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Subject: taming the piezoelectric

Posted by [wasteh202](#) on Mon, 09 Feb 2004 03:39:56 GMT

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I have a pair of the 2Pi towers. I like alot of things about this speaker. It is a great value for the money, and give a terrific range of music without comprimise by an XO, the bass is strong and low. But, my one complaint is the piezoelectric by Motorola is too fatiging for my ears. I would rather not use tone control or an equalizer in the chain to augment the sound. Is there any way that I can tame this horn some that will take some of the edge off ? I have read about some tweaks to the KSN1038.. but can not seem to find what I am looking for.I have other speakers (planar and box) that I can listen at the same or louder decibels without fatigue, but this speaker will not allow me to listen at high volumes without turning down the music after a short time.I would really like to keep them, but if I do not arrive at a solution to this problem they may go up for sale.Anybody ? .... thanks.

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Subject: Re: taming the piezoelectric

Posted by [gumby1](#) on Mon, 09 Feb 2004 06:28:17 GMT

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Yes, there is something you can do. I was in the same position you are in. Wayne gave me a list of capacitors that I could try in series with the HF driver. I found that a 0.1uF 630V capacitor did just what I was looking for. I believe the attenuation for that capacitor was 7dB.

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Subject: Re: taming the piezoelectric

Posted by [GarMan](#) on Mon, 09 Feb 2004 13:17:51 GMT

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Putting a resistor across the binding post or a cap in series with the tweeter will both tame the piezo, but in different ways. I found that the cap will attenuate the piezo, while the resistor "mellows" it out.Values you may want to try are:0.1uF for -6dB0.3uF for -3dBTry a 50, 22, or 12 ohm resistor across the binding post for a small, medium and large "mellow" effect.Gar.

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Subject: Re: taming the piezoelectric

Posted by [wasteh202](#) on Mon, 09 Feb 2004 16:16:17 GMT

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Thanks for the tips on the peizoelectric horn. I did not know about these tweak modifications, and I

will try them. I was actually thinking of tweaking the horn itself. Like adding mass to the back of the horn or opening the horn and treating the paper with something. I remember reading about these tweaks but do not remember the specifics. I do know if these physical horn tweaks will get the exact change that I am looking for, and neither do not know exactly how to do them... but... I will at least attempt the mods with the resistors. Thanks much to GarMan and Gumby

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Subject: Re: taming the piezoelectric  
Posted by [jlharden](#) on Mon, 09 Feb 2004 17:10:44 GMT  
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Hi waste, I had good results with damping the back side of the piezo with mortite. I don't know if this will do what you are wanting though. There was also talk of disassembling the tweeter and using dammar varnish on the diaphragm. If I recall correctly, this was from the single driver website where the Motorola piezo's get a decent amount of use. I haven't tried this and probably won't. The biggest difference in sound came when I switched from a pretty good quality solid state amp to a better push pull pentode amp. Better bass, midrange, and highs. Really transformed this speaker. I think the sound could be characterized as a warm, full bodied sound with hifi characteristics, yet possessing drive and dynamics not typically found in "hifi" speakers. In a nutshell: great sound with plenty of balls! Good luck with your speakers and keep us posted.  
Jerrod

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Subject: Re: taming the piezoelectric  
Posted by [wasteh202](#) on Mon, 09 Feb 2004 20:10:44 GMT  
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I may well change my amp for these speakers. I am using SS amps with them is this is likely part of the problem. I was using some Heathkit 4W-AM push/pull 20w monoblocks... but the sound was very bloated and unclear... much worse than the SS amps, perhaps the tubes... I'm not sure. I will likely sell the Heathkit amps and look for some Bottlehead or Decware tube ampification. I will also attempt to treat the piezoelectric horn as you have stated and check to try to find the website that can tell me more about altering the inside of the horn... Thank to all..

