

GSM/3G/LTE ANTENNA

MODEL: TH-88E



1. GENERAL DESCRIPTION

Model No
TH-88E-N(M)

1.1 Electrical Properties

Parameter	Description
Frequency Band	806~960/1710~2170/2400~2700 MHz
Nominal Impedance	50 ohm
Polarization	Vertical
V.S.W.R	3.0:1

1.2 Mechanical Properties

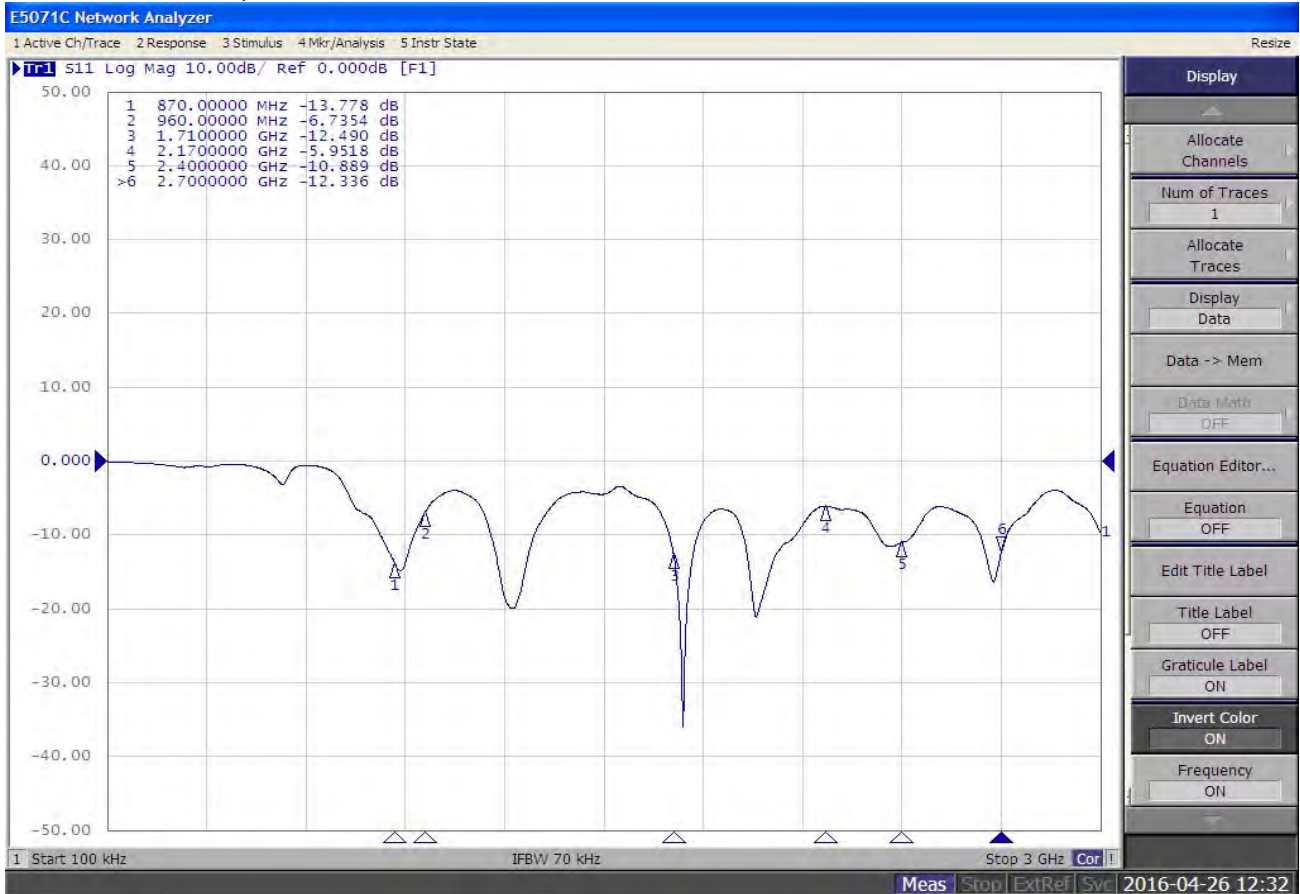
Parameter	Description
Antenna Type	Base Antenna
Antenna Cover	Fiber
Connector Type	N 180°(Male)
Antenna Dimensions	600mm±5
Antenna Color	Black
Operating Temperature Range	-20°C~+60°C
Storage Temperature Range	-30°C~+70°C

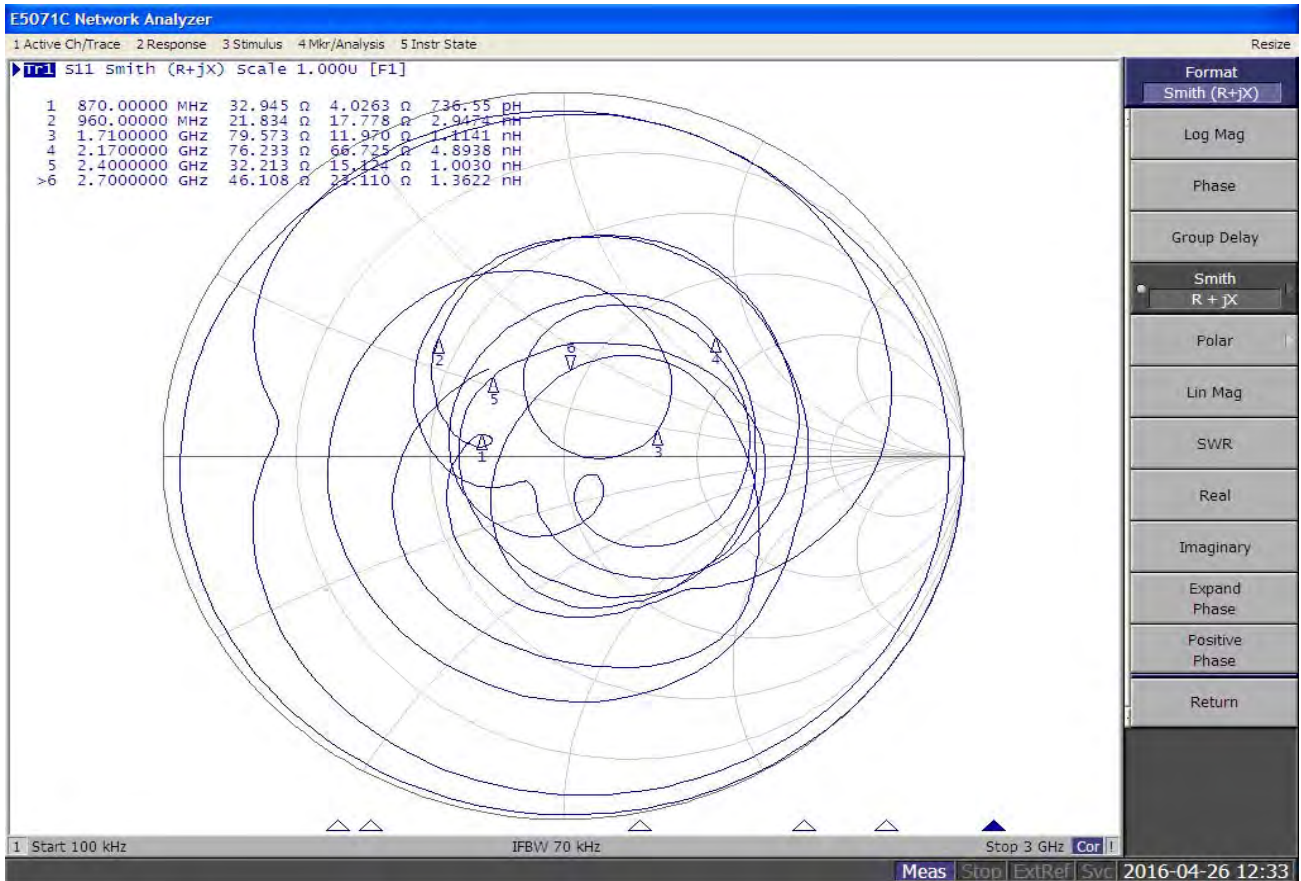
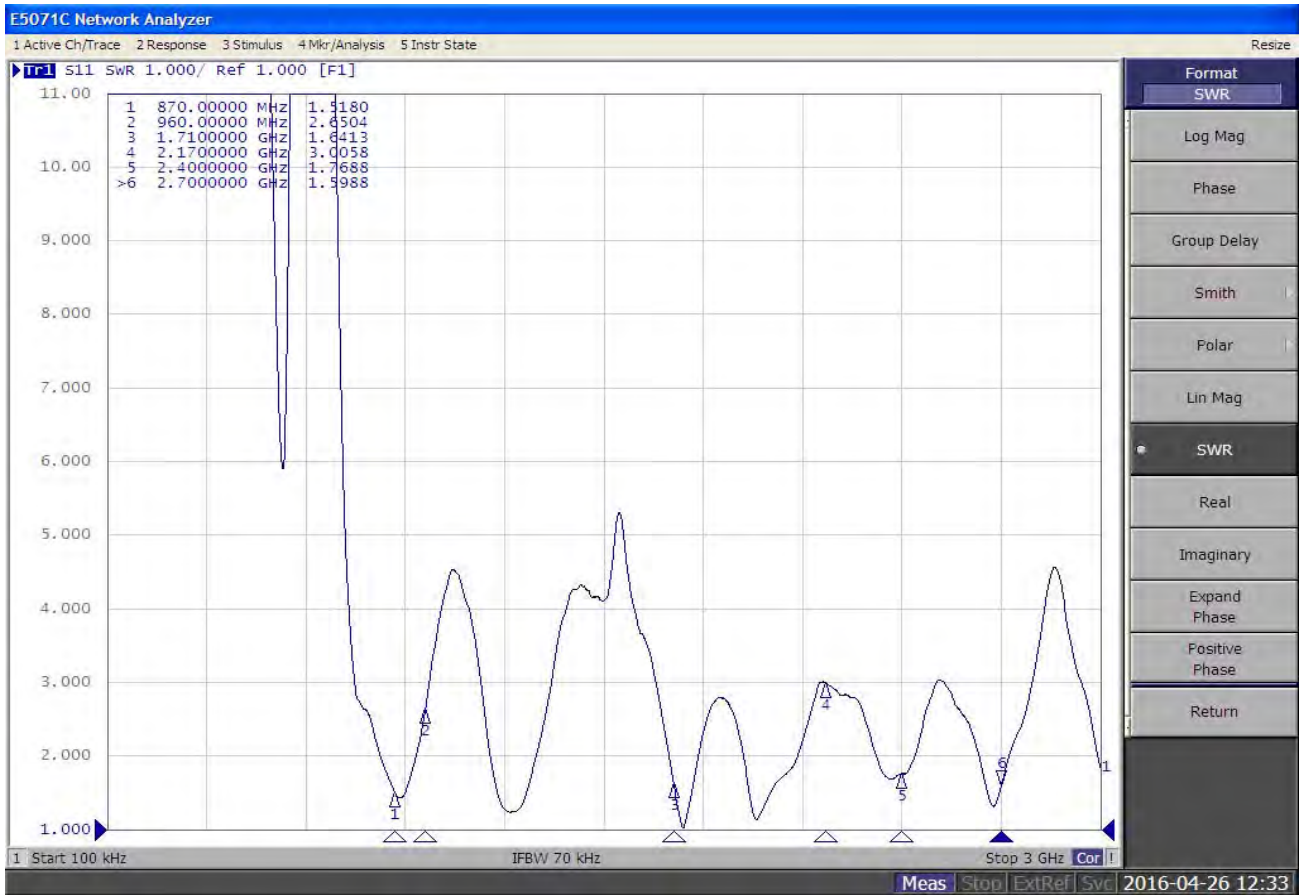
2. Appearance

