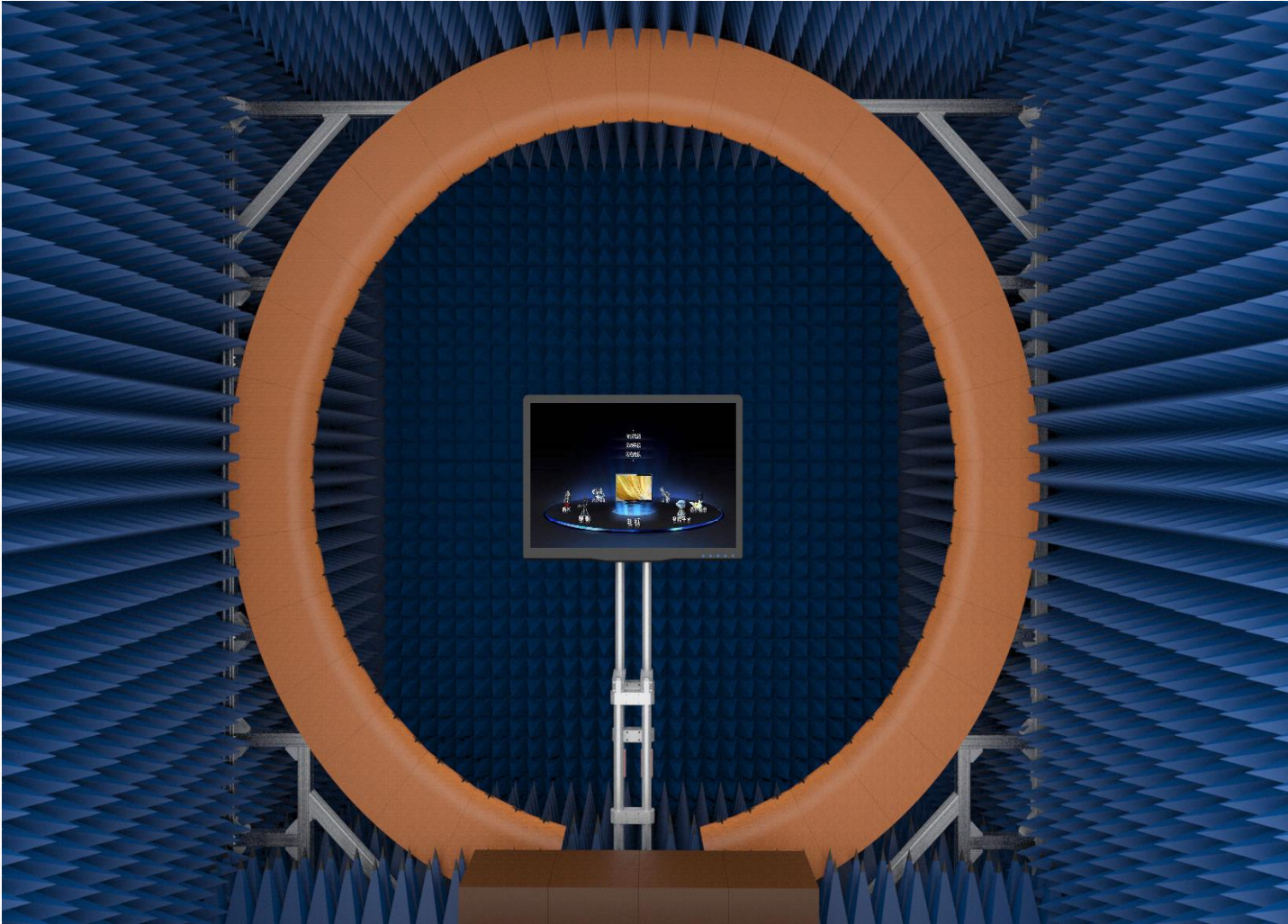


Antenna Report

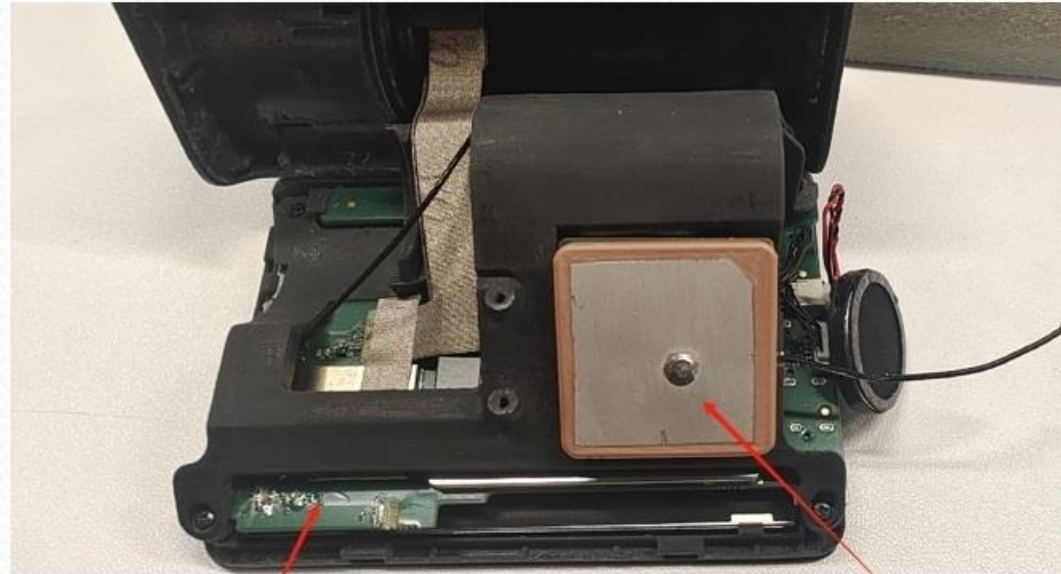
Manufacturer: 70mai Co., Ltd.

Model: DR2820-TX

1. Resume	2
2. Equipment list	3
3. Project pictures	6
4. Passive parameters of the antenna	7
5. Active test data	12
6. Summary	13



