SPECIFICATION
FOR
APPROVAL

Customer :

Model No.: **OE-002**

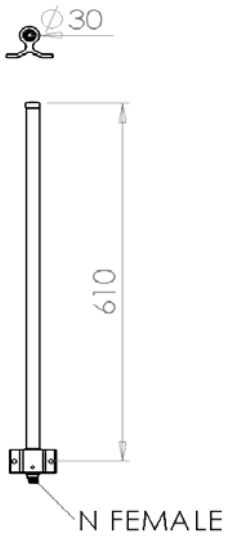
Description : **2400~2500MHz OMNI ANTENNA**

Date : **2009/04/27**

Rev : **2**

DIREKTRONIK

1. OVERVIEW & SPECIFICATIONS



Electrical Specifications:

Frequency Range :	2400~2500MHz
VSWR :	≤ 2.0
Impedance :	50Ω ± 5Ω
Forward Gain :	9dBi
Polarization :	Vertical
Power Handling :	10 Watt

Mechanical Specifications:

Connector :	N Female
Operation Temp. :	-30℃~+60℃
Material :	Radome: Fiberglass
	Base: Aluminum Alloy
	Mount: Stainless
Dimension (L*W*H) :	Ø30*610mm
Weight :	354g ±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 quite 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

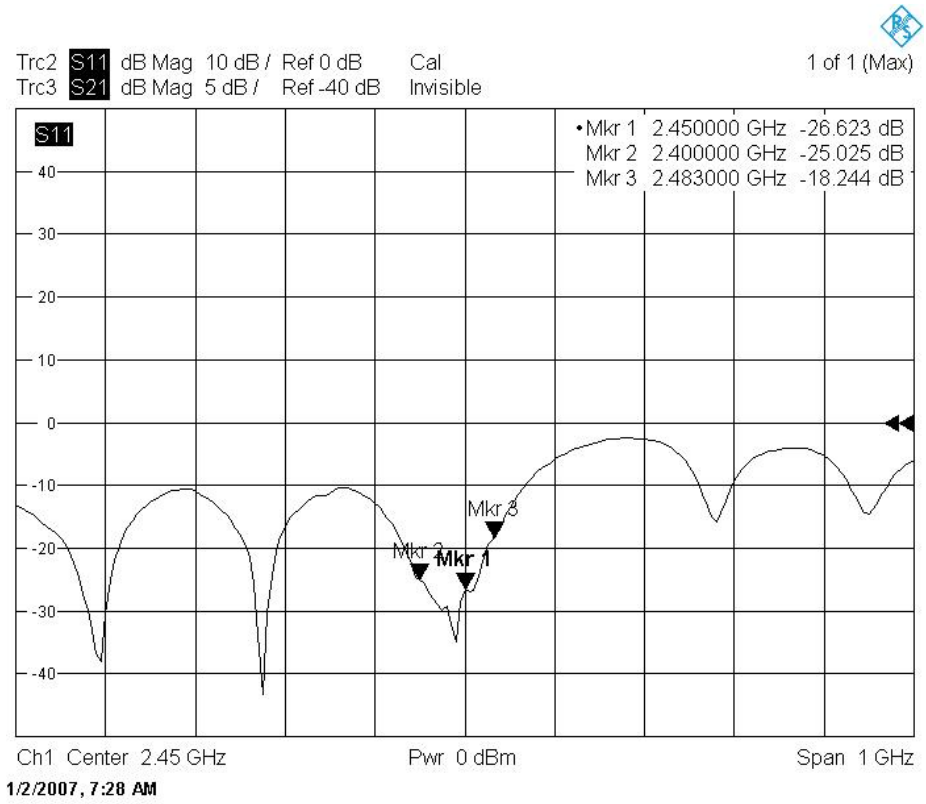
The peak gain is picked up as table list from Network analyzer in Chamber room, the completely gain plots also be shown as appendix.

