Sonos Play One
Measurement Data
The Sonos Play One is a well-regarded Wi-Fi enabled mini speaker. This speaker uses an approximately 3” woofer and a 0.8” tweeter in a conventional forward-facing arrangement. The speaker is 6.36” high and 4.69” square. I estimate the crossover point at 1800Hz. All measurements were made with the device volume set to 100% and care was taken with the input signal level so as to not engage the dynamic processing.

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 Sonos Play One. 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 tweeter.

Figure 3: The data from figure 2 normalized to the reference axis of 0° 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 +10° vertical. 0°V is the center of the tweeter. The 10° offset is introduced because the listener is expected to nearly always be above the speaker.

Figure 5: Response curves for 10°, 20° & 30° below +10° vertical. The 10° offset is introduced because the listener is expected to nearly always be above the speaker.
Figure 6: $+20^\circ$ & $0^\circ$ vertical response normalized to $10^\circ$ vertical reference axis to better show change over the $20^\circ$ vertical listening window. The $10^\circ$ offset is introduced because the listener is nearly always expected to be above the speaker.

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

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