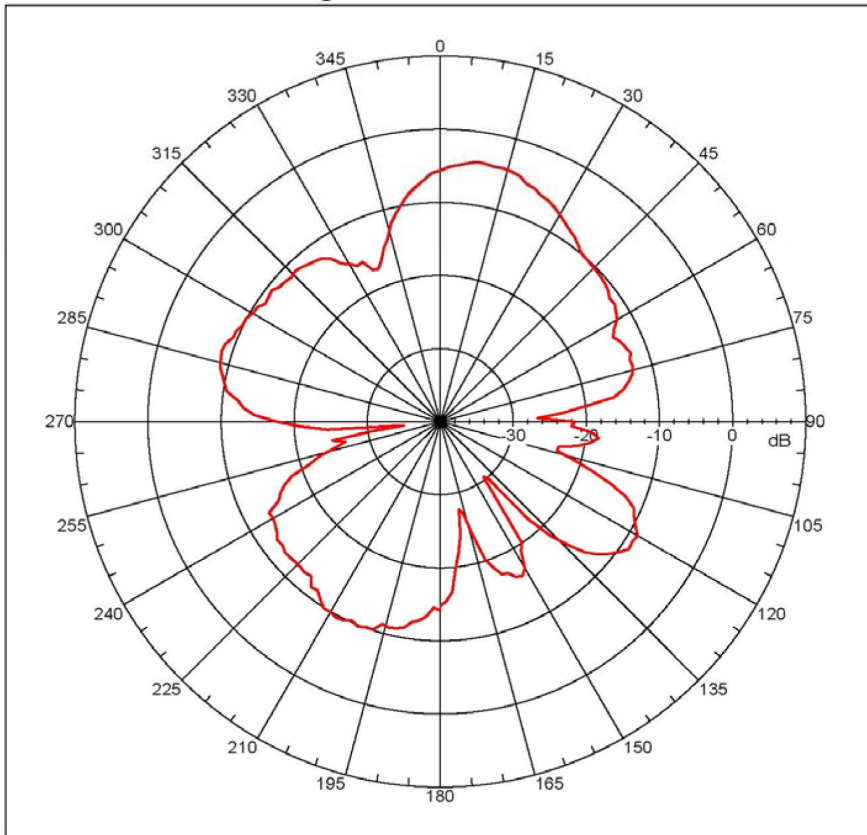


GSM Rugged 'Puck' Antenna IP67



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) = -54.2997 dB
Normalization: Reference, Network offset = 0.000 dB
Hpeak 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

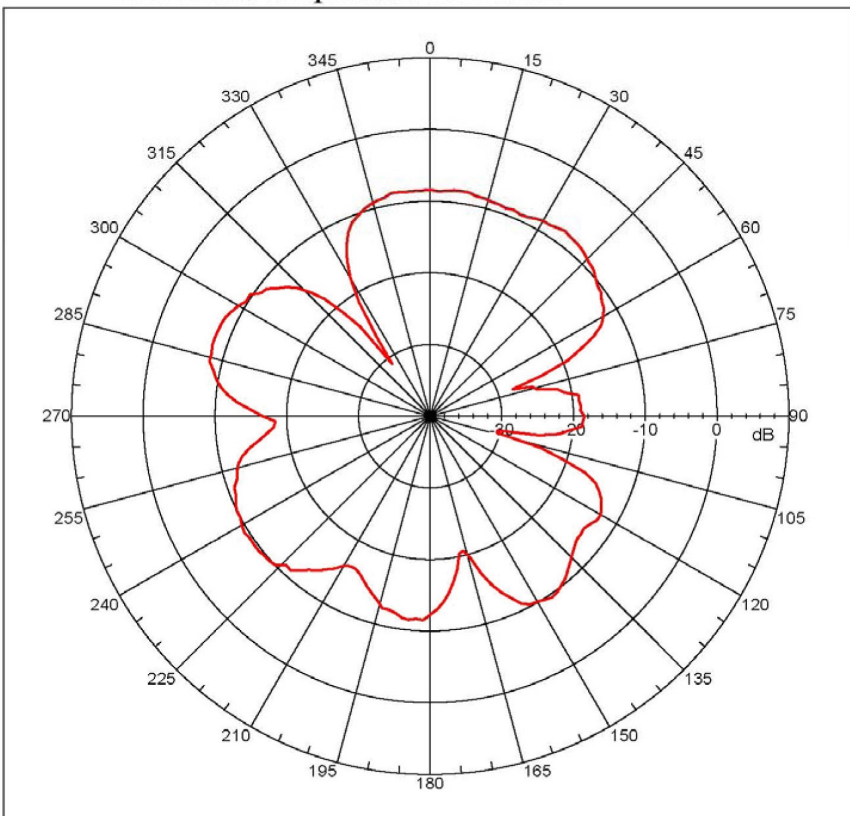
Azimuth (deg)
Span = 360.00001 deg, Center = 0.000 deg, #pts = 181
Start = -180.00001 deg, Stop = 180.00001 deg, Delta = 2.000 deg

