

Shenzhen PIPA antenna design Co., LTD.

OTATESTREPORT(Passive)

Project name: UF1103
Preparedby : XIE Mengyang
IssueDate: 20240620

1. Test Laboratory

1.1 Notes of the Test report

This report shall not be reproduced in full or partial. The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of applicable standards stated above.

1.2 Test facility

Satimo SG16 Chamber : testing frequency ranges from 600MHz to6GHz.

1.3 Testing Location

Company: Shenzhen PIPA antenna design Co.,LTD.

Address: Unit F/4F, buildingA, Junxiangda, Plada, Zhongshanyuan
Road, Nanshan District, Shenzhen

Contact: Xie Mengyang

Telephone: 15571213211

E-mail: PIFA555@163.com

1.4 Laboratory Environment

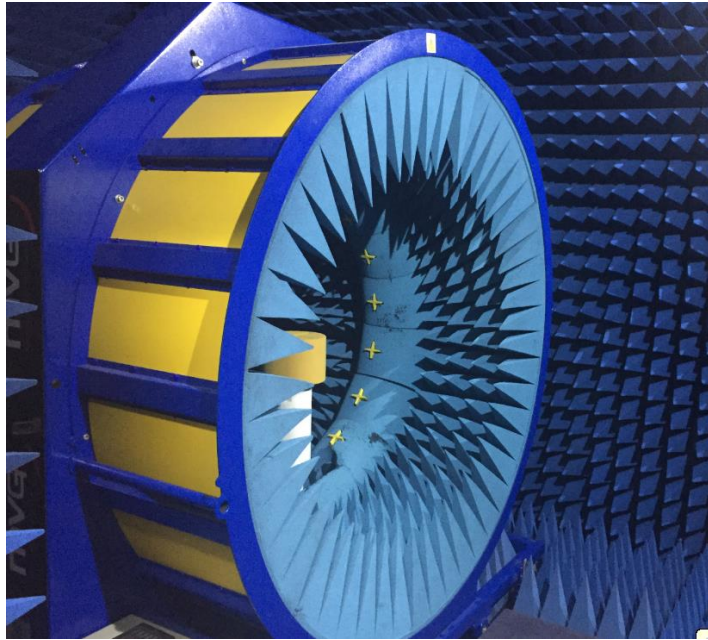
Temperature	Min.= 19°C, Max.=25°C	
Relative humidity	Min.=40%, Max.=72%	
Shield effect	0.6-7GHz	>100dB
Ground resistance	<0.5Ω	

2. General Description of Equipment under Test

2.1 General information

EUT Description	
Product Name	<i>Satimo SG16</i> Chamber
Antenna Type	FPC Antenna
Antenna Manufacturer	Shenzhen PIPA antenna design Co.,LTD.
Test Frequency	617MHz-5000MHz

3. Test Conditions



Test items	Test equipment
S11、 S12 、 VSWR 、 LOSS	E5071B、 E5062A
Efficiency、 Gain 3D Radiation Pattern	Satimo SG16Chamber、 GP7*4*3Chamber、 E5071B
TRP、 TIS	Satimo SG16Chamber、 GP7*4*3Chamber、 8960 、 CMW500、 MT8820C、 E4438C、

