



Antenna Test Report

Model PRK002001 Rev A, PRK001002 Rev A

Version 1.0 (2024-03-01)



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Version	Date	Description
1.0	2024-03-01	Initial Document Creation



General Information

Product Information

Manufacturer:

Manufacturer: eleven-x Inc.

Address of Manufacturer: 311-375 Hagey Blvd., Waterloo, Ontario, Canada N2L 6R5

General Description of Antenna:

Product Name: Dual Band 868-928MHz and 2.4-2.5GHz Antenna

Model No.: PCB-2001931

Frequency Range: 868-928MHz, 2.4-2.5GHz

Type of Antenna: Monopole flexible PCB Antenna

Peak Antenna Gain: 868-928MHz: 2.6dBi

Peak Antenna Gain: 2.4-2.5GHz: 4.1dBi



Device Setup:

PRK001002



PRK002001



Connection:



Note PCB is the same in both cases.

Refer to internal photos document for pictures of the antenna in each case.



Test Methodology

ETS AMS8050 antenna measurement system includes a 3m RF-shielded anechoic chamber, a single dual polarized wideband horn antenna, positioning system with polarization selector, and EMQuest EMQ-100 Antenna measurement software. Far field measurement consists of:

1. Place the AUT on the mounting bracket and connect the feeding cable to the antenna port.
2. Set the measurement parameters including frequency range and sampling angles.
3. Perform passive antenna test to find the peak direction, gain, and efficiency.

Test Facilities

Tested Date: 2023/07/28

Testing Contractor: Northern Mechatronics

Tested By: Rahul Karkhanis

Chamber Size: 3m x 1.8m x 2.2m

Chamber Isolation Level: > 90dB

Measurement Distance: 1.5m (phase center to phase center)

Measurement Antenna Specification: ETS 3164-04 Horn Antenna

Equipment List

Name	Cal Due Date
Agilent Network Analyzer E5071	Apr 02, 2024
ETS Sleeve Dipole 3126-800 800MHz – 950MHz	Mar 24, 2024
ETS Sleeve Dipole 3126-2450 2300MHz – 2600MHz	Mar 24, 2024



