

## ANT-M4G3-SMA

### Features

- Frequency Range
  - 690-960
  - 1710-2170
  - 2400-2700MHz
- Omni Directional 3 dBi Gain
- Rugged plastic finish IP65 Rated.
- Wall Mount Bracket
- 50ohm Impedance
- 3m RG58U with SMA Male
- Vertical Polarization
- V.S.W.R  $\leq 2.5$
- 270mm Long
- Operating Temp  $-30^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$



### Applications

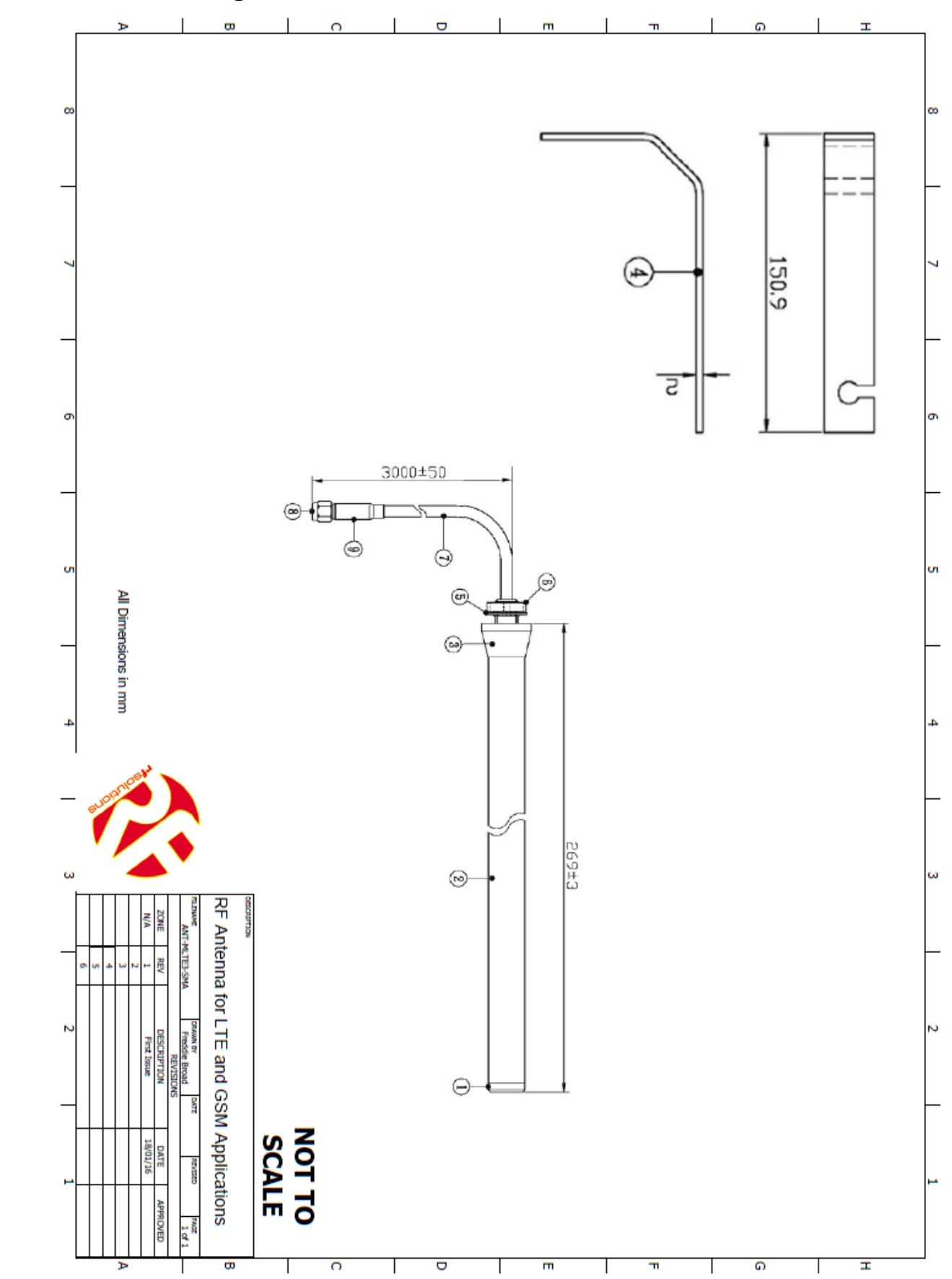
- 4G / LTE Applications
- GSM Applications
- WiFi

### Description

A wall mount LTE and GSM antenna supplied with a 3m RG58U cable and male SMA connector. This ready to operate antenna required no tuning and provides optimum range and reliability to your application.

### Ordering Information

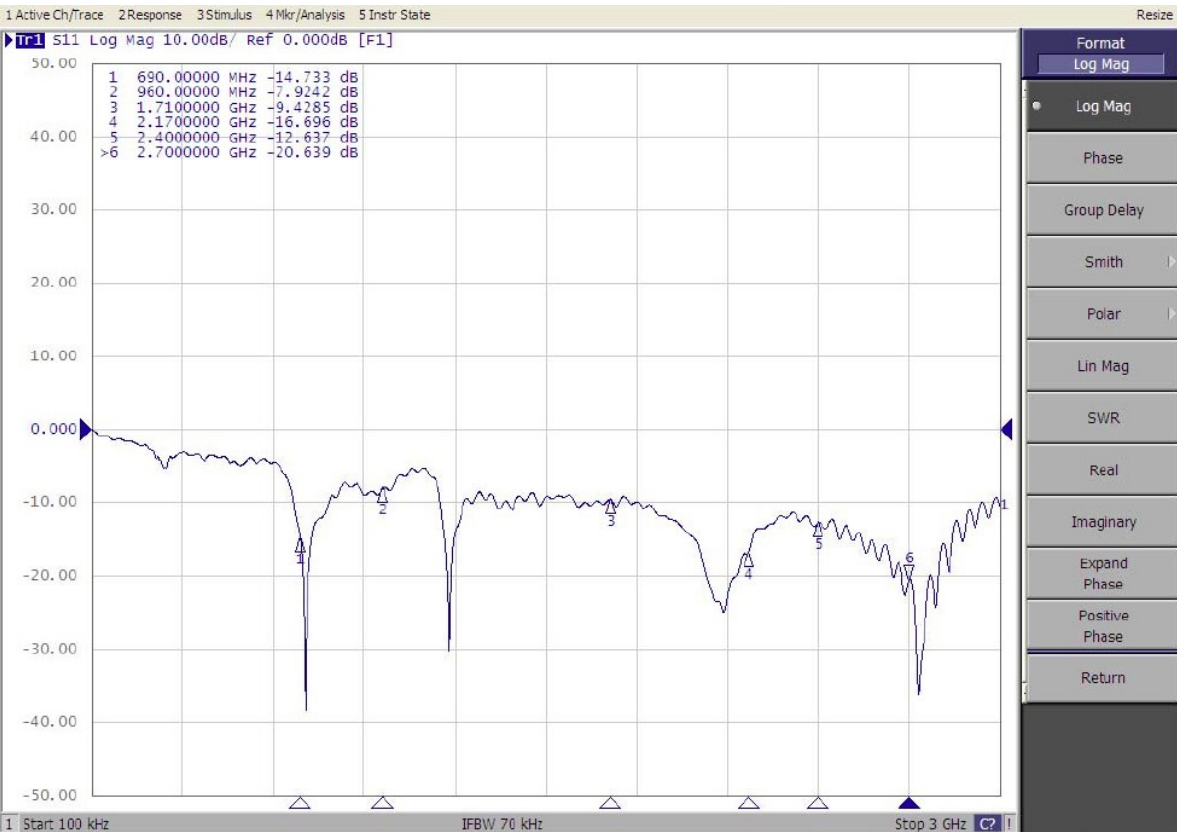
| Part No      | Description                                                     |
|--------------|-----------------------------------------------------------------|
| ANT-M4G3-SMA | 4G LTE/GSM Outside antenna (IP65 Rated) with SMA Male Connector |



V.S.W.R Test Report

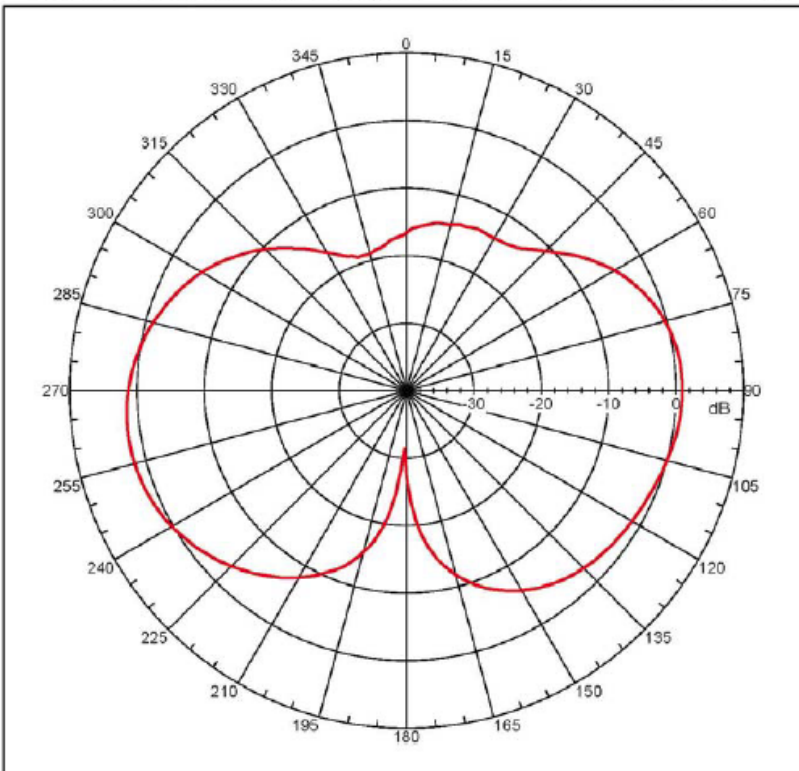


S11 Test Report



## 2D Pattern—E Plane 824MHz: 1.81917 dBi

Far-field amplitude of 20150701-4G ANT+CALBE-3.5M-E.nsi



Far-field amplitude, Eprincipal: Linear,  $\Theta_{\text{ref}} = 0.000$  deg  
 Gain = 1.81917 dBi  
 Max far-field (global) = -41.18017 dB, Max far-field (plot) = -42.18021 dB  
 Normalization: Reference, Network offset = 0.880 dB  
 Vpeak at: -100.00001 deg, Vpeak at: 0.000 deg  
 Plot centering: On

20150701-4G ANT+CALBE-3.5M-E

N322080 V4.9.124, Filename: C:\Documents and Settings\N32\Desktop\20150701-4G ANT+CALBE-3.5M-E.nsi  
 Measurement date/time: 7/1/2015 3:51:23 PM, Filetype: NUI-97

Far-field Cut Analysis:

Avg value: -4.344 dB  
 -3. dB beam width: 22.53 deg  
 -6. dB beam width: 26.19 deg  
 -10. dB beam width: 100.16 deg  
 Left Sidelobe: Not Found  
 Right Sidelobe: -15.64 dB at 25.140 deg

