940 constant-directivity horn

Low Frequency:

DL12X, 12-inch woofer mounted to a special 90° x 40° horn

Impedance, HF/LF,

Nominal:

8 ohms

Minimum:

6-7 ohms

Input Connectors:

Screw terminals (#10) on input panel barrier strip

Enclosure Materials and Finish:

16-mm (0.62-in.) medium-density fiberboard (MDF) covered with refinshable black vinyl

Optional Accessories:

EJ1-Mb (577-3048) mounting bracket

Dimensions,

Low-Frequency Horn,

Height:

584 mm (23.0 in.)

Width:

1,194 mm (47.0 in.)

Depth:

427 mm (16.8 in.)

Mid-Bass Enclosure,

Height:

445 mm (17.5 in.)

Width:

445 mm (17.5 in.)

Depth:

300 mm (11.8 in.)

Overall System,

Height:

584 mm (23.0 in.)

Width:

1,194 mm (47.0 in.)

Depth:

724 mm (28.5 in.)

Net Weight:

59.96 kg (132.3 lb)

Shipping Weight:

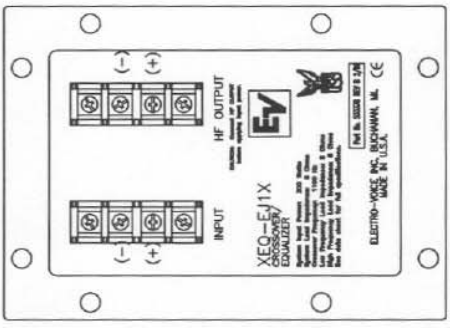
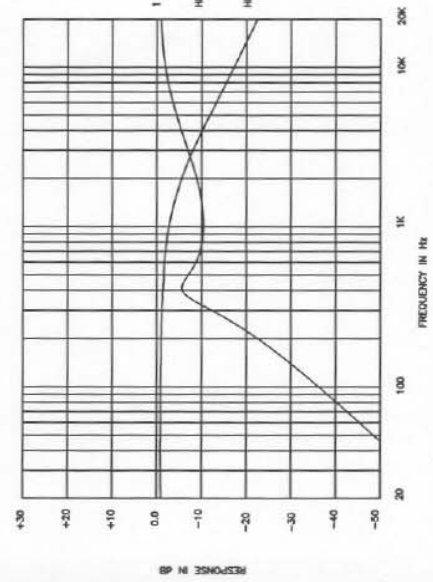
69.94 kg (154.2 lb)

TEST INSTRUCTIONS:

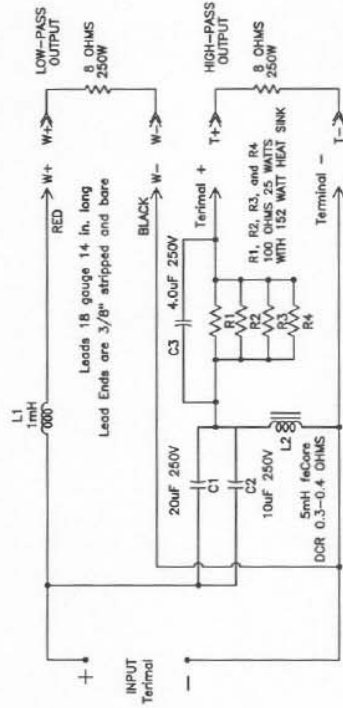
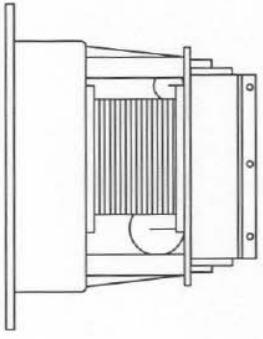
1. THE FOLLOWING TESTS SHALL BE PERFORMED PER ELECTRO-VOICE QUALITY CONTROL PROCEDURE QCP-11, STATISTICAL SAMPLING IN THE ASSEMBLY AREAS, WITH AN INSPECTION LEVEL OF 1 AND AN AQL LEVEL OF 1.5 USING THE TEST INSTRUCTIONS ON THIS SHEET.
2. THE UNIT UNDER TEST SHALL BE CONNECTED PER THE BLOCK DIAGRAM AND SCHEMATIC DIAGRAM ON THIS SHEET. THE OSCILLATOR SHALL BE A SINE WAVE AUDIO FREQUENCY OSCILLATOR. THE POWER AMP SHALL HAVE A MINIMUM OUTPUT POWER OF 200 WATTS. THE LOW-PASS SECTION LOAD SHALL BE AN 8 OHM, 250 WATT NON-INDUCTIVE RESISTOR. THE HIGH-PASS SECTION LOAD SHALL BE AN 8 OHM, 250 WATT NON-INDUCTIVE RESISTOR. THE LOAD RESISTORS SHALL BE CONNECTED TO THE CROSSOVER'S OUTPUTS FOR ALL ELECTRICAL TESTS.
3. **FREQUENCY RESPONSE TEST:**
 APPLY A 1-VOLT RMS SIGNAL TO THE INPUT OF THE CROSSOVER AND SWEEP FROM 20 Hz TO 20,000 HZ WHILE MEASURING THE OUTPUT OF THE LOW-PASS SECTION AND HIGH-PASS SECTION. THE RESPONSE SHALL BE WITHIN THE LIMITS SHOWN ON THIS SHEET. THE RESPONSE OF A TYPICAL UNIT IS SHOWN BETWEEN THE LIMITS.
 THE HIGH-PASS SECTION LIMITS ARE ±2.0dB.
 THE LOW-PASS SECTION LIMITS ARE 20Hz - 800Hz : ±0.5 dB.
 800Hz - 5KHz : ±2.0dB.



