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Grimani Systems Alpha Measurement Data

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The Grimani Systems Alpha is a CSA enabled, premium high SPL on-wall loudspeaker for high-end cinemas. It is intended for use in private screening rooms and theaters of up to 200 seats. It is an active speaker with 1750W of power and very flexible DSP built in. It is an 80Hz speaker and needs to be mated with appropriate subwoofers. It uses a 12" woofer, 2 x 6.5" midrange drivers and a 1" throat compression driver mounted to a 16" wide Conic Section Array waveguide.

All measurements were made at Sausalito Audio which does not have a full anechoic chamber. The data is anechoic to ~500Hz and becomes increasingly corrupted by room reflections below that. Below ~150Hz the data should be largely disregarded.

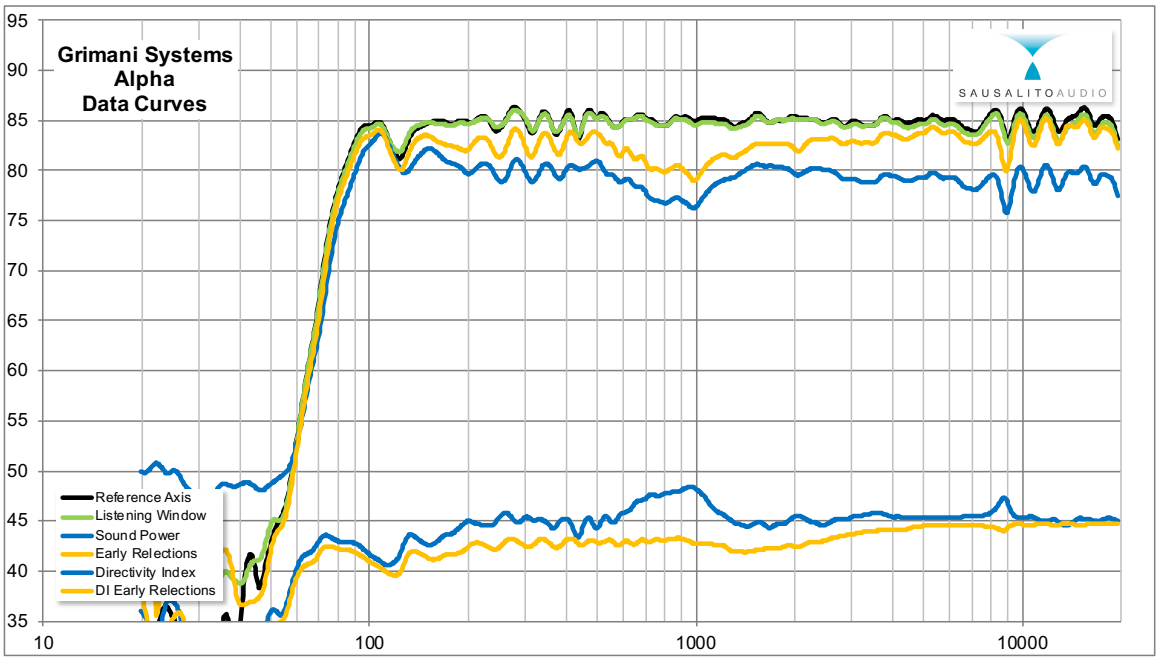

Figure 1: Spinorama chart for the Grimani Systems Alpha. For information on how to interpret this chart, please see "Interpreting Spinorama Charts" on the SA web site.