Measurement Setup

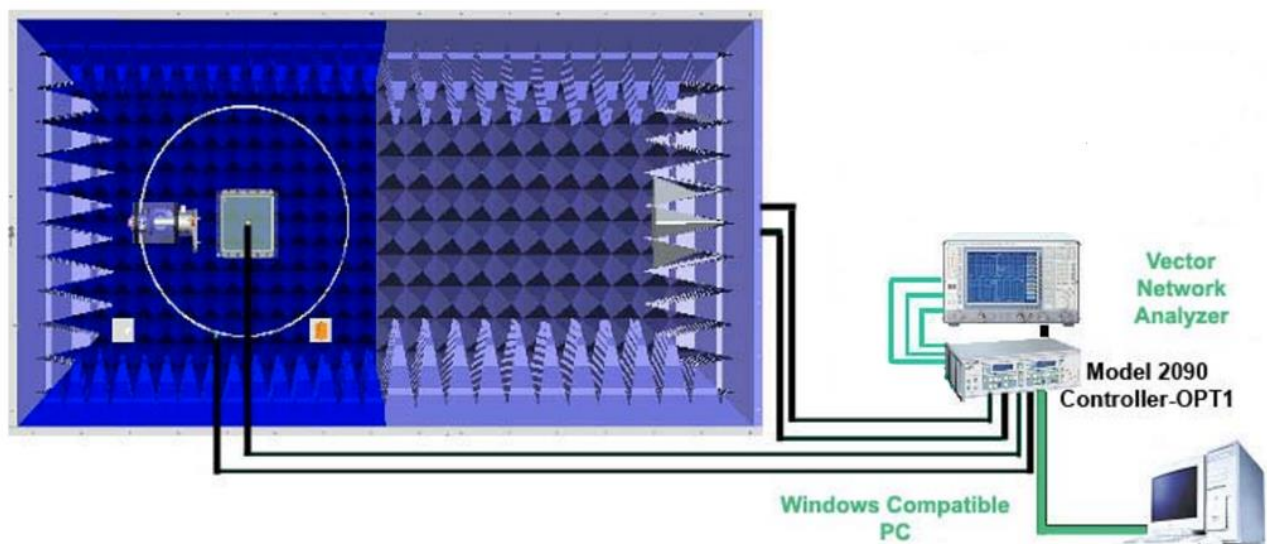
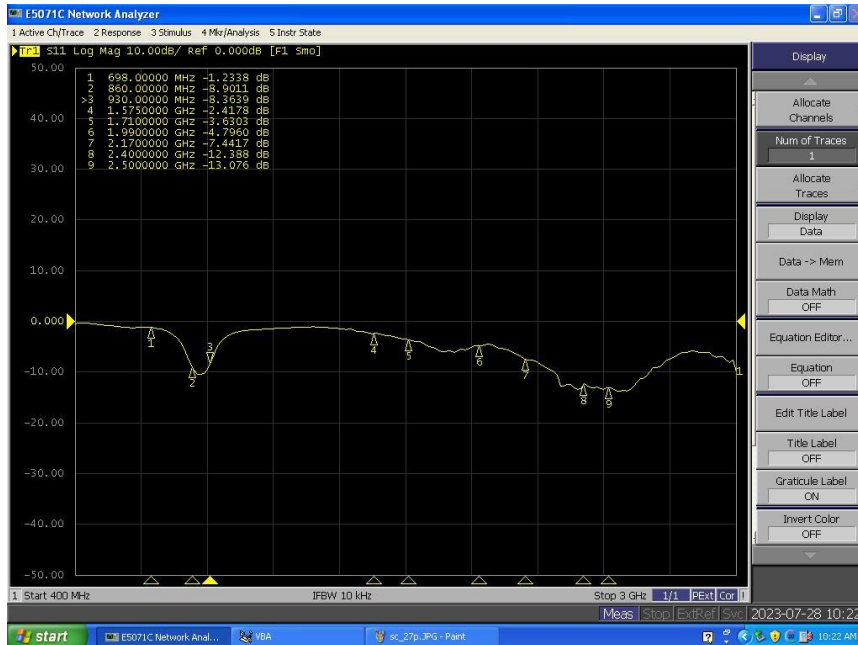


