

Antenna Specification Acknowledgment

Customer Name: _____ Youqing

Entry name: M19 (WIFI Dual band antenna)

DESCRIPTION: 単 FPC

Customer part number:

Our part number: M19

Version: V1.0

Date: 2023-08-18

custom

engineering	procure	recognize

research	engineering	examine

● Specification Overview

electrical characteristics	
Frequency	2400MHz ~2500MHz 5150MHz ~5850MHz
Return Loss	<-5dB
Efficiency	>40%
Gain	2.5dbi
Impedance	50 Ω
Polarization mode	linear polarization
Material and mechanical properties	
Material	FPC
Wire type	/
Terminal type	/
Paper size	See drawings for details
Silk-screen printing	White on Black
Environmental	
Storage temperature	- 30 °C ~ + 85 °C
FPC welding temperature	280±5°C dip time:10 秒
RF wire welding temperature	320±5°C 2-3 S

Technical drawing of a rectangular plate. The width is labeled as $*8 \pm 0,2$ and the height is labeled as $*25 \pm 0,2$. The plate is filled with a cross-hatched pattern.

● Test Equipment & Conditions

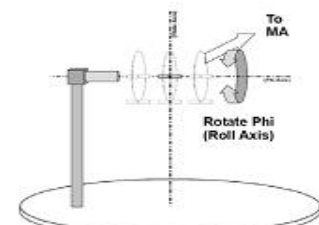
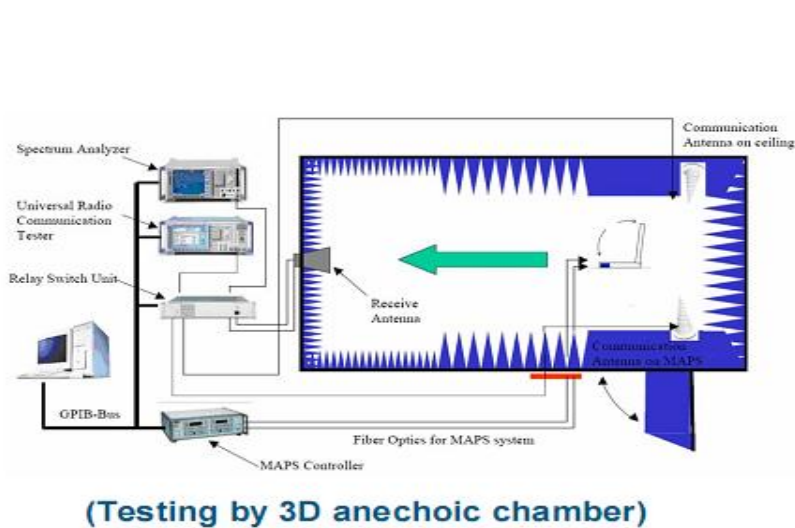
1. Network Analyzers :

Agilent 8753D 5071B

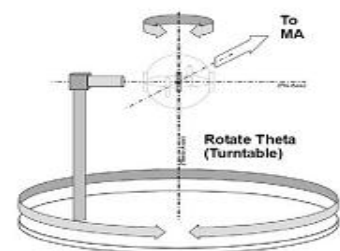
Communications Test Set:

Agilent E5515C CMW500

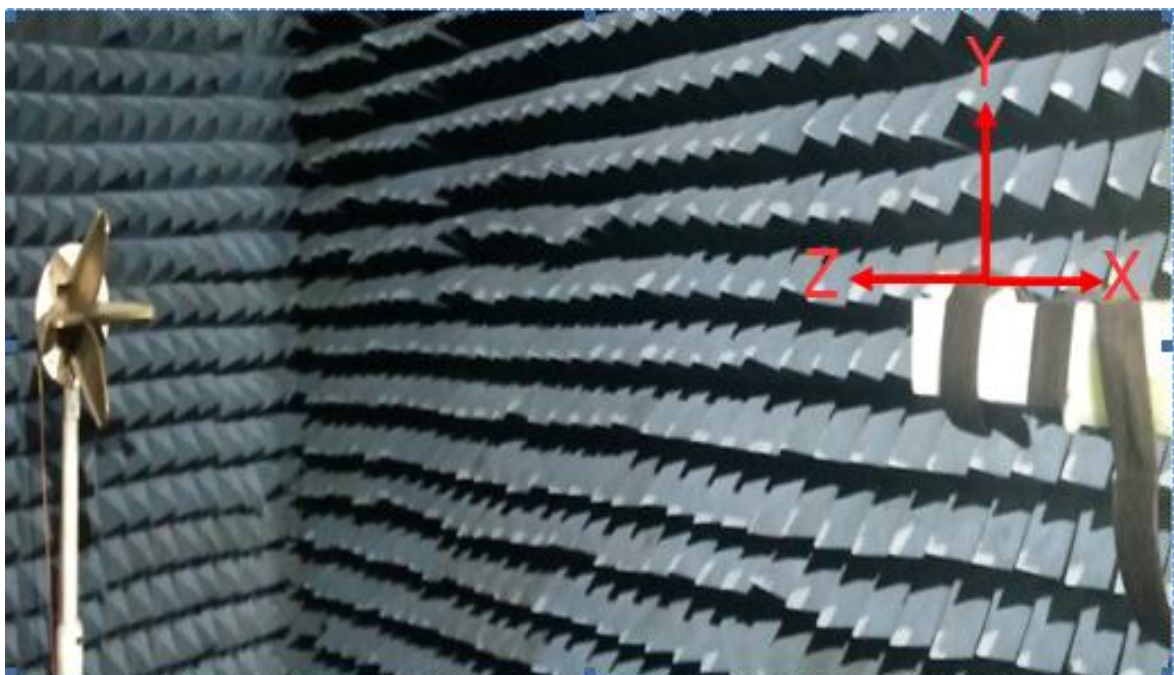
2. 3D Chamber Test System



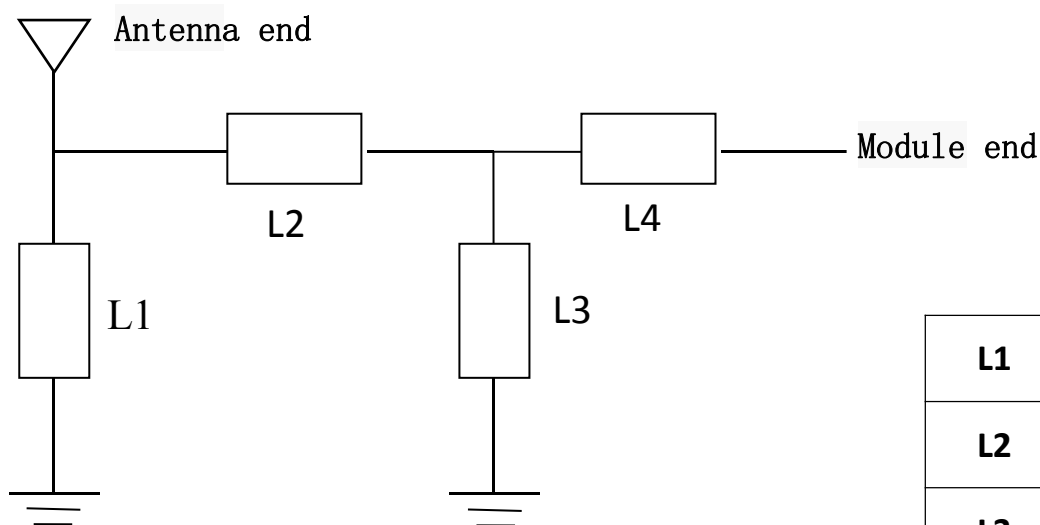
Phi axis test



Theta axis test



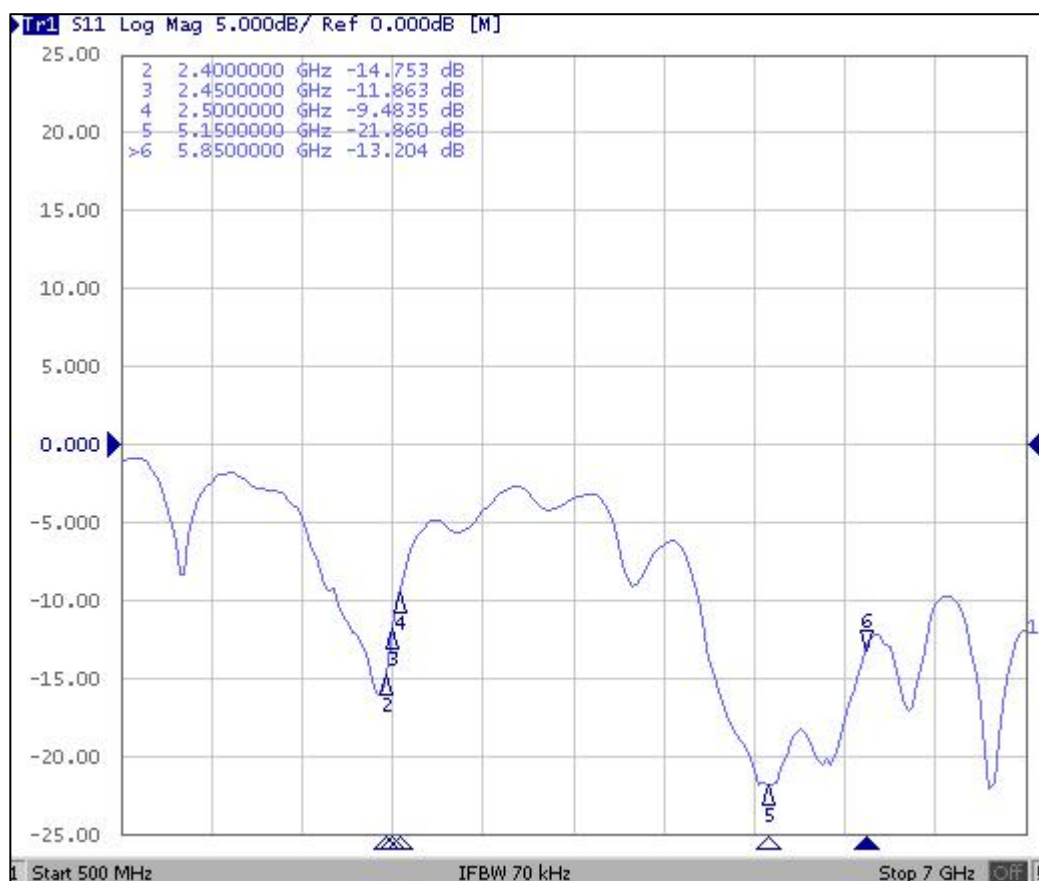
● matching circuit



L1	/
L2	/
L3	/
L4	/

The matching circuit of the original motherboard remains unchanged

◆ Return Loss



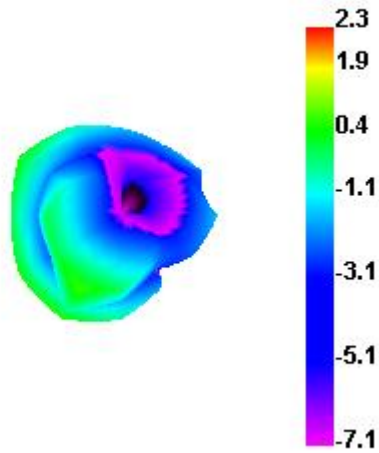
◆ Gain & Efficiency

Freq (MHz)	Effi (%)	Gain (dBi)
2400	58.72	2.29
2410	57.66	2.25