Far-field display setup

Azimuth (deg)  
 Span = 260.00001 deg, Center = 0.000 deg, #pts = 101  
 Start = -130.00001 deg, Stop = 130.00001 deg, Delta = 2.069 deg

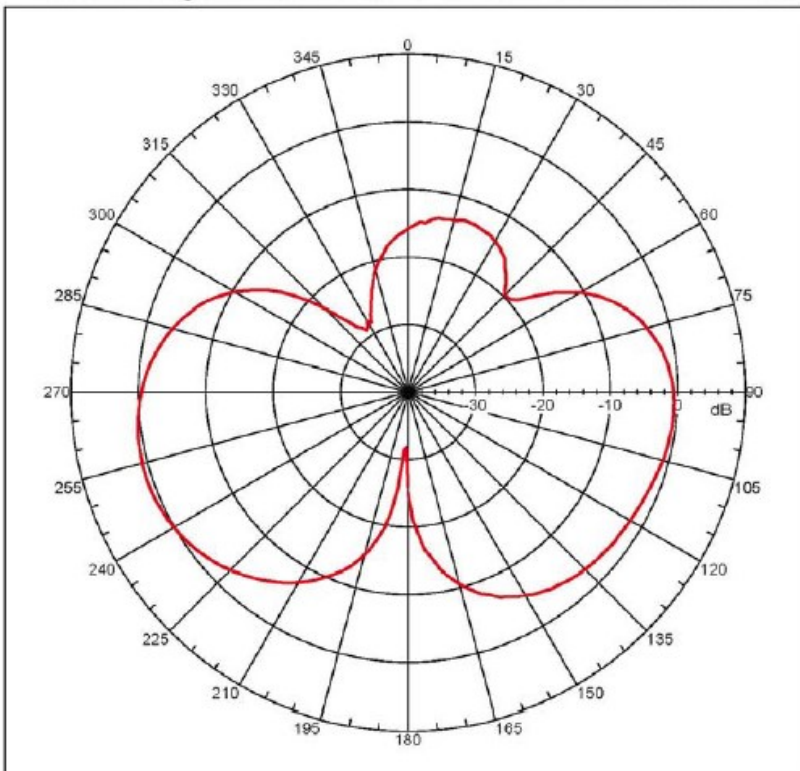
Elevation (deg)  
 Center = 0.000 deg, #pts = 1

Selected beam(s) 1 of 15

| Beam | Frequency | Azimuth | Elevation | Vol        |
|------|-----------|---------|-----------|------------|
| 2    | 0.824 GHz | Azimuth | Elevation | Single-pol |

## 2D Pattern—E Plane 850MHz: 0.84165 dBi

Far-field amplitude of 20150701-4G ANT+CALBE-3.5M-E.nsi



Far-field amplitude, Eprincipal: Linear,  $\Theta_{\text{ref}} = 0.000$  deg  
 Gain = 0.84165 dBi  
 Max far-field (global) = -40.41521 dB, Max far-field (plot) = -40.41523 dB  
 Normalization: Reference, Network offset = 0.880 dB  
 Vpeak at: -100.00001 deg, Vpeak at: 0.000 deg  
 Plot centering: On

20150701-4G ANT+CALBE-3.5M-E

N322080 V4.9.124, Filename: C:\Documents and Settings\N32\Desktop\20150701-4G ANT+CALBE-3.5M-E.nsi  
 Measurement date/time: 7/1/2015 3:51:23 PM, Filetype: NUI-97

Far-field Cut Analysis:

Avg value: -6.440 dB  
 -3. dB beam width: 21.87 deg  
 -6. dB beam width: 20.59 deg  
 -10. dB beam width: 92.00 deg  
 Left Sidelobe: Not Found  
 Right Sidelobe: -28.70 dB at -29.162 deg

Far-field display setup

Azimuth (deg)  
 Span = 260.00001 deg, Center = 0.000 deg, #pts = 101  
 Start = -130.00001 deg, Stop = 130.00001 deg, Delta = 2.069 deg

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

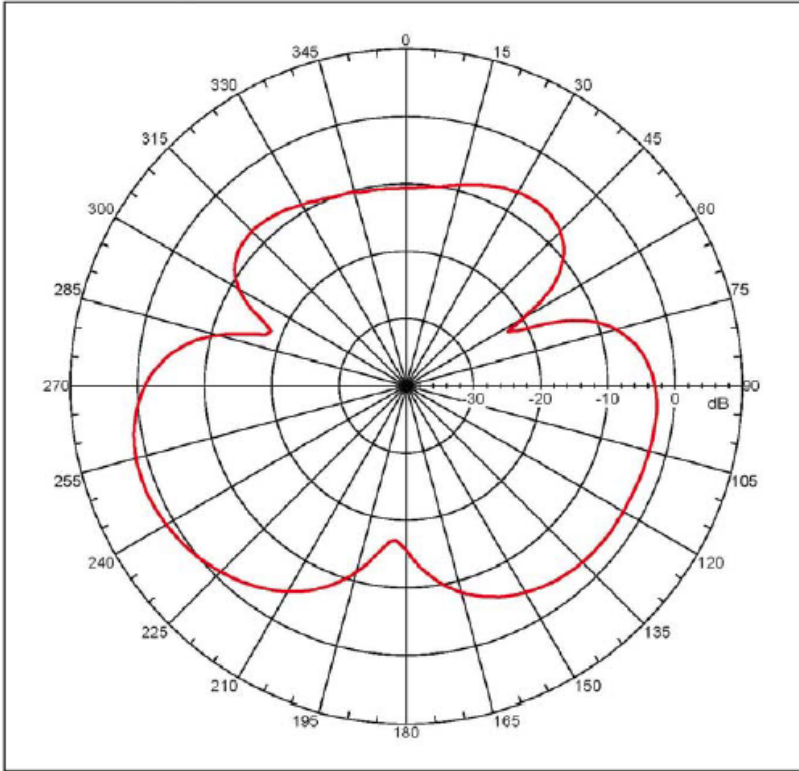
Selected beam(s) 1 of 15

| Beam | Frequency | Azimuth | Elevation | Vol        |
|------|-----------|---------|-----------|------------|
| 2    | 0.850 GHz | Azimuth | Elevation | Single-pol |



## 2D Pattern—E Plane 900MHz: 1.72636 dBi

Far-field amplitude of 20150701-4G ANT+CALBE-3.5M-E.nsi



Far-field amplitude, E-principal: Linear, Tau = 0.009 deg  
Gain = 1.72636 dBi  
Max far-field (global) = -39.83332 dB, Max far-field (plot) = -39.83332 dB  
Normalization: Reference, Network offset = 0.680 dB  
Rpeak at: -139.82081 deg, Vpeak at: 0.009 deg  
Plot centering: On

20150701-4G ANT+CALBE-3.5M-E

NSI2080 V4.8.124, Filename: C:\Documents and Settings\NSI\Desktop\20150701-4G ANT+CALBE-3.5M\20150701-4G ANT+CALBE-3.5M-E.nsi  
Measurement date/time: 7/1/2015 3:51:23 PM, Filetype: NSI-97

Far-field Cut Analysis:

Avg values: -5.126 dB  
-1. dB beam width: 67.24 deg  
-6. dB beam width: 66.05 deg  
-10. dB beam width: 82.01 deg  
Left Sidelobe: Not Found  
Right Sidelobe: -9.33 dB at -65.251 deg

Far-field display setup

Azimuth (deg)  
Span = 360.00001 deg, Center = 0.009 deg, #pts = 181  
Start = -180.00001 deg, Stop = 180.00001 deg, Delta = 2.009 deg

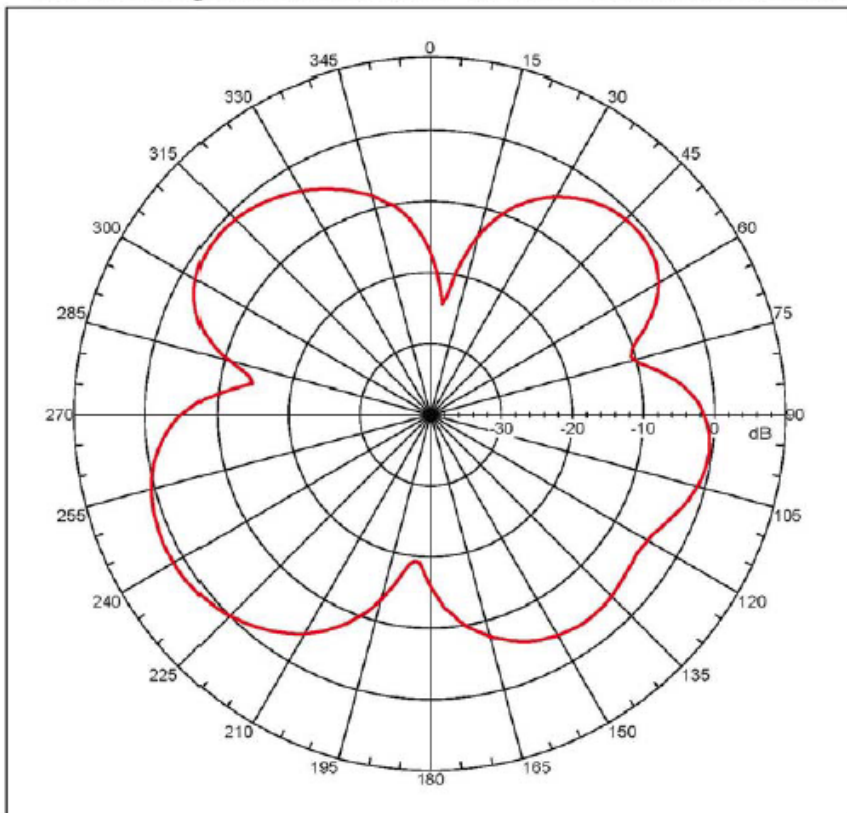
Elevation (deg)  
Center = 0.009 deg, #pts = 1

Selected beam(s) 1 of 15

| Beam | Frequency | Azimuth | Elevation | Pol        |
|------|-----------|---------|-----------|------------|
| 4    | 0.900 GHz | Azimuth | Elevation | Single-pol |

## 2D Pattern—E Plane 960MHz: 1.60164 dBi

Far-field amplitude of 20150701-4G ANT+CALBE-3.5M-E.nsi



Far-field amplitude, E-principal: Linear, Tau = 0.008 deg  
Gain = 1.60164 dBi  
Max far-field (global) = -41.82803 dB, Max far-field (plot) = -41.82803 dB  
Normalization: Reference, Network offset = 0.680 dB  
Rpeak at: -138.00000 deg, Vpeak at: 0.008 deg  
Plot centering: On

20150701-4G ANT+CALBE-3.5M-E

NSI2080 V4.8.124, Filename: C:\Documents and Settings\NSI\Desktop\20150701-4G ANT+CALBE-3.5M\20150701-4G ANT+CALBE-3.5M-E.nsi  
Measurement date/time: 7/1/2015 3:51:23 PM, Filetype: NSI-97

Far-field Cut Analysis:

Avg values: -4.728 dB  
-1. dB beam width: 43.05 deg  
-6. dB beam width: 51.00 deg  
-10. dB beam width: 72.67 deg  
Left Sidelobe: Not Found  
Right Sidelobe: -2.56 dB at -49.274 deg