NO.	NAME	Q, TY
01	Cap	01
02	Tube aluminium	01
03	Fixed upper	01
04	Spring coil	01
05	Fixed beneath	01
06	N 180° (Male)	01
07	Hexagonal nut	01

 Third angle projection	CUSTOMER'S	MODEL	PARTS NUMBER	FREQUENCY	UNIT	SCALE	DATE	VERSION
				870-960/1710-2170/2400-2700MHz	M/M		20160426	1
	TOLERANCE	X. XX±0. 15	NAME	PARTS NUMBER	APPROVED	CHECKED	DRAWING	DESIGNED
SURFACE ROUGHNESS	$\frac{S}{\nabla}$	APPEARANCE						

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

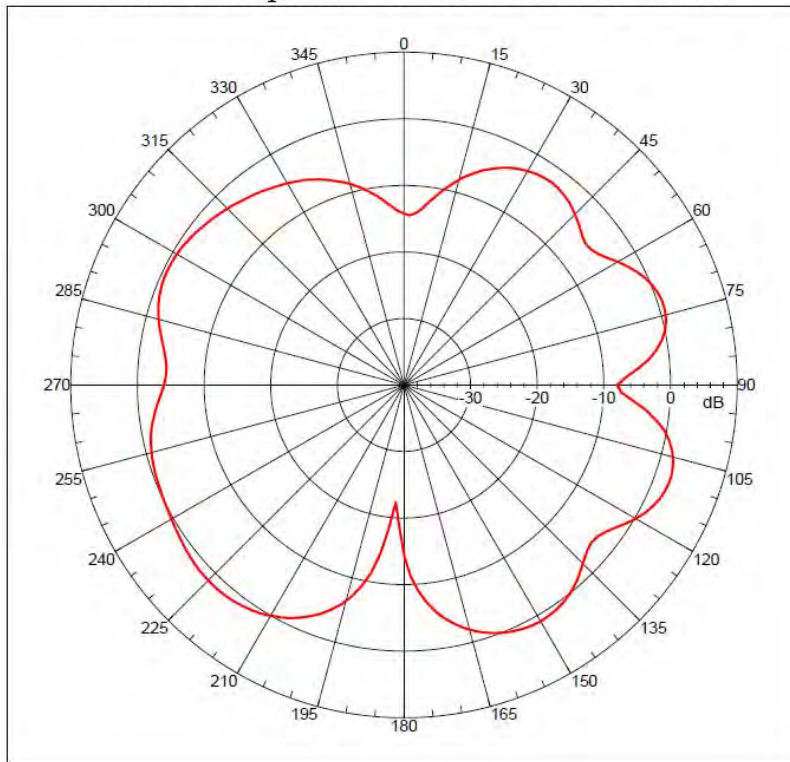




4. 2D Pattern

4.1 E-Plane

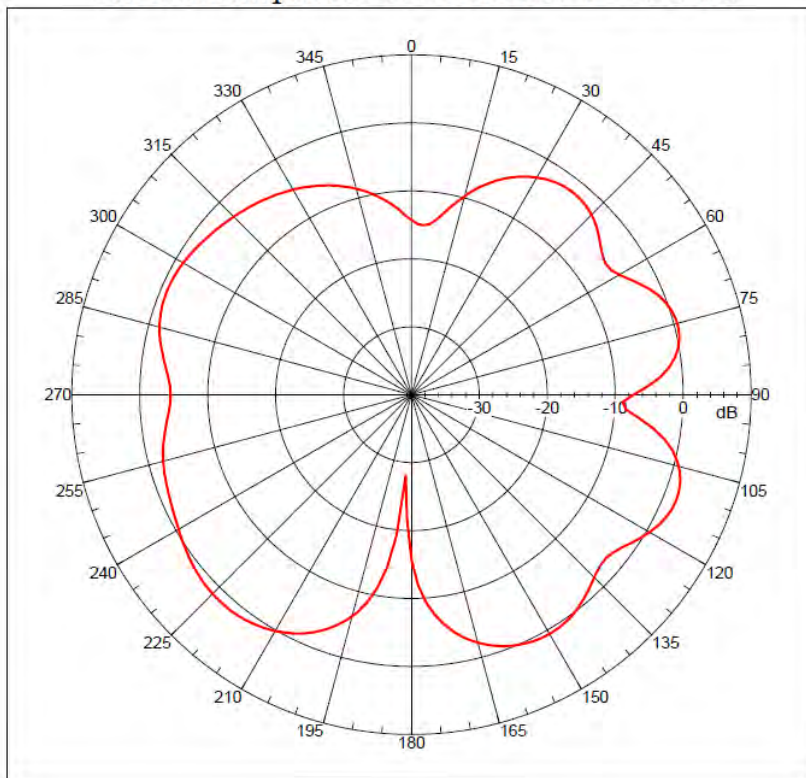
Far-field amplitude of 20160422-4G-2-E.nsi



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Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = 2.41754 dBi
Max far-field (global) = -40.32073 dB, Max far-field (plot) =
-40.32073 dB
Normalization: Reference, Network offset = 0.000 dB
Peak at: 109.99999 deg, Vpeak at: 0.000 deg
Plot centering: On
20160422-4G-2-E
NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20
160422-4G-2\20160422-4G-2-E.nsi
Measurement date/time: 4/22/2016 4:22:09 PM, Filetype: NSI-97
Far-field Cut Analysis:
Avg value: -2.556 dB
-3 dB beam width: 22.13 deg
-6 dB beam width: 73.18 deg
-10 dB beam width: 83.67 deg
Left Sidelobe: -1.65 dB at 73.408 deg
Right Sidelobe: -1.45 dB at 181.944 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 13
Beam Frequency Azimuth Elevation Pol
----
1 0.806 GHz Azimuth Elevation Single-pol
    
```

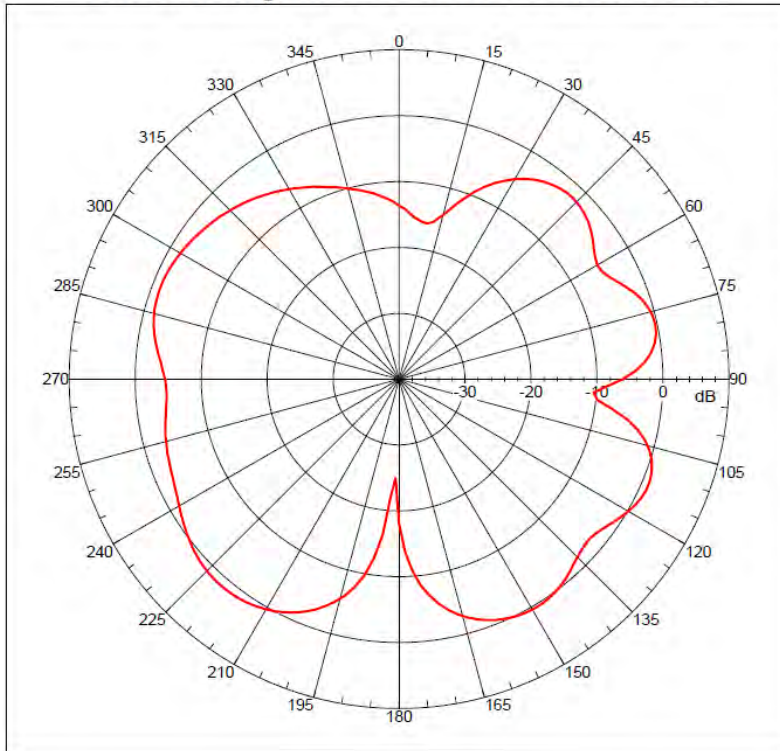
Far-field amplitude of 20160422-4G-2-E.nsi



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Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = 1.95038 dBi
Max far-field (global) = -40.19981 dB, Max far-field (plot) =
-40.19981 dB
Normalization: Reference, Network offset = 0.000 dB
Peak at: 181.99998 deg, Vpeak at: 0.000 deg
Plot centering: On
20160422-4G-2-E
NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20
160422-4G-2\20160422-4G-2-E.nsi
Measurement date/time: 4/22/2016 4:22:09 PM, Filetype: NSI-97
Far-field Cut Analysis:
Avg value: -2.517 dB
-3 dB beam width: 22.75 deg
-6 dB beam width: 71.86 deg
-10 dB beam width: 80.75 deg
Left Sidelobe: -1.45 dB at 77.490 deg
Right Sidelobe: -1.30 dB at 181.944 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 13
Beam Frequency Azimuth Elevation Pol
----
2 0.824 GHz Azimuth Elevation Single-pol
    
```

Far-field amplitude of 20160422-4G-2-E.nsi



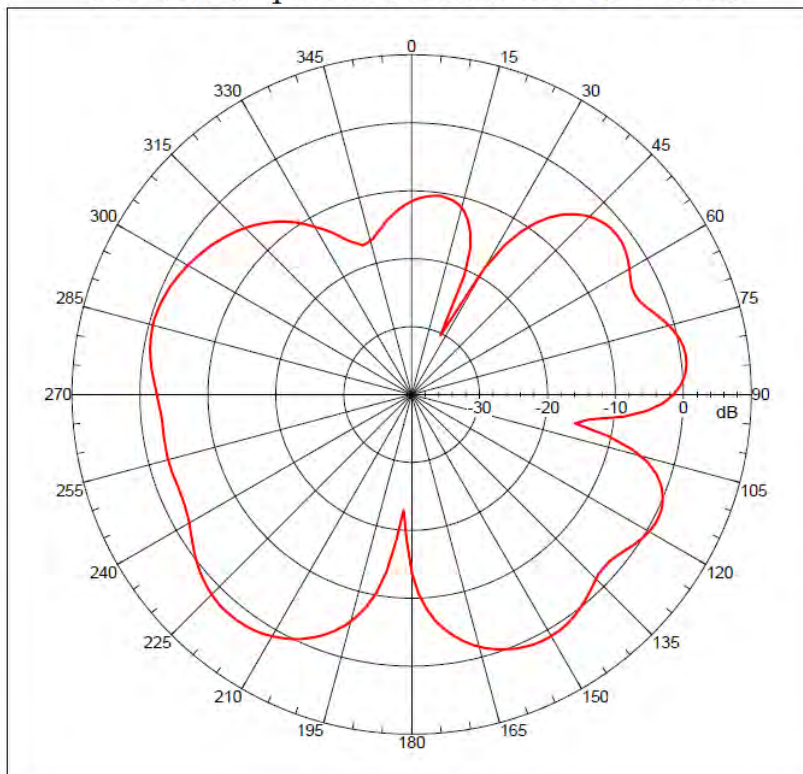
```

Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = 33590 dB
Max far-field (global) = -40.17018 dB, Max far-field (plot) =
-40.17018 dB
Normalization: Reference, Network offset = 0.000 dB
Upeak at: -140.000 deg, Upeak at: 0.000 deg
Plot centering: On

20160422-4G-2-E
NSI2000 V4.0.104, Filename:C:\Documents and Settings\NSI\Desktop\20
160422-4G-2\20160422-4G-2-E.nsi
Measurement date/time: 4/22/2016 4:22:09 PM, Filetype: NSI-97
Far-field Cut Analysis:
Avg value: -3.381 dB
-3 dB beam width: 97.90 deg
-6 dB beam width: 99.10 deg
-10 dB beam width: 146.11 deg
Left Sidelobe: Not Found
Right Sidelobe: -2.61 dB at -67.374 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 13
Beam Frequency Azimuth Elevation Pol
----
1 0.900 GHz Azimuth Elevation Single-pol

