

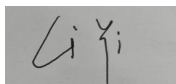
SPECIFICATION



Shenzhen Daxian Technology Co., Ltd.

L70A LDS Antenna Assembly

Product Specification

connection		frequency range	GPS: L1/L5 WIFI:2.4G/5G
entry name	L70A	edition	V1.0
Material No	1L-70AXX-060	Color	Black
Antenna type	PIFA Antenna (8 antennas)	Test Engineer	
R F Design	YuanQing.Zhu	Structural Design	RuiBin.Zhou
Quality Manager	ZiYin.Hu	Technical Director	Lei.Zhang
Date	2025-04-25		

Customer confirmation:

Whether the assembly meets your company's requirements: ☐OK ☐NG

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Revision history

[illegible]

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一 Project Description

Customer Name:	
Type of complete machine:	MIFI
Antenna band:	GPS: L1/L5 WIFI:2.4G/5G
Antenna form:	LDS
Feed form:	Springfoot
Number of feed legs:	Main: Three、DIV: Three、WiFi-1: Three、WiFi-2: Three、ANT2: Three、ANT3: Three、B14: Three、GPS: Three
Test Software Name:	Radstation v1.4.2

二 LDS Antenna Assembly

1 specifications

This report mainly provides the testing status of various electrical and structural performance parameters of the antenna for the L70A project. The following image shows an antenna with a large display design.

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1.1 Electrical specifications and standards

1.1.1 Electrical performance index

The operating frequency band of the antenna is between 1150 ~1190MHz、1550 ~1600MHz、2400~2500 MHz、 5150~5850MHz. The following table shows the electrical performance indicators of large display design and mass production antennas.

Frequency Range	Frequency (MHz)	VSWR
WiFi	2400 ~ 2500, 5150~ 5850	≤ 2
GPS	1575MHz	≤ 2

2 Structural specifications and standards

1.2.1 Antenna composition

The antenna is mainly composed of LDS.

2、 The Equipment of Active Test

Satimo 3D Chamber $6 \times 4 \times 4$ (m)

Agilent 8960 E5515c

Network analyzer-R&S ZVL

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3 test

3.1 Test of standing wave (VSWR)

3.1.1 Test connection: The VSWR test device is sequentially connected as follows: R&S ZVL network analyzer → test line → Test fixture

Actual measurement (attached drawing)

3.2 Gain and efficiency, power (TRP), sensitivity (TIS) testing

3.2.1 Test site:

Large display microwave anechoic chamber. The test frequency range is 400MHz - 6GHz, the static zone range is 50cm circumferential, and the reflectivity is less than - 50dB.

3.2.2 Tested Instruments:

R&S ZVL network analyzer, Agilent 8960 E5515C, standard horn antenna, French SATIMO-SG24SYSTEM system, printer, etc.

3.2.3 Test data: In a microwave anechoic chamber, the values related to the power and sensitivity tested are shown in the table below

Passive efficiency&gain-GPS Antenna:

L5:

Frequency (MHz)	Gain (dBi)	Efficiency (dB)	Efficiency (%)
1150	-2.3	-5.98	25.21
1160	-2.08	-5.67	27.1
1170	-2.39	-5.51	28.15
1180	-3.04	-5.84	26.04
1190	-4.02	-6.4	22.93

L1:

Frequency (MHz)	Gain (dBi)	Efficiency (dB)	Efficiency (%)
1550	-0.6	-5.66	27.15
1560	-0.57	-5.34	29.25
1570	-0.48	-4.41	36.2
1580	-0.37	-4.74	33.56
1590	-0.41	-5.73	26.71
1600	-1.4	-6.29	23.52

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WIFI-1 Antenna:**2.4G:**

Frequency (MHz)	Gain (dBi)	Efficiency (dB)	Efficiency (%)
2400	0.31	-3.95	40.31
2410	0.34	-3.84	41.32
2420	0.14	-4.08	39.05
2430	-0.12	-3.54	44.23
2440	-0.12	-4.11	38.81
2450	0.14	-3.8	41.65
2460	0.22	-3.88	40.94
2470	0.19	-3.85	41.24
2480	0.11	-3.83	41.41
2490	-0.11	-3.67	42.98
2500	-0.03	-3.91	40.66

5G:

Frequency (MHz)	Gain (dBi)	Efficiency (dB)	Efficiency (%)	Frequency (MHz)	Gain (dBi)	Efficiency (dB)	Efficiency (%)
5100	2.72	-3.53	44.36	5480	3.42	-4.39	36.37
5110	2.9	-3.59	43.75	5490	3.41	-4.5	35.5
5120	3.08	-3.45	45.17	5500	3.42	-4.39	36.37
5130	2.69	-3.64	43.22	5510	3.40	-4.33	36.94
5140	2.83	-3.73	42.38	5520	3.41	-4.36	36.68
5150	2.7	-3.79	41.76	5530	3.42	-4.13	38.67
5160	2.77	-3.82	41.45	5540	3.42	-4.21	37.97
5170	2.66	-3.96	40.18	5550	3.41	-3.96	40.14
5180	2.52	-3.99	39.88	5560	3.83	-3.86	41.09
5190	2.96	-3.87	41	5570	3.73	-3.79	41.82
5200	2.34	-4.15	38.42	5580	3.55	-3.81	41.6
5210	3.14	-3.85	41.26	5590	3.68	-3.71	42.58
5220	2.4	-4.12	38.7	5600	3.39	-3.85	41.22
5230	3.35	-3.87	41.02	5610	3.42	-3.58	43.84
5240	2.5	-4.25	37.61	5620	3.40	-3.74	42.29
5250	3.31	-3.94	40.34	5630	3.40	-3.57	44
5260	2.57	-4.35	36.73	5640	3.42	-3.58	43.87
5270	3.33	-4.04	39.42	5650	3.42	-3.51	44.59
5280	2.82	-4.31	37.08	5660	3.40	-3.53	44.34
5290	3.66	-4	39.84	5670	3.42	-3.46	45.11

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5300	3.04	-4.32	37.02	5680	3.40	-3.47	45.01
5310	3.83	-4.03	39.55	5690	3.41	-3.43	45.44
5320	3.32	-4.18	38.21	5700	3.40	-3.48	44.89
5330	3.65	-4.08	39.05	5710	3.42	-3.53	44.34
5340	3.48	-4.14	38.53	5720	3.42	-3.53	44.41
5350	3.66	-4.12	38.71	5730	3.14	-3.42	45.5
5360	3.45	-4.25	37.56	5740	3.12	-3.37	46.05
5370	3.68	-4.19	38.1	5750	3.14	-3.39	45.79
5380	3.58	-4.28	37.35	5760	3.12	-3.37	46.03
5390	3.42	-4.31	37.1	5770	3.14	-3.37	46.01
5400	3.56	-4.09	38.99	5780	3.14	-3.4	45.7
5410	3.36	-4.19	38.09	5790	3.13	-3.31	46.63
5420	3.3	-4.29	37.2	5800	3.11	-3.32	46.52
5430	3.03	-4.46	35.77	5810	3.12	-3.16	48.33
5440	2.83	-4.5	35.45	5820	3.14	-3.08	49.23
5450	3.1	-4.45	35.93	5830	3.14	-3	50.15
5460	2.83	-4.52	35.35	5840	3.11	-2.98	50.38
5470	3.42	-4.43	36.04	5850	3.14	-2.92	51.06

WIFI-2 Antenna:

2.4G:

Frequency (MHz)	Gain (dBi)	Efficiency (dB)	Efficiency (%)
2400	0.1	-3.74	42.27
2410	-0.1	-3.79	41.75
2420	-0.28	-3.89	40.82
2430	-0.32	-3.94	40.39
2440	-0.14	-3.84	41.34
2450	0.02	-3.65	43.15
2460	-0.01	-3.94	40.37
2470	0	-3.96	40.17
2480	-0.18	-3.79	41.83
2490	-0.3	-3.69	42.77
2500	-0.25	-4.04	39.44

5G:

Frequency (MHz)	Gain (dBi)	Efficiency (dB)	Efficiency (%)	Frequency (MHz)	Gain (dBi)	Efficiency (dB)	Efficiency (%)
5100	2.09	-4.33	36.93	5500	4.05	-5.1	30.91