Far-field display setup

Azimuth (deg)  
Span = 360.00001 deg, Center = 0.008 deg, #pts = 181  
Start = -180.00001 deg, Stop = 180.00001 deg, Delta = 2.009 deg

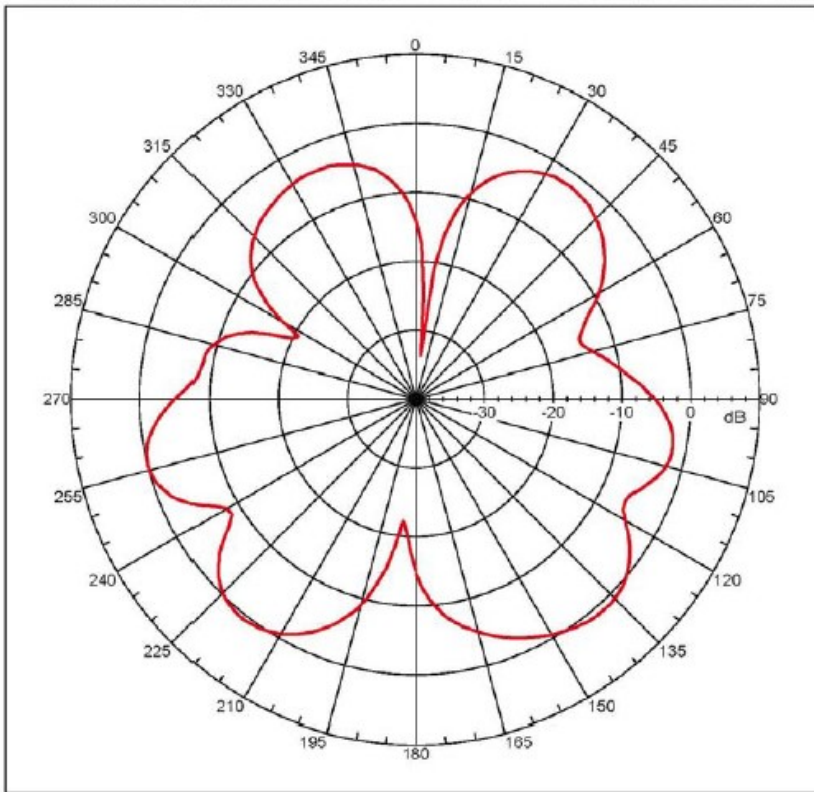
Elevation (deg)  
Center = 0.008 deg, #pts = 1

Selected beam(s) 1 of 15

| Beam | Frequency | Azimuth | Elevation | Pol        |
|------|-----------|---------|-----------|------------|
| 5    | 0.960 GHz | Azimuth | Elevation | Single-pol |

## E-Plane 1710MHz: 1.06143 dBi

Far-field amplitude of 20150701-4G ANT+CALBE-3.5M-E.nsi



Far-field amplitude, E-principal: Linear, Tau = 0.000 deg  
Gain = 1.06143 dBi  
Max far-field (global) = -44.13116 dB, Max far-field (plot) = -44.12123 dB  
Normalization: Reference, Network offset = 0.000 dB  
Hpeak at: 128.900 deg, Vpeak at: 0.000 deg  
Plot centering: On

20150701-4G ANT+CALBE-3.5M-E

NSI2008 V4.6.124, Filename: C:\Documents and Settings\NSI\Desktop\20150701-4G ANT+CALBE-3.5M-E.nsi  
Measurement date/time: 7/1/2015 3:51:23 PM, Filetype: NSI-97

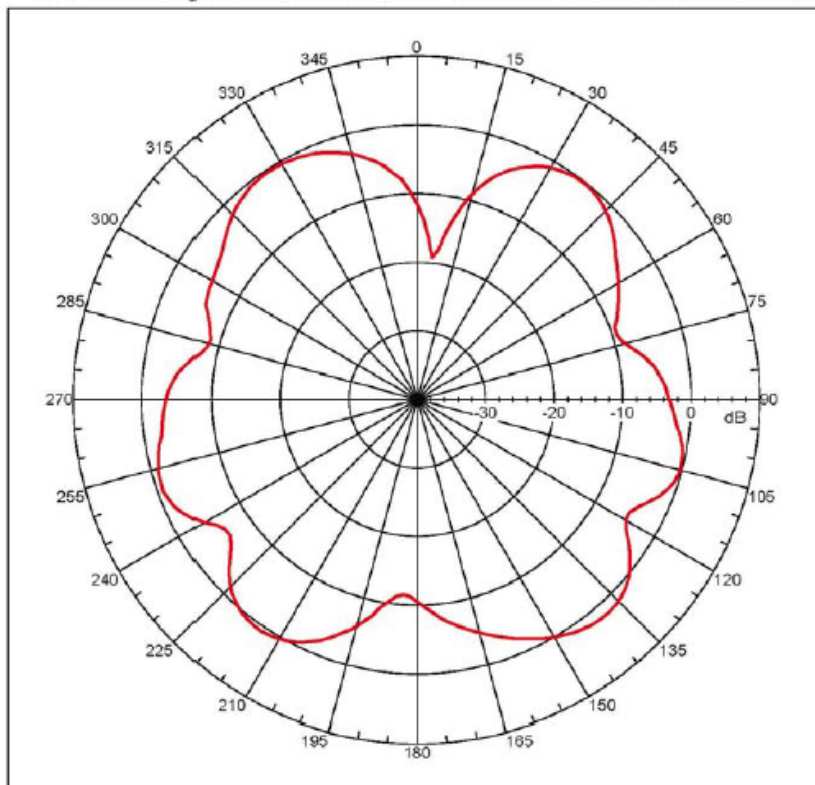
Far-field Cut Analysis:  
Avg value: -4.254 dB  
-1. dB beam width: 38.67 deg  
-6. dB beam width: 45.75 deg  
-10. dB beam width: 59.30 deg  
Left side-lobe: -2.99 dB at 102.375 deg  
Right side-lobe: Not Found

Far-field display setup  
Azimuth (deg)  
Span = 240.00001 deg, Center = 0.000 deg, #pts = 182  
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 15  
Beam Frequency Azimuth Elevation Pol  
-----  
9 3.710 GHz Azimuth Elevation Single-pol

## E-Plane 1800MHz: 1.76763 dBi

Far-field amplitude of 20150701-4G ANT+CALBE-3.5M-E.nsi



Far-field amplitude, E-principal: Linear, Tau = 0.000 deg  
Gain = 1.76763 dBi  
Max far-field (global) = -45.85441 dB, Max far-field (plot) = -45.85440 dB  
Normalization: Reference, Network offset = 0.000 dB  
Hpeak at: 128.900 deg, Vpeak at: 0.000 deg  
Plot centering: On

20150701-4G ANT+CALBE-3.5M-E

NSI2008 V4.6.124, Filename: C:\Documents and Settings\NSI\Desktop\20150701-4G ANT+CALBE-3.5M-E.nsi  
Measurement date/time: 7/1/2015 3:51:23 PM, Filetype: NSI-97

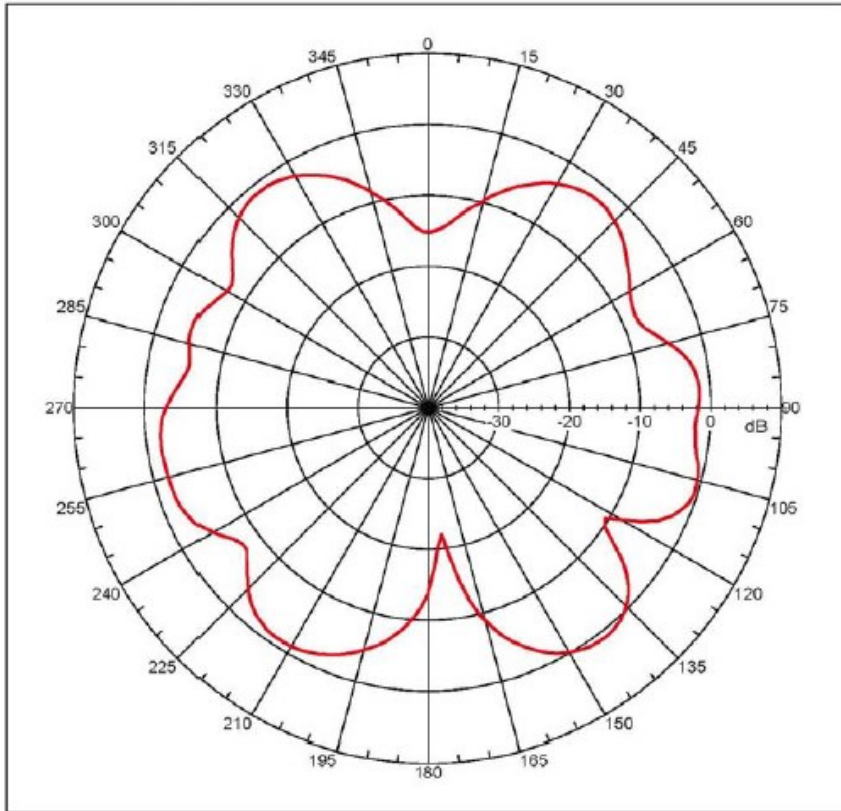
Far-field Cut Analysis:  
Avg value: -2.262 dB  
-1. dB beam width: 21.47 deg  
-6. dB beam width: 41.10 deg  
-10. dB beam width: 59.37 deg  
Left side-lobe: -2.05 dB at 105.507 deg  
Right side-lobe: Not Found

Far-field display setup  
Azimuth (deg)  
Span = 240.00001 deg, Center = 0.000 deg, #pts = 182  
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 15  
Beam Frequency Azimuth Elevation Pol  
-----  
10 3.600 GHz Azimuth Elevation Single-pol

## E-Plane 1900MHz: 0.96073 dBi

Far-field amplitude of 20150701-4G ANT+CALBE-3.5M-E.nsi



Far-field amplitude, E-principal: Linear, Tau = 0.000 deg  
Gain = 0.96073 dBi  
Max far-field (global) = -46.97623 dB, Max far-field (plot) = -46.97623 dB  
Normalization: Reference, Network offset = 0.000 dB  
Rpeak at: 141.99999 deg, Vpeak at: 0.000 deg  
Plot centering: on

20150701-4G ANT+CALBE-3.5M-E

NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20150701-4G ANT+CALBE-3.5M\20150701-4G ANT+CALBE-3.5M-E.nsi  
Measurement date/time: 7/1/2015 3:51:23 PM, Filetype: NSI-97

