

4G/LTE Antenna

Model : TH-89



1. GENERAL DESCRIPTION

P/N
TH89-SMA(M)

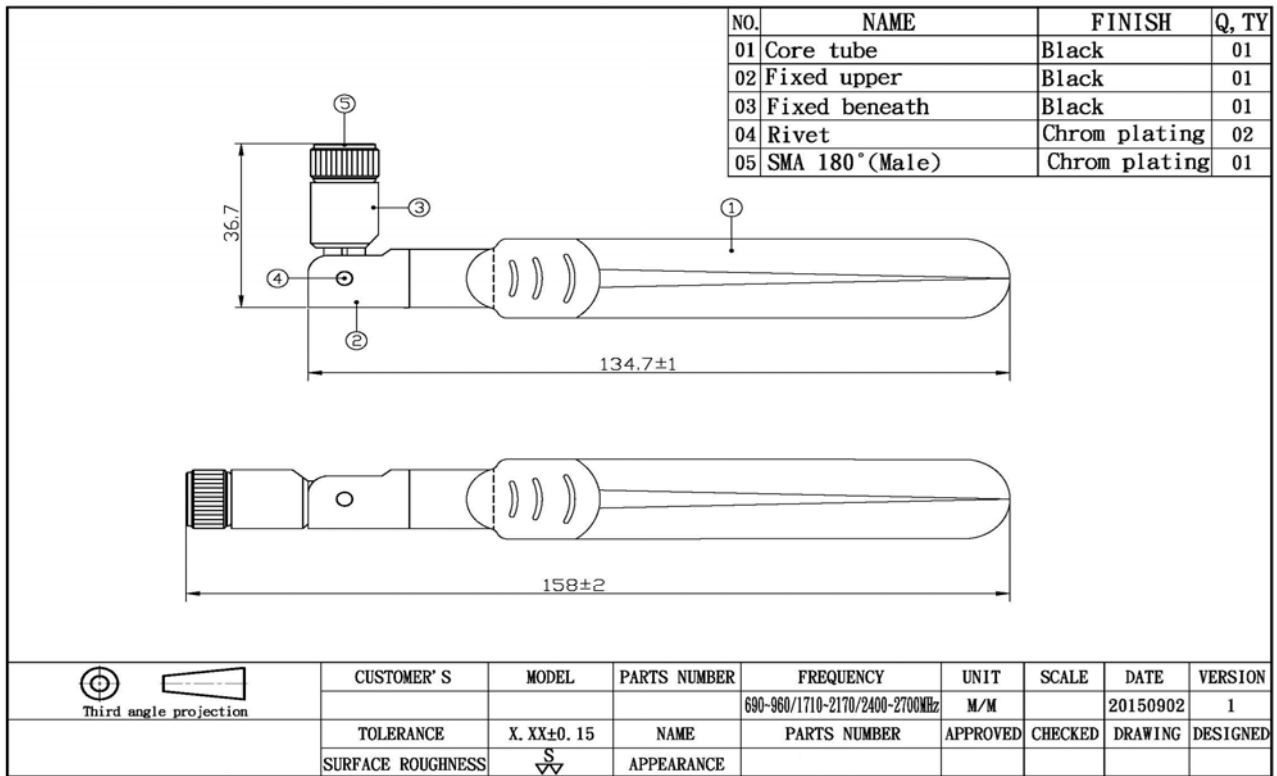
1.1 Electrical Properties

Parameter	Description
Frequency Band	690~960/1710~2170/2400~2700MHz
Nominal Impedance	50 ohm
Polarization	Vertical
V.S.W.R	3.4 : 1