	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°

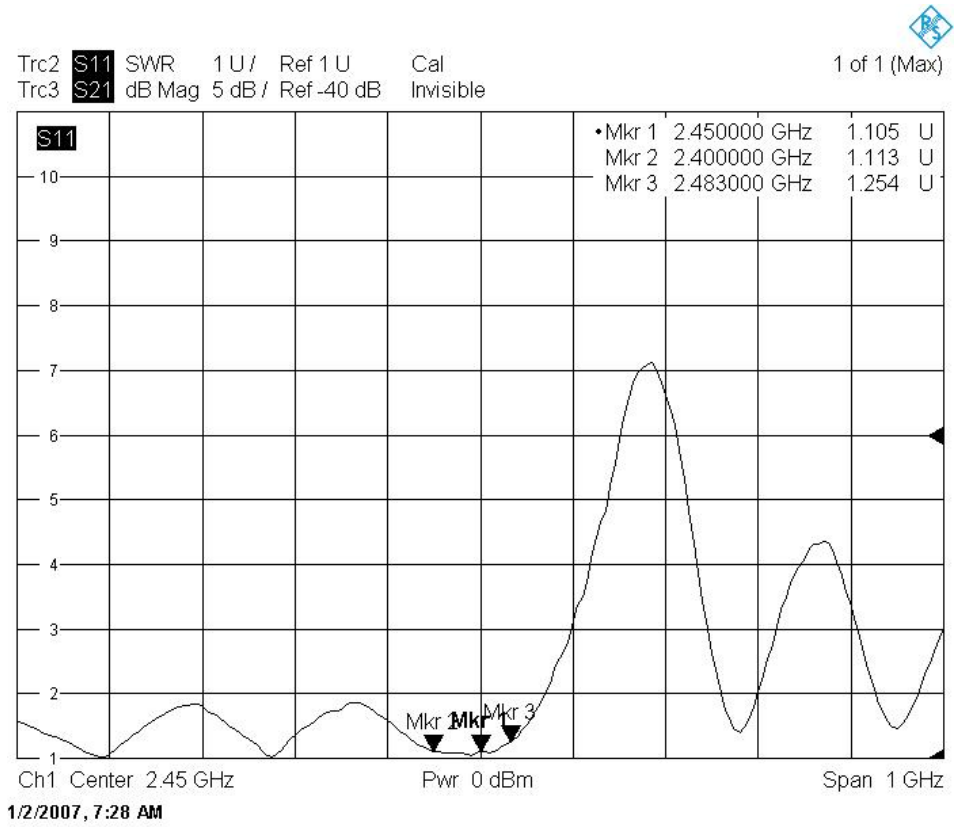
4. APPENDIX

4.1 RETURN LOSS & VSWR

RETURN LOSS

