Subject: Need crossover advice for this tweeter
Posted by BillEpstein on Sat, 05 Mar 2005 23:10:25 GMT
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Almost Spring. So close to building the 3-way. 4Pi Pro bottom with 2226's. Pi mid-Horn middle with 2123. Giving serious thought to this ribbon tweeter. 99 dB efficient (maybe true?) and wide horizontal dispersion. Kinda horn-like don't ya think? Maybe cross 2226@500-2123@3500?
Aurum Cantus G3Si

Subject: Re: Need crossover advice for this tweeter
Posted by Wayne Parham on Sun, 06 Mar 2005 04:53:27 GMT
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That G3Si ribbon looks very good, but the midhorn does not have response high enough to reach it. The 2123 as a direct radiator would do nicely paired with it though. That would make a very sweet sounding speaker, I'll bet.Here's what I would do: I'd run the 2226 and the 2123 as direct radiators. Put the 2226 in 2.5ft3 cabinet tuned to 40Hz and put the 2123 in a sealed box larger than 0.2ft3. Mount them both on the same baffle, one on top of the other. Then place the ribbon above that.With the midrange cabinet inside the main cabinet, you have a pretty nice external box size. It will end up being 3.5ft3 to 5.0ft3 outside, something like that. I think this is a real good speaker size range, because it is large enough to look substantial without being overwhelmingly large. It also makes it easy to put the mid and tweeter high enough to be over the furnature, great for seated listening.The lower crossover point isn't critical, because wavelengths are long. The 2123 is going to have natural rolloff at 200Hz, so use that to set your woofer crossover point. I'd wouldn't even use a capacitor on the 2123, and for the woofer, I'd just use a 6.0mH coil in series and that's it. I've done a lot of speakers just like this and it sounds fantastic.You could also go second-order on the woofer to match the rolloff of the sealed box mid, using a 12.0mH coil and a 47uF capacitor on the woofer and adding a Zobel. But I'd go with the simple first-order in this situation because it sounds great and the parts count is low.The mid/tweeter crossover is going to be more tricky, both because wavelengths are shorter and also because most ribbon tweeters are fragile if you hit them with low frequencies. They're excellent, but you mustn't send them low frequencies. That is something they have in common with compression drivers - Not a lot of wiggle room. So my first thought is a second or third-order for the mid/tweeter crossover. I can't be more specific because I've used compresion horns and slot tweeters more than ribbons, and I've never used the Aurum Cantus G3Si. But I think this is probably where I'd start and see how it sounds.

Subject: Re: Curious about different upper cut-off for horn and direct
Posted by BillEpstein on Sun, 06 Mar 2005 10:49:48 GMT
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What is there about horn-loading that disqualifies the 2123 to reach to 3500 Hz? JBL says that in a .25cu ft box it's flat to 5500Hz. What's the lower and upper cut-offs for the mid-Horn?
2123

Subject: Re: Curious about different upper cut-off for horn and direct
Posted by Wayne Parham on Sun, 06 Mar 2005 11:17:21 GMT
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Horns amplify the sound but only over a limited bandwidth. You can expect a midhorn for this driver to get response from 200Hz to 2kHz or so. But really, I think you'll probably like the ribbon tweeter better when used with the 2226 and 2123 as direct radiators anyway.
