

SPECIFICATION FOR APPROVAL

Customer :

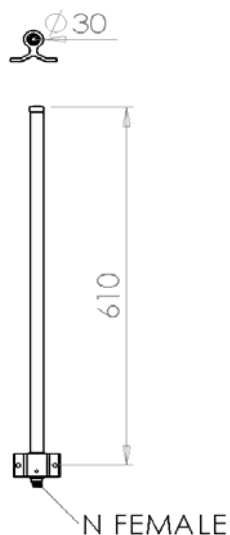
Model No.: 2,4-O-9

Description : 2400~2500MHz OMNI ANTENNA

Date : 2009/04/27

Rev : 2

1. OVERVIEW & SPECIFICATIONS



Electrical Specifications:

Frequency Range :	2400~2500MHz
VSWR :	≤ 2.0
Impedance :	$50\Omega \pm 5\Omega$
Forward Gain :	9dBi
Polarization :	Vertical
Power Handling :	10 Watt

Mechanical Specifications:

Connector :	N Female
Operation Temp. :	-30°C ~+60°C
Material :	Radome: Fiberglass Base: Aluminum Alloy Mount: Stainless
Dimension (L*W*H) :	Ø30*610mm
Weight :	354g $\pm$ 20g (w/ mount)
Color :	White

3D Illustration



2. TESTING CONDITION

2.1 TEST SETUP

VSWR measurement (S11): Use ROHDE & SCHWARZ ZV8 Network Analyzer with Harbour RG-142 coaxial cable: 1000mm length in free space.

2.1.1 VSWR

The table as below summarizes concern about Return loss measurement according to The frequency band is based on PRO-CELL design. The detail be shown as appendix that is from ROHDE & SCHWARZ ZV8 Network Analyzer

VSWR Performance			
Freq(MHz)	2400	2450	2500
Free space	1.1	1.1	1.2

3. GAIN MEASUREMENT

3.1 TEST SETUP

The gain of the antenna was measured by **PROCELL** Chamber. The chamber provides less than –30 dB reflectivity from 800 MHz through 6 GHz and a 60cm diameter spherical quiet zone. The measurement results are calibrated using both **SCHWARZBECK** horn standards. A decoupling sleeve is used to reduce feed line radiation

3.2 TEST RESULT

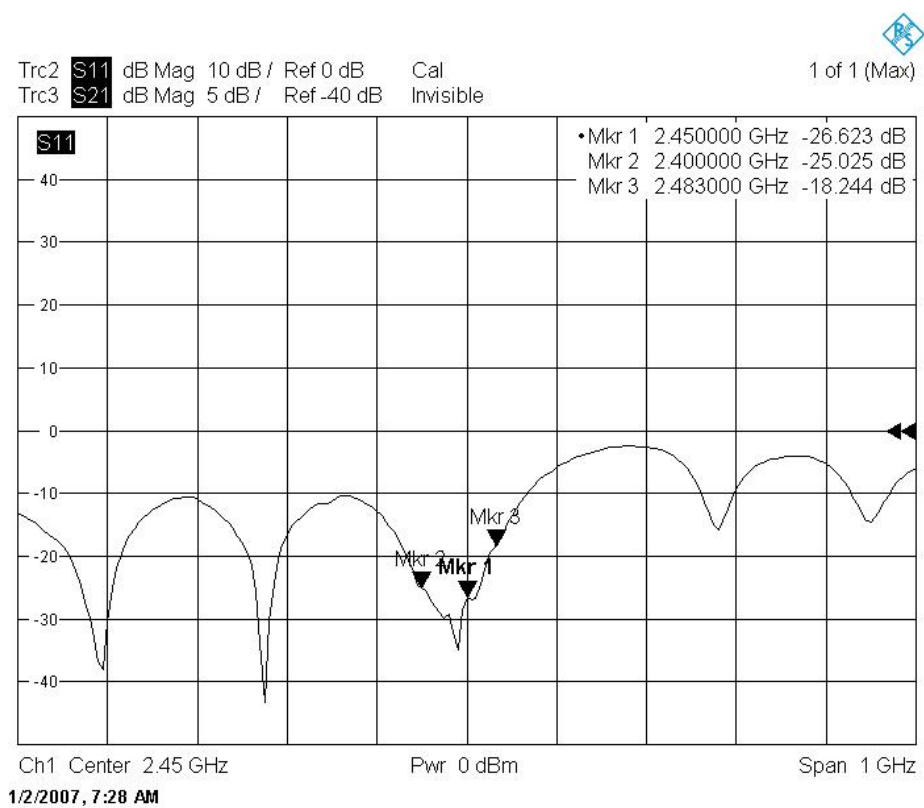
The peak gain is picked up as table list from Network analyzer in Chamber room, the completely gain plots also be shown as appendix.

