

Shenzhen Unity Wireless Technology Co., Ltd.

Address: Room 1002/1012, Building 7E, Hengda Fashion Huigu, Dalang,
Longhua District, Shenzhen

Tel: 0755-23285621

Fax: 0755-23285621

Antenna Test Report

Customer Information

- **Customer Name:** Guxian
- **Product Model:** JT022-PLUS
- **Antenna Frequency Band:** WIFI2.4G

Personnel Information

- **Tabulation:** RF Engineer: Zhang Zhineng
- **Contact:** TEL: 0755-23285621
- **Date:** November 25, 2025

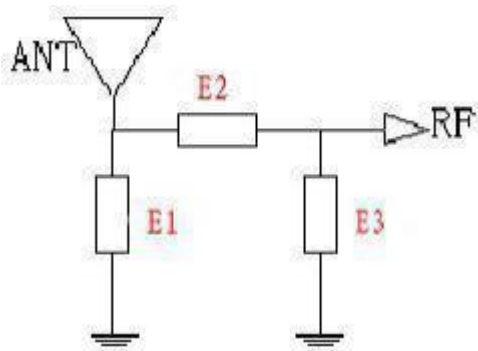
Revision History

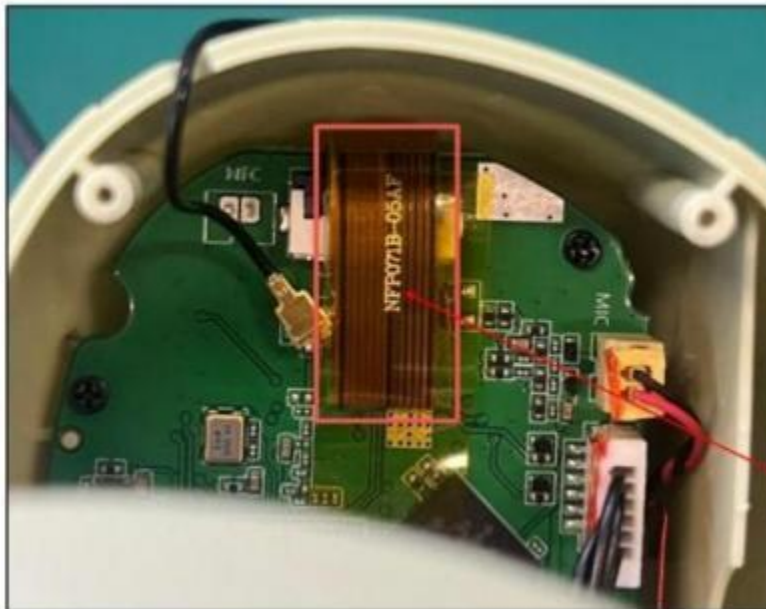
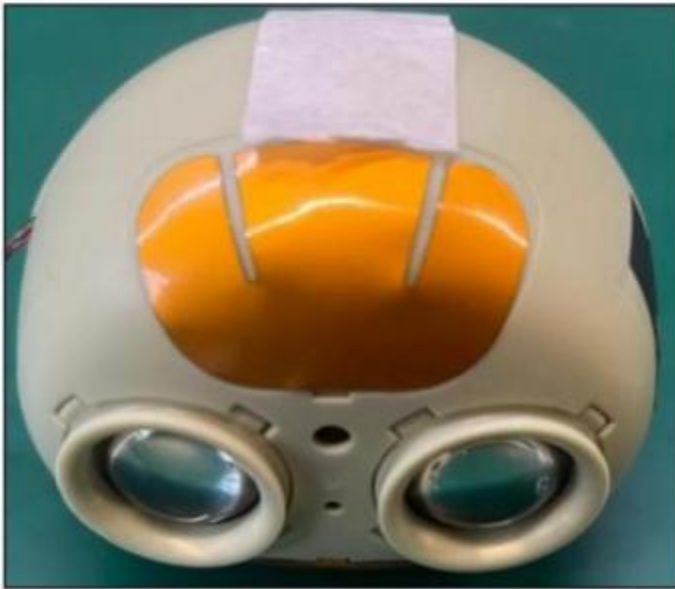
Revision Date	Revision Content	Revision Author	Original Version
2025.11.25	Optimized antenna debugging data	Zhang Zhineng	

