

**Shenzhen unity wireless technology co., ltd**

Address: Room 1002, Building 7, Hengda Fashion Huigu Building, Fulong Road, Dalang Street,  
Longhua District, Shenzhen

TEL: 0755-23285621

FAX: 0755-23285621

# Antenna Test Report

Customer Name: Jiutong IoT

Product Model: JT301A

Frequency band: LTE: 1/2/3/4/5/7/8/12/13/18/19/20/25/  
26/28/66/38/40/41

tabulation: Ouyang yingshan TEL : 0755-23285621	RF Engineer: Ouyang yingshan TEL: 0755-23285621	Date: 2025. 6. 4

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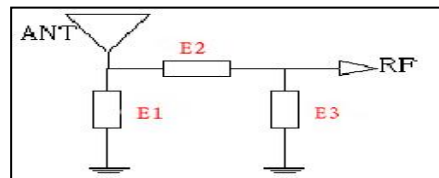
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**Antenna matching has not been changed (original motherboard**

**1. matching)**

	E1	E2	E3
	N/A	0 $\Omega$	N/A

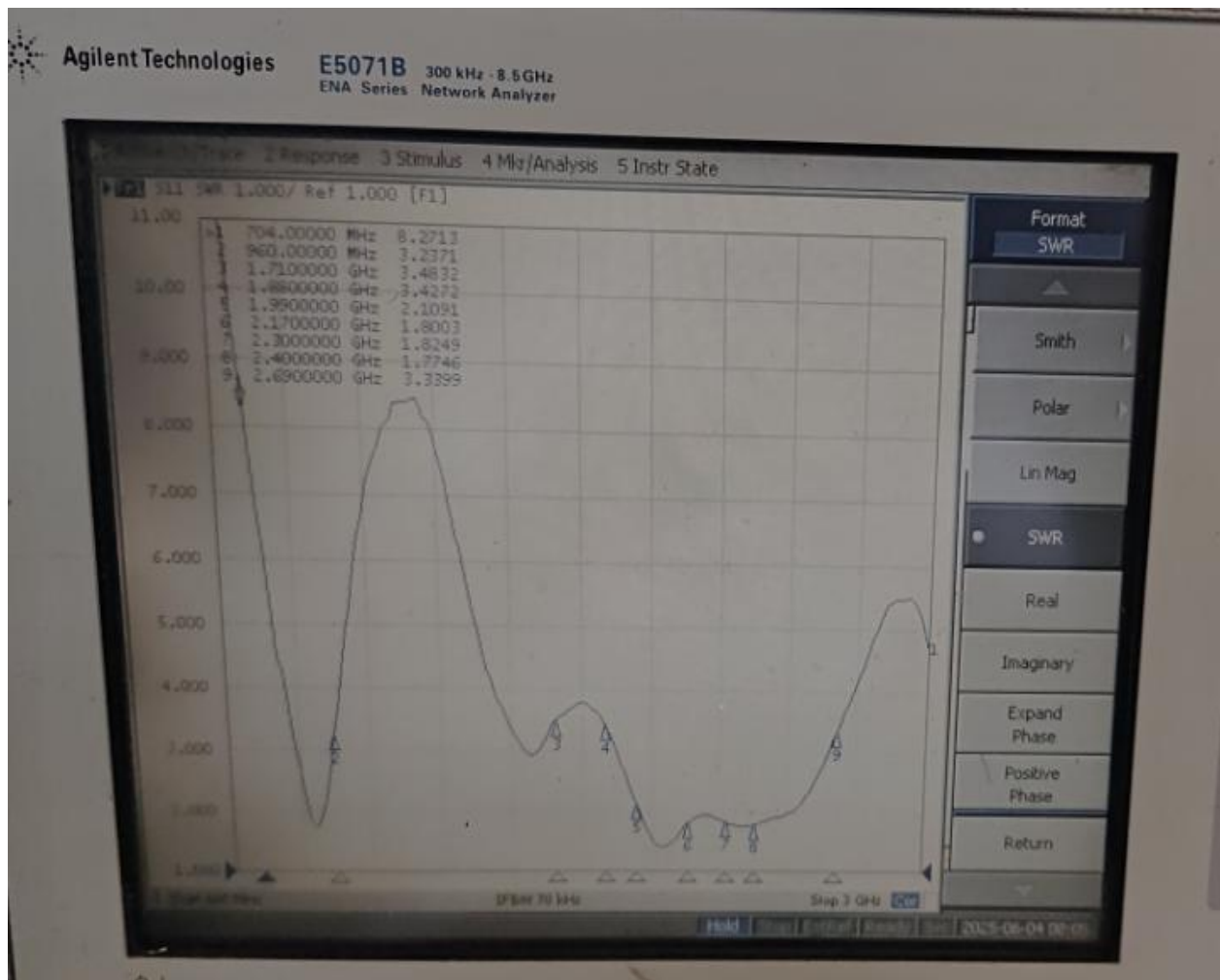


**2. Antenna complete machine picture**



### 3. 4G Antenna Passive Test Data

#### 1) Antenna Passive S11 Parameters



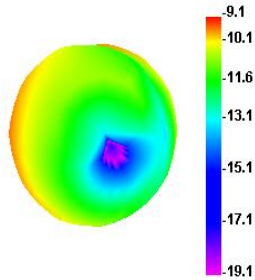
## 2) Antenna passive gain and efficiency test data

Freq (MHz)	Effi (%)	Gain (dBi)	Freq (MHz)	Effi (%)	Gain (dBi)	Freq (MHz)	Effi (%)	Gain (dBi)	Freq (MHz)	Effi (%)	Gain (dBi)	Freq (MHz)	Effi (%)	Gain (dBi)
700	12.57	-9.14	1700	39.79	-0.64	2010	37.27	-1.76	2320	38.1	-0.99	2630	53.9	0.53
710	12.28	-8.71	1710	40.9	-0.56	2020	34.45	-2.1	2330	37.61	-1.07	2640	51.11	0.7
720	12.69	-7.71	1720	41.66	-0.33	2030	33.5	-2.24	2340	37.2	-1.01	2650	53.14	1.14
730	12.2	-7.57	1730	36.42	-0.56	2040	38.86	-1.63	2350	42.42	-0.35	2660	52.52	0.53
740	11.62	-7.71	1740	40.08	-0.26	2050	40.24	-1.38	2360	41.29	-0.22	2670	51.82	0.2
750	11.36	-7.67	1750	40.09	-0.26	2060	43.97	-0.86	2370	39.97	-0.33	2680	50.79	0.01