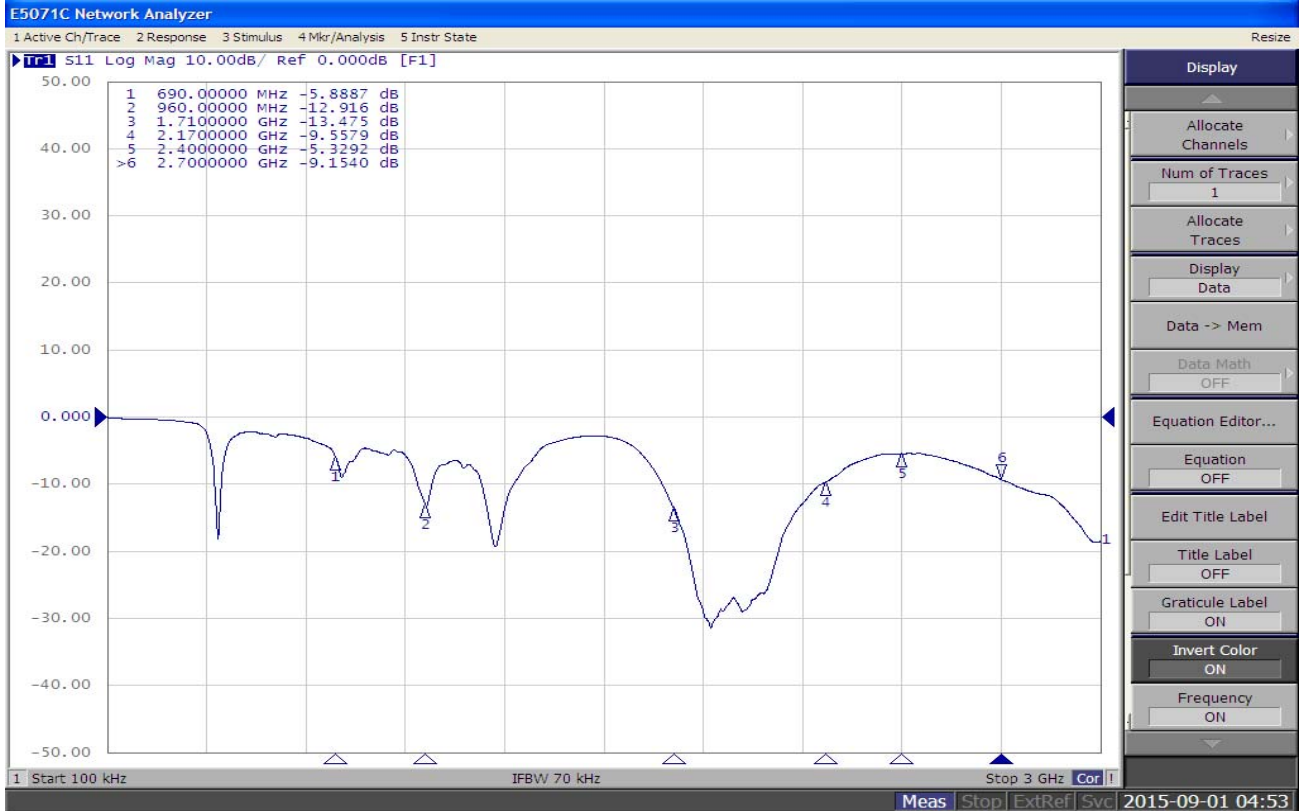
1.2 Mechanical Properties

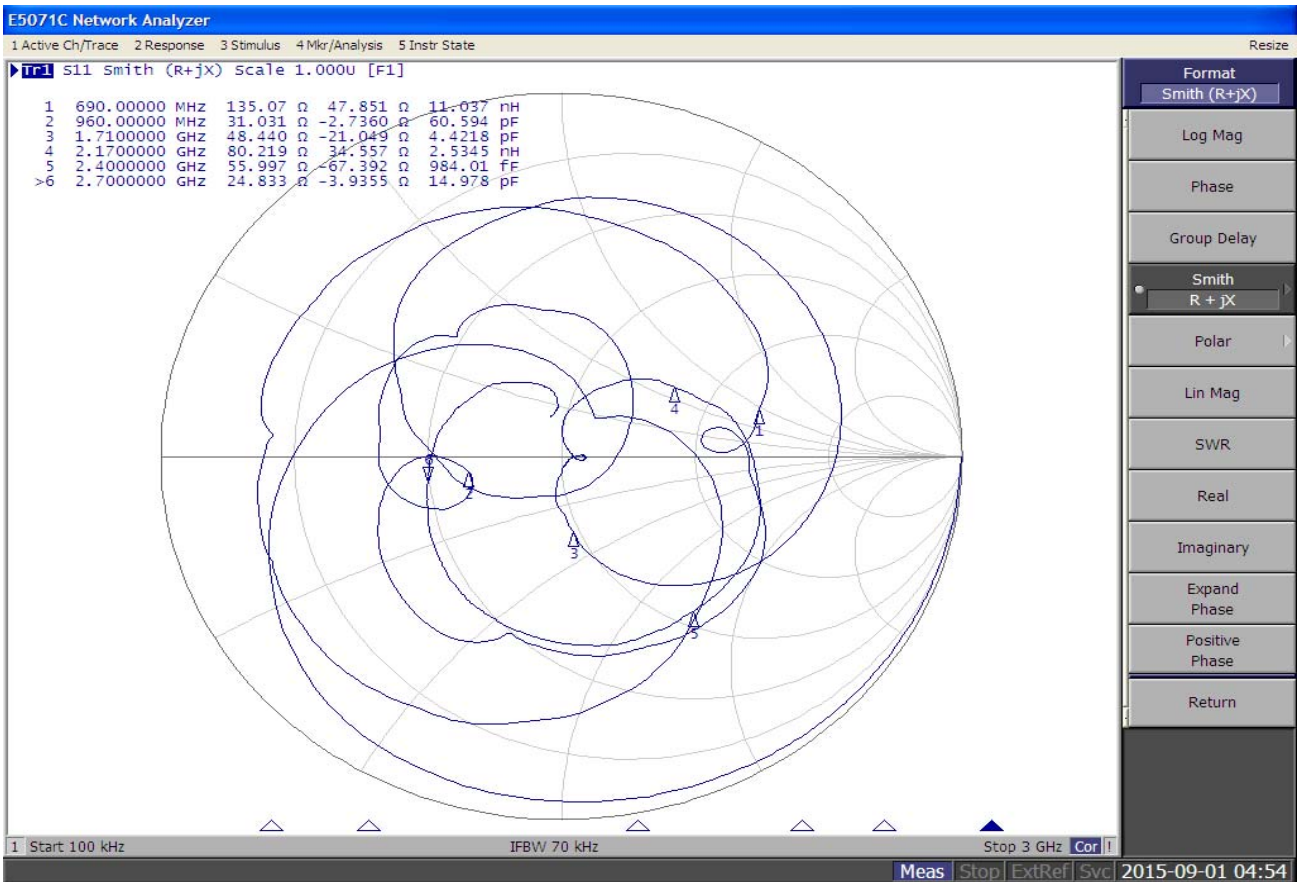
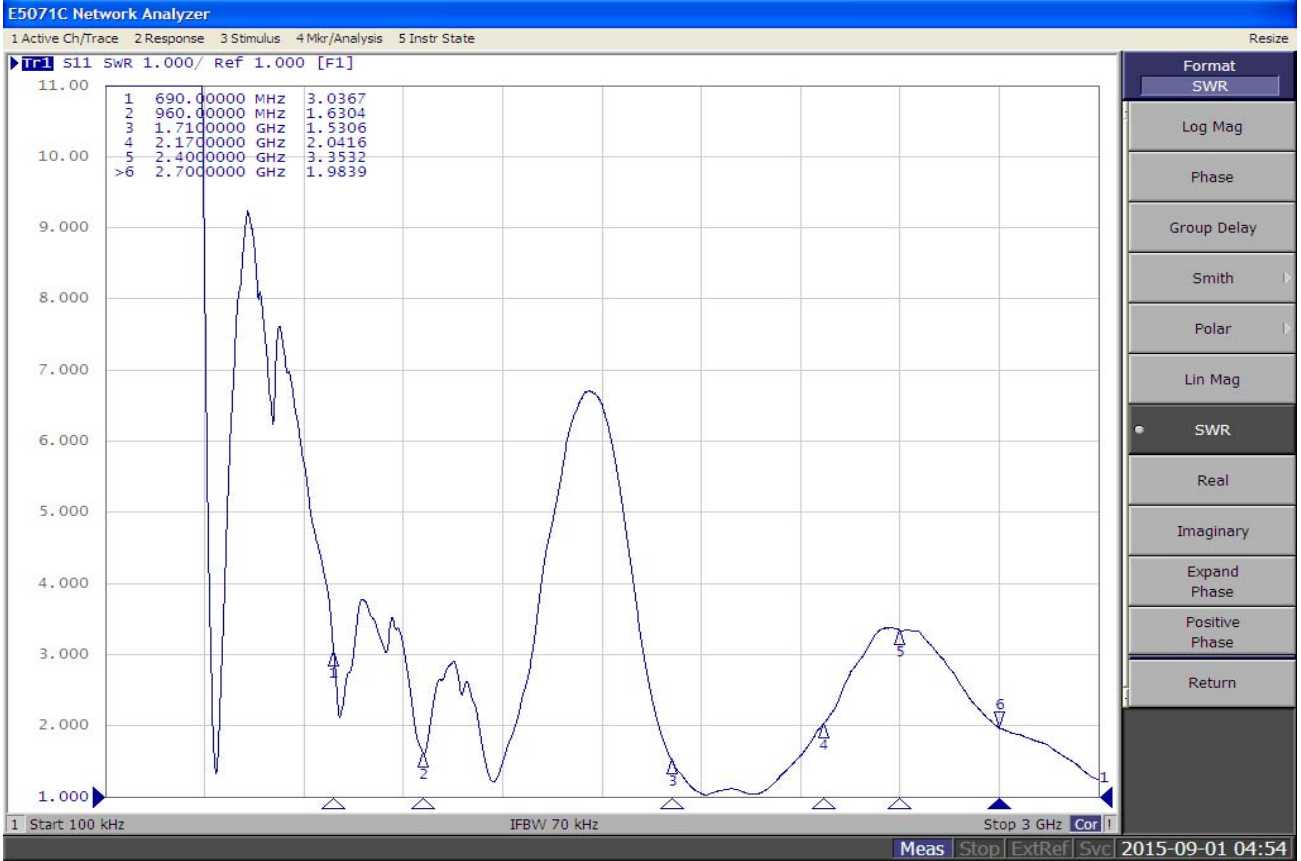
Parameter	Description
Antenna Type	External Antenna
Touch Type	Screw Type
Connector Type	SMA 180°(Male)
Antenna Dimensions	158mm±2
Antenna Color	Black
Operating Temperature Range	-20°C~+60°C
Storage Temperature Range	-30°C~+70°C

2. APPEARANCE:



3. Return Loss, V.S.W.R. and Smith Chart

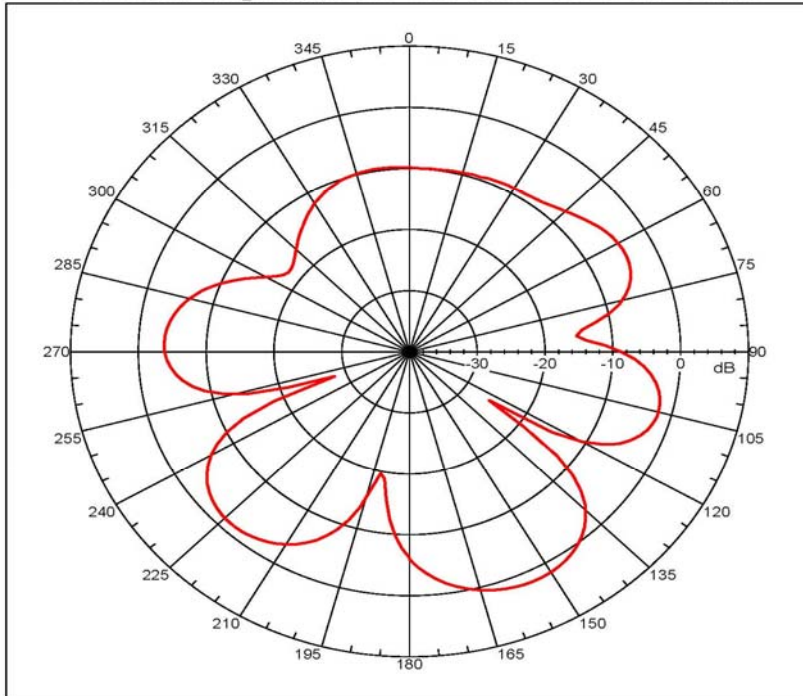




4. 2D Pattern

4.1 E-Plane

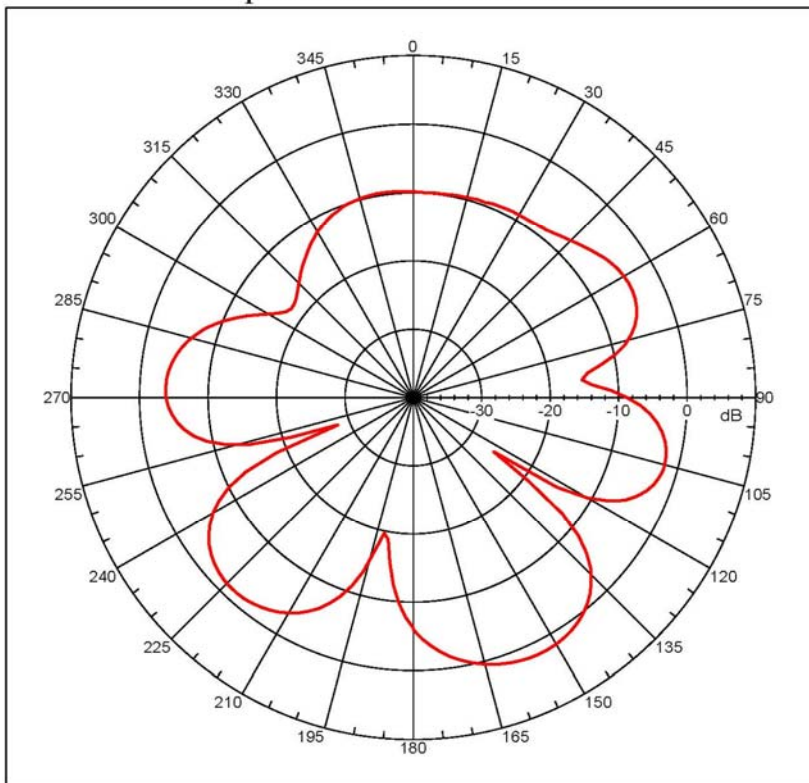
Far-field amplitude of 20150505-4G-ANT-E.nsi



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Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = 1.82429 dBi
Max far-field (global) = -39.70878 dB, Max far-field (plot) =
-39.70879 dB
Normalization: Reference, Network offset = 0.000 dB
Mpeak at: 153.99999 deg, Vpeak at: 0.000 deg
Plot centering: On
20150505-4G-ANT-E
NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20
150505-4G-ANT\20150505-4G-ANT-E.nsi
Measurement date/time: 5/5/2015 3:27:46 PM, Filetype: NSI-97
Far-field Cut Analysis:
Avg value: -6.289 dB
-3. dB beam width: 32.26 deg
-6. dB beam width: Not Found
-10. dB beam width: Not Found
Left Sidelobe: -3.81 dB at 107.598 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 11
Beam Frequency Azimuth Elevation Pol
-----
2 0.850 GHz Azimuth Elevation Single-pol
    
