Amphenol

2.4GHz Flexible Antenna

Part Number: PIOV.00M.NRB.A

Features:

- 2.4 GHz~2.48GHZ
- IPEX MHF connector
- 150mm cable
- Dimension
  32*13*0.2mm
- Ground independent

1. OVERVIEW

The SAA PIOV.00M.NRB.A antenna is a PCB based antenna. The operation frequency band is 2.4GHz ~ 2.48GHz. In practice, the antenna is usually assembled near to a PCB as the module ground, so this data is measured too.

2. ANTENNA CHARACTERISTICS

parameter	SAA PIOV.00M.NRB.A antenna
Frequency (GHz)	2.4~2.48
VSWR	≤1.3
Efficiency (%)	>77%
Peak Gain (dBi)	>1.9
Impedance	50 ohm
Polarization	Linear
Text environment	antenna on 1.5mm plastic carrier in free space
Power handled	5W
Dimensions	32*13*0.2mm
Operation temperature	-40℃ ~ +85℃
Storage temperature	-40℃ ~ +85℃
Weight	0.16 g
Connector	IPEX MHF
Cable standard	1.13 coaxial cable, 150mm length
RoHS compliant	Yes
Adhesive	3M 468

3. TEST SET UP

The Keysight E5071C network analyzer can test antenna return loss and VSWR.

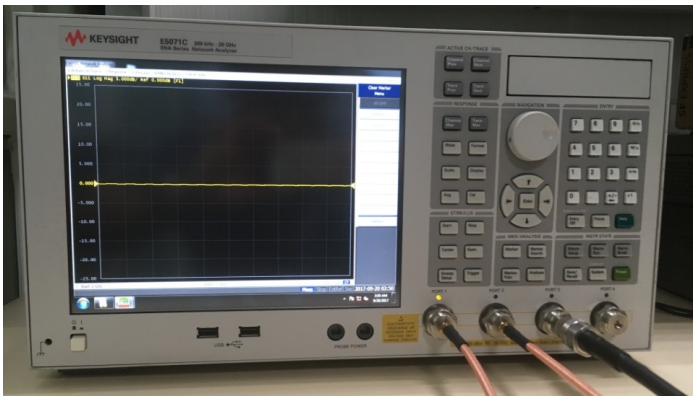


Figure1. Keysight E5071C network analyzer

The Satimo 3D chamber can test the antenna efficiency, gain and radiation pattern.

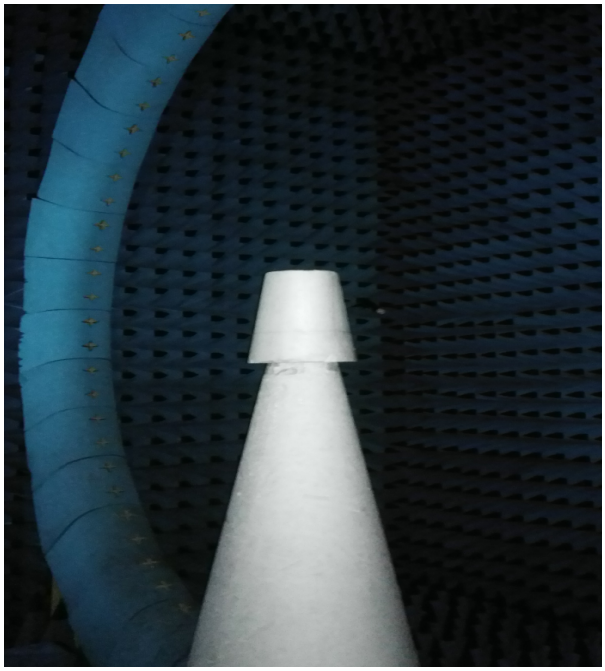
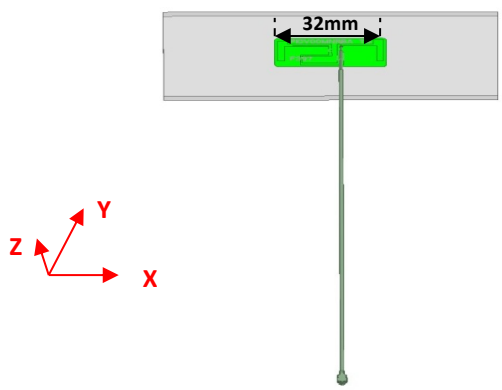


