

# PROFESSOR TECHNOLOGY CO.,LTD

## **CP68 Antenna INTRODUCTION**

### **1. GENERAL DESCRIPTION**

<b>Model No</b>
CP68-6ft-SMAM-2.4Ghz

Below is a table summarizing the antenna design specification.

#### **1.1 Electrical Properties**

<b>Parameter</b>	<b>Description</b>
Frequency Band	2.4GHz
Nominal Impedance	50 ohm
Polarization	Vertical
V.S.W.R	2.0:1
H.nsi Gain (2.45GHz)	1.73dbi
E.nsi Gain (2.45GHz)	2.93dbi

Please refer to the test report Page7 & 10

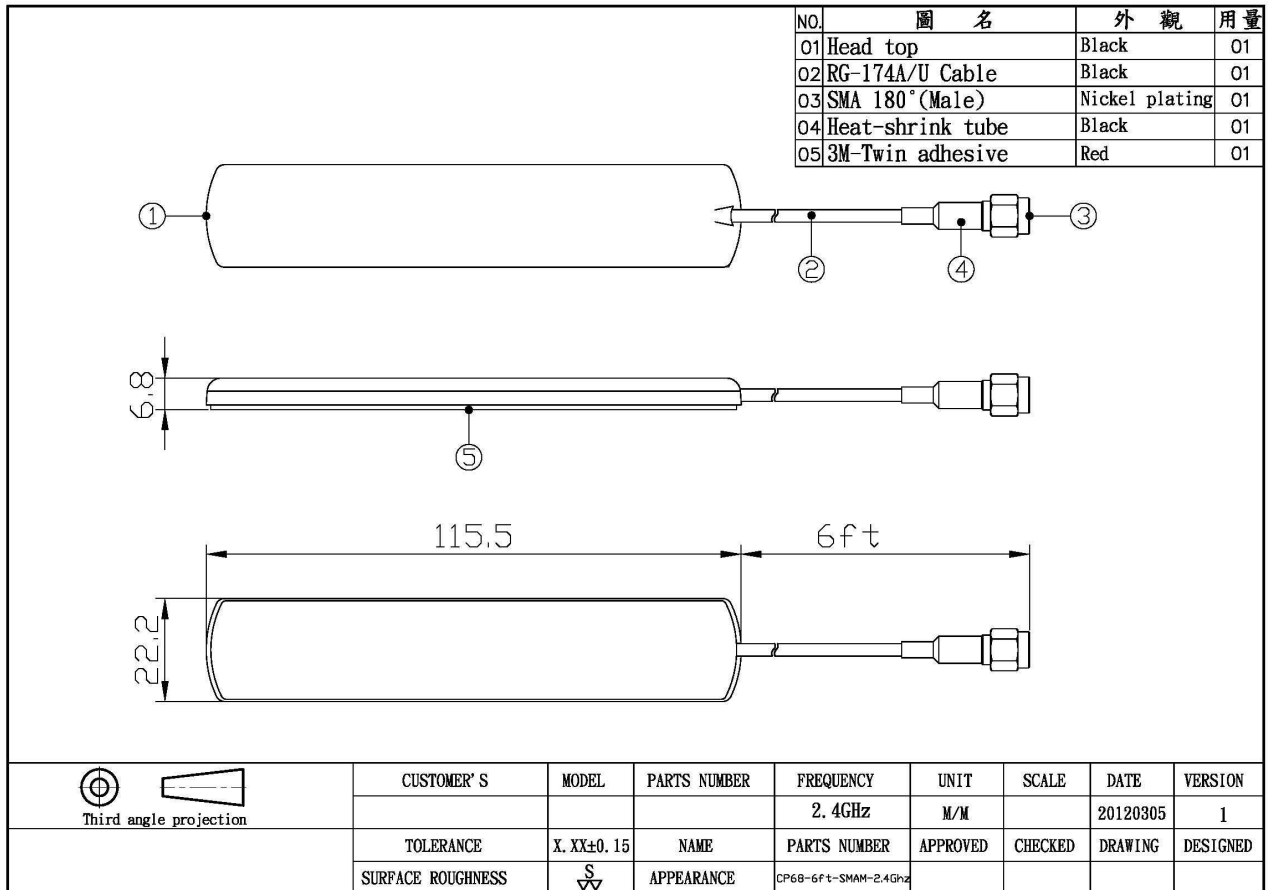
#### **1.2 Mechanical Properties**

<b>Parameter</b>	<b>Description</b>
Antenna Material	ABS
Connector Type	SMA 180° (male)
Antenna Dimensions	115 mm ± 5
Antenna Cable Total Length	6FT
Antenna Color	Black
Operating Temperature Range	-30°C~+70°C
Storage Temperature Range	-40°C~+80°C