	Peak Gain / Beamwidth		
Freq(MHz)	2400	2450	2500
H PLANE Peak Gain(dbi)	8.73 / 360°	8.5 / 325.4°	8.47 / 277.8°
E PLANE Peak Gain(dbi)	9.2 / 14.2°	9.15 / 14.2°	9.11 / 15.5°

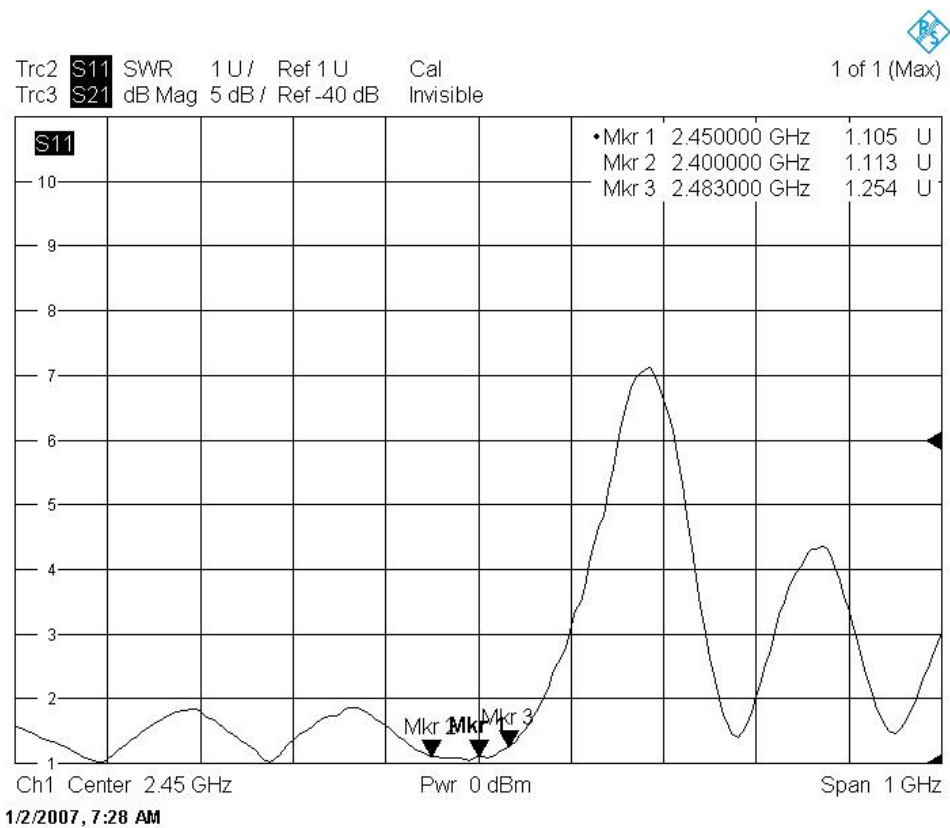
4. APPENDIX

4.1 RETURN LOSS & VSWR

RETURN LOSS

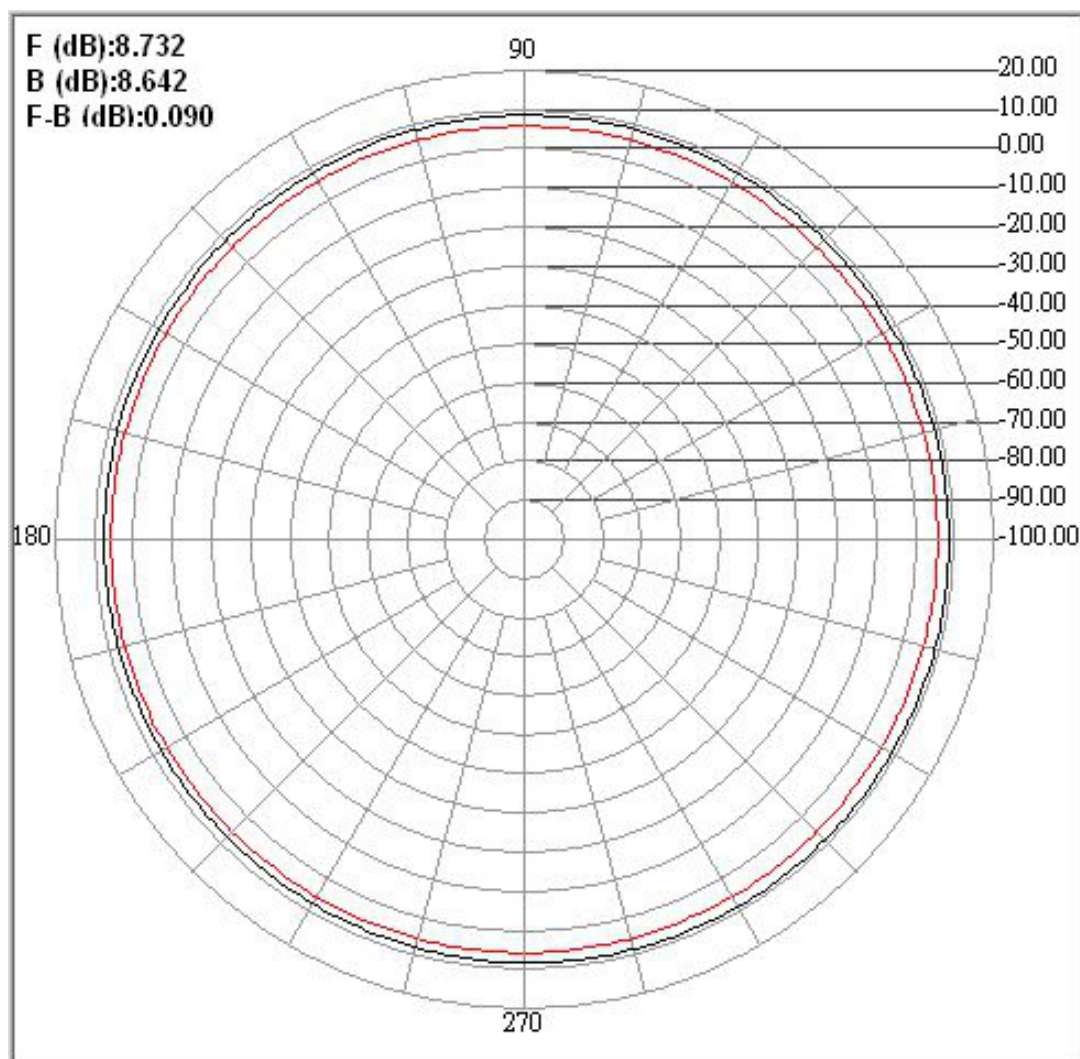


SWR