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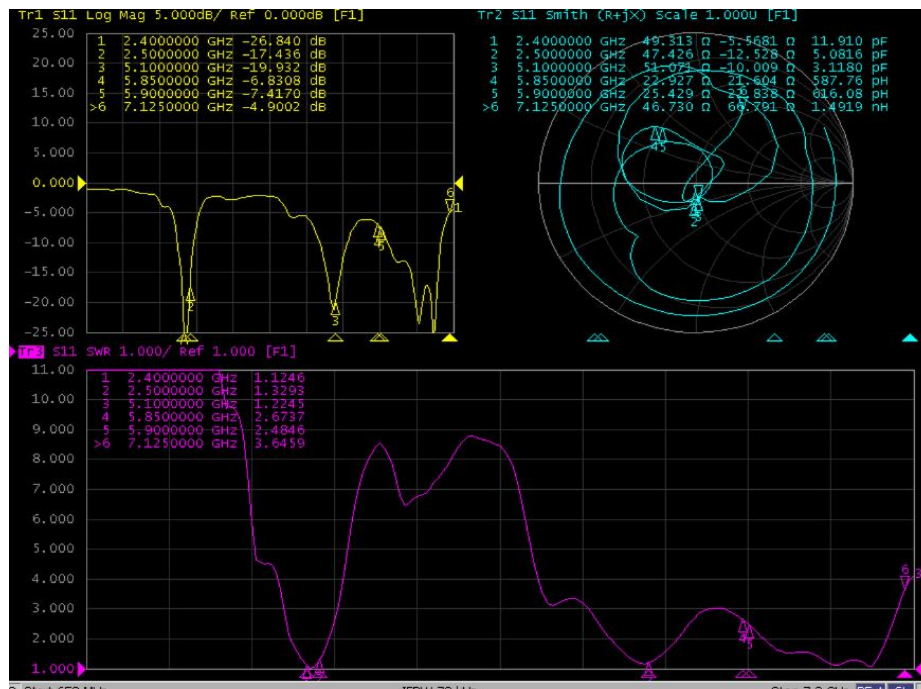
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5120	2.18	-4.27	37.45	5520	4.04	-5.18	30.34
5140	1.67	-4.54	35.16	5540	4.01	-5.08	31.03
5160	1.49	-4.63	34.42	5560	4.06	-4.86	32.63
5180	1.23	-4.79	33.15	5580	4.01	-4.83	32.86
5200	1.12	-4.92	32.22	5600	4.02	-4.82	32.96
5220	1.12	-4.81	33.01	5620	4.10	-4.62	34.53
5240	1.12	-4.85	32.7	5640	4.02	-4.4	36.3
5260	0.95	-4.88	32.54	5660	4.02	-4.3	37.17
5280	0.89	-4.75	33.51	5680	4.01	-4.21	37.97
5300	0.98	-4.69	33.99	5700	4.04	-4.16	38.36