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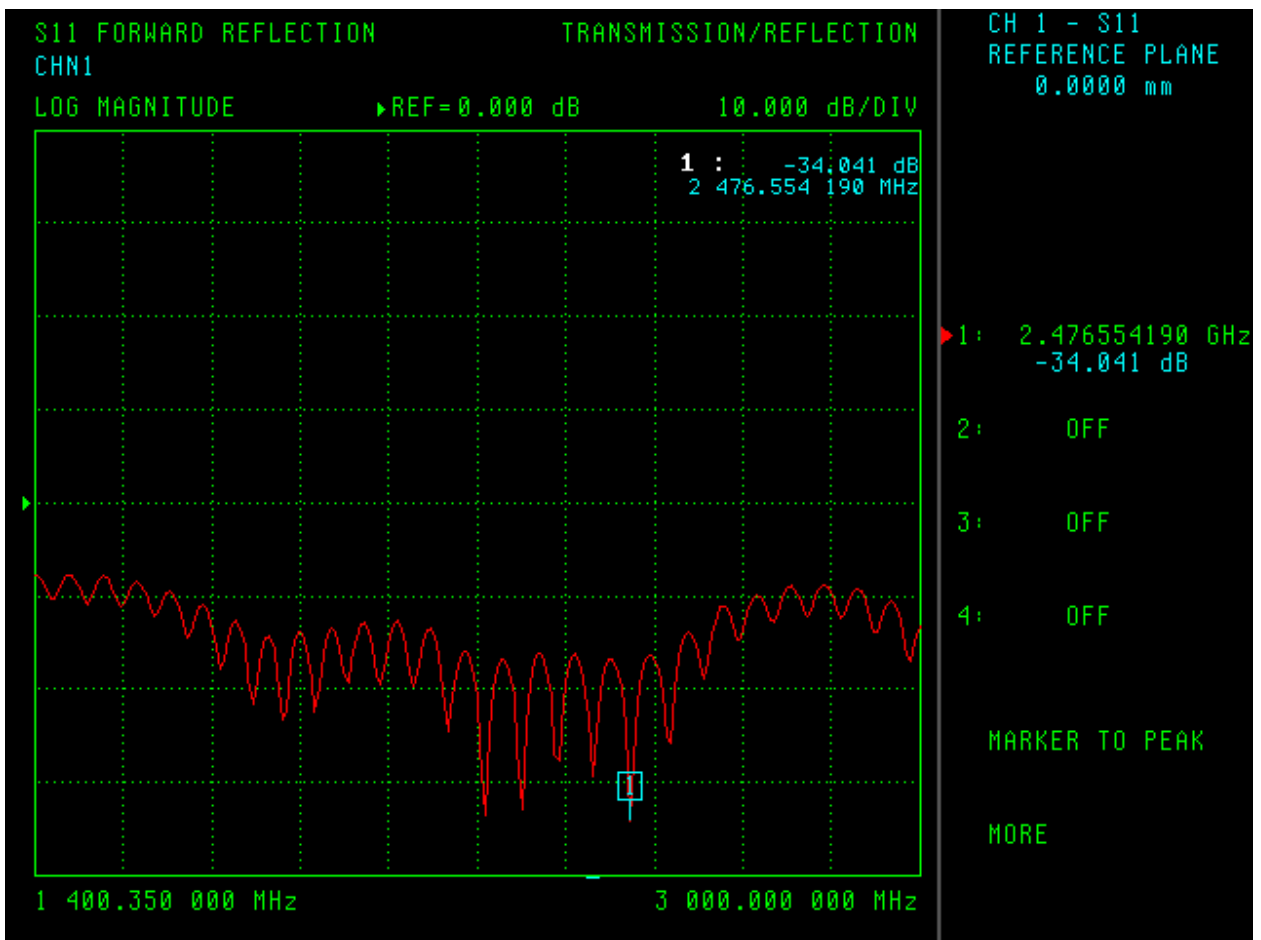
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## 2. Appearance