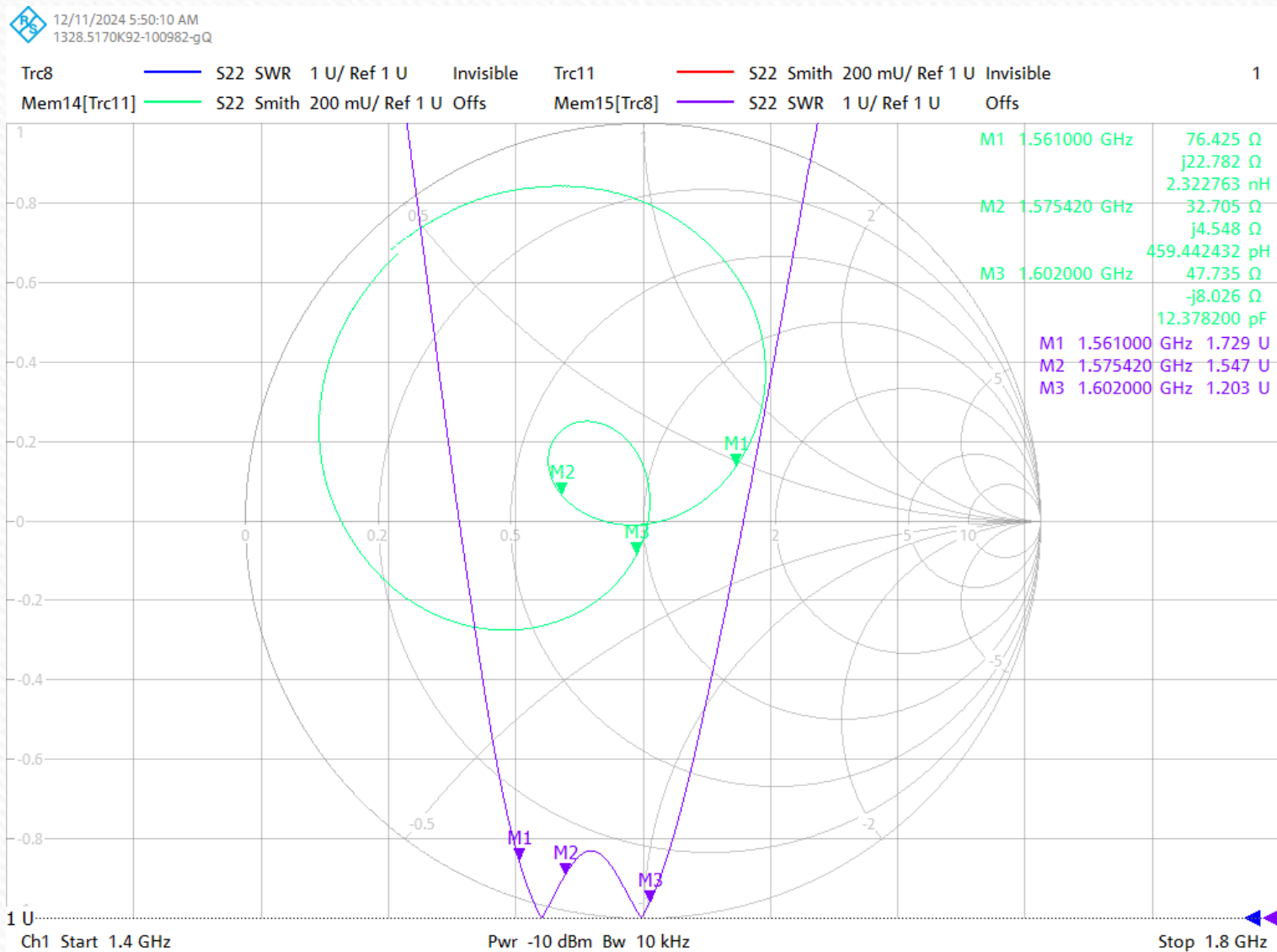
Name	QTY
OTA Laboratory	10
5G Comprehensive Tester (SP9500-CTS)	3
R&S Comprehensive Measuring Instrument (High-end CMW500)	7
Japanese Anritsu Integrated Measuring Instrument (dual-channel 8820)	4
NB-IoT Integrated Tester (SP8315)	3
Agilent Comprehensive Measuring Instrument (8960)	9
Agilent Network Analyzer (E5062A)	7
Agilent Network Analyzer (E5071C 8.5GHZ)	11
Agilent Network Analyzer (E5071B 8.5GHZ)	10
R&S Network Analyzer (ZND)	10
R&S Network Analyzer (ZVB)	3
OTA: Human head/cochlea/arm	5
GPS/WIFI active test equipment	5



