



HDH™ 1

High-Level 3-Way
Triamp System
Multi-Driver Manifold Loaded

SPECIFICATIONS

Enclosure:

HDH™ 1

Frequency Response, 1 Meter on Axis, Swept Sine Averaged Across Operating Bandwidth in Anechoic Environment:

56 Hz - 18 kHz

Low Frequency Limit (-3 dB Point):

56 Hz

Usable Low Frequency Limit (-10 dB Point):

43 Hz

Power Handling:

Lows:

500 watts continuous (44.7 volts RMS)
500 watts program

Mids:

250 watts continuous (44.7 volts RMS)
500 watts program

Highs:

160 watts continuous (35.8 volts RMS)
320 watts program

Sound Pressure Level, 1 Watt at 1 Meter, Swept Sine Input in Anechoic Environment:

109 dB

Maximum Sound Pressure Level:

131 dB

Radiation Angle Measured at -6 dB Point of Polar Response:

Horizontal Plane:

250—500 Hz

190° +/- 30°

500—10,000 Hz

95° +/- 25°

10,000—16,000 Hz

60° +/- 20°

Vertical Plane:

250—500 Hz

190° +/- 40°

500—10,000 Hz

65° +/- 15°

10,000—16,000 Hz

52° +/- 5°

Directivity Factor Q, 500 Hz—16,000 Hz Median:

8.1 (+15.3, - 6.8)

Directivity Index D_i, 500-16,000 Hz Median:

10.2 dB (+5.3 dB, - 8.2 dB)

Transducer Complement:

2 1505-8 BW

1 1204-4 BW coupled to an MB™-3 60° H
× 40° V mid bass horn

4 22A™ compression drivers coupled to a
CH™-5 80° H × 40° V horn by a four-driver
manifold

Box Tuning Frequency (F_{box}):

40 Hz

Crossover Frequency:

300 & 1200 Hz

Crossover Type:

Active HDH processing controller

Crossover Slope:

18 dB/octave low, 18 dB/octave high

Impedance (Nominal):

4 ohms low, 8 ohms mid, 8 ohms high

Impedance (Minimal):

3.2 ohms low, 5.1 ohms mid, 5.6 ohms
high

Input Connections:

Two Cannon EP-4-14 4-pin male wall-
mount receptacles wired in parallel

Enclosure Materials and Finish:

¾" flying high-density plywood covered
with wear-resistant carpet

Mounting:

Provided with 5 fixed flying points (2 top,
2 bottom, 1 back)

Dimensions:

27" (68.6 cm) W × 57¼" (145.4 cm) H ×

27" (68.6 cm) D

Net Weight:

250 lbs. (113.4 kg)

Trapezoid w/12 deg angle

DESCRIPTION:

The HDH™ 1 is a full-range, 3-way enclosure designed specifically for sound reinforcement. Its trapezoidal shape permits the arrangement of multi-enclosure arrays, providing maximum coverage. The enclosure is constructed of ¾", 7 ply, high-density plywood reinforced with 12 gauge steel bracing, then covered with a rugged wear-resistant carpet. A black opaque grille is permanently attached to the baffle to provide component protection and cosmetic appeal. Five pivoted Aeroquip mounting points are located on the top, bottom and back of the enclosure to provide suspension at any angle without overstressing any single flying point. The 3-way system is comprised of two 15 inch 1505-8 Black Widow® low frequency drivers, a 12 inch 1201-8 Black Widow® speaker loaded onto an MB™-3 mid frequency horn, and supplying the high end of the system, four 22A™ compression drivers mounted via a four driver manifold onto a CH™-5 constant directivity horn. The input frequency spectrum is controlled by the HDH™ Processing Controller which is an active crossover/preamplifier. By sampling each amplifier output, the

HDH™ Processor provides a low frequency excursion control, loudness compensation and three-band thermal protection. The HDH 1 along with the HDH Processing Controller provides ultra-high level in sound reinforcement from 43 Hz to 18,000 Hz.

DIRECTIVITY:

Beamwidth and directivity factors are derived from the -6 dB points from the polar plots (see figure 3) which are measured in a whole space anechoic environment. These are specifications which provide a reference to the coverage characteristics of the enclosure. These parameters provide insight for proper enclosure placement and installation in the chosen environment. The blending of the components of the HDH exhibits a desirable beamwidth and directivity factor (figures 4 and 5) suitable for all high-level sound reinforcement applications.

FREQUENCY RESPONSE:

The frequency response of the HDH™ 1 is measured in an anechoic environment at a distance of 1 meter while using a 2.82 volt logarithmically swept sine input. This measurement is useful in determining the accuracy in which the enclosure reproduces the input signal. The combination of two 1505-8 BW's, the MB™-3 loaded 12" BW and the four 22A™ compression drivers on the CH™-5 horn, along with the HDH Processor, results in a flat desirable response as shown in figure 1.

