

# BT&WIFI Antenna Test Report

|                  |            |
|------------------|------------|
| Customer         |            |
| Project          | MLN195K    |
| Antenna Revision |            |
| Prepared by      |            |
| Checked by       |            |
| Date:            | 2023.12.28 |

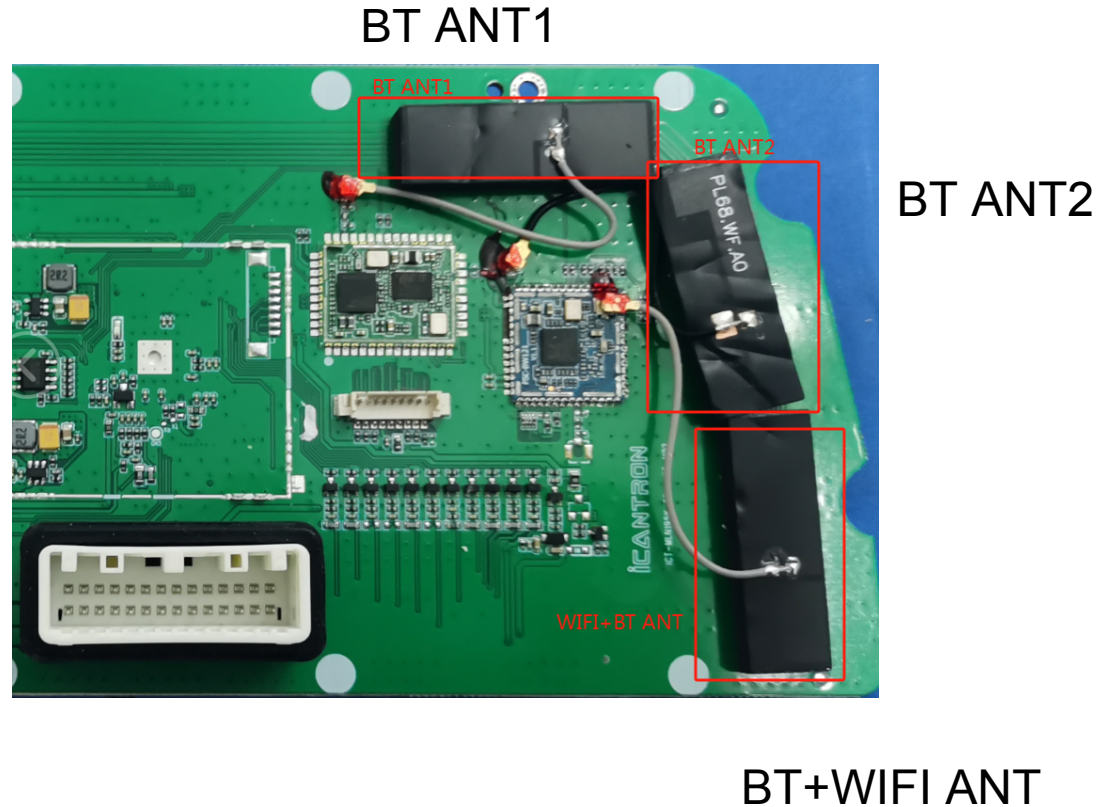
# ***Purpose***

This report is to measure the performance of **BT+WIFI** antenna for **MLN195K**. The antenna operating frequency at **2.4-5.8GHz**, All test data are showed as below.

## ***Content***

1. Product Overview & Dimension
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4. Test Result
  - 4.1 S11 Parameter
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  - 4.3 Test coordinate
  - 4.4 2D Pattern

# 1.Product Overview & Dimension

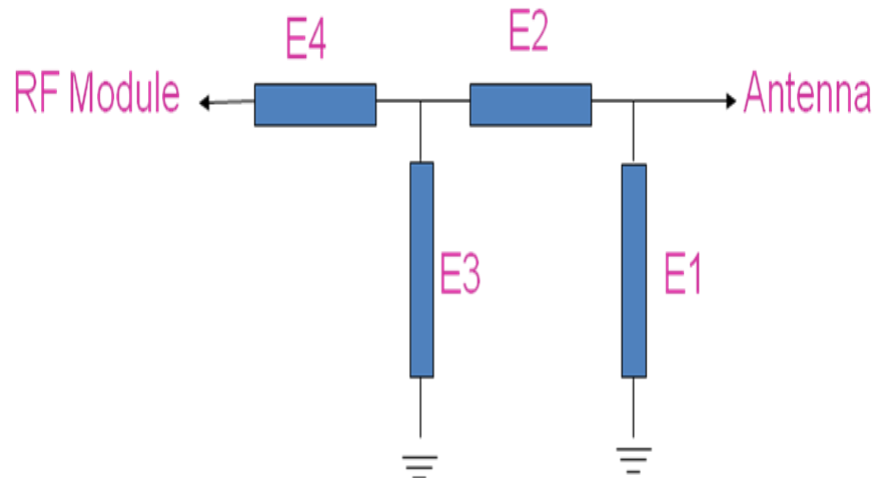


## 2. Test System

| Sequence Number   | Test Item         | equipment                                                       |
|-------------------|-------------------|-----------------------------------------------------------------|
| S parameter       | VSWR              | Agilent 5071C & Agilent 5062A                                   |
| OTA Test          | TRP&TIS           | Agilent 8960 E5515C& Agilent 4438C&CMW500 &CMW270<br>ETS&SATIMO |
| Gain & Efficiency | Gain & Efficiency | ETS&SATIMO<br>Agilent 5071C                                     |



