
Subject: Here we go again with another of my "What if" scenarios!

Posted by [spkrman57](#) on Sun, 22 May 2005 16:12:58 GMT

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Wayne, Delta 10 and APT-80 with 3.5kHz 3rd order hi-pass and .6 mH coil on the lo-pass. Direct radiator use of the Delta 10 and a cabinet as small as I can get with full fill of acoustic insulation and the use of a vari-vent(those used that release the pressure of a sealed cabinet). I am looking at trying to use this 2-way down to around between 80Hz to 120Hz as satellites and then utilize a powered sub for the bottom end. Questions: 1. Will the Delta 10 in a smallish cab reach down to 80Hz or close? 2. Will the DI of the Delta 10/APT-80 match up well(80 degree conical)? 3. Would I end up with a approx sensitivity of around 99dB(mostly dependent on the Delta 10/lossy sealed enclosure)? 4. Do you see this as a act of madness on my part?(I can already see my friends answering this last one!!! LOL!!!) Thanks, Ron PS - Bill E. has to fix my flat-packs already as I played with them too much in a temporary setup and broke some wooden pegs. I don't think Bill wants me to play with wood things anymore, everything I touch falls apart!!!! LOL !!!

Subject: Re: Here we go again with another of my "What if" scenarios!

Posted by [Wayne Parham](#) on Sun, 22 May 2005 17:36:09 GMT

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Hi Ron, The Delta/APT system will probably work out pretty well for you. You'll naturally have to work out the crossover, and that's where your work will be cut out for you. Wavelength is less than 4". Mechanical rolloffs of the two drivers are fairly close. The HF driver isn't made to withstand a lot of excursion. So I don't know if you'll want to go first-order on this one. Narrowing DI of the midwoofer would match the horn between 2.0kHz and 3.0kHz. Going to 3.5kHz would probably be fine, and I'm not sure you'd want to come down any lower than that with the APT. The thing that will probably bug you most about this system is the bass response. If you really only need 100Hz, then that's fine, it's a midrange system. But if you need to go lower, you'll want some help from room boundaries. Don't make the box smaller than 0.5ft³ and put it in a corner if you want anything below 150Hz. Good luck with it. Let us know how it sounds if you build it. Wayne

Subject: Re: Here we go again with another of my "What if" scenarios!

Posted by [spkrman57](#) on Sun, 22 May 2005 18:19:08 GMT

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Wayne, Cool beans on the answers. And yes, 3rd order crossover for the APT-80, 150Hz is good also. Cabinet will probably be some old AR-2AX cabs that are good for 10" driver and tweeter, I use the last hole for the vari-vent and fill full with acoustic whatever I have around the house. 3.5kHz @ 3rd order is Eminence recommended minimum crossover frequency. Cabinet is approx 1.5 cu ft and should be good down to between 80Hz and 120Hz where a powered sub can

handle the rest. I think my only mystery here is the coil on the Delta 10, I am guessing the range to be between .5 mh or a 1 mh, and I am guessing to use .6 mh to hit the target frequency. I now have a new computer and have downloaded: Pi align/Spice/Box plot with help of course. I just have not figured out how to use them. I guess it is like my woodworking abilities, just not my forte! If the Delta 10 is 99db and the APT-80 is 105db, would you say they would have different efficiencies when used in this configuration??? The powered sub has variable Frequency adjustment, so bottom end is not a problem. This is a satellite idea that came to me to use with my Single Ended amps (under 10wpc) that would put out much power with little wattage input. If it don't work, I'll just use the parts for other things. Ron

Subject: Re: Here we go again with another of my "What if" scenarios!
Posted by [Wayne Parham](#) on Sun, 22 May 2005 18:57:05 GMT
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You'll definitely want to attenuate the tweeter. That's easy enough. As for the rest of the circuit, I expect a single coil will work well on the Delta 10, but I'd confirm it just to be sure. You'll have mechanical crossover slopes of both the midwoofer and tweeter to consider when doing phase calculations. Might be easier these days to check response in the crossover region with Speaker Workshop or something. It's a whole lot easier than calculating everything manually. I've done the math several times, and always tried to find solutions that had some wiggle room. Makes for a lot of calculations though, that's for sure.

Subject: I use something like that for DJ tops
Posted by [JLapaire](#) on Tue, 24 May 2005 13:52:06 GMT
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Delta 10 and PSD2002 on a H290 horn in a box just about large enough to fit them. They're sealed and I HP them at 200hz. Crossover is the stock Pi 1k6 with I think 10dB padding. I modelled the Delta 10 in WinISD for the only failure I've gotten with that program. Driver specs must be off or something because the modelled curve and the RTA missed by over an octave in both sealed and ported configs. I wanted to use them 2-way in the Pi Studio 2 boxes but no amount of tuning would produce acceptable bass. So I use them where they work best. If I had more room I'd try Wayne's midrange horns, and might anyway. John

Subject: thanks for the info John
Posted by [spkrman57](#) on Tue, 24 May 2005 16:13:37 GMT
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I was curious if anyone other than myself had any interest in running that as a 2-way system with a sub handling the bottom end. I was thinking of AR-2AX cabinets with full fill and varia-vents to simulate a lossy sealed cabinet. I am not interested in bass response on this, just looking at a nice high efficiency 2 way in a small cabinet. Are the mid freqs pretty flat in a direct radiator configuration???

Ron

Subject: Re: thanks for the info John
Posted by [Adam](#) on Tue, 31 May 2005 23:29:03 GMT
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It's an idea I've been toying with for a while using the Delta lite 10" or 12" and a subwoofer. My past experiences with these high efficiency P.A. woofers, their superior midbass response coupling with some potent sub bass produces a wonderful sound. However, I think I'd go with an over damped ported enclosure rather than a sealed alignment.

Adam