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 = -8.05056 dBi
Max far-field (global) = -58.37335 dB, Max far-field (plot) = -58.37335 dB
Normalization: Reference, Network offset = 0.000 dB
Hpeak 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: 40.88 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

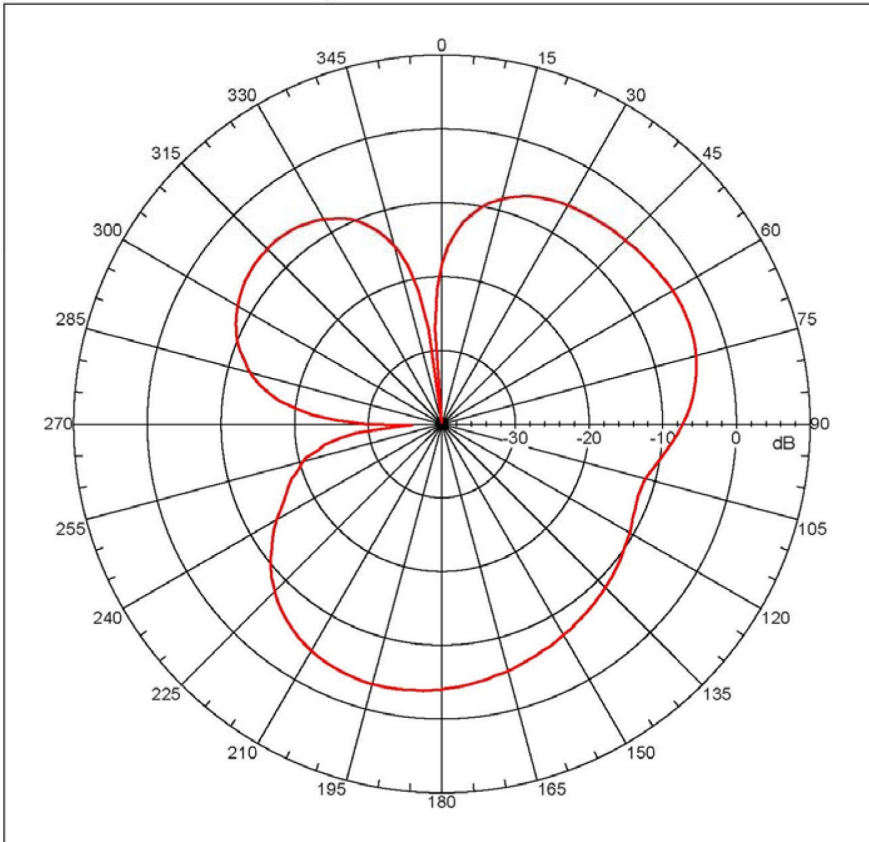
Selected beam(s) 1 of 12
Beam Frequency Azimuth Elevation Pol
12 2.600 GHz Azimuth Elevation Single-pol

