



# 深圳市联笙科技有限公司

ShengZhen LianSheng Technology Co.,Ltd.

## 规格承认书

### SPECIFICATION FOR APPROVAL

日期  
Date 2022/07/25

编号  
File No SA000898

版本  
Revision 1.0

客 户

乐生

CUSTOMER:

客户料号

W0200 L总=175MM

CUSTOMER NO:

品 名

WIFI Antenna

供方料号

LSP.A875.B113.01

送样日期 Date:

送样数量 Q"TY:

PCS

客户确认 CUSTOMER APPROVED BY

APPROVAL

CHIEF

SUPERVISOR

供方确认 SUPPLIER SIGNATURE

APPROVAL

CHECK

DESIGN

ChenGuoqiang

WenXue

ChenXingcheng

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Factory Add:Yuanfu Industrial Zone, No. 59, Muyu Road, Shatou community, Chang'an Town, Dongguan City

# 承认书项目表

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# 天线规格

## Antenna Specification

| Electrical Properties<br>电性能           |                  |
|----------------------------------------|------------------|
| Frequency ( 频率 )                       | 2.4-2.5GHz       |
| Impedance ( 阻抗 )                       | 50 Ohm Nominal   |
| V.S.W.R ( 驻波比 )                        | 2.0 Max          |
| Gain ( 增益 )                            | 4.3dBi           |
| Radiation ( 辐射方向 )                     | Omni-directional |
| Polarization ( 极化方式 )                  | Linear           |
| Physical Properties                    |                  |
| Connector ( 连接器 )                      | 1代IPEX           |
| Cable Type ( 线材类型 )                    | O.D.1.13mm       |
| Cable Length( 线长 )                     | 168mm            |
| Cable Color ( 线材颜色 )                   | Black            |
| Operating Temp.( 工作温度 )                | -40 ~ +85 °C     |
| Storage Temp / Humidity<br>( 储存温度/湿度 ) | 25±5°C / <70%    |

# Antenna Performance Test 天线性能测试

设备:网络分析仪

品牌:安捷伦

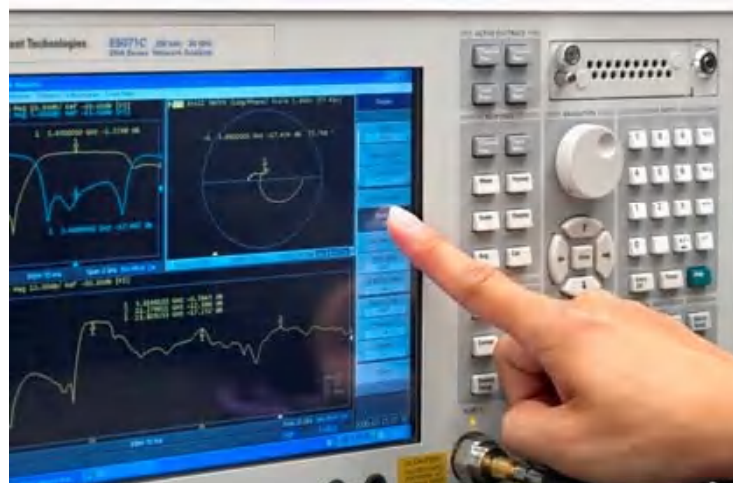
型号:E5071B

Equipment:

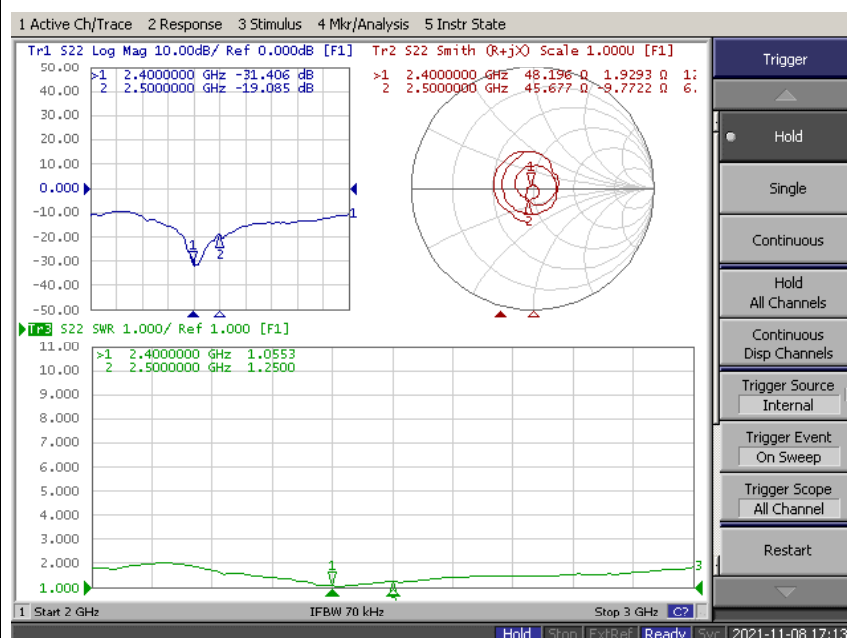
Network analyzer

Brand:Agilent

