

Antenna Specification

- Technical parameters

WLAN: GPS&WIFI&BT

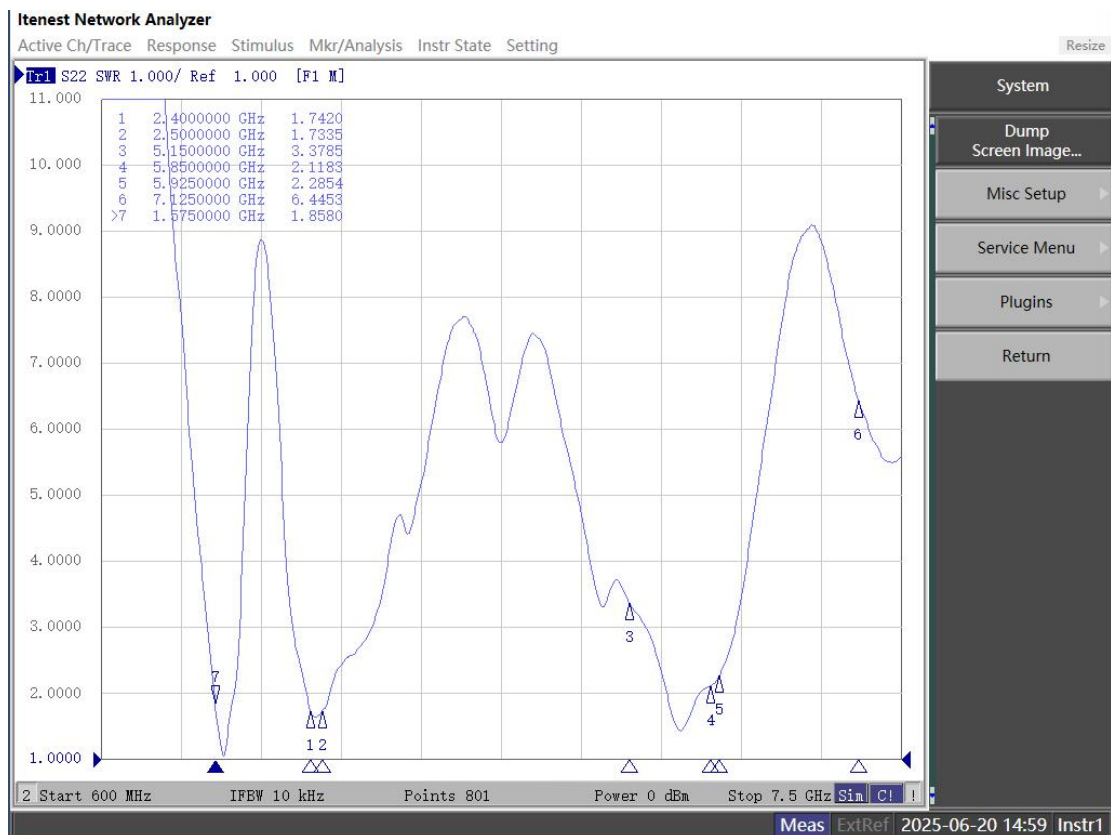
Antenna manufacturer: Sunnyway Technology

Antenna Type: PIFA

Frequency: 1575MHz, 2400MHz~2500MHz, 5150MHz~7125MHz

SWR: ≤ 4.0 : 1

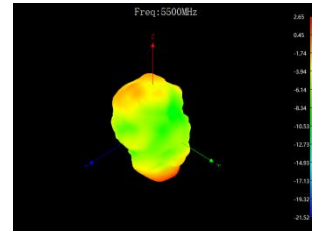
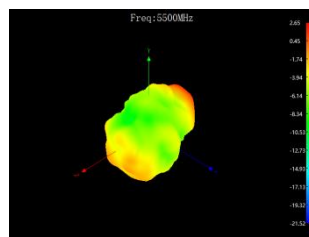
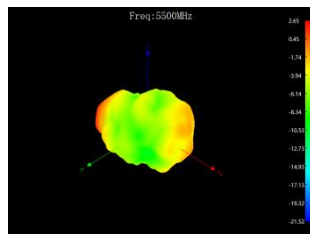
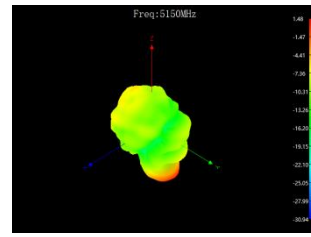
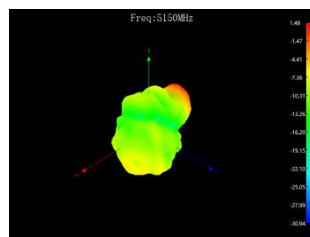
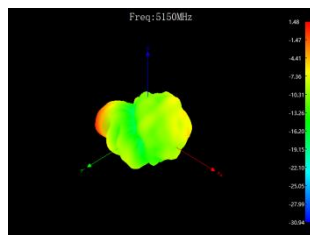
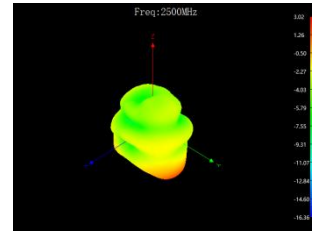
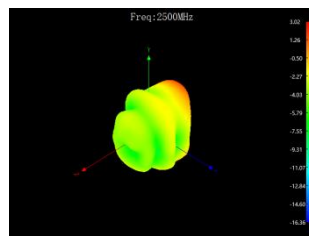
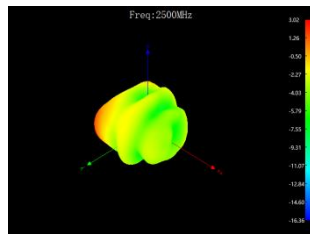
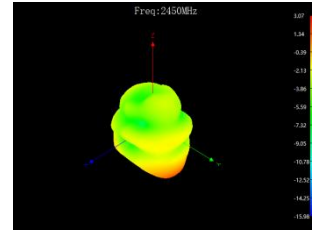
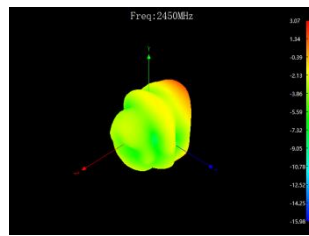
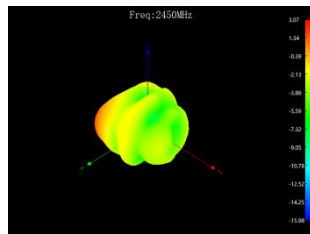
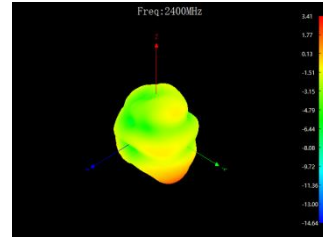
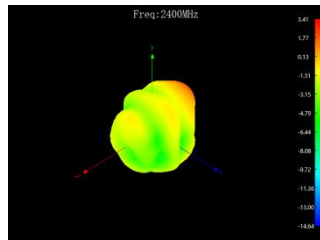
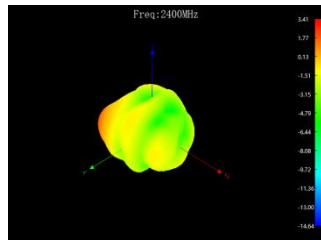
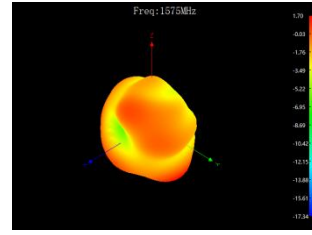
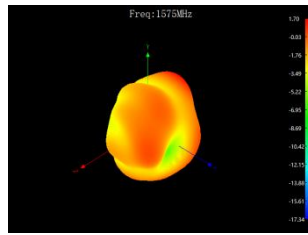
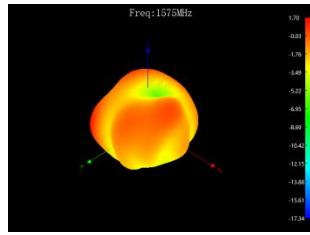
- S11



