Software support for
"RF Circuit Design: Theory and Practice"
by
Reinhold Ludwig and Pavel Bretchko
© copyright, 1999

Overview

The intent of the software contained on this CD is to provide support for the material covered in the textbook. All programs have been developed and tested using MATLAB Version 5.2. Although the authors believe that all routines should be compatible with earlier versions of MATLAB, this may not be the case. The software is maintained and regularly updated through our Web-site at *www.wpi.edu/ece/EM_RF_lab/book*. It is assumed that the user has a basic knowledge of MATLAB. Support of MATLAB is maintained through the MathWorks, Inc. Web-site at *www.mathworks.com*.

Software Installation

The installation of the RF software involves the following steps:
1. Copy the entire directory **rf_matlab** onto the desired harddrive location.
2. Invoke MATLAB.
3. At the command prompt in the main MATLAB window type: **cd c:\rf_matlab**, (here it is assumed that all files are copied to disc-drive C)
4. At the MATLAB command line type **set_path**. This will add all necessary paths to the search tree of the MATLAB. If you do not wish to save this information for future use you can stop the installation process now. In this case you will be able to run all programs but all path information will be deleted after closing MATLAB. If you decide to store the path information for future use, continue with the next step.
5. In the MATLAB command window go to the **file\set path** option. This will launch the path browser.
6. In the path browser go to the **file\save path** option shown the main window.
7. At this step all path information is stored and you can begin to run the M-file routines from the command line.

File Organization

All files are organized in the directory structure shown below and the content of each folder is described in the table.
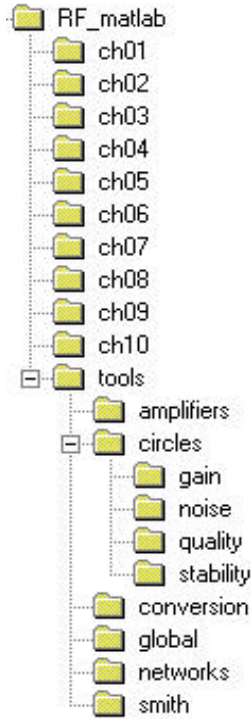
Folder name	Description
RF_matlab	Root directory
ch01-ch10	Selected examples and figures for chapters 1 through 10.
tools	Common files for simulations
amplifiers	Programs for computation of stability factor and simultaneous complex-conjugate matching for the bilateral design
circles	Various circle equations
gain	Constant gain circles
noise	Constant noise circles
quality	Constant Q_n circles
stability	Stability circles
conversion	Conversion routines between different two-port network representations
global	Some useful routines for the computation of the input and output reflection coefficients, VSWR, etc.
networks	Routines for the definition of matching network circuit topologies
smith	Programs related to the construction and plotting of various arcs in the Smith Chart

Additional information for each of the programs can be obtained by executing the command **help <program_name>**, where **<program_name>** is the name of the particular m-file. For example, to obtain help about the program **smith_chart.m**, you execute the command **help smith_chart** in MATLAB's main window.