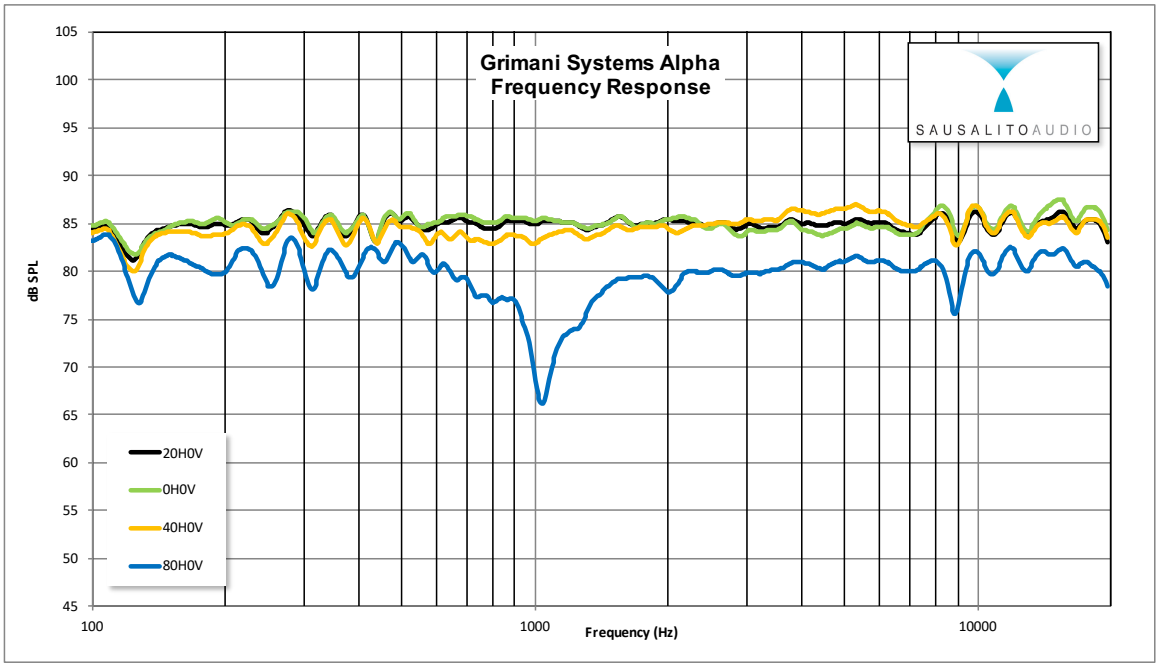

Figure 2: Frequency response curves at the referenced horizontal angles. 0° vertical is taken as the center of the mouth of the waveguide. For CSA loudspeakers, it has been Sausalito Audio's convention to use 20° horizontal, 0° vertical as the reference axis. The off-axis performance of the CSA waveguide obviates the need to "toe in" the speaker.

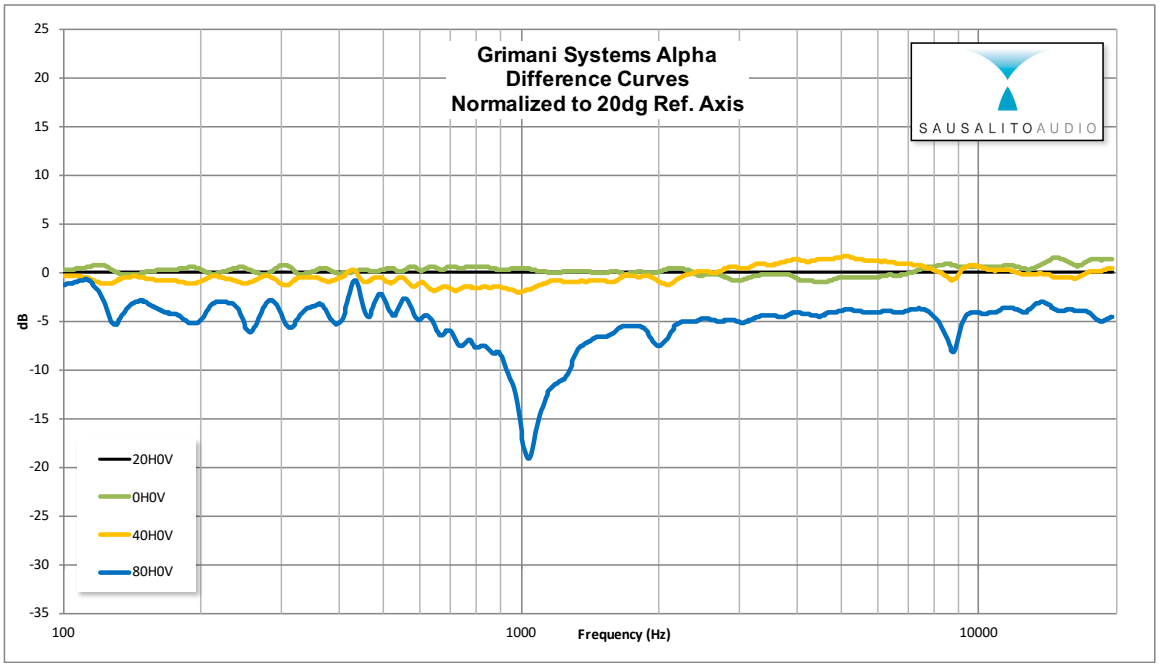

Figure 3: The data from figure 2 normalized to the reference axis of 20° horizontal, 0° vertical to more clearly show how the response of the speaker changes as one moves off the center line.

