



上海增信电子有限公司  
Signal Plus Technology Co., Ltd.

## 规格承认书

SPECIFICATION FOR APPROVAL

日期  
DATE: 2025.03.11

版本  
REV.: A

客 户  
CUSTOMER: AsiaTelco Technologies Co.

客 户 料 号  
CUSTOMER P/N: TX0724T002

品 名  
PART NAME: 外置黑色中璞玉天线 2.4G&5G&6G三频 with SMA内螺纹孔L153mm

供 方 料 号  
SUPPLIER P/N: 6001F00420

送样日期Date: 送样数量Q'TY: Pcs

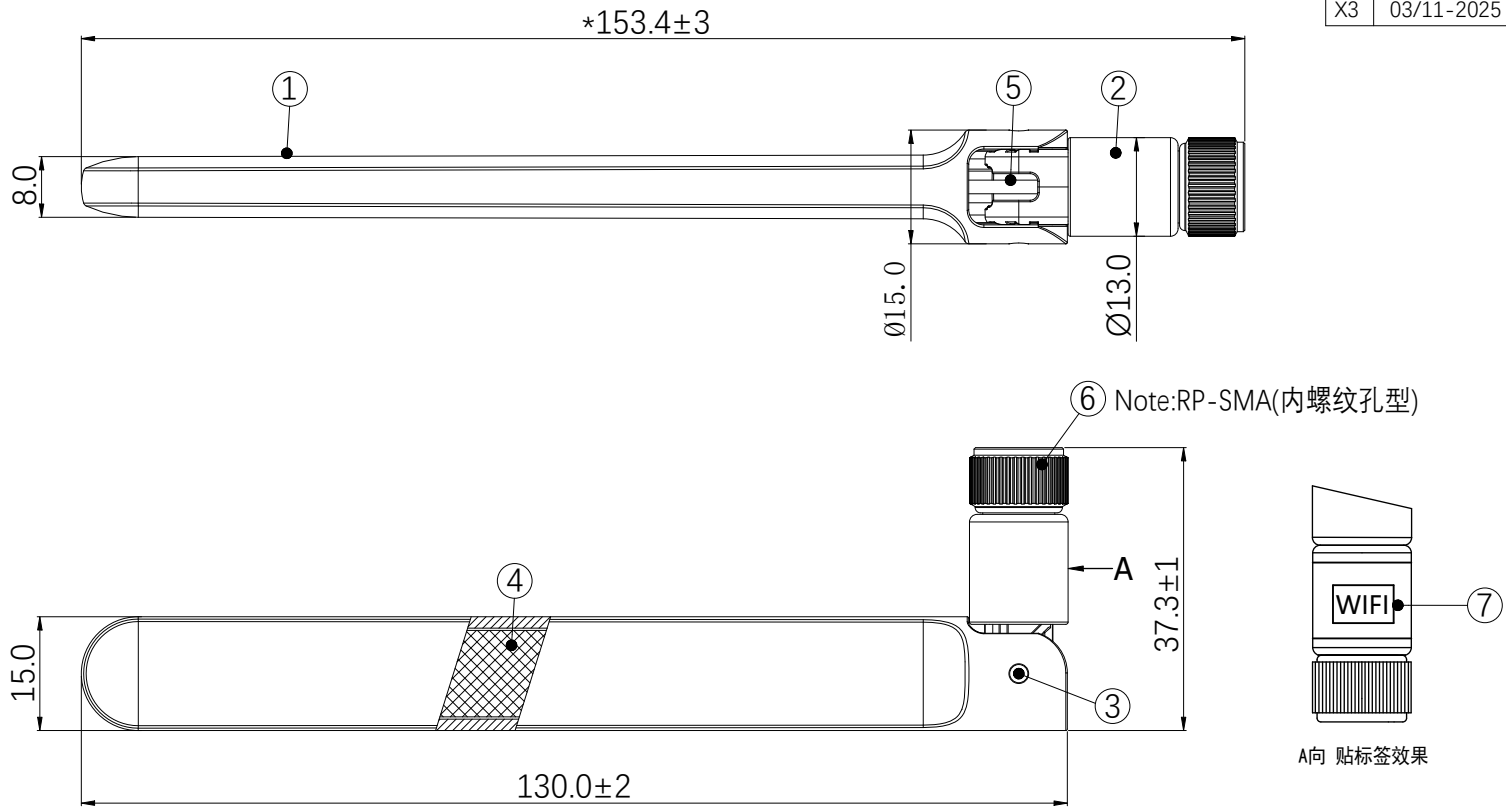
| 客户确认CUSTOMER APPROVED BY |                  |                   |
|--------------------------|------------------|-------------------|
| 核准<br>Approved by        | 审核<br>Checked by | 拟制<br>Prepared by |
|                          |                  |                   |

| 供方确认SUPPLIER SIGNATURE |                  |                   |
|------------------------|------------------|-------------------|
| 核准<br>Approved by      | 审核<br>Checked by | 拟制<br>Prepared by |
| Jack                   |                  | andy              |

ZX-QT-RD-0011-A1

Add:上海市徐汇区桂箐路69号30栋603室 Tel:021-54266190 Fax:021-54266191

| REV | DATE       | DESCRIPTION                  |
|-----|------------|------------------------------|
| X1  | 02/28-2025 | New Issue                    |
| X2  | 03/07-2025 | Add Label                    |
| X3  | 03/11-2025 | Update electrical properties |



- 1.ELECTRICAL PROPERTIES :
- 1.1 Frequency Range.....2.4-2.5GHz&5.15-5.85GHz&5.92-7.25GHz
  - 1.2 Impedance.....50 Ohm Nominal
  - 1.3 VSWR(装设备).....≤2.0@2.4-2.5GHz;  
≤2.0@5.15-5.85GHz;  
≤2.5@5.92-7.25GHz
  - VSWR(单天线).....≤2.0@2.4-2.5GHz;  
≤2.0@5.15-5.85GHz;  
≤2.5@5.92-7.25GHz;

