

4G LTE GSM 'Puck' Antenna

- Low Profile Package
- World-Wide Use
 - 700 - 960MHz
 - 1710 - 2170MHz
 - 2600- 2700MHz
- Up to +3dBi Gain
- Rugged IP67 Waterproof
- VSWR <2.0
- 3metres RG316 Cable
- SMA Male Connector
- Operates from -30 to +80°C
- M12 Screw thread Connector
- RHCP (right hand circular polarization)



Applications

- Automotive Applications
- Covert Applications
- Machine to Machine
- Secure Rugged Applications

Description

A Rugged antenna with high performance for worldwide use. This antenna provides 4G GSM Antenna with 2dBi gain. Housed in a rugged low profile UV resistant IP67 housing, this antenna is compact and resistant to Vandalism.

Part No	Description	Cable Length	Connector
ANT-GSMPUKS-IP67	GSM QuadBand Puck Antenna	3metres	SMA (M)

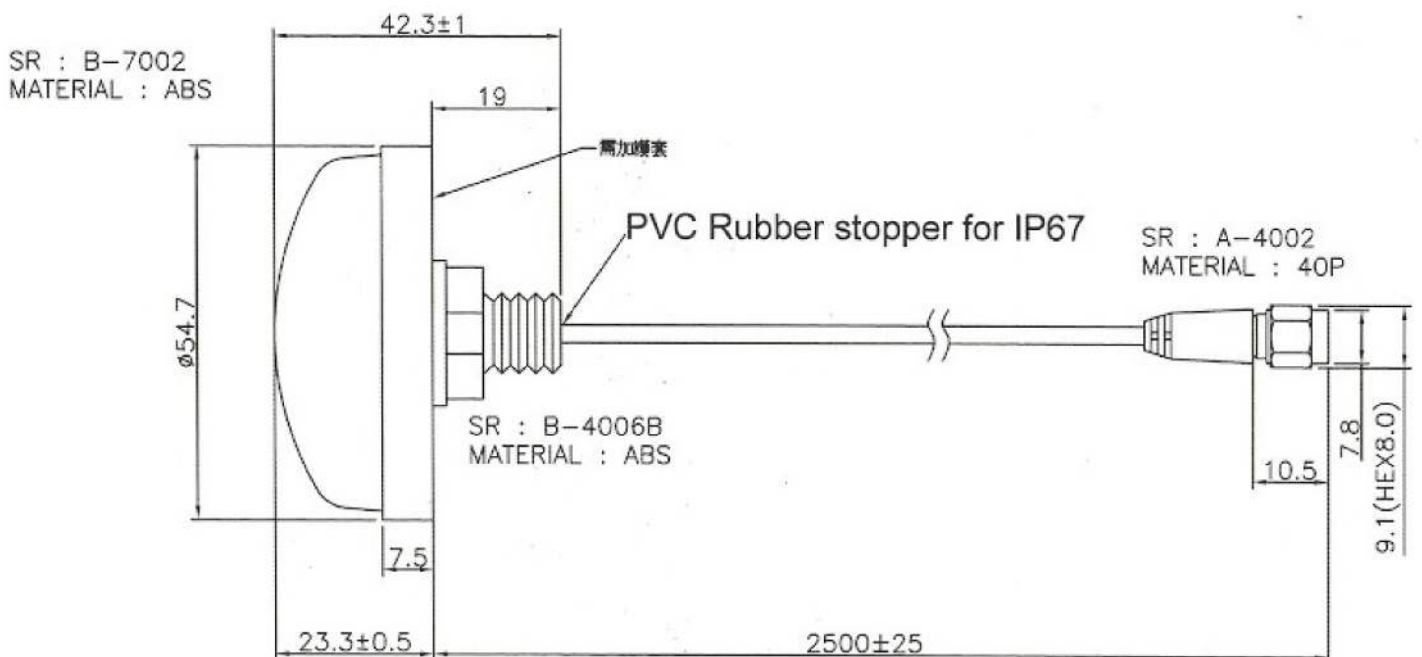
GSM Rugged 'Puck' Antenna IP67



Product Images



Mechanical Data

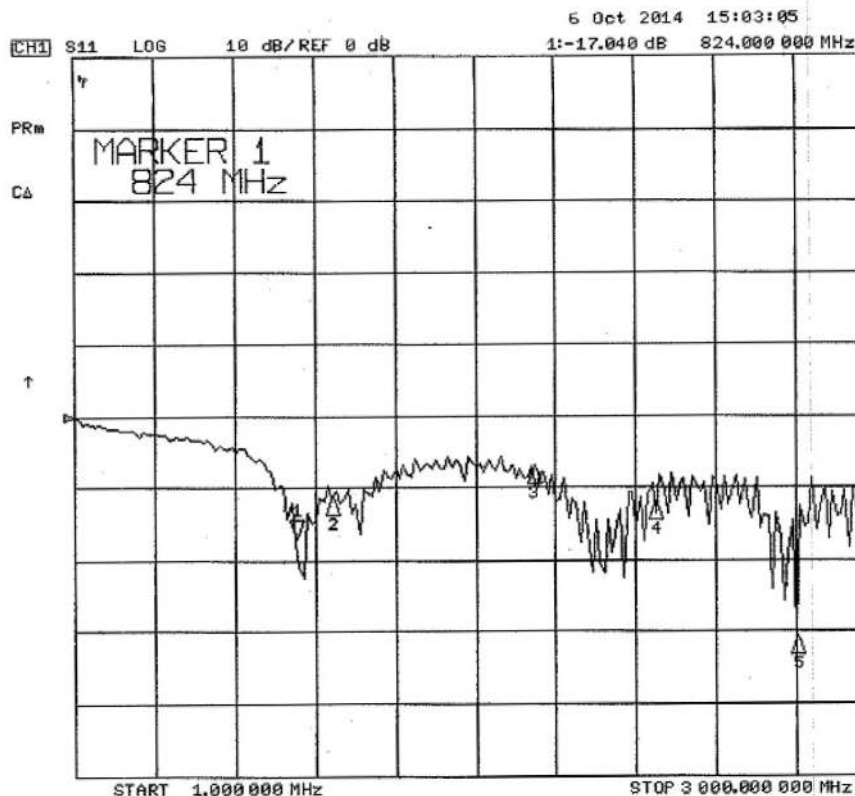


GSM Rugged 'Puck' Antenna IP67



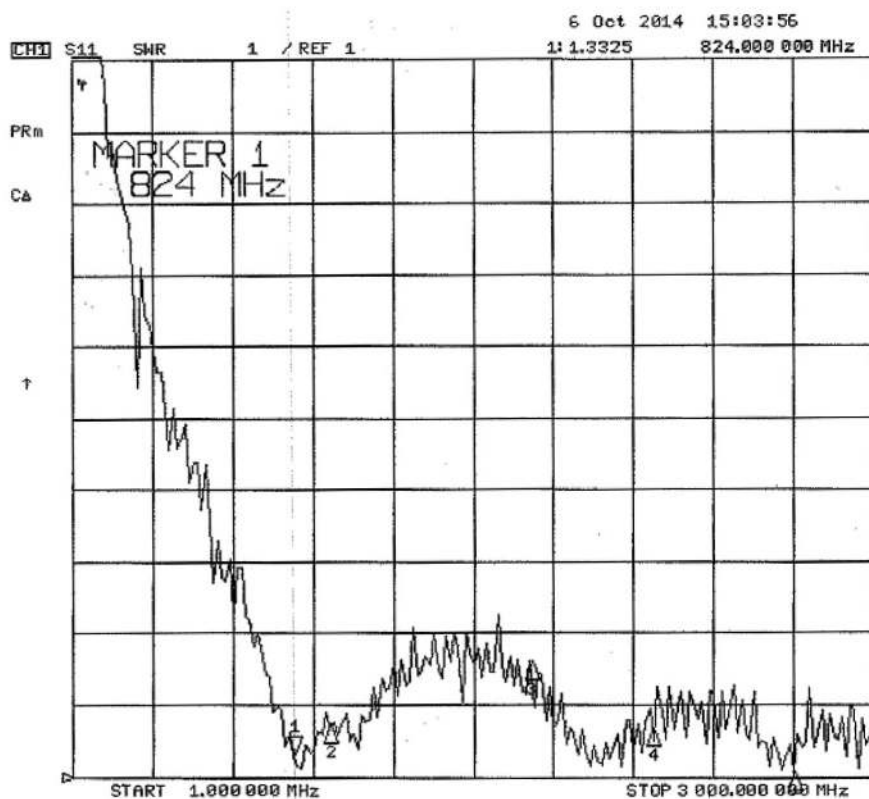
VSWR & Return Loss

4G-04A PUK ANTENNA 700-2700MHz



CH1 Markers

2:	-11.250 dB	960.000 MHz
3:	-7.0364 dB	1.71000 GHz
4:	-12.022 dB	2.17000 GHz
5:	-30.769 dB	2.70000 GHz



CH1 Markers

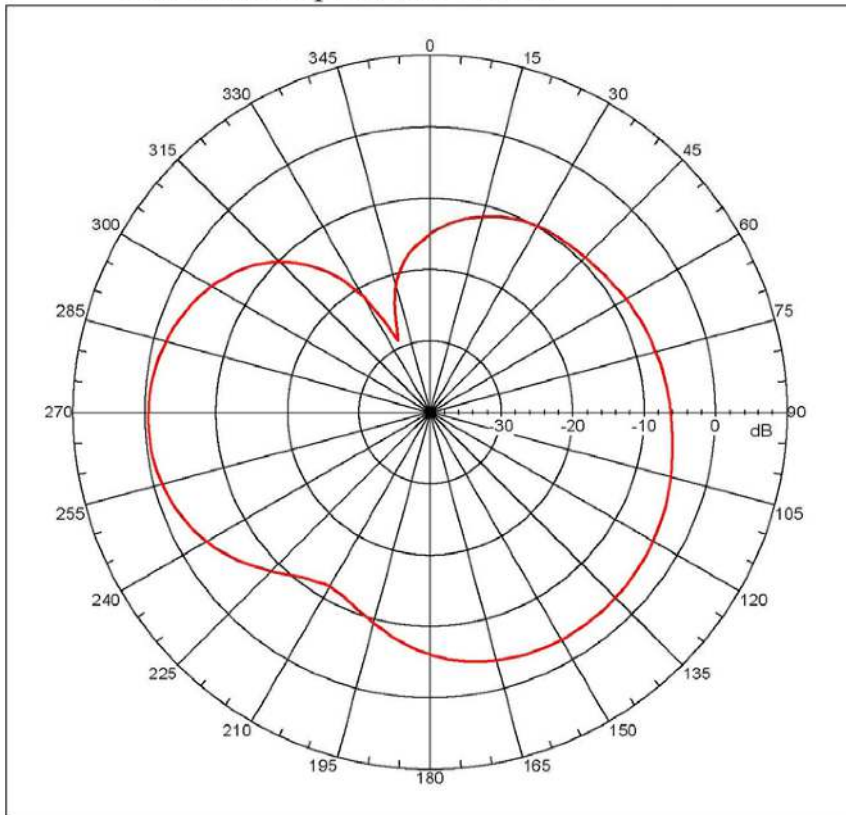
2:	1.7271	960.000 MHz
3:	2.6019	1.71000 GHz
4:	1.6686	2.17000 GHz
5:	1.0518	2.70000 GHz