760	11.29	-7.48	1760	34.13	-1.06	2070	42.36	-1.06	2380	38.4	-0.99	2690	45.45	-0.5
770	12.73	-7.87	1770	31.56	-1.37	2080	38.74	-1.27	2390	37.02	-0.61	2700	43.6	-0.75
780	13.57	-6.86	1780	31.4	-1.1	2090	36.1	-1.47	2400	36.61	-0.5			
790	13.29	-6.04	1790	33.23	-1	2100	37.23	-0.93	2410	34.29	-0.76			
800	15.27	-5.63	1800	29.07	-1.7	2110	31.02	-1.76	2420	37.47	-0.25			
810	10.2	-5.58	1810	32.44	-1.35	2120	31.29	-1.41	2430	37.66	-0.14			
820	12.4	-5.8	1820	28.29	-2.01	2130	30.88	-1.33	2440	38.58	-0.04			
830	13.86	-5.42	1830	24.17	-2.82	2140	30.35	-1.45	2450	42.76	0.44			
840	15.05	-5	1840	24.26	-2.95	2150	31.82	-1.2	2460	40.45	0.26			
850	16.95	-3.93	1850	27.56	-2.46	2160	31.99	-1.34	2470	39.18	0.13			
860	18.04	-3.3	1860	29.65	-2.35	2170	31.83	-1.59	2480	43.72	0.51			
870	18.37	-3.03	1870	31.8	-2.24	2180	32.05	-1.7	2490	44.01	0.5			
880	20.02	-2.61	1880	31.4	-2.5	2190	32.18	-1.84	2500	49.56	0.97			
890	22.23	-2.27	1890	31.95	-2.45	2200	32.54	-1.85	2510	50	1.08			
900	23.12	-2.33	1900	30.25	-2.47	2210	32.98	-1.91	2520	50.6	1.08			
910	25.4	-2.24	1910	34.04	-2	2220	33.85	-1.79	2530	48.74	0.83			
920	27.46	-2.31	1920	33.54	-2.01	2230	33.03	-1.8	2540	42.43	0.27			
930	30.84	-2.07	1930	32.89	-2.09	2240	35.5	-1.54	2550	49	0.94			
940	30.28	-2.38	1940	31.9	-2.21	2250	34.23	-1.61	2560	47.95	0.97			
950	28.89	-2.58	1950	31.26	-2.36	2260	33.99	-1.53	2570	53.44	1.27			
960	27.46	-2.66	1960	31.61	-2.24	2270	33.8	-1.31	2580	58.03	1.63			
970	33.88	-1.64	1970	30.36	-2.4	2280	34.48	-1.35	2590	54.49	1.2			
980	32.52	-1.78	1980	33.14	-2.12	2290	38.38	-0.92	2600	56.48	1.24			
990	30.8	-2.02	1990	34.44	-1.95	2300	37.5	-1.04	2610	51.23	0.58			
1000	37.24	-1.19	2000	35.93	-1.87	2310	37.53	-0.99	2620	53.59	0.56			