2.These Products are in conformity with ROHS 2.0;  
3.带"\*"为重点尺寸，表面纹理：VDI30。

|    |             |                           |   |            |        |
|----|-------------|---------------------------|---|------------|--------|
| 7  | 标签          | 特多龙, 透明底白字                | 1 | 703-1-0043 |        |
| 6  | 连接器         | RP-SMA;内螺纹(孔);黑色塑胶螺套;螺牙镀镍 | 1 |            |        |
| 5  | 线材          | RG178 Cable,透明棕色外观        | 1 |            |        |
| 4  | PCB         | FR4;绿油                    | 1 | 501-1-1648 |        |
| 3  | 销钉          | POM;黑色                    | 2 |            |        |
| 2  | 下固定座        | PC+PBT;黑色                 | 1 |            |        |
| 1  | 杆套          | ABS;黑色                    | 1 |            |        |
| NO | DESCRIPTION |                           |   | Q'TY       | REMARK |

|                      |      |      |          |                                 |      |            |
|----------------------|------|------|----------|---------------------------------|------|------------|
| CUSTOMER'S SIGNATURE | XXX. | ±2.0 | APPROVED | CUSTOMER:                       |      |            |
|                      | XX.  | ±1.0 | CHECKED  | PART NO: TX0724T002             |      |            |
|                      | X.   | ±0.5 |          | PART NAME: 外置黑色天线(2.4G&5G&6G三频) |      |            |
|                      | .X   | ±0.3 |          | Z&X P/NO: 6001F00420            |      |            |
|                      | .XX  | ±0.2 | DRAWING  | REV                             | UNIT | FILE:      |
|                      | ⊕    | ⊖    | steven   | X3                              | mm   | SHEET: 1/1 |



## Antenna Test Report

TC100-WIFI 2.4G&5G&6G

## Data Preview

### WiFi1

| Freq  | Gain  | Effi   |
|-------|-------|--------|
| (MHz) | (dBi) | (%)    |
| 2400  | 2.4   | 56.60% |
| 2450  | 2.7   | 62.50% |
| 2500  | 2.1   | 57.50% |
| 5150  | 1.1   | 59.20% |
| 5250  | 1.2   | 57.90% |
| 5350  | 1.2   | 63.40% |
| 5450  | 1.1   | 61.00% |
| 5550  | 1.6   | 63.30% |
| 5650  | 1.9   | 67.90% |
| 5750  | 2.3   | 66.80% |
| 5850  | 2.6   | 65.70% |
| 5925  | 2.4   | 64.90% |
| 6025  | 2.6   | 67.50% |
| 6125  | 2.3   | 62.90% |
| 6225  | 1.5   | 59.80% |
| 6325  | 2.0   | 63.00% |
| 6425  | 1.6   | 59.40% |
| 6525  | 1.1   | 56.00% |
| 6625  | 2.2   | 61.60% |
| 6725  | 2.0   | 54.30% |
| 6825  | 1.8   | 52.00% |
| 6925  | 1.5   | 55.80% |
| 7025  | 1.0   | 54.70% |
| 7125  | 1.2   | 51.20% |

## WiFi2

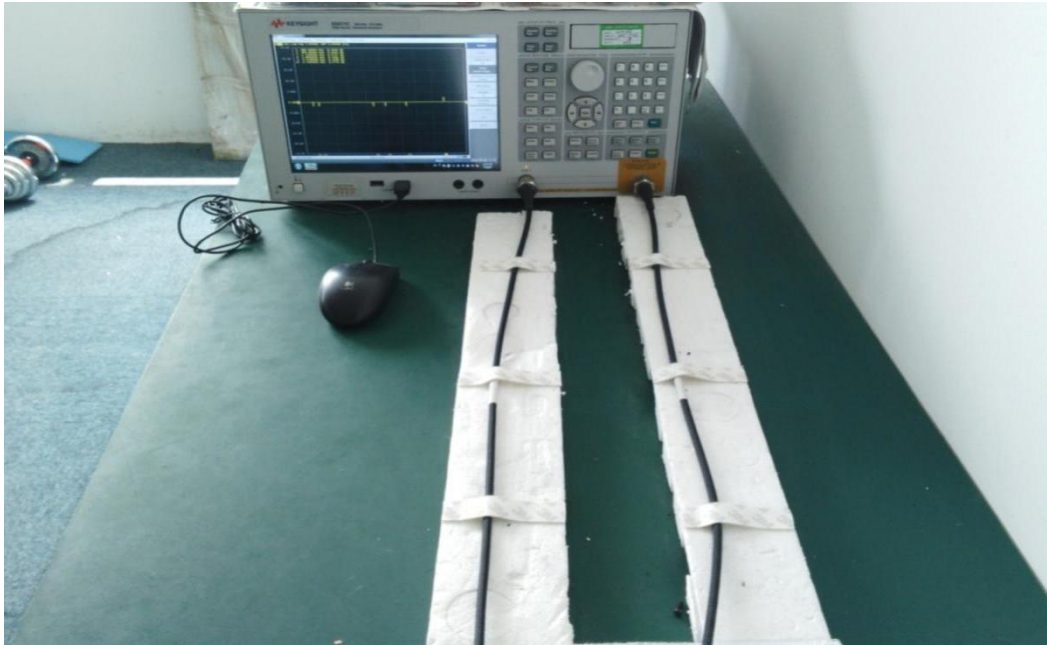
| Freq  | Gain  | Effi   |
|-------|-------|--------|
| (MHz) | (dBi) | (%)    |
| 2400  | 2.1   | 53.50% |
| 2450  | 2.0   | 58.80% |
| 2500  | 1.8   | 57.50% |
| 5150  | 1.3   | 65.40% |
| 5250  | 1.4   | 61.10% |
| 5350  | 1.8   | 65.30% |
| 5450  | 1.8   | 62.20% |
| 5550  | 2.2   | 66.70% |
| 5650  | 2.2   | 69.60% |
| 5750  | 2.2   | 65.40% |
| 5850  | 2.1   | 65.00% |
| 5925  | 1.7   | 60.80% |
| 6025  | 1.8   | 60.80% |
| 6125  | 1.2   | 54.00% |
| 6225  | 1.1   | 55.00% |
| 6325  | 1.2   | 55.50% |
| 6425  | 1.5   | 56.90% |
| 6525  | 0.5   | 57.30% |
| 6625  | 1.7   | 57.10% |
| 6725  | 1.3   | 56.20% |
| 6825  | 1.1   | 55.80% |
| 6925  | 0.6   | 53.80% |
| 7025  | 0.3   | 52.60% |
| 7125  | 0.2   | 50.90% |

