

Antenna Test report

Model Name: HP01

Date: 12th Aug, 2023

Shenzhen ANWEI Technology Co., Ltd.

www.aw168.cn

Catalogue

CO NT E NT

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- 08** Conclusion

01.Project Introduction and Photoes-Project Introduction

RF Engineer	WUXI	Email	303810988@qq.com
		Mobile	13751118278
Antenna Overview			
Status of Sample machine	Whole machine	Project Name	HP01
Antenna Type	PIFA	Structure mode	FPC+3th Generation coaxial line
Main Antenna	GSM: (B2/B3/B5/B8) WCDMA: (B1/B8) LTE-TDD: (B38/B39/B40/B41) LTE-FDD: (B1/B3 B7/B8/B19/B20/B28)		
Other Antenna	Diversity Three-in-one antenna		

02.Report Versions

Version	Report Time	Commissioning Overview
A0	2023.12.29	Antenna Test Report
A1		
A2		
A3		
A4		
A5		
A6		
A7		
A8		
A9		
A10		

03.Introduction of Company and Test Environment-Test Environment



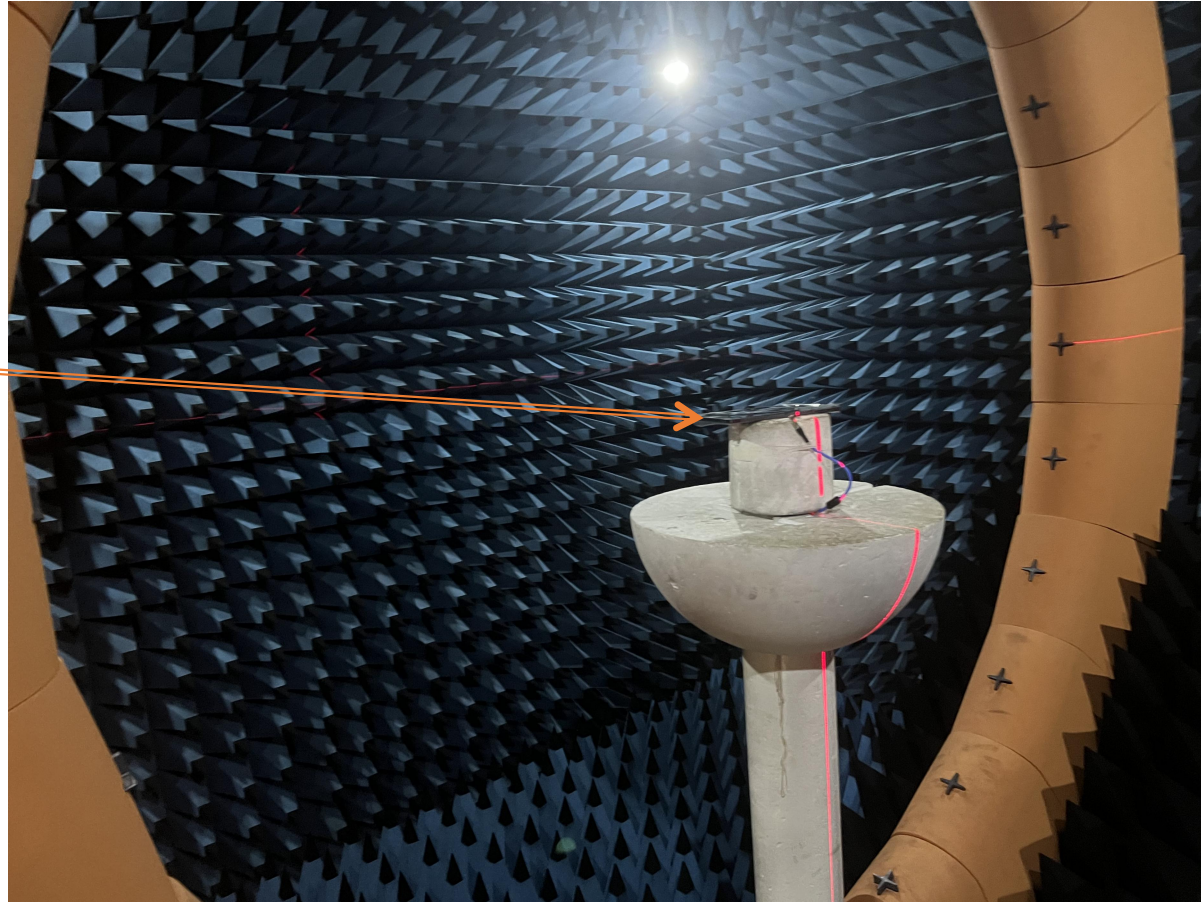
The company owns several OTA darkrooms whose frequency bands covers from 400mhz to 8.5ghz.

- ☞ 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.

04.Environment Test

Location of
Tested
Machine



05.Antenna correlation data

Main antenna active data

主天线暗室数据

	Channel	TRP (dBm)	TIS (dBm)			Channel	TRP (dBm)	TIS (dBm)	
GSM 850	128	26.34			W 1	LOW	17.6		
	190	25.54				medium	17.57		
	251	25.34	-102.54			high	17.47	-103.2	
GSM 900	1	24.34			W 2	LOW	16.55		
	62	24.64				medium	16.76		
	124	23.64	-101.64			high	16.07	-103.4	
DCS 1800	512	23.24			W 4	LOW	16.64		
	698	23.64				medium	17.52		
	885	24.34	-102.5			high	17.24	-102.2	
PCS 1900	512	24.54			W 5	LOW	15.55		
	661	23.66				medium	15.76		
	810	23.64	-103.5			high	15.15	-102.2	
					W 8	LOW	15.64		
						medium	15.24		
						high	15.17	-101.54	

06.Antenna correlation data

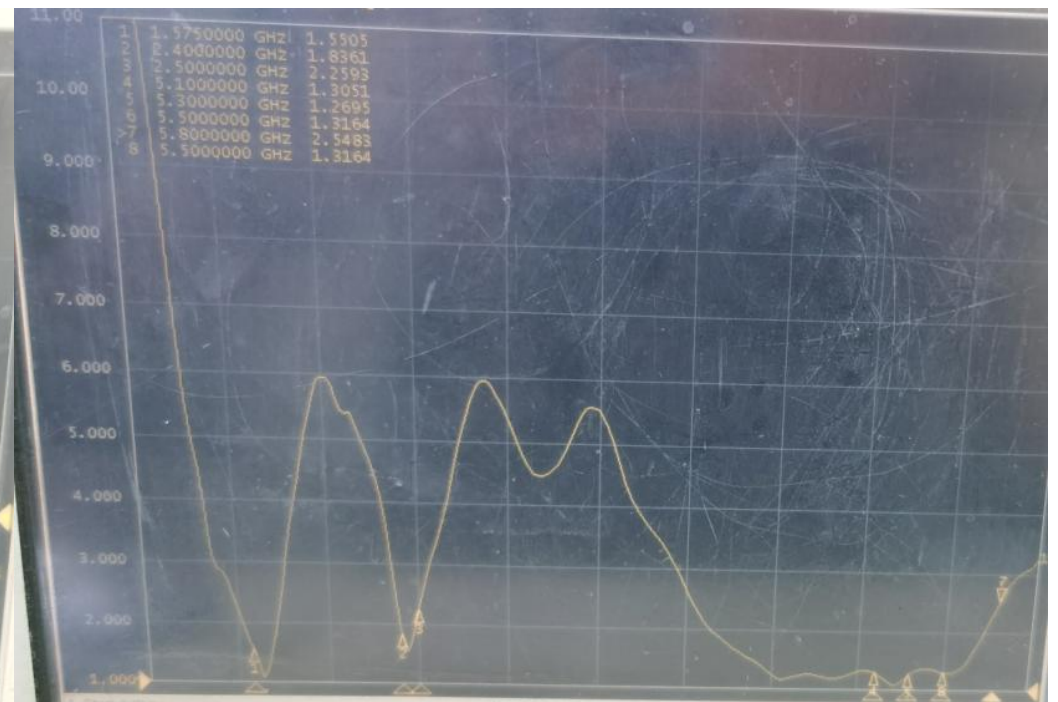
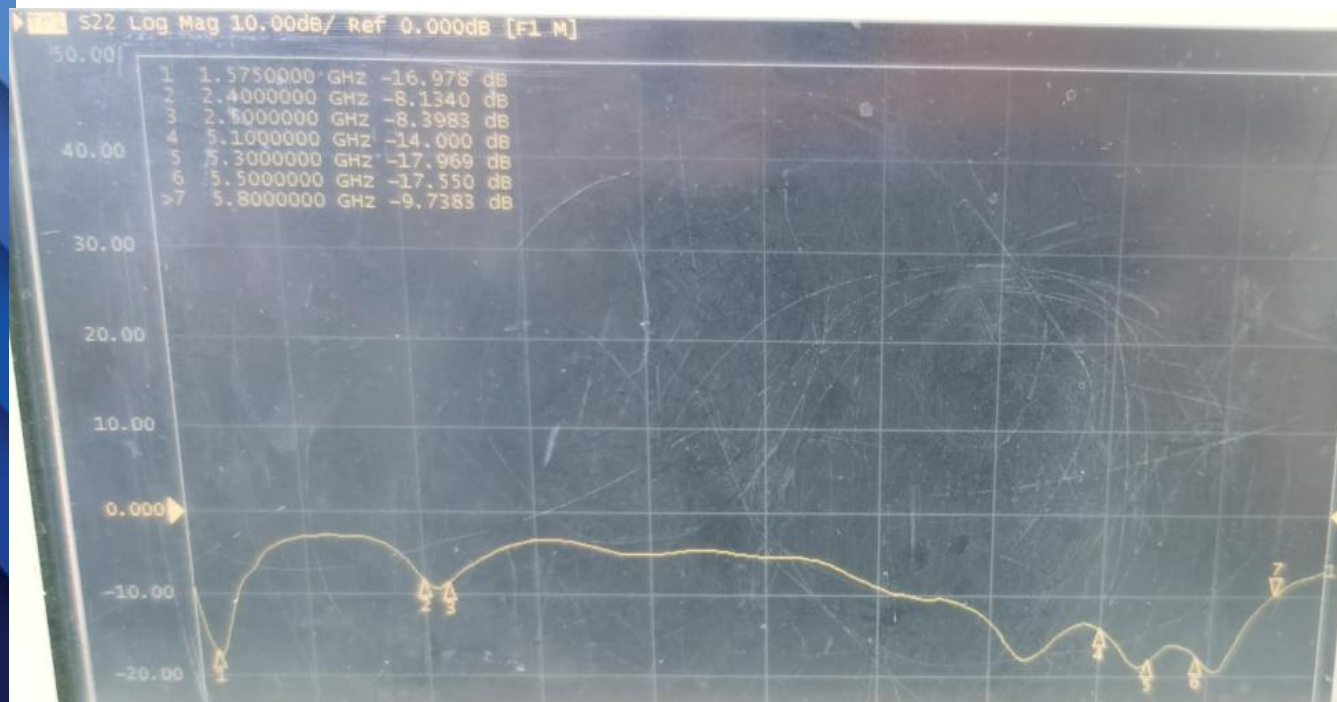
Main antenna active data

