

# CREDITS TECHNOLOGY

( Revision : R : Ao )

|                   |                                            |
|-------------------|--------------------------------------------|
| Manufacturer      | Shenzhen Lingdechuang Technology Co., Ltd. |
| CS P/N(客户机种)      | F1                                         |
| PART NAME(品名)     | Antennal                                   |
| FREQUENCY(频率)     | WIFI2.4G/5G                                |
| CREDITS NO.(物料编号) | XB-F1-WIFI                                 |
| DATE(日期)          | 2024/7/19                                  |

| CUSTOMER（客户确认） |            |            |                 |
|----------------|------------|------------|-----------------|
| QA<br>(品质)     | ME<br>(结构) | RF<br>(射频) | MANAGER<br>(经理) |
|                |            |            |                 |

| QA<br>(品质) | ME<br>(结构) | RF<br>(射频) | MANAGER<br>(经理) |
|------------|------------|------------|-----------------|
|            |            |            |                 |

|           |            |              |                                    |
|-----------|------------|--------------|------------------------------------|
| <b>1.</b> |            |              | <b>General Description</b>         |
|           |            |              |                                    |
| <b>2.</b> |            |              | <b>Electrical Specifications</b>   |
|           | <b>2-1</b> |              | <b>Set-up</b>                      |
|           |            | <b>2-1-1</b> | <b>Frequency Band</b>              |
|           |            | <b>2-1-2</b> | <b>Impedance</b>                   |
|           |            | <b>2-1-3</b> | <b>Matching Requirements</b>       |
|           |            | <b>2-1-4</b> | <b>VSWR</b>                        |
|           | <b>2-2</b> |              | <b>Test Data</b>                   |
|           |            | <b>2-2-1</b> | <b>VSWR</b>                        |
|           |            | <b>2-2-2</b> | <b>TRP&amp;TIS</b>                 |
|           |            |              |                                    |
|           |            |              |                                    |
| <b>3.</b> |            |              | <b>Mechanical Specification</b>    |
|           | <b>3-1</b> |              | <b>Mechanical Configuration</b>    |
|           |            | <b>3-1-1</b> | <b>Mechanical Configuration</b>    |
|           |            | <b>3-1-2</b> | <b>Mechanical Configuration</b>    |
|           | <b>3-2</b> |              | <b>Measurement Data</b>            |
|           | <b>3-3</b> |              | <b>Salt-Spray Test</b>             |
|           |            |              |                                    |
| <b>4.</b> |            |              | <b>Environment Characteristics</b> |
|           |            |              |                                    |
|           |            |              |                                    |

## 1. General Description

This report summarizes the electrical performance results of the proposed Internal antenna to support the F1 program. The antenna is an assembly WIFI2.4G/5.8G.



## 2. Electrical Specifications

### 2-1 Set-up

#### 2-1-1 Frequency Band

| Frequency Band | 2.4G         | 5.8G         |
|----------------|--------------|--------------|
| WIFI           | 2400-2500MHZ | 5150-5850MHZ |

#### 2-1-2 Impedance

Nominal Impedance(including matching circuit) : 50 ohms

#### 2-1-3 Matching Requirements

The matching circuit on the PCB of the handset is according to Figure 1  
Optimum matching circuit is highly dependent on the handset and thus.

Final matching circuit layout and values will be defined when handset is available.

客供

#### 2-1-4 VSWR And GAIN

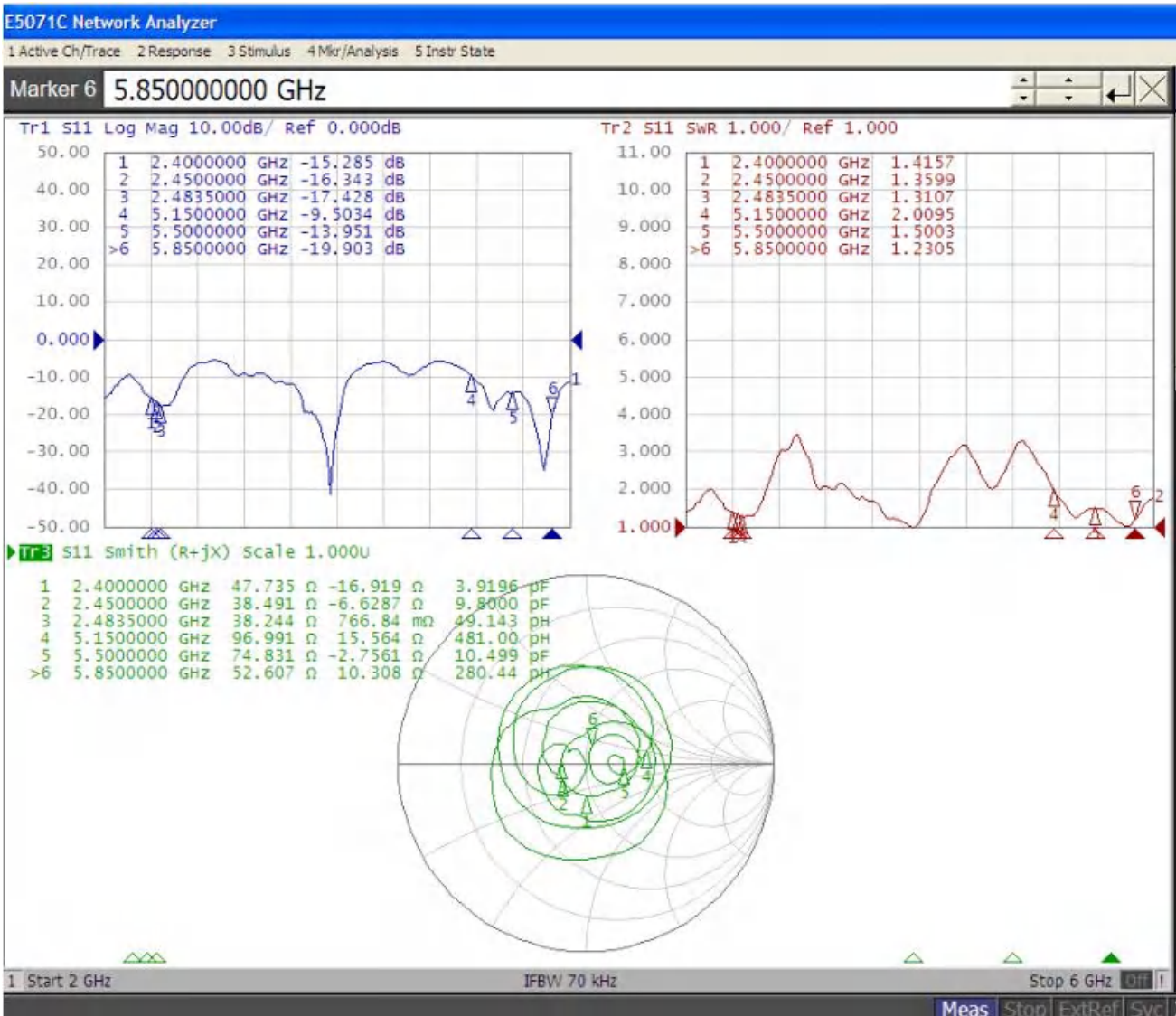
| VSWR       |      |      | GAIN    |       |           |
|------------|------|------|---------|-------|-----------|
| Freq. Band | OPEN | SPEC | Band    | Freq. | OPEN SPEC |
| 2400MHz    | ≤2.5 |      | 2400MHz |       | ≥0.5dBi   |
| 2450MHz    | ≤2.0 |      | 2450MHz |       | ≥0.5dBi   |
| 2500MHz    | ≤2.0 |      | 2500MHz |       | ≥0.5dBi   |
| 5150MHz    | ≤2.5 |      | 5150MHz |       | ≥-1.0dBi  |
| 5500MHZ    | ≤2.0 |      | 5500MHZ |       | ≥0.5dBi   |
| 5850MHZ    | ≤2.0 |      | 5850MHZ |       | ≥-1.0dBi  |