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Subject: Re: taming the piezoelectric  
Posted by [steve f](#) on Tue, 10 Feb 2004 02:29:43 GMT  
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Hi, I tried a bunch of physical add ons to piezos. The worst was an automotive undercoat sealer. ( I'm always willing to make a mess in search of better audio!) I really like stuff like mortite or

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plumbers putty. It dampens the plastic a bit, and you can easily remove it if you don't like it. Steve

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Subject: Re: taming the piezoelectric, attn: Bill Epstein  
Posted by [jlharden](#) on Tue, 10 Feb 2004 13:54:09 GMT  
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Hello again, I really like the push pull amp on horns. I've got tube power with a very big sounding 60 w/channel. I haven't heard the small signal tube amps on the 2 Pi's so I can't comment. My gut feeling is I'd like the sound, but crave the dynamics of the much more powerful push pull amps. I believe Bill Epstein has used both on Pi's, perhaps he'll comment. Either route should make great sound and warm up the room a bit! Good luck to you. Jerrod  
single driver website forum

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Subject: Re: taming the piezoelectric  
Posted by [wasteh202](#) on Tue, 10 Feb 2004 15:37:03 GMT  
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good idea... I will go this route first. Thanks !

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Subject: Re: taming the piezoelectric  
Posted by [ports](#) on Tue, 10 Feb 2004 16:20:42 GMT  
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Hello GarMan...I am in the process of assembling a "Quasi-Pi Theatre 3" using a Motorola CTS 1165a piezo tweeter instead of the Eminence PSD2002 compression driver...being an absolute novice to this I was wondering about how you installed the resistor on the piezo....do you just solder each end of the resistor to the "+" & "-" posts on the tweeter itself...I'm only beginning to gather the parts required...I have the Delta 12LF woofers, CST 1165a piezo tweeters, zobel network, & coil ...I'm still working on how to wire in the piezo(on paper)...I'm hoping to build cabinets later this year after my house renos are done. When things warm up here in Thunder Bay this summer I may get the chance to work outdoors !!!!

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Subject: Re: taming the piezoelectric, attn: Bill Epstein  
Posted by [BillEpstein](#) on Tue, 10 Feb 2004 21:26:34 GMT  
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I'm so fickle and easy to please. However, I just completed a trial that convinces me there is still no substitute for "cubic inches"! First, Theatre 4 Pi and Studio 2 Pi are really great with the 2A3 tube, 3 watts. Amazing bass along with expected sweet mids and top. Also the 4 Pi in particular was terrific with a mid-fi transistor receiver. The PSD-2002 is somewhat more forgiving and rounded than the JBL 24?? for instance. In the back of my mind, tho', was the idea that SET's round off something to achieve that sound. Where things really came into focus for me was the introduction of the Ella EL-34 amp. Excellent control of the lows and very detailed but not fatiguing mids and highs. I went to Triode at 15 watts looking for a more "SET" sound and was unimpressed. When I recently switched back to Pentode and the full 40 watts per, what a difference! While there is a definite "amplified" sound more so than with SET's overall the dynamics, tonal shading and imaging of the Pentode is superior. Better control over the motors, I guess? High Efficiency does not preclude high power by any means.

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Subject: Re: taming the piezoelectric, attn: Bill Epstein  
Posted by [jlharden](#) on Wed, 11 Feb 2004 01:10:08 GMT  
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Hi Bill, Back to pentode? That's interesting news. I too am enjoying the Ella in pentode, though I'm running the KT-88's. After hearing it in both configurations I don't think I'll ever go back to triode. There is something just right about pentode. More clean, focused and DYNAMIC! How are the new quasi 4 Pro Pi's sounding? Did you adhere to the proper Pialignment (1.92 ft) or did you go a little bigger? Jerrod

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Subject: Re: taming the piezoelectric  
Posted by [GarMan](#) on Thu, 12 Feb 2004 02:11:57 GMT  
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Thunder Bay! And I thought I had a short working season in Toronto. I feel ashamed to be complaining. Don't solder anything until you like what you hear. Just crimp the wires first. Even if you like what you hear, wait for another week just to be sure. You can attach the resistor across the two poles of the tweeter directly if that's all you're going to do. It don't look like you're need a cap to attenuate or cross early, seeing its only 92dB eff and rolls off at 1.8K. Again, try different values first to see (hear) what you like. Gar.

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