5320	1.24	-4.49	35.55	5720	4.06	-4.17	38.25
5340	1.38	-4.44	35.99	5740	2.79	-4.03	39.57
5360	1.42	-4.51	35.4	5760	2.75	-4.05	39.31
5380	1.68	-4.5	35.45	5780	2.76	-4.08	39.06
5400	1.95	-4.29	37.27	5800	2.75	-4.01	39.71
5420	1.82	-4.52	35.3	5820	2.79	-3.75	42.16
5440	1.61	-4.77	33.36	5840	2.76	-3.66	43.02
5460	4.06	-4.89	32.4	5860	2.79	-3.3	46.78
5480	4.04	-4.93	32.16				

4、VSWR 参数图 VSWR parameter diagram

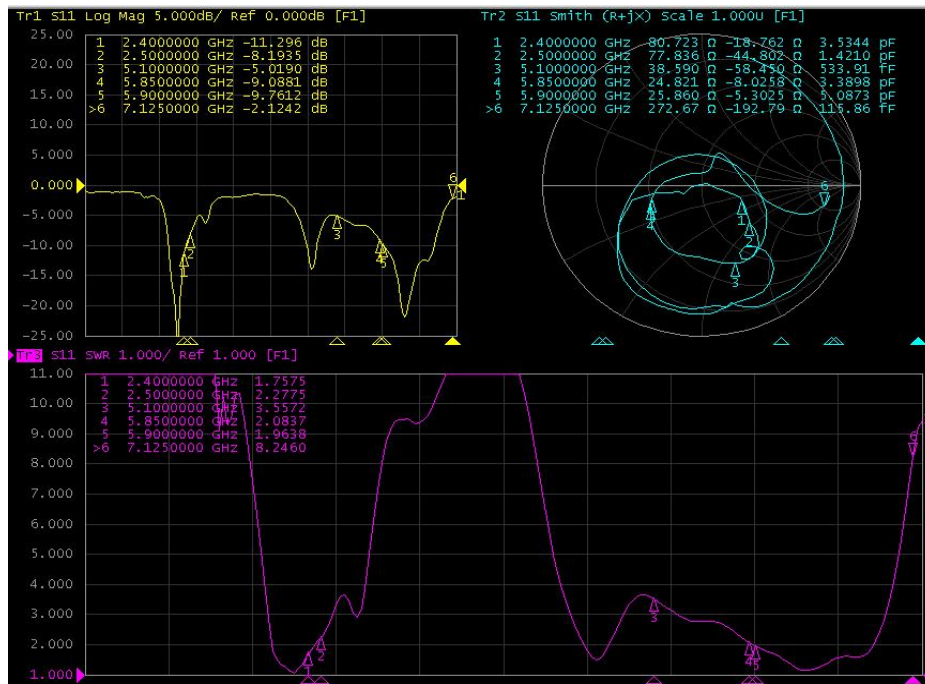
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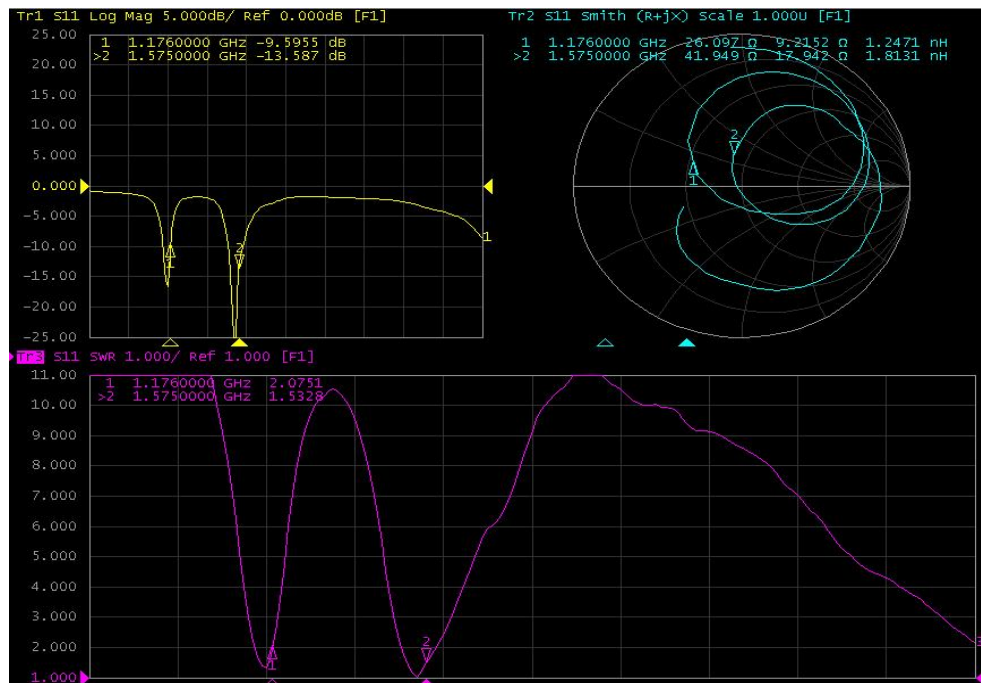
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WiFi-2 Antenna:



GPS Antenna:



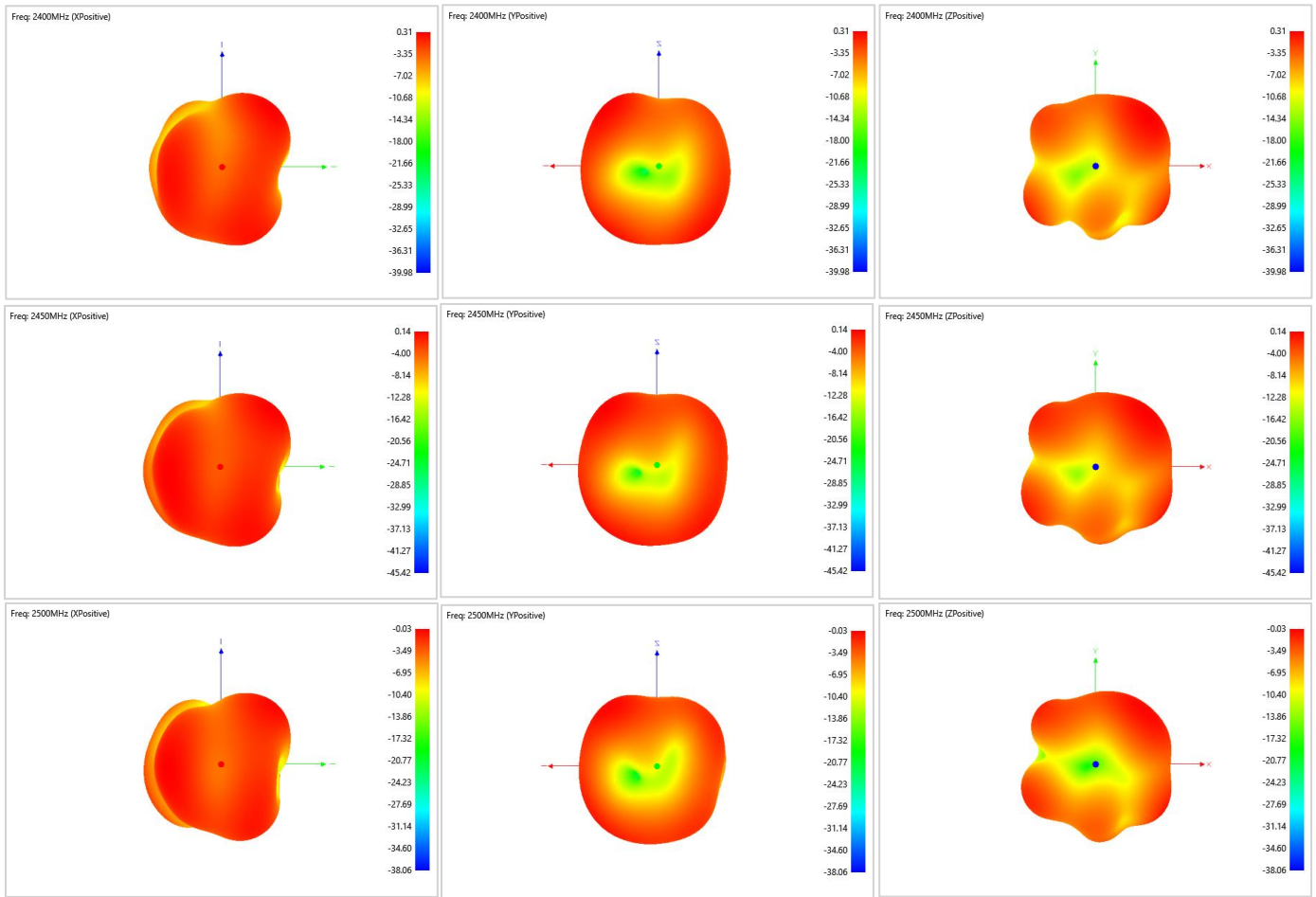
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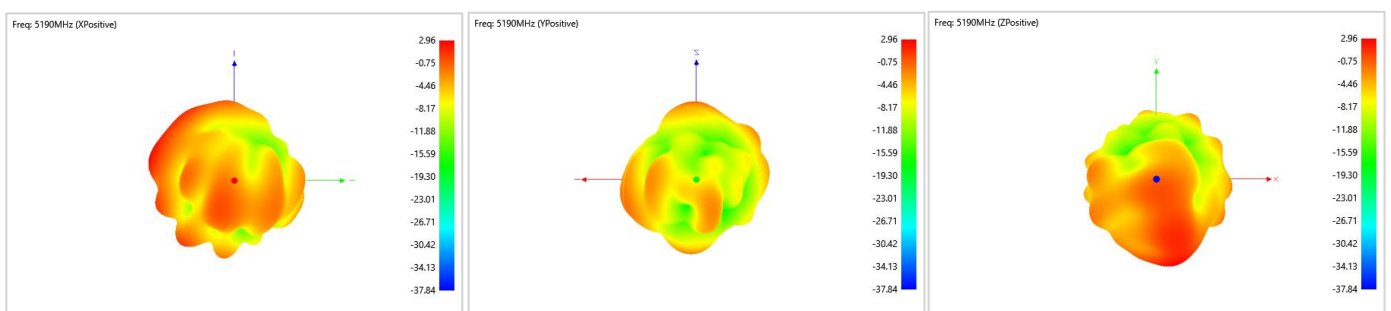
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5、2D&3DPassive field type diagram

