Antenna testing

Manufacturer：Shenzhen Starke Electromechanical Co.. Ltd.

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1, Hardware testing

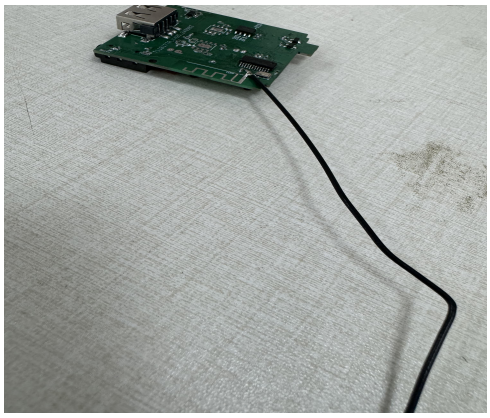
2, software test

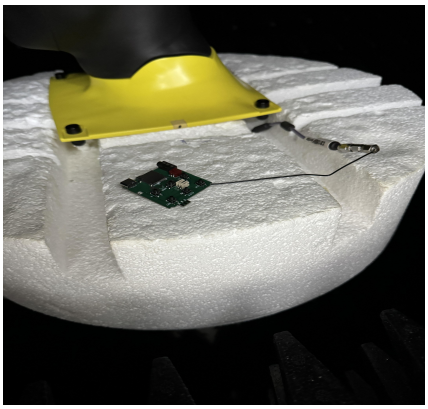
3, data fetch

1, Hardware testing

1.1, PCBA bare board testing

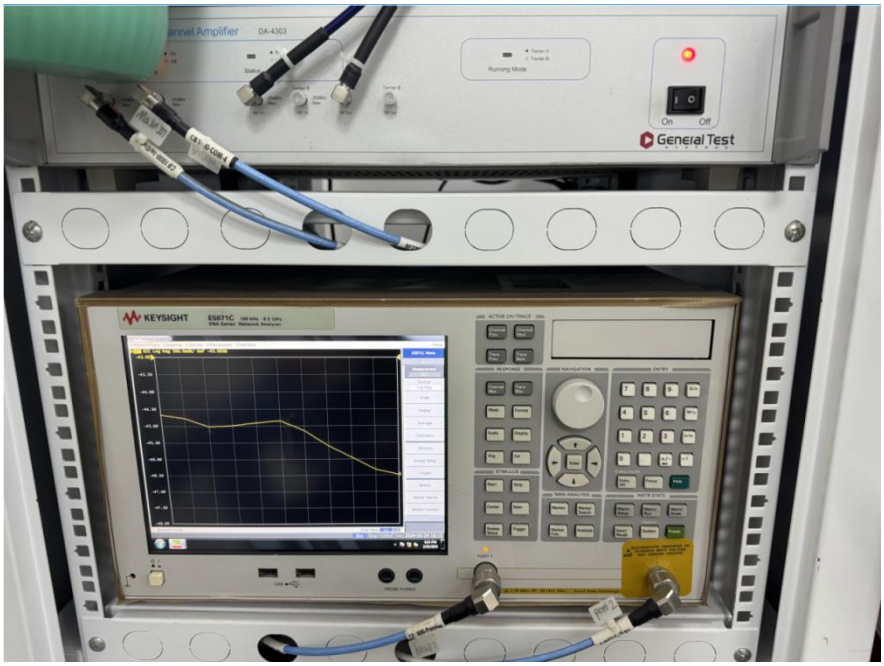
The PCBA bare board test involves soldering the RF connection wire to the bare board, and then connecting it to the OTA device. The connection diagram between the RF connection wire and the bare board is shown below:

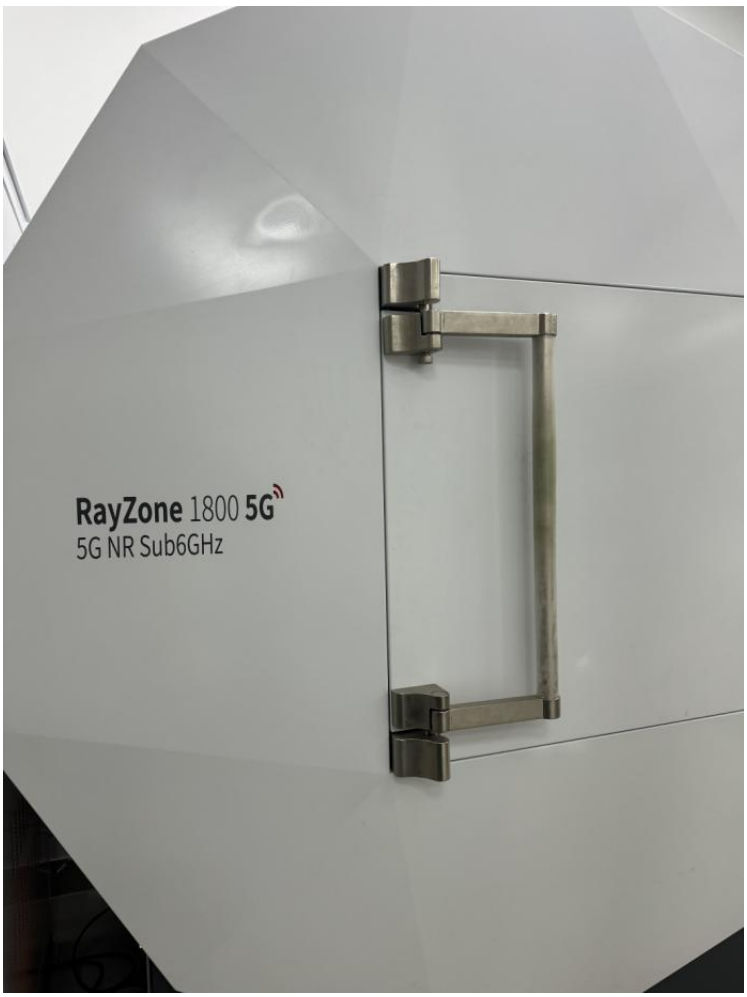




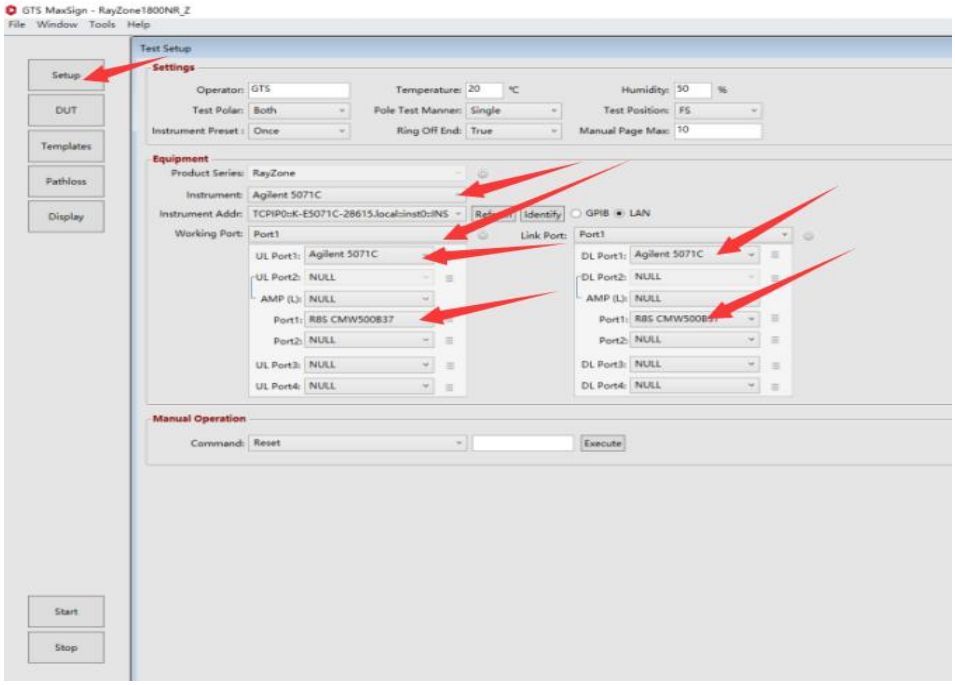
1.2, Equipment environment

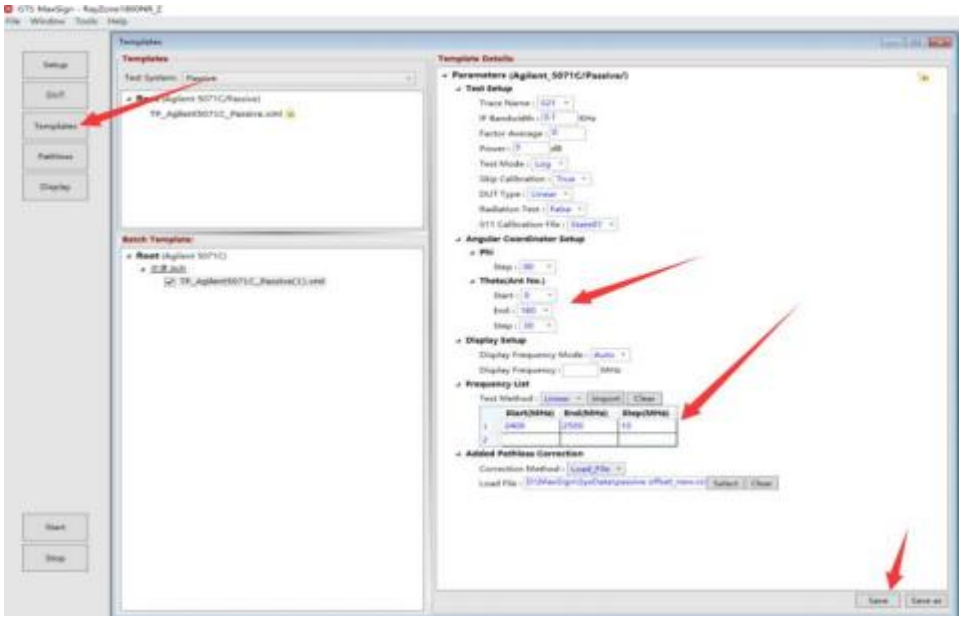
The equipment required for this test includes a computer, spectrometer, amplifier, and darkroom, as shown in the following diagram:





2, software test

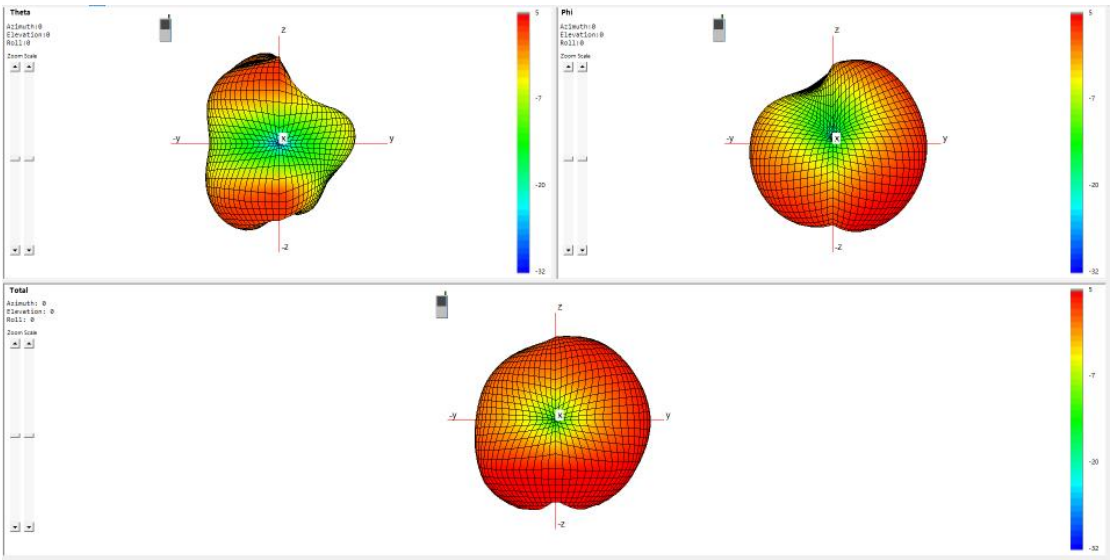

GTS MaxSign - RayZone1800NR_Z
File Window Tools Help
Test Setup
Setup
DUT
Templates
Pathloss
Display
Start
Stop
Settings
Operator: GTS
Temperature: 20 ℃
Humidity: 50 %
Test Polar: Both
Pole Test Manner: Single
Test Position: FS
Instrument Preset: Once
Ring Off End: True
Manual Page Max: 10
Equipment
Product Series: RayZone
Instrument: Agilent 5071C
Instrument Addr: TCPIP0::K-E5071C-28615.local::inst0::INS
Refresh
Identify
GPIB
LAN
Working Port: Port1
Link Port: Port1
UL Port1: Agilent 5071C
UL Port2: NULL
AMP (L): NULL
Port1: R&S CMW500B37
Port2: NULL
UL Port3: NULL
UL Port4: NULL
DL Port1: Agilent 5071C
DL Port2: NULL
AMP (L): NULL
Port1: R&S CMW500B37
Port2: NULL
DL Port3: NULL
DL Port4: NULL
Manual Operation
Command: Reset
Execute