BLOCK DIAGRAM



CONNECTION DETAIL AND INPUT LABEL LOCATION



SCHEMATIC DIAGRAM

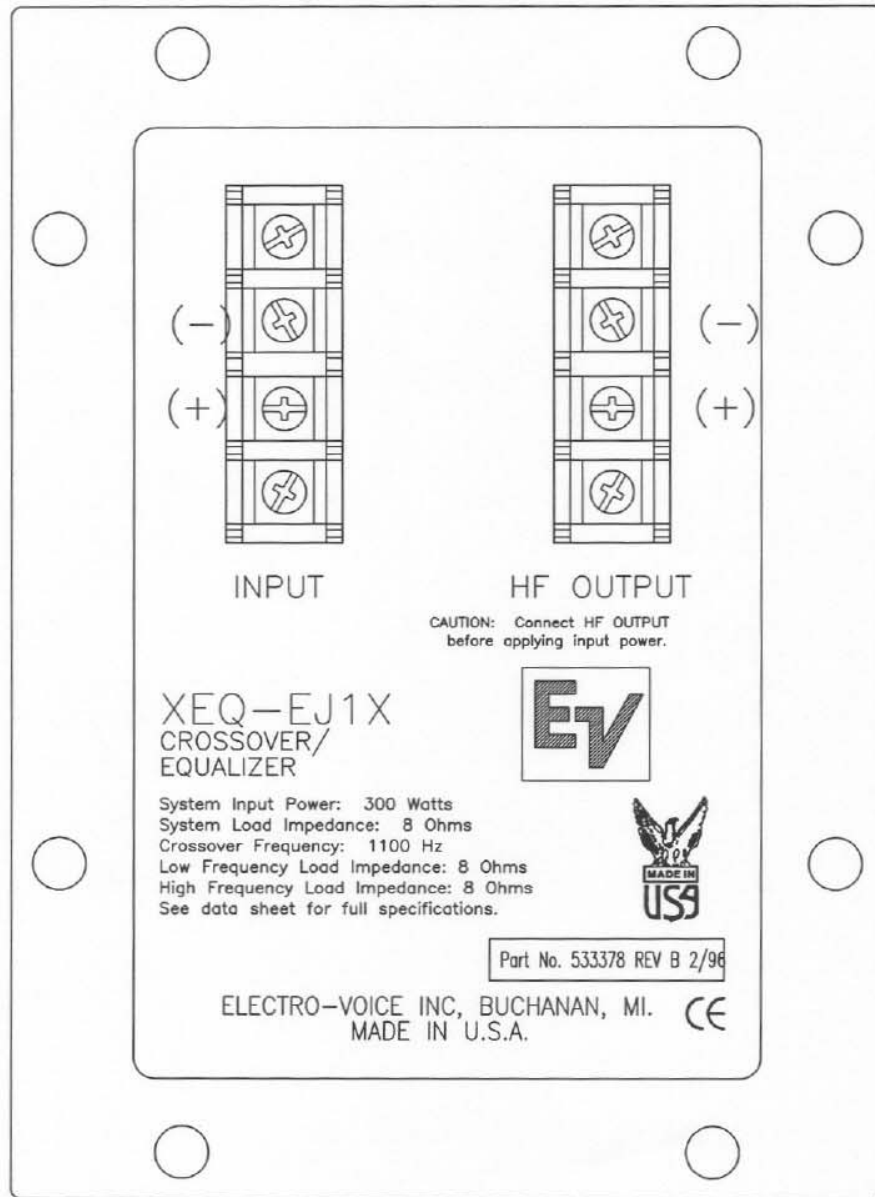
ALL CAPACITORS - METALLIZED POLYPROPYLENE
 ALL RESISTORS - 25 WATT P.C.MOUNT SQUARE CERAMIC
 L1 - Air Core +/- 10% 16Gg. WIRE
 L2 - Ferrite Core +/- 10% 18Gg. WIRE

