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Subject: Driver Escalation

Posted by [DRC](#) on Wed, 23 Oct 2002 17:22:38 GMT

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Wayne, Did you ever sell the TAD 1602's you were parting out over the summer? If not, I'll take 'em! I must have read 500 posts today on Hi Eff and Pi, and finally fell over your discussion of using these babies in a 4PiBR Pro 3.5 ft<sup>3</sup> box, as well as the fact that you had a pair (at some point) to sell. I'd put the cabs on 11" mass-loaded stands, with Bill Martinelli's horns and Eminence PS 2002's on top of them, using your 800hz (??) xover. I'd upgrade the 2002's when I recover from the shock of the initial outlay! I would expect this combo to be quicker, lower distortion, sweeter, albeit less efficient than the Theater 4's. Does that make sense? I'm after horn speed and effortlessness used with SET's, not ultimate SPL's. Thanks! Keep your ears and your mind open.

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Subject: Re: Driver Escalation

Posted by [Wayne Parham](#) on Wed, 23 Oct 2002 18:18:52 GMT

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I've still have the TAD 1602 drivers, so if you want them, E-mail me and we'll make arrangements. PiAlign recommends a 3.85 ft<sup>3</sup> motor chamber tuned to 37.5Hz with a 4.65" dia. x 4.4" long port, or a rectangular port that's 3.1" x 5.5" height and width and 4.4" long. They're perfect for a three-way cornerhorn, like the ones I've made with a 2123 midrange driver.

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Subject: Re: Driver Escalation

Posted by [DRC](#) on Wed, 23 Oct 2002 18:26:37 GMT

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Excellent! Drop me a line, offline if you like, as to the total including shipping to 06033, and how I can make payment. I'm rarin' to get started, now! Hmmmm . . . What driver will suit Bill's horns and play nicely with the 1602's in a two way system? 2426's? TD2001's (Gulp!) I really don't want to turn this into a 3-way circus if I can help it. Keep your ears and your mind open.

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Subject: Re: Driver Escalation

Posted by [Wayne Parham](#) on Wed, 23 Oct 2002 18:30:29 GMT

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The TAD 1602 sounds nice down low but you'll want to crossover lower than I would be comfortable with a 1" exit driver. You might consider pairing it with a TAD 4001 2" exit compression driver. Most 2" exit drivers don't reach the top octave but the beryllium diaphragm in the 4001 makes it sound nice all the way up.

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Subject: PSD2002

Posted by [LuxmanLover](#) on Wed, 23 Oct 2002 20:14:38 GMT

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Could the PSD2002 get down to 1100Hz if power levels were kept low?Kelly

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Subject: Re: PSD2002

Posted by [Wayne Parham](#) on Wed, 23 Oct 2002 21:04:15 GMT

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Certainly, it could be used at lower frequencies if diaphragm movement was limited by use of less power. In this de-rated mode of operation, maximum SPL and dynamic range are reduced. Alternatively, you might use a high slope HP filter in the crossover, to help reduce out of band LF energy and thereby reduce excursion.

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Subject: Re: PSD2002

Posted by [DRC](#) on Wed, 23 Oct 2002 21:34:05 GMT

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Okay, so if the 2002 is rated at 80w at a min of 1.5k, it would be good for 20w or so at 750hz, and presumably more than that at 1200. Bill's Classic horn is nominally 800, so crossing it over at 1200 using amps that won't be bigger than 8w/ch shouldn't pose a threat. May not be ideal, but won't get cooked, either. TAD quotes the 1602's range as 21hz-2k, crossing over nearly an octave lower - 1,200hz ought to be okay, shouldn't it. Again, maybe not ideal . . . I would expect the 2426 or TD-2001 to work better, and allow the 1602 more breathing room, since they are spec'd as having usable ranges of 500hz -20khz+. I'm not being argumentative, just trying to learn here, guys. Thanks for the input!

Keep your ears and your mind open.

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Subject: Re: PSD2002

Posted by [Wayne Parham](#) on Wed, 23 Oct 2002 21:55:06 GMT

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I think your reasoning is sound. All two-way speakers of this scale are pushing each subsystem to its limits, and the idea is to get two parts that are the best you can get. Sound like that's exactly the direction you're going, so let us know how your speakers turn out!

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Subject: Cabinet considerations for TAD 1602's

Posted by [DRC](#) on Thu, 24 Oct 2002 13:33:08 GMT

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Wayne, You've got mail! ;-) You wrote: >That's right. PiAlign recommends a 3.85 ft<sup>3</sup> motor chamber tuned to 37.5Hz >with a 4.65" dia. x 4.4" long port, or a rectangular port that's 3.1" x 5.5" height >and width and 4.4" long. Okay, 3.85 is a touch bigger than the Pi4 Pro, but that's considering external dimensions, as if the walls had no thickness, and the 1602 occupied no space at all. Hmmmm . . . How do I ramp up the externals to get 3.85 internal using 3/4 stock with a doubled baffle? In terms of proportions, I'd like to have 29"-30" height and 17" width to get Bill's horns to the right height for seated listening (spkr's on short stands), and match the horn width. If I take the Pi4 Pro cab, and arbitrarily bump each dimension up .75" for illustrative purposes, I'd have 26.75"x18.75"x14.75" or about 7,400 in<sup>3</sup> or 4.3 ft<sup>3</sup> externally. Reshaping this, maintaining the

volume, I'd have 30"hx17"wx14.5d. I'll want to hit the volume more precisely, which will change the dimensions, but will those sort of proportions keep me out of trouble? Is the height too close to being an even multiple of the depth? This is getting exciting - Diverse drivers rolling along in brown trucks all over the country . . ! ;-)

Keep your ears and your mind open.