```

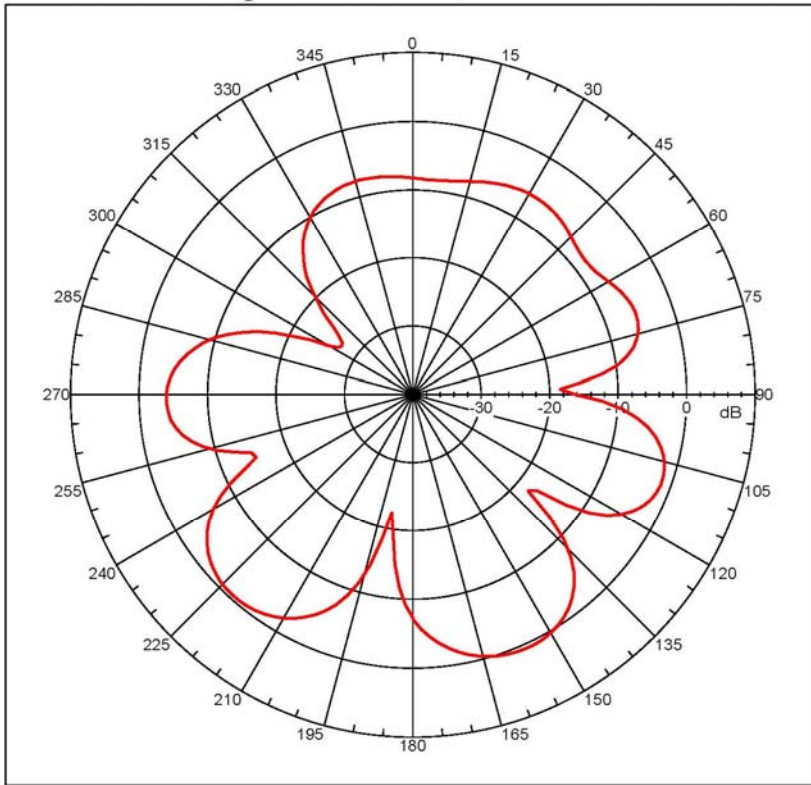
Far-field amplitude of 20150505-4G-ANT-E.nsi



```

Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = 1.82429 dBi
Max far-field (global) = -39.70878 dB, Max far-field (plot) =
-39.70879 dB
Normalization: Reference, Network offset = 0.000 dB
Mpeak at: 153.99999 deg, Vpeak at: 0.000 deg
Plot centering: On
20150505-4G-ANT-E
NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20
150505-4G-ANT\20150505-4G-ANT-E.nsi
Measurement date/time: 5/5/2015 3:27:46 PM, Filetype: NSI-97
Far-field Cut Analysis:
Avg value: -6.289 dB
-3. dB beam width: 32.26 deg
-6. dB beam width: Not Found
-10. dB beam width: Not Found
Left Sidelobe: -3.81 dB at 107.598 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 11
Beam Frequency Azimuth Elevation Pol
-----
2 0.850 GHz Azimuth Elevation Single-pol
    