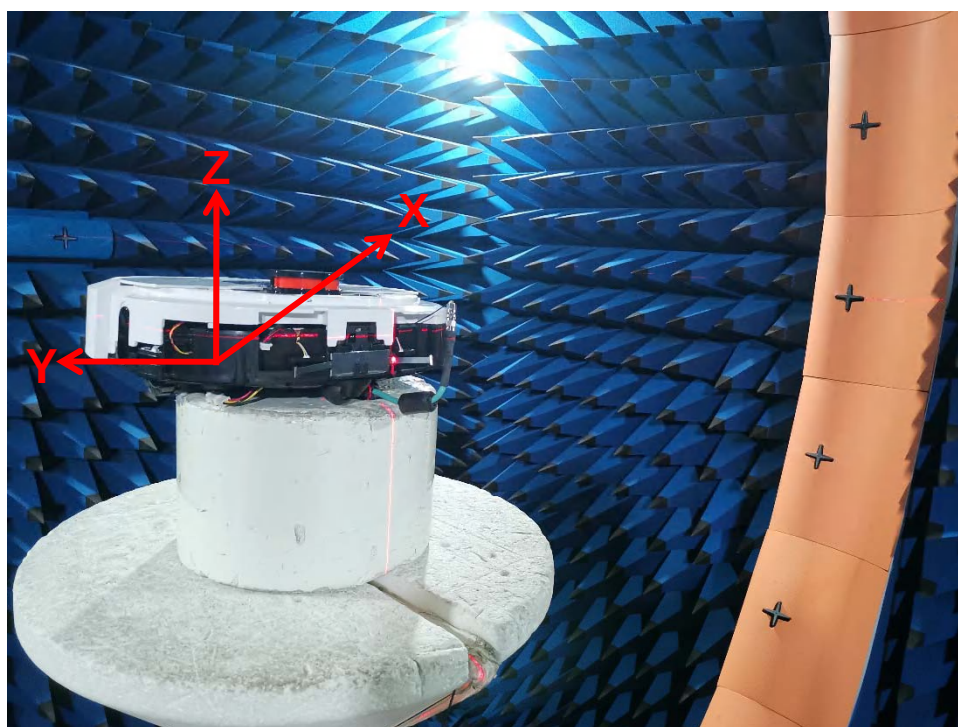
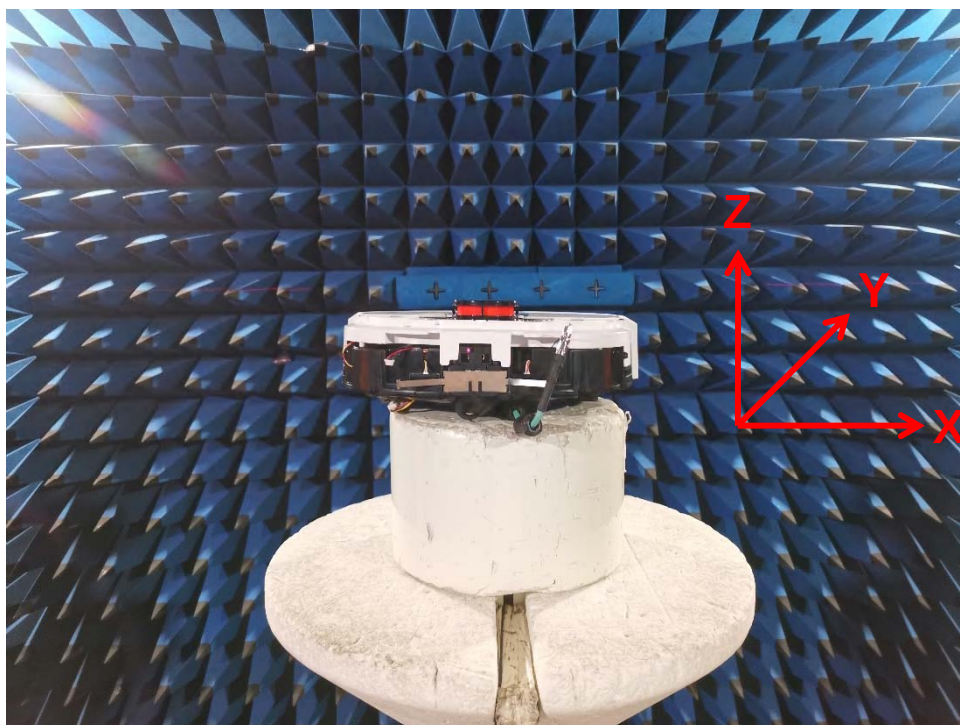
Model:E5071B



