





Research, Development, Engineering & Manufacturing Services THE STANDARDS INSTITUTION OF ISRAEL

GF-IV

IDD

Cellular Antenna Detailed Design And Simulation For

DCS-1800 and PCS-1900 BW

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Table of Changes

Revision	Date	Changed By	Description	Paragraphs Changed

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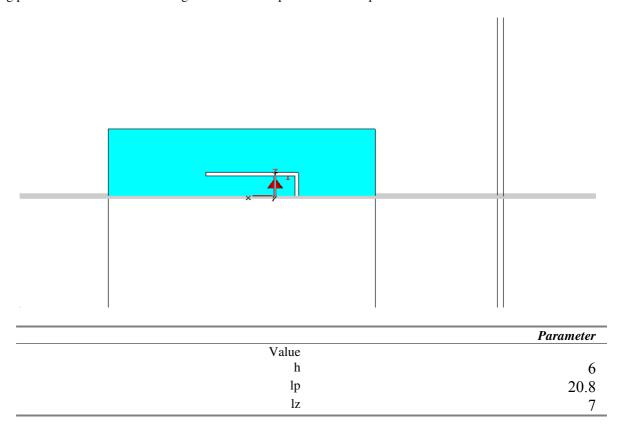




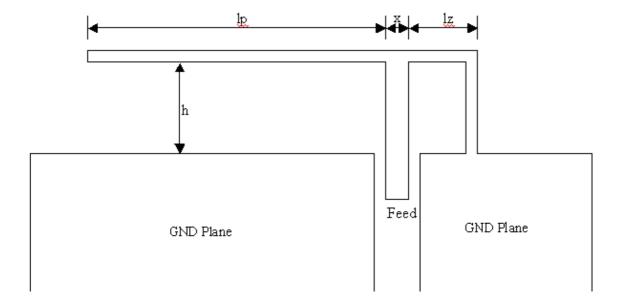
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1. Structure Visualization

• The following plot shows the structure investigated in this example. The defined parameters are listed in the table below.



The feed point (x) should be 3 mm width micro-strip in order to form 50Ω matching on 1.6mm FR4 substrate.



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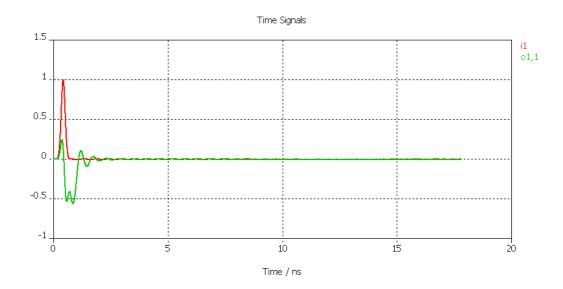




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2. Simulation Time Signals

The following plot shows the time signals which describe the mode amplitudes at the waveguide ports.



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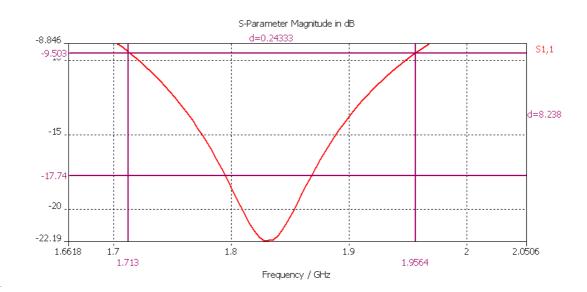


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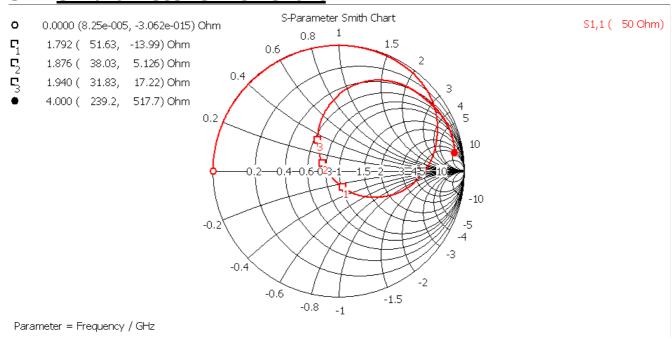
3. S-Parameter Results

- The following plot shows the S-parameters as a function of frequency.
- The antenna calibrated to DCS-1800 and PCS-1900 BW.

3.1 S-Parameter Magnitude



3.2 S-Parameter Smith Chart



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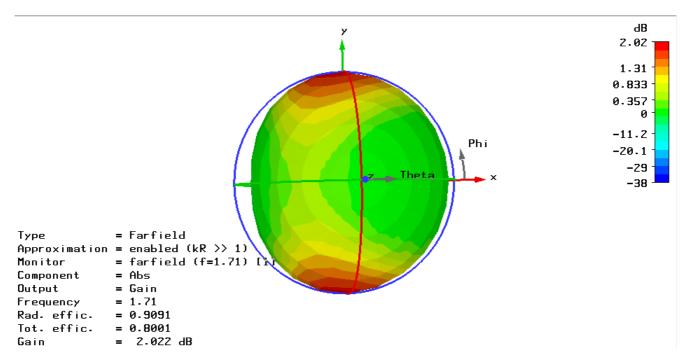


