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Antenna Specifications



2025.11.18

(catalogue) :



(Model Information)

(Company profile)

(Passive and Matching)

(3D Active Test Data)



(Environmental treatment)

(Summary)

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1、 (Model Information)

Project name		RF	
Model Name		LTE:	
Antenna Type		Band	
Model pictures :			

2、 (Passive and Matching)

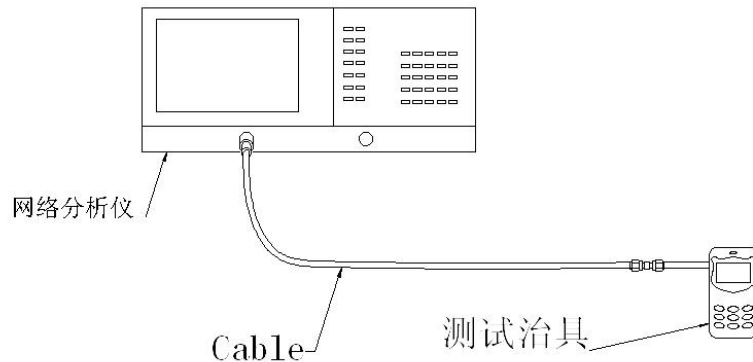
2.1A diagram of a passive test

S11 test method description

Testing equipment:

Network analyzer(E5071C 30k-8.5Ghz)

Test method: a 50 ohm CABLE is used to export from the instrument test port. After calibration, the sample machine and SMA joint of the instrument are connected.



2.2 Active test schematic

3D testing system: SHIELDED ANECHOIC chamber
testing environment: temperature 22 ° C ± 3 ° C, humidity 50% ± 15%
testing equipment: testing passive data, using the Network analyzer Agilent E5071C testing active data, using the synthesis instrument 8960cmw500

总全向辐射功率 (TIRP)

$$TIRP \equiv \frac{\pi}{2NM} \sum_{i=1}^{N-1} \sum_{j=0}^{M-1} [Eirp_{\theta}(\theta_i, \phi_j) + Eirp_{\phi}(\theta_i, \phi_j)] \sin(\theta_i)$$

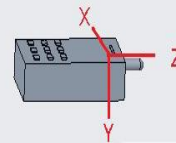
总全向辐射灵敏度 (TIRS)

$$TIRS \equiv \frac{2NM}{\pi \sum_{i=1}^{N-1} \sum_{j=0}^{M-1} \left[\frac{1}{EIS_{\theta}(\theta_i, \phi_j)} + \frac{1}{EIS_{\phi}(\theta_i, \phi_j)} \right]} \sin(\theta_i)$$

E1: XZ的切面 PHI=0

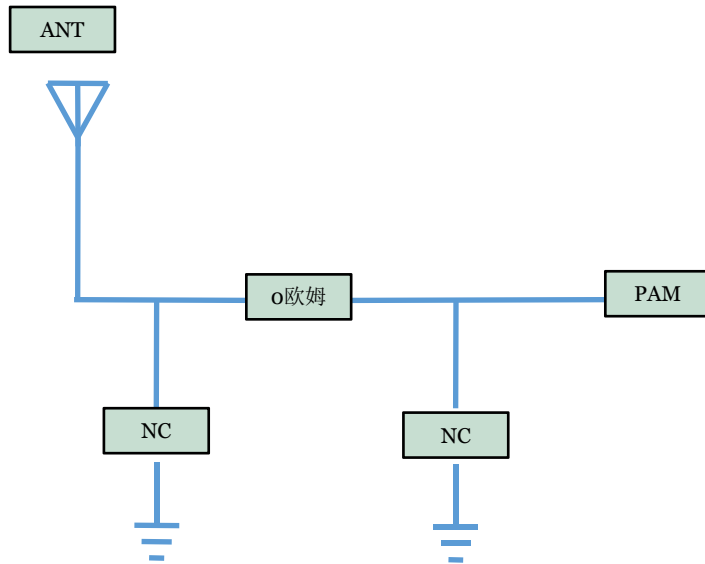
E2: YZ的切面 PHI=90

H: XY的切面 Theta=90



以喇叭天线为参考

2. 3 (Matching Circuit)