2420	57.98	2.39
2430	55.88	2.19
2440	54.1	2.52
2450	49.17	2
2460	49.68	1.93
2470	48.11	1.61
2480	48.11	1.46
2490	46.99	1.27
2500	47.47	1.25

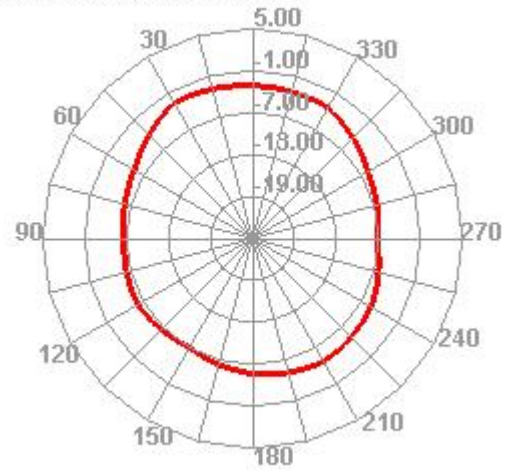
Freq (MHz)	Effi (%)	Gain (dB)
5150	42.9	-2.27
5200	42.02	-2.17
5250	41.7	-1.93
5300	41.57	-2.09
5350	43.31	-1.15
5400	43.39	-0.36
5450	43.9	-0.17
5500	44.01	0.13
5550	43.73	0.34
5600	46.04	1.19
5650	45.12	2.02
5700	42.97	2.35
5750	41.29	2.47
5800	42.16	2.49
5850	44.92	2.38