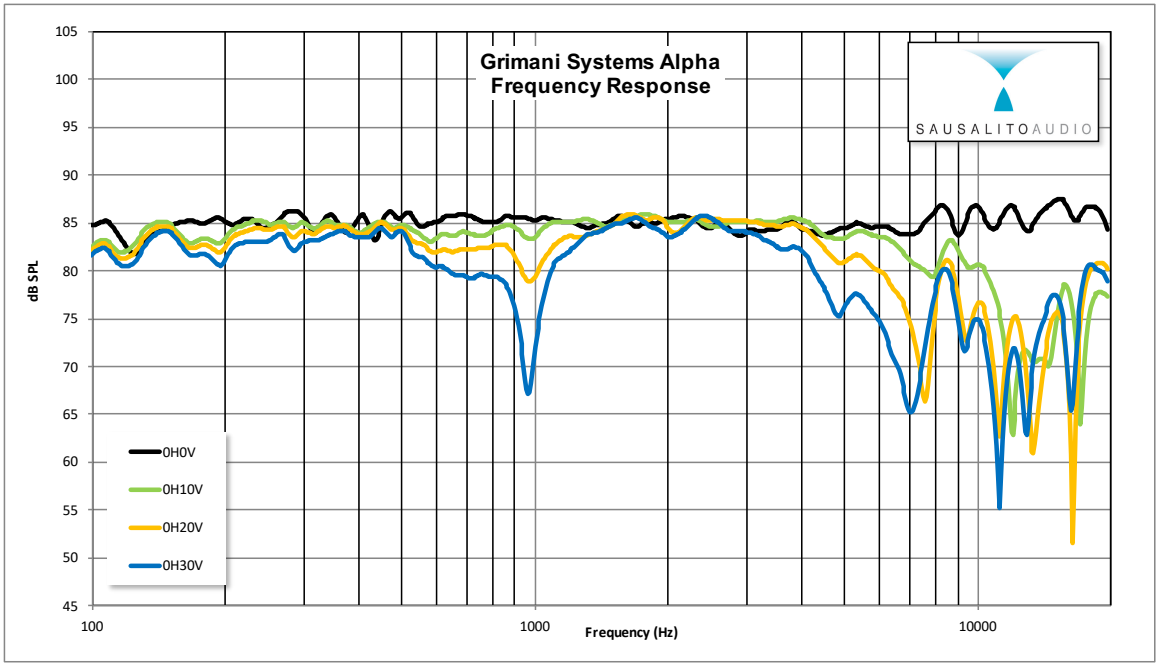

Figure 4: Response curves for 10°, 20° & 30° above the 0° vertical reference which is the center of the waveguide.