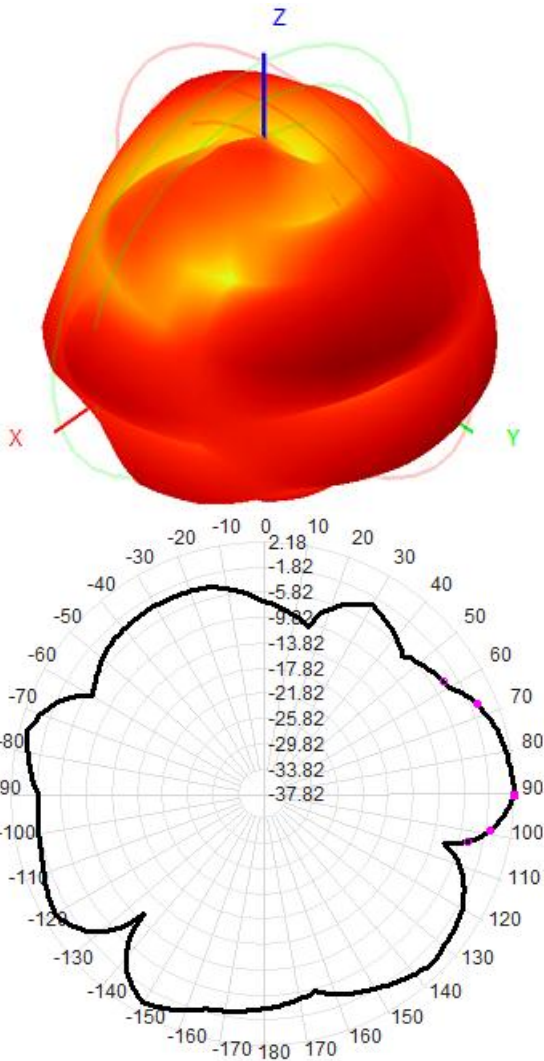
Motherboard matching
has not changed.

Note: original string 0 ohm from
antenna string 0 ohm resistor pa

4.1 passive antenna test data

Frequency Band	WIFI-2.4G-B模			WIFI-2.4G-G模		
channel	L	M	H	L	M	H
TRP	13.52	13.44	13.63	12.66	12.44	12.04
TIS			-78.25			-68.21
Frequency Band	WIFI-2.4G-N模			WIFI-5.8G-A模		
channel	L	M	H	L	M	H
TRP	12.60	12.07	12.44	13.25	12.41	12.06
TIS			-66.32			-71.54

4.2 passive antenna test data

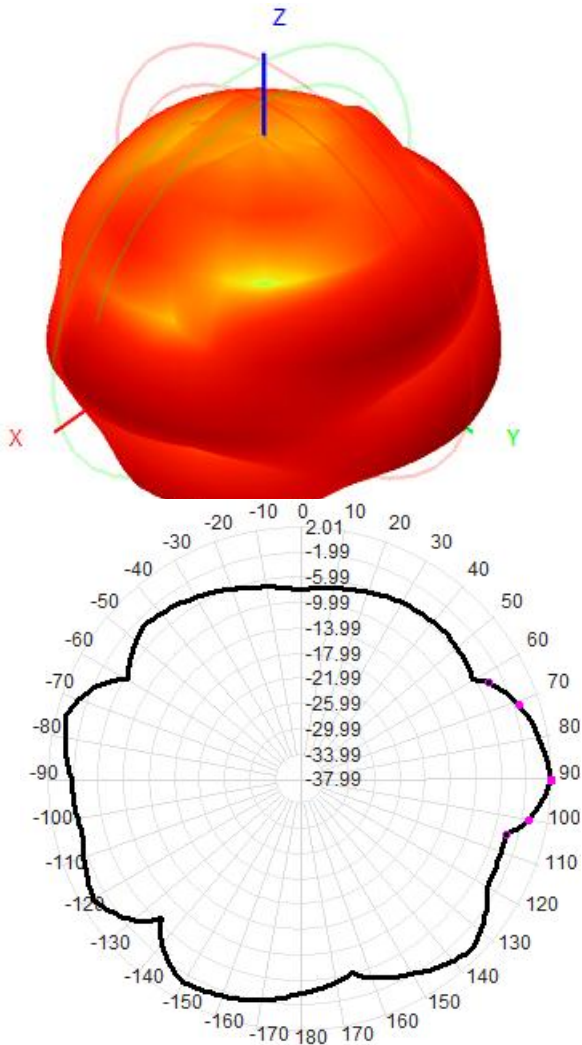


Test data:

WIFI 2.4G

Freq(MHz)	Efficiency (%)	Gain (dBi)
2400	57.93	1.60
2410	58.62	1.74
2420	57.18	1.75
2430	58.44	1.98
2440	57.63	2.18
2450	58.91	2.06
2460	57.18	1.68
2470	55.15	1.77
2480	55.63	1.84

