

1、 Main Antenna

- Technical parameters

WWAN: 3G/4G

Antenna name: SH25028IB77-1

Antenna company: Sunnyway Technology (China) Co., Ltd.

Company address:

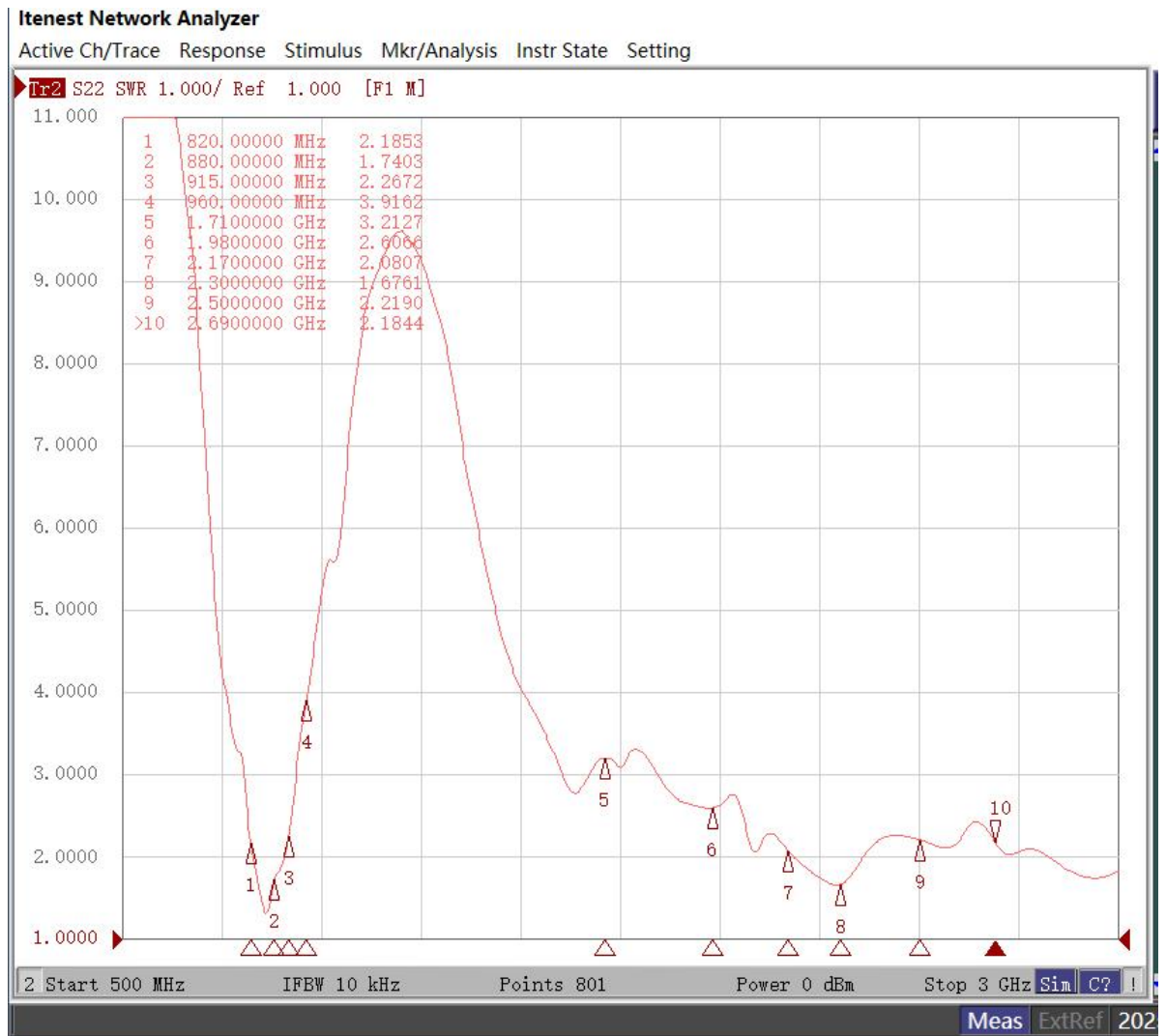
1/F, Building 4, No. 99, Lane 215, Gaoguang Road, Qingpu District, Shanghai

