

Shenzhen Yishengbang Technology Co., Ltd Antenna Test Report

Customer.: Sichuan AI-Link Technology Co., Ltd

Product: WIFI+BT Antenna Report date: 2024.1.8

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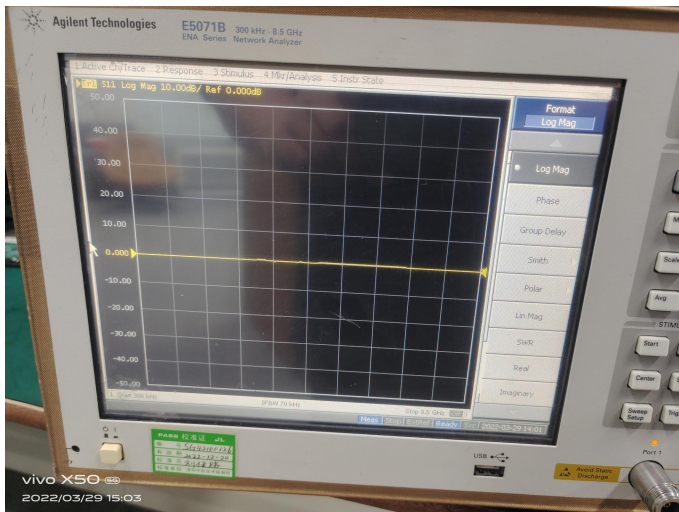
Purpose

This report is to measure the performance of SLK for Master Antenna . All measure data are showed below.

Content

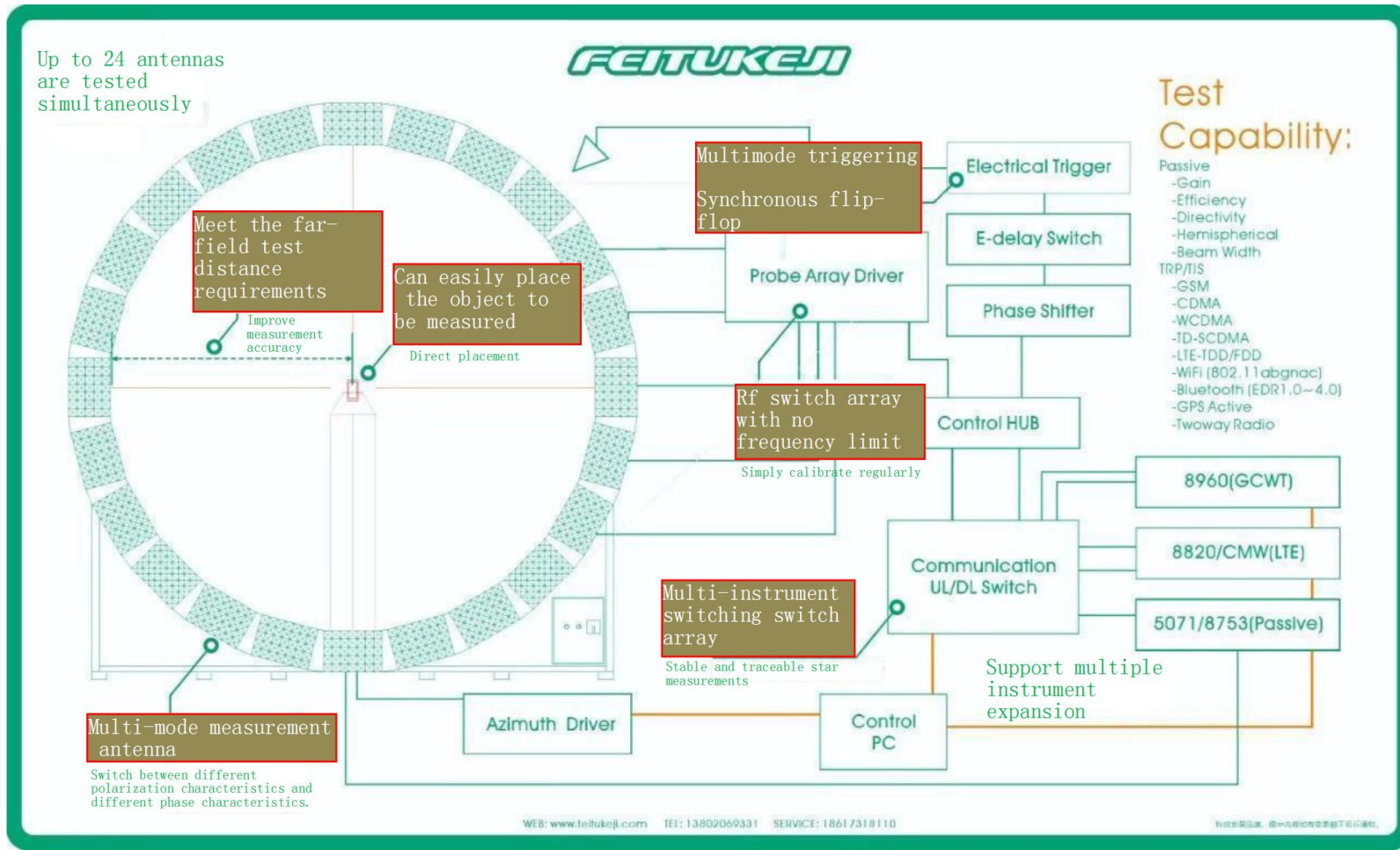
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1. Test equipment



