

# OUTSIDE GSM/LTE ANTENNA

## MODEL: GSM-100C



### 1. GENERAL DESCRIPTION

Model No
GSM100C

Below is a table summarizing the antenna design specification.

#### 1.1 Electrical Properties

Parameter	Description
Frequency Band	690~960/1710~2170/2500~2700 MHz
Nominal Impedance	50 ohm
Polarization	Vertical
Return Loss	Please See Data-1
V.S.W.R	2.2:1
Note: Gain includes the cable loss	

#### 1.2 Mechanical Properties

Parameter	Description
Antenna Type	Base Antenna
Antenna Cover	Fiber
Connector Type	N (Female)

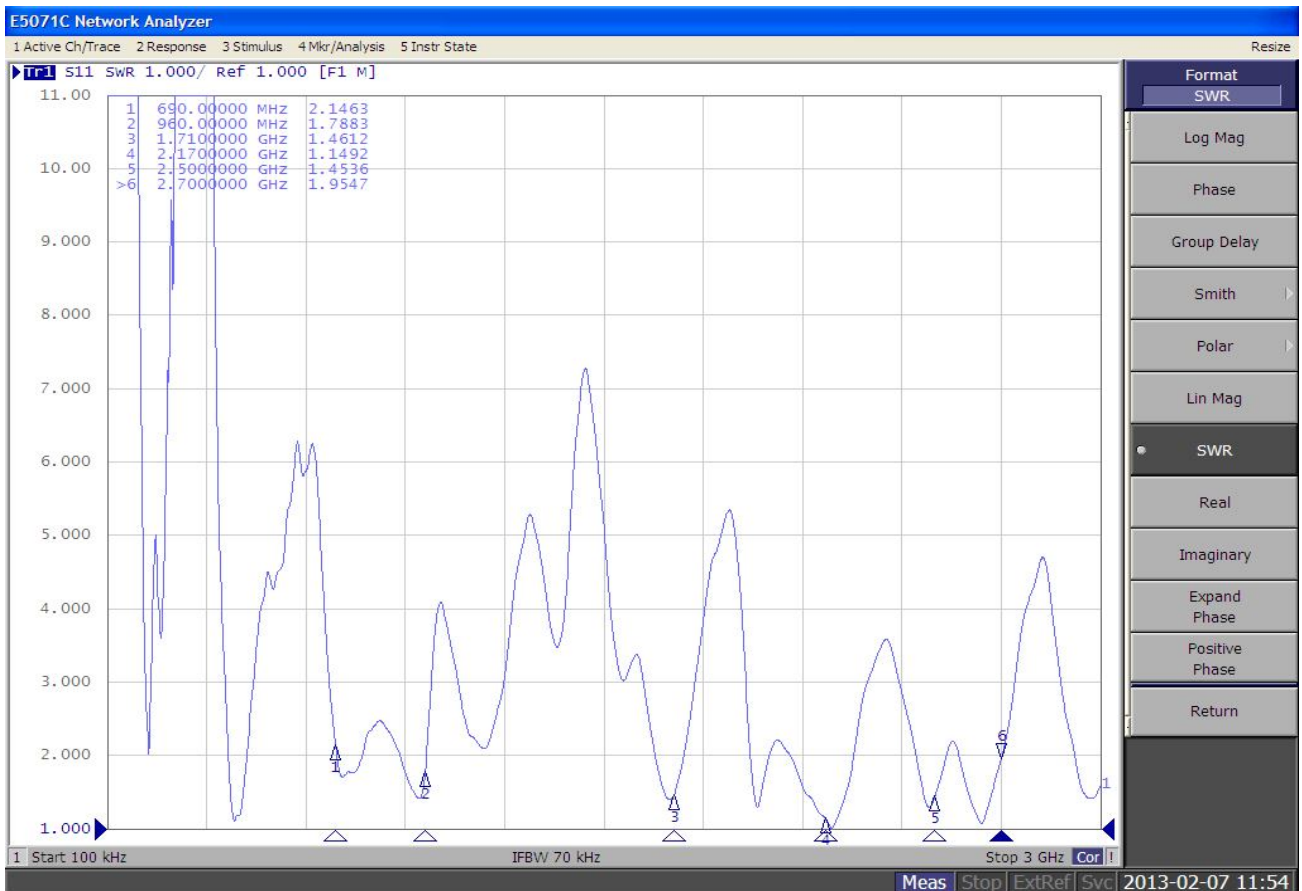
Antenna Dimensions	756mm ± 20
Antenna Color	White
Operating Temperature Range	-20°C~+60°C
Storage Temperature Range	-30°C~+70°C

## 2. Appearance

NO.	NAME	Q. TY
01	Body	01
02	Cap	01
03	Tube aluminium	01
04	Round iron washer	01
05	Hexagonal nut	01
06	Clip retaining	02
07	U-Circlip	02
08	Hexagonal nut	02
09	Round iron washer	04
10	Hexagonal nut	04
11	Hexagonal plate hand	01

CUSTOMER'S	MODEL	PARTS NUMBER	FREQUENCY	UNIT	SCALE	DATE	VERSION
			800/900/1800/1900/2170MHz	M/M		20070903	1
TOLERANCE	X. XX±0. 15	NAME	PARTS NUMBER	APPROVED	CHECKED	DRAWING	DESIGNED
SURFACE ROUGHNESS	$\frac{S}{\sqrt{V}}$	APPEARANCE					

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



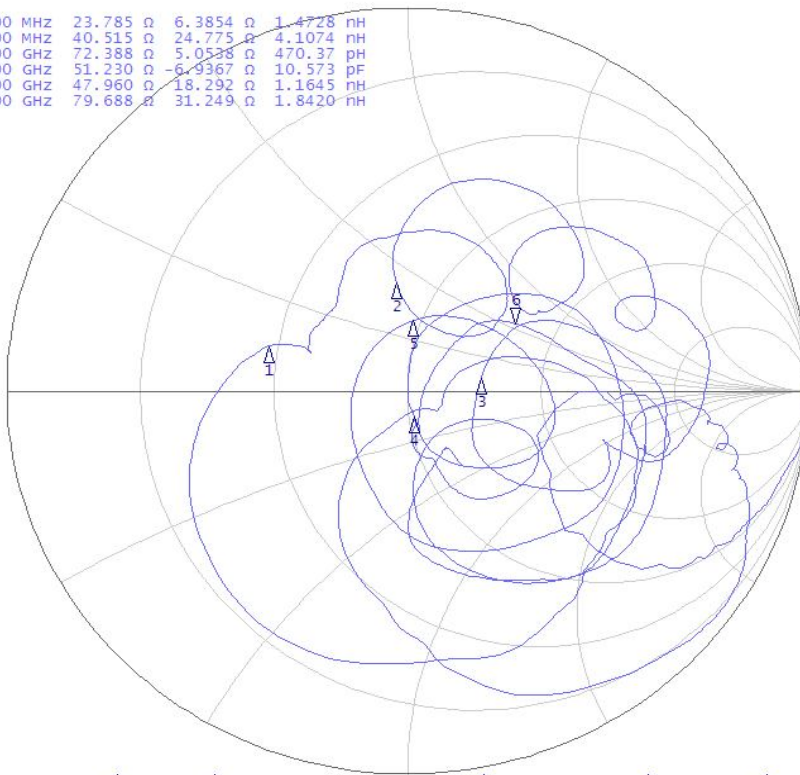
E5071C Network Analyzer

1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State

Resize

▶ **Tr1** S11 Smith (R+jX) Scale 1.0000 [F1 M]

1	690.00000	MHZ	23.785	$\Omega$	6.3854	$\Omega$	1.4728	nH
2	960.00000	MHZ	40.515	$\Omega$	24.775	$\Omega$	4.1074	nH
3	1.7100000	GHZ	72.388	$\Omega$	5.0538	$\Omega$	470.37	pH
4	2.1700000	GHZ	51.230	$\Omega$	-6.9367	$\Omega$	10.573	pF
5	2.5000000	GHZ	47.960	$\Omega$	18.292	$\Omega$	1.1645	nH
>6	2.7000000	GHZ	79.688	$\Omega$	31.249	$\Omega$	1.8420	nH



1 Start 100 kHz

IFBW 70 kHz

Stop 3 GHz Cor 1

Meas Stop ExtRef Svc 2013-02-07 11:55

Format

Smith (R+jX)

Log Mag

Phase

Group Delay

Smith

R + jX

Polar

Lin Mag

SWR

Real

Imaginary

Expand

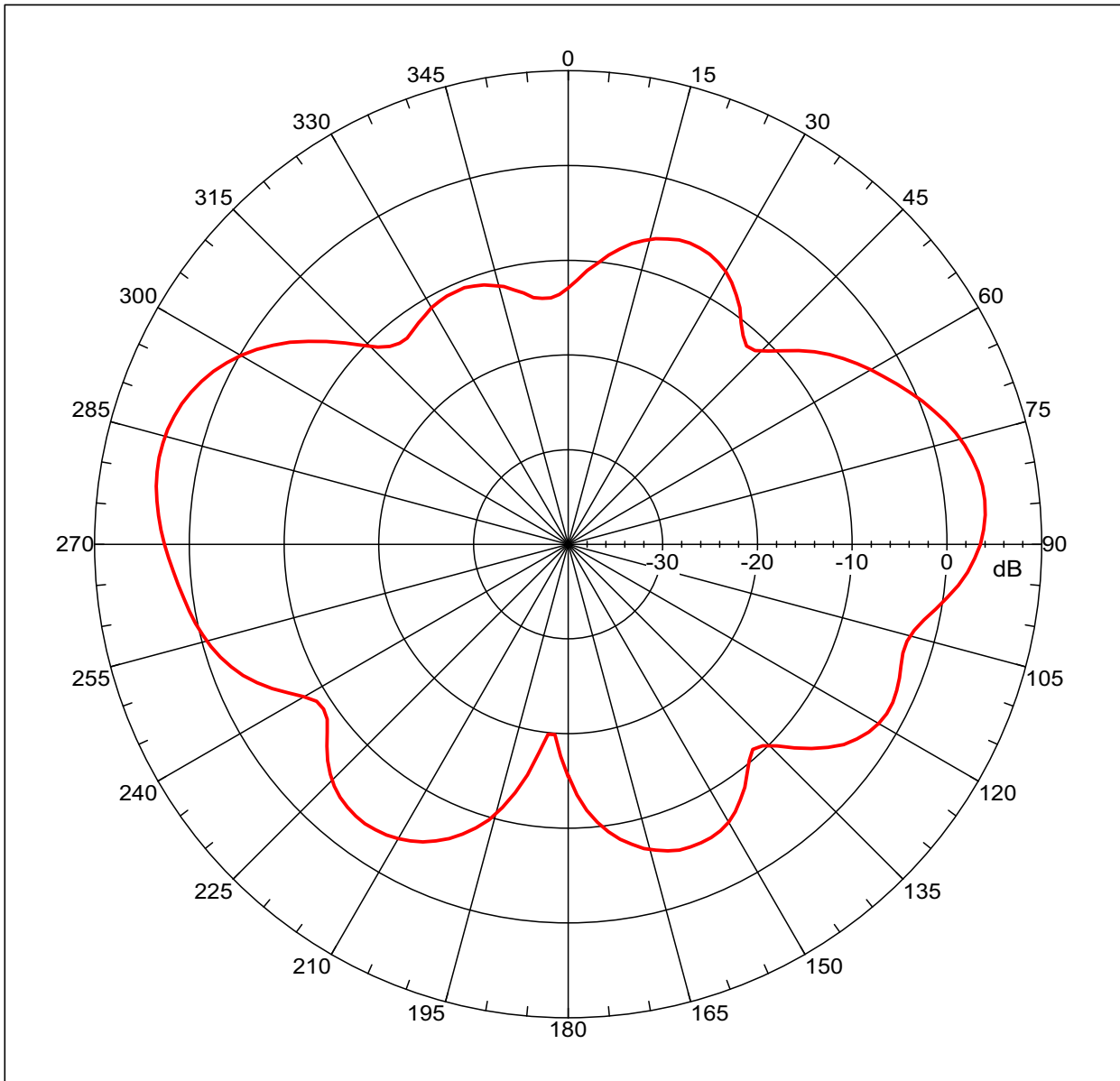
Phase

Positive

Phase

Return

# Far-field amplitude of GSM100C-4G-E.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
 Gain = 4.22749 dBi  
 Max far-field (global) = -38.52078 dB, Max far-field (plot) =  
 -38.52082 dB  
 Normalization: Reference, Network offset = 0.000 dB  
 Hpeak at: 84.000 deg, Vpeak at: 0.000 deg  
 Plot centering: On

GSM100C-4G-E

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\Y.  
 H.T\YG\4G NEW\E\GSM100C-4G-E.nsi  
 Measurement date/time: 1/31/2013 1:26:21 PM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: -3.736 dB  
 -3. dB beam width: 26.25 deg  
 -6. dB beam width: 39.53 deg  
 -10. dB beam width: 75.08 deg  
 Left Sidelobe: -9.95 dB at 23.129 deg  
 Right Sidelobe: -9.71 dB at 157.877 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