Templates
Template Details
Parameters (Agilent_5071C/Passive/)
Test Setup
Angular Coordinate Setup
Display Setup
Frequency List
Added Pathloss Correction
Save
Save as

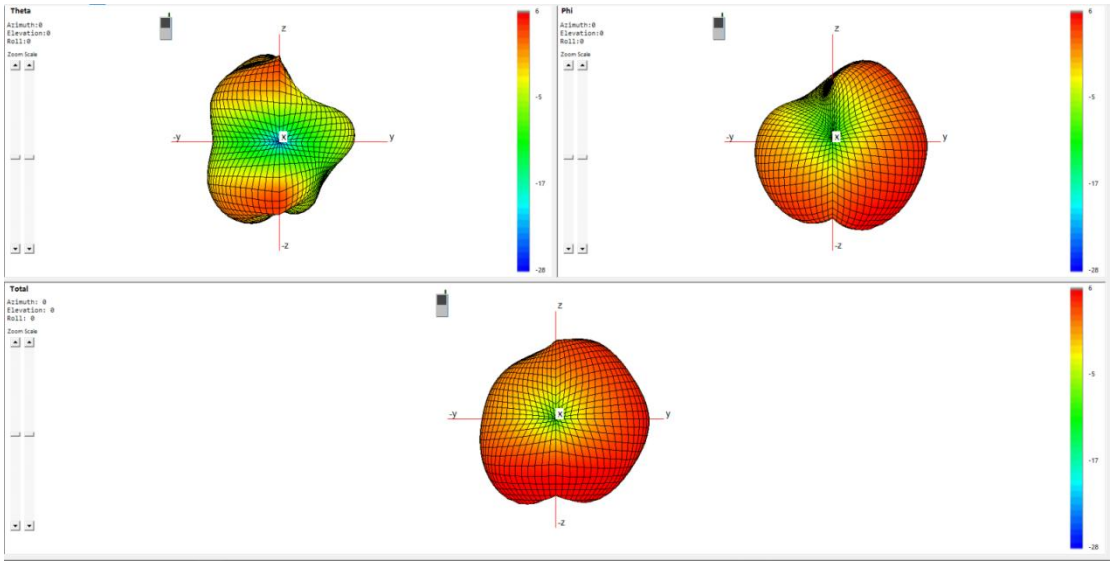
3, data fetch

3.1, 3D radiation pattern of scanning antenna

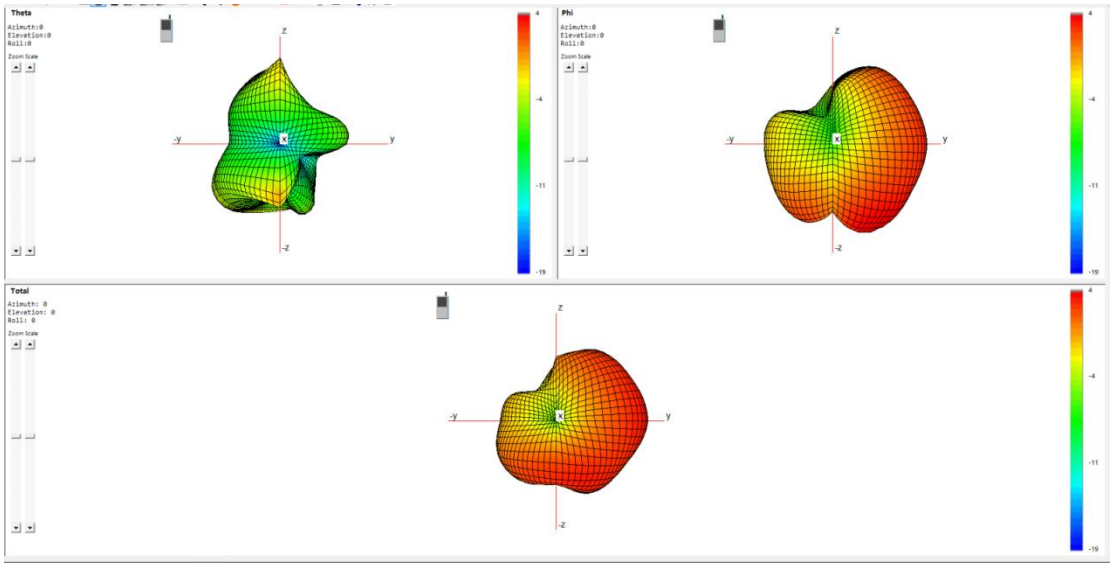
2400MHz:



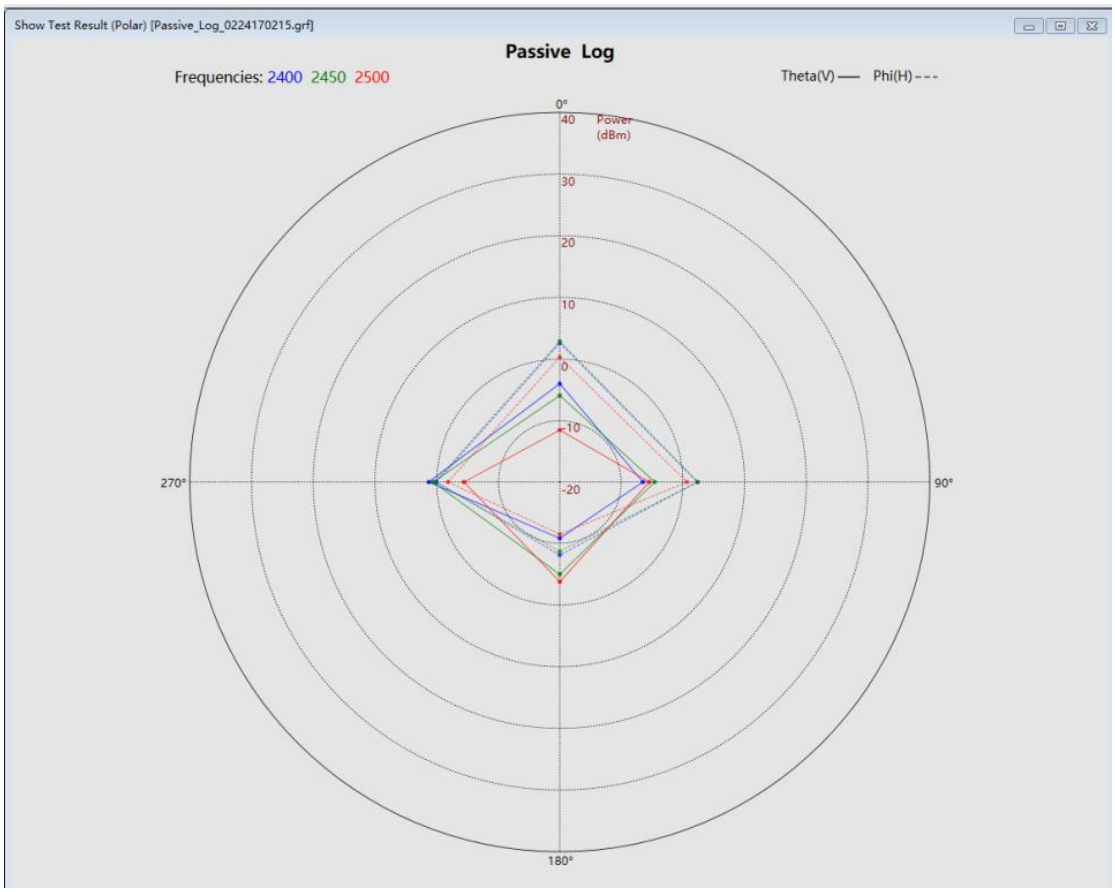
2450MHz:



2500MHz:



3.2, Scan the 2D radiation pattern of the antenna

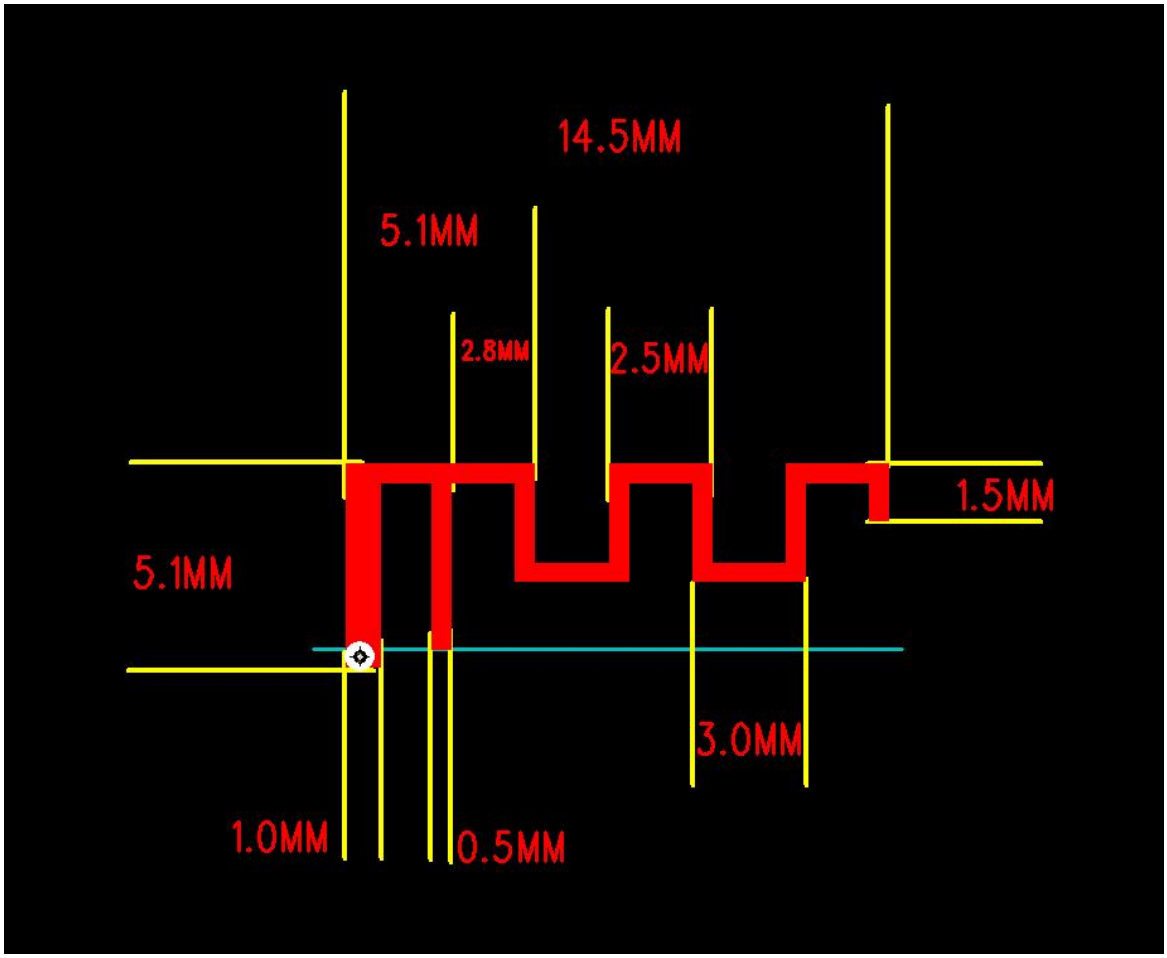


3.3, Detailed scan output data results

Freq（MHz）	Gain（dBi）	Efficiency（dB）	Efficiency（%）
2400	4.73342591	1.773815678	150.4463195
2410	4.961265122	1.895608836	154.7251398
2420	5.067302169	1.962652587	157.1322245
2430	5.368003414	2.188791154	165.5309149
2440	5.600528892	2.350140377	171.7963916
2450	5.655040851	2.390523367	173.4012951
2460	5.521399269	2.267430619	168.5555519
2470	5.001927509	1.794395308	151.1609215
2480	4.563397682	1.323160534	135.6175997
2490	4.023180436	0.746943067	118.7665953
2500	3.691213759	0.453532901	111.0077475

ITEM	ANT SPEC		
Model Name	2.4G ANT		
Antenna plate	PCB antenna		
Center Frequency	2400MHz	2450MHz	2500MHz
	4.73dBi	5.65dBi	3.69dBi
MAX.Gain	5.65dBi		
Polarization	Horizontai and Vertical		
Impedance	50Ohm		
Manufacture			

AntennaPhouo&Length(mm)


14.5MM
5.1MM
2.8MM
2.5MM
1.5MM
5.1MM
3.0MM
1.0MM
0.5MM