Shanghai Shangyuan Communication Technology Co., LTD

Antenna admission book

Customer name: qian hai lian da	Project name: CS85D
Working frequency band: LTE1/3/5/8/34/38/39/40/41	
Hardware version: F510-T113-S3-V2.120240617	
Hardware version: PD_VCI_V0.2-20231027	
Shangyuan material specifications	

specifications and models	Shang Yuan material number	Customer material number
MAIN ant	SZ23400IB77	

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Preparation / change date	Change the content	Change the person	edition
2024.06.24	A new release	XUWEI	A

Shang Yuan will sign the column				
research and development	structure:	examine and verify:	Quality Engineer:	ratify:
	radio frequency:	examine and verify:		

The customer will sign the column			
electronic engineer	project manager	construction engineer	Quality engineer

catalogue

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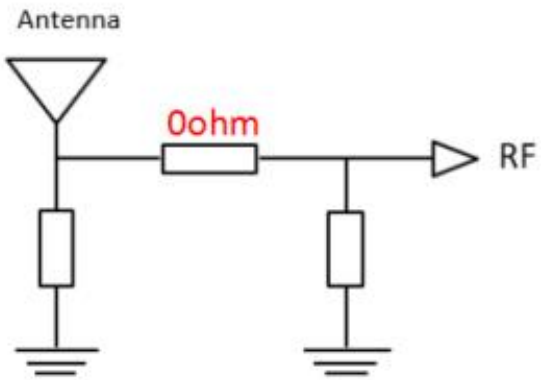
一、 item information

1.1 Schematic diagram

二、 Antenna matching circuit



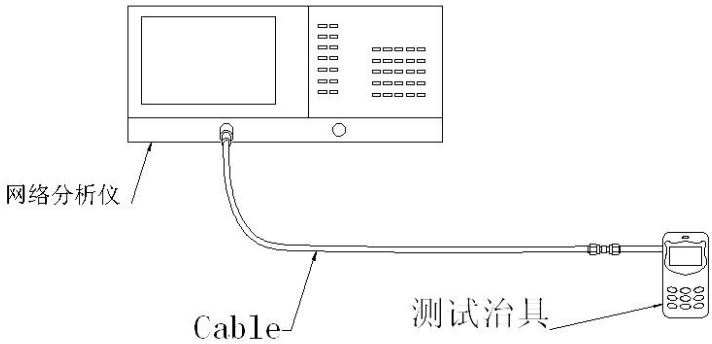
三、 Complete machine test data

3.1 S11 Description of the test method

Test Equipment: Network Analyzer (Agilent E5071C)

Test method: Export a 50 Ohm CABLE cable from the instrument test port, connect the SMA connector of the test device after the calibrator, and record the echo loss and standing wave ratio corresponding to the relevant frequency point.

The test schematic diagram is as follows:



Schematic diagram of the test

3.2 Test environment

Test System: MPS 6450 Multi-sensor OTA Measurement System (XH-IoT)

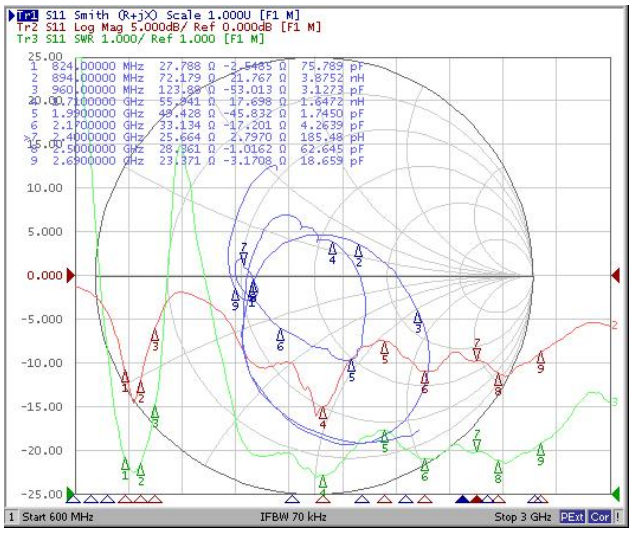
Test environment: temperature 22℃± 3℃, humidity 50% ± 15%

Test equipment: Use the network analyzer R & S ZND / Agilent E5071C when testing the passive data

When testing active data, use the comprehensive meter Agilent 8960 / CMW500 / S P9500E / SP 8315