| Test equipment | Test content |
|---|---|
| network analyzer: 5071B | <ol style="list-style-type: none"> 1.VSWR 2.Return loss 3.Smith |
| network analyzer: 5071B chamber: 4*4*4M24 probe anechoic chamber | <ol style="list-style-type: none"> 1.Antenna efficiency 2.Antenna gain 3.3D field pattern of antenna |
| Comprehensive measuring instrument: CMW500 chamber: 4*4*4M 24 probe anechoic chamber | <ol style="list-style-type: none"> 1.TRP 2.TIS |

2. Test setup



3. Test site

Test site: Shenzhen Yishengbang Technology Co., Ltd
101, Building C, Qianwan Hard Technology Industrial Park,
Xixiang Street, Bao'an District, Shenzhen City, Guangdong
Province, China
24 probe anechoic chamber.

4. Test equipment list

| | Test equipment | Equipment model | Manufacturer | Calibration time | Remarks |
|---|------------------|--|--------------|------------------|---------|
| 1 | network analyzer | agilent E5071B | Agilent | 2023-11-9 | |
| 2 | anechoic chamber | 4*4*4M 24 probe anechoic chamber | FEITUKEJI | 2023-11-9 | |
| 3 | computer | Lenovo desktop computer | Lenovo | 2023-11-9 | |

5. Measurement procedure

| | Procedure | Remarks |
|---|---|---------|
| 1 | Calibrate network analyzer | |
| 2 | Analyze the overall situation of the machine and select a suitable location for antenna debugging | |
| 3 | Optimize antenna standing wave ratio to ensure meeting customer needs | |
| 4 | Testing items such as passive efficiency and gain of antennas | |
| 5 | Provide antenna samples to customers based on debugging specifications | |

7. Test Result

7.1.1 WIFI Antenna VSWR/S11 (WIFI 1)



Note: Use the network analyzer E5071B to connect the connector on the antenna RF line to test the passive standing wave ratio and return loss of the antenna.

7. Test Result

7.1.2 WIFI Antenna VSWR/S11 (WIFI 2)



Note: Use the network analyzer E5071B to connect the connector on the antenna RF line to test the passive standing wave ratio and return loss of the antenna.

7. Test Result

7.1.3 BT Antenna VSWR/S11 (BT)



Note: Use the network analyzer E5071B to connect the connector on the antenna RF line to test the passive standing wave ratio and return loss of the antenna.