## 1. RF Fixture Experiment

### 1.1 Test Setup

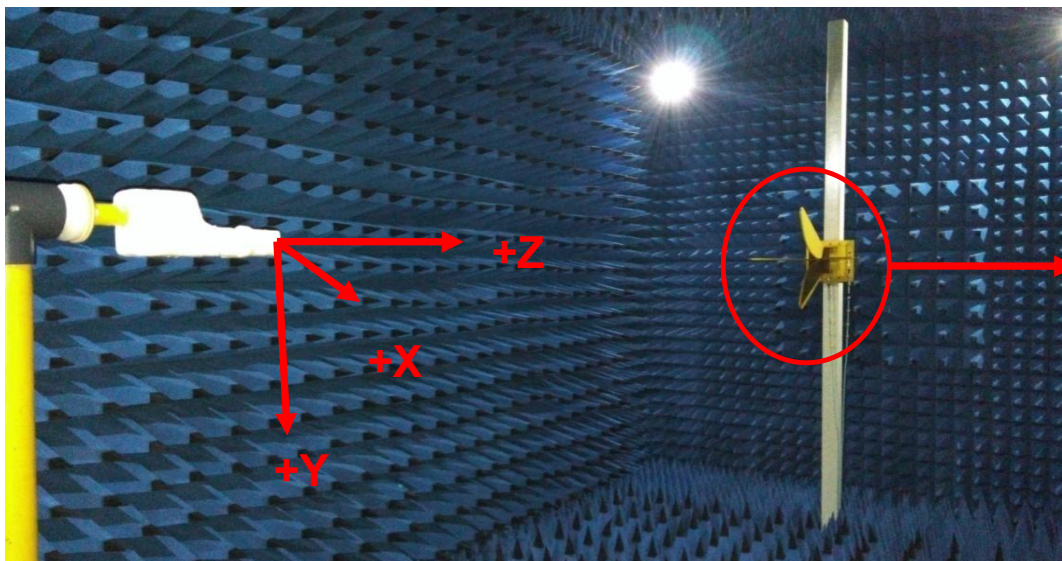
#### 1.1.1 VNA Test Setup

VSWR and Return Loss measurements (S11) were performed using an Keysight E5071C Network Analyzer. The isolation between antennas is also tested. The testing was performed with apparatus in free space.

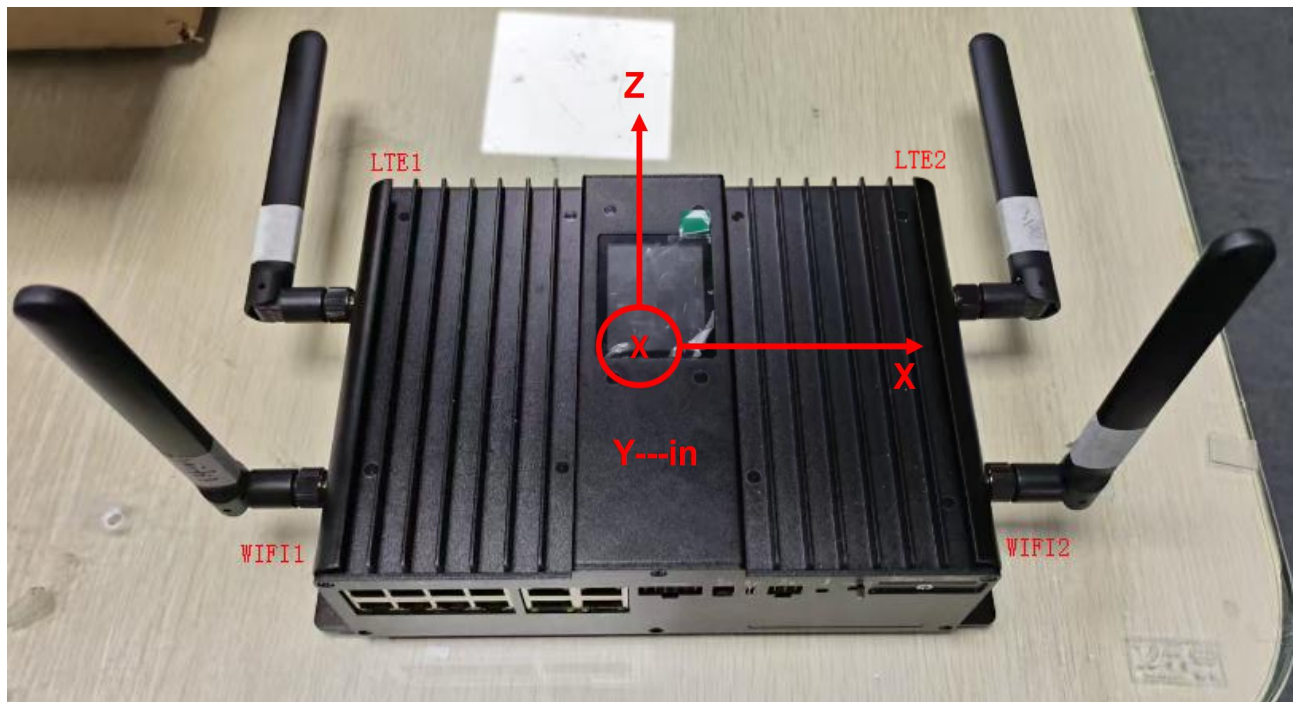


#### 1.1.2 Anechoic Chamber Test Setup

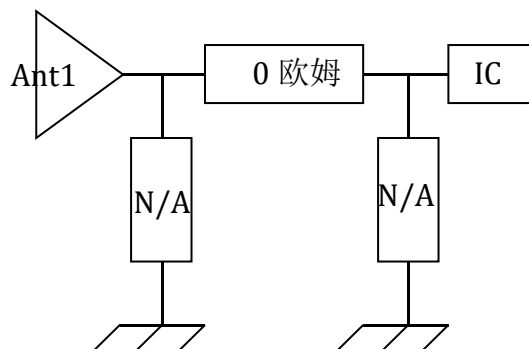
The gain of the antenna was measured in the anechoic chamber. The chamber provides less than  $-30$  dB reflectivity from 400 MHz through 6 GHz. The chamber size is: 7m\*4m\*3m. The measurement results are calibrated using a leaky wave horn standard. We can measure the antenna gain and efficiency accurately.