```

Far-field amplitude of 20160422-4G-2-E.nsi



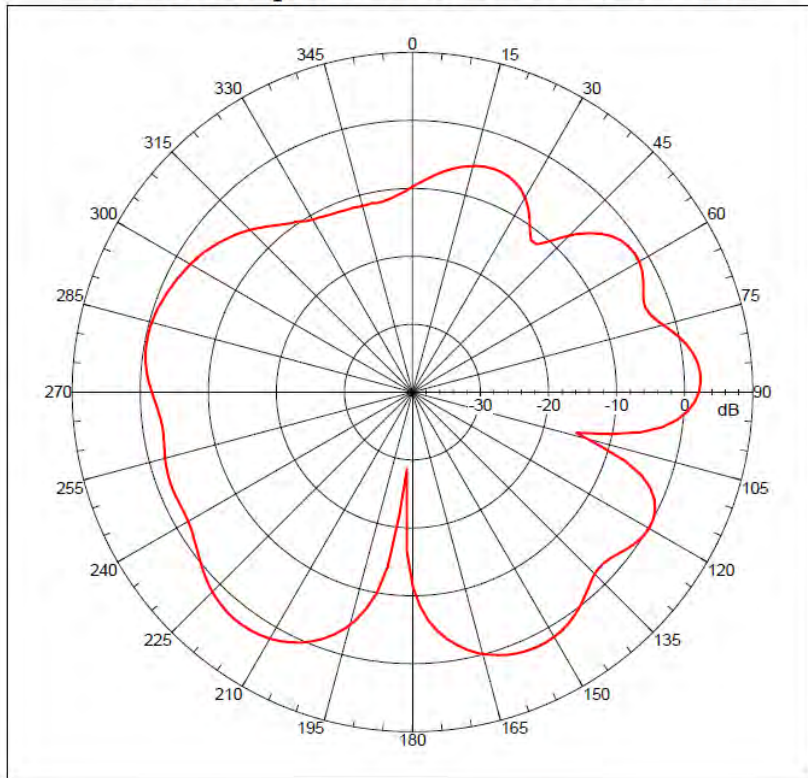
```

Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = 23020 dB
Max far-field (global) = -39.52687 dB, Max far-field (plot) =
-39.52689 dB
Normalization: Reference, Network offset = 0.000 dB
Upeak at: -142.000 deg, Upeak at: 0.000 deg
Plot centering: On

20160422-4G-2-E
NSI2000 V4.0.104, Filename:C:\Documents and Settings\NSI\Desktop\20
160422-4G-2\20160422-4G-2-E.nsi
Measurement date/time: 4/22/2016 4:22:09 PM, Filetype: NSI-97
Far-field Cut Analysis:
Avg value: -2.488 dB
-3 dB beam width: 92.61 deg
-6 dB beam width: 113.16 deg
-10 dB beam width: 131.15 deg
Left Sidelobe: Not Found
Right Sidelobe: -2.99 dB at -73.408 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 13
Beam Frequency Azimuth Elevation Pol
----
4 0.900 GHz Azimuth Elevation Single-pol

```

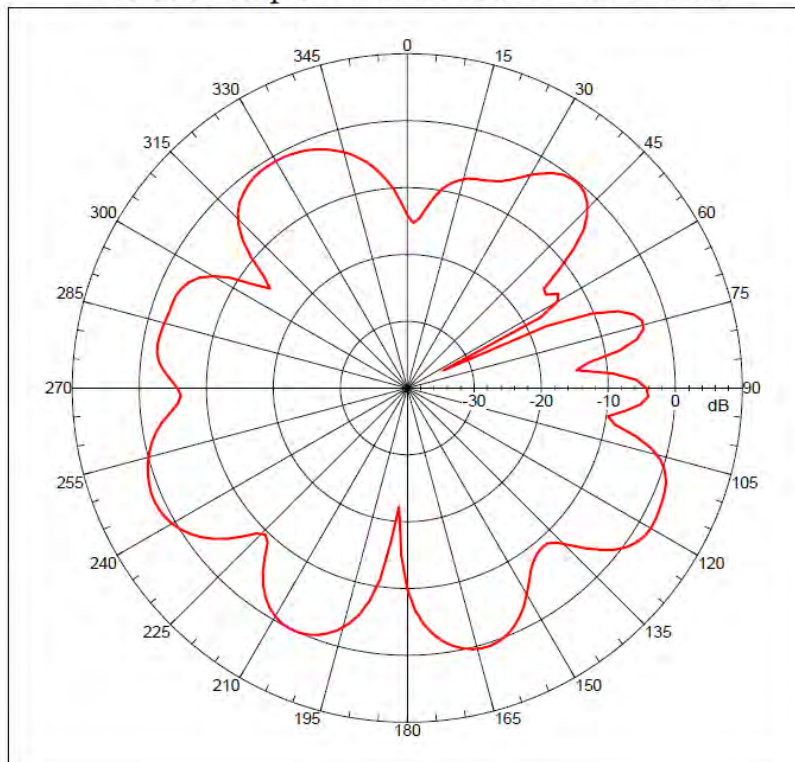
Far-field amplitude of 20160422-4G-2-E.nsi



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Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = 2.89409 dBi
Max far-field (global) = -40.19588 dB, Max far-field (plot) =
-40.19589 dB
Normalization: Reference, Network offset = 0.000 dB
Upeak at: -144.000 deg, Upeak at: 0.000 deg
Plot centering: On
20160422-4G-2-E
NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20
160422-4G-2\20160422-4G-2-E.nsi
Measurement date/time: 4/22/2016 4:22:09 PM, Filetype: NSI-97
Far-field Cut Analysis:
Avg value: -2.858 dB
-3 dB beam width: 127.48 deg
-6 dB beam width: 110.07 deg
-10 dB beam width: 127.48 deg
Left Sidelobe: Not Found
Right Sidelobe: -2.70 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 13
Beam Frequency Azimuth Elevation Pol
-----
5 0.960 GHz Azimuth Elevation Single-pol
    
```

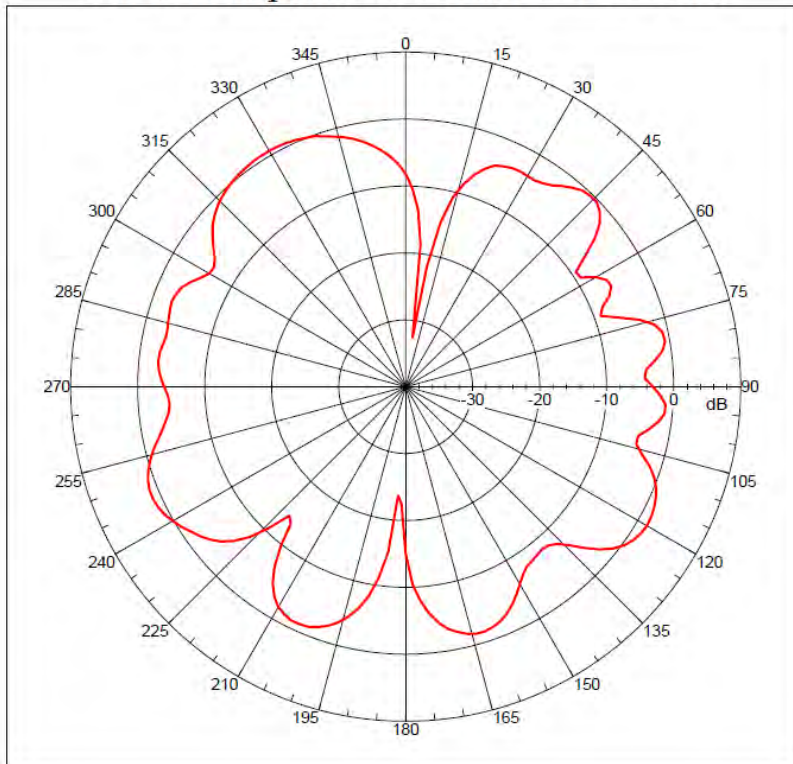
Far-field amplitude of 20160422-4G-2-E.nsi



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Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = 1.93602 dBi
Max far-field (global) = -43.23657 dB, Max far-field (plot) =
-43.23662 dB
Normalization: Reference, Network offset = 0.000 dB
Upeak at: 119.8988 deg, Upeak at: 0.000 deg
Plot centering: On
20160422-4G-2-E
NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20
160422-4G-2\20160422-4G-2-E.nsi
Measurement date/time: 4/22/2016 4:22:09 PM, Filetype: NSI-97
Far-field Cut Analysis:
Avg value: -3.712 dB
-3 dB beam width: 22.98 deg
-6 dB beam width: 29.28 deg
-10 dB beam width: 36.40 deg
Left Sidelobe: -5.89 dB at 58.920 deg
Right Sidelobe: -1.46 dB at 169.511 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 13
Beam Frequency Azimuth Elevation Pol
-----
6 1.710 GHz Azimuth Elevation Single-pol
    
```