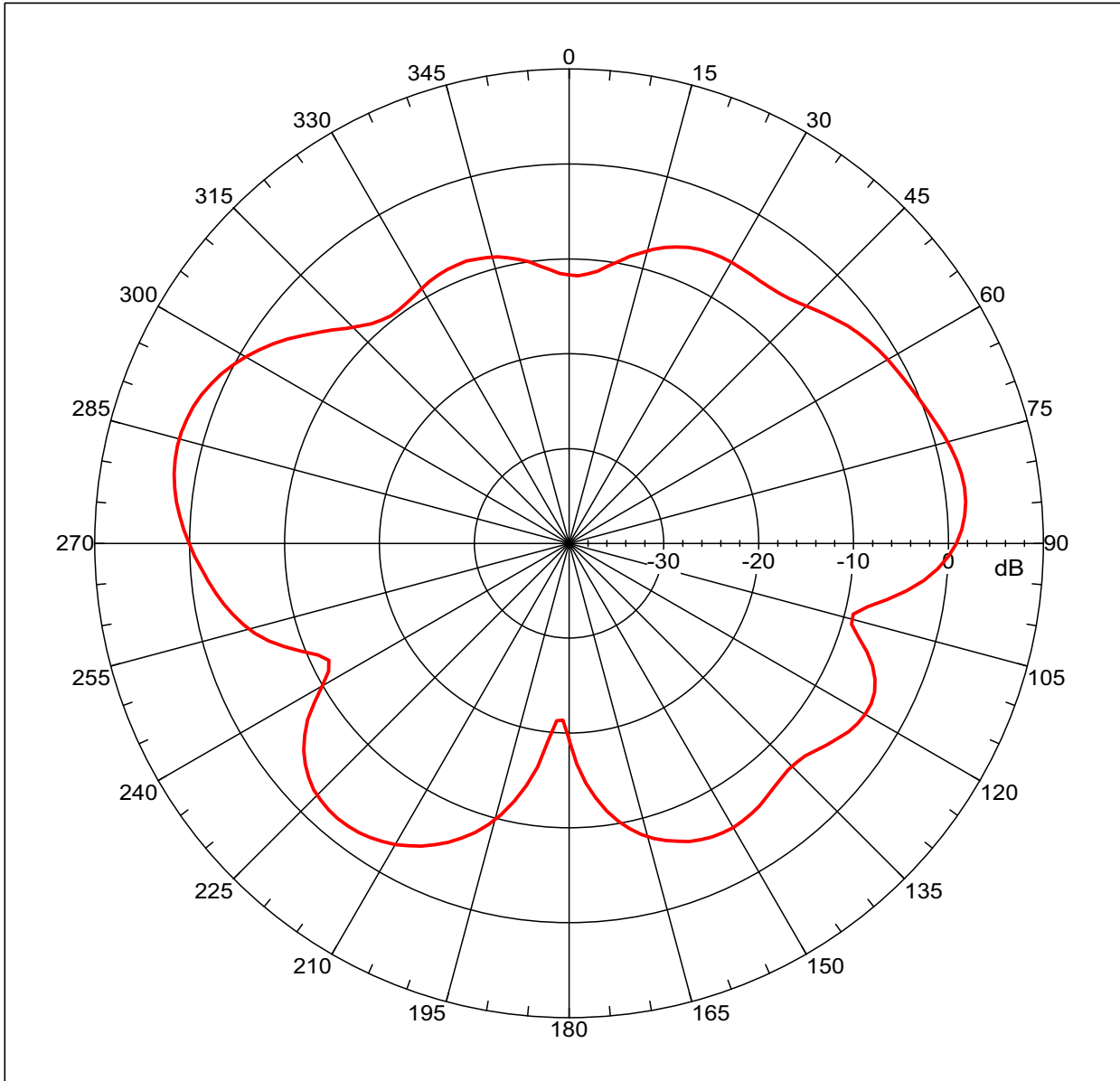
deg

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 GSM100C-4G-E.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
 Gain = 2.52972 dBi  
 Max far-field (global) = -38.72714 dB, Max far-field (plot) =  
 -38.72716 dB  
 Normalization: Reference, Network offset = 0.000 dB  
 Hpeak at: -76.00001 deg, Vpeak at: 0.000 deg  
 Plot centering: On

GSM100C-4G-E

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\Y.  
 H.T\YG\4G NEW\E\GSM100C-4G-E.nsi  
 Measurement date/time: 1/31/2013 1:26:21 PM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: -4.419 dB  
 -3. dB beam width: 31.38 deg  
 -6. dB beam width: 47.58 deg  
 -10. dB beam width: 63.65 deg  
 Left Sidelobe: -4.65 dB at -139.777 deg  
 Right Sidelobe: -10.86 dB at -19.106 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

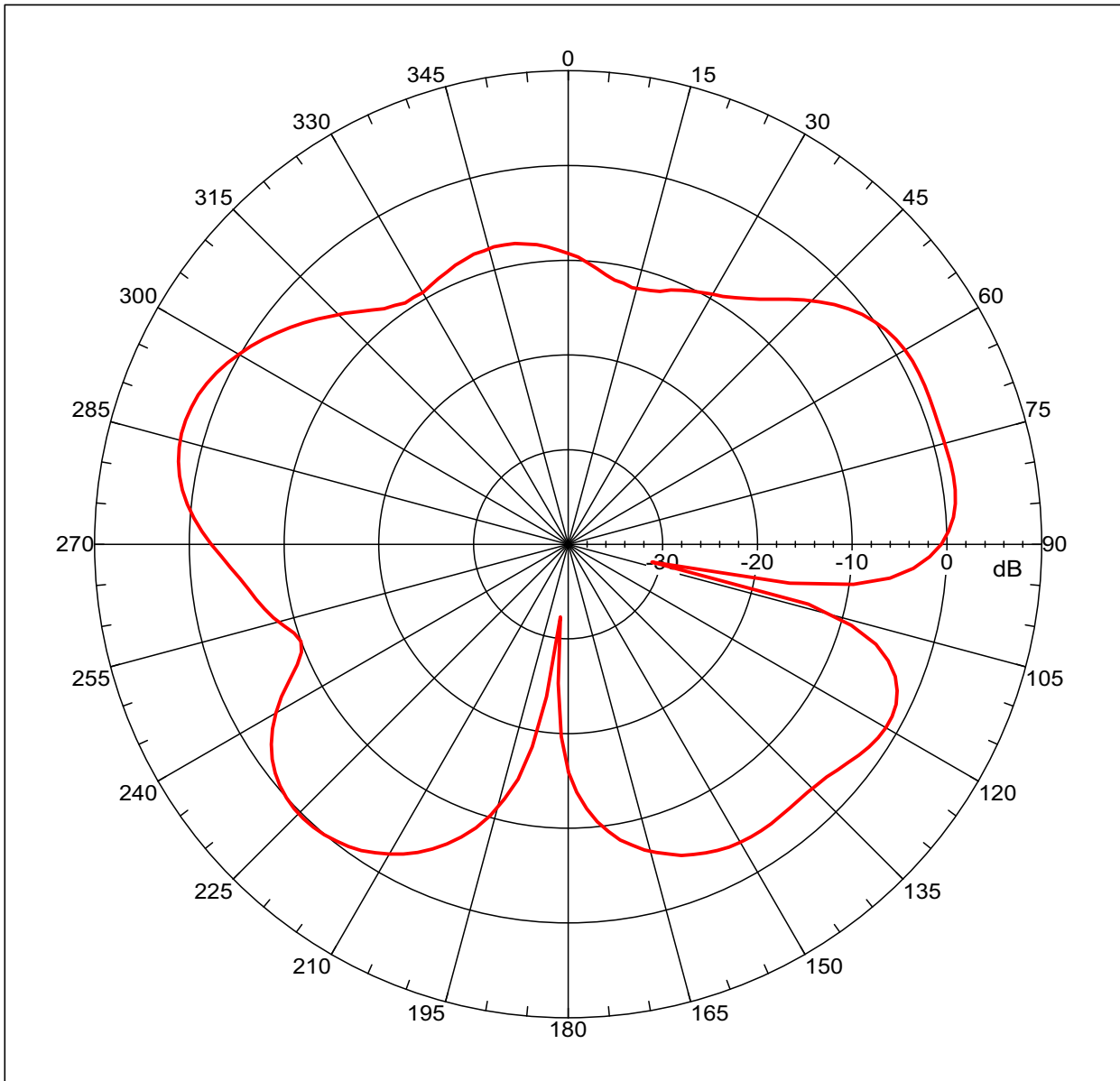
deg

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

Selected beam(s) 1 of 11

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

# Far-field amplitude of GSM100C-4G-E.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
 Gain = 2.4456 dBi  
 Max far-field (global) = -39.11408 dB, Max far-field (plot) =  
 -39.11409 dB  
 Normalization: Reference, Network offset = 0.000 dB  
 Hpeak at: -74.000 deg, Vpeak at: 0.000 deg  
 Plot centering: On

GSM100C-4G-E

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\Y.  
 H.T\YG\4G NEW\E\GSM100C-4G-E.nsi  
 Measurement date/time: 1/31/2013 1:26:21 PM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: -3.928 dB  
 -3. dB beam width: 28.56 deg  
 -6. dB beam width: 42.48 deg  
 -10. dB beam width: 62.79 deg  
 Left Sidelobe: -2.19 dB at -135.754 deg  
 Right Sidelobe: -10.09 dB at -13.073 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

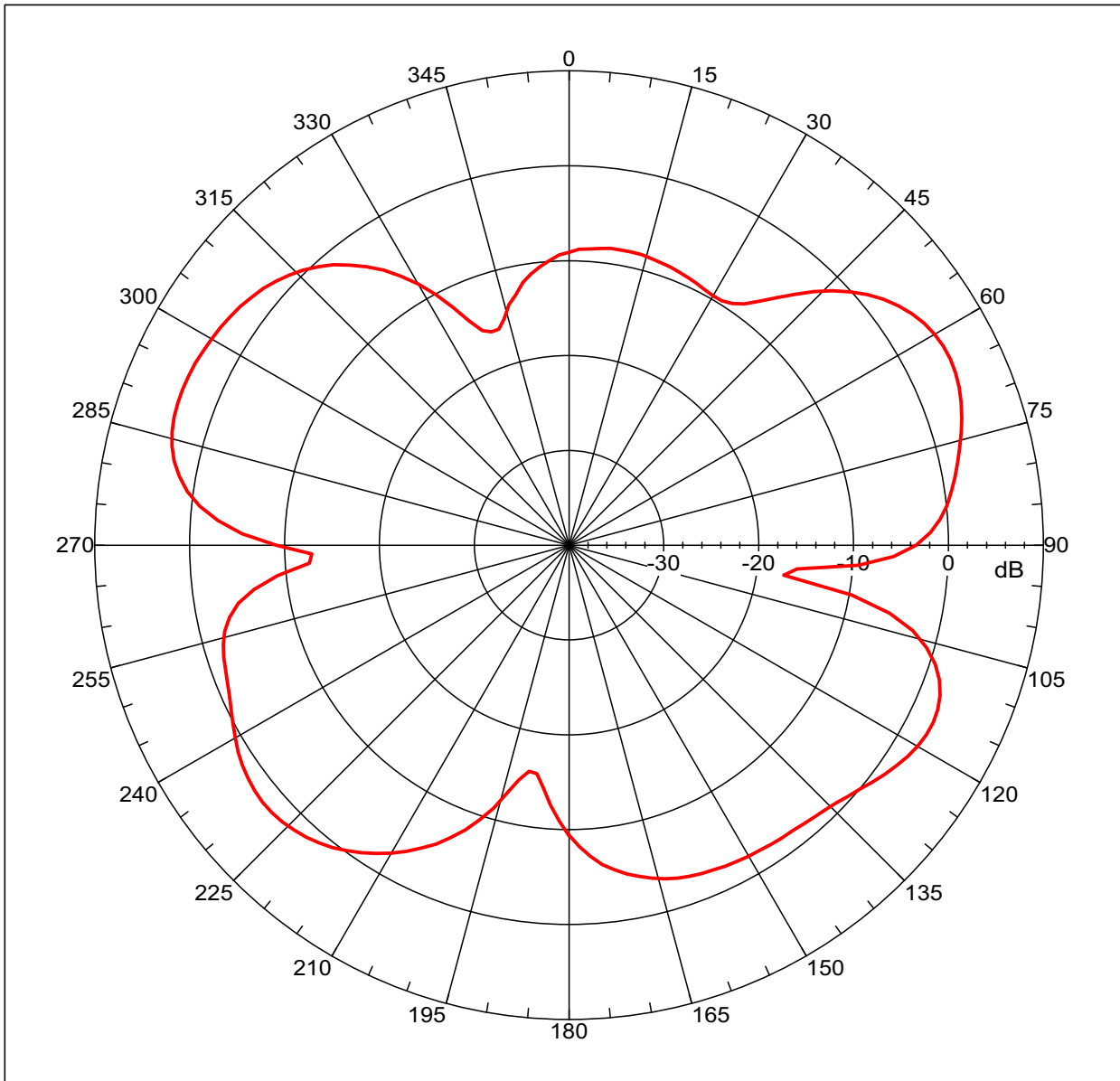
deg

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

# Far-field amplitude of GSM100C-4G-E.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
 Gain = 4.72287 dBi  
 Max far-field (global) = -37.9068 dB, Max far-field (plot) =  
 -37.90683 dB  
 Normalization: Reference, Network offset = 0.000 dB  
 Hpeak at: 63.99999 deg, Vpeak at: 0.000 deg  
 Plot centering: On

GSM100C-4G-E

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\Y.  
 H.T\YG\4G NEW\E\GSM100C-4G-E.nsi  
 Measurement date/time: 1/31/2013 1:26:21 PM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: -1.895 dB  
 -3. dB beam width: 27.37 deg  
 -6. dB beam width: 40.90 deg  
 -10. dB beam width: 50.97 deg  
 Left Sidelobe: -13.14 dB at 9.050 deg  
 Right Sidelobe: -2.04 dB at 117.654 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

