
Subject: Goodmans Update - Bass and Notch
Posted by [GarMan](#) on Fri, 23 Jun 2006 14:22:13 GMT
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I was able to spend some time with the Goodmans Axiote this week and was very surprised by a couple of findings. First was the bass. According to the T/S parameters I measured and Boxplot, these drivers can extend down to 30Hz in a 3 1/2 cu ft box. It just so happens that I have a box of that size available in the form of my 3-PI Theatres. I made an adaptor for the Goodmans to fit on the baffle and guess what? It does go down that deep! I'm guessing its about -10dB at that point, but it's clean, clear and detailed. I still can't believe these little guys can actually pump the way it does. Now I'm rethinking my intent to cross with a sub. The second surprise was what it took to tame the mids. These speakers sound very mid-rangey when used naked. I connected a 10-band eq to the system and played with the settings for a couple of hours to find where the problem areas were. What it took was simple attenuation at 1kHz. Not by -3dB or -6dB. But as far as the eq can go, to -15dB. At this setting the drivers had an extremely natural tone, but I'm finding it surprising that it takes such an extreme attenuation at such a specific frequency. I don't have a lot of experience with correcting fullrange drivers, so I'm wondering this is common. Also, wondering what the pros and cons are between narrow/steep vs wide/shallow band notch filters. Is the phase shift resulting from a narrow/steep filter audible? Gar.

Subject: Re: Goodmans Update - Bass and Notch
Posted by [akhilesh](#) on Fri, 23 Jun 2006 15:16:25 GMT
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Hi Gar, I think it'd be common for many antique speakers to have these crazy peaks. The fostex fe103As I have used have a 20 db step at 3 khz! That's a step, not a spike. One good way to tame them, use active filters. Passive elements can often make them sound dead, and will be a lot more imprecise. -akhilesh

Subject: Re: Goodmans Update - Bass and Notch
Posted by [GarMan](#) on Fri, 23 Jun 2006 18:07:00 GMT
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I know what you mean about making them dead. I did a quick model in SPICE to figure out values for the notch filter, and when I inserted it into the signal path, the speakers sounded dead. With the graphic eq, the sound was neutral, but still alive.

Subject: Re: Goodmans Update - Bass and Notch
Posted by [akhilesh](#) on Fri, 23 Jun 2006 21:51:48 GMT
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Yup. I like to use active xovers often as filters. A 3-way active will allow a bass sub crossover and also some kind of a step filter (well if you can call 24 db per octave a step). A notch will of course require either a parametric EQ or a 4 way active xover (assuming you want to use a sub). If you don't want to use a sub, of course, a 3 way active xover should provide a satisfactory active notch.
-akhilesh

Subject: Re: Goodmans Update - Bass and Notch
Posted by [B.Arnstein](#) on Thu, 16 Aug 2007 03:53:02 GMT
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Many of the problems of severe notches in the response of thin coned speakers are caused by inappropriate cone manipulation causing creasing in the paper. Also fatigue problems at the cone apex will create a circular corrugation with a dip and peak characteristic.
