Subject: alpha 10A frequency response
Posted by bqc on Tue, 17 Sep 2002 10:48:26 GMT
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I've just received my order of Alpha 10s. Thanks Wayne for shippingthem out promptly. I looked at the spec sheet and although the printquality is poor, it looks like there is a noticable 'bump' in frequency response starting around 2k going out till 4k. This graph does not resemble at all the one shownat Eminence web site for the Alpha 10 where the response is ruler flat. Does anyone know if the spec for the Alpha 10 has changed? If so would this render the part unusable for the Studio 2 pi's?

Subject: Re: alpha 10A frequency response
Posted by Wayne Parham on Wed, 18 Sep 2002 07:02:26 GMT
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Eminence has changed the Alpha 10 and some of its other drivers recently. They've changed the voice coil to make them handle more power and while they've kept electro-mechanical specs pretty similar, there have been some minor changes. In the case of the Alpha 10, power handling and ultimately maximum output has been increased but there is a rise in the upper midrange as a result.The way we're addressing this is to include a 0.5mH coil as a pseudo-first-order filter to create a shelf of reduced energy between 1kHz and 4kHz. The response curve you can expect from a 0.5mH coil in series with an Alpha 10 is shown below.Pseudo-first-order 0.5mH in series with Alpha 10

Subject: Re: alpha 10A frequency response
Posted by Chris Rose on Wed, 18 Sep 2002 08:26:43 GMT
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Gentlemen,Indeed, I am sorry that our periodic changes in performance data at Eminence lend to occassional confusion. This is certainly not ever our intention.Most manufacturers feel comfortable publishing the same data for years and years without ever considering that changes in components, vendors, and manufacturering techniques have changed the performance of a particular item.In this case, we just did a complete review of all our published data and power handling capabilities for the reasons I listed above. In addition, we knew that there were some anomolies in our curves caused by our anechoic chamber that needed correction as well as some significant improvements in our voice coil manufacturing techniques that would result in improved

power handling. The spec sheets that we put in the products were updated about a month ago, our website with the new data was uploaded yesterday, and our new catalog will be distributed sometime in October.As you can imagine, the logistics of informing thousands of customers about such changes can be difficult.I apologize for any inconvenience this may have caused you.Please contact me directly at chris.rose@eminence.com if you have any further questions or concerns.Best regards,Chris RoseEminence

Subject: Re: alpha 10A frequency response
Posted by Oscarl on Wed, 18 Sep 2002 10:31:10 GMT
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So how do I know if my speakers are old or new? When was the change made?

Subject: Re: alpha 10A frequency response
Posted by Wayne Parham on Wed, 18 Sep 2002 16:14:47 GMT
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The new speakers have a silver label on the magnet, so that's how you can identify them.

Subject: Re: alpha 10A frequency response
Posted by Matts on Wed, 18 Sep 2002 16:43:06 GMT
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Wayne,I just made some 2Pi's, and am in the process of making some 1Pi's. I love the way the 2Pi's sound, so I'm not going to worry about this. However, I hope that at some point you or others will comment on the inductor and whatever else may be helpful, and let us know if they are worth retrofitting based on actual listening. I don't mind an improvement if it's real world, but you

can't listen to a spec sheet.Matts

Subject: Re: alpha 10A frequency response
Posted by Wayne Parham on Wed, 18 Sep 2002 18:41:35 GMT
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The coil is only used with speakers having the silver label. If you have the earlier model, you don't need it.

Subject: Who could forget the "live, naked resistors"?
Posted by BillEpstein on Wed, 18 Sep 2002 21:55:41 GMT
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So how, with full-color illustrated instructions does one install the inductormobile thingy?

Subject: Re: Who could forget the "live, naked resistors"?
Posted by Wayne Parham on Wed, 18 Sep 2002 22:34:53 GMT
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The coil is now included with kits, so nothing else is needed. If you're doing your own, just install a 0.5mH coil in series with the woofer. Cut one of the wires going to the woofer and splice the coil in, covering the leads with heat shrink tubing.The coil should use 20 guage or larger wire, which will result in less than 0.5 ohms DC resistance. A suitable part is the 260-723.This part has 0.5 ohms DC resistance, so the woofer's Qes is only raised by 0.03. The difference in overall system Q is small, so it works pretty well.

Subject: since you mentioned Qes and R
Posted by Sam P. on Wed, 18 Sep 2002 23:44:22 GMT
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I thought I would ask about how significant that 0.5 ohm dcr might be. My sansui 5000a has a damping switch on the rear. The two settings give either 50 or 15 for the Df using an 8 ohm load. And all the switch really does is...tada!, add a 0.3 ohm resistor in line with the speaker output. Maybe because the output is via a bigasscap(2200uF), but these specs show that 0.3 ohms added resistance cuts the Df in this instance by 2/3's. Doesn't that represent a reduction in the amps ability to control the motor? Sam

Subject: Re: since you mentioned Qes and R
Posted by Wayne Parham on Thu, 19 Sep 2002 01:07:14 GMT
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Adding series resistance to the output circuit makes the amp less able to short the motor's back EMF. That, in turn, makes it less able to provide electrical damping, which acts sort of like an electric brake for the speaker. To put this in perspective, solid state amps usually have output impedance less than 0.1 ohm but many tube amps have output impedance of more than an ohm and some have several ohms.

Subject: subjectively in the "low" damp position
Posted by Sam P. on Thu, 19 Sep 2002 09:42:10 GMT
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the sansui sounds, well, more "tube-like" is what comes to mind regarding the slight loss of low bass weight. Like a subsonic or "rumble" filter is engaged. Sound's good either way, just

"different" enough to notice when doing an a-b comparison and listening closely. Shaving that midrange rise will be a larger benefit from the coil than any slight decrease in Qes is how this looks to me. Eminence does "product improvements". Wayne's design "evolves". That's how the world works.