### 3. Antenna Matching Network

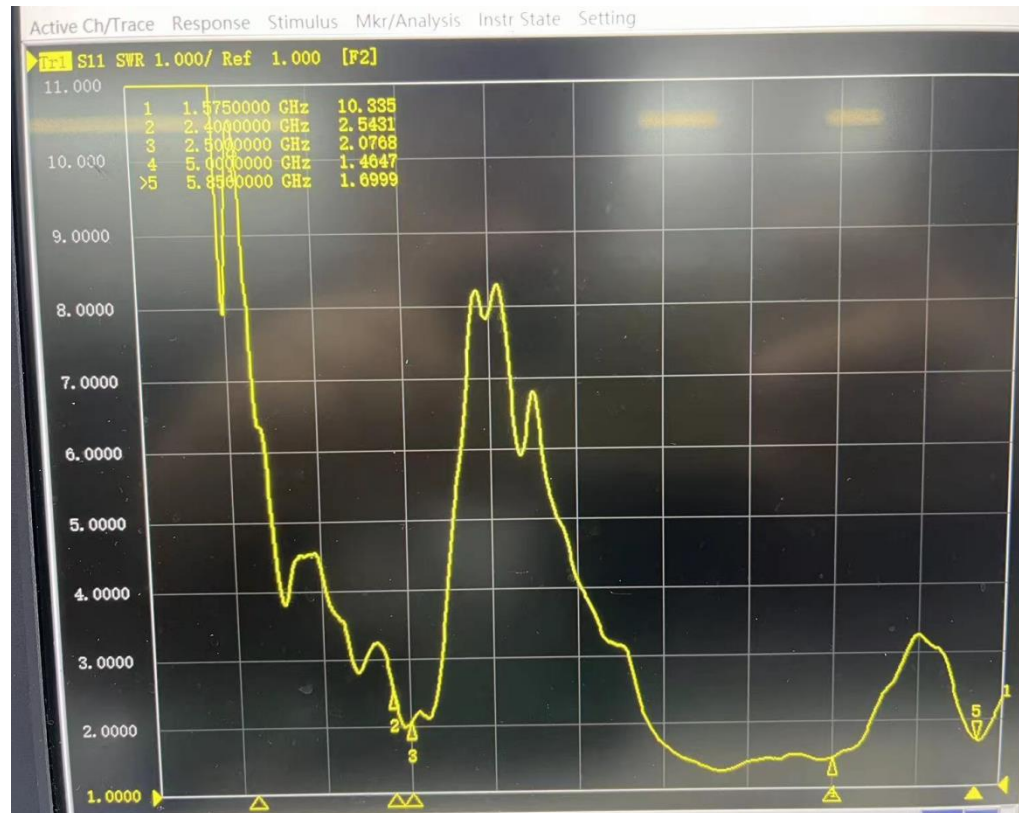


| Element | Capacitor | Inductor |
|---------|-----------|----------|
| E1      | N/A       | N/A      |
| E2      | N/A       | N/A      |
| E3      | N/A       | N/A      |
| E4      | N/A       | N/A      |

The matching circuit at the PCB board end has not been modified

## 4. Test Result

### 4.1 S11 Parameter-VSWR-2.4+5.8 antenna



| Frequency(MHz) | 2400 | 2500 | 5000 | 5850 |
|----------------|------|------|------|------|
| VSWR           | 2.54 | 2.07 | 1.46 | 1.69 |

