Antenna Specification

Technical Parameter	Indicator requirements
Antenna type	PIFA
Antenna size	2.4G1/5G1: 48*7*0.8mm (without cable) 2.4G2/5G2: 48*7*0.8mm (without cable) 5G3: 20*8*0.8mm (without cable)
Antenna polarization	Linear polarization
Frequency range	2.4-2.5GHz 5.15-5.85GHz
VSWR	≤ 2
Isolation	≤-20
Gain	As below table
Efficiency	2.4G:>50% 5G: >60%
Manufacturer	Fujian HuiChuangXinGao Electronic Technology Co.,Ltd.
Address	Huichuang Science Park, Dengbang Industrial Zone, Zhangping City, Fujian Province
Issue Date	2024.03.15
Engineer	Sean
Test Lab	Huichuang OTA Lab

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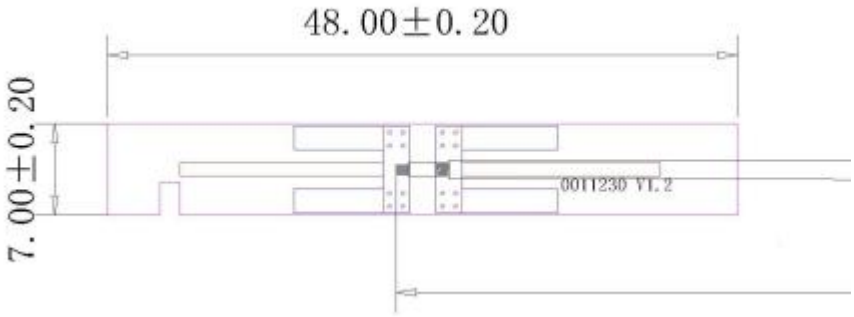
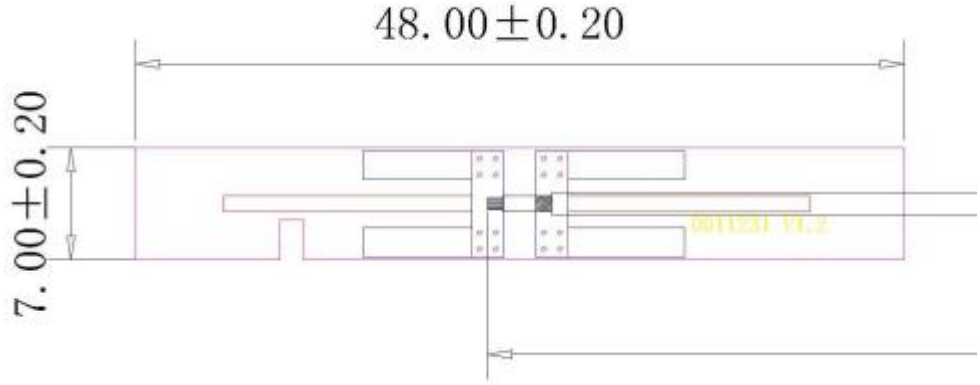
1. Antenna information