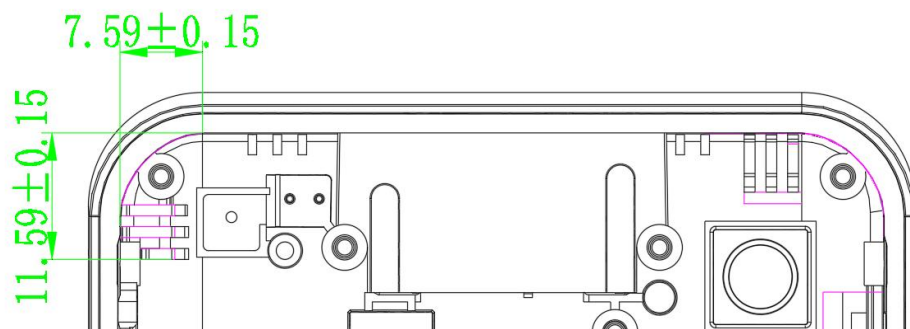
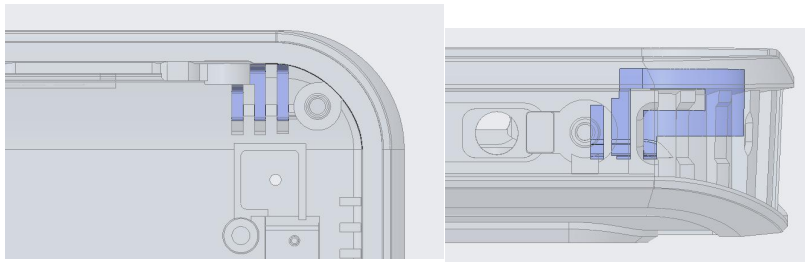
Efficiency and gain

Frequency/Mhz	MaxGain/dBi	Efficiency / %	Frequency/Mhz	MaxGain/dBi	Efficiency / %
1550	1.71	42.85	5750	2.36	29.31
1555	1.46	42.07	5800	2.54	30.41
1560	1.4	42.27	5850	2.93	27.16
1565	1.65	43.15	5900	2.08	25.23
1570	1.87	42.95	5950	3.05	24.89
1575	1.7	41.98	6000	2.27	19.5
1580	1.67	42.56	6050	1.36	15.6
1585	1.8	42.95	6100	1.08	15.24
1590	1.92	41.78	6150	0.01	12.16
1595	2.16	43.85	6200	-0.54	10.33
1600	2.14	43.05	6250	-1.09	10.62
1605	2.07	42.66	6300	-2.38	8.09
1610	2.71	44.16	6350	-3.07	6.32
2400	2.41	34.43	6400	-3.91	5.73
2410	2.06	34.28	6450	-3.57	4.57
2420	2.41	33.88	6500	-3.57	3.49
2430	2.33	33.81	6550	-3.85	3.35
2440	2.69	34.12	6600	-4.47	3.25
2450	3.07	34.04	6650	-4.8	2.69
2460	2.94	32.96	6700	-4.03	2.73
2470	2.83	33.04	6750	-4.94	2.57
Frequency/Mhz	MaxGain/dBi	Efficiency / %	Frequency/Mhz	MaxGain/dBi	Efficiency / %
2480	2.85	32.81	6800	-2.04	2.28
2490	2.3	33.04	6850	-4.51	2.2
2500	3.02	33.34	6900	-4.69	2.42
5150	1.48	13.77	6950	-4.58	2.3
5200	0.93	13.77	7000	-4.37	2.62
5250	0.38	13.71	7050	-4.14	2.77
5300	0.66	16.26	7100	-4.42	2.51
5350	0.95	17.46	7150	-4.43	2.72
5400	1.12	20.28			
5450	2.19	25.59			
5500	2.65	27.16			
5550	2.02	29.24			
5600	2.47	33.42			
5650	2.39	32.51			
5700	2.93	28.18			

Radiation pattern



● Structure size



- Technical parameters

WLAN: GPS&WIFI&BT

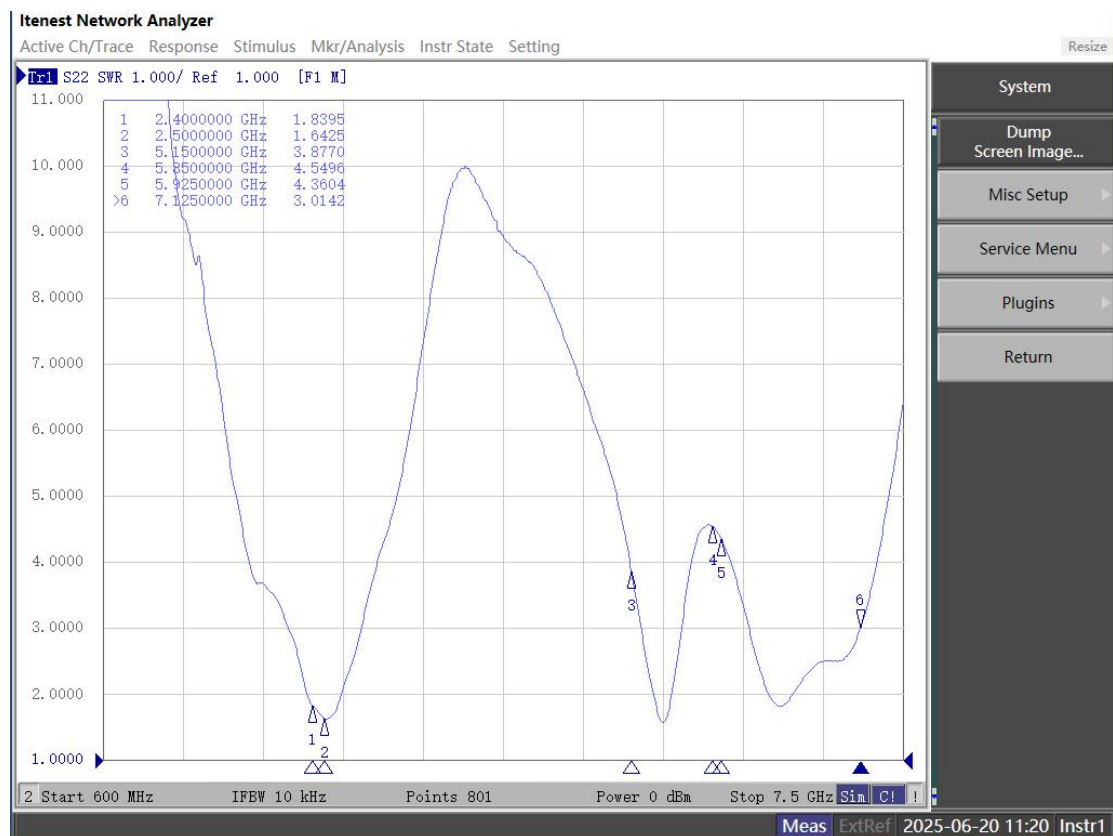
Antenna manufacturer: Sunnyway Technology