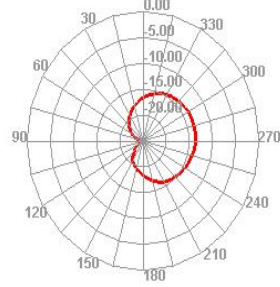


## Antenna Radiation Pattern

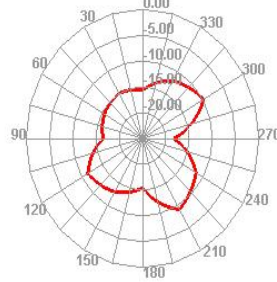
**700.000MHz**



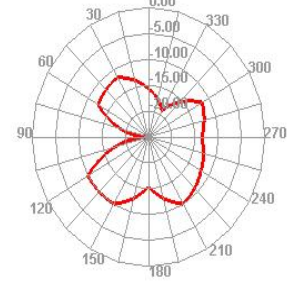
**700.000MHz H**



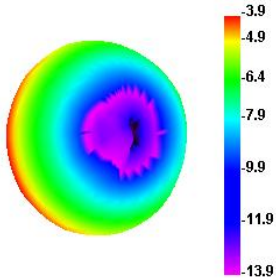
**700.000MHz E1**



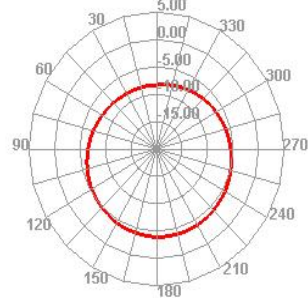
**700.000MHz E2**



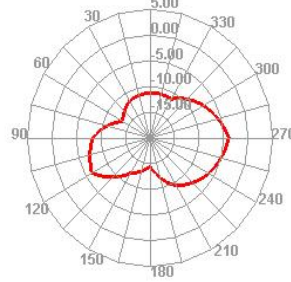
**850.000MHz**



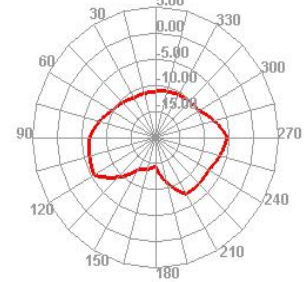
**850.000MHz H**



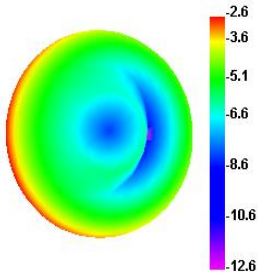
**850.000MHz E1**



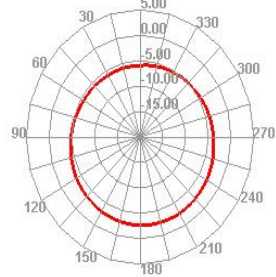
**850.000MHz E2**



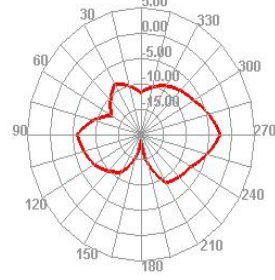
**880.000MHz**



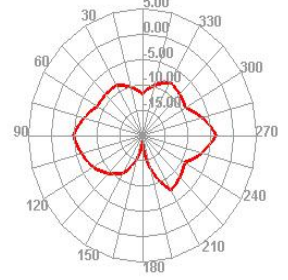
**880.000MHz H**



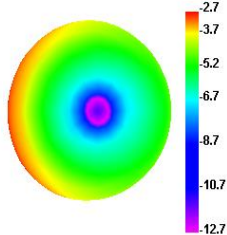
**880.000MHz E1**



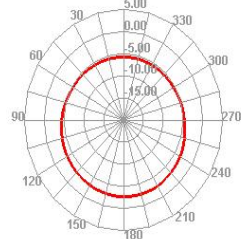
**880.000MHz E2**



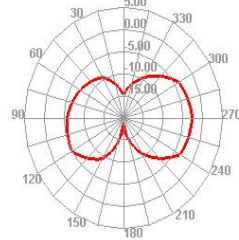
**960.000MHz**



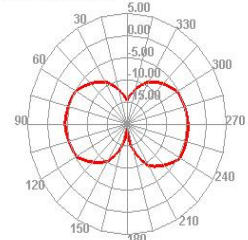
**960.000MHz H**



**960.000MHz E1**



**960.000MHz E2**



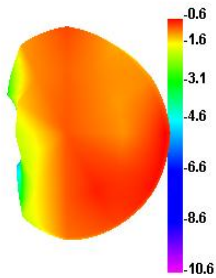
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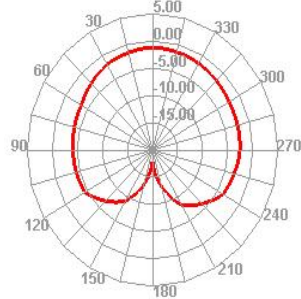
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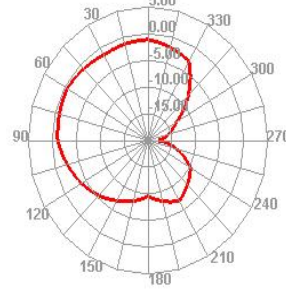
1710.000MHz