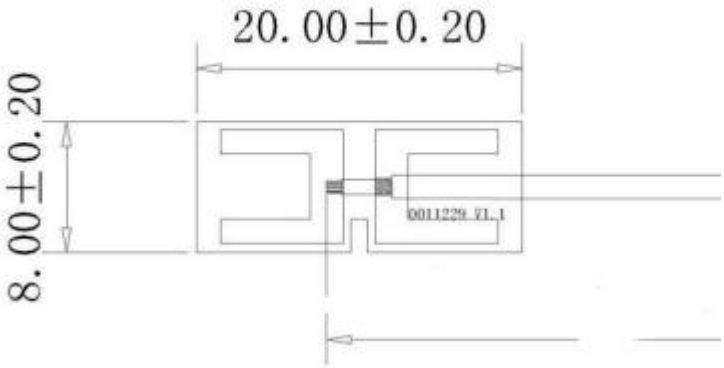
2.4G/5G Antenna 1 **Unit: mm**



2.4G/5G Antenna 2



5G Antenna 3 **Unit: mm**


20.00±0.20
8.00±0.20
0011229 V1.1

2. Test equipment and setup

1. Network Analyzers: Agilent E5071C

3. Test data

2.4G/5G-1 Antenna：2400-2500MHz，5150-5890MHz

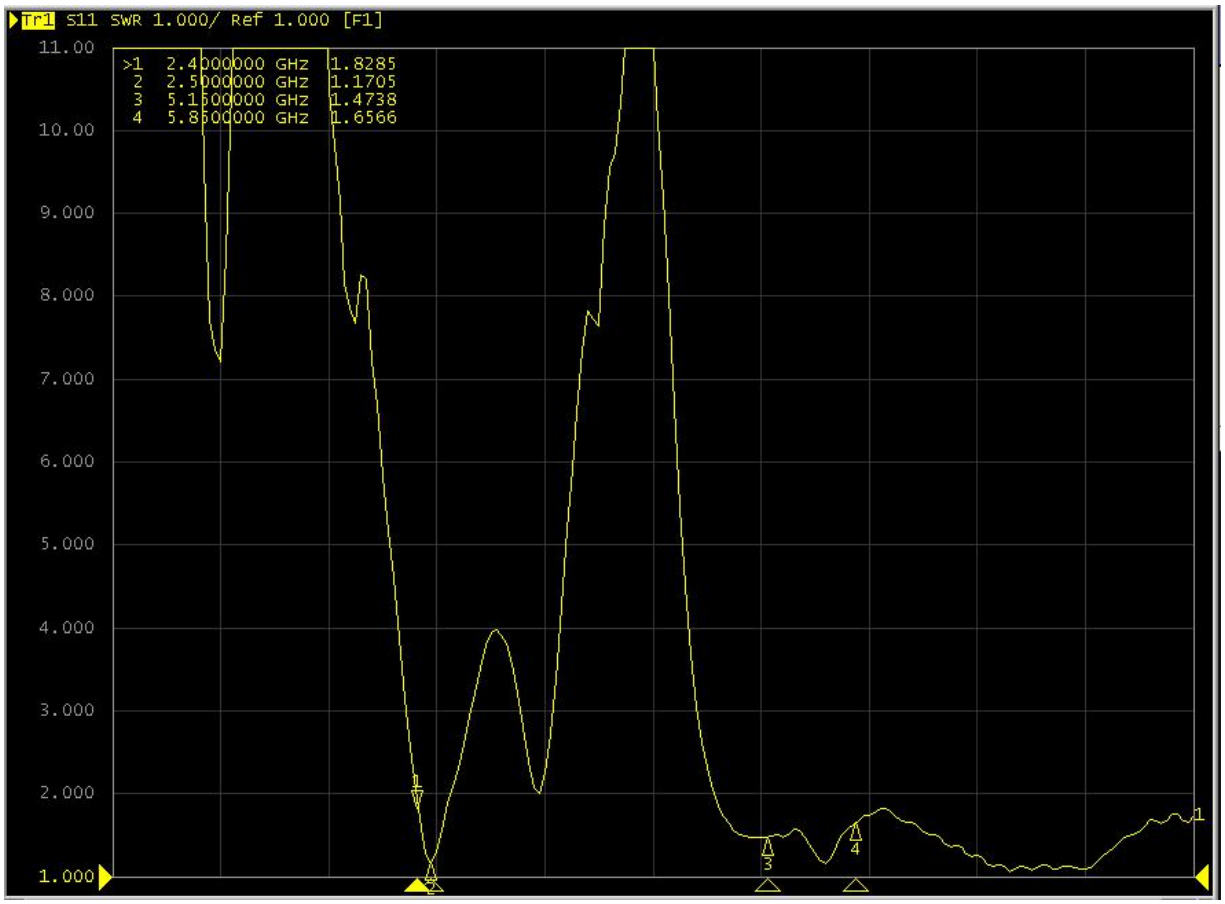
Freq (MHz)	Effi (%%)	Gain (dBi)
2400	53.08	3.10
2410	53.75	3.04
2420	52.01	2.95
2430	52.81	2.89
2440	54.80	3.05
2450	54.16	2.86
2460	52.55	2.81
2470	52.27	2.80
2480	53.09	2.96
2490	52.33	2.97
2500	51.94	3.06

Freq (MHz)	Effi (%%)	Gain (dBi)
5150	73.02	4.41
5160	71.99	4.41
5170	69.79	4.29
5180	71.79	4.44
5190	75.71	4.73
5200	75.04	4.69
5210	74.69	4.71
5220	74.57	4.70
5230	75.38	4.71
5240	75.66	4.82
5250	76.25	4.81
5260	77.54	4.89
5270	75.06	4.80
5280	71.16	4.62
5290	72.46	4.72
5300	73.10	4.81
5310	71.79	4.79
5320	73.34	4.97
5330	73.23	4.98
5340	71.28	4.85
5350	72.82	5.06
5360	75.69	5.21
5370	75.08	5.21
5380	73.34	5.11

