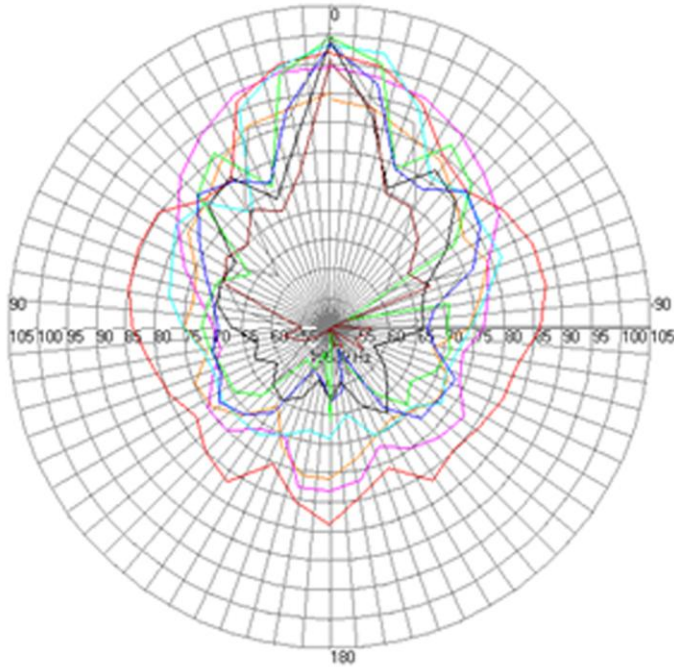




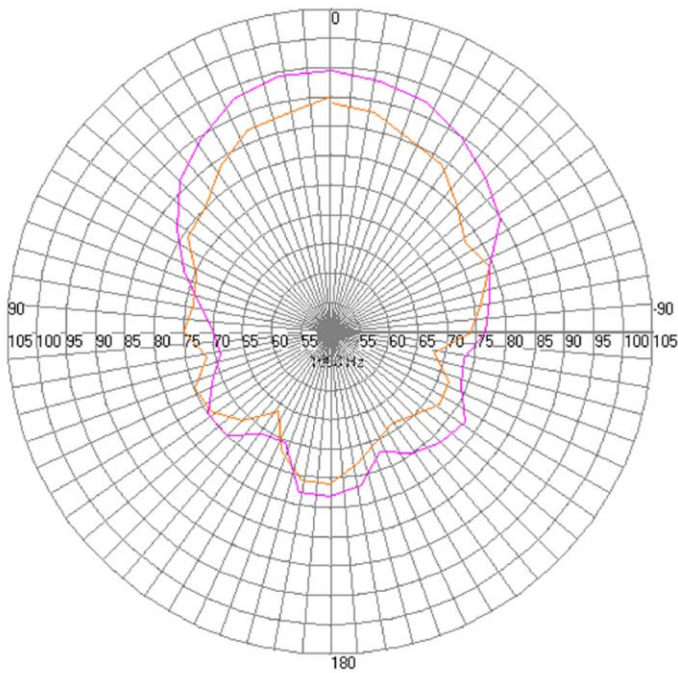
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HS-18 Polar Plot – All Frequency Bands



- 500 Hz
- 700 Hz
- 1000 Hz
- 1412 Hz
- 2000 Hz
- 2818 Hz
- 4000 Hz
- 5620 Hz
- 8000 Hz

