



深圳众城无线技术有限公司

Shenzhen unity wireless technology co., ltd

地址：深圳市宝安区西乡街道南昌社区深圳前湾硬科技产业园 B 栋 601-603

电话：0755-23285621

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Antenna test report

Customer Name: **DAQI**

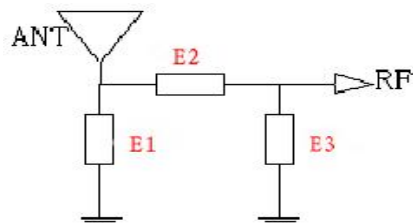
Product model: **T3**

Antenna frequency band type: **WIFI 2. 4G/5. 8G**

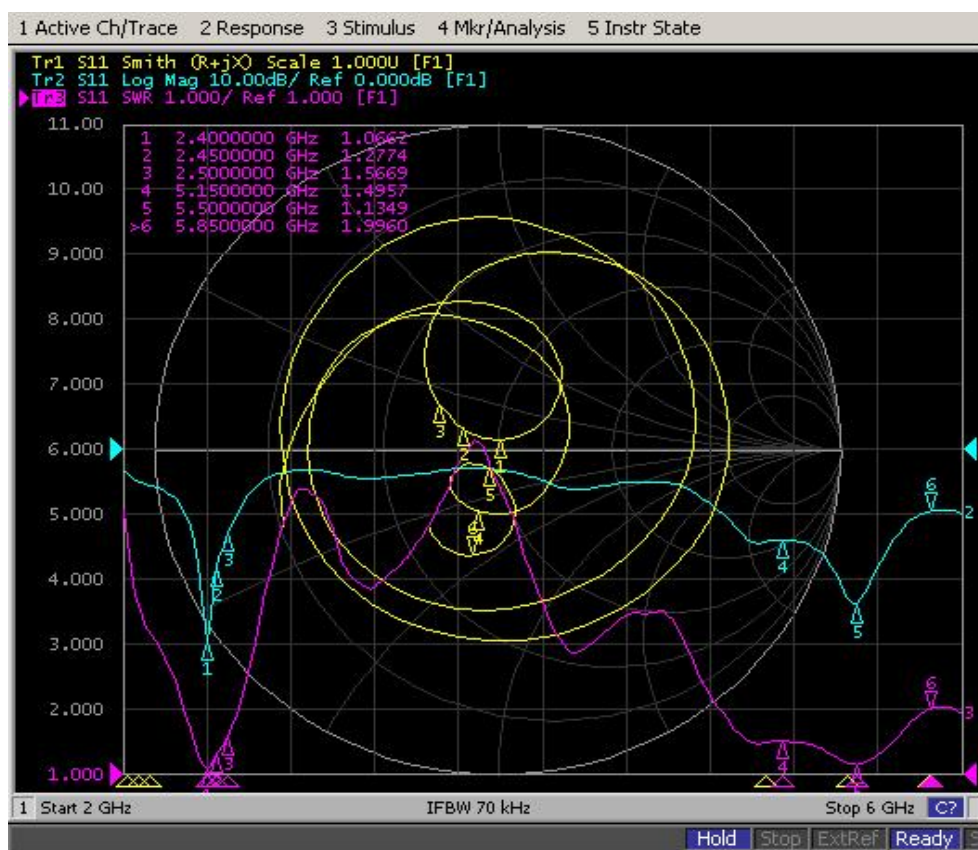
Tulation: Zhangzhi neng TEL : 0755-23285621	RFEngineer: Ouyangy ingshan TEL: 0755-23285621	
Date: 2022-05-10		

一. Antenna matching (original antenna matching)

	E1	E2	E3
WIFI	N/A	0 Ohms	N/A



二. WIFI antenna passive test data:

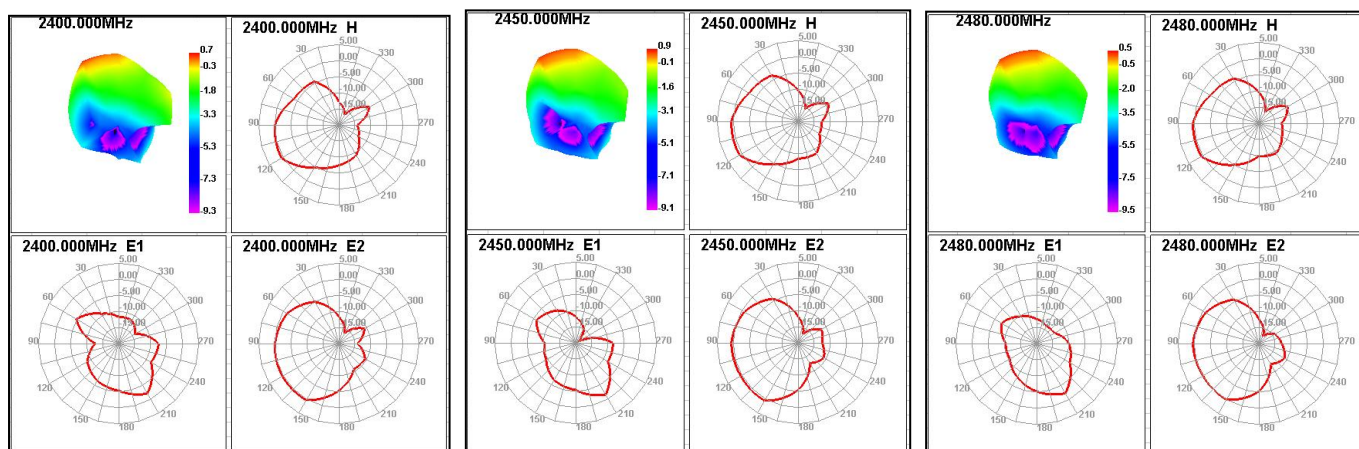


FREQ. (GHZ)	2.4	2.45	2.5	5.15	5.5	5.85
VSWR	1.0	1.2	1.5	1.4	1.1	1.9

Freq (MHz)	Effi (%)	Gain (dBi)
2400	43.47	0.78
2410	40.64	0.53
2420	41.38	0.62
2430	41.74	0.65
2440	40.89	0.53
2450	42.61	0.72
2460	41.57	0.6
2470	40.81	0.49
2480	43.78	0.82
2490	43.37	0.7
2500	45.38	0.86

Freq (MHz)	Effi (%)	Gain (dBi)
5000	34.8	1.97
5100	38.41	1.59
5200	41.28	1
5300	42.69	1.63
5400	46.49	1.75
5500	43.11	1.59
5600	46.32	1.35
5700	45.98	2.04
5800	43.06	1.9
5900	44.23	1.67
6000	41.17	1.77

三. Antenna radiation orientation diagram:





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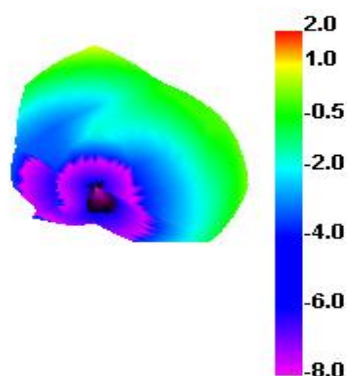
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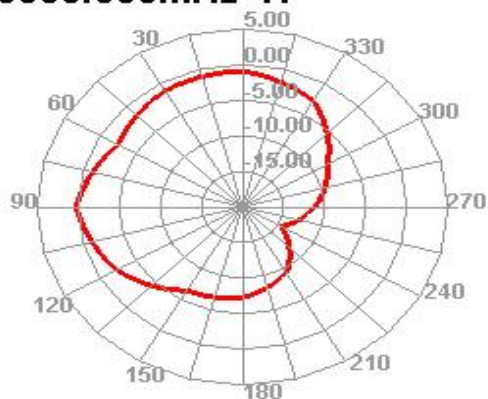
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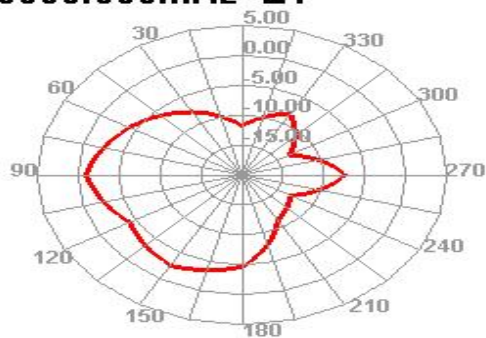
5000.000MHz