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Subject: Re: Cabinet considerations for TAD 1602's  
Posted by [Wayne Parham](#) on Thu, 24 Oct 2002 16:12:41 GMT  
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A good enclosure size for the TAD 1602's is 30" x 20" x 14.5", using 1" stock and a rectangular port that's 3.1" x 5.5" and 4.4" long. That would look very good with Bill's horns too. You could reduce the width to 17" and increase the depth and/or height a little too, if desired, matching the width of the cabinet to the width of the horn.

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Subject: Re: Cab & xover considerations  
Posted by [DRC](#) on Thu, 24 Oct 2002 17:03:39 GMT  
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Wayne, Thanks! So how does 36.5"Hx17"Wx14"D sound? I'll skip the stands. I imagine I'd use your 800hz@12db/oct xover, (correct me if there's a better choice), but I've no idea what the values would be for this box & woofer. The joys of going "off road". ;-)

Keep your ears and your mind open.

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Subject: You've got mail!  
Posted by [Wayne Parham](#) on Thu, 24 Oct 2002 19:08:56 GMT  
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A 36.5" x 17" x 14" cabinet is perfect for a TAD 1602. Use a rectangular port that's 3.1" x 5.5" and 4.4" long, and your cabinet will work very well. Check your E-Mail - I've sent you the crossover schematics. Use a Zobel woofer damper of 8 ohms and 20uF across the woofer with this crossover.

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Subject: Re: Driver Escalation

Posted by [DRC](#) on Fri, 25 Oct 2002 12:01:33 GMT

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If I were to go three way (sssomebody ssstop me!!!!) with the 2131's, would the same cabinet still work for both the 1602's and the 2131's, or should they be wholly or partially (perforated shelf going sideways between them?) separated or . . . ? Given the operating range of the three drivers, I'm thinking of crossing the 1602 to the 2123 gently at 200hz, then more steeply to the tweeter (PSD2002 to start) at 1600. That would give the JBL 3 critical octaves to cover. (Still pinata-bashing, free-wheeling without much of a clue!) Thanks! Keep  
your ears and your mind open.

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Subject: Trouble, trouble

Posted by [JLapaire](#) on Fri, 25 Oct 2002 16:14:42 GMT

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Hi Dave, you know I almost hate to do this, but I just want to throw in a reminder that the Eminence goes Verry nicely up to 1.6k, as attested by a bunch of Bottleheads under thine own roof. And it's so cheap and simple and 100+ db....all right, I won't bring it up again. BTW I'm not bringing so much beer this time, Mike and I wound up drinking most of it at the last meet and I went home without my speakers that I'd finally talked my wife into letting into the living room. John

Subject: Re: Driver Escalation

Posted by [Wayne Parham](#) on Fri, 25 Oct 2002 16:41:40 GMT

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The three-way's I've designed using similar components crossed at 250Hz and 1.6kHz. And the 2123 is contained in its own separate motor cabinet that is sealed and isolated from the woofer's ported motor cabinet. It's a small box within the larger cabinet.

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Subject: Re: Trouble, trouble

Posted by [DRC](#) on Fri, 25 Oct 2002 17:08:05 GMT

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Well, I'd a helped you with the beer, but I was losing the remote to the CD transport every 5 minutes without any! Somebody else run the 11/3 meet, I think I need some beer! Yeah, I know, but that was just too easy. I've gotta complicate the hell out of it to make it really fun!

Keep your ears and your mind open.

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Subject: Re: Driver Escalation

Posted by [DRC](#) on Fri, 25 Oct 2002 17:48:55 GMT

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Hi Wayne! Did you stay with passive xovers in a three way, and if so, was the 300 at a different slope from the 1.6k ?

Keep your ears and your mind open.

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Subject: Three-way systems

Posted by [Wayne Parham](#) on Fri, 25 Oct 2002 19:01:02 GMT

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The crossover can be configured for first or second order LF and MF sections and a third-order

the crossover is configured for first-order LF and MF slopes.

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Subject: Any progress on the active cross-over mentioned a while back? nt  
Posted by [Garland](#) on Fri, 25 Oct 2002 19:34:09 GMT  
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nt

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Subject: Re: Any progress on the active cross-over mentioned a while back?  
Posted by [Wayne Parham](#) on Fri, 25 Oct 2002 20:55:54 GMT  
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No, and the worst part is that tomorrow I'm going to visit with Kevin Grier, and he's planning on using the active crossover, so I promised to look it over with him. The second worst part is that it is actually very simple, and I just need to run the numbers and build a suitable model to verify its performance. I've had the papers on my desk for a month or two, so that they prompt me into action every time I see them. But I've still not had time to make it a priority.

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Subject: 3 Way It Is!  
Posted by [DRC](#) on Sat, 26 Oct 2002 13:53:24 GMT  
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Okay, I've signed up for a pair of JBL 2123's as well. No sense in ending up with a 2-way with all kinds of strain through the midrange as the drivers try to be things they are not at their frequency extremes. This is no longer speculation; the drivers are ordered. I'm convinced it will turn out well, but I'm curious as to whether anyone out there has done this combo before: TAD 1602 JBL 2123 Eminence PSD 2002 in Marintelli horn (either/or with the other 2, actually.) I'll post further details, pics and impressions as this takes physical shape. Keep your ears and your mind open.

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