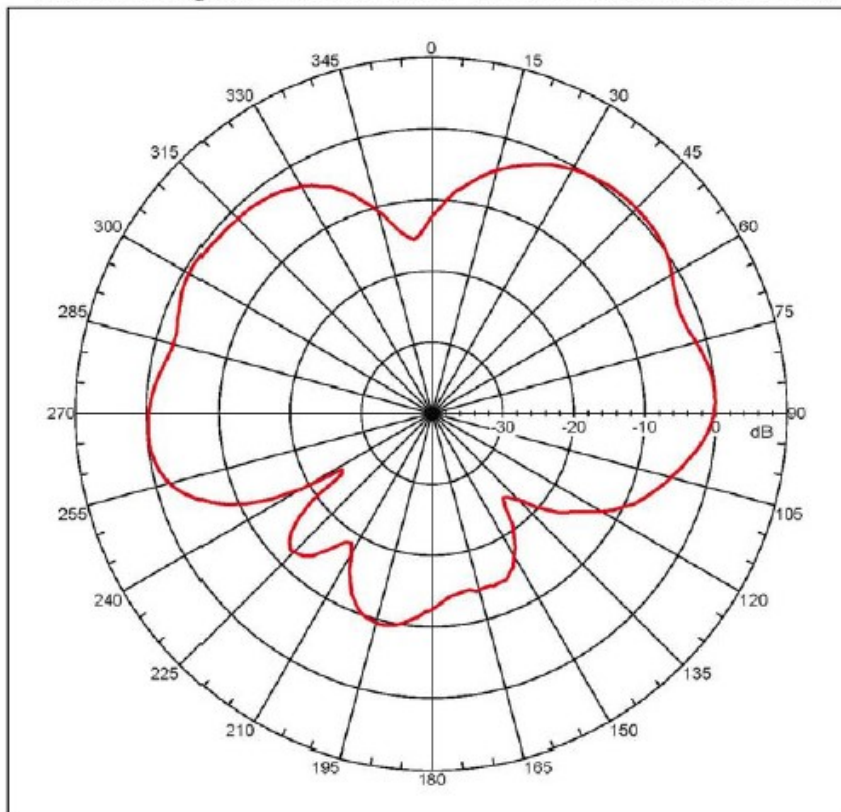
Far-field Cut Analysis:  
Avg value: -4.289 dB  
-3. dB beam width: 21.40 deg  
-6. dB beam width: 22.25 deg  
-10. dB beam width: 48.59 deg  
Left sidelobe: -1.40 dB at 109.609 deg  
Right sidelobe: Not found

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 15  
Beam Frequency Azimuth Elevation Pol  
---  
11 1.900 GHz Azimuth Elevation Single-pol

## E-Plane 2170MHz: 0.72134 dBi

Far-field amplitude of 20150701-4G ANT+CALBE-3.5M-E.nsi



Far-field amplitude, E-principal: Linear, Tau = 0.000 deg  
Gain = 0.72134 dBi  
Max far-field (global) = -46.93077 dB, Max far-field (plot) = -46.93077 dB  
Normalization: Reference, Network offset = 0.000 dB  
Rpeak at: 42.99999 deg, Vpeak at: 0.000 deg  
Plot centering: on

20150701-4G ANT+CALBE-3.5M-E

NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20150701-4G ANT+CALBE-3.5M\20150701-4G ANT+CALBE-3.5M-E.nsi  
Measurement date/time: 7/1/2015 3:51:23 PM, Filetype: NSI-97

Far-field Cut Analysis:  
Avg value: -5.247 dB  
-3. dB beam width: 45.11 deg  
-6. dB beam width: 92.49 deg  
-10. dB beam width: 110.41 deg  
Left sidelobe: -1.27 dB at -57.310 deg  
Right sidelobe: -0.77 dB at 87.486 deg

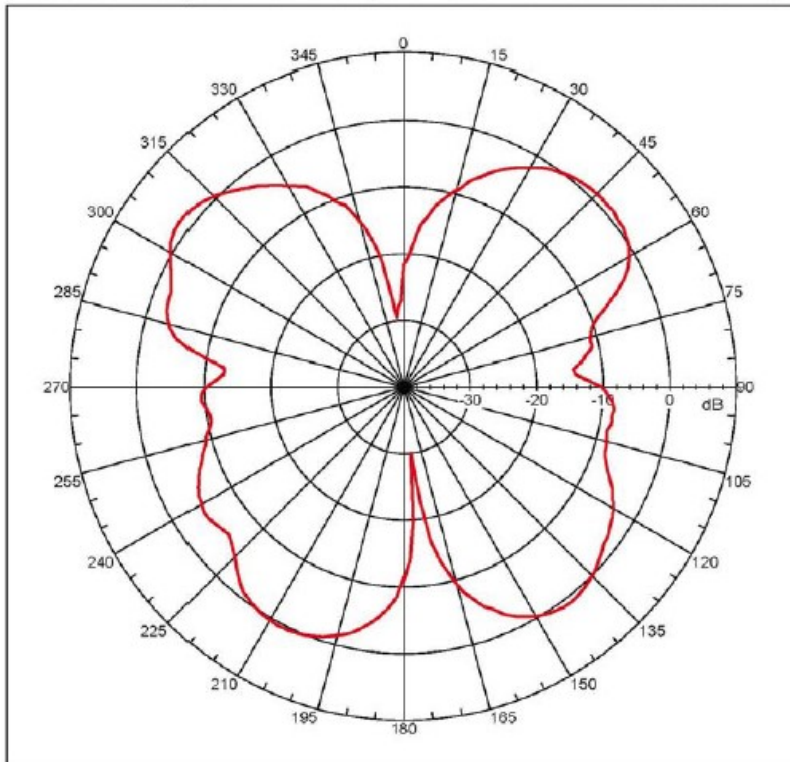
Far-field display setup  
Azimuth (deg)  
Span = 360.00001 deg, Center = 0.000 deg, #pts = 181  
Start = -180.00001 deg, Stop = 180.00001 deg, Delta = 2.000 deg  
Elevation (deg)  
Center = 0.000 deg, #pts = 1

Selected beam(s) 1 of 15  
Beam Frequency Azimuth Elevation Pol  
---  
12 2.170 GHz Azimuth Elevation Single-pol



## E-Plane 2400MHz: 1.73269 dBi

Far-field amplitude of 20150701-4G ANT+CALBE-3.5M-E.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
Gain = 1.73269 dBi  
Max far-field (global) = -47.27496 dB, Max far-field (plot) = -47.27496 dB  
Normalization: Reference, Network offset = 0.000 dB  
Hpeak at: -56.000 deg, Vpeak at: 0.000 deg  
Plot centering: On

20150701-4G ANT+CALBE-3.5M-E

NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20150701-4G ANT+CALBE-3.5M-E.nsi  
Measurement date/time: 7/1/2015 3:53:23 PM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: -4.258 dB  
-3. dB beam width: 23.86 deg  
-6. dB beam width: 44.51 deg  
-10. dB beam width: 57.59 deg  
Left sidelobe: -11.18 dB at -92.520 deg  
Right sidelobe: -0.06 dB at 47.203 deg

Far-field display setup

Azimuth (deg)  
Span = 268.00001 deg, Center = 0.000 deg, #pts = 181  
Start = -130.00001 deg, Stop = 130.00001 deg, Delta = 2.000 deg

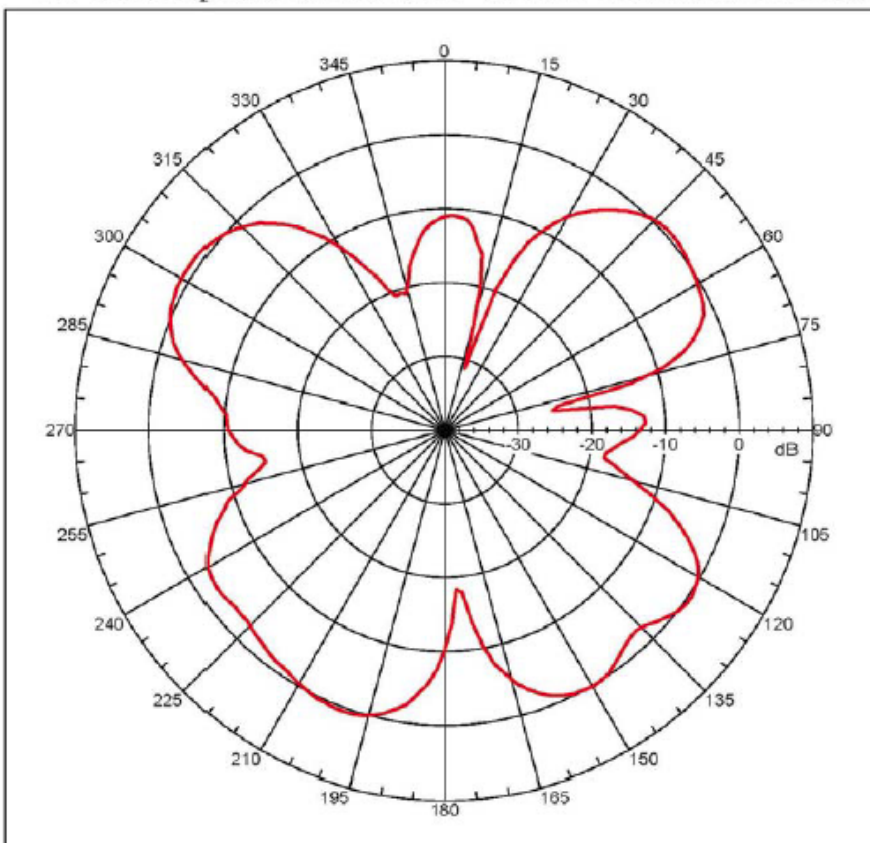
Elevation (deg)  
Center = 0.000 deg, #pts = 1

Selected beam(s) 1 of 15

| Beam | Frequency | Azimuth | Elevation | Pol        |
|------|-----------|---------|-----------|------------|
| 13   | 2.400 GHz | Azimuth | Elevation | Single-pol |

## E-Plane 2500 MHz: 1.04758 dBi

Far-field amplitude of 20150701-4G ANT+CALBE-3.5M-E.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
Gain = 1.04758 dBi  
Max far-field (global) = -49.88841 dB, Max far-field (plot) = -49.88841 dB  
Normalization: Reference, Network offset = 0.000 dB  
Hpeak at: -60.00001 deg, Vpeak at: 0.000 deg  
Plot centering: On

20150701-4G ANT+CALBE-3.5M-E

NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20150701-4G ANT+CALBE-3.5M-E.nsi  
Measurement date/time: 7/1/2015 3:53:23 PM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: -4.572 dB  
-3. dB beam width: 28.25 deg  
-6. dB beam width: 29.90 deg  
-10. dB beam width: 58.99 deg  
Left sidelobe: -3.43 dB at -125.699 deg  
Right sidelobe: -11.56 dB at 3.917 deg

Far-field display setup

Azimuth (deg)  
Span = 268.00001 deg, Center = 0.000 deg, #pts = 181  
Start = -130.00001 deg, Stop = 130.00001 deg, Delta = 2.000 deg

