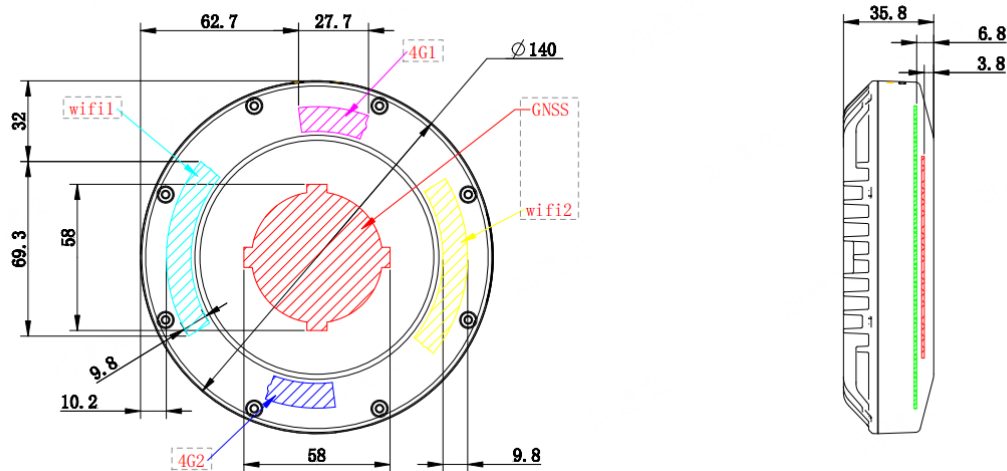


1, Antenna Type and Size 天线类型及天线尺寸

Antenna Type: PCB

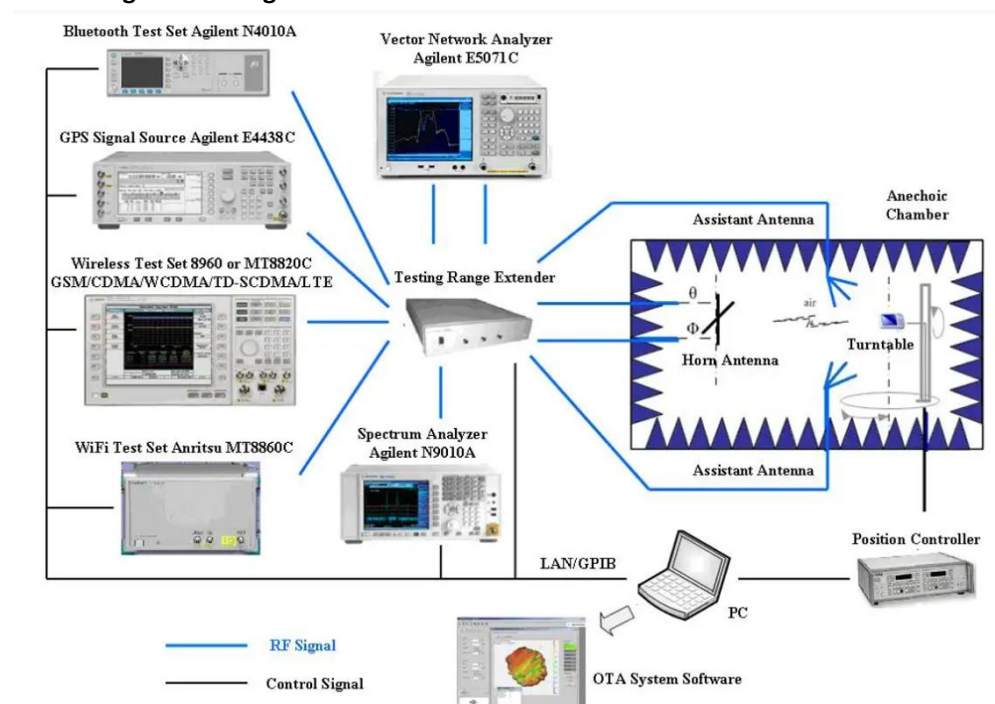
Size



2, Testing Methods and Testing Standards

Name	Parameter	Method	Standard no.
Antenna performance	Radiation efficiency	IEEE Standard Test Procedures for Antennas	ANSI IEEE Std 149-2021

