



Antenna Test report

Model Name: M9-4-YJ-SL730A

Date: 15th Aug, 2023

Shenzhen Xinlingke Technology Co., Ltd.

www.kpantenna.com

诚信 · 感恩

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01.Project Introduction and Photoes-Project Introduction



RF Engineer	Engineer Kong	Email	2532625702@qq.com
		Mobile	18477016343
Antenna Overview			
Status of Sample machine	Whole machine	Project Name	M9-4-YJ-SL730A
Antenna Type	PIFA	Structure mode	FPC+4th Generation coaxial line
Main Antenna	4G:B2 B3 B4 B5 B7 B8 B20 B28A B40, 3G(850/1900) 2G(850/900/1800/1900)		
Other Antenna	Diversity Three-in-one antenna		

02.Report Versions



Version	Report Time	Commissioning Overview
A0	2023.08.02	Antenna Test Report
A1	2023.08.05	Optimize the main antenna test report
A2	2023.08.15	Optimize jamming antenna test report
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



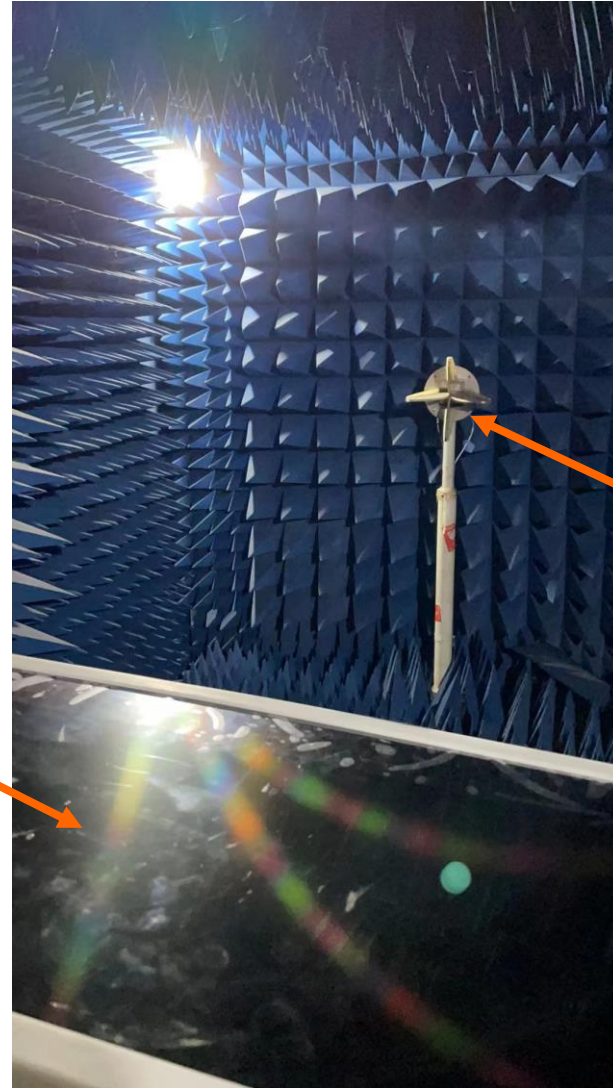
The company owns several OTA darkrooms whose frequency bands covers from 400mhz to 8.5ghz.

- 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
- Providing 2D pattern / Apple chart analysis
- Providing upper and lower hemisphere efficiency
- Providing mutual interference correlation coefficient test items.

05.Environment Test



Location of
Tested
Machine



Location of
Loudspeaker

06.Antenna correlation data



Main antenna active data

Band	Channel	TRP	TIS
B2	L	17.3	
	M	17.2	
	H	17.1	-90.7
B3	L	17.1	
	M	17.6	
	H	17.1	-91.6
B4	L	17.1	
	M	17.2	
	H	17.1	-90.4
B5	L	12.2	
	M	12.1	
	H	11.3	-82.1

Band	Channel	TRP	TIS
B7	L	12.1	
	M	12.6	
	H	14.1	-88.9
B8	L	10.2	
	M	9.5	
	H	8.5	-78.5
B28	L	13.4	
	H	13.7	-83.8
B40	L	12.6	
	M	13.1	
	H	13.1	-84

07. Antenna correlation data

Main antenna active data



Off screen	
EGSM TRP	EGSM TIS
124	124
914.799	959.799
19.44	-93.56
Flash the screen and turn on the camera	
EGSM TRP	EGSM TIS
124	124
914.799	959.799
19.35	-93.72