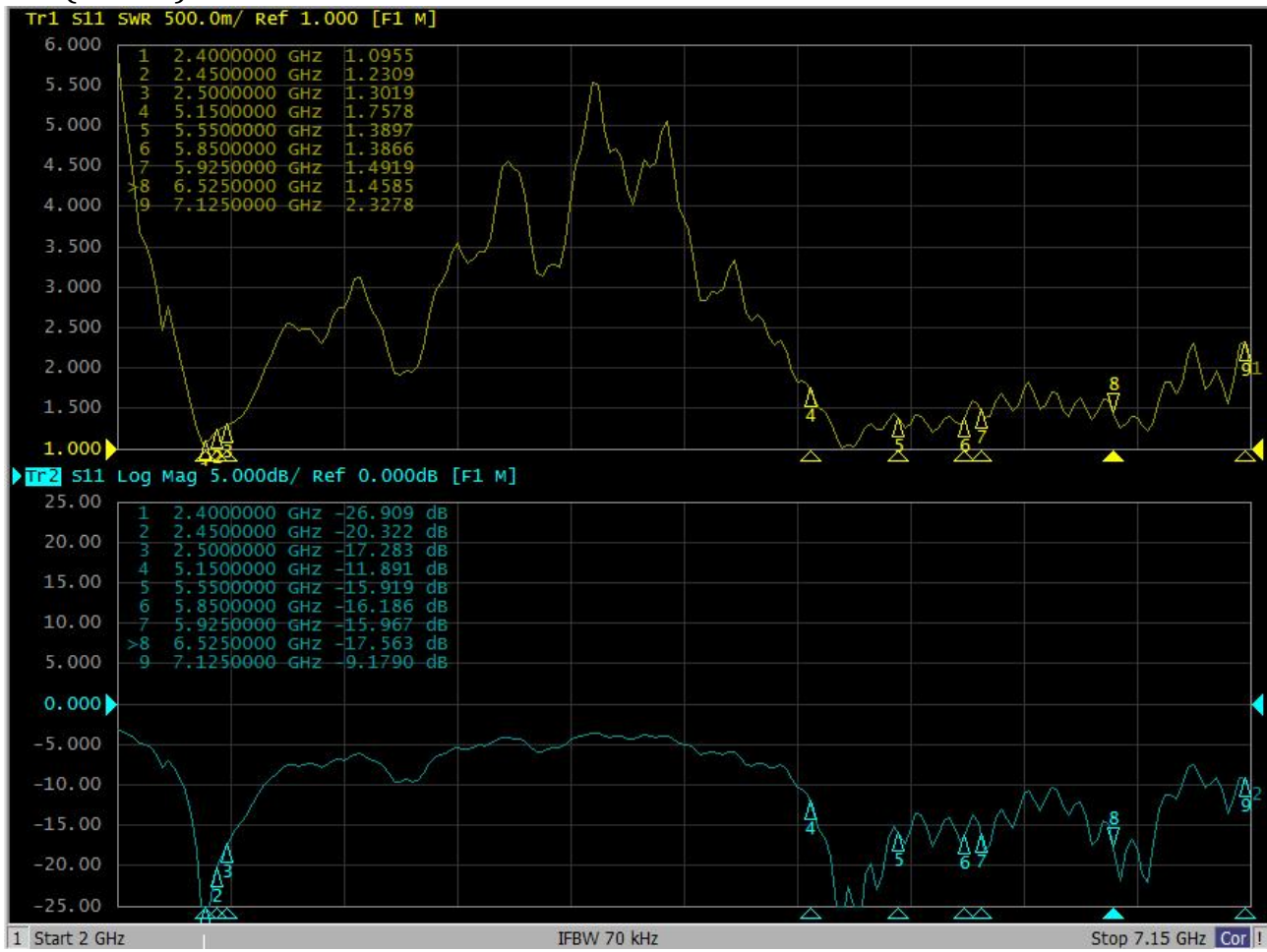
## 2. Antenna Solution



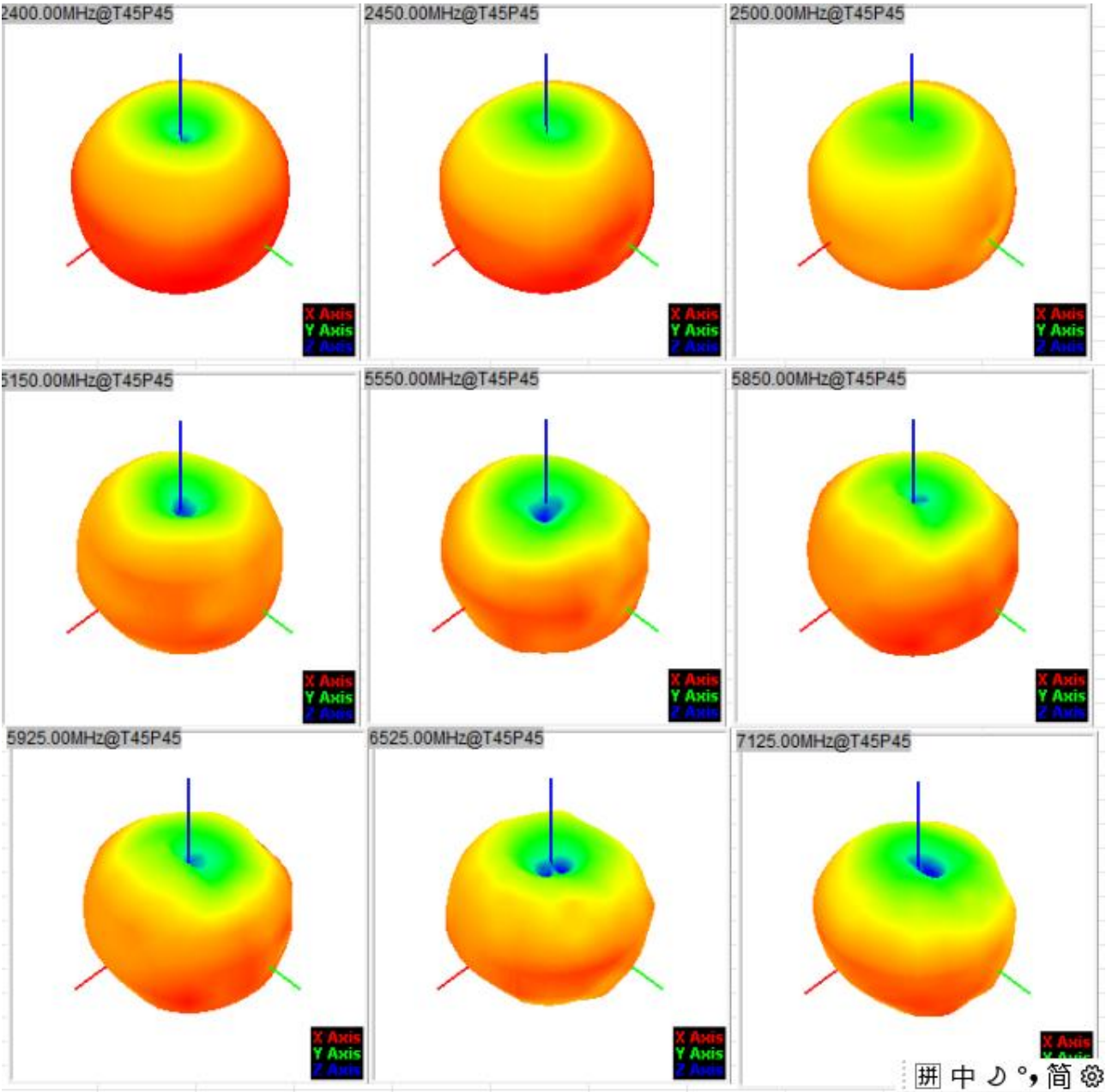
## 3. RF matching circuit for different antennas