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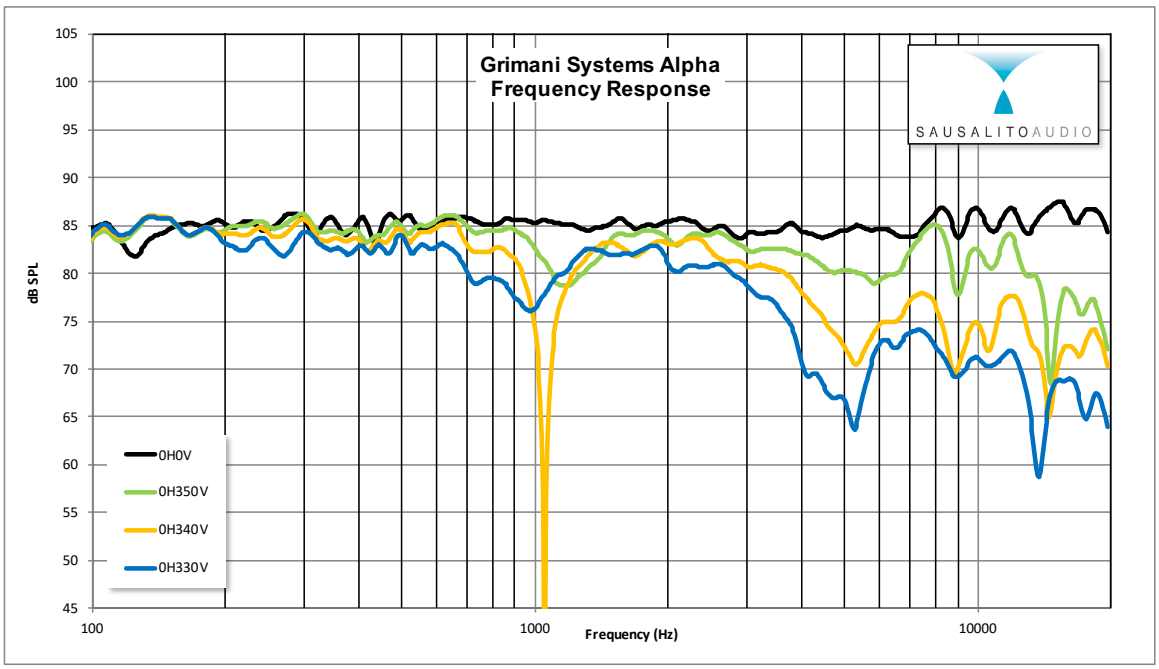

Figure 5: Response curves for 10°, 20° & 30° below the 0° vertical reference which is the center of the waveguide.

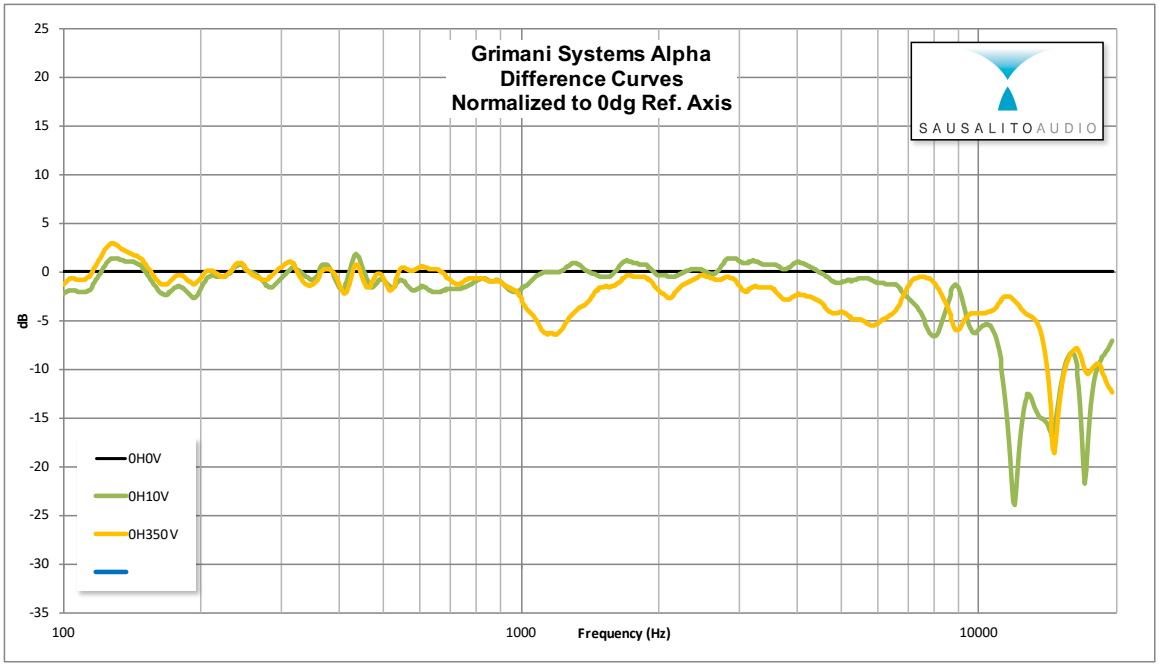

Figure 6: +10° & -10° vertical response normalized to 0° vertical reference axis to better show change over the 20° vertical listening window.