	Channel	TRP (dBm)	TIS (dBm)			Channel	TRP (dBm)	TIS (dBm)			Channel	TRP (dBm)	TIS (dBm)	
FDD B1	LOW	17			FDD B17	LOW	15.34			FDD B66	LOW	17.76		
	medium	17.65				medium	15.5				medium	17.09		
	high	18.02	-91.64			high	15.34	-90.64			high	16.13	-90.3	
FDD B2	LOW	17.46			FDD B18	LOW	15.02							
	medium	17.61				medium	16.24							
	high	18.35	-90.4			high	15.55	-90.4						
FDD B3	LOW	17.6			FDD B19	LOW	16.64							
	medium	18.2				medium	15.24							
	high	17.7	-90.35			high	16.12	-90.35						
FDD-B4	LOW	17.7			FDD-B20	LOW	15.24							
	medium	17.98				medium	15.1							
	high	17.74	-90.4			high	15.34	-89.0						
FDD B5	LOW	16.55			FDD B25	LOW	16.57			TDD B38	LOW	18.44		
	medium	16.33				medium	16.42				medium	17.9		
	high	16.07	-90.3			high	17.21	-90.3			high	18.05	-89.5	
FDD B7	LOW	18.28			FDD B26	LOW	15.42			TDD B40	LOW	17.97		
	medium	17.7				medium	15.7				medium	18.11		
	high	17.81	-90.6			high	15.34	-90.35			high	17.54	-90.4	
FDD B8	LOW	15.04			FDD B28A	LOW	15.46			TDD B41	LOW			
	medium	15.28				medium	15.2				medium	17.57	-90.1	
	high	15.98	-90.6			high	16.34	-90.35			high			
FDD B12	LOW	15.04			FDD-B28B	LOW	15.35							
	medium	15.91				medium	15.62							
	high	14.71	-90.5			high	16.13	-89.0						

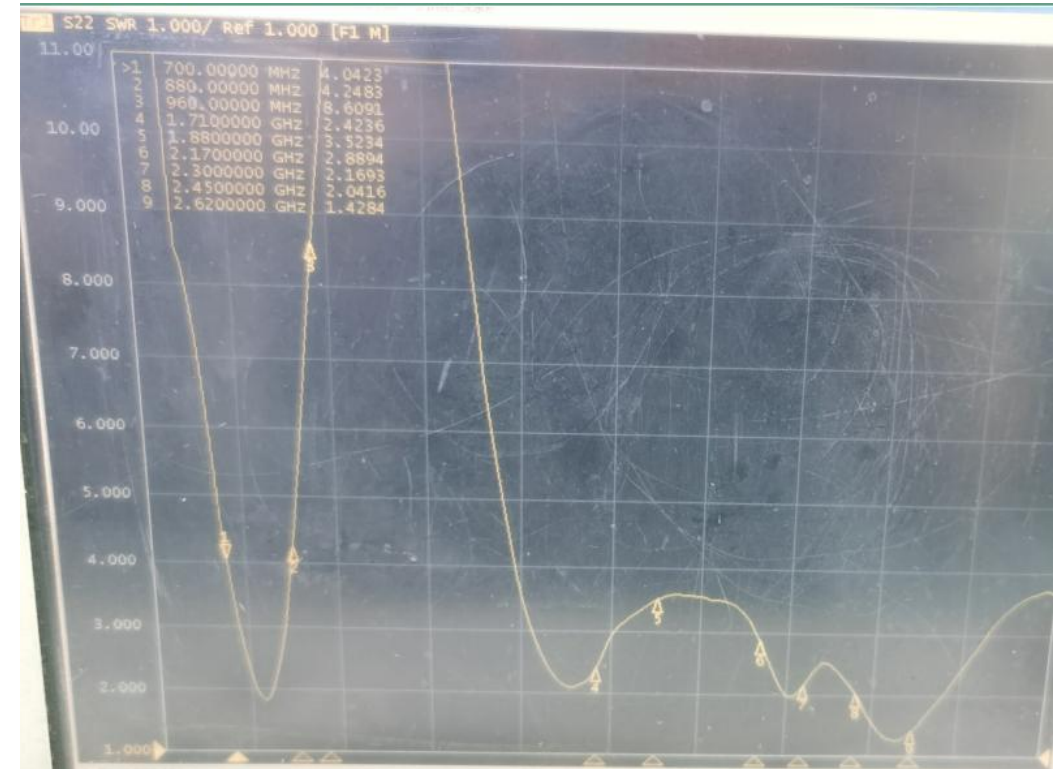
07. WIFI active data

BAND	2.4WIFI			5.8WIFI		
CHANNEL	low	medium	high	low	medium	high
TRP (dBm)	9.67	8.67	9.24	10.34	9.42	9.31
TIS (dBm)	-79.52	-78.64	-78.66	-70.76	-69.42	-69.31

08.GPS/WIFI/BT Antenna VSWR/S11



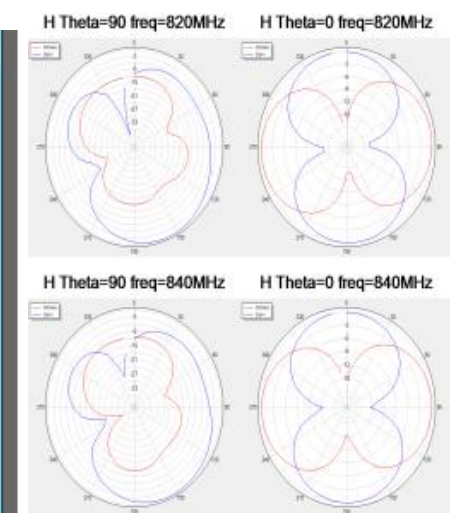
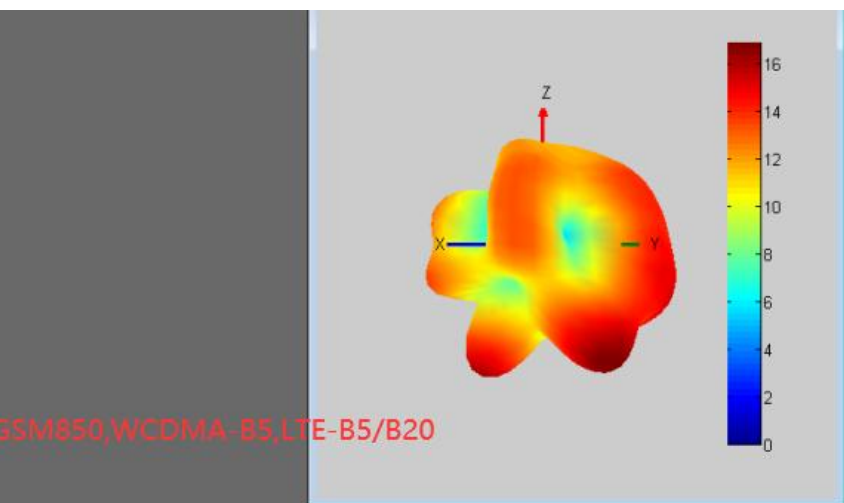
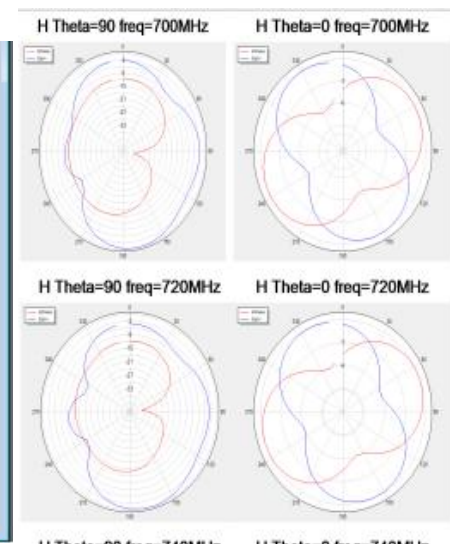
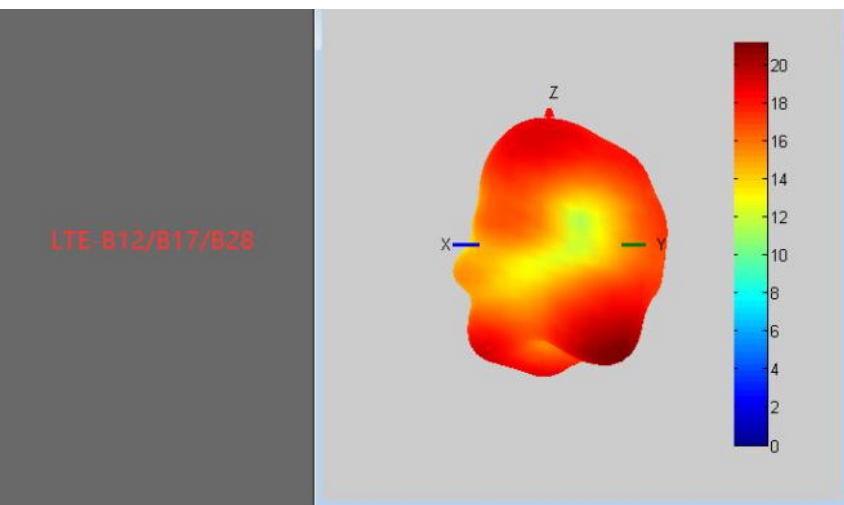
09. MAIN Antenna VSWR/S11