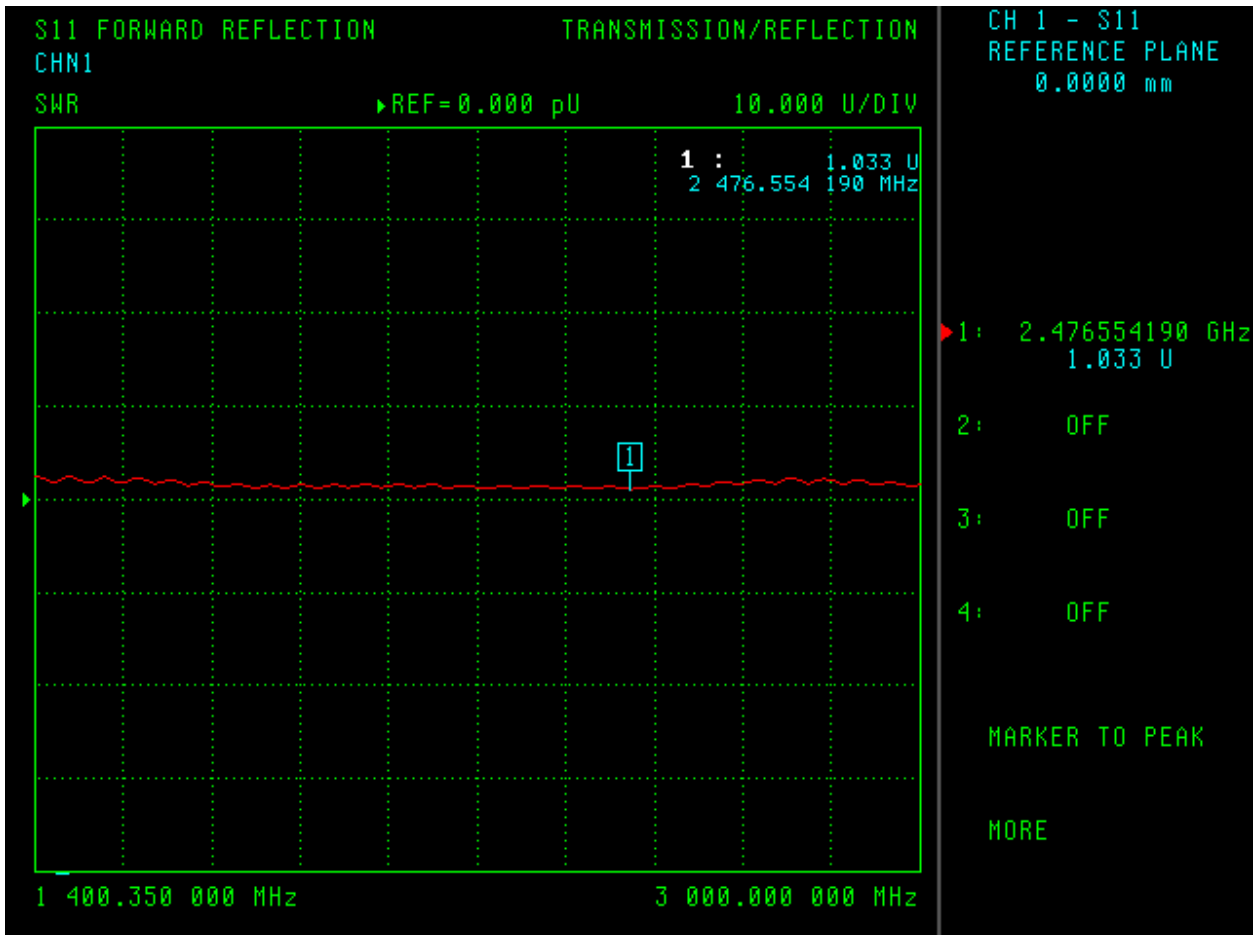


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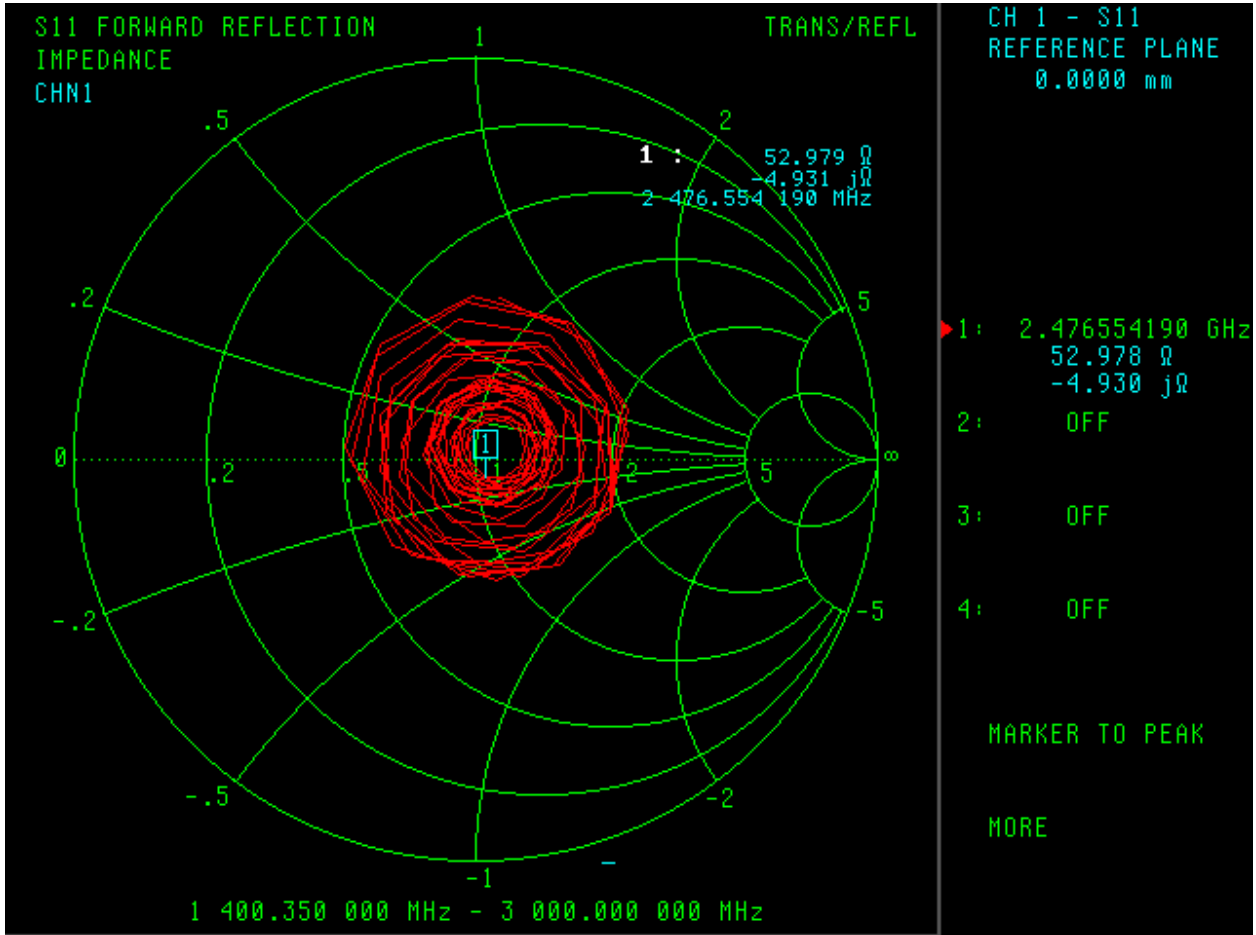
