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## Antenna Gain Test Report

Project No.: \

Client Name: Primax

Client Address: \

Product Name: 2.4GHz Dongle

Product Model: \

Manufacture: Primax

Antenna Type: Dongle: PIFA

Antenna Size: \

Project Engineer: James Qin

Test Standards: ANSI/IEEE std 149-2021

Issued Date: 2023.1.13

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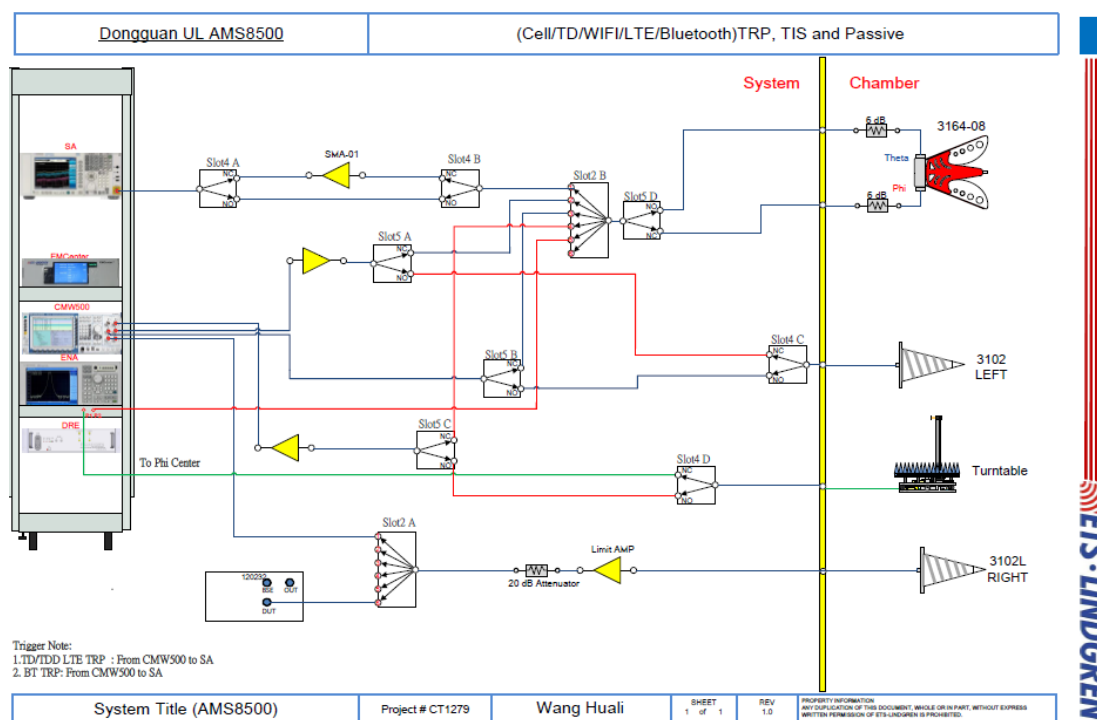
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## 1 Test Equipment Information

| Equipment           | Manufacturer | Mode No.      | Serial No. | Cal date   | Cal Due    |
|---------------------|--------------|---------------|------------|------------|------------|
| Test Chamber        | ETS-Lindgren | 8500          | /          | /          | /          |
| Test Software       | ETS-Lindgren | EMQuest V1.12 | 1496       | /          | /          |
| Network Analyzer    | Keysight     | E5071C        | MY46524531 | 2022.10.17 | 2023.10.16 |
| EXA Singal Analyzer | Keysight     | N9010A        | MY55150514 | 2022.10.17 | 2023.10.16 |

## 2 Setup block diagram



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### 3 Test Temperature and Humidity

Temperature: 23.1°C

Humidity: 63%

### 4 Test Step Flow

- 1) Maintain the test ambient temperature of  $23\pm 2$  C, the instrument is powered on and preheated for more than 30 minutes;
- 2) Turn on the darkroom power supply, connect the test cable, and set up the sample according to the standard;
- 3) Outline sets the test content objectives and conducts calibration tests;
- 4) Run the software, when the test is completed, export the corresponding test diagram and test data, and save to the corresponding directory.

