Antenna Test report

Model Name : M9-4-YK-T310

Date: 27st Sep, 2023

Shenzhen Xinlingke Technology Co., Ltd.

Adress: Fifth floor, Shenzhen Flour Company office building, North District, High-tech Park, Nanshan District, Shenzhen

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BTantenna

CONTENT

01.Project Introducation and Photoes-Project Introducation

RF Engineer	Engineer Kong	Email	2532625702@qq.com
		Mobile	18477016343
Antenna Overview			
Status of Sample machine	Whole machine	Project Name	**M9-4-YK-T310**
Antenna Type	PIFA	Structure mode	FPC+4th Generation coaxial line
Main Antenna	4G : 2 4 5 7 12 17 41 66 71		
Other Antenna	Diversity Three-in-one antenna		

02.Report Versions

Version	Report Time	Commissioning Overview
A0	2023.08.02	Antenna Test Report
A1		
A2		
A3		
A4		
A5		
A6		
A7		
A8		
A9		
A10		

03.Introduction of Company and Test Environment- Company

Company Experience

Shenzhen Xinlingke Technology Co., Ltd. owns 12 years of experience in R & D and production of various mobile communication terminals. Company has established a joint RF device laboratory with universities. Company is proficient in antennas of 5G NSA and SA, ultra thin mobile phones, NB IOT / EMTC, and base station.

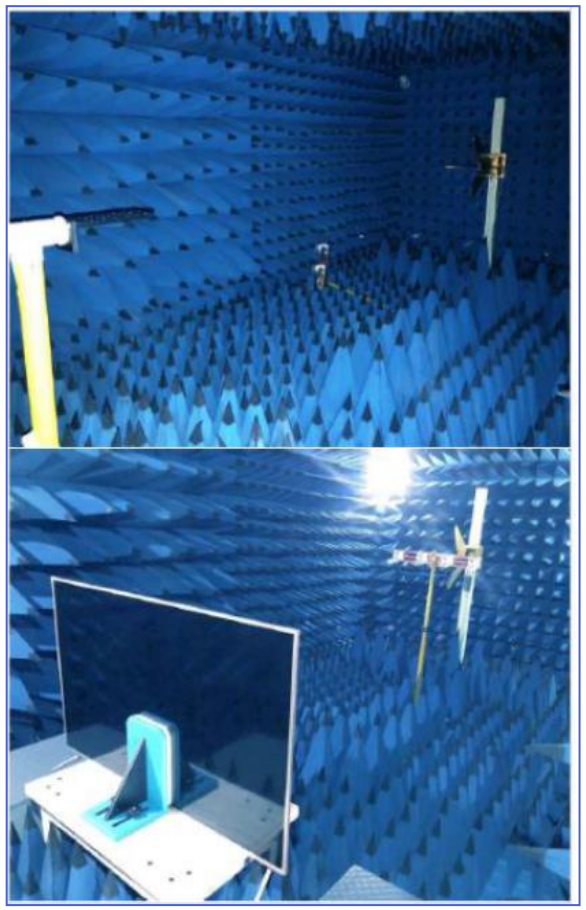
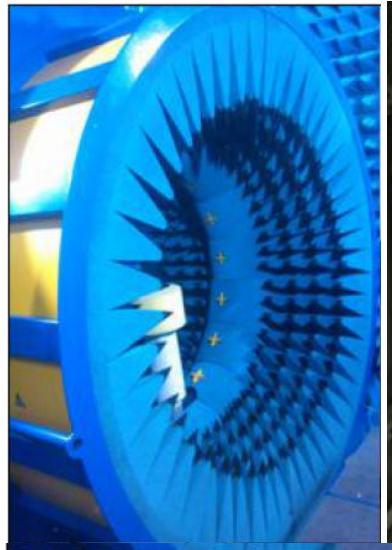
Product Range

The products of company cover many fields, such as smart home, Internet of vehicles, smart wear, mobile phones, pad, base station etc.

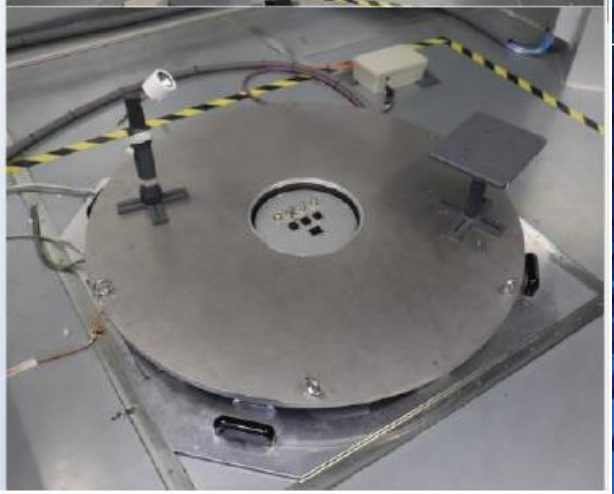
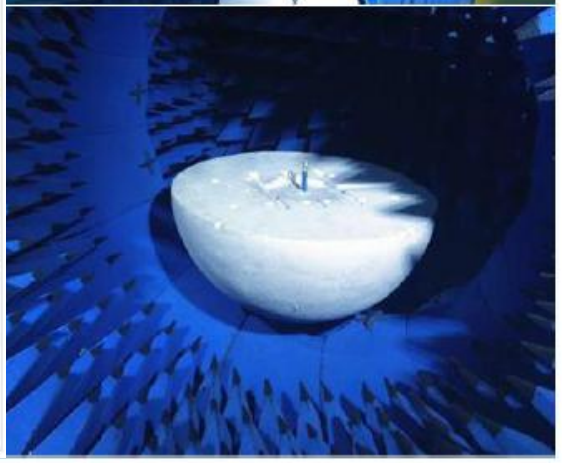
Core Task

Company has been committed to improving our long-term competitiveness by providing whole RF solution, insisted on taking customer demand as the first place.

