Subject: JBL 2226H & EV DH1A w/HP940
Posted by Mark BT on Mon, 08 Sep 2008 01:28:26 GMT
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I recently purchased a couple of JBL 2226H's and EV DH1A's with HP940 horns, and am looking for guidance with regards to cabinet size, crossover(800Hz or 1.2kHz) and porting. I was referred to this site, "Wayne" specifically, by someone on diyaudio, "Take a look at the Pi speaker site I think Wayne still uses 2226's in the same configuration you want to use them in. Robh3606" I have seen some of the postings here and look forward to building a pair of, I believe they're called 4's?Your assistance is greatly appreciated.Mark ")

Subject: Re: While we're waiting for Wayne...
Posted by Bill Epstein on Mon, 08 Sep 2008 14:50:27 GMT
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Looks like the EV does well to cross at 800 but some experimentation is in order 'cause the 2226 has such a wonderful mid-range. Higher might be better.The 4Pi is a 2.5 cu ft box tuned to 40 Hz but larger, up to 4 cu ft works well, too.Wayne will arrive eventually and you'll see, "you have mail", the plans and crossover schemas, that is.In the meantime, enjoy the Rap while we all wait for our Universe to come to an end tomorrow when the LHC comes on line

Posted by Wayne Parham on Mon, 08 Sep 2008 19:27:52 GMT
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2226H midwoofer and the Eminence H290 horn with either PSD2002-8 or DE250-8 compression

Posted by Mark BT on Mon, 08 Sep 2008 22:13:19 GMT
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Hello Wayne, and thank you for replying so quickly.I would appreciate any assistance with regards to building a cabinet to properly load the 2226H(approx. 3 - 4 cubic feet) and a crossover to go with the EV DH1A/HP940 combo(i.e. box dimensions, bracing, horn placement, port size/placement, 1.2kHz crossover etc.). That is a lot to ask for, I know. And, after looking at the Pi

speakers and reading reviews about them, I'm sure that I would be happy with something very similar. Is it possible to do this with the drivers I've chosen?Your assistance/guidance would be very much appreciated.Mark BT

Subject: Re: While we're waiting for Wayne...
Posted by Mark BT on Mon, 08 Sep 2008 22:19:20 GMT
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Hello BillThanx for the input and the video...very cool. Can't wait to see if that particle 'thingy' blows a hole through the earth or not, or worse, opens a worm hole that can't be closed inviting all kinds of 'species' come out and start eating our brains...ahh, that's never going to happen! *shudders*Mark BT

Subject: EV DH1-A data info
Posted by spkrman57 on Mon, 08 Sep 2008 23:10:26 GMT
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http://192.112.63.14/Electrovoice3/files.nsf/Pages/DH1A/$file/dh1a-dh1a16-eds.pdfRon sends.....

Subject: Re: EV DH1-A data info
Posted by Wayne Parham on Tue, 09 Sep 2008 03:41:15 GMT
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Thanks for the link!

Subject: Matched directivity two-way loudspeakers
Posted by Wayne Parham on Tue, 09 Sep 2008 04:01:29 GMT
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Like virtually every other compression driver + CD horn combo, HF rolloff is predictable, since power response falls off at 6dB/octave and horn directivity is constant. The goal of designers using a horn like this is to combine it with other drivers or horns that have matching directivity. You'll want to design the crossover and set baffle spacing for a forward axis normal to the baffle, with null angles preferably just outside the vertical pattern of the HF horn. Crossover frequency

should be approximately where the midwoofer's pattern narrows to equal the tweeter's horizontal pattern. Summing should be flat on axis and at all angles within the pattern.Baffle spacing, phase angles and time alignment, revisitedThis describes the basic approach. It isn't terribly difficult, but it isn't trivial either. I put a lot of time in each of my designs to make sure they are optimized. If you don't have measurement equipment, you can calculate phase angles and determine driver spacing to approximate crossover frequency and slope but this is rather tedious. For best results, you'll want to get the design close by calculation and verify with measurements, fine tuning as necessary.

Subject: You've got mail!
Posted by Wayne Parham on Tue, 09 Sep 2008 04:16:32 GMT
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my suggestion is to sell the EV drivers and horns on eBay and use the money to get H290 horns

2226 woofers and DE250/H290 tweeter horns.This is not to say the horns/drivers you have are better or worse, although I will say the DE250 is a very good driver and the H290 horn is perfect for this application. But even if the EV DH1A/HP940 is also very good, it will still take a fairly substantial design effort to configure the crossover and speaker layout properly.It takes dozens, sometimes hundreds of man-hours to design and optimize a speaker like this, and that's if you've already done enough of them that they're practically a templated design. So even if you start with

system to get everything right.

Subject: Re: You've got mail!
Posted by Mark BT on Wed, 10 Sep 2008 07:45:24 GMT
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Thank you for sending the plans, Wayne. It IS a great starting point. It looks as though I've got a lot of work ahead of me, but I'm up for it. When they are complete, I'll post a few pics.I built some subs a few years back, loosely modelled on the EV TL440(driver compliment is EVX180B). They are 9 cubic foot boxes in black piano lacquer. I've got one in each end of the living room powered by a QSC amp. More than enough bass for this place, I know. They sound fine during movies(lots of thunderous bass for explosions, soundtracks and the like), but when I want to listen to a CD, it seems as though they are lacking in the bottom end(60Hz & 90Hz area) and I have to turn up the gain. There's still plenty of bass, mind you, but it seems as though there is something missing. I'll explain... I've swept them and find that there is plenty of bottom between 40Hz and 55Hz, then it drops(-2 or -3db) between 55Hz and 65Hz, comes back hard(+3 or +4db) at around 70Hz until 80Hz, then starts to roll off because of the crossover, at 100Hz. I also noticed plenty of cone movement between 30Hz and 37Hz but not much in the way of 'air movement' from the vents. (Nothing below 30Hz as I have anything below that cut with a filter)I contacted Electrovoice to ask

if there was something I could do, but didn't get any help.(I understand, though) One techie I spoke with suggested "they may be peaking to high", and that I cover one of the two vents and shorten the other one to lower the tuning? I haven't tried this because the advice I DID get from someone else, suggested that I should use 2 vents at a minimum of 6" dia. I don't know, maybe I should just leave well enough alone? I just think there should be more air movement sometimes. If I do have any questions, comments or dirty jokes, I'll be sure to post them here. Thanx again!Mark BT

Subject: Smoothing room modes
Posted by Wayne Parham on Wed, 10 Sep 2008 16:31:09 GMT
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There are two things I would do:1. Take one of the subs outdoors and measure it. That will tell you what the anechoic response is, and let you know if the problem is in the speaker or in the room.2. Model the room with CARA to find out where to put your subs for smoothest response. Using careful placement, you can average the room modes, effectively cancelling notches and peaks. For example, where a notch would form from a standing wave cancellation when just one sub is used, the other sub can be positioned so that it fills in the hole. When combined with the woofers in your mains, you'll have four bass sound sources to blend, further smoothing the room modes.