```

Far-field amplitude of 20150505-4G-ANT-E.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = 0.63658 dBi
 Max far-field (global) = -40.9231 dB, Max far-field (plot) = -40.9232 dB
 Normalization: Reference, Network offset = 0.000 dB
 Hpeak at: 153.99999 deg, Vpeak at: 0.000 deg
 Plot centering: on

20150505-4G-ANT-E

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20150505-4G-ANT\20150505-4G-ANT-E.nsi
 Measurement date/time: 5/5/2015 3:27:46 PM, Filetype: NSI-97

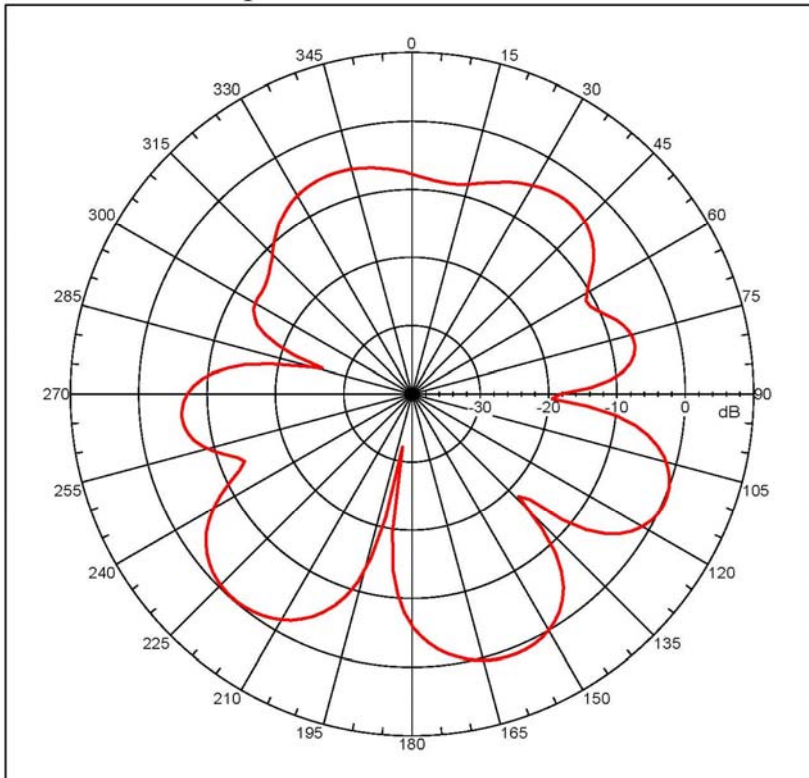
Far-field Cut Analysis:
 Avg value: -6.343 dB
 -3. dB beam width: 29.92 deg
 -6. dB beam width: Not Found
 -10. dB beam width: Not Found
 Left Sidelobe: -2.08 dB at 111.620 deg
 Right Sidelobe: Not Found

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 11

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

Far-field amplitude of 20150505-4G-ANT-E.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = 1.03699 dBi
 Max far-field (global) = -40.88272 dB, Max far-field (plot) = -40.88278 dB
 Normalization: Reference, Network offset = 0.000 dB
 Hpeak at: 157.99999 deg, Vpeak at: 0.000 deg
 Plot centering: on

20150505-4G-ANT-E

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20150505-4G-ANT\20150505-4G-ANT-E.nsi
 Measurement date/time: 5/5/2015 3:27:46 PM, Filetype: NSI-97

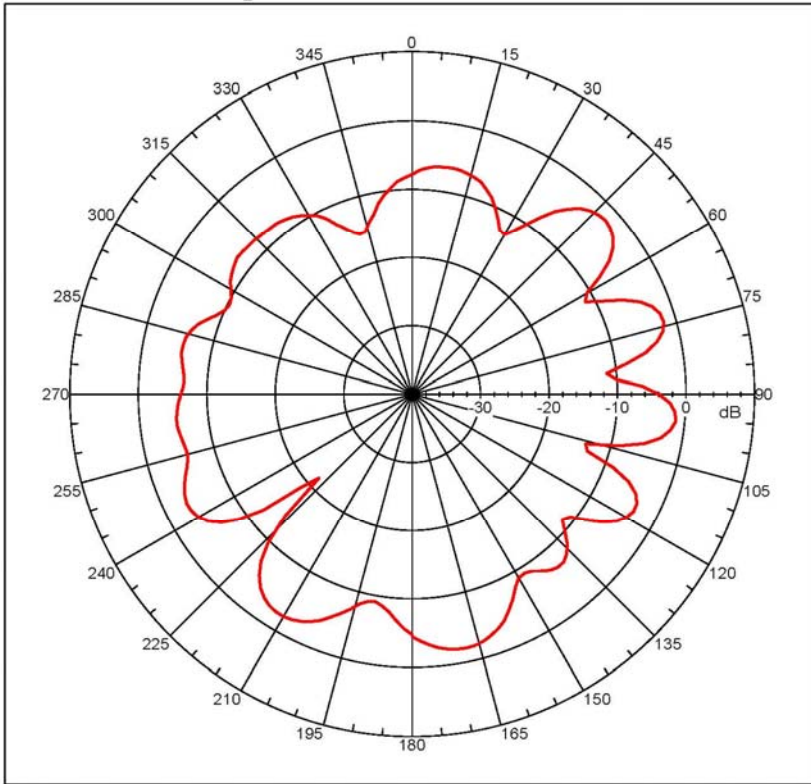
Far-field Cut Analysis:
 Avg value: -5.874 dB
 -3. dB beam width: 28.24 deg
 -6. dB beam width: Not Found
 -10. dB beam width: Not Found
 Left Sidelobe: -0.74 dB at 115.643 deg
 Right Sidelobe: Not Found

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 11

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

Far-field amplitude of 20150505-4G-ANT-E.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = -1.34625 dB
 Max far-field (global) = -46.53884 dB, Max far-field (plot) = -46.53891 dB
 Normalization: Reference, Network offset = 0.000 dB
 Hpeak at: 95.000 deg, Vpeak at: 0.000 deg
 Plot centering: On

20150505-4G-ANT-E

NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20150505-4G-ANT\20150505-4G-ANT-E.nsi
 Measurement date/time: 5/5/2015 3:27:46 PM, Filetype: NSI-97

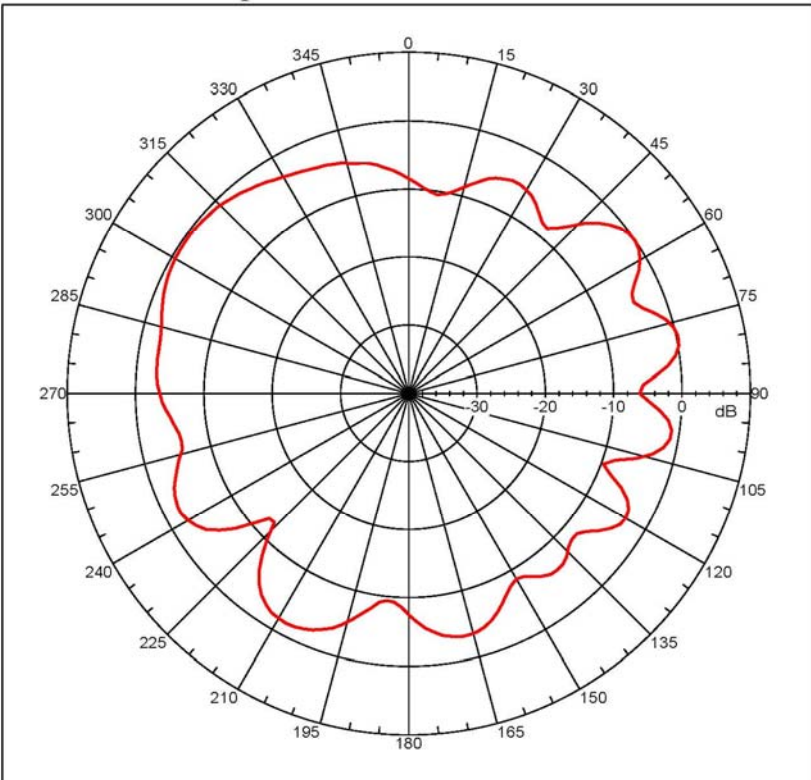
Far-field Cut Analysis:
 Avg value: -6.394 dB
 -3. dB beam width: 11.46 deg
 -6. dB beam width: 15.72 deg
 -10. dB beam width: 21.03 deg
 Left Sidelobe: -0.46 dB at 75.419 deg
 Right Sidelobe: -2.04 dB at 119.665 deg

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 11

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

Far-field amplitude of 20150505-4G-ANT-E.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = 0.2859 dB
 Max far-field (global) = -46.53614 dB, Max far-field (plot) = -46.53629 dB
 Normalization: Reference, Network offset = 0.000 dB
 Hpeak at: 78.000 deg, Vpeak at: 0.000 deg
 Plot centering: On

20150505-4G-ANT-E

NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20150505-4G-ANT\20150505-4G-ANT-E.nsi
 Measurement date/time: 5/5/2015 3:27:46 PM, Filetype: NSI-97

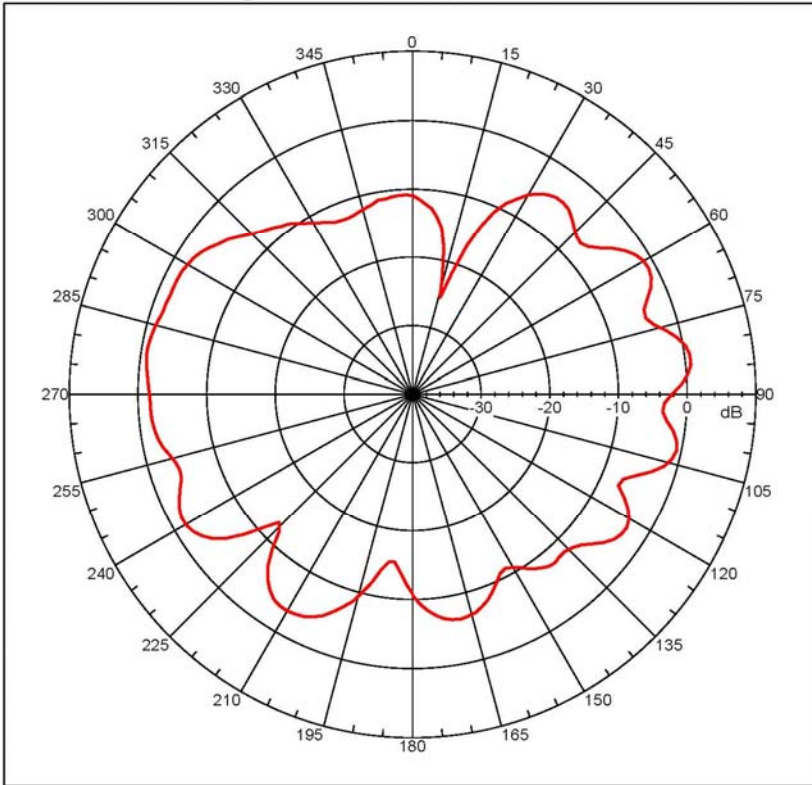
Far-field Cut Analysis:
 Avg value: -4.197 dB
 -3. dB beam width: 13.71 deg
 -6. dB beam width: 44.14 deg
 -10. dB beam width: Not Found
 Left Sidelobe: -0.34 dB at 57.318 deg
 Right Sidelobe: -1.44 dB at 99.553 deg

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 11

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

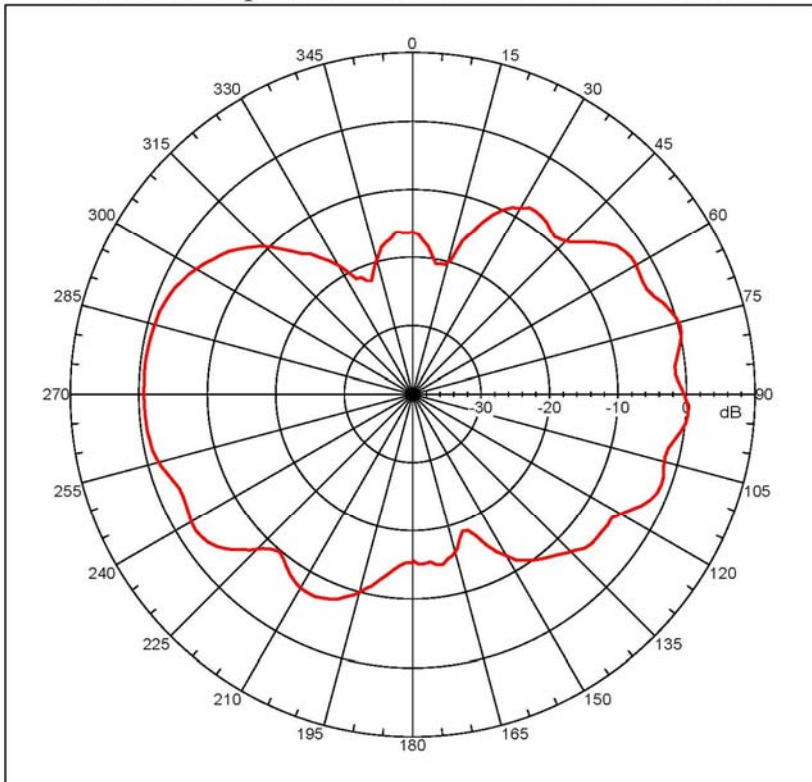
Far-field amplitude of 20150505-4G-ANT-E.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = 0.76964 dBi
 Max far-field (global) = -46.26732 dB, Max far-field (plot) = -46.26748 dB
 Normalization: Reference, Network offset = 0.000 dB
 Hpeak at: 81.99999 deg, Vpeak at: 0.000 deg
 Plot centering: On
 20150505-4G-ANT-E
 NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20150505-4G-ANT\20150505-4G-ANT-E.nsi
