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深圳泓德致新科技有限公司

Shenzhen Hongde Zhixin Technology Co., LTD

Ruishang Times

WiFi 天线规格书

WiFi Antenna Specification sheet

|                                                               |                           |              |                       |                     |
|---------------------------------------------------------------|---------------------------|--------------|-----------------------|---------------------|
| Xintu Electronics:Shenzhen Ruishang Times Technology Co., LTD |                           |              | Project Name: 2.4/5.8 |                     |
| Frequency band: WiFi/BT Date                                  |                           | May 15, 2025 |                       | Version: R:A        |
| Research and development                                      | structure: Zhuge Chong    |              |                       | Approval: Zhang Lin |
|                                                               | Radio Frequency: Sun Jian |              |                       |                     |
| Customer Audit:                                               |                           |              | Customer approval     |                     |

HDZX-X100MA-WIFI-1 WIFI 天线 黑色线长 L=140MM 1 代端子

**HDZX-X100MA-WIFI-1 WIFI antenna, black wire  
length L=140MM, first-generation terminal**

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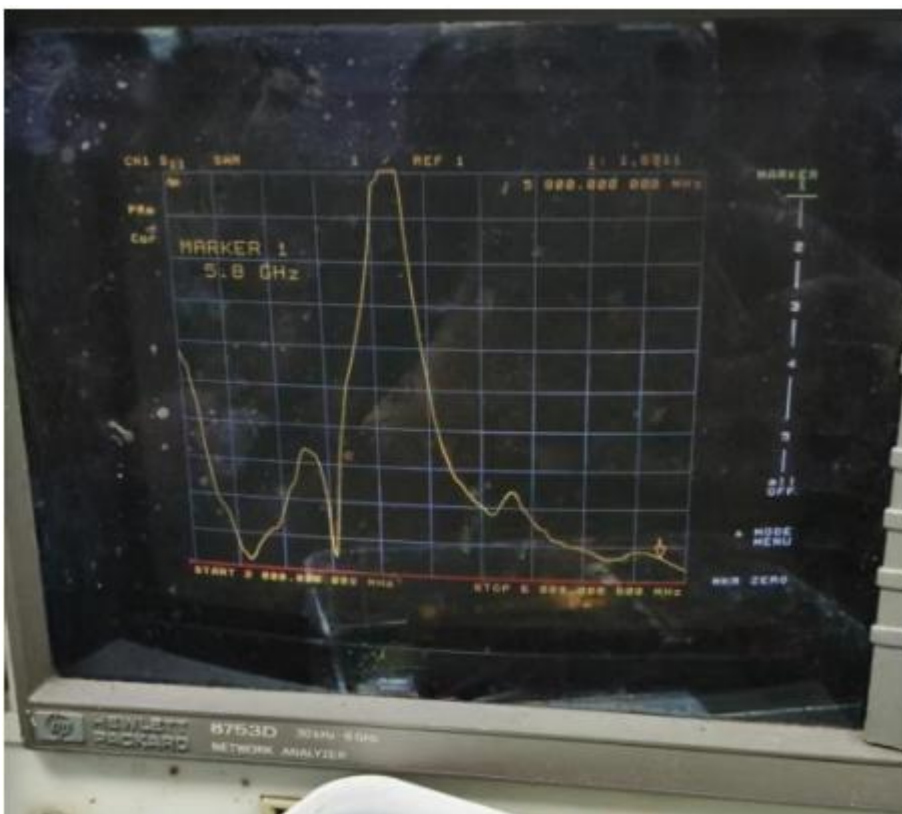
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## 1. Project information and Electrical Specification

*Those specifications were specially defined for WIFI/BT model, and all characteristics were measured under the model's handset testing jig .*