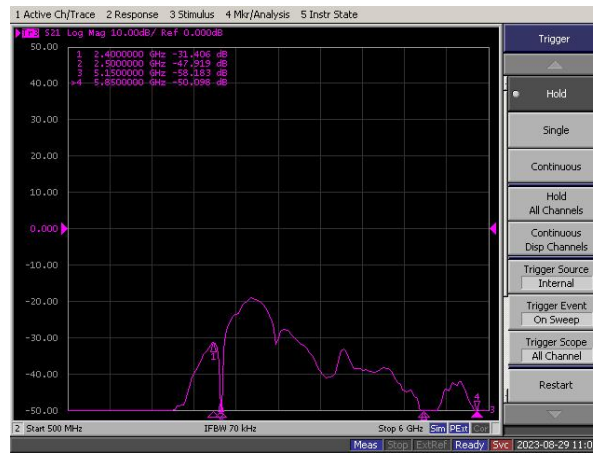
7. Test Result

7.1.4 WIFI+BT Antenna Isolation

WIFI 1+BT



WIFI 2+BT



WIFI 1+WIFI 2

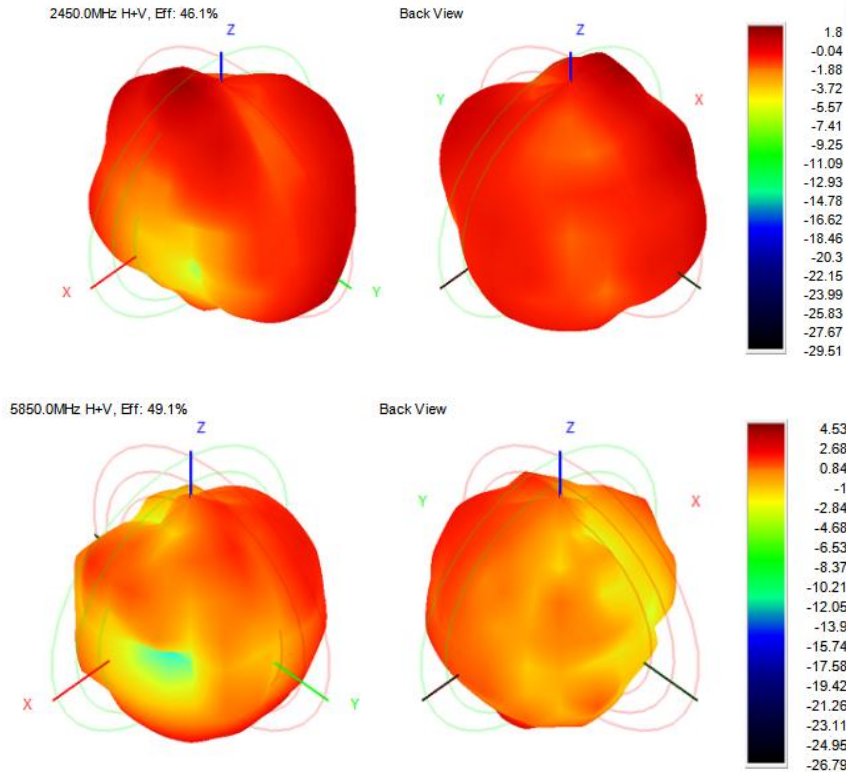


Note: Use the network analyzer E5071B to connect the connector on the antenna RF line to test the passive standing wave ratio and return loss of the antenna.

7. Test Result

7.2 .1WIFI Antenna Gain/Efficiency/3D DATA(WIFI 1)

| Frequency (MHz) | 2400.0 | 2410.0 | 2420.0 | 2430.0 | 2440.0 | 2450.0 | 2460.0 | 2470.0 | 2480.0 | 2490.0 | 2500.0 | 5150.0 | 5250.0 | 5550.0 | 5750.0 | 5850.0 |
|------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Efficiency (dBi) | -4.04 | -3.87 | -3.74 | -3.39 | -3.43 | -3.36 | -3.20 | -3.33 | -3.15 | -3.16 | -3.35 | -5.81 | -5.09 | -3.55 | -3.09 | -3.08 |
| Gain (dBi) | 1.05 | 0.95 | 1.21 | 1.57 | 1.64 | 1.80 | 2.24 | 2.13 | 2.39 | 2.57 | 2.23 | 0.36 | -0.49 | 2.91 | 4.29 | 4.53 |
| Efficiency (%) | 39.43 | 41.06 | 42.28 | 45.77 | 45.40 | 46.11 | 47.85 | 46.43 | 48.43 | 48.33 | 46.29 | 26.25 | 31.01 | 44.18 | 49.08 | 49.15 |



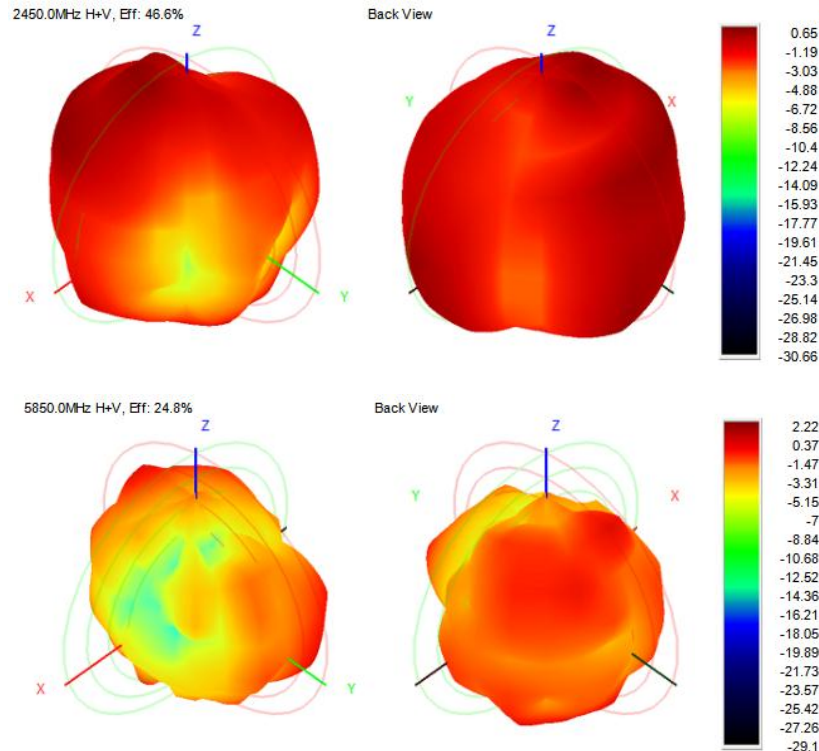
Note: Use the network analyzer E5071B and microwave anechoic chamber to test the passive efficiency, gain, and 3D field pattern of the antenna.