※Measuring a 50Ω test jig is connected to a network analyzer to  
measure the VSWR ※※All test value is done in customer  
approval fixture.

2-2 Test Data

2-2-1 WIFI VSWR

|                            |                         |
|----------------------------|-------------------------|
| Model No:                  | File:                   |
| CREDITS NO:                | Note:<br><br>WIFI -VSWR |
| Sample No:                 |                         |
| Test Condition: Free Space | Matching: 客供            |
| Confirmation:              | Engineer:               |

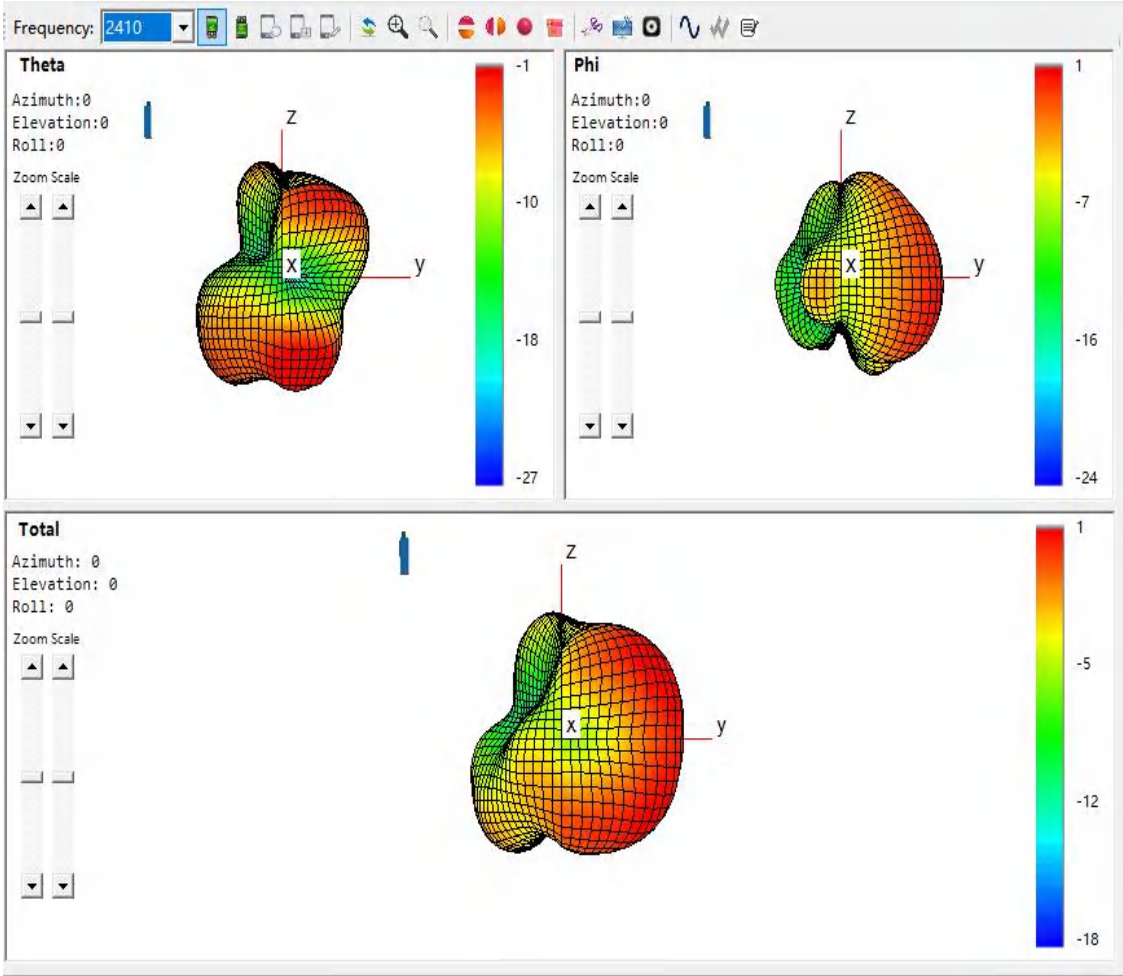


2-2-2 WIFI GAIN&EFF

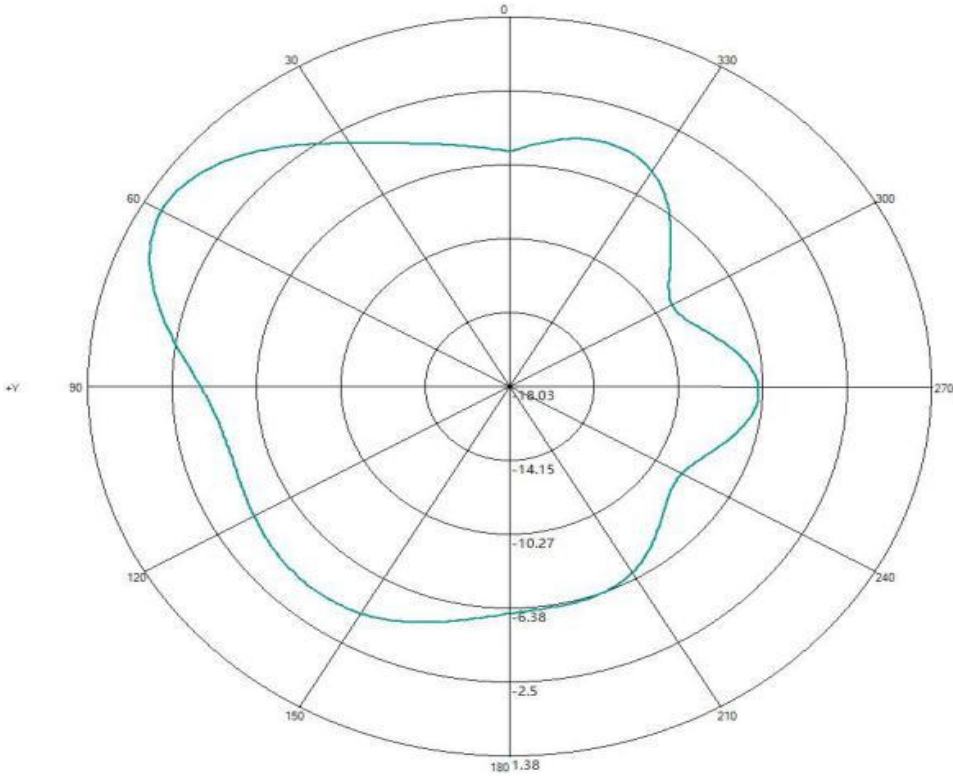
| Freq (MHz) | Gain (dBi) | Efficiency (%) | Freq (MHz) | Gain (dBi) | Efficiency (%) |
|------------|------------|----------------|------------|------------|----------------|
| 2400       | 0.96       | 42.95          | 5150       | -0.13      | 37.14          |
| 2410       | 0.79       | 42.74          | 5240       | 0.39       | 41.83          |