Antenna form: PIFA

Frequency: 820MHz~2690MHz

SWR: ≤ 4

- S11

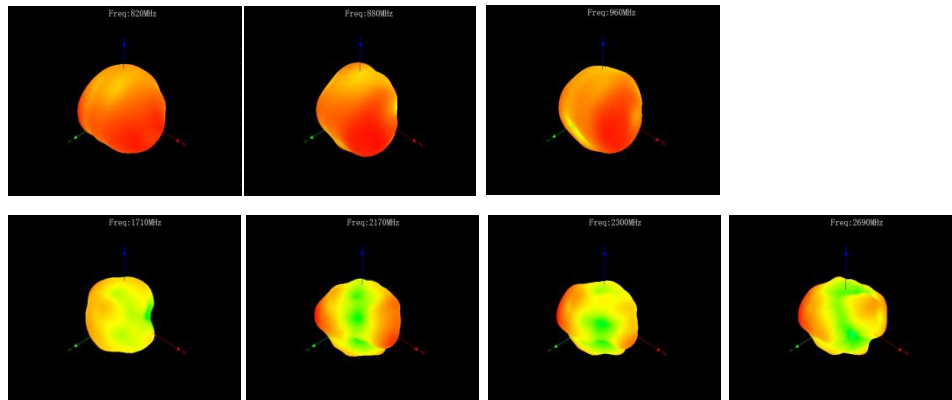


● Efficiency and Gain

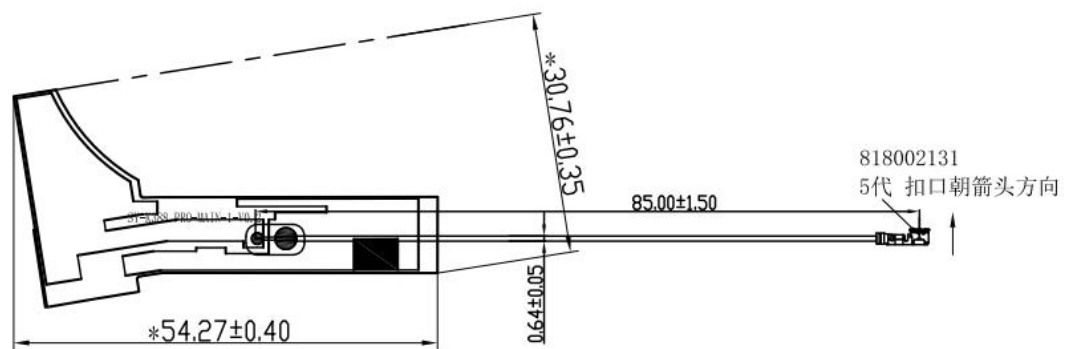
Frequency/Mhz	MaxGain/dBi	Efficiency / %	Frequency/Mhz	MaxGain/dBi	Efficiency / %
820	0.97	22.39	2110	-0.24	28.47
830	0.98	25.65	2120	0.09	28.73
840	1.05	30.7	2130	-0.11	29.81
850	1.32	33.74	2140	-0.37	28.67
860	1.22	34.2	2150	-0.69	28.4
870	0.52	40.93	2160	-0.54	26.63
880	-0.11	44.98	2170	-0.64	25.72
890	-0.44	46.56			
900	-1.25	45.29	2300	1.16	32.91
910	-1.75	41.02	2310	1.29	32.24
920	-2.51	35.81	2320	1.18	33.14
930	-2.64	31.41	2330	1.51	33.14
940	-2.75	26.79	2340	1.52	33.22