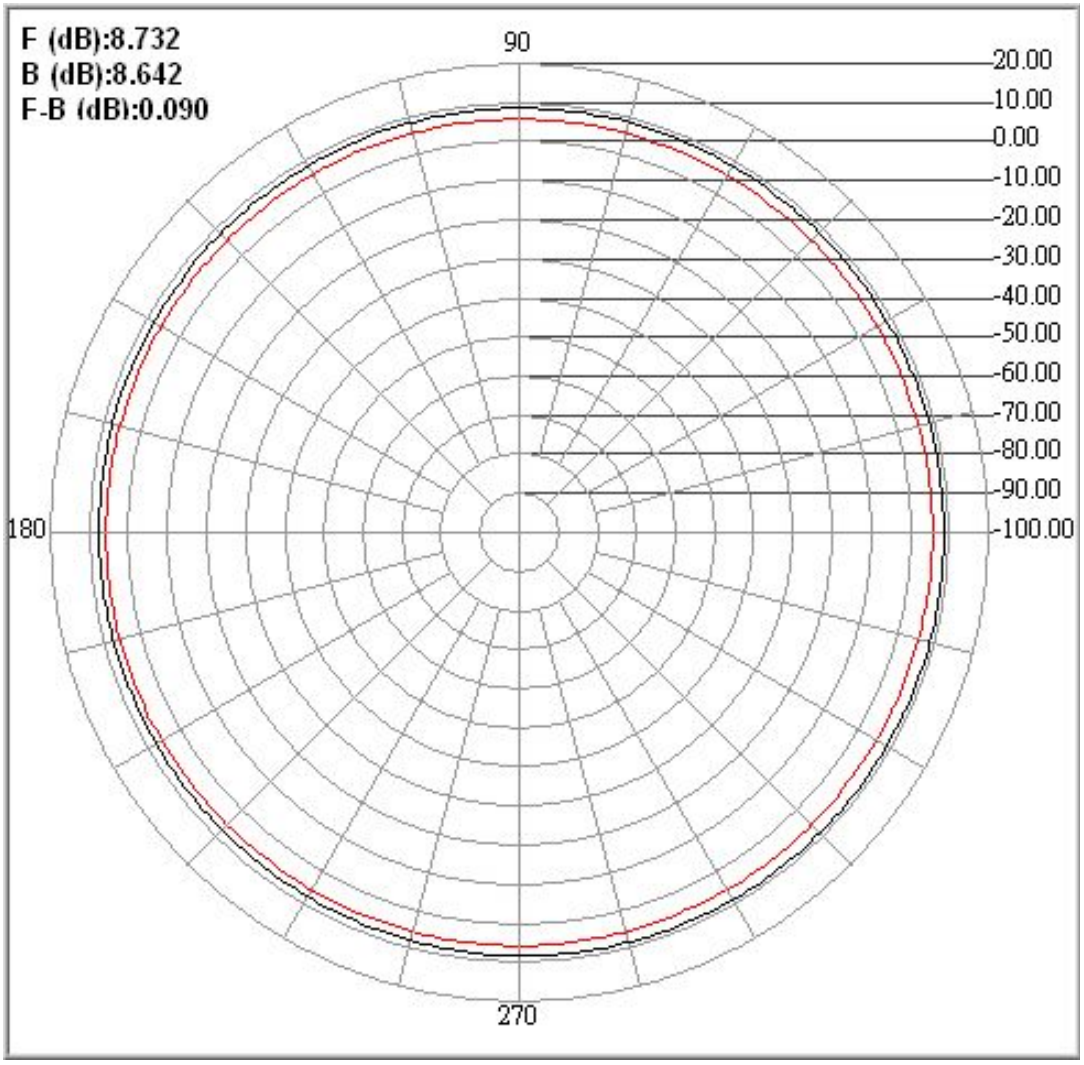


SWR

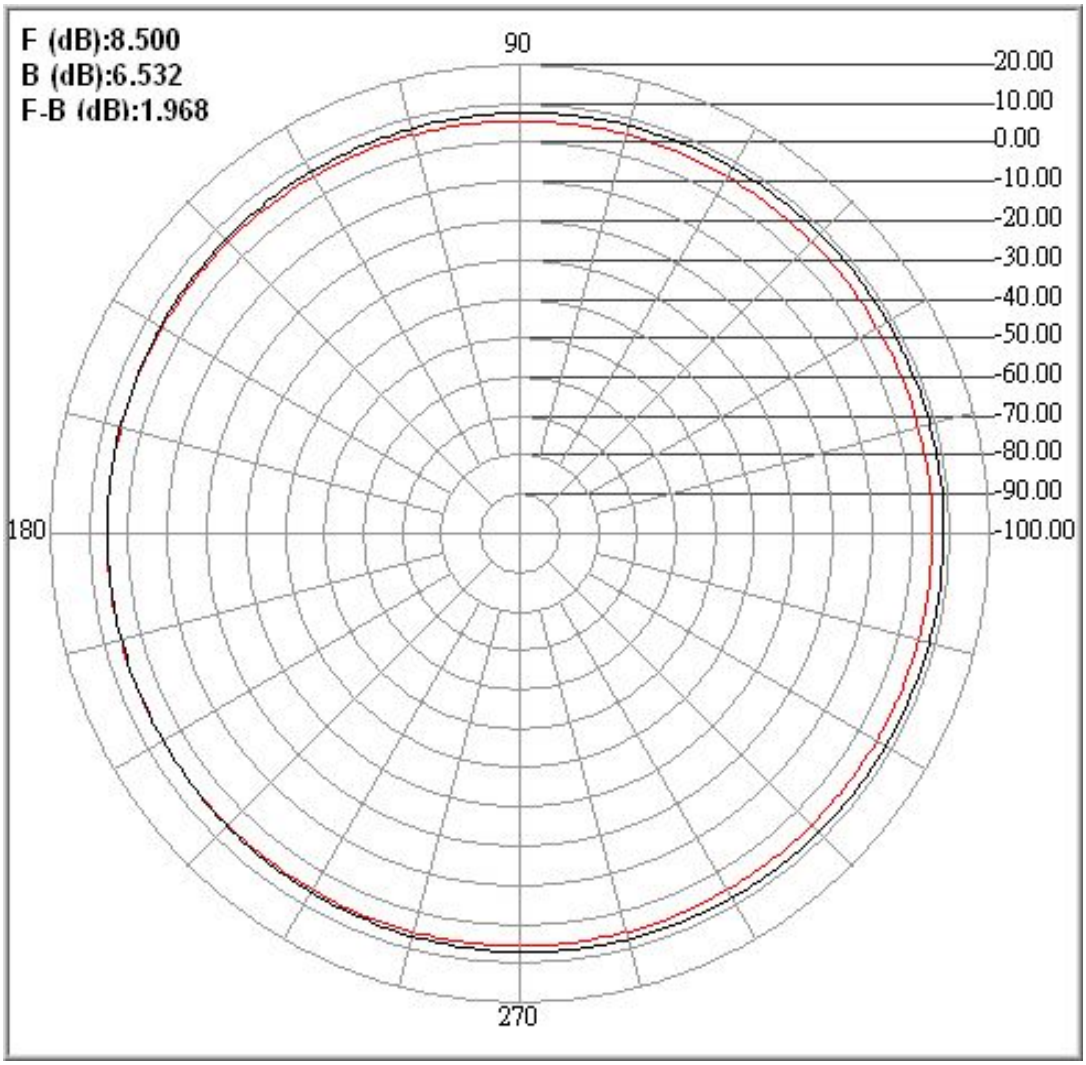

Trc2 S11 SWR 1 U / Ref 1 U Cal
Trc3 S21 dB Mag 5 dB / Ref -40 dB Invisible
1 of 1 (Max)
S11
•Mkr 1 2.450000 GHz 1.105 U
Mkr 2 2.400000 GHz 1.113 U
Mkr 3 2.483000 GHz 1.254 U
10
9
8
7
6
5
4
3
2
1
Mkr 2
Mkr 3
Ch1 Center 2.45 GHz
Pwr 0 dBm
Span 1 GHz
1/2/2007, 7:28 AM

