

Re: Low cost coax connectors

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- *From:* Rich Grise <rich@xxxxxxxxxxx>
 - *Date:* Sat, 27 Oct 2007 20:41:39 GMT
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On Sat, 27 Oct 2007 11:41:19 -0700, Joerg wrote:

Jeff Liebermann wrote:

Joerg <notthisjoergsch@xxxxxxxxxxxxxxxxxxxxxxxx> hath wroth:

Jeff Liebermann wrote:

On Fri, 26 Oct 2007 21:24:44 GMT, Rich Grise <rich@xxxxxxxxxxx> wrote:

How about those coaxial,
"power" types, like this?
(mind the wrap)
<http://www.radioshack.com/product/index.jsp?parentPage=search&pg=3&sur>
You might have to modify
the plug and socket a bit,
and impedance might be
interesting...

That will probably work fine until someone
plugs a live AC wall wart
into the plug and vaporizes your radio. I
think they call that an
"attractive nuisance" or "warranty magnet".

Can be remedied by a wee component: A series capacitor :-)

Too easy. I thought this was a low cost design, where every extra component saved is important. I've seen designs with DC on the antenna jack in order to save the cost of the capacitor. However, the power jack as an antenna connector does present another problem. If the antenna is part of the FCC type certification, the FCC sometimes requires a "unique" coax connector to prevent users from substituting the antenna and violating the type certification. The reason I say

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"sometimes" is that there have been various rulings and variances that allow the use of not so unique connectors or connectors that were at one time unique, but are now commonly available. Anyway, using the power jack as a coax connector would certainly not qualify as unique as one could easily obtain one at Radio Shock. Same problem with the 3.5mm earphone jack.

Incidentally, don't forget to perform the basic antenna field test. That's where the customer grabs the unit by the antenna and swings it around while walking. It's a very common problem with HT's (handie talkies) and seems to be spreading to wi-fi wireless access points and other devices with rubber duckie antennas. If the connect can't support the unit when held by the antenna, it will fail this all important field test.

This is for systems, mostly internal connections. Actually DC would not matter here as long as a short doesn't fry stuff. So if it's the bias of a transistor it would be ok. Can actually be helpful in diagnosing a broken connection.

About 25 years ago, my employer embarked on yet another bean counting cost reduction adventure. Someone decided that all the coax cables connectors going between boards was too expensive. So, I contrived a stamped, board mounted, receptacle. That by itself wasn't very interesting as those were already being sold by AMP. I eliminated the coax plug by simply tinning the coax cable braid and the center wire. We were using RG188a/u, which is the PTFE dielectric version of RG174a/u. Cut the end off squarely and remove the outer jacket. Tin the outer braid being careful not to let the braid bluge. Then run it through a rotary blade stripper to trim the tinned braid to length, expose some dielectric, and strip the center conductor. Tin the center conductor, trim, and you have the world's cheapest coax plug.

<gasp> Oh man, I haven't gone that far yet...

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Well, you asked for something cheaper than an RCA phono connector pair and tinning the coax is certainly cheaper.

It sure is :-)

And, if you have a production run of say, more than 100 or so, you could make a little cutter to strip the jacket, cut the braid, and strip the center conductor in one swipe. ;-)

Cheers!

Rich

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