Subject: Re: Interpreting speaker response curves
Posted by Wayne Parham on Tue, 02 Sep 2003 09:38:21 GMT
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I'd say you've interpreted the response chart pretty well by the numbers. I'll bet these are great sounding speakers though.The common rating method of "+/-3dB" leaves a 6dB window. Since this speaker appears to be about 95dB average, and hits 96dB on a few peaks, you could make the 6dB window be 90-96dB. That would make it flat +/-3dB from 50Hz to well beyond the range of hearing and have average sensitivity of 95dB. Not only that, but I suspect that this loudspeaker offers really good distortion performance.I'm more focused on the HF response than the LF performance. Sure, you would enjoy a bit more bass below 50Hz, but there is usable response an octave lower and you can augment this with EQ. Maybe better to get a subwoofer, because you probably don't want to force an expensive speaker like these to be used outside their best range and make 'em generate more distortion. These speakers undoubtedly generate very low distortion when used above 50Hz, because that's something JBL Pro parts are really good at. But still, I've been curious about their performance in the top octave more than I have about their bottom octave.Personally, I'd love to build a two-way with the woofer and tweeter used in this system, and leave off the super-tweeter. That would reduce cost of the system, and just as important, it would remove the need for a crossover at 10kHz. I like the 1kHz crossover point but I could do without the upper one at 10kHz. Then again, having that half-octave above 15kHz is really nice, it's just that I think I'd rather not crossover much above 5kHz, where wavelength is two and three-quarter inches.At 10kHz, we're down to just over an inch, so movement by the listener causes audible "phasiness." Distance changes between the listener and the HF and UHF sources make this happen for every implementation of a 10kHz super-tweeter I've ever heard. Shift the top crossover point an octave or two down, and the problem goes away because the wavelengths grow to more manageable distances.Then again, they may have designed the system to be in dense interference where everything averages out. Rather than aligning the HF and UHF subsystems for on-axis or some "sweet spot," they may have purposely done the opposite. Maybe it is designed so that nulls and peaks in response are so densely distributed that you just really don't notice them at all, even when moving in the listening environment. That's a successful technique used in concerts where alignment is impossible, and it would have merit here too.I don't really know what JBL engineers have done when designing these speakers, and I haven't heard them either. But I'll bet they're truly excellent.