3.3 The passive test parameters

standing-wave ratio VSWR



Passive efficiency

Freq (MHz)	Effi (%)	Gain (dBi)
820	46.93	1.61
830	45.83	1.57
840	43.96	1.48
850	45.62	1.41
860	43.26	1.11
870	41.32	1.21
880	42.72	1.45
890	45.12	1.74
900	44.98	1.85
910	44.33	1.81
920	42.51	1.74
930	41.17	1.67
940	40.68	1.43
950	40.45	1.06
960	40.02	1.13

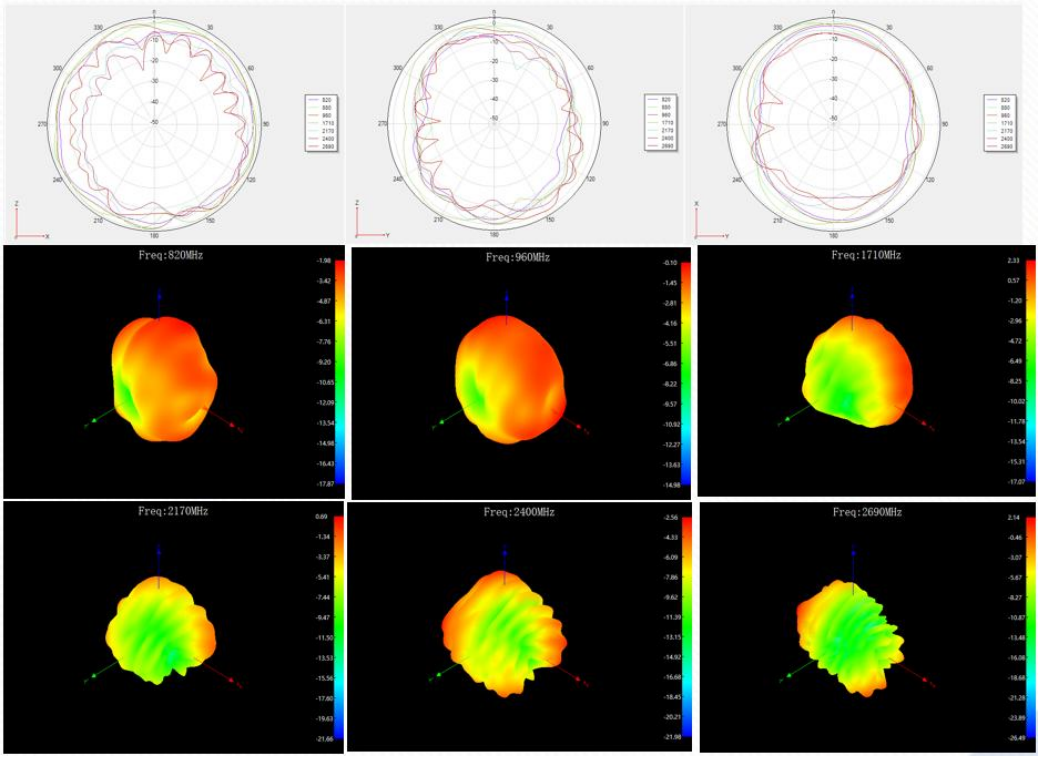
Freq (MHz)	Effi (%)	Gain (dBi)
1700	44.95	2.48
1710	40.53	3.18
1720	43.77	2.36
1730	45.51	2.53
1740	47.44	2.63
1750	49.55	2.68
1760	51.45	2.62
1770	53.3	2.52
1780	54.01	3.28
1790	54.84	3.09
1800	53.84	2.79
1810	53.61	2.58
1820	52.82	2.4
1830	52.25	2.3
1840	51.09	2.2
1850	50.11	2.17
1860	48.74	2.19
1870	46.51	2.23
1880	43.93	2.32
1890	41.15	2.36
1900	42.84	2.35
1910	43.14	2.26
1920	46.66	2.25
1930	47.26	2.24
1940	44.82	2.25
1950	41.81	2.34
1960	45.2	2.56

1970	47.96	2.79
1980	49.87	3.08
1990	51.29	3.38
2000	51.23	2.57
2010	51.3	2.73
2020	51.29	2.87
2030	51.13	2.96
2040	51	3.02
2050	51.35	3.08
2060	51.11	3.09
2070	50.71	3.05
2080	50.6	3.21
2090	51.61	3.01
2100	52.54	3.12
2110	53.25	2.95
2120	53.19	2.85
2130	54.62	2.86
2140	54.98	2.78
2150	54.93	2.65
2160	55.97	2.58
2170	50.68	2.05
2180	52.32	2.98
2190	54.17	2.9
2200	56.08	2.79
2210	56.97	3.6
2220	57.84	3.57
2230	58.07	3.46
2240	57.48	3.28
2250	56.52	3.52
2260	55.89	3.75
2270	55.59	3.98