4. Test Results

4.1 Antenna Effi.& Max. Peak Gain

ANTO

Frequency /Mhz	Efficiency / dB	Efficiency / %	MaxGain/ dBi	Frequenc y/Mhz	Efficienc y / dB	Efficienc y / %	MaxGain/ dBi
700	-9.4	11.47	-5.82	2010	-3.78	41.88	0.18
720	-9.02	12.53	-6.47	2030	-4.17	38.28	-0.13
740	-8.29	14.84	-6.18	2050	-4.39	36.39	-0.1
760	-7.48	17.88	-4.32	2070	-4.62	34.51	0.02
780	-6.69	21.41	-3.44	2090	-4.88	32.51	0.13
800	-6.31	23.37	-4.19	2110	-5.45	28.51	-0.3
820	-6.09	24.63	-3.75	2130	-5.42	28.71	-0.28
840	-5.84	26.04	-3.46	2150	-5.83	26.12	-0.99
860	-6.03	24.95	-3.98	2170	-5.82	26.18	-0.83
880	-6.12	24.45	-4.43	2300	-5.74	26.67	0.39
900	-6.41	22.86	-4.24	2320	-5.65	27.23	0.51
920	-6.55	22.14	-3.85	2340	-5.66	27.16	0.49
940	-6.74	21.18	-3.84	2360	-5.64	27.29	0.39
960	-6.84	20.7	-4.04	2380	-5.64	27.29	0.61
1710	-5.03	31.41	-0.25	2400	-5.51	28.12	0.97
1730	-4.66	34.2	-0.2	2420	-5.39	28.91	1.05
1750	-3.99	39.9	0.44	2440	-5.46	28.44	1.32
1770	-3.25	47.32	0.96	2460	-5.5	28.18	1.29
1790	-2.89	51.4	1.03	2480	-5.59	27.61	1.07
1810	-2.65	54.33	0.89	2500	-5.36	29.11	1.09
1830	-2.47	56.62	1.07	2520	-5.48	28.31	1.02
1850	-2.26	59.43	1.66	2540	-5.28	29.65	1.33
1870	-2.13	61.24	1.96	2560	-5.19	30.27	1.5
1890	-2.07	62.09	2.07	2580	-5.19	30.27	1.46
1910	-2.33	58.48	1.55	2600	-5.33	29.31	1.37
1930	-2.5	56.23	1.21	2620	-5.25	29.85	1.48
1950	-2.81	52.36	0.58	2640	-5.47	28.38	1.23
1970	-3.13	48.64	0.42	2660	-5.28	29.65	1.2
1990	-3.64	43.25	0.15	2680	-5.4	28.84	1.23

ANT1

Frequency /Mhz	Efficiency / dB	Efficiency / %	MaxGain/ dBi	Frequenc y/Mhz	Efficienc y / dB	Efficienc y / %	MaxGain/ dBi
700				2010	-7.73	16.87	-4.94
720				2030	-7.16	19.23	-4.85
740	-20.70	0.85	-15.08	2050	-6.51	22.34	-4.97
760	-20.53	0.89	-14.46	2070	-8.05763	15.64	-5.34
780	-18.79	1.32	-13.51	2090	-7.4958	17.8	-4.46
800	-16.26	2.37	-14	2110	-7.20333	19.04	-3.88
820	-14.62	3.45	-13.49	2130	-7.00711	19.92	-4.4
840	-13.01	5	-12.06	2150	-7.15795	19.24	-5.02
860	-11.11	7.74	-9.91	2170	-7.27926	18.71	-5.19
880	-9.19	12.05	-9.92	2300	-8.07154	15.59	-4.72
900	-9.04	12.47	-8.96	2320	-7.52763	17.67	-3.98
920	-11.01	7.93	-7.25	2340	-7.54241	17.61	-2.98
940	-14.12	3.87	-9.69	2360	-6.93146	20.27	-0.88
960	-16.73	2.12	-10.84	2380	-6.82773	20.76	3.87
1710	-8.63	13.71	-6.38	2400	-6.10657	24.51	-1.06
1730	-8.48	14.19	-5.37	2420	-5.93801	25.48	-3.62
1750	-8.2	15.14	-4.78	2440	-5.77082	26.48	-3.38
1770	-8.04	15.7	-4.22	2460	-5.84026	26.06	-4.05
1790	-8	15.85	-4.2	2480	-5.56581	27.76	-4
1810	-8	15.85	-4.45	2500	-5.6623	27.15	-2.75
1830	-8.15	15.31	-4.44	2520	-5.73001	26.73	-1.01
1850	-8.16	15.28	-4.47	2540	-5.86868	25.89	-1.86
1870	-8.05	15.67	-3.64	2560	-5.74466	26.64	-1.94
1890	-8.11	15.45	-3.14	2580	-5.85528	25.97	-2.21
1910	-8.33	14.69	-3.13	2600	-5.78561	26.39	-2.5
1930	-8.41	14.42	-3.51	2620	-5.78561	26.39	-3.03
1950	-8.37	14.55	-3.77	2640	-5.86868	25.89	-2.89
1970	-8.29	14.83	-4	2660	-5.67512	27.07	-2.23
1990	-7.99	15.89	-4.72	2680	-5.68958	26.98	-3.3