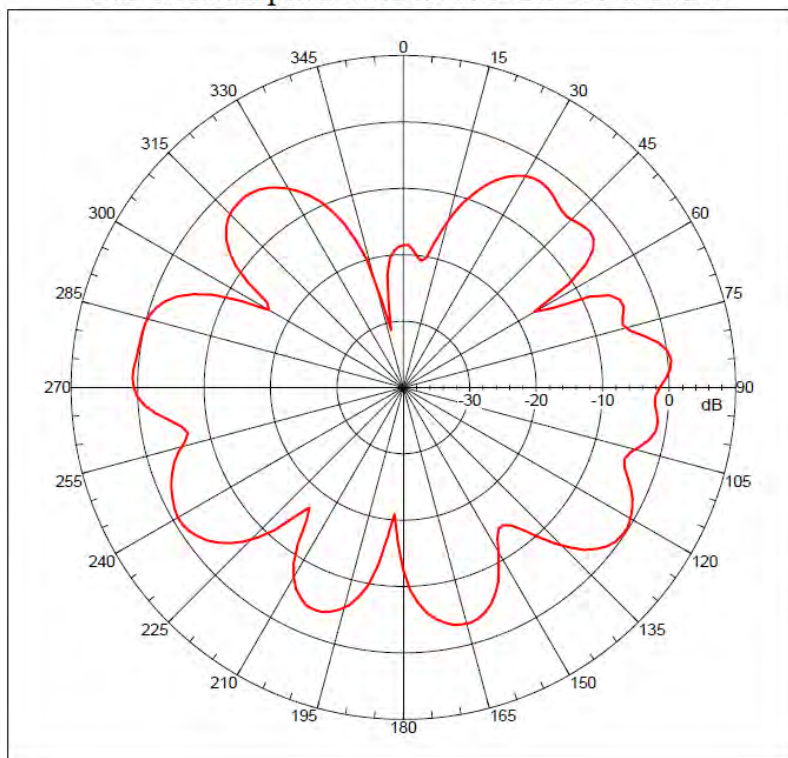
Far-field amplitude of 20160422-4G-2-E.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = 1.96485 dB
 Max far-field (global) = -46.28719 dB, Max far-field (plot) = -46.28719 dB
 Normalization: Reference, Network offset = 0.000 dB
 Upeak at: 119.99599 deg, Upeak at: 0.000 deg
 Plot centering: On
 20160422-4G-2-E
 NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20160422-4G-2-E.nsi
 Measurement date/time: 4/22/2016 4:22:09 PM, Filetype: NSI-97
 Far-field Cut Analysis:
 Avg value: -3.289 dB
 -3 dB beam width: 20.55 deg
 -6 dB beam width: 22.46 deg
 -10 dB beam width: Not Found
 Left Sidelobe: -2.69 dB at 95.831 deg
 Right Sidelobe: -3.18 dB at 163.511 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 19

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

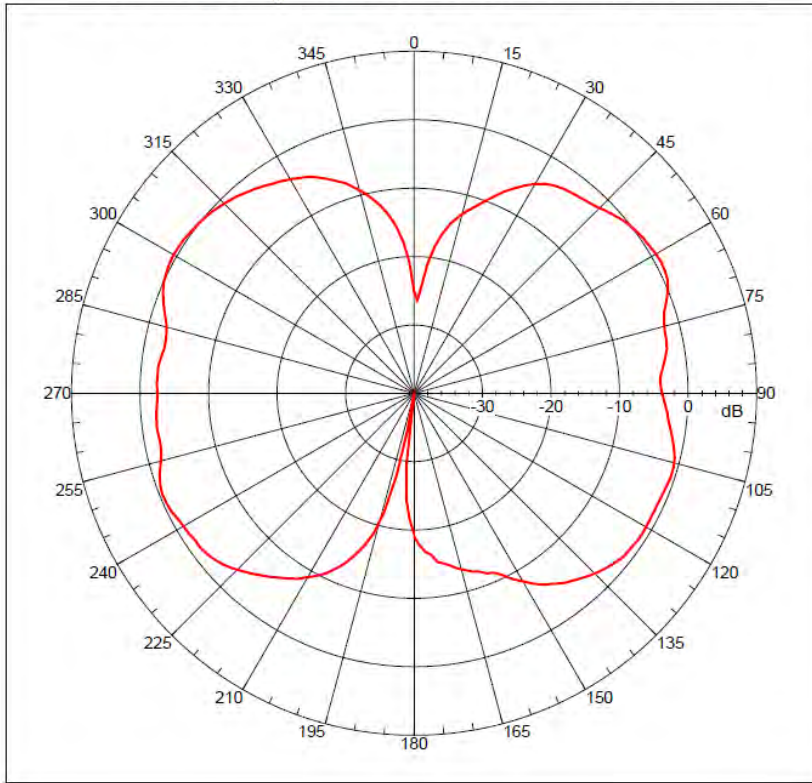
Far-field amplitude of 20160422-4G-2-E.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
 Gain = 0.76298 dB
 Max far-field (global) = -46.28611 dB, Max far-field (plot) = -46.28611 dB
 Normalization: Reference, Network offset = 0.000 dB
 Upeak at: -89.00001 deg, Upeak at: 0.000 deg
 Plot centering: On
 20160422-4G-2-E
 NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20160422-4G-2-E.nsi
 Measurement date/time: 4/22/2016 4:22:09 PM, Filetype: NSI-97
 Far-field Cut Analysis:
 Avg value: -5.216 dB
 -3 dB beam width: 26.16 deg
 -6 dB beam width: 32.92 deg
 -10 dB beam width: 76.42 deg
 Left Sidelobe: -1.97 dB at -119.665 deg
 Right Sidelobe: -2.42 dB at -89.218 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 19

Beam	Frequency	Azimuth	Elevation	Pol
8	1.900 GHz	Azimuth	Elevation	Single-pol

Far-field amplitude of 20160422-4G-2-E.nsi



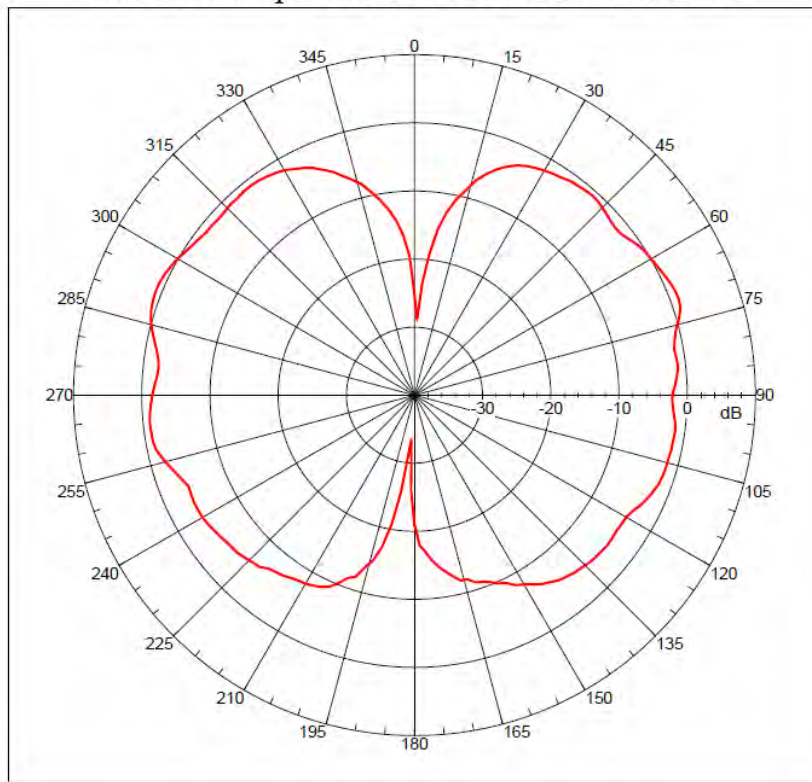
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Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = 0.88859 dB
Max far-field (global) = -46.67982 dB, Max far-field (plot) =
-46.67982 dB
Normalization: Reference, Network offset = 0.000 dB
Peak at: 61.99999 deg, Upeak at: 0.000 deg
Plot centering: On

20160422-4G-2-E
NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20
160422-4G-2\20160422-4G-2-E.nsi
Measurement date/time: 4/22/2016 4:22:09 PM, Filetype: NSI-97
Far-field Cut Analysis:
Avg value: -4.187 dB
-3 dB beam width: 32.09 deg
-6 dB beam width: 114.58 deg
-10 dB beam width: 130.72 deg
Left Sidelobe: -0.37 dB at -59.320 deg
Right Sidelobe: -1.49 dB at 109.609 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 13
Beam Frequency Azimuth Elevation Pol
----
9 2.170 GHz Azimuth Elevation Single-pol
    
```

Far-field amplitude of 20160422-4G-2-E.nsi



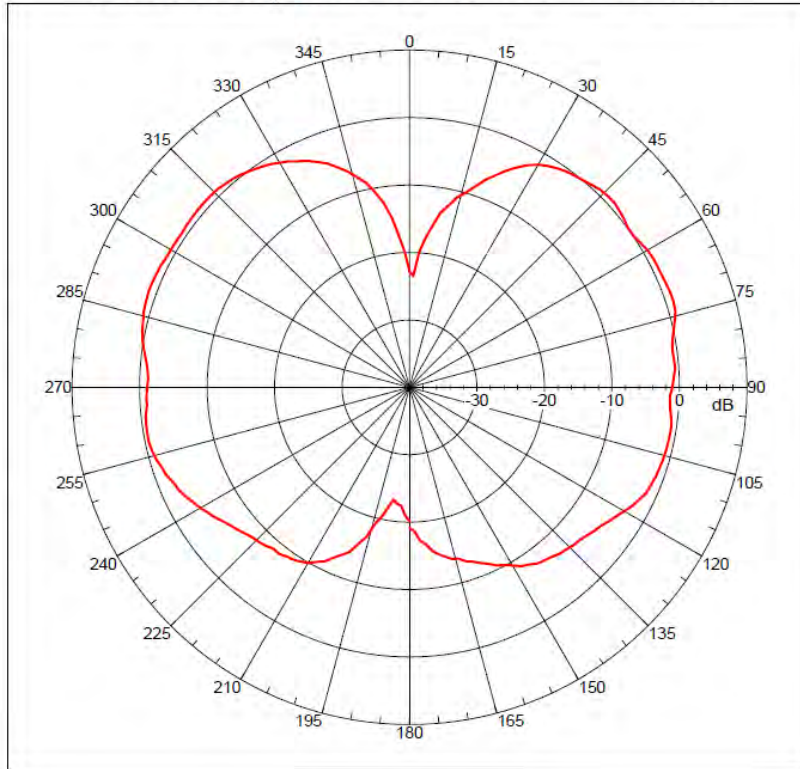
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Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = 1.2494 dB
Max far-field (global) = -46.69058 dB, Max far-field (plot) =
-46.69077 dB
Normalization: Reference, Network offset = 0.000 dB
Peak at: 69.99999 deg, Upeak at: 0.000 deg
Plot centering: On

20160422-4G-2-E
NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20
160422-4G-2\20160422-4G-2-E.nsi
Measurement date/time: 4/22/2016 4:22:09 PM, Filetype: NSI-97
Far-field Cut Analysis:
Avg value: -3.982 dB
-3 dB beam width: 36.77 deg
-6 dB beam width: 116.73 deg
-10 dB beam width: 139.19 deg
Left Sidelobe: -5.27 dB at -59.218 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 13
Beam Frequency Azimuth Elevation Pol
----
10 2.300 GHz Azimuth Elevation Single-pol
    
```