GSM Rugged 'Puck' Antenna IP67



Test Report H824

Far-field amplitude of H.nsi



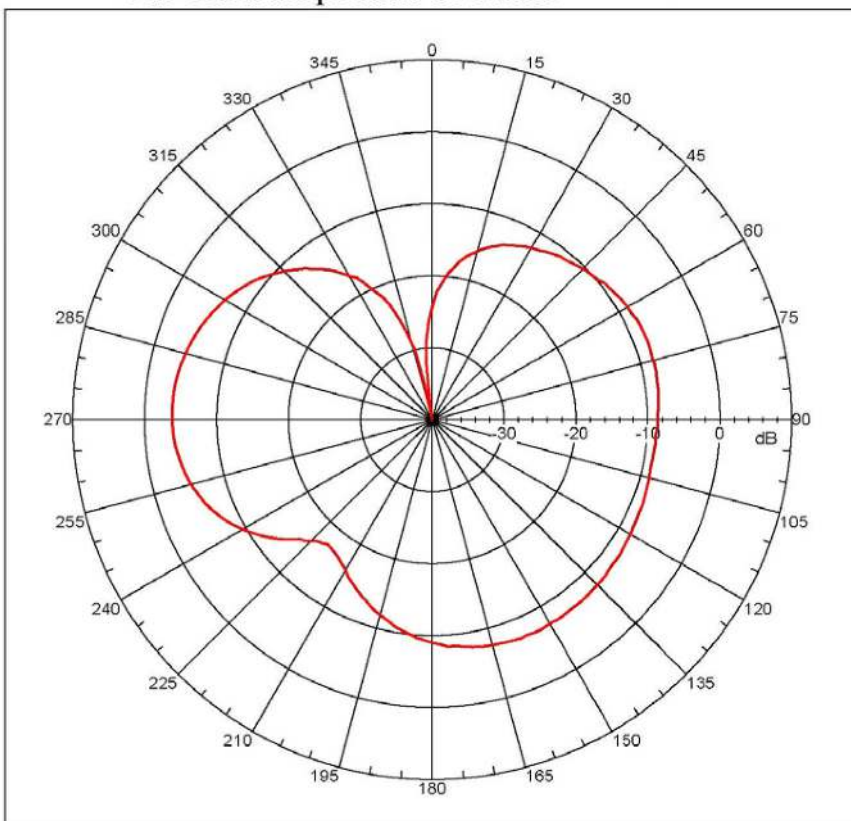
Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = -0.48917 dB
 Max far-field (global) = -43.48851 dB, Max far-field (plot) = -43.48853 dB
 Normalization: Reference, Network offset = 0.000 dB
 Hpeak at: -92.000 deg, Vpeak at: 0.000 deg
 Plot centering: On

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20
 Measurement date/time: 5/9/2013 11:26:45 AM, Filetype: NSI-97
 Far-field Cut Analysis:
 Avg value: -0.461 dB
 -3. dB beam width: 53.91 deg
 -6. dB beam width: 75.16 deg
 -10. dB beam width: 97.17 deg
 Left Sidelobe: Not Found
 Right Sidelobe: -2.86 dB at 141.788 deg
 Far-field display setup
 Azimuth (deg)
 Span = 360.00001 deg, Center = 0.000 deg, #pts = 181
 Start = -180.00001 deg, Stop = 180.00001 deg, Delta = 2.000 deg
 Elevation (deg)
 Center = 0.000 deg, #pts = 1
 Selected beam(s) 1 of 12

Beam	Frequency	Azimuth	Elevation	Pol
1	0.924 GHz	Azimuth	Elevation	Single-pol

Test Report H850

Far-field amplitude of H.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = -3.61927 dB
 Max far-field (global) = -45.07613 dB, Max far-field (plot) = -45.07614 dB
 Normalization: Reference, Network offset = 0.000 dB
 Hpeak at: -88.00001 deg, Vpeak at: 0.000 deg
 Plot centering: On

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20
 Measurement date/time: 5/9/2013 11:26:45 AM, Filetype: NSI-97
 Far-field Cut Analysis:
 Avg value: -9.663 dB
 -3. dB beam width: 52.61 deg
 -6. dB beam width: 72.95 deg
 -10. dB beam width: 92.92 deg
 Left Sidelobe: Not Found
 Right Sidelobe: -4.28 dB at 71.397 deg
 Far-field display setup
 Azimuth (deg)
 Span = 360.00001 deg, Center = 0.000 deg, #pts = 181
 Start = -180.00001 deg, Stop = 180.00001 deg, Delta = 2.000 deg
 Elevation (deg)
 Center = 0.000 deg, #pts = 1
 Selected beam(s) 1 of 12

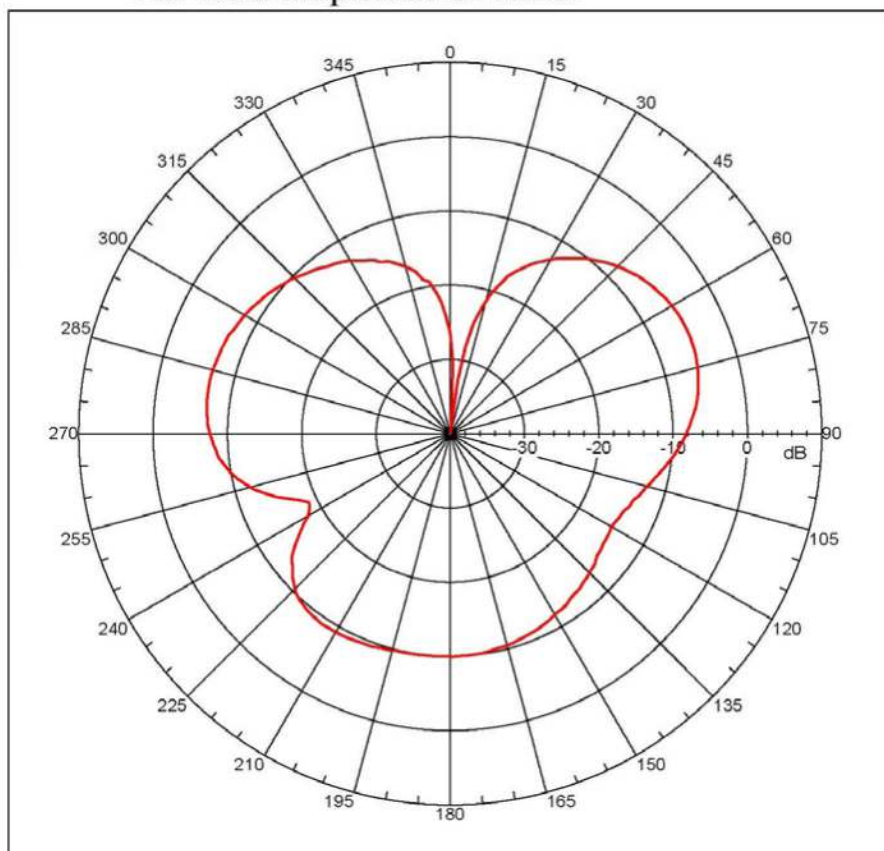
Beam	Frequency	Azimuth	Elevation	Pol
2	0.850 GHz	Azimuth	Elevation	Single-pol

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Test Report H900

Far-field amplitude of H.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = -5.19635 dBi
Max far-field (global) = -46.75603 dB, Max far-field (plot) = -46.75605 dB
Normalization: Reference, Network offset = 0.000 dB
Hpeak at: 57.99999 deg, Vpeak at: 0.000 deg
Plot centering: On

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20

Measurement date/time: 5/9/2013 11:26:45 AM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: -10.752 dB

-3. dB beam width: 45.33 deg

-6. dB beam width: 65.64 deg

-10. dB beam width: Not Found

Left Sidelobe: -1.69 dB at -77.430 deg

Right Sidelobe: -4.01 dB at 177.989 deg

Far-field display setup

Azimuth (deg)

Span = 360.00001 deg, Center = 0.000 deg, #pts = 181

Start = -180.00001 deg, Stop = 180.00001 deg, Delta = 2.000

deg

Elevation (deg)

Center = 0.000 deg, #pts = 1

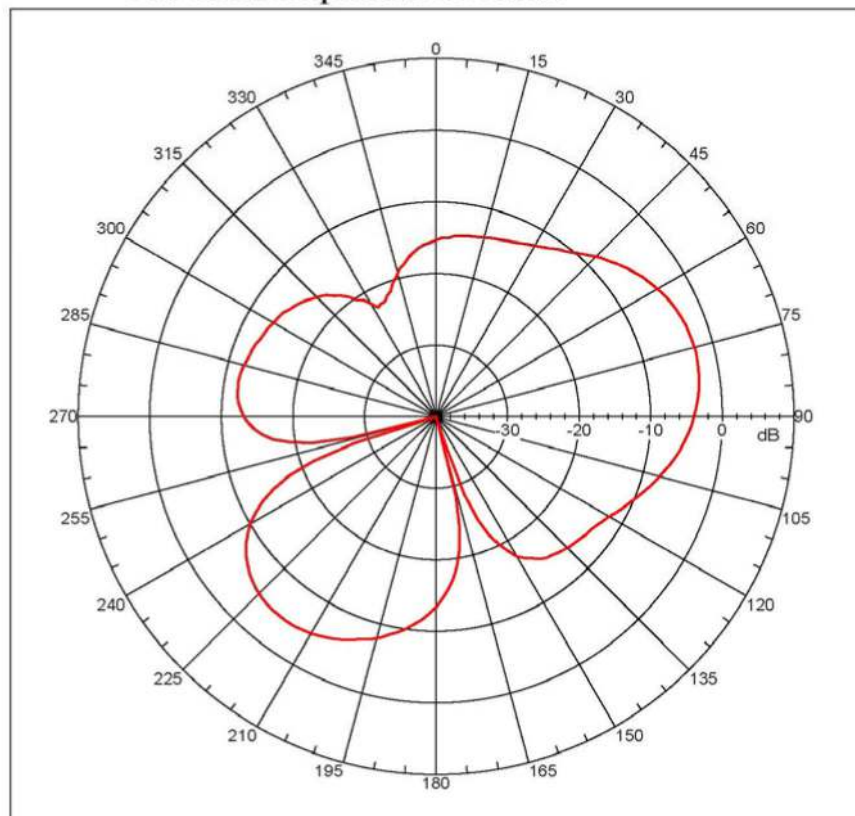
Selected beam(s) 1 of 12

Beam Frequency Azimuth Elevation Pol

3 0.900 GHz Azimuth Elevation Single-pol

Test Report H960

Far-field amplitude of H.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = -2.61629 dBi
Max far-field (global) = -45.24596 dB, Max far-field (plot) = -45.246 dB
Normalization: Reference, Network offset = 0.000 dB
Hpeak at: 75.99999 deg, Vpeak at: 0.000 deg
Plot centering: On

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20

Measurement date/time: 5/9/2013 11:26:45 AM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: -18.584 dB

-3. dB beam width: 43.69 deg

-6. dB beam width: 63.97 deg

-10. dB beam width: 94.18 deg

Left Sidelobe: -9.35 dB at -79.441 deg

Right Sidelobe: Not Found

Far-field display setup

Azimuth (deg)

Span = 360.00001 deg, Center = 0.000 deg, #pts = 181

Start = -180.00001 deg, Stop = 180.00001 deg, Delta = 2.000

deg

Elevation (deg)