| 2420       | 0.62       | 42.42          | 5280       | 0.68       | 42.46          |
| 2430       | 0.56       | 42.42          | 5320       | 1.13       | 43.74          |
| 2440       | 0.59       | 43.13          | 5400       | 0.83       | 42.54          |
| 2450       | 0.56       | 43.21          | 5480       | 0.79       | 42.82          |
| 2460       | 0.65       | 43.67          | 5520       | 0.31       | 40.94          |
| 2470       | 0.72       | 44.01          | 5600       | -0.21      | 40.43          |
| 2480       | 0.74       | 44.24          | 5780       | -0.53      | 37.95          |
| 2490       | 0.79       | 44.67          | 5820       | -0.33      | 37.28          |
| 2500       | 0.81       | 45.19          | 5850       | -0.67      | 35.41          |

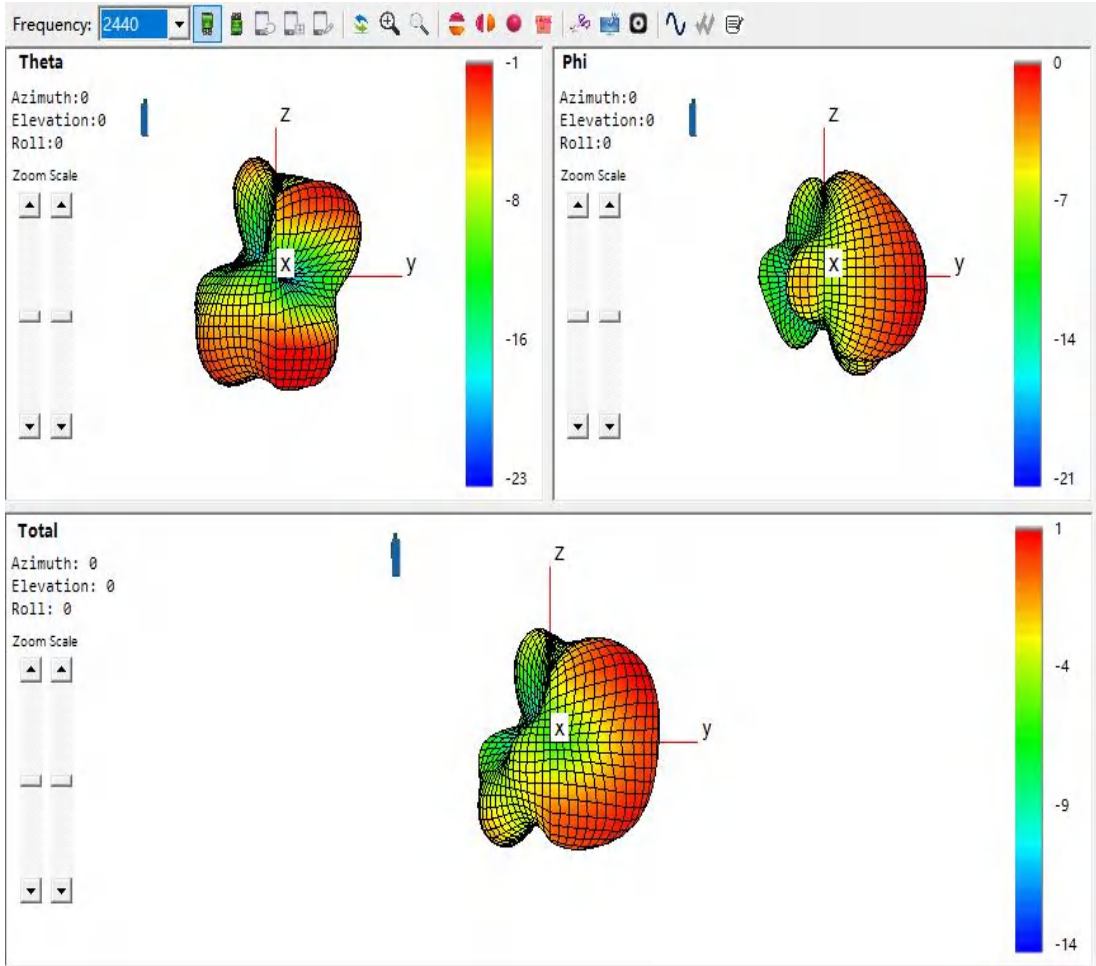
2.4G: 0.96dBi  
U-NII Band 1: 0.39dBi;  
U-NII Band 2A: 1.13dBi;  
U-NII Band 2C: 0.31dBi;  
U-NII Band 3: -0.33dBi;