04.Introduction of Company and Test Environment-Test Environment

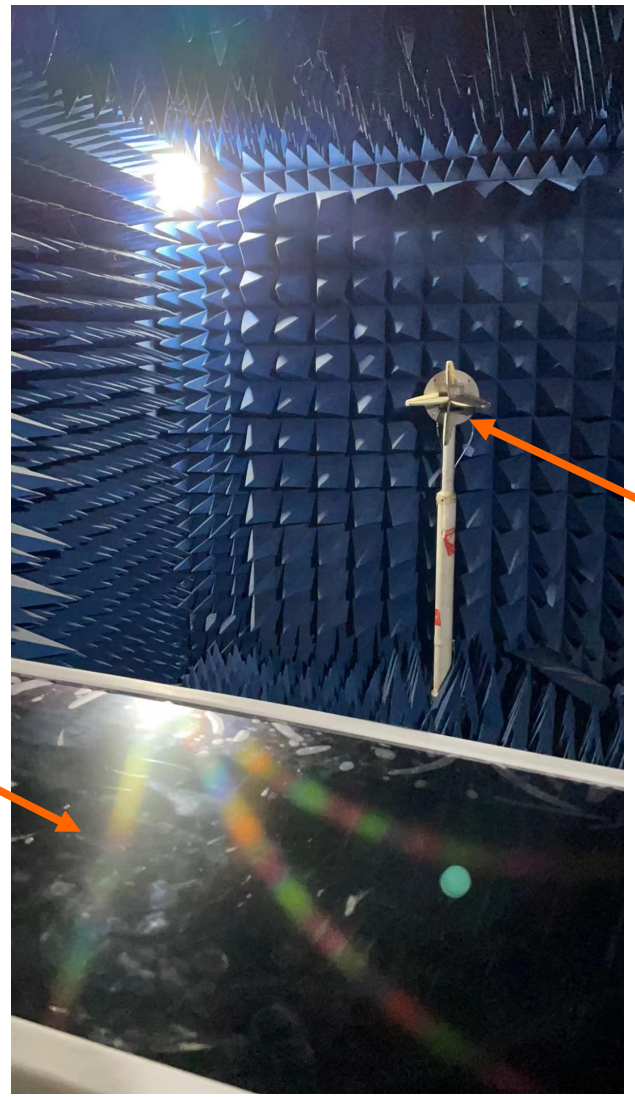


The company owns several OTA darkrooms whose frequency bands covers from 400mhz to 8.5ghz.

- Providing OTA test for whole machine which include but not be limited to 5G NSA, SA(trp/tis), WiFi active test (supporting 11b/11g/11n/11ax mode), bluetooth/GPS active test
- Providing antenna gain and efficiency
- Providing2D pattern / Apple chart analysis
- Providing upper and lower hemisphere efficiency
- Providing mutual interference correlation coefficient test items.

05.Enviornment Test



06.Antenna correlation data

Main antenna active data

Band	Channel	TRP (dbm)	TIS (dbm)
B2	L	17.05	
	M	17.49	
	H	16.6	-90.71
B4	L	15.71	
	M	15.86	
	H	15.91	-92.13
B5	L	10.5	
	M	10.64	
	H	10.42	-78.21
B7	L	15.77	
	M	15.24	
	H	15.17	-84.02

Band	Channel	TRP (dbm)	TIS (dbm)
B12	L	10.55	
	M	10.81	
	H	10.25	-80.24
B17	L	10.05	
	M	10.12	
	H	10.25	-80.84
B41	L	15.47	
	M	14.21	
	H	13.47	-85.02

Band	Channel	TRP (dbm)	TIS (dbm)
B66	L	15.37	
	M	16.45	
	H	16.4	-87.6
B71	L	10.12	
	M	10.38	
	H	11.69	-70.27

