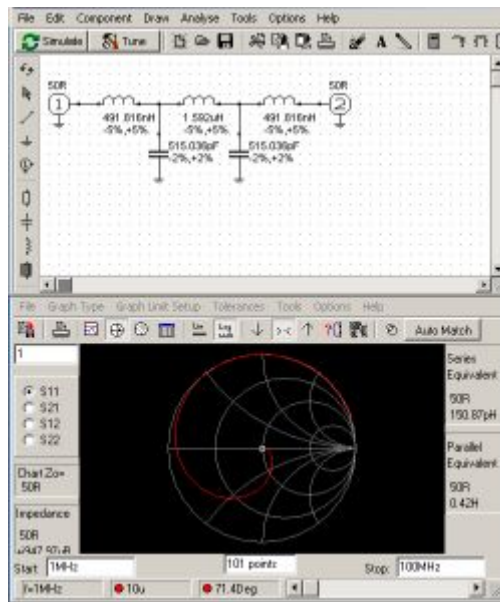# RFsim99 - Circuit Simulator

RFSim99 is a free linear S-parameter based circuit simulator offering schematic capture, simulation, 1 port and 2 port S-parameter display and file support, tolerance analysis, stability circles, and much more. Requires Windows 95, 98, NT or 2000. File size 2045K

Installing on Windows 7 64-bit OS
Chris Hudgins (18.09.2010 06:11:24)
Here is how to make RFSim99 work on Windows 7 64-bit OS. You must be running Windows 7 Professional OR Windows 7 Ultimate. Upgrade if you are running anything less. Next, download the Windows Virtual XP Mode for Windows 7 64-bit OS from Microsoft. This will allow you to run any XP program from Windows 7, 64-bit OS. It can be downloaded from Microsoft here: http://www.microsoft.com/windows/virtual-pc/download.aspx . Next, install RFSim99 under the Virtual XP Mode. It works great.

Best regards,
Chris Hudgins

RFsim99
GTrax (04.11.2009 03:29:28)
This is a gem of a RF tool. As implied by the title, it has been around for years, and though no longer maintained, it still holds its own amid extremely expensive RF filter synthesis and matching tools. This is a program for users who understand the difference between Berkeley-SPICE-derived simulation tools, and one like this which is S-Parameter based. This way is much faster for network analysis and filter synthesis for any devices where there is a set of known S-Parameter data.

For circuits and filters, and matching networks, RFSim99 offers the way to schematically enter the common passive components, connecting to the device for which you may have tabulated S-Parameters taken from the data sheet. Plots of frequency response and return loss are the standard expected output, but beyond that, you find all sorts of tools. "AUTO-MATCH" to allow the optimum component values to be found for filters and matchers. All the Smith Chart displays too. Limits, tolerances, choice of units, origin shifts etc.

I was surprised, because this is the kind of thing that is normally only found as part of much more expensive suites such as Ansoft Designer or AWR Microwave Office. So far, I have run it on Windows2000, and Windows XP, and lately, on a Linux Ubuntu 91.0 platform using the "Wine" compatibility tool. Getting it to work can sometimes pose problems, depending on how it gets unpacked. The important point is that it does appear to be quite accurate. I designed a filter with amplifier circuit using RFSim99, which performed as expected when built. Offering the values figured out with RFSim99 to other RF design tools yield the same plots. One can use online filter and amplifier synthesis tools, but these usually offer limited choice, and involve a lock-in, time limit, or other condition. This one is vendor-independent, and if it were open-source, would have seen much development and probably integration into other suites by now.

Stumble points will usually be in the extraction and installation. I did not encounter copies carrying malware, but that means little. If you find it in .ZIP form, then the unzip yields a .EXE that is itself a self-extracting archive. It installed and ran OK on a 32-bit version of Windows7-RC1 (kindly offered for a limited time into 2010). It crashed badly in the attempt to install on XP-64. There seemed no way to make the "setup.exe" run. We finally got it to run in XP by copying the resulting files from an already extracted installation. Things are much easier in 32-bit XP platforms.

Things can go madly unstuck if you attempt to install in a Linux box using the Wine program. The access violation can run amok opening vast numbers of install attempts until you can kill it. Instead, simply using the extractor to get it out of ZIP, and then using it AGAIN to get at the files inside the .EXE self-extracting archive, and then finally letting Wine do its thing, yields a perfect high-speed tool in a Linux environment, right down to the auto-re-scaling graphics. In this case, the distribution was Ubuntu 9.10

In use, there are some awkwardnesses. The way the schematic entry works is intuitive enough, but can sometimes insist on making connections at crossings you did not intend, and can auto-route awkwardly if you happen to be too close to some component the route is trying to avoid. Also, the options for setting the frequency limits can be a bit hard to tell if some of the digits are obscured by the entry box edges (I guess it depends on the font size). Using the slider was too coarse. I needed to enter the number direct. Given the usefulness of this little free tool, I could easily forgive the occasional clumsiness.

I don't want to get too picky here. For a free tool, I was real glad to have it around, even to persevere to get over some installation hiccups.