2.4G

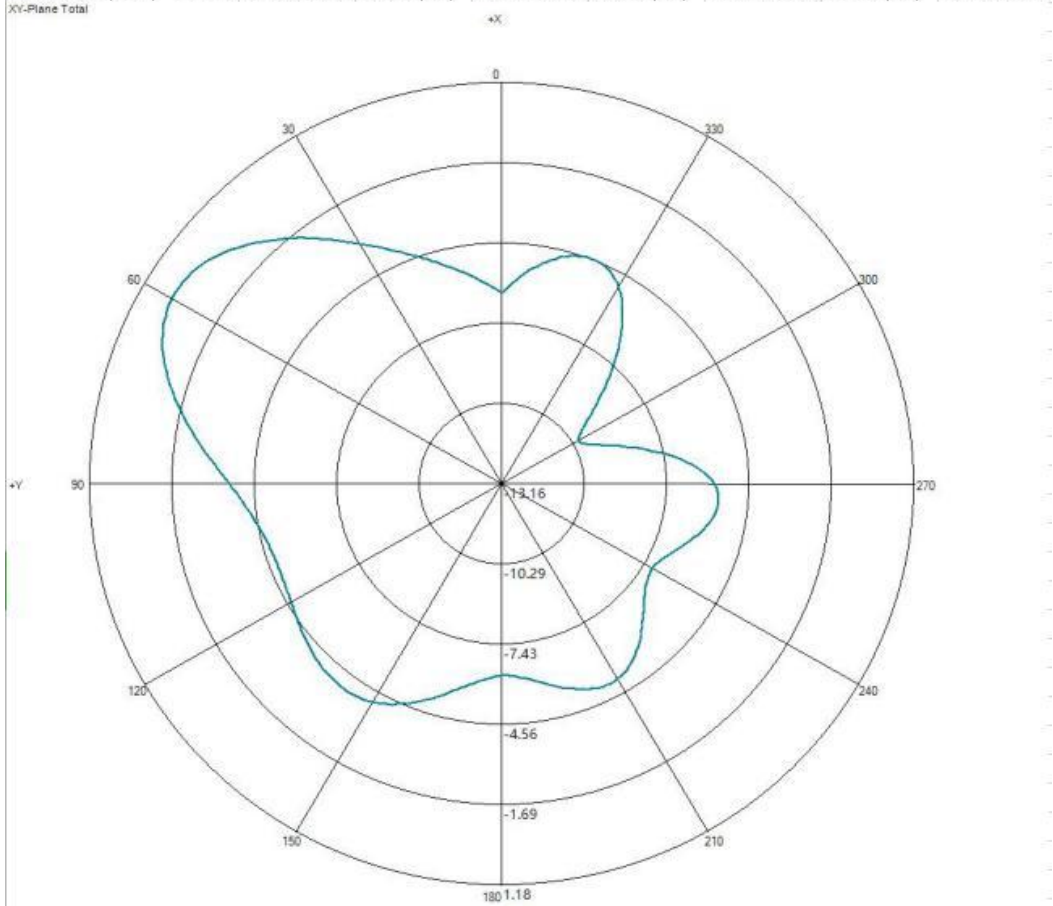


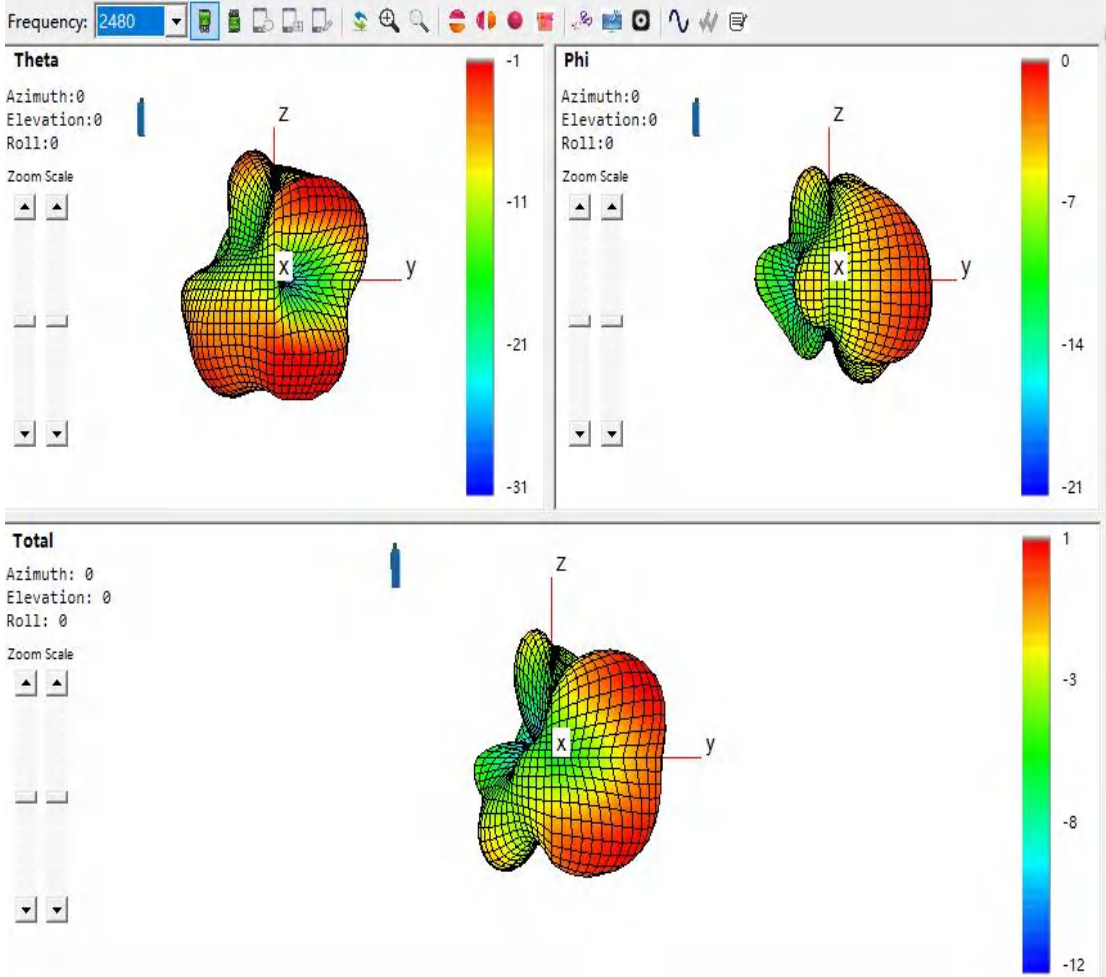
Channel (MHz) 2410 XY-Plane Max. (dB) 0.489967 Ave. (dB) -4.50953 Min. (dB) -9.41807  
XY-Plane Total



