
Subject: Supertweeters?

Posted by [rkeman](#) on Thu, 21 May 2015 19:17:19 GMT

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The compression drivers used in most of the Pi Speakers offerings have rapidly falling output above 17kHz or so. Has anyone ever used a supertweeter (e.g. Fostex T90A) to extend the response to above 30kHz?

Subject: Re: Supertweeters?

Posted by [Wayne Parham](#) on Fri, 22 May 2015 16:10:30 GMT

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I have done that, and it does add "sparkle." But I don't like the fact that there's no-way to get summing right through the 90°x40° pattern. The wavelengths are too small and the distances between sound sources too great. So the top octave is a mess.

That said, it's dense interference up there. It's not like it forms discrete modes large enough to detect. They're all tiny little pockets of energy modes, with the direct sound being just like the reverberent field. So it's not like the interference is audible.

Still, I'd prefer to use a compression driver that reaches higher into the top octave than to use a supertweeter. There are some drivers with beryllium diaphragms that reach above 20kHz.

Subject: Re: Supertweeters?

Posted by [rkeman](#) on Sun, 24 May 2015 00:08:46 GMT

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Are there any drop-in beryllium compression drivers that you would consider for the 3Pi and 6Pi.?

Subject: Re: Supertweeters?

Posted by [Wayne Parham](#) on Mon, 25 May 2015 14:19:54 GMT

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I've used the TAD TD-2001 and would recommend it. It's a drop-in replacement for the DE-250.

I've never tested the 2002 but it looks nice too. It would probably need different R1/R2 values for a little more attenuation.

Subject: Re: Supertweeters?
Posted by [rkeman](#) on Tue, 26 May 2015 02:02:24 GMT
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The TAD compression drivers list at about \$1800 and are limited in availability. Perhaps the Radian 450BePB?

Subject: Re: Supertweeters?
Posted by [Wayne Parham](#) on Tue, 26 May 2015 13:37:13 GMT
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I've not tried the Radian 450BEPB-8. If you do, please let us know! I'd love to see some measurements.

Subject: Re: Supertweeters?
Posted by [rkeman](#) on Wed, 27 May 2015 01:51:02 GMT
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The Radian 450BEPB-8 is certainly a consideration, but still runs about \$500. Looking solely at the specifications, do you believe it has a reasonable shot at being compatible with the 3Pi/6Pi crossovers without substantial modification? The aluminum diaphragm Radian also looks linear to over 20kHz and costs only about \$190.

Subject: Re: Supertweeters?
Posted by [Wayne Parham](#) on Wed, 27 May 2015 15:25:15 GMT
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In most cases, compression drivers are pretty similar, with breakup and HF rolloff being the two things to watch for. So for the most part, you can swap 'em around by just matching voltage sensitivity with R1/R2 values. But as always, the devil is in the details. You just can't really know for sure 'til you bolt it on and measure it.