4.2 RADIATION PATTERN

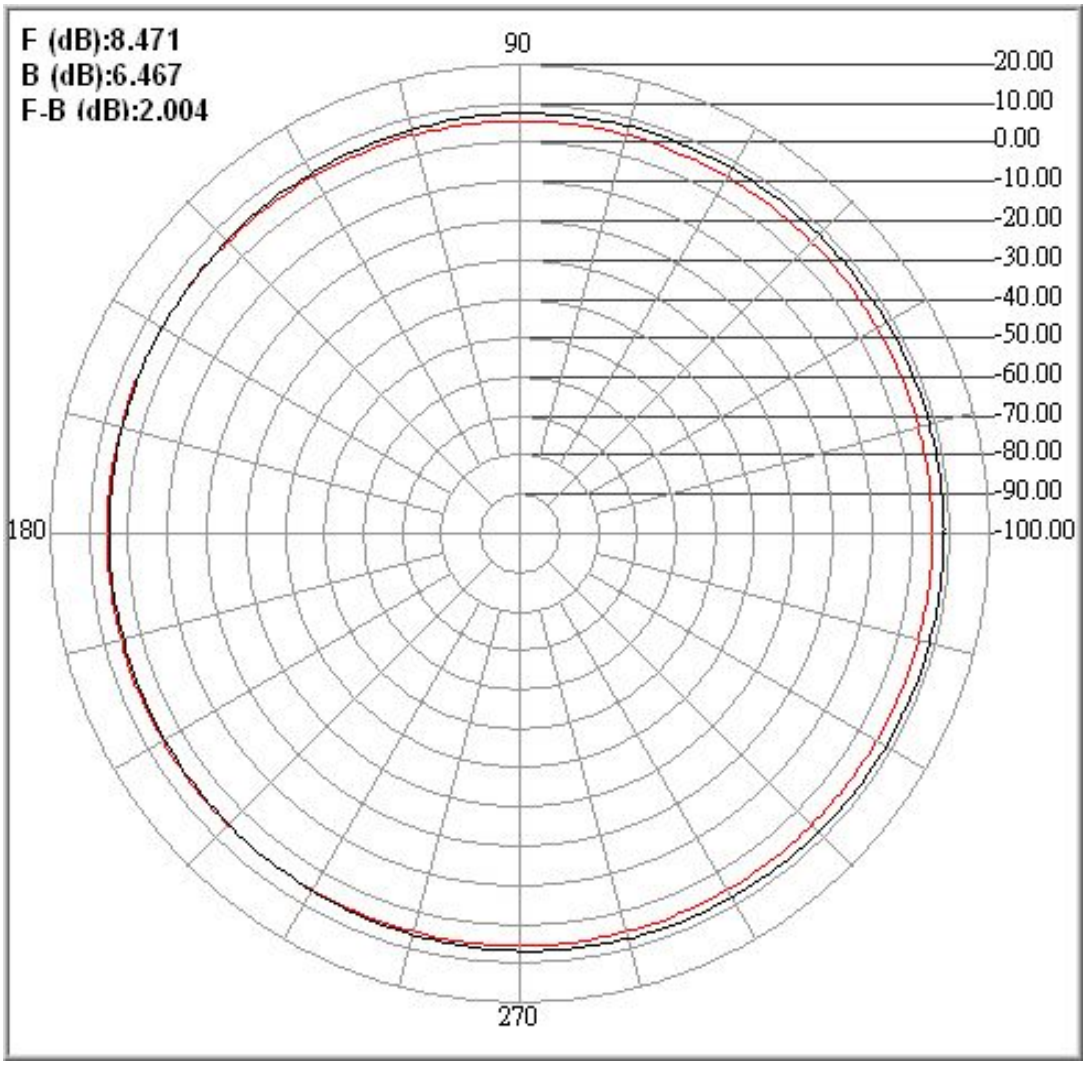
H-PLANE



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**

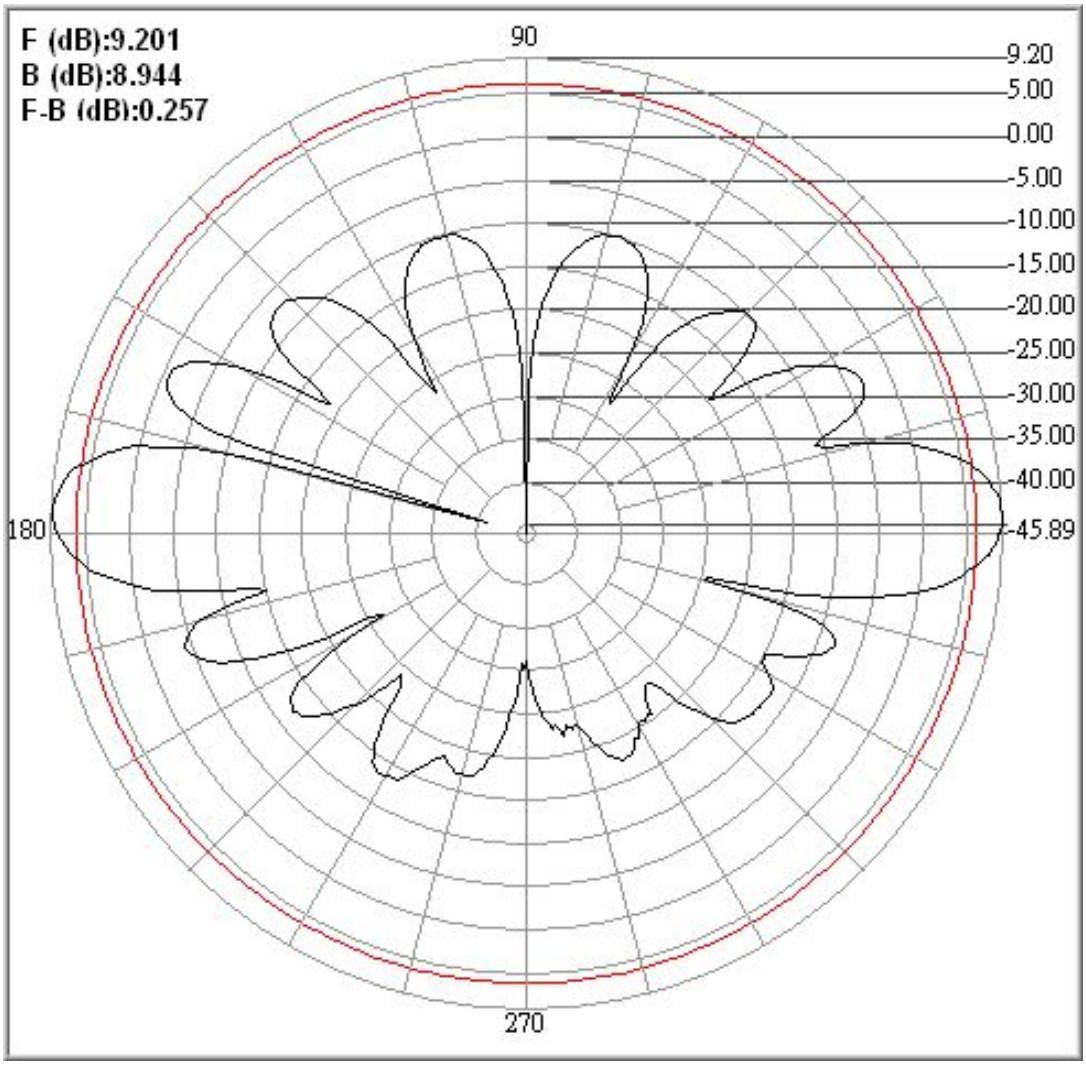


Center freq.(MHz)**:2450**	Plane **:H Plane**	
Max gain(dBi) **:8.50**	Min gain(dBi) **:5.38**	Avg gain(dBi) **:7.32**
-3dB1(°) **:176.30**	-3dB2(°) **:-149.10**	HPB(°) **:325.40**
Front (dB) **:8.500**	Back (dB) **:6.532**	F B Ratio (dB) **:1.968**