## S11(WIFI1)

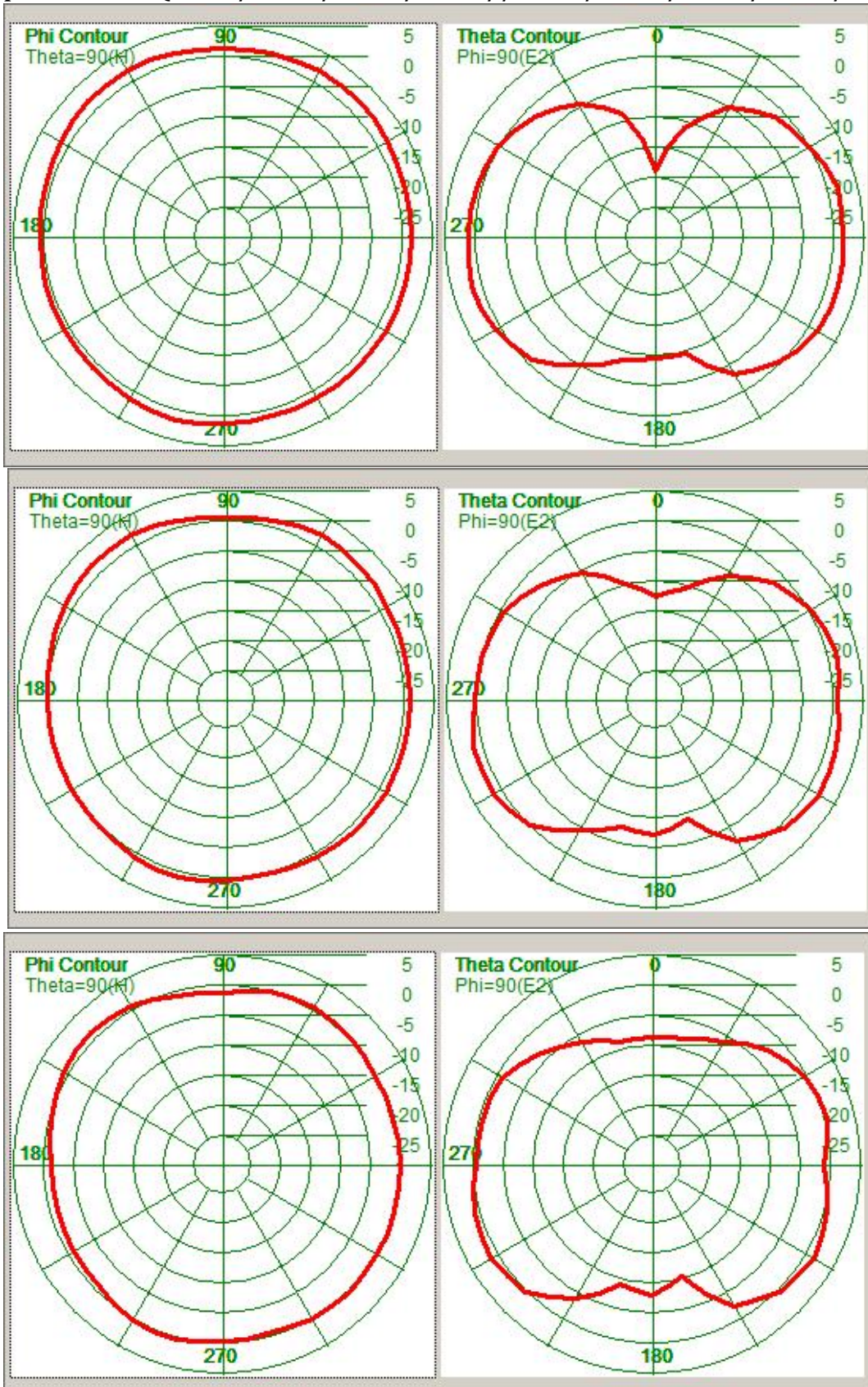


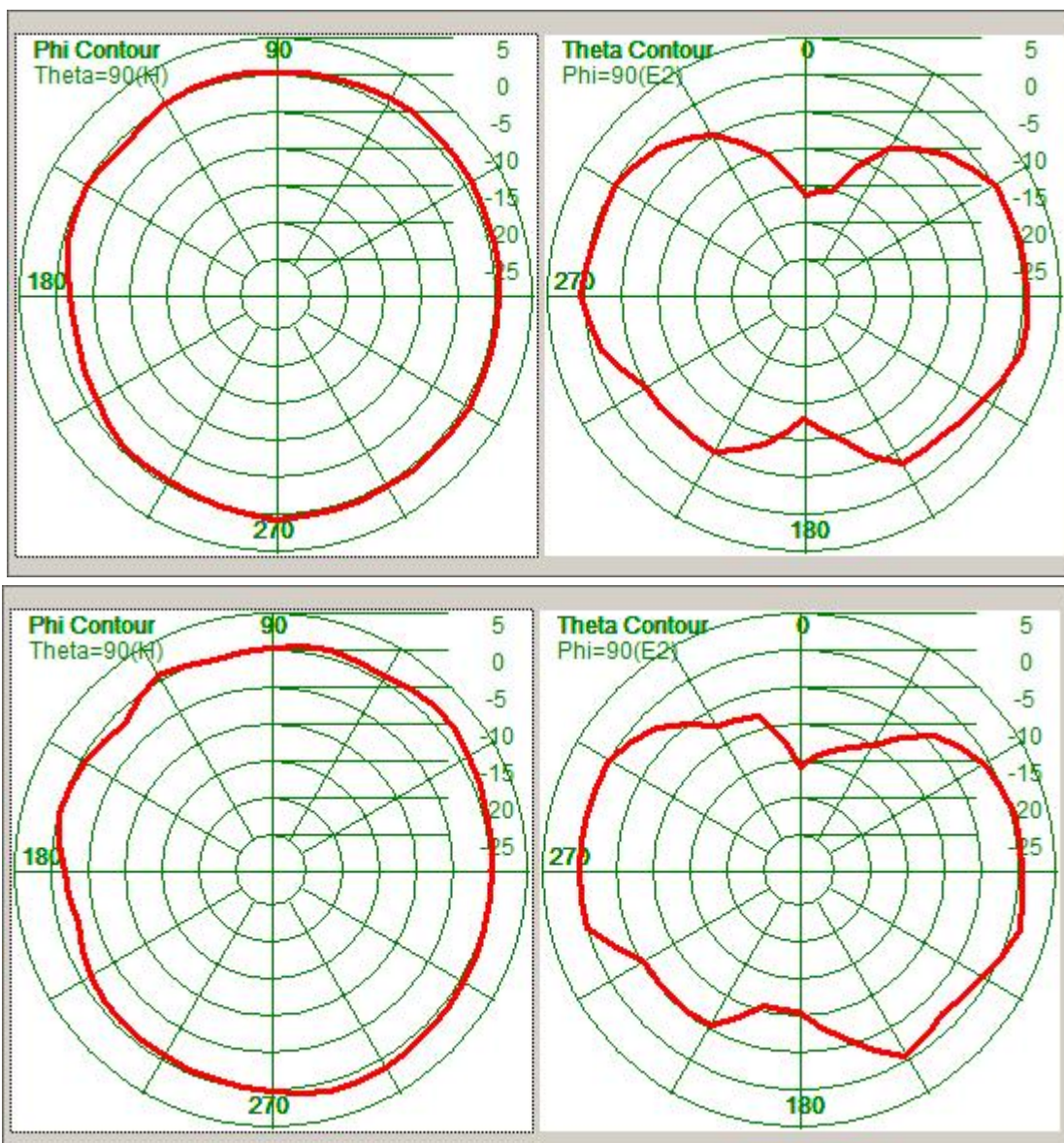
patterns:3D(2400/2450/2500/5150//5550/5850/5925/6525/7125MHz)