950	-2.84	23.44	2350	1.29	33.98
960	-3.01	20.99	2360	1.65	35.1
			2370	1.97	35.02
1710	1.19	39.32	2380	1.77	35.42
1720	0.85	36.02	2390	1.72	35.02
1730	0.74	34.48	2400	1.89	33.37
1740	0.91	34.64	2410	1.41	32.52
1750	1.04	35.53	2420	1.83	31.72
1760	1.28	36.7	2430	1.49	30.85
1770	1.58	38.86	2440	0.99	31.28
1780	1.57	41.94	2450	1.23	32.45
1790	1.92	45.04	2460	0.9	34.06
1800	2.14	48.71	2470	1.28	38.23
1810	2.15	51.24	2480	1.79	41.24
1820	2	52.55	2490	1.8	42.99
1830	1.66	53.16	2500	1.97	44.6
1840	1.3	51.96	2510	2.5	45.22
1850	1.07	49.84	2520	2.33	45.31
1860	1.13	49.04	2530	2.21	44.91
1870	0.98	48.71	2540	2.13	45.31
1880	1	47.7	2550	1.73	44.79
1890	0.92	46.94	2560	1.88	45
1900	0.97	44.83	2570	1.6	43.99
1910	0.79	44.11	2580	1.56	44.29
1920	0.65	43.41	2590	1.84	42.99
1930	0.47	42.72	2600	1.71	41.05
1940	0.48	42.42	2610	1.43	39.21
1950	0.45	42.91	2620	1.31	37.17
1960	0.43	42.23	2630	1	37.27
1970	0.36	41.46	2640	1.46	36.84
1980	0.29	39.86	2650	1.58	37.17
1990	0.18	37.8	2660	1.46	37.86
2000	0.2	36.35	2670	1.74	39.28
2010	0.23	34.16	2680	1.39	40.3
2020	0.5	35.38	2690	1.75	43.37
2030	0.4	34.07			
2040	-0.17	31.65			
2050	-0.03	29.46			
2060	0.22	28.93			
2070	0.26	28.34			
2080	0.01	27.5			
2090	-0.14	27.5			
2100	0.19	27.56			

● Radiation pattern



- Structure size:



2、DIV

- Technical parameters

WWAN: 3G/4G

Antenna name: SH25028IB77-4

Antenna company: Sunnyway Technology (China) Co., Ltd.

Company address:

1/F, Building 4, No. 99, Lane 215, Gaoguang Road, Qingpu District, Shanghai

Antenna form: MONOPOLE

Frequency: 820MHz~2690MHz

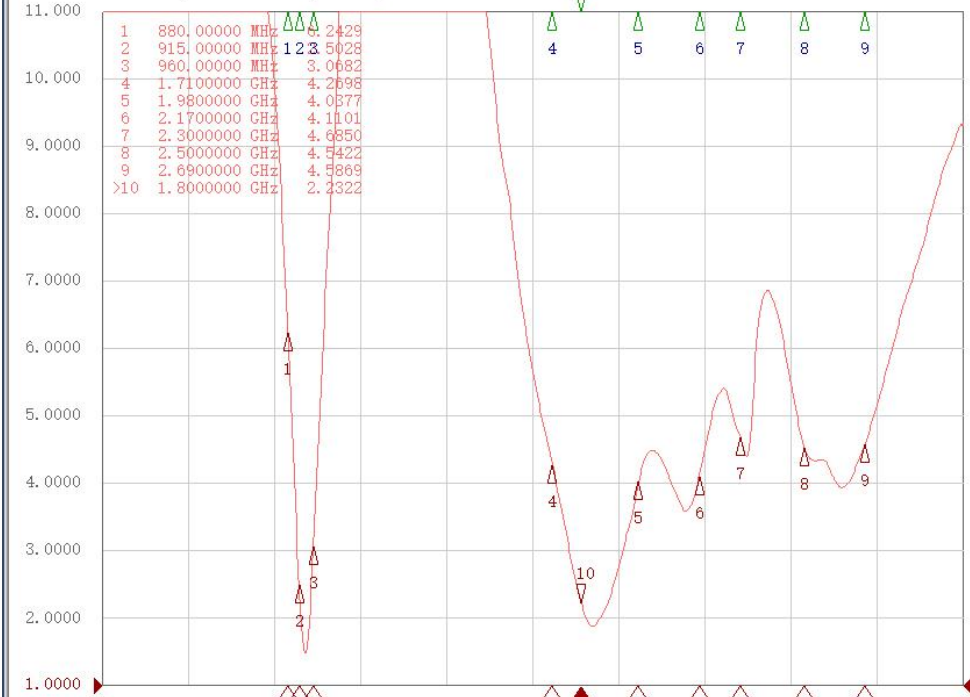
SWR: ≤ 5.0 : 1

- S11

Itenest Network Analyzer

Active Ch/Trace Response Stimulus Mkr/Analysis Instr State Setting

Tr1 S11 SWR 1.000/ Ref 1.000 [F1 off]
 Tr2 S11 SWR 1.000/ Ref 1.000 [F1 M]
 Tr3 S11 SWR 1.000/ Ref 1.000 [F1 off]