4.2 passive antenna test data



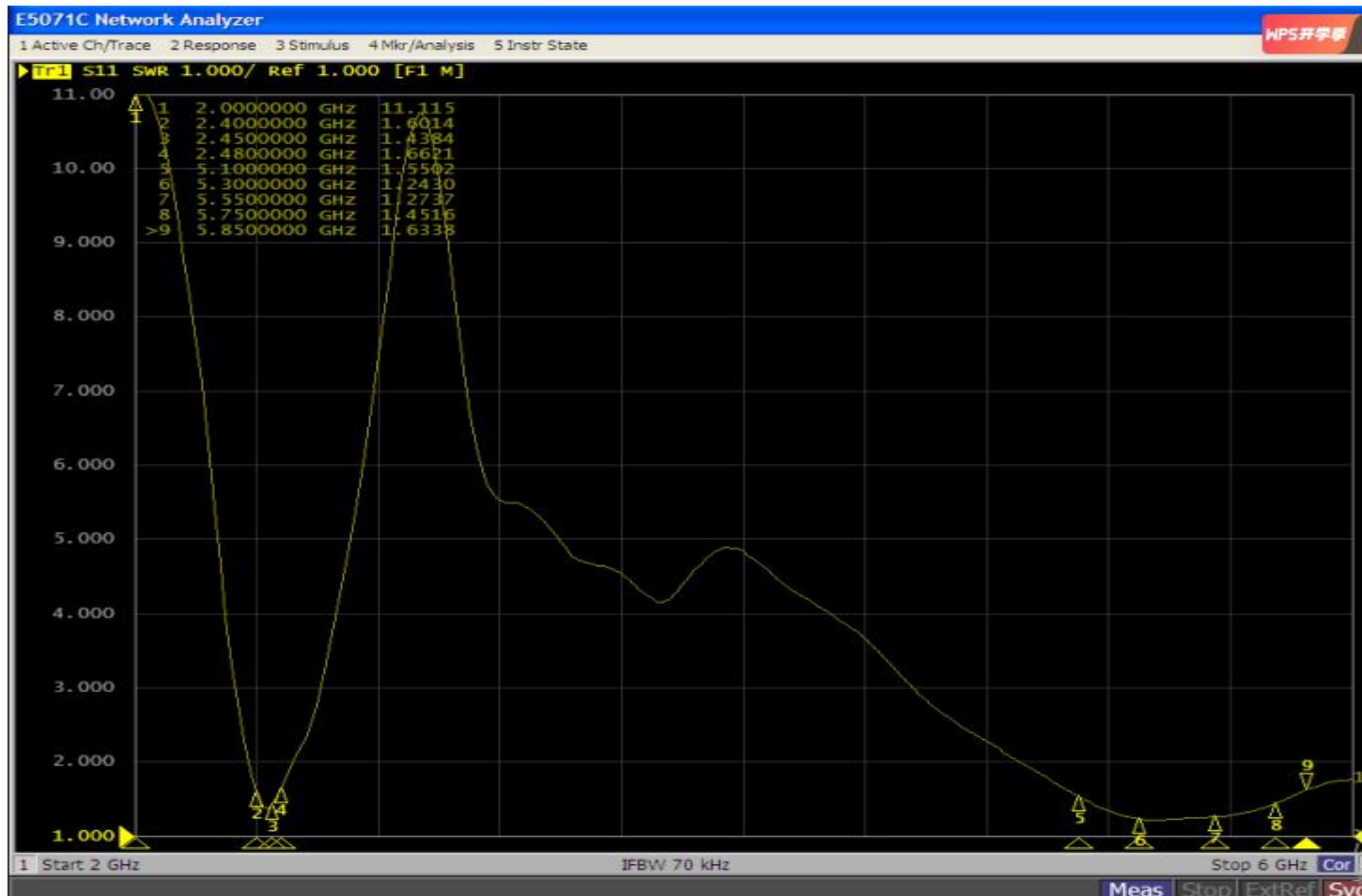
Test data:

WIFI 5.8G

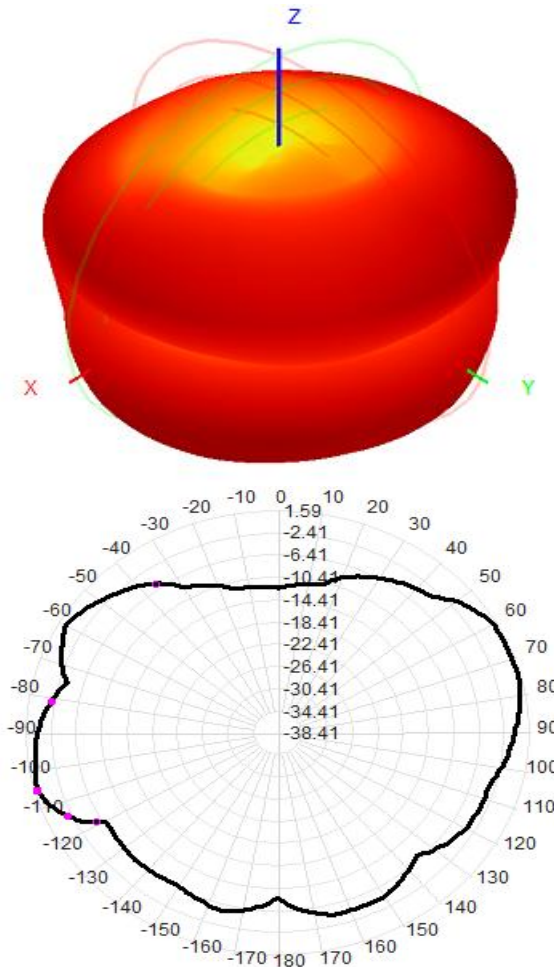
Freq(MHz)	Efficiency (%)	Gain (dBi)
5000	52.30	1.62
5100	54.15	1.74
5200	56.32	1.85
5300	57.52	1.99
5400	58.62	2.01
5500	54.82	1.57
5600	57.25	1.46
5700	56.19	1.33
5800	54.75	1.25
5850	55.63	1.41

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4.2 Main antenna SWR



4.3 Secondary antenna passive data

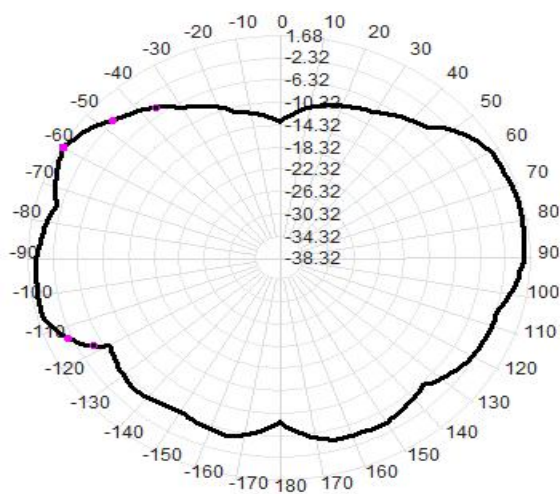
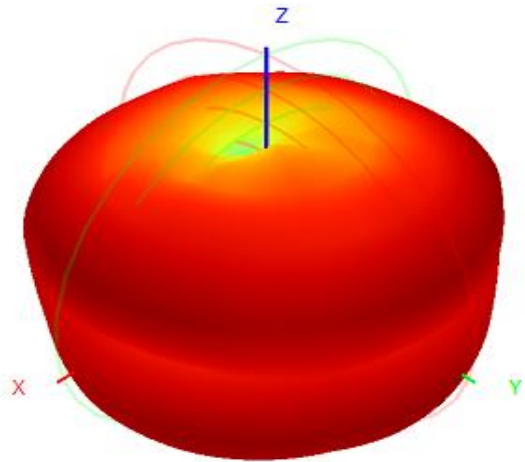


Test data:

WIFI 2.4G

Freq(MHz)	Efficiency (%)	Gain (dBi)
2400	54.85	1.25
2410	58.41	1.44
2420	59.65	1.59
2430	54.25	1.30
2440	55.32	1.25
2450	52.50	1.40
2460	53.54	1.55
2470	58.41	1.56
2480	57.49	1.41