 Measurement date/time: 5/5/2015 3:27:46 PM, Filetype: NSI-97
 Far-field Cut Analysis:
 Avg value: -5.412 dB
 -3. dB beam width: 14.51 deg
 -6. dB beam width: 58.03 deg
 -10. dB beam width: 121.10 deg
 Left Sidelobe: -1.83 dB at 63.352 deg
 Right Sidelobe: -1.44 dB at 103.575 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 11
 Beam Frequency Azimuth Elevation Pol

 7 1.900 GHz Azimuth Elevation Single-pol

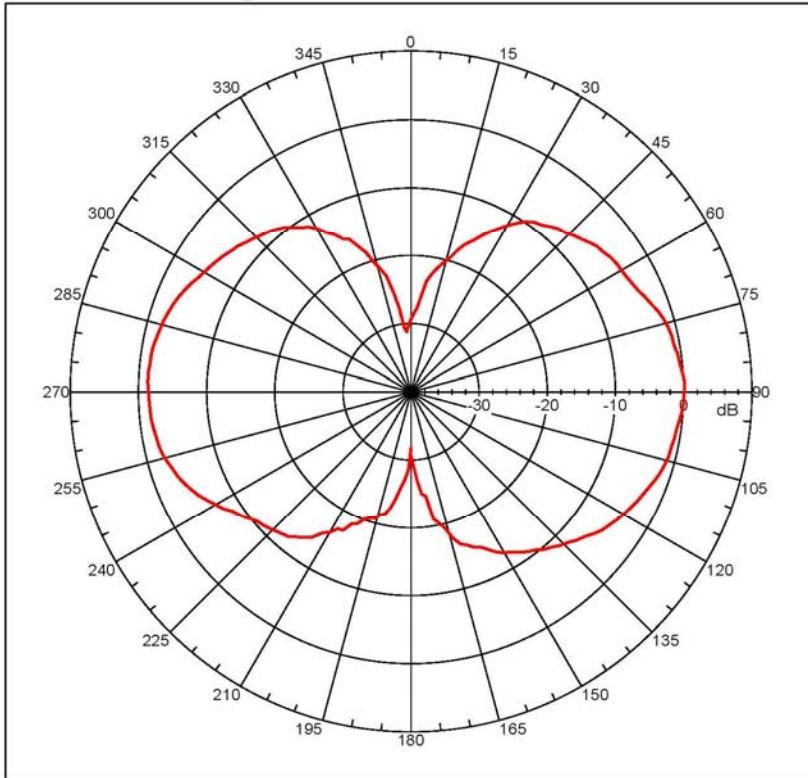
Far-field amplitude of 20150505-4G-ANT-E.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = 0.35536 dBi
 Max far-field (global) = -47.17675 dB, Max far-field (plot) = -47.17688 dB
 Normalization: Reference, Network offset = 0.000 dB
 Hpeak at: 93.99999 deg, Vpeak at: 0.000 deg
 Plot centering: On
 20150505-4G-ANT-E
 NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20150505-4G-ANT\20150505-4G-ANT-E.nsi
 Measurement date/time: 5/5/2015 3:27:46 PM, Filetype: NSI-97
 Far-field Cut Analysis:
 Avg value: -6.112 dB
 -3. dB beam width: 59.78 deg
 -6. dB beam width: 72.39 deg
 -10. dB beam width: 116.84 deg
 Left Sidelobe: -0.04 dB at 77.430 deg
 Right Sidelobe: -15.00 dB at 171.955 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 11
 Beam Frequency Azimuth Elevation Pol

 8 2.170 GHz Azimuth Elevation Single-pol

Far-field amplitude of 20150505-4G-ANT-E.nsi

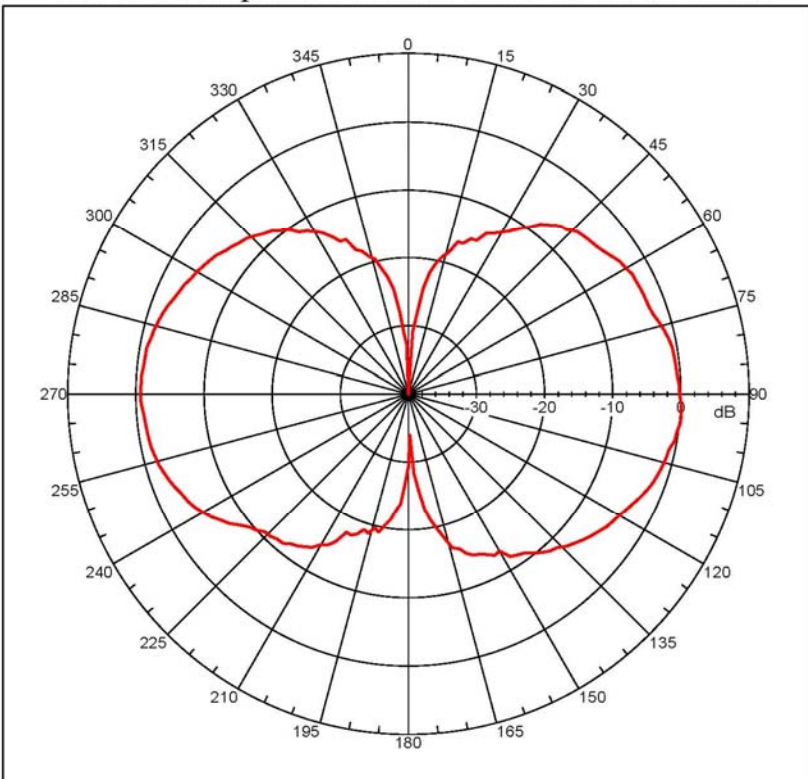


Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = 0.15081 dBi
 Max far-field (global) = -48.85682 dB, Max far-field (plot) = -48.85699 dB
 Normalization: Reference, Network offset = 0.000 dB
 Hpeak at: 87.99999 deg, Vpeak at: 0.000 deg
 Plot centering: On

20150505-4G-ANT-E
 NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20150505-4G-ANT\20150505-4G-ANT-E.nsi
 Measurement date/time: 5/5/2015 3:27:46 PM, Filetype: NSI-97
 Far-field Cut Analysis:
 Avg Value: -7.438 dB
 -3. dB beam width: 45.80 deg
 -6. dB beam width: 77.56 deg
 -10. dB beam width: 107.08 deg
 Left Sidelobe: -1.51 dB at -85.475 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 11
 Beam Frequency Azimuth Elevation Pol
 9 2.400 GHz Azimuth Elevation Single-pol

Far-field amplitude of 20150505-4G-ANT-E.nsi

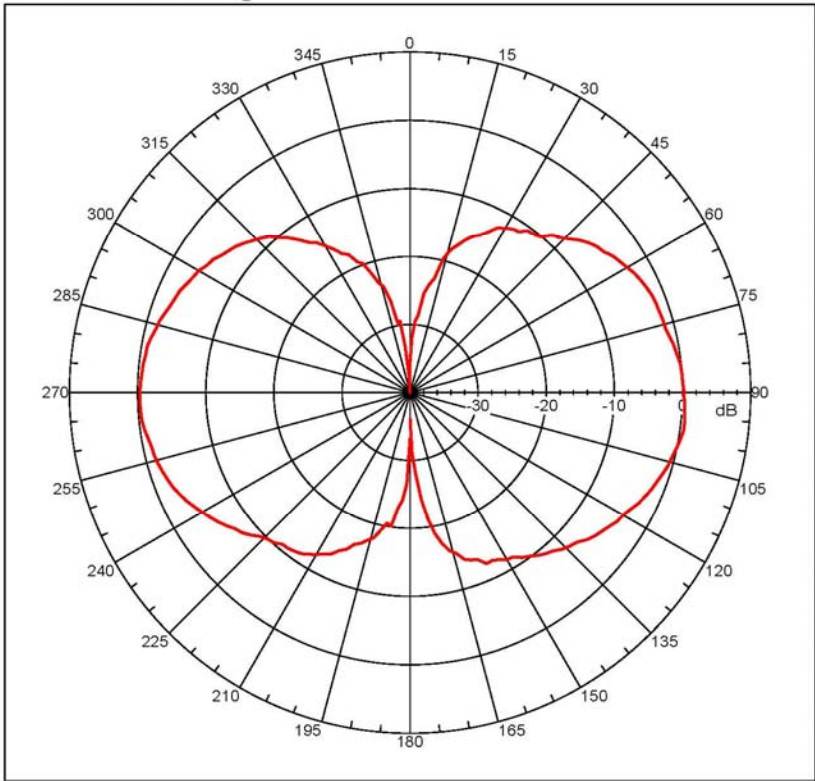


Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = 0.15197 dBi
 Max far-field (global) = -49.98402 dB, Max far-field (plot) = -49.98415 dB
 Normalization: Reference, Network offset = 0.000 dB
 Hpeak at: 93.99999 deg, Vpeak at: 0.000 deg
 Plot centering: On

20150505-4G-ANT-E
 NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20150505-4G-ANT\20150505-4G-ANT-E.nsi
 Measurement date/time: 5/5/2015 3:27:46 PM, Filetype: NSI-97
 Far-field Cut Analysis:
 Avg value: -6.981 dB
 -3. dB beam width: 53.11 deg
 -6. dB beam width: 82.23 deg
 -10. dB beam width: 105.73 deg
 Left Sidelobe: -0.82 dB at -89.497 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 11
 Beam Frequency Azimuth Elevation Pol
 10 2.500 GHz Azimuth Elevation Single-pol

Far-field amplitude of 20150505-4G-ANT-E.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = 0.54845 dBi
 Max far-field (global) = -49.76834 dB, Max far-field (plot) = -49.76834 dB
 Normalization: Reference, Network offset = 0.000 dB
 Hpeak at: 96.000 deg, Vpeak at: 0.000 deg
 Plot centering: on

20150505-4G-ANT-E

NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20150505-4G-ANT\20150505-4G-ANT-E.nsi
 Measurement date/time: 5/5/2015 3:27:46 PM, Filetype: NSI-97

Far-field Cut Analysis:
 Avg value: -6.777 dB
 -2. dB beam width: 51.60 deg
 -6. dB beam width: 76.50 deg
 -10. dB beam width: 101.13 deg
 Left Sidelobe: -29.96 dB at -7.039 deg
 Right Sidelobe: Not Found

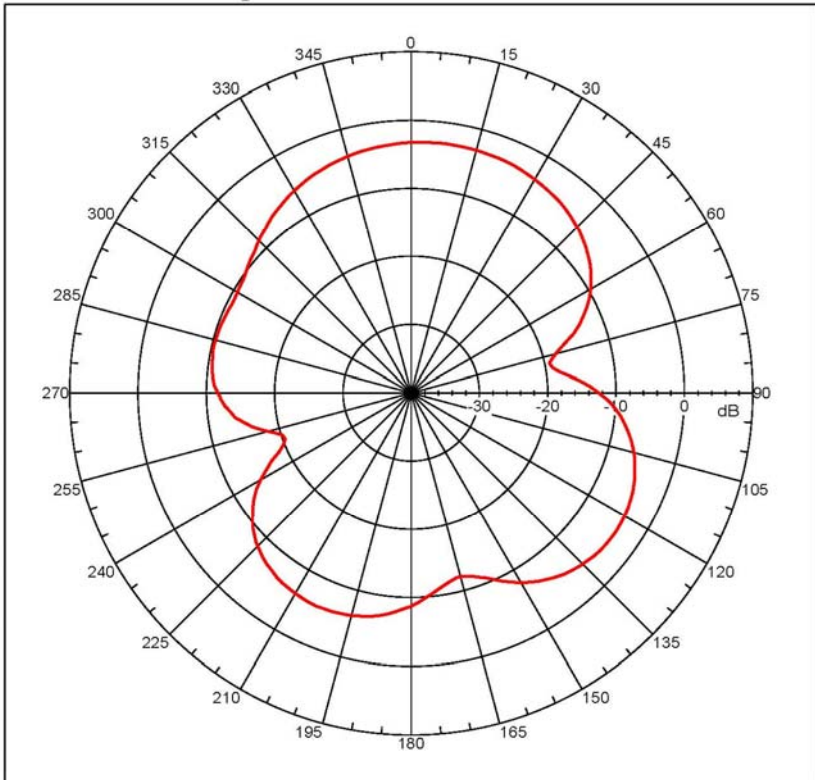
Far-field display setup
 Azimuth (deg)
 Span = 360.00001 deg, Center = 0.000 deg, #pts = 181
 Start = -180.00001 deg, Stop = 180.00001 deg, Delta = 2.000 deg
