

June 2005

SuperNEC Newsletter

Poynting Software – www.supernec.com

Version 2.9 released

SuperNEC version 2.9 has recently been released.

Some of the new features included in this release are

- SIG GUI upgraded
- Matching Network Generator

The following aspects of the SuperNEC GUI has been upgraded:

- Input Interface
 - o Fractal Antennas
 - o EM Toolbox
- Output Interface

SIG GUI

The SIG GUI has been upgraded from a beta release to full release status.

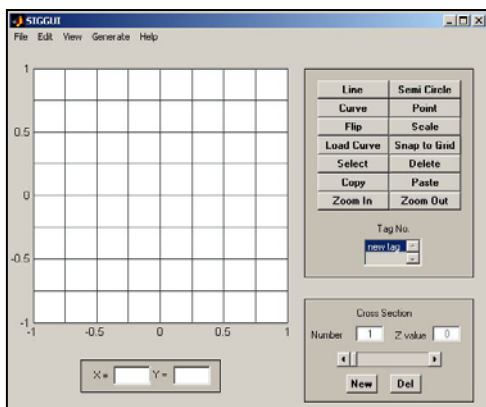
The SIG GUI now includes an animated help feature to help new users familiarise themselves with the package.

Matching Network Generator

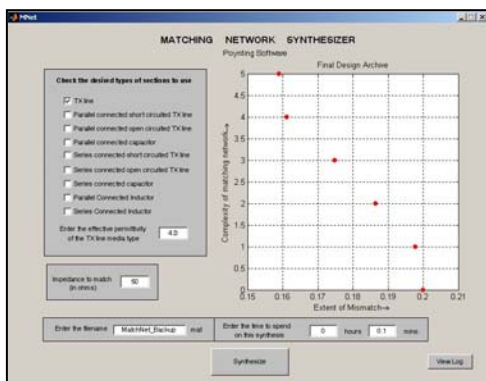
A new module has been added to SuperNEC as a beta release. This new module is used to generate matching networks and optimise them using transmission lines, capacitors and inductors.

Input Interface

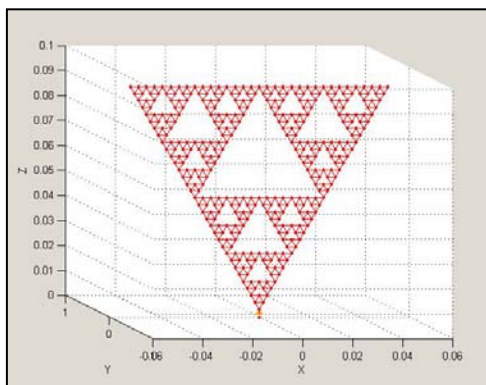
The input interface has been enhanced with a number of