## 3. FREQUENCY



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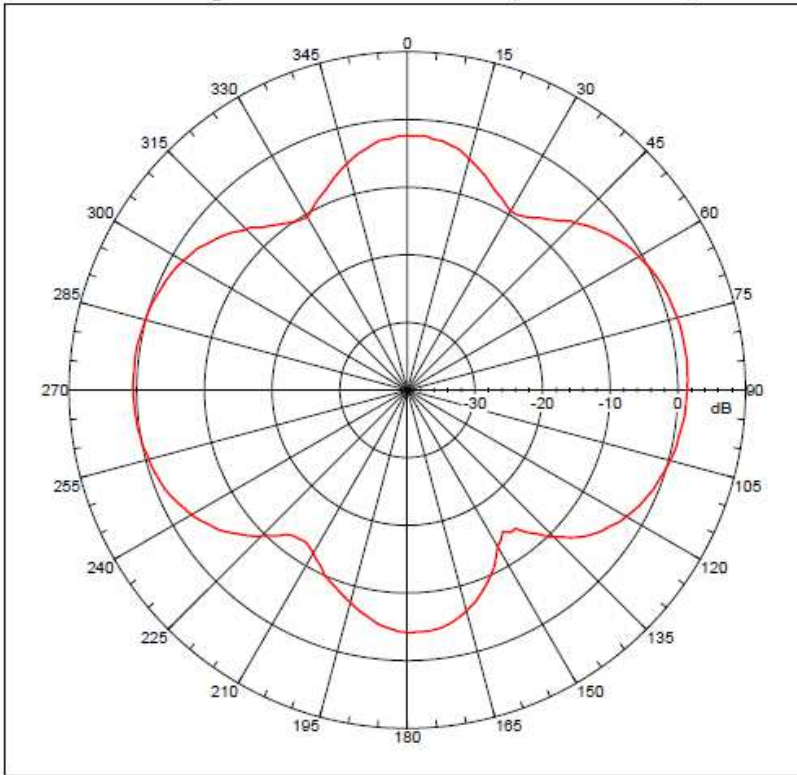