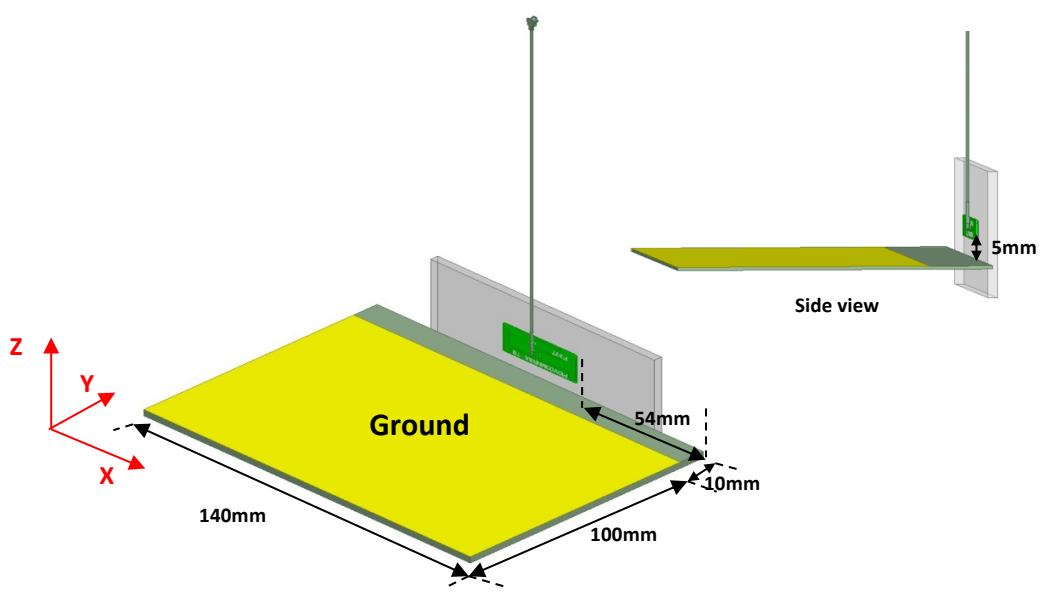
Figure2. Satimo 3D chamber

4. ANTENNA PARAMETERS

The antenna is usually used near the ground under the practical operation condition, so we use a PCB as the ground. Test setup is as below. We provide both free space and on PCB test data. 10mm away from the antenna to ground or farther is recommended for the antenna RF performance.



On free space



Antenna on PCB

Figure3. Antenna test set up (free space and on PCB)