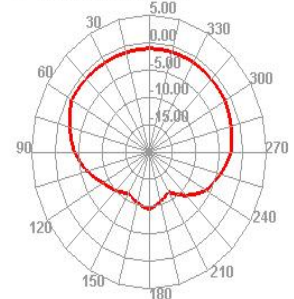
1710.000MHz H



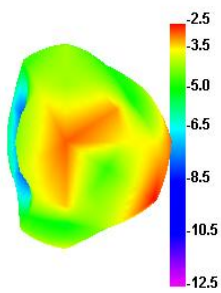
1710.000MHz E1



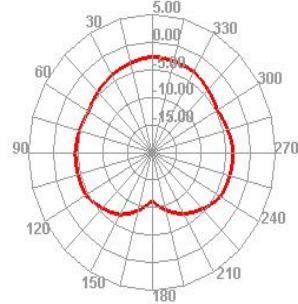
1710.000MHz E2



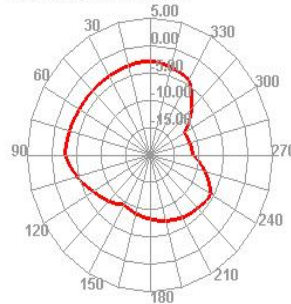
1880.000MHz



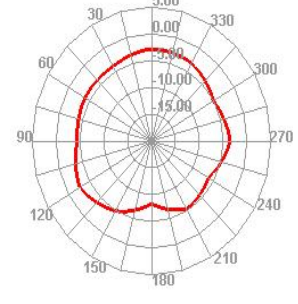
1880.000MHz H



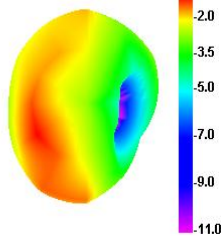
1880.000MHz E1



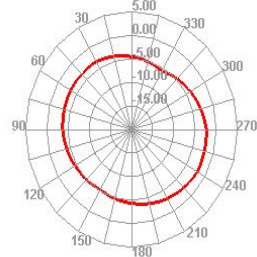
1880.000MHz E2



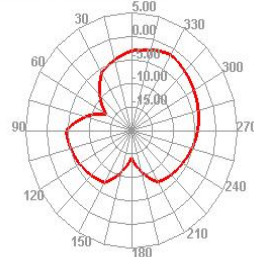
2300.000MHz



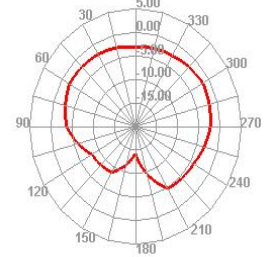
2300.000MHz H



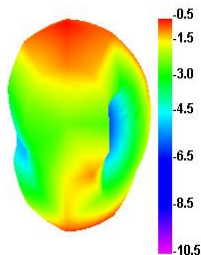
2300.000MHz E1



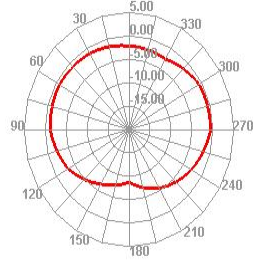
2300.000MHz E2



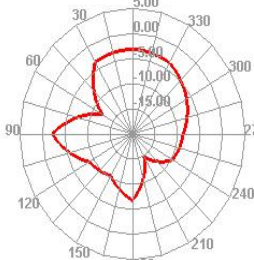
2690.000MHz



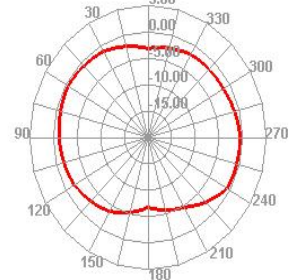
2690.000MHz H



2690.000MHz E1



2690.000MHz E2



## Active OTA test data

信道CH Test value		LTEB1			LTEB2		
		18050	18300	18550	18650	18900	19150
10M	TRP	14.26	16.03	17.14	14.69	15.03	14.57
	TIS			-90.04			-87.28

CH Test value		LTEB3			LTEB4		
		19250	19575	19900	20000	20175	20350
10M	TRP	18.19	17.25	16.38	18.65	19.54	19.29
	TIS			-89.94			-90.56

CH Test value		LTEB5			LTEB7		
		20450	20525	20600	20800	21100	21400
10M	TRP	17.64	16.68	15.71	19.37	19.63	19.87
	TIS			-88.72			-91.49

CH Test value		LTEB8			LTEB12		
		21500	21625	21750	23060	23095	23130
10M	TRP	18.65	18.42	18.35	15.96	15.24	14.9
	TIS			-90.95			-84.02

CH Test value		LTEB13			LTEB18		
				23230	23900	23925	23950
10M	TRP			15.18	18.43	18.69	18.93
	TIS			-87.86			-90.26

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CH Test value		LTEB19			LTEB20		
		24050	24075	24100	24200	24300	24400
10M	TRP	18.78	18.6	18.27	18.39	18.88	18.76
	TIS			-90.43			-90.76

CH Test value		LTEB25			LTEB26		
		26090	26365	26640	26640	26865	26990
10M	TRP	14.37	15.42	15.81	18.27	18.33	18.63
	TIS			-86.95			-90.66

