

Re: Wanted: LM-709 (Spice model) National Op-Amp

Source: <http://sci.tech-archive.net/Archive/sci.electronics.cad/2005-09/msg00131.html>

- *From:* Paul Rako <sp_a_mpa_u_1@xxxxxxxxx>
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analog:

Thank god, a scientist. Coherent, I suppose, with the IEEE mail domain. I will install LTspice/SwitcherCAD III and replicate some of my Orcad misery.

People:

The one complaint I heard tonight at Bldg T was that you can't export the LTspice/SwitcherCAD III work to something that can lay-out a circuit board. Based on the other buncombe, some of which I may have inadvertently spouted, I will try it first and see. I guess the best thing to do is to load the circuit from the EDN article and see if will converge and correlate to the results Jim Williams got.

Hey Mike:

Tom Gross was at bldg T tonight as well as Bill so that was a bit of a harmonic convergence. Sorry about the "somebody said something" but the somebody was a well-known engineer at a competing company to National and LT so I did not have his permission to quote him at 3:00 AM last night and why mention any competitors' companies? When I get sarcastic like that I say "Doh, pass me a donut." Like the other writer is treating me like Homer Simpson. I could see how that might apply to my "somebody" comment. I am a little sorry to see you dismiss the SPICE engine underneath WEBENCH. Maybe it is marketing jargon but a new release is significant if there was some significant code-work that has been done. I suspect you rev LTspice/SwitcherCAD III when you feel there is a significant advantage. I do agree if there is no sanctioning body like IEEE or W3C or anybody to validate the claim for an improved engine, one has to be more critical. How can one judge the advance of proprietary standards unless you guys start opening up your code so the community can see the difference in the source? Sorry if you feel I am posting garbage, I am trying to be positive. We are building a 15 MHz 4th-order low-pass filter to see if WEBENCH can nail that as well as it did the 10KHz filter on the Analog by Design show. Then I will feel pretty good about it. Hey, maybe the SPICE engine under WEBENCH touts "Stage 3" to just keep up with you and the "3" in your release.

Also Mike:

Well, the only stories I heard about you tonight is that somebody called you

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"Panama Mike". Being a Leon Redbone fan I can understand that as a complement, it sure sounded like one when she said it.

Kevin:

I have to admit I am a long way from worrying if LTspice/SwitcherCAD III deals with HSPICE directives. But that did get me to check out your website and if that SPICE can inter-operate on... oh-- I don't know, EDIF 2 0 0 well that would be pretty cool since I could do work in it and then stuff it into Orcad or when I get creamed in Orcad I could jump into your SPICE. As a matter of fact I would pay the price if only so I did not have to start Orcad in the evil "Mixed Signal" mode where the part properties get all goofy because PSPICE likes to call instantians "occurrences" instead of "instances" like Orcad does. Back-annotate into that mess once and you might understand why PSPICE is under-used. Arbitrary handles are a wonderful thing, please tell Orcad.

And Jim:

Don't call it a cane, call it a walking stick. Or a sceptor. Like that Saran Wrap guy from Lord of the Rings. I see the WWF analog smack-down as you, Bob and Barrie in a Thunderdome type of deal. Tina Turner is already signed. The dynamic is all three of you have to get in the dome and any two can gang up on the third. Then those two face off after enough personal liability and property damage have been heaped on the other guy. Now that would be interesting. A prisoner's dilemma au troix. Tagline: "Three men enter. One man leaves."

I am on vacation next week so I should have time to play with LTspice/SwitcherCAD III and Kevin's SuperSpice stuff which is at <http://www.anasoft.co.uk/> and I have PSPICE and ICAP/4

And one of you guys has to do a release called "Habanero". Now that is some hot spice.

And Panama Mike:

Sorry about the "LTspice/SwitcherCAD III is a PSPICE knockoff" crack. I asked the source tonight and what he intended to say or I what I did not hear was: "LTspice/SwitcherCAD III is a variant of SPICE."

Well, duh. Shakespeare is a variant of the dictionary. I knew that.

Paul

analog wrote:

Paul Rako wrote:

Well, it was an LT guy that told me LT-SPICE was a PSPICE variant but I don't have the need to trash people [...]

[cut thinly veiled trashing of various people]

Several years ago EDN magazine did a circuit and gave it to 6 SPICE vendors and Jim Williams at Linear Tech. If I remember about half of the programs failed to converge and the rest gave wrong results, sometimes wildly wrong compared to Jim's real board. Was there a memo I missed? Have models and SPICE engines gotten that much better?

LTspice has improved models for inductors and capacitors that allow realistic parasitics to be entered and computed as an integral part of the element. This prevents the corresponding branch admittances from going to zero or infinity for reduced time steps during a transient analysis, greatly improving run time convergence.

I doubt you or anyone else has a legitimate circuit that would trip up LTspice.

Can anyone really get any kind of mid-range SPICE to deal with non-linear magnetics?

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LTspice can without breaking a sweat. Download the program and read the help file topic on L devices.

Regards -- analog