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## Dongle 1#

| Frequency (MHz) | Efficiency (%) | Gain (dBi) |
|-----------------|----------------|------------|
| 2400            | 24.09          | 1.14       |
| 2410            | 25.90          | 1.27       |
| 2420            | 28.15          | 1.33       |
| 2430            | 30.01          | 1.45       |
| 2440            | 31.62          | 1.57       |
| 2450            | 32.71          | 1.83       |
| 2460            | 33.24          | 1.10       |
| 2470            | 33.52          | 1.28       |
| 2480            | 33.92          | 1.42       |
| 2490            | 34.33          | 1.58       |
| 2500            | 34.45          | 1.75       |

## Dongle 2#

| Frequency (MHz) | Efficiency (%) | Gain (dBi) |
|-----------------|----------------|------------|
| 2400            | 29.77          | 1.78       |
| 2410            | 29.66          | 1.70       |
| 2420            | 29.92          | 1.57       |
| 2430            | 29.70          | 1.43       |
| 2440            | 29.20          | 1.24       |
| 2450            | 28.34          | 1.15       |
| 2460            | 27.37          | 1.13       |
| 2470            | 26.48          | 1.17       |
| 2480            | 25.92          | 1.30       |
| 2490            | 25.72          | 1.51       |
| 2500            | 25.31          | 1.76       |

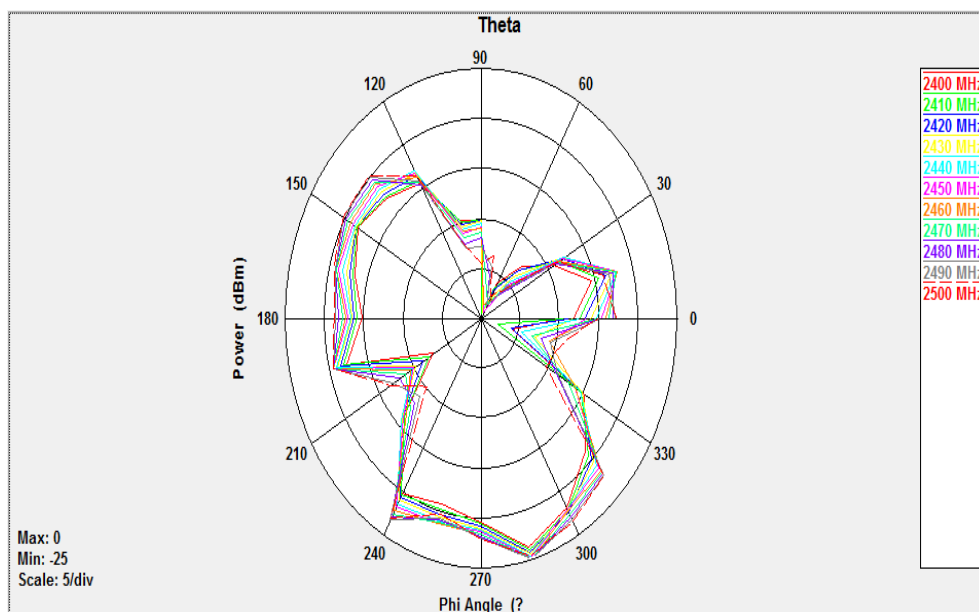
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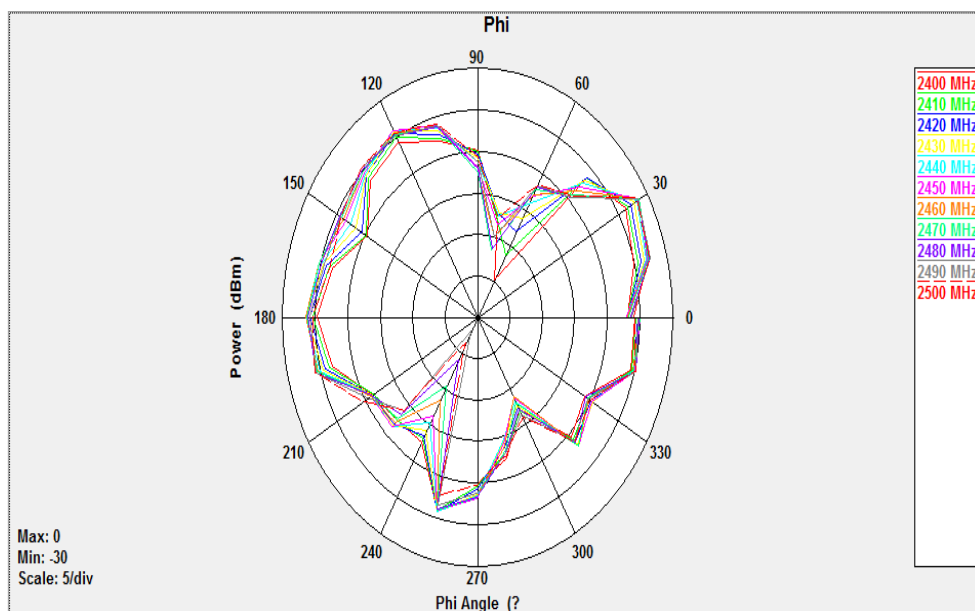


