Subject: Pro's and con's of adding a super tweeter to HF horn section?
Posted by Norris Wilson on Tue, 29 Jul 2008 20:51:58 GMT
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Could someone explain the basic pro's and con's of adding a super tweeter above a 1" DC with constant directivity horn in a three-way direct radiator speaker? In my case I would be using JBL 2226J 16 ohm 15", JBL 2118J 16 ohm 8" midrange, 1" Beyma CP-385Nd 8 ohm compression driver with Beyma T250 horn, and the super tweeter would be the B&C DE35 at 8 ohms.Would there be any benifit in not using EQ to extend the high frequency of the Beyma CP-385Nd? Allowing the 1" CD and horn to roll off naturally around 10kHz to 13kHz, then rolling the DE35 in gradually where the CP-385Nd rolls off up top?I have read where many have implimented a similar combination of drivers using a 1" compression driver with horn and super tweeter to their speaker system with good results. But, there have been references to the difficulty of implimenting this type of high frequency design, especially with phase issues.Since there appears to be some distortion issues with a 1" compression driver reaching a high enough frequency extreme, 18kHz to 20kHz range without coaching with EQ.That it makes common sense to use the proper driver to cover the extended frequency range above 10kHz, the B&C DE35.Or, are there to many compromises and problems introduced in doing so, where it would out weigh the gains?Are there any references where a newby could learn the proper way of building and implimenting such a design?Any help and direction would be appreciated.ThanksNorris

Subject: Re: Pro's and con's of adding a super tweeter to HF horn section?
Posted by Wayne Parham on Wed, 30 Jul 2008 20:36:48 GMT
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The pros are extended HF. The cons are there's no way to get good summing at a high crossover frequency. The higher in frequency the crossover, the more narrow the angle between anti-phase nulls. So what you end up with is basically no area of constructive summing, all areas are outside. Dense intereference is the best you can hope for, because at least it creates a fairly uniform average distribution. In the end, it always sounds phasey to me.