4.1 VSWR

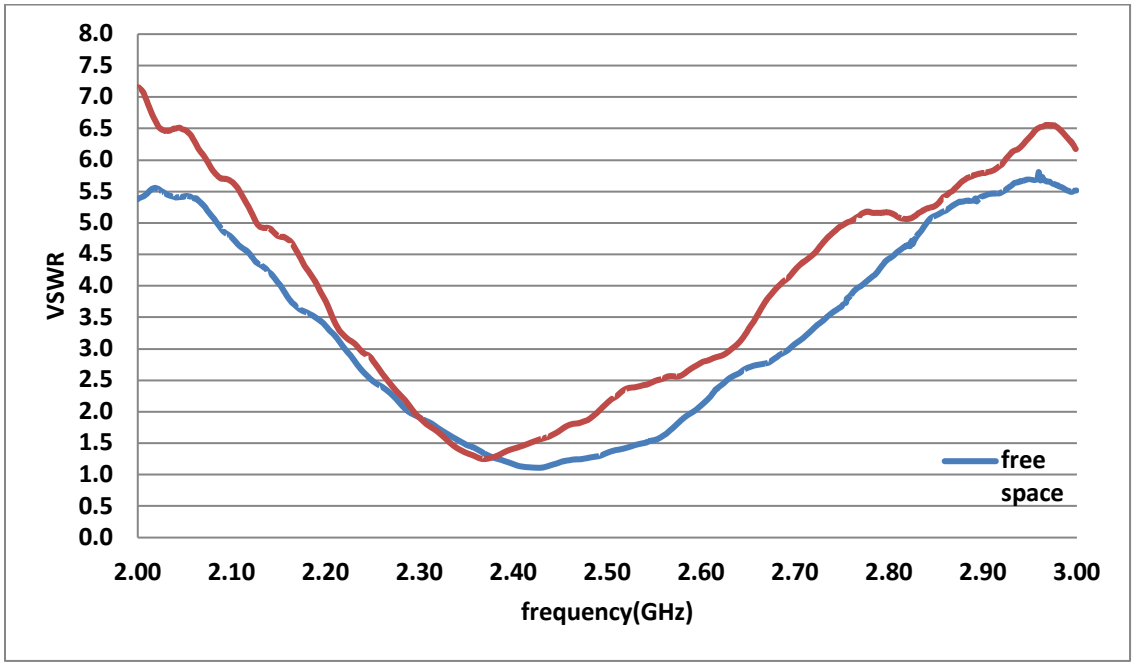


Figure4.1 VSWR of the antenna

4.2 Efficiency

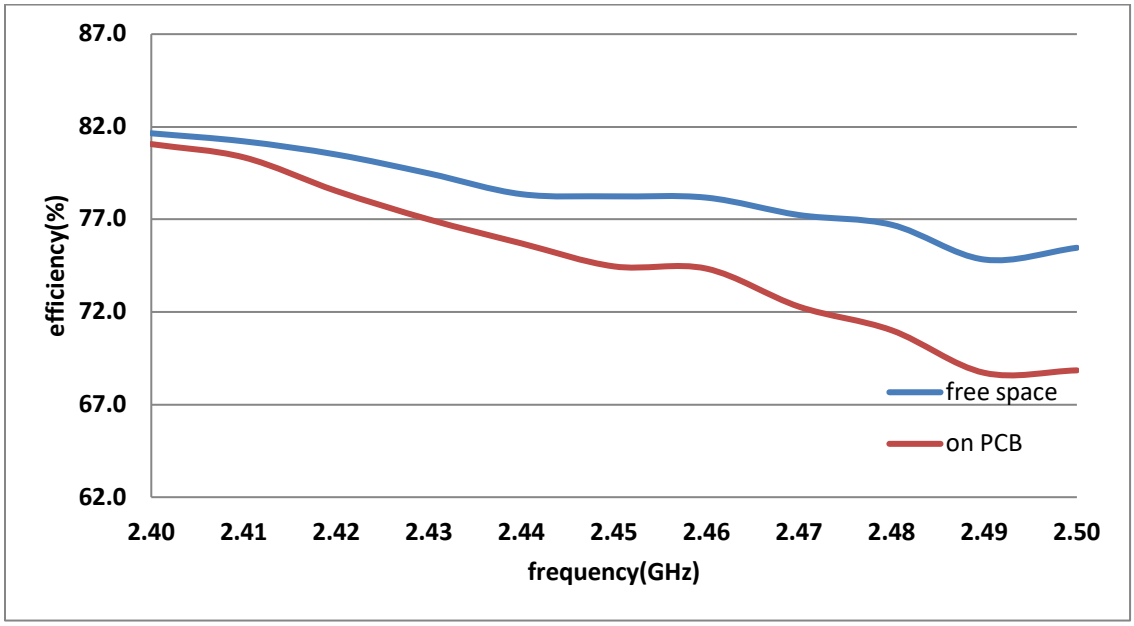


Figure4.2 Efficiency of the antenna

4.3 Peak gain

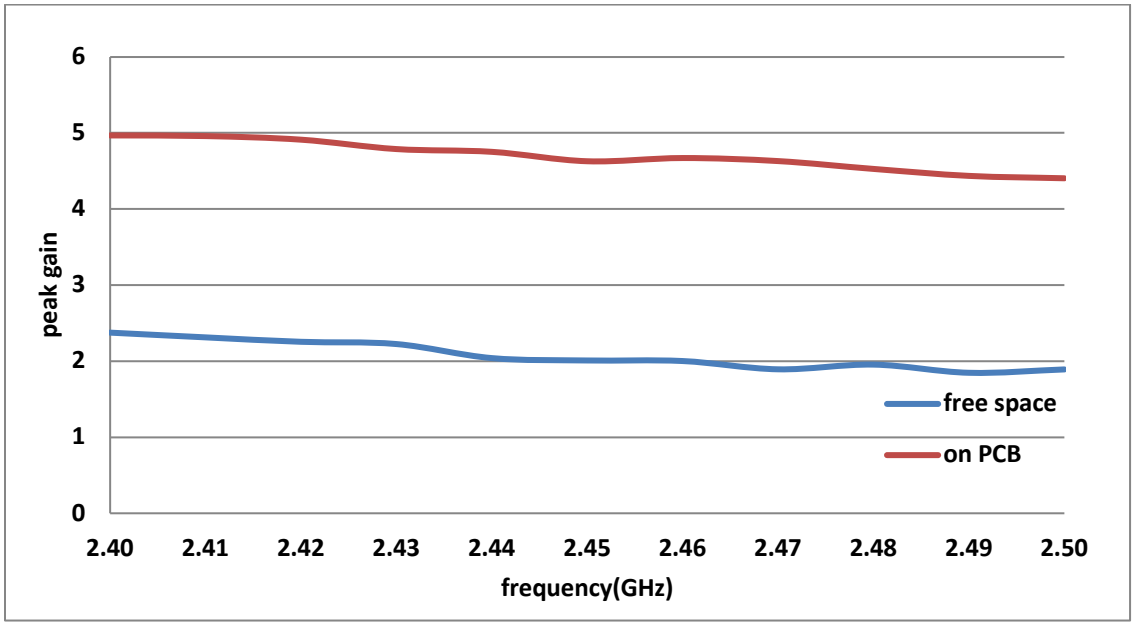