Figure 1: Measurement system with 3164-04 Horn Antenna

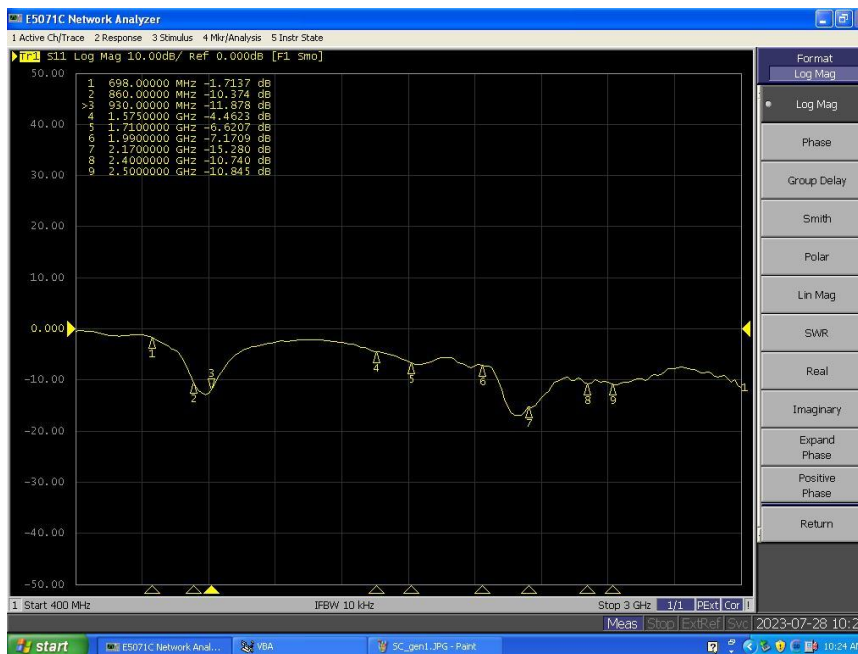


Network Analyzer Measurement

S11 Results in PRK001002



S11 Results in PRK002001





OTA Test

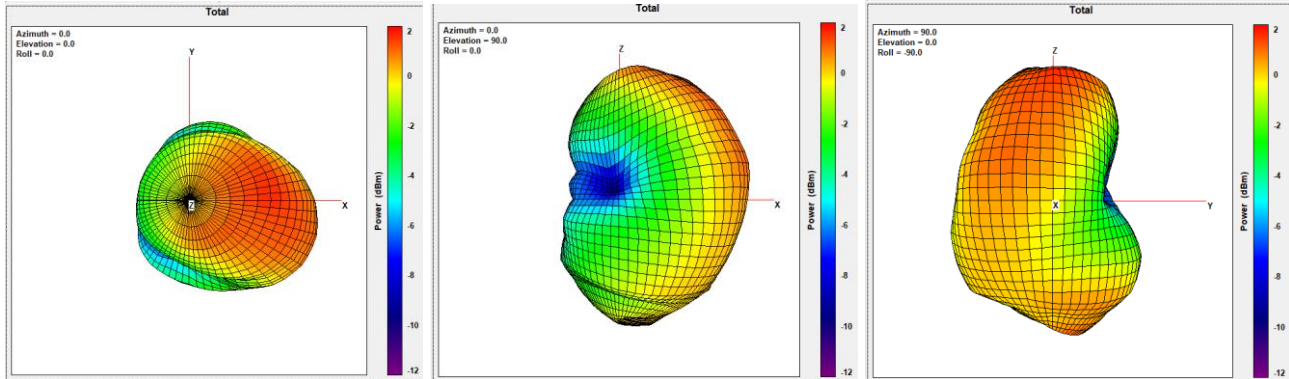
Gain

Frequency (MHz)	Peak Gain (dBi) PRK002001	Peak Gain (dBi) PRK001002
850	1.6	-2.3
868	1.7	-1.4
897	2.6	-0.1
902	2.1	-0.2
915	2.4	-0.2
938	2.4	-0.5
2400	3.5	4.1
2450	3.6	4.1
2500	4.1	4.0