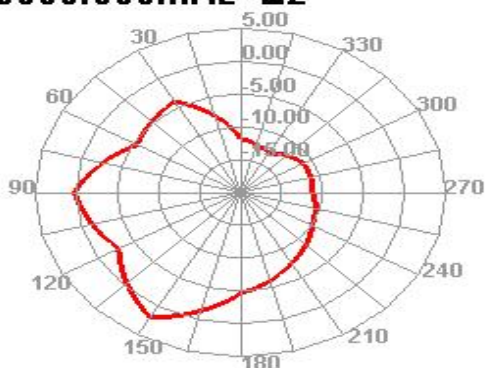
5000.000MHz H



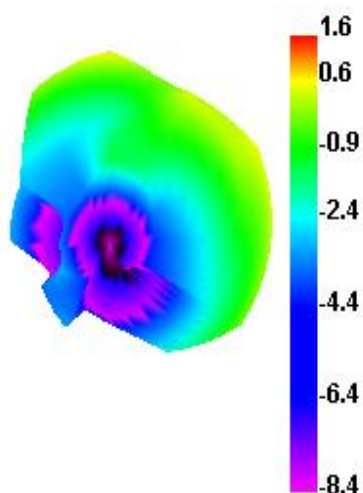
5000.000MHz E1



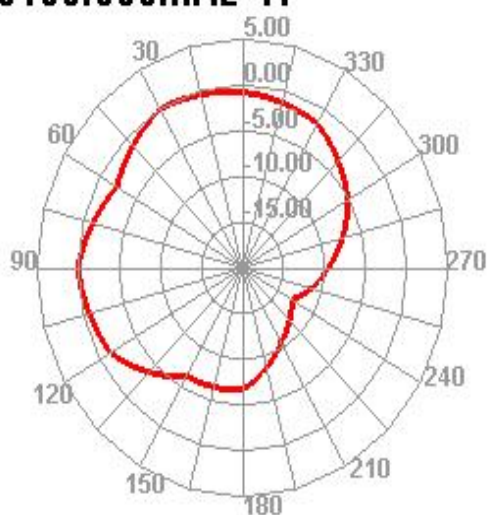
5000.000MHz E2



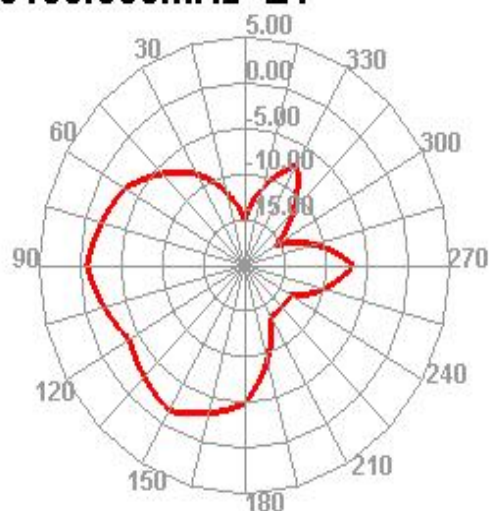
5100.000MHz



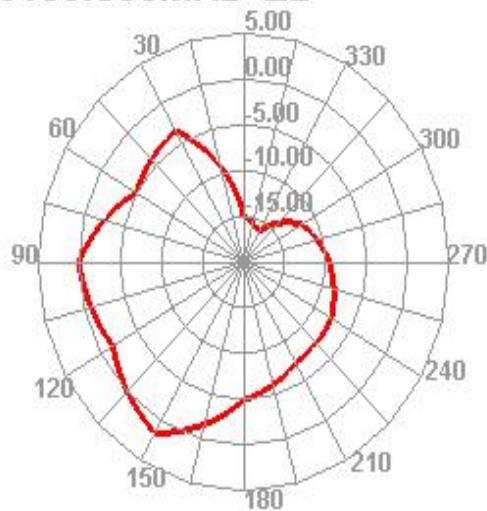
5100.000MHz H



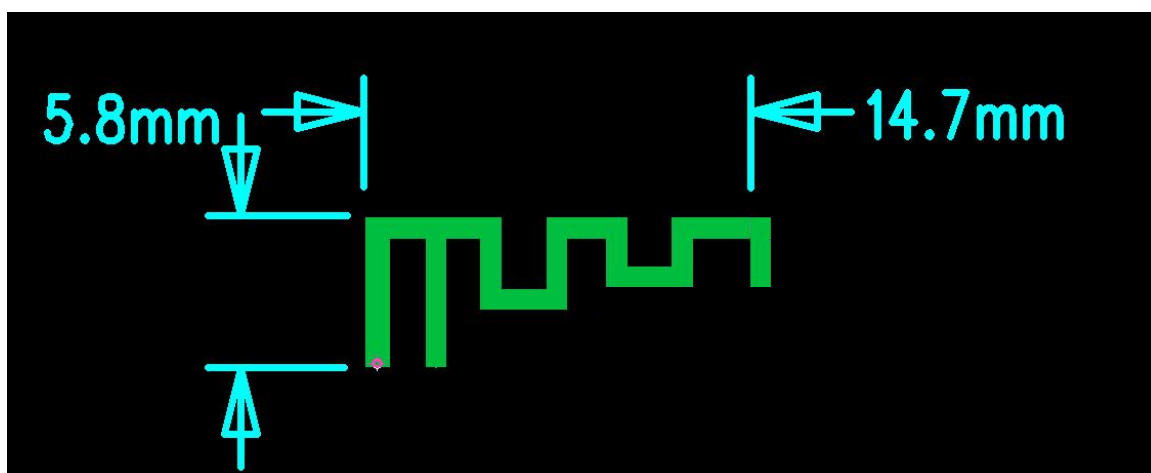
5100.000MHz E1



5100.000MHz E2



五. Design drawings



Gain :2.4G 0.72dBi, 5G 2.04dBi