Antenna Type: PIFA

Frequency: 2400MHz~2500MHz, 5150MHz~7125MHz

SWR: ≤ 4.0 : 1

- S11

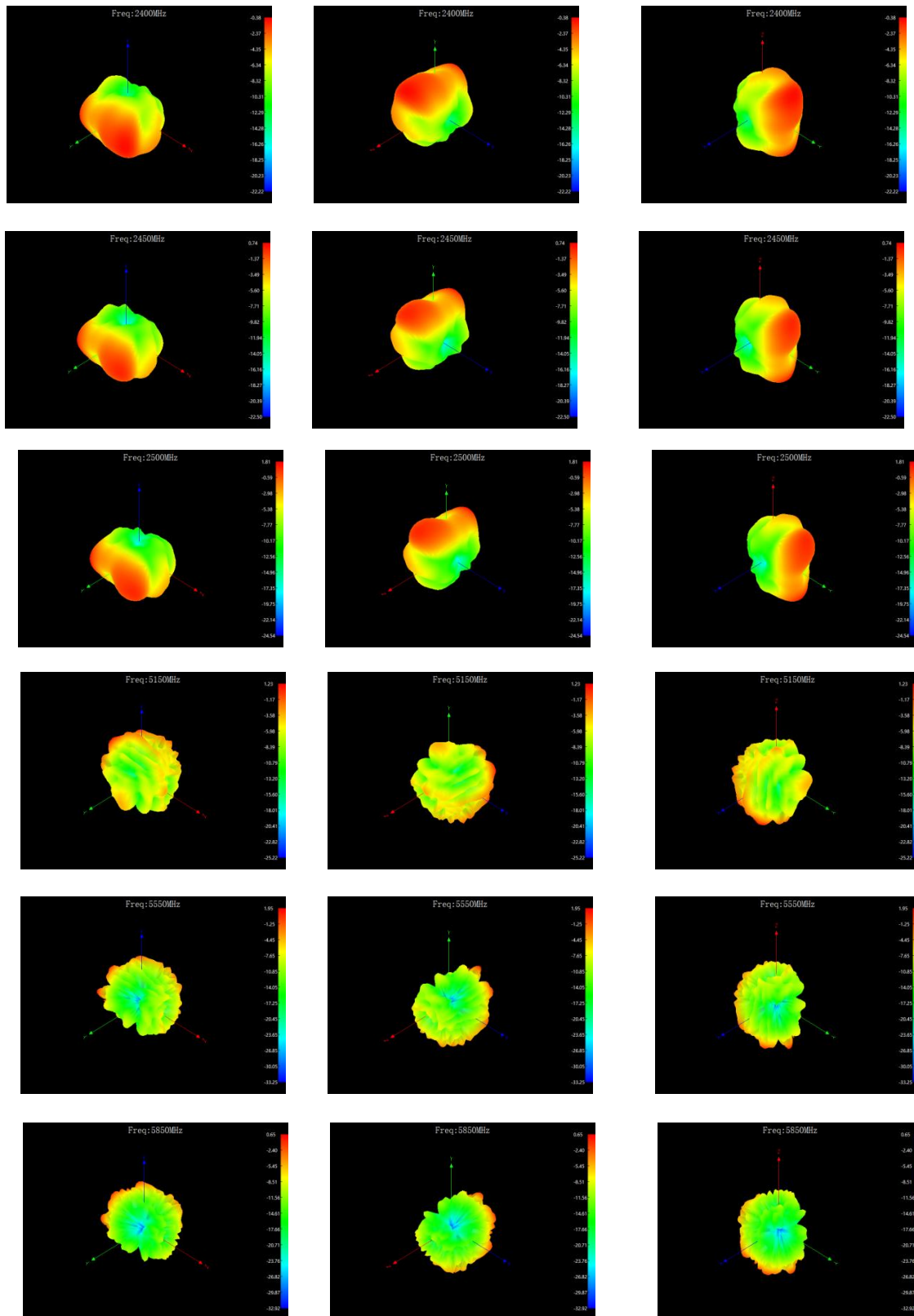


- Efficiency and gain

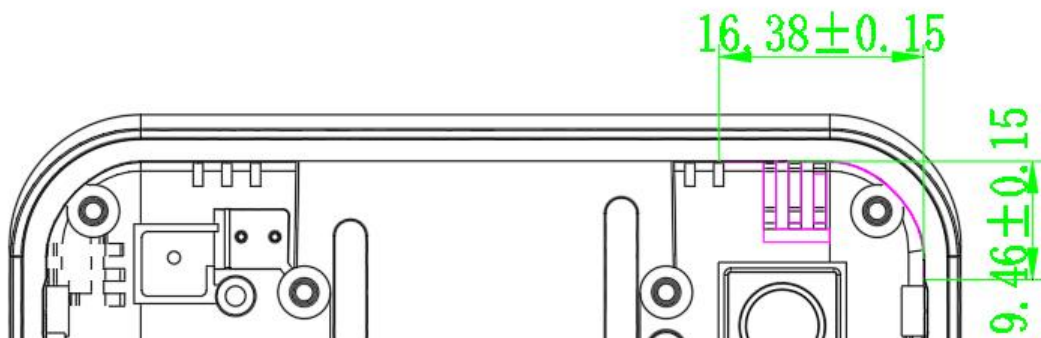
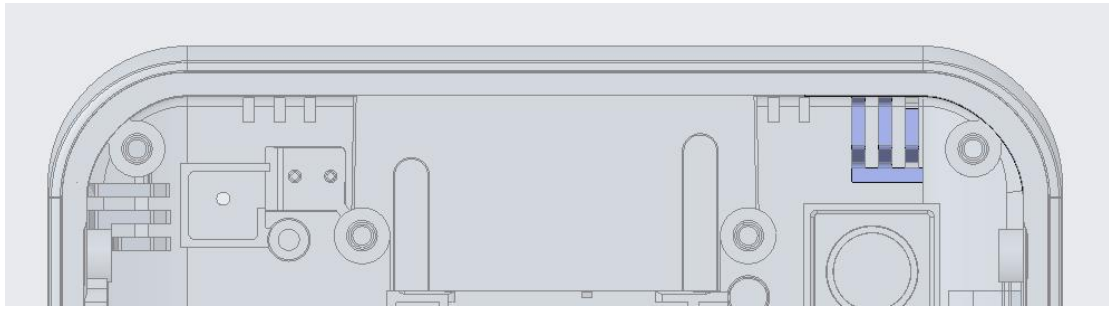
Frequency/Mhz	MaxGain/dBi	Efficiency / %	Frequency/Mhz	MaxGain/dBi	Efficiency / %
2400	-0.38	20.54	5750	-0.29	11.83
2410	-0.93	21.59	5800	0	12.39
2420	0.41	20.56	5850	0.65	12.11

2430	0.3	21.13	5900	0.07	11.22
2440	-0.34	22.28	5950	0.19	11.22
2450	0.74	23.28	6000	-0.3	10.59
2460	0.59	23.5	6050	-1.33	8.61
2470	0.92	25	6100	-0.91	9.02
2480	1.46	26.3	6150	-1.07	8.34
2490	1.53	27.67	6200	-1.86	7.08
2500	1.81	29.58	6250	-1.71	7.5
5150	1.23	19.45	6300	-1.89	7.85
5200	2.53	22.44	6350	-2.38	6.78
5250	2.4	23.17	6400	-3.01	6.3
5300	2.51	23.12	6450	-3.52	5.92
5350	2.5	22.59	6500	-3.68	4.75
5400	1.74	20.8	6550	-3.89	4.4
5450	2.08	19.54	6600	-3.51	4.59
5500	2.54	19.91	6650	-2.84	4.14
5550	1.95	18.92	6700	-3.87	3.83
5600	2.07	17.99	6750	-4.42	3.66
5650	1.62	16.56	6800	-4.64	3.56
5700	0.37	13.24	6850	-4.65	3.62
			6900	-5.1	3.39
			6950	-4.93	3.42
			7000	-4.42	3.64
			7050	-4.49	3.18
			7100	-5.88	2.91
			7150	-4.55	3.15