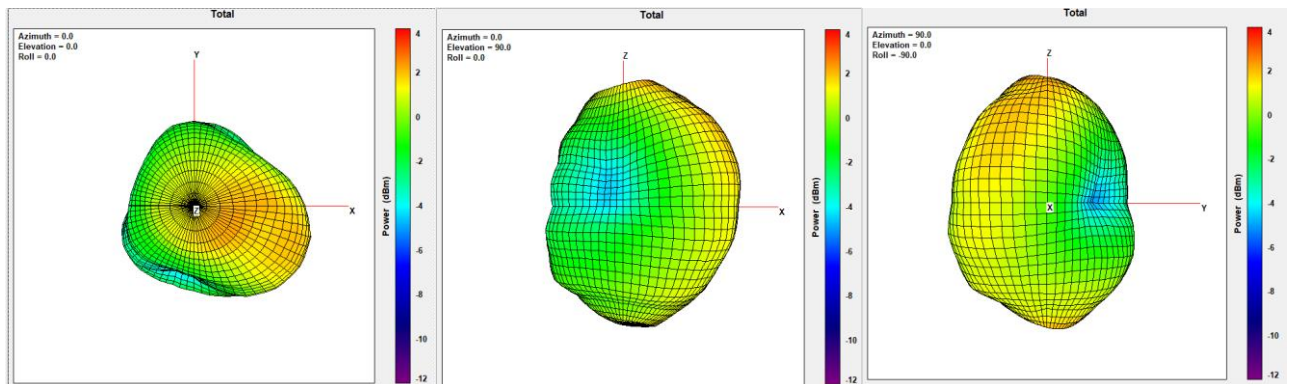


Radiation Pattern View - PRK002001

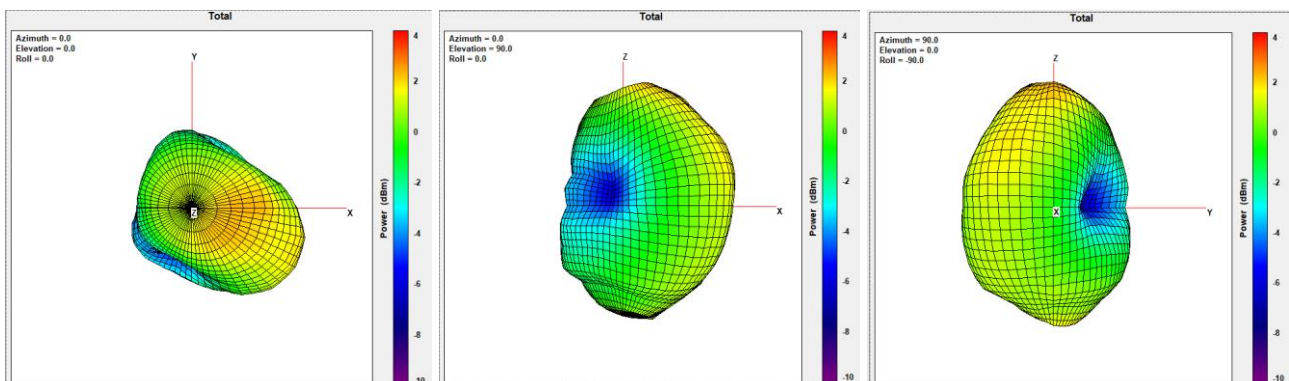
868MHz



915MHz