Off screen	
WCDMA_II TRP	WCDMA_II TIS
9262	9662
1852.4	1932.4
17.53	-105.72
Bright screen before rectification	
WCDMA_II TRP	WCDMA_II TIS
9262	9662
1852.4	1932.4
17.54	-100.86
After the brightening environment is rectified	
WCDMA_II TRP	WCDMA_II TIS
9262	9662
1852.4	1932.4
17.57	-103.23

08. WIFI active data



2.4G WIFI active data

2.4GWIFI	802.11b (11M)		
channel	1	7	13
TRP	6.2	9.7	9.7
TIS			-74.1

5G WIFI active data

5GWIFI	802.11a (54M)		
channel	36	149	165
TRP	8.5	5.7	3.9
TIS			-65.6

09. Antenna passive data

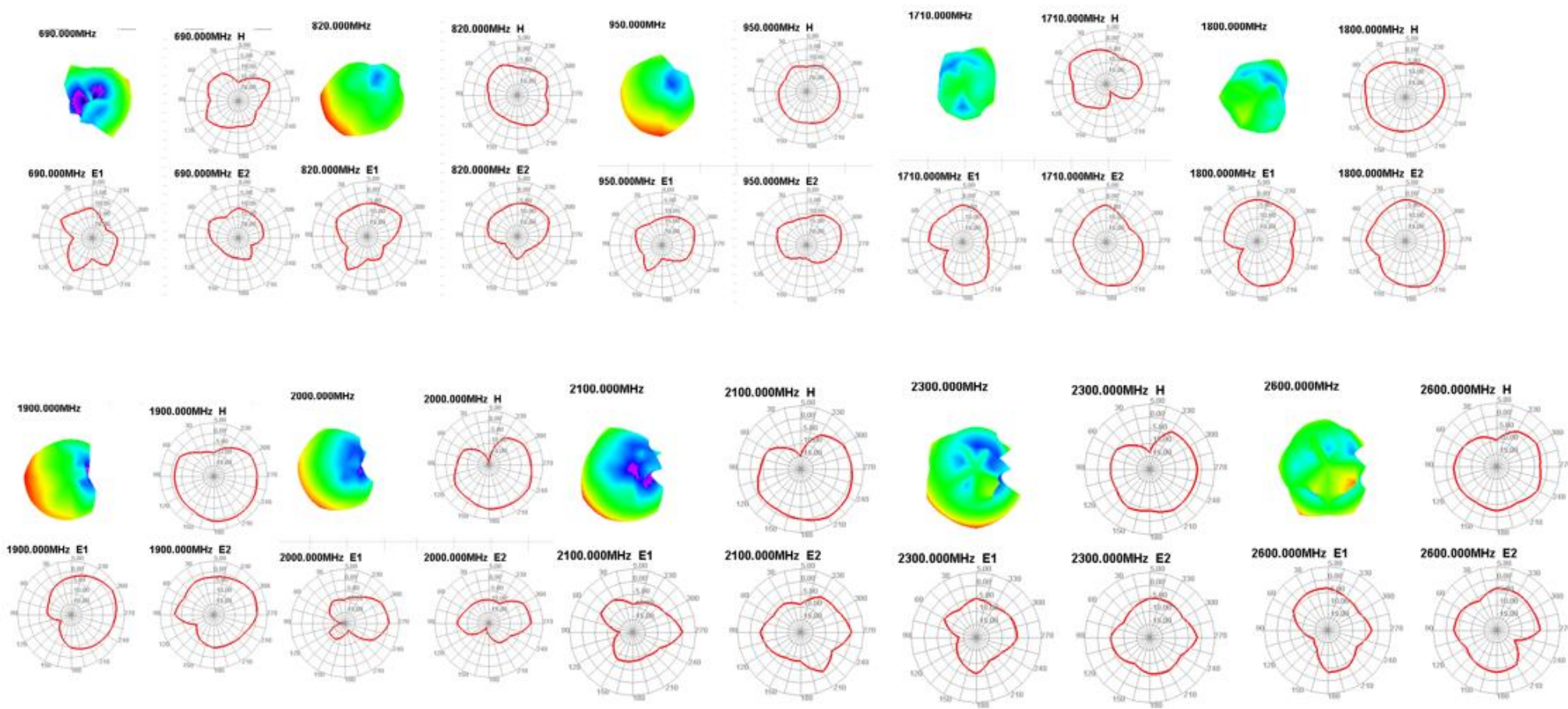
4G main antenna gain

Passive Test For		Passive Test For					
Freq (MHz)	Gain (dBi)	Freq (MHz)	Gain (dBi)				
690	-2.74	1700	-1.68	1980	-2.34	2580	-0.71
700	-2.09	1710	-1.41	1990	-1.68	2590	-0.55
710	-2.98	1720	-1.71	2000	-1.91	2600	-0.39
720	-2.74	1730	-1.91	2010	-1.51	2610	0.85
730	-2.24	1740	-1.87	2020	-2.86	2620	-0.33
740	-2.1	1750	-1.91	2030	-2.25	2630	-1.11
750	-2.41	1760	-1.81	2040	-2.01	2640	-0.23
760	-2.33	1770	-1.88	2050	-2.28	2650	-0.4
770	-2.26	1780	-1.86	2060	-2.04		
780	-3.05	1790	-1.7	2070	-1.92		
790	-3.13	1800	-0.33	2080	-2.96		
800	-3.27	1810	-0.47	2090	-2.67		
810	-3.32	1820	-0.43	2300	-1.79		
820	-3.32	1830	-0.16	2310	-1.31		
830	-3.43	1840	0.6	2320	-2.58		
840	-3.51	1850	0.27	2330	-2.31		
850	-3.56	1860	-0.32	2340	-1.86		
860	-3.55	1870	-0.25	2350	-1.87		
870	-3.62	1880	0.67	2360	-1.97		
880	-3.77	1890	0.02	2370	-1.78		
890	-3.77	1900	-0.67	2380	-1.96		
900	-3.79	1910	-0.9	2390	-1.76		
910	-3.81	1920	-0.66	2400	-1.62		
920	-3.93	1930	-0.92	2500	-1.81		
930	-3.95	1940	-1.29	2510	-1.24		
940	-4.02	1950	-1.12	2520	-1.28		
950	-4.12	1960	-1.27	2530	-0.68		
960	-4.54	1970	-2.13	2540	-1.14		
				2550	-0.99		
				2560	-0.2		
				2570	-0.36		