◆ Radiation Pattern

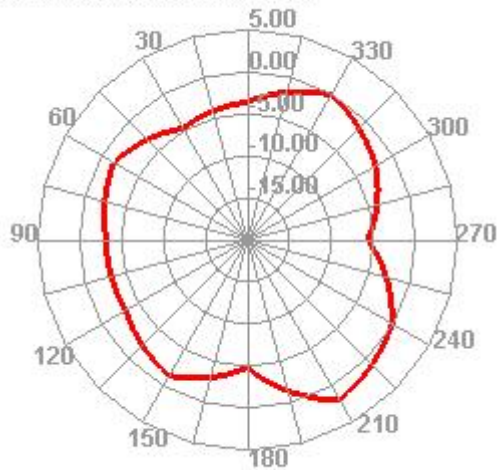
2400.000MHz



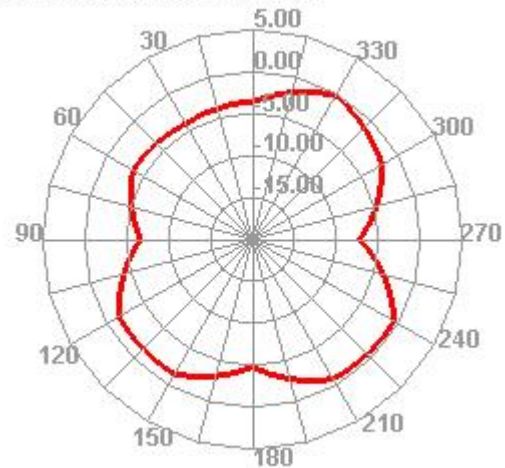
2400.000MHz H



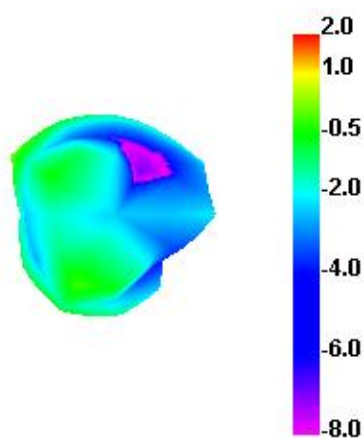
2400.000MHz E1



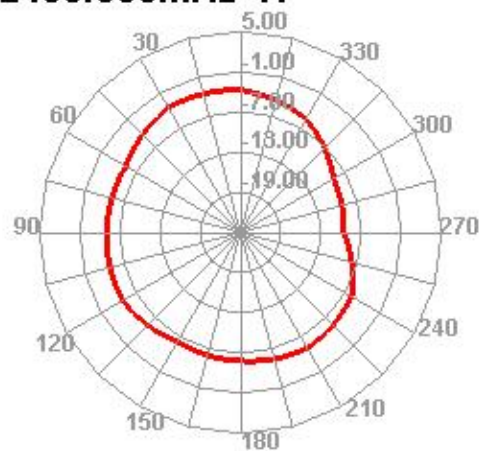
2400.000MHz E2



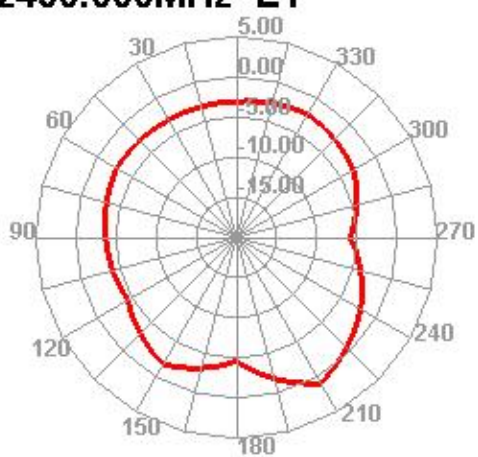
2450.000MHz



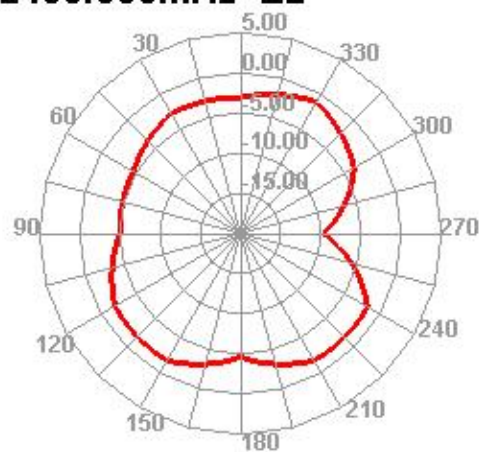
2450.000MHz H



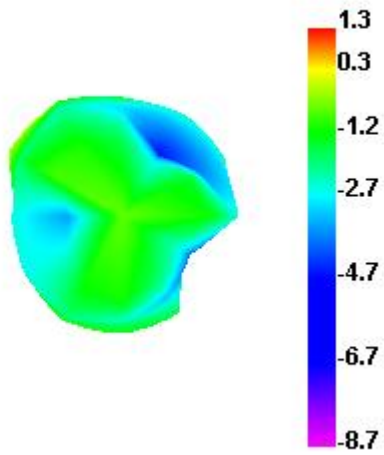
2450.000MHz E1



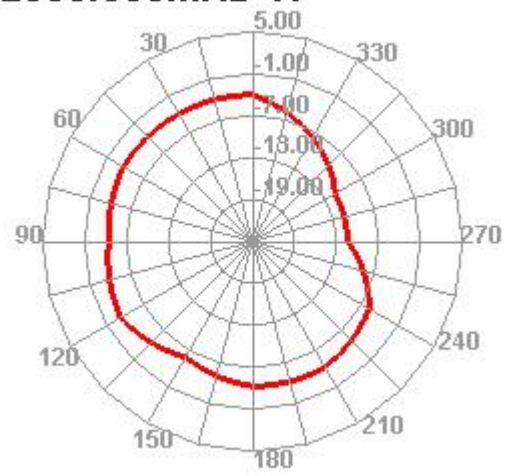
2450.000MHz E2



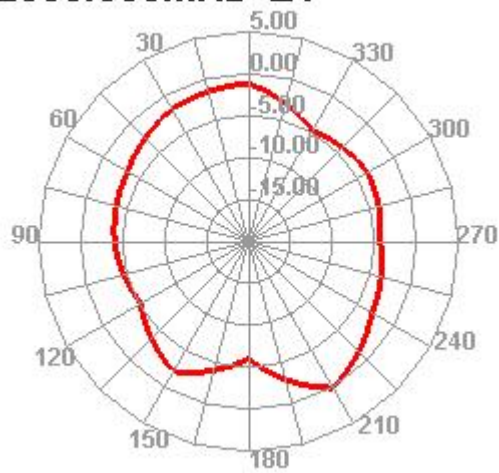
2500.000MHz