Figure4.3 Peak gain of the antenna

4.4 Radiation pattern

4.4.1 Phi=0°, free space, figure 3 as reference (dBi)

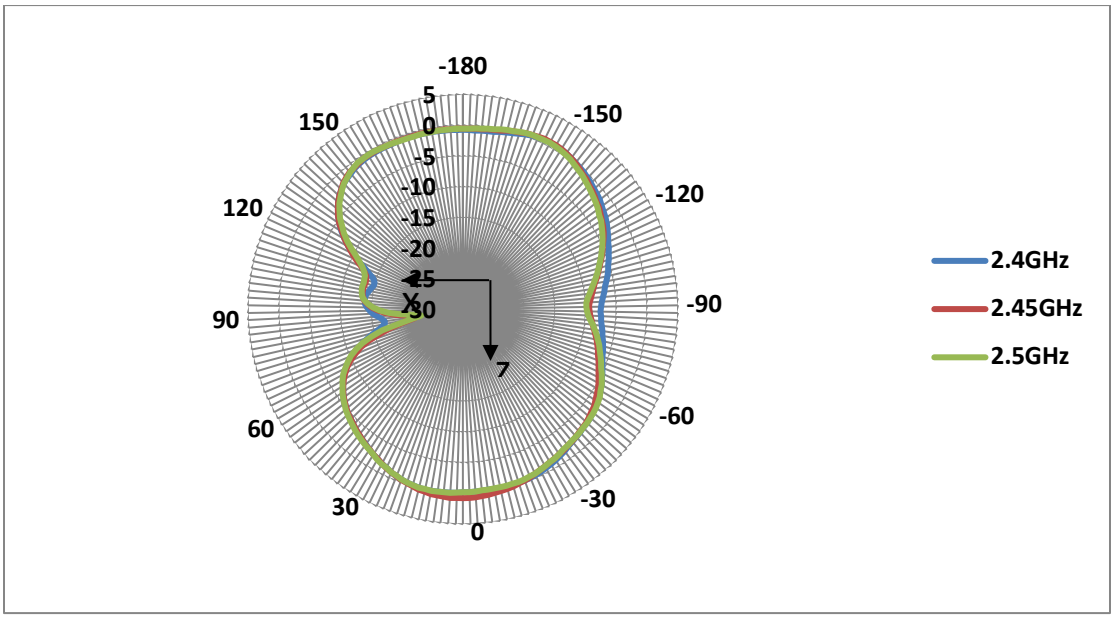


Figure4.4 Radiation pattern XZ plan