Radiation pattern



- Structure size



RFID

- Technical parameters

WLAN: RFID

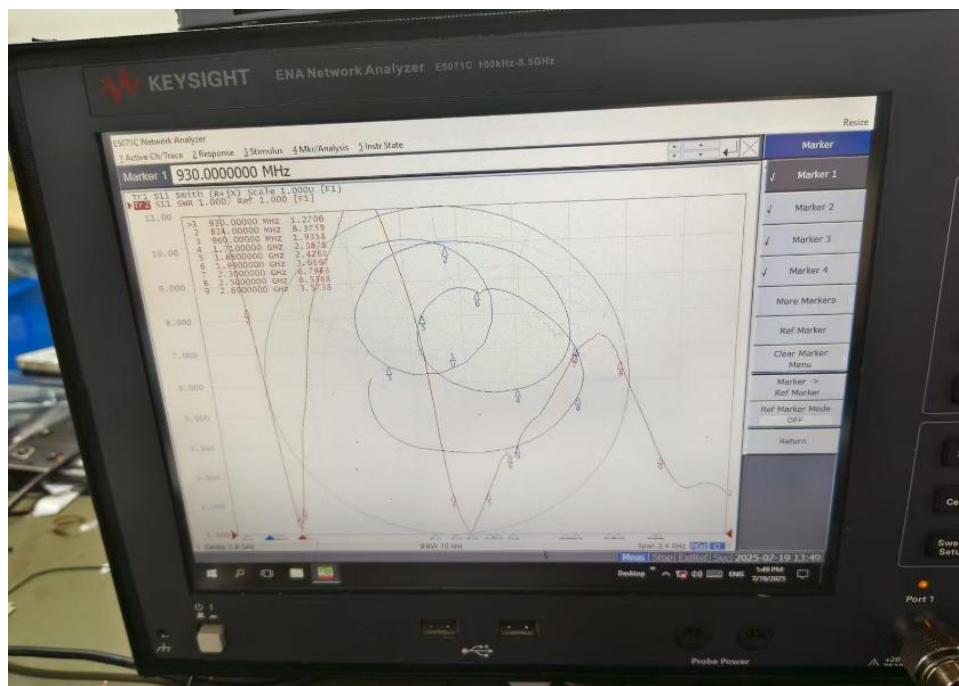
Antenna manufacturer: Sunnyway Technology

Antenna Type: PIFA

Frequency: 902.75MHz~927.25MHz

SWR: ≤ 2.0 : 1

- S11

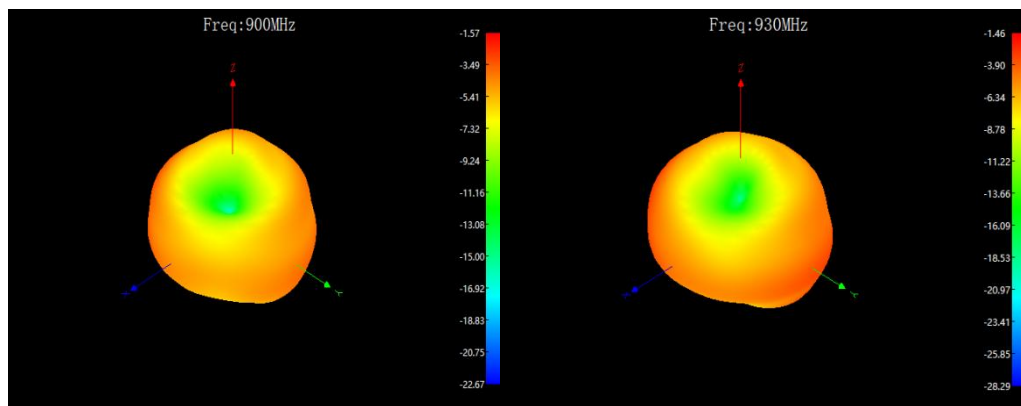


● Efficiency and gain

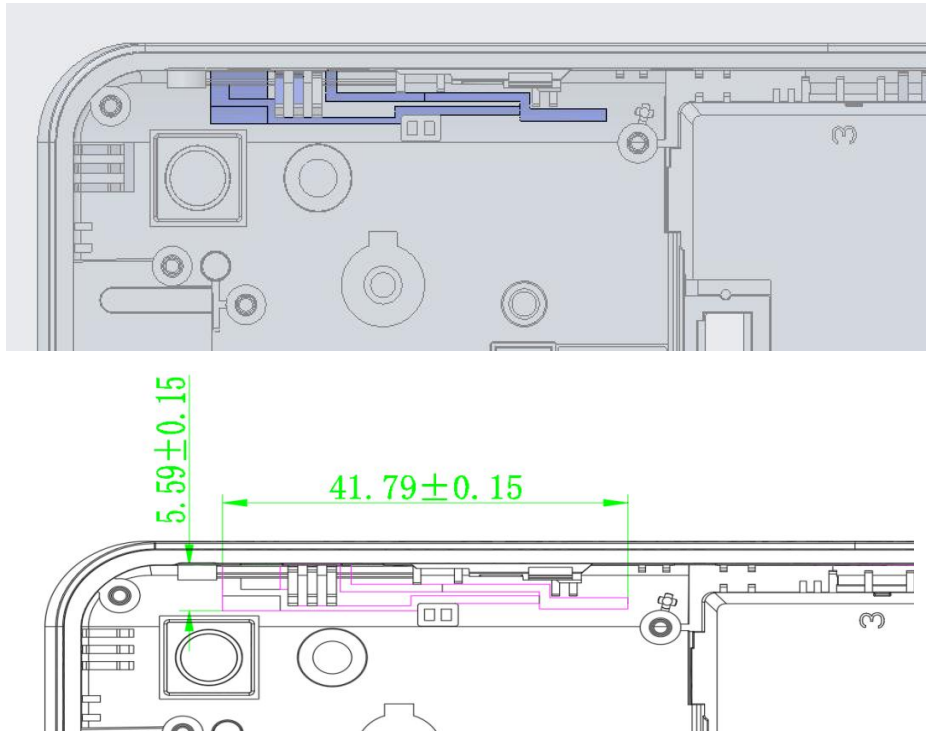
Frequency (Mhz)	Efficiency (%)	MaxGain (dBi)
900	16.01	-3.5
901	17.21	-3.34
902	18.06	-3.13
903	18.41	-3.08
904	18.35	-3.1
905	18.47	-3.05
906	17.72	-3.18
907	17.66	-3.15
908	18.12	-3.01
909	18.64	-2.88
910	18.82	-2.83
911	19.3	-2.77
912	19.3	-2.81
913	19.06	-2.88
914	18.94	-2.9
915	19	-2.88
916	19.85	-2.74
917	20.61	-2.57
918	21.31	-2.45
919	21.77	-2.38
920	22.11	-2.32
921	20.61	-2.68
922	19.3	-2.98
923	18.41	-3.2
924	17.77	-3.37

925	17.38	-3.5
926	18.12	-3.33
927	18.53	-3.27
928	18.41	-3.28
929	17.89	-3.34
930	17.27	-3.42