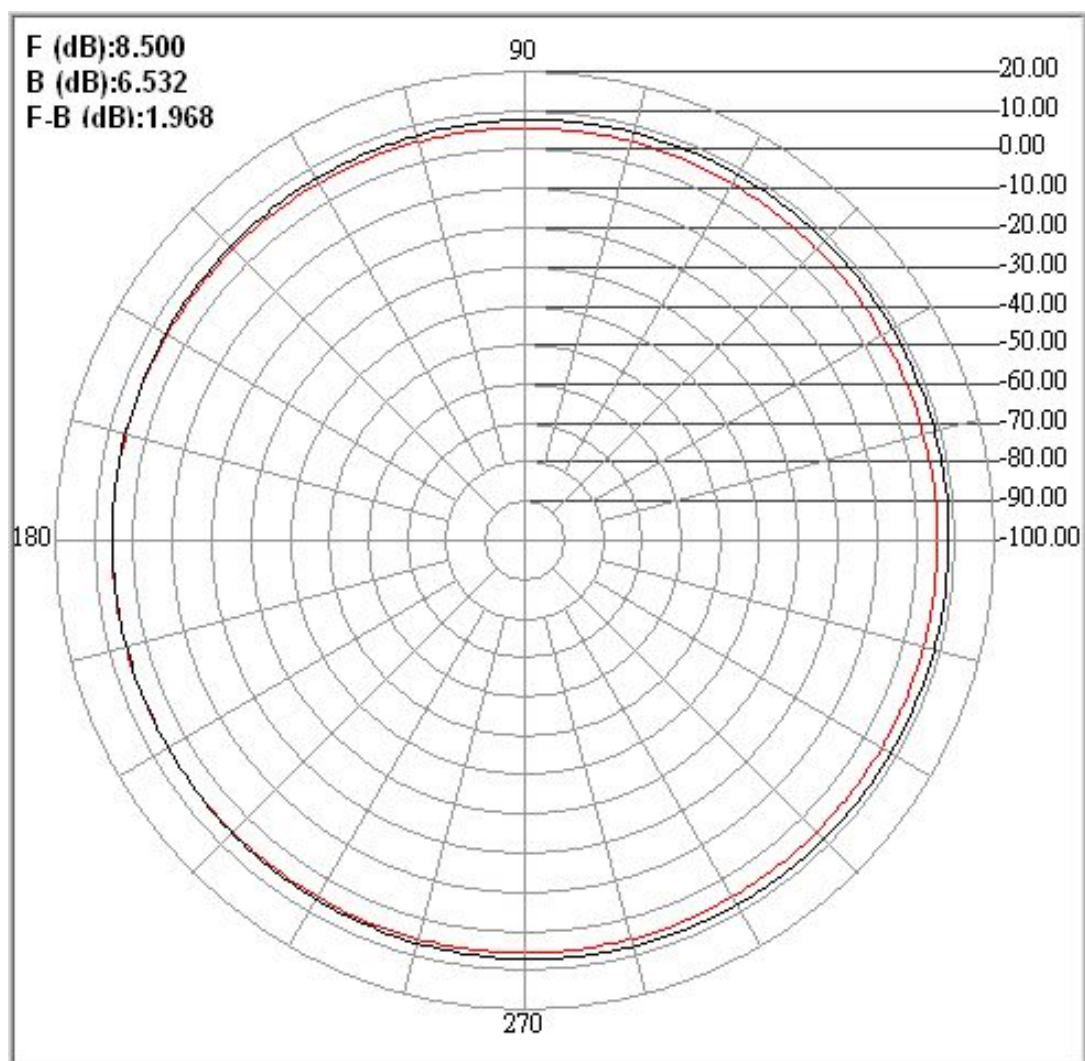


4.2 RADIATION PATTERN

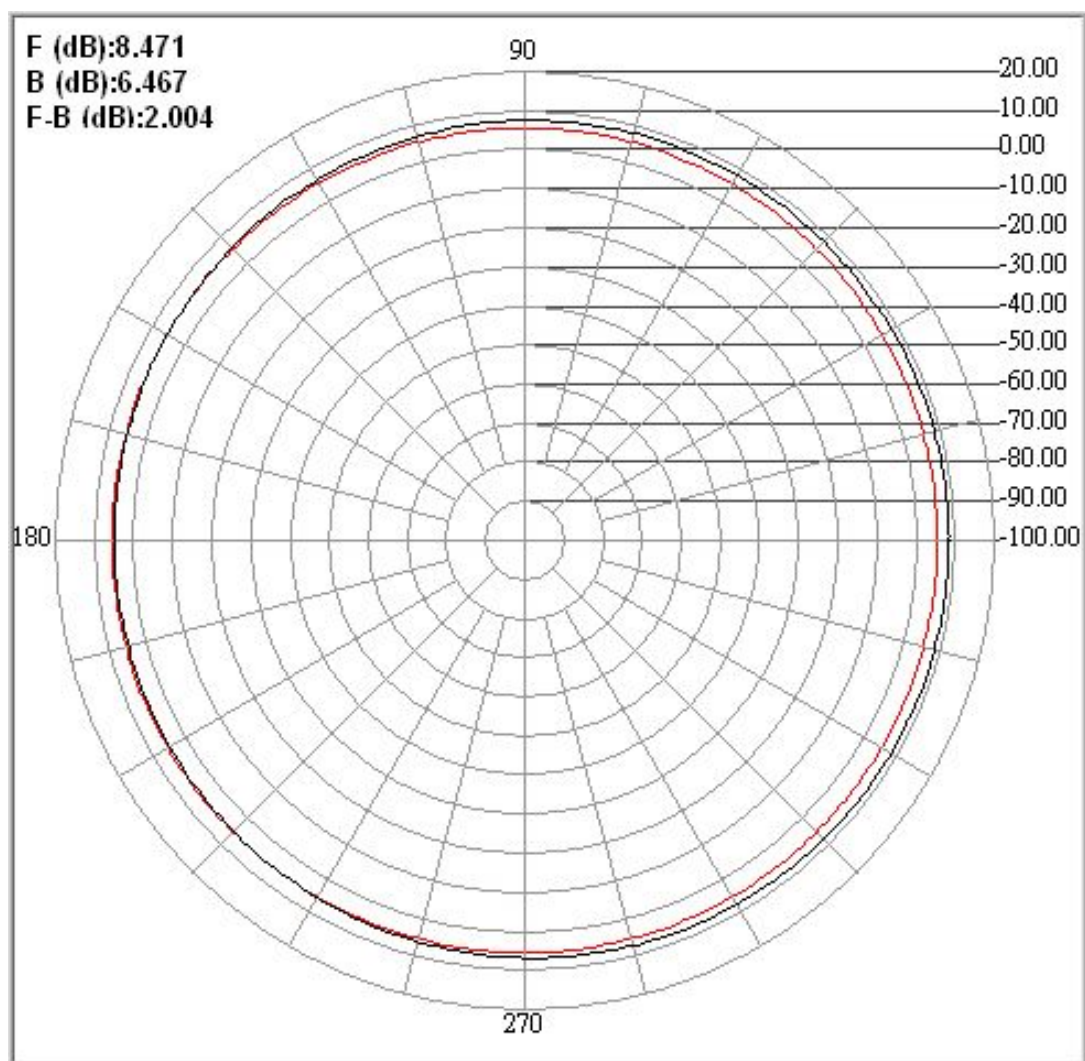
H-PLANE



Center freq.(MHz): 2400	Plane : H Plane	
Max gain(dBi) : 8.73	Min gain(dBi) : 7.38	Avg gain(dBi) : 8.26
-3dB1(°) : 0.00	-3dB2(°) : 0.00	HPB(°) : 360.00
Front (dB) : 8.732	Back (dB) : 8.642	F B Ratio (dB) : 0.090