WiFi/BT Antenna

GPS Antenna

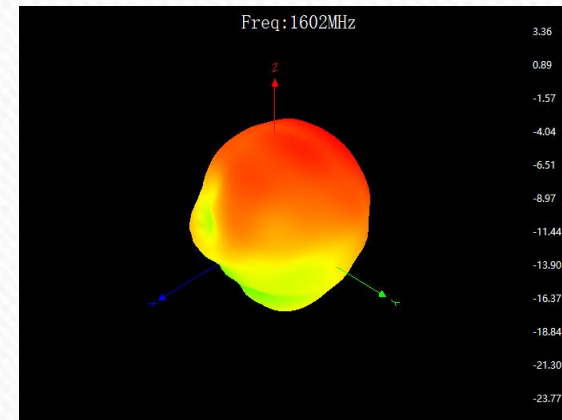
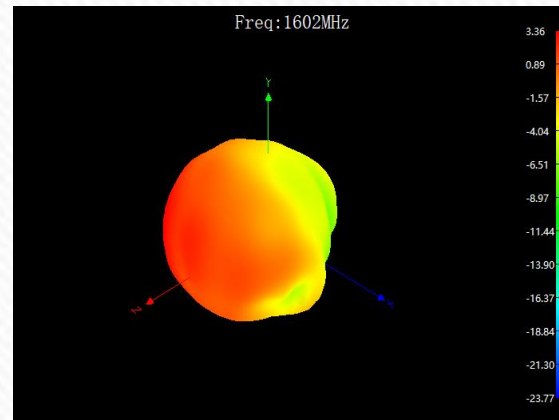
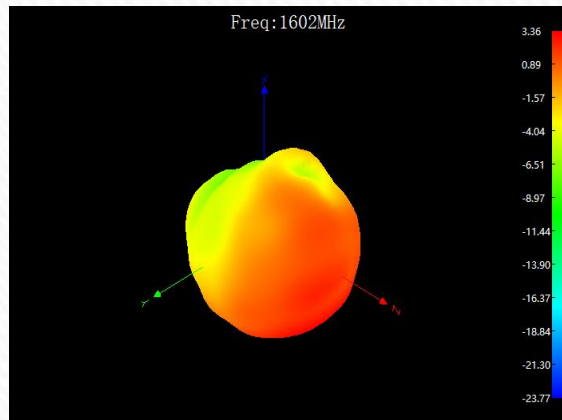
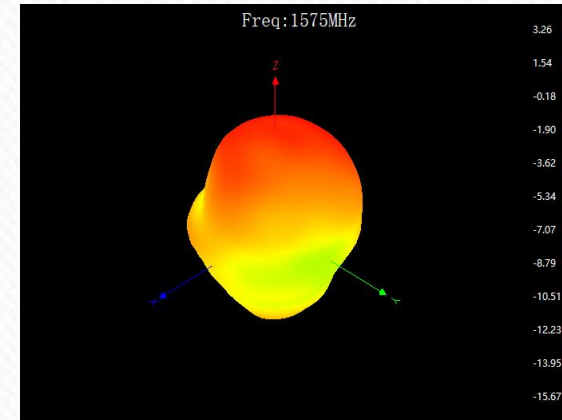
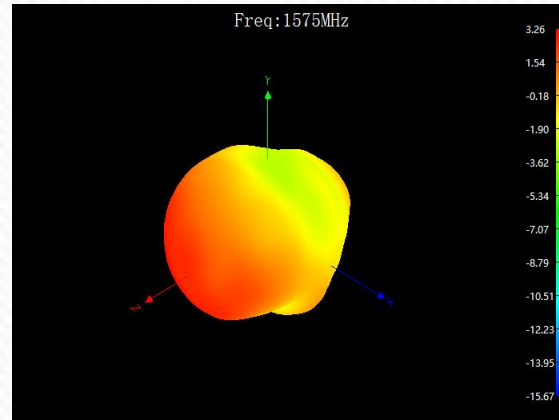