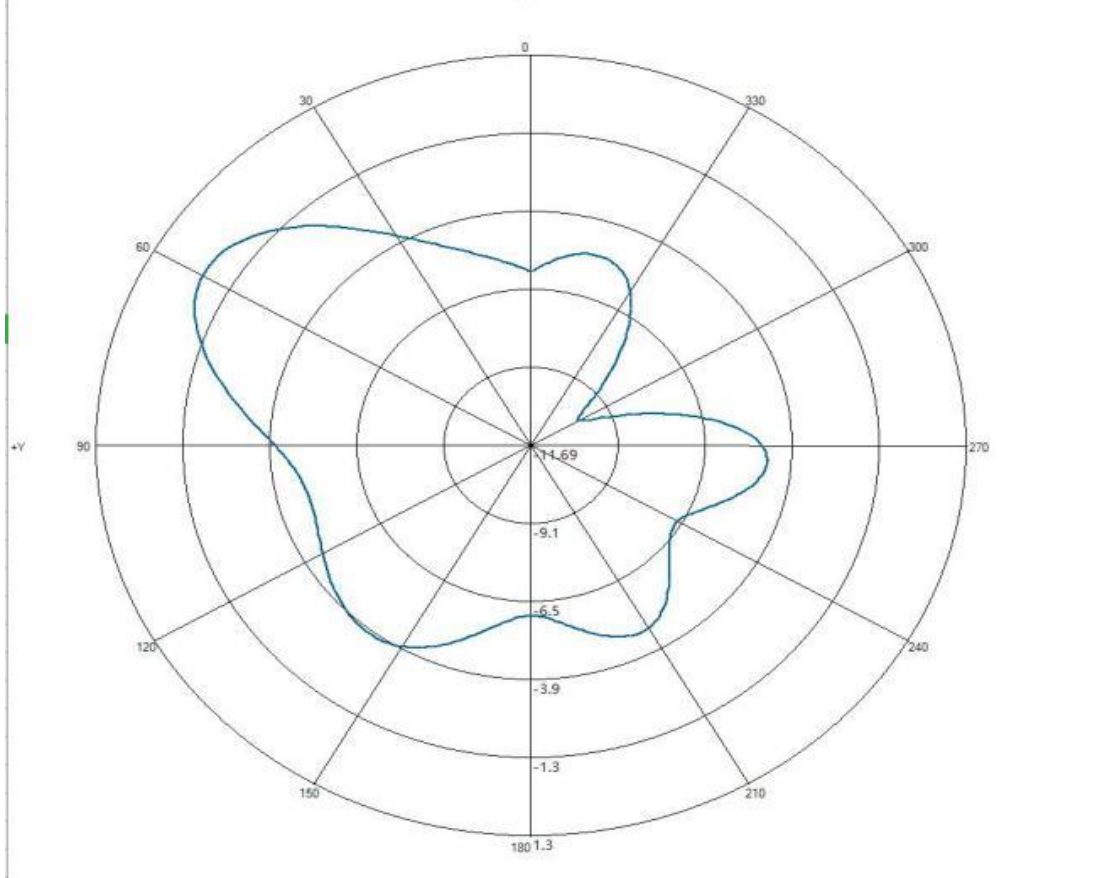


Channel (MHz) 2440 XY-Plane Max. (dB) 0.104186 Ave. (dB) -4.46002 Min. (dB) -10.0735