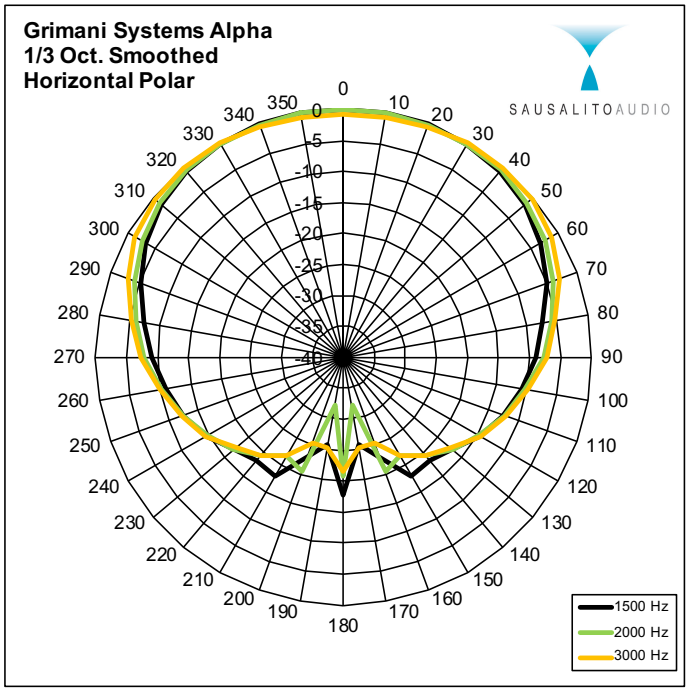

Figure 7: Horizontal polar response at the indicated frequency. Data is normalized to 0dB and smoothed to 1/3 octave per convention for polar plots.

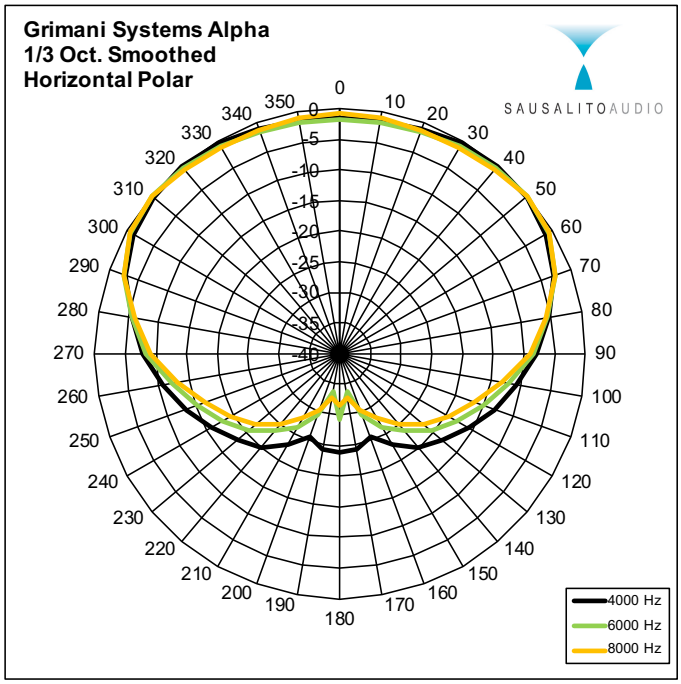

Figure 8: Horizontal polar response at the indicated frequency. Data is normalized to 0dB and smoothed to 1/3 octave per convention for polar plots.