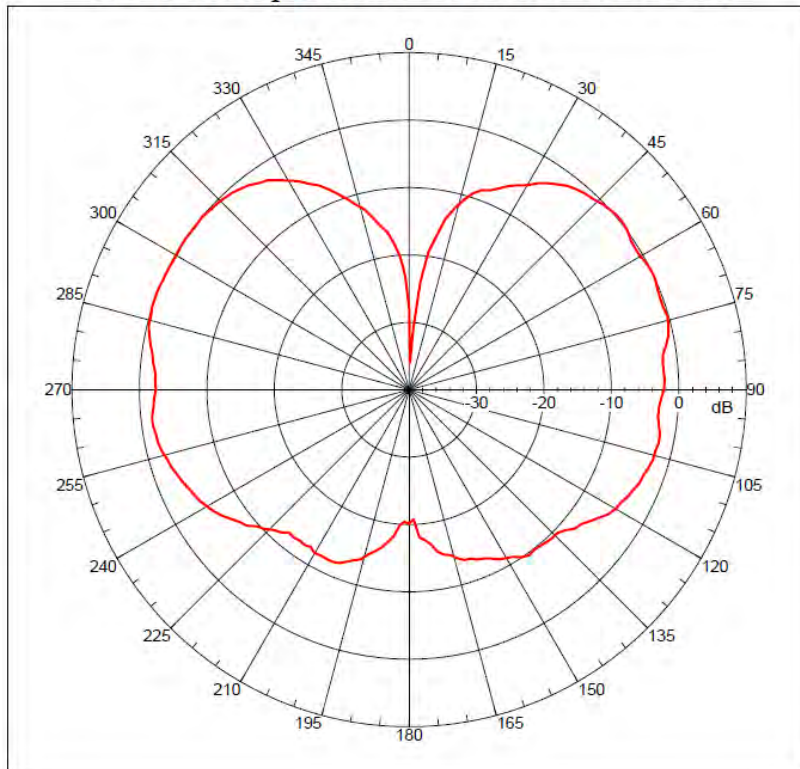

Far-field amplitude of 20160422-4G-2-E.nsi



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Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = 0.18511 dB
Max far-field (global) = -47.85175 dB, Max far-field (plot) =
-47.85175 dB
Normalization: Reference, Network offset = 0.000 dB
Vpeak at: -49.000 deg, Vpeak at: 0.000 deg
Plot centering: On
20160422-4G-2-E
NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20
160422-4G-2\20160422-4G-2-E.nsi
Measurement date/time: 4/22/2016 4:22:09 PM, Filetype: NSI-97
Far-field Cut Analysis:
Avg value: -5.638 dB
-3 dB beam width: 82.08 deg
-6 dB beam width: 102.72 deg
-10 dB beam width: 131.82 deg
Left Sidelobe: Not Found
Right Sidelobe: -0.30 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 13
Beam Frequency Azimuth Elevation Pol
----
11 2.400 GHz Azimuth Elevation Single-pol
    
```

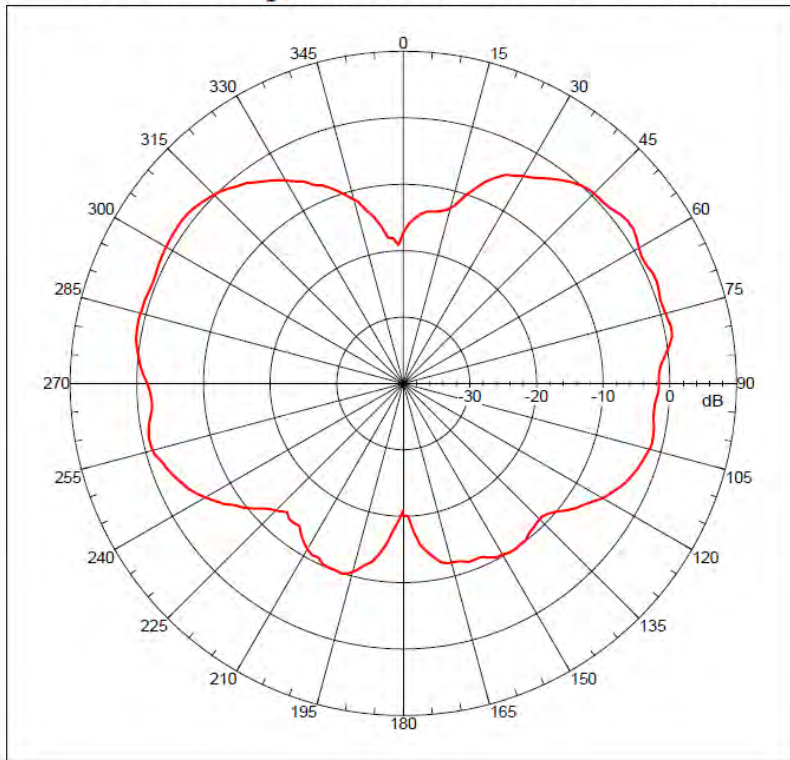
Far-field amplitude of 20160422-4G-2-E.nsi



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Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = 0.21934 dB
Max far-field (global) = -49.81668 dB, Max far-field (plot) =
-49.81668 dB
Normalization: Reference, Network offset = 0.000 dB
Vpeak at: 51.99999 deg, Vpeak at: 0.000 deg
Plot centering: On
20160422-4G-2-E
NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20
160422-4G-2\20160422-4G-2-E.nsi
Measurement date/time: 4/22/2016 4:22:09 PM, Filetype: NSI-97
Far-field Cut Analysis:
Avg value: -5.058 dB
-3 dB beam width: 55.08 deg
-6 dB beam width: 96.24 deg
-10 dB beam width: 123.81 deg
Left Sidelobe: -0.25 dB at -49.274 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 13
Beam Frequency Azimuth Elevation Pol
----
12 2.500 GHz Azimuth Elevation Single-pol
    
```

Far-field amplitude of 20160422-4G-2-E.nsi

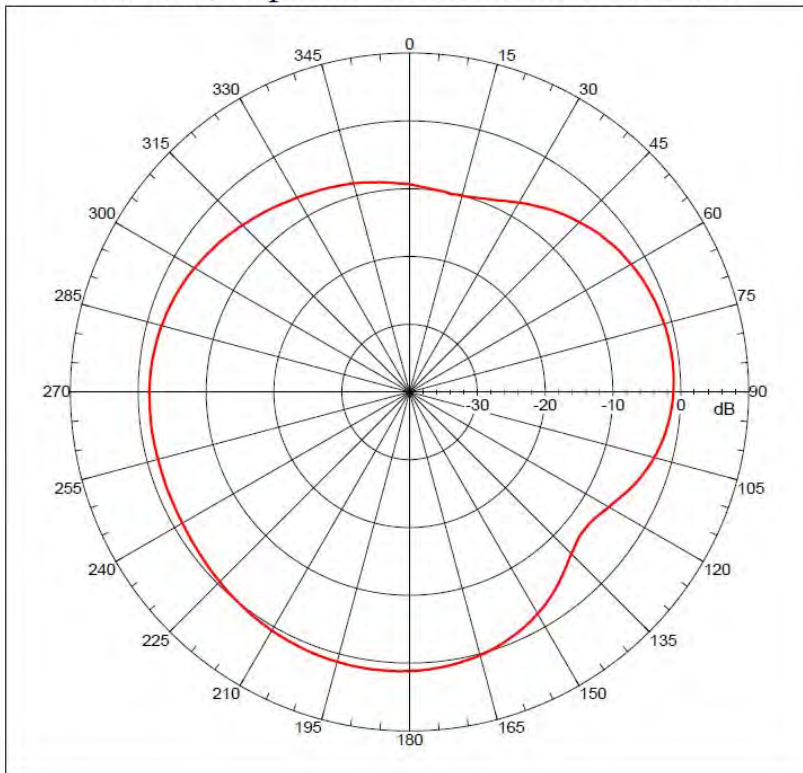


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Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = 1.62613 dBi
Max far-field (global) = -48.68066 dB, Max far-field (plot) =
-43.48001 dB
Normalization: Reference, Network offset = 0.000 dB
Vpeak at: 55.99958 deg, Vpeak at: 0.000 deg
Plot centering: On
20160422-4G-2-E
NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20
160422-4G-2\20160422-4G-2-E.nsi
Measurement date/time: 4/22/2016 4:22:09 PM, Filetype: NSI-97
Far-field Cut Analysis:
Avg value: -4.354 dB
-3. dB beam width: 49.11 deg
-6. dB beam width: 86.69 deg
-10. dB beam width: 106.64 deg
Left SideLobe: -0.38 dB at -53.296 deg
Right SideLobe: -11.55 dB at 147.821 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 13
Beam Frequency Azimuth Elevation Pol
-----
1 0.806 GHz Azimuth Elevation Single-pol
    
```

4.2 H-Plane

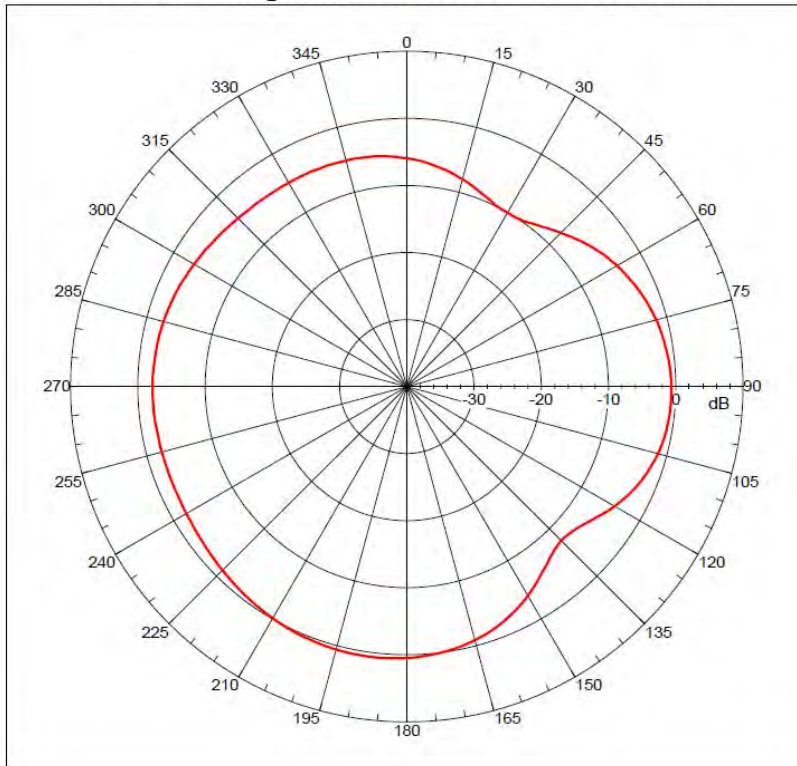
Far-field amplitude of 20160422-4G-2-H.nsi



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Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = 1.27291 dBi
Max far-field (global) = -41.47896 dB, Max far-field (plot) =
-41.47896 dB
Normalization: Reference, Network offset = 0.000 dB
Vpeak at: -172.00001 deg, Vpeak at: 0.000 deg
Plot centering: On
20160422-4G-2-H
NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20
160422-4G-2\20160422-4G-2-H.nsi
Measurement date/time: 4/22/2016 4:38:11 PM, Filetype: NSI-97
Far-field Cut Analysis:
Avg value: -2.187 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: -2.14 dB at 89.464 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 13
Beam Frequency Azimuth Elevation Pol
-----
1 0.806 GHz Azimuth Elevation Single-pol
    
```