HS-18 Polar Plot – Human voice band

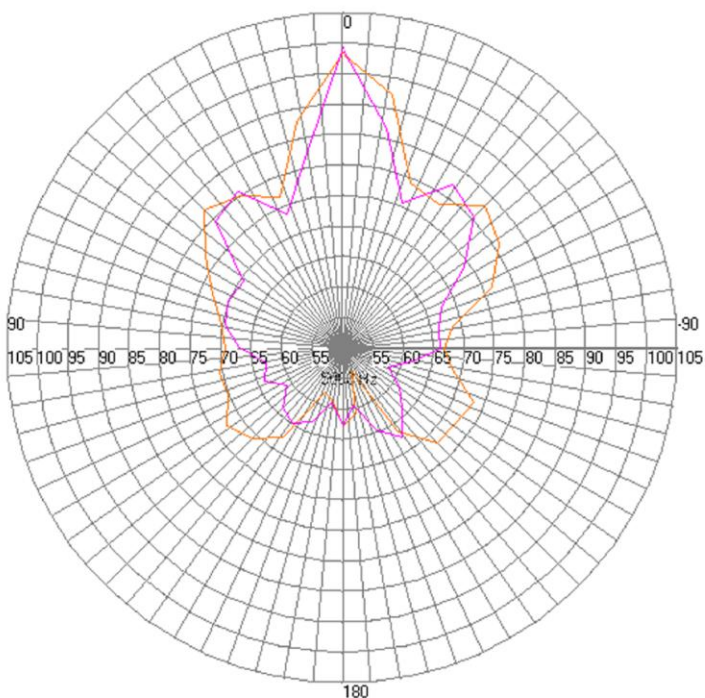


- 500 Hz
- 700 Hz



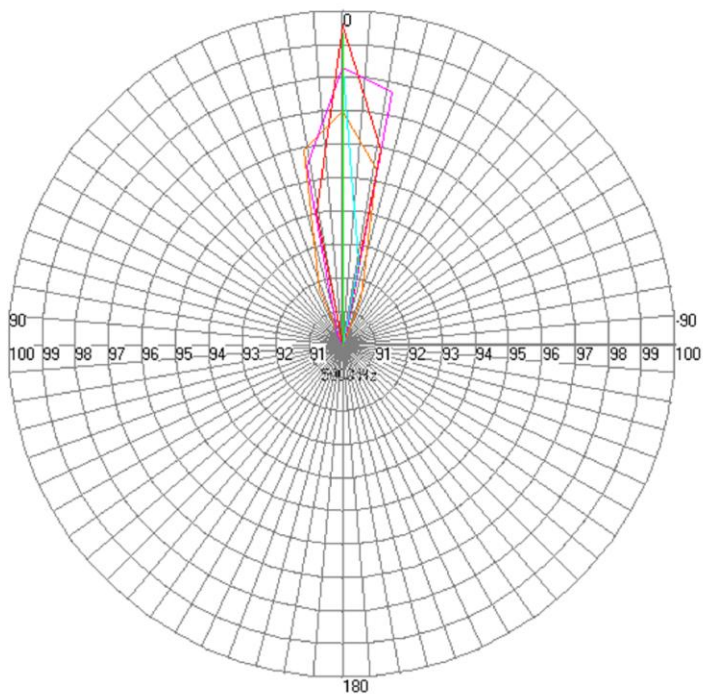
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HS-18 Polar Plot – Alert Tone