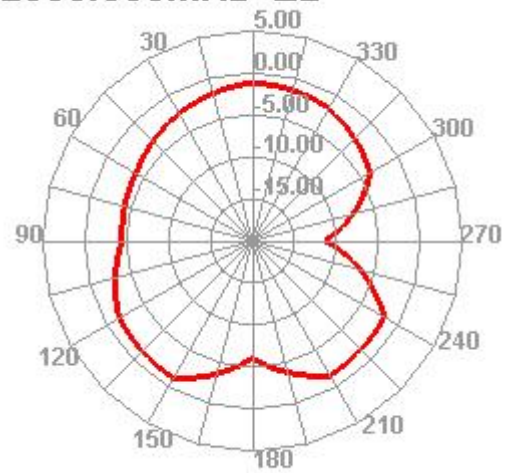
2500.000MHz H



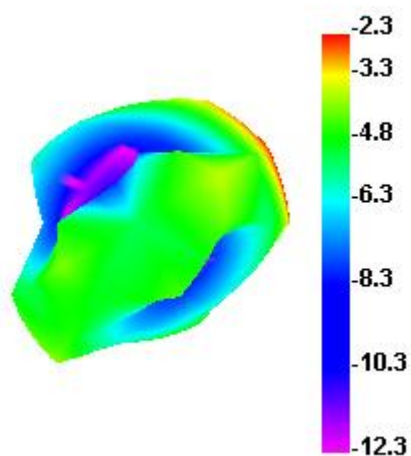
2500.000MHz E1



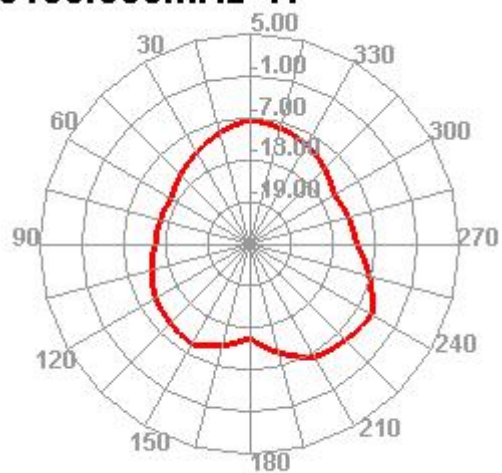
2500.000MHz E2



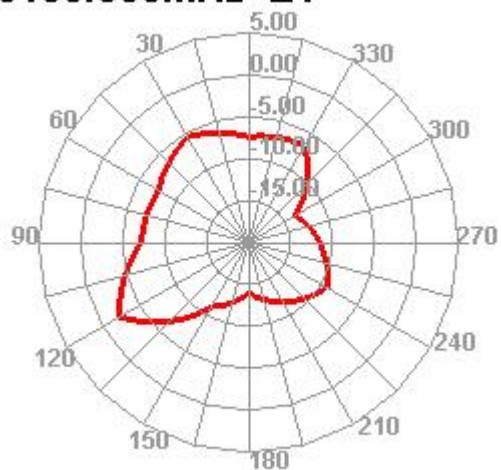
5150.000MHz



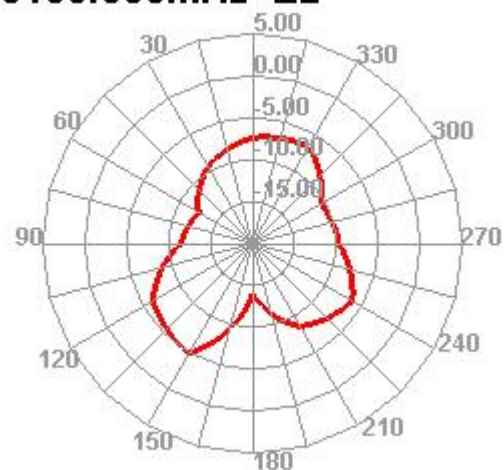
5150.000MHz H



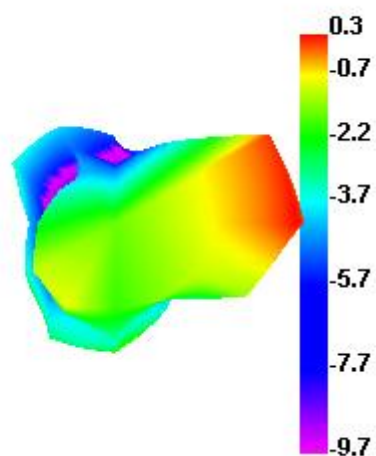
5150.000MHz E1



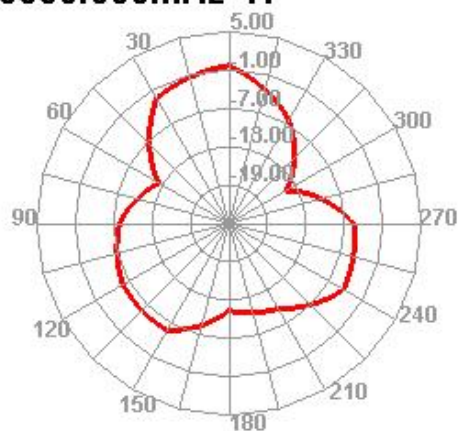
5150.000MHz E2



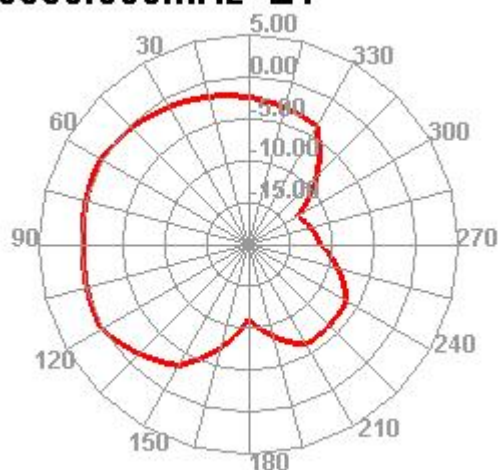
5550.000MHz



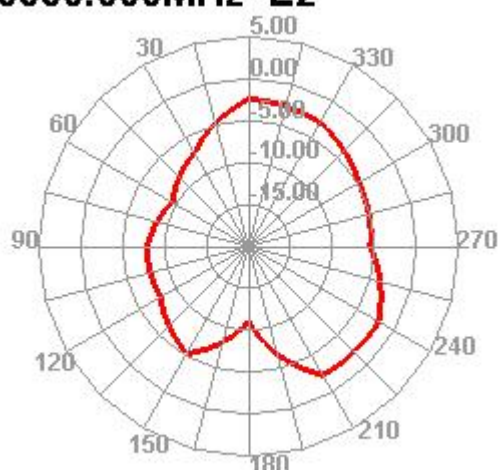
5550.000MHz H



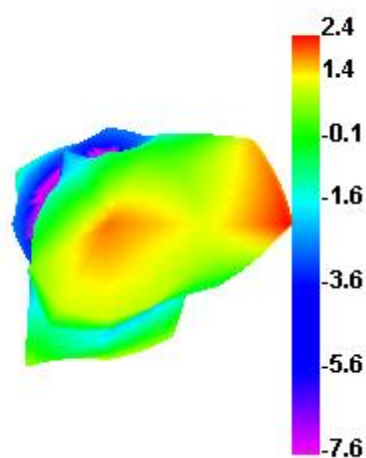
5550.000MHz E1



