Engineering News

ALTEC
A DIVISION OF ALTEC CORPORATION

1515 S. Manchester Avenue, Anaheim, California

TECHNICAL LETTER NO. 220

MEASUREMENT OF NOMINAL SENSITIVITY RATINGS FOR HORN-DRIVER COMBINATIONS COMMONLY USED IN MONITOR AND PLAYBACK SYSTEMS

Technical Letter No. 203 presented sensitivity measurements for ALTEC's large high-frequency drivers on multicellular horns and larger sectoral horns. This letter supplements that data with sensitivity measurements for ALTEC's smaller high-frequency horn-driver combinations, providing contractors and engineers with accurate specifications for high-quality monitor and playback systems.

Test conditions and instrumentation used in compiling this data were identical to those used in compiling the measurements presented in Technical Letter No. 203. All measurements were made at four feet on axis. Sensitivity measurements were obtained from two separate input methods for each horn-driver combination listed in Table 1.

Method 1. RMS voltage adjusted to provide one watt of input to the nominal rated impedance of the driver

$$\left(\frac{\underline{E}^2}{Z_{nom}} = 1 \text{ watt}\right).$$

Method 2. Both RMS voltage and RMS current adjusted to provide one watt of input to the driver

$$(\underline{E} \times \underline{I} = 1 \text{ watt}).$$

Differences resulting from these measurement methods are negligible, reflecting only the difference between the complex impedance of the driver and a resistor of nominal impedance value. Method 1 is recommended because it matches the condition most often met with high-quality amplifiers having low source impedance. Nominal impedance of the 288C driver is 24 ohms; nominal impedance of all other drivers listed in Table 1 is 8 ohms.

Table 1. Field Sensitivity Measurements

Driver	Horn	Pink Noise Bandwidth	$\frac{\underline{E}^2}{Z_{nom}} = 1$ watt	$\underline{E} \times \underline{I} = 1$ watt
806-8A	811B	1 kHz - 3 kHz	101.5 dB SPL	101.0 dB SPL
806-8A	511B	500 Hz - 3 kHz	102.0 dB SPL	102.5 dB SPL
807-8A	811B	1 kHz - 3 kHz	103.5 dB SPL	104.0 dB SPL
807-8A	511B	500 Hz - 3 kHz	103.0 dB SPL	103.5 dB SPL
802-8A	811B	1 kHz - 3 kHz	103.0 dB SPL	104.0 dB SPL
802-8A	511B	500 Hz - 3 kHz	102.5 dB SPL	104.0 dB SPL
808-8A	811B	1 kHz - 3 kHz	103.5 dB SPL	104.5 dB SPL
808-8A	511B	500 Hz - 3 kHz	103.0 dB SPL	104.5 dB SPL
288C	329A	500 Hz - 3 kHz	108.0 dB SPL	108.0 dB SPL
288-8A	511	500 Hz - 3 kHz	105.0 dB SPL	107.0 dB SPL

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