Far-field amplitude of 20160422-4G-2-H.nsi

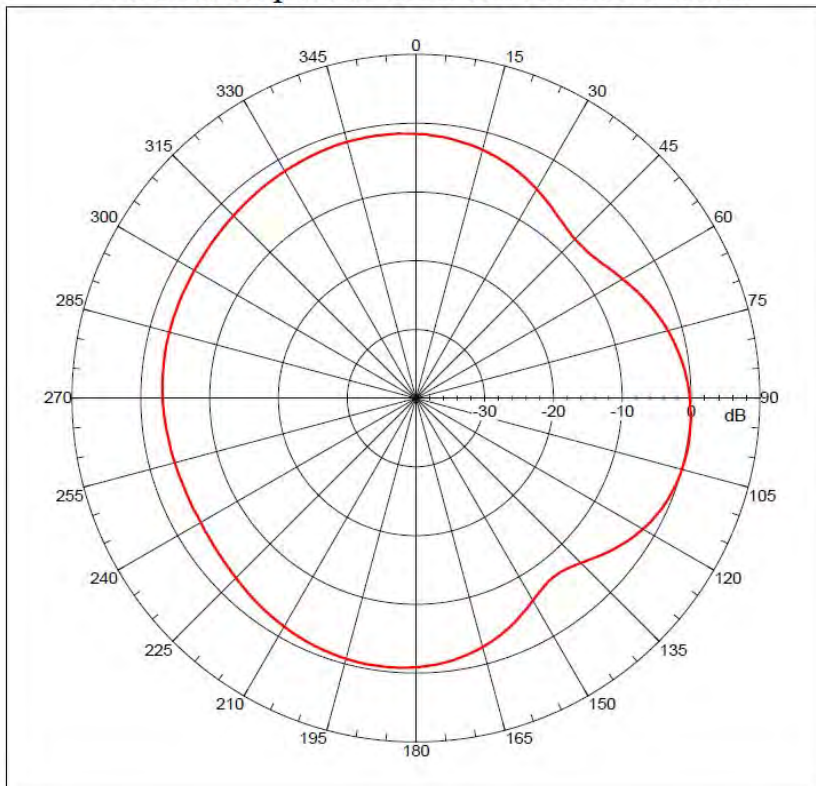


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Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = 0.67517 dB
Max far-field (global) = -41.4719 dB, Max far-field (plot) =
-41.4719 dB
Normalisation: Reference, Network offset = 0.000 dB
Ypeak az: -171.00001 deg, Ypeak az: 0.000 deg
Plot centering: On

20160422-4G-2-H
NSI000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20
160422-4G-20160422-4G-2-H.nsi
Measurement date/time: 4/22/2016 4:33:11 PM, Filetype: NSI-87
Far-field Cut Analysis:
Avg value: -3.056 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: -1.02 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 13
Beam Frequency Azimuth Elevation Pol
-----
2 0.824 GHz Azimuth Elevation Single-pol
    
```

Far-field amplitude of 20160422-4G-2-H.nsi

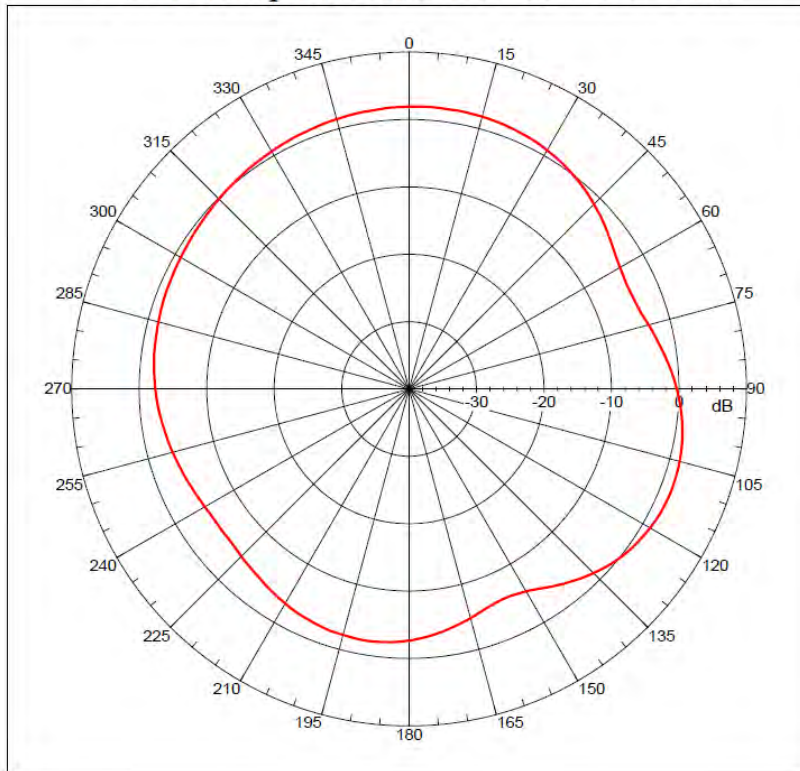


```

Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = 0.28308 dB
Max far-field (global) = -41.24403 dB, Max far-field (plot) =
-41.24404 dB
Normalisation: Reference, Network offset = 0.000 dB
Ypeak az: 88.16999 deg, Ypeak az: 0.000 deg
Plot centering: On

20160422-4G-2-H
NSI000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20
160422-4G-20160422-4G-2-H.nsi
Measurement date/time: 4/22/2016 4:33:11 PM, Filetype: NSI-87
Far-field Cut Analysis:
Avg value: -2.581 dB
-3 dB beam width: 82.92 deg
-6 dB beam width: 76.61 deg
-10 dB beam width: Not Found
Left Sidelobe: -1.69 dB at -3.017 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 13
Beam Frequency Azimuth Elevation Pol
-----
3 0.850 GHz Azimuth Elevation Single-pol
    
```

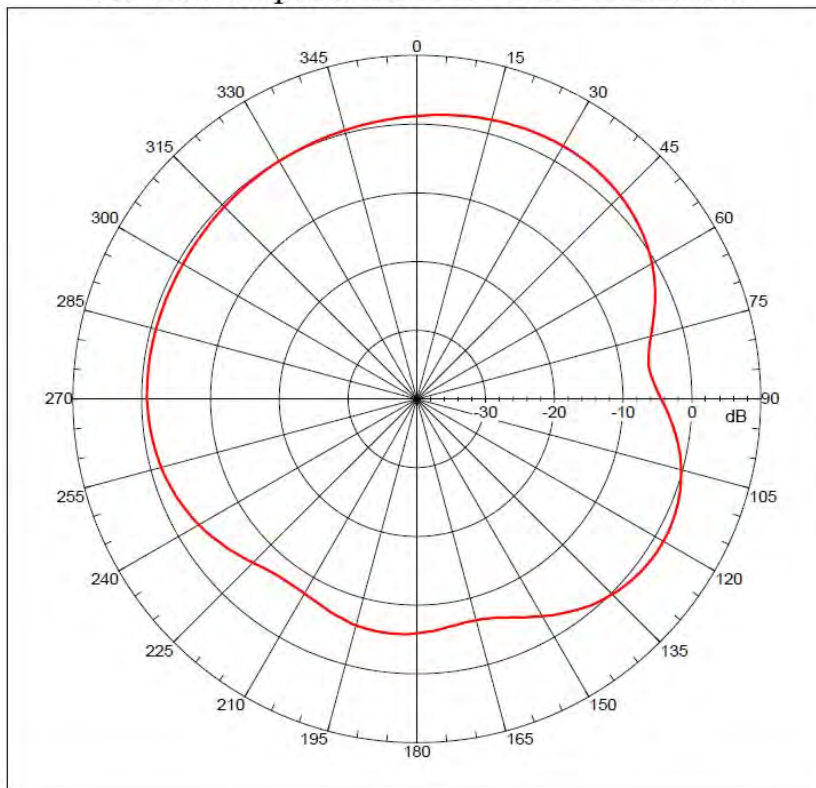
Far-field amplitude of 20160422-4G-2-H.nsi



```

Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = 1.8633 dBi
Max far-field (global) = -39.59676 dB, Max far-field (plot) =
-39.59676 dB
Normalization: Reference, Network offset = 0.000 dB
Ypeak at: 2.95999 deg, Ypeak at: 0.000 deg
Plot centering: On
20160422-4G-2-H
NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20
160422-4G-2\20160422-4G-2-H.nsi
Measurement date/time: 4/22/2016 4:33:11 PM, Filetype: NSI-97
Far-field Cut Analysis:
Avg value: -1.350 dB
-2. dB beam width: 106.69 deg
-6. dB beam width: 170.55 deg
-10. dB beam width: Not Found
Left Sidelobe: -4.06 dB at -169.944 deg
Right Sidelobe: -0.27 dB at 113.691 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 13
Beam Frequency Azimuth Elevation Pol
----
4 0.900 GHz Azimuth Elevation Single-pol
    
```

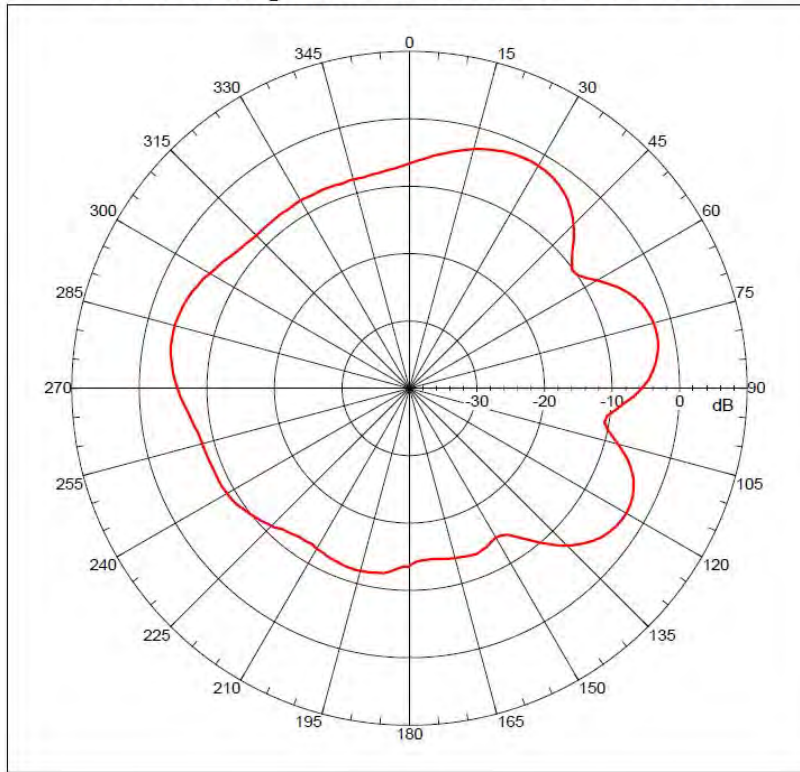
Far-field amplitude of 20160422-4G-2-H.nsi