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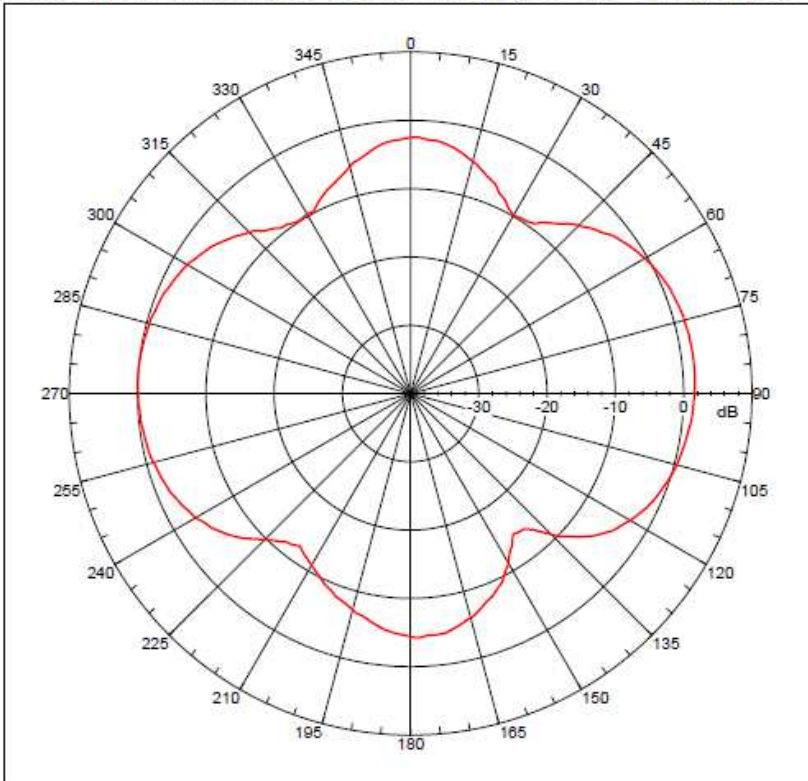
Far-field amplitude of 20120302(2.4-2.5GHz)-H.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
Gain = 1.57832 dBi  
Max far-field (global) = -47.42911 dB, Max far-field (plot) =  
-47.42914 dB  
Normalizations: Reference, Network offset = 0.000 dB  
Sweep at: 84.000 deg, Vpeak at: 0.000 deg  
Plot centering: On  
20120302(2.4-2.5GHz)-H  
MS22000 V4.0.124, Filename:C:\Documents and Settings\MSI\Desktop\20  
12 CIMORE\atx-wave\20120302(2.4-2.5GHz)\20120302(2.4-2.5GHz)-H.nsi  
Measurement date/time: 3/2/2012 2:59:00 PM, Plottype: NSI-97  
Far-field Cur Analysis:  
Rys value: -3.597 dB  
-3. dB beam width: 59.88 deg  
-6. dB beam width: 79.66 deg  
-10. dB beam width: 97.90 deg  
Left Sidelobe: -3.90 dB at 5.020 deg  
Right Sidelobe: -3.79 dB at 177.969 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 3  
Beam Frequency Azimuth Elevation Pol  
1 2.400 GHz Azimuth Elevation Single-pol

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Far-field amplitude of 20120302(2.4-2.5GHz)-H.nsi



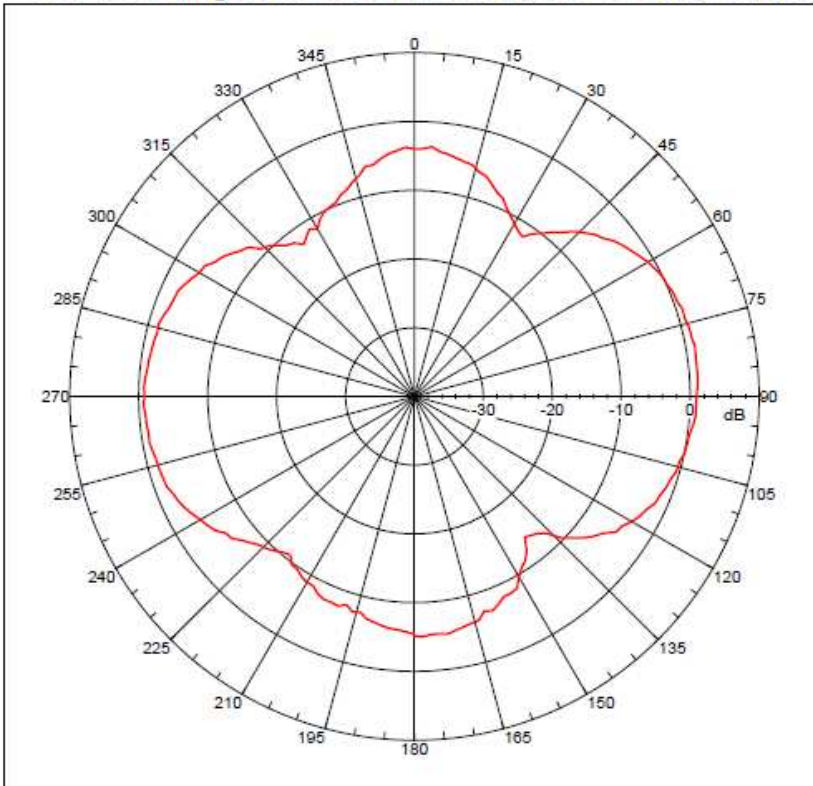
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Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg
Gain = 1.7317 dB
Max far-field (global) = -49.34498 dB, Max far-field (plot) =
-49.243 dB
Normalization: Reference, Network offset = 0.000 dB
Ipeak at: 21.99299 deg, Vpeak at: 0.000 deg
Plot centering: On