1-1 Project picture



1-2 Frequency Band:

| Frequency Band | MHz                 |
|----------------|---------------------|
| WiFi/BT 频率     | 2380-2500 4900~5800 |
| 天线增益           | 1.55dbi             |
| 天线最大功率         | 16.38dbi            |
| 调试类别           | 同轴线+FPC 焊接          |

|        |        |
|--------|--------|
| 无线通讯标准 | 802.11 |
|--------|--------|

|                                 |                      |
|---------------------------------|----------------------|
| Frequency Band                  | MHz                  |
| WFi/BT Frequency                | 2380-2500 4900~5800  |
| Antenna Gain                    | 1.5db                |
| Antenna Maximum Power           | 16.38dbi             |
| Debugging category              | Coaxial +FPC welding |
| Wireless communication standard | 802.11               |

### 1-3 Impedance matching

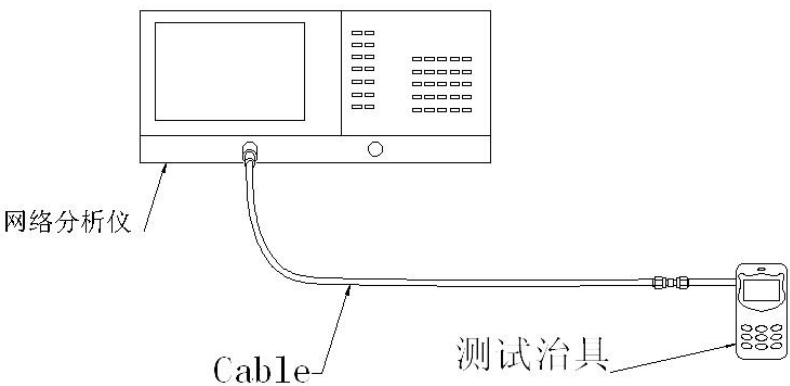
天线原匹配

## 2.VSWR

### 2-1 Measuring Method:

1. A  $50\ \Omega$  coaxial cable is connected to the antenna. Then this cable is connected to a network analyzer to measure the VSWR,
2. Keeping this jig away from metal at least 20cm.

测试示意图如下:



### 2-2 S11 parameter values

|                    |      |      |      |
|--------------------|------|------|------|
| 频率 (MHZ) frequency | 2400 | 5500 | 5800 |
| 驻波 standing wave   | 1.2  | 1.5  | 1.5  |

## 2. Efficiency and Gain

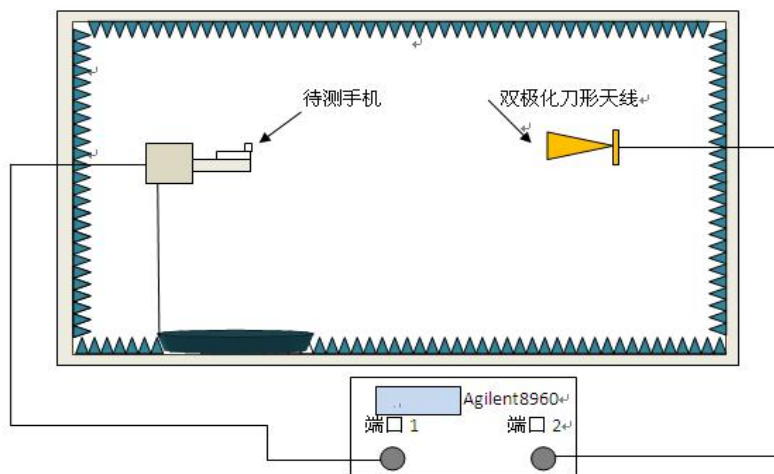
### 3.\*measuring and test instruments:

Microwave anechoic chamber, Agilent network analyzer, Agilent spectrum analyzer, 8960 comprehensive tester, standard antenna