4.4.2 Phi=0°, on PCB, figure 3 as reference (dBi)

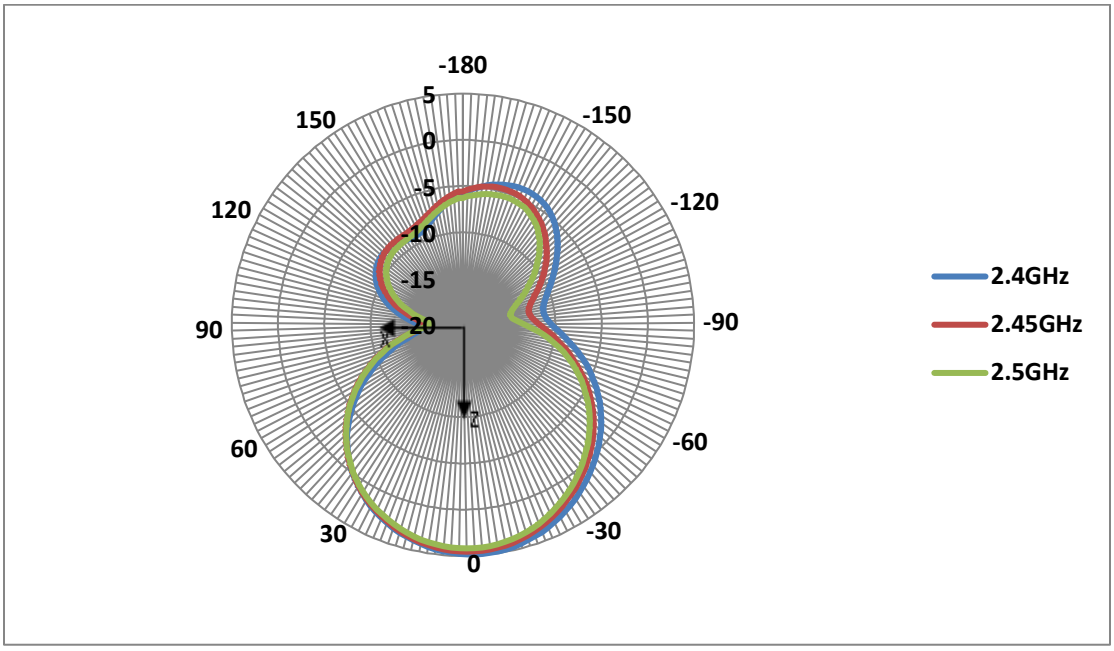


Figure4.5 Radiation pattern XZ plane

4.4.3 Phi=90°, free space, figure 3 as reference (dBi)

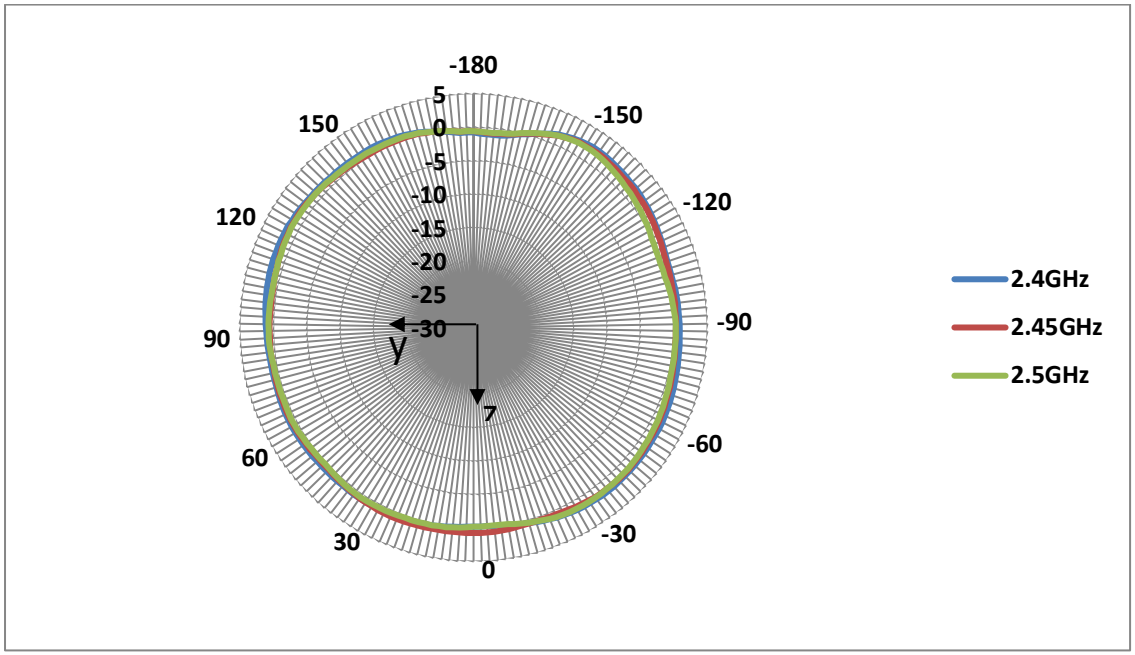


