Subject: Magnepan 1.7 Crossover
Posted by AudioFred on Fri, 31 Dec 2010 23:27:32 GMT
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For those who haven't been following the Magnepan story lately, the company recently introduced the new model 1.7 as a replacement for their 1.6. The 1.7 incorporates some significant changes, one of which is a change from a two-way to a two-way with a supertweeter. The audio press is describing the 1.7 as a spectacular success, but Peter Gunn, an aftermarket upgrader of Magnepan products, has described the new 1.7 this way: "It makes music simply sound wrong". http://www.indiespinzone.com/mag/mag1.7.html

So here's the problem: I've owned the 1.6 and the 3.6 in the past, and they were great speakers. Magnepan is a highly regarded company and I can't believe they would replace their best value product with a lemon. But Peter Gunn's work with Magnepans in highly regarded among knowledgable audophiles. What gives?

I reviewed Peter's crossover schematic and drew two conclusions: 1) as far as I can tell it accrately reflects the wiring in the picture of the actual crossover, and 2) it makes no sense to me. As I see it, the woofer crossover is a simple first order with a series 1.4mH cap. The tweeter and supertweeter share the same first order crossover components, which are a 116uF and a 10Uf cap wired in series. I can't help but wonder if these are wired incorrectly, and that the 116uF should be the tweeter high pass filter and the 10uF should be a separate high pass filter for the supertweeter only. Comments?

Subject: Re: Magnepan 1.7 Crossover
Posted by Adveser on Sat, 01 Jan 2011 01:39:49 GMT
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I guess they are trying to split the same signal that would normally go to the tweeter into two different tweeters. That doesn't sound like the worst idea ever, but I think these should be 4-way speakers. I don't see the advantage of both tweeters getting the same signal, especially since crossover networks work to roll off frequencies instead of using a hard filter.

That's my best guess. Maybe the old design didn't sound bright enough? Or it was poorly reproducing air frequencies that are extremely important.

I recently upgraded a lot of MP3's that were missing a lot of HF information and they sound like two different songs. The timbre is just not accurate on the lesser encodings. My suspicion regarding "doesn't sound right" seems like they are emphasizing these a bit too much and it is exagerrating how much space and sizzle is around the instruments. Too much treble boosting or too many things introducing high order distortion is very unnerving and unmusical too.

Edit: I read the bit about the ST sending a high order signal to the other drivers. Why would they do that? That kind of thing should be done after the waves leave the speaker and enter your ears.

Subject: Re: Magnepan 1.7 Crossover
Posted by Wayne Parham on Sat, 01 Jan 2011 15:47:20 GMT
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I have exactly zero experience with Magnapans so I have no advice but do have a question.  Isn't the membrane primarily capacitive?  OK, no, two questions.  Is the supertweeter also electrostatic or does it have a voice coil?

Subject: Re: Magnepan 1.7 Crossover
Posted by AudioFred on Sat, 01 Jan 2011 17:18:01 GMT
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Wayne Parham wrote on Sat, 01 January 2011 09:47
I have exactly zero experience with Magnapans so I have no advice but do have a question.  Isn't the membrane primarily capacitive?  OK, no, two questions.  Is the supertweeter also electrostatic or does it have a voice coil?

The driver elements are almost entirely resistive, with almost no capacitance or inductance. For every Magnepan element the "voice coil" isn't a coil at all. It's the wires (or the ribbon in the case of the 3.6 and above) that are glued to the mylar diaphram, which react with the rows of magnets behind the diaphragm, causing it to move.
http://www.magnepan.com/magneplanar_technology

Subject: Re: Magnepan 1.7 Crossover
Posted by Wayne Parham on Sat, 01 Jan 2011 19:11:42 GMT
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OK, I see, it isn't electrostatic.  It's an electromagnetic ribbon.  Cool, makes crossover work easy.

Subject: Re: Magnepan 1.7 Crossover
Posted by Adveser on Sat, 01 Jan 2011 20:50:32 GMT
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Wayne Parham wrote on Sat, 01 January 2011 13:11
OK, I see, it isn't electrostatic.  It's an electromagnetic ribbon.  Cool, makes crossover work easy.

For a product that naturally has smooth and extended highs it is a mystery how they are getting these things to sound glassy or shrill as the review suggests they are.

I mean they would have to be really distorting the lower order speakers with the crossover configuration sending HF info to them or possibly exceeding the limitations of the tweeter in this design. I don't what's up without hearing them, but the characteristics described in the review don't match my perception of how the equipment SHOULD work. He says it sounds "wrong" so maybe he is right.

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