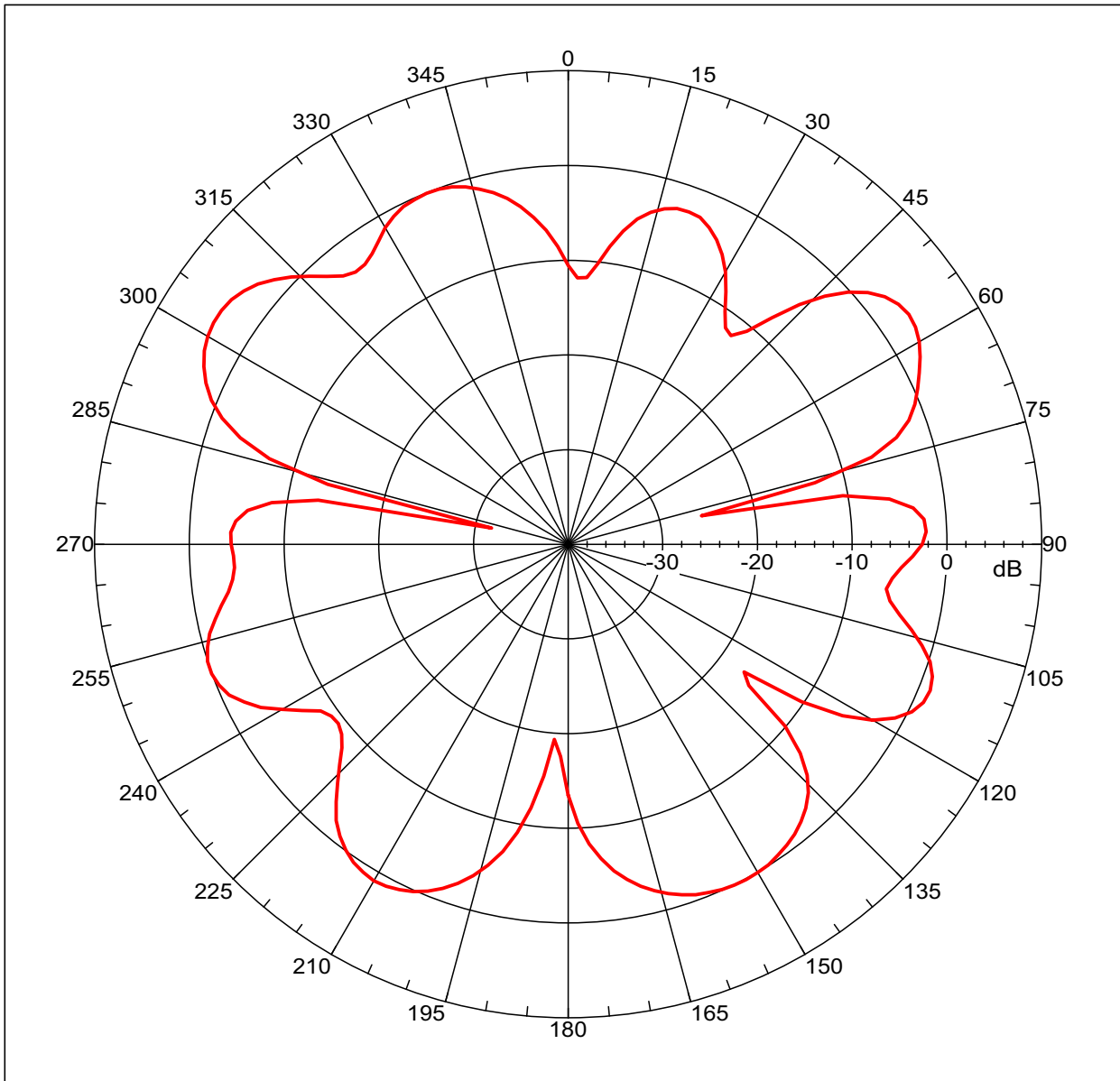
Elevation (deg)  
 Center = 0.000 deg, #pts = 1

Selected beam(s) 1 of 11

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



# Far-field amplitude of GSM100C-4G-E.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
 Gain = 4.12968 dBi  
 Max far-field (global) = -41.06291 dB, Max far-field (plot) = -41.06295 dB  
 Normalization: Reference, Network offset = 0.000 dB  
 Hpeak at: -58.00001 deg, Vpeak at: 0.000 deg  
 Plot centering: On

GSM100C-4G-E

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\Y.H.T\YG\4G NEW\E\GSM100C-4G-E.nsi  
 Measurement date/time: 1/31/2013 1:26:21 PM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: -2.669 dB  
 -3. dB beam width: 20.35 deg  
 -6. dB beam width: 28.61 deg  
 -10. dB beam width: 68.40 deg  
 Left Sidelobe: -8.50 dB at -87.486 deg  
 Right Sidelobe: -4.19 dB at -21.117 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

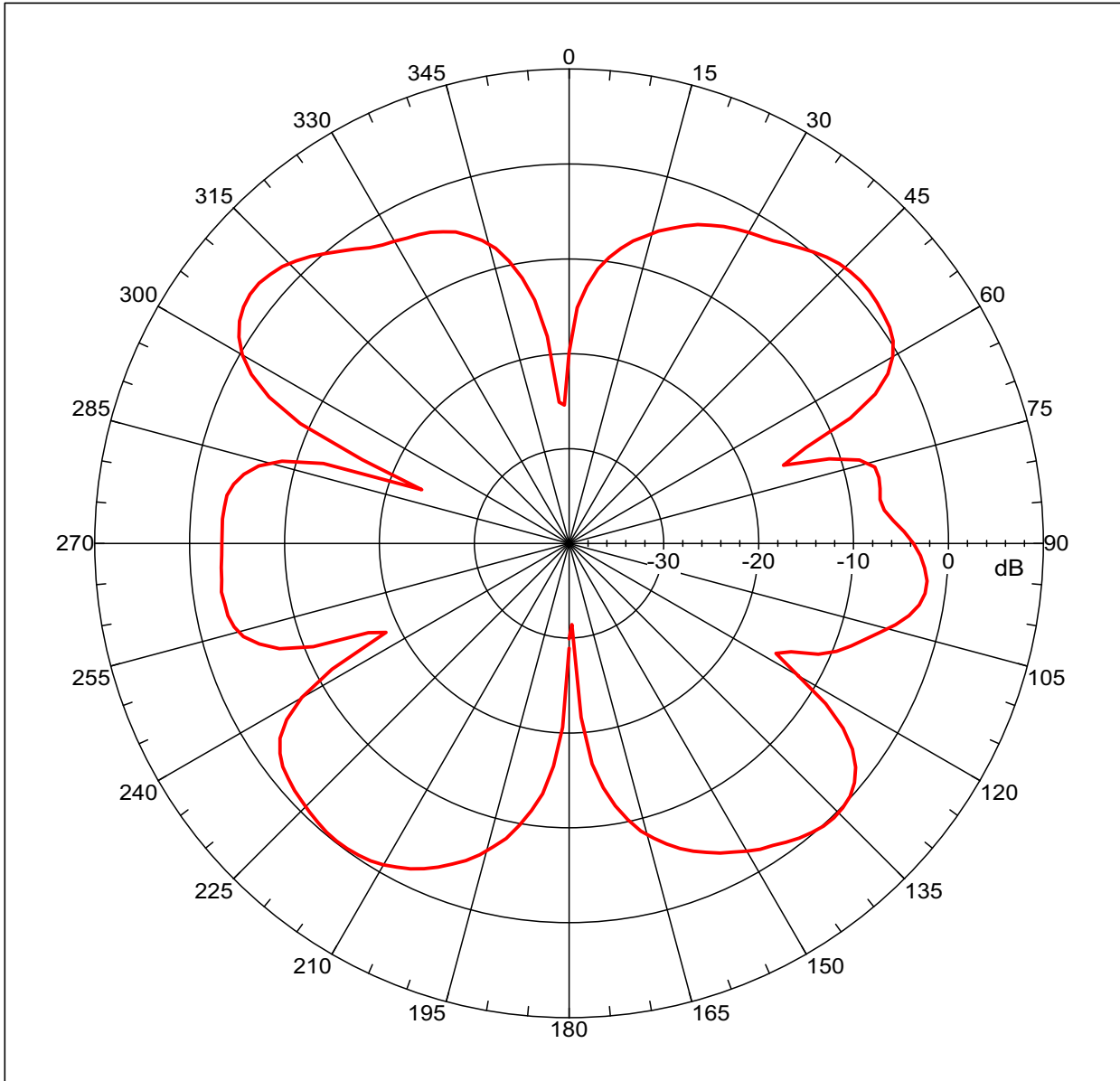
deg

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 GSM100C-4G-E.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
 Gain = 2.6564 dBi  
 Max far-field (global) = -43.77064 dB, Max far-field (plot) =  
 -43.77073 dB  
 Normalization: Reference, Network offset = 0.000 dB  
 Hpeak at: -50.00001 deg, Vpeak at: 0.000 deg  
 Plot centering: On

GSM100C-4G-E

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\Y.  
 H.T\YG\4G NEW\E\GSM100C-4G-E.nsi  
 Measurement date/time: 1/31/2013 1:26:21 PM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: -4.037 dB  
 -3. dB beam width: 20.83 deg  
 -6. dB beam width: 33.76 deg  
 -10. dB beam width: 50.42 deg  
 Left Sidelobe: -6.03 dB at -85.475 deg  
 Right Sidelobe: -1.31 dB at 51.285 deg

Far-field display setup

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

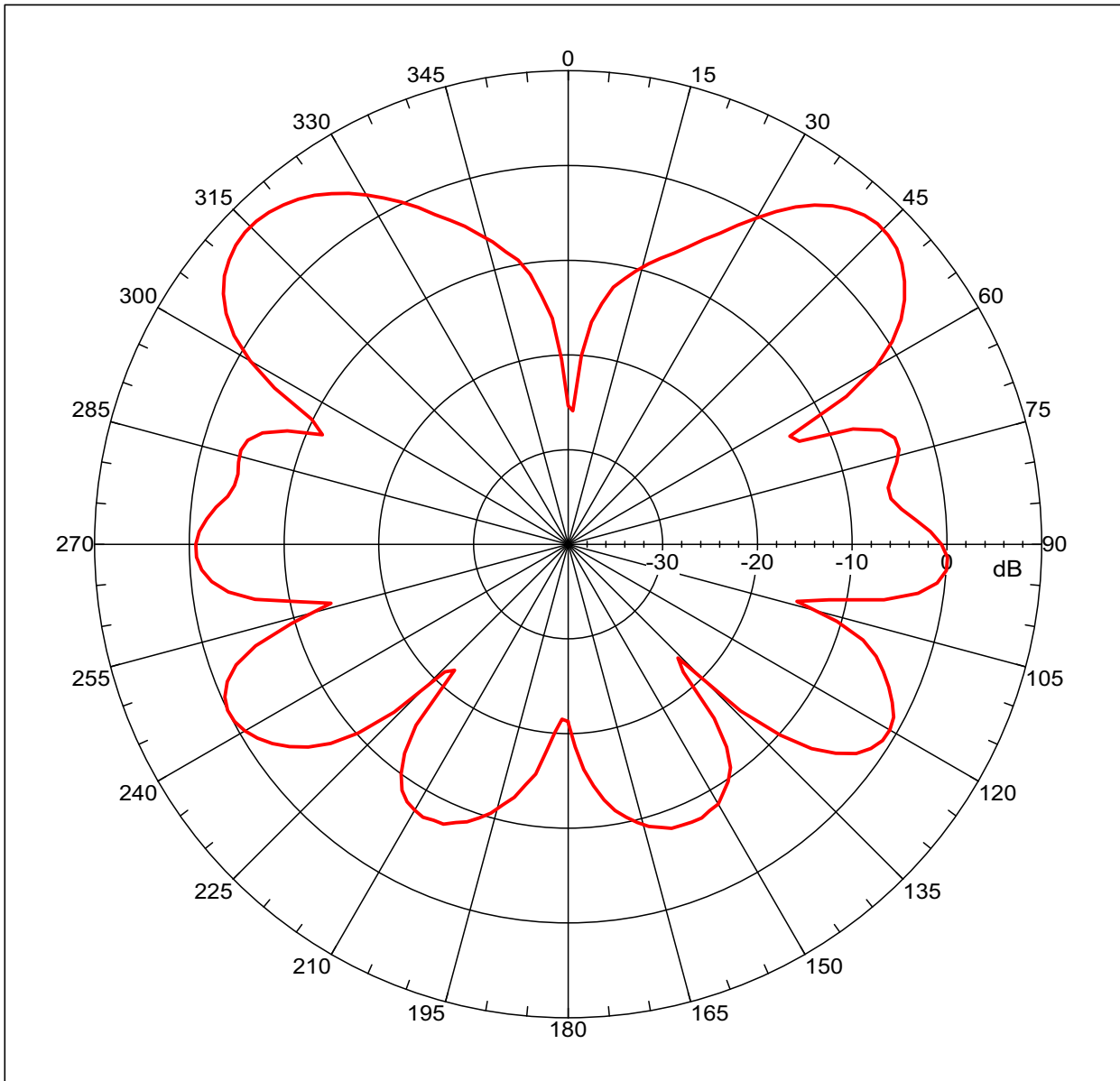
deg

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

Selected beam(s) 1 of 11

Beam	Frequency	Azimuth	Elevation	Pol
6	1.850 GHz	Azimuth	Elevation	Single-pol

# Far-field amplitude of GSM100C-4G-E.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
 Gain = 7.39327 dBi  
 Max far-field (global) = -40.41283 dB, Max far-field (plot) = -40.41285 dB  
 Normalization: Reference, Network offset = 0.000 dB  
 Hpeak at: -46.00001 deg, Vpeak at: 0.000 deg  
 Plot centering: On

GSM100C-4G-E

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\Y.H.T\YG\4G NEW\E\GSM100C-4G-E.nsi  
 Measurement date/time: 1/31/2013 1:26:21 PM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: -3.083 dB  
 -3. dB beam width: 21.45 deg  
 -6. dB beam width: 30.31 deg  
 -10. dB beam width: 39.20 deg  
 Left Sidelobe: -11.46 dB at -73.408 deg  
 Right Sidelobe: -0.38 dB at 45.251 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