Figure4.6 Radiation pattern YZ plane

4.4.4 Phi=90°, on PCB, figure 3 as reference (dBi)

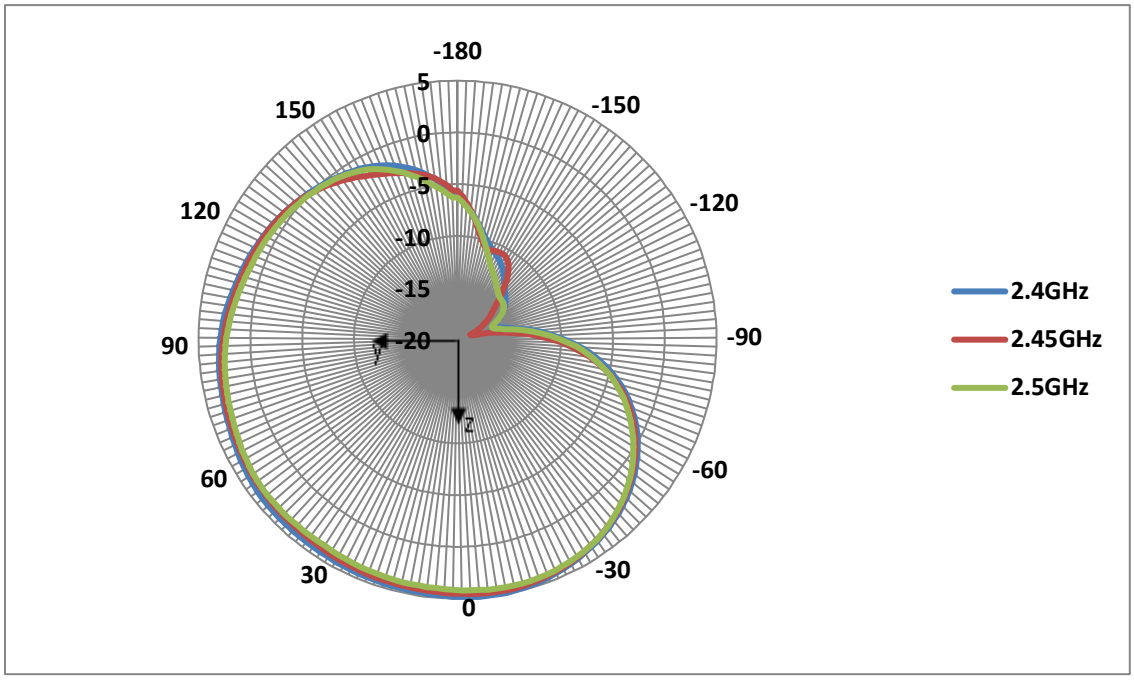


Figure4.7 Radiation pattern YZ plane

4.4.5 Theta=90°, free space, figure 3 as reference (dBi)