 Elevation (deg)
 Center = 0.000 deg, #pts = 1

Selected beam(s) 1 of 11

Beam	Frequency	Azimuth	Elevation	Pol
11	2.600 GHz	Azimuth	Elevation	Single-pol

4.2 H-Plane

Far-field amplitude of 20150505-4G-ANT-H.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = -3.12153 dBi
 Max far-field (global) = -45.8698 dB, Max far-field (plot) = -45.8698 dB
 Normalization: Reference, Network offset = 0.000 dB
 Hpeak at: 7.99999 deg, Vpeak at: 0.000 deg
 Plot centering: on

20150505-4G-ANT-H

NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20150505-4G-ANT\20150505-4G-ANT-H.nsi
 Measurement date/time: 5/5/2015 3:18:16 PM, Filetype: NSI-97

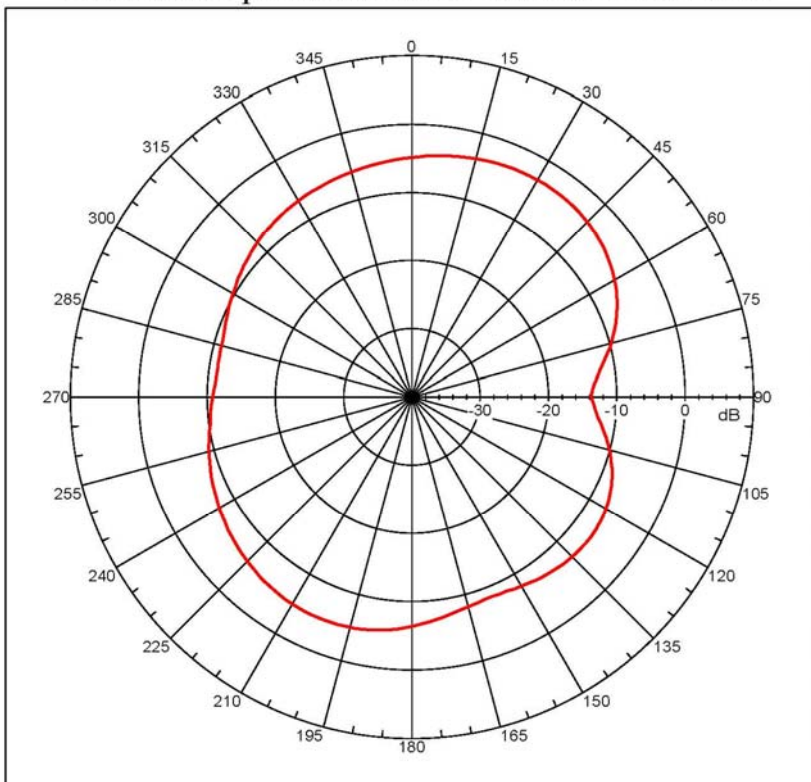
Far-field Cut Analysis:
 Avg value: -7.588 dB
 -2. dB beam width: 80.03 deg
 -6. dB beam width: 106.95 deg
 -10. dB beam width: 153.57 deg
 Left Sidelobe: -2.66 dB at -155.866 deg
 Right Sidelobe: -0.68 dB at 125.698 deg

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 11

Beam	Frequency	Azimuth	Elevation	Pol
1	0.806 GHz	Azimuth	Elevation	Single-pol

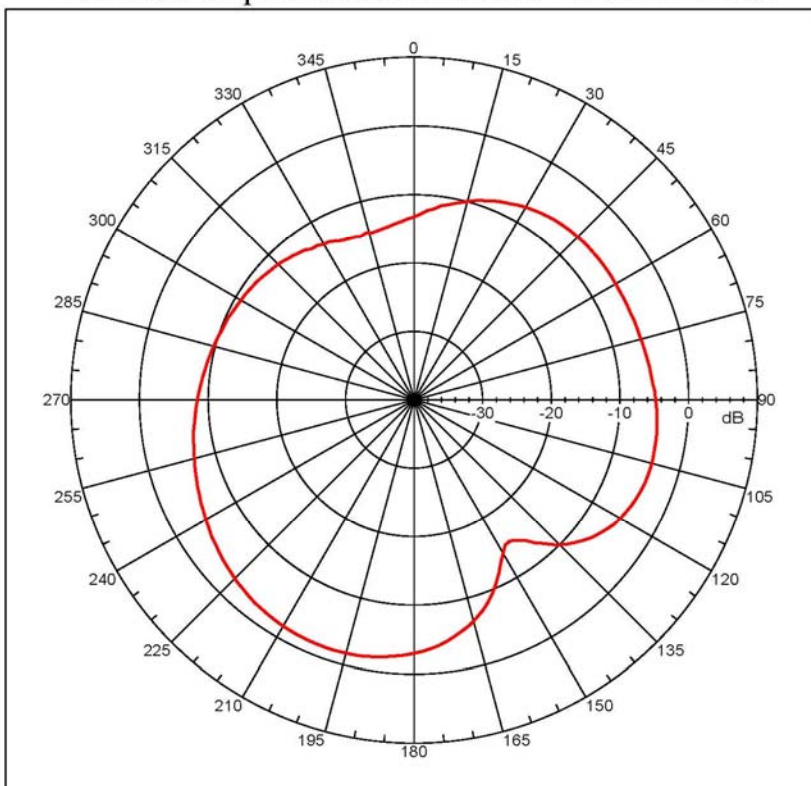
Far-field amplitude of 20150505-4G-ANT-H.nsi



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Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = -3.21122 dB
Max far-field (global) = -44.7709 dB, Max far-field (plot) =
-44.77091 dB
Normalization: Reference, Network offset = 0.000 dB
Hpeak at: 31.99999 deg, Vpeak at: 0.000 deg
Plot centering: On
20150505-4G-ANT-H
NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20
150505-4G-ANT\20150505-4G-ANT-H.nsi
Measurement date/time: 5/5/2015 3:18:16 PM, Filetype: NSI-97
Far-field Cut Analysis:
Avg value: -6.998 dB
-3. dB beam width: 83.86 deg
-6. dB beam width: 129.37 deg
-10. dB beam width: Not Found
Left Sidelobe: -1.63 dB at -155.866 deg
Right Sidelobe: -3.52 dB at 131.732 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 11
Beam Frequency Azimuth Elevation Pol
----
3 0.900 GHz Azimuth Elevation Single-pol
    
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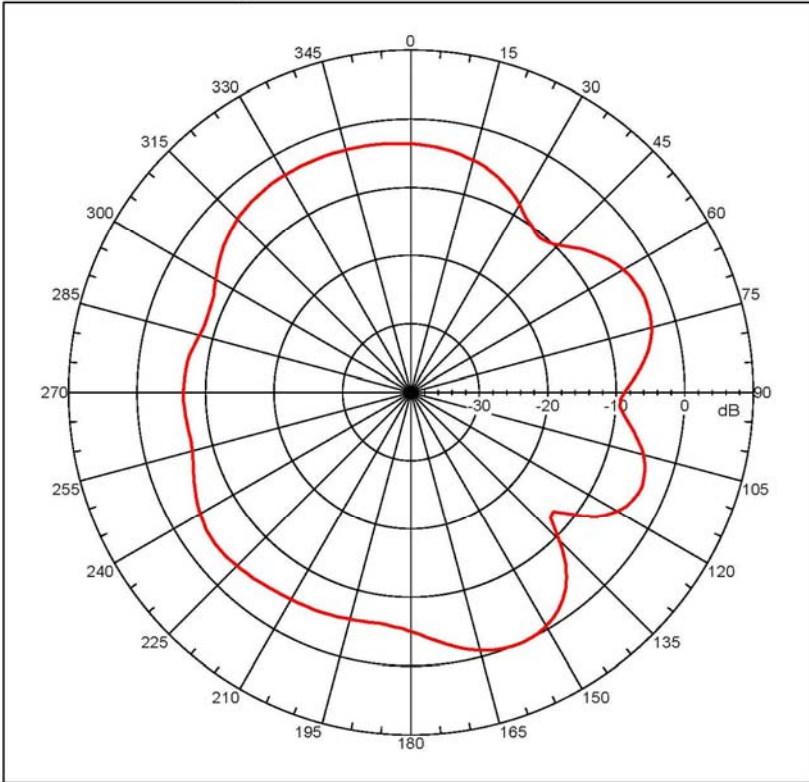
Far-field amplitude of 20150505-4G-ANT-H.nsi



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Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = -1.60993 dB
Max far-field (global) = -44.2396 dB, Max far-field (plot) =
-44.23964 dB
Normalization: Reference, Network offset = 0.000 dB
Hpeak at: -160.00001 deg, Vpeak at: 0.000 deg
Plot centering: On
20150505-4G-ANT-H
NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20
150505-4G-ANT\20150505-4G-ANT-H.nsi
Measurement date/time: 5/5/2015 3:18:16 PM, Filetype: NSI-97
Far-field Cut Analysis:
Avg value: -6.895 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: -4.58 dB at 49.274 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 11
Beam Frequency Azimuth Elevation Pol
----
4 0.960 GHz Azimuth Elevation Single-pol
    
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Far-field amplitude of 20150505-4G-ANT-H.nsi

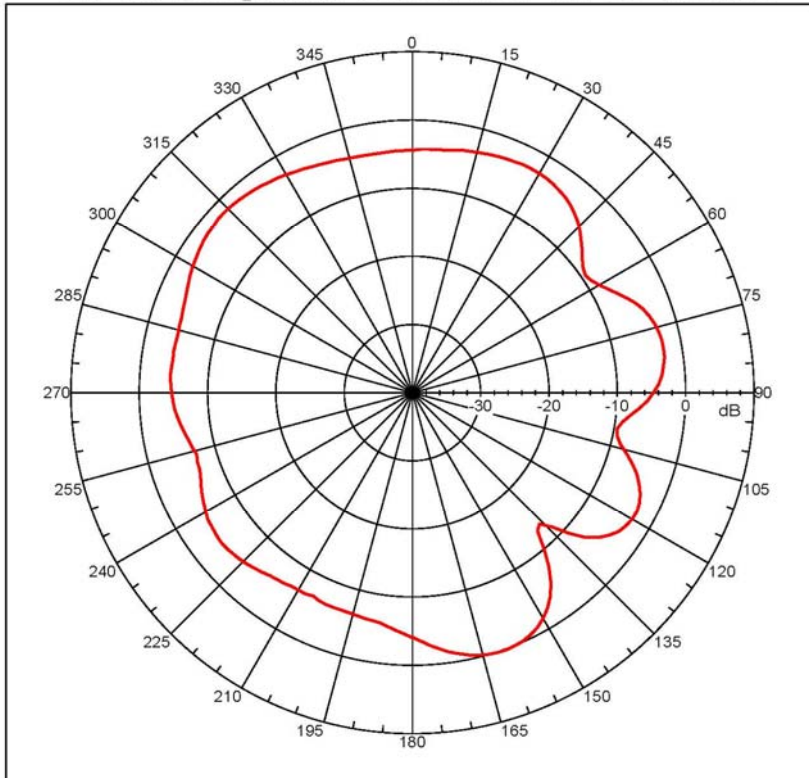


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Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = 0.06102 dBi
Max far-field (global) = -45.13157 dB, Max far-field (plot) =
-45.13164 dB
Normalization: Reference, Network offset = 0.000 dB
Hpeak at: 155.99999 deg, Vpeak at: 0.000 deg
Plot centering: On

20150505-4G-ANT-H
NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20
150505-4G-ANT\20150505-4G-ANT-H.nsi
Measurement date/time: 5/5/2015 3:18:16 PM, Filetype: NSI-97
Far-field Cut Analysis:
Avg value: -4.993 dB
-3. dB beam width: 29.80 deg
-6. dB beam width: Not Found
-10. dB beam width: Not Found
Left Sidelobe: -3.60 dB at 113.631 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 11
Beam Frequency Azimuth Elevation Pol
-----
5 1.710 GHz Azimuth Elevation Single-pol
    
```