***S11***  
***Parameter***  
***Test //***  
***WIFI***  
***Antenna***



# *Antenna Passive Test* 天线无源测试



设备：多探头OTA测量系统

品牌：星航物联

型号：MPS2450

Equipment:

OTA measurement system

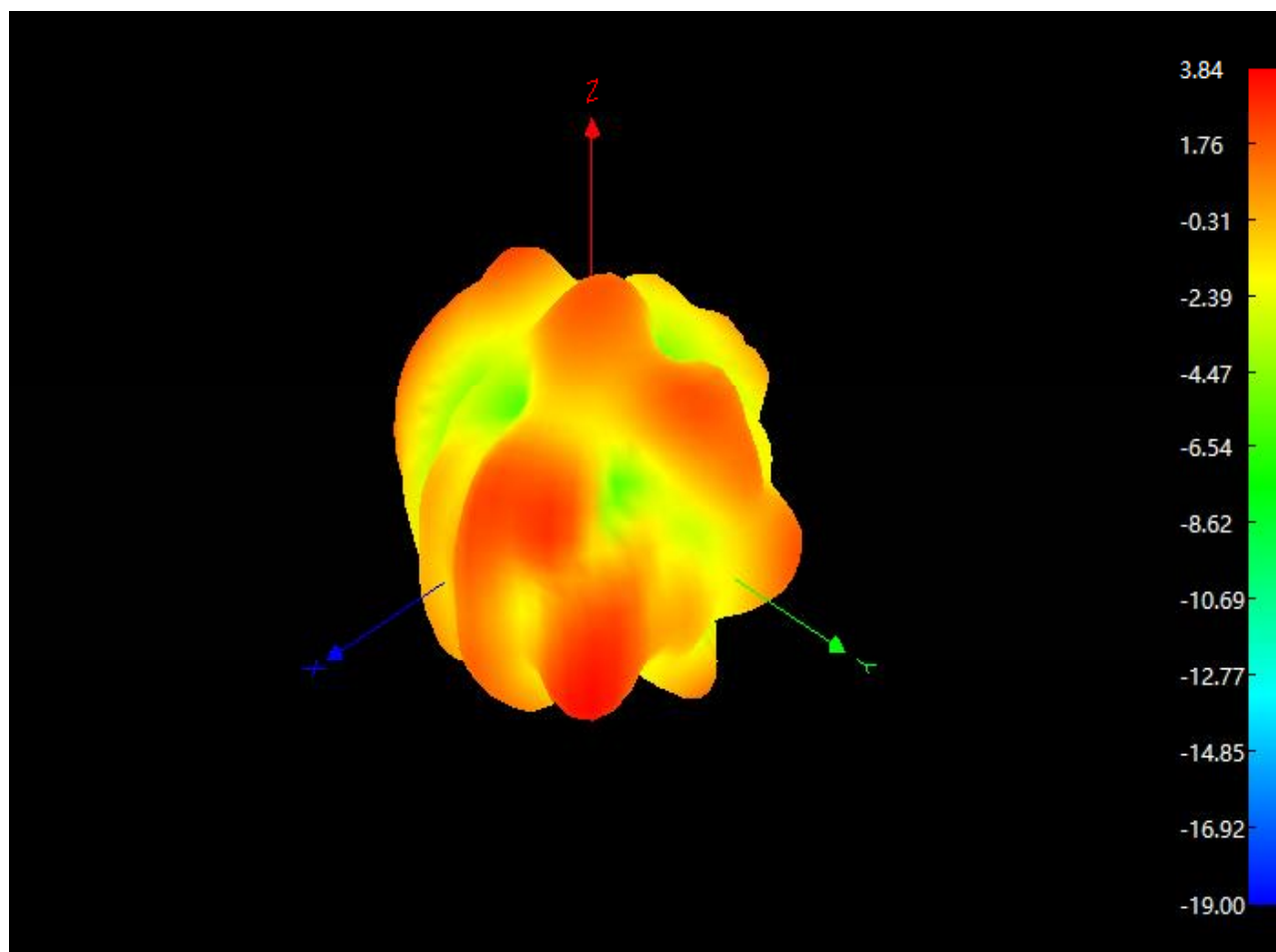
Brand: XH-IOE

Model: MPS2450

| Passive Test For WiFi Antenna(2.4G)<br>WIFI天线无源测试 |                    |                     |                     |
|---------------------------------------------------|--------------------|---------------------|---------------------|
| Freq( 频率 )<br>(MHz)                               | Effi ( 效率 )<br>(%) | Effi ( 效率 )<br>(dB) | Gain( 增益 )<br>(dBi) |
| 2400                                              | 60.7               | -2.2                | 3.3                 |
| 2410                                              | 60.7               | -2.2                | 3.4                 |
| 2420                                              | 61.1               | -2.1                | 3.4                 |
| 2430                                              | 60.8               | -2.2                | 3.6                 |
| 2440                                              | 58.9               | -2.3                | 3.4                 |
| 2450                                              | 61.2               | -2.1                | 3.8                 |
| 2460                                              | 59.8               | -2.2                | 3.9                 |
| 2470                                              | 61.0               | -2.2                | 4.1                 |
| 2480                                              | 59.4               | -2.3                | 4.1                 |
| 2490                                              | 61.7               | -2.1                | 4.3                 |
| 2500                                              | 58.8               | -2.3                | 4.1                 |