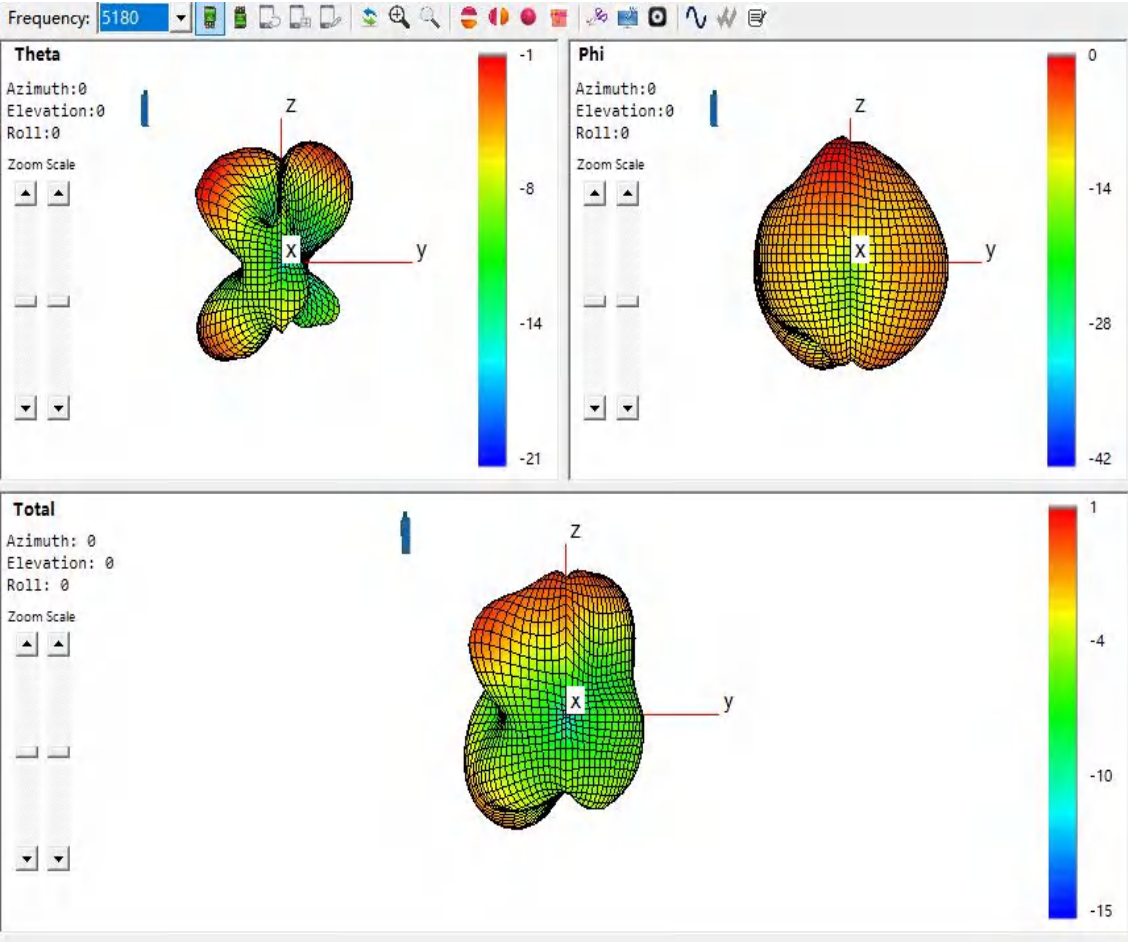




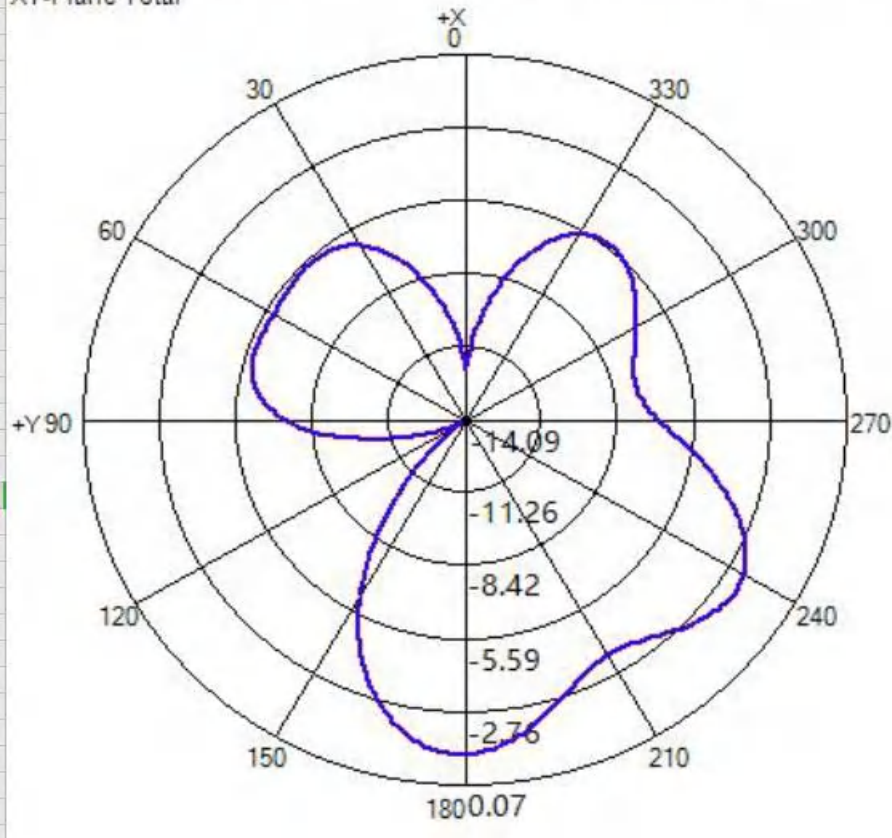
| Channel (MHz)  | 2480 | XY-Plane | Max. (dB) | -0.35206 | Ave. (dB) | -4.49578 | Min. (dB) | -10.0369 |
|----------------|------|----------|-----------|----------|-----------|----------|-----------|----------|
| XY-Plane Total |      |          |           |          |           |          |           |          |