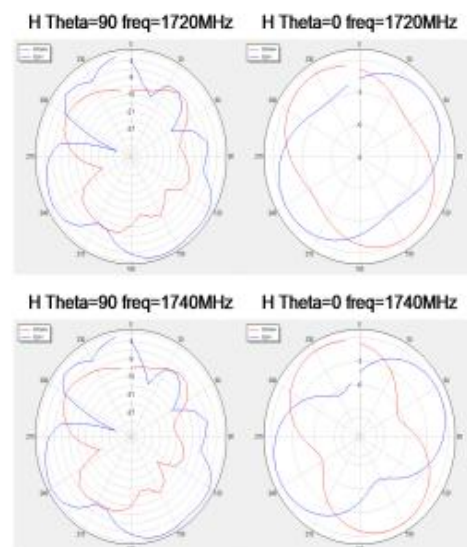
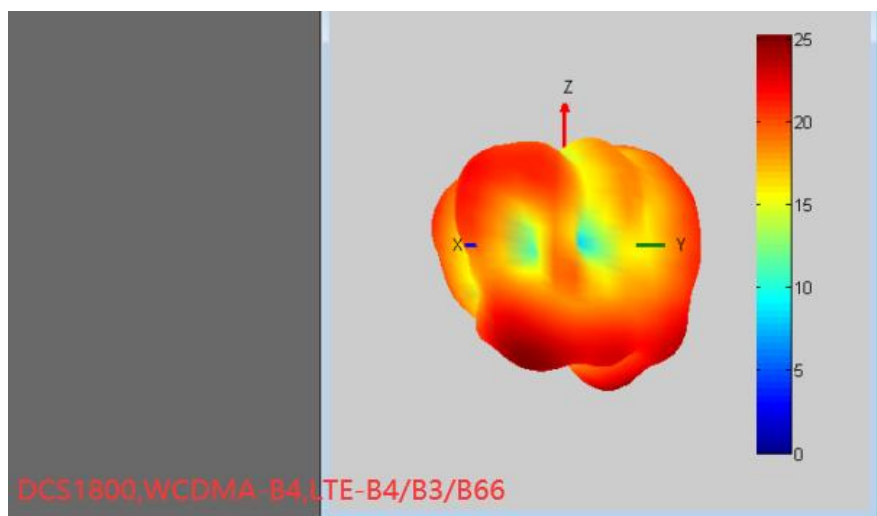
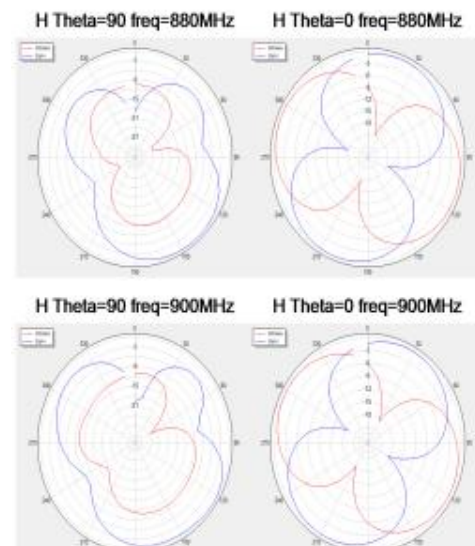
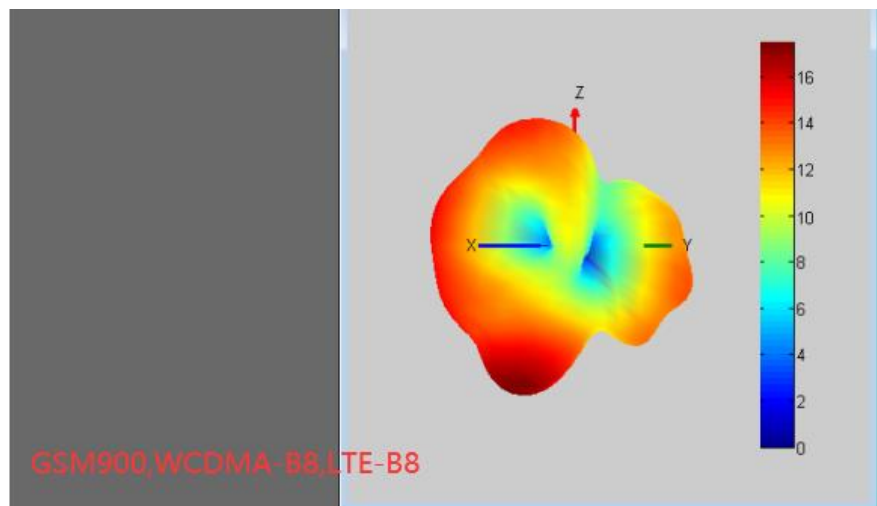
10. Antenna passive data

Gain&Efficiency																			
frequency	gain	mingain	efficiency	efficiency	1800	2.88	-17.99	-3.73	32.34	2160	2.37	-19.92	-4.02	20.61	2520	1.23	-23.37	-4.7	31.89
频率(MHz)	增益(dBi)	最小增益	效率(dBi)	效率(%)	1820	3.06	-16.93	-3.88	30.96	2180	2.45	-22.98	-3.95	24.26	2540	2.12	-28.94	-3.9	31.71
700	-0.64	-19.05	-5.76	20.52	1840	3.91	-18.3	-3.22	32.59	2200	1.89	-22.72	-4.33	26.93	2560	1.73	-32.13	-4.25	32.56
720	-0.55	-21.69	-5.7	21.92	1860	3.98	-19.22	-3.12	38.73	2220	1.75	-21.78	-4.5	25.51	2580	1.8	-27.91	-4.04	31.47
820	0.1	-27.22	-4.61	24.58	1880	4.15	-19.45	-3.01	39.96	2240	2	-22.08	-4.1	28.90	2600	1.88	-24.2	-4.14	30.58
840	0.21	-20.13	-4.36	26.62	1900	4.05	-22.78	-3.04	39.61	2260	1.62	-23.89	-4.29	27.25	2620	2.41	-21.3	-3.51	29.57
860	1.08	-15.89	-3.89	25.84	1920	4.14	-24.87	-2.56	35.49	2280	2.24	-23.9	-4.02	29.66	2640	1.47	-22.11	-4.32	28.94
880	1.97	-15.91	-3.75	24.20	1940	3.51	-20.4	-2.81	32.40	2300	1.92	-20.94	-3.61	30.55	2660	2.1	-22.5	-3.68	27.89
900	2.41	-16.59	-3.82	23.45	1960	3.3	-21.56	-2.86	29.73	2320	2.06	-19.73	-3.73	31.34	2680	1.63	-23.63	-4.2	27.99
920	1.64	-18.9	-4.58	22.84	1980	3.18	-21.77	-2.8	28.46	2340	1.65	-23.67	-4.31	27.10	2700	2.16	-18.48	-3.81	31.59
940	1.11	-19.07	-5.19	21.26	2000	3.18	-24.1	-2.96	27.54	2360	1.53	-21.91	-3.9	30.70	Horizontal				
960	1.05	-20.59	-5.44	22.56	2020	2.83	-25.9	-3.75	26.16	2380	1.14	-26.04	-4.56	30.02	Frequency				
					2040	3.25	-24.09	-3.28	26.96	2400	1.3	-21.53	-4.51	31.41	频率(MHz)				
1700	0.61	-21.95	-5.48	28.31	2060	3.28	-21.37	-3.65	25.15	2420	2.2	-20.05	-3.95	30.25					
1720	0.63	-23.51	-5.42	28.73	2080	3.22	-23.06	-3.78	24.86	2440	1.8	-21.57	-4.56	32.03					
1740	1.1	-22.94	-5.29	29.55	2100	3.15	-25.25	-3.69	23.80	2460	2.15	-20.43	-4.07	29.21					
1760	0.92	-25.03	-5.52	28.02	2120	3.29	-23.57	-3.43	22.38	2480	2.28	-18.73	-3.97	31.06					
1780	1.72	-18.8	-4.83	32.87	2140	2.36	-23.14	-4.09	21.03	2500	2.26	-19.13	-3.93	32.42					