- 2818 Hz
- 4000 Hz

HS-18 Directivity Plot

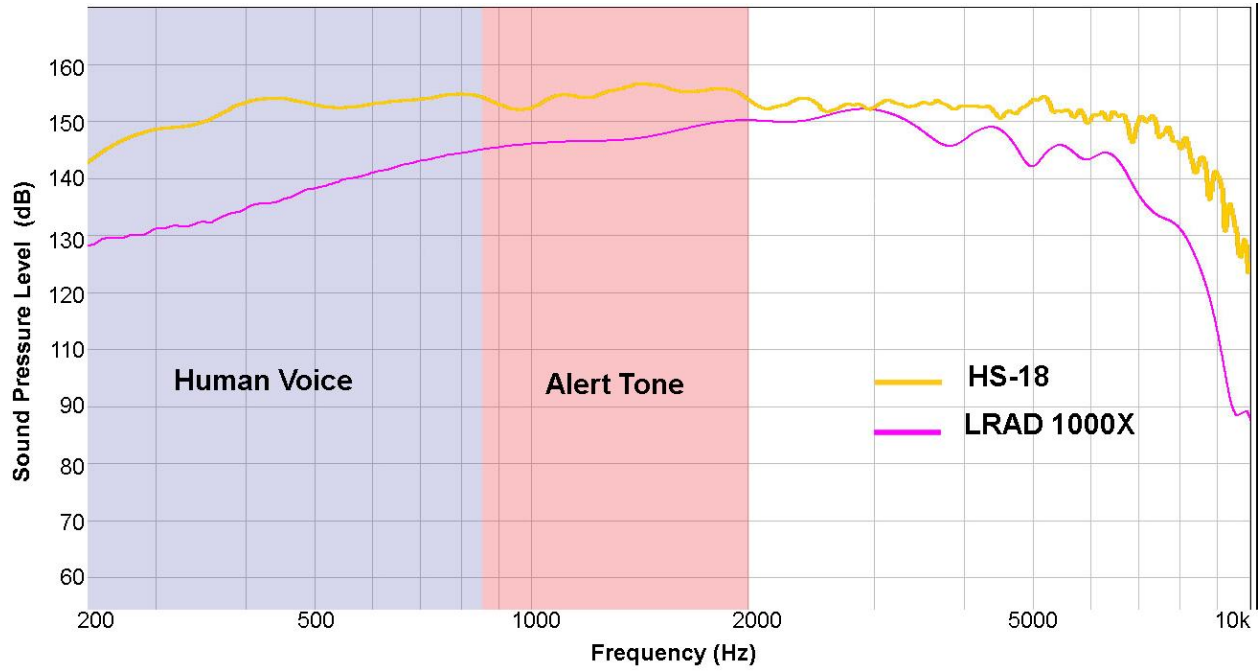


- 1000 Hz
- 1412 Hz
- 2000 Hz
- 2818 Hz
- 4000 Hz

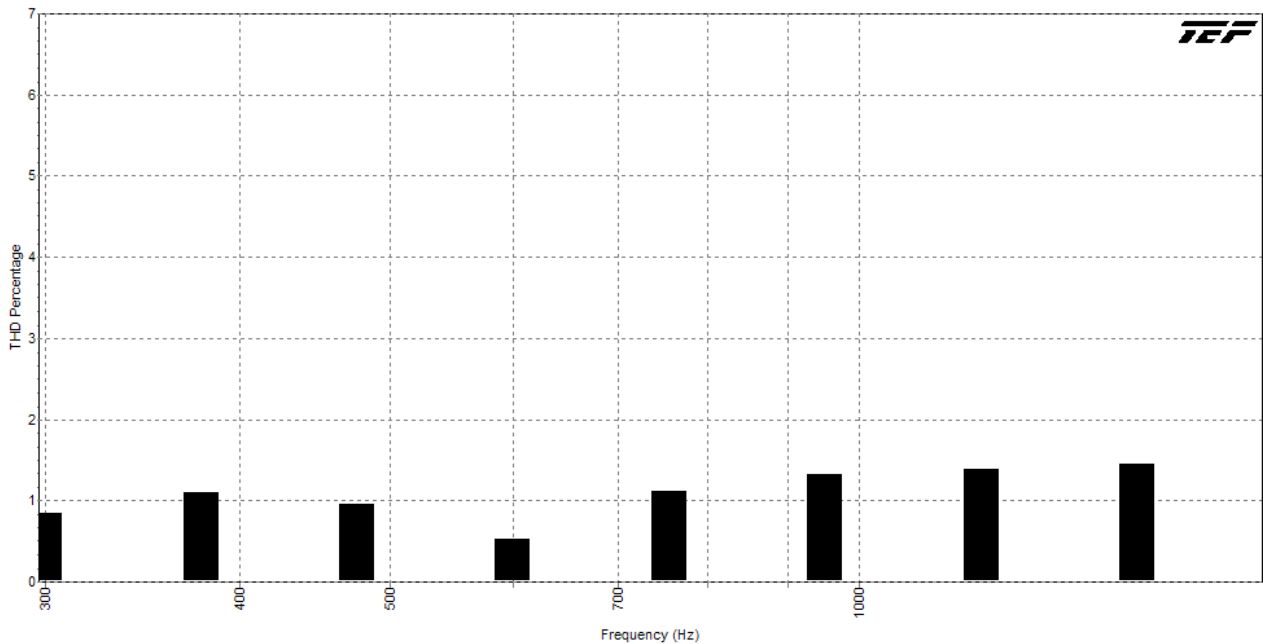


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HS-18 Frequency Response



HS-18 Total Harmonic Distortion (THD)





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Definitions

Sound Pressure Level is a logarithmic measure of the effective sound pressure of a sound relative to a reference value. It is measured in decibels (dB) above a standard reference level. The commonly used "zero" reference sound pressure in air is 20 μPa RMS, which is usually considered the threshold of human hearing (at 1 kHz).

Polar Plots provide a basic understanding of the radiation pattern of an acoustic device and are common tools used to determine the beam width. A polar plot describes the response of the speaker as it rotates around its axis.

Directivity is a measure of the directional characteristic of a sound source. It is often expressed as a Directivity Index in decibels, or as a dimensionless value of Q. This is an important aspect of a sound source. When a balloon is popped, it sends sound out in all directions equally (for all practical purposes), and this would represent a Q value of 1. A person talking has a Q value of approximately 2, which means that sound radiates in a hemispherical pattern (half a sphere). Directivity is important because it helps indicate how much sound will be directed towards a specific area compared to all the sound energy being generated by a source.

Total Harmonic Distortion or THD of a signal is a measurement that compares the output signal of a speaker with the input signal and measures the level differences in harmonic frequencies between the two. Total harmonic distortion is measured as a percentage, such as 0.5% THD. Lesser THD allows the components in a loudspeaker, amplifier or microphone or other equipment to produce a more accurate reproduction by reducing harmonics added by electronics and audio media. A THD rating < 1% is considered to be in high-fidelity and inaudible to the human ear.