Subject: RCA Splitters
Posted by Barryso on Fri, 19 Jul 2024 14:33:59 GMT
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Anyone have experience with RCA splitters that don't degrade sound quality?

I'd been using a cheap pair of solid metal splitters on the back of the preamp for ages but discovered that just having them in the signal path reduces sound quality. Pretty similar experiences with all the preamps.

There must be a better quality product out there. Anyone have any suggestions?

Subject: Re: RCA Splitters
Posted by Wayne Parham on Fri, 19 Jul 2024 16:30:10 GMT
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There are plenty of great quality splitters available. Just get one with gold-plated ends, and with pure copper center conductor and shield. If the splitter has those qualities, it's 100% good as gold. I have a handful of "good ones" and a few cheap little splitters like you've described. I should probably throw those away.

Another potential issue is with impedances and more importantly, with reactances. The output circuit and the pair of input circuits might be sensitive to the change of impedance/reactance that happens when two inputs are connected in parallel.

Most devices that output a preamp signal are pretty robust, with more current capacity than is needed. Said another way, if they get a greater load than is expected, they can drive it without dropping much of the signal. Their output impedance is low, so there isn't much resistance to act as a voltage divider.

But not all outputs are like that. Some do have enough output impedance that you can hear a noticeable drop in volume when their load is greater, like when paralleling a couple inputs with a splitter.

And more importantly, if the output or input has a reactive component - an inductor, transformer or capacitor - then they have a natural filter function. This isn't uncommon, because interstage connections are often done with coupling capacitors or transformers. Most times, the reactive component is sized large enough that its effects are way outside the passband. For example, a coupling capacitor is made large enough that it stops only DC, and passes everything above a very low frequency, like 1.0Hz or below. The filter is a function of reactance and resistance, and if the resistance changes, so does the filter. Still, if the reactive component is sized to work down to 1.0Hz, even a pretty large shift wouldn't push it up into the passband.

So that's something to think about too.

You might experiment a little bit. Try different devices and see which ones are most sensitive.

You will probably find that some will work but some won't. Some will be completely unaffected. Some will reduce volume just a smidge, but won't change tonal balance. Then some won't work 'cause they'll make the system sound "thin."

Subject: Re: RCA Splitters
Posted by gofar99 on Sat, 20 Jul 2024 02:55:00 GMT
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Hi, I'm with Wayne. They can be useful but when you essentially parallel two loads on a single output you can run into the issues mentioned above. I consider it unwise if the two load input impedances are not equal in impedance and reactance.

Subject: Re: RCA Splitters
Posted by Barryso on Sat, 20 Jul 2024 14:17:42 GMT
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Thanks Wayne, Gofar

I'll look for gold/copper splitters. The one's I have are gold plated but I've no idea what they are made of underneath. Probably cheesium. They were cheap.

Just to be clear, everything got pulled off the splitters, including the 2nd set of cables. So all that was in the chain were the splitters and the RCA cables to the main amp. When the splitters were removed the sound improved. So this particular problem is likely not an impedance issue - just too much garbage in the signal path.

For this and other reasons there are no front subs running. The sound from the 4 pi's is just a whole lot better without the splitters and crossover. You don't have low bass but what's left is much better. Actually, it's pretty excellent.

There are other issues, some likely impedance, going on with other parts of the front sub crossover and amplification chain. Tried to fix it a few years back and got nowhere so I've just been listening sans subs. It sounds really good so it's kinda hard to get motivated to make changes.

When good splitters are found the next step will be finding a crossover/amp with the same impedance as the amp running the 4 pi's. Hopefully that'll fix the suck out that happens with the existing crossover.

We're still in air conditioning season so nothing much will happen until fall. Then it's time to play.

Subject: Re: RCA Splitters
Posted by Wayne Parham on Sat, 20 Jul 2024 14:55:58 GMT
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Sounds good, keep us posted!

I'm surprised that the splitters did that to the signal when used just as a straight-through single cable. I'm wondering if the center conductor - maybe originally a few strands of tiny wire - lost a strand or two where it terminates on an end. Something bad must've happened.

Subject: Re: RCA Splitters
Posted by gofar99 on Sun, 21 Jul 2024 01:44:51 GMT
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A bit of a surprise here too. Check for corrosion.