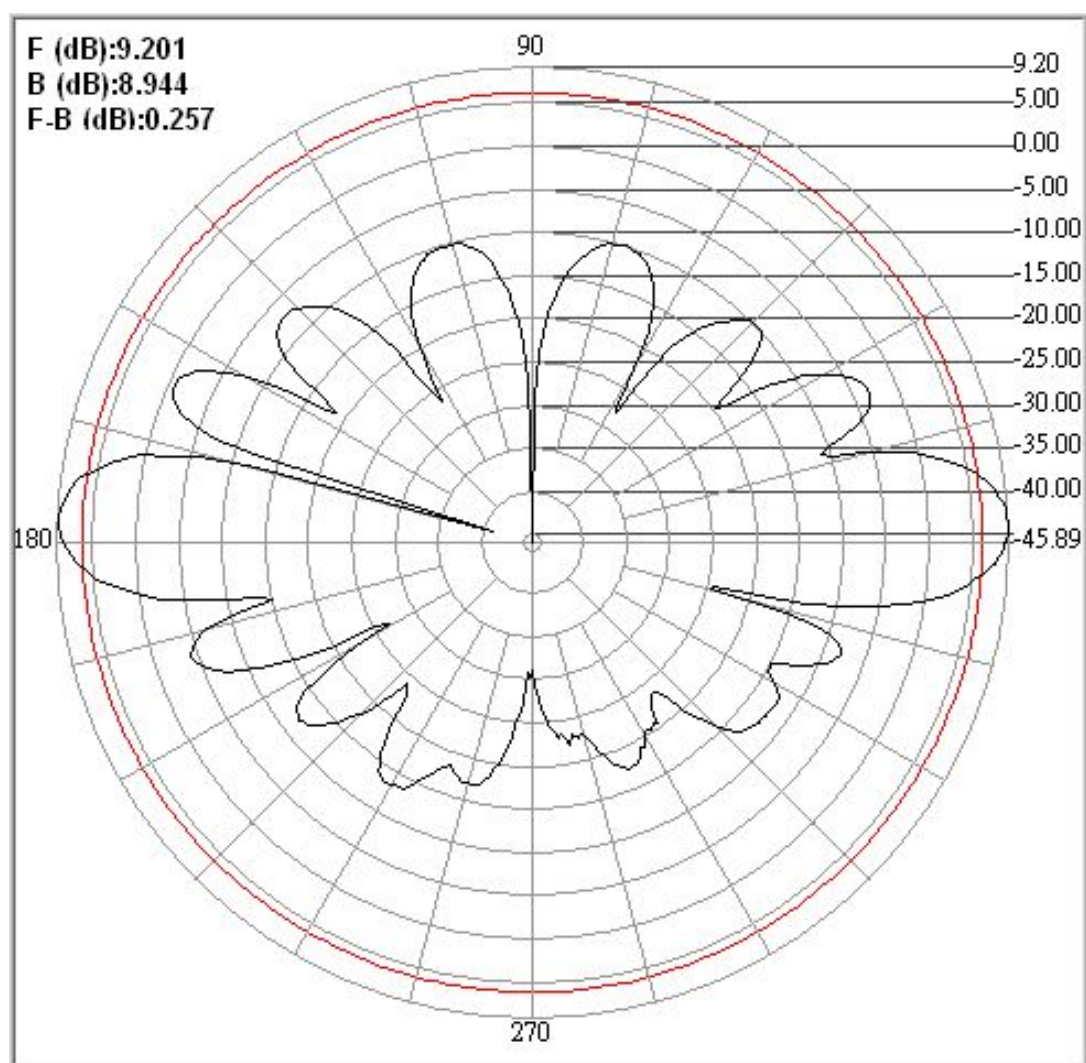


Center freq.(MHz): 2450	Plane : H Plane	
Max gain(dBi) : 8.50	Min gain(dBi) : 5.38	Avg gain(dBi) : 7.32
-3dB1(°) : 176.30	-3dB2(°) : -149.10	HPB(°) : 325.40
Front (dB) : 8.500	Back (dB) : 6.532	F B Ratio (dB) : 1.968