2280	54.78	3.15
2290	53.1	3.23
2300	53.52	3.43
2310	53.58	3.58
2320	52.8	3.02
2330	51.53	3.18
2340	51.28	3.28
2350	49.93	3.02
2360	48.74	2.28
2370	47.9	2.11
2380	47.83	3.92
2390	47.63	3.67
2400	46.95	3.32
2410	52.73	3.36
2420	51.81	3.29
2430	49.35	3.11
2440	47.86	2.97
2450	46.23	2.85
2460	43.89	2.75
2470	40.84	2.57
2480	41.77	2.46
2490	43.01	2.2
2500	45.3	1.86
2510	45.79	1.69
2520	46.35	1.66
2530	46.46	1.69
2540	47.2	1.85
2550	48.3	2.02

2560	48.89	2.09
2570	49.19	2.1
2580	49.79	2.11
2590	50.33	2
2600	48.78	1.84
2610	51.44	1.62
2620	52.31	1.49
2630	53.81	1.3
2640	54.41	1.12
2650	50.31	1.95
2660	53.9	2.83
2670	47.65	2.76
2680	48.61	2.77
2690	53.27	2.88
2700	54.32	2.86

Passive direction diagram

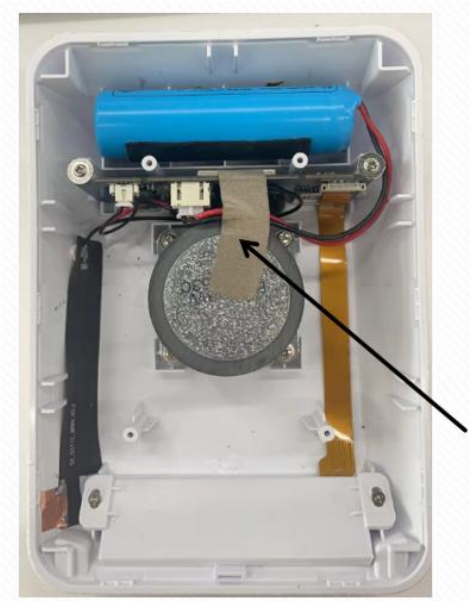


3.4 Active test data

4G	Channel	TRP	TIS
LTE B1	L	19.83	
	M	20.01	
	H	20.26	-94.59
LTE B3	L	18.16	
	M	18.75	
	H	19.37	-94.18
LTE B5	L	17.85	
	M	17.57	
	H	18.38	-87.45
LTE B8	L	18.89	
	M	18.65	
	H	18.29	-90.21

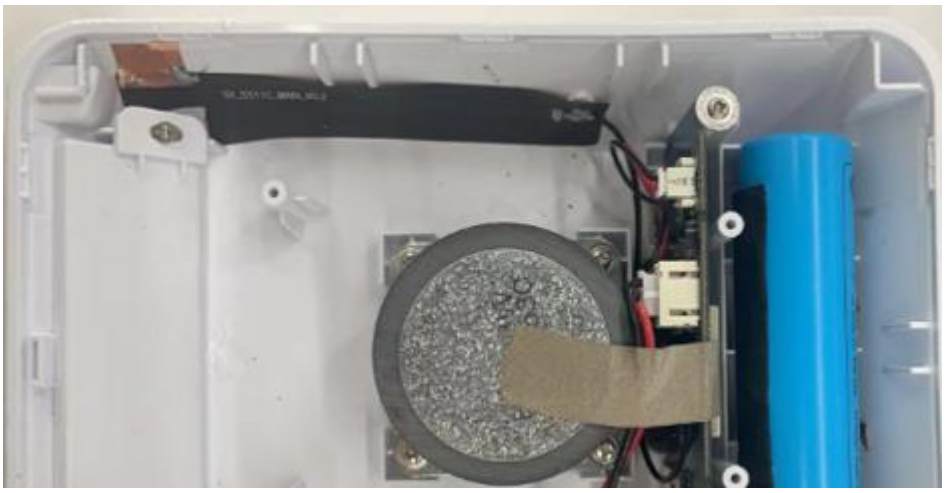
4G	Channel	TRP	TIS
LTE B34	L	19.15	
	M	19.31	
	H	19.49	-96.08
LTE B39	L	19.54	
	M	19.69	
	H	19.57	-95.12
LTE B40	L	19.33	
	M	19.51	
	H	19.42	-95.51
LTE B41	L	19.83	
	M	19.52	
	H	18.81	-94.96