● Radiation pattern



● Structure size



NFC

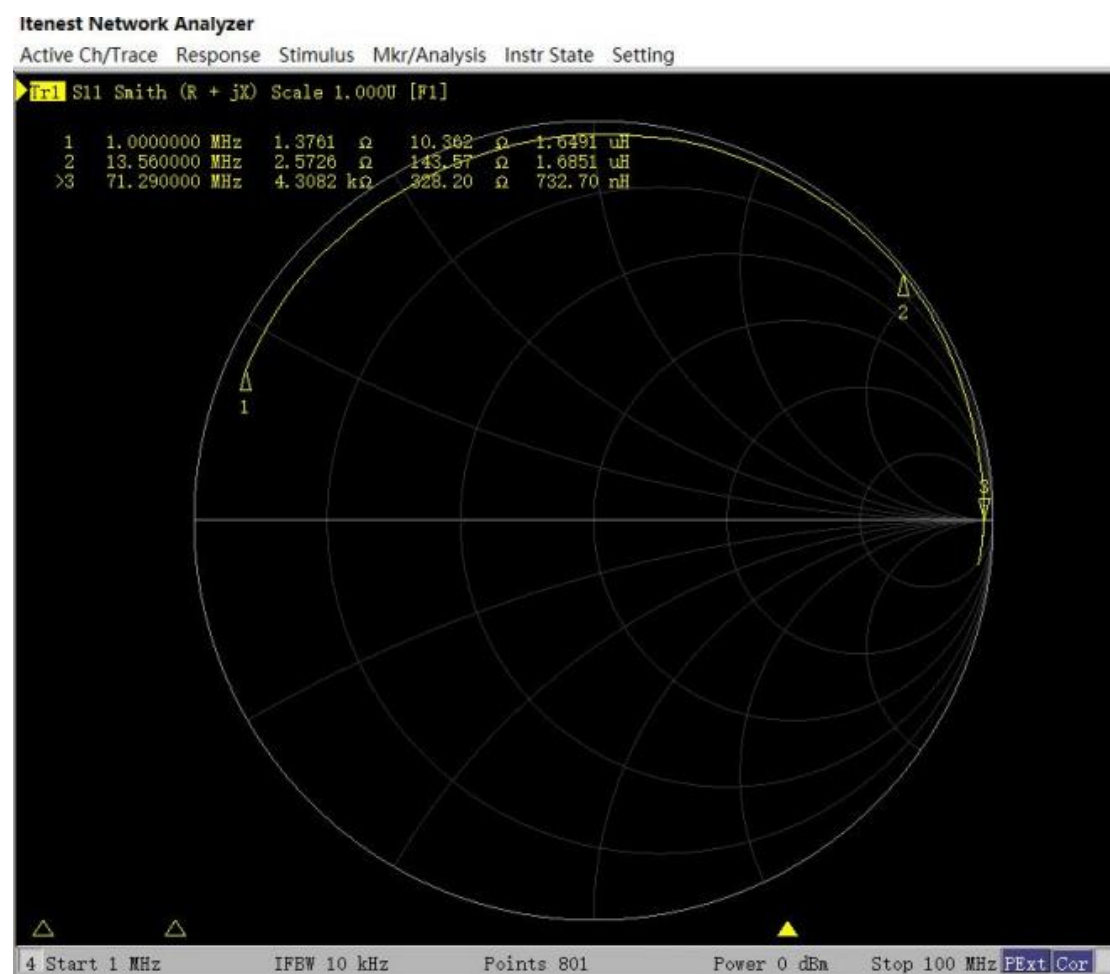
- Technical parameters

Antenna manufacturer: Sunnyway Technology

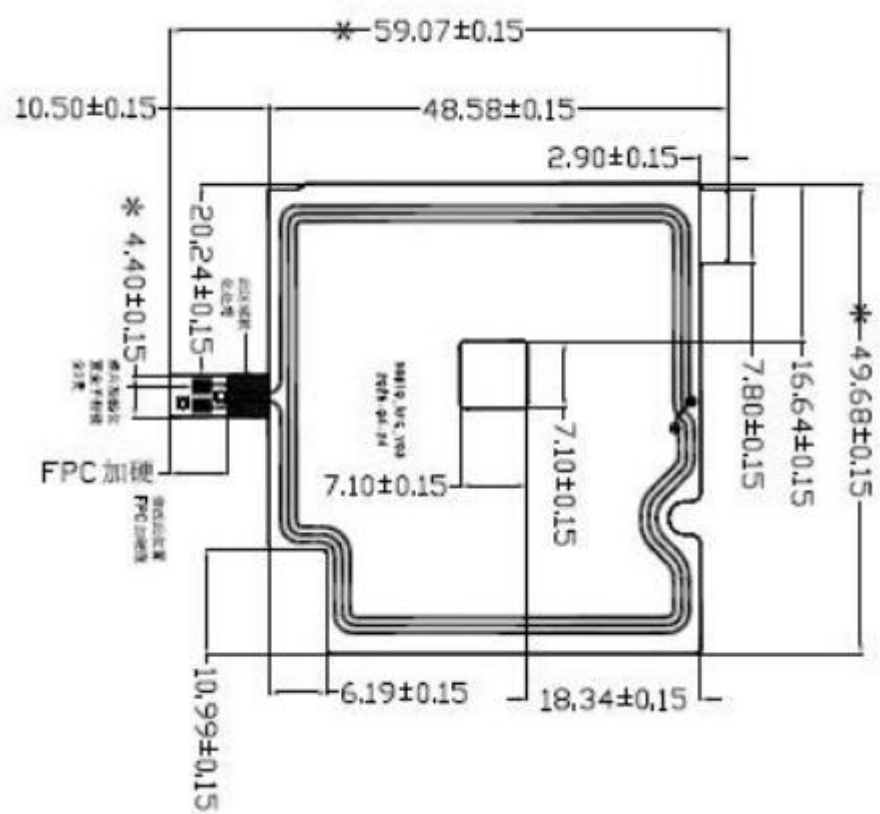
Antenna Type: LOOP

Frequency: 13.56MHz

- S11



- Structure size



Main Antenna

- Technical parameters

WWAN: 2G/3G/4G/5G

Antenna manufacturer: Sunnyway Technology

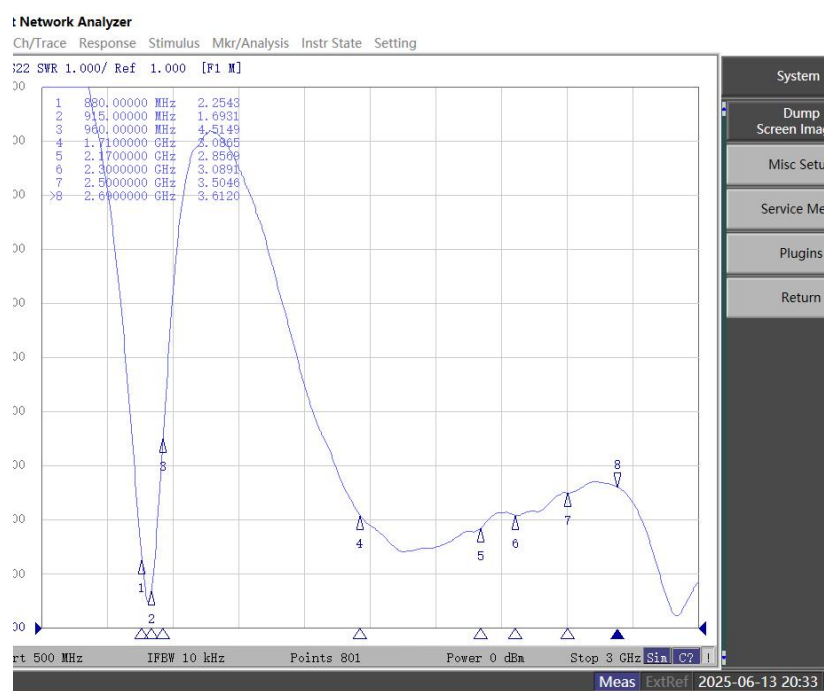
Antenna Type: PIFA

Frequency: 700MHz~2690MHz

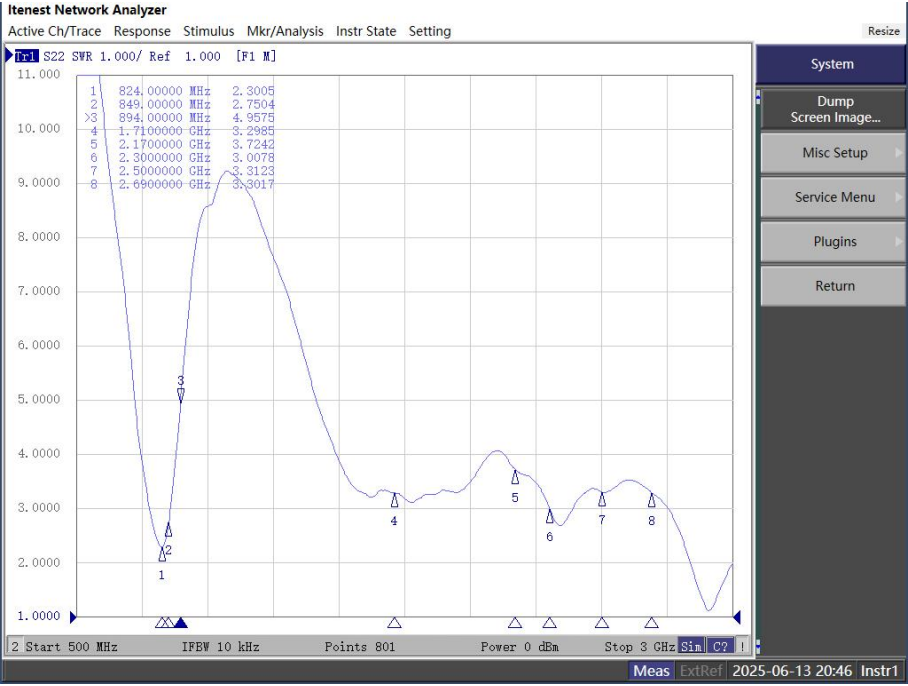
SWR: $\leq 13.5: 1$

- S11

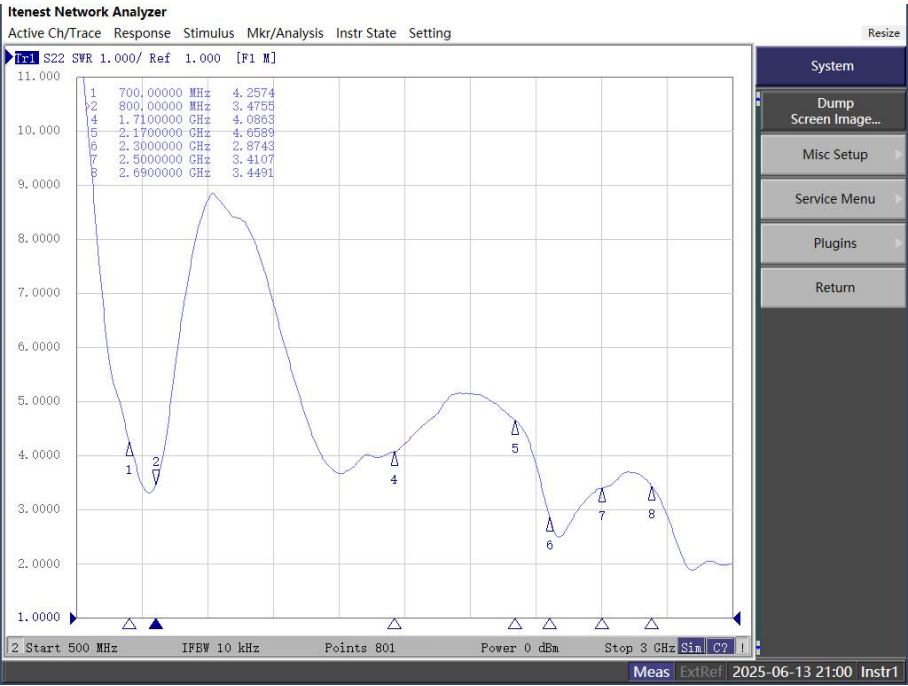
- RF1



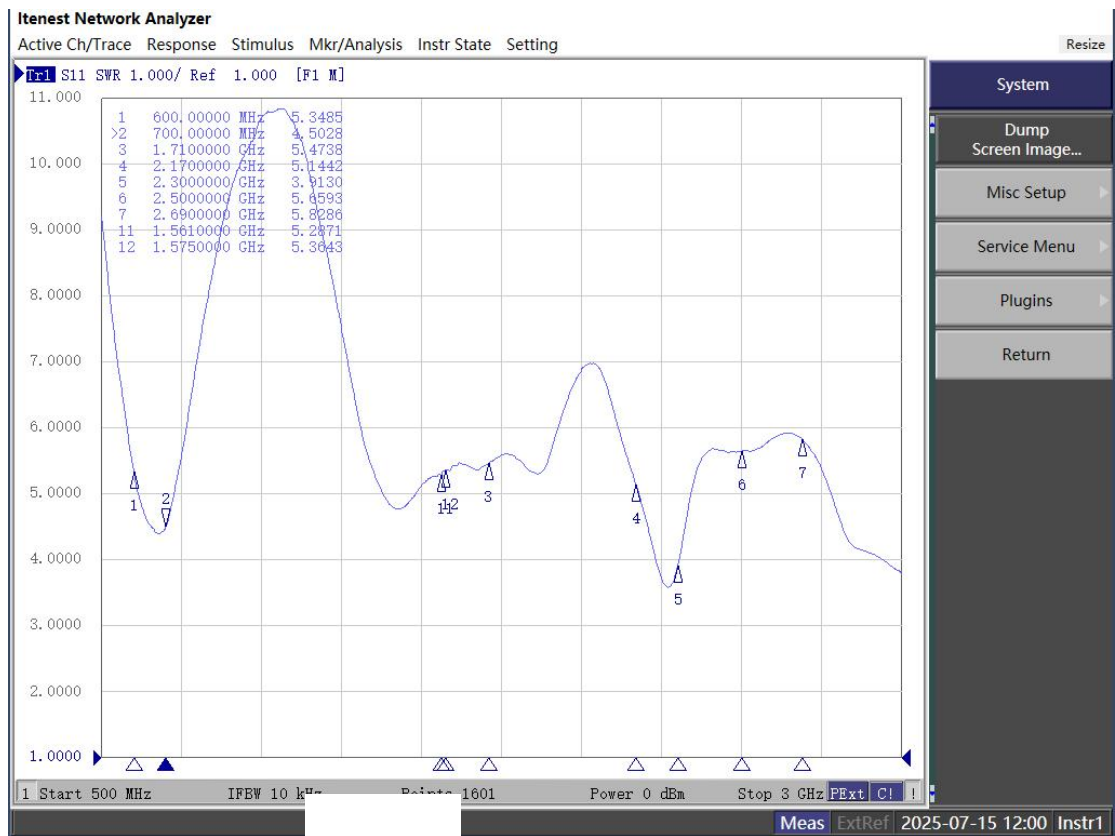
● RF2



● RF3



● RF4



- Efficiency and gain

- RF1

Frequency/Mhz	MaxGain/dBi	Efficiency / %	Frequency/Mhz	MaxGain/dBi	Efficiency / %
880	-0.63	18.2	2110	1.12	32.36
890	-0.24	20.61	2120	1.13	32.96
900	-0.39	21.98	2130	0.9	31.26
910	-0.37	22.91	2140	1.16	31.26
920	-0.35	23.12	2150	0.18	29.72
930	-0.55	21.93	2160	0.67	29.11
940	-0.98	19.91	2170	0.25	27.99
950	-2.06	16.87	2300	-1.1	19.91
960	-3.62	14.39	2310	-1.12	19.63
1710	1.56	25.7	2320	-1.09	20.09
1720	1.57	25.64	2330	-0.52	20.14
1730	1.53	25.94	2340	-0.45	20.28
1740	1.47	26	2350	-0.2	21.04
1750	1.2	25.7	2360	0.05	21.18
1760	0.95	26	2370	0.56	20.84
1770	1.12	26.67	2380	0.52	20.61
1780	1.42	27.48	2390	0.45	20.37