2490mhz is the maximum gain point of 2400-2500mhz
 5150mhz is the maximum gain point of 5150-5250mhz
 5820mhz is the maximum gain point of 5.8G segment

7. Test Result

7.2 .2WIFI Antenna Gain/Efficiency/3D DATA(WIFI 2)

| Frequency (MHz) | 2400.0 | 2410.0 | 2420.0 | 2430.0 | 2440.0 | 2450.0 | 2460.0 | 2470.0 | 2480.0 | 2490.0 | 2500.0 | 5150.0 | 5250.0 | 5550.0 | 5750.0 | 5850.0 |
|------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Efficiency (dBi) | -4.15 | -3.89 | -3.64 | -3.34 | -3.30 | -3.32 | -3.17 | -3.47 | -3.54 | -3.72 | -4.09 | -4.92 | -5.20 | -4.60 | -4.83 | -6.05 |
| Gain (dBi) | -0.14 | -0.04 | 0.25 | 0.51 | 0.68 | 0.65 | 0.84 | 0.37 | 0.94 | 1.15 | 1.10 | -0.80 | -0.75 | 1.58 | 2.45 | 2.22 |
| Efficiency (%) | 38.43 | 40.79 | 43.23 | 46.29 | 46.78 | 46.58 | 48.21 | 45.01 | 44.28 | 42.46 | 39.01 | 32.25 | 30.22 | 34.71 | 32.91 | 24.83 |



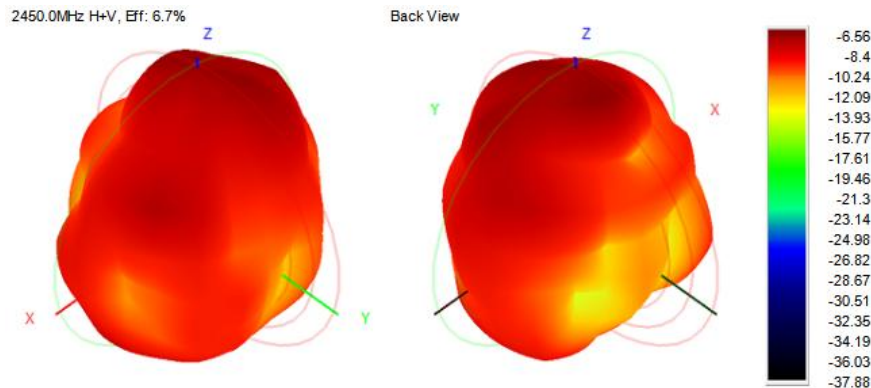
Note: Use the network analyzer E5071B and microwave anechoic chamber to test the passive efficiency, gain, and 3D field pattern of the antenna.

2490mhz is the maximum gain point of 2400-2500mhz
 5250mhz is the maximum gain point of 5150-5250mhz
 5750mhz is the maximum gain point of 5.8G segment

7. Test Result

7.2 .3WIFI Antenna Gain/Efficiency/3D DATA(BT)

| Frequency (MHz) | 2400.0 | 2410.0 | 2420.0 | 2430.0 | 2440.0 | 2450.0 | 2460.0 | 2470.0 | 2480.0 | 2490.0 | 2500.0 |
|------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Efficiency (dBi) | -12.27 | -12.08 | -11.39 | -11.75 | -11.54 | -11.77 | -11.23 | -11.87 | -12.13 | -11.80 | -11.71 |
| Gain (dBi) | -6.75 | -6.83 | -6.26 | -6.30 | -6.35 | -6.56 | -5.95 | -6.62 | -6.84 | -6.42 | -5.95 |
| Efficiency (%) | 5.93 | 6.19 | 7.26 | 6.69 | 7.01 | 6.66 | 7.53 | 6.50 | 6.13 | 6.60 | 6.75 |



Note: Use the network analyzer E5071B and microwave anechoic chamber to test the passive efficiency, gain, and 3D field pattern of the antenna.

2460mhz is the maximum gain point of 2400-2500mhz

---The End---