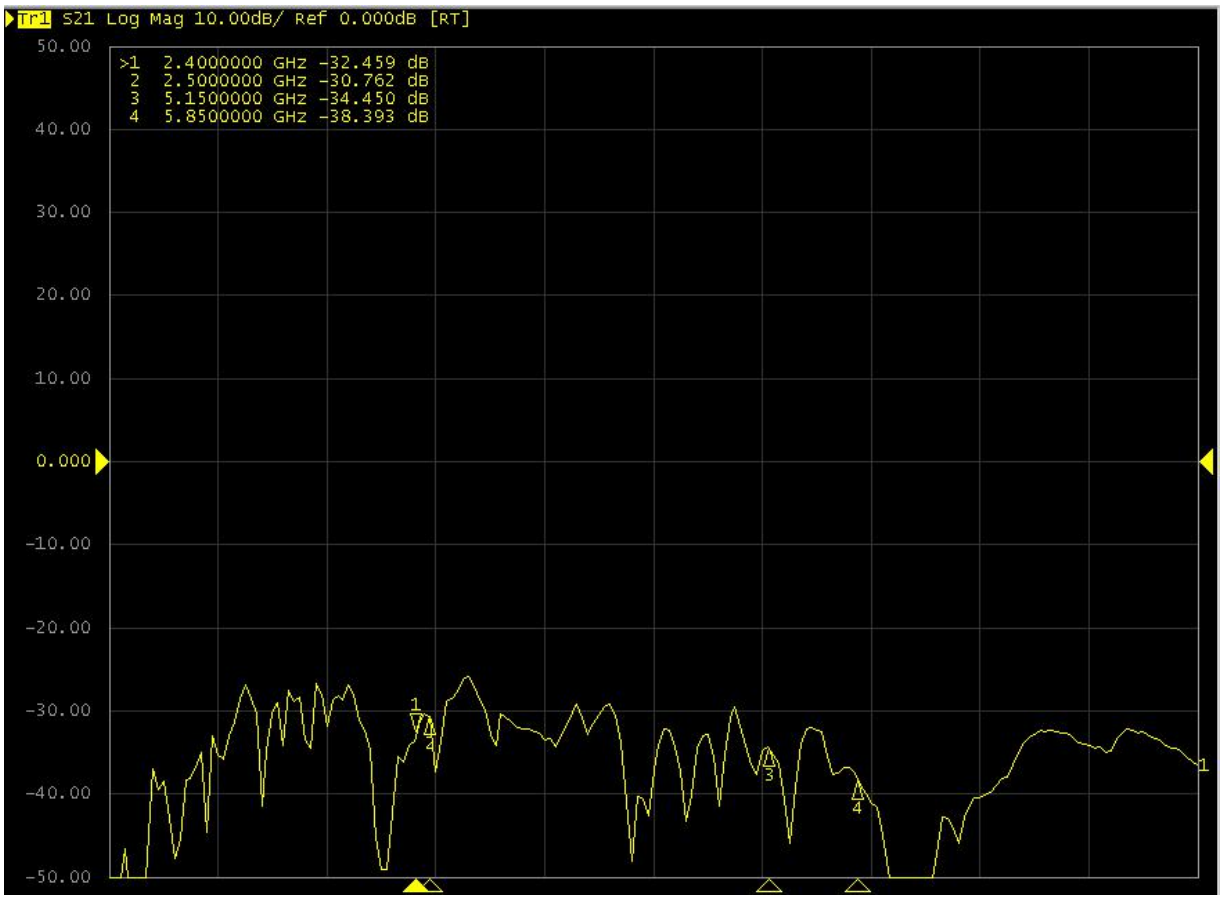
5390	74.01	5.19
5400	74.07	5.15
5410	73.66	5.13
5420	76.40	5.27
5430	74.21	5.20
5440	69.25	4.88
5450	68.11	4.88
5460	69.20	5.02
5470	69.74	5.05
5480	69.06	5.10
5490	65.09	4.83
5500	64.62	4.84
5510	66.64	4.87
5520	70.29	5.04
5530	74.24	5.16
5540	74.78	5.15
5550	71.88	4.85
5560	76.04	5.06
5570	81.73	5.32
5580	84.42	5.42
5590	83.35	5.34
5600	83.27	5.31
5610	83.76	5.34
5620	85.28	5.45
5630	89.70	5.67
5640	91.04	5.82
5650	84.90	5.54
5660	81.03	5.33
5670	86.34	5.63
5680	90.37	5.85
5690	87.67	5.80
5700	83.22	5.55
5710	80.25	5.50
5720	81.73	5.52
5730	83.36	5.69
5740	83.98	5.66
5750	82.22	5.69
5760	75.99	5.30
5770	76.37	5.34
5780	83.20	5.78
5790	83.48	5.75
5800	80.05	5.79

5810	80. 70	5. 82
5820	83. 79	6. 08
5830	86. 78	6. 20
5840	87. 52	6. 38
5850	85. 75	6. 31