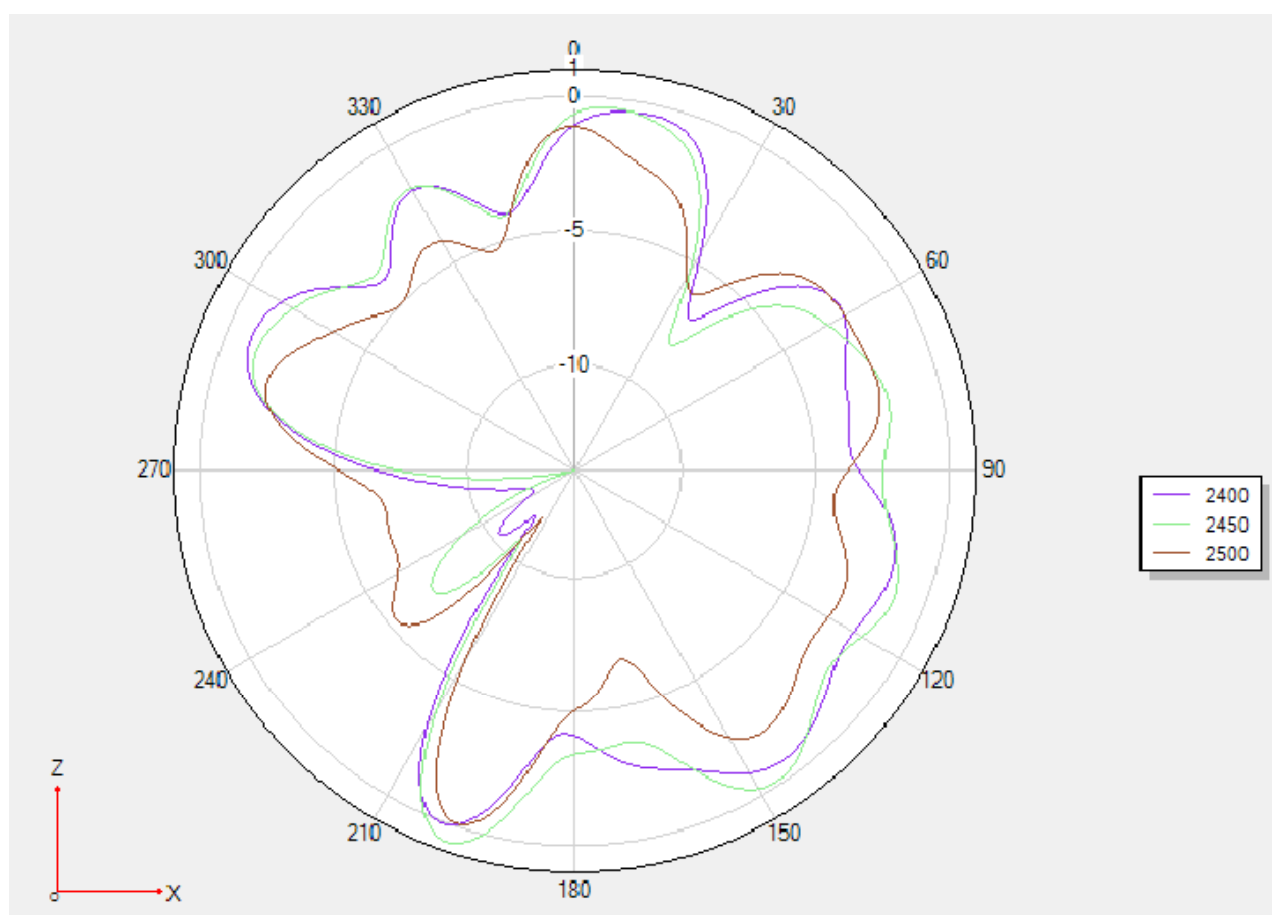
## Radiation Pattern For WIFI Antenna(2450MHz)