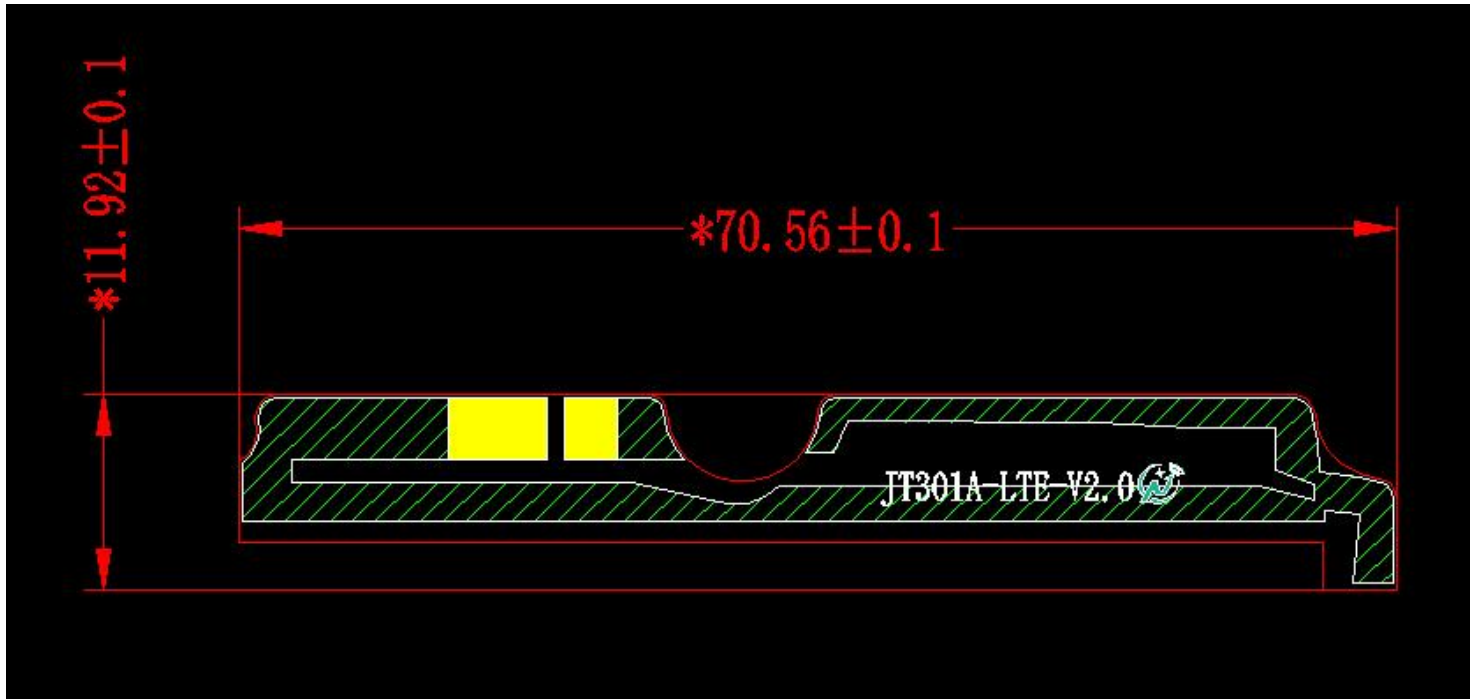
CH Test value		LTEB28			LTEB66		
		27260	27435	27610	132022	132322	132622
10M	TRP	11.61	12.12	12.31	18.22	17.83	17.66
	TIS			-86.71			-90.59

CH Test value					LTEB38		
					37850	38000	38150
10M	TRP				19.97	19.74	19.52
	TIS						-91.47

CH Test value		LTEB40			LTEB41		
		38750	39150	39550	40340	40840	41140
10M	TRP	18.79	19.15	19.35	19.62	19.81	19.94
	TIS			-91.38			-91.79