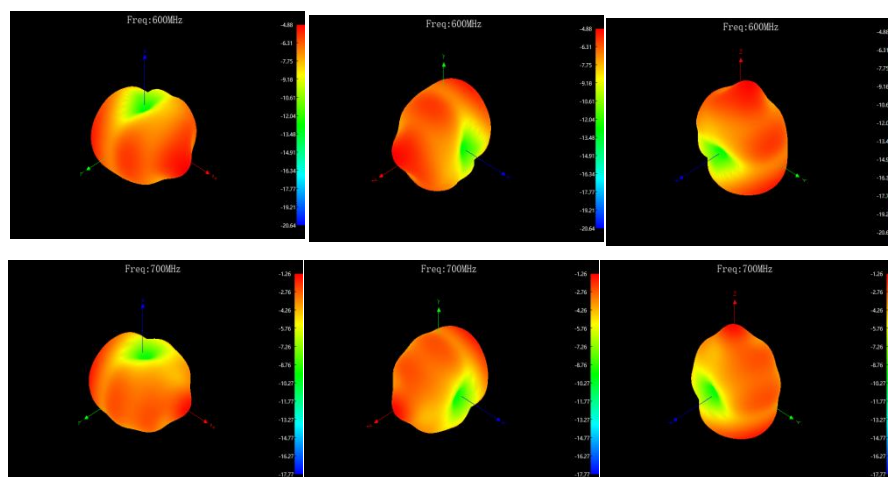
1790	1.89	28.77	2400	0.87	19.72
1800	2.21	29.31	2410	0.39	20
1810	2.38	30.2	2420	0.69	19.68
1820	2.29	31.12	2430	9.55	28.97
1830	2.17	30.97	2440	0.15	20
1840	2.11	30.34	2450	0.41	19.54
1850	2	30.34	2460	14.14	54.58
1860	2.4	30.83	2470	-0.02	18.58
1870	2.57	31.19	2480	-0.28	18.03
1880	2.78	32.06	2490	0.28	18.24
1890	2.82	32.21	2500	-0.07	18.37
1900	2.92	33.42	2510	0.44	17.99
1910	2.71	34.67	2520	0.03	17.1
1920	2.72	35.48	2530	-0.66	15.92
1930	2.64	36.9	2540	-0.63	15.52
1940	2.55	38.02	2550	-1.22	14.45
1950	2.43	37.5	2560	-1.03	13.93
1960	2.43	37.67	2570	-1.2	13.09
1970	2.43	37.84	2580	-1.25	13.12
1980	2.62	37.15	2590	-0.91	12.71
1990	2.62	37.33	2600	-1.23	12.08
2000	2.58	36.98	2610	-1.48	11.78
2010	2.63	38.99	2620	-1.44	11.35
2020	2.27	38.64	2630	-2.09	11.35
2030	2.6	38.19	2640	-2.08	11.35
2040	2.49	36.81	2650	-1.66	11.43
2050	2.53	36.9	2660	-2.72	11.46
2060	2.54	36.81	2670	-1.6	11.59
2070	2.28	35.16	2680	-2.37	11.25
2080	2.26	34.91	2690	-2.5	11.56
2090	1.62	33.96			
2100	1.49	33.34			

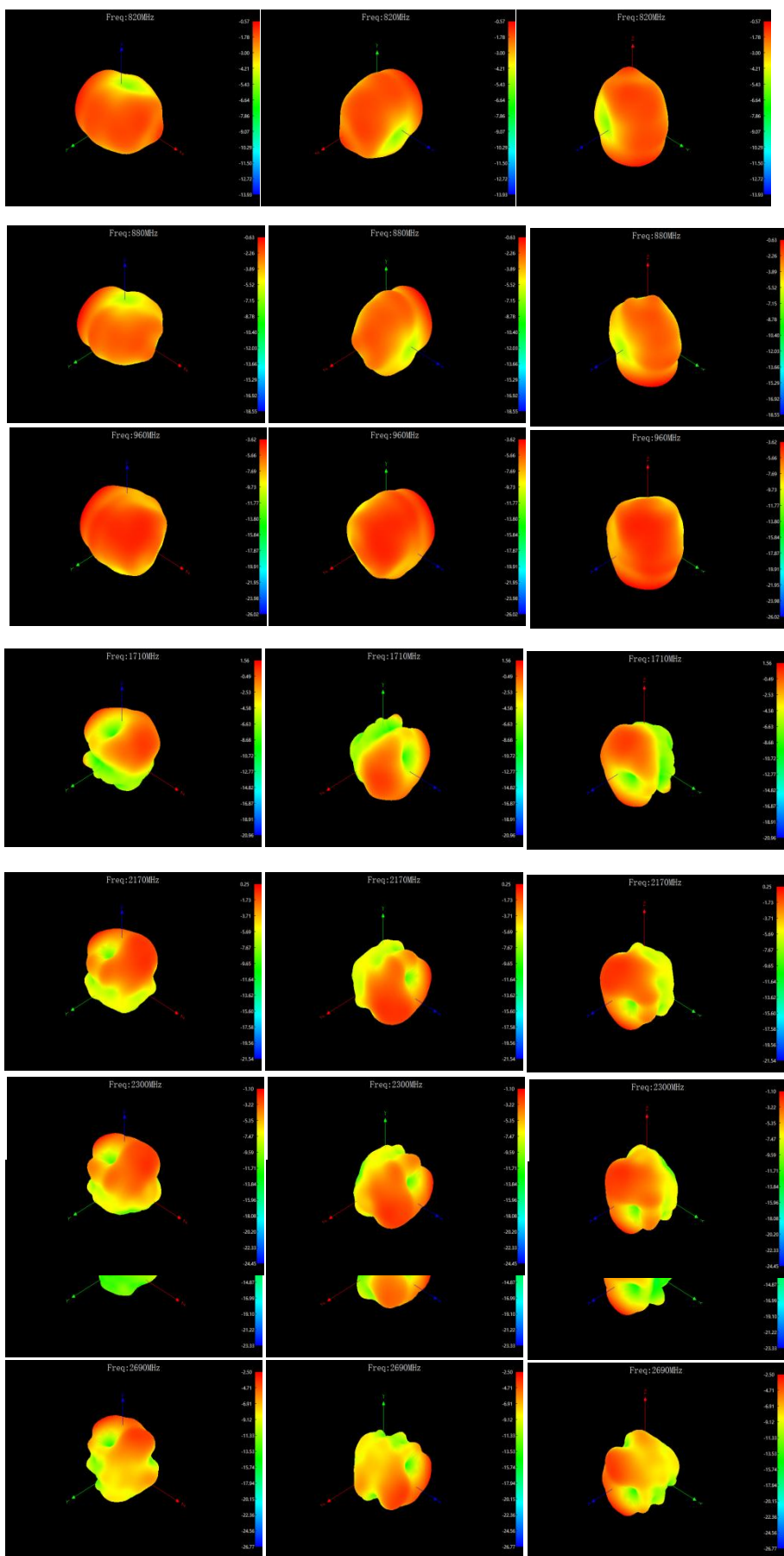
RF2		
Frequency/Mhz	MaxGain/dBi	Efficiency / %
820	-0.57	21.18
830	-1.09	21.04
840	-1.04	20.7
850	-0.96	20.18
860	-1.17	18.45
870	-0.97	17.42
880	-0.99	16.98

RF3		
Frequency/Mhz	MaxGain/dBi	Efficiency / %
700	-1.26	17.62
710	-0.87	18.11
720	-0.51	17.99
730	-0.49	17.66
740	-0.83	17.86
750	-1.52	18.24
760	-1.55	19.19
770	-1.1	19.91
780	-0.62	20.61
790	0.08	21.13
800	0.17	20.32

