Subject: Top octave compensation on non Eminence comp drivers
Posted by RyanH on Fri, 26 Apr 2002 17:56:03 GMT
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Very soon I will be building a pair of speakers for PA use with Eminence Kappa 15LFA woofers (already have) and a yet-undecided, but almost definitely the Selenium D205TI compression driver. The D205TI is on sale right now for $35 and I just don't know if I could swing the extra for the PSD2002. Also, for the horn lens I was thinking about going with one of the inexpensive or on sale ones for around $10, would this work? If it is too thin I can coat the back with fiberglass resin or something. I'm basically looking to cut costs the most. Since I will have to build a crossover for this, I was wondering if the top octave compensation used in Pi speakers could be used for this, since I've seen mentioned that its a general compensation for all compression drivers. Thanks for all help in this area, and I will be using Speaker Workshop to model the xovers. I've also got a nasty peak in the 15LFA's response to take care of, so I'll definitely have a challenge ahead of me. Thanks for any help!!--Ryan

Subject: yeah
Posted by dbeardsl on Fri, 26 Apr 2002 19:46:49 GMT
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Yeah. I'm pretty sure you can use it, of course the amount of upper octave compensation is going to depend on how much the main compensation is. Whatever the case, it should work fine. heh though, wait for Waynes answer.Danny."if it's not you, then do it for the sake of fashion your friends like a certain you, that's who you've got to be"-Pedro the lionFrom "It's Hard to Find a Friend - When they really get to know you they will run"

http://www.pedrothelion.com/shows.html

Subject: Re: Top octave compensation on non Eminence comp drivers
Posted by Adam on Fri, 26 Apr 2002 20:00:41 GMT
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Depending on the horn lense you'll be using, you will likely still need compensation.Bi-radial

lenses like the CH-3 will attenuate the top end of the compression driver's response, so compensation wouldn't hurt. However, I don't think you will need as much with that compression driver. Wayne's compensation circuit takes into account the natural rolloff of the PSD2002's as well as flare modification.If I remember correctly, the Selenium compression drivers all go down to 1,000 Hz or so (agian, if I remember right) I would urge you to try taking it that low. If not, a 2nd order LP at 1.5 kHz with impedance compensation will handle the peaking adequately, coming from a guy who has owned a total of eight K15lfa's.Adam

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Subject: Re: Top octave compensation on non Eminence comp drivers
Posted by Wayne Parham on Fri, 26 Apr 2002 21:04:53 GMT
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includes top-octave compensation. See his thread called "My Pi sevens using Selenium parts" for more information.

Subject: Re: Top octave compensation on non Eminence comp drivers
Posted by RyanH on Sat, 27 Apr 2002 02:43:02 GMT
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Wayne,Thats good news about the driver. Its great to hear others have done this with success, thats very reassuring. I think I'll try and have my parents place the order this weekend so the parts will all be waiting for me when I get back home from college (2 weeks!). Thanks for all the help and great site!--Ryan

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Subject: Re: Top octave compensation on non Eminence comp drivers
Posted by RyanH on Sat, 27 Apr 2002 02:47:15 GMT
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Thanks for the great advice on the crossover, that's going to be very useful when I try and tackle that problem, which doesn't seem so bad now. Also, I was wondering about the 1000 Hz xo point

you were talking about, how much does it reduce power handling? Maybe I could compromise and go up to ~1250 or so. I don't want there to be much of a chance of blowing one of these drivers since it'll likely happen when I'm out at college 1500 miles away and I'll have to talk them through every step to replace the driver/coil/whatever. My parents will be using these for PA applications, so that's why I worry. Thanks for the wisdom!--Ryan

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Subject: Re: yeah
Posted by RyanH on Sat, 27 Apr 2002 02:52:48 GMT
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Pedro at the Showbox on may 25, I'm there!! Thanks for posting that link, I knew they had a show in Seattle soon, but I wasn't exactly sure when. I think "Its Hard to Find a Friend" is the best CD of theirs I've heard, but I haven't heard all of "Whole" and still need to hear their new stuff. My favorite Pedro song is probably "Bad Diary Days" however, theres just something about it. For Death Cab, I love listening to the entire "We have the facts" CD. Also, check out Ben Gibbard's side project "All time quarterback" if you like Death Cab a lot. I'm excited now for that show, woohoo!Later,Ryan

All Time Quarterback downloads

Subject: Re: Top octave compensation on non Eminence comp drivers
Posted by Adam on Sat, 27 Apr 2002 13:26:02 GMT
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No problem.I'm not sure about the power handling issues. The PDF on that unit has the power handling at 1.2 kHz, 12db/octave at 100 watts musical, so maybe 50wrms. That's probably what I would recommend, except 18db/octave crossover instead. With that, you should be fine.I would also recommend impedance compensation on the compression driver. The impedance plot shows two distinct spikes right in the xover point region, which will probably change the function of the crossover. Impedance compensation should flatten these peaks.Adam

Subject: what did you think about the dip near 6K?(nt)
Posted by Sam P. on Sat, 27 Apr 2002 15:30:14 GMT
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nt

Subject: Re: what did you think about the dip near 6K?(nt)
Posted by Adam on Sat, 27 Apr 2002 15:45:34 GMT
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It's a very signifigant dip, around 10 decibels if I read the graph correctly. I'm not sure how to go about fixing this with a passive crossover, but you could at least equalize it out. However, it will be noticable.My other concern is the 15+ decible peak at around 19 kHz. It might be noticable after you use compensation circuitry because it will translate to 15 db above reference. I wouldn't worry about it too much, though.Ryan, after checking out the response graph, it seems to be similar to the PSD2002, except more ragged. You could probably use identical compensation circuits (perhaps use a slightly smaller capacitor value) and still get decent results.Adam

Subject: Re: what did you think about the dip near 6K?(nt)
Posted by RyanH on Sat, 27 Apr 2002 18:11:53 GMT
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Since this driver is much more sensitive than the woofer, could I add an extra part in the xover (reverse notch filter??) to compensate and basically bring the rest of the response to its level? Also, since they showed it mounted on a different horn how much would it change for that PE cheapo one (pretty similar in looks to H290)? Thanks for all the help everyone!--Ryan

Subject: Re: what did you think about the dip near 6K?(nt)
Posted by Adam on Sat, 27 Apr 2002 18:28:36 GMT
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You might be able to build a reverse notch filter, but I've never done it before and I don't really know how to do it.Adam

Subject: Maybe choose another driver
Posted by Wayne Parham on Sat, 27 Apr 2002 19:18:51 GMT
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A "notch filter" is a band-stop filter and the complement of such a filter is called a band-pass filter. People use band-pass filters for a midrange crossover in three-way speakers. However, the use of a filter as a (wide-band) frequency splitter and the use of a filter as a high-Q (narrow-band) equalization mechanism are two different things. To use a narrow band-pass filter as a compensation network for a response spike means everything else will be shelved down to match. Even that may not do it, because it may be caused by destructive interference, something best adddressed by the phase plug. I think I might be tempted to look for another driver instead.