Subject: Pi Fours- Low Frequencies
Posted by Matts on Wed, 29 Jun 2005 16:08:28 GMT
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I was looking at the Eminence data sheets for the 15" speakers, and noticed that they give a lower fs for the Omega series than the Delta Pro(39hz vs. 42hz), and they post a "usable frequency range" that goes down to 35hz for the Omega, and 40hz for the Delta Pro. With that in mind, is it possible to slightly modify a Pi 4 Stage model to ge a little lower frequency response, as I notice the Theatre 4 has that. Is there a tradeoff in the Stage series to get better quality upper bass and/or midrange?

Subject: Re: Pi Fours- Low Frequencies
Posted by Wayne Parham on Wed, 29 Jun 2005 17:24:22 GMT
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The Omega 15 is like so many other high-output 15" speakers, in that it has been designed with electro-mechanical specs that make it work very well in cabinets from 2.0ft3 to 6.0ft3, tuned to 40Hz. The Omega 15 will actually work well in cabinets up to 8.0ft3. Larger than that and the cabinet is best tuned to an EBS alignment. It makes a good subwoofer in a 10.0ft3 cabinet tuned to 30Hz, a la JBL 2235 or 2245. So this speaker is very versatile.This is what you can expect from various alignments of the Omega 15:Cabinet size Box tuning -3dB -10dB==========2.0ft3 40Hz 65Hz 43Hz3.0ft3 40Hz 50Hz 37Hz 4.0ft3 40Hz 45Hz 35Hz5.0ft3 40Hz 43Hz 33Hz6.0ft3 40Hz 40Hz 31Hz7.0ft3 38Hz 38Hz 30Hz8.0ft3 38Hz 38Hz 30Hz9.0ft3 35Hz 35Hz 28Hz10.0ft3 32Hz 32Hz 25Hz==========As bandwidth goes up, intermodulation does too, so the lower you push the midwoofer in a two-way

and is a good compromise between bass extension and midrange clarity. It is a good all-around speaker that sounds good in large areas with limited boundary reinforcement. It sounds balanced in half-space and quarter-space is good but eighth-space is usually a bit too much. The Stage

from boundary reinforcement. It is also good for use in situations where extra midrange presence is required. Having a larger box provides deeper useable response, but at a reduced level. So the Stage four actually sounds like it has more bass, if both are compared in a large room. If placed in corners or floorstanding against the wall in a small or medium sized room, the Stage four may even sound bass-heavy where the Theater four sounds just right.

Subject: Wayne... the kid in the candy store.

Posted by GrantMarshall on Wed, 29 Jun 2005 20:10:30 GMT
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Hi Wayne.It's been a while.I've seen people on various forums wondering why the moderator "does it". Buy what you want, write it off.... Not a bad deal. Known as "supporting the habit".I hope the summer's going well, the families good, the wheels are fun, and the beer is cold.Take it easy.Grant.

Subject: Re: Wayne... the kid in the candy store.
Posted by Wayne Parham on Wed, 29 Jun 2005 21:09:54 GMT
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Good to hear from you! How is the weather up north? Everything is great here, but the temperature in Oklahoma summers is always brutal. We're over 35° Celsius every single day, sometimes as high as 40°. Speaking of heat, did you see the cooling system I'm working on?

Subject: Re: Wayne... the kid in the candy store.
Posted by GrantMarshall on Wed, 29 Jun 2005 21:49:59 GMT
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Hi again Wayne.Weather here is similar to what you have. Humidity is 60-80 % often too and the resulting smog is just nasty.Nice lead in to the cooling system BTW... It looks engineered to work (I can't think of a nicer thing to say knowing you). No plug of air moving back and forth. That should really make a difference to those that need... Enjoy your summer.Grant.

Subject: Re: Wayne... the kid in the candy store.
Posted by Wayne Parham on Wed, 29 Jun 2005 22:34:00 GMT
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You wouldn't believe how hot these things get. Remove the vent screen on one of your woofers. It's just a press fit, easy to remove and reinstall later. Run the woofer up to 80% power and let it play for several minutes. Put your finger down the vent and feel the surface. Down near the front plate, it's so hot it will burn you, so be careful. The voice coil is even hotter than that...Increased voice coil temperature changes electro-mechanical specs and alters cabinet tuning. It also is the cause of compression and power limits, not to mention thermal failure. By reducing temperature, we improve the speaker in all of these areas. I'm very excited by this.

Subject: Re: Wayne... the kid in the candy store.
Posted by GrantMarshall on Wed, 29 Jun 2005 23:50:39 GMT
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You're showing smooth looking prototypes, talking about temperatures, and saying you're very excited. If I had to guess I'd say you KNOW you're on to something good. It will be interesting when you get some numbers together. You didn't mention any downsides yet other than the obvious cost and work involved. Cost should be easily taken care of when compared to cost of thermal failure.Now that you've got the intercooler in there you'll have to work on a turbocharger next. Have fun Wayne.Grant.

Subject: Re: Pi Fours- Low Frequencies
Posted by skite30 on Thu, 30 Jun 2005 10:58:26 GMT
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WayneEnjoyed your comments about the uses and voiceing of the stage 4 and theater 4. Could you do the same on the theatre 3. Especially the room size and boundry bits. thanks steve

Subject: Re: Thanks a lot, Wayne
Posted by Matts on Thu, 30 Jun 2005 13:32:18 GMT
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Lots of good info...so the Theatre 4 goes deeper, but can use a little room boost to raise the level, and the Stage may be louder in a slightly higher region of bass, but can be tuned by moving out from or up the wall. I could probably use either. Right now my regular Studio two pi's give very good bass in the room using quarter-space, so I guess either of these would do very well also in that department.

Subject: Re: Pi Fours- Low Frequencies
Posted by Wayne Parham on Thu, 30 Jun 2005 14:42:20 GMT
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eighth-space or quarter-space too.