WIFI-1 Antenna-2.4G

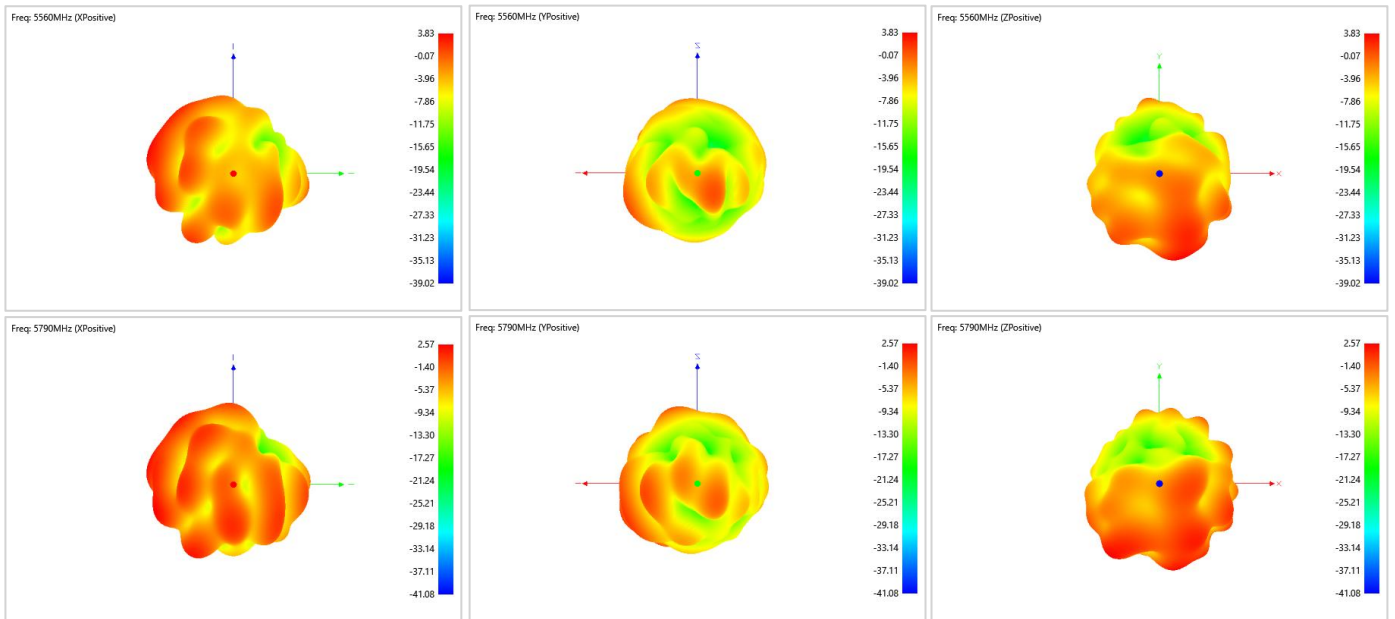


WIFI-1 Antenna-5G

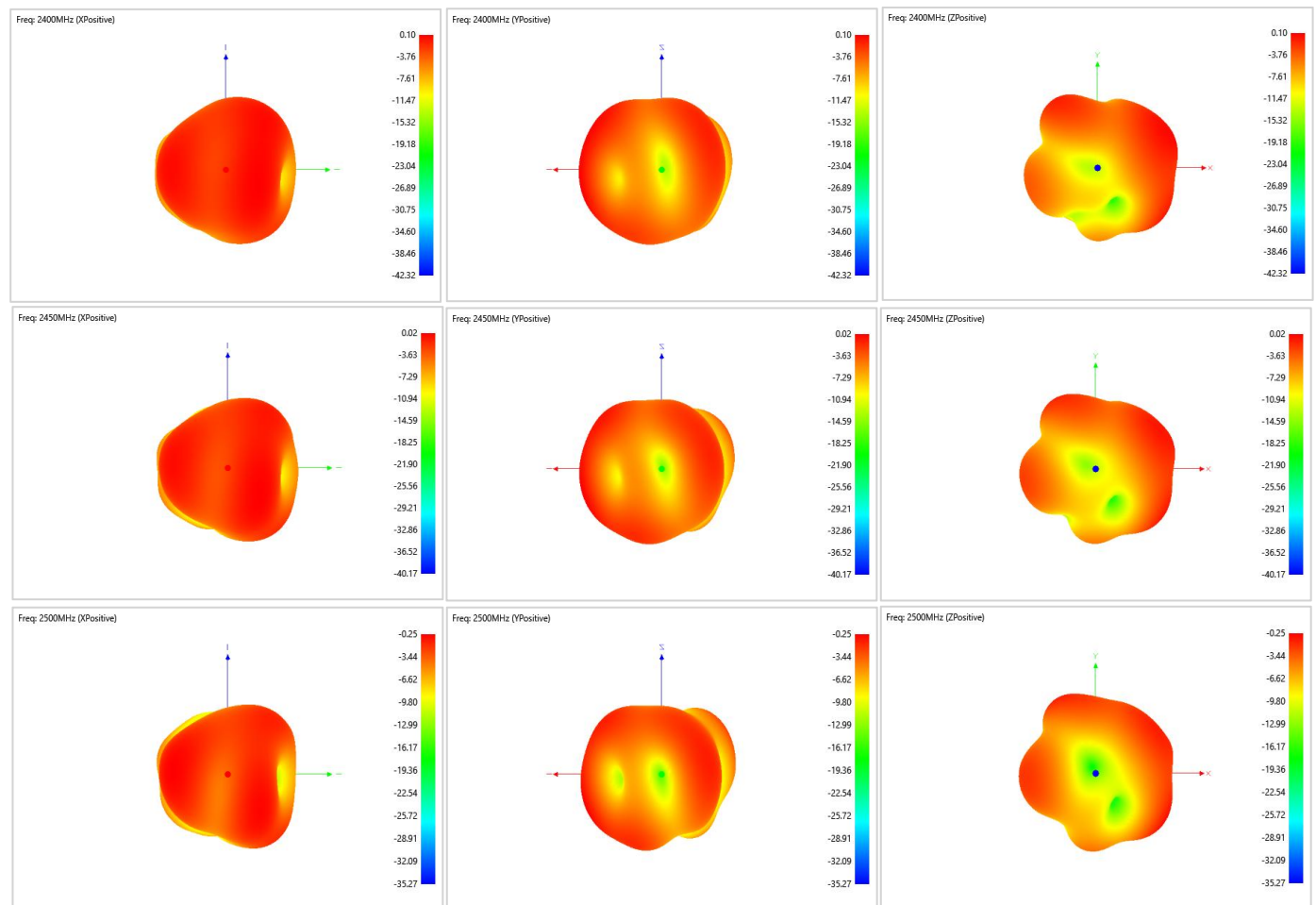


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