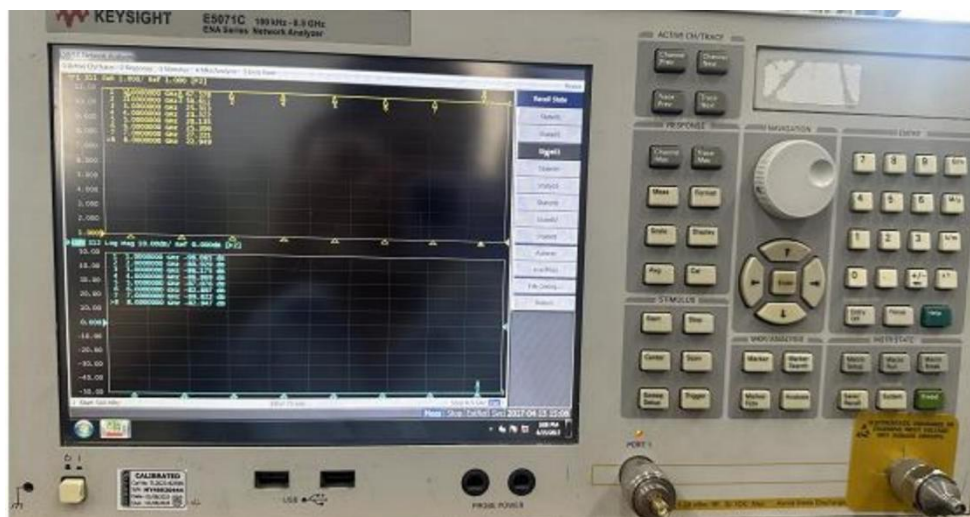
Test configuration diagram



3,Instrument List and Calibration Date

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date
Network Analyzer	Agilent	E5071C	XAG20200510	2025.9.11	2026.9.10

testing software : Keysight PathWave VNA A.19.55.14



4, Test Subject and Time Information

Drawer	Checker	Approver	Test data	Testing Company
Cai huiping	Wu Yi	Deng Haibo	2025.3.15	Haiheng Technology.Inc

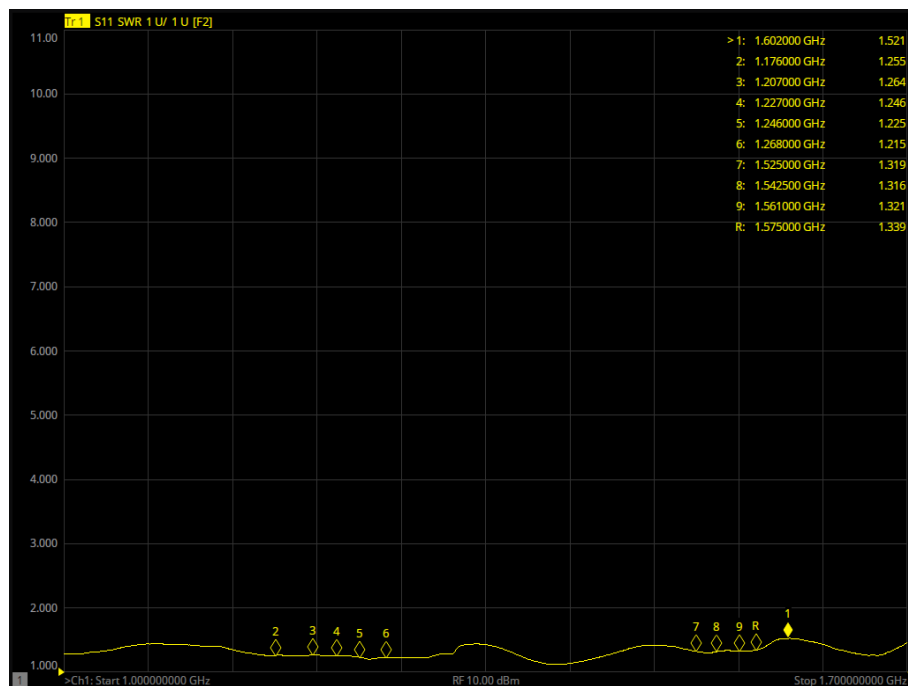
Testing Company Address: Room209, 2F, No.51 Jinghai East Rd, Shatou South District, Changan Town, Dongguan City, Guangdong, China