4.3 Secondary antenna passive data

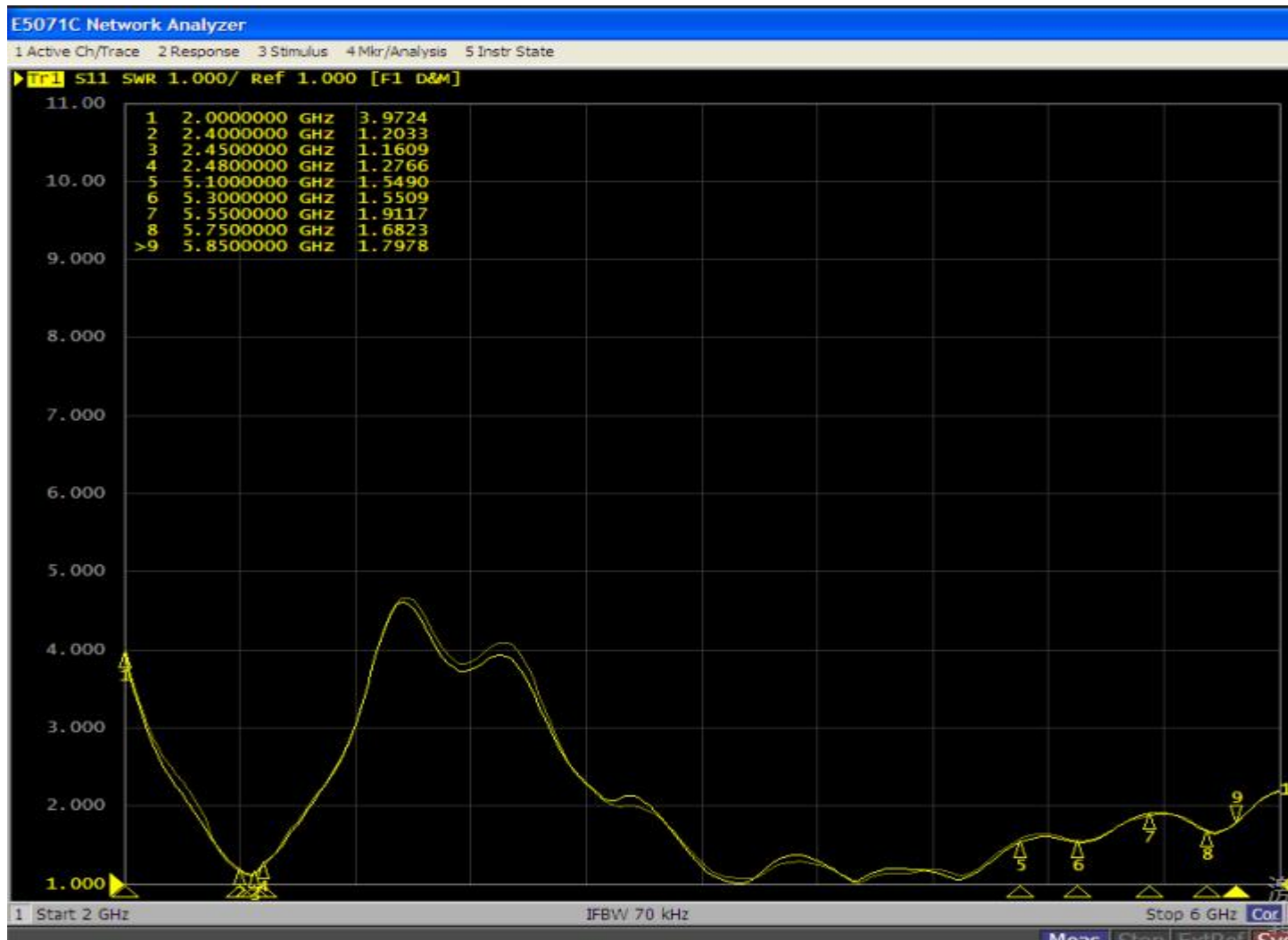


Test data:

WIFI 5.8G

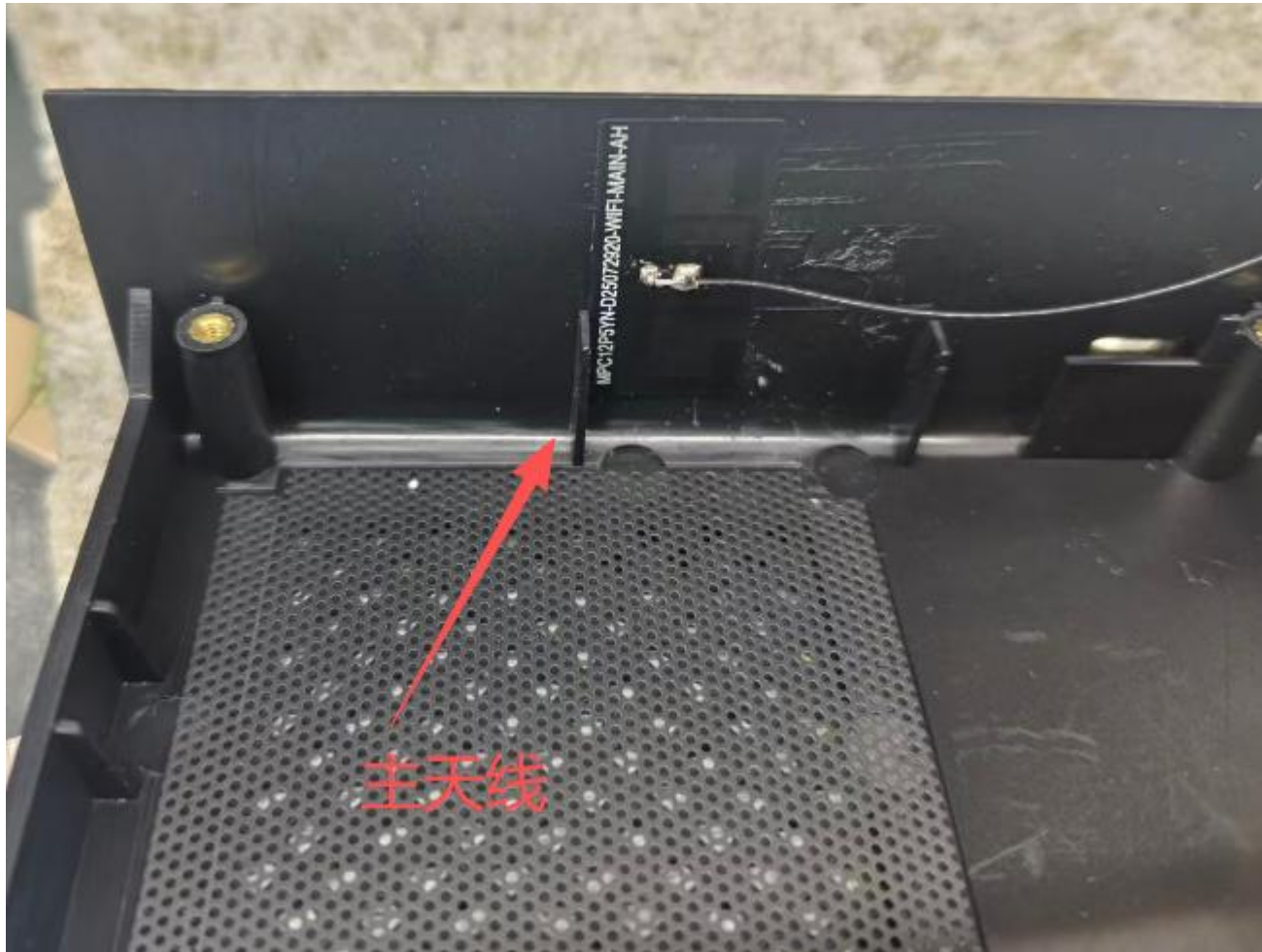
Freq(MHz)	Efficiency (%)	Gain (dBi)
5000	57.55	1.40
5100	58.65	1.55
5200	59.14	1.68
5300	57.25	1.54
5400	55.25	1.28
5500	56.25	1.47
5600	54.15	1.32
5700	57.25	1.47
5800	59.63	1.58
5850	54.12	1.60