### \*test method:

| Passive       |             |              |               |               |            |
|---------------|-------------|--------------|---------------|---------------|------------|
| Freq<br>(MHz) | Effi<br>(%) | Effi<br>(dB) | Gain<br>(dBi) | Gain<br>(dBd) | UHS<br>(%) |
| 2400          | 53.85       | -2.45        | 1.4           | -0.78         | 25.212     |
| 2410          | 55.52       | -2.18        | 1.55          | -0.6          | 26.983     |
| 2420          | 57.05       | -2.44        | 1.26          | -0.89         | 25.56      |
| 2430          | 54.82       | -2.61        | 0.92          | -1.23         | 24.707     |
| 2440          | 57.04       | -2.44        | 1.06          | -1.09         | 25.763     |
| 2450          | 56.51       | -2.48        | 0.86          | -1.29         | 25.667     |
| 2460          | 58          | -2.37        | 0.91          | -1.24         | 26.474     |
| 2470          | 56.03       | -2.52        | 0.73          | -1.42         | 25.757     |
| 2480          | 60.48       | -2.18        | 1.07          | -1.08         | 27.859     |
| 2490          | 60.58       | -2.18        | 1.17          | -0.98         | 28.028     |
| 2500          | 59.5        | -2.25        | 1.08          | -1.07         | 27.599     |

The equipment is placed at the center of the turntable on the H plane and fixed, on the same horizontal line as the center of the horn antenna