Test setup photo



1. GNSS Antenna

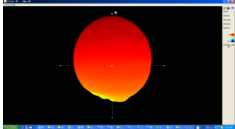
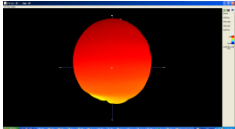
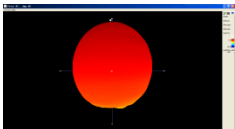
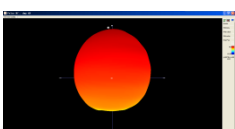
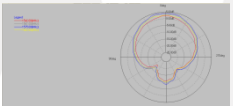
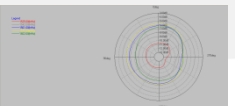
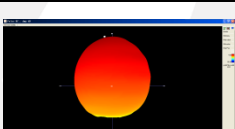
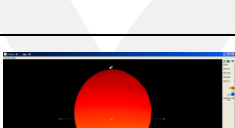
1.1 VSWR



1.2 Radiation pattern and Test data

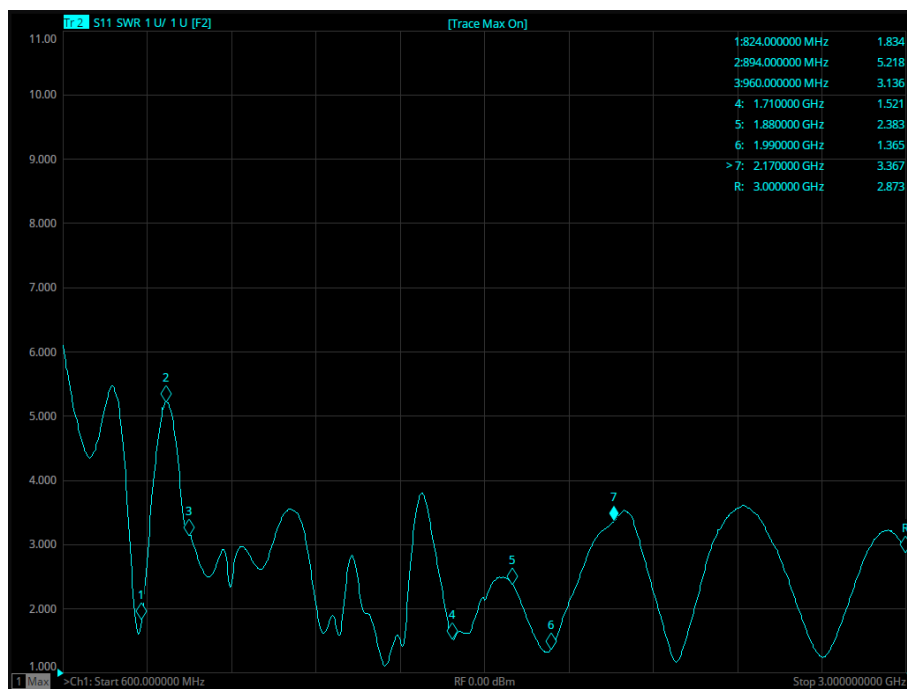
Frequency ID	1	2	3	4	5	6	7	8	9
Frequency(MHz)	1176	1207	1227	1246	1268	1542	1561	1575	1602
Gain(dBi)	3.07	4.45	3.98	3.68	3.21	2.24	4.17	4.03	2.63