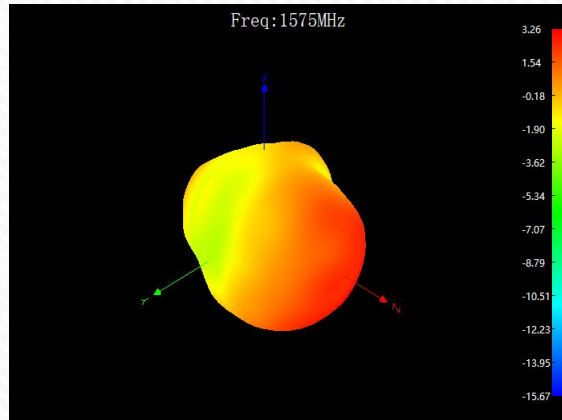
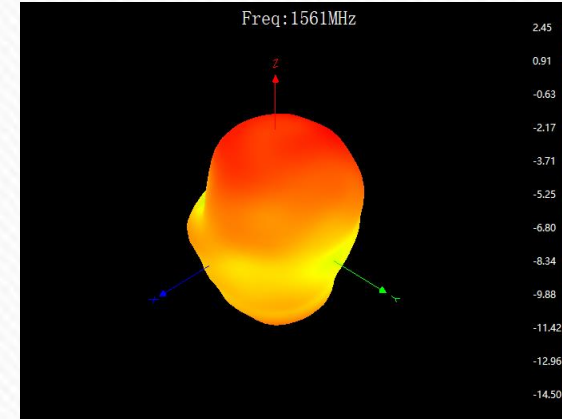
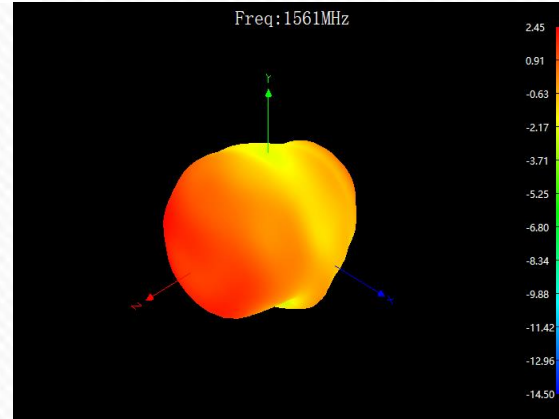
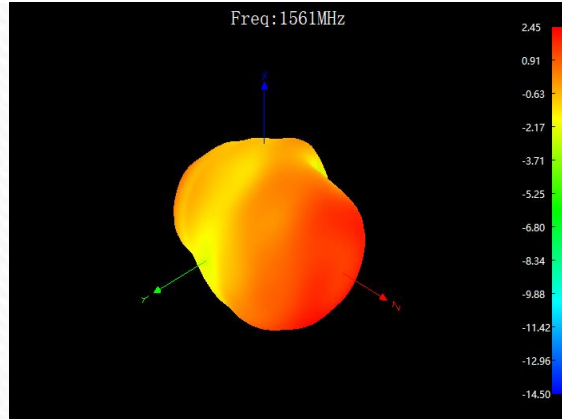
Parameters of GPS antenna S11