Dongle 1#

Theta Polarization(Theta Angle=90°)



Phi Polarization(Theta Angle=90°)

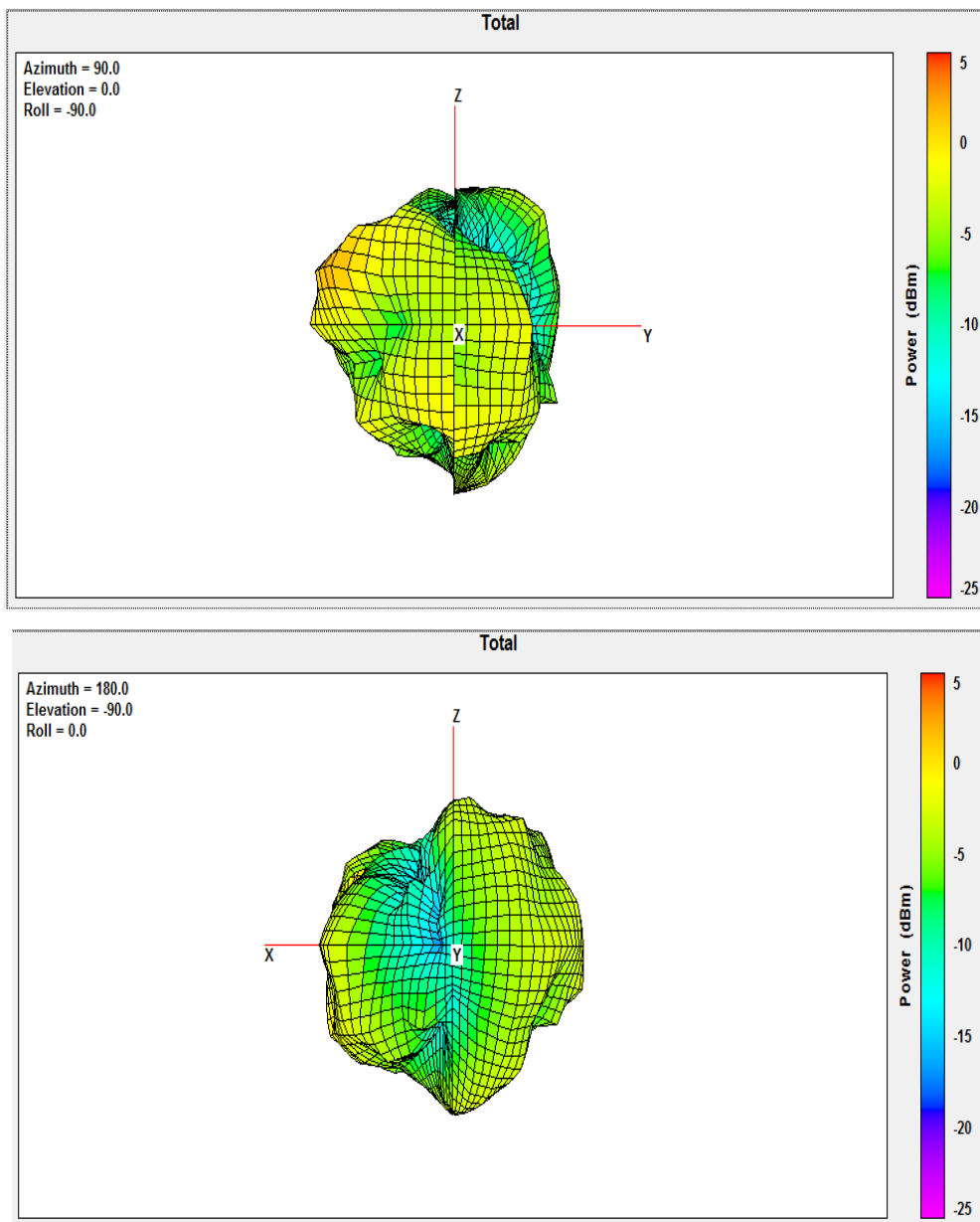


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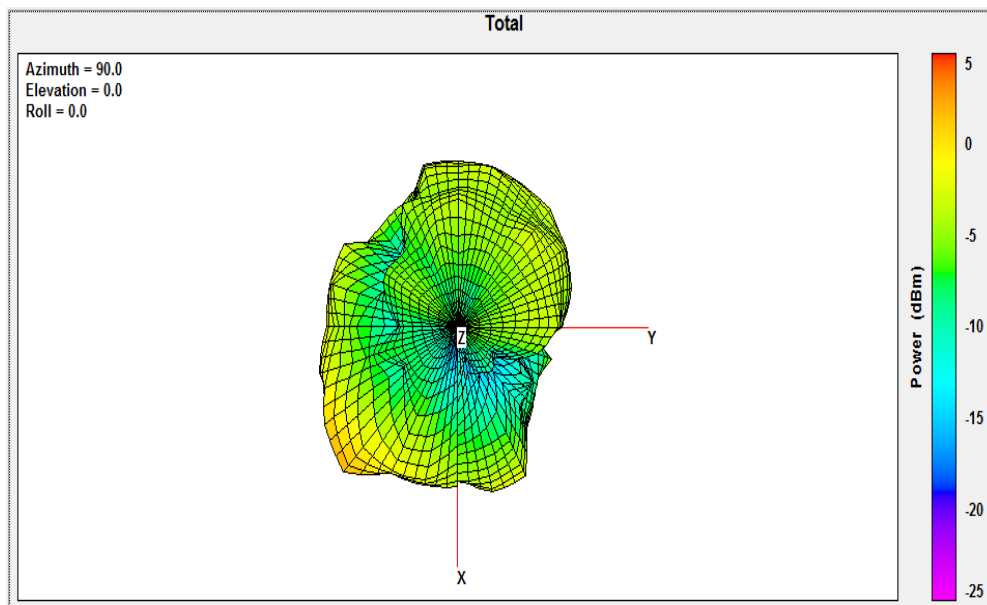