07.Main antenna data

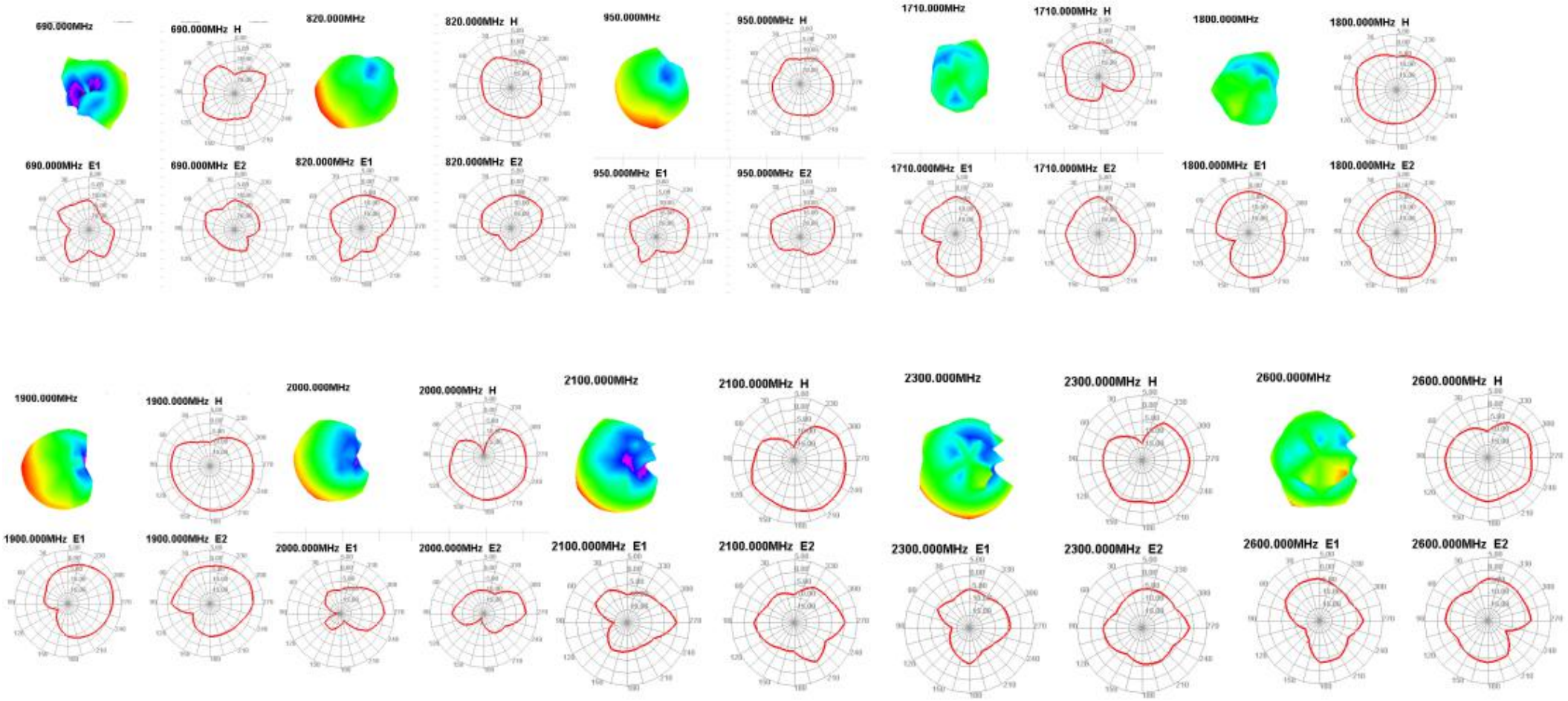
Freq (MHz)	Gain (dBi)
650	-2.42
660	-2.6
670	-2.04
680	-2.85
690	-2.74
700	-2.09
710	-2.98
720	-2.74
730	-2.24
740	-2.1
750	-2.41
760	-2.33
770	-2.26
780	-3.05
790	-3.13
800	-3.27
810	-3.32
820	-3.32
830	-3.43
840	-3.51
850	-3.56
860	-3.55
870	-3.62
880	-3.77
890	-3.77
900	-3.79
910	-3.81
920	-3.93
930	-3.95
940	-4.02
950	-4.12
960	-4.54

Passive Test For	
Freq (MHz)	Gain (dBi)
1700	-1.68
1710	-1.41
1720	-1.71
1730	-1.91
1740	-1.87
1750	-1.91
1760	-1.81
1770	-1.88
1780	-1.86
1790	-1.7
1800	-0.33
1810	-0.47
1820	-0.43
1830	-0.16
1840	0.6
1850	0.27
1860	-0.32
1870	-0.25
1880	0.67
1890	0.02
1900	-0.67
1910	-0.9
1920	-0.66
1930	-0.92
1940	-1.29
1950	-1.12
1960	-1.27
1970	-2.13

1980	-2.34
1990	-1.68
2000	-1.91
2010	-1.51
2020	-2.86
2030	-2.25
2040	-2.01
2050	-2.28
2060	-2.04
2070	-1.92
2080	-2.96
2090	-2.67
2300	-1.79
2310	-1.31
2320	-2.58
2330	-2.31
2340	-1.86
2350	-1.87
2360	-1.97
2370	-1.78
2380	-1.96
2390	-1.76
2400	-1.62
2500	-1.81
2510	-1.24
2520	-1.28
2530	-0.68
2540	-1.14
2550	-0.99
2560	-0.2
2570	-0.36

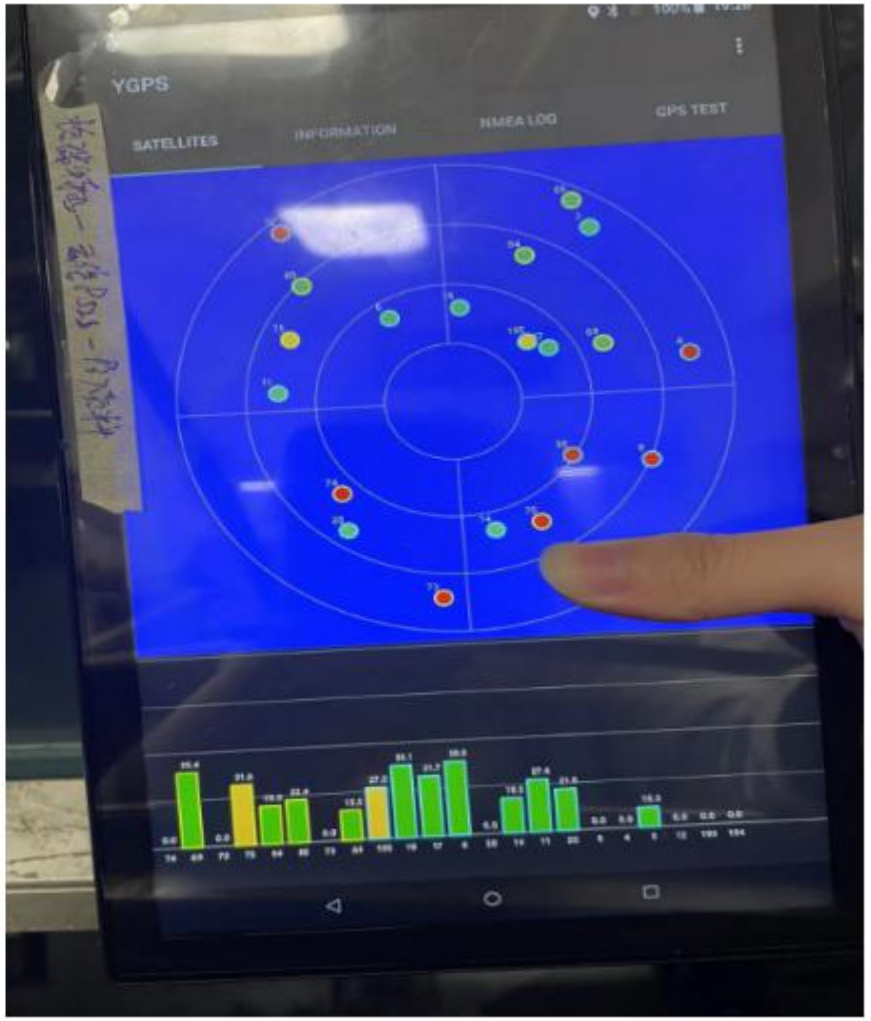
2580	-0.71
2590	-0.55
2600	-0.39
2610	0.85
2620	-0.33
2630	-1.11
2640	-0.23
2650	-0.4
2660	-0.45