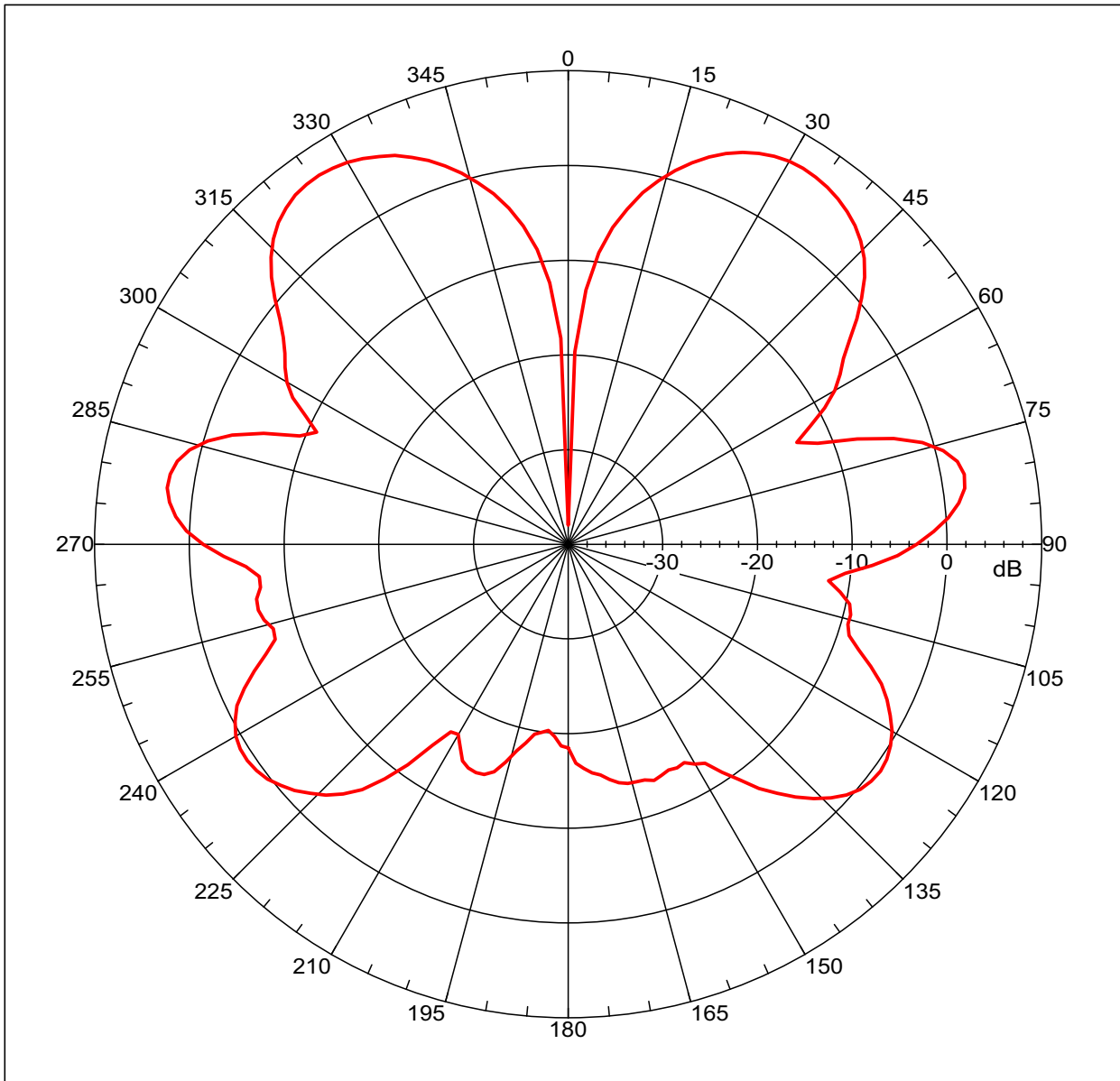
deg

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

Selected beam(s) 1 of 11

Beam	Frequency	Azimuth	Elevation	Pol
7	1.990 GHz	Azimuth	Elevation	Single-pol

# Far-field amplitude of GSM100C-4G-E.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
 Gain = 6.99957 dBi  
 Max far-field (global) = -40.53254 dB, Max far-field (plot) = -40.53258 dB  
 Normalization: Reference, Network offset = 0.000 dB  
 Hpeak at: -34.00001 deg, Vpeak at: 0.000 deg  
 Plot centering: On

GSM100C-4G-E

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\Y.H.T\YG\4G NEW\E\GSM100C-4G-E.nsi  
 Measurement date/time: 1/31/2013 1:26:21 PM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: -2.008 dB  
 -3. dB beam width: 23.51 deg  
 -6. dB beam width: 33.10 deg  
 -10. dB beam width: 43.43 deg  
 Left Sidelobe: -4.28 dB at -81.453 deg  
 Right Sidelobe: -0.20 dB at 33.184 deg

Far-field display setup

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

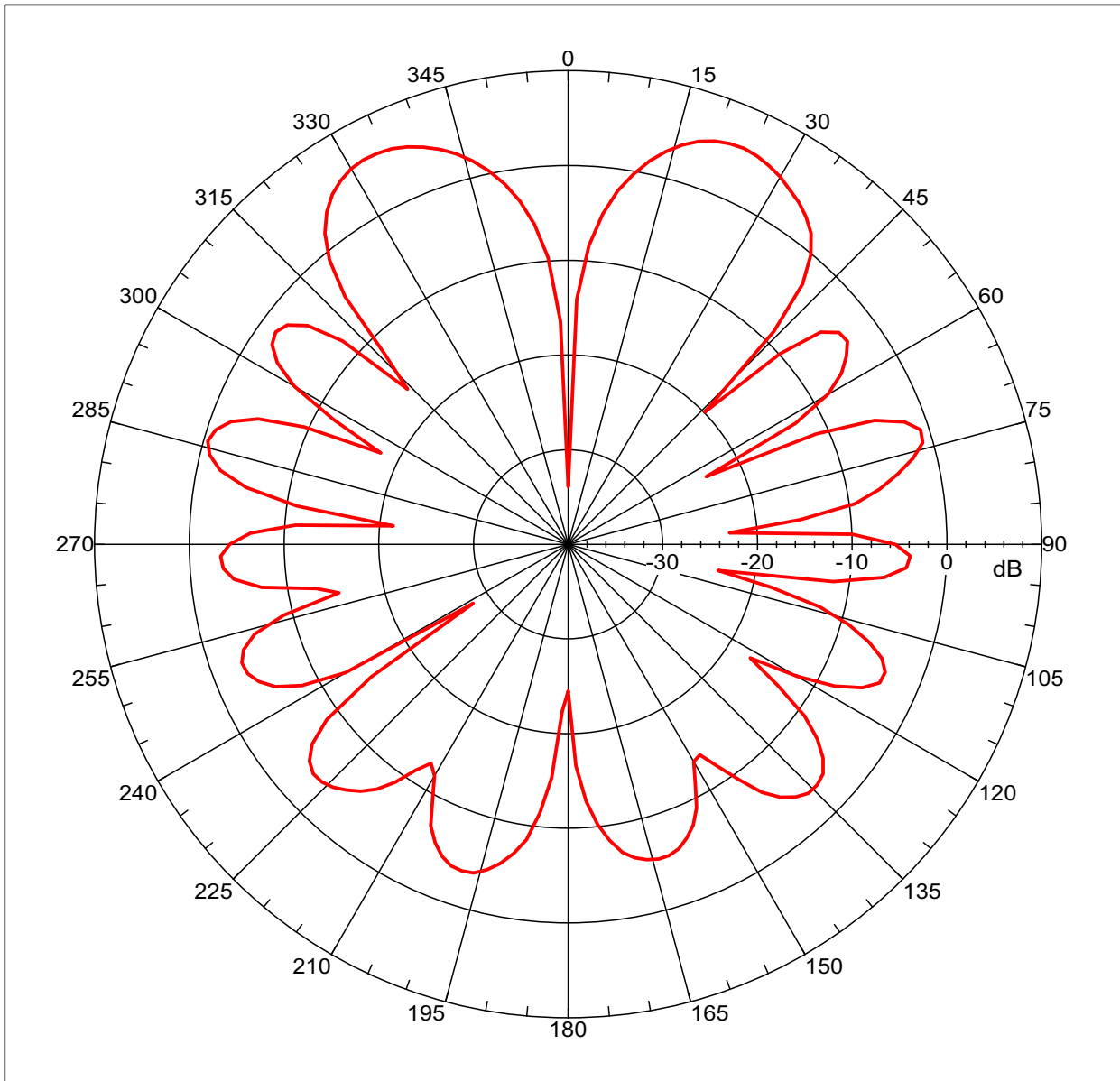
deg

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

Selected beam(s) 1 of 11

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

# Far-field amplitude of GSM100C-4G-E.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
 Gain = 5.97572 dBi  
 Max far-field (global) = -43.03191 dB, Max far-field (plot) =  
 -43.03194 dB  
 Normalization: Reference, Network offset = 0.000 dB  
 Hpeak at: -28.00001 deg, Vpeak at: 0.000 deg  
 Plot centering: On

GSM100C-4G-E

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\Y.  
 H.T\YG\4G NEW\E\GSM100C-4G-E.nsi  
 Measurement date/time: 1/31/2013 1:26:21 PM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: -3.819 dB  
 -3. dB beam width: 20.33 deg  
 -6. dB beam width: 27.90 deg  
 -10. dB beam width: 34.28 deg  
 Left Sidelobe: -7.84 dB at -53.296 deg  
 Right Sidelobe: -0.25 dB at 25.140 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

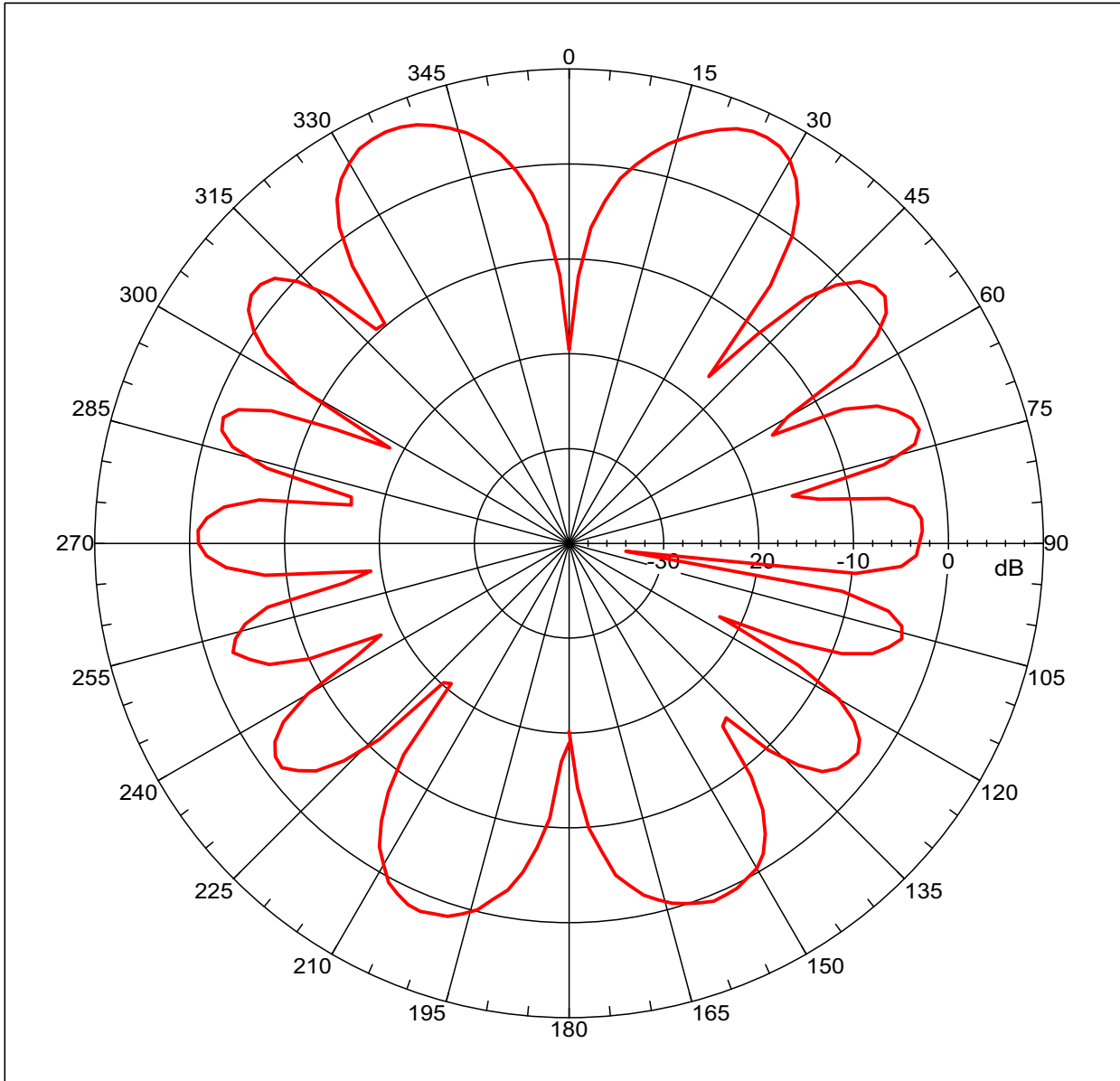
deg

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

Selected beam(s) 1 of 11

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

# Far-field amplitude of GSM100C-4G-E.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
 Gain = 7.59958 dBi  
 Max far-field (global) = -42.53641 dB, Max far-field (plot) = -42.53643 dB  
 Normalization: Reference, Network offset = 0.000 dB  
 Hpeak at: 25.99999 deg, Vpeak at: 0.000 deg  
 Plot centering: On

GSM100C-4G-E

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\Y.  
 H.T\YG\4G NEW\E\GSM100C-4G-E.nsi  
 Measurement date/time: 1/31/2013 1:26:21 PM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: -1.836 dB  
 -3. dB beam width: 16.47 deg  
 -6. dB beam width: 23.68 deg  
 -10. dB beam width: 30.02 deg  
 Left Sidelobe: -0.14 dB at -23.128 deg  
 Right Sidelobe: -5.33 dB at 53.296 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