### WIFI天线辐射图



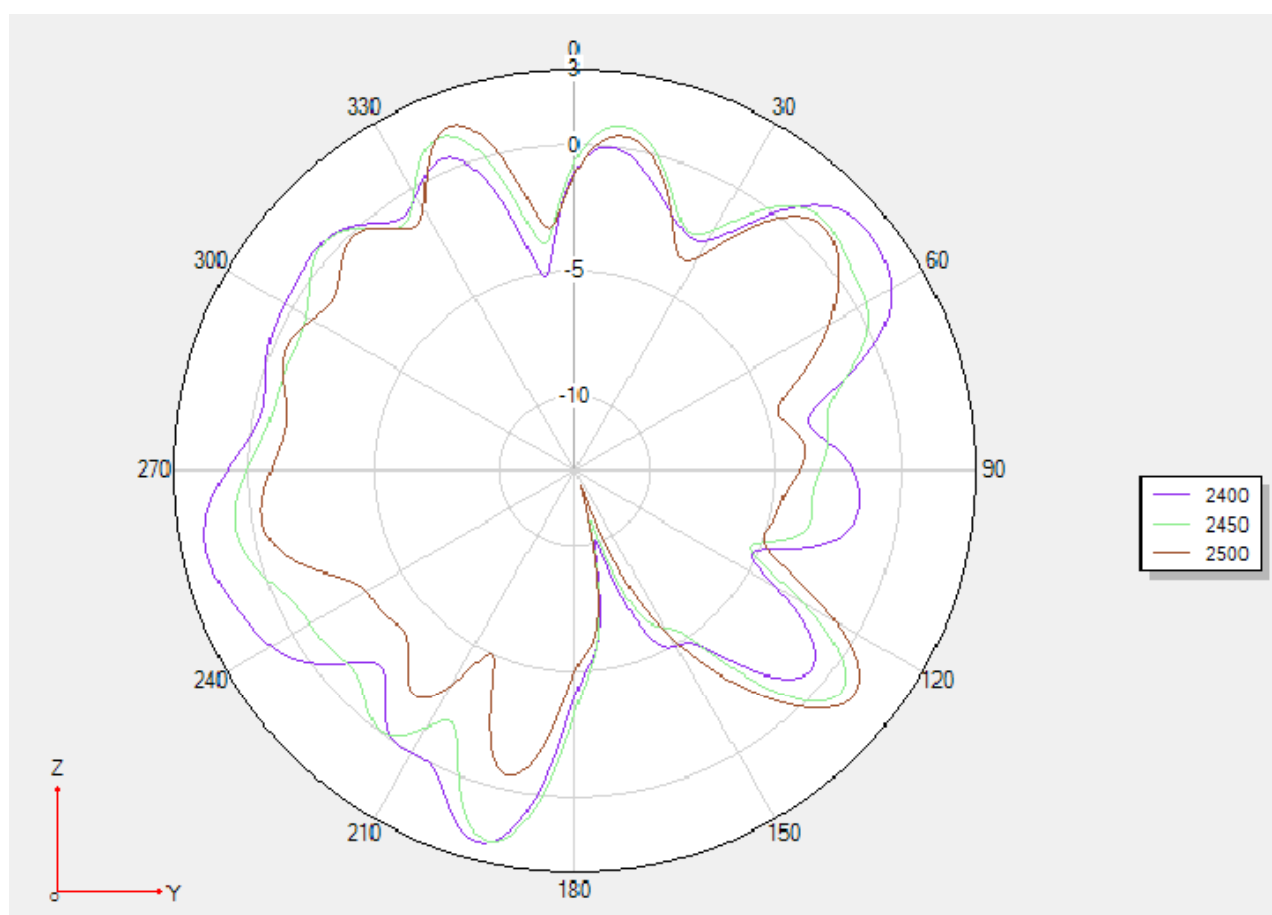
## Radiation Pattern For WIFI Antenna(Phi 0)