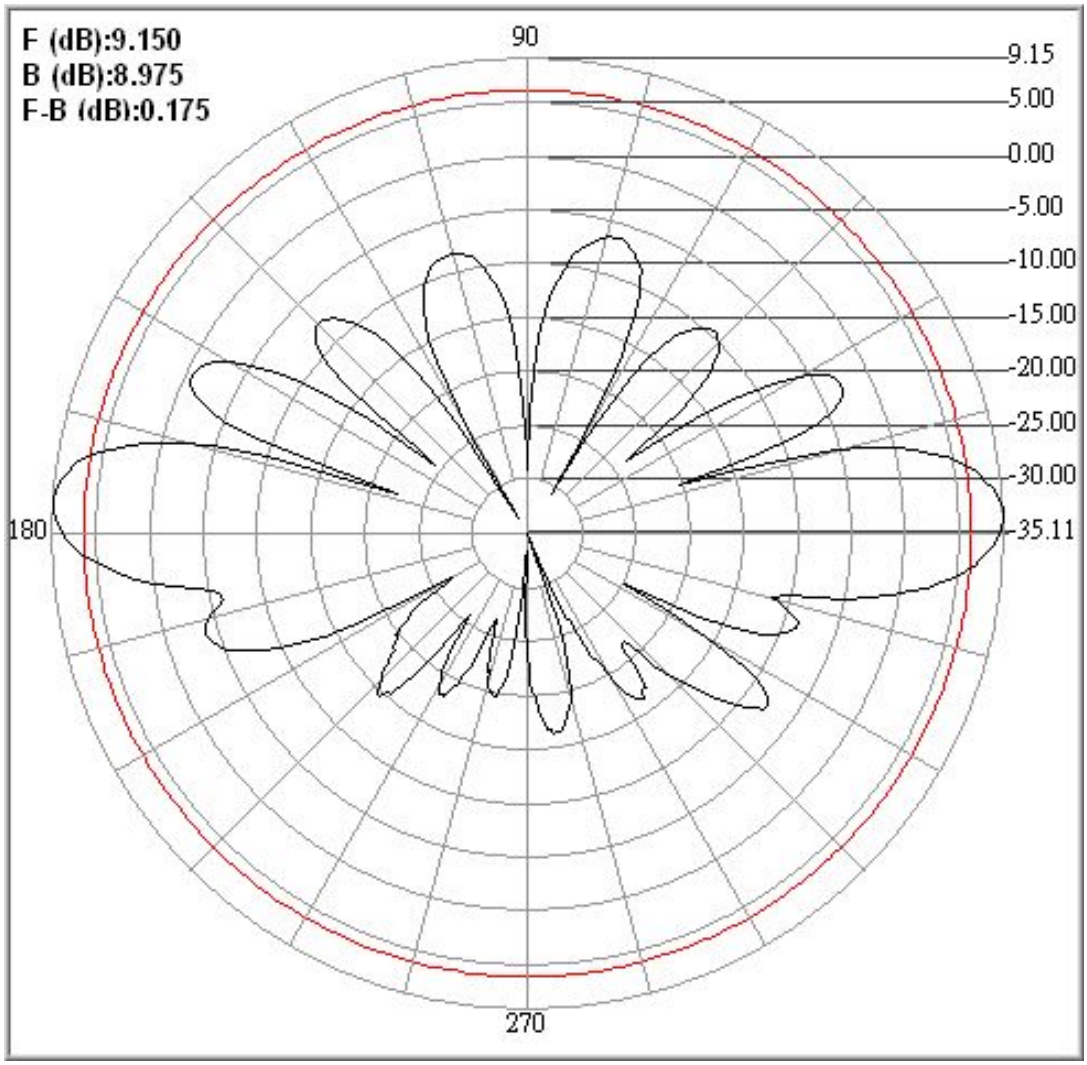


Center freq.(MHz)**:2500**	Plane **:H Plane**	
Max gain(dBi) **:8.47**	Min gain(dBi) **:4.85**	Avg gain(dBi) **:7.11**
-3dB1(°) **:148.50**	-3dB2(°) **:-129.30**	HPB(°) **:277.80**
Front (dB) **:8.471**	Back (dB) **:6.467**	F B Ratio (dB) **:2.004**