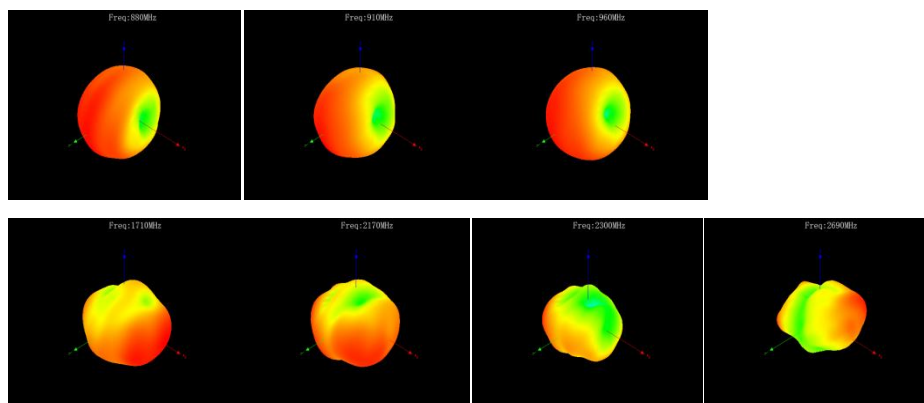
1 Start 300 MHz IFBW 10 kHz Points 801 Power 0 dBm Stop 3 GHz FExt C! !
 Meas ExtRef 2025

● Efficiency and gain

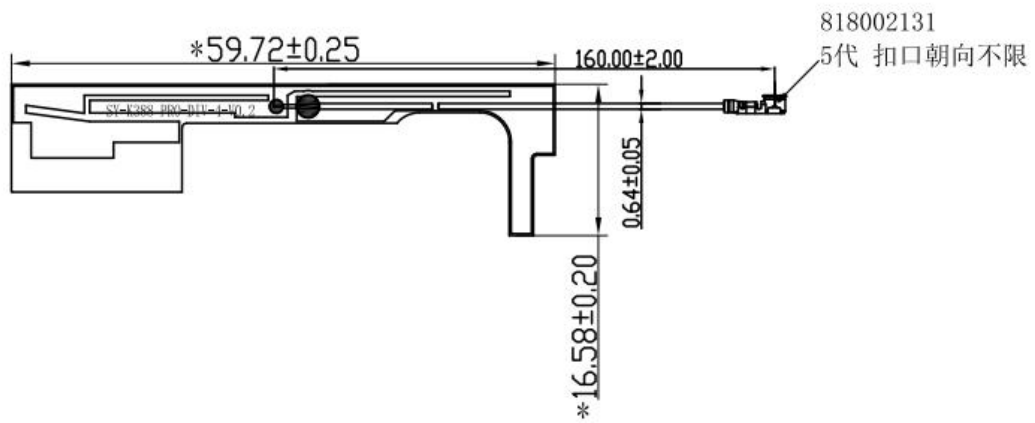
Frequency/Mhz	MaxGain/dBi	Efficiency / %	Frequency/Mhz	MaxGain/dBi	Efficiency / %
820	-2.26	18.41	2110	-1.14	19.95
830	-1.27	22.03	2120	-1.07	20.7
840	-0.8	26.12	2130	-1.13	19.91
850	-0.33	29.85	2140	-0.64	19.72
860	-0.19	34.2	2150	-1.51	18.49
870	0.2	40.93	2160	-1.04	17.86
880	0.43	44.98	2170	-1.29	17.14
890	0.85	46.56			
900	0.8	45.29	2300	-0.21	17.14
910	0.47	41.02	2310	-0.52	16.79
920	-0.08	35.81	2320	-0.39	17.26
930	-0.78	31.41	2330	-0.13	17.26
940	-1.43	26.79	2340	-0.22	17.3
950	-2.22	23.44	2350	-0.04	17.7
960	-3.19	20.99	2360	-0.1	18.28
			2370	0.46	18.24
1710	0.77	27.29	2380	0.32	18.45
1720	1.34	26.12	2390	0.21	18.24
1730	1.76	26.24	2400	0.71	17.38
1740	2.12	26.92	2410	0.21	16.94
1750	2.18	27.8	2420	0.34	16.52
1760	2.03	29.44	2430	0.91	16.07
1770	1.86	31.77	2440	0.31	16.29
1780	1.82	34.12	2450	0.92	16.9
1790	1.91	36.9	2460	1.41	17.74
1800	1.83	38.82	2470	1.12	19.91
1810	1.88	39.81	2480	1.11	21.48
1820	1.87	40.27	2490	1.93	22.39
1830	1.72	39.36	2500	1.36	23.23
1840	1.44	37.76	2510	1.98	23.55
1850	1.29	37.15	2520	1.63	23.6
1860	1.68	36.9	2530	1.01	23.39
1870	2.12	36.14	2540	1.18	23.6
1880	2.24	35.56	2550	0.98	23.33
1890	1.89	33.96	2560	1.49	23.44
1900	1.55	33.42	2570	1.81	22.91
1910	1.24	32.89	2580	1.75	23.07
1920	1.02	32.36	2590	1.78	22.39
1930	1.01	32.14	2600	1.9	21.38