4.3 Secondary antenna passive data



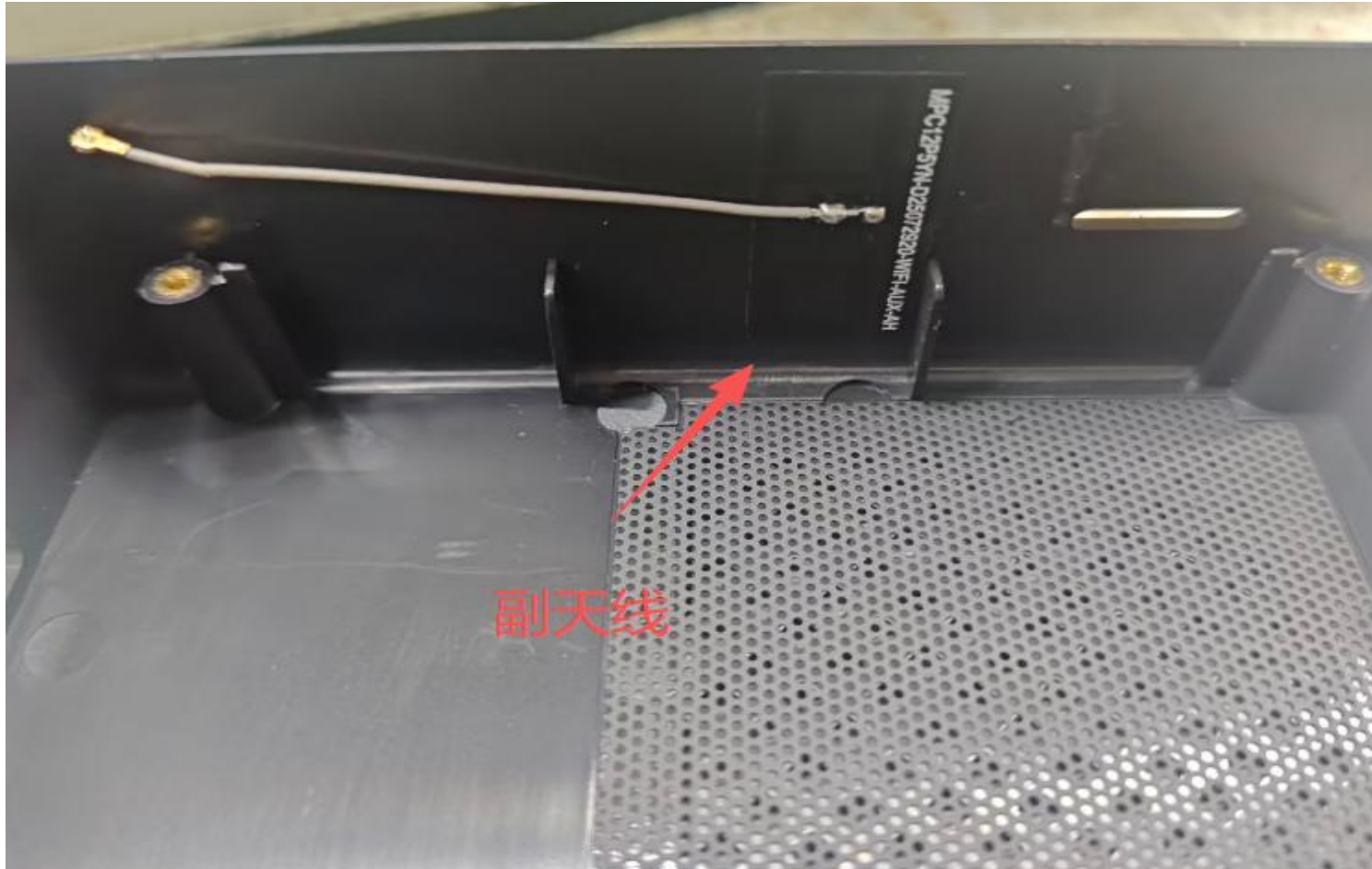
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● ● ● Environmental treatment