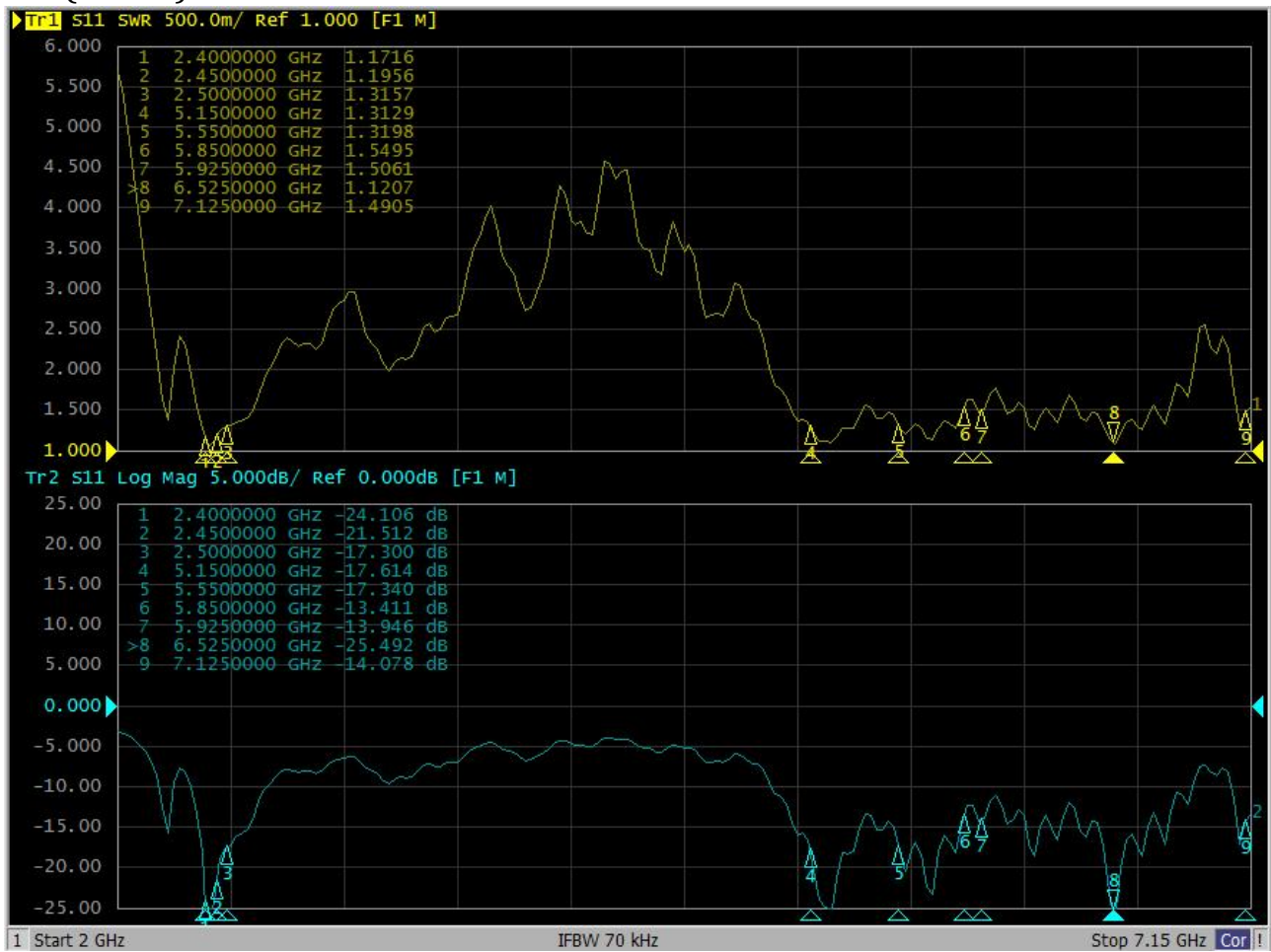
## Radiation

patterns:2D(2400/2450/2500/5150//5550/5850/5925/6525/7125MHz)