20120302(2.4-2.5GHz)-H
NSI2000 V4.0.124, Filename:Cr\Documents and Settings\MSI\Desktop\20
12 0302\air-wave\20120302(2.4-2.5GHz)\20120302(2.4-2.5GHz)-H.nsi
Measurement date/time: 3/2/2012 2:59:08 PM, Filetype: NSI-97
Far-field Cut Analysis:
Avg value: -3.758 dB
-3. dB beam width: 56.35 deg
-6. dB beam width: 77.30 deg
-10. dB beam width: 94.00 deg
Left Sidelobe: -4.25 dB at 3.017 deg
Right Sidelobe: -6.20 dB at 175.978 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 3
Beam Frequency Azimuth Elevation Pol
-----
1 2.450 GHz Azimuth Elevation Single-pol
    
```

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Far-field amplitude of 20120302(2.4-2.5GHz)-H.nsi



Far-field amplitude, Sprincipal: Linear, Tau = 0.000 deg  
Gain = 1.25144 dB  
Max far-field (global) = -48.79455 dB, Max far-field (plot) =  
-48.79465 dB  
Normalization: Reference, Network offset = 0.000 dB  
Vpeak at: 79.99998 deg, Vpeak at: 0.000 deg  
Plot centering: On

20120302(2.4-2.5GHz)-H

MSI000 V4.0.124, Filename:C:\Documents and Settings\MSI\Desktop\10  
11 CMOSR\air-wave\20120302(2.4-2.5GHz)\20120302(2.4-2.5GHz)-H.nsi  
Measurement date/time: 3/2/2012 2:59:08 PM, Filetype: NSI-97

Far-field Cut Analysis:  
Avg value: -4.459 dB  
-2. dB beam width: 15.33 deg  
-6. dB beam width: 75.24 deg  
-10. dB beam width: 91.09 deg  
Left Sidelobe: -4.96 dB at 3.028 deg  
Right Sidelobe: -9.46 dB at 155.866 deg

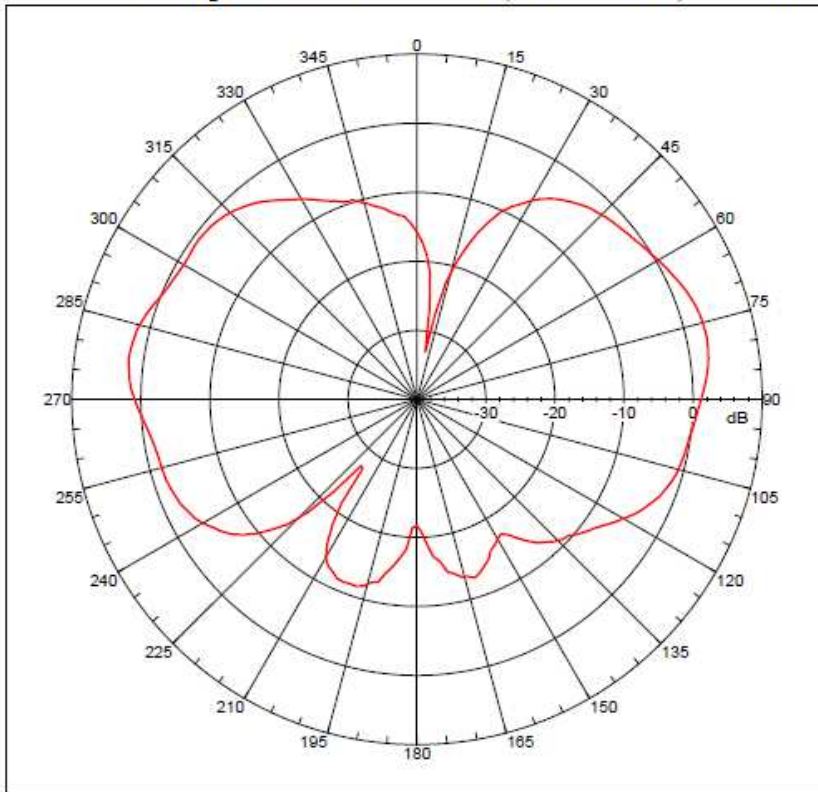
Far-field display setup  
Azimuth (deg)  
Span = 360.00001 deg, Center = 0.000 deg, #pts = 181  
Start = -180.00001 deg, Stop = 180.00001 deg, Delta = 2.000  
deg  
Elevation (deg)  
Center = 0.000 deg, #pts = 1

Selected beam(s) 1 of 3  
Beam Frequency Azimuth Elevation Pol  