GSM Rugged 'Puck' Antenna IP67



Test Report E824

Far-field amplitude of E.nsi



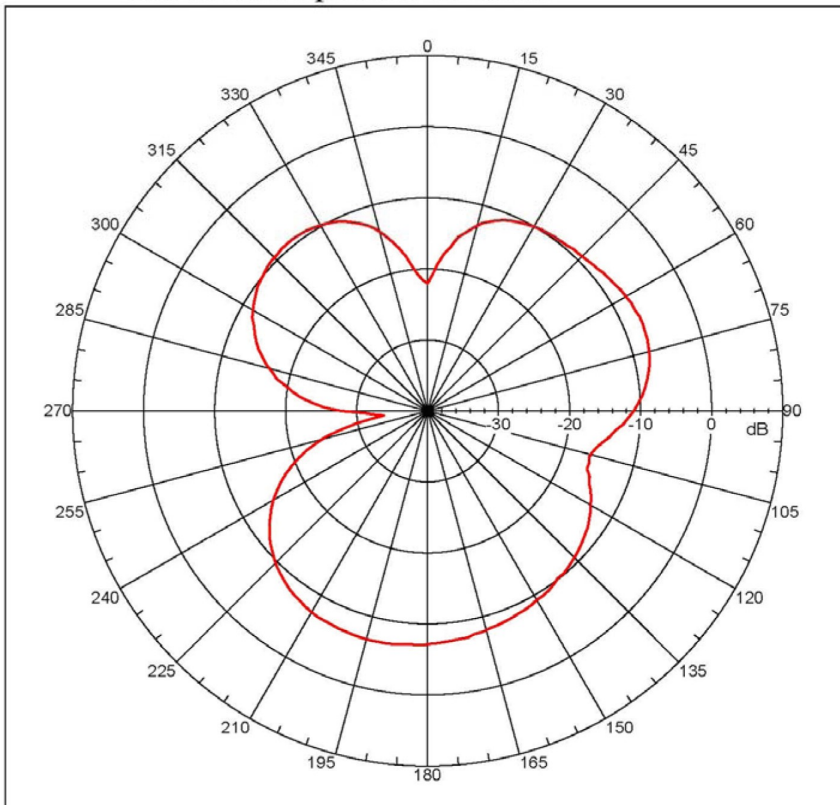
Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = -3.49476 dBi
Max far-field (global) = -46.4941 dB, Max far-field (plot) = -46.49412 dB
Normalization: Reference, Network offset = 0.000 dB
Mpeak at: -168.000 deg, Vpeak at: 0.000 deg
Plot centering: On

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: -11.130 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

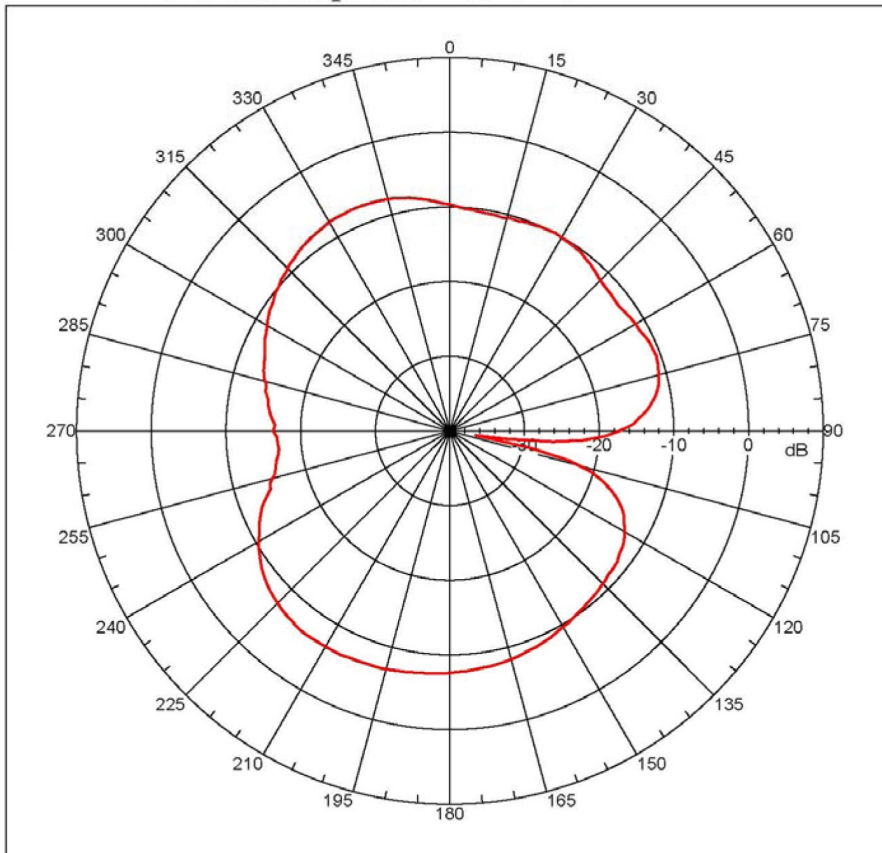
2 0.850 GHz Azimuth Elevation Single-pol