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

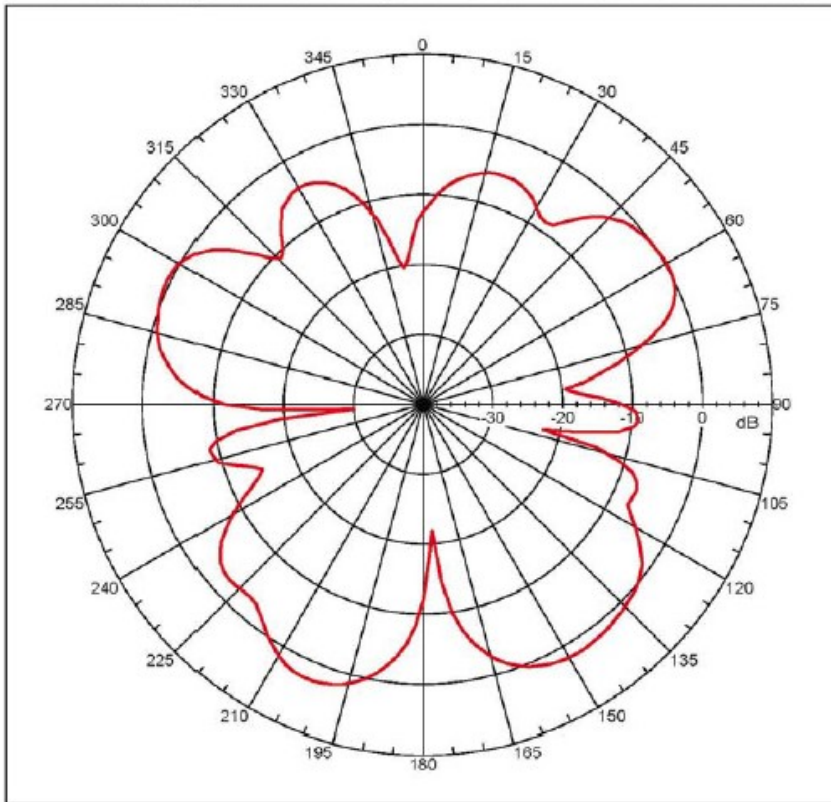
Selected beam(s) 1 of 15

| Beam | Frequency | Azimuth | Elevation | Pol        |
|------|-----------|---------|-----------|------------|
| 14   | 2.500 GHz | Azimuth | Elevation | Single-pol |



## E-Plane 2600MHz: 2.59262 dBi

Far-field amplitude of 20150701-4G ANT+CALBE-3.5M-E.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
Gain = 2.59262 dBi  
Max far-field (global) = -47.72417 dB, Max far-field (plot) = -47.72429 dB  
Normalization: Reference, Network offset = 0.000 dB  
Hpeak at: -156.000 deg, Vpeak at: 0.000 deg  
Plot centering: On

20150701-4G ANT+CALBE-3.5M-E

N3280B V4.0.124, Filename: C:\Documents and Settings\N3I\Desktop\20150701-4G ANT+CALBE-3.5M-E.nsi  
Measurement date/time: 7/1/2015 3:51:23 PM, Filetype: NSI-97

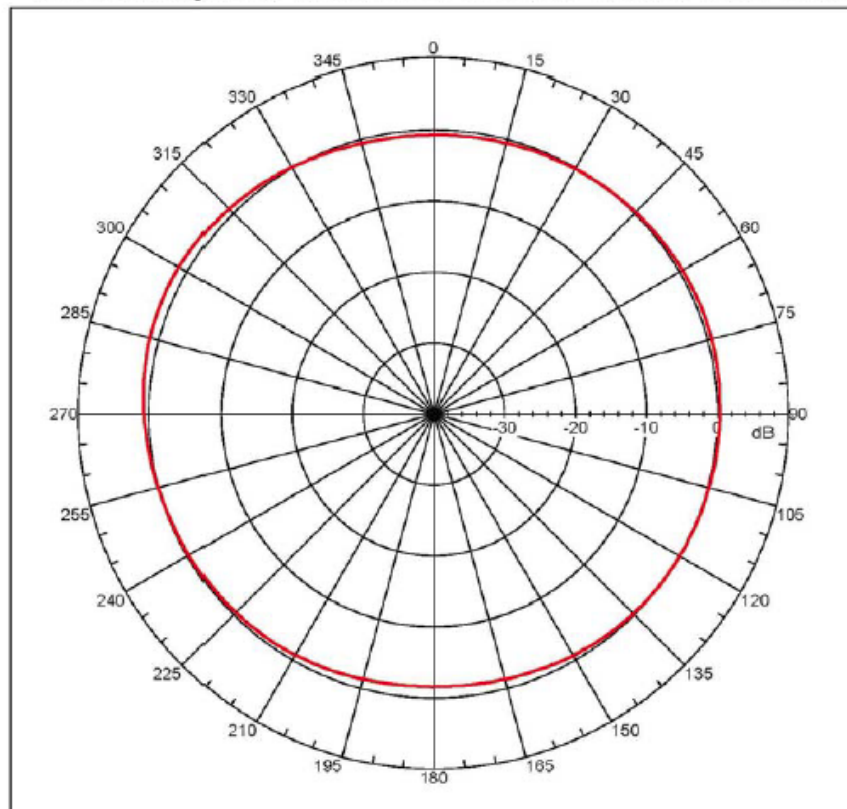
Far-field Cut Analysis:  
Avg value: -4.167 dB  
-3. dB beam width: 23.08 deg  
-6. dB beam width: 46.20 deg  
-10. dB beam width: 56.36 deg  
Left side-lobe: Not Found  
Right side-lobe: -11.26 dB at -191.564 deg

Far-field display setup  
Azimuth (deg)  
Span = 269.00001 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 15  
Beam Frequency Azimuth Elevation Pol  
15 2.600 GHz Azimuth Elevation Single-pol

## H-Plane 806MHz: 1.37841 dBi

Far-field amplitude of 20150701-4G ANT+CALBE-3.5M-H.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
Gain = 1.37841 dBi  
Max far-field (global) = -41.30906 dB, Max far-field (plot) = -41.30906 dB  
Normalization: Reference, Network offset = 0.000 dB  
Hpeak at: -60.00001 deg, Vpeak at: 0.000 deg  
Plot centering: On

20150701-4G ANT+CALBE-3.5M-H

N3280B V4.0.124, Filename: C:\Documents and Settings\N3I\Desktop\20150701-4G ANT+CALBE-3.5M-H.nsi  
Measurement date/time: 7/1/2015 3:36:28 PM, Filetype: NSI-97

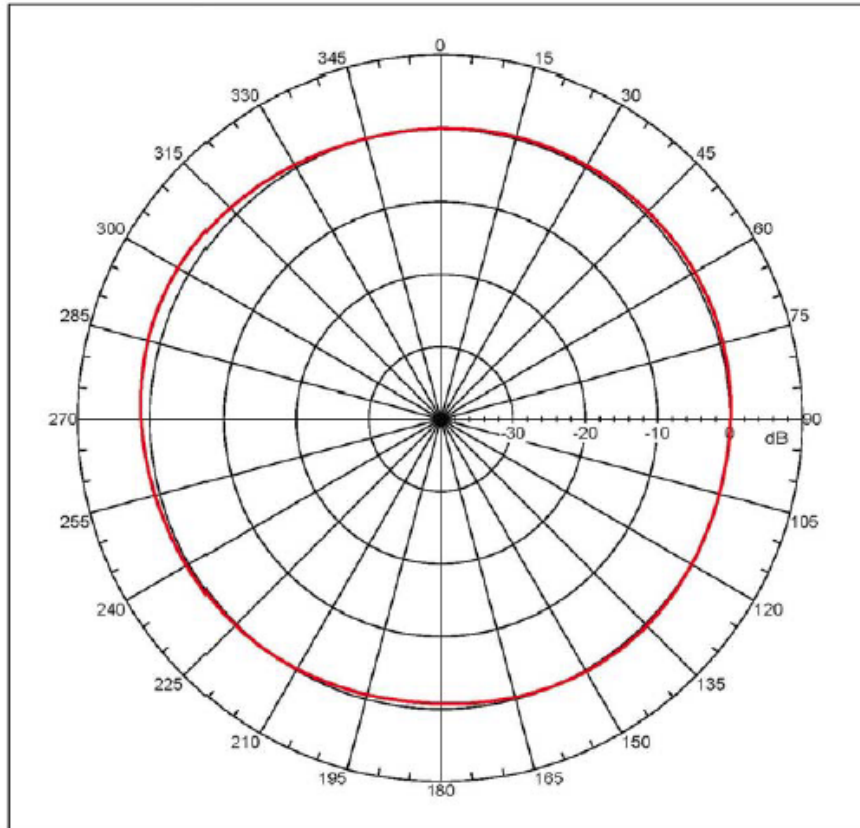
Far-field Cut Analysis:  
Avg value: -0.077 dB  
-3. dB beam width: Not Found  
-6. dB beam width: Not Found  
-10. dB beam width: Not Found  
Left side-lobe: Not Found  
Right side-lobe: -0.91 dB at 59.330 deg

Far-field display setup  
Azimuth (deg)  
Span = 269.00001 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 15  
Beam Frequency Azimuth Elevation Pol  
1 8.006 GHz Azimuth Elevation Single-pol

## H-Plane 824MHz: 1.77902 dBi

Far-field amplitude of 20150701-4G ANT+CALBE-3.5M-H.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
Gain = 1.77902 dBi  
Max far-field (global) = -41.22032 dB, Max far-field (plot) = -41.22032 dB  
Normalization: Reference, Network offset = 0.000 dB  
Hpeak at: -65.000 deg, Vpeak at: 0.000 deg  
Plot centering: On

20150701-4G ANT+CALBE-3.5M-H

NSI2000 V4.0.324, Filename: C:\Documents and Settings\NSI\Desktop\20150701-4G ANT+CALBE-3.5M\20150701-4G ANT+CALBE-3.5M-H.nsi  
Measurement date/time: 7/1/2015 3:36:20 PM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: 0.271 dB  
-1. 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

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

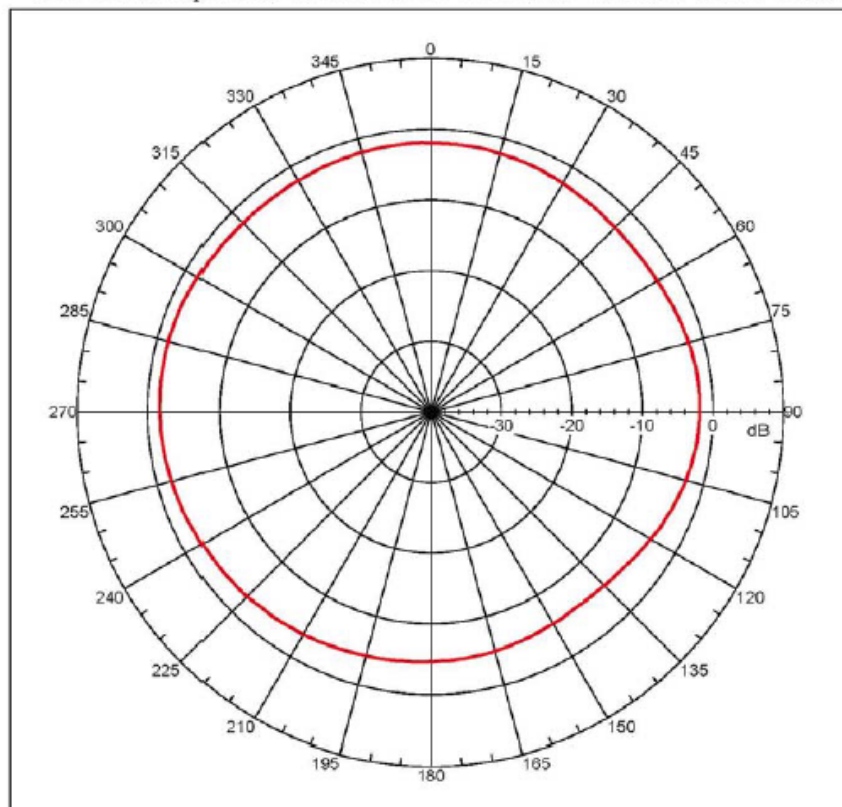
Elevation (deg)  
Center = 0.000 deg, #pts = 1