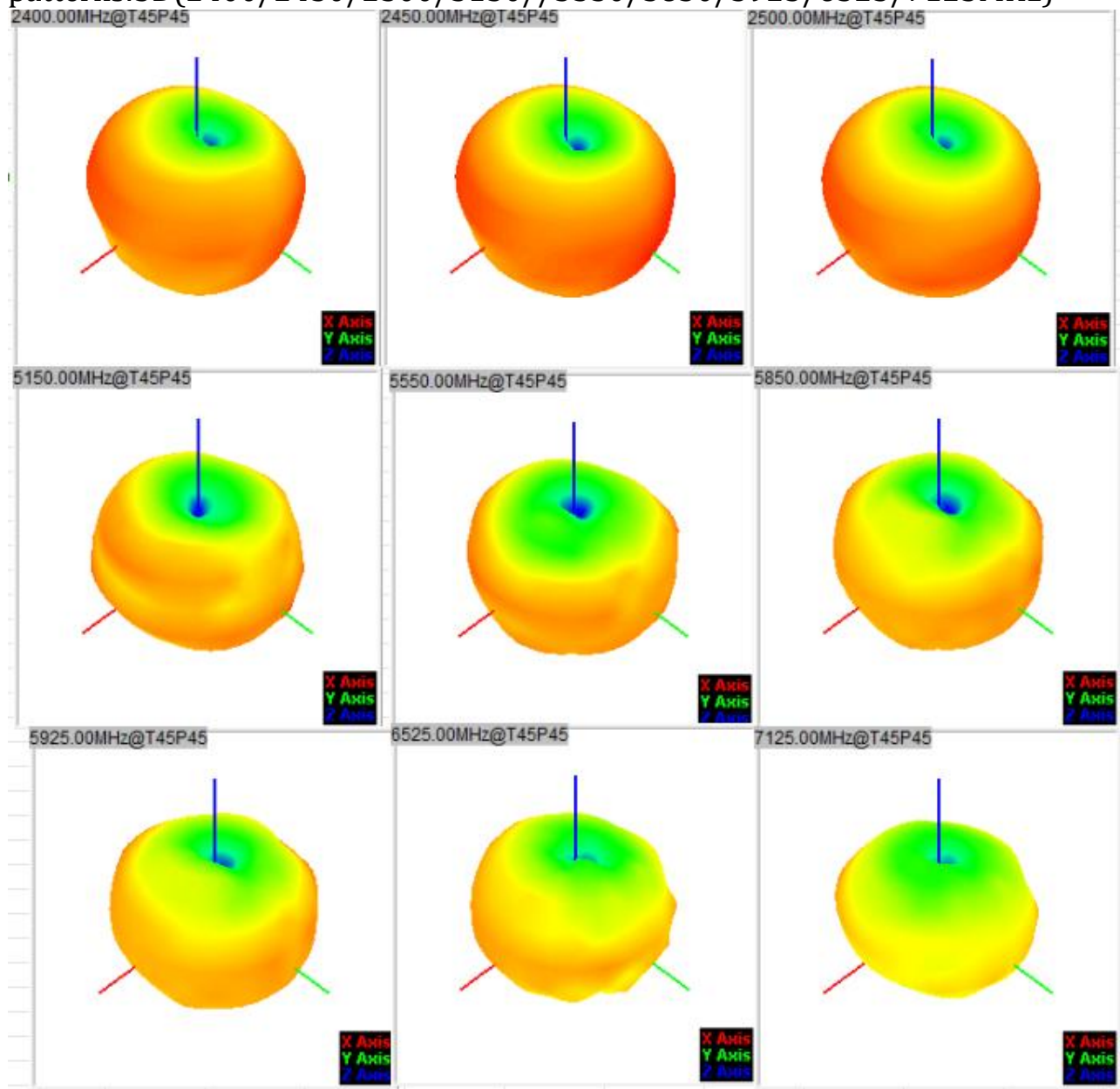




## S11(WIFI2)

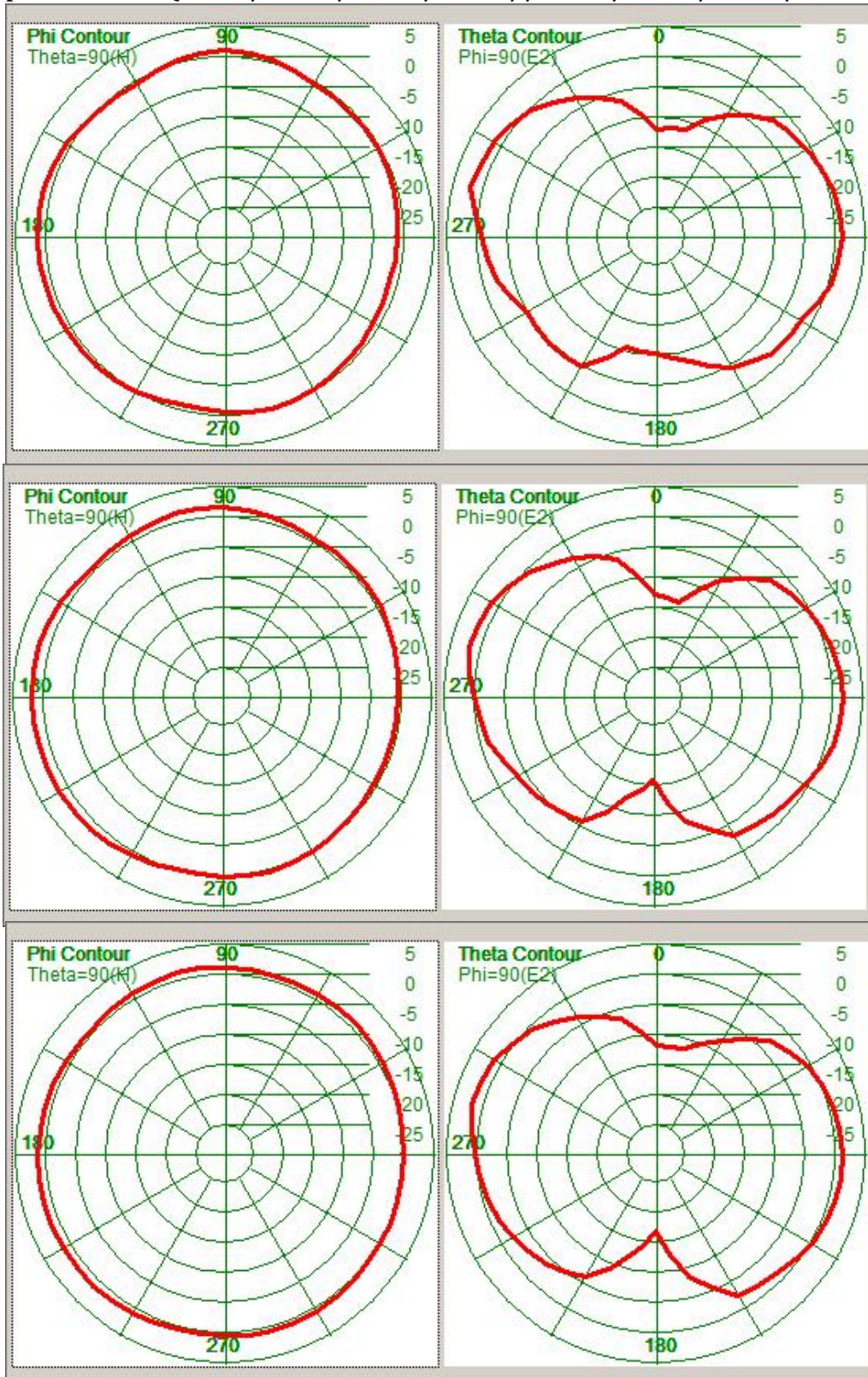


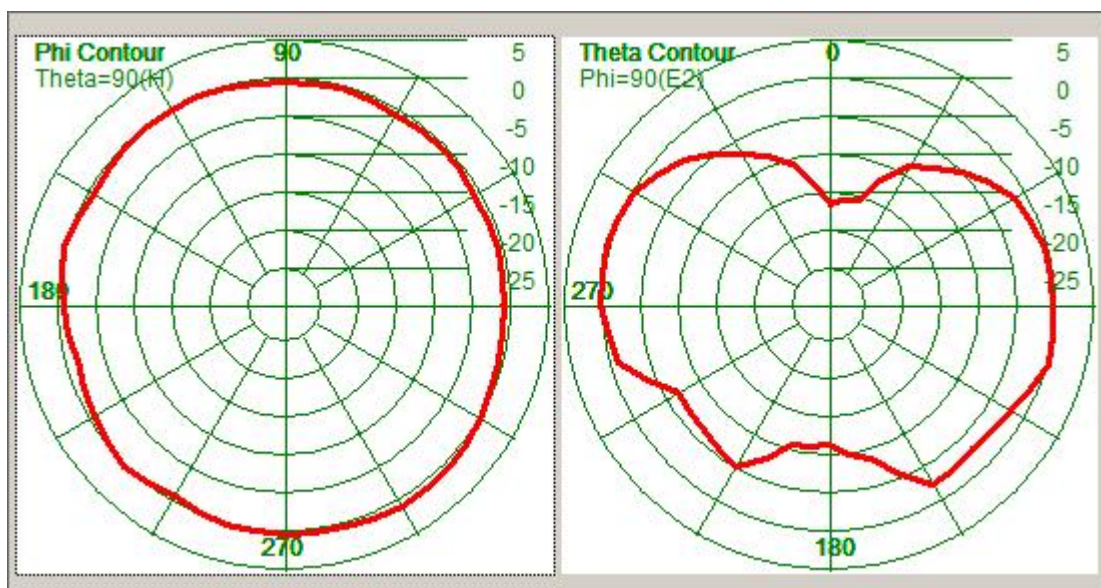
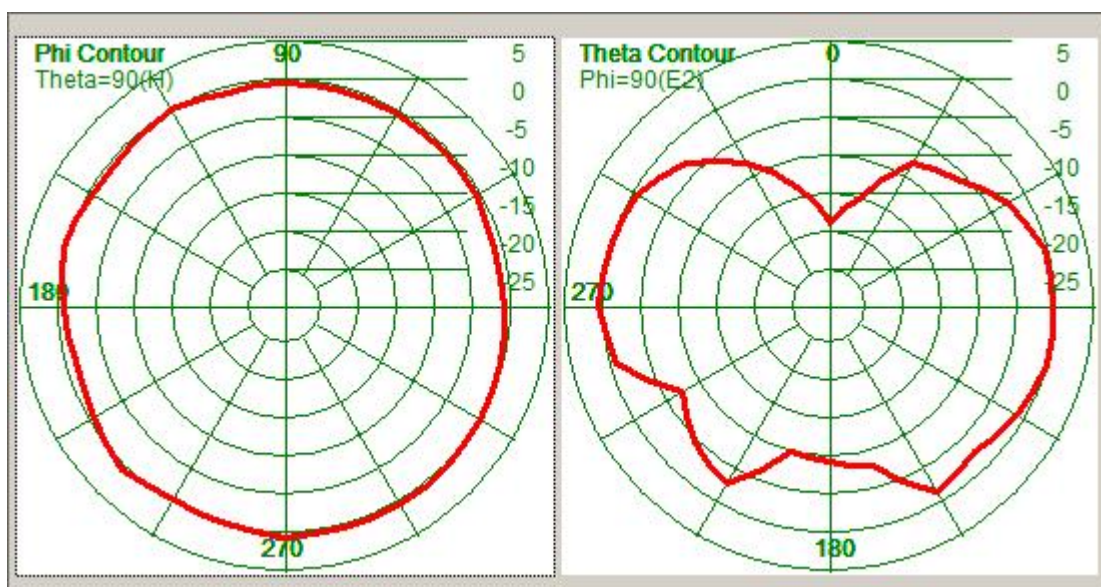