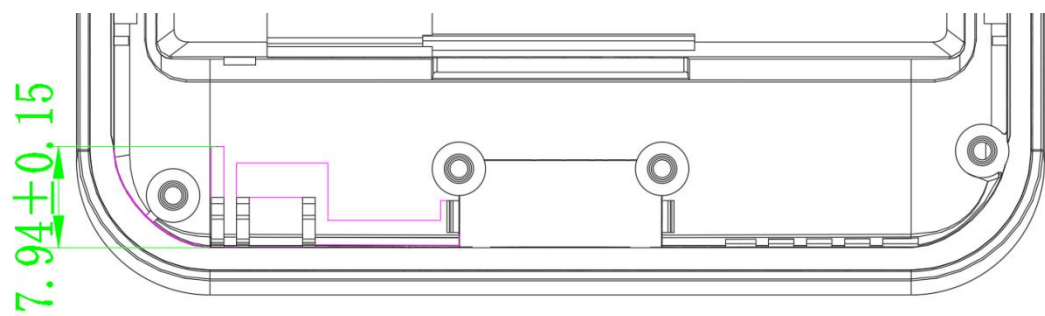
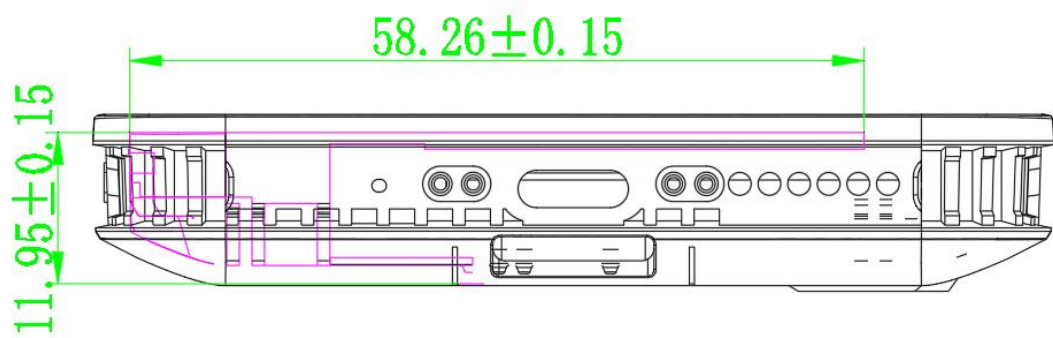
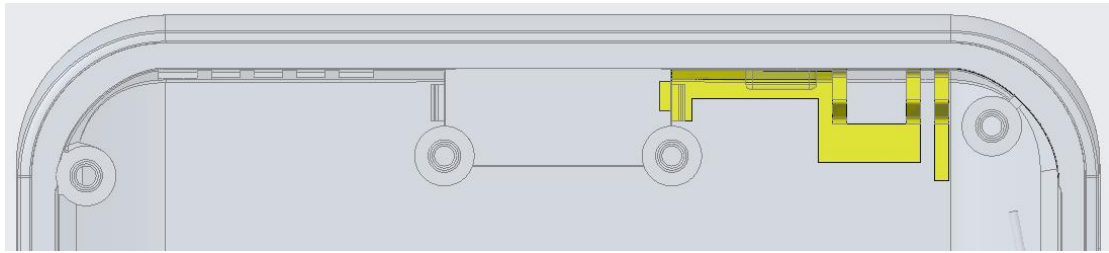
RF4		
Frequency/Mhz	MaxGain/dBi	Efficiency / %
600	-4.88	10.43
610	-4.48	10.77
620	-4.35	10.95
630	-2.29	14.39
640	-2.26	14.93
650	-2.48	15.89
660	-2.6	13.06
670	-1.99	15.03
680	-1.96	15.21
690	-2.02	14.66
700	-2.39	12.76

● Radiation pattern





- Structure size



ANT1

- Technical parameters

WWAN: 4G/5G

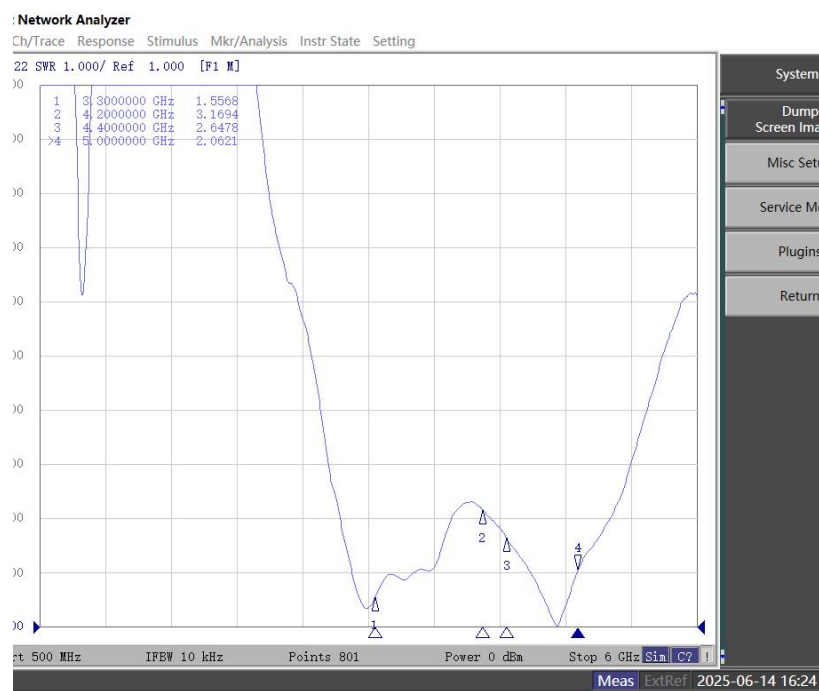
Antenna manufacturer: Sunnyway Technology

Antenna Type: PIFA

Frequency: 3300MHz~5000MHz

SWR: ≤ 3.0 : 1

- S11

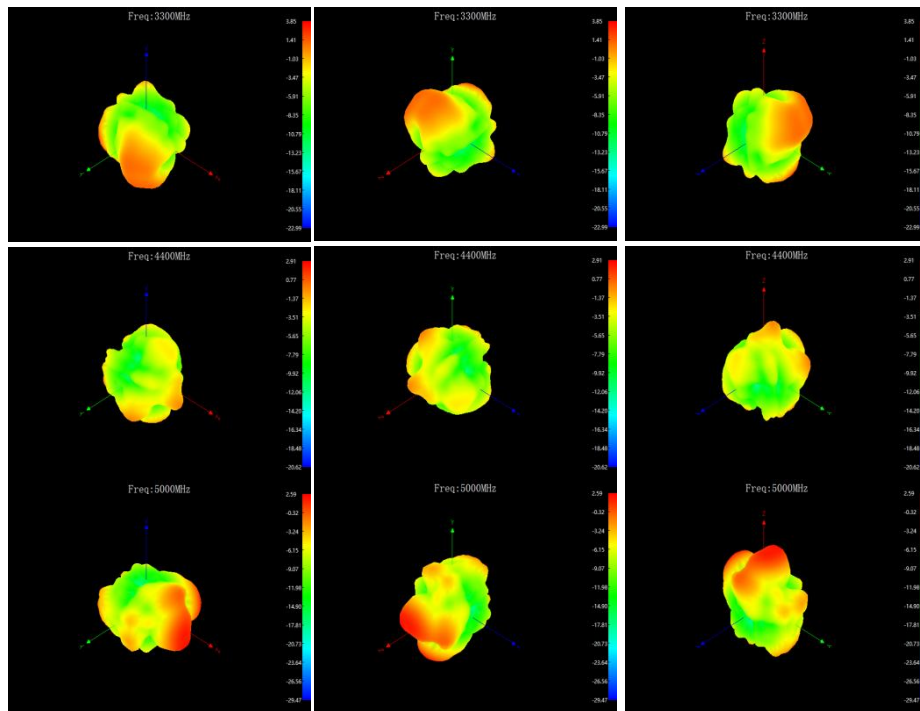


- Efficiency and gain

Frequency/Mhz	MaxGain/dBi	Efficiency / %
3300	-1.85	39.72
3350	-1.63	41.21
3400	-1.53	42.36
3450	-1.22	46.67
3500	-1.04	44.06

3550	-1.11	37.41
3600	-1.36	34.59
3650	-1.56	35.16
3700	-1.78	35.97
3750	-1.07	42.17
3800	-1.31	41.59
3850	-1.82	35.16
3900	-2.02	28.31
3950	-2.47	24.72
4000	-2.14	23.71
4050	-2.93	22.65
4100	-2.64	23.23
4150	-2.31	25.06
4200	-1.87	27.35
4250	-1.72	27.42
4300	-2.41	26.55
4350	-2.18	28.18
4400	-1.91	27.16
4450	-1.67	26.18
4500	-1.78	27.8
4550	-2.29	28.84
4600	-2.27	29.92
4650	-1.45	31.26
4700	-1.39	37.33
4750	-1.18	39.26
4800	-2	36.73
4850	-1.38	40.18
4900	-1.36	39.54
4950	-2.85	35.16
5000	--2.59	33.5

- Radiation pattern



- Structure size