1940	0.86	32.51	2610	1.81	20.42
1950	0.55	31.99	2620	1.63	19.36
1960	0.37	31.41	2630	1.59	19.41
1970	0.31	30.2	2640	1.53	19.19
1980	0.37	28.64	2650	1.22	19.36
1990	0.48	27.54	2660	1.47	19.72
2000	0.72	25.88	2670	1.14	20.46
2010	0.93	25.64	2680	1.25	20.99
2020	0.76	23.66	2690	1.56	22.59
2030	0.52	21.98			
2040	0.4	20.46			
2050	0.18	20.09			
2060	0.07	19.68			
2070	-0.32	19.1			
2080	-0.58	19.1			
2090	-0.72	19.14			
2100	-1.06	19.77			

● Radiation pattern



- Structure size



3、 3 in 1

- Technical parameters

WLAN: GPS&WIFI&BT

Antenna name: SH25028IB77-2

Antenna company: Sunnyway Technology (China) Co., Ltd.

Company address:

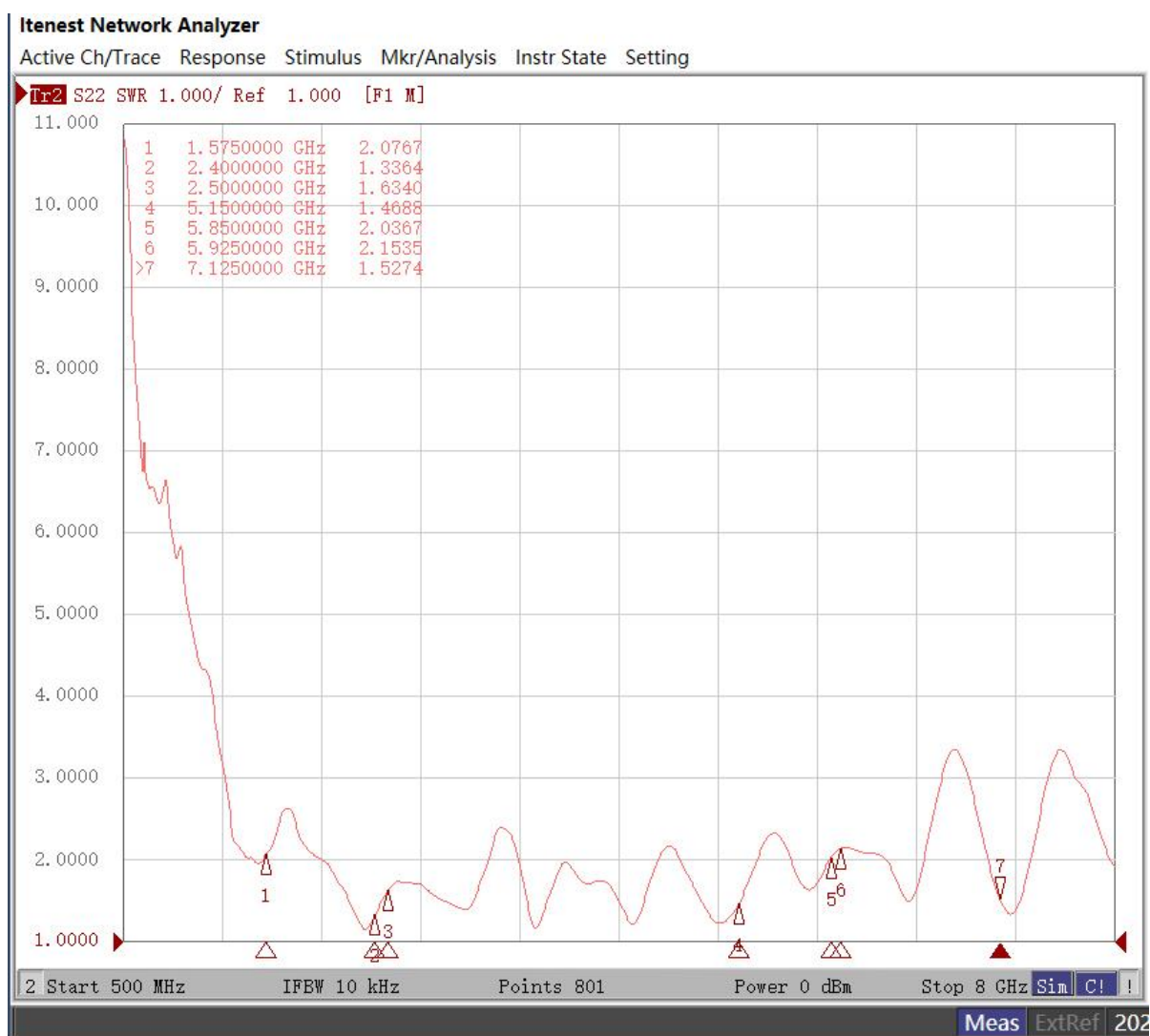
1/F, Building 4, No. 99, Lane 215, Gaoguang Road, Qingpu District, Shanghai