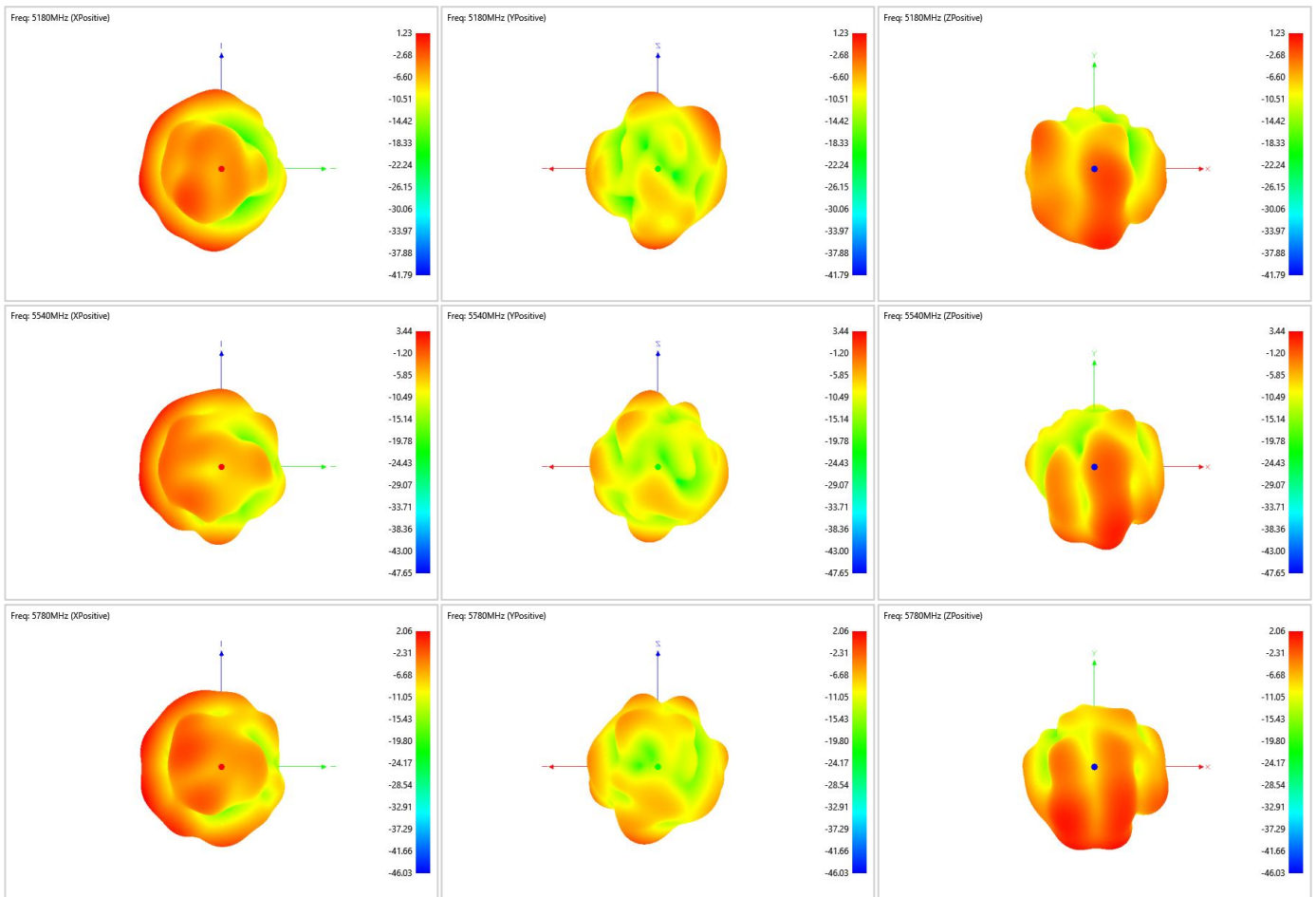
WIFI-2 Antenna-2.4G



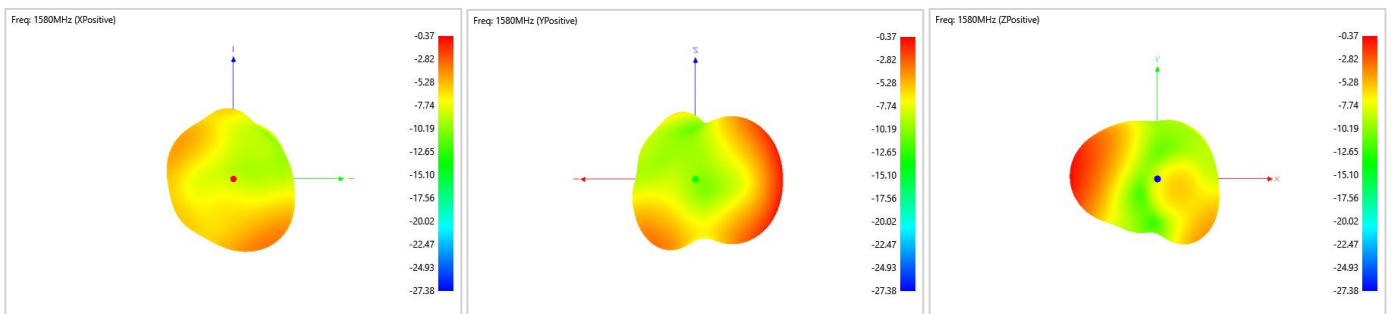
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WIFI-2 Antenna-5G