POWER HANDLING:

There are many different approaches to power handling ratings, the most common being EIA Standard RS-426A. The derived shape of this test spectrum was an attempt to simulate the spectral content of contemporary music. Although it does resemble contemporary music, EIA-RS-426A does not contain the same levels of very low frequency material found in live music situations. Very high levels of low frequency material produce distortion and, ultimately, device failure. The presence of the low frequency material will therefore yield lower device ratings than produced by EIA Standard RS-426A.

Although the device ratings are lower than those produced by the EIA test spectrum, they are far more reliable and will have a direct correlation to real world situations.

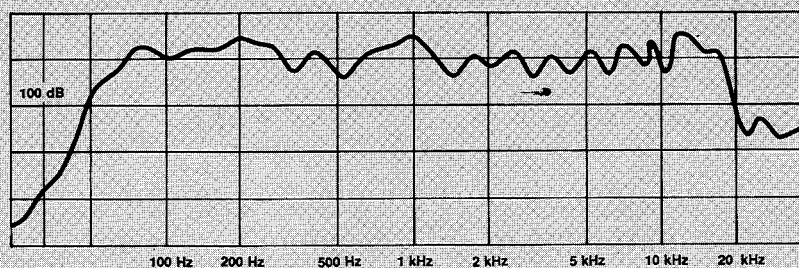


Figure 1. FREQUENCY RESPONSE

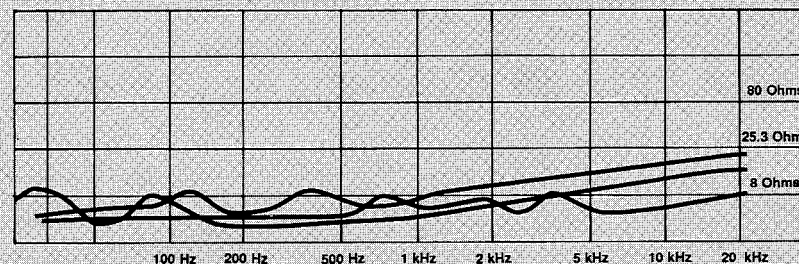


Figure 2. IMPEDANCE

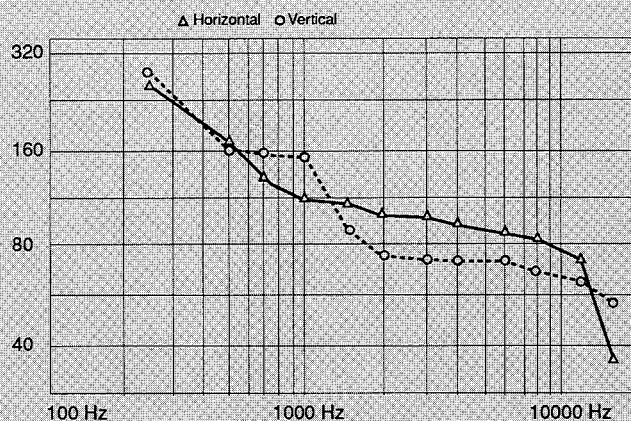


Figure 4. BEAMWIDTH VS. FREQUENCY

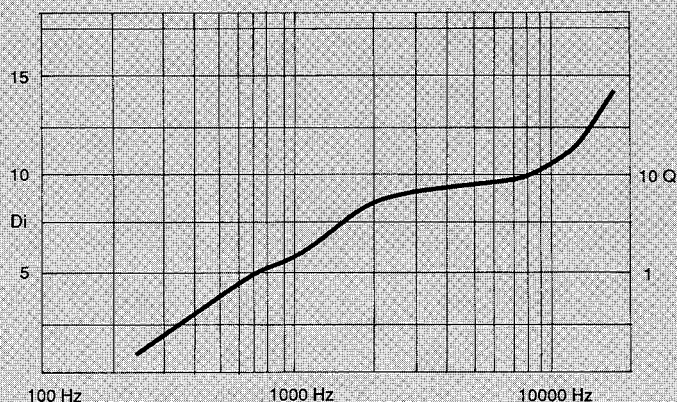
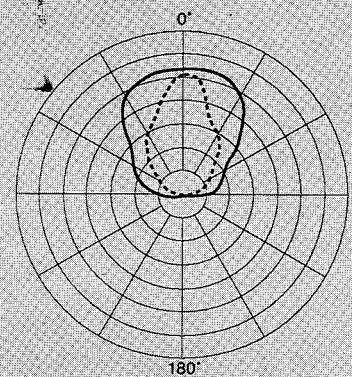
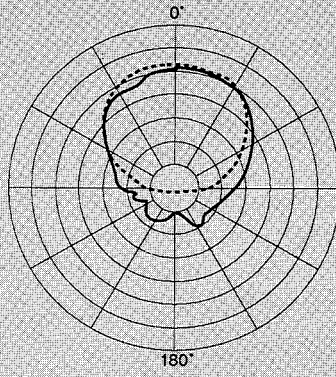
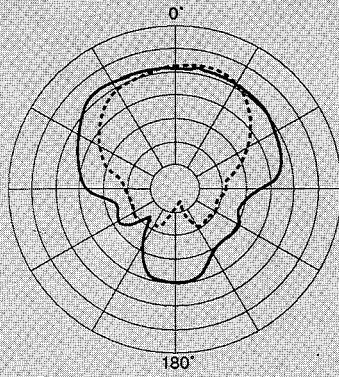