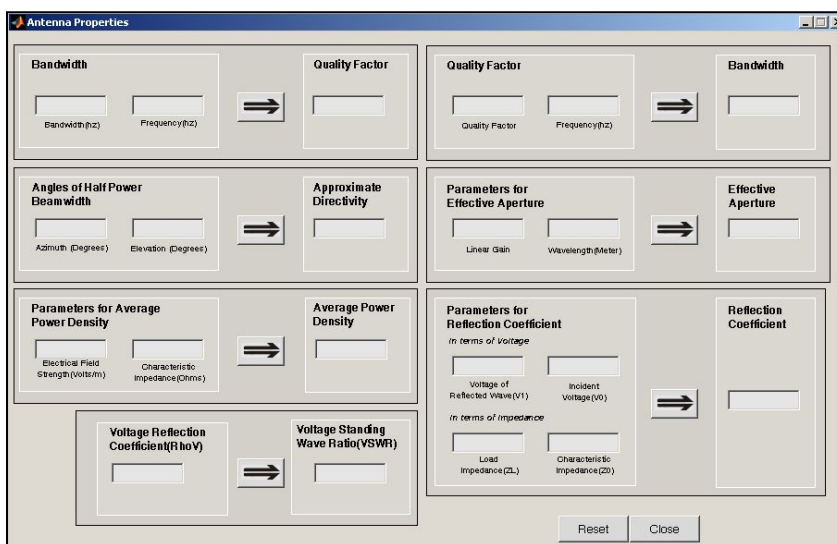
SIG GUI Screenshot



Matching Network Screenshot



An example of one of the Fractal Antennas - Sierpinsky Triangle



EM Toolbox Screenshot

SuperNEC V 2.9 continued

features. The full list of enhancements can be found in the release notes in the installation directory of SuperNEC. Two items are highlighted here.

Fractal Antennas

One of the new features are a group of assemblies for fractal antennas written by Abdelhafid Tchoketch. These include:

- Koch Antenna
- Koch Loop antenna
- Sierpinsky triangle
- Trees Antenna
- Loop structure

EM Toolbox

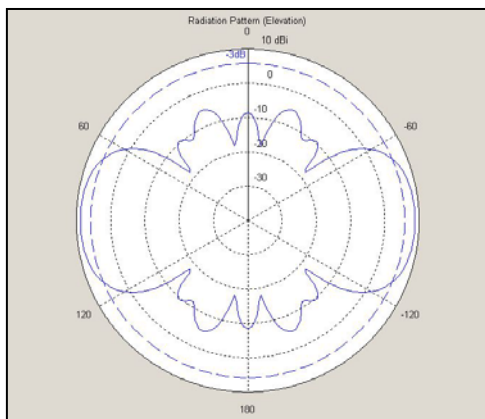
The interface also includes an EM Toolbox to make calculation of everyday electromagnetic equations easy. The toolbox includes conversion functions and equations, from the link equation to radio horizon to

angle conversions.

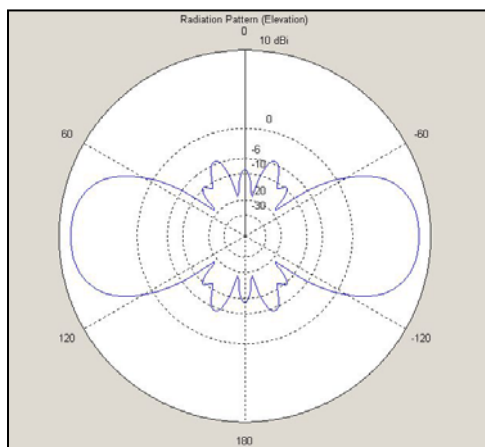
Output Interface

The **impedance plotter** and **2D radiation pattern plotter** received a number of upgrades. The impedance plotter now includes the ability to plot real and imaginary components of impedance on one plot. The 2D plotter includes a -3dB circle to view the -3dB points from maximum gain. It also includes a logarithmic scaling technique (ARRL scaling).

All 3D plots have had a new **colour map** added. This CMR colour map will allow the 3D plots to be converted to greyscale correctly. Other colour map schemes do not make provision for this. The contrast between a JET map and CMR map is shown below.



Improved 2D Plot with -3dB Circle



Improved 2D Plot with ARRL Scaling

Did you know?