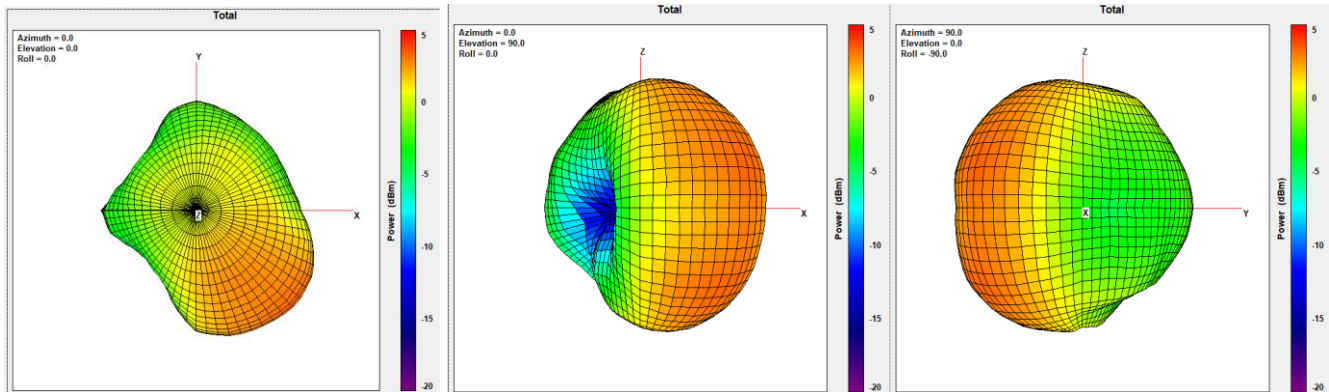


938MHz

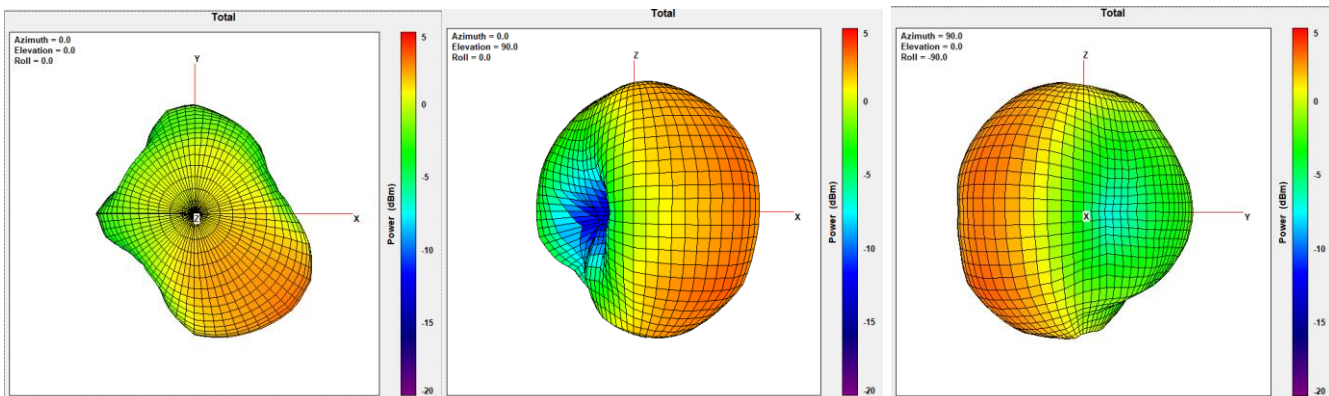




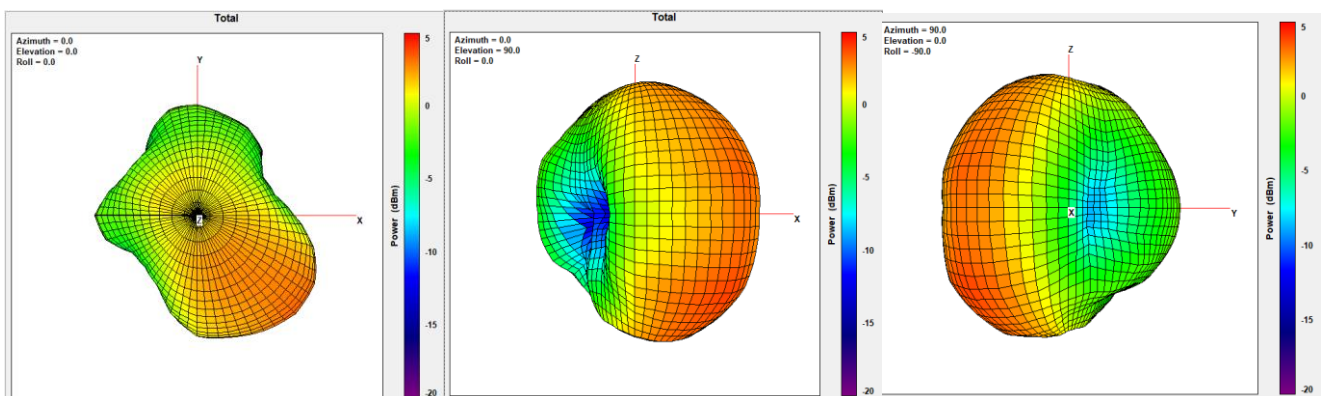
2400MHz



2450MHz