六. Test the equipment:

Measurement instrument: Microwave dark room, network analyzer, standard antenna.

Microwave dark chamber description:

This is the microwave dark room set in Shenzhen, this microwave dark room belongs to a far field measuring system, the size of 7.0 meters x4.0 meters x3.0 meters, static area size (Quiet zone) size of 15 cm x15 cm x15 cm.

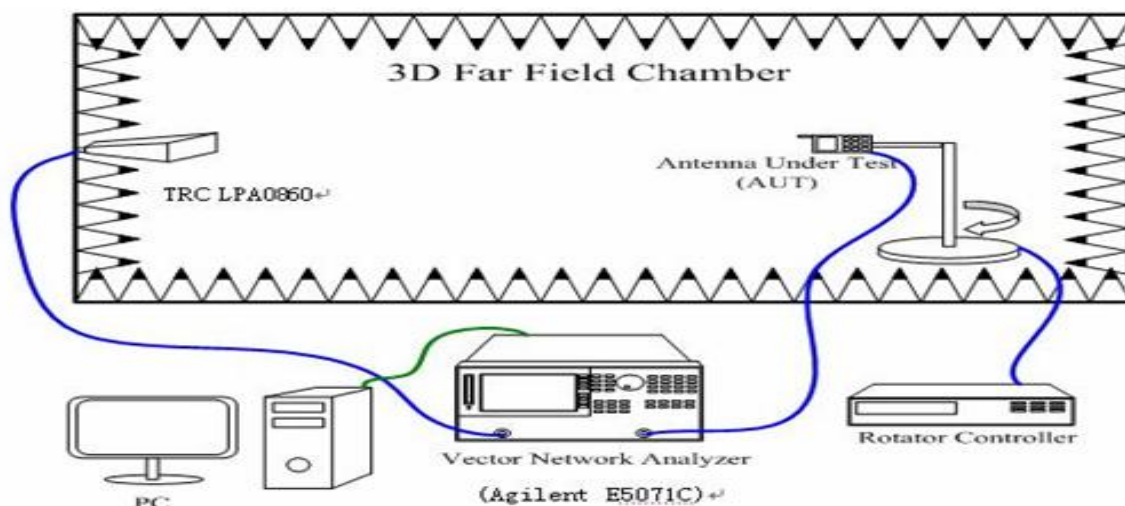


图. 1. 微波暗室内部仪器设置 r.