Center = 0.000 deg, #pts = 1

Selected beam(s) 1 of 12

Beam Frequency Azimuth Elevation Pol

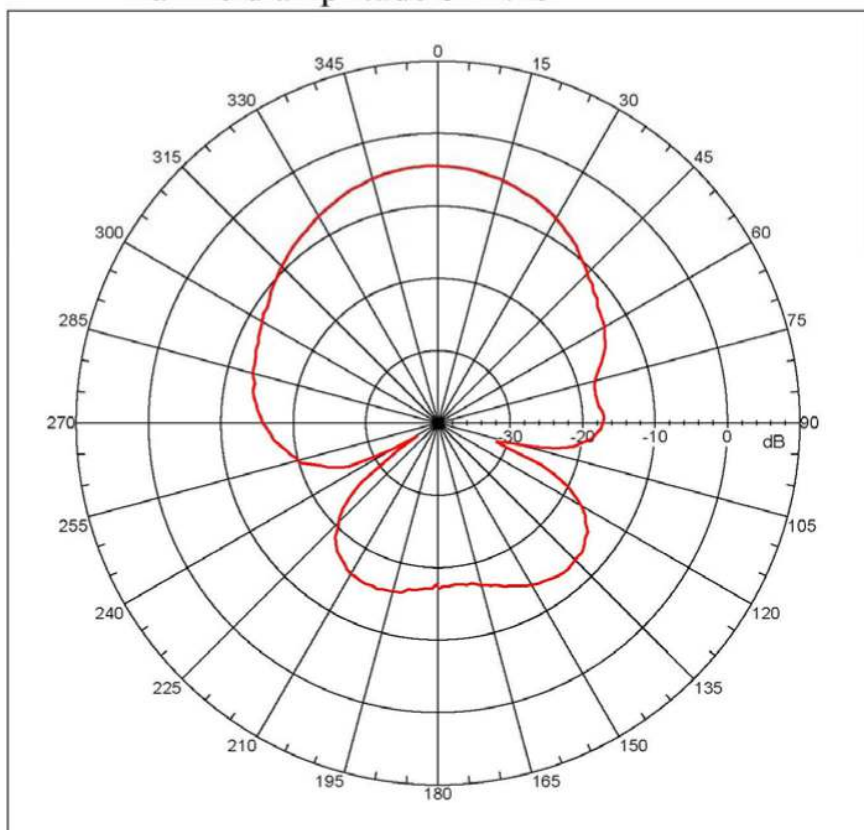
4 0.960 GHz Azimuth Elevation Single-pol

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Test Report H1710

Far-field amplitude of H.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = -4.4025 dBi
 Max far-field (global) = -49.59509 dB, Max far-field (plot) = -49.59509 dB
 Normalization: Reference, Network offset = 0.000 dB
 Hpeak at: -2.00001 deg, Vpeak at: 0.000 deg
 Plot centering: on

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20

Measurement date/time: 5/9/2013 11:26:45 AM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: -12.481 dB
 -3. dB beam width: 62.52 deg
 -6. dB beam width: 94.30 deg
 -10. dB beam width: 147.52 deg
 Left Sidelobe: -11.20 dB at -155.866 deg
 Right Sidelobe: -8.82 dB at 133.743 deg

Far-field display setup

Azimuth (deg)
 Span = 360.00001 deg, Center = 0.000 deg, #pts = 181
 Start = -180.00001 deg, Stop = 180.00001 deg, Delta = 2.000 deg

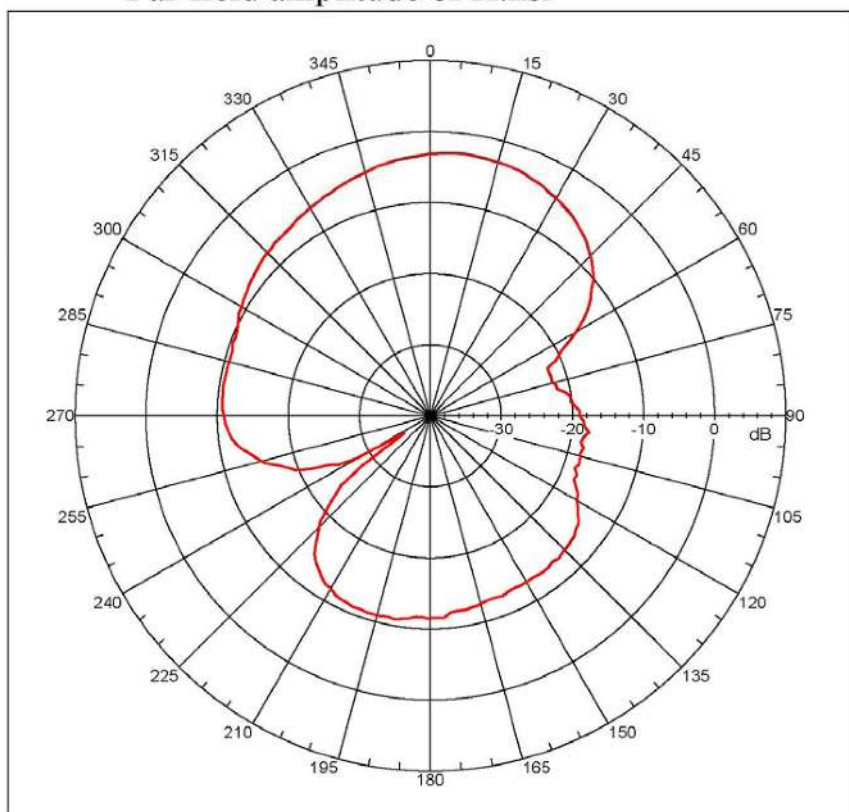
Elevation (deg)
 Center = 0.000 deg, #pts = 1

Selected beam(s) 1 of 12

Beam	Frequency	Azimuth	Elevation	Pol
5	1.710 GHz	Azimuth	Elevation	Single-pol

Test Report H1800

Far-field amplitude of H.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = -2.88658 dBi
 Max far-field (global) = -49.70862 dB, Max far-field (plot) = -49.70862 dB
 Normalization: Reference, Network offset = 0.000 dB
 Hpeak at: 7.89999 deg, Vpeak at: 0.000 deg
 Plot centering: on

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20

Measurement date/time: 5/9/2013 11:26:45 AM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: -10.422 dB
 -3. dB beam width: 63.96 deg
 -6. dB beam width: 104.00 deg
 -10. dB beam width: 155.72 deg
 Left Sidelobe: -8.08 dB at -157.877 deg
 Right Sidelobe: -17.22 dB at 83.464 deg

Far-field display setup

Azimuth (deg)
 Span = 360.00001 deg, Center = 0.000 deg, #pts = 181
 Start = -180.00001 deg, Stop = 180.00001 deg, Delta = 2.000 deg

Elevation (deg)
 Center = 0.000 deg, #pts = 1

Selected beam(s) 1 of 12

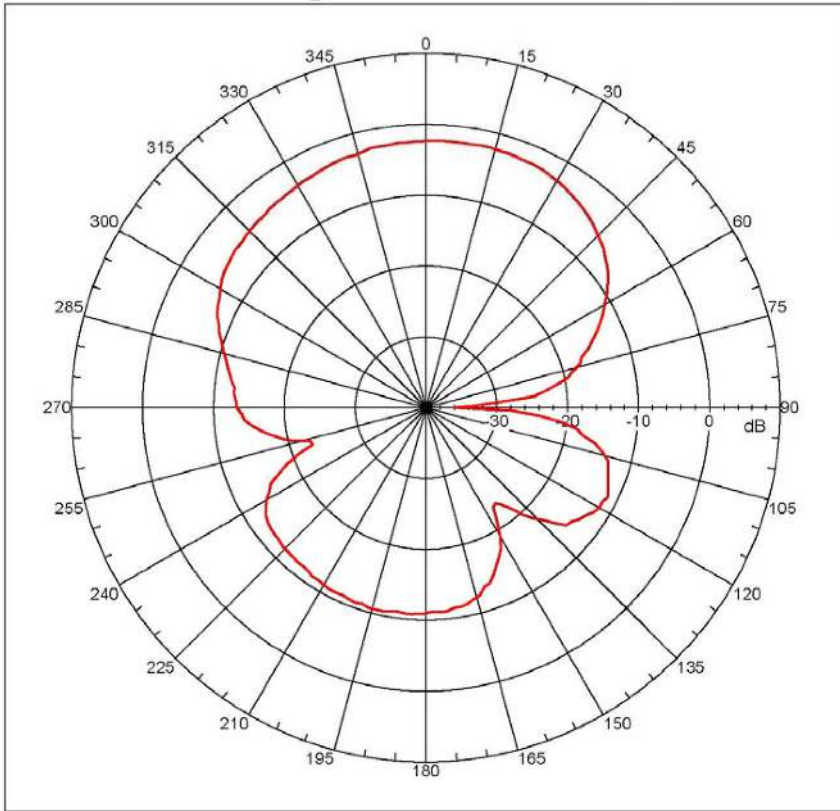
Beam	Frequency	Azimuth	Elevation	Pol
6	1.800 GHz	Azimuth	Elevation	Single-pol

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Test Report H1900

Far-field amplitude of H.nsi



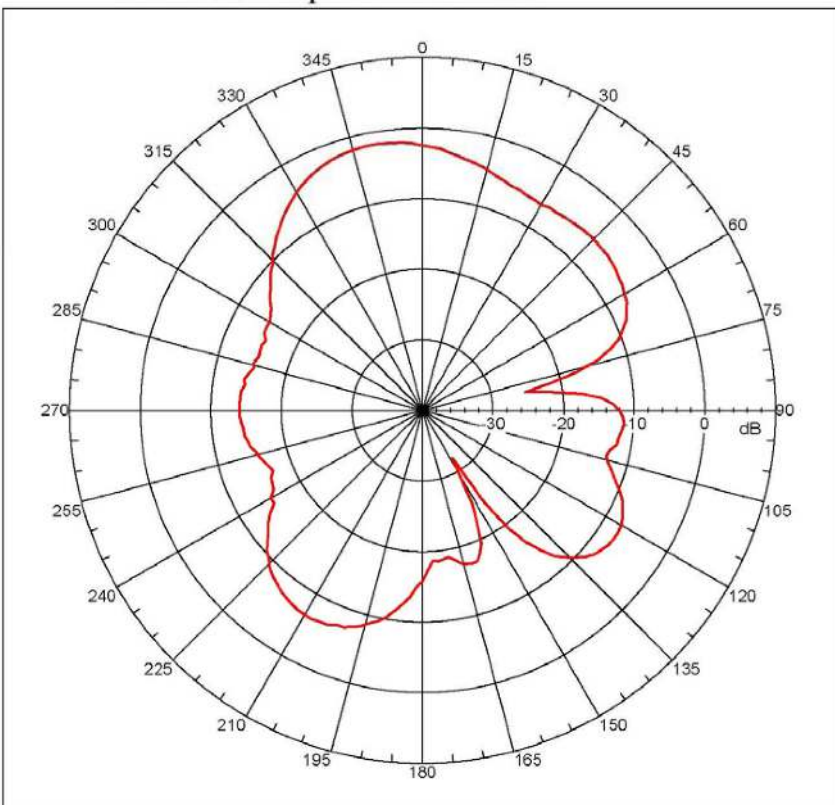
Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = -2.20998 dBi
 Max far-field (global) = -49.24694 dB, Max far-field (plot) = -49.24694 dB
 Normalization: Reference, Network offset = 0.000 dB
 Hpeak at: 11.99999 deg, Vpeak at: 0.080 deg
 Plot centering: On

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20
 Measurement date/time: 5/9/2013 11:26:45 AM, Filetype: NSI-97
 Far-field Cut Analysis:
 Avg value: -9.065 dB
 -3. dB beam width: 94.99 deg
 -6. dB beam width: 121.91 deg
 -10. dB beam width: 145.76 deg
 Left Sidelobe: -9.64 dB at -132.743 deg
 Right Sidelobe: -9.18 dB at 113.654 deg
 Far-field display setup
 Azimuth (deg)
 Span = 360.00001 deg, Center = 0.000 deg, #pts = 181
 Start = -100.00001 deg, Stop = 100.00001 deg, Delta = 2.000 deg
 Elevation (deg)
 Center = 0.000 deg, #pts = 1
 Selected beam(s) 1 of 12