10. Antenna correlation data



4G main antenna



11. Antenna passive data



Antenna passive data

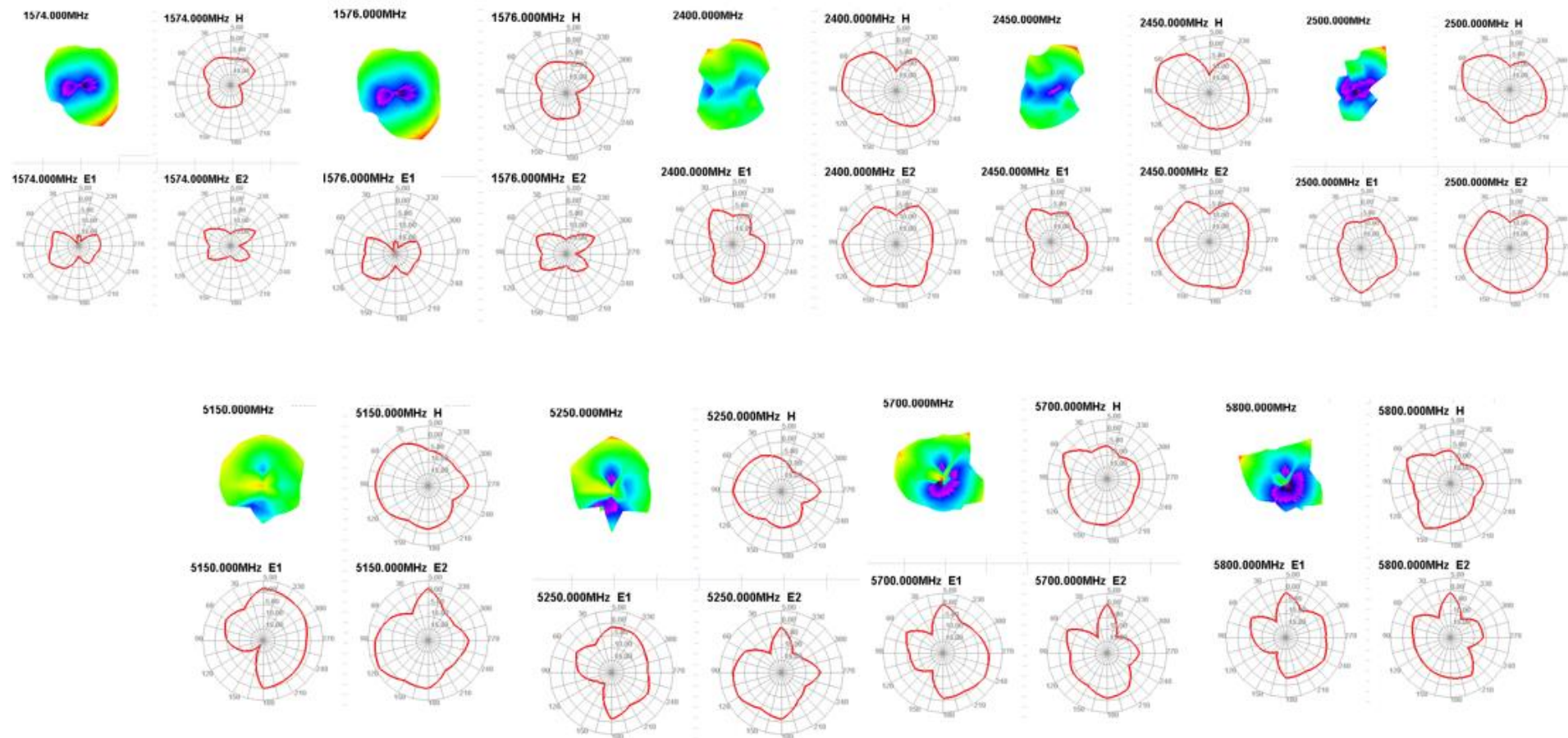
three-in-one antenna gain

Passive Test For		Passive Test For	
Freq (MHz)	Gain (dBi)	Freq (MHz)	Gain (dBi)
1564	-1.77	2400	-0.91
1566	-1.72	2410	-0.65
1568	-1.74	2420	-1.07
1570	-1.81	2430	-1.16
1572	-1.73	2440	-0.91
1574	-1.63	2450	-0.52
1576	-1.49	2460	-0.94
1578	-1.32	2470	-1.31
1580	-1.15	2480	-0.96
1582	-1.07	2490	-1.46
1584	-1.02	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. Antenna correlation data