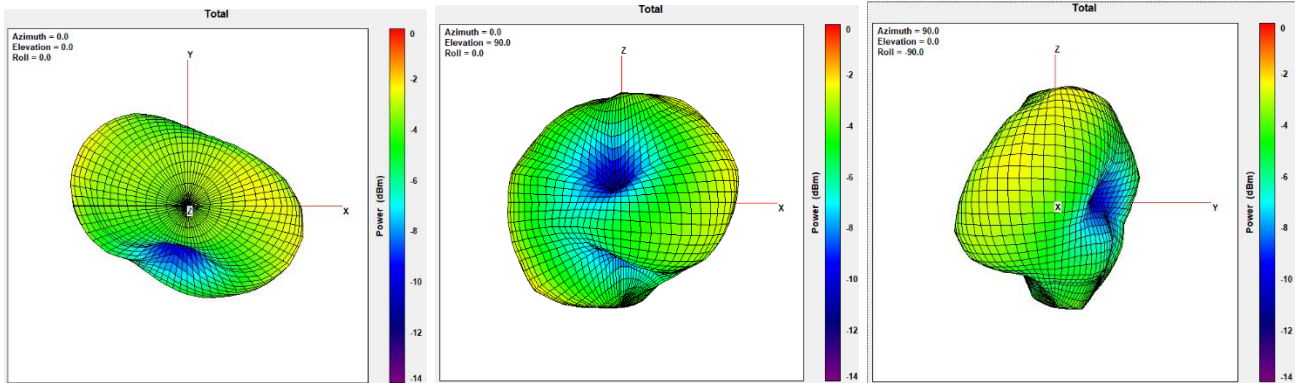
2500MHz



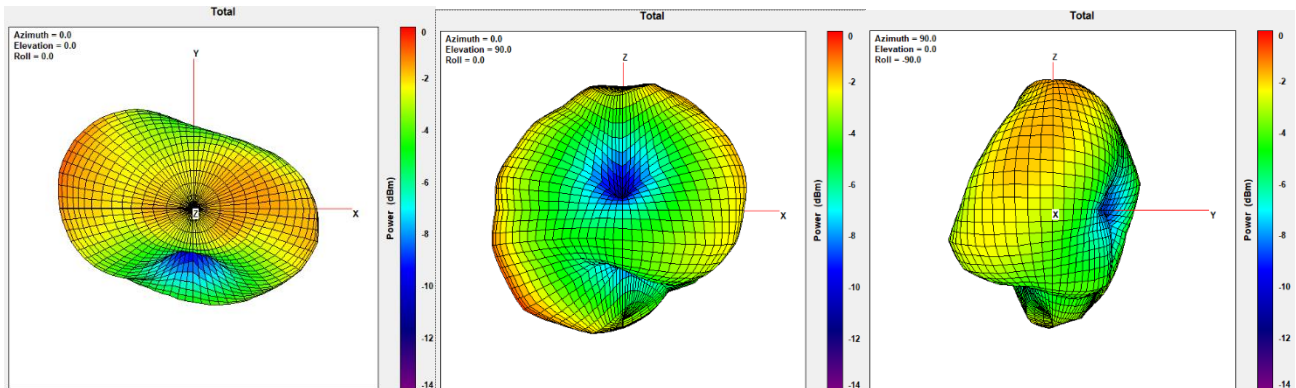


Radiation Pattern View - PRK001002

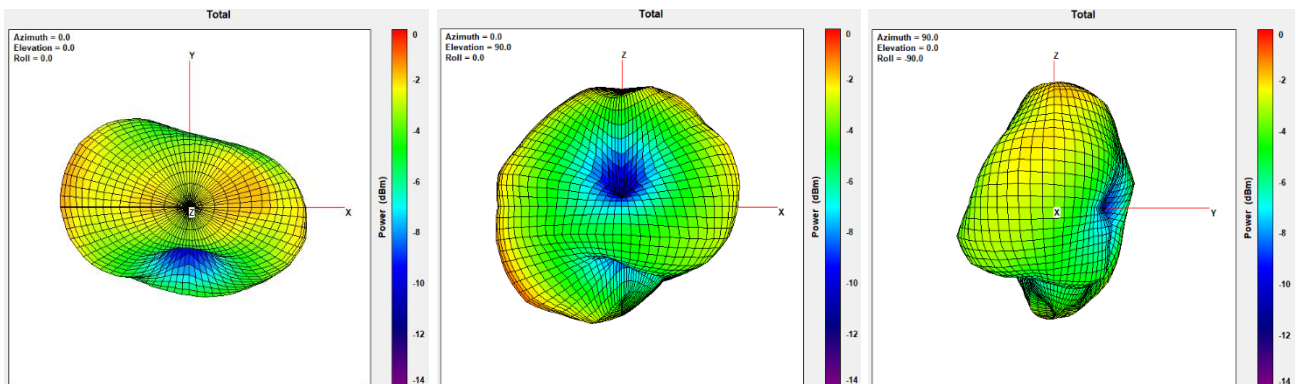