## Total 3D Plot(Fre.2480MHz)



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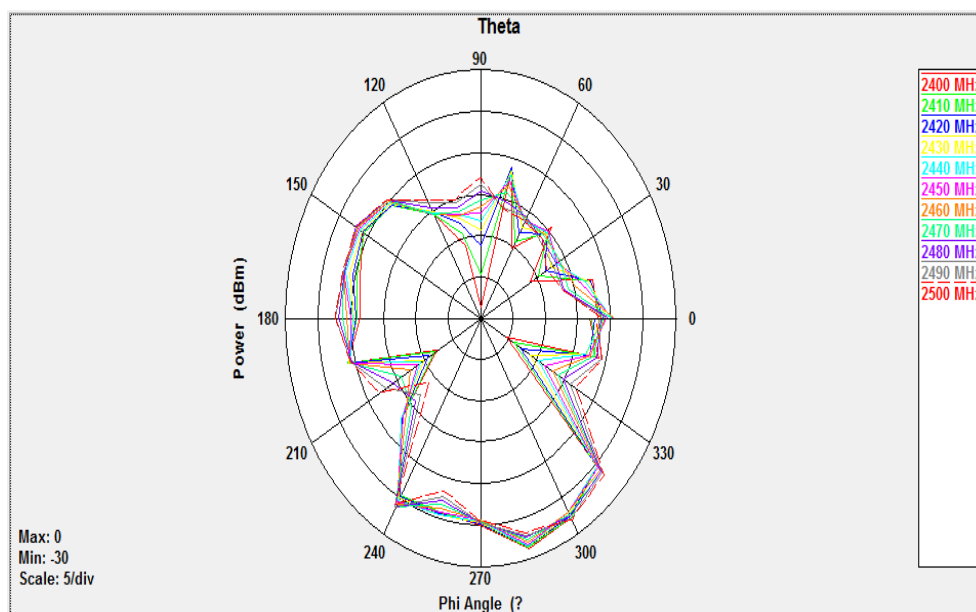
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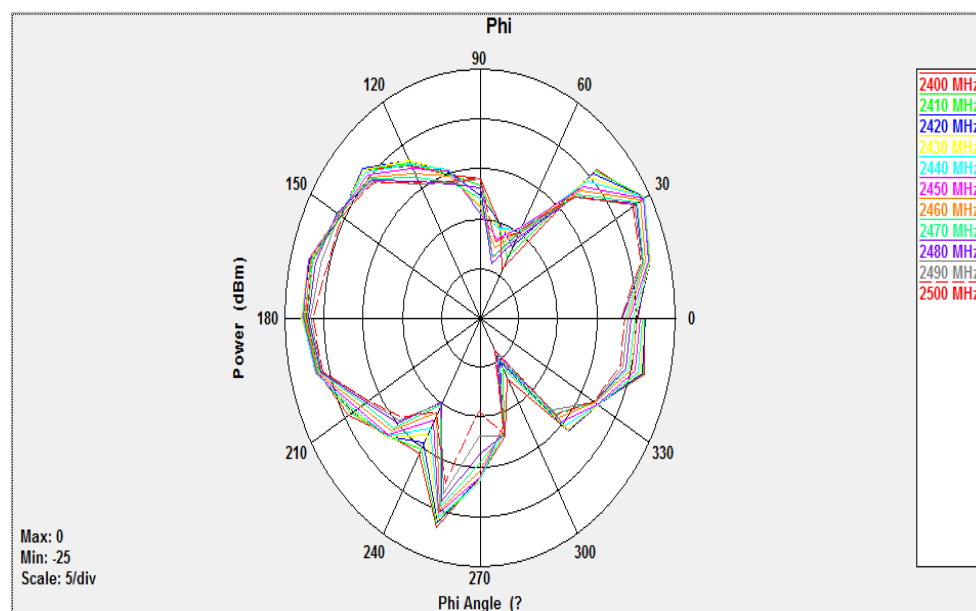