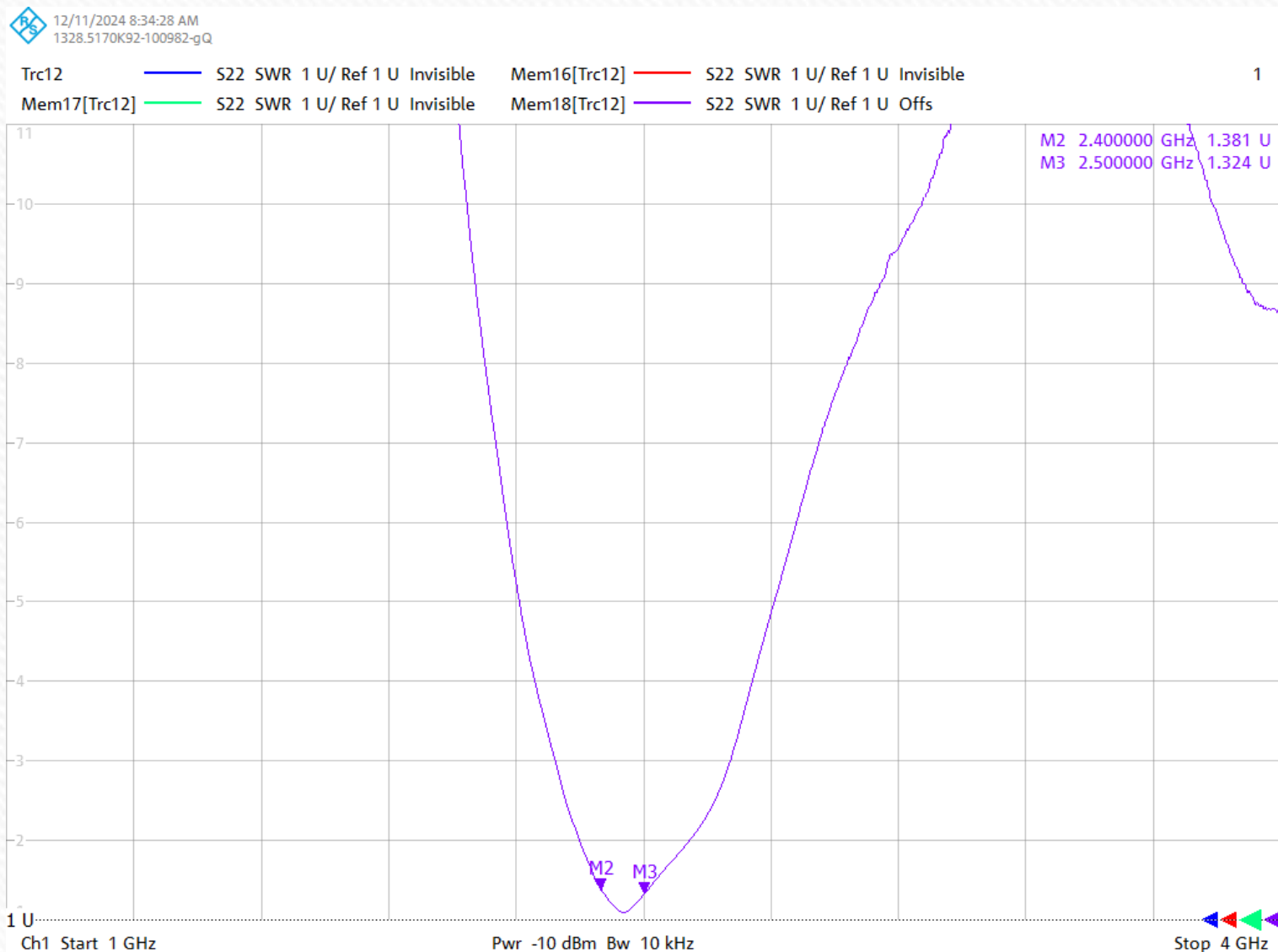
Passive efficiency of GPS antenna

Frequency/Mhz	Efficiency / dB	Efficiency / %	MaxGain/dBi	TopHalfEff / %	ErcEff / %	Frequency/Mhz	Efficiency / dB	Efficiency / %	MaxGain/dBi	TopHalfEff / %	ErcEff / %
1550	-4.34	36.82	-0.66	25.93	20.04	1581	-2.42	57.28	2.3	43.12	47.34
1551	-4.16	38.37	-0.48	26.96	21.17	1582	-2.46	56.76	2.3	42.93	47.23
1552	-4	39.81	-0.31	28.1	22.32	1583	-2.48	56.5	2.31	42.73	47.11
1553	-3.82	41.5	-0.12	29.22	23.64	1584	-2.49	56.37	2.32	42.73	47.23
1554	-3.64	43.25	0.07	30.53	25.03	1585	-2.47	56.63	2.35	42.93	47.34
1555	-3.46	45.09	0.29	31.97	26.58	1586	-2.46	56.76	2.37	43.12	47.45
1556	-3.28	46.99	0.47	33.33	28.16	1587	-2.43	57.16	2.4	43.52	47.68
1557	-3.11	48.87	0.66	34.73	29.77	1588	-2.39	57.68	2.45	44.02	47.9
1558	-2.94	50.82	0.87	36.2	31.55	1589	-2.34	58.35	2.51	44.64	48.14
1559	-2.78	52.73	1.07	37.65	33.44	1590	-2.28	59.16	2.56	45.26	48.36
1560	-2.62	54.71	1.26	39.05	35.28	1591	-2.23	59.85	2.59	45.89	48.6
1561	-2.5	56.24	1.45	40.24	36.98	1592	-2.18	60.54	2.63	46.43	48.6
1562	-2.4	57.55	1.61	41.37	37.47	1593	-2.14	61.1	2.65	46.85	48.36