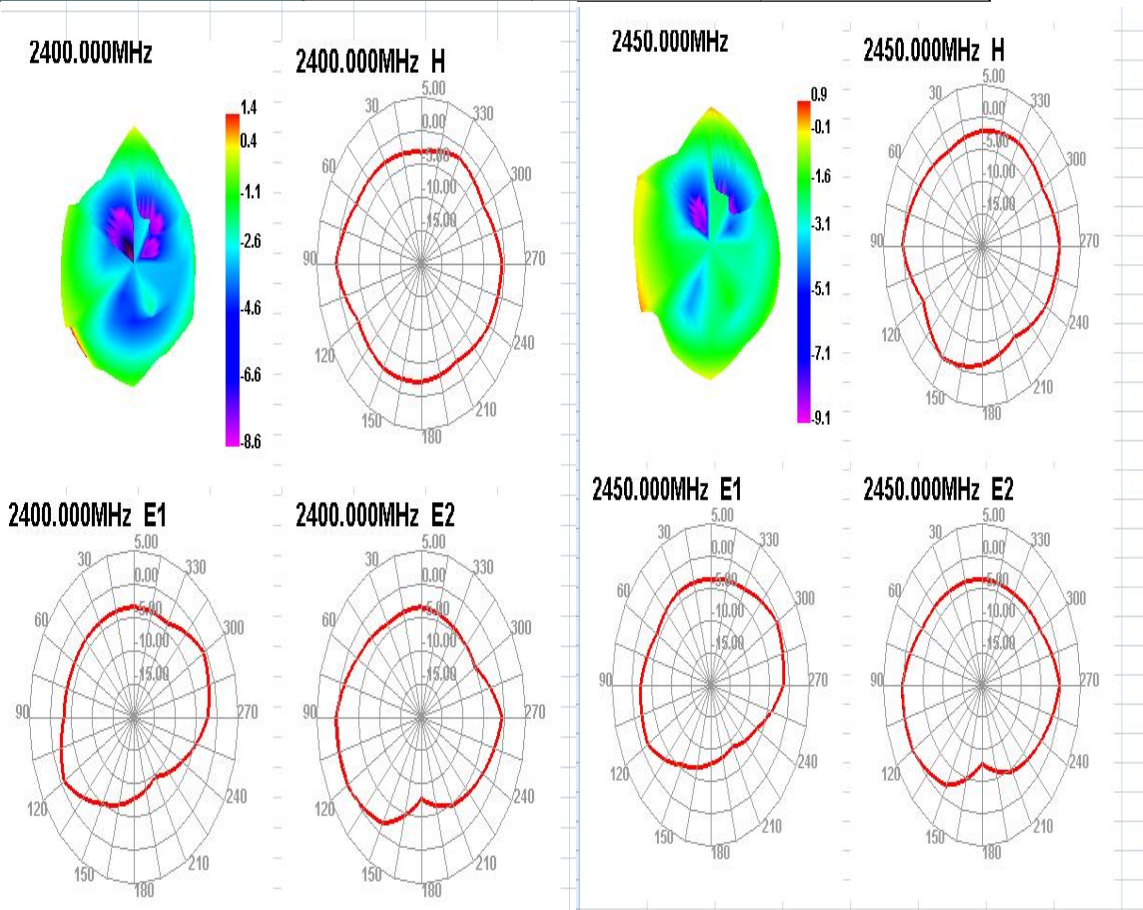
### 3-1 Efficiency/Peak Gain-

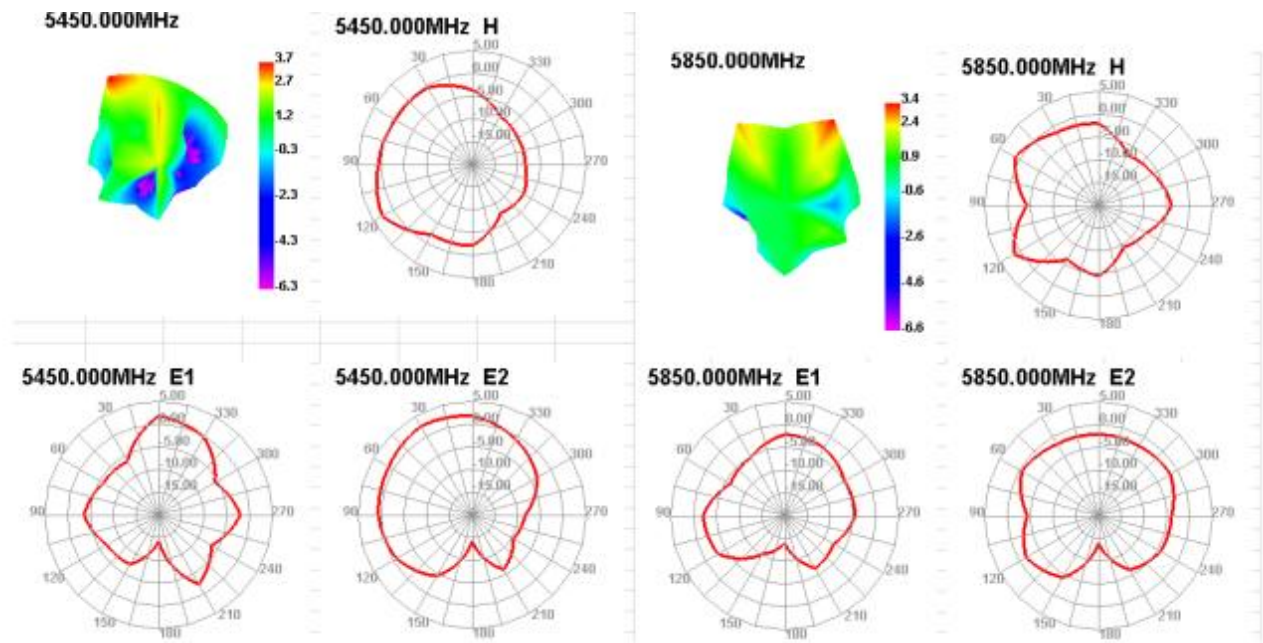
2. 4G

| Test            | 802.11B, Wifi 2.4G 11M |        |        |
|-----------------|------------------------|--------|--------|
| Result          | 12                     | 6      | 1      |
| Frequency (MHz) | 2467                   | 2437   | 2412   |
| TRP (dBm)       | 12.83                  | 12.96  | 13.69  |
| TIS (dBm)       | -81.21                 | -81.57 | -82.32 |

5. 8G

| Test            | 802.11A, Wifi 5, 8G 54M |        |        |
|-----------------|-------------------------|--------|--------|
| Result          | 36                      | 149    | 161    |
| Frequency (MHz) | 5180                    | 5745   | 5805   |
| TRP (dBm)       | 12.23                   | 12.36  | 12.89  |
| TIS (dBm)       | -71.01                  | -71.07 | -71.32 |





#### 4. The production index

When antennas are mass-produced, the standing wave ratio is used as the mass production test standard. Based on the differences of the projects themselves, the following standards are provided

| 频率                     | 量产标准                         |
|------------------------|------------------------------|
| WIFI /BT(2400-2500MHZ) | VSWR (量产产品) < VSWR(设计样品)+0.5 |