Beam	Frequency	Azimuth	Elevation	Pol
7	1.900 GHz	Azimuth	Elevation	Single-pol

Test Report H2100

Far-field amplitude of H.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = -1.74913 dBi
 Max far-field (global) = -49.07583 dB, Max far-field (plot) = -49.07584 dB
 Normalization: Reference, Network offset = 0.000 dB
 Hpeak at: -10.00001 deg, Vpeak at: 0.000 deg
 Plot centering: On

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20
 Measurement date/time: 5/9/2013 11:26:45 AM, Filetype: NSI-97
 Far-field Cut Analysis:
 Avg value: -9.250 dB
 -3. dB beam width: 46.59 deg
 -6. dB beam width: 104.01 deg
 -10. dB beam width: 121.82 deg
 Left Sidelobe: -12.63 dB at -79.441 deg
 Right Sidelobe: -9.65 dB at 95.531 deg
 Far-field display setup
 Azimuth (deg)
 Span = 360.00001 deg, Center = 0.000 deg, #pts = 181
 Start = -180.00001 deg, Stop = 180.00001 deg, Delta = 2.000 deg
 Elevation (deg)
 Center = 0.000 deg, #pts = 1
 Selected beam(s) 1 of 12

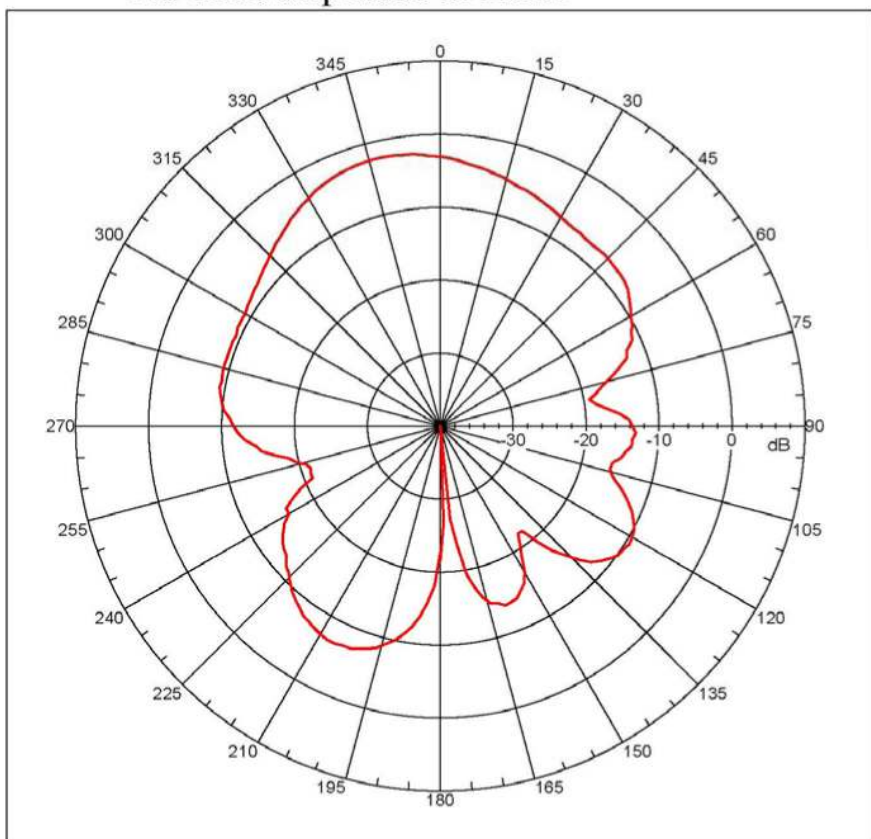
Beam	Frequency	Azimuth	Elevation	Pol
8	2.100 GHz	Azimuth	Elevation	Single-pol

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Test Report H2170

Far-field amplitude of H.nsi



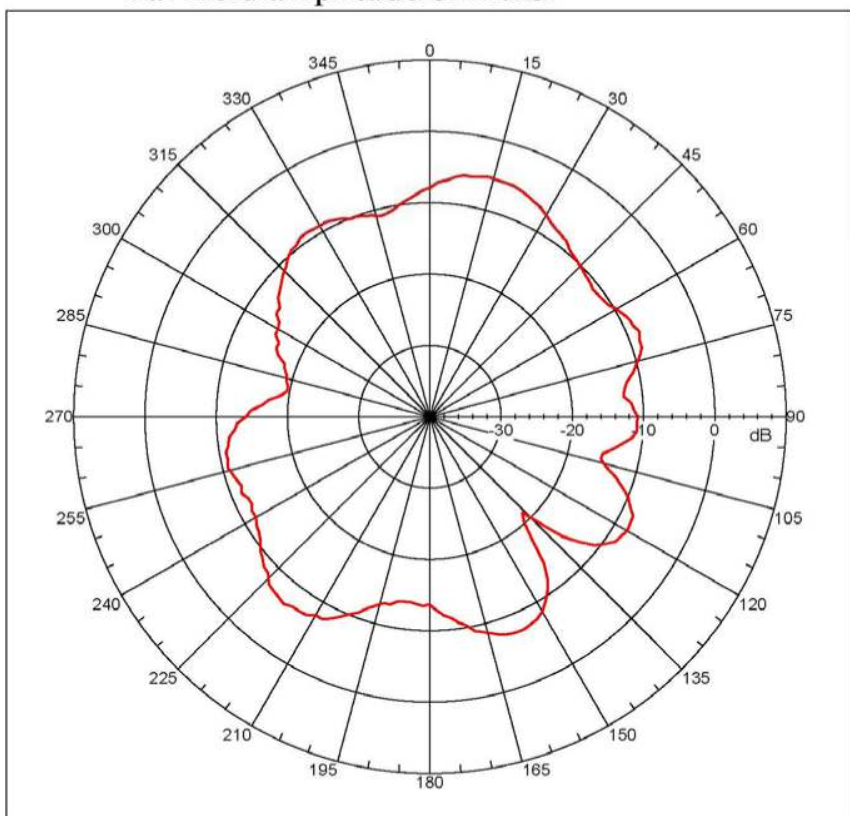
Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = -2.31766 dBi
 Max far-field (global) = -49.84977 dB, Max far-field (plot) = -49.84977 dB
 Normalization: Reference, Network offset = 0.000 dB
 Hpeak at: -14.00001 deg, Vpeak at: 0.000 deg
 Plot centering: On

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20
 Measurement date/time: 5/9/2013 11:26:45 AM, Filetype: NSI-97
 Far-field Cut Analysis:
 Avg value: -9.493 dB
 -3. dB beam width: 54.18 deg
 -6. dB beam width: 108.01 deg
 -10. dB beam width: 160.73 deg
 Left Sidelobe: -4.59 dB at -151.844 deg
 Right Sidelobe: -10.93 dB at 93.520 deg
 Far-field display setup
 Azimuth (deg)
 Span = 360.00001 deg, Center = 0.000 deg, #pts = 181
 Start = -180.00001 deg, Stop = 180.00001 deg, Delta = 2.000 deg
 Elevation (deg)
 Center = 0.000 deg, #pts = 1
 Selected beam(s) 1 of 12

Beam	Frequency	Azimuth	Elevation	Pol
9	2.170 GHz	Azimuth	Elevation	Single-pol

Test Report H2400

Far-field amplitude of H.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = -5.40718 dBi
 Max far-field (global) = -54.41481 dB, Max far-field (plot) = -54.41483 dB
 Normalization: Reference, Network offset = 0.000 dB
 Hpeak at: 13.99999 deg, Vpeak at: 0.000 deg
 Plot centering: On

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20
 Measurement date/time: 5/9/2013 11:26:45 AM, Filetype: NSI-97
 Far-field Cut Analysis:
 Avg value: -10.360 dB
 -3. dB beam width: 37.29 deg
 -6. dB beam width: 125.89 deg
 -10. dB beam width: 194.12 deg
 Left Sidelobe: -3.66 dB at -27.151 deg
 Right Sidelobe: -2.86 dB at 69.385 deg
 Far-field display setup
 Azimuth (deg)
 Span = 360.00001 deg, Center = 0.000 deg, #pts = 181
 Start = -180.00001 deg, Stop = 180.00001 deg, Delta = 2.000 deg
 Elevation (deg)
 Center = 0.000 deg, #pts = 1
 Selected beam(s) 1 of 12

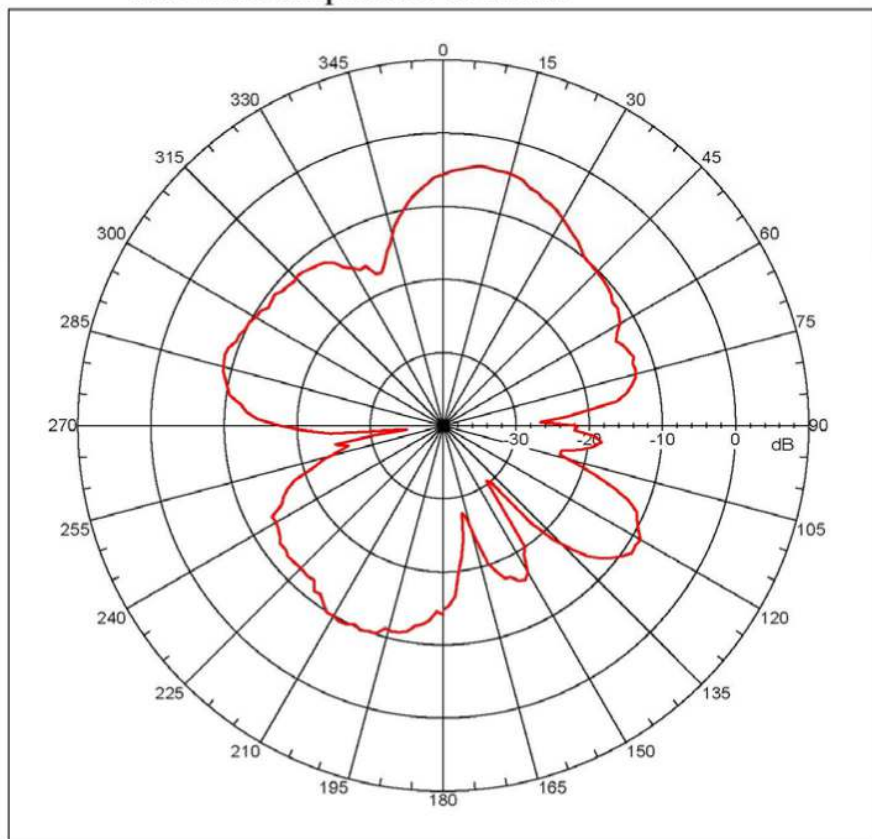
Beam	Frequency	Azimuth	Elevation	Pol
10	2.400 GHz	Azimuth	Elevation	Single-pol

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Test Report H2500

Far-field amplitude of H.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = -4.16371 dBi
 Max far-field (global) = -54.2997 dB, Max far-field (plot) = -54.29971 dB
 Normalization: Reference, Network offset = 0.000 dB
 Mpeak at: 7.99999 deg, Vpeak at: 0.000 deg
 Plot centering: On

NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20

Measurement date/time: 5/9/2013 11:26:45 AM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: -12.131 dB
 -3. dB beam width: 34.22 deg
 -6. dB beam width: 54.02 deg
 -10. dB beam width: 96.06 deg
 Left Sidelobe: -11.54 dB at -25.140 deg
 Right Sidelobe: -9.12 dB at 71.397 deg

Far-field display setup

Azimuth (deg)
 Span = 360.00001 deg, Center = 0.000 deg, #pts = 181
 Start = -180.00001 deg, Stop = 180.00001 deg, Delta = 2.000 deg

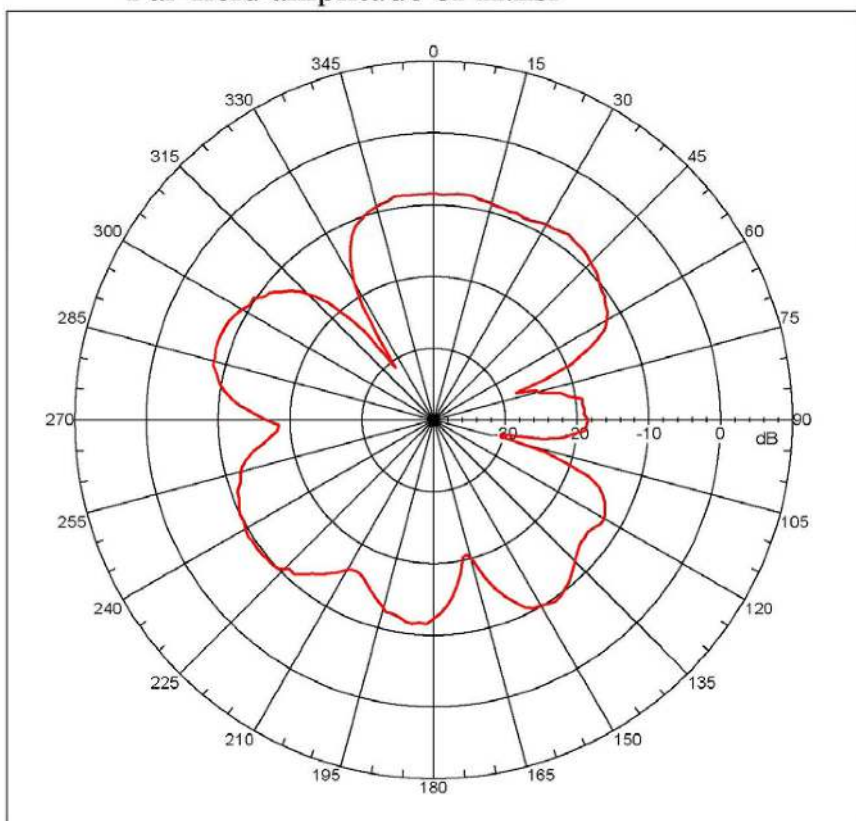
Elevation (deg)
 Center = 0.000 deg, #pts = 1

Selected beam(s) 1 of 12

Beam	Frequency	Azimuth	Elevation	Pol
11	2.500 GHz	Azimuth	Elevation	single-pol

Test Report H2600

Far-field amplitude of H.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = -8.05656 dBi
 Max far-field (global) = -59.37335 dB, Max far-field (plot) = -59.37337 dB
 Normalization: Reference, Network offset = 0.000 dB
 Mpeak at: -70.00001 deg, Vpeak at: 0.000 deg
 Plot centering: On

NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20

Measurement date/time: 5/9/2013 11:26:45 AM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: -12.223 dB
 -3. dB beam width: 30.60 deg
 -6. dB beam width: 49.88 deg
 -10. dB beam width: 49.84 deg
 Left Sidelobe: -1.92 dB at -115.643 deg
 Right Sidelobe: -0.40 dB at -9.050 deg

Far-field display setup

Azimuth (deg)
 Span = 360.00001 deg, Center = 0.000 deg, #pts = 181
 Start = -180.00001 deg, Stop = 180.00001 deg, Delta = 2.000 deg

Elevation (deg)
 Center = 0.000 deg, #pts = 1

Selected beam(s) 1 of 12

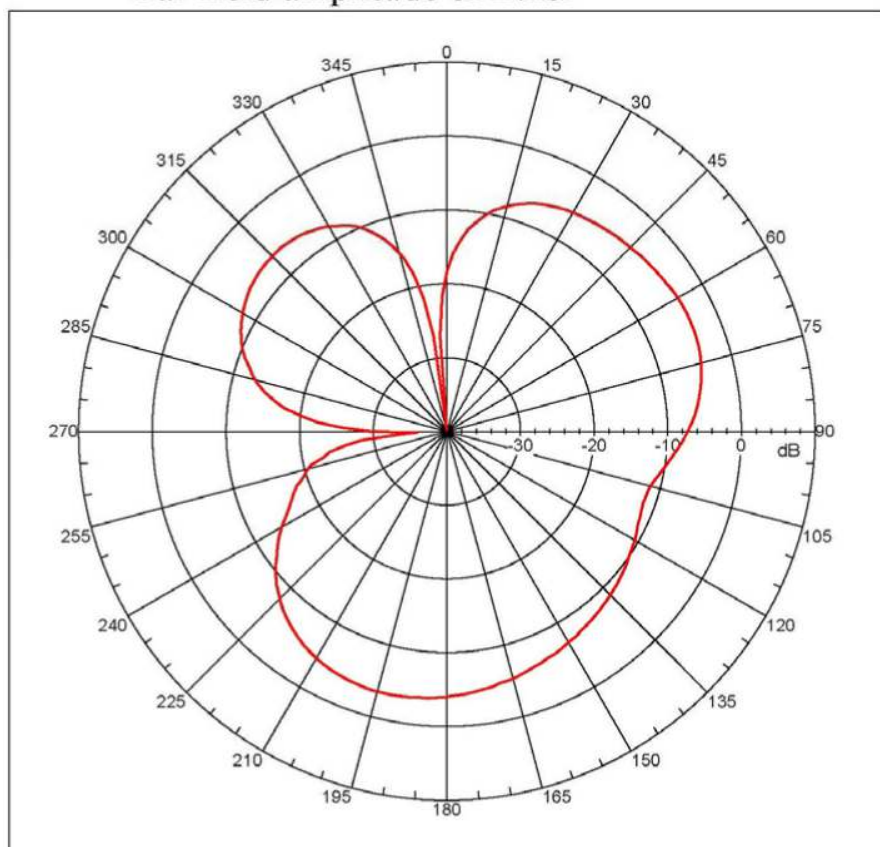
Beam	Frequency	Azimuth	Elevation	Pol
12	2.600 GHz	Azimuth	Elevation	Single-pol

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Test Report E824

Far-field amplitude of E.nsi



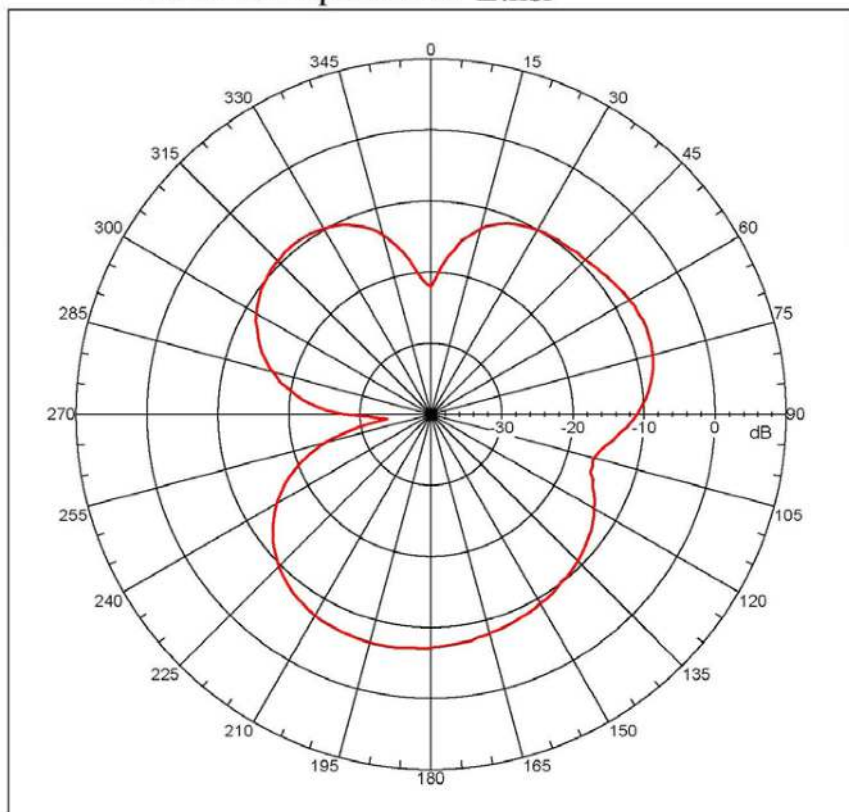
Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = -2.49476 dBi
 Max far-field (global) = -46.4941 dB, Max far-field (plot) = -46.49412 dB
 Normalization: Reference, Network offset = 0.000 dB
 Mpeak at: -168.000 deg, Vpeak at: 0.000 deg
 Plot centering: On

NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20
 Measurement date/time: 5/9/2013 1:10:59 PM, Filetype: NSI-97
 Far-field Cut Analysis:
 Avg value: -8.073 dB
 -3. dB beam width: Not Found
 -6. dB beam width: Not Found
 -10. dB beam width: Not Found
 Left Sidelobe: Not Found
 Right Sidelobe: -2.98 dB at -43.240 deg
 Far-field display setup
 Azimuth (deg)
 Span = 360.00001 deg, Center = 0.000 deg, #pts = 181
 Start = -180.00001 deg, Stop = 180.00001 deg, Delta = 2.000 deg
 Elevation (deg)
 Center = 0.000 deg, #pts = 1
 Selected beam(s) 1 of 12

Beam	Frequency	Azimuth	Elevation	Pol
1	0.824 GHz	Azimuth	Elevation	Single-pol

Test Report E850

Far-field amplitude of E.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = -6.74011 dBi
 Max far-field (global) = -47.99697 dB, Max far-field (plot) = -47.99699 dB
 Normalization: Reference, Network offset = 0.000 dB
 Mpeak at: -166.000 deg, Vpeak at: 0.000 deg
 Plot centering: On

NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20
 Measurement date/time: 5/9/2013 1:10:59 PM, Filetype: NSI-97
 Far-field Cut Analysis:
 Avg value: -11.120 dB
 -3. dB beam width: Not Found
 -6. dB beam width: Not Found
 -10. dB beam width: Not Found
 Left Sidelobe: Not Found
 Right Sidelobe: -2.54 dB at -37.207 deg
 Far-field display setup
 Azimuth (deg)
 Span = 360.00001 deg, Center = 0.000 deg, #pts = 181
 Start = -180.00001 deg, Stop = 180.00001 deg, Delta = 2.000 deg
 Elevation (deg)
 Center = 0.000 deg, #pts = 1
 Selected beam(s) 1 of 12