WiFi1 antenna efficiency

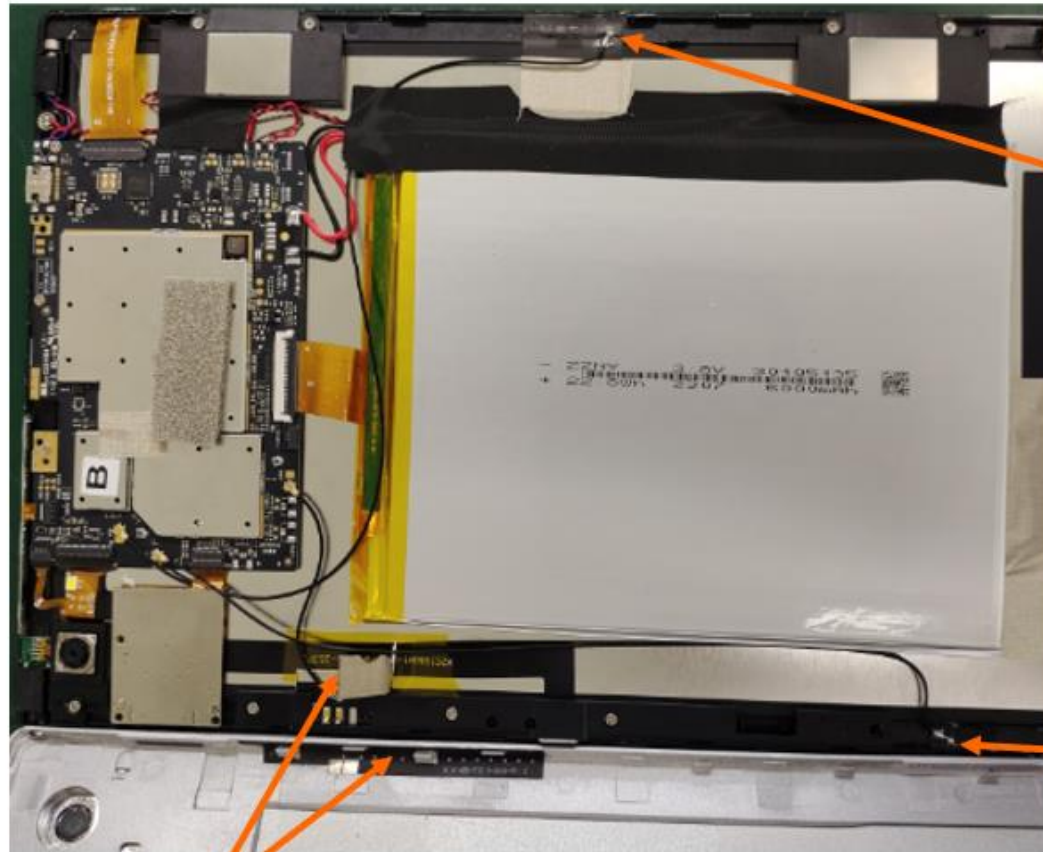


13.GPS/BT/ measured data



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

14. Antenna location diagram