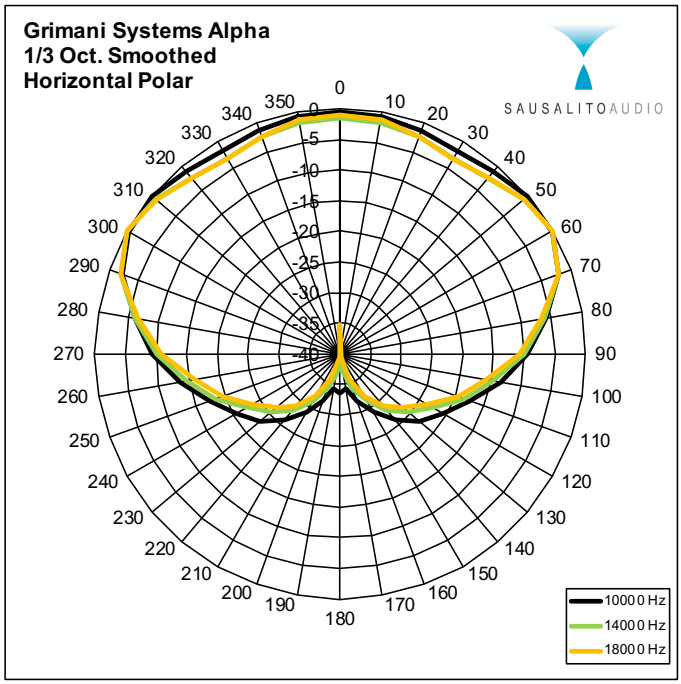

Figure 9: Horizontal polar response at the indicated frequency. Data is normalized to 0dB and smoothed to 1/3 octave per convention for polar plots.

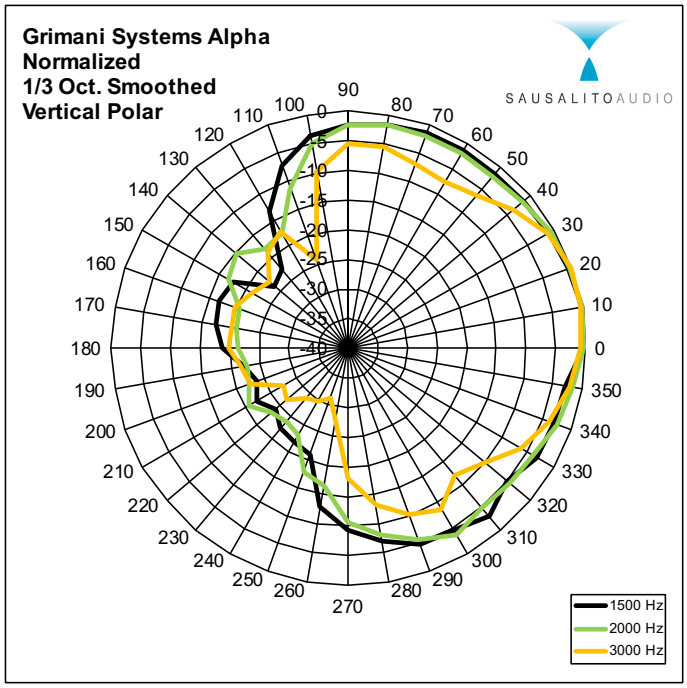

Figure 10: Vertical polar response at the indicated frequency. Data is normalized to 0dB and smoothed to 1/3 octave per convention for polar plots.

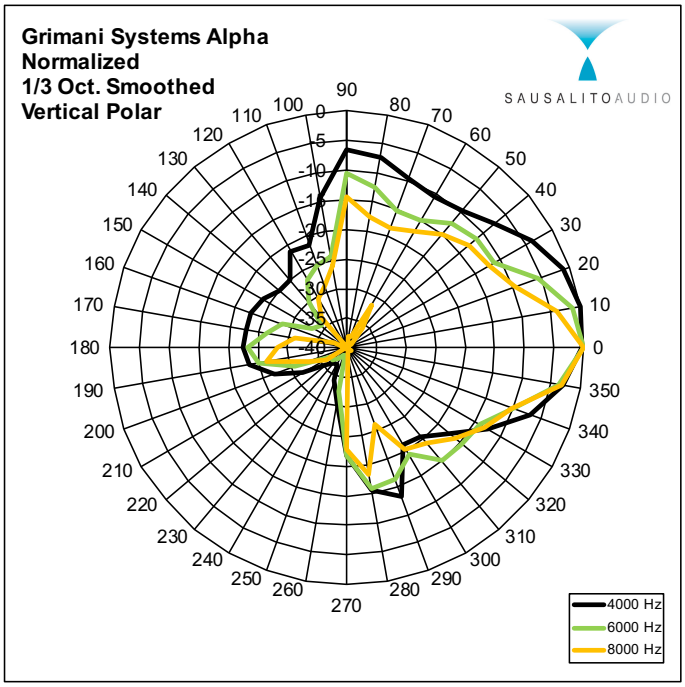

Figure 11: Vertical polar response at the indicated frequency. Data is normalized to 0dB and smoothed to 1/3 octave per convention for polar plots.

