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Subject: Microphone mods

Posted by [Dean Kukral](#) on Fri, 11 Jun 2004 16:26:33 GMT

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I thought a while back that there was a post here on modifying a RS sound level meter using a better thingamajig that you replaced in the receiving end. You could get it from Digi-Key and it was cheap. At the time, I went to Digi-Key, but they were out of stock. Can anyone help me here, please?

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Subject: Re: Microphone mods

Posted by [Wayne Parham](#) on Sat, 12 Jun 2004 06:44:31 GMT

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I believe these are what you are looking for. Eric Wallin's Radio Shack SPL meter modifications: 33-205033-205542-3019

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Subject: Thanks, But Not What I Was Looking For

Posted by [Dean Kukral](#) on Sat, 12 Jun 2004 12:02:51 GMT

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Thanks, Wayne, I printed off that for future reference, but what I was looking for simply said to replace the "microphone element" (I did not know the term or my question would have been more precise) with a new one from DigiKey. The mic was a little round thing about the size of three quarters stacked, and cost less than \$3. I probably saw the posting on the AA in December. I'll take a look there.

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Subject: Re: Thanks, But Not What I Was Looking For

Posted by [Wayne Parham](#) on Sat, 12 Jun 2004 13:23:29 GMT

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I think Eric Wallin mentions the use of a substitute microphone in his articles. Maybe you're wanting to use something like a Panasonic WM-60AY microphone cartridge. There's a preamp schematic for this microphone posted here, but you won't need it for use as a replacement mic in your SPL meter.

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Subject: Re: Thanks, But Not What I Was Looking For  
Posted by [Manualblock](#) on Sat, 03 Jul 2004 15:47:36 GMT  
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Hi Wayne; Have you or anyone out there actually done these mods? If so are they reliable? And last do you happen to know if RS still sells these meters; they seem to have cut back on a lot of the audio stuff, you can't even get outboard speaker binding posts anymore. Those links to posts are really helpfull. May I ask; if you were to propose a simple but accurate within reason; system for TS measurement; one you could trust to provide reasonably accurate readings within the constraints of the hobbyist resources(I mean w/o having access to anechoic chambers etc.),considering that you have a fairley powerful computer that could be dedicated to this pursuit as well as the room to perform the required measurements and somewhat effective isolation measures in place(whew!). What would you tell the novice in regards to setting this sort of system up. Any good tutorials and sites. I know about all the programs available but many do not address the issue in it's entirety. I have accessed some of the posts on this site but have not organised them into a thorough plan.

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Subject: Re: Thanks, But Not What I Was Looking For  
Posted by [Wayne Parham](#) on Sat, 03 Jul 2004 18:58:50 GMT  
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Hi John,I'm reasonably confident that Eric has done the mods. But to be honest, I never liked the performance of the little RS SPL meters. I see them as a way to get ballpark figures, but nothing more.As for electro-mechanical specs, they're not quite as hard to get as response measurements because they don't include the acoustic domain. If you have a good signal generator and a scope or meter, you can obtain reasonably good T/S specs. I don't expect home measurements to be as reliable as those obtained at large shops with better systems. But still, you're really just measuring electrical values, and the mechanical transformation is reflected in them, showing electro-mechanical specs. There isn't as much outside influence as there is when making acoustic measurements, so you can usually expect decent results.I think the best thing you can do to reduce ambiguity is to verify with more than one measuring instrument, and to ensure you can reliably repeat your measurement values.Wayne

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Subject: Re: Thanks, But Not What I Was Looking For  
Posted by [Manualblock](#) on Sun, 04 Jul 2004 01:43:57 GMT  
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Thanks Wayne, I have a feild behind my house and can take 5meter distance from the ground. Would you consider this adequate or should ground plane measurements be used. Also is there a meter you are familiar with that is more competent than the RS? In your opinion which freq. response program works well with amatuers and what mic. would you recommend. Let me know if

this is out of line with this forum's purpose. Any word on the lab 12?

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Subject: Speaker Workshop

Posted by [Wayne Parham](#) on Sun, 04 Jul 2004 04:11:20 GMT

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Actually, I've always considered really accurate measurement systems to be available only to those with deep pockets. This has changed to a large degree, and there are some really good packages available these days for less than a grand. Speaker Workshop is shareware, and it does a pretty good job. I don't know that I'd put its results up against a calibrated system in an anechoic environment, but it sure makes design work a whole lot easier than doing everything manually and with hand calculations. Distance to boundaries depends on the frequency range of interest. For example, if you're concerned with the interaction between components at a crossover above 300Hz, then a few feet distance from boundaries is plenty. You can gate the microphone input so that reflections are ignored. About the subwoofer, I assume you're talking about the flux-stabilized B12. Eminence has already built a first prototype and found that the shorting ring reduced 2nd harmonics by more than 10dB, so that part was a success. But to get the reduction of harmonics down to the lowest frequencies requires a larger flux stabilization ring, so they are working on another type of magnetic structure. They'll build a second prototype using a structure that allows a larger ring, and they've told me that we're looking at around the end of the summer for a timeframe on that.

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Subject: Yes, perhaps that was it.

Posted by [Dean Kukral](#) on Tue, 06 Jul 2004 23:26:36 GMT

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That cartridge may well be what it was. I went to digi-key and they said it was obsolete...Thanks for your help.

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Subject: Re: Yes, perhaps that was it.

Posted by [Wayne Parham](#) on Wed, 07 Jul 2004 04:37:12 GMT

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I looked on Digi-Key's website and found the WM-60AY shows quantity available of 0, so maybe they have been discontinued. You might try the WM-61A instead. They show having 15,000 available and its specs look like it would make a suitable replacement, so it should be just fine.

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Subject: RS SPL Meter Modifications (Wallin)

Posted by [Adrian Mack](#) on Sat, 15 Jan 2005 03:59:47 GMT

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Hi manualblock I've done all Eric Wallin's mods to my RS meter. Basically that includes replacing all of the electronic components, and using the panasonic WM-60AY mic mounted on the end of a microphone boom (piece of rod homemade). I use this setup with the Speakerworkshop program, and I have always gotten consistant results from this combination. I think it works very well and is a great and cheap way for a DIYer to make meaasurements. I think RS has stopped selling this meter though, but you could just build a little preamp such as the one Wayne posted a link to instead. If you have an RS meter, the RS meter works as the preamp and is more sensitive/higher gain when you select a lower decible band, so you won't need to build a seperate pre-amp. Adrian

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