Selected beam(s) 1 of 15

| Beam | Frequency | Arimuth | Elevation | Pol        |
|------|-----------|---------|-----------|------------|
| 2    | 0.824 GHz | Arimuth | Elevation | Single-pol |

## H-Plane 850 MHz: -1.60185 dBi

Far-field amplitude of 20150701-4G ANT+CALBE-3.5M-H.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
Gain = -1.60185 dBi  
Max far-field (global) = -42.85871 dB, Max far-field (plot) = -42.85871 dB  
Normalization: Reference, Network offset = 0.000 dB  
Hpeak at: -76.00001 deg, Vpeak at: 0.000 deg  
Plot centering: On

20150701-4G ANT+CALBE-3.5M-H

NSI2000 V4.0.324, Filename: C:\Documents and Settings\NSI\Desktop\20150701-4G ANT+CALBE-3.5M\20150701-4G ANT+CALBE-3.5M-H.nsi  
Measurement date/time: 7/1/2015 3:36:20 PM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: -2.587 dB  
-1. dB beam width: Not Found  
-6. dB beam width: Not Found  
-10. dB beam width: Not Found  
Left Sidelobe: Not Found  
Right Sidelobe: -0.24 dB at 87.486 deg

Far-field display setup

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

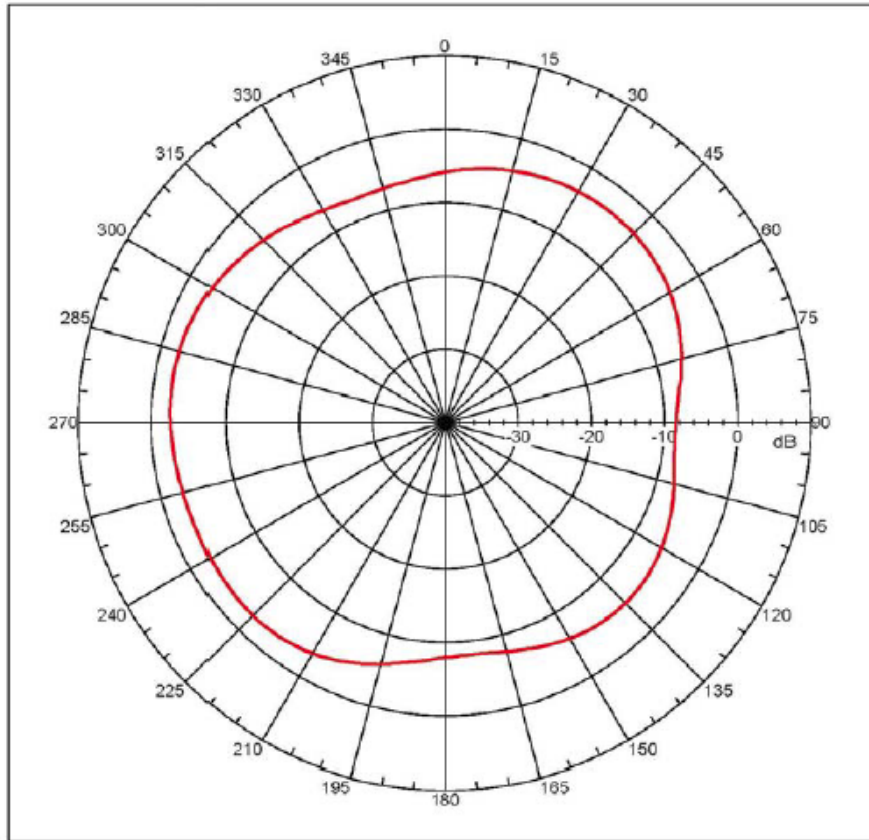
Elevation (deg)  
Center = 0.000 deg, #pts = 1

Selected beam(s) 1 of 15

| Beam | Frequency | Arimuth | Elevation | Pol        |
|------|-----------|---------|-----------|------------|
| 2    | 0.850 GHz | Arimuth | Elevation | Single-pol |

## H-Plane 900MHz: -2.47165 dBi

Far-field amplitude of 20150701-4G ANT+CALBE-3.5M-H.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
Gain = -2.47165 dBi  
Max far-field (global) = -44.93133 dB, Max far-field (plot) = -44.93134 dB  
Normalization: Reference, Network offset = 0.000 dB  
Hpeak at: -62.90001 deg, Vpeak at: 0.000 deg  
Plot centering: On

20150701-4G ANT+CALBE-3.5M-H

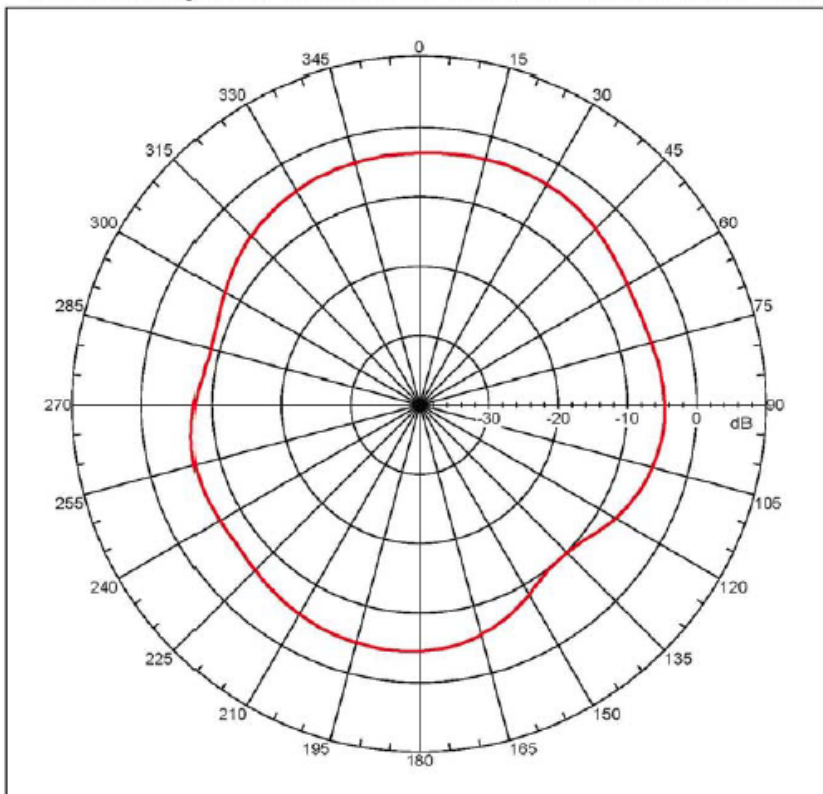
NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20150701-4G ANT+CALBE-3.5M\20150701-4G ANT+CALBE-3.5M-H.nsi  
Measurement date/time: 7/1/2015 3:36:28 PM, Filetype: NSI-97  
Far-field Cut Analysis:  
Avg values: -1.529 dB  
-1. dB beam width: 127.69 deg  
-6. dB beam width: Not Found  
-10. dB beam width: Not Found  
Left Sidelobe: Not Found  
Right Sidelobe: -0.95 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 15

| Beam | Frequency | Azimuth | Elevation | Pol        |
|------|-----------|---------|-----------|------------|
| 4    | 0.900 GHz | Azimuth | Elevation | Single-pol |

## H-Plane 960MHz: -3.26146 dBi

Far-field amplitude of 20150701-4G ANT+CALBE-3.5M-H.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
Gain = -3.26146 dBi  
Max far-field (global) = -45.89113 dB, Max far-field (plot) = -45.89114 dB  
Normalization: Reference, Network offset = 0.000 dB  
Hpeak at: 19.99999 deg, Vpeak at: 0.000 deg  
Plot centering: On

20150701-4G ANT+CALBE-3.5M-H

NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20150701-4G ANT+CALBE-3.5M\20150701-4G ANT+CALBE-3.5M-H.nsi  
Measurement date/time: 7/1/2015 3:36:28 PM, Filetype: NSI-97  
Far-field Cut Analysis:  
Avg values: -3.182 dB  
-1. dB beam width: 183.18 deg  
-6. dB beam width: Not Found  
-10. dB beam width: Not Found  
Left Sidelobe: -3.19 dB at -105.987 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

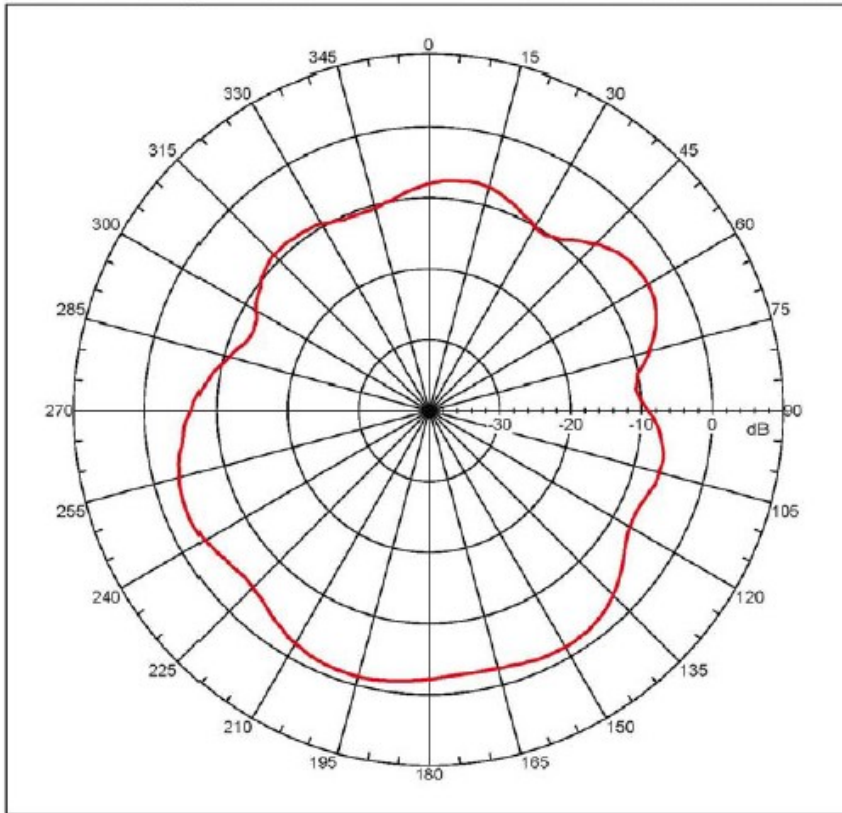
Selected beam(s) 1 of 15

| Beam | Frequency | Azimuth                                        | Elevation | Pol        |
|------|-----------|------------------------------------------------|-----------|------------|
| 5    | 0.960 GHz | Azimuth <td>Elevation</td> <td>Single-pol</td> | Elevation | Single-pol |