### WIFI天线辐射图



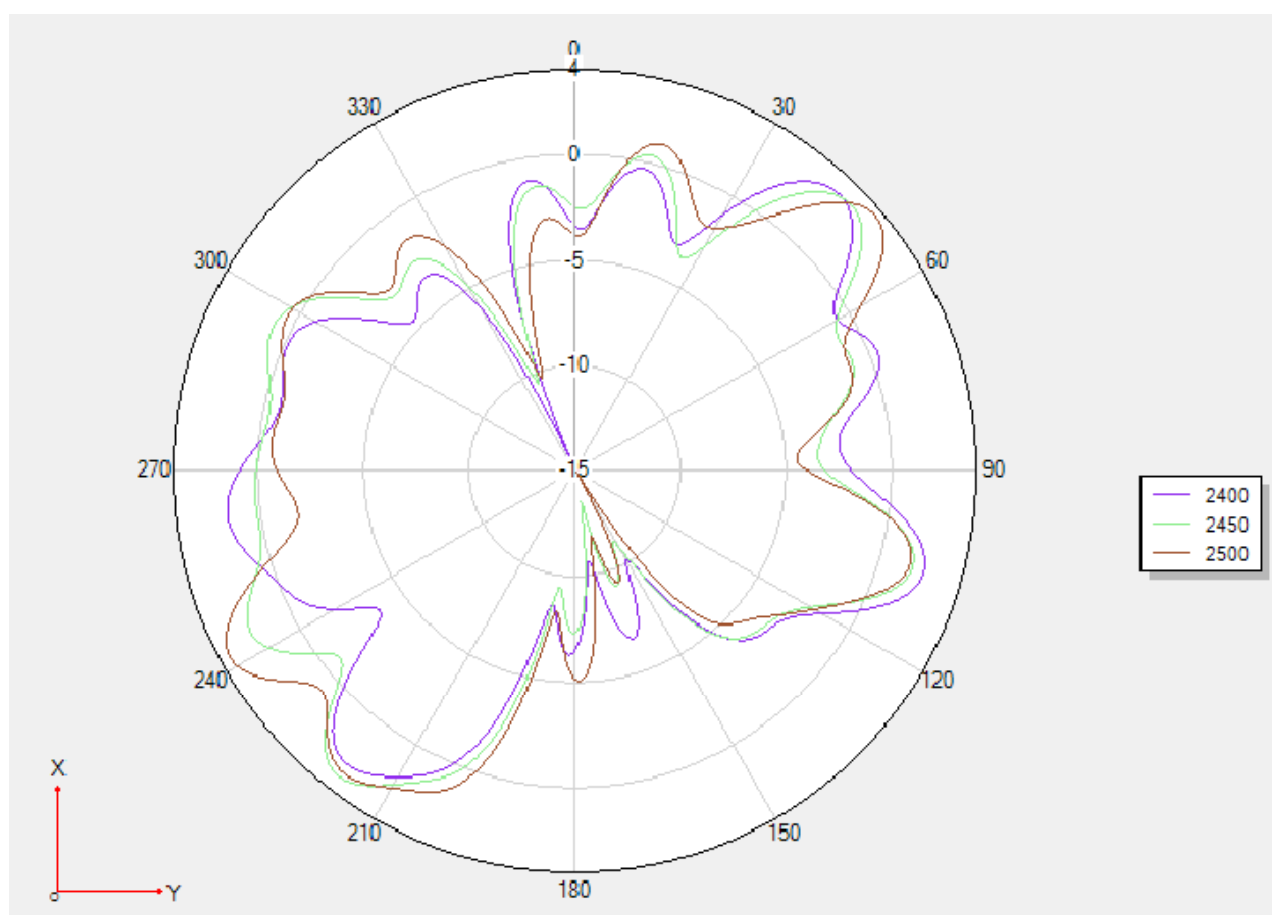
## Radiation Pattern For WIFI Antenna(Phi 90)