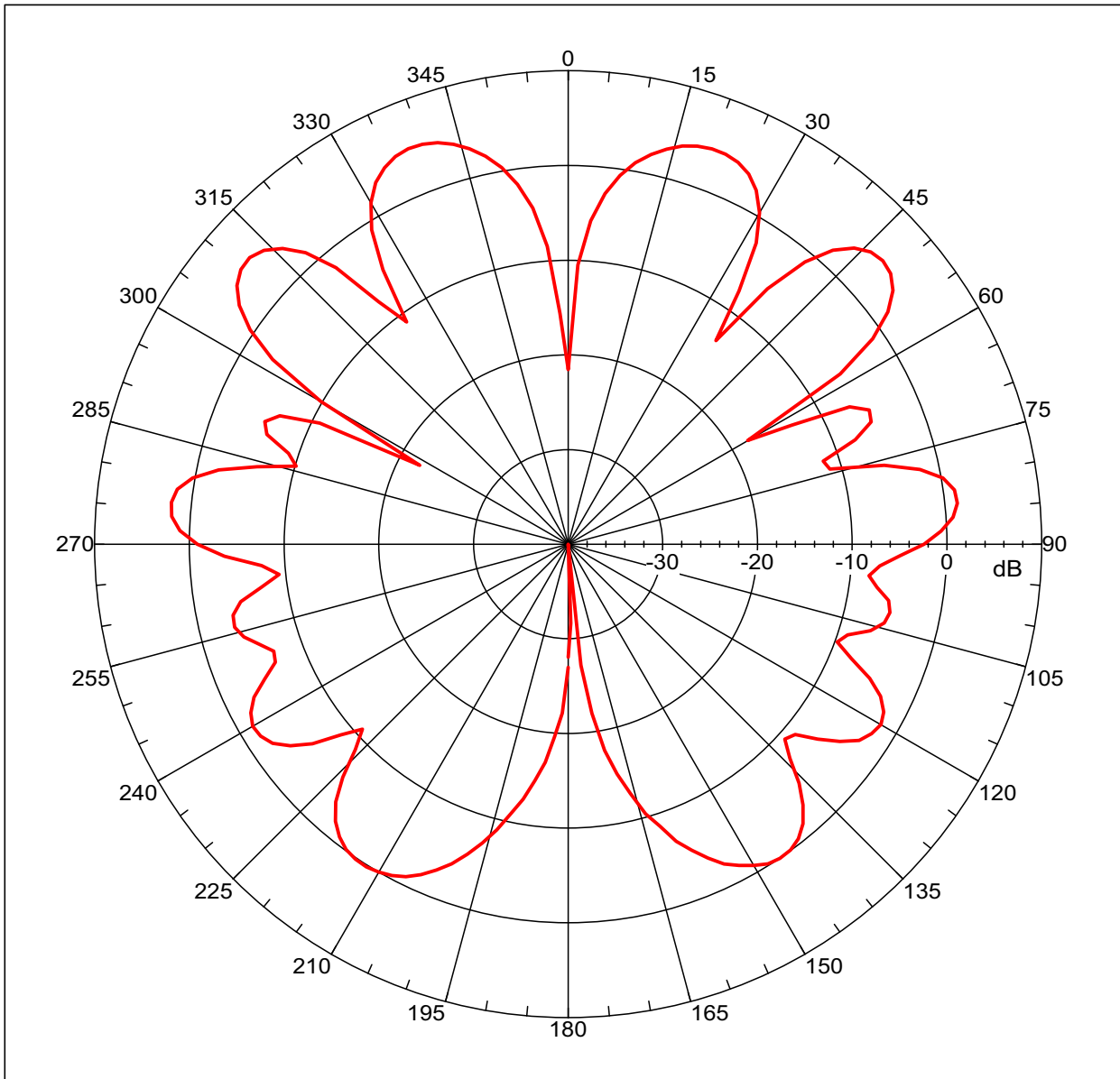
deg

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

Selected beam(s) 1 of 11

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

# Far-field amplitude of GSM100C-4G-E.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
 Gain = 5.23263 dBi  
 Max far-field (global) = -45.08416 dB, Max far-field (plot) =  
 -45.08437 dB  
 Normalization: Reference, Network offset = 0.000 dB  
 Hpeak at: -48.000 deg, Vpeak at: 0.000 deg  
 Plot centering: On

GSM100C-4G-E

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\Y.  
 H.T\YG\4G NEW\E\GSM100C-4G-E.nsi  
 Measurement date/time: 1/31/2013 1:26:21 PM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: -2.368 dB  
 -3. dB beam width: 11.78 deg  
 -6. dB beam width: 16.08 deg  
 -10. dB beam width: 19.60 deg  
 Left Sidelobe: -10.70 dB at -67.374 deg  
 Right Sidelobe: -0.19 dB at -21.117 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

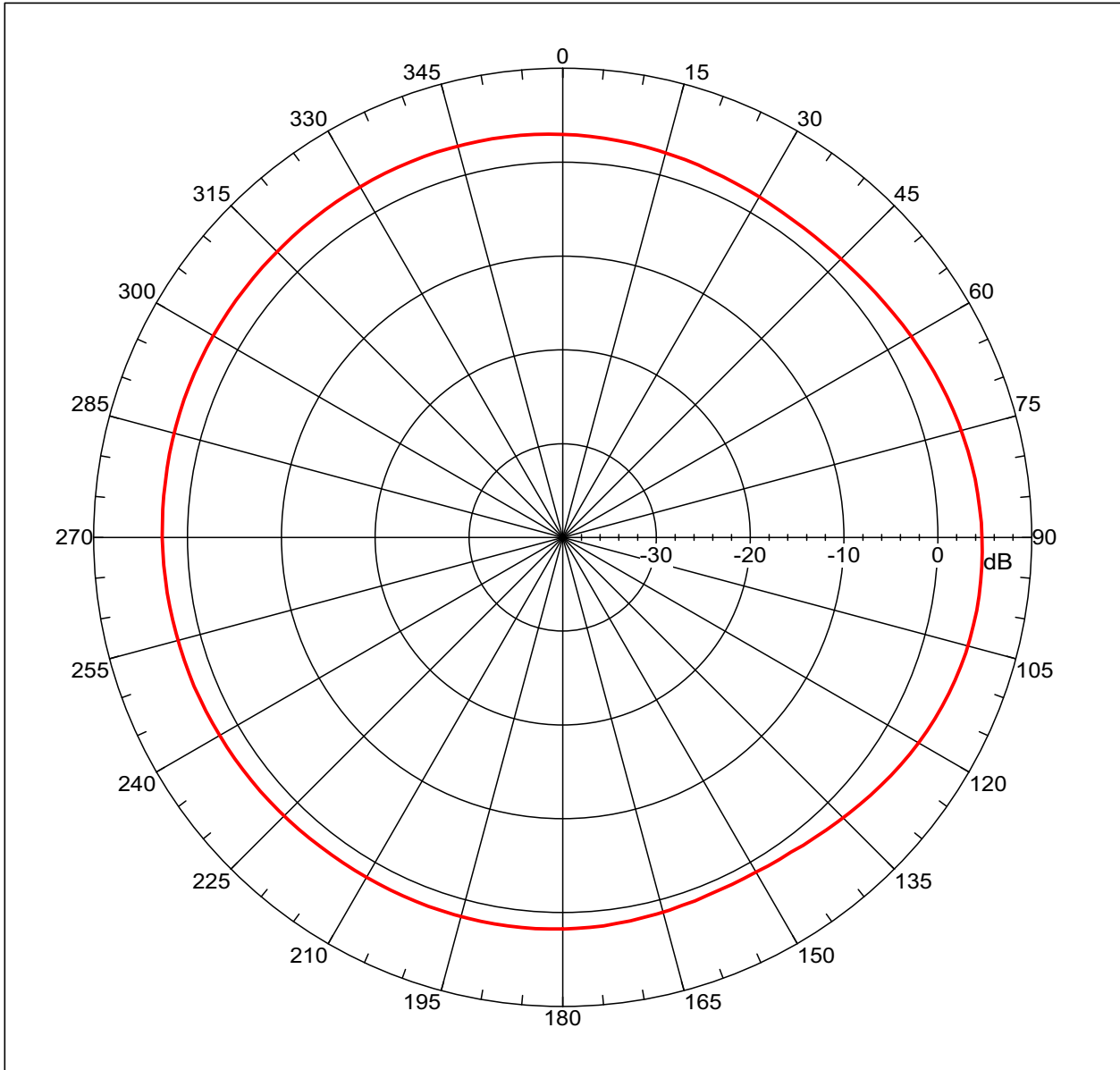
deg

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

Selected beam(s) 1 of 11

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

# Far-field amplitude of GSM100C-4G-H.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
 Gain = 4.81743 dBi  
 Max far-field (global) = -37.93084 dB, Max far-field (plot) = -37.93084 dB  
 Normalization: Reference, Network offset = 0.000 dB  
 Hpeak at: 99.99999 deg, Vpeak at: 0.000 deg  
 Plot centering: On

GSM100C-4G-H

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\Y.H.T\YG\4G NEW\H\GSM100C-4G-H.nsi  
 Measurement date/time: 1/31/2013 1:17:11 PM, Filetype: NSI-97

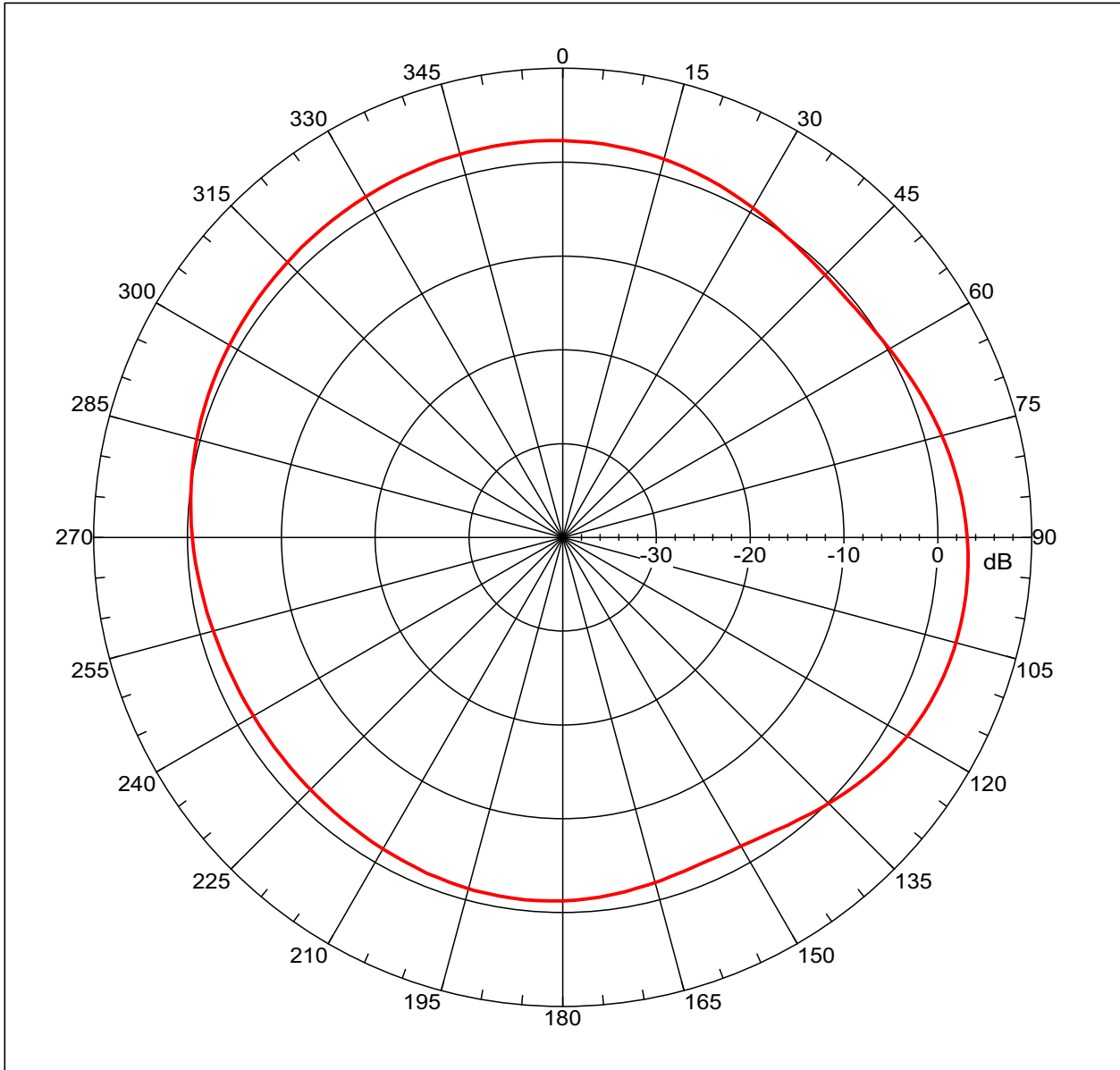
Far-field Cut Analysis:  
 Avg value: 2.716 dB  
 -3. dB beam width: 100.07 deg  
 -6. dB beam width: Not Found  
 -10. dB beam width: Not Found  
 Left Sidelobe: -1.63 dB at -17.095 deg  
 Right Sidelobe: Not Found  
 Far-field display setup  
 Azimuth (deg)  
 Span = 360.00001 deg, Center = 0.000 deg, #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
1	0.806 GHz	Azimuth	Elevation	Single-pol



# Far-field amplitude of GSM100C-4G-H.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
 Gain = 3.44105 dBi  
 Max far-field (global) = -37.81581 dB, Max far-field (plot) = -37.81581 dB  
 Normalization: Reference, Network offset = 0.000 dB  
 Hpeak at: 102.000 deg, Vpeak at: 0.000 deg  
 Plot centering: On

GSM100C-4G-H

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\Y.  
 H.T\YG\4G NEW\H\GSM100C-4G-H.nsi  
 Measurement date/time: 1/31/2013 1:17:11 PM, Filetype: NSI-97