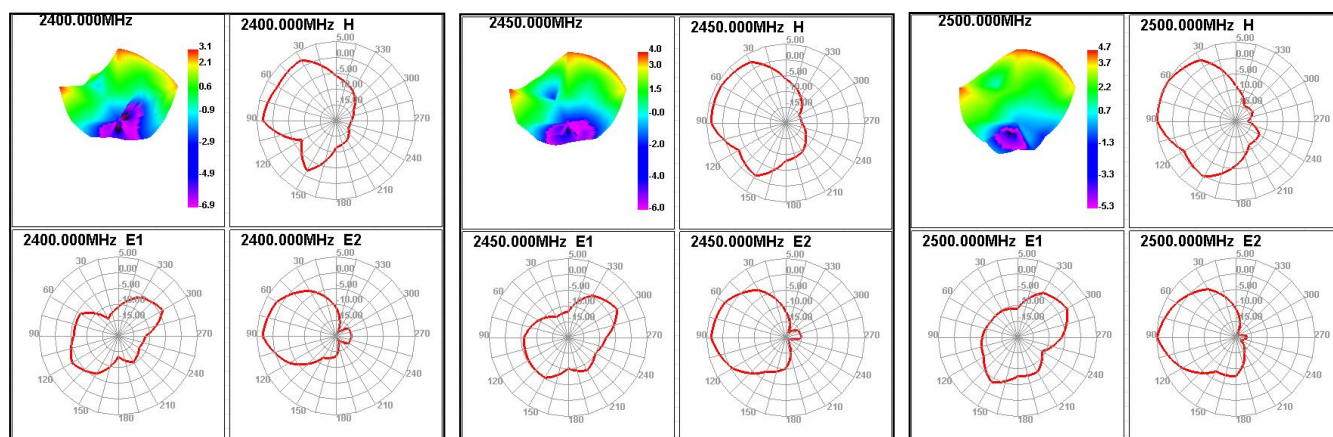
## Antenna Dimensions



## 4.BT passive efficiency test:

Freq (MHz)	Effi (%)	Gain (dBi)
2400	50.2	3.13
2410	50.78	3.02
2420	50.45	3.23
2430	51.4	3.31
2440	51.45	3.48
2450	52.78	3.99