四、 The prototype environment processing mode



五、 Antenna loading position

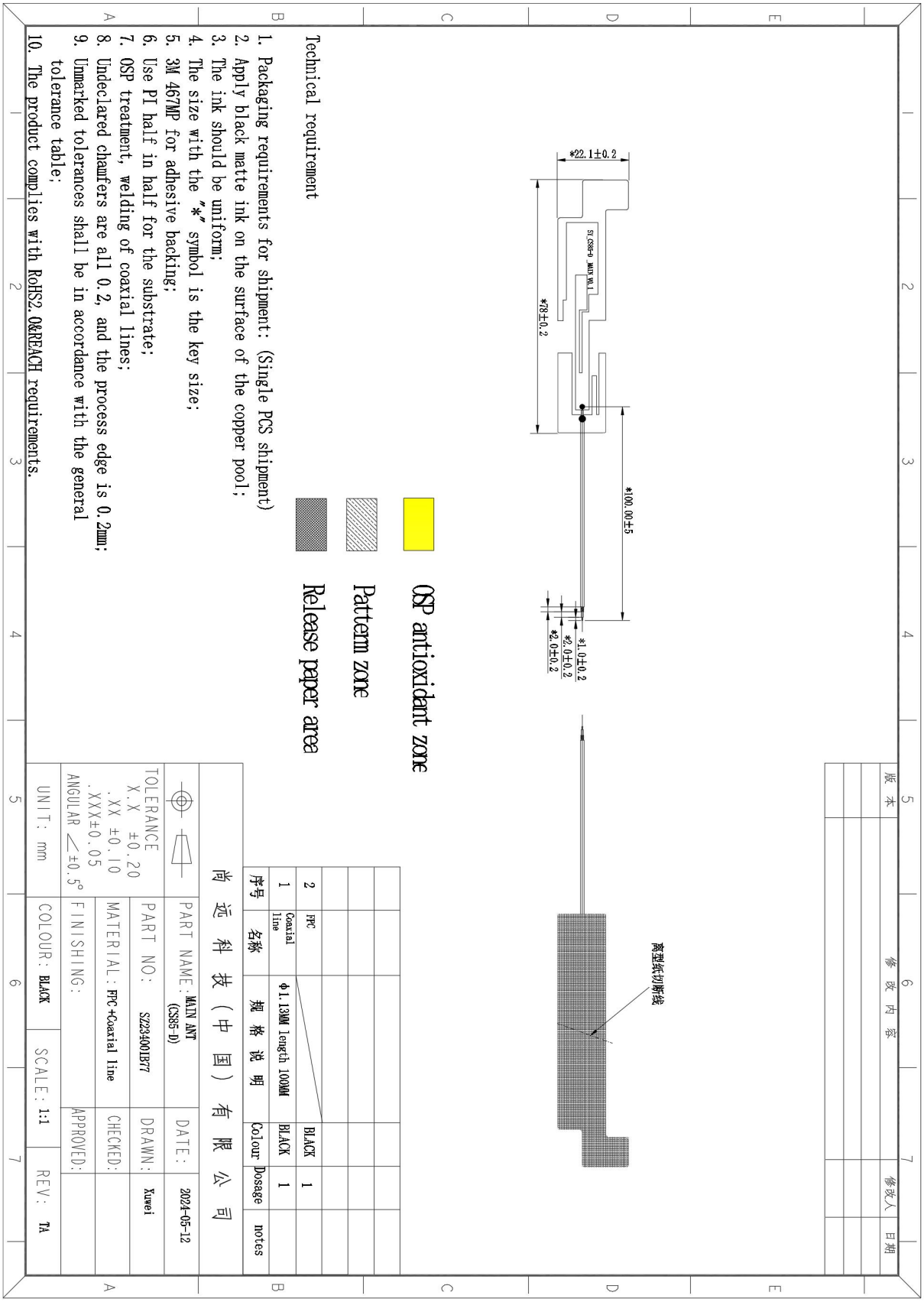
The antenna is assembled in the following figure



六、 Mass production antenna index

When the antenna is in mass production, the standing wave ratio is used as the test standard for mass production.

Based on the differences of the project itself, the following criteria are given:

Frequency (MHz)	Mass production standards
2400-2450MHz	VSWR (mass production performance) <VSWR (recognized performance) + 0.5
5150-5850MHz	

七、 Engineering drawing