GSM Rugged 'Puck' Antenna IP67



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
Hpeak 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: -10.501 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: -1.03 dB at -27.151 deg

Far-field display setup

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

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

Elevation (deg)

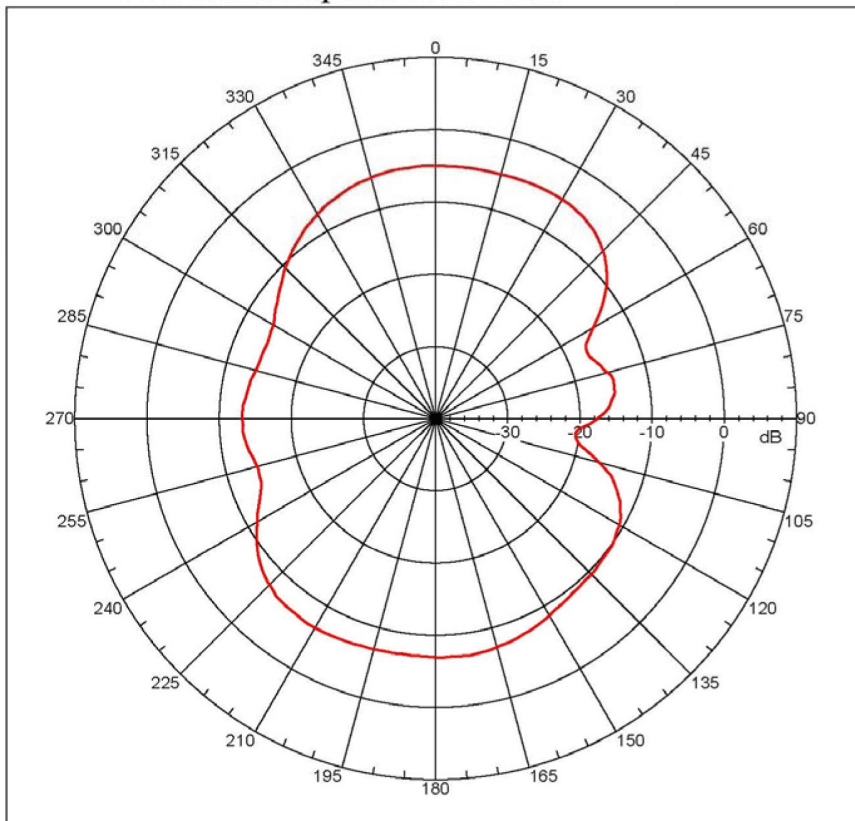
Center = 0.000 deg, #pts = 1

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
Hpeak 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: -9.200 dB