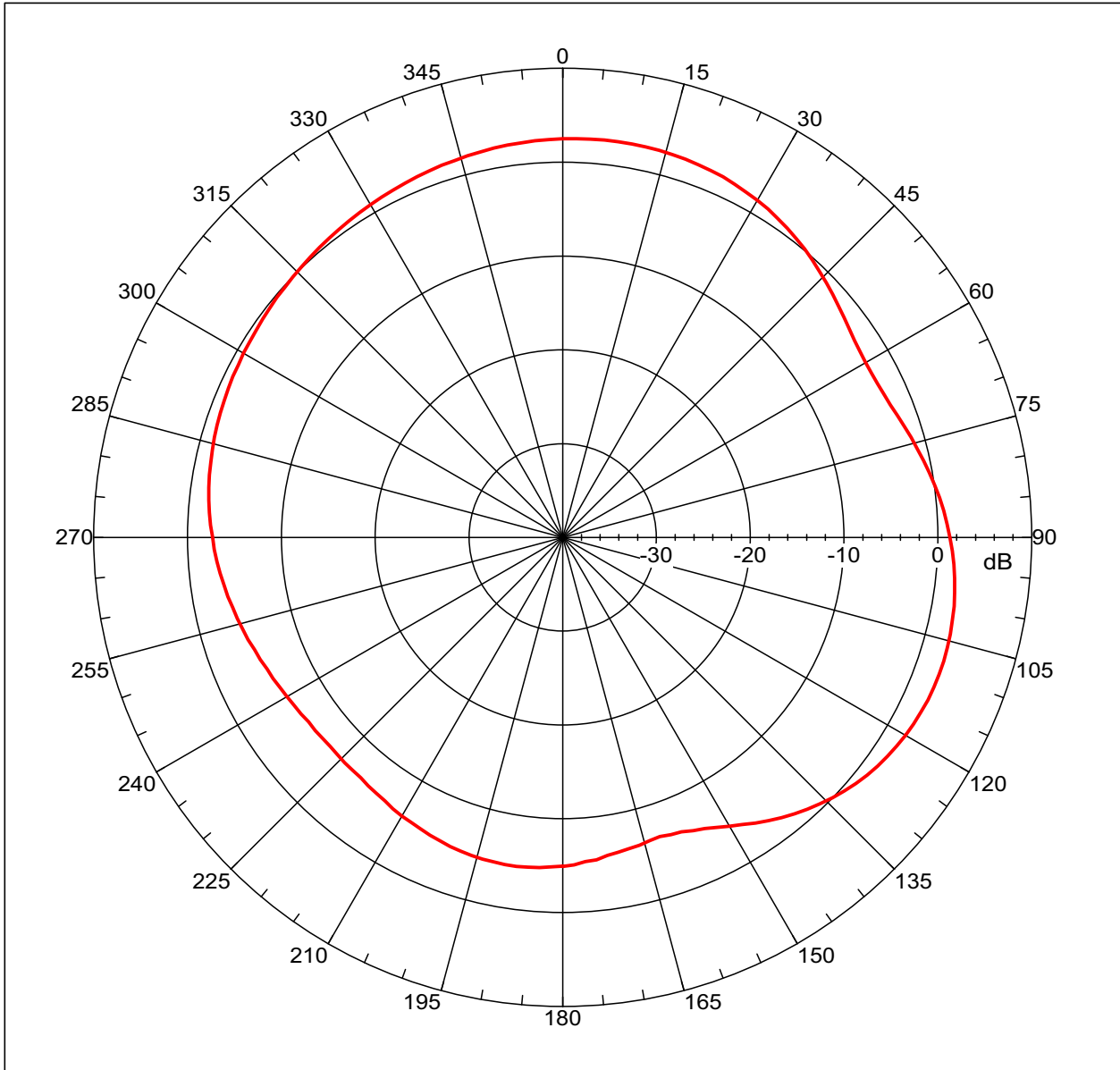
Far-field Cut Analysis:  
 Avg value: 0.513 dB  
 -3. dB beam width: 70.94 deg  
 -6. dB beam width: Not Found  
 -10. dB beam width: Not Found  
 Left Sidelobe: -1.11 dB at -3.017 deg  
 Right Sidelobe: Not Found

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 11

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

# Far-field amplitude of GSM100C-4G-H.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
 Gain = 2.70298 dBi  
 Max far-field (global) = -38.8567 dB, Max far-field (plot) = -38.85672 dB  
 Normalization: Reference, Network offset = 0.000 dB  
 Hpeak at: 107.99999 deg, Vpeak at: 0.000 deg  
 Plot centering: On

GSM100C-4G-H

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\Y.H.T\YG\4G NEW\H\GSM100C-4G-H.nsi  
 Measurement date/time: 1/31/2013 1:17:11 PM, Filetype: NSI-97

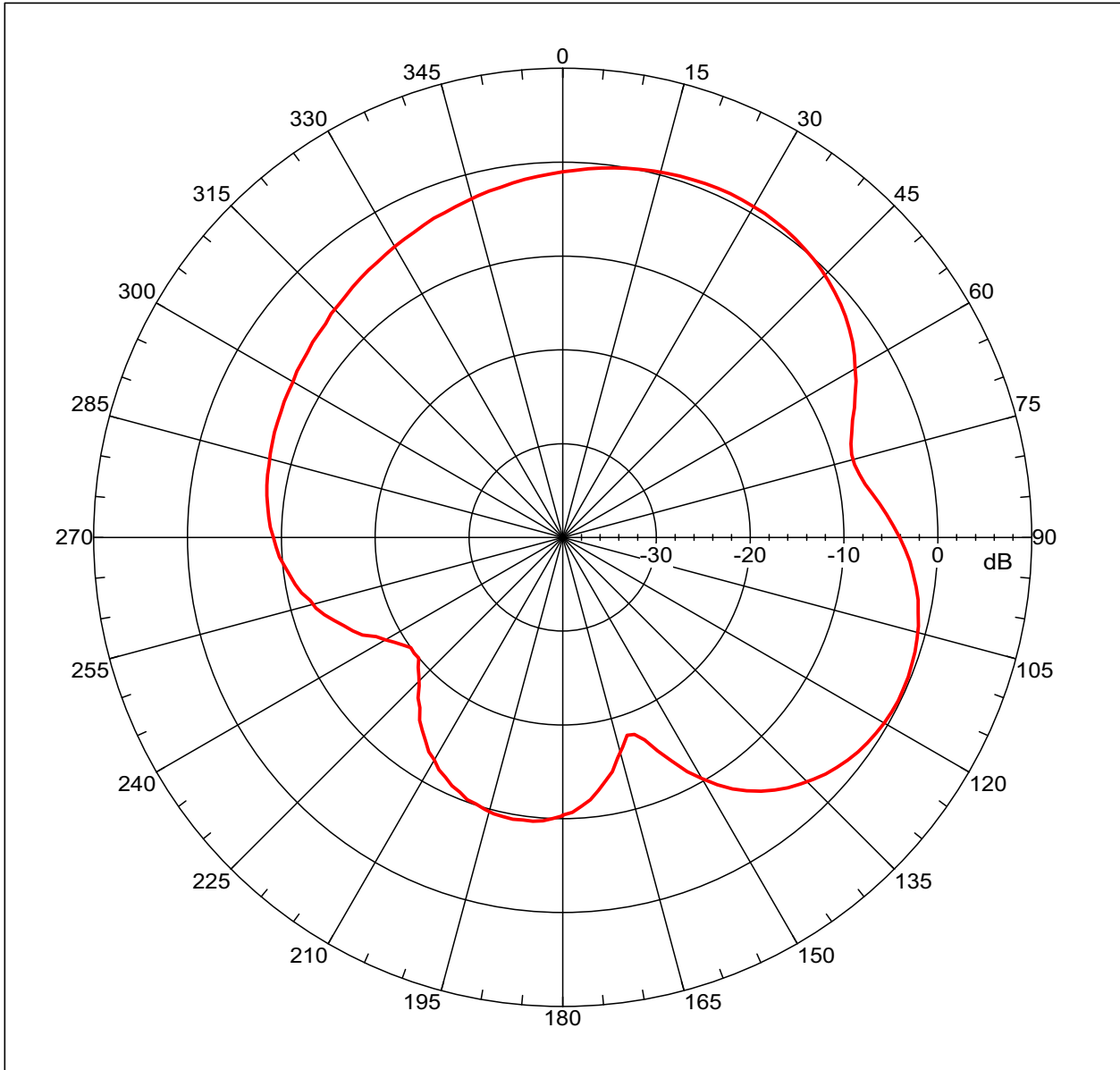
Far-field Cut Analysis:  
 Avg value: -1.038 dB  
 -3. dB beam width: 55.24 deg  
 -6. dB beam width: 243.40 deg  
 -10. dB beam width: Not Found  
 Left Sidelobe: -0.13 dB at 9.050 deg  
 Right Sidelobe: Not Found

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 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 GSM100C-4G-H.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
 Gain = 0.73934 dBi  
 Max far-field (global) = -41.89033 dB, Max far-field (plot) = -41.89033 dB  
 Normalization: Reference, Network offset = 0.000 dB  
 Hpeak at: 25.99999 deg, Vpeak at: 0.000 deg  
 Plot centering: On

GSM100C-4G-H

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\Y.H.T\YG\4G NEW\H\GSM100C-4G-H.nsi  
 Measurement date/time: 1/31/2013 1:17:11 PM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: -5.273 dB  
 -3. dB beam width: 66.06 deg  
 -6. dB beam width: 105.06 deg  
 -10. dB beam width: 240.43 deg  
 Left Sidelobe: -10.24 dB at -169.944 deg  
 Right Sidelobe: -0.97 dB at 117.654 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

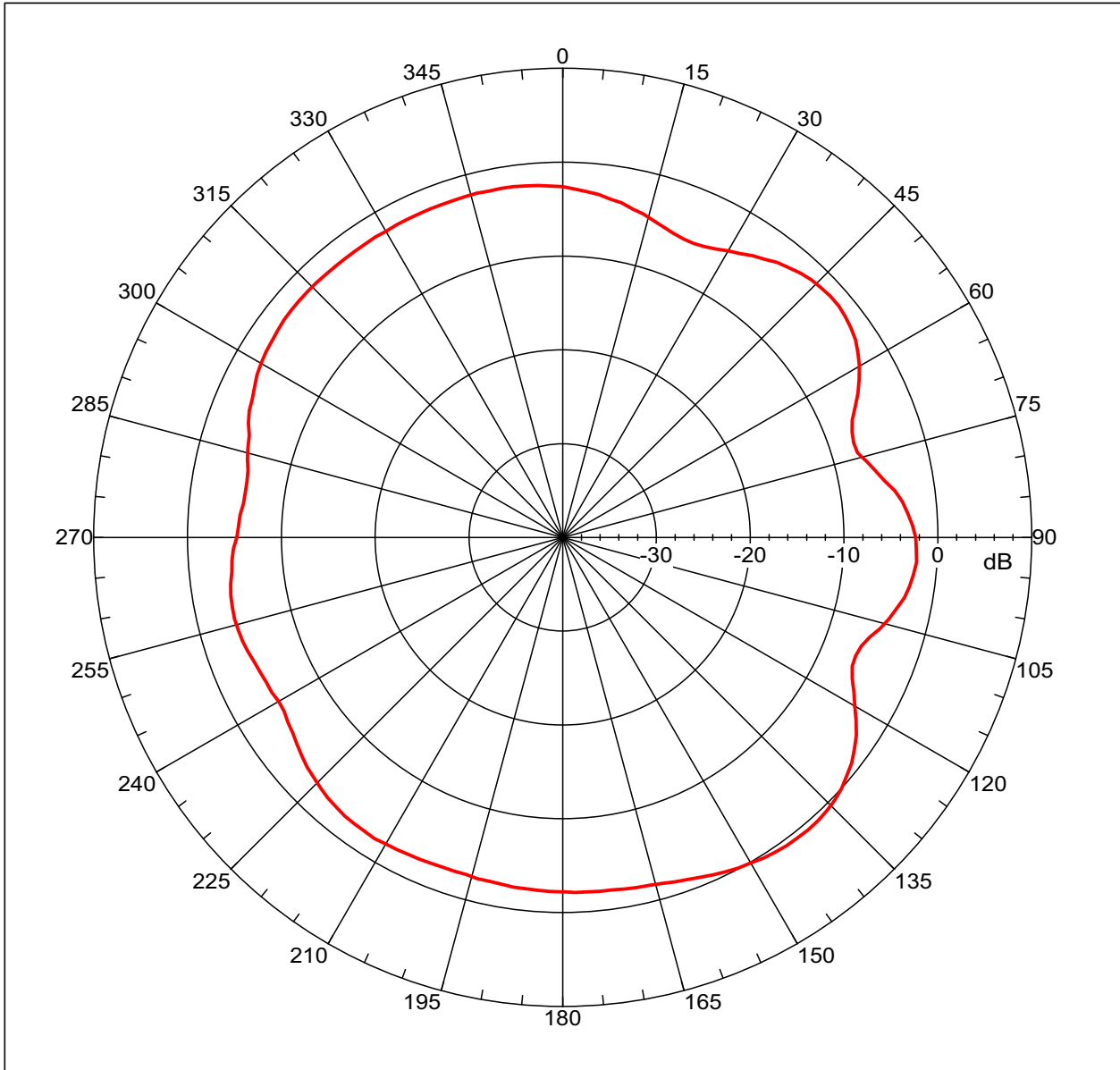
deg

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

# Far-field amplitude of GSM100C-4G-H.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
 Gain = 0.6985 dBi  
 Max far-field (global) = -44.49409 dB, Max far-field (plot) =  
 -44.49413 dB  
 Normalization: Reference, Network offset = 0.000 dB  
 Hpeak at: 140.000 deg, Vpeak at: 0.000 deg  
 Plot centering: On

GSM100C-4G-H

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\Y.  
 H.T\YG\4G NEW\H\GSM100C-4G-H.nsi  
 Measurement date/time: 1/31/2013 1:17:11 PM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: -2.995 dB  
 -3. dB beam width: Not Found  
 -6. dB beam width: Not Found  
 -10. dB beam width: Not Found  
 Left Sidelobe: -2.90 dB at 95.531 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

