

Shanghai Shangyuan Communication Technology Co., LTD

Antenna admission book

Customer name: Apeco		Project name: 3600
Working frequency band: WiFi2.4G		
Hardware version:		
Shangyuan material specifications		
specifications and models	Shang Yuan material number	Customer material number
WIFI ant	SZ234051B77	

Change the resume			
Preparation / change date	Change the content	Change the person	edition
2023/11/15	A new release	YANG XIN	A

Shang Yuan will sign the column				
research and development	structure:	examine and verify:	Quality Engineer:	ratify:
	radio frequency:	examine and verify:		
The customer will sign the column				
electronic engineer	project manager	construction engineer	Quality engineer	

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1、item information

1.1、Prototype diagram



2、Antenna matching circuit

No change in matching circuit

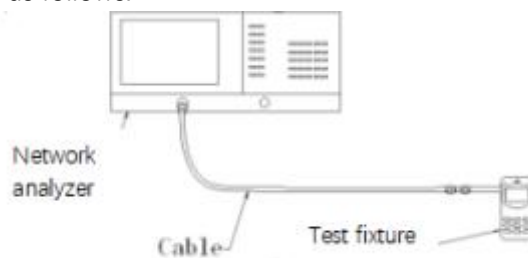
3、Overall test data

3.1 S11 Test Method Description

Test Equipment: Network Analyzer (Agilent E5071C)

Test method: Export a 50 Ohm CABLE cable from the instrument test port, connect the SMA connector of the test device after the calibrator, and record the echo loss and standing wave ratio corresponding to the relevant frequency point.

The test schematic diagram is as follows:



Schematic diagram of the test

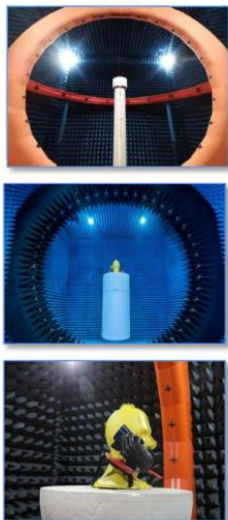
3.2 Testing Environment

Test System: MPS 6450 Multi-sensor OTA Measurement System (XH-IoT)

Test environment: temperature $22^{\circ}\text{C} \pm 3^{\circ}\text{C}$, humidity $50\% \pm 15\%$

Test equipment: Use the network analyzer R & S ZND / Agilent E5071C when testing the passive data
When testing active data, use the comprehensive meter Agilent 8960 / CMW500 / S P9500E / SP 8315