## H-Plane 1710MHz -1.21375 dBi

Far-field amplitude of 20150701-4G ANT+CALBE-3.5M-H.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
Gain = -1.21375 dBi  
Max far-field (global) = -46.40634 dB, Max far-field (plot) =  
-46.40634 dB  
Normalization: Reference, Network offset = 0.000 dB  
Rpeak at: -164.000 deg, vpeak at: 0.000 deg  
Plot centering: On

20150701-4G ANT+CALBE-3.5M-H

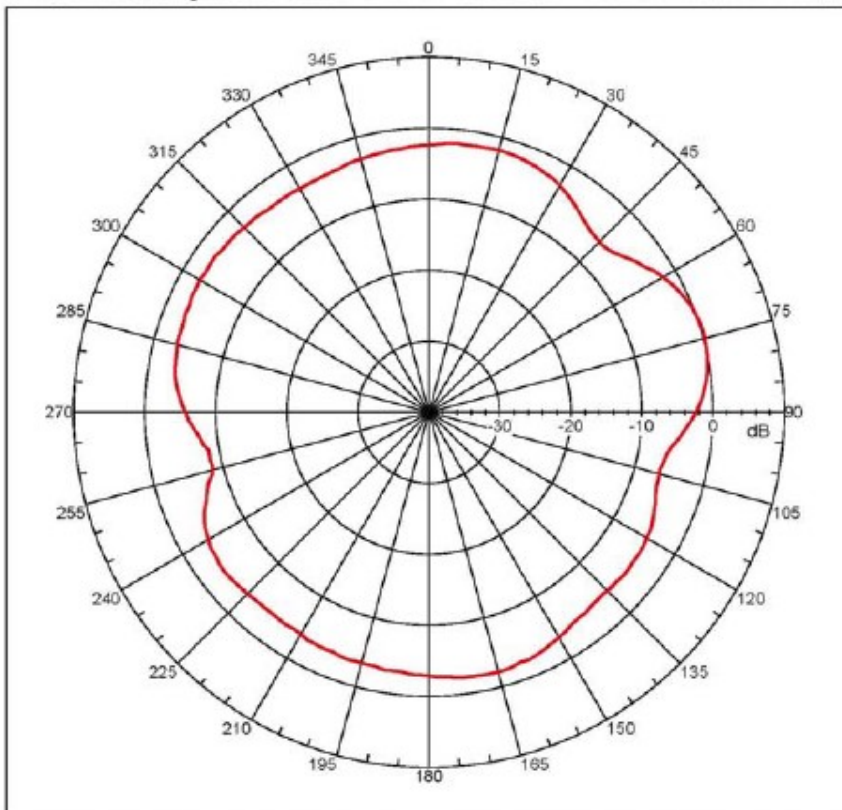
NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20  
150701-4G ANT+CALBE-3.5M\20150701-4G ANT+CALBE-3.5M-H.nsi  
Measurement date/time: 7/1/2015 3:36:28 PM, Filetype: NSI-97  
Far-field Cut Analysis:  
Avg value: -5.684 dB  
-3. dB beam width: Not Found  
-6. dB beam width: Not Found  
-10. dB beam width: Not Found  
Left Sidelobe: Not Found  
Right Sidelobe: -1.87 dB at -133.631 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

Selected beam(s) 1 of 15

| Beam | Frequency | Azimuth | Elevation | Fol        |
|------|-----------|---------|-----------|------------|
| 9    | 1.710 GHz | Azimuth | Elevation | Single-pol |

## H-Plane 1800MHz: 0.29161 dBi

Far-field amplitude of 20150701-4G ANT+CALBE-3.5M-H.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
Gain = 0.29161 dBi  
Max far-field (global) = -46.53043 dB, Max far-field (plot) =  
-46.53043 dB  
Normalization: Reference, Network offset = 0.000 dB  
Rpeak at: 73.99999 deg, vpeak at: 0.000 deg  
Plot centering: On

20150701-4G ANT+CALBE-3.5M-H

NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20  
150701-4G ANT+CALBE-3.5M\20150701-4G ANT+CALBE-3.5M-H.nsi  
Measurement date/time: 7/1/2015 3:36:28 PM, Filetype: NSI-97  
Far-field Cut Analysis:  
Avg value: -3.461 dB  
-3. dB beam width: 23.46 deg  
-6. dB beam width: 50.52 deg  
-10. dB beam width: Not Found  
Left Sidelobe: -2.12 dB at 15.094 deg  
Right Sidelobe: -4.62 dB at 125.098 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

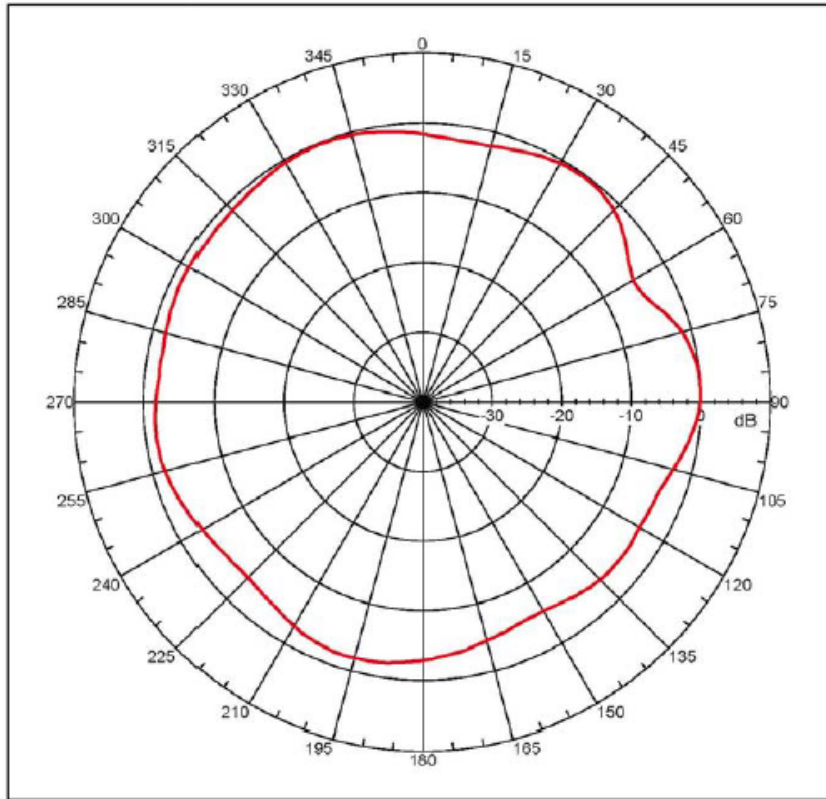
Selected beam(s) 1 of 15

| Beam | Frequency | Azimuth                                         | Elevation                     | Fol        |
|------|-----------|-------------------------------------------------|-------------------------------|------------|
| 10   | 1.800 GHz | Azimuth <td>Elevation <td>Single-pol</td> </td> | Elevation <td>Single-pol</td> | Single-pol |



## H-Plane 1900MHz: -0.03944 dBi

Far-field amplitude of 20150701-4G ANT+CALBE-3.5M-H.nsi



Far-field amplitude, Principal: Linear, Tau = 0.000 deg  
Gain = -0.03944 dBi  
Max far-field (global) = -47.9764 dB, Max far-field (plot) = -47.9764 dB  
Normalization: Reference, Network offset = 0.000 dB  
Vpeak at: 85.9999 deg, Vpeak at: 0.000 deg  
Plot centering: On

20150701-4G ANT+CALBE-3.5M-H

NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20150701-4G ANT+CALBE-3.5M\20150701-4G ANT+CALBE-3.5M-H.nsi  
Measurement date/time: 7/1/2015 3:36:20 PM, Filetype: NSI-97

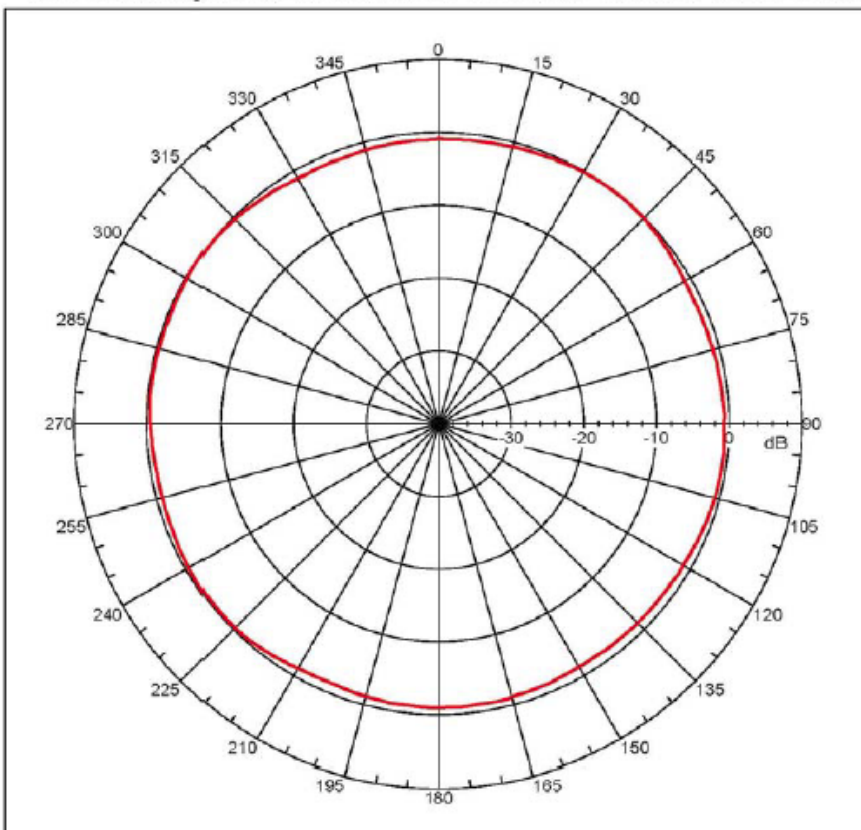
Far-field Cut Analysis:  
Avg value: -2.231 dB  
-3. dB beam width: 37.22 deg  
-6. dB beam width: Not Found  
-10. dB beam width: Not Found  
Left Sidelobe: -9.27 dB at 27.287 deg  
Right Sidelobe: Not Found

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 15  
Beam Frequency Azimuth Elevation Pol  
-----  
11 1.900 GHz Azimuth Elevation Single-pol

## H-Plane 2170MHz: 0.020 dBi

Far-field amplitude of 20150701-4G ANT+CALBE-3.5M-H.nsi



Far-field amplitude, Principal: Linear, Tau = 0.000 deg  
Gain = 0.020 dBi  
Max far-field (global) = -47.51211 dB, Max far-field (plot) = -47.51211 dB  
Normalization: Reference, Network offset = 0.000 dB  
Vpeak at: 29.9999 deg, Vpeak at: 0.000 deg  
Plot centering: On

20150701-4G ANT+CALBE-3.5M-H

NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20150701-4G ANT+CALBE-3.5M\20150701-4G ANT+CALBE-3.5M-H.nsi  
Measurement date/time: 7/1/2015 3:36:20 PM, Filetype: NSI-97