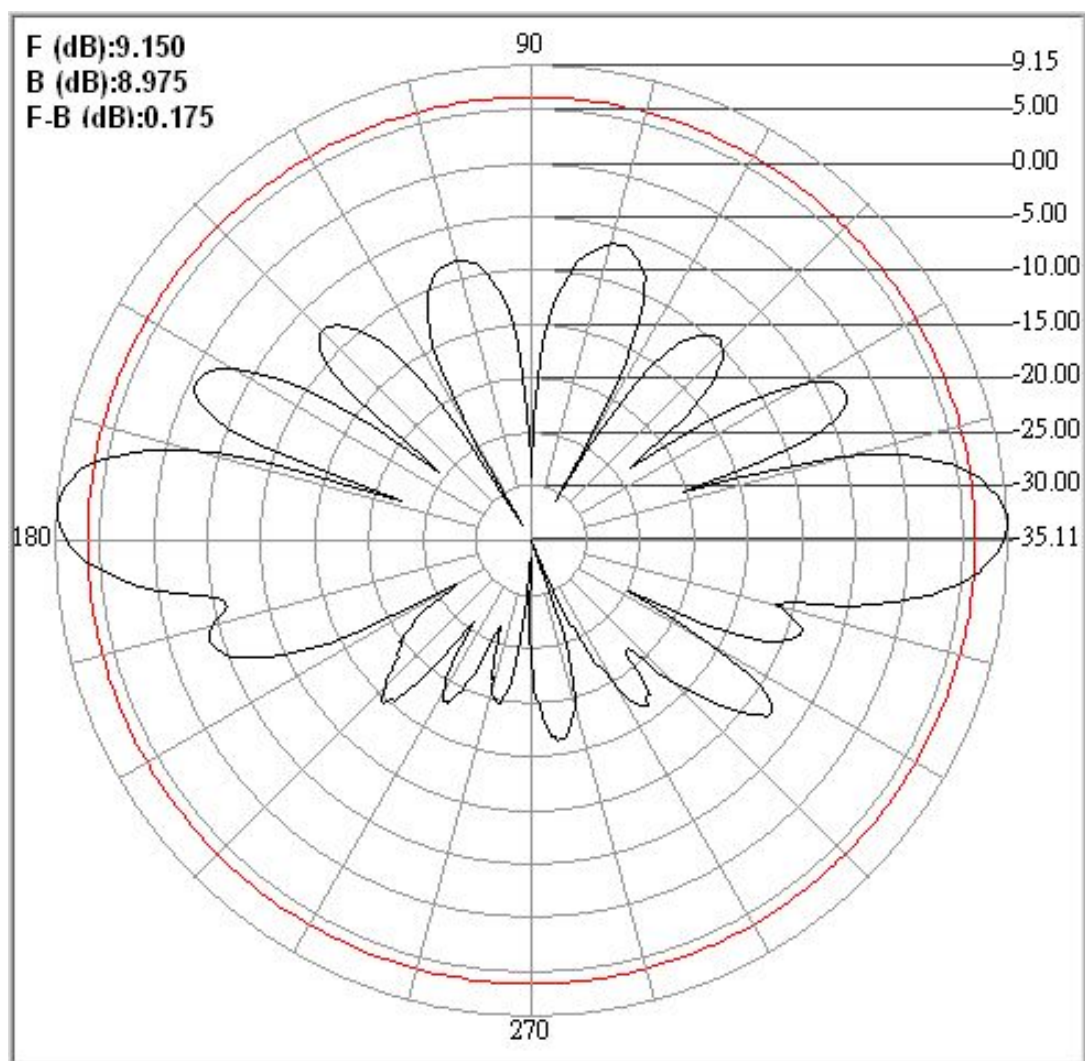


Center freq.(MHz): 2500	Plane : H Plane	
Max gain(dBi) : 8.47	Min gain(dBi) : 4.85	Avg gain(dBi) : 7.11
-3dB1(°) : 148.50	-3dB2(°) : -129.30	HPB(°) : 277.80
Front (dB) : 8.471	Back (dB) : 6.467	F B Ratio (dB) : 2.004