Antenna form: PIFA

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

SWR: ≤ 3

- S11

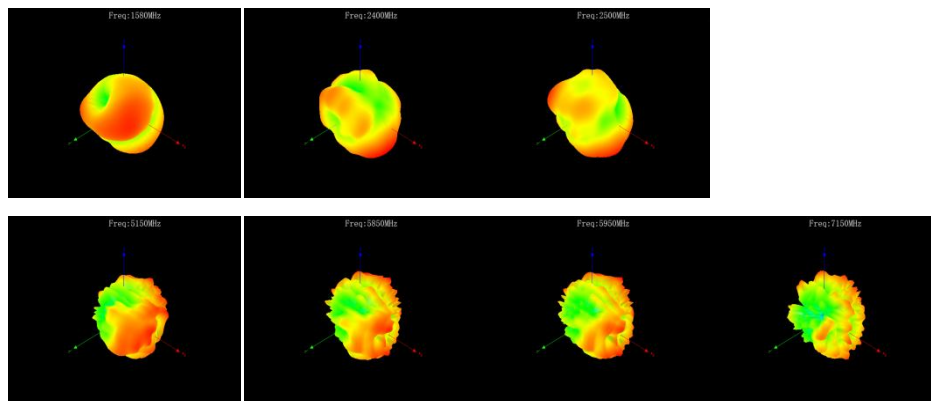


Efficiency and gain

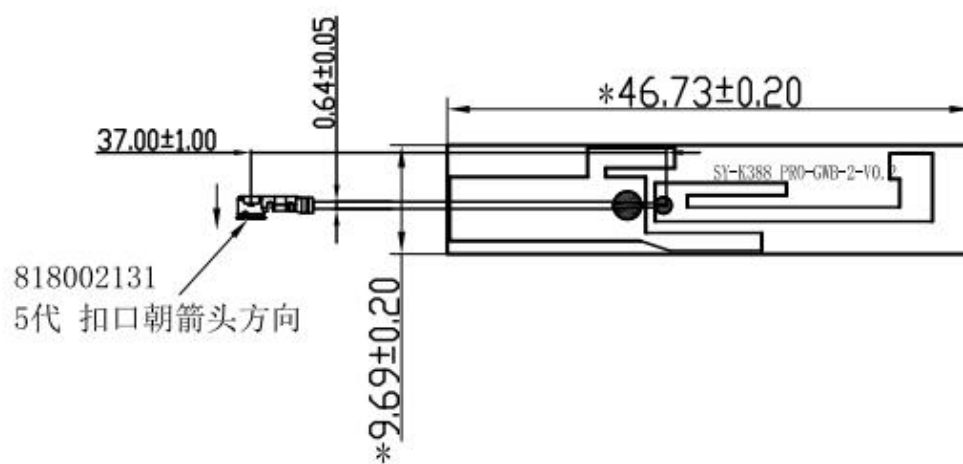
Frequency/MHz	MaxGain/dBi	Efficiency / %	Frequency/MHz	MaxGain/dBi	Efficiency / %
1550	0.78	38.55	5900	1.25	51.52
1560	0.83	40.09	5950	1.05	53.33
1570	1.16	41.02	6000	1.33	47.64
1580	1.28	43.15	6050	0.81	44.16
1590	1.54	42.76	6100	1.58	50.58
2400	1.71	43.06	6150	2.11	48.75
2410	1.63	43.86	6200	1.23	47.97
2420	1.87	44.07	6250	2.02	52.6
2430	1.06	44.07	6300	2.63	51.29
2440	0.85	44.79	6350	2.29	49.09
2450	1.47	45.3	6400	2.61	48.42
2460	1.09	44.69	6450	2.62	47.21
2470	1.27	45.61	6500	1.57	42.95

