

Electro-Voice®
a gulton company

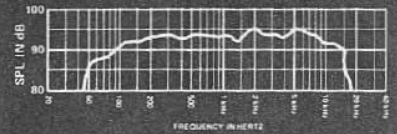


FIGURE 1 — Axial Frequency Response 4 volts/10 feet

Model S-1503 Stage Speaker System

SPECIFICATIONS

Frequency Response, 10 Feet on Axis,
Swept 1/3-Octave, Half-Space Anechoic
Environment (see Figure 1):

62-16,000 Hz

Low-Frequency 3-dB-Down Point:

62 Hz

Usable Low-Frequency Limit

(10-dB-down point):

40 Hz

Half-Space Reference Efficiency:

4.5%

Long-Term Average Power Handling
Capacity per EIA Standard RS-426A
(see Power Handling Capacity section):

200 watts

Maximum Woofer Acoustic Output:

9 watts

Sound Pressure Level at 1 Meter,
1 Watt Input, Anechoic Environment,
Band-Limited Pink Noise Signal,

300 to 2,000 Hz:

100 dB

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

250-20,000 Hz Horizontal

(see Figure 3):

113° ± 61°

250-20,000 Hz Vertical

(see Figure 3):

106° ± 54°

Directivity Factor R_d (Q), 800-16,000

Hz Median (see Figure 4):

8.1 (+7, -5.5)

Directivity Index D_i , 800-16,000 Hz

Median (see Figure 4):

9.1 dB (+2.7 dB, -4 dB)

Distortion, 0.1 Full Power Input

Second Harmonic,

100 Hz: 3%

1000 Hz: <1%

10,000 Hz: 4.5%

Third Harmonic,

100 Hz: <1%

1000 Hz: 2%

10,000 Hz: 3%

Distortion, 0.01 Full Power Input,

Second Harmonic,

100 Hz: 1%

1000 Hz: <1%

10,000 Hz: 2%

Third Harmonic,

100 Hz: <1%

1000 Hz: 1%

10,000 Hz: <1%

Transducer Complement,

High-Frequency:

ST350B

Mid-Frequency:

Vented midrange

Low-Frequency:

EVX-15

Box Tuning Frequency:

44 Hz

Crossover Frequencies:

600 Hz & 4000 Hz

Crossover Slope:

12 dB per octave

Impedance,

Nominal:

8 ohms

Minimum:

4.7 ohms

Input Connections:

Parallel 1/4 in. phone jacks (allows
paralleling of multiple speakers)

Enclosure Materials and Colors:

Black carpet covered Road-Wood™

Dimensions:

72.9 cm (28.7 in.) high

35.1 cm (13.8 in.) deep

61.9 cm (24.4 in.) wide

Net Weight:

47.7 kg (105 lb)

Shipping Weight:

50.4 kg (111 lb)

Optional Accessory:

EV 484 stand mount kit

DESCRIPTION

The Electro-Voice S-1503 is a 200-watt, three-way, high-efficiency stage system. It combines professional quality components, highlighted by the VMR® vented midrange speaker, with an unusually durable Thiele-Small aligned vented enclosure. The result is clear and articulate high quality sound.

The enclosure is constructed of Road-Wood™ — a structural material made of layered and selectively oriented hardwood strands. The covering is abuse-resistant black carpeting.

The high-frequency section of the S-1503 employs the ST350B constant-directivity tweeter featuring wide and uniform high-frequency coverage coupled with an auto-limiting protection circuit.

The midrange is the EV VMR speaker built with a high-efficiency flat wire coil and high temperature construction materials.

The bass section of the S-1503 is designed using Thiele-Small parameters for efficient performance to below 60 Hz. The 15-inch woofer used in the system is an EVX-15 unit featuring beryllium copper lead wire and an extended length, edgewound voice coil protected by the unique EV Thermo Inductive Ring (TIR™). The part of the magnetic structure adjacent to the coil is insulated, using the exclusive EV PROTEF™ process. The coil is driven by a massive (16 lb) magnetic structure.