Fig. 1 is the instrument setting of the microwave dark room and the connection diagram of the network analyzer. The distance from the transmitting antenna (TRC LPA0860 800MHZ-6GHZ transmitting antenna used in the dark room) to the antenna to be measured (AUT), the antenna is placed on the rotating platform to measure the measuring antenna at the angle rotated by the control turntable.

Place the antenna to be measured on the rotary table and measure the 360-degree field strength data of each plane (ZY and ZX planes). Day will be tested again



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The line is replaced with a standard dipole antenna (the standard dipole antenna model used in the dark room is TRC AD series dipole antenna 800MHz~2500MHz) and detects the field strength data of 360 degrees to obtain the standard gain value of the antenna to be measured and direction through the conversion of formula 1.

$$G_{AUT} = G_{stand} + P_{AUT} - P_{stand}$$

G_{AUT} : Gain of AUT

G_{stand} : Gain of Standard Gain Antenna

P_{AUT} : Measured Power of AUT

P_{stand} : Measured Power of Standard Gain Antenna



深圳市博格斯通信技术有限公司
shenzhen bogesi communication technology co.,ltd

Applicable to DQS t30P project 4G antenna solution

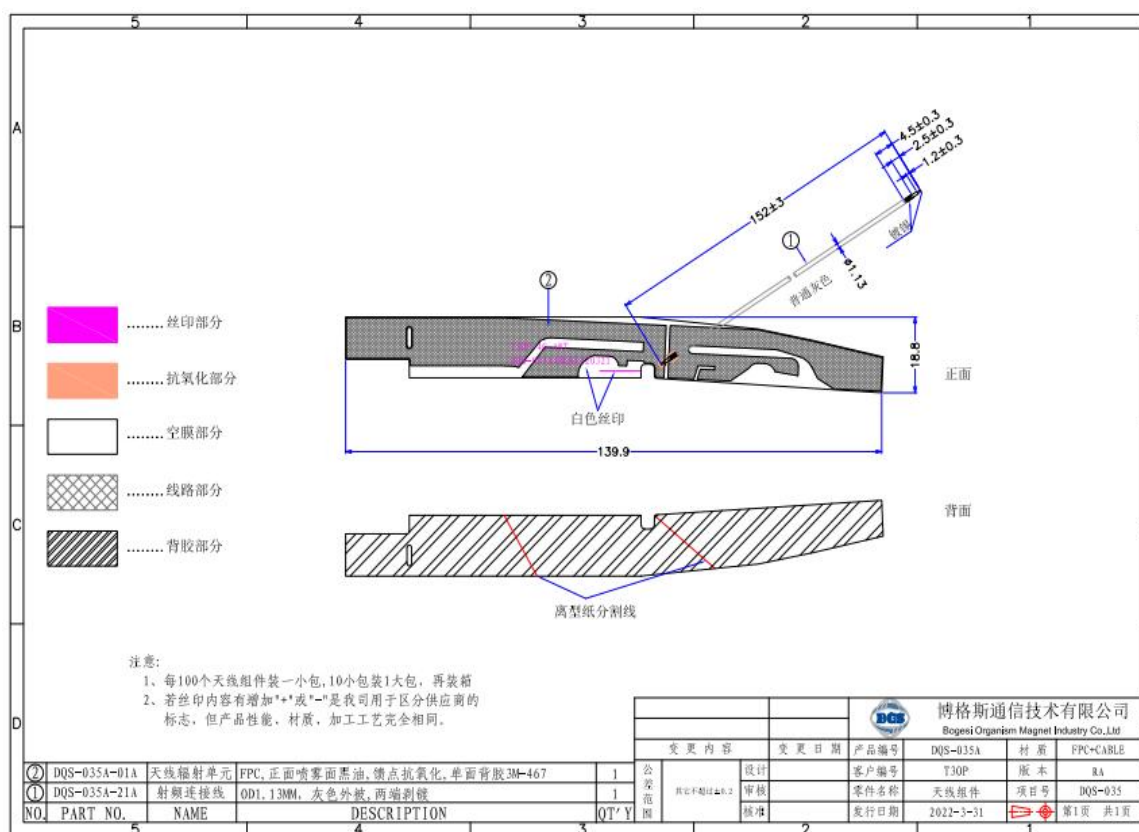
Electrical Specifications:

Frequency Band	700-960MHz: 1710-2690MHz	The Antenna Material	FPC
Nominal Impedance	50 Ω	Antenna Connection Mode	weld
VSWR	≤ 4.0	Working Temperature	-40°C ~ +85°C
Peak Gain	700-960MHz: 0.63dBi	Keep The Temperature	+19°C ~ +23°C
	1710-2690MHz: 2.55dBi	Polarization	Linear Polarization

Test Conditions And Methods:

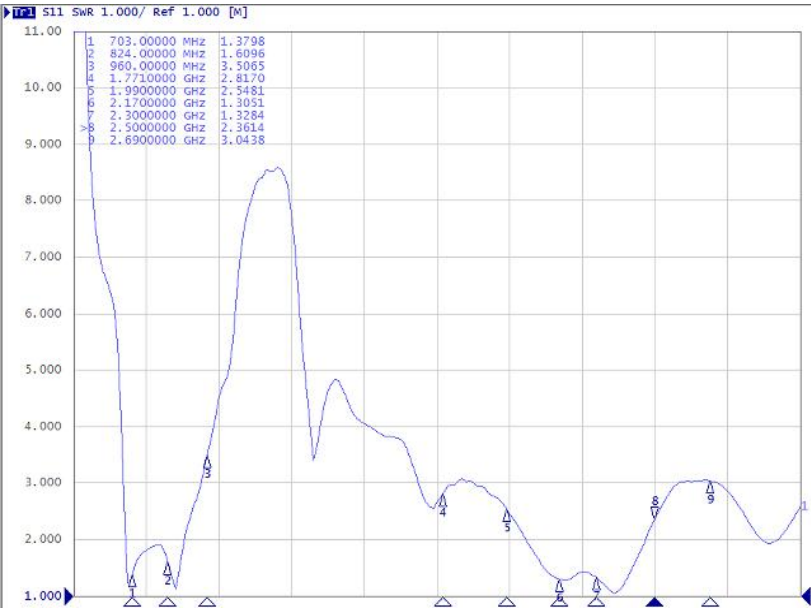
Test Instruments	Test Method	Test Result
7*4*3 microwave darkroom E5071B network analyzer	1. Assemble the antenna to be tested on the prototype. 2. Put the prototype on the test fixture in a dark room, and conduct comprehensive test with it. Instrument/analyzer connection is established. 3. Test antenna passive data with test software.	Refer to the Test Report