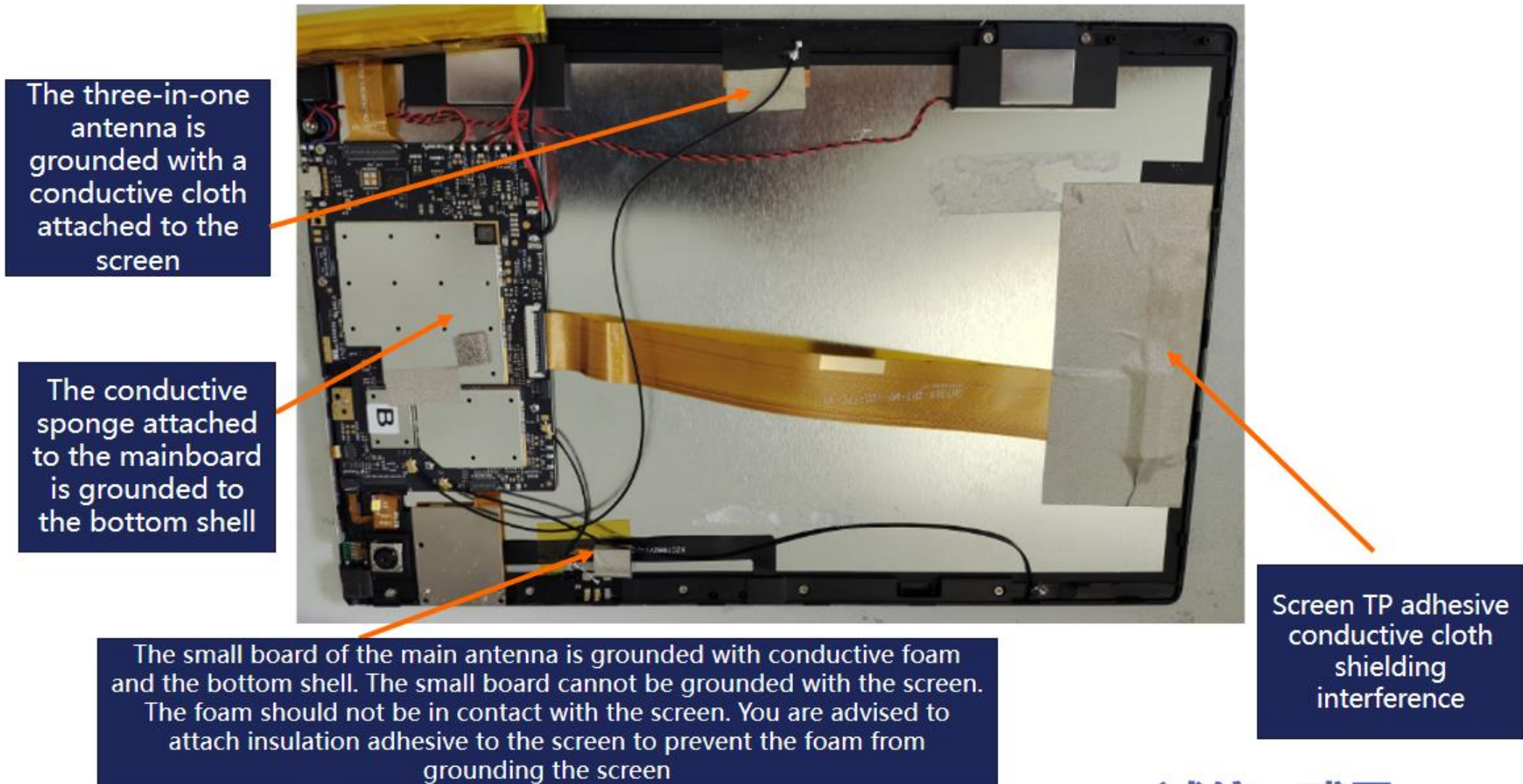


Three-in-one
antenna location

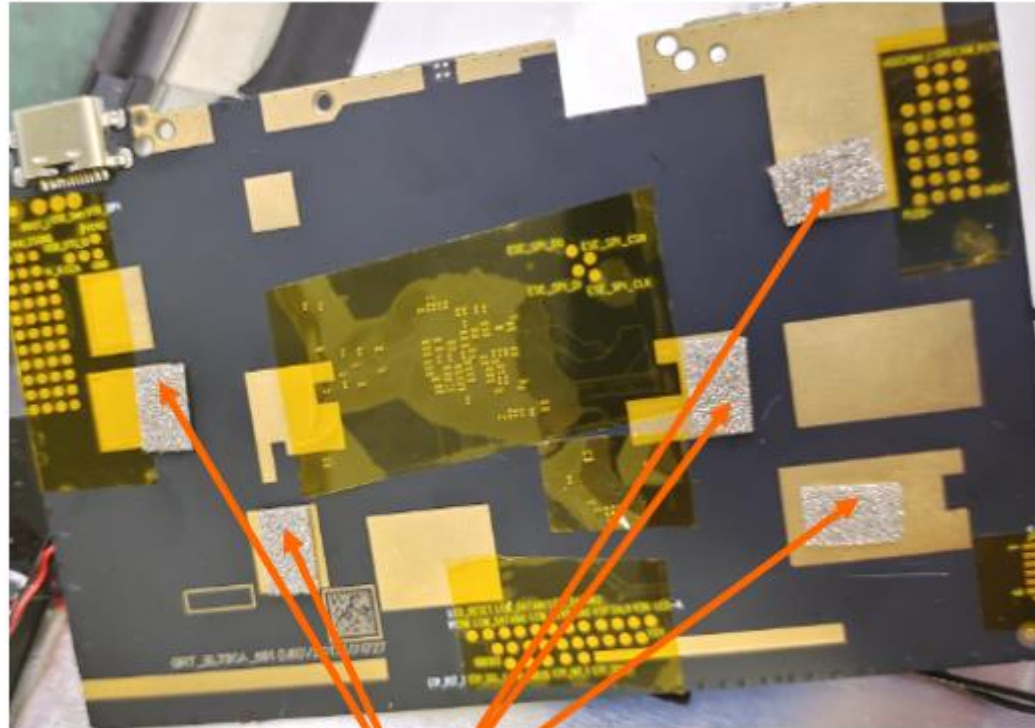
Diversity antenna
position

Main antenna and small plate
position