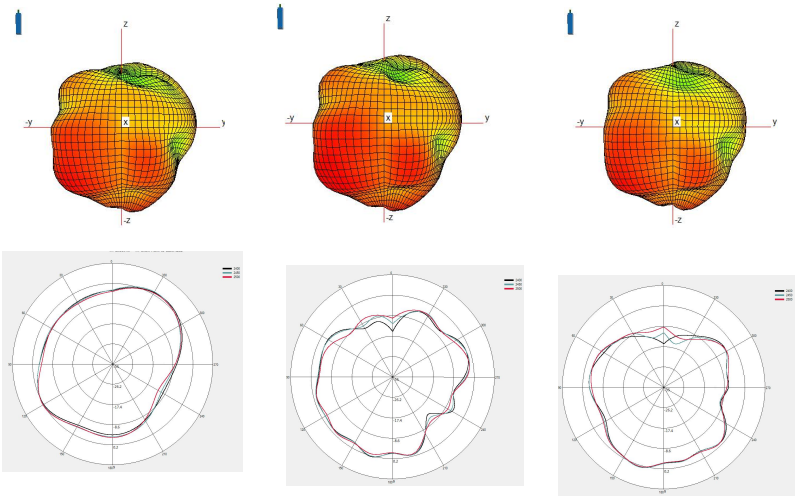
Return Loss Test



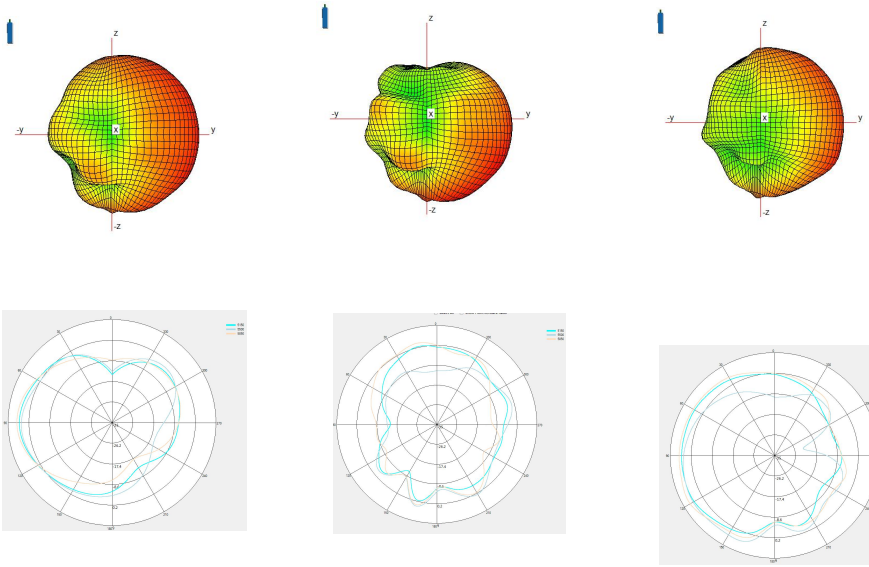
Isolation testing



2.4G



5G



2.4G/5G-2 Antenna：2400-2500MHz，5150-5850MHz

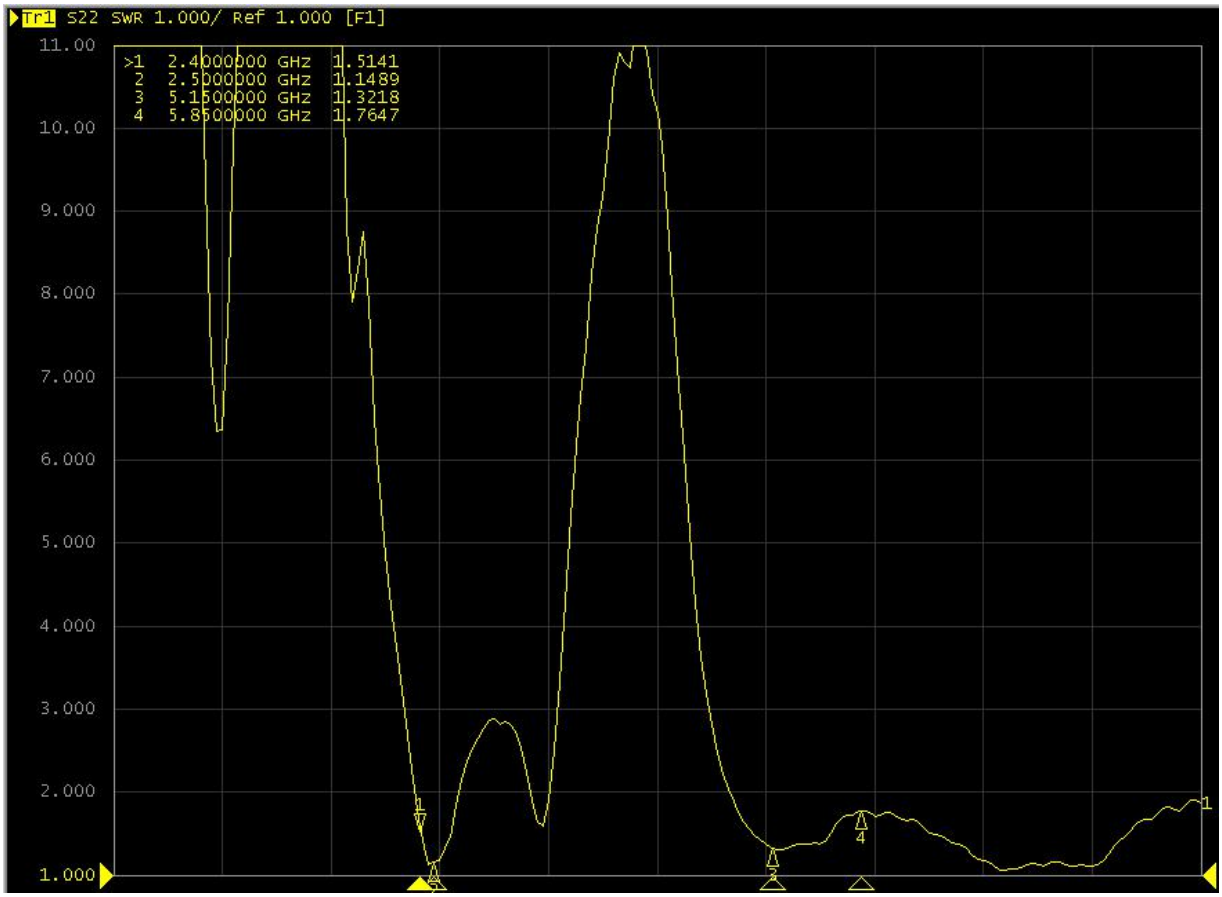
Freq	Effi	Gain
(MHz)	(%%)	(dBi)
2400	55.30	4.01
2410	55.64	4.00
2420	53.61	3.91
2430	54.04	3.89
2440	55.74	4.08
2450	54.82	3.92
2460	53.07	3.85
2470	52.70	3.76
2480	53.53	3.76
2490	53.04	3.60
2500	52.72	3.52