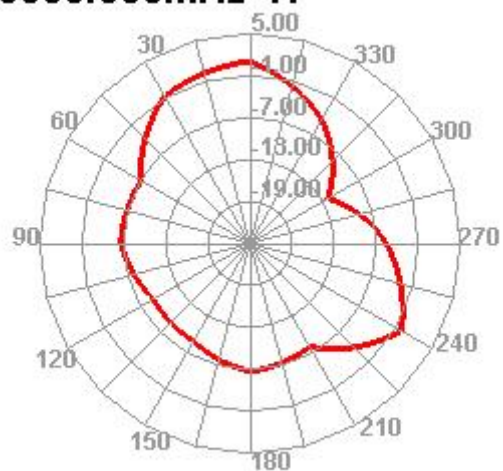
5550.000MHz E2



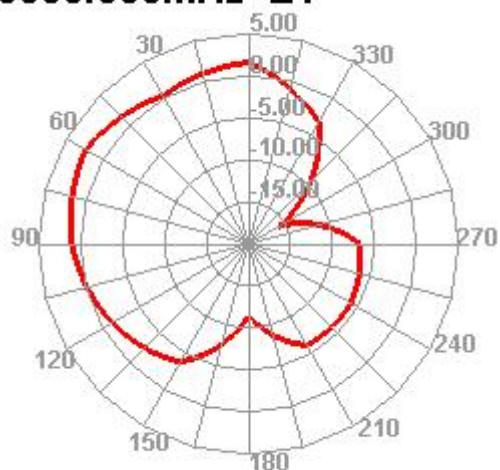
5850.000MHz



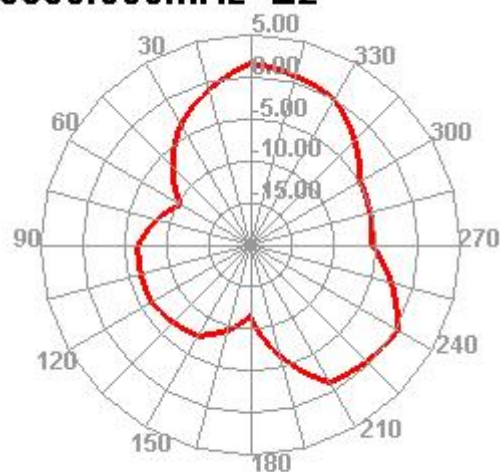
5850.000MHz H



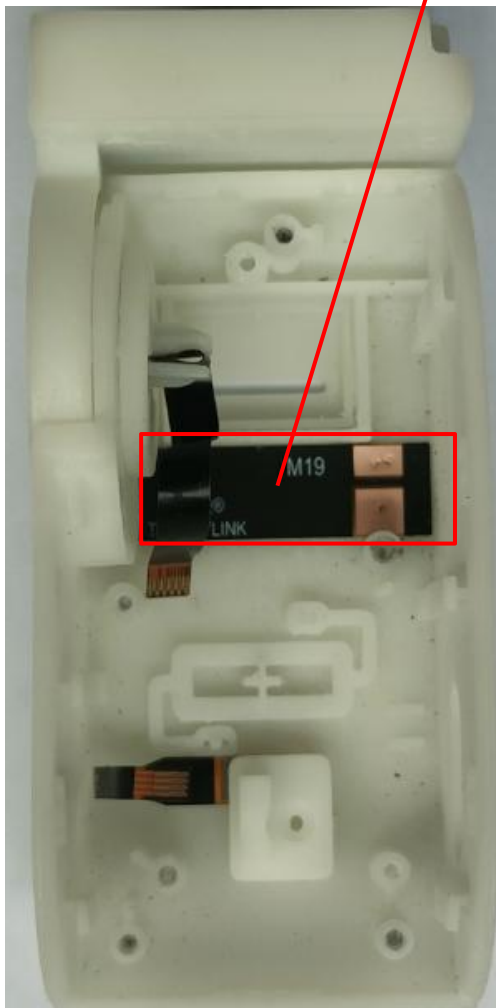
5850.000MHz E1



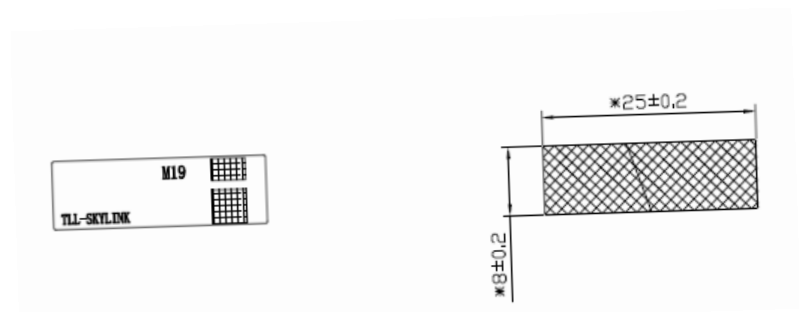
5850.000MHz E2



◆ Antenna assembly method



The antenna is aligned and tightly attached to the bone position in the direction of the arrow



◆ Reliability testing

Test items		Test conditions	Device	Specification	Result
1	Low temperature	Temperature: -30 °C, humidity: 65%, time: 48 hours Test conditions: Place the antenna in a high and low temperature test box, maintain the temperature at 25 °C and humidity at 65% for 1 hour, then lower the temperature to -30 °C within 1 hour and maintain it for 44 hours, then raise the temperature to 25 °C and maintain it for 2 hours	High and low temperature testing machine	No material deformation allowed Good electronic performance	Pass
2	Hot test	Temperature: 85 °C, humidity: 85%, time: 48 hours Test conditions: Place the antenna in a high and low temperature test box, with a temperature of 25 °C and a humidity of 65% for 1 hour. Then, within 1 hour, raise the temperature to 80 °C and a humidity of 85% for 44 hours, and then lower the temperature to 25 °C for 2 hours.	High and low temperature testing machine	No material deformation allowed Good electronic performance	Pass
3	Salt spray test	Salt Spray Test: Place the antenna in the salt spray testing machine and set the testing environment: Temperature 35 ± 2 °C Humidity 85% Salt spray: $5 \pm 1\%$ PH value 6.5-7.2 Time: 24 hours	Salt spray testing machine	No color change No rusting occurred	Pass