1. Antenna Matching (Original Antenna Matching)

E1	E2	E3
N/A	0 Ohm	N/A

2. Antenna Position





NFP071B-05AF
It is suggested that the FPC wiring is directly above the antenna on the antenna

3. WIFI Active Test Data

802.11b: 11Mbps

ChannelCH Test Value	1	6	11
TRP	17.54	18.36	18.91
TIS			-87.65

802.11n: MCS7

Channel CH Test Value	1	6	11
TRP	16.17	16.9	17.14
TIS			-70.38

802.11g: 54Mbps

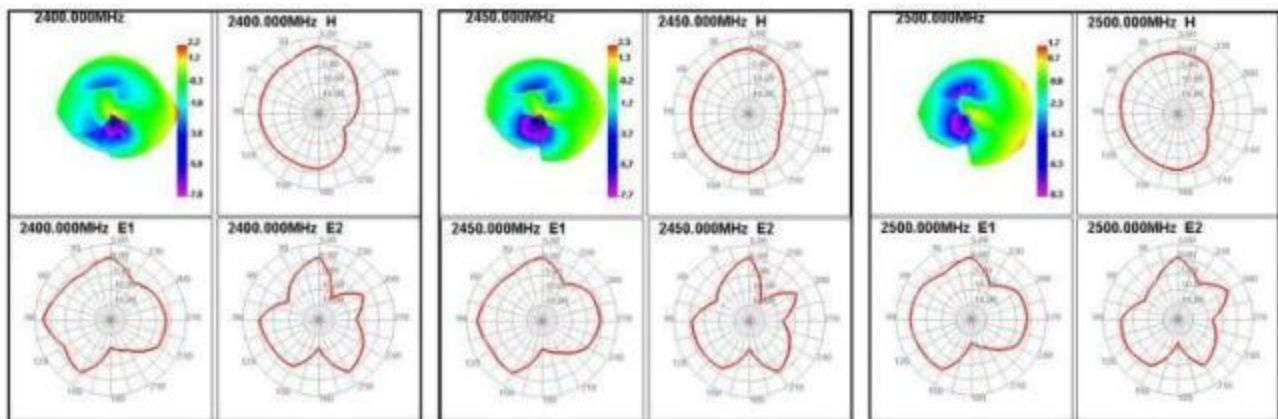
Channel CH Test Value	1	6	11
TRP	16.17	16.9	17.2
TIS			-71.68