```

Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = 1.49112 dBi
Max far-field (global) = -40.13755 dB, Max far-field (plot) =
-40.13755 dB
Normalization: Reference, Network offset = 0.000 dB
Ypeak at: 27.69999 deg, Ypeak at: 0.000 deg
Plot centering: On
20160422-4G-2-H
NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20
160422-4G-2\20160422-4G-2-H.nsi
Measurement date/time: 4/22/2016 4:33:11 PM, Filetype: NSI-97
Far-field Cut Analysis:
Avg value: -1.337 dB
-2. dB beam width: 107.60 deg
-6. dB beam width: 152.03 deg
-10. dB beam width: Not Found
Left Sidelobe: -2.17 dB at -173.967 deg
Right Sidelobe: -1.06 dB at 123.657 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 13
Beam Frequency Azimuth Elevation Pol
----
5 0.900 GHz Azimuth Elevation Single-pol
    
```

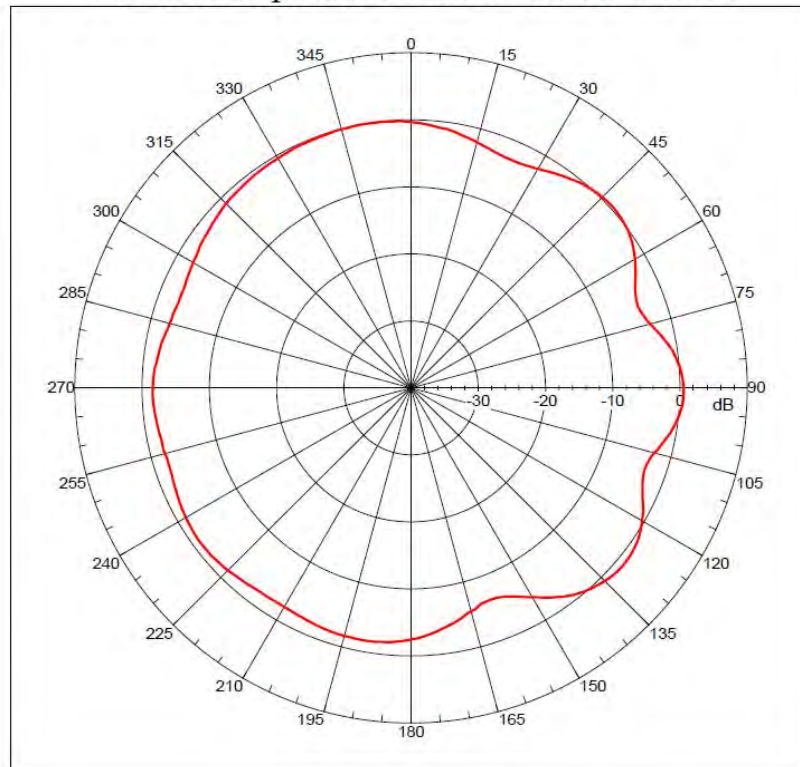
Far-field amplitude of 20160422-4G-2-H.nsi



```

Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = -1.8025 dBi
Max far-field (global) = -46.99509 dB, Max far-field (plot) =
-46.9951 dB
Normalization: Reference, Network offset = 0.000 dB
Peak az: 27.99999 deg, Vpeak az: 0.000 deg
Plot centering: On
20160422-4G-2-H
NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20
160422-4G-20160422-4G-2-H.nsi
Measurement date/time: 4/22/2016 4:33:11 PM, Filetype: NSI-97
Far-field Cut Analysis:
Avg value: -7.044 dB
-3. dB beam width: 35.08 deg
-6. dB beam width: 59.41 deg
-10. dB beam width: 151.79 deg
Left Sidelobe: -2.14 dB at -79.419 deg
Right Sidelobe: -0.63 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 13
Beam Frequency Azimuth Elevation Pol
-----
6 1.710 GHz Azimuth Elevation Single-pol
    
```

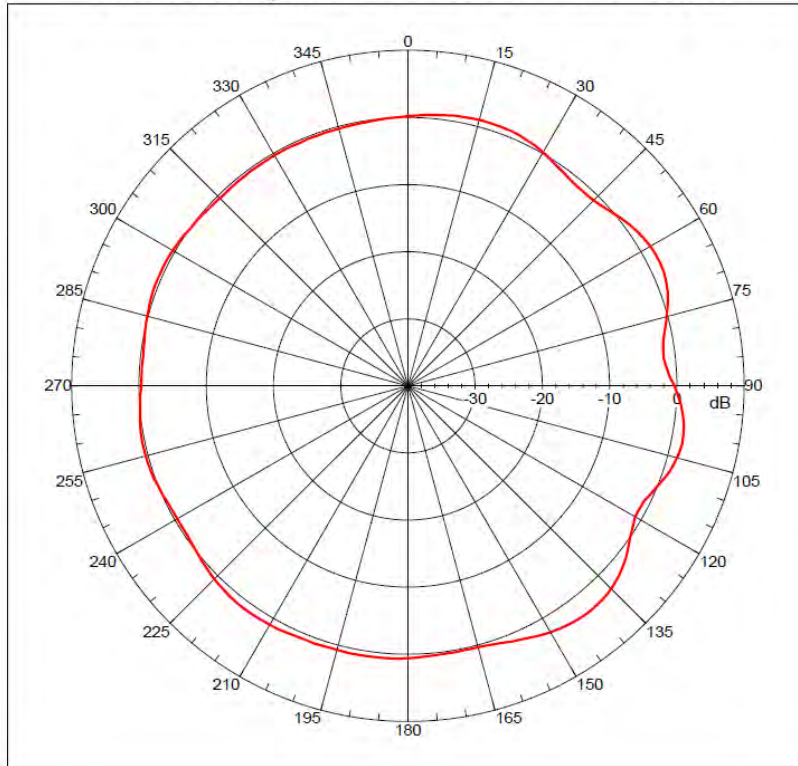
Far-field amplitude of 20160422-4G-2-H.nsi



```

Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = 1.17614 dBi
Max far-field (global) = -45.6459 dB, Max far-field (plot) =
-45.6459 dB
Normalization: Reference, Network offset = 0.000 dB
Peak az: 119.99999 deg, Vpeak az: 0.000 deg
Plot centering: On
20160422-4G-2-H
NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\20
160422-4G-20160422-4G-2-H.nsi
Measurement date/time: 4/22/2016 4:33:11 PM, Filetype: NSI-97
Far-field Cut Analysis:
Avg value: -1.864 dB
-3. dB beam width: 39.44 deg
-6. dB beam width: Not Found
-10. dB beam width: Not Found
Left Sidelobe: -0.48 dB at 91.508 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 13
Beam Frequency Azimuth Elevation Pol
-----
7 1.800 GHz Azimuth Elevation Single-pol
    
```

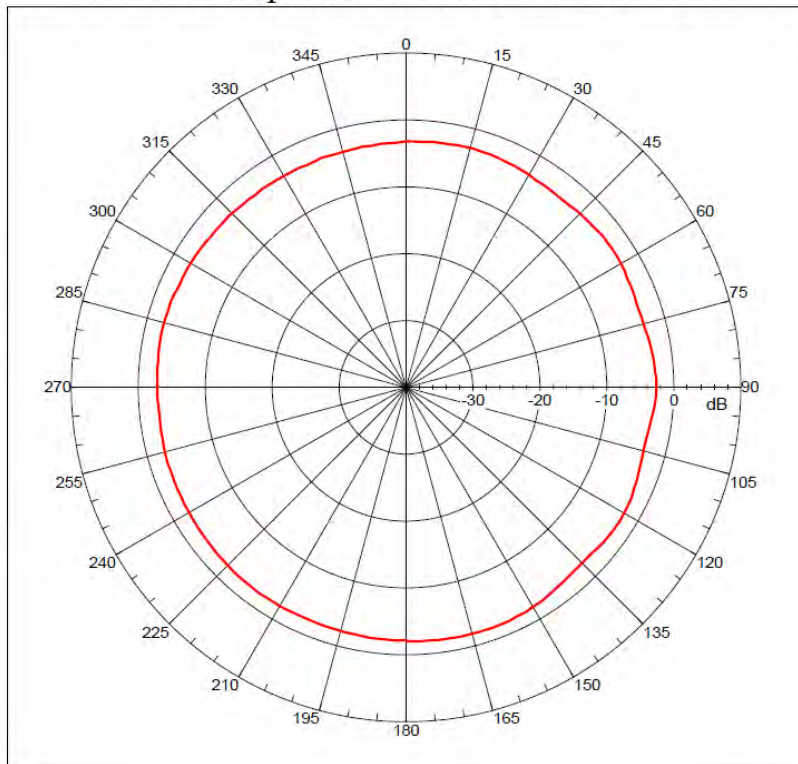
Far-field amplitude of 20160422-4G-2-H.nsi



```

Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = 3.1223 dB
Max far-field (global) = -42.91476 dB, Max far-field (plot) =
-42.91476 dB
Normalization: Reference, Network offset = 0.000 dB
Hpeak at: 140.000 deg, Vpeak at: 0.000 deg
Plot centering: On
20160422-4G-2-H
NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20
160422-4G-2\20160422-4G-2-H.nsi
Measurement date/time: 4/22/2016 4:33:11 PM, Filetype: NSI-97
Far-field Cut Analysis:
Avg value: 0.449 dB
-3. dB beam width: Not Found
-6. dB beam width: Not Found
-10. dB beam width: Not Found
Left Sidelobe: -1.48 dB at 102.578 deg
Right Sidelobe: Not Found
Far-field display setup
Azimuth (deg)
Span = 260.00001 deg, Center = 0.000 deg, #pts = 121
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 13
Beam Frequency Azimuth Elevation Pol
----
9 1.900 GHz Azimuth Elevation Single-pol
    
```

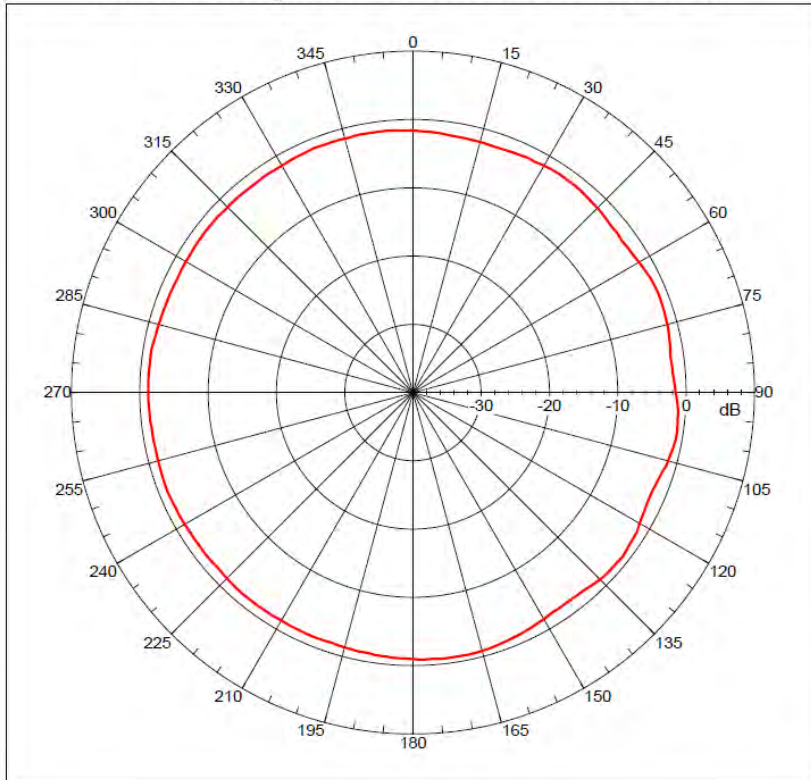
Far-field amplitude of 20160422-4G-2-H.nsi