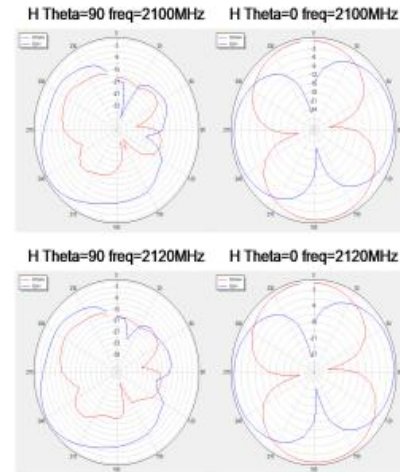
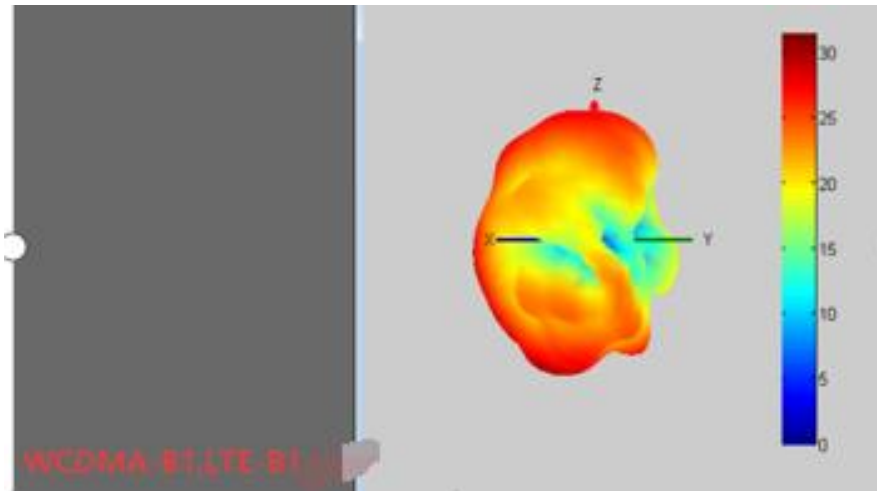
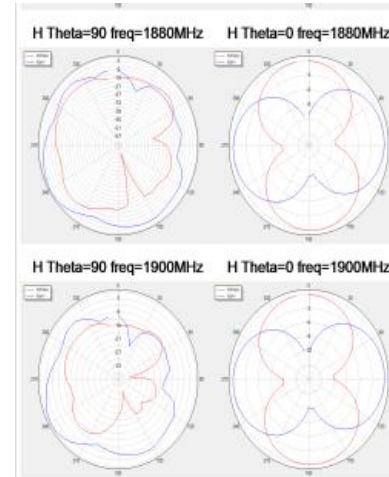
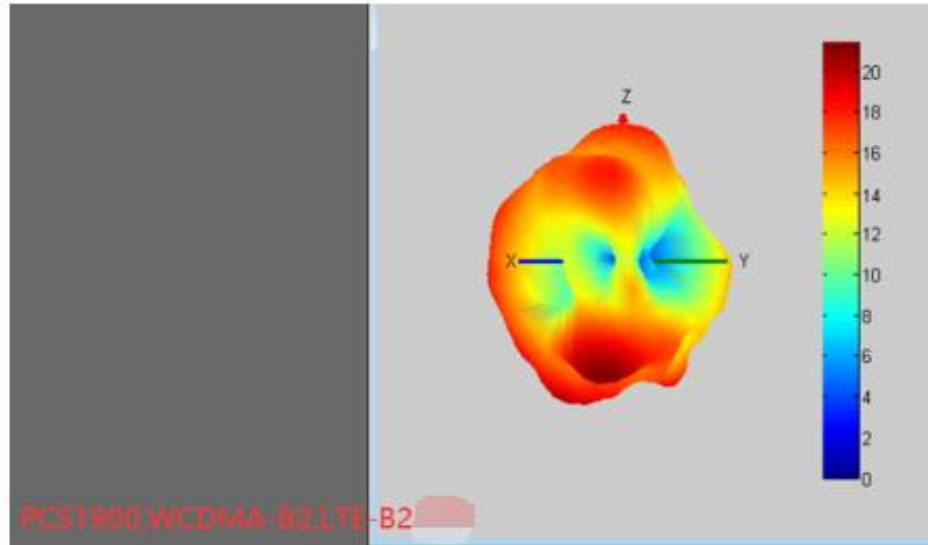
11. Antenna correlation data



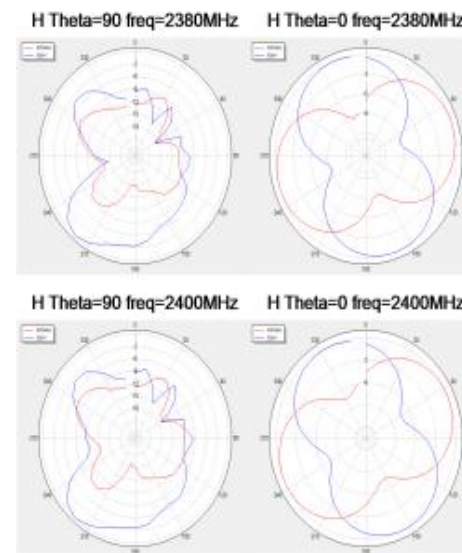
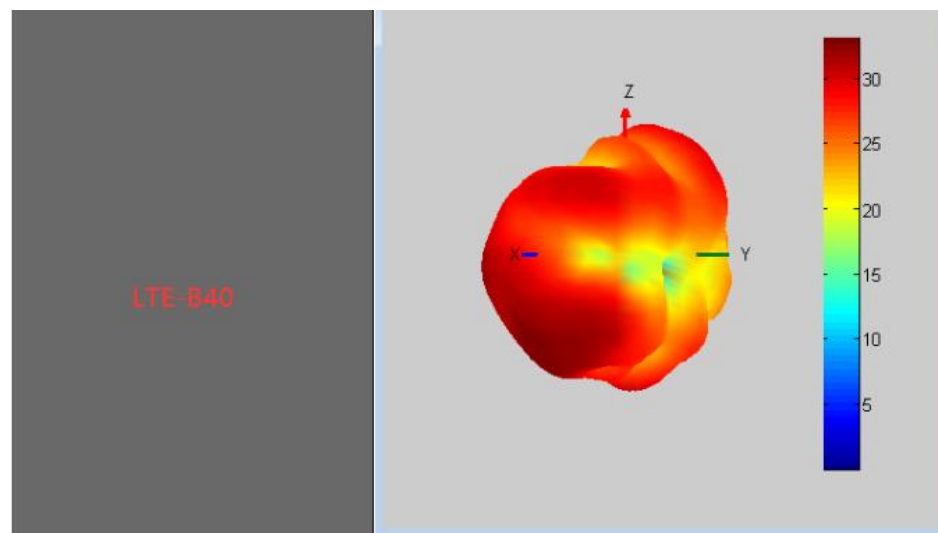
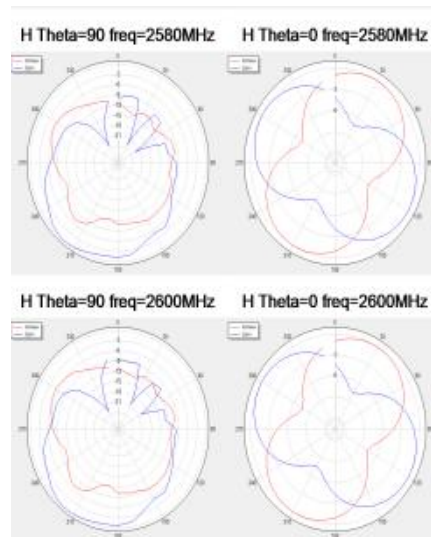
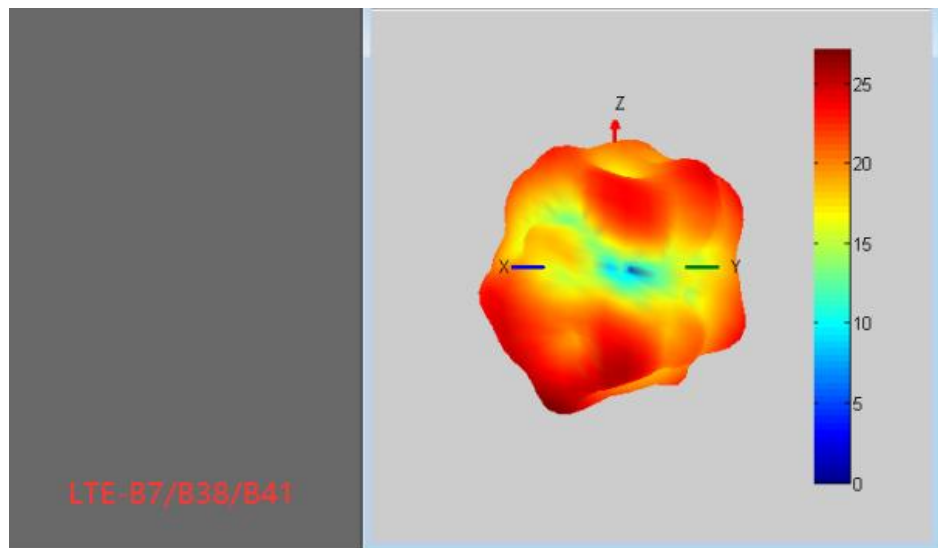
12. Antenna correlation data