08.Main antenna data



09. GPS/BT/ measured data

GPS search more than 40 stars on the top of the fifth floor of our company, positioning time 1 minute. Bluetooth no block 12 meters listening to music smooth



10. WIFI active data

2.4G WIFI active data

2.4GWIFI	802.11b（11M）		
channel	1	7	13
TRP(dbm)	9.02	9.35	9.51
TIS(dbm)			-72.33

5G WIFI active data

5GWIFI	802.11a（54M）			
channel	36	64	149	165
TRP(dbm)	7.24	7.33	7	6.67
TIS(dbm)				-64.86

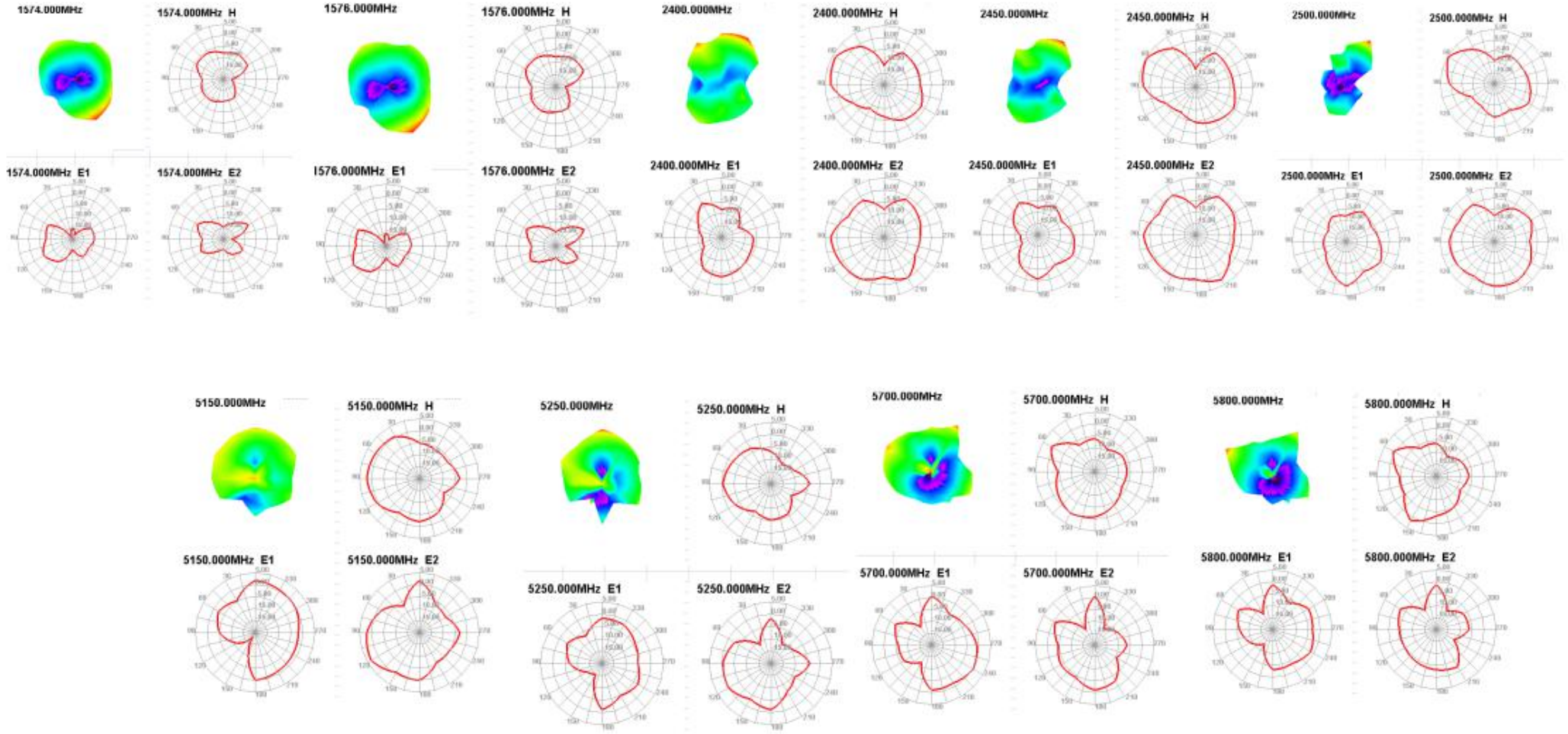
11.Three-in-one antenna data

Passive Test For	
Freq (MHz)	Gain (dBi)
1564	-1.77
1566	-1.72
1568	-1.74
1570	-1.81
1572	-1.73
1574	-1.63
1576	-1.49
1578	-1.32
1580	-1.15
1582	-1.07
1584	-1.02