Far-field amplitude of 20150505-4G-ANT-H.nsi

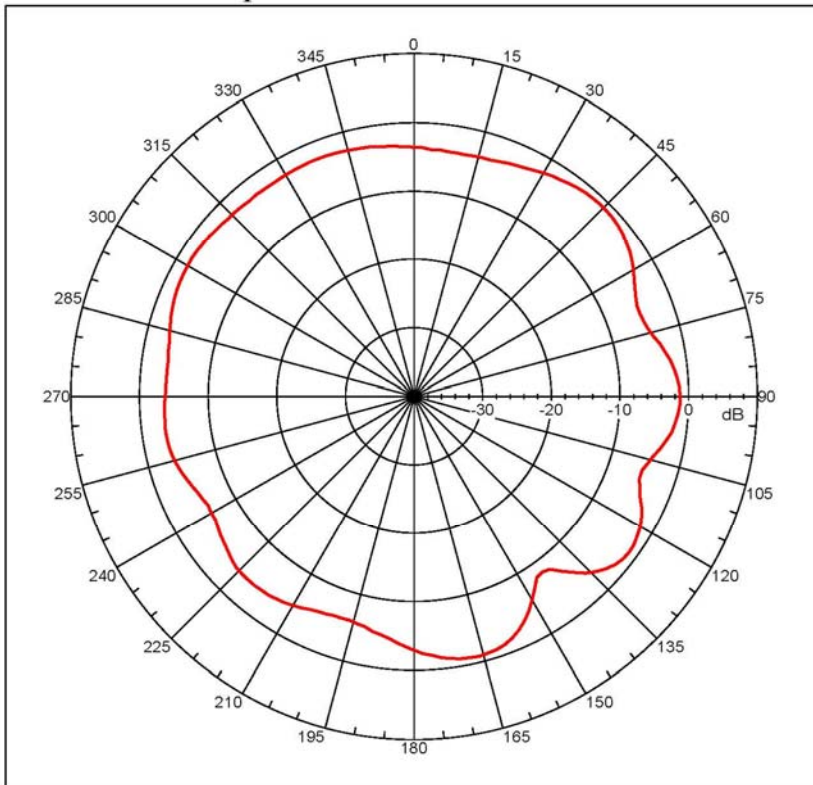


```

Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = 0.14224 dBi
Max far-field (global) = -46.6797 dB, Max far-field (plot) =
-46.67979 dB
Normalization: Reference, Network offset = 0.000 dB
Hpeak at: 160.000 deg, Vpeak at: 0.000 deg
Plot centering: On

20150505-4G-ANT-H
NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20
150505-4G-ANT\20150505-4G-ANT-H.nsi
Measurement date/time: 5/5/2015 3:18:16 PM, Filetype: NSI-97
Far-field Cut Analysis:
Avg value: -4.365 dB
-3. dB beam width: Not Found
-6. dB beam width: Not Found
-10. dB beam width: Not Found
Left Sidelobe: -2.94 dB at 119.665 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 11
Beam Frequency Azimuth Elevation Pol
-----
6 1.800 GHz Azimuth Elevation Single-pol
    
```

Far-field amplitude of 20150505-4G-ANT-H.nsi

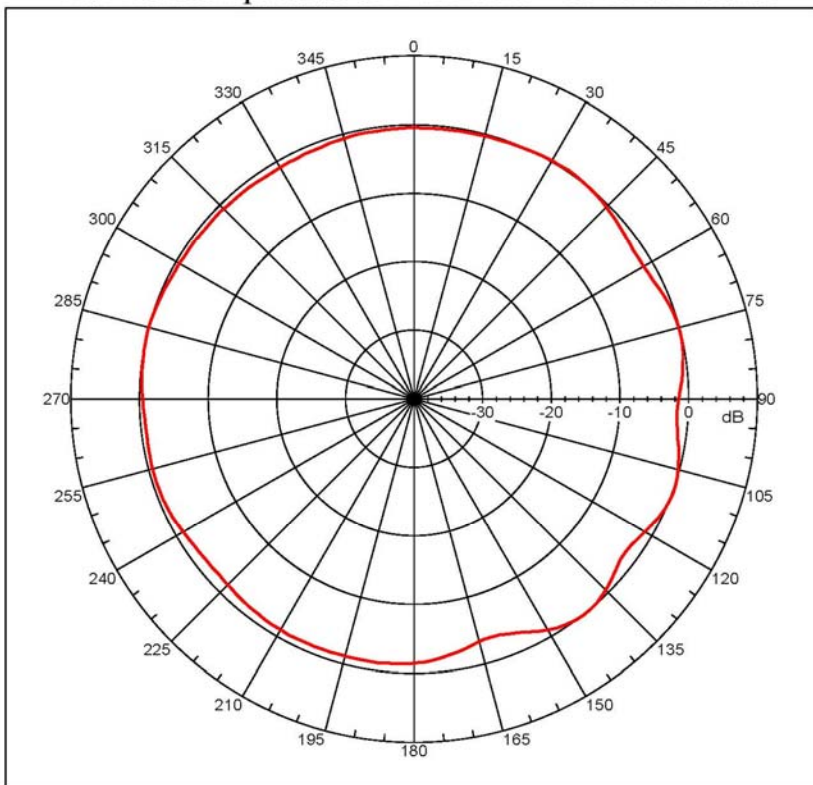


Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = -0.88519 dbi
 Max far-field (global) = -47.92215 dB, Max far-field (plot) = -47.92224 dB
 Normalization: Reference, Network offset = 0.000 dB
 Hpeak at: 165.99999 deg, Vpeak at: 0.000 deg
 Plot centering: On

20150505-4G-ANT-H
 NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20150505-4G-ANT\20150505-4G-ANT-H.nsi
 Measurement date/time: 5/5/2015 3:18:16 PM, Filetype: NSI-97
 Far-field Cut Analysis:
 Avg value: -3.237 dB
 -3. dB beam width: Not Found
 -6. dB beam width: Not Found
 -10. dB beam width: Not Found
 Left sidelobe: -0.37 dB at 127.710 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 11