13. Antenna correlation data



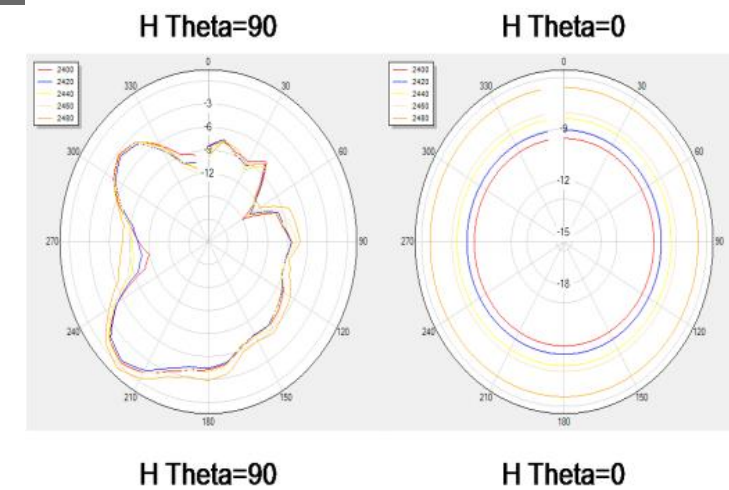
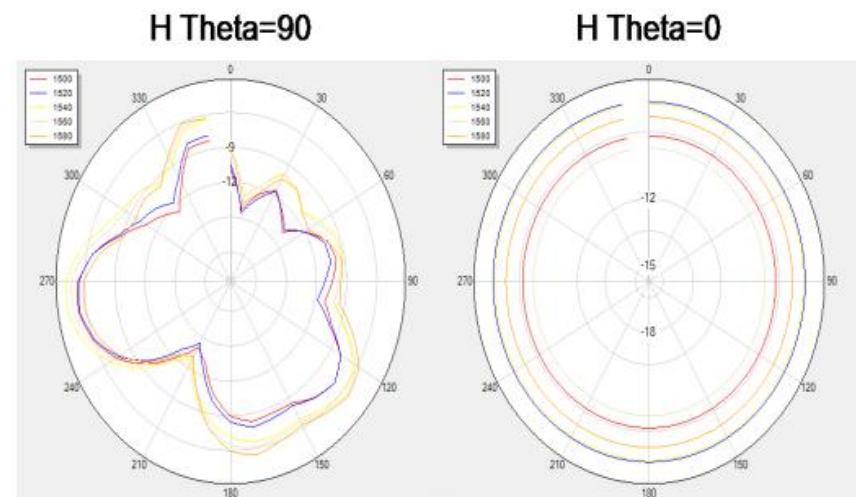
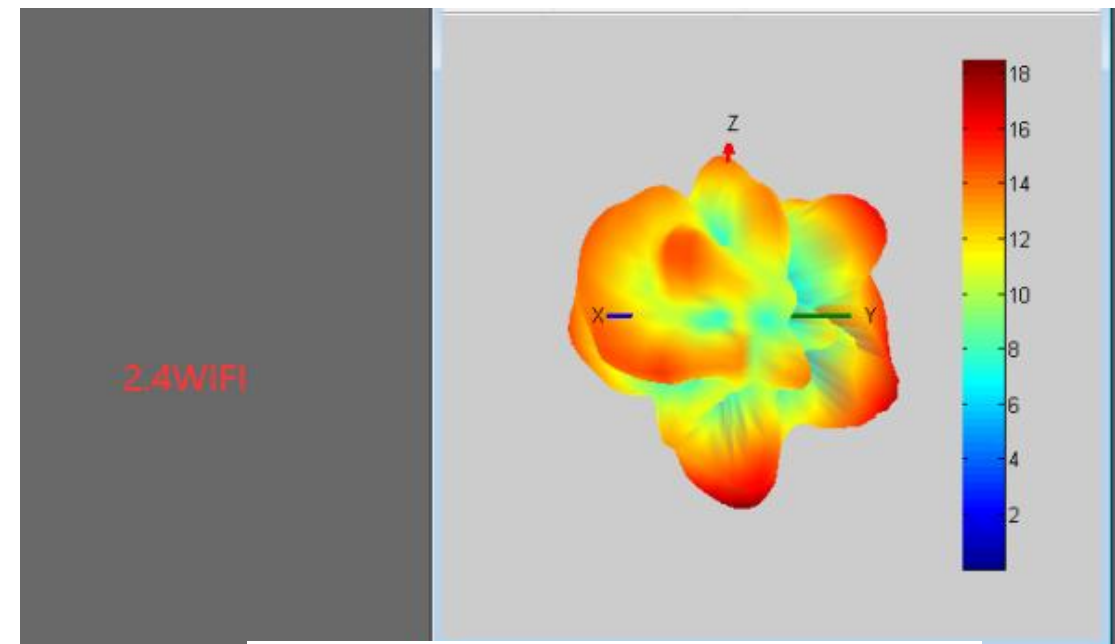
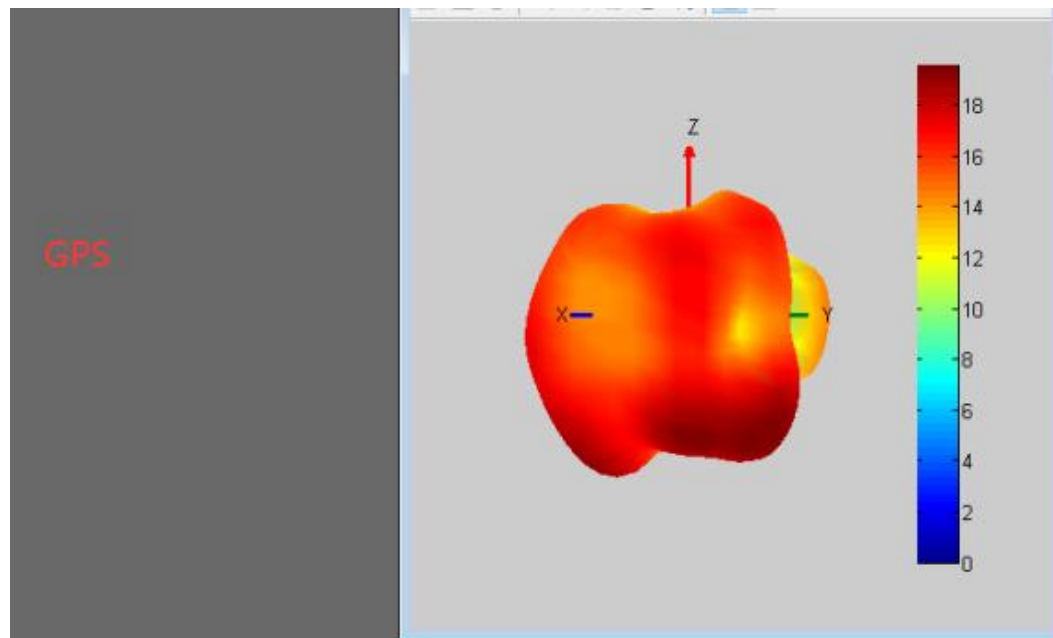
14. Antenna correlation data



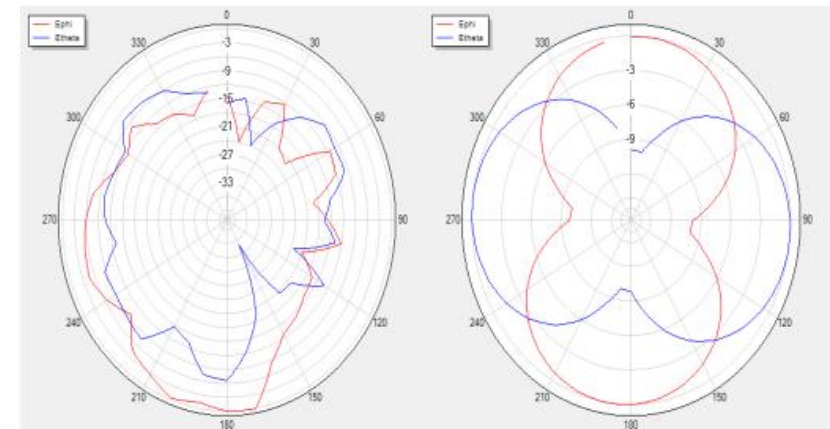
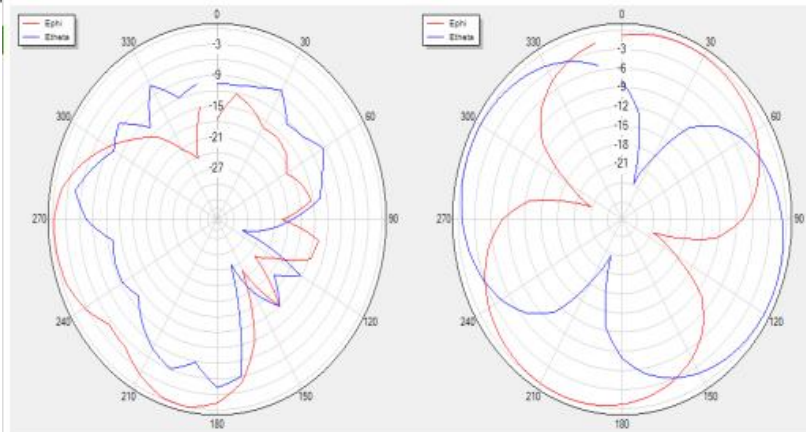
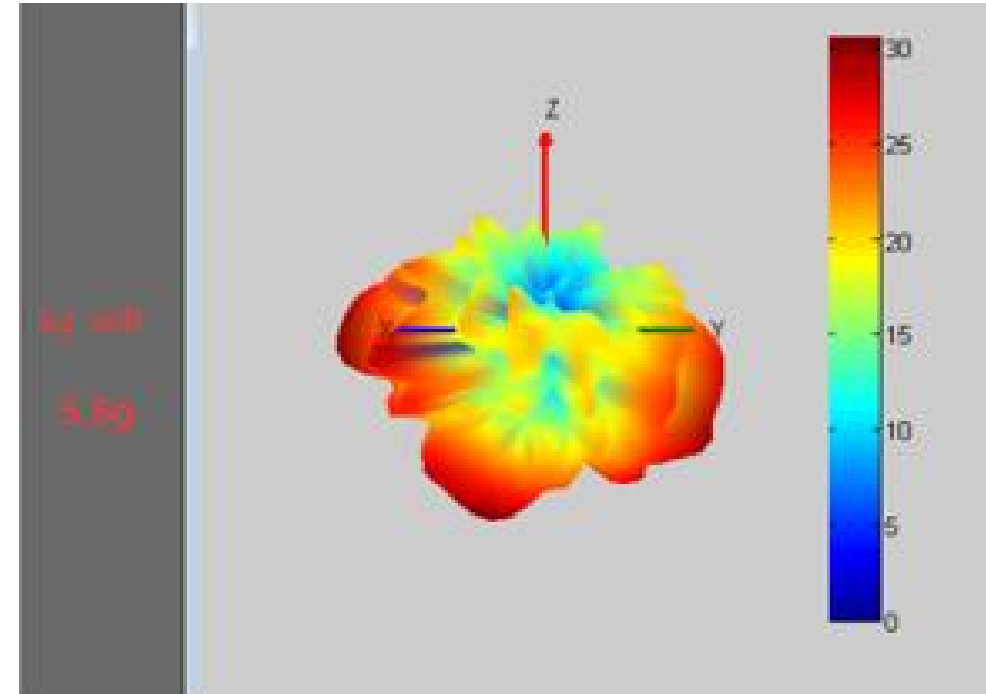
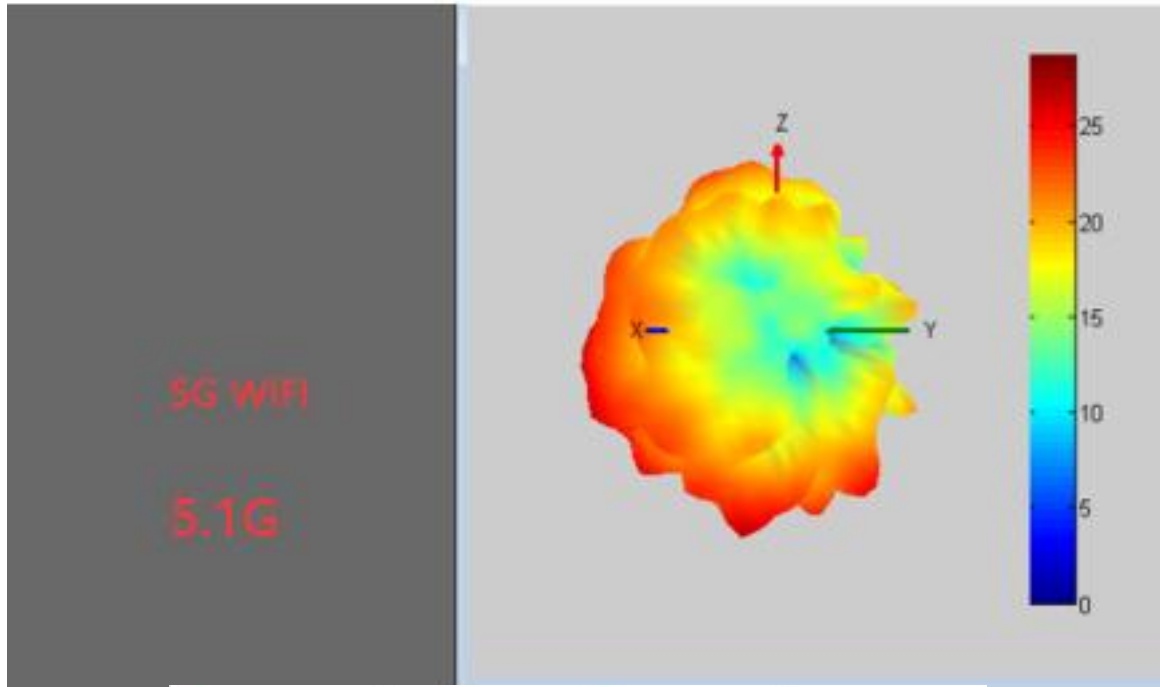
15. Antenna passive data