2460	51.29	4
2470	52.48	4.23
2480	51.72	4.56
2490	52.33	4.72
2500	52.82	4.75

## BT 天线苹果图:



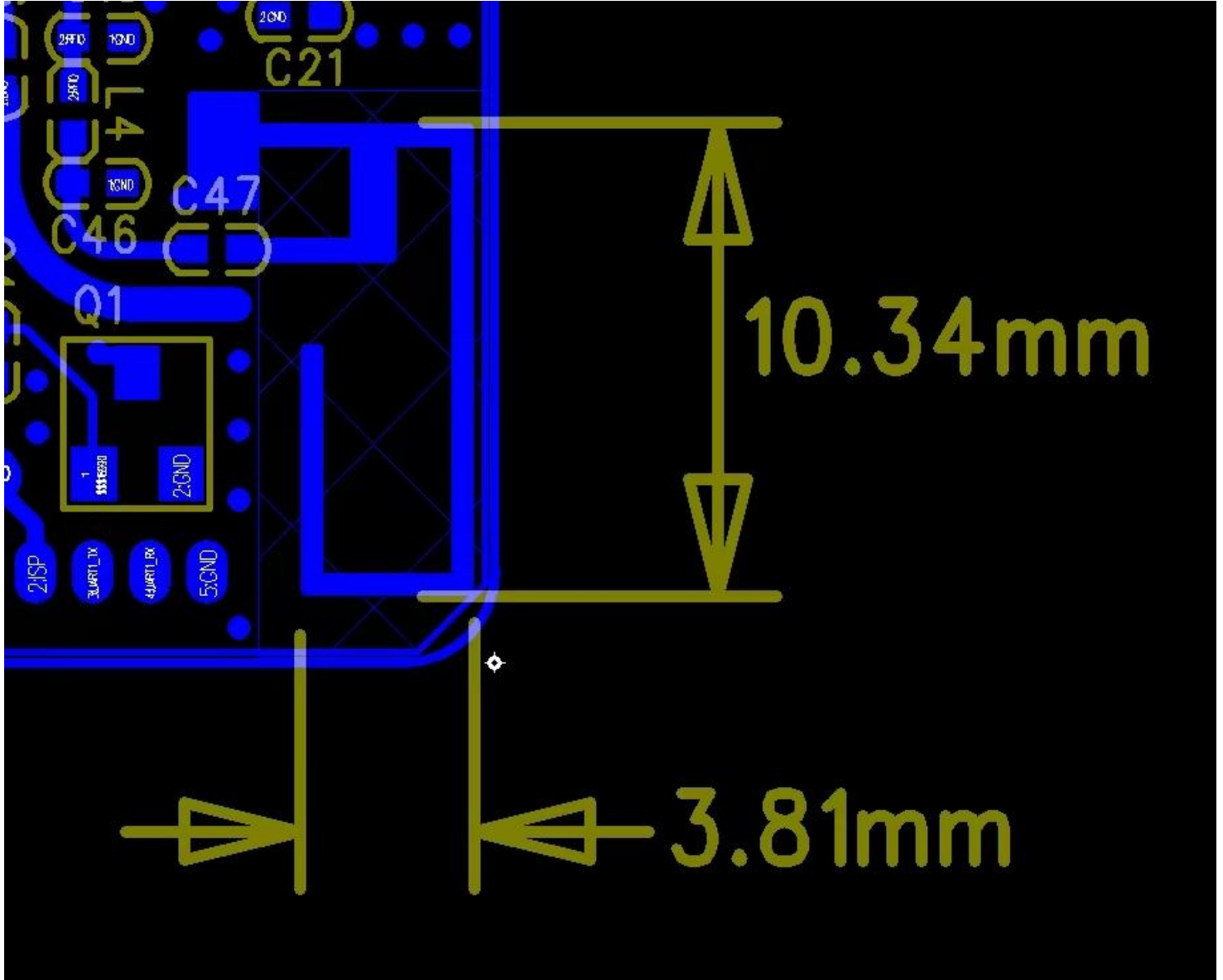
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### Antenna Dimensions