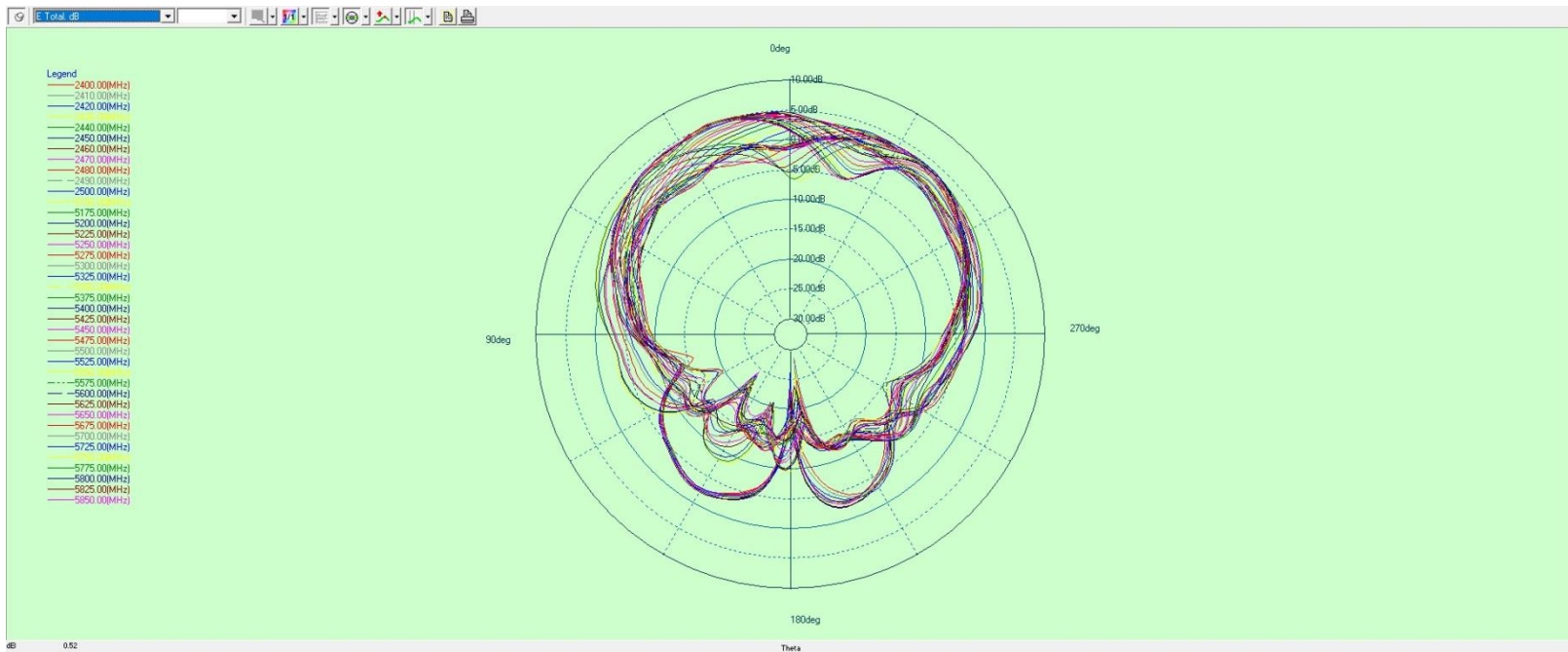
## 4. Test Result

### 4.2 Gain & Efficiency—— 2.4+5.8 antenna

| Frequency<br>(MHz) | Efficiency<br>(%) | Peak GAIN<br>(dBi) |
|--------------------|-------------------|--------------------|
| 2400               | 45.9              | 1.32               |
| 2450               | 46.5              | 1.95               |
| 2500               | 47.5              | 2.52               |
| 5150               | 51.6              | 3.12               |
| 5720               | 52.7              | 3.69               |
| 5850               | 52.3              | 3.82               |