15. Environmental treatment



16. Environmental treatment

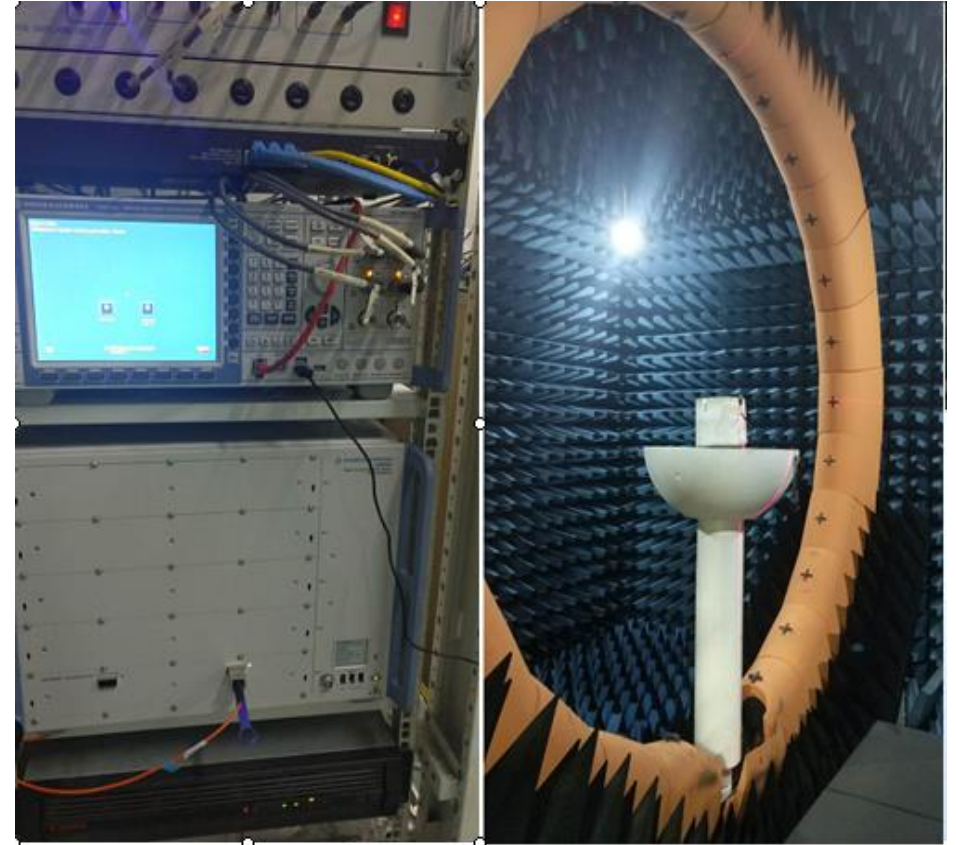


The mainboard is grounded to the screen
The mainboard is grounded to the screen