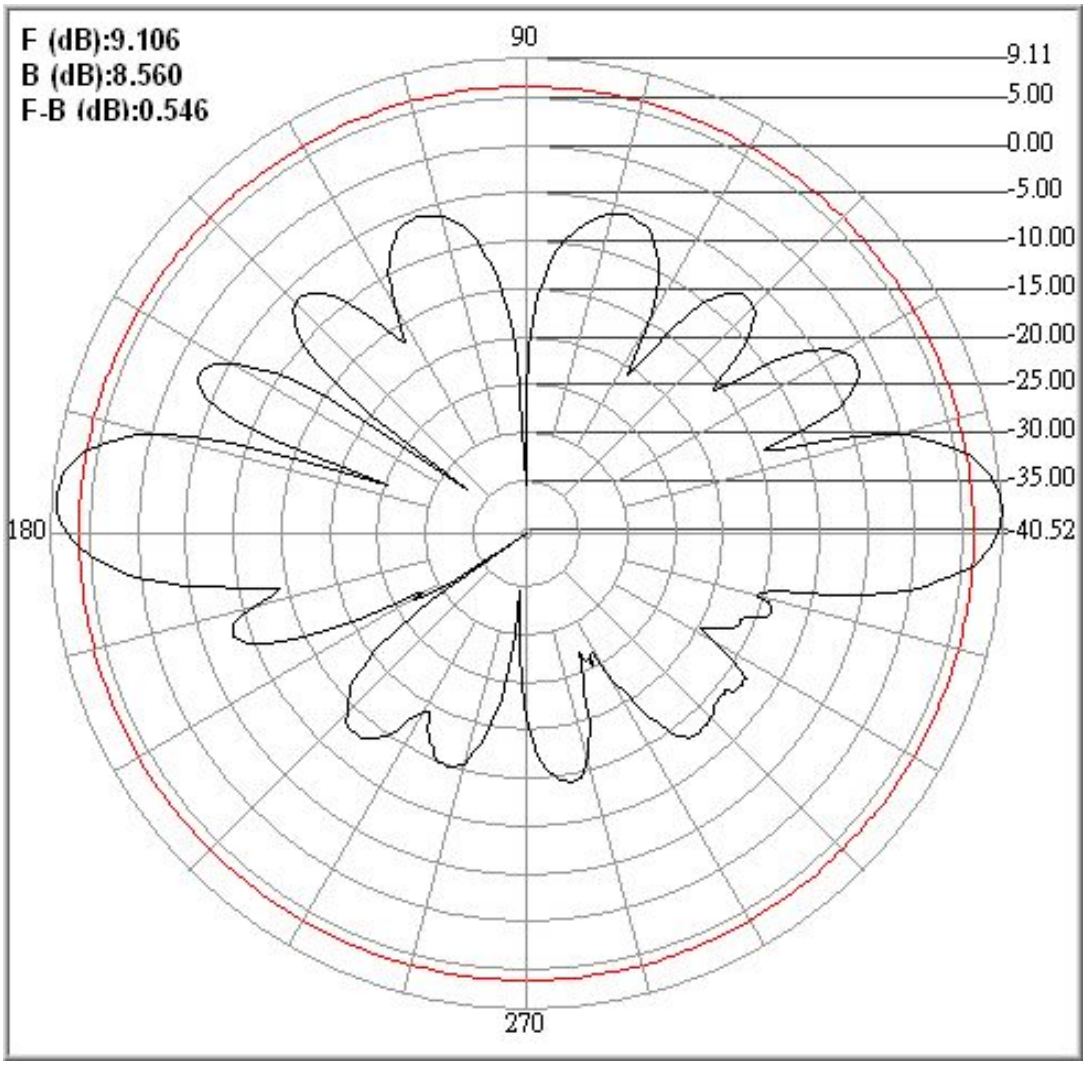
E-PLANE



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**