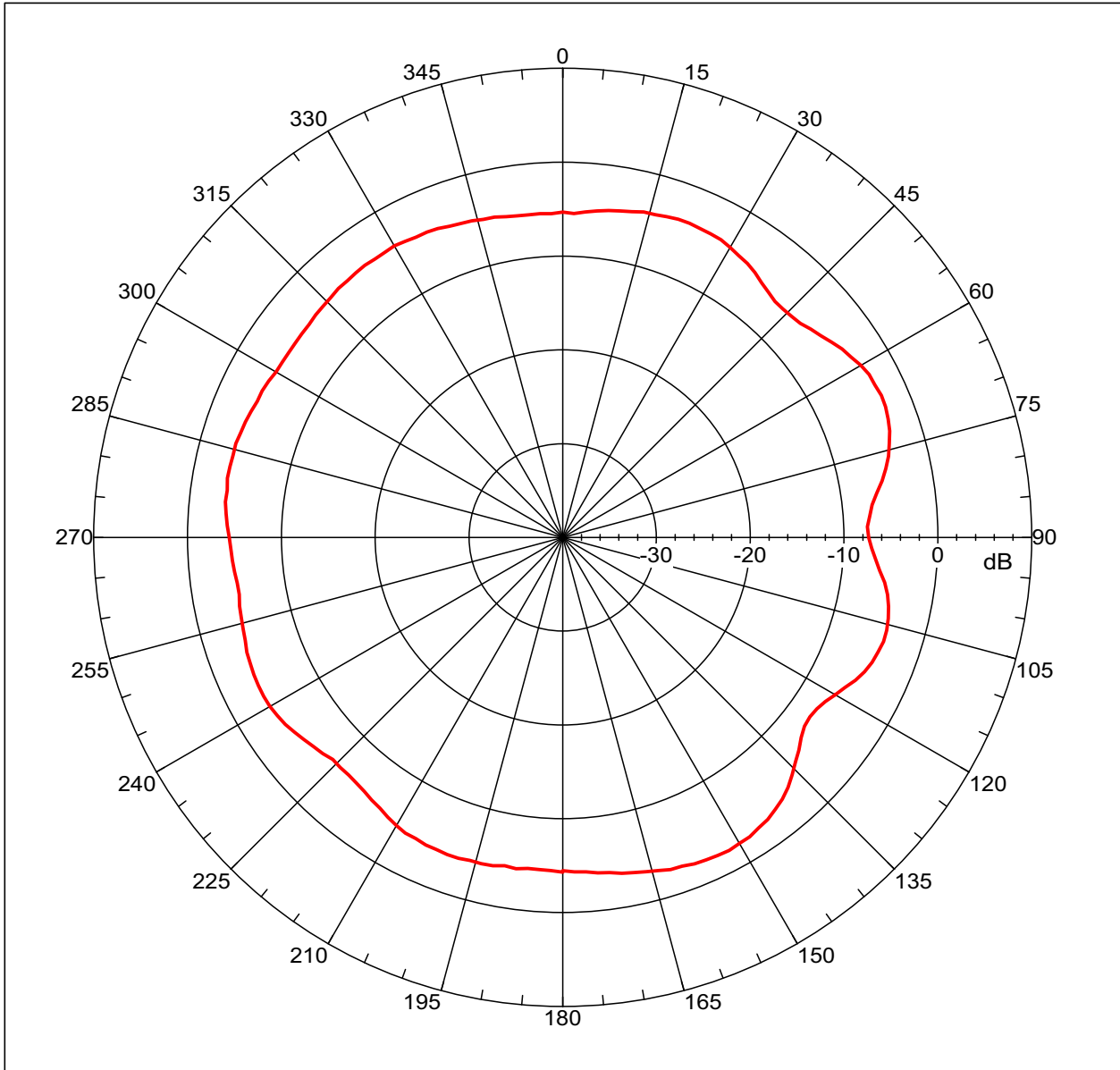
deg

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 GSM100C-4G-H.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
 Gain = -2.20738 dBi  
 Max far-field (global) = -48.63442 dB, Max far-field (plot) = -48.63452 dB  
 Normalization: Reference, Network offset = 0.000 dB  
 Hpeak at: 151.99999 deg, Vpeak at: 0.000 deg  
 Plot centering: On

GSM100C-4G-H

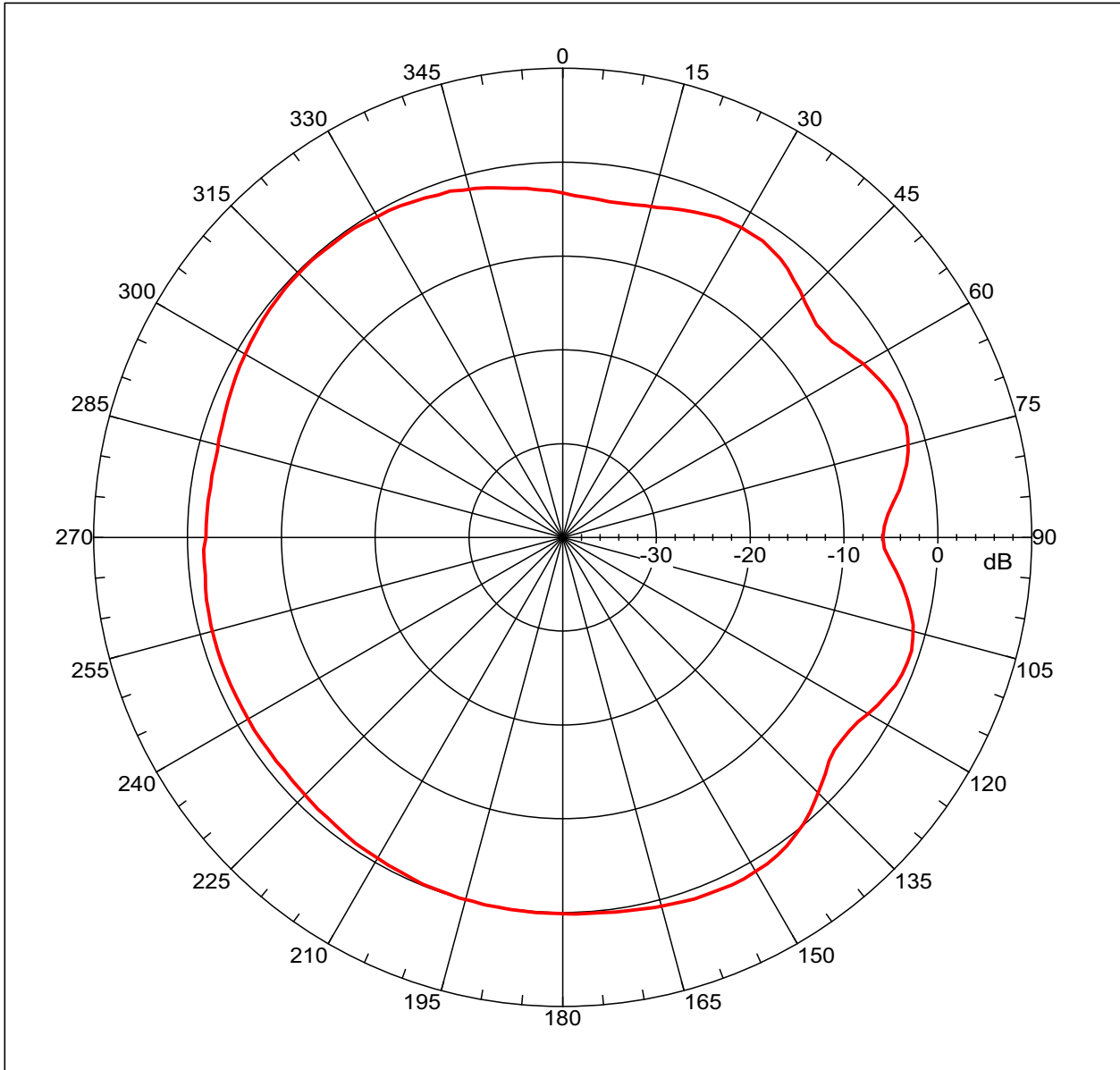
NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\Y.H.T\YG\4G NEW\H\GSM100C-4G-H.nsi  
 Measurement date/time: 1/31/2013 1:17:11 PM, Filetype: NSI-97

Far-field Cut Analysis:  
 Avg value: -4.529 dB  
 -3. dB beam width: Not Found  
 -6. dB beam width: Not Found  
 -10. dB beam width: Not Found  
 Left Sidelobe: -1.84 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 11

Beam	Frequency	Azimuth	Elevation	Pol
6	1.850 GHz	Azimuth	Elevation	Single-pol

# Far-field amplitude of GSM100C-4G-H.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
 Gain = 1.21982 dBi  
 Max far-field (global) = -46.58628 dB, Max far-field (plot) =  
 -46.58629 dB  
 Normalization: Reference, Network offset = 0.000 dB  
 Hpeak at: 153.99999 deg, Vpeak at: 0.000 deg  
 Plot centering: On

GSM100C-4G-H

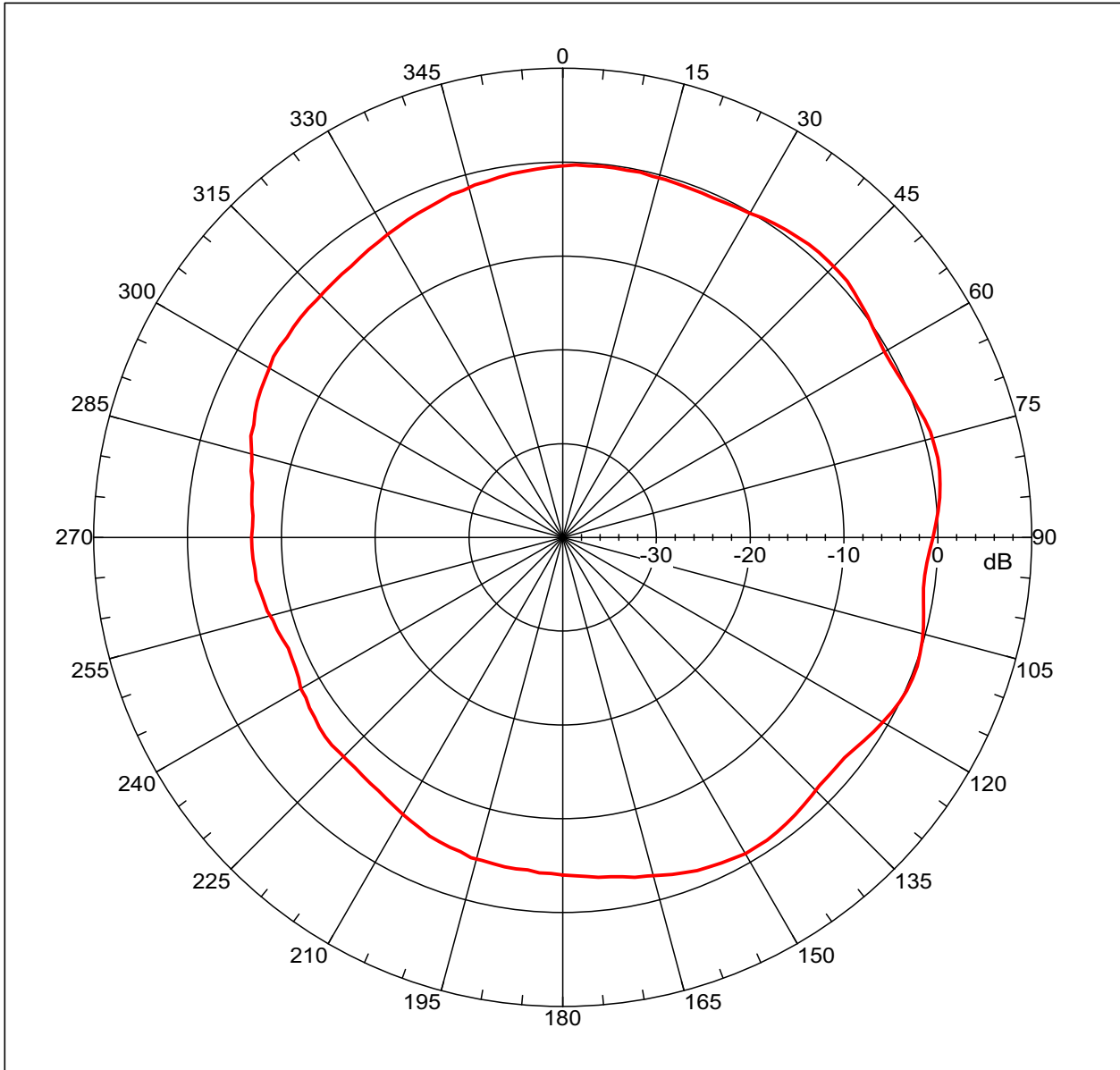
NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\Y.  
 H.T\YG\4G NEW\H\GSM100C-4G-H.nsi  
 Measurement date/time: 1/31/2013 1:17:11 PM, Filetype: NSI-97

Far-field Cut Analysis:  
 Avg value: -1.454 dB  
 -3. dB beam width: Not Found  
 -6. dB beam width: Not Found  
 -10. dB beam width: Not Found  
 Left Sidelobe: -2.13 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 11  

Beam	Frequency	Azimuth	Elevation	Pol
7	1.990 GHz	Azimuth	Elevation	Single-pol

# Far-field amplitude of GSM100C-4G-H.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
 Gain = 0.85924 dBi  
 Max far-field (global) = -46.67287 dB, Max far-field (plot) = -46.6729 dB  
 Normalization: Reference, Network offset = 0.000 dB  
 Hpeak at: 78.000 deg, Vpeak at: 0.000 deg  
 Plot centering: On

GSM100C-4G-H

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\Y.H.T\YG\4G NEW\H\GSM100C-4G-H.nsi  
 Measurement date/time: 1/31/2013 1:17:11 PM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: -2.412 dB  
 -3. dB beam width: 185.73 deg  
 -6. dB beam width: Not Found  
 -10. dB beam width: Not Found  
 Left Sidelobe: -0.02 dB at 45.251 deg  
 Right Sidelobe: -0.64 dB at 113.631 deg