Frequency(MHz)	3D Pattern	Vertical Pattern	Horizontal Pattern
1176			
1207			
1227			

1246			
1268			
1542			
1561			
1575			
1602			

2. LTE Antenna

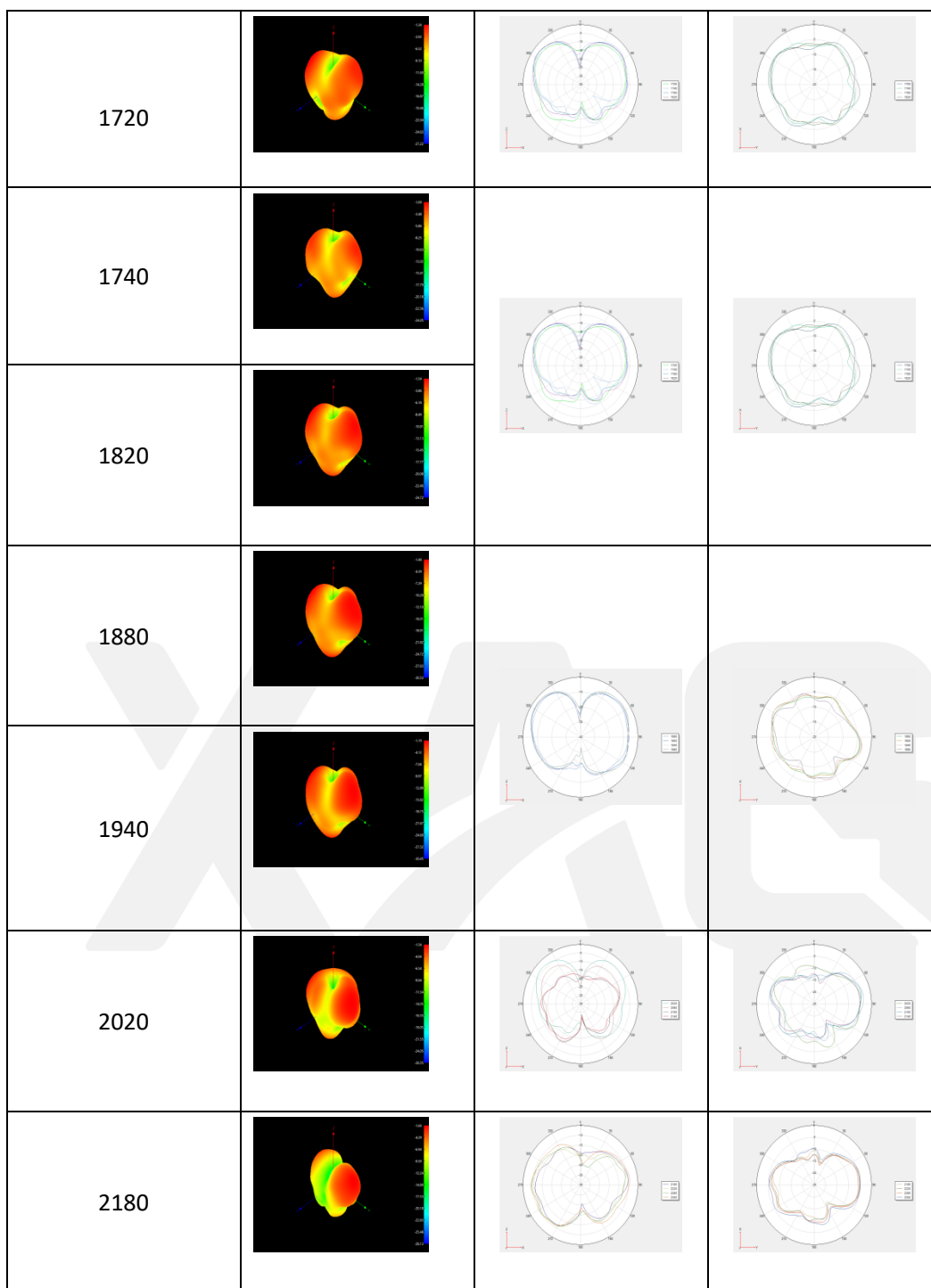
2.1 VSWR



2.2 Radiation pattern and Test data

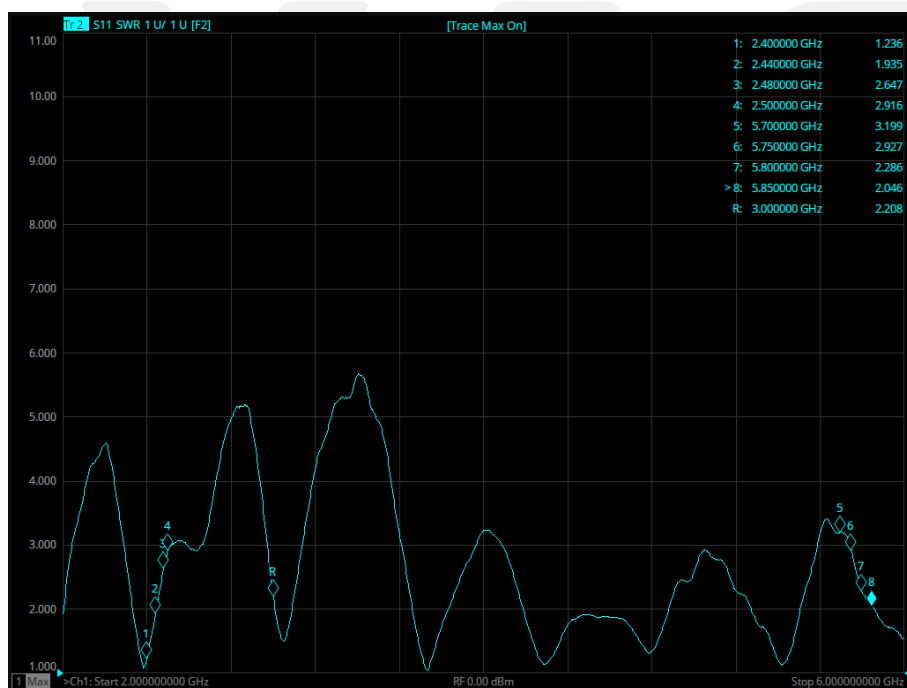
