Continuum

The story

Originally designed to be Jeff's personal reference monitor speaker, the Continuum was a no-compromise design built around a specific set of design criteria. Based on the original BBC LS3/5a specification, Jeff's goal was to take this specification to the next level by incorporating today's advanced loudspeaker technology, design knowledge, and computer modeling techniques...hence the name ***"Continuum"***.

The speaker generated a lot of talk after an audio show in 2007. Since that time several sets have been built and Jeff continues to receive requests for the speaker. Due to this growing interest he has asked if we would produce a production version of the speaker.

The monitor is just slightly larger than the original LS3/5a (8"W x 12.5" H x 8.5" D), but offers significantly greater performance in terms of overall SPL, lower distortion, and bass output.

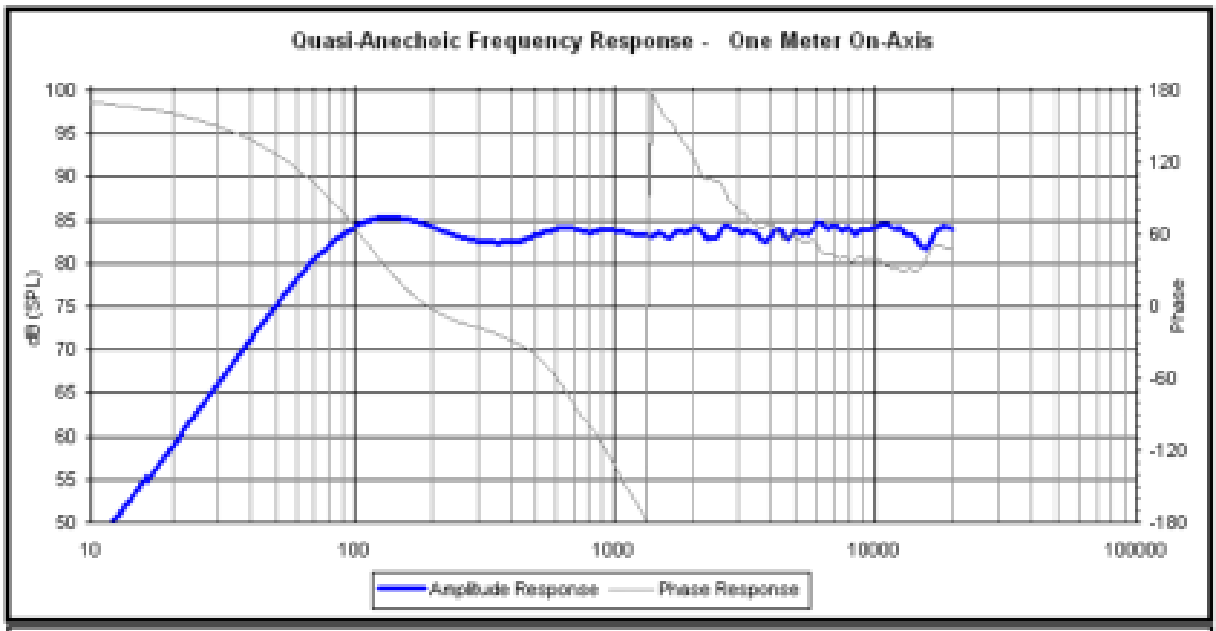
The drivers

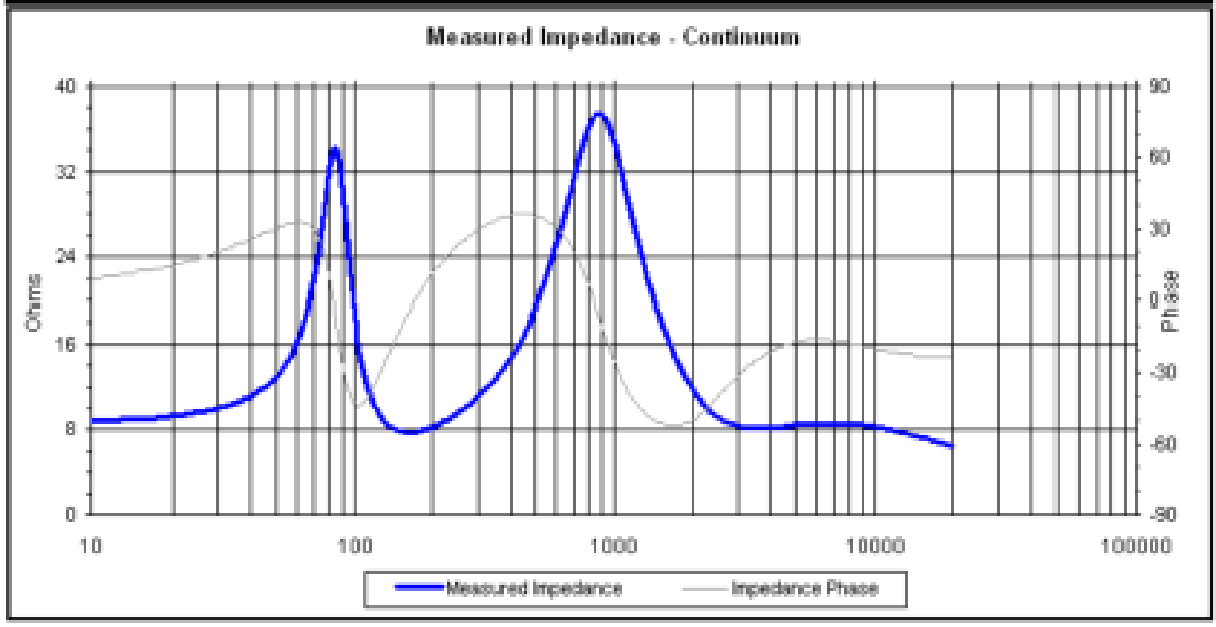
During development three different versions of the speaker were built using different drivers and enclosure designs leading to this final version. The final design contains the best drivers that could be found for fulfilling the requirements of the design.

The 5.25" woofers have a large motor, cast frame, and a mica/carbon filled poly cone. It solves most of the problems associated with the LS3/5a's woofer, the Kef B110 - with better bass extension capability, much higher output capability, very low motor distortion, yet retains a stunningly beautiful midrange. Jeff said he was unable to achieve this level of bass and midrange resolution with any other driver he tested regardless of price. This woofer is optimized for the small sealed box and has extremely low distortion measurements in its operating range.

The tweeter is a 28mm aluminum dome with phase shield, shorting rings and a copper pole-piece allowing it to offer some of the lowest measured harmonic distortion of any tweeter available today. It has an Fs of 530Hz and is ideally suited for the low 2nd order crossover employed. By being a larger dome with high power handling it easily handles the required low crossover point effortlessly.

The crossover is a second order acoustic crossover at 1.8kHz. The electrical circuit is a proprietary design that Jeff developed for this speaker that achieves excellent phase tracking between the two drivers over a wide bandwidth, while also contouring the response of the woofer to match the target response curve.


Quasi-Anechoic Frequency Response - One Meter On-Axis
dB (SPL)
Phase
100
95
90
85
80
75
70
65
60
55
50
180
120
60
0
-60
-120
-180
10
100
1000
10000
100000
Amplitude Response
Phase Response


Measured Impedance - Continuum
Ohms
Phase
40
32
24
16
8
0
90
60
30
0
-30
-60
-90
10
100
1000
10000
100000
Measured Impedance
Impedance Phase