-3. dB beam width: 80.40 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

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

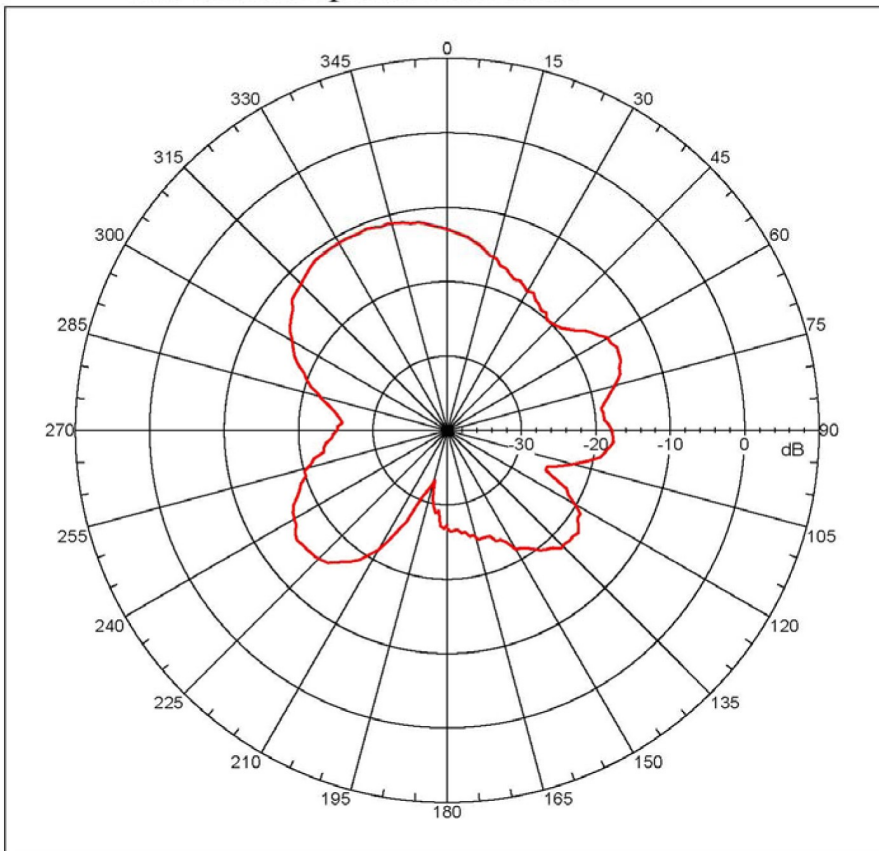
Beam	Frequency	Azimuth	Elevation	Pol
4	0.960 GHz	Azimuth	Elevation	Single-pol

GSM Rugged 'Puck' Antenna IP67



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
Hpeak 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 65.363 deg

Far-field display setup

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

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

Elevation (deg)