Far-field display setup

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

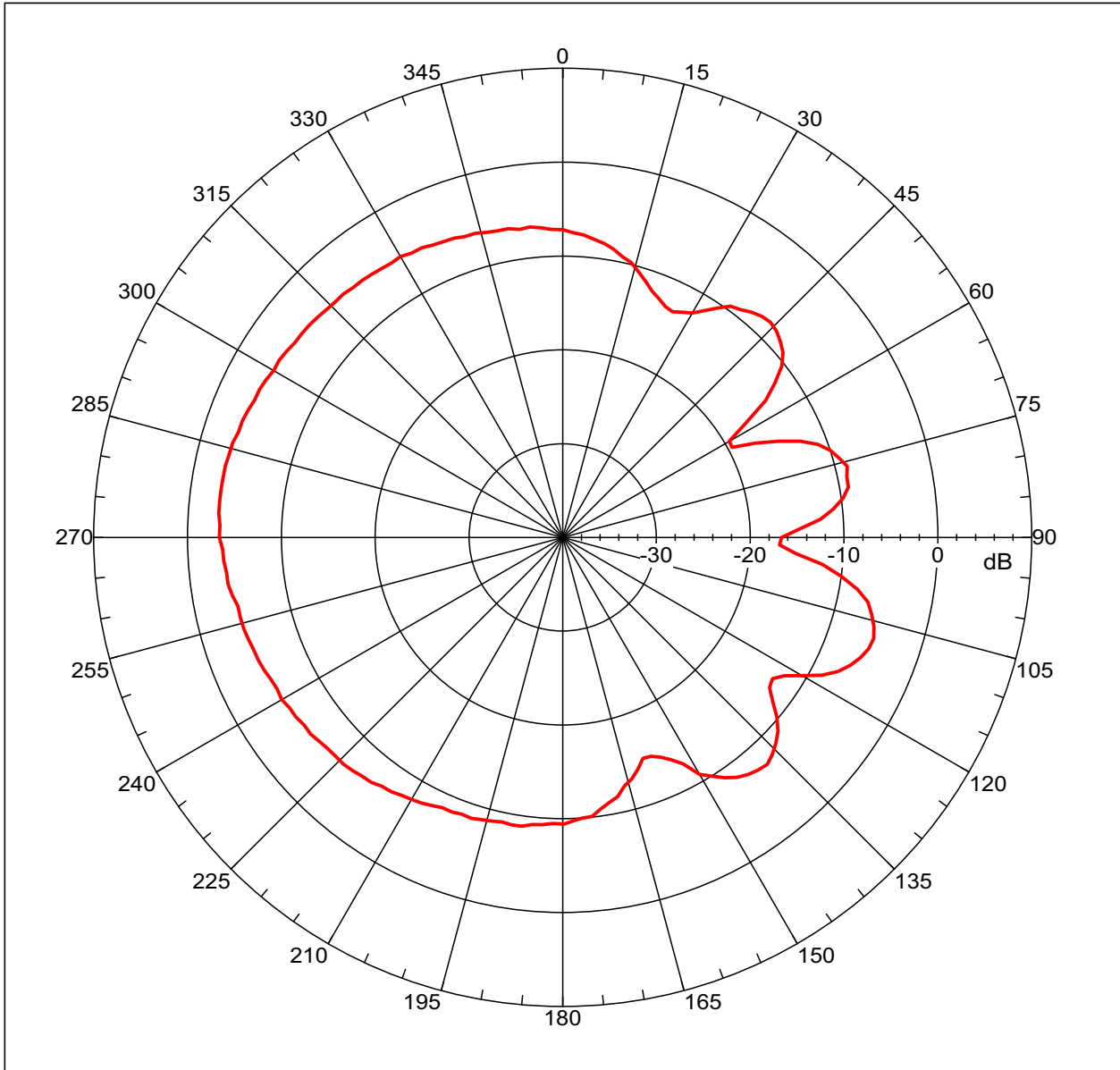
deg

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

Selected beam(s) 1 of 11

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

# Far-field amplitude of GSM100C-4G-H.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
 Gain = -3.23166 dBi  
 Max far-field (global) = -52.23929 dB, Max far-field (plot) =  
 -52.23929 dB  
 Normalization: Reference, Network offset = 0.000 dB  
 Hpeak at: -82.00001 deg, Vpeak at: 0.000 deg  
 Plot centering: On

GSM100C-4G-H

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\Y.  
 H.T\YG\4G NEW\H\GSM100C-4G-H.nsi  
 Measurement date/time: 1/31/2013 1:17:11 PM, Filetype: NSI-97

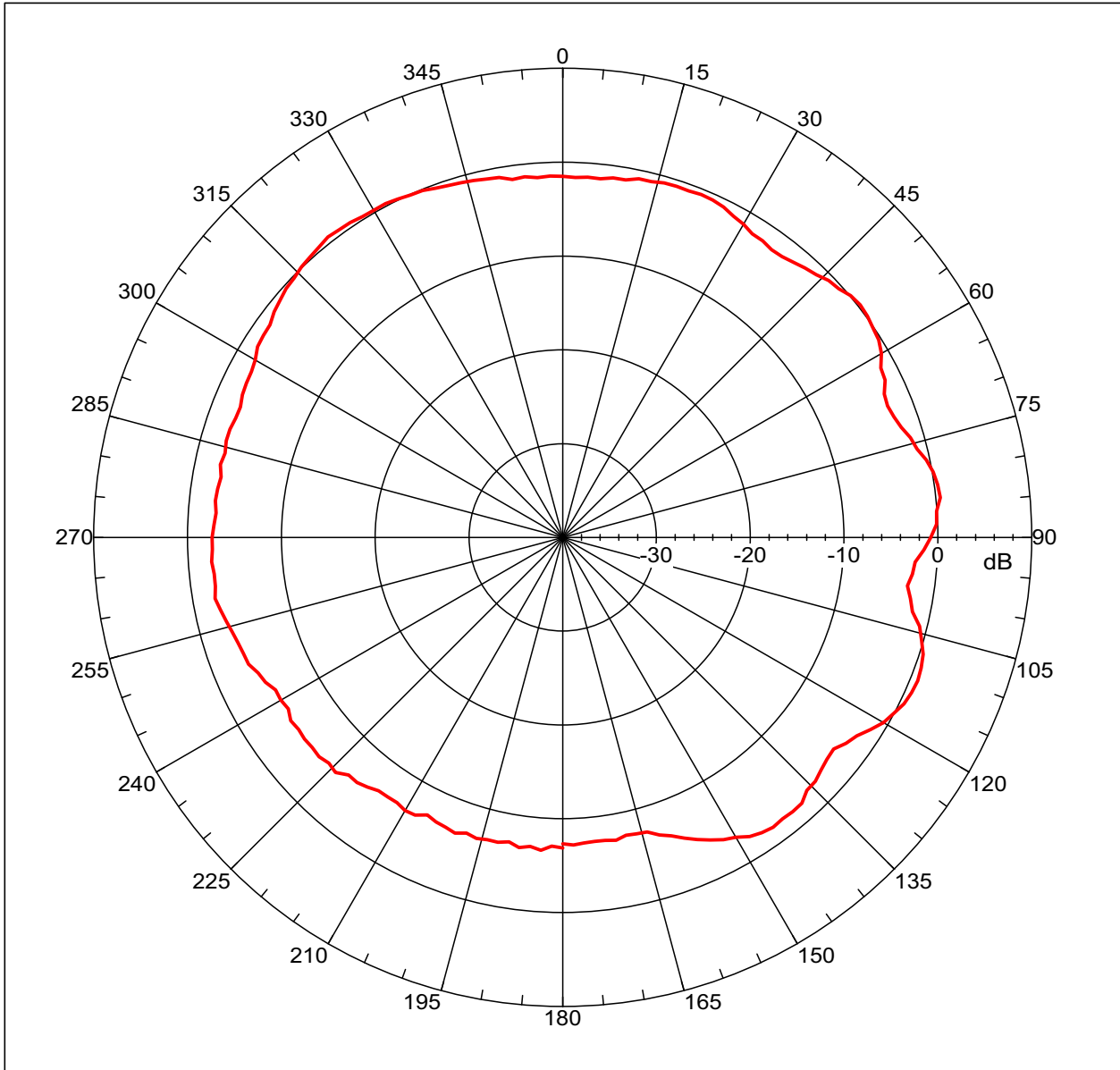
Far-field Cut Analysis:  
 Avg value: -7.642 dB  
 -3. dB beam width: 112.95 deg  
 -6. dB beam width: 186.39 deg  
 -10. dB beam width: Not Found  
 Left Sidelobe: Not Found  
 Right Sidelobe: -4.91 dB at 45.251 deg  
 Far-field display setup  
 Azimuth (deg)  
 Span = 360.00001 deg, Center = 0.000 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
9	2.400 GHz	Azimuth	Elevation	Single-pol



# Far-field amplitude of GSM100C-4G-H.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
 Gain = 0.81518 dBi  
 Max far-field (global) = -49.32081 dB, Max far-field (plot) = -49.3209 dB  
 Normalization: Reference, Network offset = 0.000 dB  
 Hpeak at: 111.99999 deg, Vpeak at: 0.000 deg  
 Plot centering: On

GSM100C-4G-H

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\Y.H.T\YG\4G NEW\H\GSM100C-4G-H.nsi  
 Measurement date/time: 1/31/2013 1:17:11 PM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: -2.375 dB  
 -3. dB beam width: 23.35 deg  
 -6. dB beam width: 276.31 deg  
 -10. dB beam width: Not Found  
 Left Sidelobe: -0.35 dB at 85.475 deg  
 Right Sidelobe: -2.65 dB at 141.788 deg

Far-field display setup

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

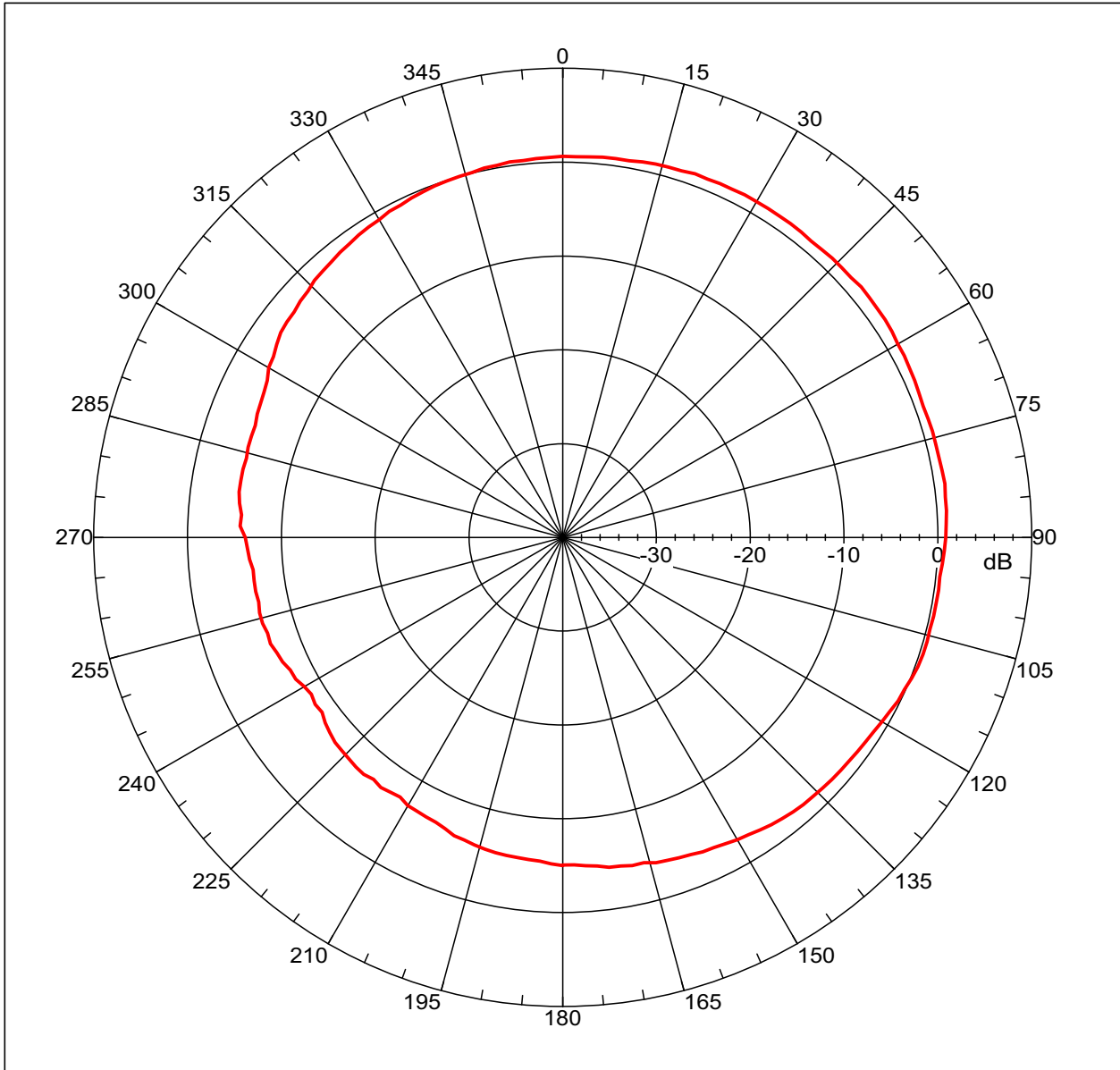
deg

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

Selected beam(s) 1 of 11

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

# Far-field amplitude of GSM100C-4G-H.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
 Gain = 1.53117 dBi  
 Max far-field (global) = -48.78562 dB, Max far-field (plot) = -48.78566 dB  
 Normalization: Reference, Network offset = 0.000 dB  
 Hpeak at: 49.99999 deg, Vpeak at: 0.000 deg  
 Plot centering: On

GSM100C-4G-H

NSI2000 V4.0.124, Filename:C:\Documents and Settings\NSI\Desktop\Y.  
 H.T\YG\4G NEW\H\GSM100C-4G-H.nsi  
 Measurement date/time: 1/31/2013 1:17:11 PM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: -1.920 dB  
 -3. dB beam width: 172.33 deg  
 -6. dB beam width: 235.27 deg  
 -10. dB beam width: Not Found  
 Left Sidelobe: -8.55 dB at -139.777 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