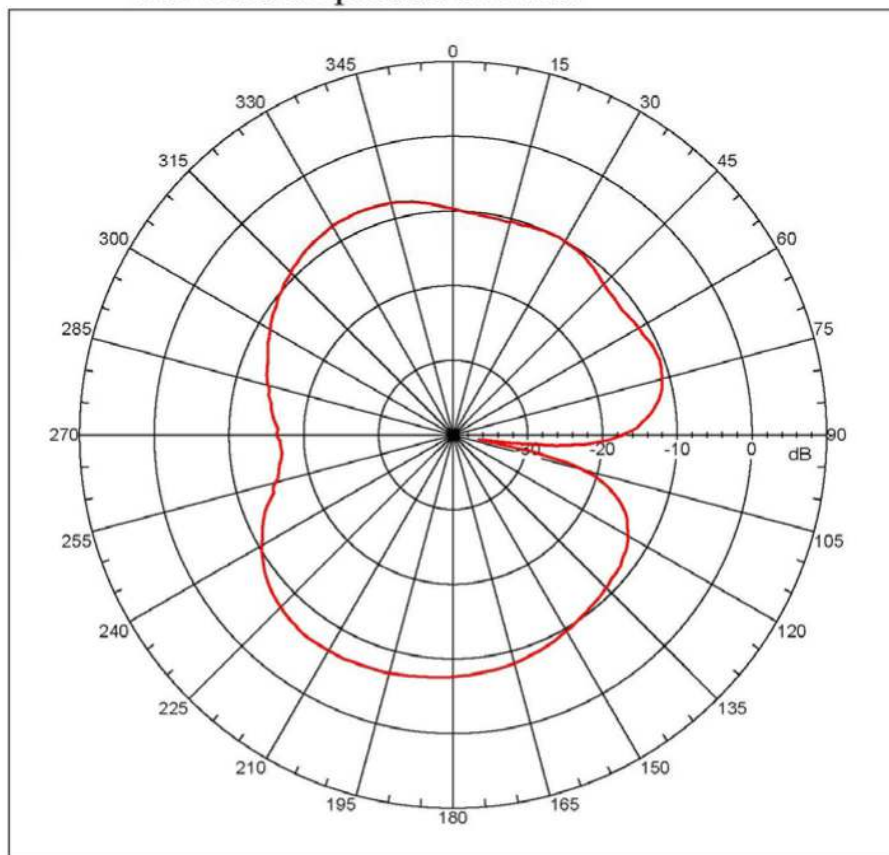
Beam	Frequency	Azimuth	Elevation	Pol
2	0.850 GHz	Azimuth	Elevation	Single-pol

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Test Report E900

Far-field amplitude of E.nsi



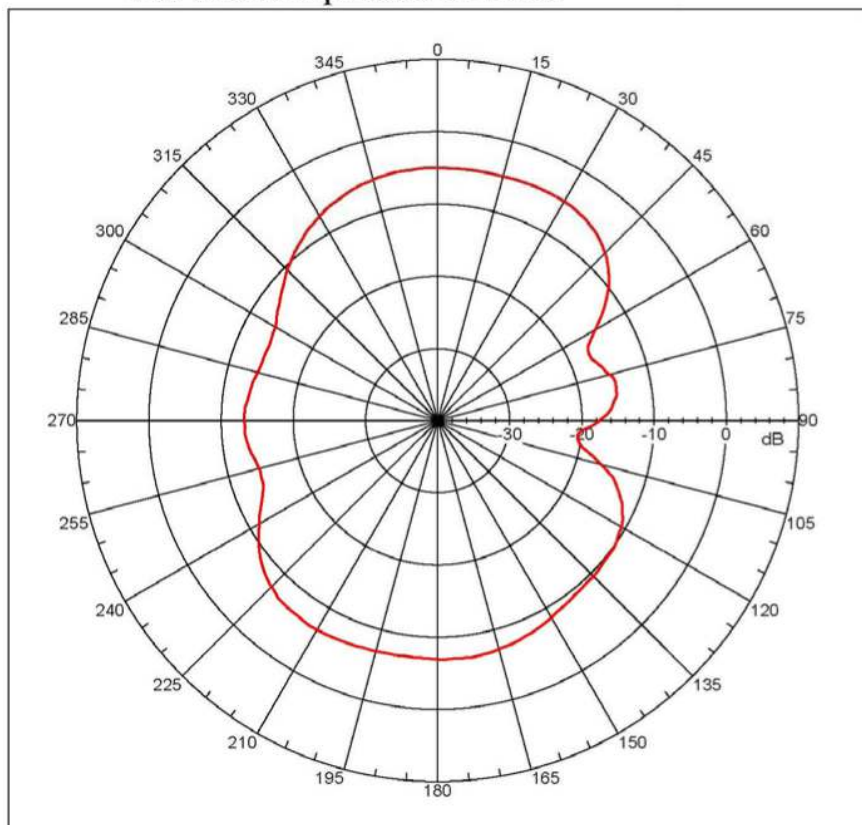
Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = -6.62872 dBi
 Max far-field (global) = -48.1884 dB, Max far-field (plot) = -48.1884 dB
 Normalization: Reference, Network offset = 0.000 dB
 Mpeak at: -144.000 deg, Vpeak at: 0.000 deg
 Plot centering: on

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20
 Measurement date/time: 5/9/2013 1:10:59 PM, Filetype: NSI-97
 Far-field Cut Analysis:
 Avg value: -19.581 dB
 -3. dB beam width: Not Found
 -6. dB beam width: Not Found
 -10. dB beam width: Not Found
 Left Sidelobe: Not Found
 Right Sidelobe: -1.83 dB at -27.151 deg
 Far-field display setup
 Azimuth (deg)
 Span = 360.00001 deg, Center = 0.000 deg, #pts = 181
 Start = -180.00001 deg, Stop = 180.00001 deg, Delta = 2.000 deg
 Elevation (deg)
 Center = 0.000 deg, #pts = 1
 Selected beam(s) 1 of 12

Beam	Frequency	Azimuth	Elevation	Pol
3	0.900 GHz	Azimuth	Elevation	Single-pol

Test Report E960

Far-field amplitude of E.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = -4.85416 dBi
 Max far-field (global) = -47.48383 dB, Max far-field (plot) = -47.48383 dB
 Normalization: Reference, Network offset = 0.000 dB
 Mpeak at: 23.99999 deg, Vpeak at: 0.000 deg
 Plot centering: on

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20
 Measurement date/time: 5/9/2013 1:10:59 PM, Filetype: NSI-97
 Far-field Cut Analysis:
 Avg value: -9.208 dB
 -3. dB beam width: 80.48 deg
 -6. dB beam width: 100.55 deg
 -10. dB beam width: Not Found
 Left Sidelobe: -8.34 dB at -89.497 deg
 Right Sidelobe: -9.93 dB at 79.441 deg
 Far-field display setup
 Azimuth (deg)
 Span = 360.00001 deg, Center = 0.000 deg, #pts = 181
 Start = -180.00001 deg, Stop = 180.00001 deg, Delta = 2.000 deg
 Elevation (deg)
 Center = 0.000 deg, #pts = 1
 Selected beam(s) 1 of 12

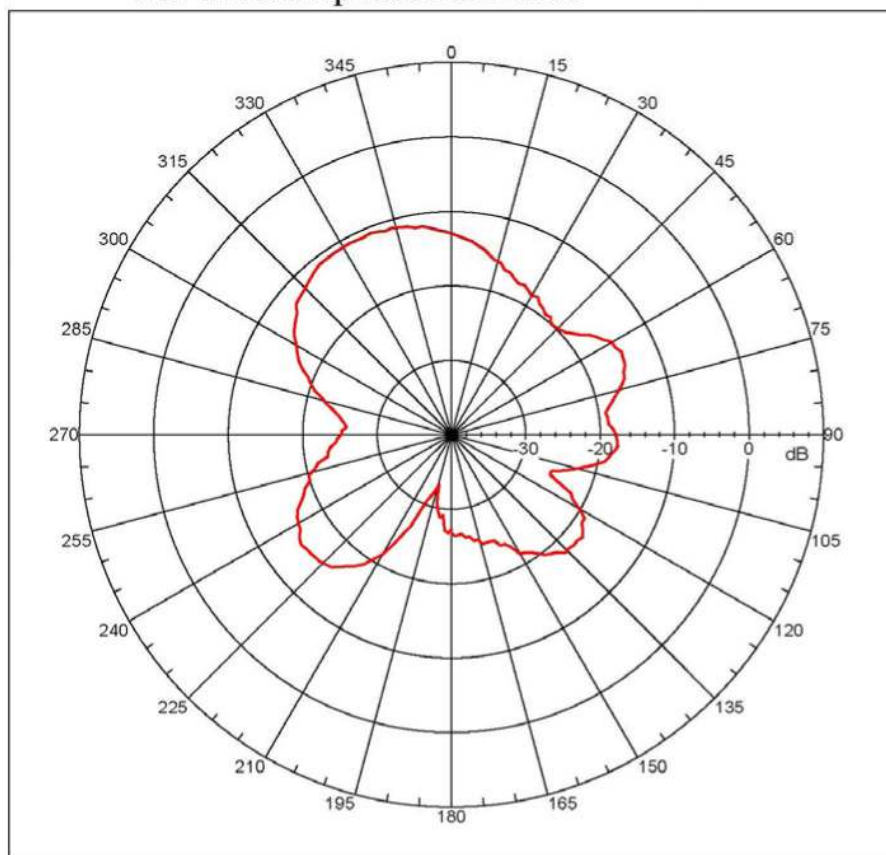
Beam	Frequency	Azimuth	Elevation	Pol
4	0.960 GHz	Azimuth	Elevation	Single-pol

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Test Report E1710

Far-field amplitude of E.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = -10.82067 dBi
 Max far-field (global) = -56.01326 dB, Max far-field (plot) = -56.01326 dB
 Normalization: Reference, Network offset = 0.000 dB
 Mpeak at: -22.00001 deg, Vpeak at: 0.000 deg
 Plot centering: On

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20

Measurement date/time: 5/9/2013 1:10:59 PM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: -17.657 dB
 -3. dB beam width: 58.67 deg
 -6. dB beam width: 82.47 deg
 -10. dB beam width: 175.81 deg
 Left Sidelobe: -4.18 dB at -125.698 deg
 Right Sidelobe: -3.76 dB at 65.362 deg

Far-field display setup

Azimuth (deg)
 Span = 360.00001 deg, Center = 0.000 deg, #pts = 181
 Start = -180.00001 deg, Stop = 180.00001 deg, Delta = 2.000 deg

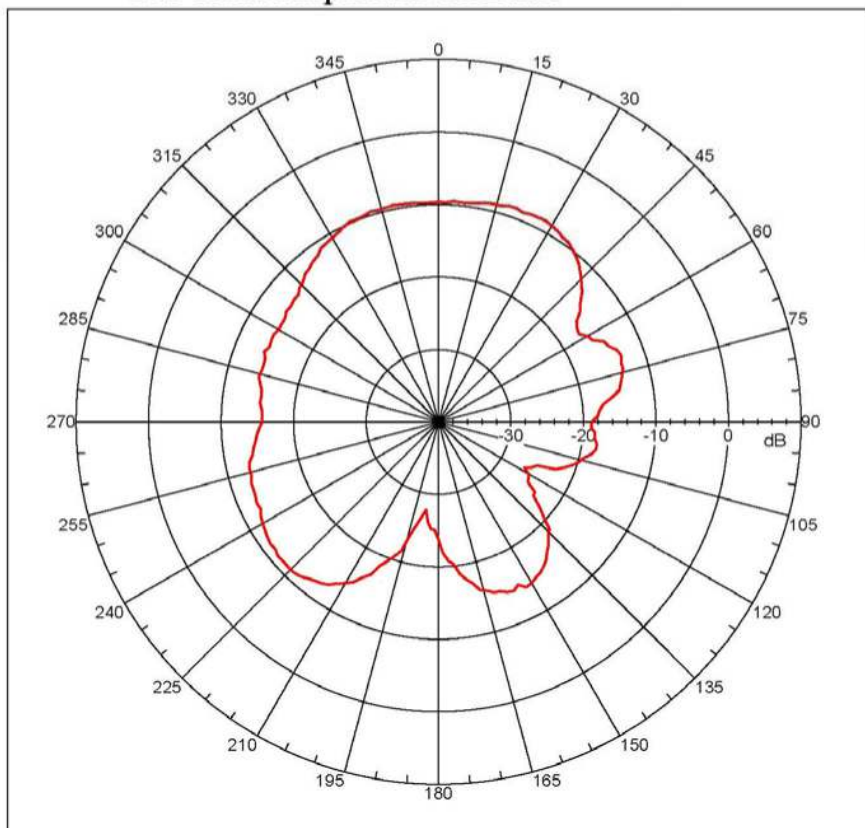
Elevation (deg)
 Center = 0.000 deg, #pts = 1