Dongle 2#

Theta Polarization(Theta Angle=90°)



Phi Polarization(Theta Angle=90°)

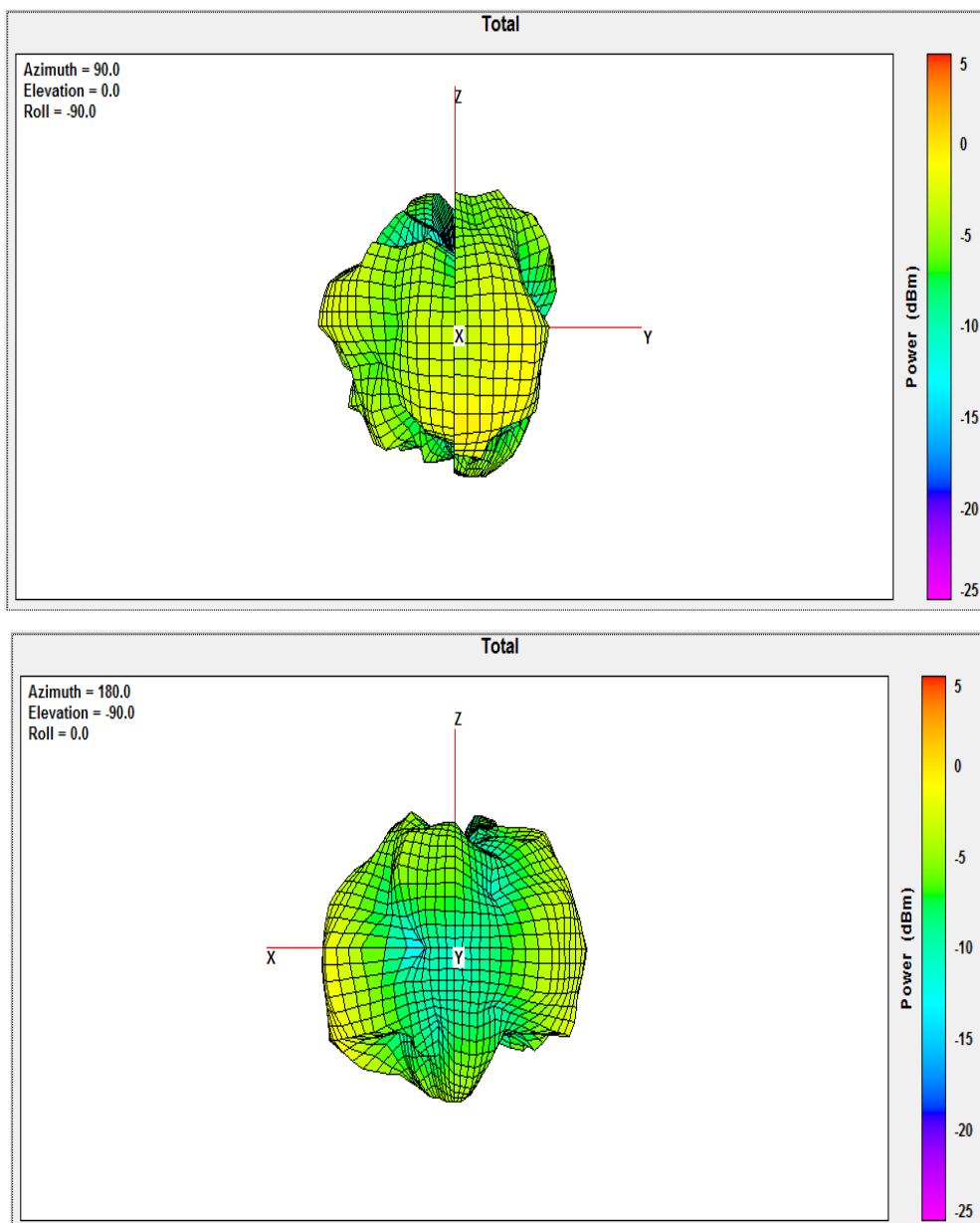


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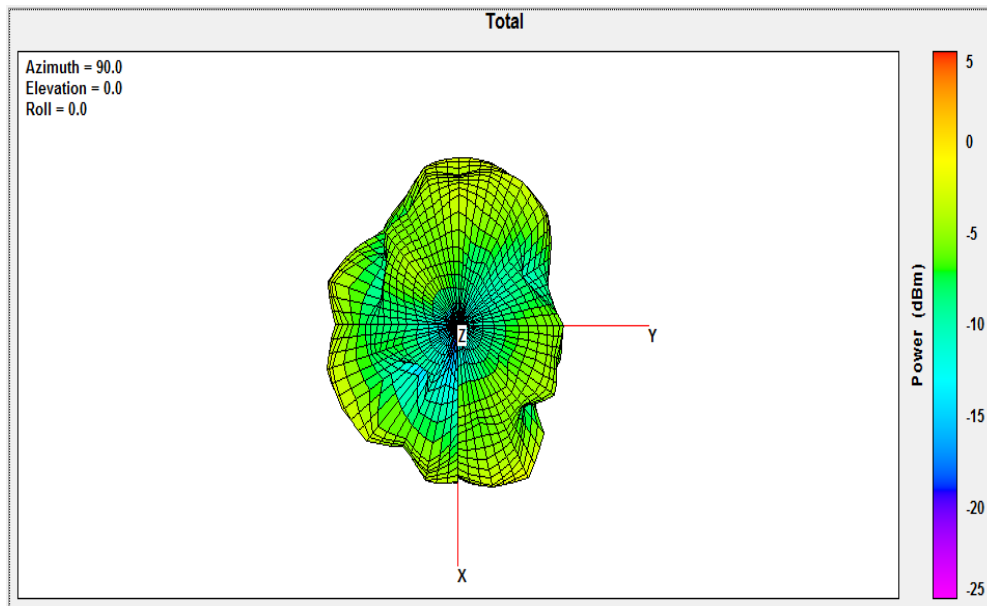