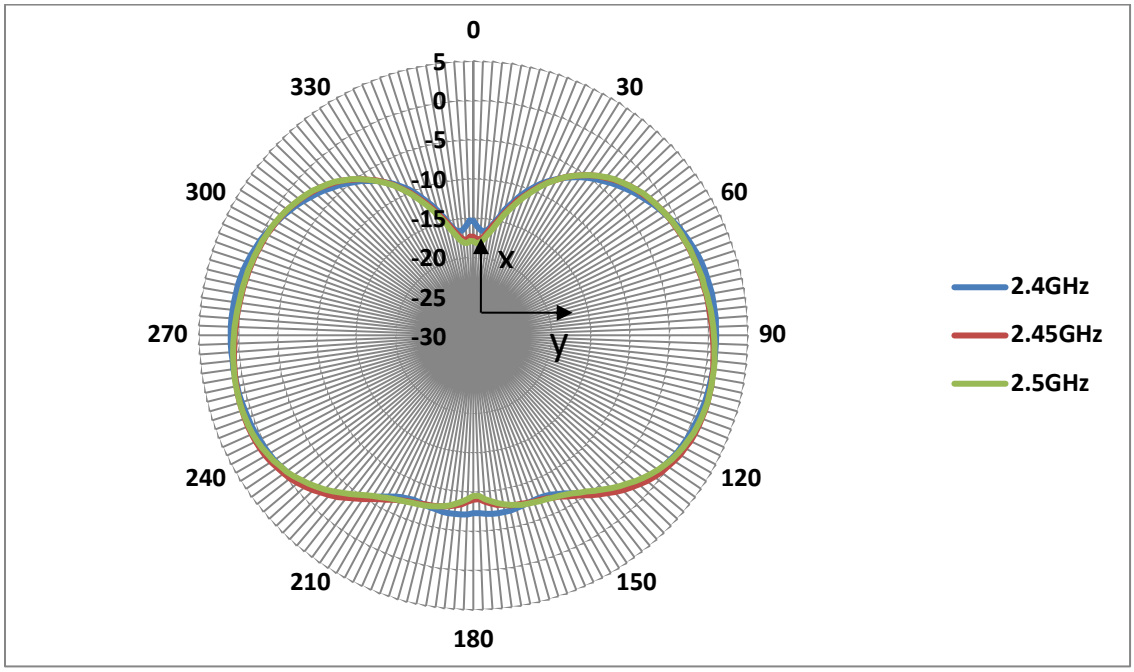


Figure4.8 Radiation pattern XY plane

4.4.6 Theta=90°, on PCB, figure 3 as reference (dBi)

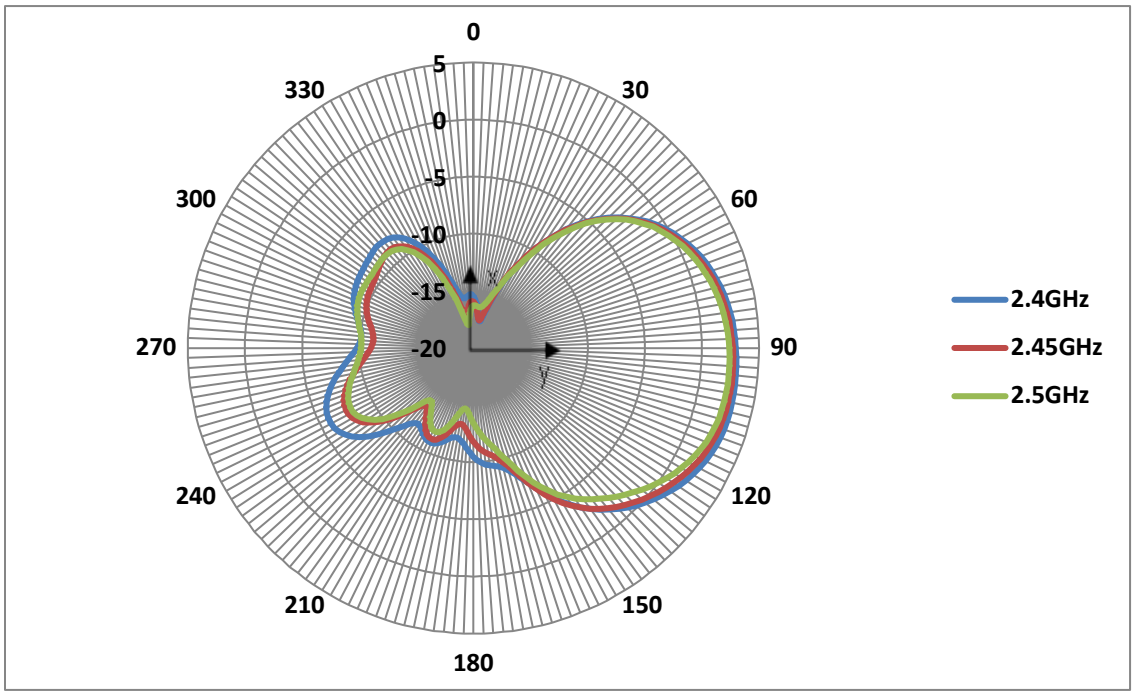


Figure4.9 Radiation pattern XY plane