2480	1.34	46.05	6550	1.33	40.55
2490	1.69	46.79	6600	1.96	38.02
2500	1.65	48.31	6650	1.39	34.28
			6700	1.33	35.4
5150	1.8	54.7	6750	1	31.33
5200	1.85	58.34	6800	1.11	28.31
5250	2.07	56.89	6850	1.31	30.97
5300	1.95	56.1	6900	1.63	30.27
5350	1.4	55.21	6950	1.74	26.24
5400	2.16	58.34	7000	1.93	28.05
5450	1.44	56.36	7050	1.48	31.62
5500	1.45	51.76	7100	1.35	30.41
5550	1.86	52.97	7150	1.27	28.12
5600	2.36	56.62			
5650	1.61	53.21			
5700	1.31	49.55			
5750	1.24	53.95			
5800	1.19	53.83			
5850	1.24	50.82			

- Radiation pattern



- Structure size



3、WiFi

- Technical parameters

WLAN: WIFI

Antenna name: SH25028IB77-3

Antenna company: Sunnyway Technology (China) Co., Ltd.

Company address:

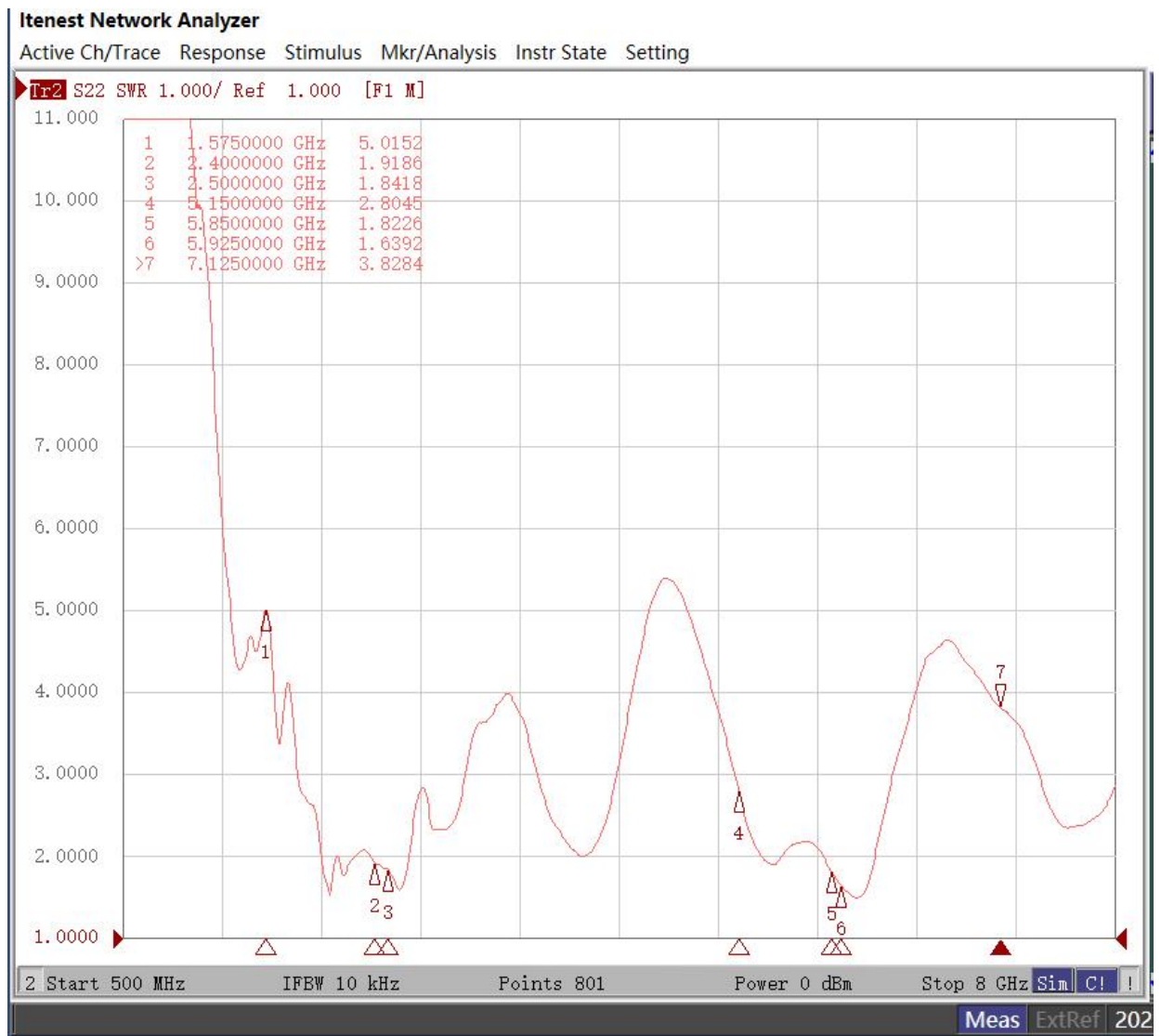
1/F, Building 4, No. 99, Lane 215, Gaoguang Road, Qingpu District, Shanghai