Freq	Effi	Gain
(MHz)	(%%)	(dBi)
5150	73.83	4.50
5160	72.52	4.43
5170	70.61	4.35
5180	72.16	4.46
5190	75.87	4.69
5200	75.23	4.65
5210	74.47	4.61
5220	74.79	4.57
5230	75.67	4.55
5240	75.81	4.53
5250	77.03	4.52
5260	78.31	4.54
5270	76.14	4.38
5280	72.65	4.17
5290	73.69	4.20
5300	74.79	4.31
5310	73.60	4.31
5320	75.24	4.50
5330	75.77	4.54
5340	73.53	4.40
5350	75.21	4.58
5360	78.43	4.74
5370	77.68	4.72
5380	76.48	4.65
5390	77.39	4.75

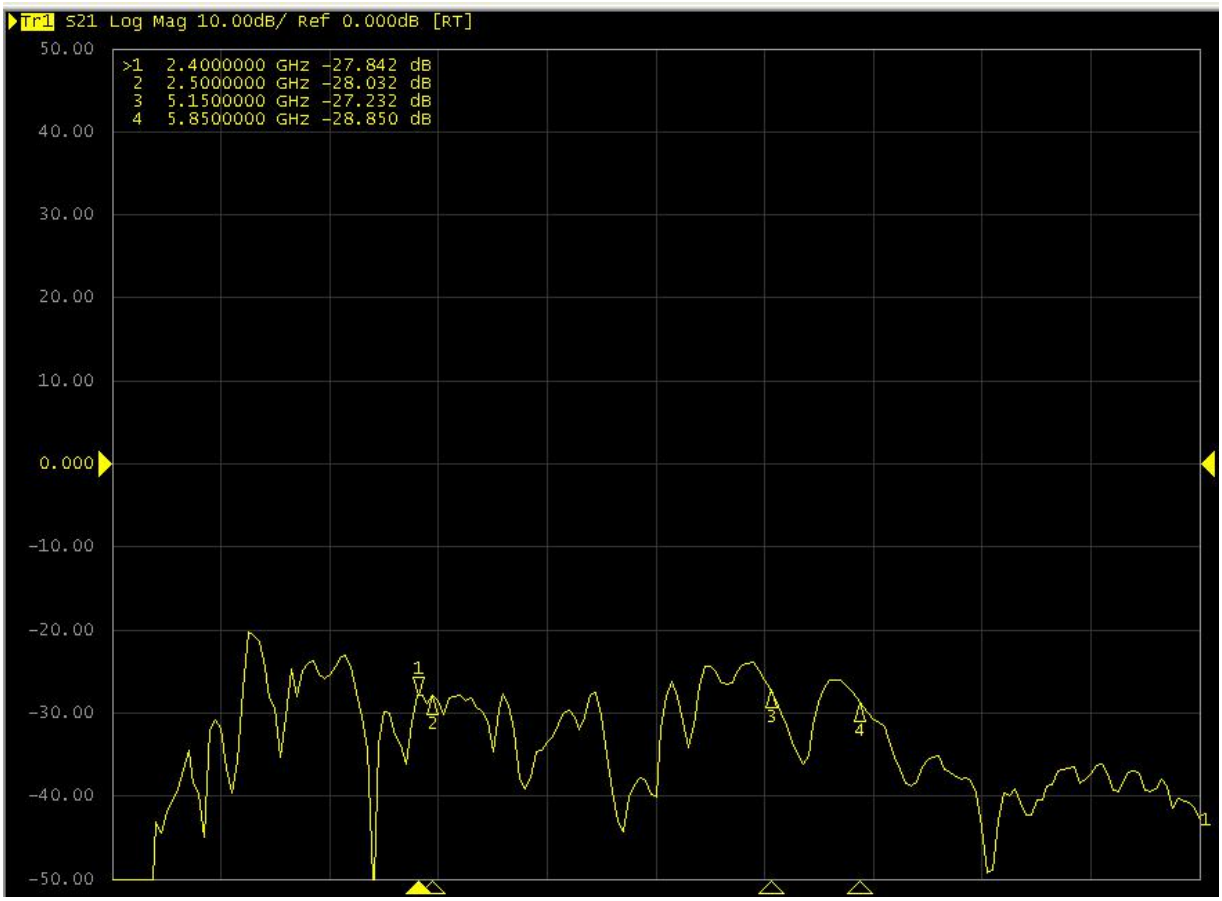
5400	77.37	4.72
5410	77.37	4.84
5420	80.24	5.00
5430	78.51	5.04
5440	73.64	4.69
5450	72.22	4.68
5460	73.62	4.77
5470	73.99	4.77
5480	73.11	4.78
5490	68.66	4.51
5500	67.36	4.48
5510	68.90	4.58
5520	72.07	4.80
5530	75.53	5.03
5540	75.70	5.13
5550	71.74	4.89
5560	75.34	5.19
5570	80.57	5.47
5580	82.65	5.65
5590	81.56	5.64
5600	80.92	5.68
5610	80.95	5.63
5620	82.73	5.78
5630	86.73	5.98
5640	88.17	6.11
5650	81.74	5.78
5660	77.44	5.50
5670	82.70	5.76
5680	86.34	5.88
5690	83.89	5.76
5700	79.61	5.47
5710	76.56	5.34
5720	77.95	5.30
5730	79.50	5.43
5740	80.04	5.39
5750	78.46	5.38
5760	72.33	4.96
5770	72.88	5.02
5780	79.74	5.44
5790	80.13	5.41
5800	77.04	5.24
5810	77.65	5.31