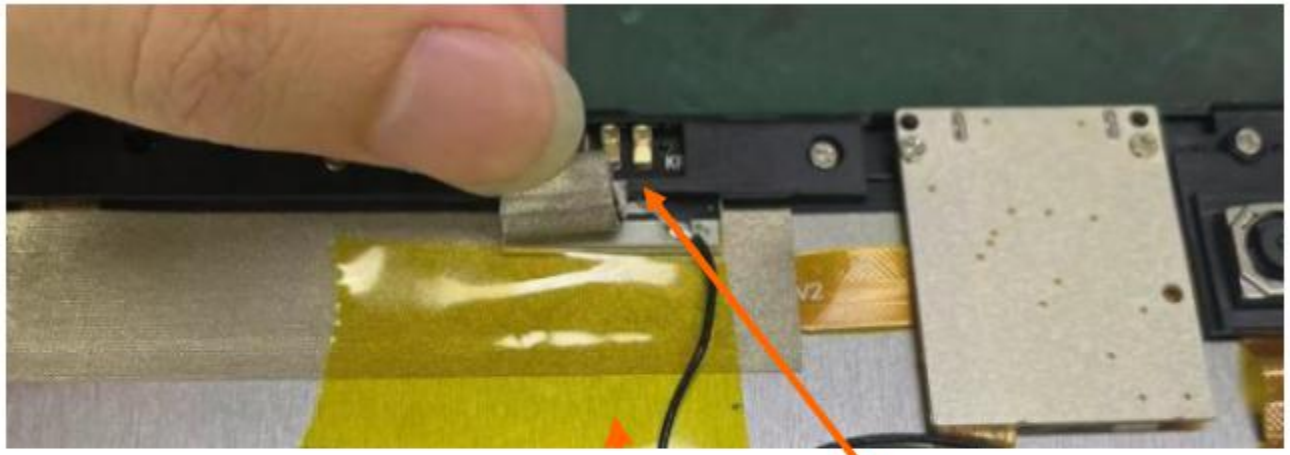
Passive Test For	
Freq (MHz)	Gain (dBi)
2400	-0.91
2410	-0.65
2420	-1.07
2430	-1.16
2440	-0.91
2450	-0.52
2460	-0.94
2470	-1.31
2480	-0.96
2490	-1.46
2500	-1.57

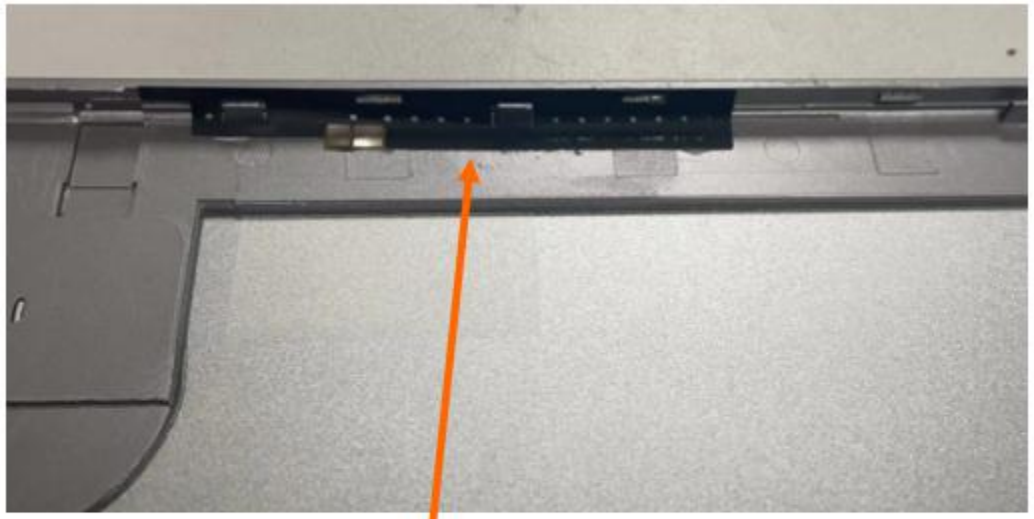
Passive Test For	
Freq (MHz)	Gain (dBi)
5150	0.67
5200	0.53
5250	-0.93
5300	-1.93
5350	-0.47
5400	-1.09
5450	-1.62
5500	-2.11
5550	-2.11
5600	-2.32
5650	-3.49
5700	-1.67
5750	-2.3
5800	-1.67
5850	-1.1