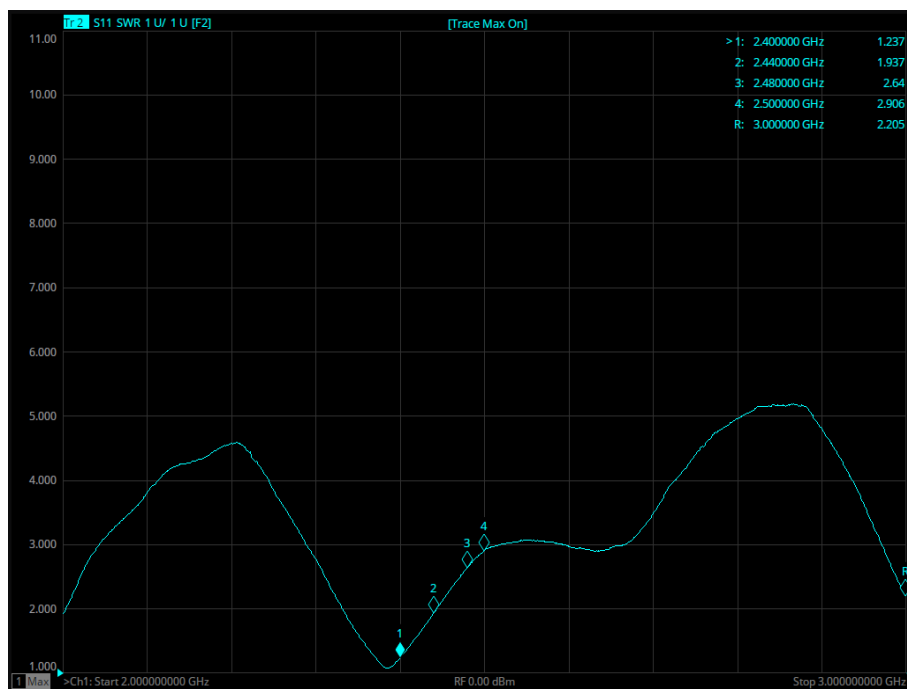
Frequency ID	1	2	3	4	5	6	7	8	9	10
Frequency(MHz)	820	900	960	1720	1740	1820	1880	1940	2020	2180
Gain(dBi)	-4.25	-11.05	-12.11	-1.31	-1.07	-1.54	-1.47	-1.19	-1.53	-1.61
Efficiency(%)	18.24	3.42	2.73	27.48	26.06	28.05	26.18	26.12	21.38	14.83