Gain&Efficiency					
frequency 频率(MHz)	gain 增益(dBi)	efficiency 效率(%)			
1570	0.7	34.13	5100	0.69	25.24
1575	0.81	35.13	5200	0.71	24.22
1580	0.94	33.12	5300	0.84	24.24
2400	1.95	28.24	5400	0.77	24.28
2410	2.1	29.43	5500	0.91	26.59
2420	2.31	27.98	5600	1.1	27.39
2430	2.89	28.69	5700	1.08	27.89
2440	2.28	28.96	5800	1.17	26.06
2450	2.21	27.98	Horizontal		
2460	2.35	29.86	Frequency		
2470	2.51	30.57	频率(MHz)		
2480	2.46	31.80			
2490	2.13	29.34			
2500	2.2	28.30			

16. Antenna correlation data



17. Antenna correlation data



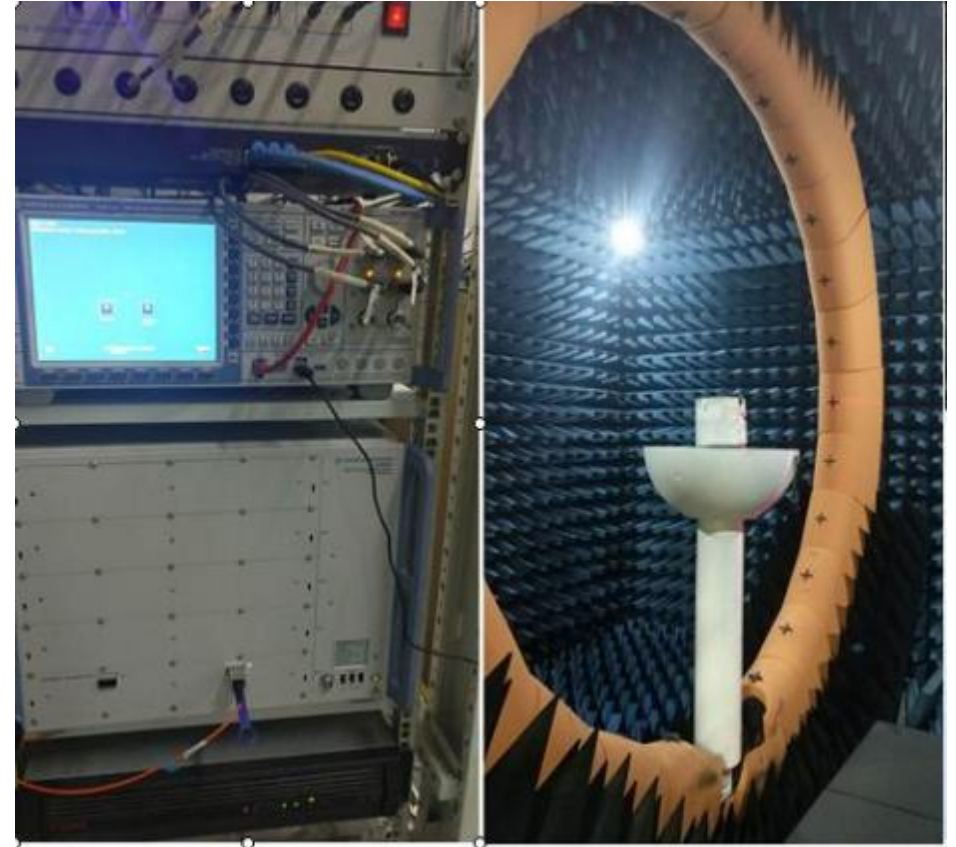
18.GPS/BT/ measured data



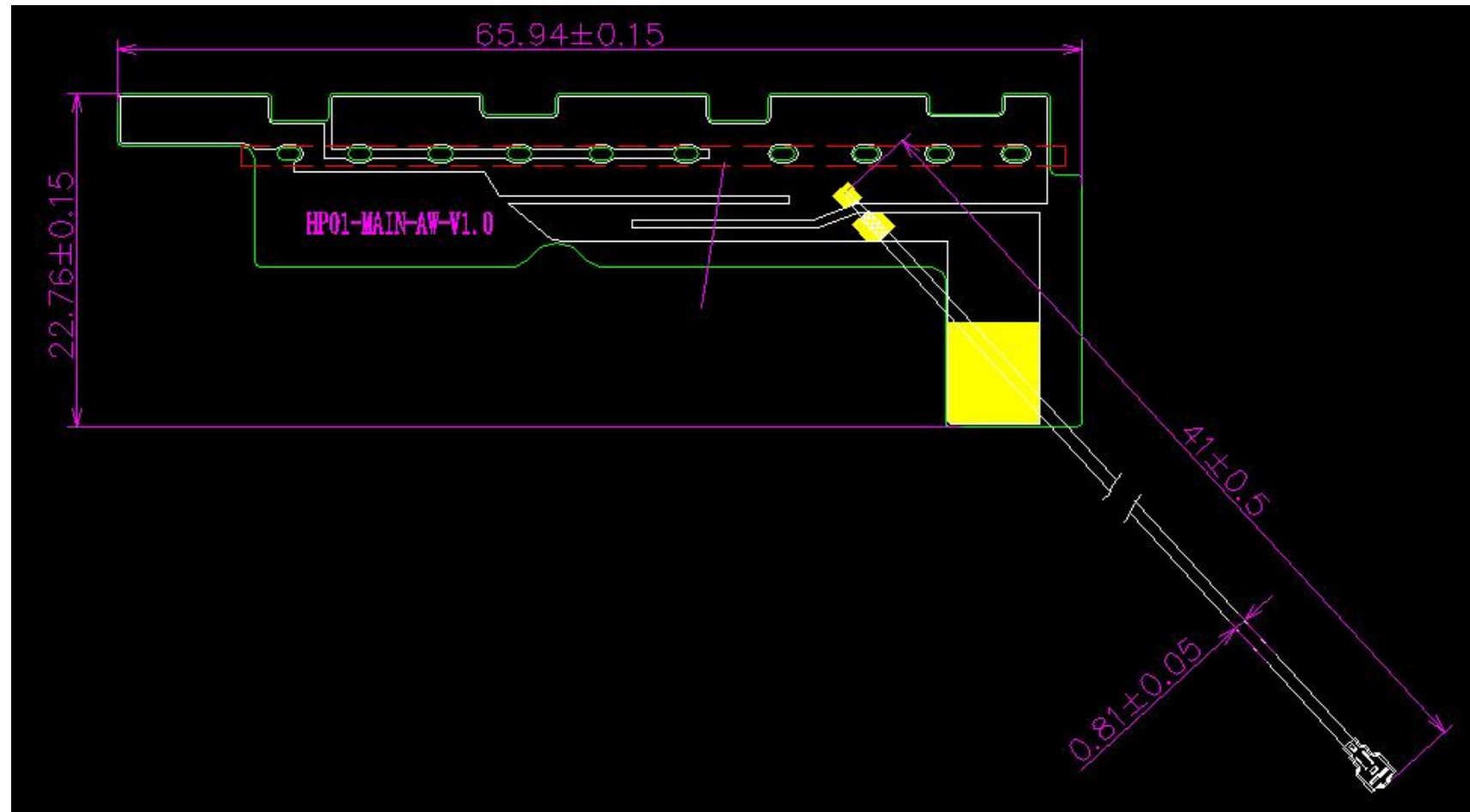
GPS search on the roof of the fifth floor of our company, positioning time 1 minute. Bluetooth no block 12 meters listening to music smooth