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

Far-field amplitude of 20150505-4G-ANT-H.nsi

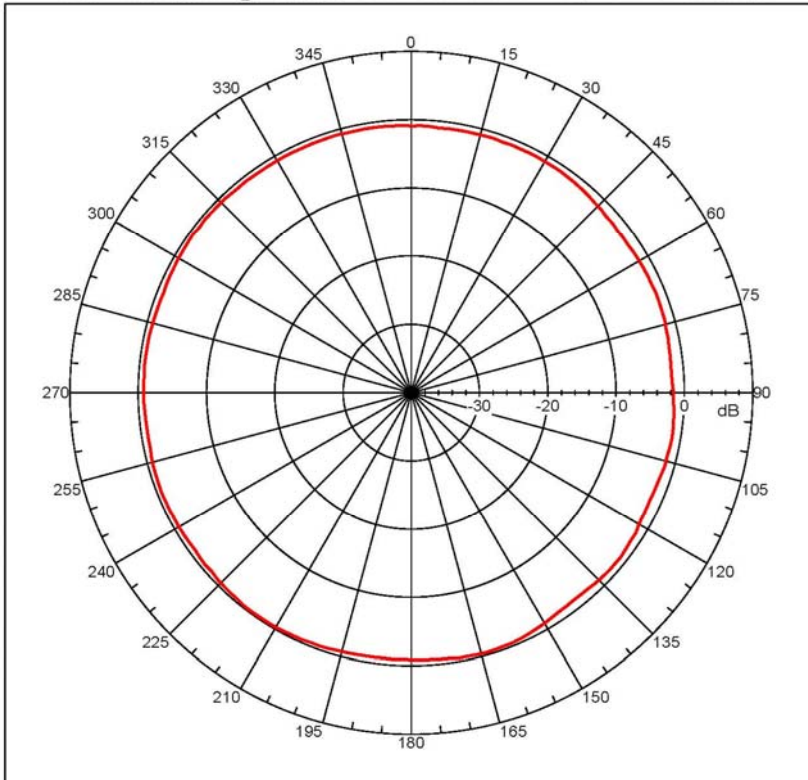


Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = 0.23595 dbi
 Max far-field (global) = -47.29616 dB, Max far-field (plot) = -47.29618 dB
 Normalization: Reference, Network offset = 0.000 dB
 Hpeak at: 33.99999 deg, Vpeak at: 0.000 deg
 Plot centering: On

20150505-4G-ANT-H
 NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20150505-4G-ANT\20150505-4G-ANT-H.nsi
 Measurement date/time: 5/5/2015 3:18:16 PM, Filetype: NSI-97
 Far-field Cut Analysis:
 Avg value: -0.641 dB
 -3. dB beam width: Not Found
 -6. dB beam width: Not Found
 -10. dB beam width: Not Found
 Left sidelobe: -0.22 dB at -15.419 deg
 Right sidelobe: -0.31 dB at 77.430 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 11

Beam	Frequency	Azimuth	Elevation	Pol
8	2.170 GHz	Azimuth	Elevation	Single-pol

Far-field amplitude of 20150505-4G-ANT-H.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = -0.29129 dBi
 Max far-field (global) = -49.29892 dB, Max far-field (plot) = -49.29902 dB
 Normalization: Reference, Network offset = 0.000 dB
 Hpeak at: -142.000 deg, Vpeak at: 0.000 deg
 Plot centering: On

20150505-4G-ANT-H

NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20150505-4G-ANT\20150505-4G-ANT-H.nsi
 Measurement date/time: 5/5/2015 3:18:16 PM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: -0.934 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: -0.10 dB at 165.922 deg

Far-field display setup

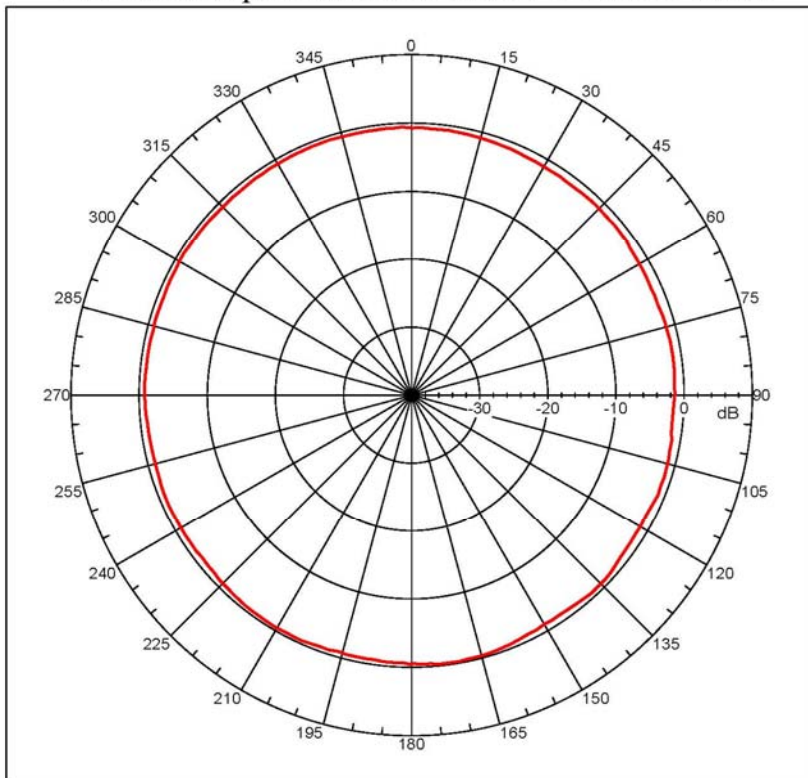
Span = 360.00001 deg, Center = 0.000 deg, #pts = 181
 Start = -180.00001 deg, Stop = 180.00001 deg, Delta = 2.000 deg

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

Selected beam(s) 1 of 11

Beam	Frequency	Azimuth	Elevation	Pol
9	2.400 GHz	Azimuth	Elevation	Single-pol

Far-field amplitude of 20150505-4G-ANT-H.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = -0.2555 dBi
 Max far-field (global) = -50.39149 dB, Max far-field (plot) = -50.39157 dB
 Normalization: Reference, Network offset = 0.000 dB
 Hpeak at: 169.99999 deg, Vpeak at: 0.000 deg
 Plot centering: On

20150505-4G-ANT-H

NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20150505-4G-ANT\20150505-4G-ANT-H.nsi
 Measurement date/time: 5/5/2015 3:18:16 PM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: -0.896 dB
 -3. dB beam width: Not Found
 -6. dB beam width: Not Found
 -10. dB beam width: Not Found
 Left Sidelobe: -0.28 dB at -141.788 deg
 Right Sidelobe: Not Found

Far-field display setup

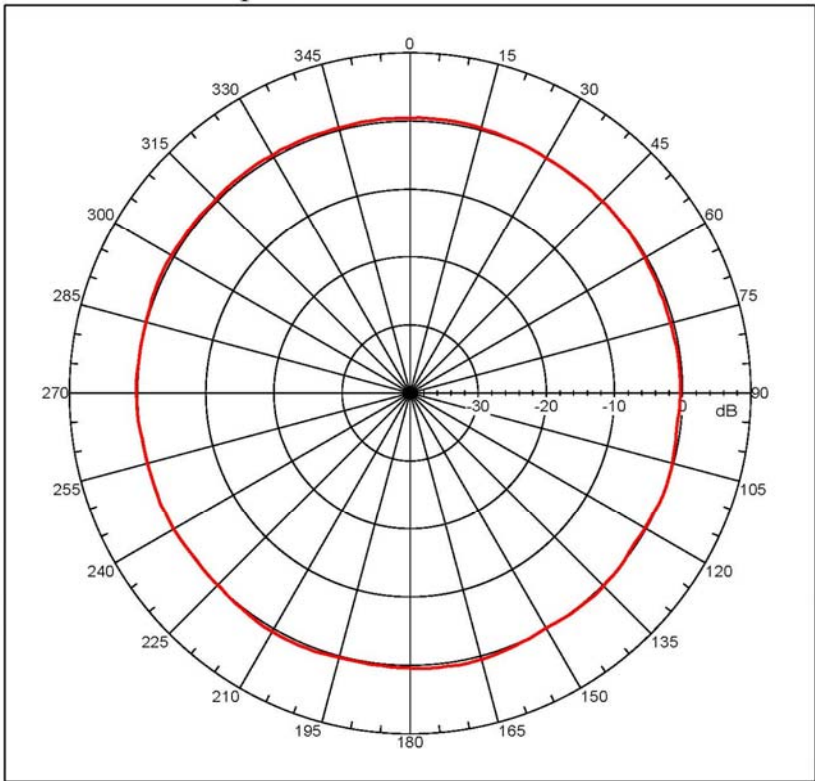
Span = 360.00001 deg, Center = 0.000 deg, #pts = 181
 Start = -180.00001 deg, Stop = 180.00001 deg, Delta = 2.000 deg

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

Selected beam(s) 1 of 11

Beam	Frequency	Azimuth	Elevation	Pol
10	2.500 GHz	Azimuth	Elevation	Single-pol

Far-field amplitude of 20150505-4G-ANT-H.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = 0.59265 dBi
 Max far-field (global) = -49.72314 dB, Max far-field (plot) =
 -49.72315 dB
 Normalization: Reference, Network offset = 0.000 dB
 Mpeak at: 169.29939 deg, Vpeak at: 0.000 deg
 Plot centering: On

20150505-4G-ANT-H

NI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20150505-4G-ANT\20150505-4G-ANT-H.nsi

Measurement date/time: 5/5/2015 3:18:16 PM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: 0.116 dB
 -3. dB beam width: Not Found
 -6. dB beam width: Not Found
 -10. dB beam width: Not Found
 Left Sidelobe: -0.12 dB at 9.050 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

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

Selected beam(s) 1 of 11

Beam	Frequency	Azimuth	Elevation	Pol
11	2.600 GHz	Azimuth	Elevation	Single-pol