Product drawings



Passive performance test parameters

Frequency (GHz)	0.7	0.96	1.71	2.69
VSWR	1.37	3.5	2.8	3.0

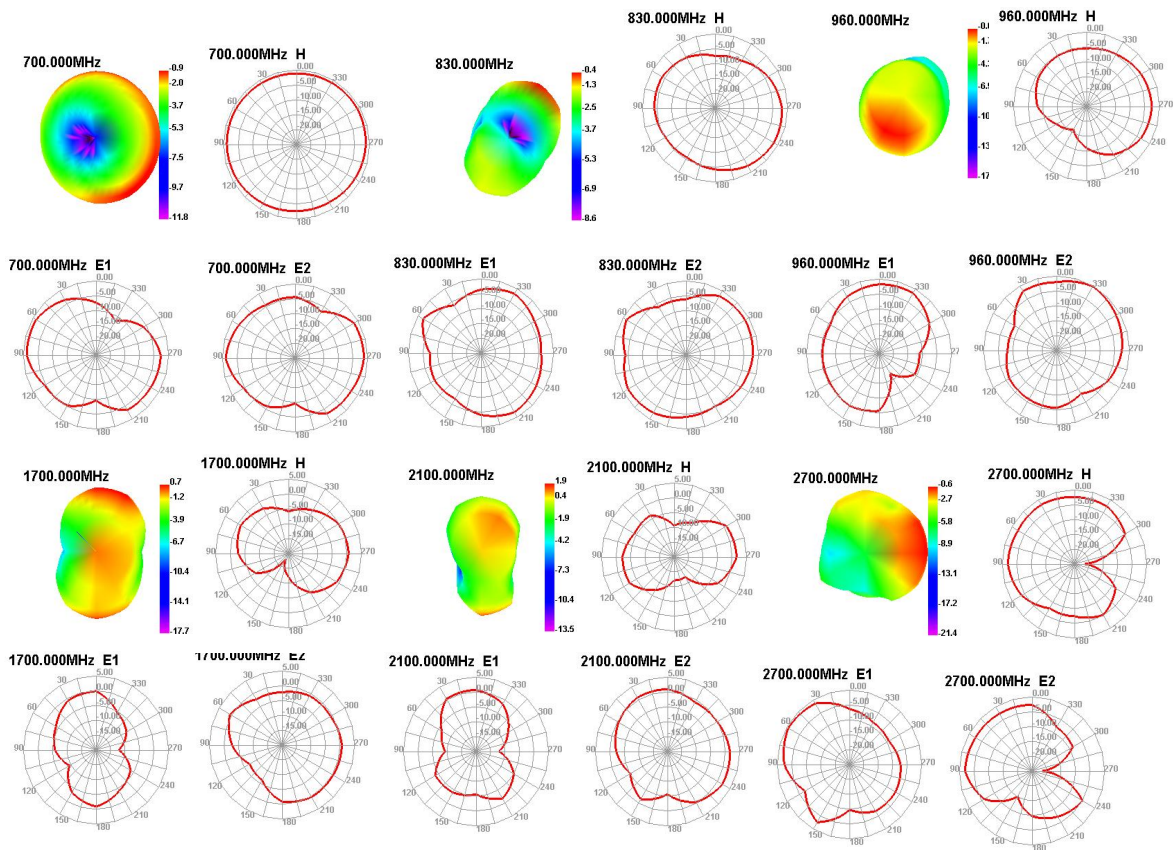


antenna passive data:

Freq (MHz)	Effi (%)	Gain (dBi)
700	49.04	-0.93
710	47.9	-0.97
720	47.07	-1.15
730	48.78	-0.89
740	48.48	-0.81
750	46.97	-0.93
760	44.64	-1.27
770	42.38	-1.65
780	41.72	-1.87
790	42.2	-1.69
800	42.91	-1.39
810	48.69	-0.65
820	46.43	-0.7
830	46.03	-0.44
840	49.1	-0.1
850	49.97	0.09
860	50.64	0.63
870	39.29	0.2
880	36.05	0.4
890	26.96	-0.52
900	25.3	-0.76
910	23.61	-1.29
920	27.07	-1.2
930	29.16	-1
940	33.25	-0.3
950	34.94	0.16
960	31.82	-0.01

Freq (MHz)	Effi (%)	Gain (dBi)
1700	52.28	0.69
1720	51.65	1.15
1740	47.13	1.26
1760	42.56	0.88
1780	38.1	0.11
1800	29.62	-1.28
1820	29.27	-0.91
1840	28.46	-0.73
1860	31.42	-0.58
1880	33.67	-0.68
1900	37.16	-0.06
1920	40.66	0.44
1940	42.09	0.67
1960	42.97	0.67
1980	42.66	0.63
2000	42.8	0.74
2020	46.17	0.97
2040	44.25	0.5
2060	52.74	1.2
2080	55.37	1.68
2100	58.43	1.94
2120	60.66	2.12
2140	61.11	2.23
2160	59.06	1.87
2180	58.6	1.63
2200	61.81	1.9
2220	61.59	1.82
2240	59.16	1.66
2260	55.1	1.51
2280	57.11	1.85
2300	60.61	1.9
2320	70.12	2.51
2340	72.79	2.44
2360	75.96	2.55
2380	70.99	2.15
2400	60.51	1.32
2420	56.52	1.22
2440	48.39	0.97
2460	45.77	0.82
2480	45.9	0.72
2500	46.91	0.7
2520	47.04	0.76
2540	40.58	0.19
2560	39.86	-0.37
2580	37.36	-0.6
2600	32.18	-0.78
2620	32.26	-0.47
2640	30.23	-0.63
2660	31.76	-0.24
2680	31.95	-0.42
2700	33.56	-0.58

Directional diagram



Testing environment

