Subject: What gauge wire?
Posted by FloydV on Tue, 06 Mar 2012 20:51:36 GMT
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I'm going to be running speaker wire in a new house. No single run will be more than 35 feet (those would be for back surrounds). I'm trying to decide if I should get 14 gauge or 16 gauge wire for this.

I'm leaning toward 14, but the thicker the wire is, the harder it is to work into connectors on the back of my receiver.

Any thoughts on this?

Floyd

Subject: Re: What gauge wire?
Posted by audioaudio90 on Tue, 06 Mar 2012 22:45:49 GMT
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For 35-feet runs, you can certainly use 16 gauge wire and it should sound fine. I would lean towards 14 gauge wire myself, though, even though it's technically not necessary at that distance. Yes, connecting it is a bit harder but I think it's worth it.

Subject: Re: What gauge wire?
Posted by FloydV on Tue, 06 Mar 2012 23:00:42 GMT
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audioaudio90 wrote on Tue, 06 March 2012 16:45For 35-feet runs, you can certainly use 16 gauge wire and it should sound fine. I would lean towards 14 gauge wire myself, though, even though it's technically not necessary at that distance. Yes, connecting it is a bit harder but I think it's worth it.

Yeah. That's what I decided too. The 14 gauge will come to wall plates. From their a short run of 16 gauge to the receiver (say 3 feet) will make no difference.

I ordered 300 feet of 14 gauge from http://www.monoprice.com. They have great prices on everything electrical. $79 for the 300 feet.

I do have a question about RCA cable vs. speaker wire to subwoofers though. If I follow Wayne Parham's idea of putting two more self powered subs at the back, that would be a lot of shielded cable, and it seems to me a lot greater chance of picking up hum. So, what would I give up if I went to speaker wire connects to the more remote subs?

Floyd

Subject: Re: What gauge wire?
Posted by Wayne Parham on Wed, 07 Mar 2012 01:11:37 GMT
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You're right that the relatively high-impedance, low-level unbalanced coax cable is more susceptible to noise than a low-impedance, high-level balanced speaker cable. The shield of the coax helps, but it can't complete with a low-impedance balanced pair for noise-immunity.

There are balanced preamps, and that is an improvement over unbalanced where noise immunity is an issue. But it still can't compete with a speaker level line for noise immunity simply because of the impedance issue.

Then again, you're probably not in an electrically noisy environment. The two biggest offenders for you are probably power and fluorescent lamps. Light dimmers, motor speed controllers and switching supplies can be killers too. And of course, cell phones can be annoying.

A few decades ago, ham radios from nearby operators were sometimes a problem. When they keyed up, their RF would be detected by rectification in the input circuits of nearby sound system equipment. The radio signal would so overdrive the inputs that they would rectify the RF and turn it into an audio signal, to be amplified and presented to the speakers.

So anyway, my point is, you might try running a long coax line and testing the waters, so to speak. If it picks up too much noise, you can always put the amps close to the source and run speaker cables for the distance. Or you could try a wireless distribution.

About speaker wire, a good rule is to keep speaker wire resistance under 1/10th the load impedance. You can use a resistance chart to calculate it, given length and gauge. But don't forget that the line is a conductor pair, so double the length when calculating resistance.
Wire CalculatorThere's no disadvantage using a wire that's too large, but there is if it's too small. Best to get the biggest stranded copper wire you can get, although there does come a point of diminishing returns. I tend to find the minimum wire size needed, then go up a size or two. So, for example, an 18 gauge wire will support about 50 feet runs, but I'd probably go with 14 gauge or 16 gauge anyway. If I had to buy a ton of it though, and the budget started dictating choices, then 18 gauge would suffice.

Subject: Re: What gauge wire?
Posted by FloydV on Wed, 07 Mar 2012 01:26:30 GMT
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Thanks Wayne,

I think I would go with speaker wire to the rear subs. I have always been particularly annoyed with hum picked up from whatever source.

The part that confuses me (and that isn't too hard) is why I would use cable to the subs over speaker wire in the first place. There is LFE, but I'm not sure how that plays into music.

Floyd