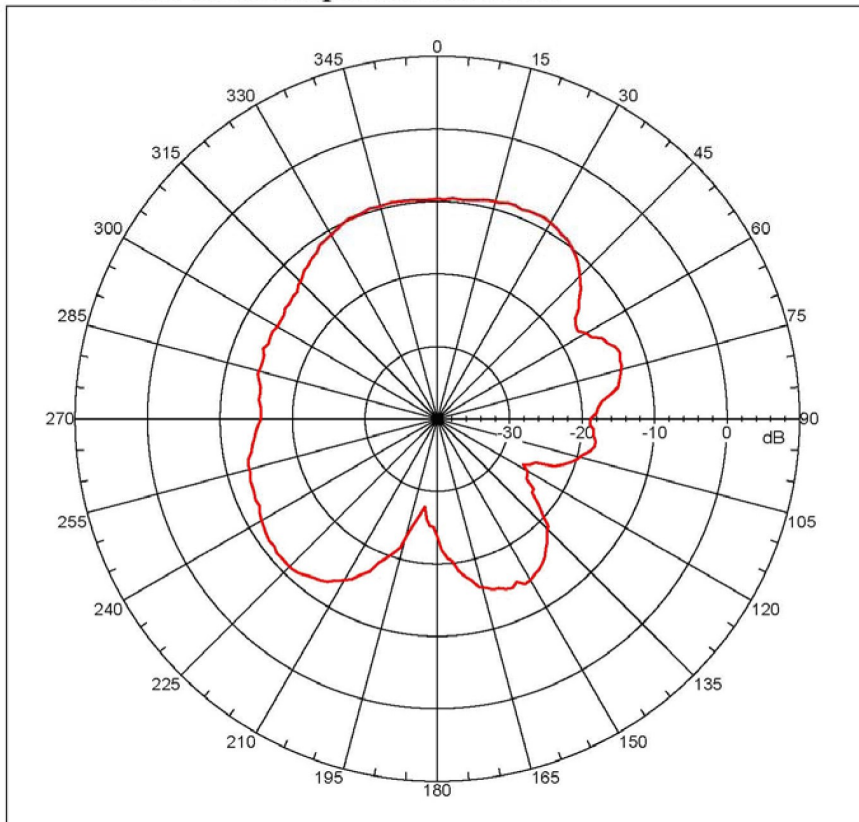
Center = 0.000 deg, #pts = 1

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 = -0.56537 dBi
Max far-field (global) = -55.38741 dB, Max far-field (plot) =
-55.38742 dB
Normalization: Reference, Network offset = 0.000 dB
Hpeak 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: 248.62 deg
Left Sidelobe: -4.27 dB at -107.598 deg
Right Sidelobe: -4.62 dB at 71.397 deg

Far-field display setup

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

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

Elevation (deg)

Center = 0.000 deg, #pts = 1

Selected beam(s) 1 of 12

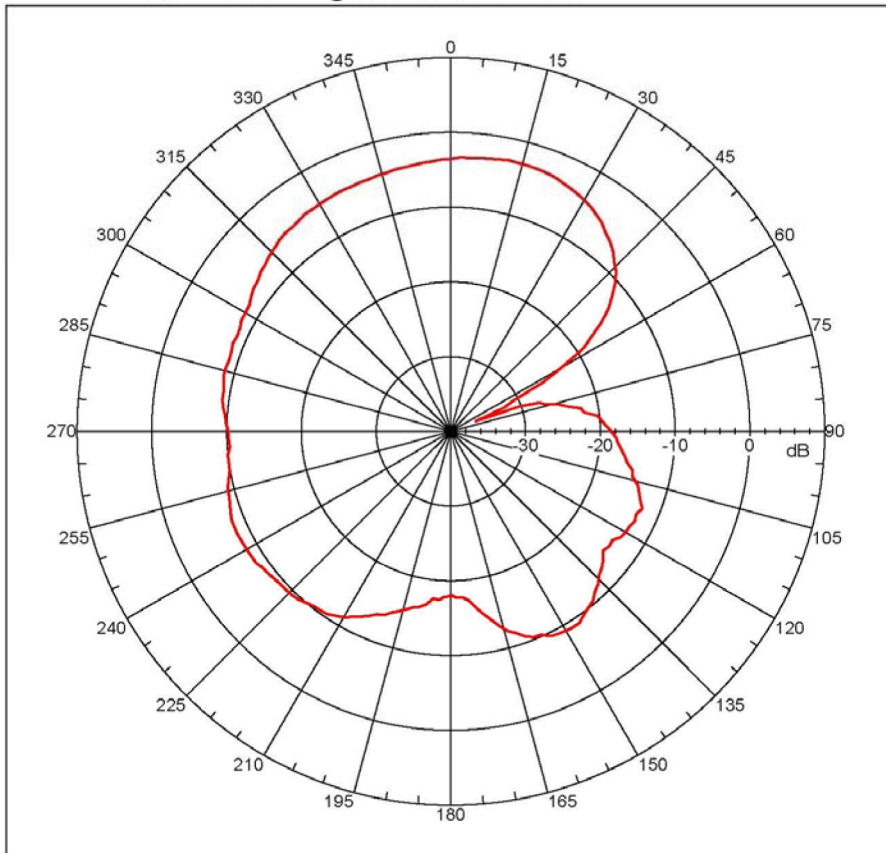
Beam	Frequency	Azimuth	Elevation	Pol
6	1.800 GHz	Azimuth	Elevation	Single-pol

GSM Rugged 'Puck' Antenna IP67



Test Report E1900

Far-field amplitude of E.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = -2.92528 dB
Max far-field (global) = -49.96224 dB, Max far-field (plot) = -49.96225 dB
Normalization: Reference, Network offset = 0.000 dB
Hpeak 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: 80.63 deg