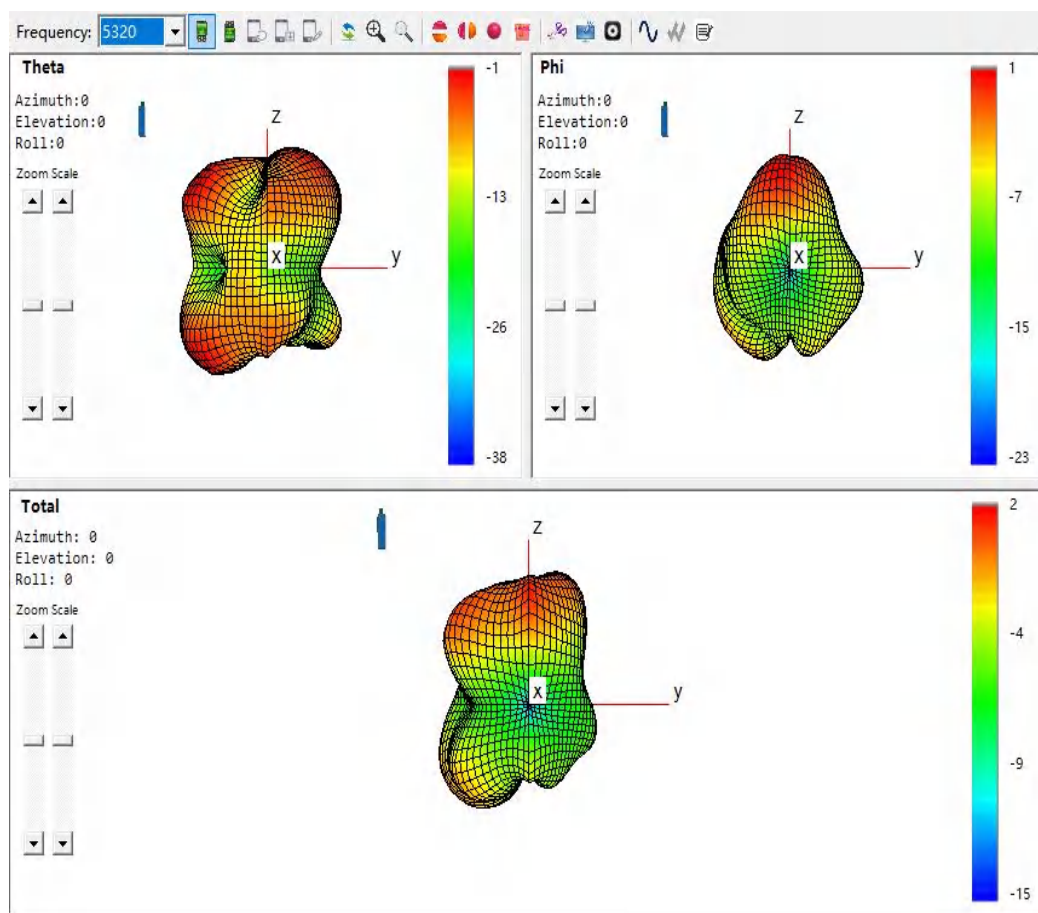


5.8G

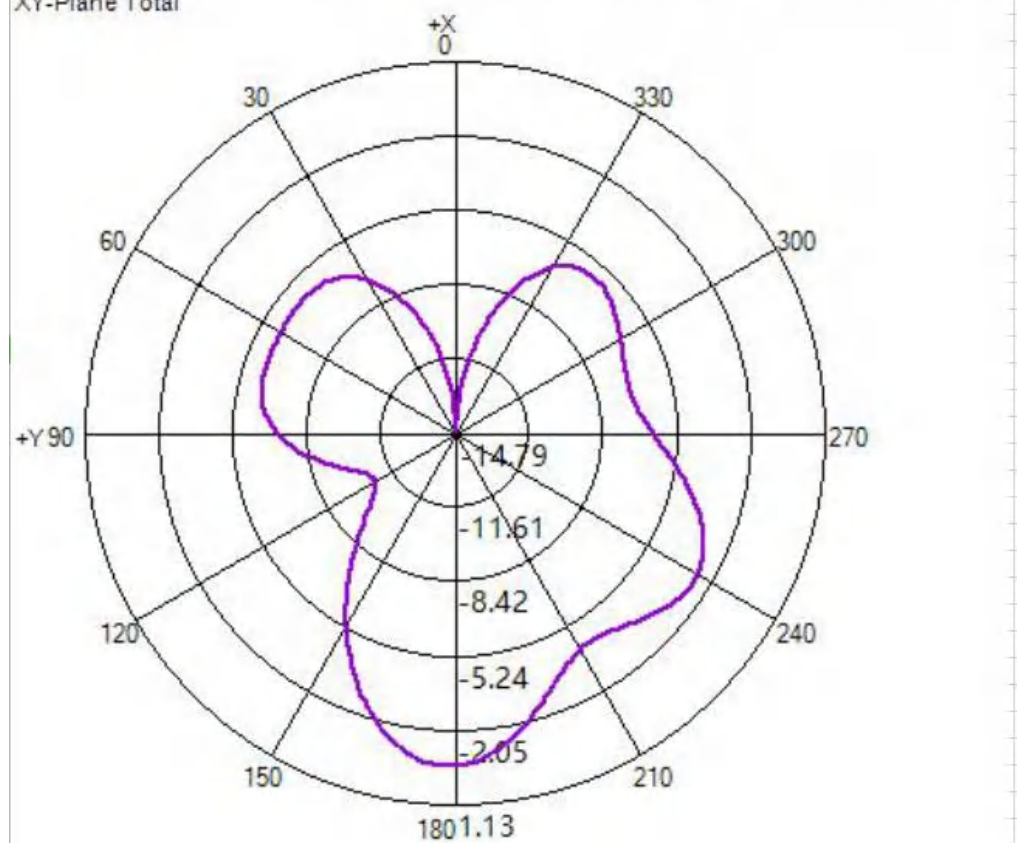


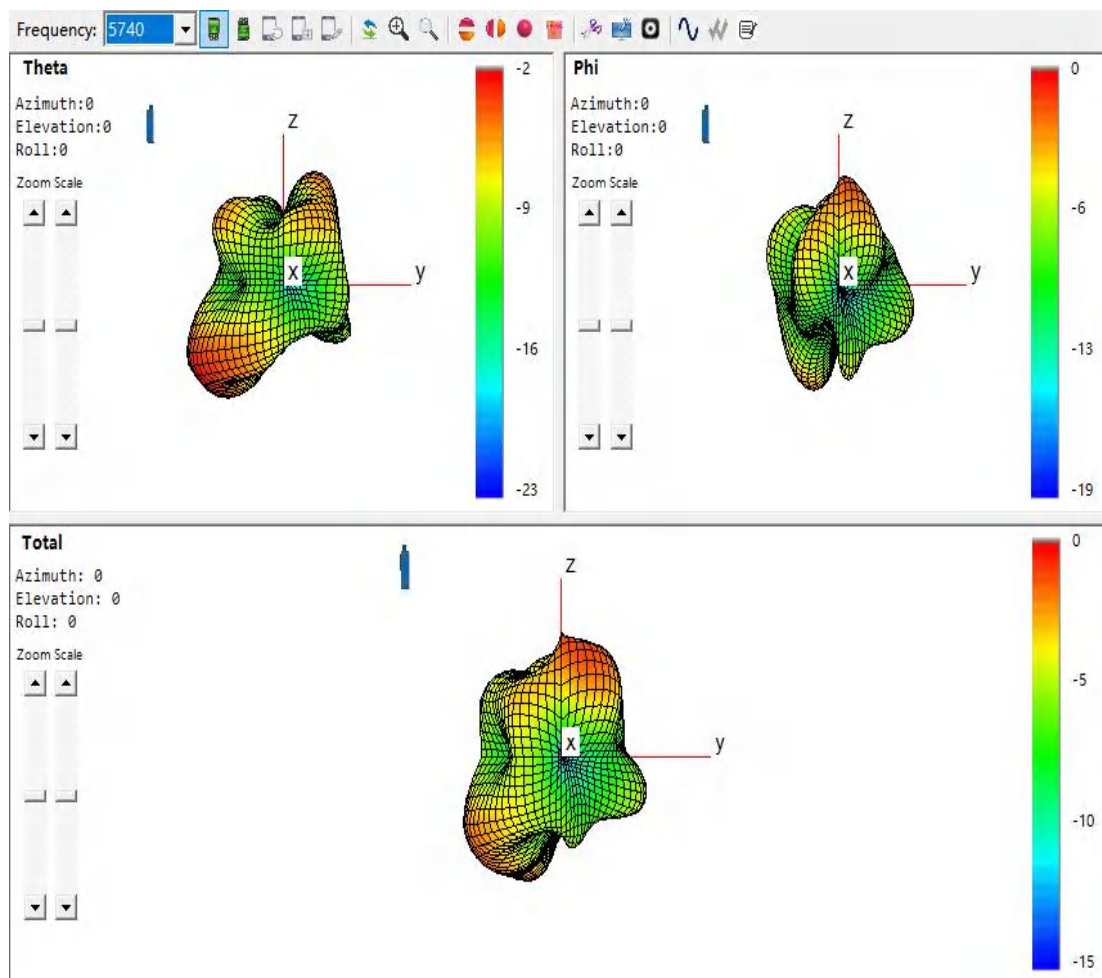
Channel (MHz) 5180 XY-Plane Max. (dB) -1.10745 Ave. (dB) -5.31114 Min. (dB) -13.9591  
XY-Plane Total



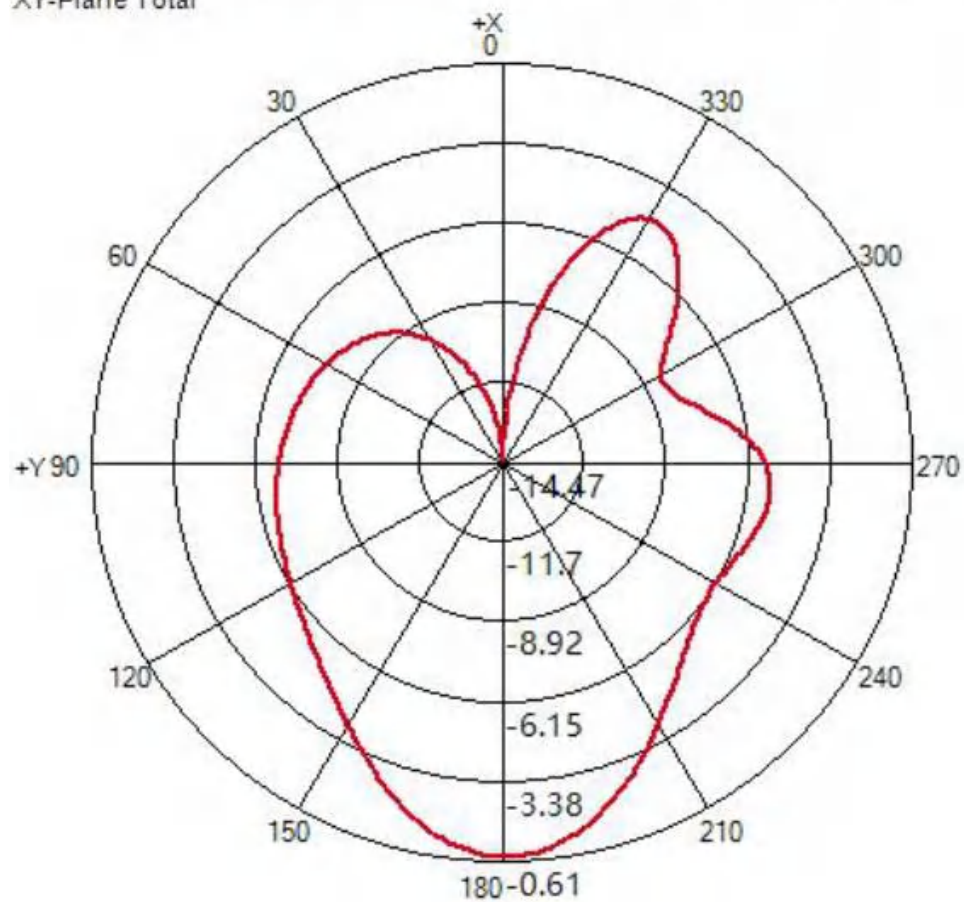


Channel (MHz) 5320 XY-Plane Max. (dB) -0.53132 Ave. (dB) -5.31605 Min. (dB) -14.7915  
XY-Plane Total





Channel (MHz) 5740 XY-Plane Max. (dB) -0.77301 Ave. (dB) -5.44932 Min. (dB) -14.4674  
XY-Plane Total



3. Mechanical Specification

3-1-1 Mechanical Configuration( 组装图)

3-2 Measurement Data

3-3 Salt-Spray test

35°C, 85%RH, 48Hours(According to MIL-STD-810E)The salt-spray is generated from a 5% salt solution., The VSWR, Gain, Radiation Pattern must be met specifications after the salt-spray test.

4. Environment Characteristic

| NO. | ITEM                                                     | TEST CONDITION                                                   | SPECIFICATION                                                                  |
|-----|----------------------------------------------------------|------------------------------------------------------------------|--------------------------------------------------------------------------------|
| 4-1 | High Temperature/Humidity<br>Storage Test(non operating) | 1.Temperature: +70 ±2°C<br>2.Humidity: 90~95%RH<br>3.Time: 48hrs | No material deformation is allowed.                                            |
| 4-2 | Low Temperature/Humidity<br>Storage Test(non operating)  | 1.Temperature: -30±2°C<br>2.Humidity: 0%RH<br>3.Time:48hrs       | The VSWR, Gain, Radiation Pattern must be met specifications after these test. |