### WIFI天线辐射图

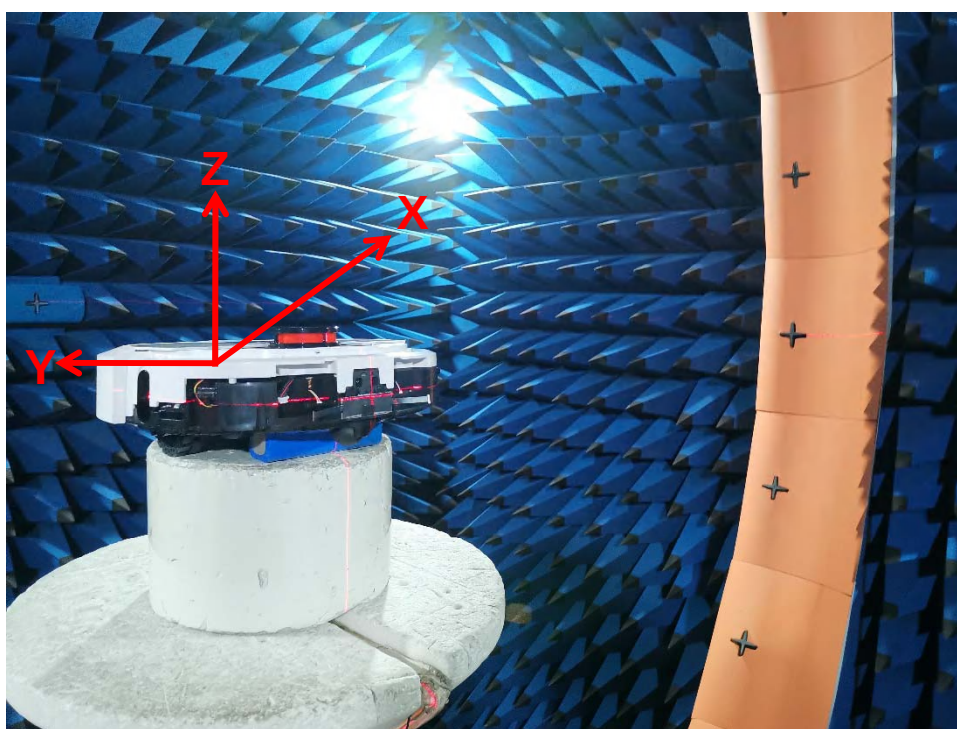
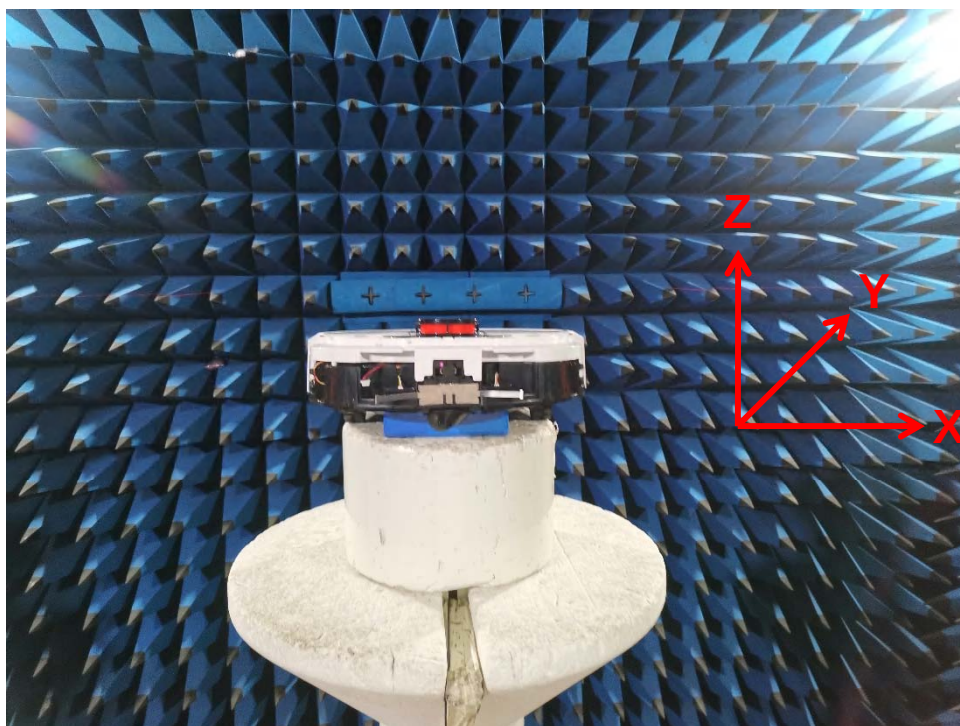


## Radiation Pattern For WIFI Antenna(Theta 90)

### WIFI天线辐射图



## *Antenna Active Test* 天线有源测试



| Active Test For WIFI Antenna<br>天线有源测试 |               |                 |           |                 |            |
|----------------------------------------|---------------|-----------------|-----------|-----------------|------------|
| Band<br>波段                             | Channel<br>通道 | Data Rate<br>速率 | TRP<br>功率 | Data Rate<br>速率 | TIS<br>灵敏度 |
| WIFI 2.4G<br>802.11b                   | 1             | 11Mbps          | 12.9      | 11Mbps          | -79.1      |
|                                        | 6             |                 | 12.7      |                 | -84.0      |
|                                        | 11            |                 | 12.2      |                 | -80.1      |
| WIFI 2.4G<br>802.11g                   | 1             | 6Mbps           | 9.1       | 54Mbps          | -70.9      |
|                                        | 6             |                 | 9.0       |                 | -67.8      |
|                                        | 11            |                 | 8.5       |                 | -65.9      |
| WIFI 2.4G<br>802.11n                   | 1             | 6.5Mbps         | 9.7       | 65Mbps          | -59.9      |
|                                        | 6             |                 | 9.0       |                 | -62.0      |
|                                        | 11            |                 | 8.5       |                 | -63.5      |

WIFI Antenna