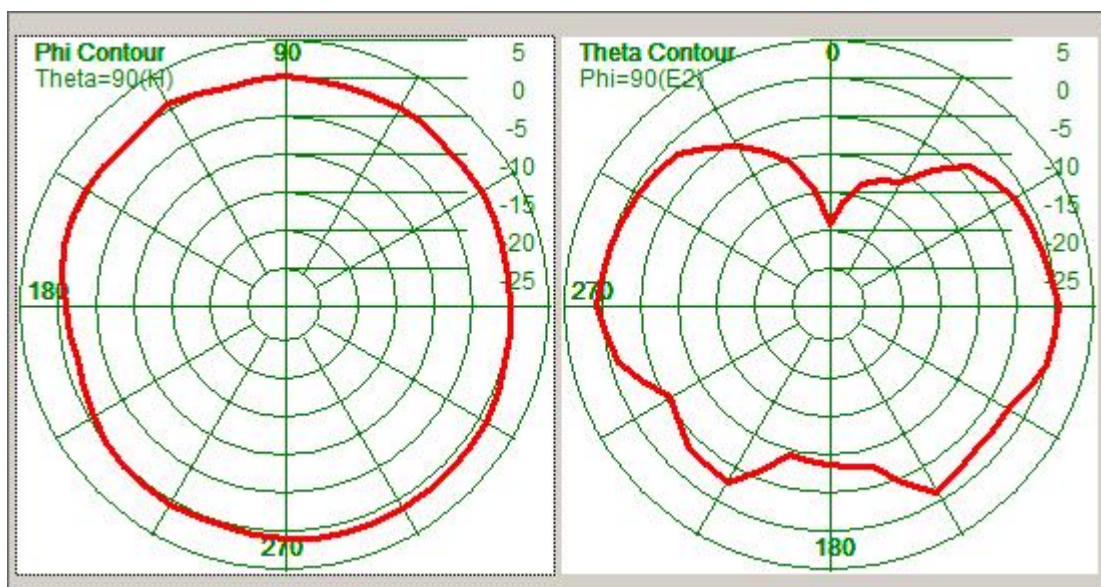
patterns:3D(2400/2450/2500/5150//5550/5850/5925/6525/7125MHz)



## Radiation

patterns:2D(2400/2450/2500/5150//5550/5850/5925/6525/7125MHz)





S21