ZONE	REV.	DESCRIPTION	DATE	APPROVED
A	1	RELEASED TO PRODUCTION. ECJ-----LS.	6-26-97	G.PETERMAN

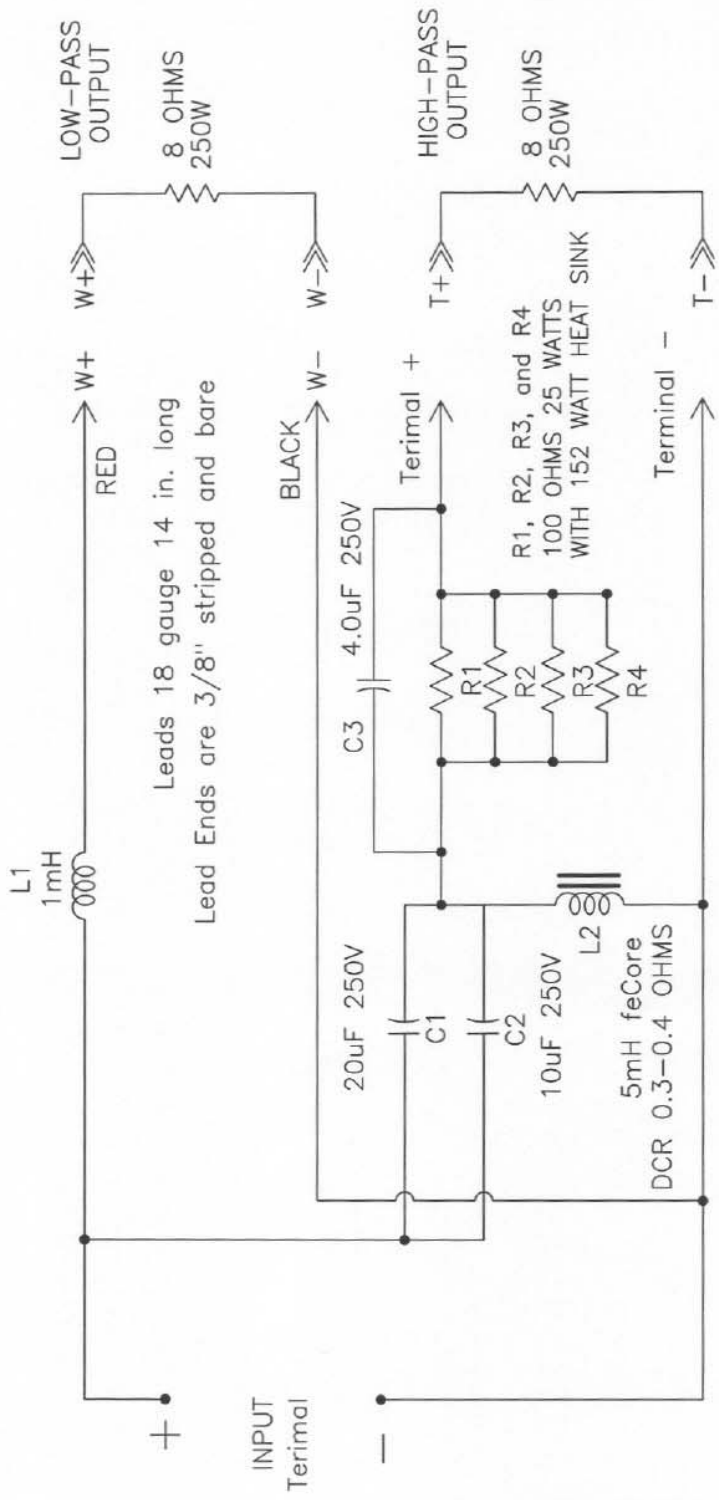
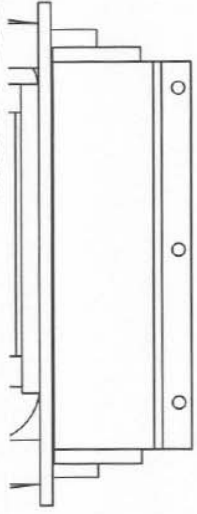
DATE	BY	DESCRIPTION
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8-25-97	G.PETERMAN	REVISED
8-25-97	G.PETERMAN	REVISED
8-25-97	G.PETERMAN	REVISED

SCALE: 1:1	FILE NO. RB-4517.DWG	SHEET NO. 1 OF 1
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 A Division of EM Audio, 138 E. Harte St., Richmond, MD, 21877
 QC SPEC SHEET
 PART NO. 84517



CONNECTION DETAIL AND
INPUT LABEL LOCATION



SCHEMATIC DIAGRAM

- ALL CAPACITORS - METALLIZED POLYPROPYLENE
- ALL RESISTORS - 25 WATT P.C.MOUNT SQUARE CERAMIC
- L1 - Air Core +/- 10% 18Ga. WIRE
- L2 - Ferrite Core +/- 10% 18Ga. WIRE

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