Elen3000 Electromagnetics Home Page

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Additional Material

Nice examples of stub matching in an Ordinary QD remote receiver, Full circuit showing from bottom right, going clockwise: Power Conditioning, 12 series PIC, EEPROM for code storage, RF Amplifier, Filter stage with stub tuning; and Stubs showing the Short circuited stubs (providing DC ground!) Note the modifications on right hand stub.

The inevitable Smith Chart in pdf form. An excellent Smith Chart discussion at Spread Spectrum Scene.

Ode to a Smith Chart

O, circles, circles, round and round,
they're coming out of my ears.
At Whence I do but hear that sound,
it enlights my darkest fears.

A constant rho, a constant z
and VSWR
They come into and fill my head
then leave like a speeding car.

One day perhaps I'll understand,
the purpose of this dross
but until then the chart's unmanned
and I feel like a toss.

Michael Barker, Elen302 2000.

Excellent S-Parameter Overview

Is at Spread Spectrum Scene, and another, dealing with amplifier design is from Agilent. Another here and another from from Anritsu.

Example test and exam

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Feedback, marks

Attached are the marks. Everyone did the lab and the average is around 80%. There where several 100% and only 1 person did really terribly with 27%, and that was because it was missing a large chunk of information and graphs.

General comments:

- Many don't understand that the delay factor is due to the line being a model, and isn't there so they can more easily read off the timing, the world doesn't work that way.
- Lots of waffeling in the report.
- I had one group actually get the TTL problem this year, first time :)
- They assume air has 0 conductance and real cap cannot have any.
- Many sum capacitances and inductances and divide by length to get C' and L'! They don't understand the dx model.
- Some didn't use graph paper???
- A few had error bars on measurements, but only a few.
- For the $Z_o = (Z_{o/c} Z_{s/c})^{0.5}$ they don't measure complex loads, ie looking at the change in phase. One or two did this.
- I had much rushing, which points to poor time management.

Please check marks, 2016

eTexts

Electromagnetics Vol 1 Beta: Steven Ellingson

http://open.umn.edu/opentextbooks/BookDetail.aspx?bookId=532 contains ***Electromagnetics Vol 1 Beta*** by Steven Ellingson, Virginia Tech., USA.

This excellent book is one of the only ones to follow my order of Transmission Lines first. ie From Circuits I to HF, or: 1-D to 3-D (with Time :-). In addition, LaTeX 2_ε is used in its typesetting, so it is a superb design. A pity he didn't use my Circuit Macros to do his drawings... Can't win 'em all :-)

Please use the link above to download, as then the download is correctly accredited. If the link breaks, Please tell me, I do have a local copy. The errata.

Electromagnetism for Electronic Engineers: Richard Carter

https://bookboon.com/en/electromagnetism-for-electronic-engineers-ebook is an ad-filled BookBoon containing ***Electromagnetism for Electronic Engineers*** by Richard Carter, Lancaster University, UK.

The ads are a pain, it isn't in LaTeX 2_ε, and it gives a traditional order. Pics need some attention, but it is a sound enough text!

Essential Electromagnetism: Raymond John Protheroe

https://bookboon.com/en/essential-electromagnetism-ebook is an ad-filled BookBoon containing ***Essential Electromagnetism*** by Raymond John Protheroe, University of Adelaide, Australia.

Ads again, in LaTeX 2_ε, better figs, but ends early, hence his next book!

Essential Electrodynamics: Raymond John Protheroe

https://bookboon.com/en/essential-electrodynamics-ebook is an ad-filled BoonBook containing ***Essential Electrodynamics*** by Raymond John Protheroe, University of Adelaide, Australia.

Ads. . . . . , a good additional work, but doesn't cover what I need in detail.