5820	80.55	5.51
5830	83.58	5.66
5840	84.33	5.74
5850	82.72	5.57

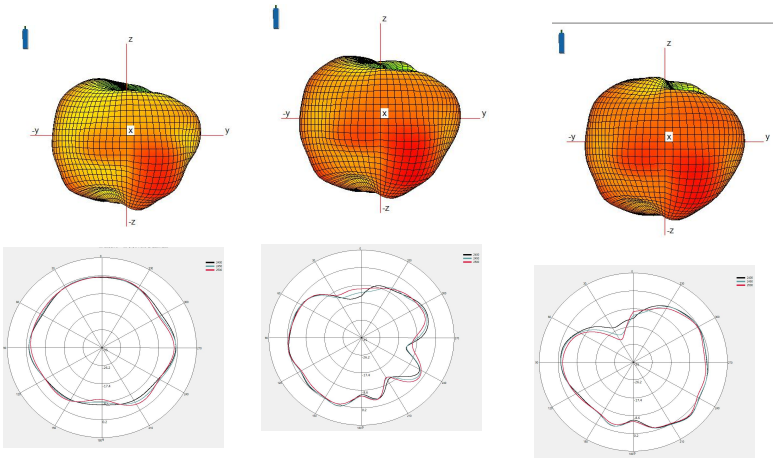
Return Loss Test



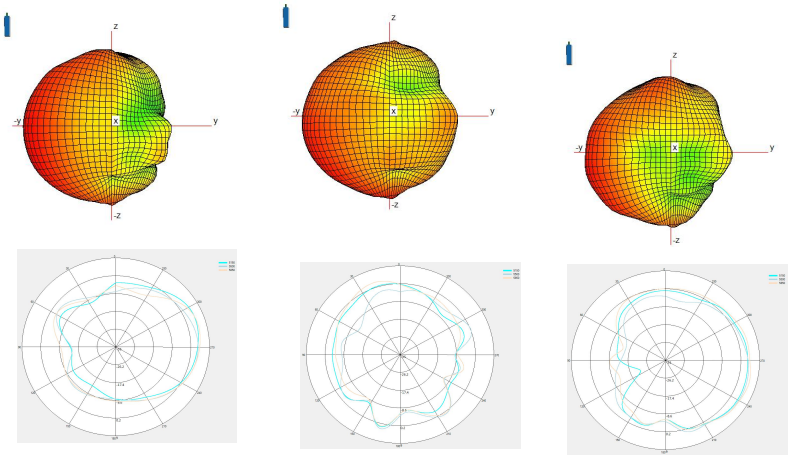
Isolation testing



2.4G



5G

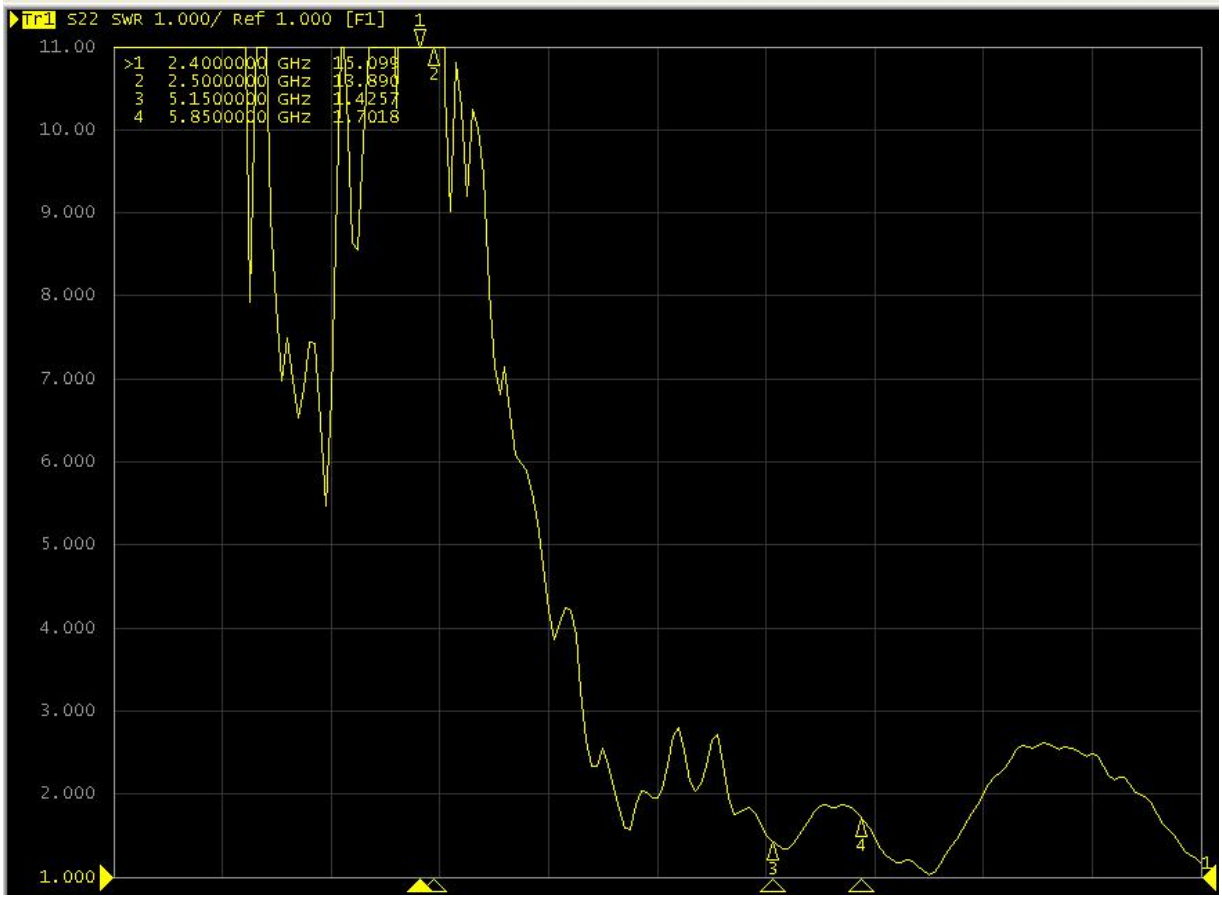


5G-3 Antenna：5150-5850MHz

Freq	Effi	Gain
(MHz)	(%%)	(dBi)
5150	71.24	5.46
5160	69.50	5.38
5170	68.61	5.32
5180	69.82	5.41
5190	72.87	5.58
5200	72.58	5.63
5210	70.69	5.56
5220	71.60	5.58
5230	72.80	5.64
5240	71.70	5.58
5250	73.85	5.68
5260	74.74	5.72
5270	72.08	5.57
5280	69.59	5.33
5290	69.51	5.34
5300	70.17	5.37
5310	68.90	5.24
5320	69.15	5.30
5330	70.71	5.35
5340	68.90	5.24
5350	70.02	5.37
5360	74.64	5.64
5370	73.33	5.60
5380	73.41	5.61
5390	76.33	5.81
5400	75.82	5.80
5410	77.24	5.90
5420	80.83	6.05
5430	79.01	5.95
5440	76.29	5.78
5450	74.88	5.71
5460	76.43	5.72
5470	78.85	5.75
5480	77.45	5.71
5490	74.11	5.51
5500	73.48	5.44
5510	75.08	5.50
5520	79.55	5.72
5530	83.69	6.04

5540	84.01	6.06
5550	81.16	5.94
5560	84.25	6.02
5570	90.52	6.35
5580	92.77	6.50
5590	90.33	6.33
5600	89.80	6.24
5610	89.07	6.06
5620	89.61	6.09
5630	94.57	6.26
5640	95.71	6.19
5650	89.44	5.81
5660	85.55	5.48
5670	90.43	5.71
5680	95.01	5.83
5690	91.76	5.56
5700	87.04	5.35
5710	84.44	5.20
5720	85.54	5.24
5730	87.14	5.22
5740	88.44	5.23
5750	85.97	5.13
5760	79.48	4.68
5770	79.74	4.67
5780	86.13	4.92
5790	86.09	4.83
5800	82.17	4.59
5810	82.92	4.50
5820	85.94	4.57
5830	88.29	4.61
5840	88.43	4.48
5850	85.98	4.39