GPS Antenna



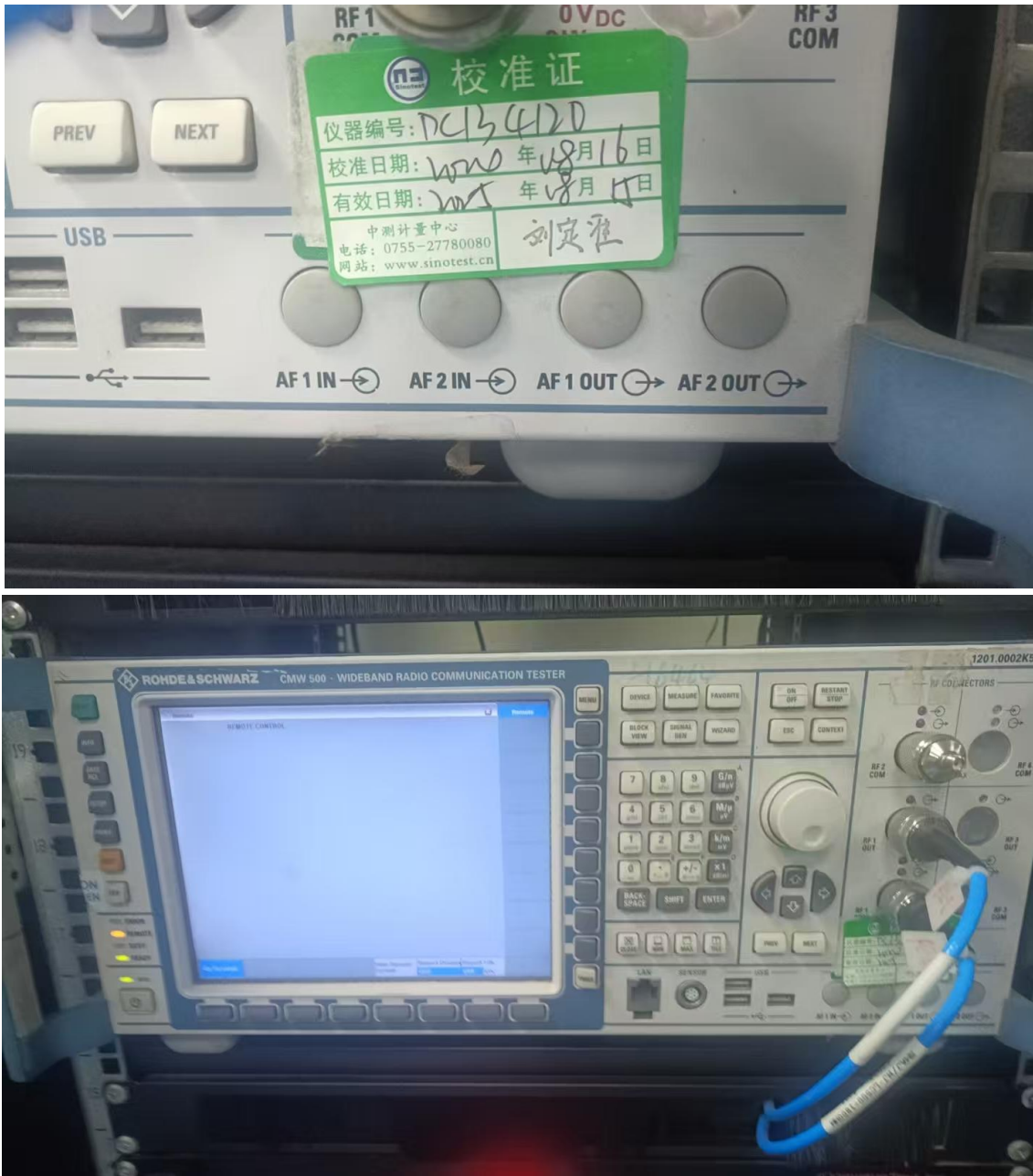
6、 conclusion

This antenna is designed based on the prototype provided by the customer. The electrical parameters and structural performance have met the technical requirements, please confirm!

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7、Test instruments and their calibration dates:



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