```

Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = -1.20782 dB
Max far-field (global) = -49.32993 dB, Max far-field (plot) =
-49.32993 dB
Normalization: Reference, Network offset = 0.000 dB
Hpeak at: 157.95999 deg, Vpeak at: 0.000 deg
Plot centering: On
20160422-4G-2-H
NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20
160422-4G-2\20160422-4G-2-H.nsi
Measurement date/time: 4/22/2016 4:33:11 PM, Filetype: NSI-97
Far-field Cut Analysis:
Avg value: -2.784 dB
-3. dB beam width: Not Found
-6. dB beam width: Not Found
-10. dB beam width: Not Found
Left Sidelobe: -0.79 dB at -69.385 deg
Right Sidelobe: Not Found
Far-field display setup
Azimuth (deg)
Span = 260.00001 deg, Center = 0.000 deg, #pts = 121
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 13
Beam Frequency Azimuth Elevation Pol
----
9 2.170 GHz Azimuth Elevation Single-pol
    
```

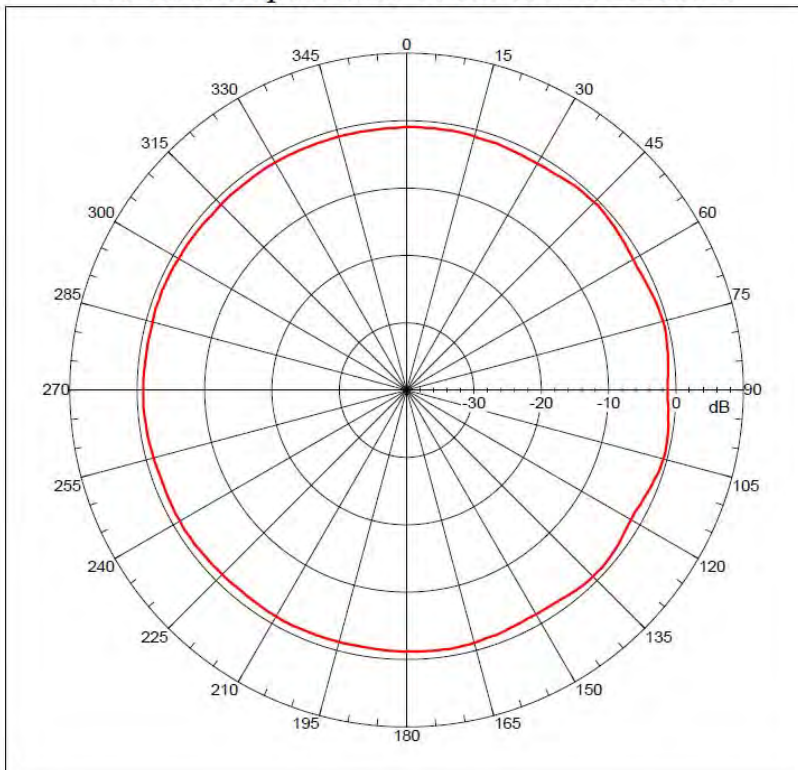
Far-field amplitude of 20160422-4G-2-H.nsi



```

Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = -0.77591 dB
Max far-field (global) = -48.71869 dB, Max far-field (plot) =
-48.71869 dB
Normalization: Reference, Network offset = 0.000 dB
Upeak at: 187.56959 deg, Upeak at: 0.000 deg
Plot centering: On
20160422-4G-2-H
NSI2000 V4.0.114, Filename: C:\Documents and Settings\NSI\Desktop\20
160422-4G-2\20160422-4G-2-H.nsi
Measurement date/time: 4/22/2016 4:33:11 PM, Filetype: NSI-97
Far-field Cut Analysis:
Avg value: -1.491 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 101.564 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 13
Beam Frequency Azimuth Elevation Pol
-----
10 2.900 GHz Azimuth Elevation Single-pol
    
```

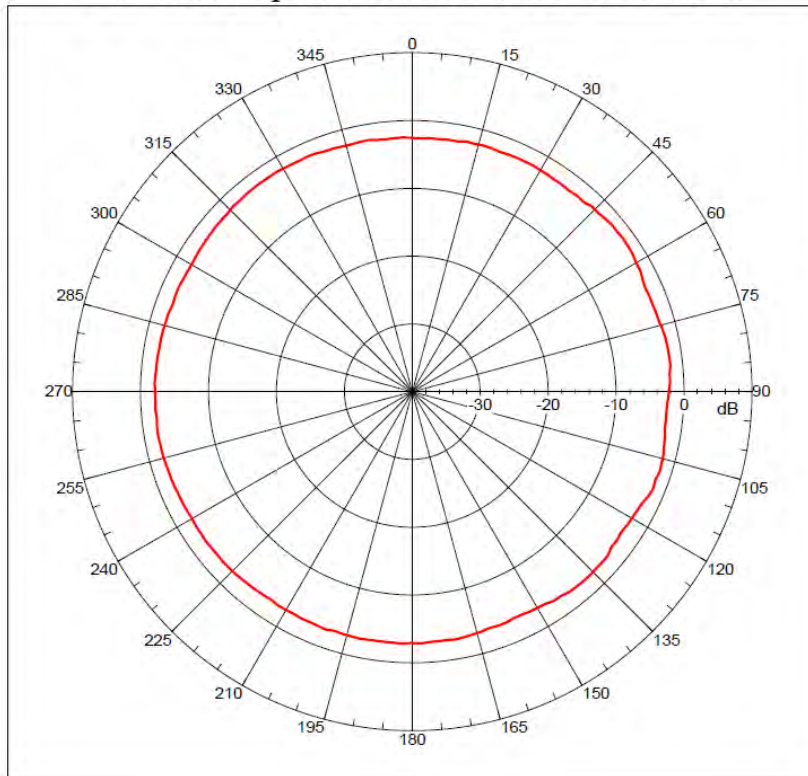
Far-field amplitude of 20160422-4G-2-H.nsi



```

Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = -0.47129 dB
Max far-field (global) = -49.47896 dB, Max far-field (plot) =
-49.47896 dB
Normalization: Reference, Network offset = 0.000 dB
Upeak at: 189.56958 deg, Upeak at: 0.000 deg
Plot centering: On
20160422-4G-2-H
NSI2000 V4.0.114, Filename: C:\Documents and Settings\NSI\Desktop\20
160422-4G-2\20160422-4G-2-H.nsi
Measurement date/time: 4/22/2016 4:33:11 PM, Filetype: NSI-97
Far-field Cut Analysis:
Avg value: -1.269 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: 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 13
Beam Frequency Azimuth Elevation Pol
-----
11 2.400 GHz Azimuth Elevation Single-pol
    
```

Far-field amplitude of 20160422-4G-2-H.nsi

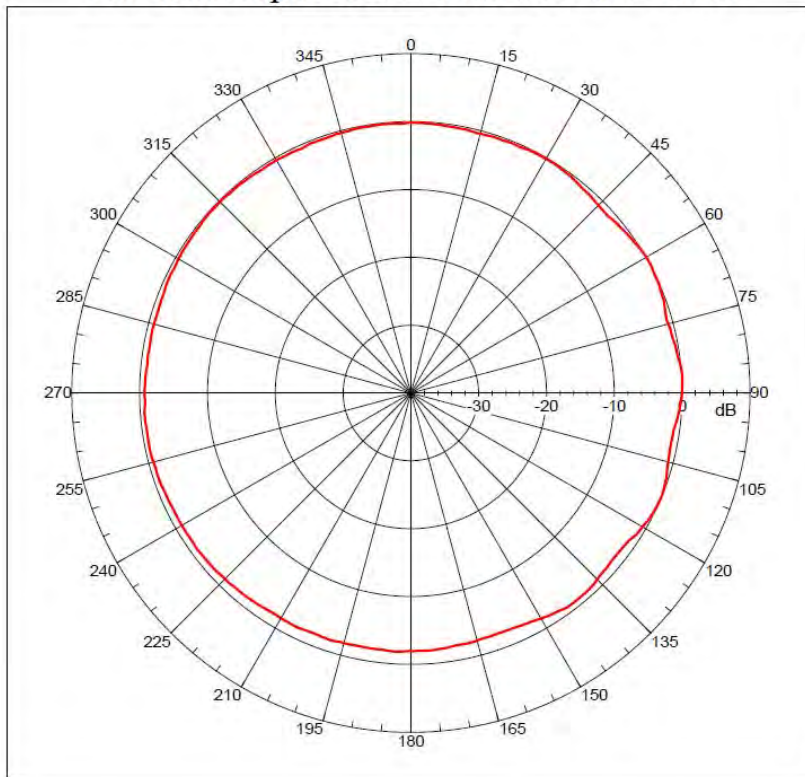


```

Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = -1.61977 dB
Max far-field (global) = -51.75076 dB, Max far-field (plot) =
-51.75079 dB
Normalization: Reference, Network offset = 0.000 dB
Vpeak at: 53.99999 deg, Vpeak az: 0.000 deg
Plot centering: On
20160422-4G-2-H

NSI0000 V4 0.124, Filename: C:\Documents and Settings\NSI\Desktop\20
160422-4G-2\20160422-4G-2-H.nsi
Measurement date/time: 4/22/2016 4:33:11 PM, Filetype: NSI-97
Far-field Cut Analysis:
Avg value: -2.418 dB
-3. dB beam width: Not Found
-6. dB beam width: Not Found
-10. dB beam width: Not Found
Left Side-lobe: Not Found
Right Side-lobe: 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 13
Beam Frequency Azimuth Elevation Pol
-----
13 2.500 GHz Azimuth Elevation Single-pol
    
```

Far-field amplitude of 20160422-4G-2-H.nsi



```

Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = 0.11059 dB
Max far-field (global) = -50.2059 dB, Max far-field (plot) =
-50.20596 dB
Normalization: Reference, Network offset = 0.000 dB
Vpeak at: 53.99999 deg, Vpeak az: 0.000 deg
Plot centering: On
20160422-4G-2-H

NSI0000 V4 0.124, Filename: C:\Documents and Settings\NSI\Desktop\20
160422-4G-2\20160422-4G-2-H.nsi
Measurement date/time: 4/22/2016 4:33:11 PM, Filetype: NSI-97
Far-field Cut Analysis:
Avg value: -0.615 dB
-3. dB beam width: Not Found
-6. dB beam width: Not Found
-10. dB beam width: Not Found
Left Side-lobe: Not Found
Right Side-lobe: 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 13
Beam Frequency Azimuth Elevation Pol
-----
13 2.500 GHz Azimuth Elevation Single-pol
    
```