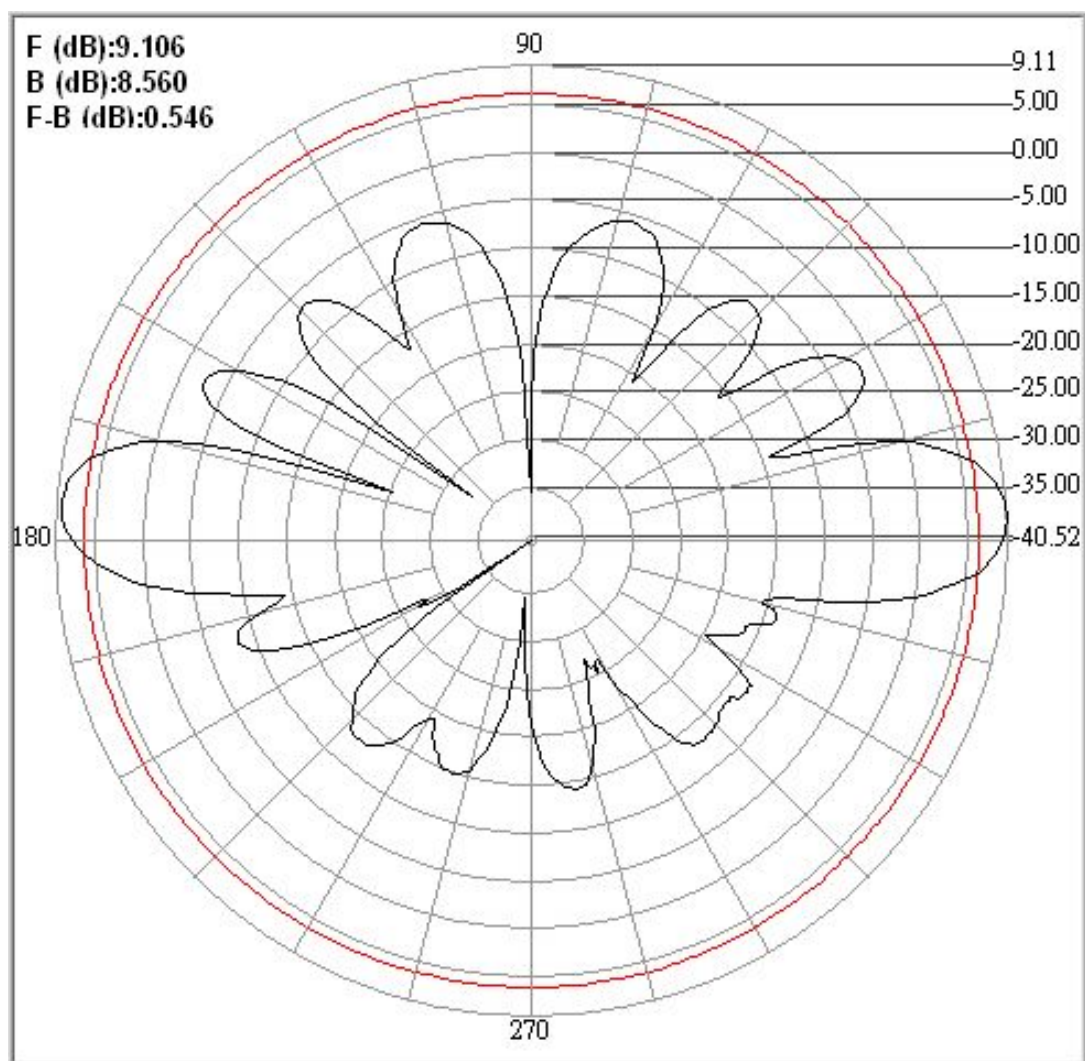
E-PLANE



Center freq.(MHz): 2400	Plane : E Plane	
Max gain(dBi) : 9.20	Min gain(dBi) : -45.89	Avg gain(dBi) : -0.36
-3dB1(°) : 9.30	-3dB2(°) : -4.90	HPB(°) : 14.20
Front (dB) : 9.201	Back (dB) : 8.944	F B Ratio (dB) : 0.257



Center freq.(MHz): 2450	Plane : E Plane	
Max gain(dBi) : 9.15	Min gain(dBi) : -35.11	Avg gain(dBi) : -0.19
-3dB1(°) : 9.40	-3dB2(°) : -4.80	HPB(°) : 14.20
Front (dB) : 9.150	Back (dB) : 8.975	F B Ratio (dB) : 0.175



Center freq.(MHz): 2500	Plane : E Plane	
Max gain(dBi) : 9.11	Min gain(dBi) : -40.52	Avg gain(dBi) : -0.24
-3dB1(°) : 10.70	-3dB2(°) : -4.80	HPB(°) : 15.50
Front (dB) : 9.106	Back (dB) : 8.560	F B Ratio (dB) : 0.546