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Environmental treatment

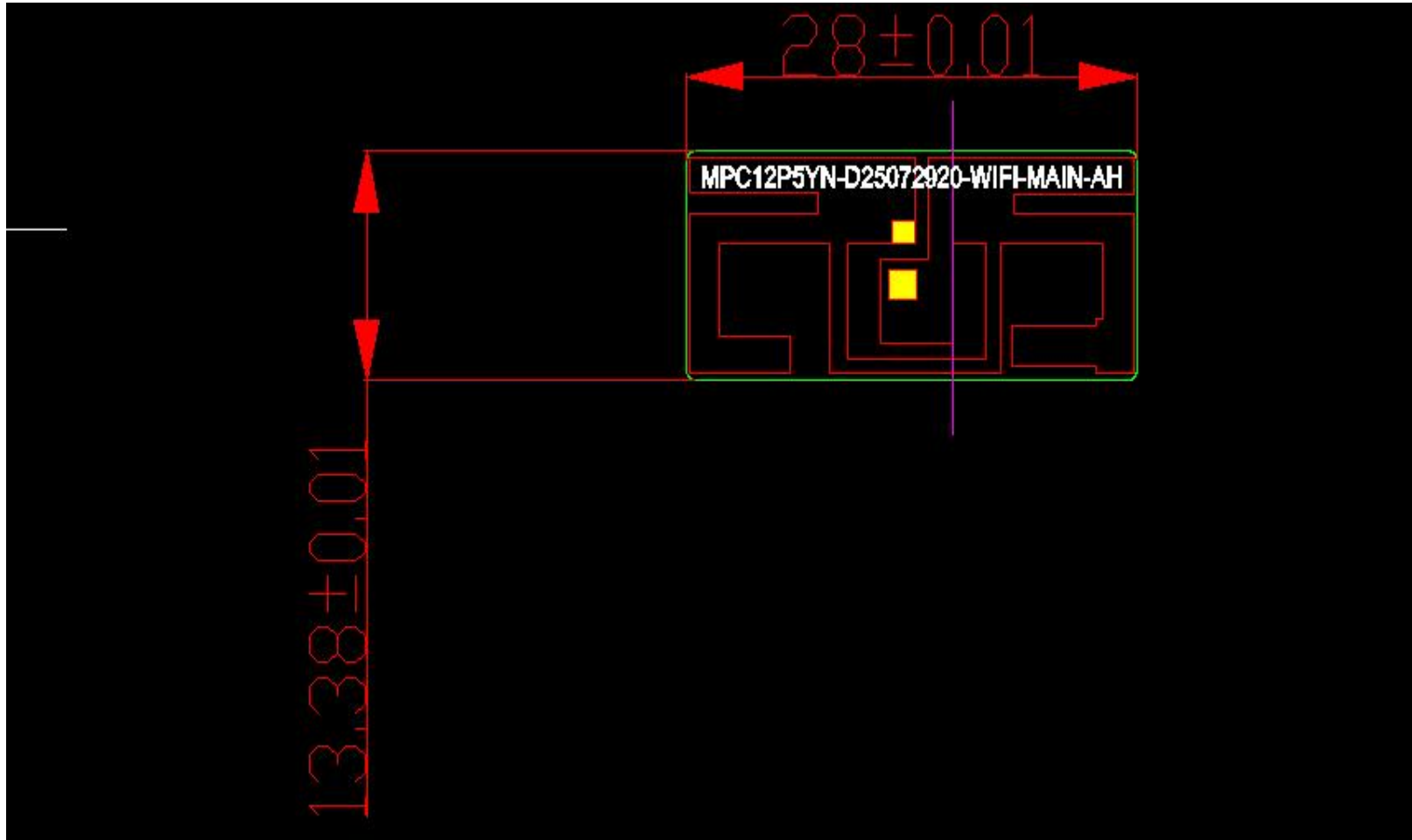


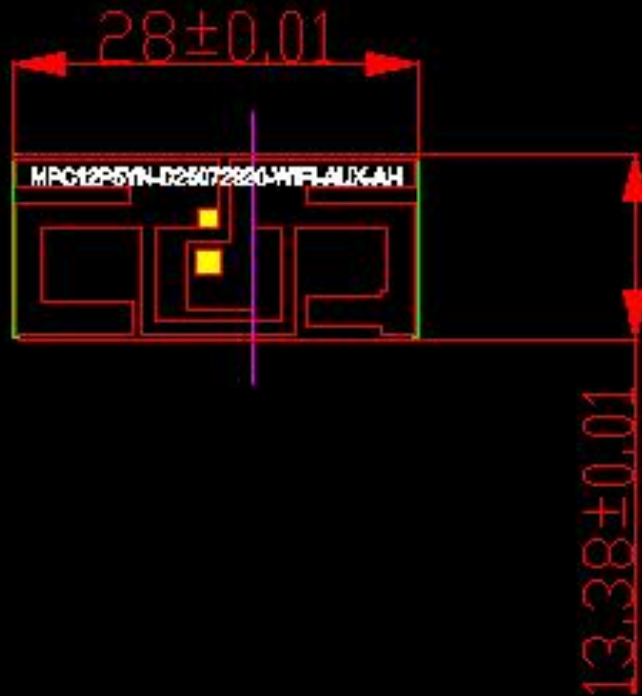
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Environmental treatment



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6、 (Summary)

Combined with the active, passive antenna, measured results, have reached the best state.

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Note: 1. This report is based on the actual debugging and testing of the prototype, in which the environment processing, antenna position and the assembly position of each component can not be changed at will. 2. If there is any change in the materials used in the prototype, we need to make a timely feedback to revalidate. 3. List of sensitive devices: TP (material, coating, wiring, etc.) screen (amplifier circuit, LED, wiring design, etc.) shell material (antenna assembly mode, structural interference, shell material, antenna position height and area, etc.) motherboard (motherboard conduction, RF circuit matching, PA, dual-power, filter, LNA, power circuit, etc.) camera, battery, motor, MIC, fingerprint identification module, etc. 4. Because there are few or only one prototype, some probability problems can not be found out completely. It is suggested to check the problem points in small batch before mass production (such as flashing screen, loudspeaker noise, TP Jump Point, black screen death, signal diving, etc.)

Thank you