## Total 3D Plot(Fre.2410MHz)



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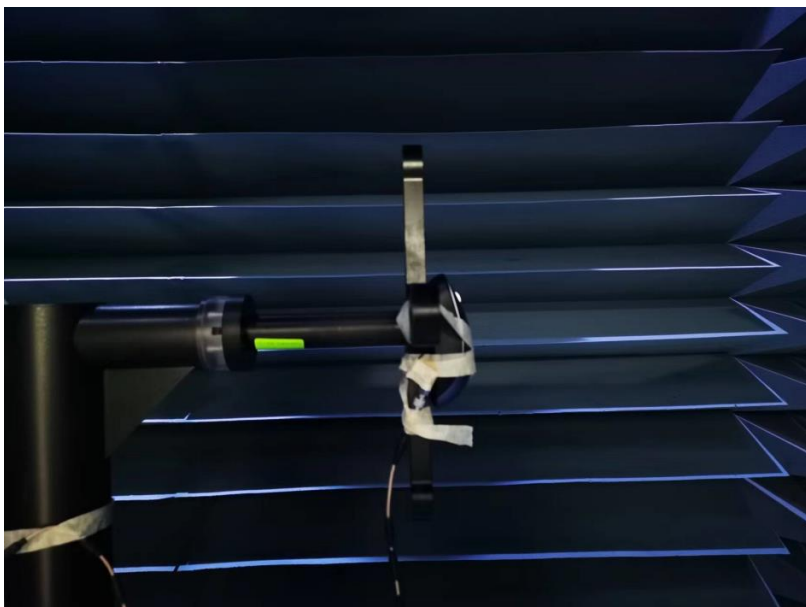


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## 7 Photo



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