ANT2

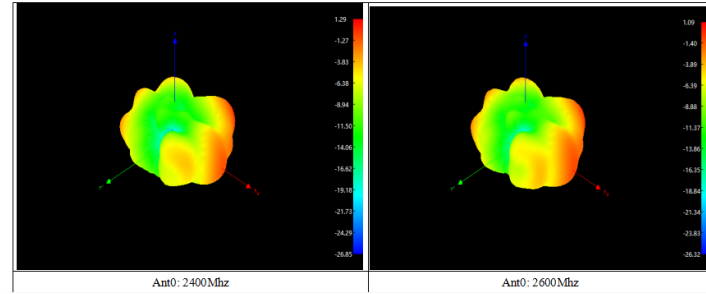
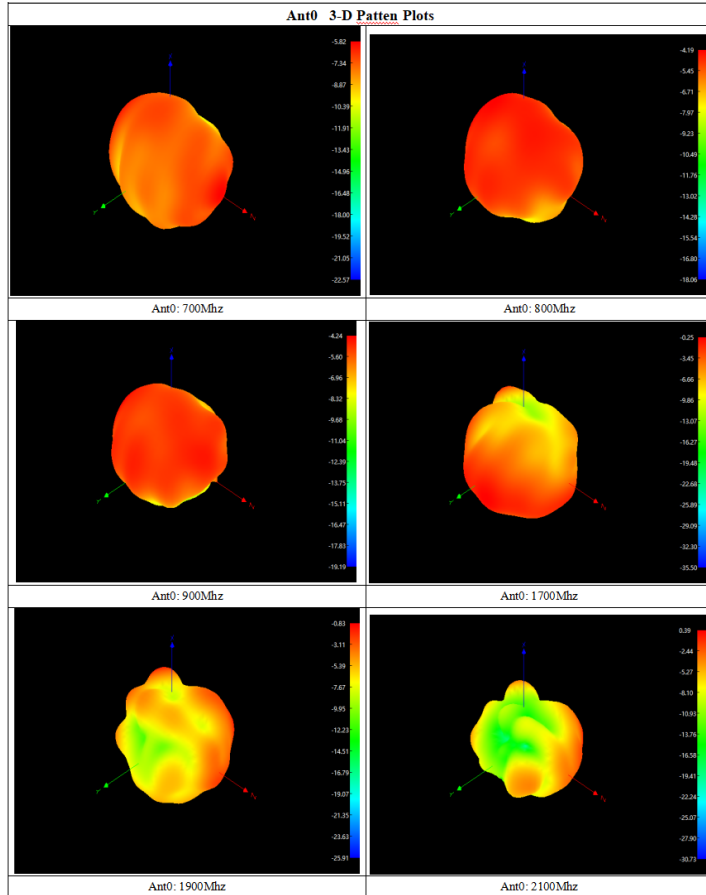
Frequenc y/Mhz	Efficienc y / dB	Efficienc y / %	MaxGain/ dBi	Frequenc y/Mhz	Efficienc y / dB	Efficienc y / %	MaxGain/ dBi
2400	-3.6	43.65	2.28	5410	-8.13	15.38	1.15
2410	-3.64	43.25	2.24	5430	-8.2	15.14	1.05
2420	-3.4	45.71	2.09	5450	-8.74	13.37	0.48
2430	-3.43	45.39	2.21	5470	-8.74	13.37	0.35
2440	-3.44	45.29	2.19	5490	-8.65	13.65	0.25
2450	-3.39	45.81	2.13	5510	-8.95	12.74	-0.41
2460	-3.48	44.87	2.09	5530	-8.8	13.18	-0.45
2470	-3.37	46.03	2.14	5550	-8.6	13.8	-0.19
2480	-3.37	46.03	2.2	5570	-8.88	12.94	-0.47
2490	-3.15	48.42	2.41	5590	-8.65	13.65	-0.34
2500	-3.2	47.86	2.46	5610	-8.63	13.71	-0.24
5150	-8	15.85	0.98	5630	-8.6	13.8	0.25
5170	-7.99	15.89	0.96	5650	-8.77	13.27	0.49
5190	-7.88	16.29	0.87	5670	-8.74	13.37	0.83
5210	-8.09	15.52	0.56	5690	-9.22	11.97	0.51
5230	-7.93	16.11	0.57	5710	-8.93	12.79	0.73
5250	-7.79	16.63	0.52	5730	-8.96	12.71	0.49
5270	-8	15.85	0.1	5750	-9.16	12.13	0.14
5290	-7.84	16.44	-0.03	5770	-9.06	12.42	0.43
5310	-7.73	16.87	0.44	5790	-8.82	13.12	0.69
5330	-7.97	15.96	0.69	5810	-8.99	12.62	0.52
5350	-7.72	16.9	1.26	5830	-8.44	14.32	0.93
5370	-7.81	16.56	1.37	5850	-8.43	14.35	0.88
5390	-7.88	16.29	1.36				