Selected beam(s) 1 of 12

Beam	Frequency	Azimuth	Elevation	Pol
5	1.710 GHz	Azimuth	Elevation	Single-pol

Test Report E1800

Far-field amplitude of E.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = -9.50537 dBi
 Max far-field (global) = -55.38741 dB, Max far-field (plot) = -55.38742 dB
 Normalization: Reference, Network offset = 0.000 dB
 Mpeak at: 27.99999 deg, Vpeak at: 0.000 deg
 Plot centering: on

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20

Measurement date/time: 5/9/2013 1:10:59 PM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: -13.889 dB
 -3. dB beam width: 79.57 deg
 -6. dB beam width: 121.04 deg
 -10. dB beam width: 248.82 deg
 Left Sidelobe: -4.27 dB at -107.598 deg
 Right Sidelobe: -4.62 dB at 71.397 deg

Far-field display setup

Azimuth (deg)
 Span = 360.00001 deg, Center = 0.000 deg, #pts = 181
 Start = -180.00001 deg, Stop = 180.00001 deg, Delta = 2.000 deg

Elevation (deg)
 Center = 0.000 deg, #pts = 1

Selected beam(s) 1 of 12

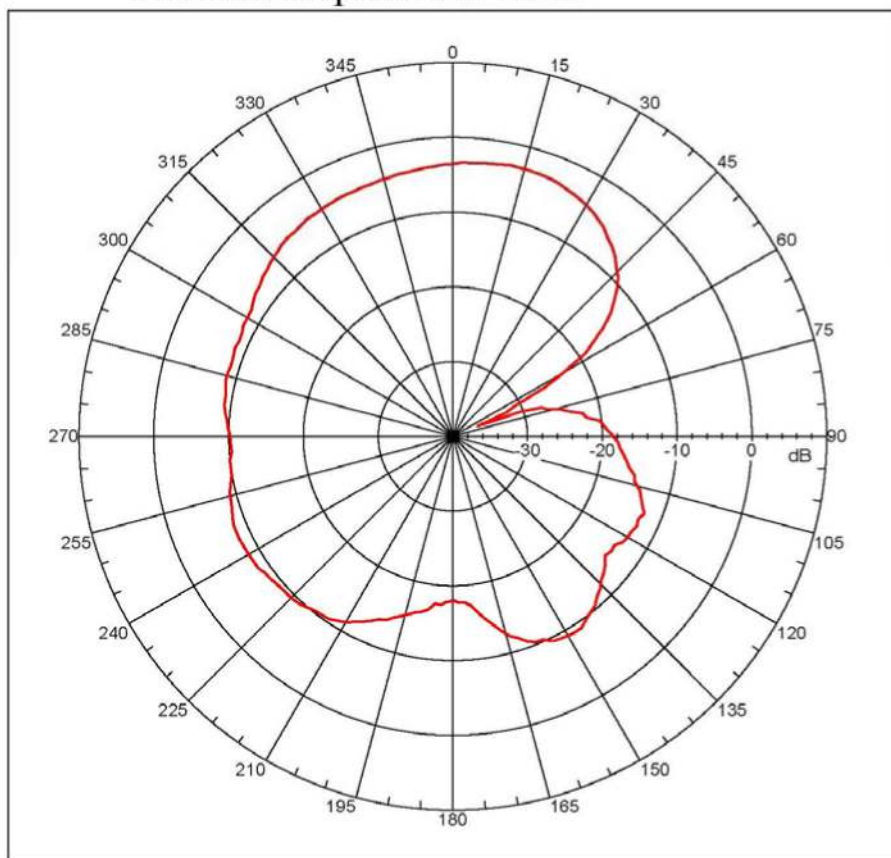
Beam	Frequency	Azimuth	Elevation	Pol
6	1.800 GHz	Azimuth	Elevation	Single-pol

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Test Report E1900

Far-field amplitude of E.nsi



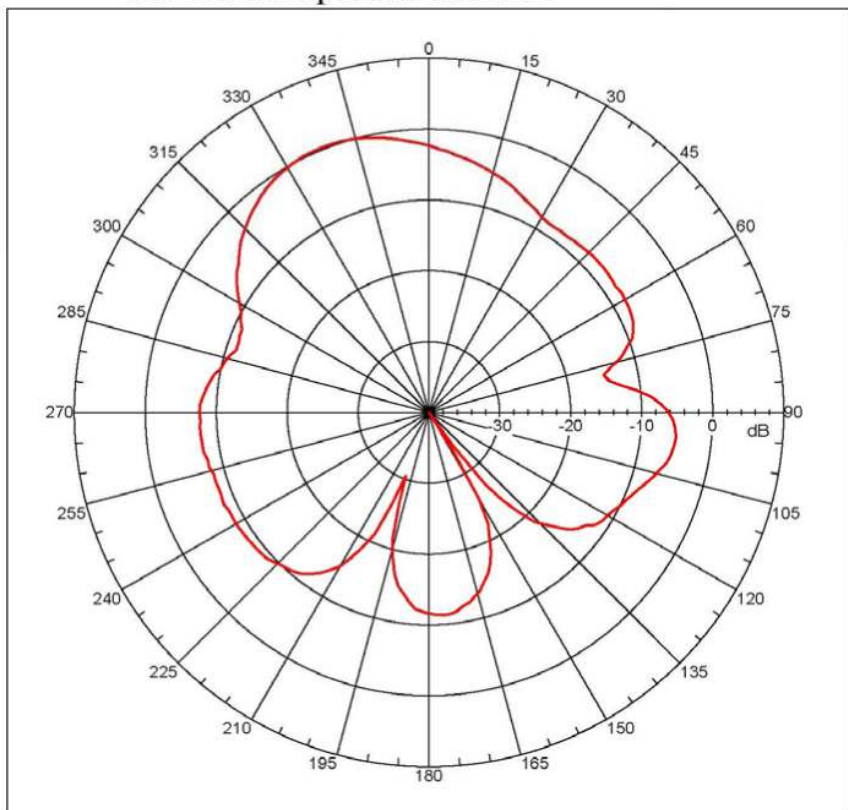
Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = -2.92528 dBi
 Max far-field (global) = -49.96224 dB, Max far-field (plot) = -49.96225 dB
 Normalization: Reference, Network offset = 0.000 dB
 Mpeak at: 11.99999 deg, Vpeak at: 0.000 deg
 Plot centering: On

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20
 Measurement date/time: 5/9/2013 1:10:59 PM, Filetype: NSI-97
 Far-field Cut Analysis:
 Avg value: -9.368 dB
 -3. dB beam width: 98.63 deg
 -6. dB beam width: 123.21 deg
 -10. dB beam width: 208.63 deg
 Left Sidelobe: -5.43 dB at -115.643 deg
 Right Sidelobe: -9.45 dB at 113.621 deg
 Far-field display setup
 Azimuth (deg)
 Span = 360.00001 deg, Center = 0.000 deg, #pts = 181
 Start = -180.00001 deg, Stop = 180.00001 deg, Delta = 2.000 deg
 Elevation (deg)
 Center = 0.000 deg, #pts = 1
 Selected beam(s) 1 of 12

Beam	Frequency	Azimuth	Elevation	Pol
7	1.900 GHz	Azimuth	Elevation	Single-pol

Test Report E2100

Far-field amplitude of E.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = 0.29972 dBi
 Max far-field (global) = -47.02798 dB, Max far-field (plot) = -47.02798 dB
 Normalization: Reference, Network offset = 0.000 dB
 Mpeak at: -22.00001 deg, Vpeak at: 0.000 deg
 Plot centering: On

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\28
 Measurement date/time: 5/9/2013 1:10:59 PM, Filetype: NSI-97
 Far-field Cut Analysis:
 Avg value: -7.897 dB
 -3. dB beam width: 44.62 deg
 -6. dB beam width: 70.54 deg
 -10. dB beam width: 122.27 deg
 Left Sidelobe: -7.94 dB at -89.497 deg
 Right Sidelobe: -5.22 dB at 97.542 deg
 Far-field display setup
 Azimuth (deg)
 Span = 360.00001 deg, Center = 0.000 deg, #pts = 181
 Start = -180.00001 deg, Stop = 180.00001 deg, Delta = 2.000 deg
 Elevation (deg)
 Center = 0.000 deg, #pts = 1
 Selected beam(s) 1 of 12

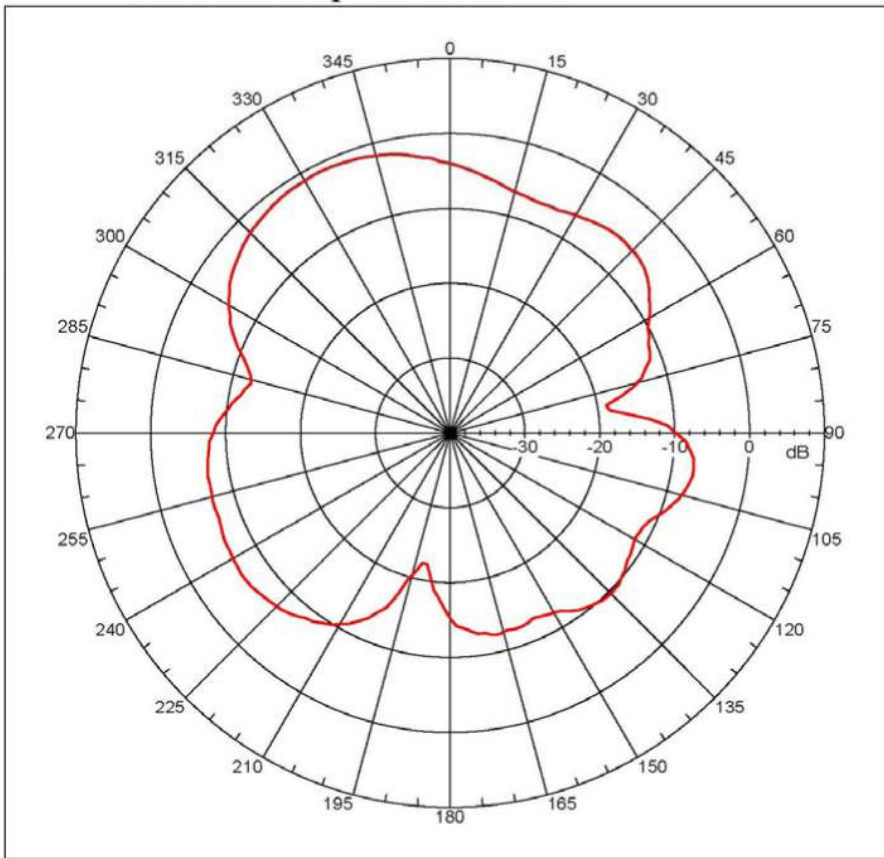
Beam	Frequency	Azimuth	Elevation	Pol
8	2.100 GHz	Azimuth	Elevation	Single-pol