20.Conclusion

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

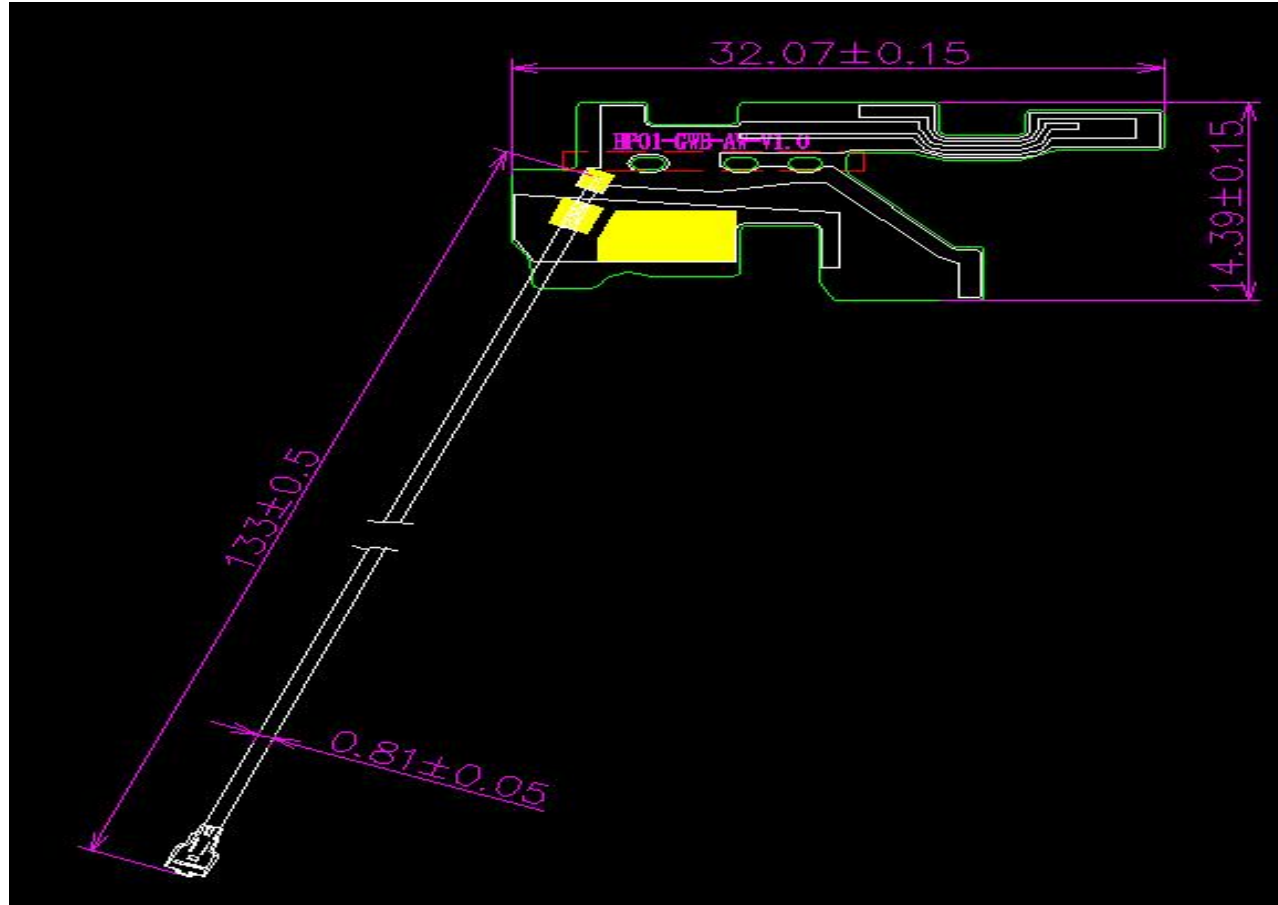


21.Main antenna size

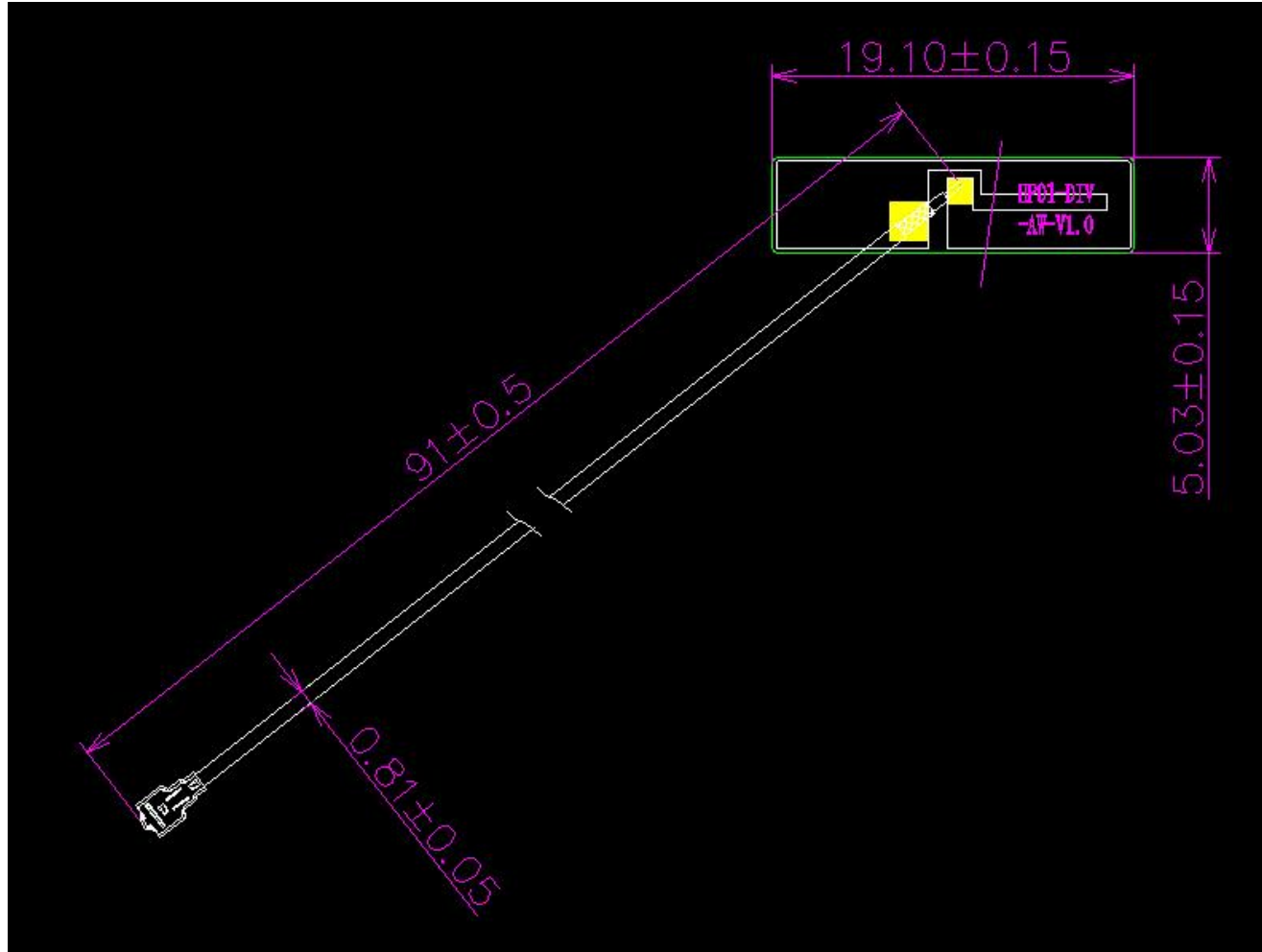


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22.Three in one antenna size