-6. dB beam width: 123.21 deg

-10. dB beam width: 208.63 deg

Left Sidelobe: -5.41 dB at -115.643 deg

Right Sidelobe: -9.45 dB at 113.631 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

deg

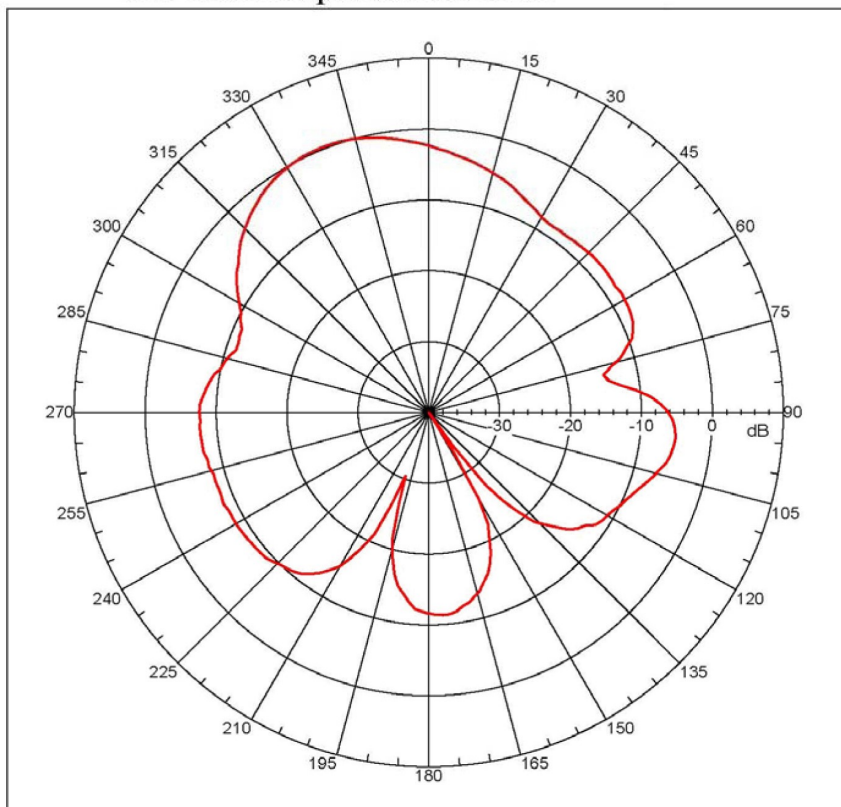
Selected beam(s) 1 of 12

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 = 0.29872 dB
Max far-field (global) = -47.02798 dB, Max far-field (plot) = -47.02798 dB
Normalization: Reference, Network offset = 0.000 dB
Hpeak 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: -7.897 dB