# 4. Test Result

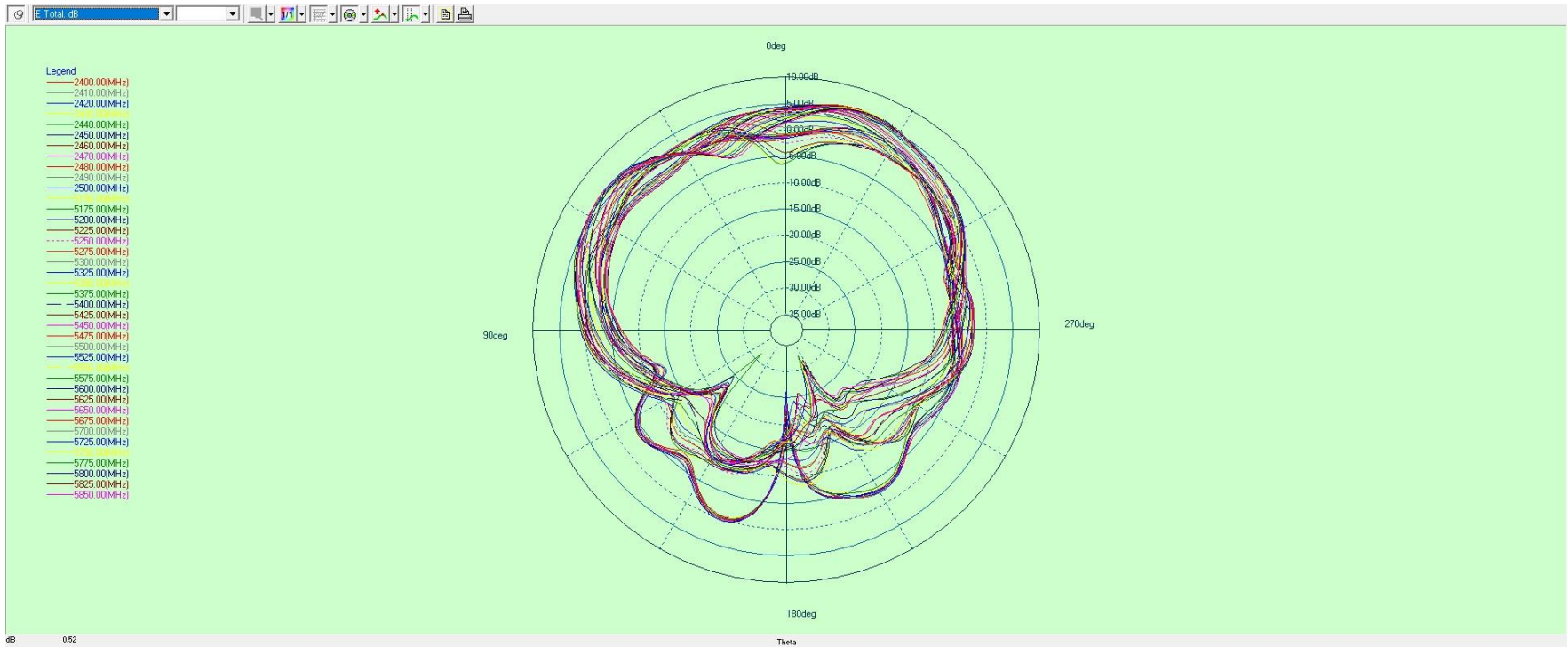
## 4.4 2D Pattern



Phi =0

# 4. Test Result

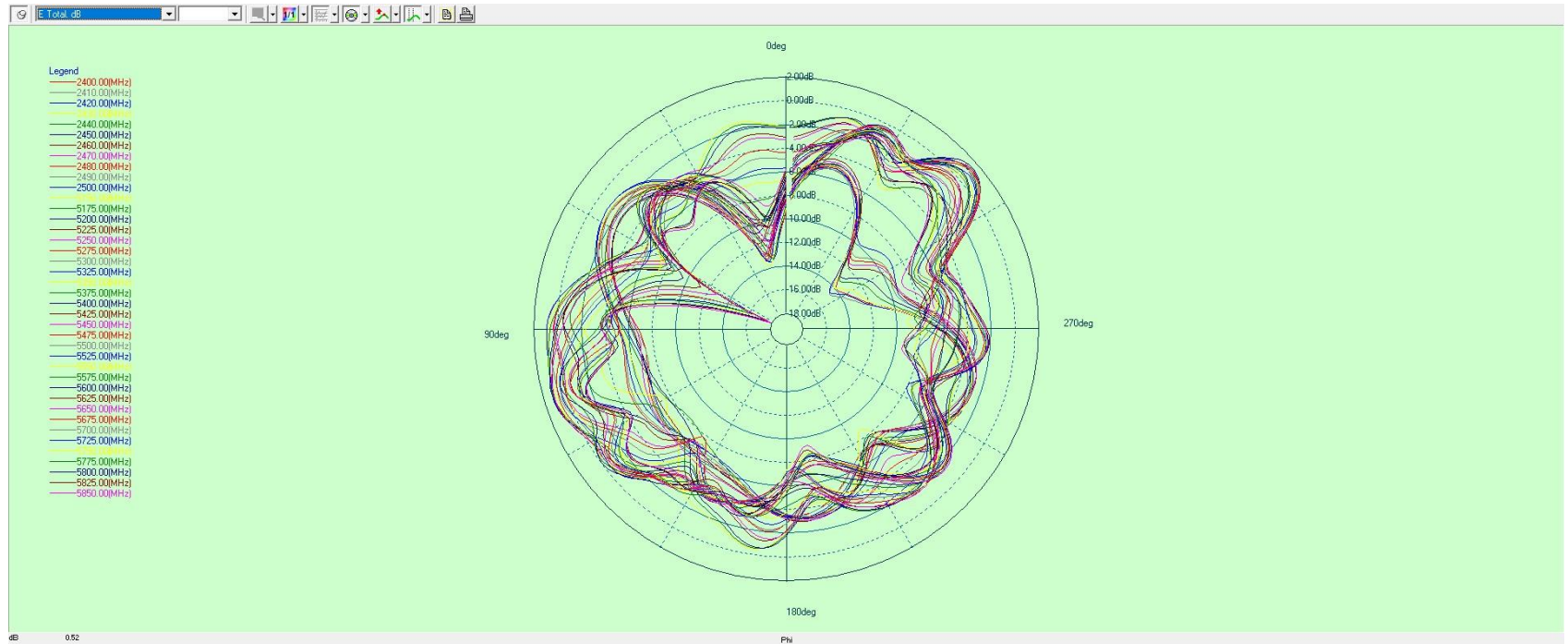
## 4.4 2D Pattern



Phi =90

# 4. Test Result

## 4.4 2D Pattern



Theta =90

## 4. Test Result

### 4.1 S11 Parameter-VSWR-2.4G BT ANT1



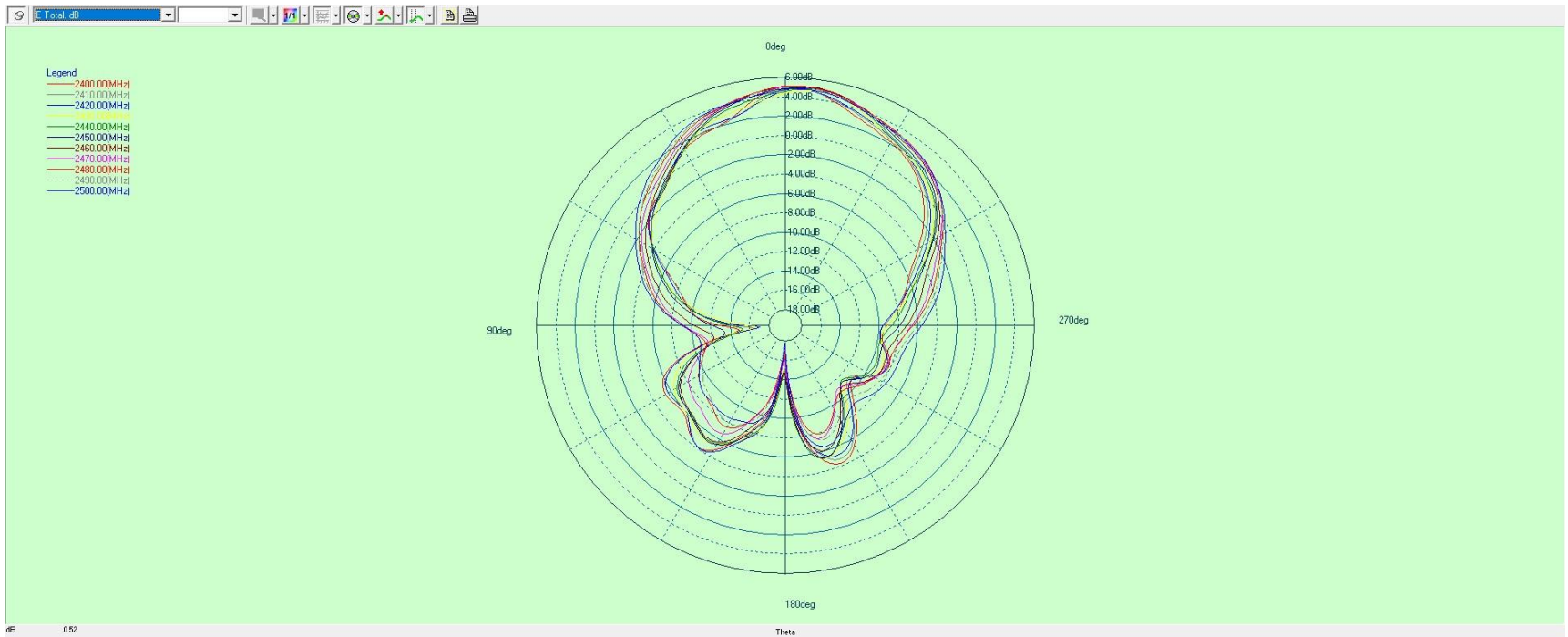
## 4. Test Result

### 4.2 Gain & Efficiency—— BT ANT1

| Frequency (MHz) | Efficiency (%) | Peak GAIN (dBi) |
|-----------------|----------------|-----------------|
| 2400            | 53.9%          | 4.13            |
| 2410            | 54.4%          | 4.36            |
| 2420            | 54.1%          | 4.28            |
| 2430            | 55.0%          | 4.16            |
| 2440            | 55.8%          | 4.24            |
| 2450            | 54.8%          | 4.39            |
| 2460            | 56.3%          | 4.72            |
| 2470            | 56.6%          | 4.98            |
| 2480            | 56.7%          | 4.73            |
| 2490            | 54.0%          | 4.85            |
| 2500            | 56.2%          | 4.68            |