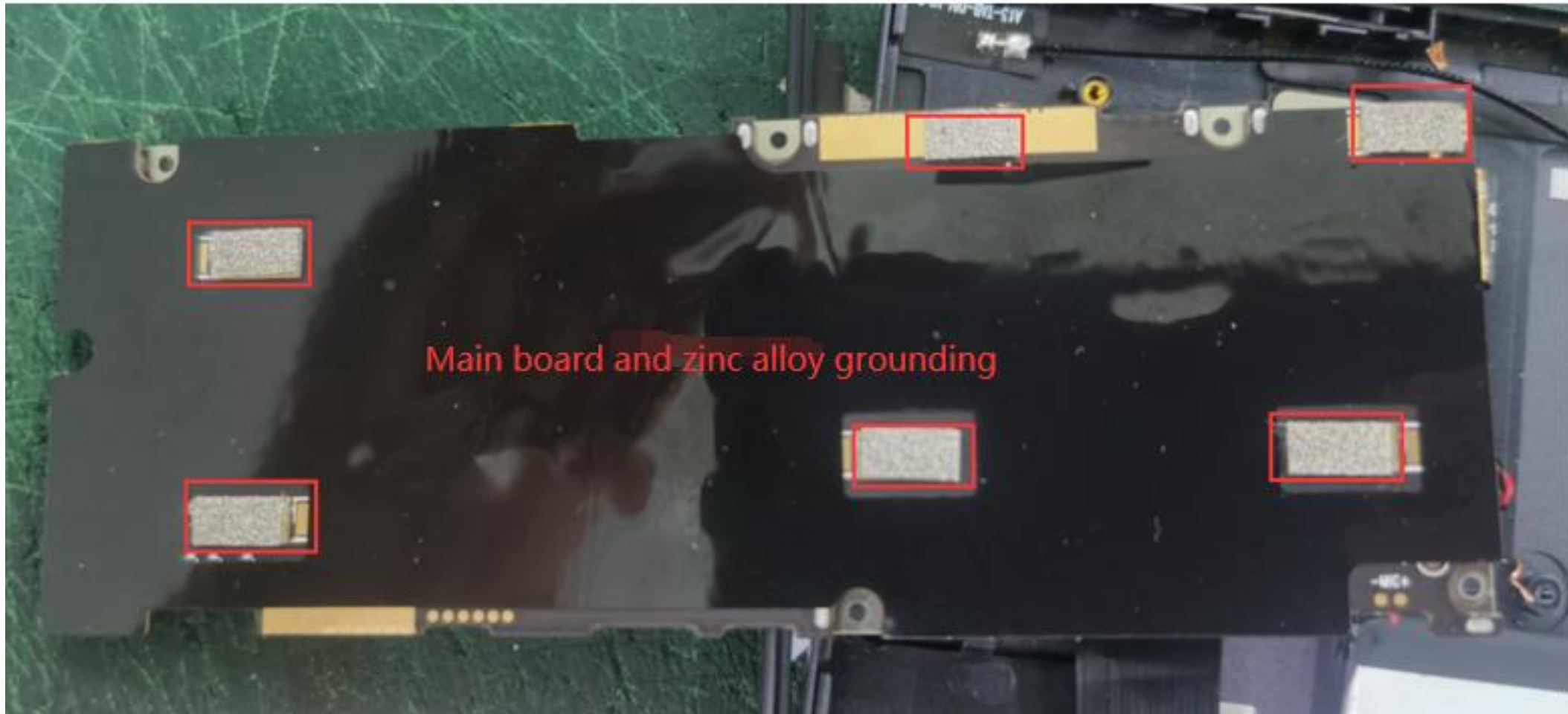


23. Diversity antenna size

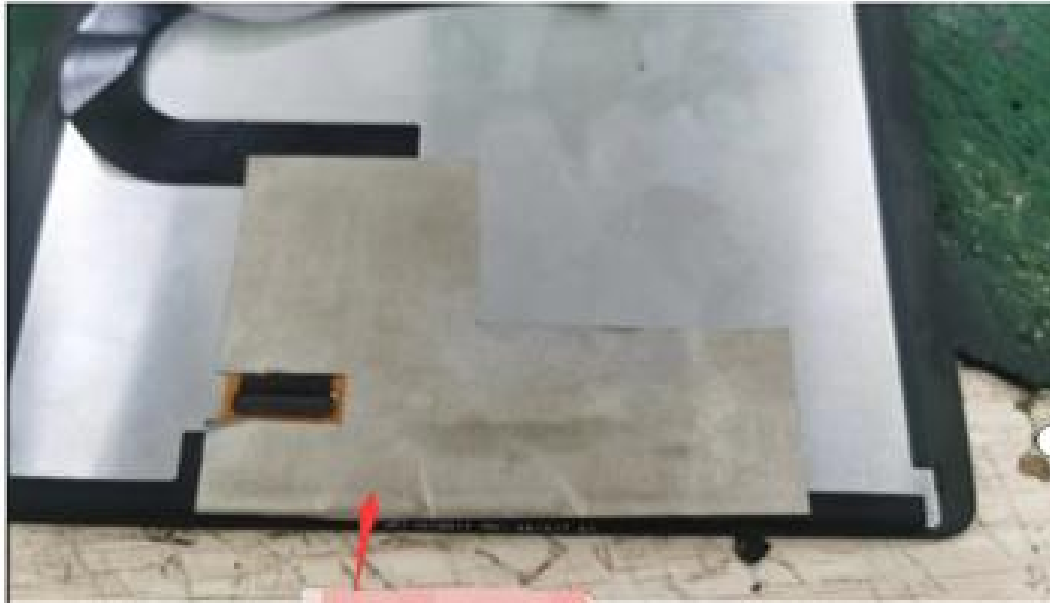


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24. Antenna location diagram



26. Antenna location diagram

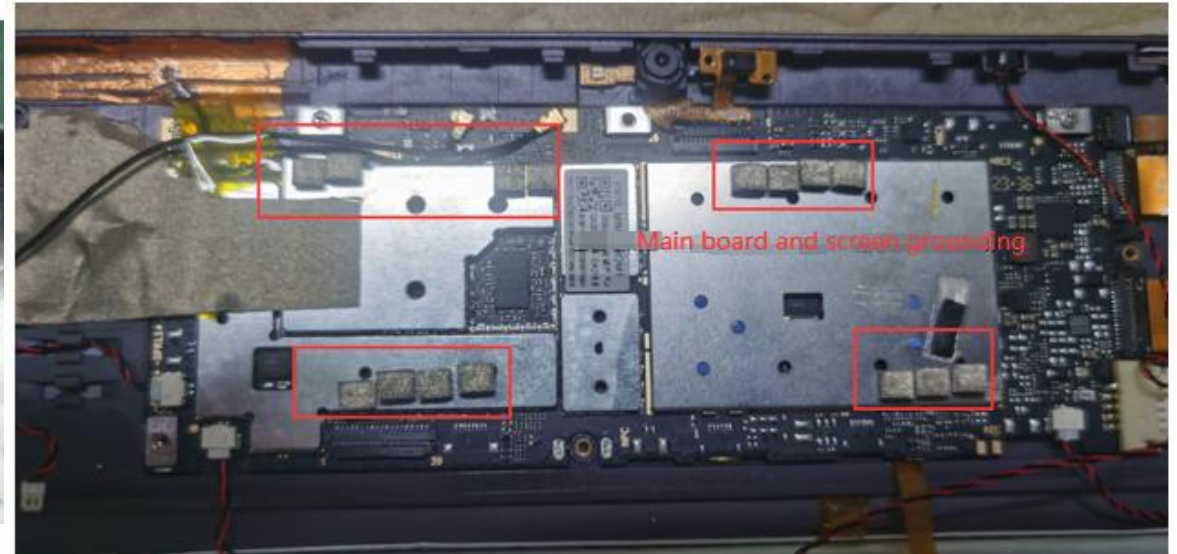


Shielding of screen cables with conductive cloth

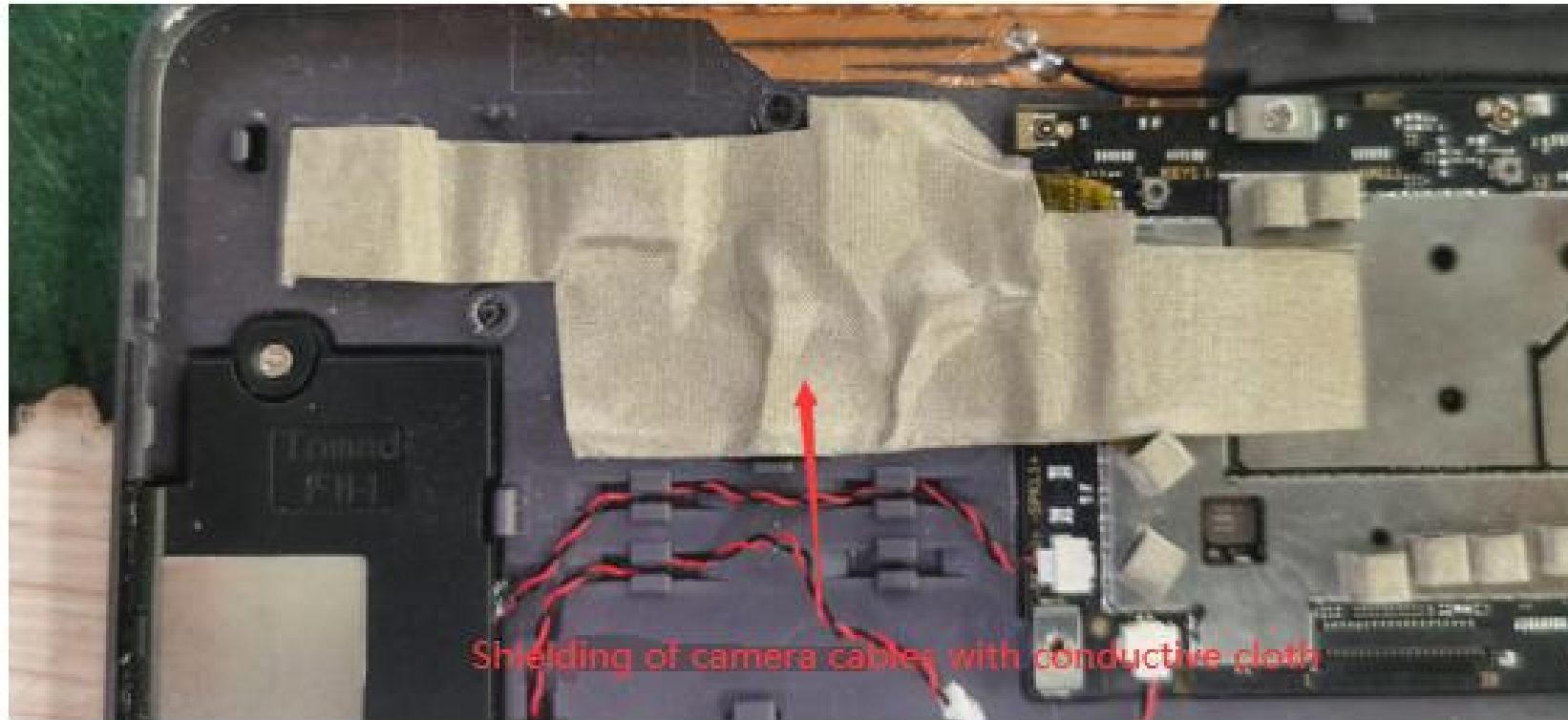


Three in one antenna exposed copper area grounding

27. Antenna location diagram



28. Antenna location diagram





THANKS!

Shenzhen anweiTechnology Co., Ltd.

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