-3. dB beam width: 44.62 deg

-6. dB beam width: 70.54 deg

-10. dB beam width: 132.27 deg

Left Sidelobe: -7.94 dB at -89.497 deg

Right Sidelobe: -5.32 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

deg

Selected beam(s) 1 of 12

Beam Frequency Azimuth Elevation Pol

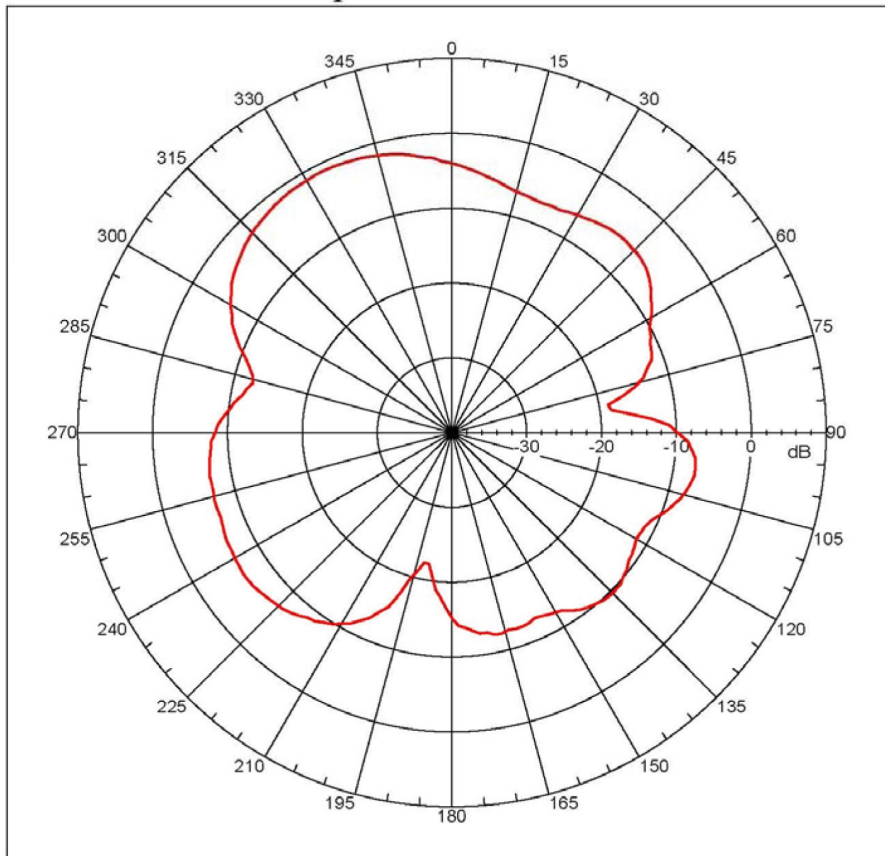
8 2.100 GHz Azimuth Elevation Single-pol

GSM Rugged 'Puck' Antenna IP67



Test Report E2170

Far-field amplitude of E.nsi

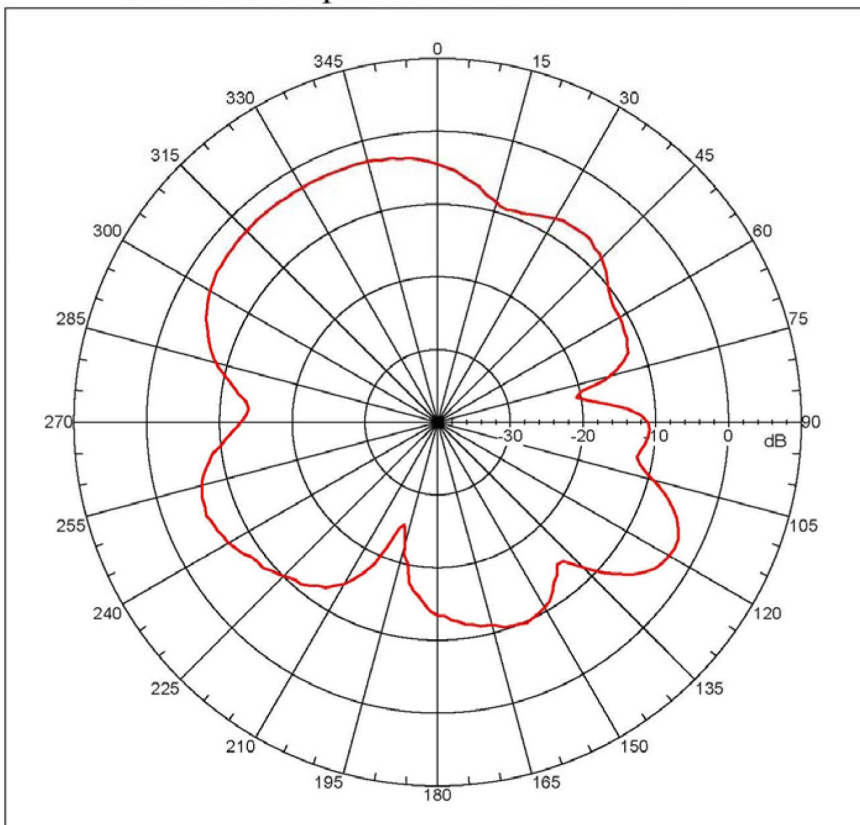


Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = -1.04684 dBi
Max far-field (global) = -48.57895 dB, Max far-field (plot) = -48.57896 dB
Normalization: Reference, Network offset = 0.000 dB
Hpeak at: -28.00001 deg, Vpeak at: 0.000 deg
Plot centering: On

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: -6.05 dB at -99.552 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 33.184 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