12.Three-in-one antenna data



13. Antenna location diagram

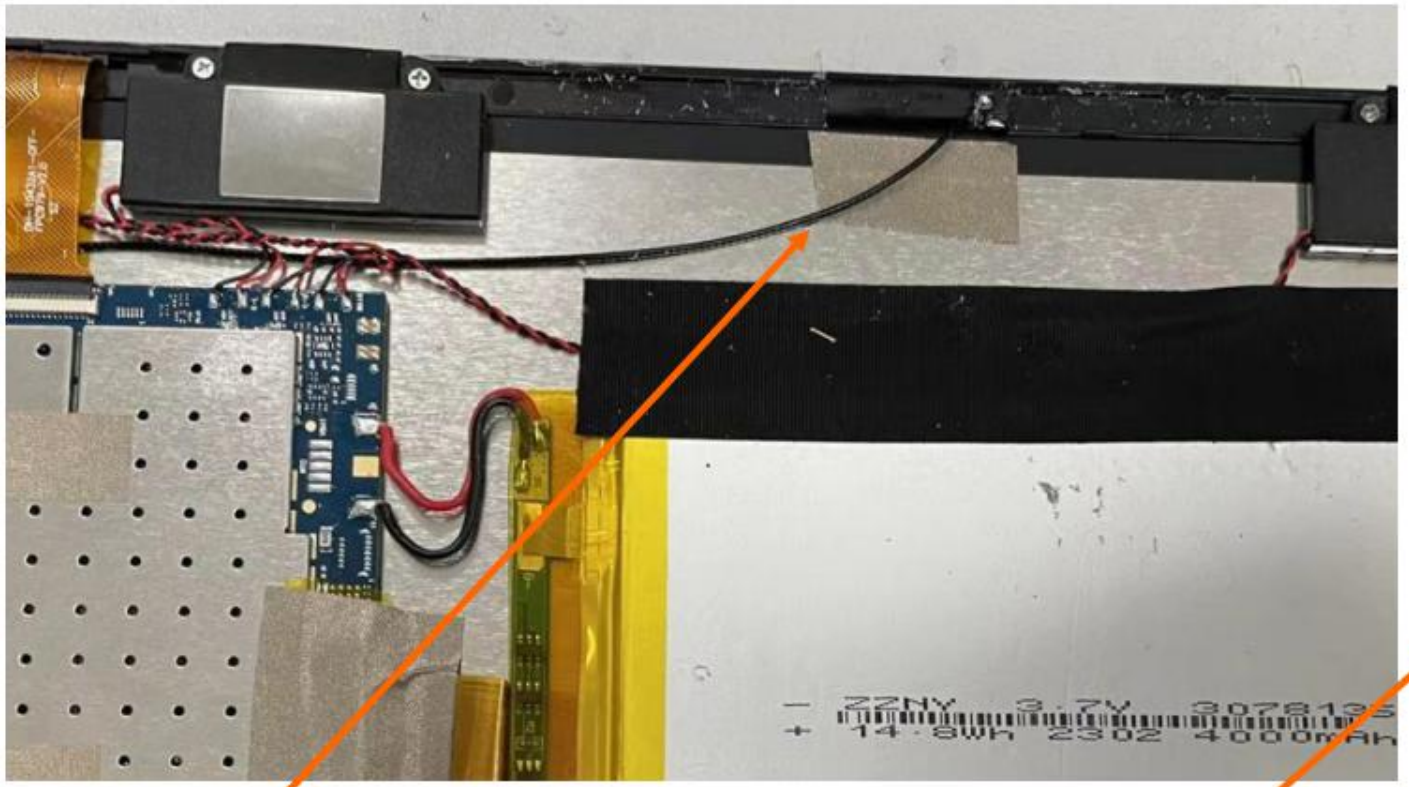




Position of main antenna panel

Position of main antenna

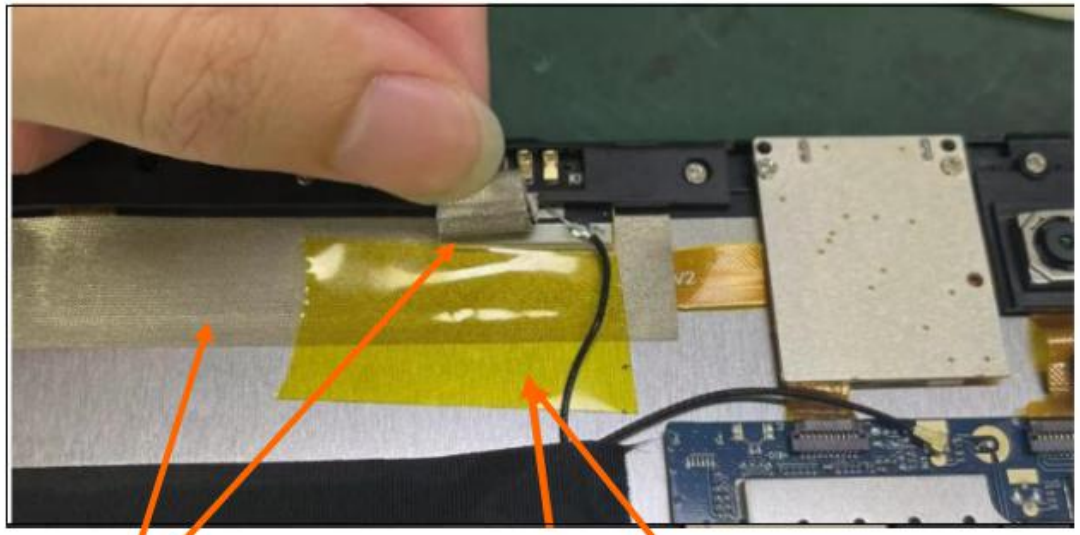
14. Antenna location diagram

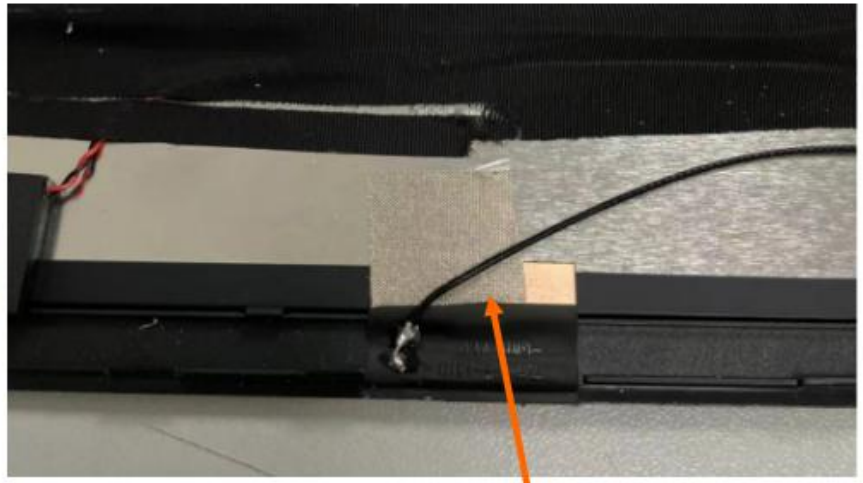


Three-in-one antenna position

Diversity antenna position

15. Environmental treatment





Attach conductive cloth to the camera cables, and attach conductive foam to the small board and ground the rear shell

Insulation adhesive is applied here to prevent the conductive sponge on the small board from grounding the screen