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Test Report E2170

Far-field amplitude of E.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = -1.04694 dBi
 Max far-field (global) = -48.57895 dB, Max far-field (plot) = -48.57896 dB
 Normalization: Reference, Network offset = 0.000 dB
 Hpeak at: -28.00001 deg, Vpeak at: 0.000 deg
 Plot centering: On

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20

Measurement date/time: 5/9/2013 1:10:59 PM, Filetype: NSI-97

Far-field Cut Analysis:

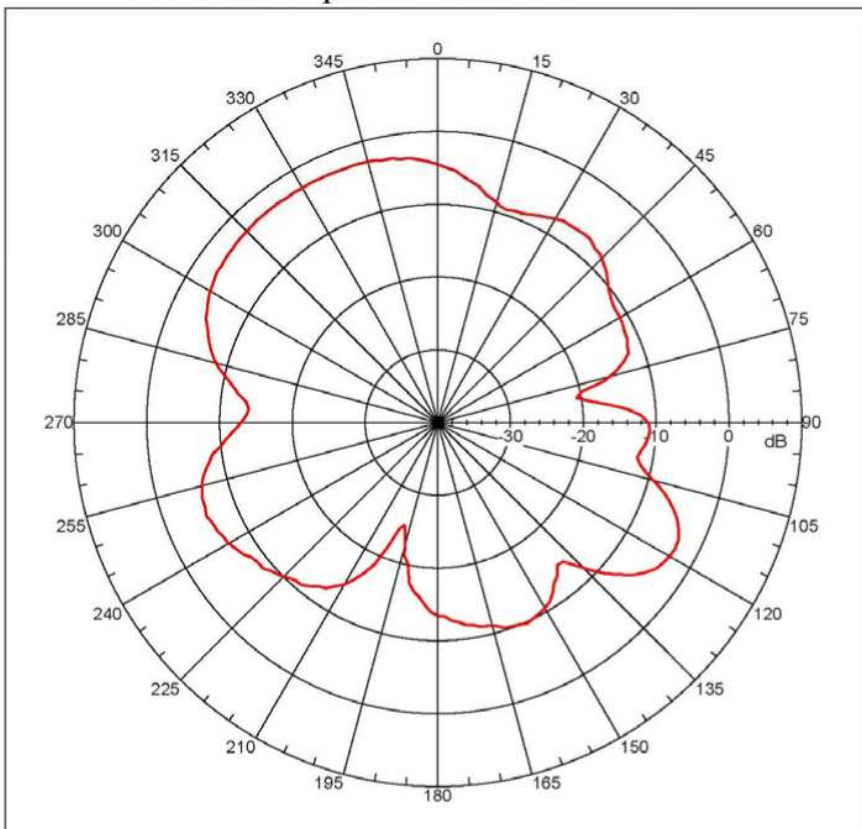
Avg value: -7.645 dB
 -3. dB beam width: 54.68 deg
 -6. dB beam width: 117.19 deg
 -10. dB beam width: 138.26 deg
 Left Sidelobe: -6.95 dB at -99.353 deg
 Right Sidelobe: -4.39 dB at 43.240 deg
 Far-field display setup
 Azimuth (deg)
 Span = 360.00001 deg, Center = 0.000 deg, #pts = 181
 Start = -180.00001 deg, Stop = 180.00001 deg, Delta = 2.000 deg
 Elevation (deg)
 Center = 0.000 deg, #pts = 1

Selected beam(s) 1 of 12

Beam	Frequency	Azimuth	Elevation	Pol
9	2.170 GHz	Azimuth	Elevation	Single-pol

Test Report E2400

Far-field amplitude of E.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = -2.70625 dBi
 Max far-field (global) = -51.71388 dB, Max far-field (plot) = -51.7139 dB
 Normalization: Reference, Network offset = 0.000 dB
 Hpeak at: -36.00001 deg, Vpeak at: 0.000 deg
 Plot centering: On

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20

Measurement date/time: 5/9/2013 1:10:59 PM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: -8.107 dB
 -3. dB beam width: 72.94 deg
 -6. dB beam width: 90.78 deg
 -10. dB beam width: 154.52 deg
 Left Sidelobe: -3.01 dB at -111.620 deg
 Right Sidelobe: -4.66 dB at 33.194 deg
 Far-field display setup
 Azimuth (deg)
 Span = 360.00001 deg, Center = 0.000 deg, #pts = 181
 Start = -180.00001 deg, Stop = 180.00001 deg, Delta = 2.000 deg
 Elevation (deg)
 Center = 0.000 deg, #pts = 1

Selected beam(s) 1 of 12

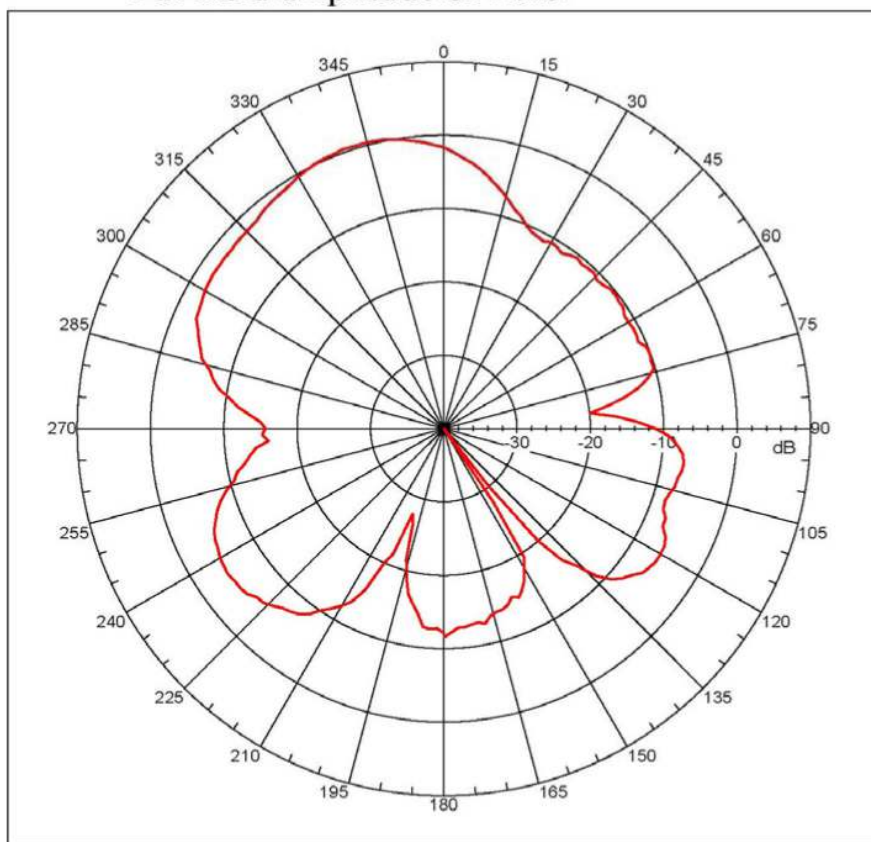
Beam	Frequency	Azimuth	Elevation	Pol
10	2.400 GHz	Azimuth	Elevation	Single-pol

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Test Report E2500

Far-field amplitude of E.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = 0.45901 dBi
Max far-field (global) = -49.67698 dB, Max far-field (plot) =
-49.67699 dB
Normalization: Reference, Network offset = 0.000 dB
Hpeak at: -20.00001 deg, Vpeak at: 0.000 deg
Plot centering: On

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20

Measurement date/time: 5/9/2013 1:10:59 PM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: -7.364 dB

-3. dB beam width: 62.89 deg

-6. dB beam width: 84.82 deg

-10. dB beam width: 102.12 deg

Left Sidelobe: -4.95 dB at -123.687 deg

Right Sidelobe: -10.56 dB at 71.397 deg

Far-field display setup

Azimuth (deg)

Span = 360.00001 deg, Center = 0.000 deg, #pts = 181

Start = -180.00001 deg, Stop = 180.00001 deg, Delta = 2.000

deg

Elevation (deg)

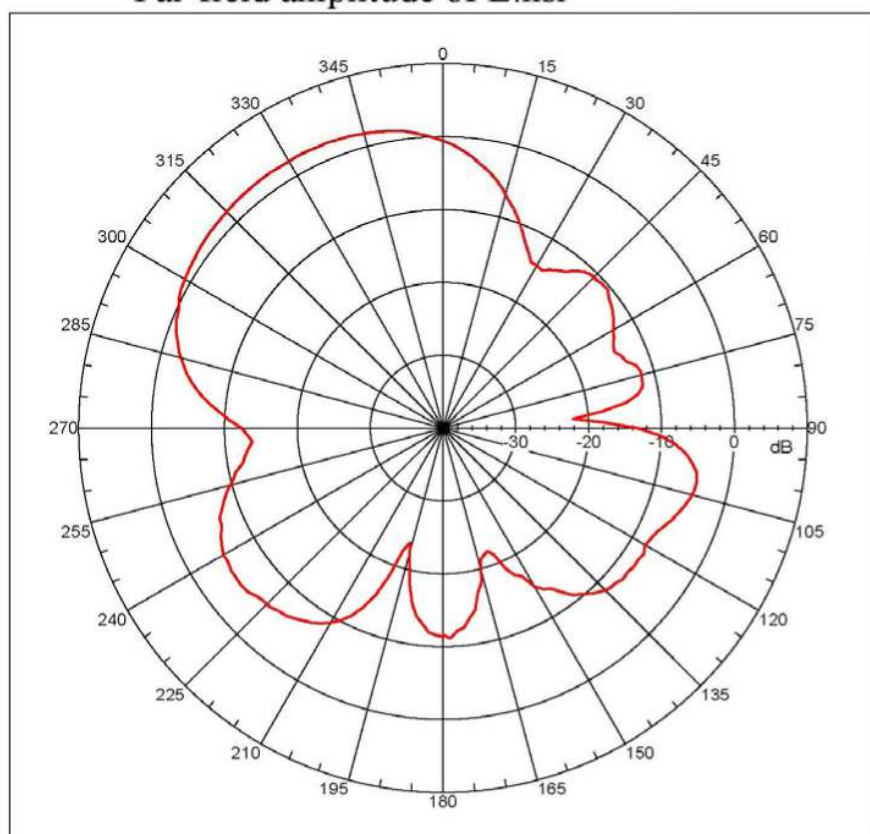
Center = 0.000 deg, #pts = 1

Selected beam(s) 1 of 12

Beam	Frequency	Azimuth	Elevation	Pol
11	2.500 GHz	Azimuth	Elevation	Single-pol

Test Report E2600

Far-field amplitude of E.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = 2.33806 dBi
Max far-field (global) = -47.97873 dB, Max far-field (plot) =
-47.97873 dB
Normalization: Reference, Network offset = 0.000 dB
Hpeak at: -20.00001 deg, Vpeak at: 0.000 deg
Plot centering: On

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20

Measurement date/time: 5/9/2013 1:10:59 PM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: -5.878 dB

-3. dB beam width: 69.09 deg

-6. dB beam width: 86.26 deg

-10. dB beam width: 100.88 deg

Left Sidelobe: -7.55 dB at -119.665 deg

Right Sidelobe: -12.82 dB at 51.285 deg

Far-field display setup

Azimuth (deg)

Span = 360.00001 deg, Center = 0.000 deg, #pts = 181

Start = -180.00001 deg, Stop = 180.00001 deg, Delta = 2.000

deg

Elevation (deg)

Center = 0.000 deg, #pts = 1

Selected beam(s) 1 of 12

Beam	Frequency	Azimuth	Elevation	Pol
12	2.600 GHz	Azimuth	Elevation	Single-pol

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