Antenna form: PIFA

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

SWR: ≤ 4.0

- S11

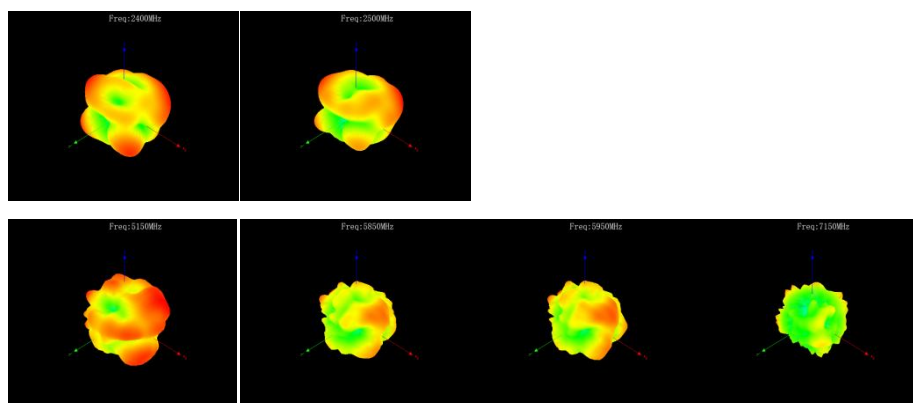


● Efficiency and gain

Frequency/Mhz	MaxGain/dBi	Efficiency / %	Frequency/Mhz	MaxGain/dBi	Efficiency / %
2400	1.04	44.57	5900	2.46	39.36
2410	0.56	43.85	5950	2.59	37.77
2420	1.29	42.46	6000	2.31	37.77
2430	0.8	40.93	6050	1.76	36.4
2440	0.46	40.83	6100	2.54	40.2
2450	1.51	40.64	6150	2.83	44.36
2460	1.19	39.81	6200	2.82	38.72
2470	1.24	40.93	6250	2.12	37.52
2480	1.57	41.59	6300	2.61	40.65
2490	1.53	42.95	6350	2.5	36.9
2500	1.48	45.19	6400	2.74	40.93
			6450	1.98	41.2

5150	1.38	45.11	6500	2	38.28
5200	2.15	41.42	6550	2.05	34.53
5250	1.82	44.19	6600	2.1	37.24
5300	2.29	41.53	6650	2.64	36.55
5350	2.11	39.64	6700	2.66	38.7
5400	2.88	44.46	6750	2.11	32.3
5450	2.27	39.08	6800	1.59	31.1
5500	1.94	40.93	6850	1.82	40.55
5550	1.97	39	6900	1.42	40.85
5600	2.34	42.18	6950	1.75	37.8
5650	2.63	39.44	7000	2.02	42.39
5700	2.72	40.56	7050	1.93	36.2
5750	2.37	38.14	7100	2.86	37.4
5800	2.13	39.05	7150	1.5	40.16
5850	2.03	37.4			

Radiation pattern



● Structure size