THE VENTED MIDRANGE

An unusual feature of this system is the vented midrange used to bridge the frequency region between the specialized EVX woofer and the ST350B tweeter. This EV innovation represents a unique way of providing high acoustic output and efficiency from a compact direct-radiator form of loudspeaker. It is capable of providing large amounts of acoustic output from a small package that can be gracefully integrated into a medium size loudspeaker system. It does so without having the "honky" sound quality and upper range beaminess often associated with small format horn transducers used to cover midrange frequencies with a bandpass beginning below 1000 Hz. It contributes to providing natural high quality sound in a musical instrument loudspeaker system.

ENCLOSURE CONSTRUCTION

The S-1503 enclosure utilizes a structural material that combines the strength of high-quality plywood with the density and acoustic damping of particle board without brittleness. Road-Wood uses the same principle of crossbanding veneers, as in plywood, in order to achieve its very high rigidity. A tough liquid-phenolic resin is blended with long, narrow strands of hardwood. Alternate layers are perpendicularly bonded under intense heat and pressure to form panels of superior uniformity. Unlike many grades of plywood, Road-Wood is dimensionally stable, water resistant and free from voids.

A combination of dado cut joints, tough adhesives and proper bracing ensure a sonically dead enclosure free from panel resonances.

The densely-woven, industrial-grade, abuse-resistant carpeting provides a finish that is both attractive and highly durable. Large, heavy-duty metal corner protectors, firmly secured rubber feet and recessed handles complete the picture and ensure that the S-1503 speaker system is ideally suited to a long and reliable life "on the road."

FREQUENCY RESPONSE

The combination of 15-inch woofer, vented midrange and high-frequency tweeter provide the wide and smooth overall response shown in Figure 1. This response was measured at ten feet, using a 4-volt input in an anechoic chamber, and was measured using a swept 1/3-octave. No external equalization was used.

DIRECTIVITY

The polar response of the S-1503 speaker system at selected 1/3-octave bandwidths is shown in Figure 2. These polar responses were measured in an anechoic environment at 10 feet using 1/3-octave pink noise inputs. The frequencies selected are fully representative of the polar response of the system. Beamwidth of the system utilizing the complete 1/3-octave polar data is shown in Figures 3. R_{θ} (Q) and directivity index (D_i) are plotted in Figure 4.

POWER HANDLING CAPACITY

To our knowledge, Electro-Voice was the first U.S. manufacturer to develop and publish a power test closely related to real-life conditions. First, we use a random noise input signal because it contains many frequencies simultaneously, just like real voice or instrument program. Second, our signal contains more energy at extremely high and low frequencies than typical actual program, adding an extra measure of reliability. Third, the test signal includes not only the overall "long-term average" or "continuous" level — which our ears interpret as loudness — but also short-duration peaks which are many times higher than the average, just like the actual program. The long-term average level stresses the speaker thermally (heat). The instantaneous peaks test mechanical reliability (cone and diaphragm excursion). Note that the sine wave test signals sometimes used have a much less demanding peak value relative to their average level. In actual use, long-term average levels exist from several seconds on up, but we apply the long-term average for several hours, adding another extra measure of reliability.

Specifically, the S-1503 is designed to withstand the power test described in the revised EIA Standard RS-426A. The EIA test spectrum is applied for eight hours. To obtain the spectrum, the output of a white noise generator (white noise is a particular type of random noise with equal energy per bandwidth in Hz) is fed to a shaping filter with 6-dB-per octave slopes below 40 Hz and above 318 Hz. When measured with the usual constant-percentage bandwidth analyzer (one-third octave), this shaping filter produces a spectrum whose 3-dB-down points are at 100 Hz and 1200 Hz with a 3-dB-per octave slope above 1200 Hz. This shaped signal is sent to the power amplifier with the continuous power set at 200 watts into the 7.7 ohms EIA equivalent impedance, (39.2 volts true RMS). Amplifier clipping sets instantaneous peaks at 6 dB above the continuous power, or 800 watts peak (78.4 volts peak). This procedure provides a rigorous test of both thermal and mechanical failure modes.

