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Subject: active speakers

Posted by [micmac](#) on Sun, 03 Oct 2004 05:39:40 GMT

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Just a general question: Would it be better to put amps in a stand-alone box, and have long speaker wire runs and short RCA runs from x-over to amp, or put the amp in the speaker enclosure and have long RCA runs? Thanks Mike

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Subject: Re: active speakers

Posted by [Wayne Parham](#) on Sun, 03 Oct 2004 07:48:51 GMT

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Hi Mike, There are two things to consider here. Low-impedance, high-power lines suffer more from power loss through long lines. High-impedance, low-power lines are more vulnerable to noise when they are made long. So those are the vulnerabilities you'll have when either is made longer. Fortunately, with the distances involved in home audio systems, neither is usually a problem. You can find an easy solution either way you do it. If you make the speaker wires long, make sure they are large. And if you make the preamp level lines long, make sure they are shielded and not run near electrically noisy devices like fluorescent lamps and large appliances with high current switching relays or commutated electric motors. Wayne

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Subject: Re: active speakers

Posted by [halojoy](#) on Sun, 31 Oct 2004 17:17:46 GMT

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I agree with Wayne, about drawbacks for lsp-cables vs. signal-cables. Also true that problems very small when we talk about only 2-3 meters of length. Most active speakers amplifiers are put close to or within lspeakers. Like in subwoofers. I am thinking of building an active system now. With three-way speakers. And 3+3 chip-amplifiers. Right now my idea is to fit all active filters and those six amplifier-ICs onto heatsinks IN ONE COMMON ALUMINIUM BOX. And to have loudspeaker cables for those 2-3 meters going to lspeakers. Cables will be standard low price LSP-cables at least 2x6 mm<sup>2</sup> area. The benefit from this will be I can have six volume-potentiometers. One for each amplifier - lsp-driver (element). (I will also have one master dual volume knob). And I have all controls in same box, at my listening position. When you put all controls in same box as active filter and use six longer signal cables to amps near to LSP, you will need VERY good shielding! This is because when you turn down volume, a very weak signal will be passed through the signal cables, those 2-3 meters. And the smaller (maybe below 0.1 Volt RMS) the signal, the less distance to the NOISE-floor will be. How strong the signal is compared to noise is expressed as SIGNAL to NOISE ratio, counted in decibel. for example: S/N 60 dB The signal is 60 dB stronger than noise. Turning down signal will give less S/N. So if we have a long signal cable, we would

want the signal to be strong for the length of the signal cable. Preferable 1-2 volt RMS = the full output of a CD-player. The volume control should then be put very close to power-amps input pins. As I said, my choice was having all volume controls + Amp-chips in same box and to have long Isp-cables instead. Only in the low-impedance thick Isp-cables will the signal be very weak. /halojoy

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