OTA实验室



综测仪器



SP9500-CTS-5G

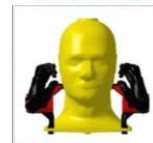


CMW500



SP8315 NB-IoT
/eMTC

其他设备



OTA head hand



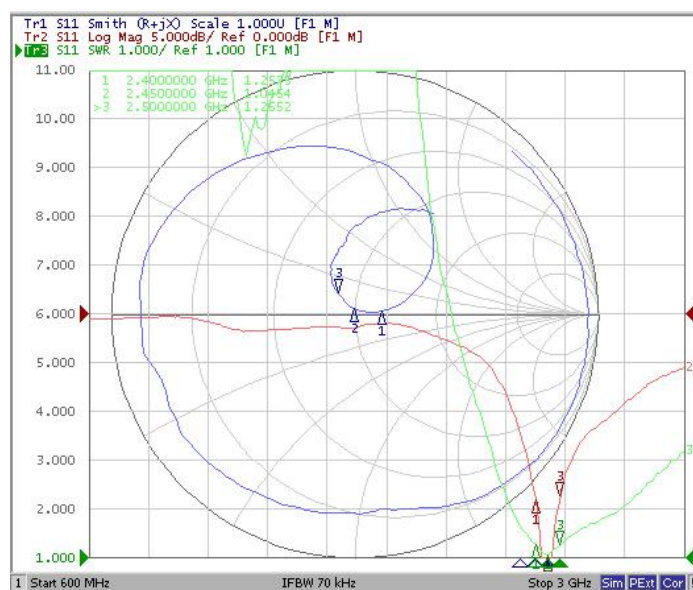
OTA ear hand



OTA arm hand

3.3 Passive testing parameters

Return Loss -WiFi



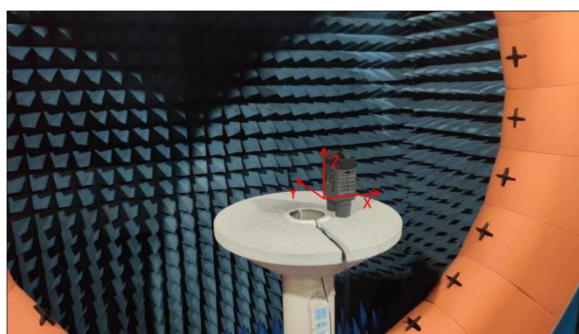
Passive efficiency-WiFi

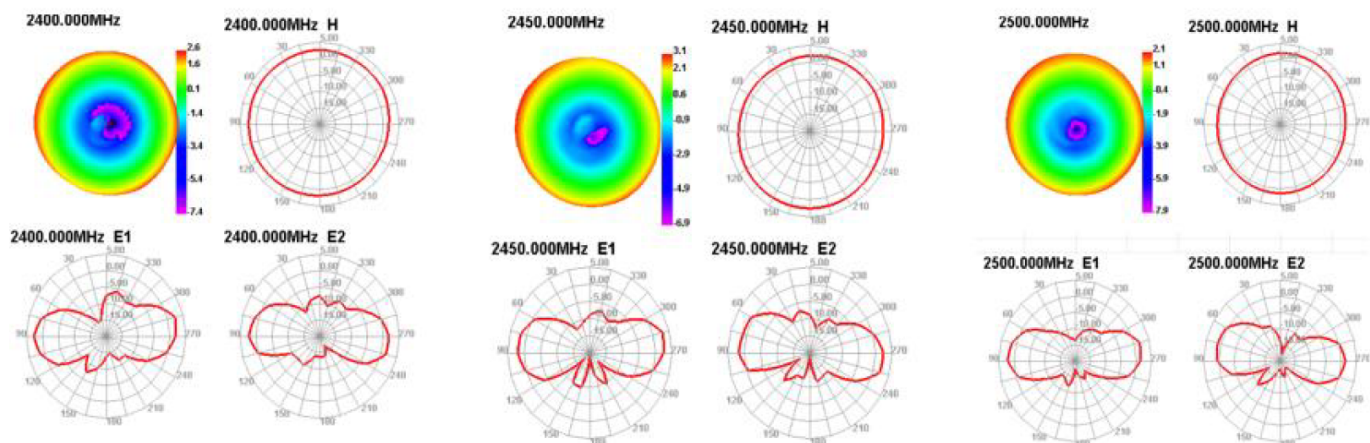
Frequency (MHz)	Efficiency (%)	Peak GAIN (dBi)
2400	48.37	2.62
2450	49.05	3.07
2500	46.69	2.12

Antenna active data-WiFi

Measurement	Band	Channel	
TRP	WIFI_B (1M)	1	15.25
TRP	WIFI_B (1M)	7	15.41
TRP	WIFI_B (1M)	11	15.54
TIS(EIRP)	WIFI_B (11M)	1	-86.12
TRP	WIFI_G (6M)	1	16.57
TRP	WIFI_G (6M)	7	16.32
TRP	WIFI_G (6M)	11	16.19
TIS(EIRP)	WIFI_G (54M)	11	-72.58
TRP	WIFI_N_ISM (6.5M)	1	16.05
TRP	WIFI_N_ISM (6.5M)	7	15.71
TRP	WIFI_N_ISM (6.5M)	11	15.76
TIS(EIRP)	WIFI_N_ISM (65M)	11	-70.54

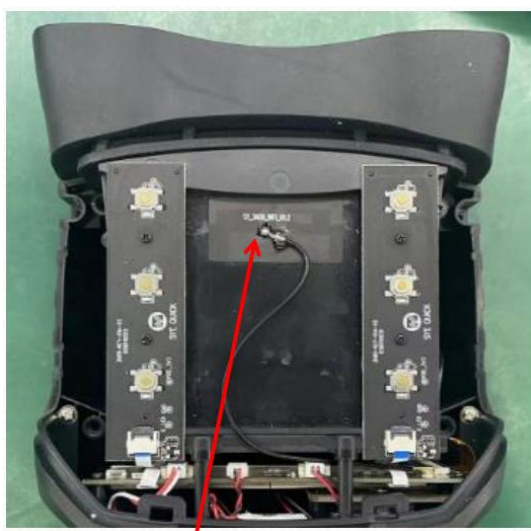
Passive direction diagram-WiFi





5、Antenna installation position

The antenna is assembled as shown in the following figure



6、Mass production antenna indicators

When the antenna is in mass production, the standing wave ratio is used as the test standard for mass production.

Based on the differences of the project itself, the following criteria are given:

Frequency (MHz)	Mass production standards
2400-2450MHz	VSWR (mass production performance) <VSWR (recognized performance) + 1

7、Engineering Drawing

