

Re: S – Y Parameter conversion with Smith Chart

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From: Paul Burrige (pb_at_notthisbit.osiris1.co.uk)

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On Sat, 31 Jul 2004 04:51:41 GMT, Rex Allers <rexa@sonic.net> wrote:

>On Fri, 30 Jul 2004 16:29:42 -0700, Roy Lewallen <w7el@eznec.com> wrote:

>

>>I sense some confusion about s and y parameters. S parameters aren't

>>impedances -- they're dimensionless transmission or reflection

>>coefficients.

>[etc.]

>

>>Roy Lewallen, W7EL

>

>Roy,

>

>Thanks for another well informed and sensible reply.

Hear! Hear! Thank God there are still some folks here who know what they're talking about.

[snip]

>So, since the 60's, RF designers have been using S-parameters to

>characterize devices and circuits. They are based on reflection and

>transmission in a 50 ohm system. They are measurable. Why do you feel

>you want to use Y parameters? (Why-oh Y-oh?)

I agree entirely, Rex. I'd much sooner use scattering parameters alone for the reasons given in your post. The only fly in the ointment is that some datasheets only provide Y-params and when those times arise one needs to be able to convert between the two. Now it transpires from what Roy has stated that there is no feasible way to convert the two using the Smith Chart. That's fine; at least I know I'm not doing all that mathematical manipulation unnecessarily. John L's suggestion of writing a routine to do the fiddly bits now seems the most likely solution. Should only take about a line-and-a-half of C++.

Thanks, both.

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"What is now proved was once only imagin'd." - William Blake, 1793.