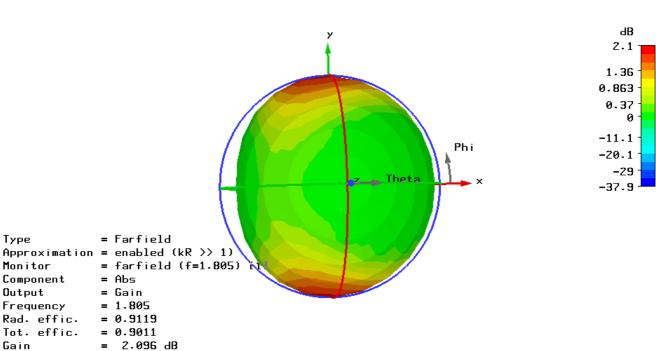




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4. Gain Result





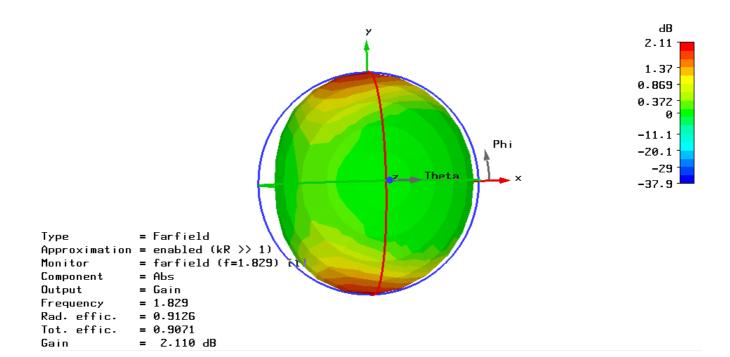
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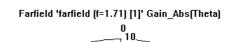
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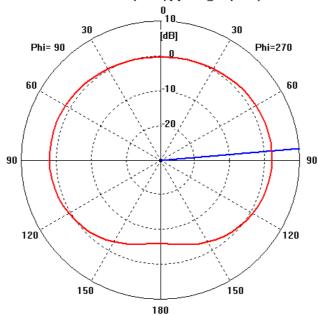






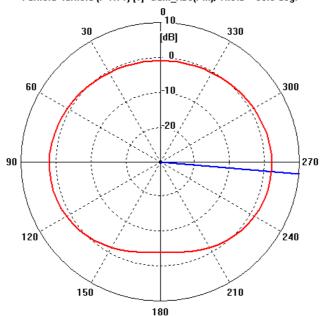
5. E/H-Plane





Frequency = 1.71Main lobe magnitude = 2.1 dB Main lobe direction = 85.0 deg.

Farfield 'farfield (f=1.71) [1]' Gain_Abs(Phi); Theta= 90.0 deg.



= 1.71 Frequency Main lobe magnitude = 2.0 dB Main lobe direction = 265.0 deg.

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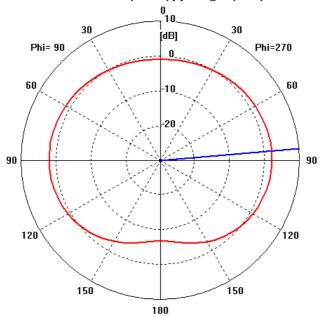






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Farfield 'farfield (f=1.805) [1]' Gain_Abs(Theta)

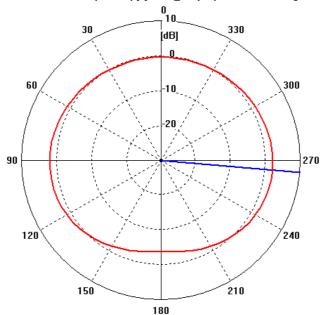


Frequency = 1.805

Main lobe magnitude = 2.1 dB

Main lobe direction = 85.0 deg.

Farfield 'farfield (f=1.805) [1]' Gain_Abs(Phi); Theta= 90.0 deg.



Frequency = 1.805

Main lobe magnitude = 2.1 dB

Main lobe direction = 265.0 deg.

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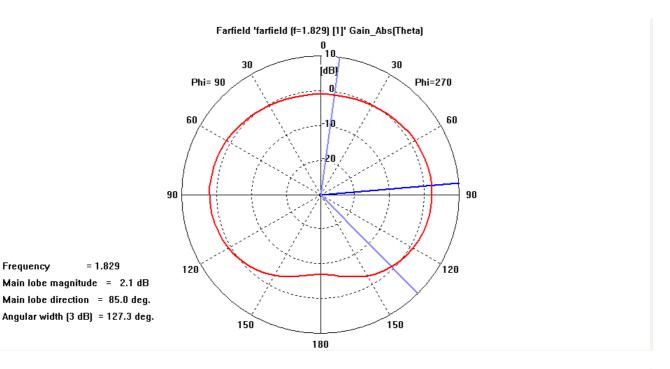
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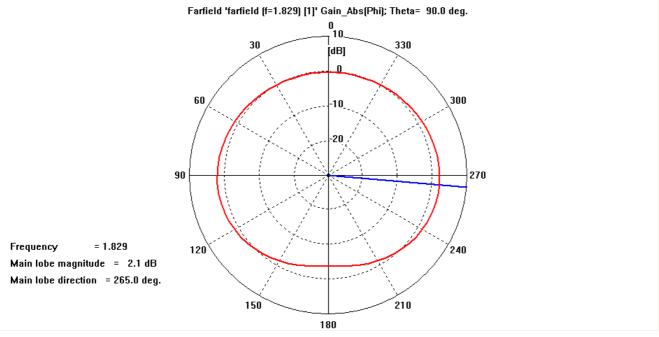






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