# 4. Test Result

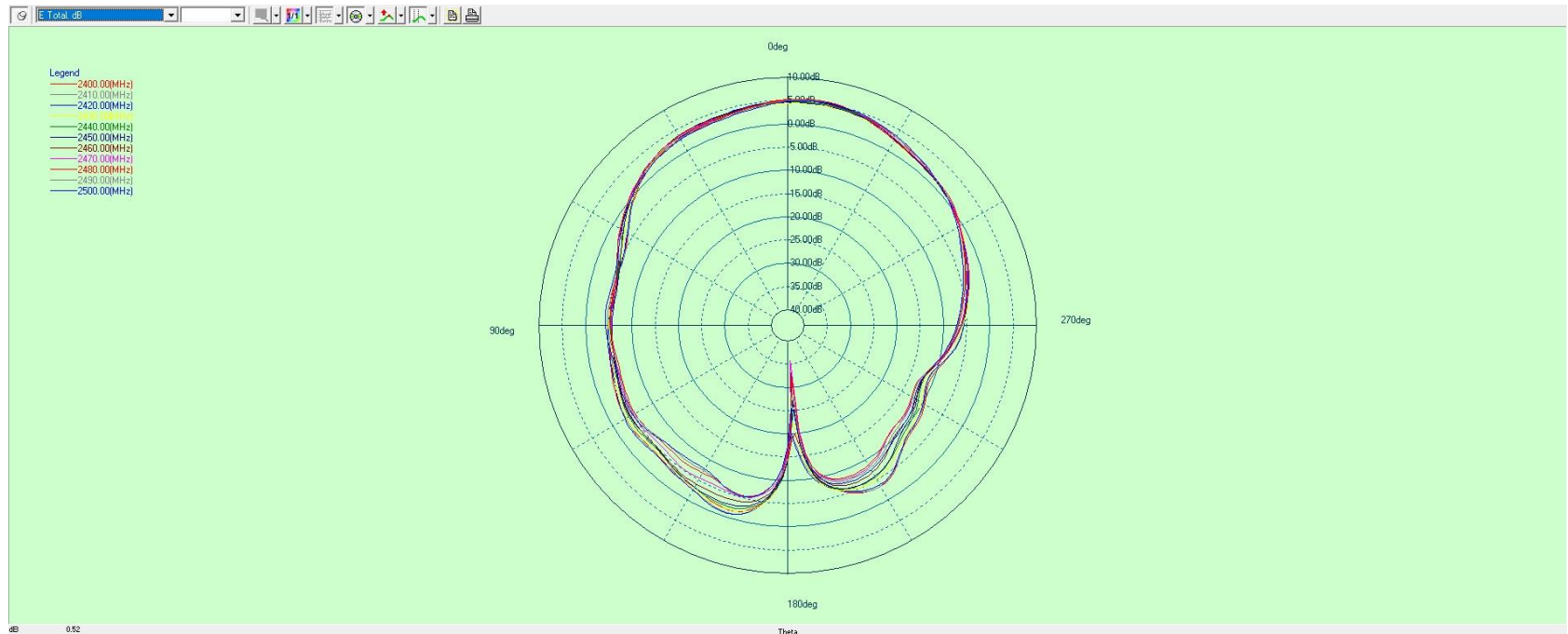
## 4.4 2D Pattern——BT ANT1



Phi = 0

## 4. Test Result

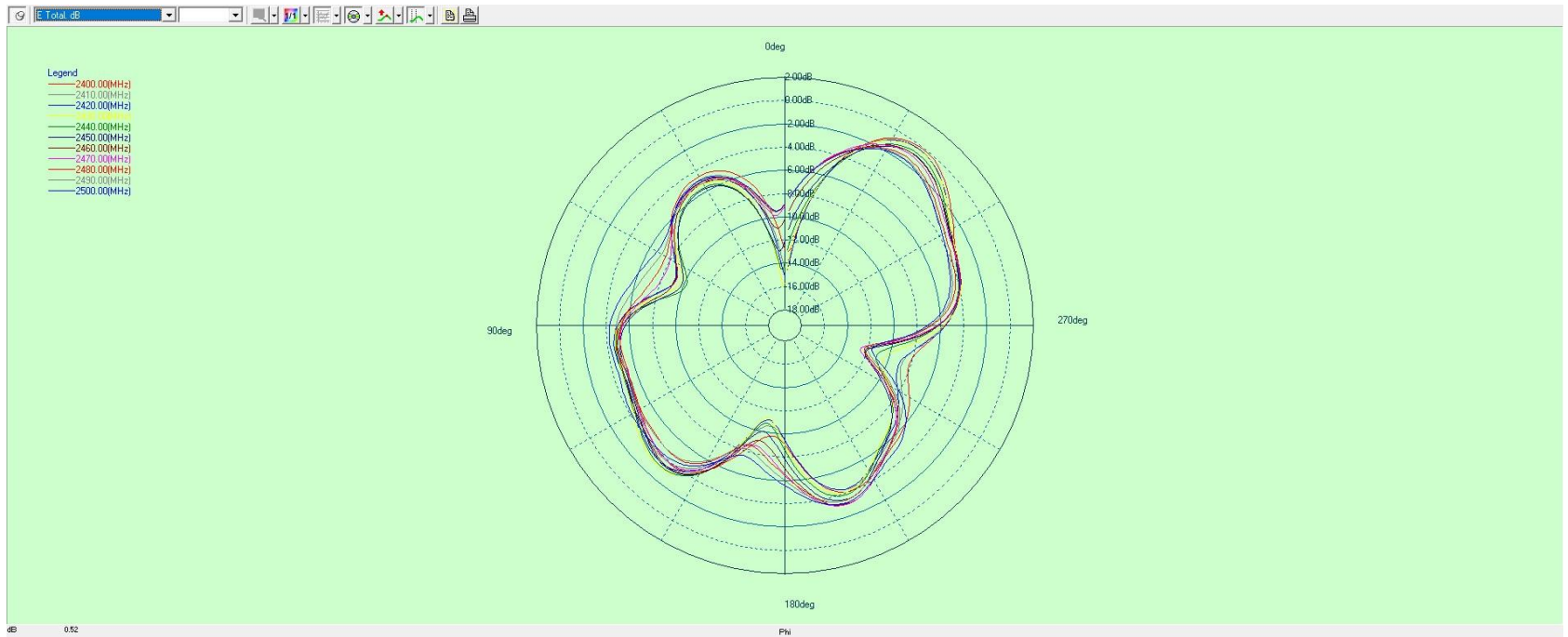
### 4.4 2D Pattern——BT ANT1



Phi =90

# 4. Test Result

## 4.4 2D Pattern——BT ANT1



Theta =90

## 4. Test Result

### 4.1 S11 Parameter-VSWR-BT ANT2



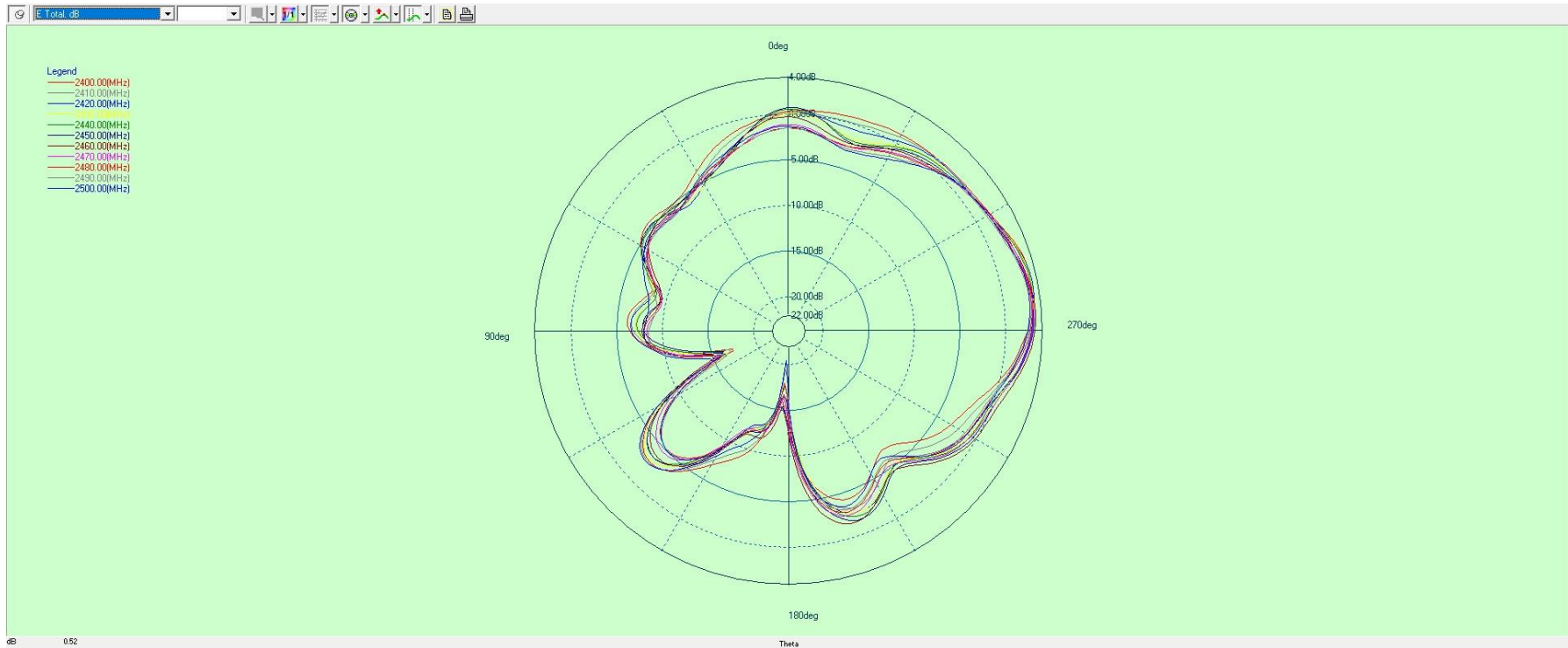
## 4. Test Result

### 4.2 Gain & Efficiency——**BT ANT2**

| Frequency<br>(MHz) | Efficiency<br>(%) | Peak GAIN<br>(dBi) |
|--------------------|-------------------|--------------------|
| 2400               | 54.7%             | 3.45               |
| 2410               | 55.2%             | 3.37               |
| 2420               | 57.4%             | 3.45               |
| 2430               | 56.7%             | 3.41               |
| 2440               | 57.4%             | 3.30               |
| 2450               | 58.1%             | 3.25               |
| 2460               | 59.9%             | 3.43               |
| 2470               | 56.9%             | 3.25               |
| 2480               | 54.7%             | 3.12               |
| 2490               | 52.7%             | 2.90               |
| 2500               | 54.3%             | 2.99               |

