Subject: What is the optimal frequency range for a single driver to reproduce?
Posted by akhilesh on Sun, 05 Feb 2006 00:04:24 GMT
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1. Tradeoffs:Multiple drivers leads to a smoother freq responseSIngle driver leads to greater "coherence"2. What is the spectrum of fundamental frequencies for most instruments and voices? Presumably we want these to come from one driver?-akhilesh

Subject: Re: What is the optimal frequency range for a single driver to reproduce?
Posted by Bob Brines on Sun, 05 Feb 2006 09:39:08 GMT
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1. Give me the coherence of a single driver any day of the week. This coherence is due mainly to a lack of cross-over phasing problems in the critical 300-3000 Hz band. But then, the overall characteristics of a single driver full range system exactly match the music I listen to. If you are into big, loud and complex, you will probably disagree with me.2. The normal instrument range is for 40 Hz for a double bass to 4200 Hz for a piccolo. The normal voice range is 60-1500 Hz (assuming that the F5 in Mozart's "Magic Flute" is as high as it goes). The normal piano range is 28-4200 Hz and the Boesendorfer Model 290 goes to 16 Hz. The normal large organ goes to 16 Hz, but a few monsters, like the Sidney Opera House organ goes to 8 Hz.Question for you -- Capturing the fundamental is fine, but don't you want to get at least the first two harmonics?Bob
Instrument Range Chart

Subject: Re: What is the optimal frequency range for a single driver to reproduce?
Posted by akhilesh on Mon, 06 Feb 2006 12:30:10 GMT
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THanks a lot, Bob. Great post & very informative.I thought it would be good to know what the fundamental frequencies are. Linkwitz's orion does 140-1500 Hz (approx) on one driver. I have found that if I do 100-3500 on one driver, itr pretty much covers most of the listneing spectrum...just by my own listening experiments. Of course the higher one goes, the greater the cone breakup, and beaming. It' a tradeoff! Linkwotz chose to go with no cone breakup. I do a little bit of cone breakup on my vintage trusonics. -akhilesh

Subject: Two harmonics?
Posted by Riot on Sat, 04 Mar 2006 14:18:41 GMT
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What Hz range must a speaker cover in order to capture the first two harmonics?