GRILLE REMOVAL

The grille assembly of the S-1503 is fastened to the enclosure using four sturdy dual-lock fasteners. The grille assembly can be removed quickly and easily, allowing access to the drivers, by firmly pulling on the two black polyester ribbon loops provided.

MOUNTING

The S-1503 can be mounted on a 1-3/8 inch diameter stand by employing the EV 484 Stand Mount Accessory Kit, which includes a heavy duty stand socket together with four propellor nuts and screws. Installation is easily achieved with the template and mounting instructions included.

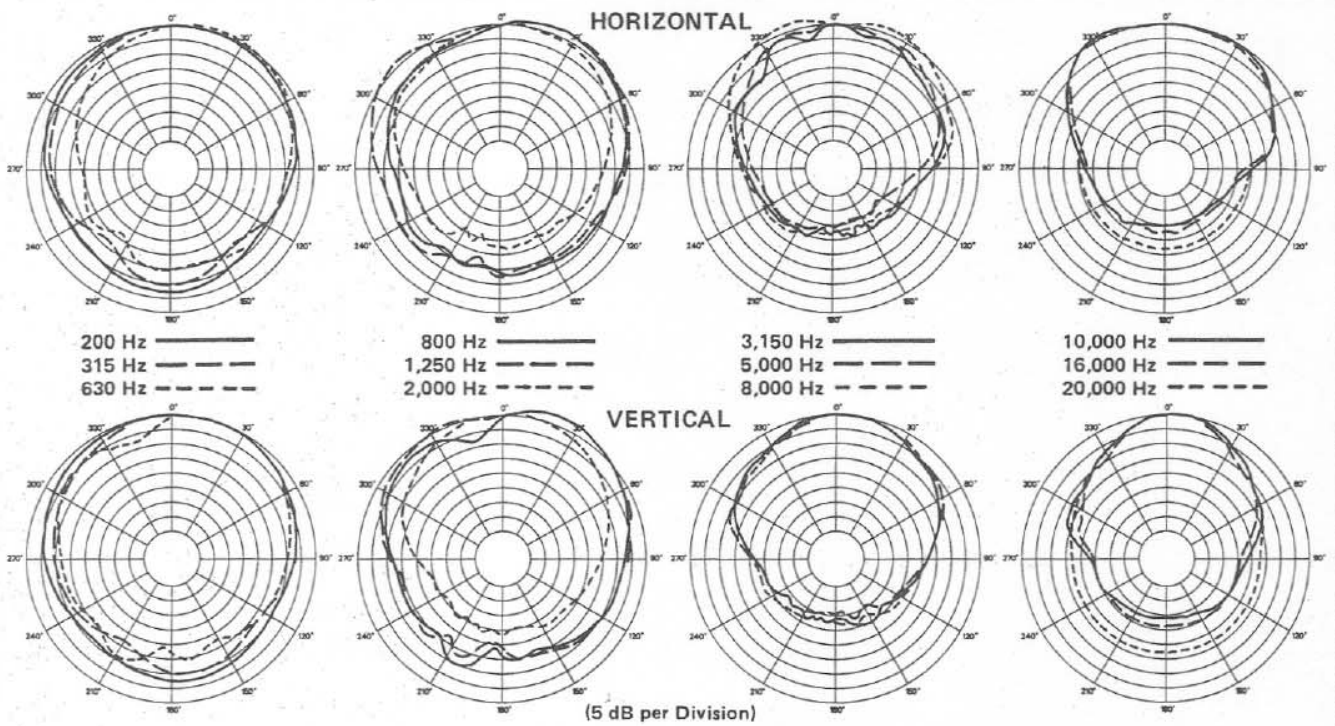


FIGURE 2 – Polar Response (1/3 octave pink noise
4 volts/10 feet)