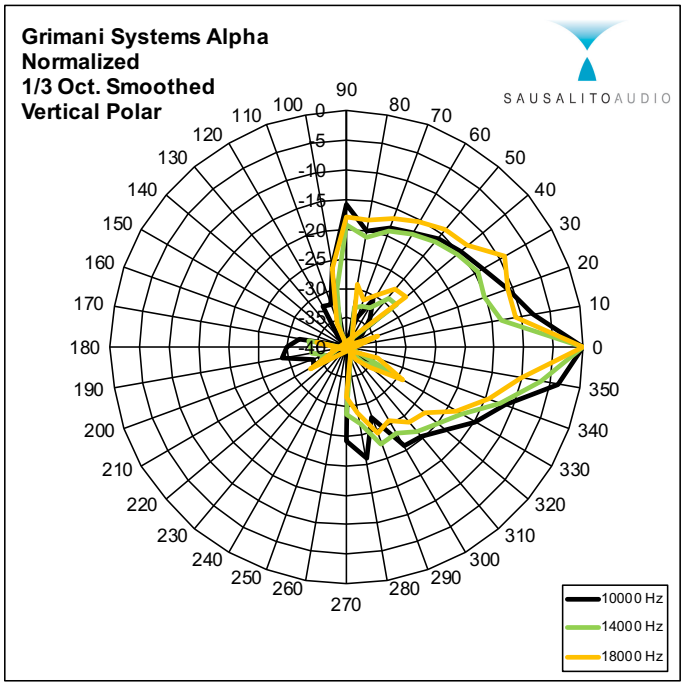

Figure 12: Vertical polar response at the indicated frequency. Data is normalized to 0dB and smoothed to 1/3 octave per convention for polar plots.

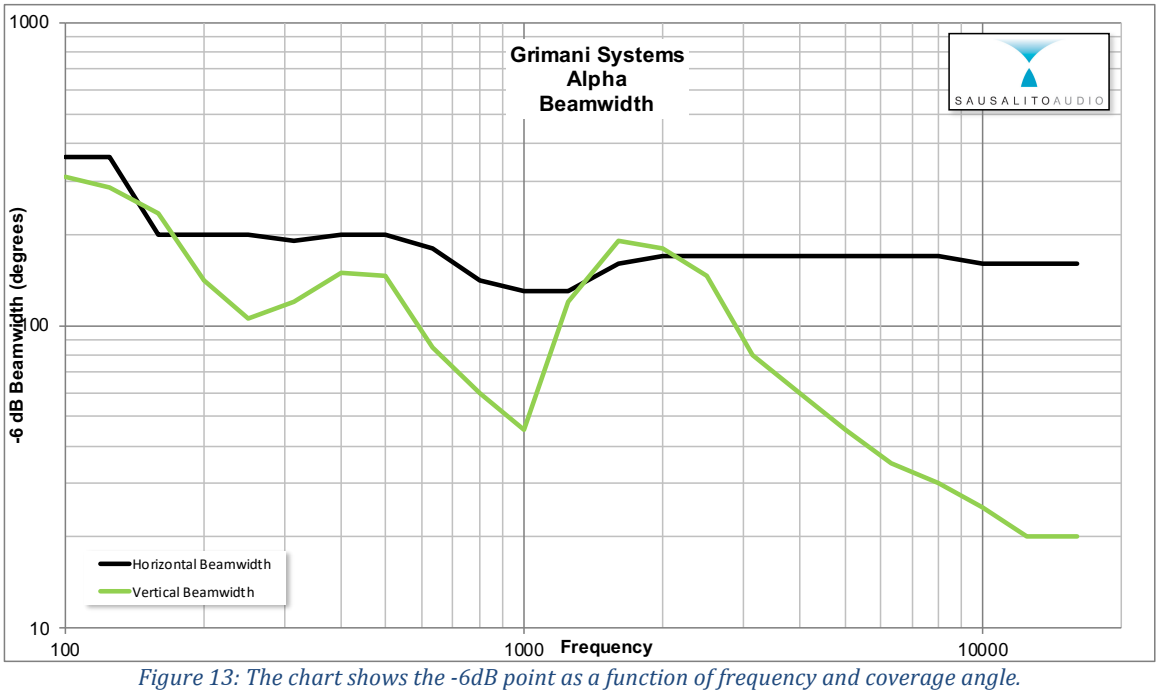

Figure 13: The chart shows the -6dB point as a function of frequency and coverage angle.