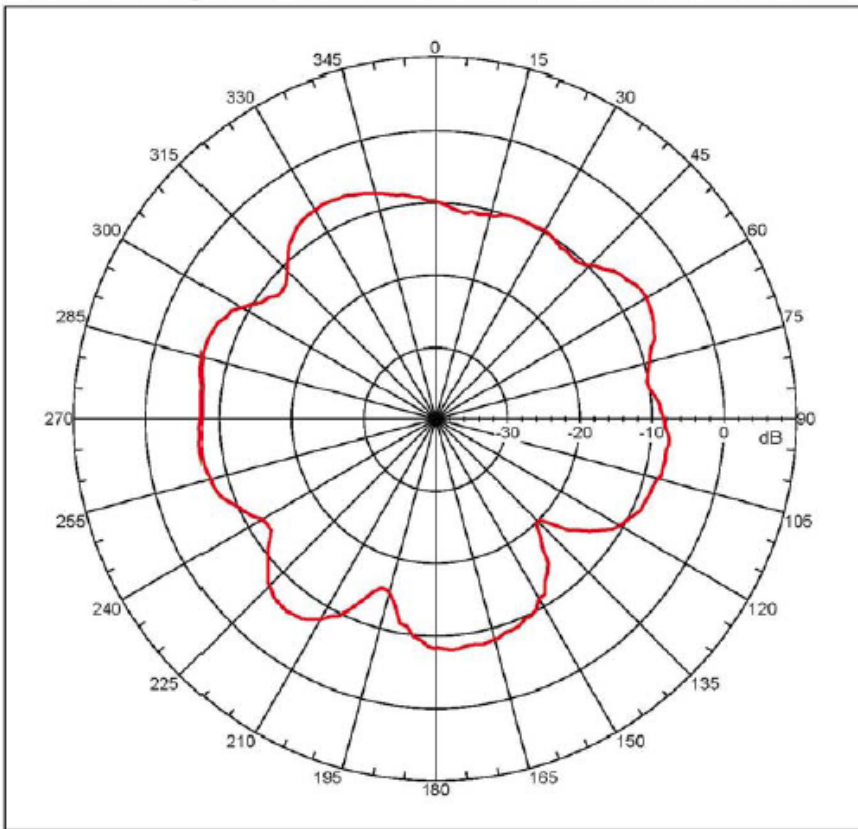
Far-field Cut Analysis:  
Avg value: -0.759 dB  
-3. dB beam width: Not Found  
-6. dB beam width: Not Found  
-10. dB beam width: Not Found  
Left Sidelobe: -9.09 dB at -51.205 deg  
Right Sidelobe: Not Found

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 15  
Beam Frequency Azimuth Elevation Pol  
-----  
12 2.170 GHz Azimuth Elevation Single-pol

## H-Plane 2400MHz –6.23579 dBi

Far-field amplitude of 20150701-4G ANT+CALBE-3.5M-H.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
Gain = -6.23579 dBi  
Max far-field (global) = -55.24242 dB, Max far-field (plot) = -55.24242 dB  
Normalization: Reference, Network offset = 0.000 dB  
Rpeak at: 57.99999 deg, Vpeak at: 0.000 deg  
Plot centering: On

20150701-4G ANT+CALBE-3.5M-H

NI2008 V4.0.124, Filename: C:\Documents and Settings\N81\Desktop\20150701-4G ANT+CALBE-3.5M\20150701-4G ANT+CALBE-3.5M-H.nsi  
Measurement date/time: 7/1/2015 3:36:28 PM, Filetype: NSI-67

Far-field Cut Analysis:  
Avg value: -9.108 dB  
-3. dB beam width: 28.34 deg  
-6. dB beam width: 245.17 deg  
-10. dB beam width: Not found  
Left Sidelobe: -9.32 dB at -21.117 deg  
Right Sidelobe: -1.24 dB at 97.542 deg

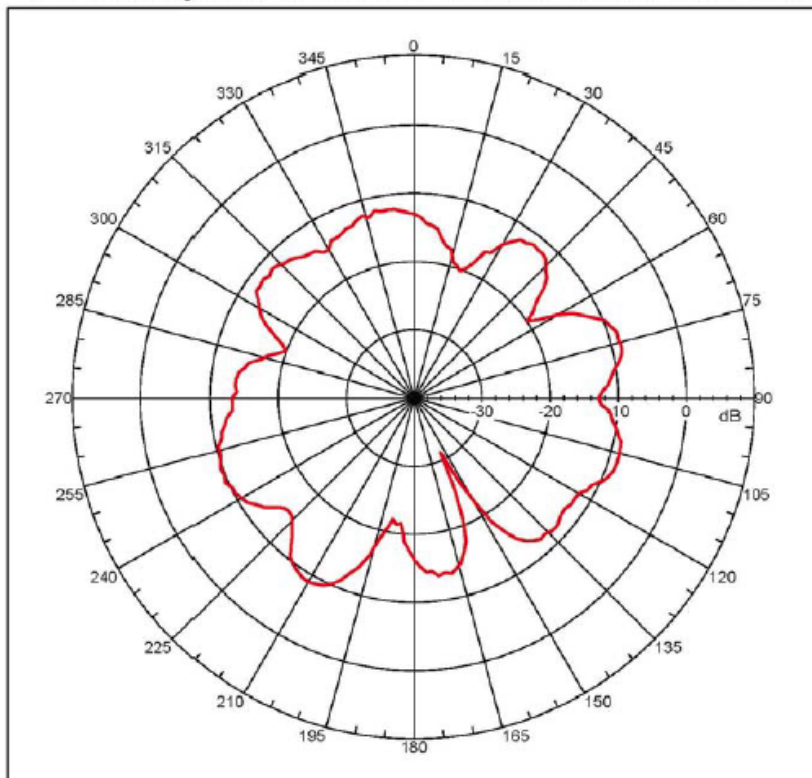
Far-field display setup  
Azimuth (deg)  
Span = 360.00001 deg, Center = 0.000 deg, #pts = 181  
Start = -180.00001 deg, Stop = 180.00001 deg, Delta = 2.000 deg  
Elevation (deg)  
Center = 0.000 deg, #pts = 1

Selected beam(s) 1 of 15

| Beam | Frequency | Azimuth | Elevation | Pol        |
|------|-----------|---------|-----------|------------|
| 17   | 2.400 GHz | Azimuth | Elevation | Single-pol |

## H-Plane 2500MHz: -8.61832 dBi

Far-field amplitude of 20150701-4G ANT+CALBE-3.5M-H.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
Gain = -8.61832 dBi  
Max far-field (global) = -58.75431 dB, Max far-field (plot) = -58.75431 dB  
Normalization: Reference, Network offset = 0.000 dB  
Rpeak at: 75.99999 deg, Vpeak at: 0.000 deg  
Plot centering: On

20150701-4G ANT+CALBE-3.5M-H

NI2008 V4.0.124, Filename: C:\Documents and Settings\N81\Desktop\20150701-4G ANT+CALBE-3.5M\20150701-4G ANT+CALBE-3.5M-H.nsi  
Measurement date/time: 7/1/2015 3:36:28 PM, Filetype: NSI-67

Far-field Cut Analysis:  
Avg value: -12.450 dB  
-3. dB beam width: 27.38 deg  
-6. dB beam width: 87.42 deg  
-10. dB beam width: 59.70 deg  
Left Sidelobe: -2.08 dB at 42.240 deg  
Right Sidelobe: -0.07 dB at 107.599 deg

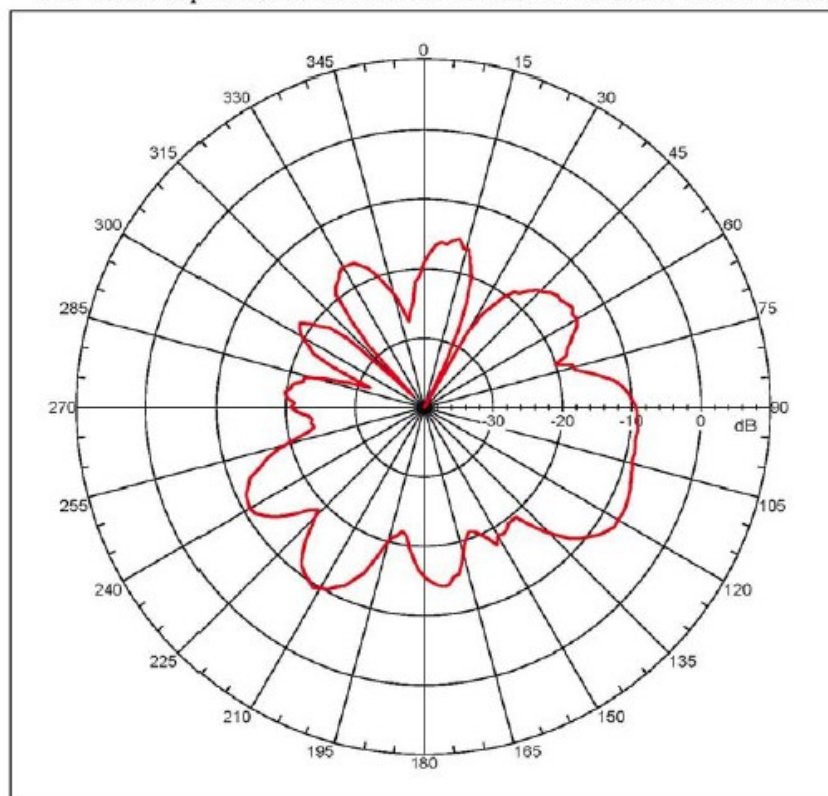
Far-field display setup  
Azimuth (deg)  
Span = 360.00001 deg, Center = 0.000 deg, #pts = 181  
Start = -180.00001 deg, Stop = 180.00001 deg, Delta = 2.000 deg  
Elevation (deg)  
Center = 0.000 deg, #pts = 1

Selected beam(s) 1 of 15

| Beam | Frequency | Azimuth | Elevation | Pol        |
|------|-----------|---------|-----------|------------|
| 14   | 2.500 GHz | Azimuth | Elevation | Single-pol |

## H-Plane 2600MHz: -7.49977 dBi

Far-field amplitude of 20150701-4G ANT+CALBE-3.5M-H.nsi



Far-field amplitude: Eprincipal: Linear, Tau = 0.000 deg  
Gain = -7.49977 dBi  
Max far-field (global) = -57.92000 dB, Max far-field (plot) = -57.91600 dB  
Normalization: Reference, Network offset = 0.000 dB  
Hpeak at: 217.99999 deg, Vpeak at: 0.000 deg  
Plot centering: On

20150701-4G ANT+CALBE-3.5M-H

NSI2000 V4.0.124, Filename: C:\Documents and Settings\NSI\Desktop\20150701-4G ANT+CALBE-3.5M-H.nsi  
Measurement date/time: 7/1/2015 11:26:28 AM, Filetype: NSI-97

Far-field Cut Analysis:  
Avg value: -15.671 dB  
-3. dB beam width: 44.15 deg  
-6. dB beam width: 52.56 deg  
-10. dB beam width: 62.50 deg  
Left sidelobe: -7.01 dB at 61.341 deg  
Right sidelobe: -10.84 dB at 153.855 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 15  
Beam Frequency Azimuth Elevation Pol  
15 2.600 GHz Azimuth Elevation Single-pol

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Environment Agency producer registration number: WEE/JB0104WV.

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