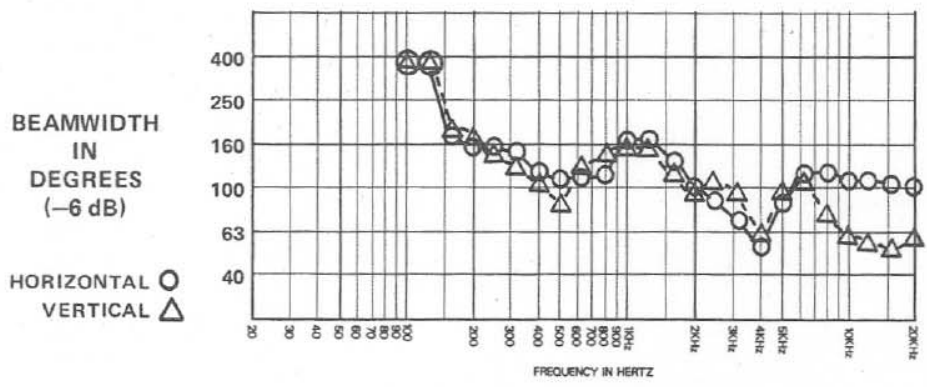


FIGURE 3 – Beamwidth vs Frequency
Whole Space (anechoic)

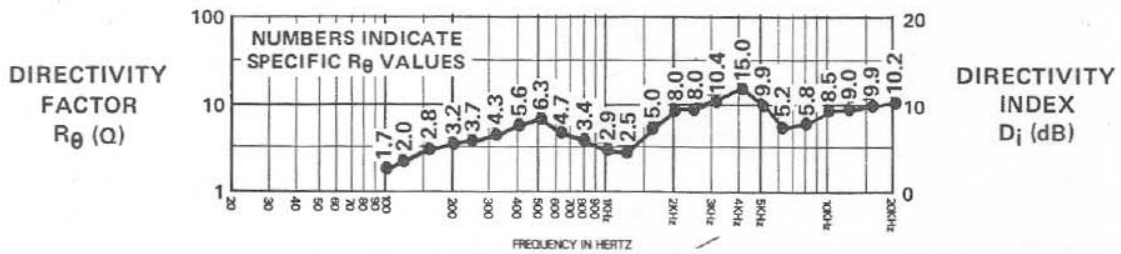


FIGURE 4 – Directivity vs Frequency
Whole Space (anechoic)