-----  
3 2.500 GHz Azimuth Elevation Single-pol



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Far-field amplitude of 20120302(2.4-2.5GHz)-E01.nsi



Far-field amplitude, E(principal): Linear, Tau = 0.000 deg  
Gain = 2.9347 dBi  
Max Far-field (global) = -46.07293 dB, Max Far-field (plot) =  
-46.07295 dB  
Normalization: Reference, Network offset = 0.000 dB  
Vpeak at: 78.000 deg, Vpeak at: 0.000 deg  
Plot centering: On

20120302(2.4-2.5GHz)-E01

NIH2000 V4.0.124, Filename: C:\Documents and Settings\MSI\Desktop\20  
12 0302\air-wave\20120302(2.4-2.5GHz)\20120302(2.4-2.5GHz)-E01.n  
s

Measurement date/time: 3/2/2012 5:12:08 PM, Filetype: MS1-97

Far-field Cut Analysis:

Avg value: -4.654 dB  
-3. dB beam width: 39.22 deg  
-6. dB beam width: 74.22 deg  
-10. dB beam width: 94.39 deg  
Left Sidelobe: -3.76 dB at -53.296 deg  
Right Sidelobe: -3.76 dB at 163.211 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

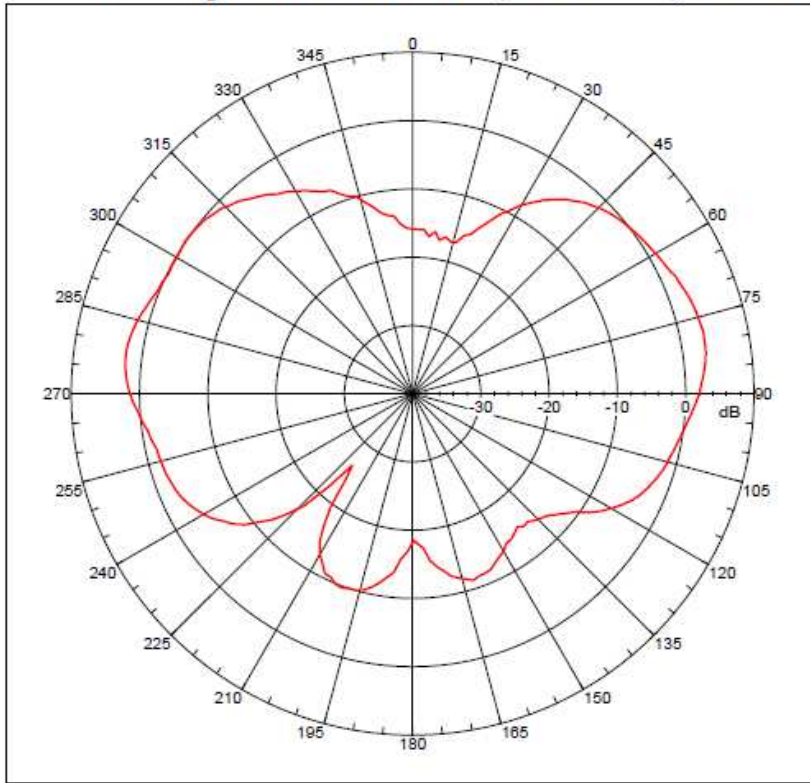
Elevation [deg]  
Center = 0.000 deg, #pts = 1

Selected beam(s) 1 of 3

Beam	Frequency	Azimuth	Elevation	Pol
1	2.400 GHz	Azimuth	Elevation	Single-pol

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Far-field amplitude of 20120302(2.4-2.5GHz)-E01.nsi



Far-field amplitude, Eprincipal: Linear, Tau = 0.000 deg  
Gain = 3.52196 dB  
Max far-field (global) = -46.45619 dB, Max far-field (plot) = -46.45625 dB  
Normalization: Reference, Network offset = 0.000 dB  
Upeak str: 18.000 deg, Vpeak str: 0.000 deg  
Plot centering: On

20120302(2.4-2.5GHz)-E01

NI1000 V4.0.124, Filename:G:\Documents and Settings\NHI\Desktop\20120302(2.4-2.5GHz)\20120302(2.4-2.5GHz)-E01.nsi