Frequency(MHz)	3D Pattern	Vertical Pattern	Horizontal Pattern
820			
900			
960			



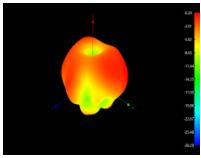
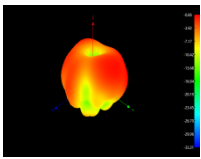
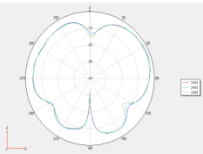
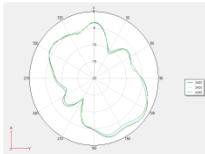
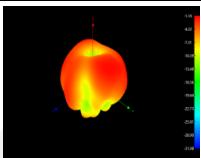
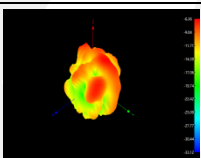
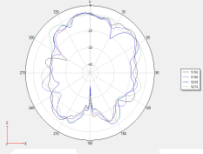
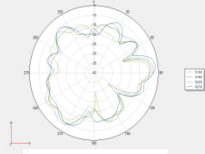
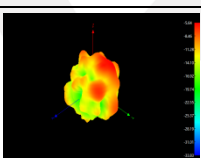
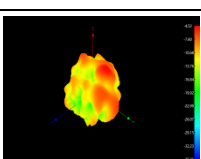
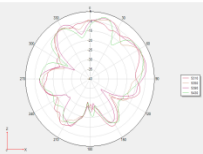
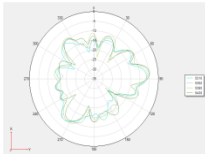
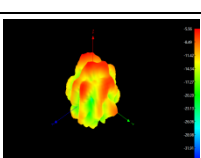
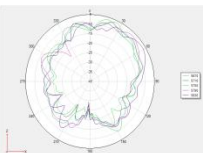
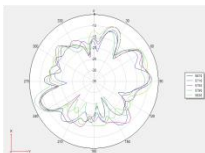
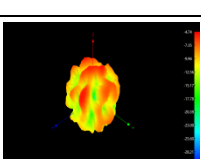
3. Bluetooth/WIFI Antenna

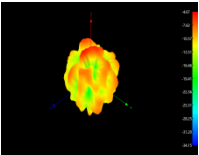
3.1 VSWR



3.2 Radiation pattern and Test data

Frequency ID	1	2	3	4	5	6	7	8	9	10
Frequency(M Hz)	2400	2440	2480	2500	5150	5230	5310	5710	5750	5830
Gain(dBi)	-0.17	-0.66	-1.13	-0.91	-6	-5	-4	-5.5	-5.5	-5.5
Efficiency(%)	32.43	31.4	30.6	30.6	5.48	5.74	6.9	5.06	5.27	5.83

Frequency(MHz)	3D Pattern	Vertical Pattern	Horizontal Pattern
2400			
2440			
2500			
5150			
5230			
5310			
5710			
5800			

5830			
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