WARRANTY (Limited) —

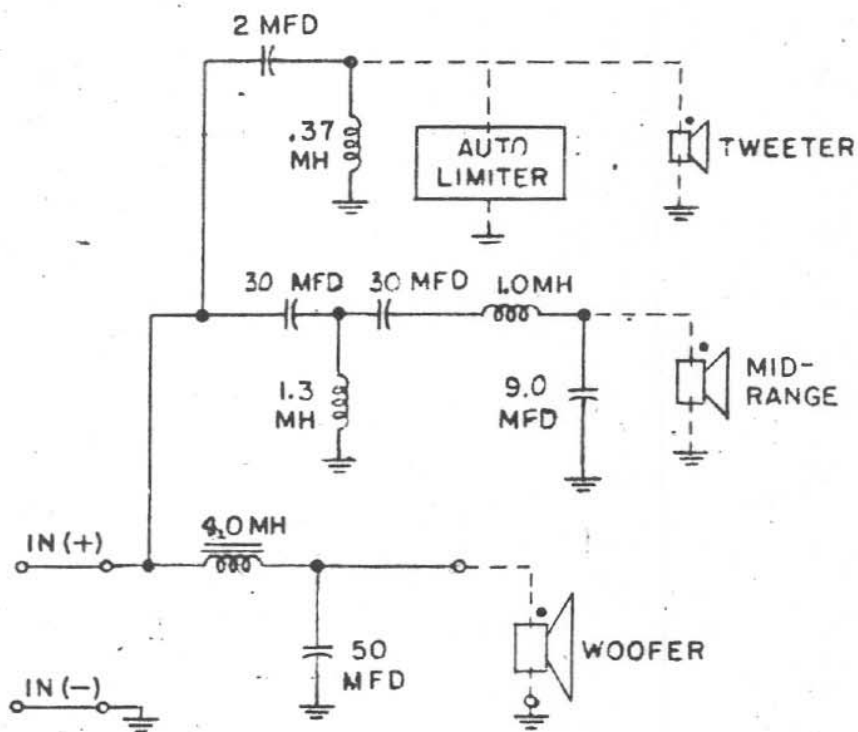
Electro-Voice Music Loudspeaker Systems and Accessories are guaranteed for five years from date of original purchase against malfunction due to defects in workmanship and materials. If such malfunction occurs, unit will be repaired or replaced (at our option) without charge for materials or labor if delivered prepaid to the proper Electro-Voice service facility. Unit will be returned prepaid. Warranty does not cover finish or appearance items or malfunction due to abuse or operation at other than specified conditions. Repair by other than Electro-Voice or its authorized service agencies will void this guarantee.

For shipping address and instructions on return of Electro-Voice products for repair and locations of authorized service agencies, please write: Service Department, Electro-Voice, Inc., 600 Cecil Street, Buchanan, Michigan 49107 (Phone: 616/695-6831) or Electro-Voice West, 8234 Doe Avenue Visalia, California 93277 (Phone: 209/651-7777).

Electro-Voice also maintains complete facilities for non-warranty service.

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

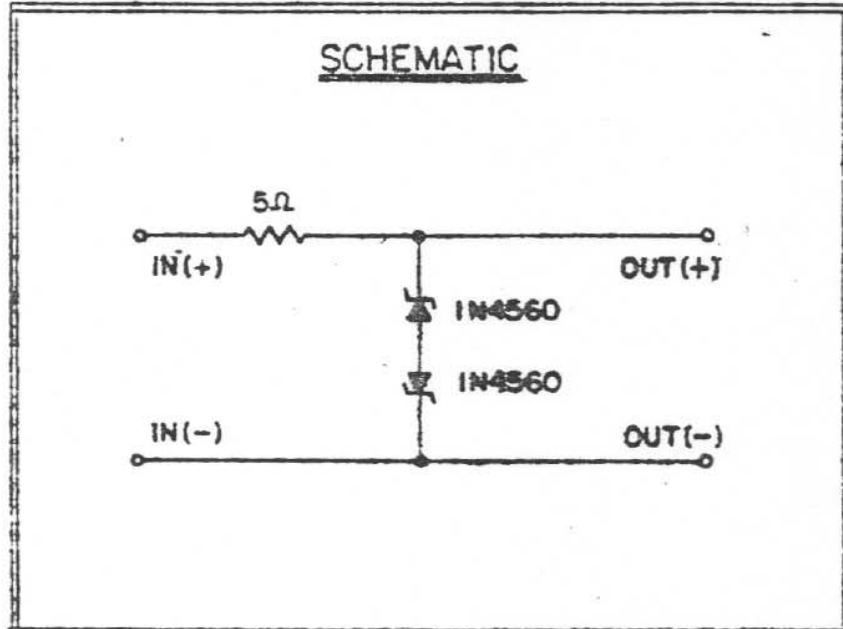
Specifications subject to change without notice.



SCHEMATIC
S-1503

SBD-10-5355

89060 LIMITER



Zener Diode	43297	2 pcs.
5ohm/50W Resistor	46684	1 pc.

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