Measurement date/time: 3/2/2012 5:12:08 PM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: -4.204 dB  
-3. dB beam width: 40.05 deg  
-6. dB beam width: 68.97 deg  
-10. dB beam width: 87.68 deg  
Left Sidelobe: -19.59 dB at 9.050 deg  
Right Sidelobe: -14.76 dB at 162.911 deg

Far-field display setup

Azimuth (deg)  
Span = 360.00001 deg, Center = 0.000 deg, #pts = 361  
Start = -180.00001 deg, Stop = 180.00001 deg, Delta = 1.000 deg

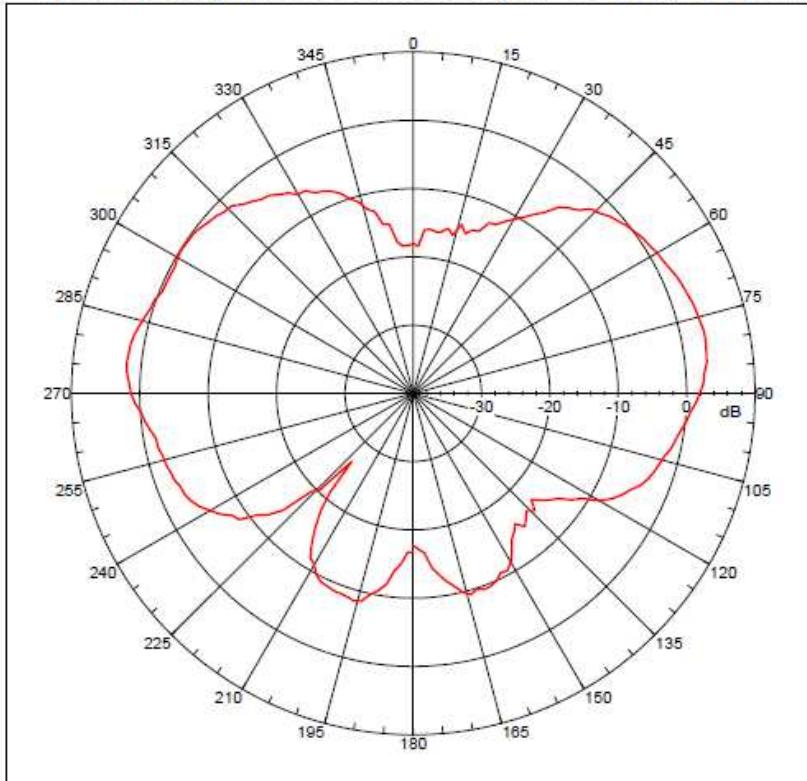
Elevation (deg)  
Center = 0.000 deg, #pts = 1

Selected beam(s) 1 of 3

Beam	Frequency	Azimuth	Elevation	Pol
1	2.450 GHz	Azimuth	Elevation	Single-pol

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Far-field amplitude of 20120302(2.4-2.5GHz)-E01.nsi



Far-field amplitude,  $\theta$  principal: Linear,  $\tau = 0.000$  deg  
 Gain = 3.50301 dB  
 Max far-field (global) = -46.63288 dB, Max far-field (plot) = -46.63286 dB  
 Normalization: Reference, Network offset = 0.000 dB  
 $\theta$  peak at: 79.000 deg,  $\psi$  peak at: 0.000 deg  
 Plot centering: On

20120302(2.4-2.5GHz)-E01

NSI2000 V4.0.124, Filename: C:\Documents and Settings\W31\Desktop\20120302(air-wave\20120302(2.4-2.5GHz)\20120302(2.4-2.5GHz)-E01.ms

Measurement date/time: 3/2/2012 5:12:08 PM, Filetype: NSI-97

Far-field Cut Analysis:

Avg value: -4.645 dB  
 -3. dB beam width: 39.93 deg  
 -6. dB beam width: 62.19 deg  
 -10. dB beam width: 90.44 deg  
 Left Sidelobe: -11.76 dB at 17.098 deg  
 Right Sidelobe: -15.77 dB at 135.754 deg

Far-field display setup

Azimuth (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 3

Beam	Frequency	Azimuth	Elevation	Pol
1	2.500 GHz	Azimuth	Elevation	Single-pol
2	2.500 GHz	Azimuth	Elevation	Single-pol
3	2.500 GHz	Azimuth	Elevation	Single-pol