## 4. Test equipment

- **Measuring instruments: microwave darkroom, network analyzer, standard antenna.**
- **Microwave Darkroom Description:**

This is the microwave darkroom set up by our company in Shenzhen. This microwave darkroom belongs to a far-field measurement system. The size of the darkroom is 7.0m x 4.0m x 3.0m, and the size of the quiet zone is 15cm x 15cm x 15cm.

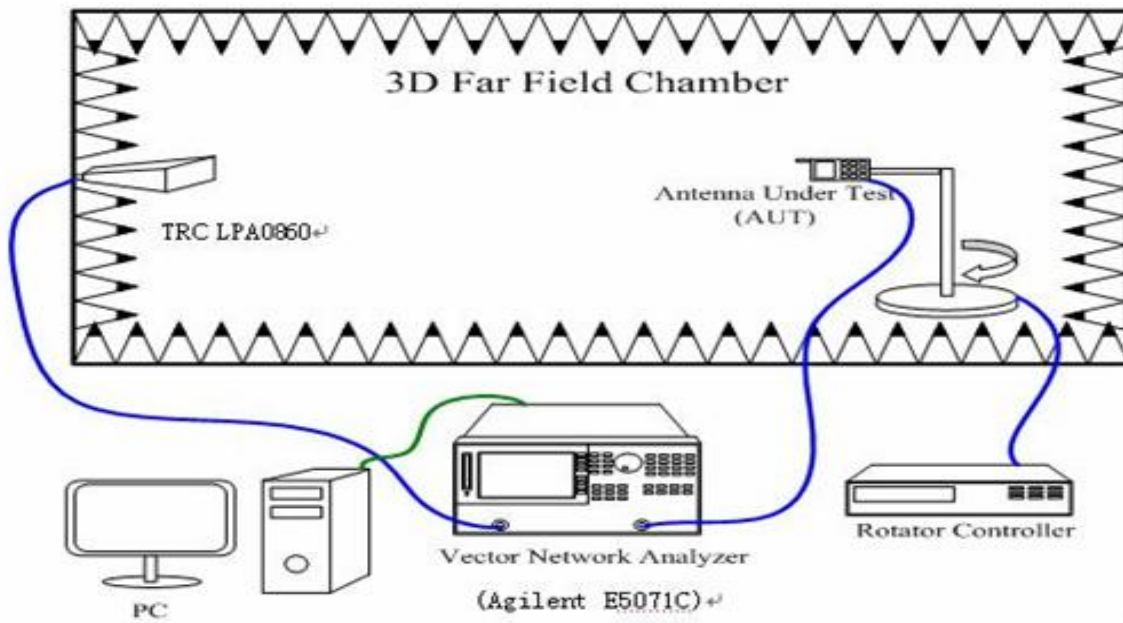


图. 1. 微波暗室内仪器设置 r.

Fig. 1 shows the instrument setup and network analyzer connection diagram in the microwave anechoic chamber. The distance between the transmitting antenna (the transmitting antenna model used in this chamber is TRC LPA0860 800MHZ-6GHZ) and the antenna under test (AUT) is 1.35 meters. The antenna under test is placed on a rotating platform. By controlling the rotation angle of the turntable, a rough and relatively accurate measurement can be made on the antenna under test.

Place the antenna to be tested on a rotating table and measure the 360-degree field strength data of each plane (ZY plane and ZX plane). Then replace the antenna to be tested with a standard dipole antenna (the standard dipole antenna model used in this darkroom is TRC AD series dipole antenna 800MHz~2500MHz) and measure its 360-degree field strength data to convert the gain standard value. The gain value and radiation pattern of the antenna to be tested can be obtained 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