868MHz



915MHz

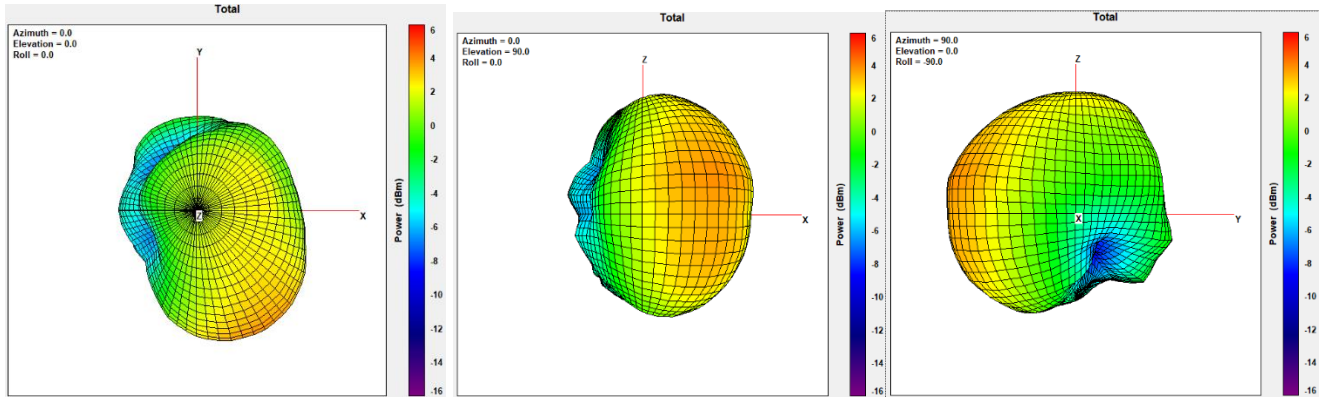


938MHz

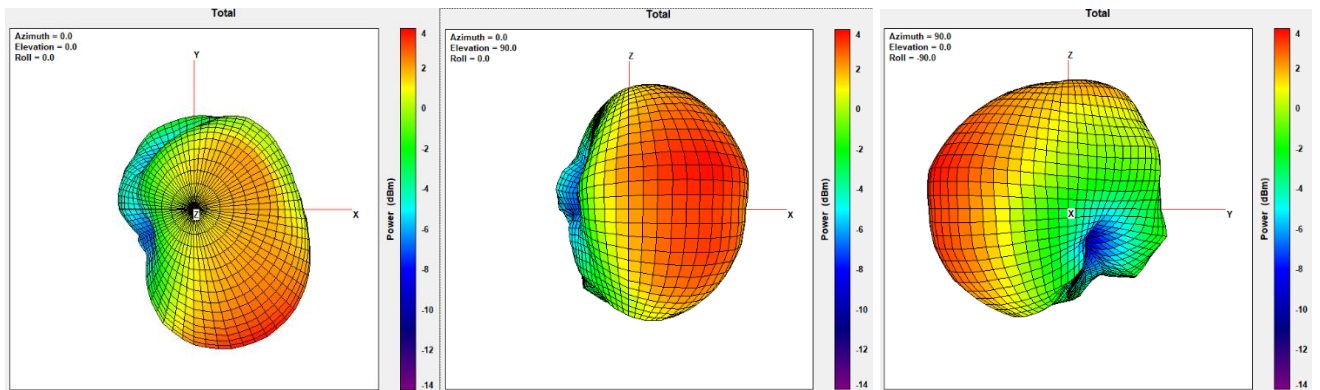




2400MHz



2450MHz



2500MHz