Figure 5. DIRECTIVITY

5 dB per Division

HORIZONTAL



— 500 Hz
- - - 1 kHz

— 2 kHz
- - - 4 kHz

— 8 kHz
- - - 16 kHz

5 dB per Division

VERTICAL

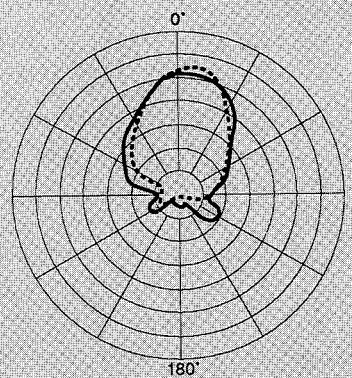
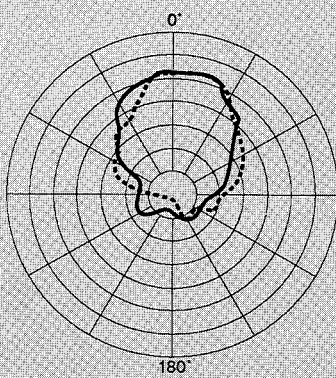
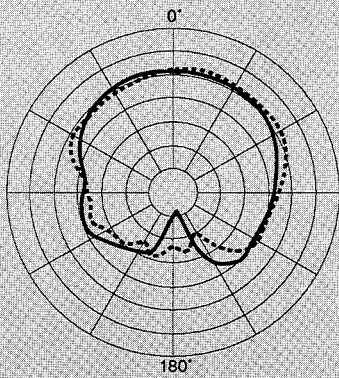
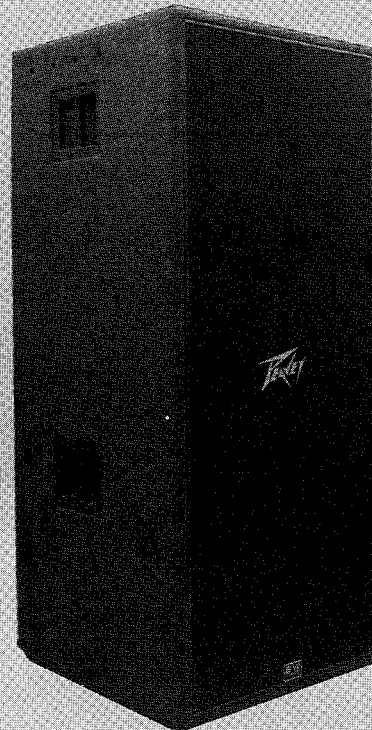
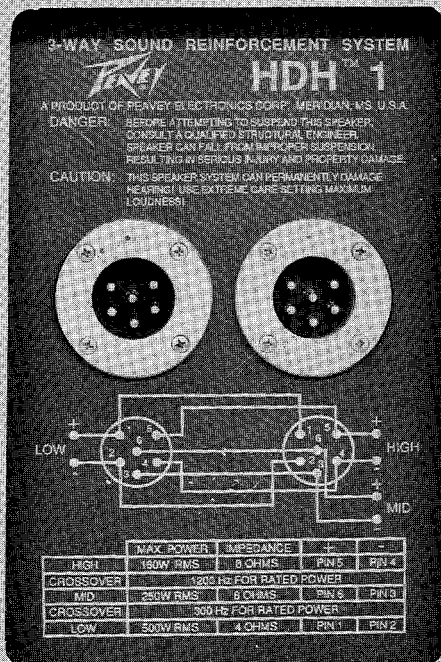


Figure 3. POLAR PATTERNS



MOUNTING:

The HDH™-1 is supplied with five fixed, pivoted Aeroquip flying points (two top, two bottom, one back) which enable hanging at any angle. The cabinet is reinforced with 12 gauge steel brackets which tie all six faces into a sturdy single unit. The grille is permanently attached to the baffle to alleviate any possibility of separation of the grille from the enclosure.

ARCHITECTURAL & ENGINEERING SPECIFICATIONS:

The loudspeaker system shall have an operating bandwidth of 43 Hz to 18 kHz. The output level shall be 109 dB when measured at a distance of one meter with an input of one watt. The nominal impedance shall be 4 ohms (low), 8 ohms (mid) and 8 ohms (high). The continuous power handling shall be 500 watts (low), 250 watts (mid), and 160 watts (high); maximum program power of 1000 watts (low), 500 watts (mid), and 320 watts (high), with a minimum amplifier headroom of 3 dB. The nominal radiation geometry shall be 80 degrees in the horizontal plane and 40 in the vertical plane. The outside dimensions shall be 27 inches wide by 57¼ inches high by 27 inches deep. The weight shall be 250 lbs. The loudspeaker system shall be a Peavey model HDH™ 1.

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