1563	-2.3	58.89	1.75	42.34	38.31	1594	-2.12	61.38	2.65	47.18	48.02
1564	-2.22	59.99	1.87	43.23	39.8	1595	-2.02	62.88	2.64	47.18	47.34
1565	-2.15	60.96	1.97	43.93	40.27	1596	-2.01	63.02	2.63	47.4	46.66
1566	-2.09	61.81	2.07	44.75	40.77	1597	-2.01	63.02	2.6	47.4	45.88
1567	-2.04	62.53	2.15	45.26	41.19	1598	-2.02	62.88	2.55	47.18	45.02
1568	-2.02	62.81	2.21	45.57	42.3	1599	-2.04	62.59	2.51	46.85	43.95
1569	-2.03	62.67	2.25	45.68	43.11	1600	-2.06	62.3	2.49	46.53	42.81
1570	-2.05	62.38	2.28	45.68	43.74	1601	-2.15	61.02	2.43	45.57	41.19
1571	-2.08	61.95	2.28	45.47	44.38	1602	-2.22	59.91	2.36	44.64	39.54
1572	-2.11	61.53	2.29	45.15	44.8	1603	-2.31	58.81	2.28	43.73	38.05
1573	-2.14	61.1	2.3	44.95	45.23	1604	-2.38	57.74	2.21	42.93	36.61
1574	-2.17	60.68	2.32	44.75	45.77	1605	-2.47	56.68	2.12	42.05	35.13
1575	-2.2	60.26	2.26	44.64	46.22	1606	-2.56	55.52	2.01	41.09	33.72
1576	-2.23	59.85	2.27	44.43	46.66	1607	-2.67	54.14	1.89	39.97	33.09
1577	-2.25	59.57	2.29	44.34	47.11	1608	-2.81	52.41	1.75	38.7	31.49
1578	-2.29	59.02	2.3	44.13	47.34	1609	-2.96	50.64	1.58	37.3	29.82
1579	-2.33	58.49	2.3	43.82	47.45	1610	-3.15	48.47	1.4	35.7	28.03
1580	-2.37	57.95	2.29	43.52	47.45						