Return Loss Test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3 5.1500000 GHz 1.4257
4 5.8500000 GHz 1.7018
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10.00
9.000
8.000
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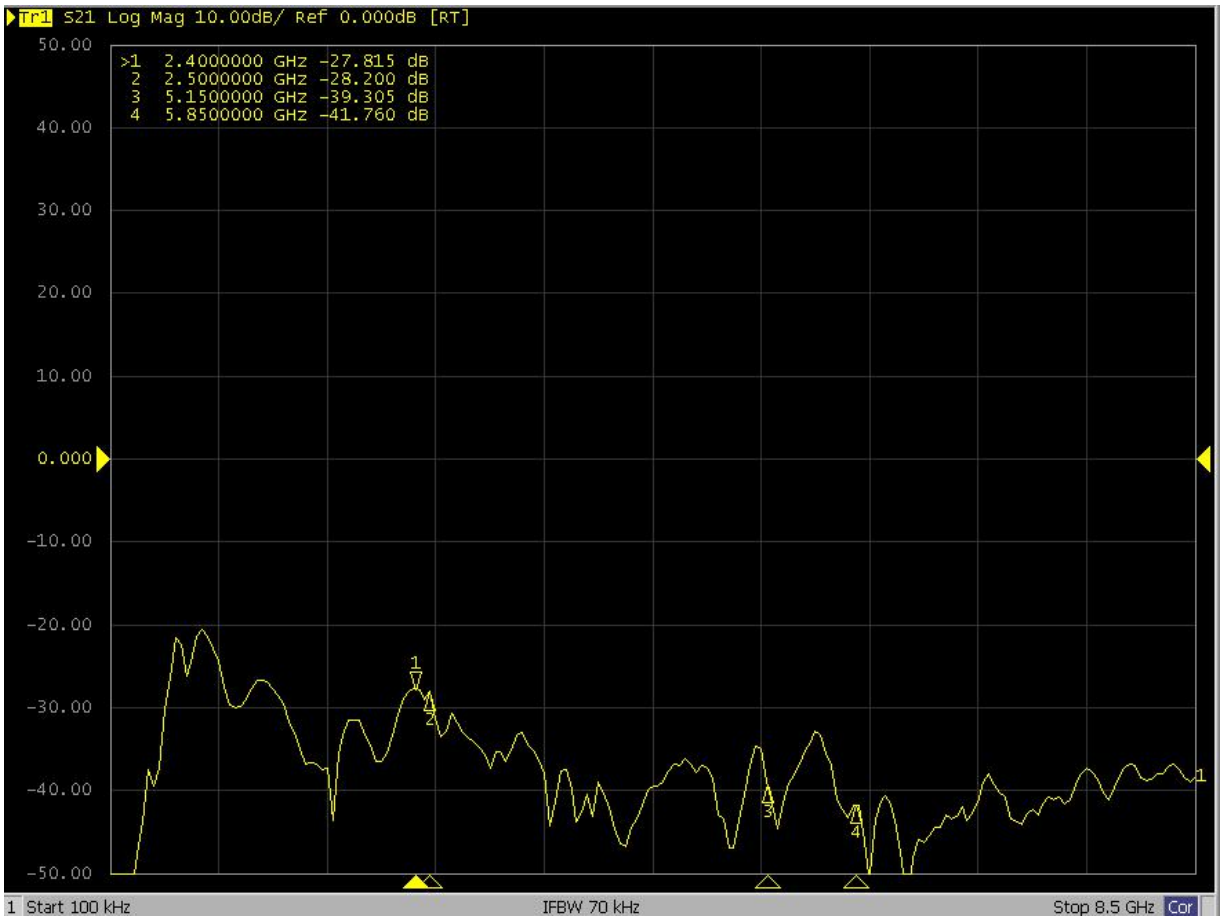
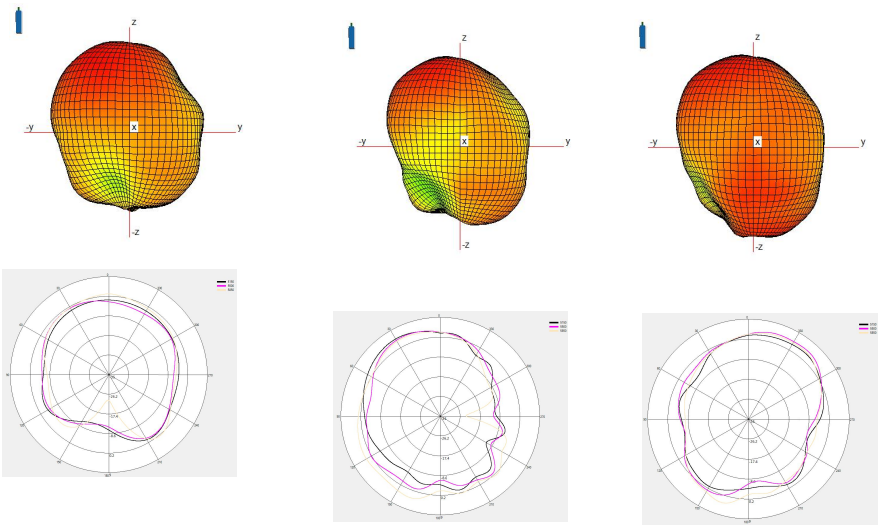
2.000
1.000

Isolation testing