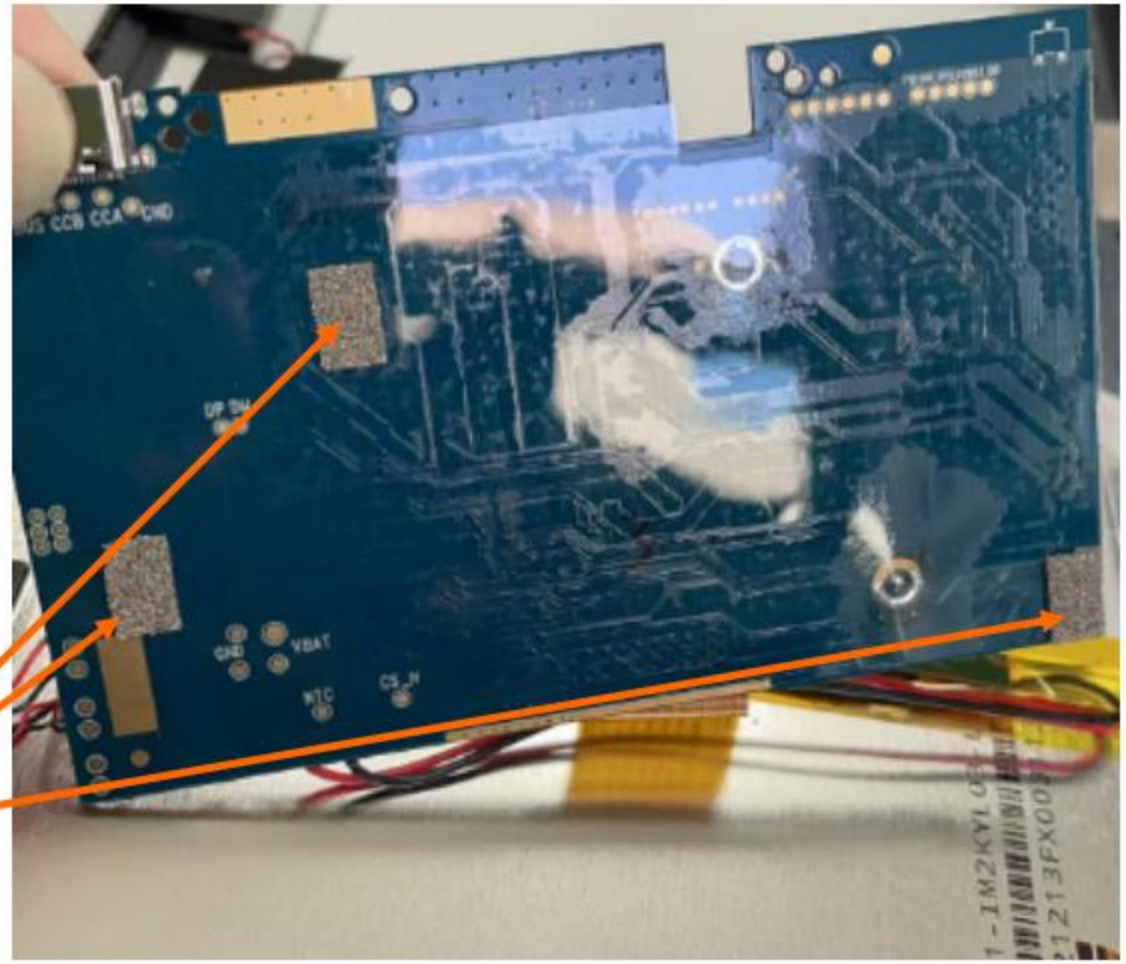
Three-in-one antenna ground

16. Environmental treatment

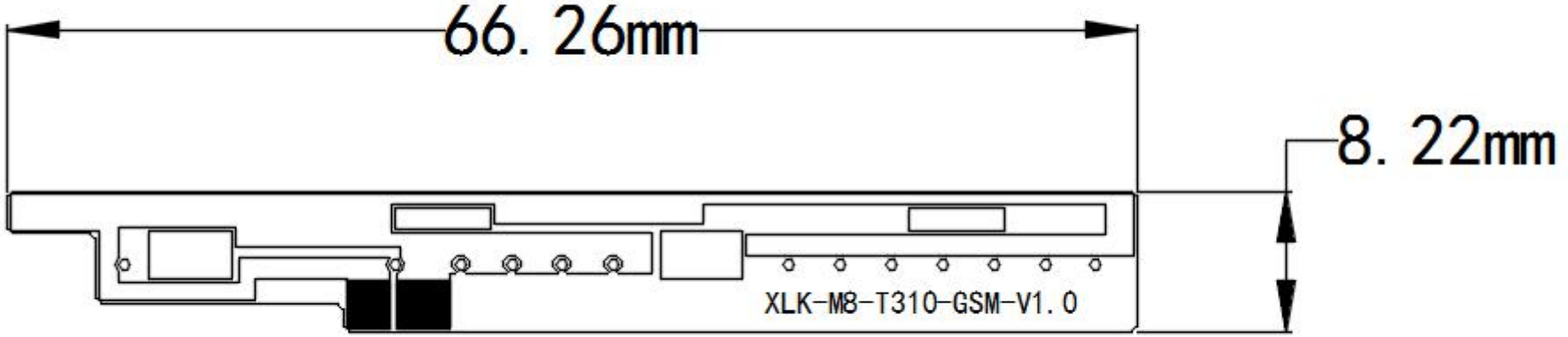
The rear shell is grounded to the mainboard