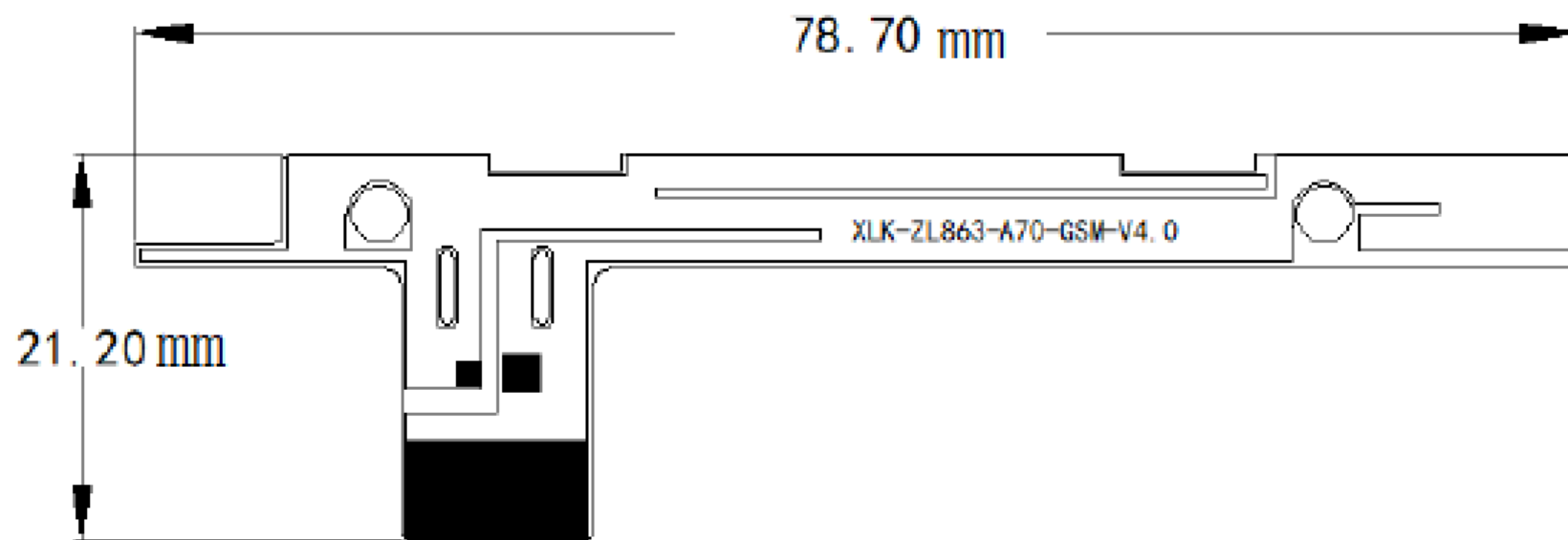
17.Conclusion



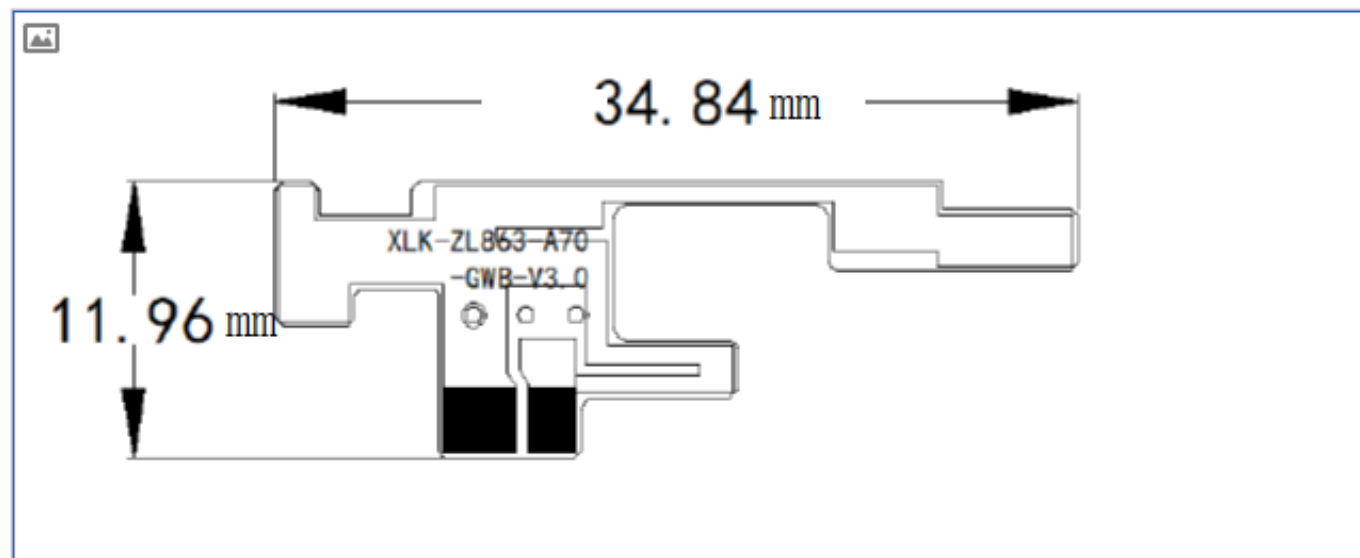
The software and hardware of batch production should be the same as the sample machine.



