Subject: A couple questions about Pi-alignment
Posted by Tightwad on Tue, 23 Sep 2003 23:40:08 GMT
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I am designing an enclosure for a high-Q full-range driver, simple BR design.In terms of calculating the optimum enclosure volume, resonance, and bandwidth, is the Pi-align whitepaper the best source? I only ask since it is dated 1979, wondering if it is state-of-art for Pi-alignment.Also, in the formulas on page 5, I don't recognize some of the parameters from the typical T/S params.Anyway, any advice would be appreciated.

Subject: PiAlign terms
Posted by Wayne Parham on Wed, 24 Sep 2003 02:16:30 GMT
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The formulas used to calculate the cabinet from the speaker's electro-mechanical properties are the same whether you use T/S specs or the PiAlign equivalents. Specifically, the T/S compliance figure is Vas and equal to PiAlign's Vad, Fts is the same as Frd and Qts = 1/Qd.You can also use the sealed box method or the added mass method to find these values. Measurements of the electro-mechanical properties of a speaker are much more likely to be reasonably accurate than measurements that involve the acoustic domain, because finding electro-mechanical parameters doesn't require any acoustic measurements. So these kinds of measurements can be obtained with probably something like 20% tolerance using equipment that is commonly available to DIY builders.

Subject: Re: PiAlign terms
Posted by Tightwad on Wed, 24 Sep 2003 12:06:30 GMT
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Thanks for the response! I'll need to take a closer look later.

Subject: C4, B4, QB3 and EBS
Posted by Wayne Parham on Wed, 24 Sep 2003 15:39:32 GMT
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If you're interested in looking at several alignments, I suggest reading Davies' T/S implementation,

and studying the popular generalized alignments such as C4, B4, QB3 and EBS. Davies was the one responsible for suggesting a popular critically damped alignment, used in several modern software packages, and based on prior work by Thiele and Small. Thiele and Small described the relationships between motor cabinets and electro-mechanico-pneumatic specifications, but they focused mostly on the relationship and its effects on response, not so much on specific alignments. A couple of specific alignments were mentioned, but most popular alignments are implementations based on their prior work.

Subject: Re: C4, B4, QB3 and EBS
Posted by Tightwad on Wed, 24 Sep 2003 21:43:49 GMT
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I'll have to track down that Davies paper. Thanks so much for your help.

Subject: "Vented Speaker Systems" article by Brian Davies
Posted by Wayne Parham on Wed, 24 Sep 2003 23:28:52 GMT
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Subject: GIF files un-readable...
Posted by AR on Thu, 25 Sep 2003 03:31:25 GMT
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Hi Wayne - thanks for posting this article, but the files were unreadable. Any other suggestions??
TIA AR

Subject: Use an image viewer or paint program
Posted by Wayne Parham on Thu, 25 Sep 2003 03:48:34 GMT
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Download and install a copy of the free version of Paint Shop Pro. I think that's the easiest way to solve this. So grab a copy of "Paint Shop Pro" from JASC Software and give that a go. Wayne

Subject: Re: GIF files un-readable...
Posted by ToFo on Thu, 25 Sep 2003 03:49:58 GMT
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Hi AR,Hmmm? I find the attached files readable (they open) and readable (legible). What OS and browser are you using? Maybe save them and use an image editor to zoom to a magnification that renders less aliasing than fit to page.

Subject: Re: "Vented Speaker Systems" article by Brian Davies
Posted by Tightwad on Thu, 25 Sep 2003 20:05:03 GMT
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Thanks so much for the files. I've scanned the first couple pages, and it looks like JUST what I need. Now I got something to read over lunch :)

Subject: Re: Use an image viewer or paint program
Posted by AR on Fri, 26 Sep 2003 03:58:15 GMT
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I've used Photoshop and Photodeluxe to try to open and print these pages, but I'm still having trouble with the legibility. I'll keep trying. Thanks.

Subject: Re: Use an image viewer or paint program

Posted by Wayne Parham on Fri, 26 Sep 2003 05:37:32 GMT
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Adobe Photoshop is a great program and so you've got what you need there. I scanned and saved these documents with 2544 x 3299 pixels - a fairly high resolution - so that shouldn't be a problem. Be sure to do a right click on each image, then save the file, and load the saved file into Photoshop. If doing a copy-and-paste, it may be transferring a low-res image rendered by the web browser.For the most part, each letter is clearly legible although it isn't as clear as a vector or TrueType font. These are bitmaps of a very old scanned document, so the characters will be a bit rough. Still they should be clearly legible for the most part. There may be some places that are more clear than others, so if you find a sentence or formula that is difficult to read, please write to me and I'll try to touch up the image file in that specific spot. But overall, I think you'll find the document is clear enough to read, once you save the files on your computer in the 2544 x 3299 pixel format they are stored as on the server.