GPS antenna pattern

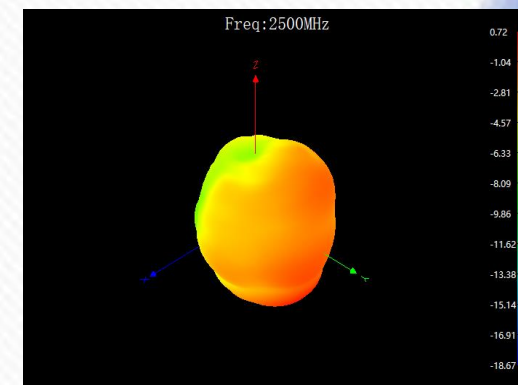
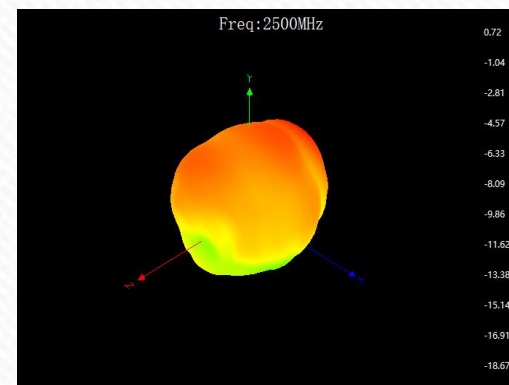
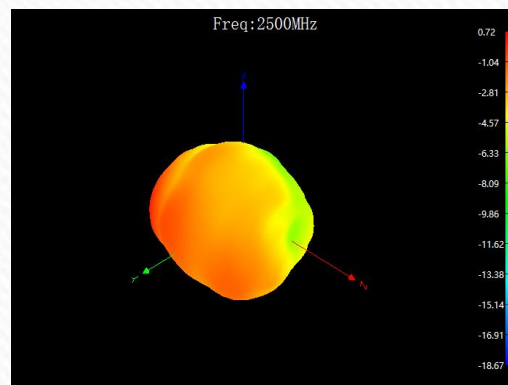
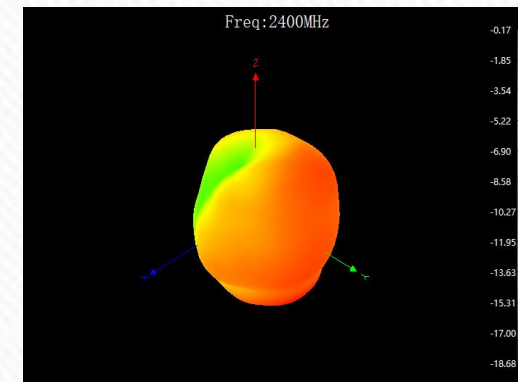
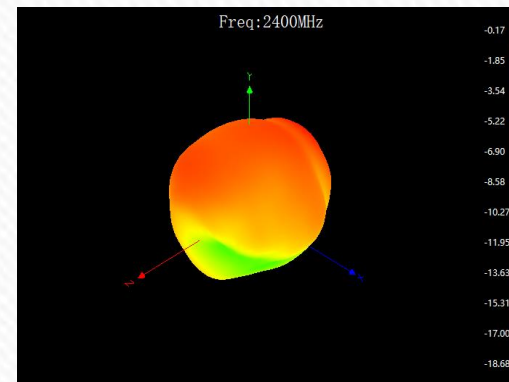
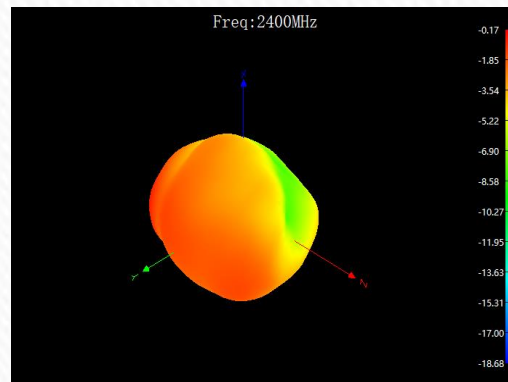


Parameters of WIFI/BT antenna S11



Passive efficiency of WIFI/BT antenna

Frequency /Mhz	Efficiency / dB	Efficiency / %	MaxGain /dBi
2400	-5.1	30.93	-0.17
2410	-5.14	30.65	-0.23
2420	-5.08	31.07	-0.16
2430	-5	31.65	-0.03
2440	-5.03	31.43	0.13
2450	-5.08	31.06	0.42
2460	-5.13	30.7	0.46
2470	-4.93	32.15	0.71
2480	-4.93	32.15	0.78
2490	-4.92	32.22	0.83
2500	-5.09	30.99	0.72



Config 1

Band	Channel	TRP	TIS
Wifi BT _B	1	12.35	-80.69
	6	12.24	-79.22
	11	12.13	-78.51

Config 3

Band	Channel	TRP	TIS
Wifi BT _B	1	11.47	-70.44
	6	11.54	-70.25
	11	12.13	-71.69

Thank You