Wiring with conductive cloth

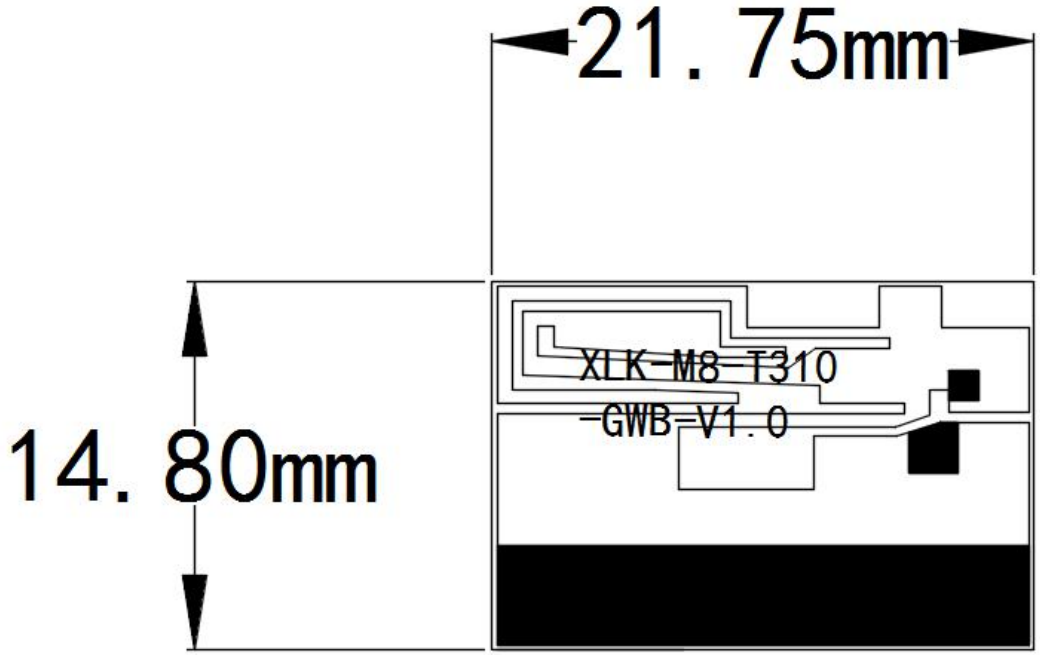
17 Environmental treatment



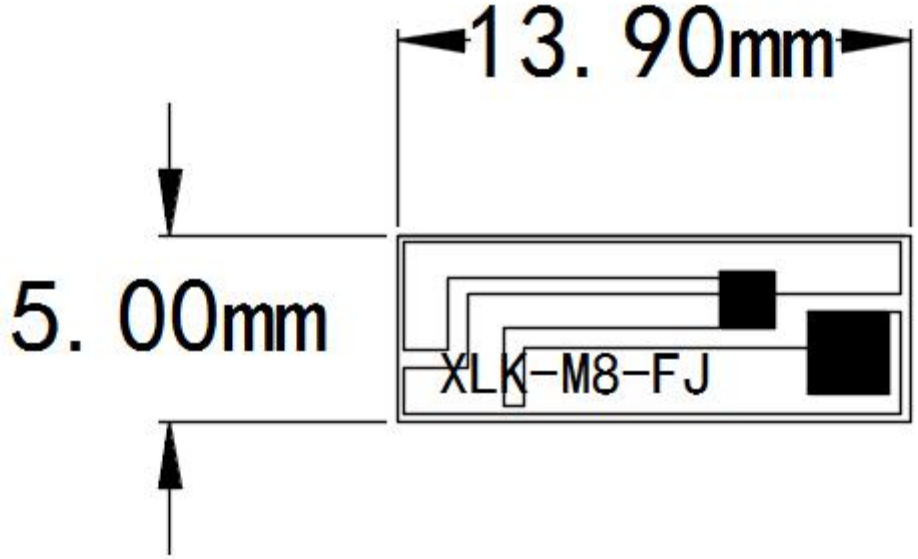
18 Antenna size diagram
Main antenna



19 Antenna size diagram
Three-in-one antenna

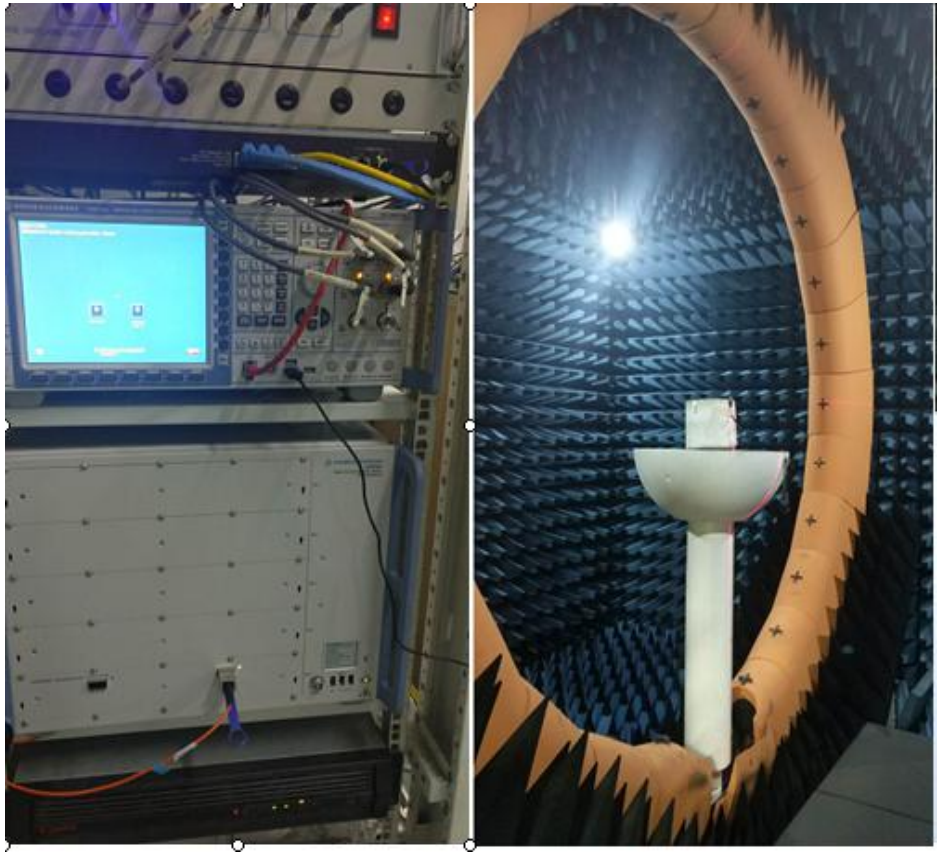


20 Antenna size diagram
Diversity antenna



21.Conclusion

The software and hardware of batch prodution should be the same as the sample machine.



THANKS !

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