Subject: Variable x-o for motorola KSN1142
Posted by Andy G on Wed, 18 Apr 2001 03:31:43 GMT
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This is a proposed varial x-o for a PA box I am currently building.The other drivers are an Eminence gamma 12 and an Eminence Beta 12LT in a 2.5 arrangement.X-o is aimed at 3500Hz 6dB.  Gamma 12 will augment bass below about 300

Subject: Re: Variable x-o for motorola KSN1142
Posted by Wayne_Parham on Wed, 18 Apr 2001 05:12:18 GMT
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Your crossover is cool, but you will find that the 30 ohm R1 will slightly reduce output in the top octave.  From 10kHz to 20kHz, the tweeter's impedance is less than double this value, and nearly equal at 20kHz.  So you might use a smaller value series resistor in position R1.  Another thing you might do is to add about 20 ohms directly across the tweeter.  That will make the load presented to the crossover be nearly equal to the shunt resistance.  That will allow you to design a crossover just like you do for any other driver, knowing the shunt resistance value to be the load impedance for crossover component value calculations.

Subject: Modified Variable x-o for motorola KSN1142
Posted by Andy G on Wed, 18 Apr 2001 06:13:42 GMT
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After feedback from John Risch on the Mad Board, I have made the following changes.  He actually suggested using switched capacitor values, but I guess what I was trying to do was to make a variable piezo x-o with the components I have in stock. I have 4 of those 8 ohm L-pads in stock, an was trying to find a way of using them, rather than buying extra rotary or other switches. If I remove the 1.5µF cap (doesn't seem necessary) Put 22 ohms across the piezo and add a 15 ohm in series with the parallel leg of the 8 ohm L-pad and push the x-o frequency up to 4500 calculated on 16 ohms (2.2µF), The R1 resistor would be set for the half way position on the L-pad, giving partial cut and gain. (I know that it would not give the same dB cut as on the face-plate of the L-pad, but I wasn't planning to use it anyway.) Do you reckon it would work ok? My calcs seem to indicate that the resistance seen by the x-o capacitor would vary between 15.2 and 16.9 ohms. This is probably quite a bit more stable than a normal driver.

Subject: ps:
Posted by Andy G on Wed, 18 Apr 2001 06:20:18 GMT
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You are probably right about the 30 ohm resistor, but thats what I have been using in other non variable piezo x-os, and its just about right.Also, as asked further down, have you ever used the Eminence Gamma 12 in a PA box,  I had great trouble getting a sensible box size, ended going fully sealed and fully stuff about 95 litres, hope it works. If it doesn't, I'll swap it out with a beta 12 and port that section of the box.

Subject: Eminence Gamma series
Posted by Wayne_Parham on Wed, 18 Apr 2001 16:42:55 GMT
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Try running PiAlign to see what it recommends.

Subject: Re: Modified Variable x-o for motorola KSN1142
Posted by Wayne_Parham on Wed, 18 Apr 2001 16:46:42 GMT
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Adding the 22 ohm resistor is the main thing because it sets the load presented to the crossover. After that, the rest is cake.

Subject: Re: Eminence Gamma series
Posted by Andy G on Thu, 19 Apr 2001 00:13:24 GMT
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I will see if PiAlign will work under Virtual PC on my mac.Thanks for the assistance. Let you know how I end up.

Subject: Re: Variable x-o for motorola KSN1142

Posted by Lothar on Wed, 20 Jun 2001 18:39:13 GMT
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Dear Andy,  Wayne with interest I followed your discussion aboutPiezo filtering.Perhaps you could help me out with the following:I would try to add a Piezo to a Tannoy dual-concentric speaker design.To add some brilliance. The objective however is to use a 6 db. perOctave filter with the cut off starting somewhere at 20 khz.(To not intefere with the idee of the Tannoy principle of superior Phase carateristics by using a point source). Yust adding some upper brilliance!Could you guys help me out with the values of the C's and R's?B.t.w if you don't mind I would like to post your reply in the Tannoyforum.

Subject: KSN 1038 as a "Super Tweeter"
Posted by Wayne_Parham on Thu, 21 Jun 2001 07:35:37 GMT
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You might be interested in the post called "Pi implementations of quartz piezoelectric tweeters", and in the links to other threads that are contained in this post.  As for a specific sugegstion, you might try this:=== 10kHz Filter ===Series Capacitance  = 1.0uF Parallel Resistance = 16 ohmsfreq  resp==========20kHz  -1 dB10kHz  -3 dB 5kHz  -7 dB2.5kHz  -13dBThat will give you some subtle "sparkle" and is probably what you're looking for.Alternately, I'll describe the exact filter you've asked about, which is a first order 20kHz network.  If this is what you want, you'll need a capacitor that's exactly half as big as the one listed above.  So you'll want a 16 ohm resistor across the tweeter, and a 0.47uF capacitor in series with the tweeter/resistor connection.This will give the following response curve:=== 20kHz Filter ===Series Capacitance  = 0.47uF Parallel Resistance = 16 ohmsfreq  resp==========20kHz  -3 dB10kHz  -7 dB 5kHz  -13dB2.5kHz  -19dBA KSN 1038 using this second filter might add some "air," but it will be crossing over pretty high.

Subject: Re: KSN 1038 as a "Super Tweeter"
Posted by Lothar on Fri, 22 Jun 2001 01:19:18 GMT
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Wayne, first af all: thanks for your reply!At this moment I am sitting in my laziest chair ready to surf to all the links I can find provided in your reply.Tomorrow a pair of piezo's is waiting for me at the local dealer, and I am anxious to try it, although I am satisfied with the treble in the current configuration most of the times.It's an experiment: I'll let you know the results.

Subject: Re: KSN 1038 as a "Super Tweeter"

Posted by Wayne_Parham on Sun, 08 Jul 2001 09:23:41 GMT
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Have you had time to hook the tweeters up yet?  What were your impressions?

Subject: Re: KSN 1038 as a "Super Tweeter"
Posted by Lothar on Mon, 09 Jul 2001 01:08:59 GMT
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Hey Wayne!Well I tried them with the 20 khz high pass and it seems that I justhave that extra "air" what I was looking for.(Or is it the, positive intimidating, sight of two black tiny hornson top of the loudspeakers)?He he.Well thanks for the advice again, and... Spatsiba!

Posted by Wayne_Parham on Mon, 09 Jul 2001 05:16:12 GMT
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Posted by Lothar on Fri, 20 Jul 2001 00:24:15 GMT
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Hmm, think I have to download a different language pack from MS here.Well tomorrow I am trying a third order filter I am soldering rightnow, I use this site to calculate the L/C values:
http://www.the12volt.com/caraudio/crosscalc.asp#ccc