4. 2.4G Antenna Passive Efficiency

Efficiency and Gain Data

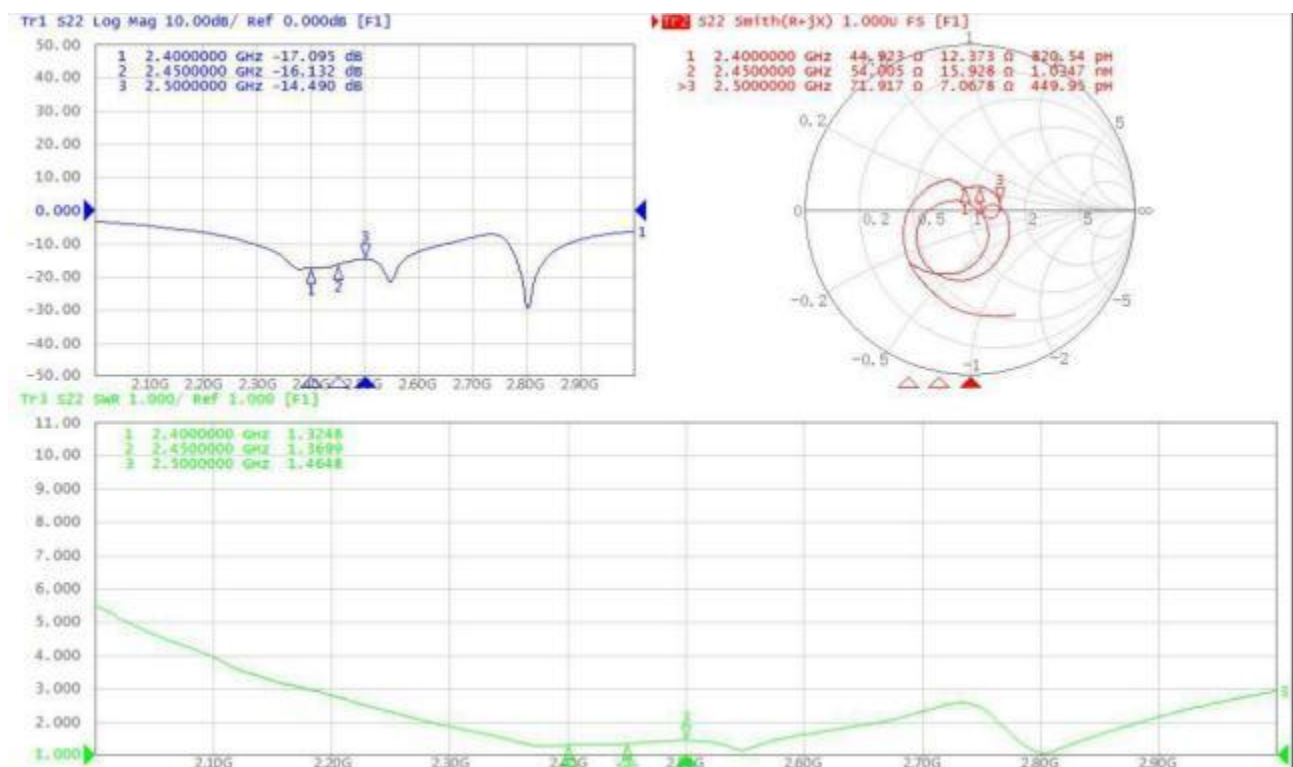
Freq (MHz)	Efficiency	Gain (dBi)
2400	53.96	2.23
2410	55.55	2.16
2420	55.37	1.95
2430	58.45	1.91
2440	58.08	1.98
2450	59.86	2.29
2460	58.68	2.24
2470	58.66	2.41
2480	58.19	2.21
2490	59.65	2.24
2500	58.38	1.71

Efficiency Chart



5. Antenna Radiation Pattern (Apple Chart)

6. S11 VSWR Chart



7. Test Equipment

Measurement Instruments

- Anechoic Chamber
- Network Analyzer

- Standard Antenna

Anechoic Chamber Description

This is the anechoic chamber set up by our company in Shenzhen. It belongs to a far-field measurement system. The size of the anechoic chamber is 7.0m x 4.0m x 3.0m, and the size of the quiet zone is 15cm x 15cm x 15cm.

Gain Calculation Formula

```


$$G_{AUT} = G_{stand} + P_{AUT} - P_{stand}$$


$$G_{avr}: \text{Gain of AUT}$$


$$G_{aval}: \text{Gain of Standard Gain Antenna}$$


$$P_{avr}: \text{Measured Power of AUT}$$


$$P_{aval}: \text{Measured Power of Standard Gain Antenna}$$


```

Instrument Setup

Figure 1 shows the instrument setup in the anechoic chamber and the connection diagram of the network analyzer. The distance from the transmitting antenna (the model of the transmitting antenna used in this anechoic chamber is TRC LPA0860 800MHZ-6GHZ) to the antenna under test (AUT) is 1.35 meters. The antenna under test is placed on a rotating platform. By controlling the rotation angle of the turntable, a rough and more accurate measurement of the antenna under test can be performed.

Measurement Process

The antenna under test is placed on the turntable, and the 360-degree field strength data of each plane (ZY plane and ZX plane) is measured. Then, the antenna under test is replaced with a standard dipole antenna (the model of the standard dipole antenna used in this anechoic chamber is TRCAD series dipole antenna 800MHz~2500MHz), and its 360-degree field strength data is measured as the conversion gain standard value. The gain value and radiation pattern of the antenna under test can be obtained through the conversion of Formula 1.

Company Information

Shenzhen Unity Wireless Technology Co., Ltd

- **Address:** Room 1002/1012, Building 7E, Evergrande Fashion Valley, Dalang, Longhua District, Shenzhen
- **Telephone:** 0755-23285621
- **Fax:** 0755-23285621