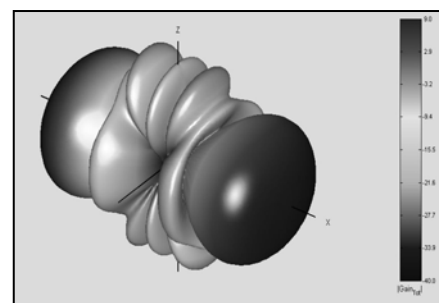
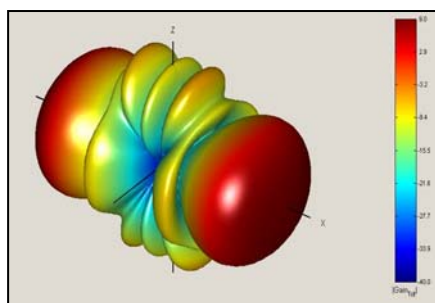
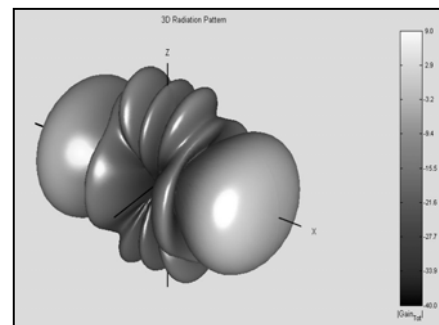
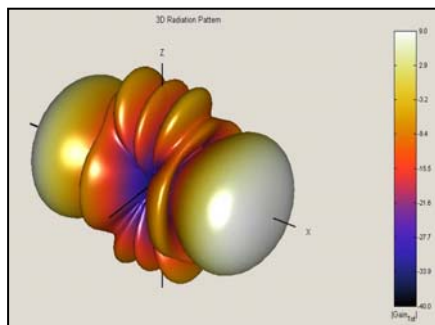
You can now do **partial downloads** of SuperNEC at:

www.supernec.com.

- Download (25.17MB) the trial version of SuperNEC 2.9 for Windows, requires Matlab 6.5 or better (no runtime option and no help files)

- Download (58.27MB) the trial version of SuperNEC 2.9 for Windows, Matlab runtime option (no help files)

- Download (54.27MB) the SuperNEC 2.9 help files for Windows (html documentation and animated help)



New 3D colour map at the top, compared to previous colour map

RFID Reader Antenna



RFID Circular Patch

Poynting Antennas supplies antennas for various RFID applications. One of these products is the Circular Patch Antenna that covers both the EU and USA RFID bands. The antenna is waterproof and easy to install. As it is circularly

polarized it can be used for reading in any orientation. The antenna can also be used for indoor GSM coverage due to circular polarization. Please contact sales@poynting.co.za for more information on this product.

Product Code

PATCH-A0003-02	0.3 m RG 58 with N(f)
PATCH-A0003-03	1.0 m RG 58 with SMA(m)
PATCH-A0003-03	2.0 m RG 58 with SMA(m)
PATCH-A0003-04	0.4 m RG 58 with SMA(f)

Electrical:

Gain (max.)	7 dBi (±0.5 dB) Circularly polarised gain
Gain (min. over band)	6 dBi (±0.5 dB) Circularly polarised gain
Frequency	860 - 930 MHz
VSWR	<1.5:1
Axial ratio	less than 1dB
Feed power handling	10 W
Polarisation	Circular

Mechanical:

Dimensions	245 mm x 235 mm x 40 mm
Weight	470 g

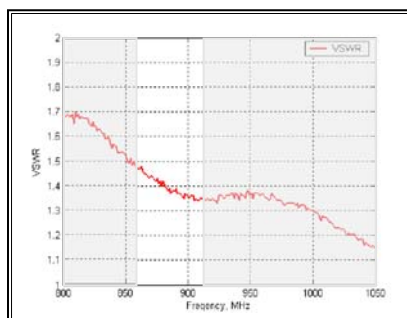
See us at IEEE APS in Washington

Poynting Software will be exhibiting at the IEEE APS URSI Symposium.

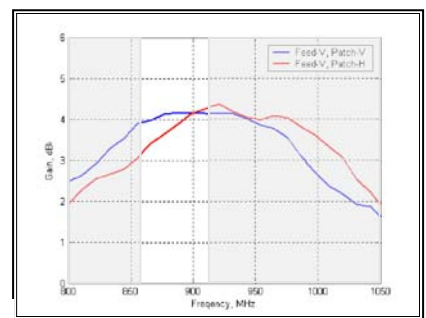
When: 3 to 8 July 2005
Where: Omni Shoreham Hotel Washington, DC.



VSWR and GAIN Measurements for Circular Patch



VSWR



Gain

measured under linear polarisation

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