## 4. Test Result

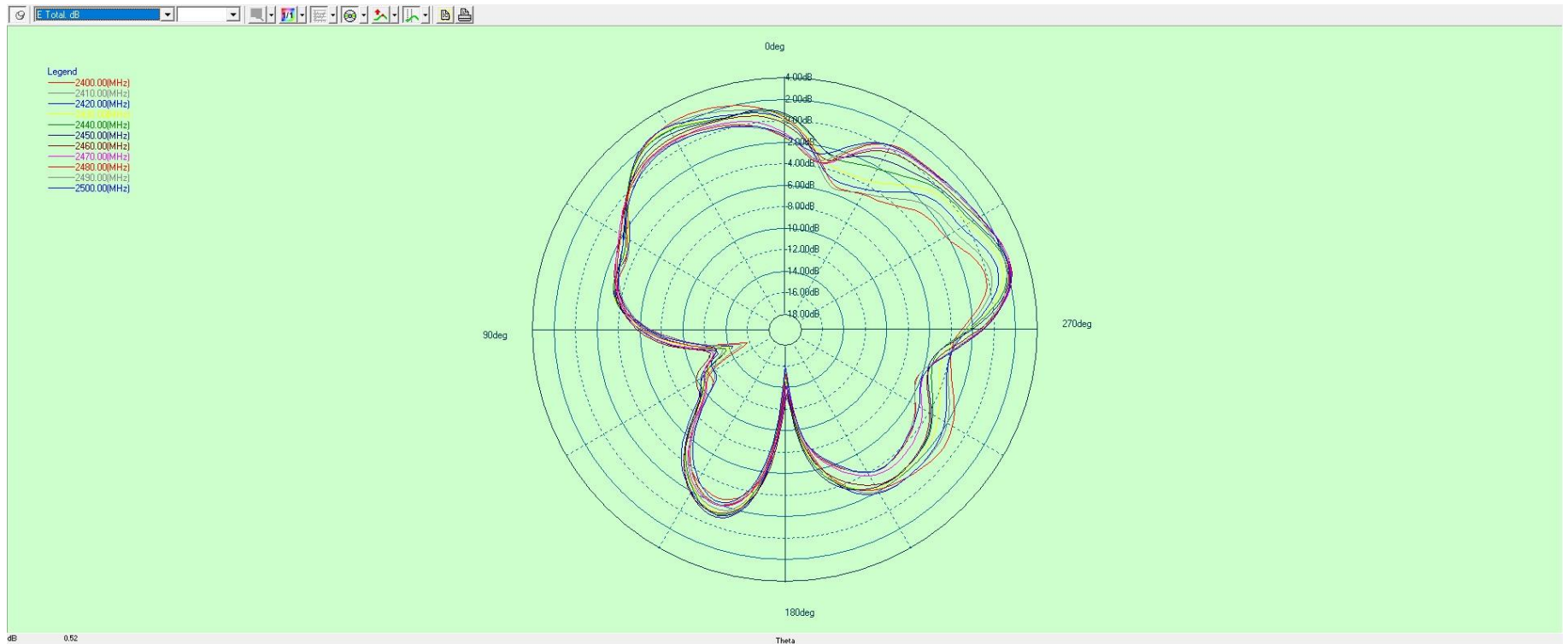
### 4.4 2D Pattern——**BT ANT2**



**Phi = 0**

# 4. Test Result

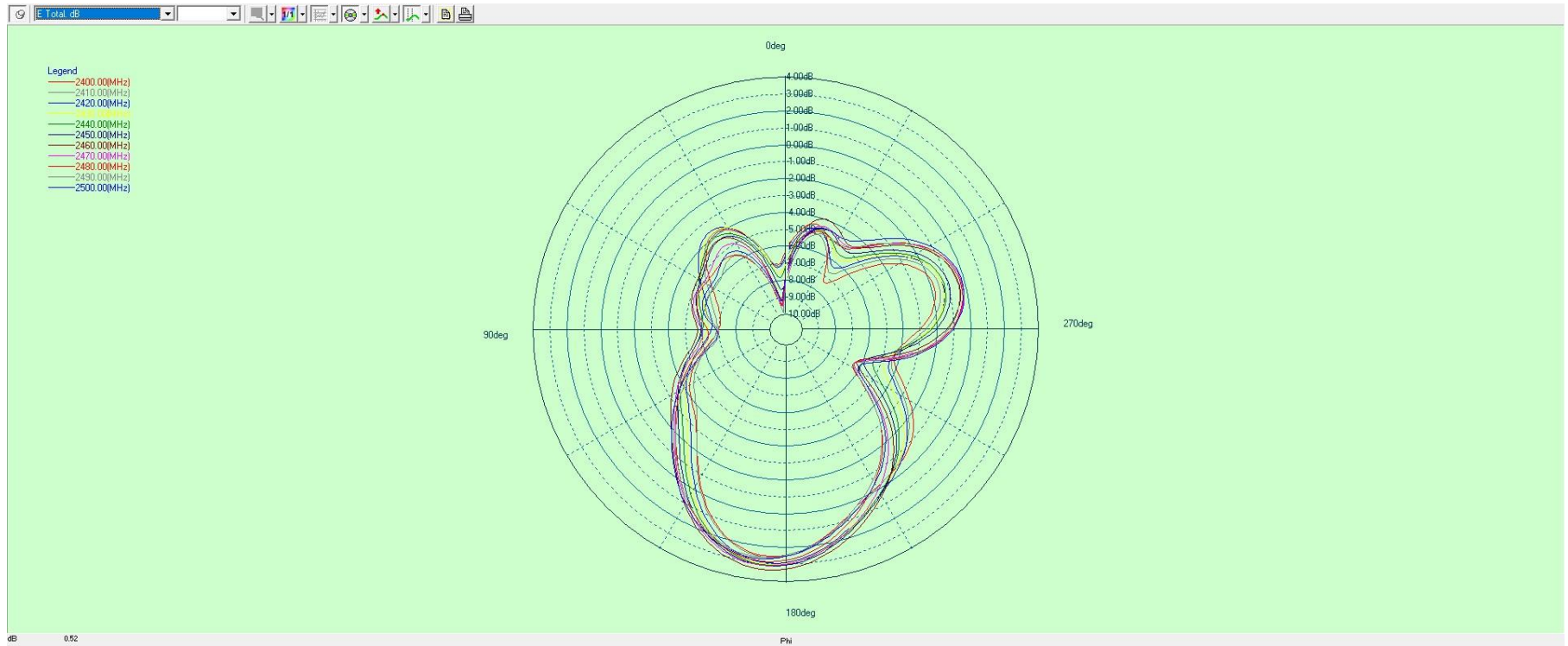
## 4.4 2D Pattern——**BT ANT2**



**Phi =90**

## 4. Test Result

### 4.4 2D Pattern——**BT ANT2**



Theta = 90