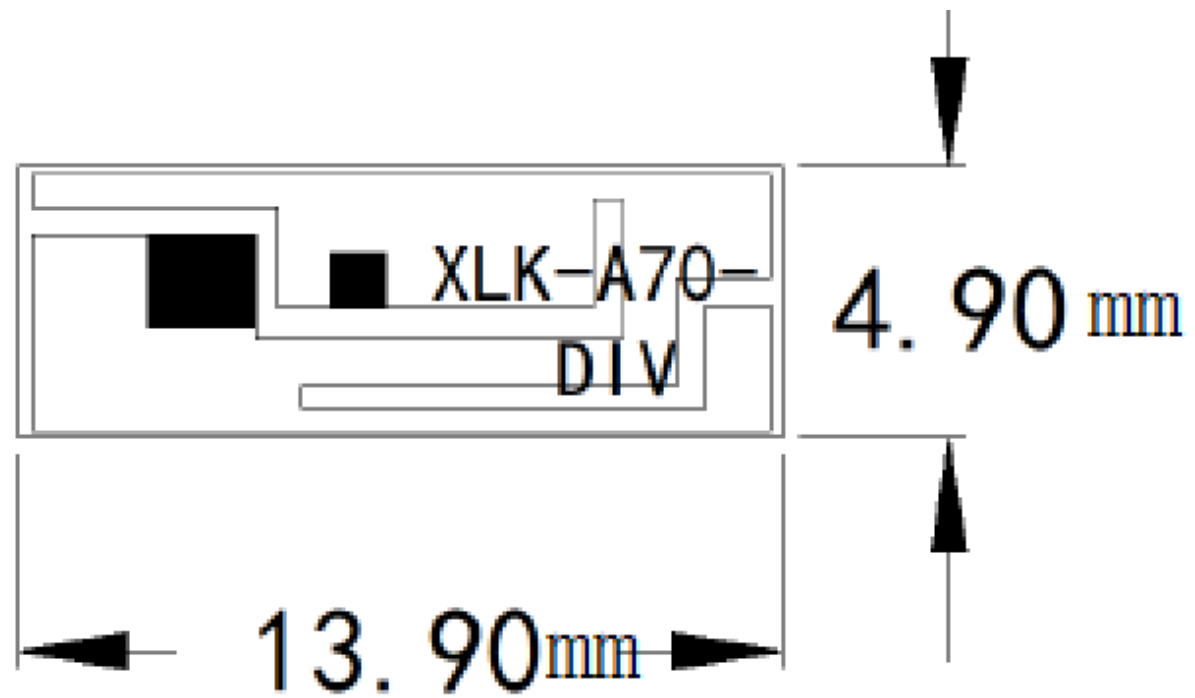
主天线尺寸



三合一天线尺寸



分集天线尺寸



THANKS!

Shenzhen Xinlingke Technology Co., Ltd.

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