ANT3

Frequenc y/Mhz	Efficienc y / dB	Efficienc y / %	MaxGain/ dBi	Frequenc y/Mhz	Efficienc y / dB	Efficienc y / %	MaxGain/ dBi
1500	-6.83	20.75	-3.4	5150	-5.89	25.76	0.04
1510	-6.5	22.39	-3.18	5170	-6.07	24.72	-0.25
1520	-5.65	27.23	-2.16	5190	-6.11	24.49	-0.55
1530	-5.05	31.26	-1.31	5210	-6.41	22.86	-0.98
1540	-4.46	35.81	-0.51	5230	-6.59	21.93	-1.01
1550	-4.2	38.02	0.08	5250	-6.32	23.33	-0.51
1560	-4	39.81	0.3	5270	-6.63	21.73	-0.65
1570	-3.53	44.36	0.93	5290	-6.54	22.18	-0.39
1580	-3.71	42.56	1.22	5310	-6.52	22.28	-0.26
1590	-4	39.77	1.53	5330	-6.88	20.51	-0.55
1600	-4.62	34.52	1.74	5350	-6.55	22.13	-0.07
2400	-3.31	46.67	1.78	5370	-6.39	22.96	0.1
2410	-3.03	49.77	1.87	5390	-6.49	22.44	-0.05
2420	-3.11	48.87	1.96	5410	-6.69	21.43	-0.12
2430	-2.96	50.58	2.07	5430	-6.33	23.28	0.28
2440	-2.87	51.64	2.21	5450	-6.67	21.53	0
2450	-2.85	51.88	2.2	5470	-6.39	22.96	0.37
2460	-2.56	55.46	2.33	5490	-6.11	24.49	0.7
2470	-2.58	55.21	2.42	5510	-6.25	23.71	0.6
2480	-2.99	50.23	2.55	5530	-5.87	25.88	0.97
2490	-3.04	49.66	2.89	5550	-5.38	28.97	1.42
2500	-3.2	47.86	3.06	5570	-5.57	27.73	1.11
				5590	-5.08	31.05	1.25
				5610	-4.85	32.73	1.04
				5630	-4.56	34.99	0.82
				5650	-4.52	35.32	0.95
				5670	-4.47	35.73	1.17
				5690	-5.04	31.33	0.82
				5710	-4.91	32.28	1.28
				5730	-5.11	30.83	1.49
				5750	-5.35	29.17	1.43
				5770	-5.42	28.71	1.54
				5790	-5.38	28.97	1.55
				5810	-5.73	26.73	1.18
				5830	-5.39	28.91	1.74
				5850	-5.52	28.05	1.99

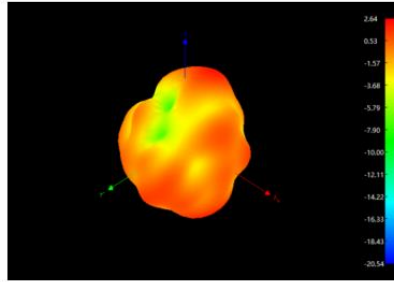
4.2 Antenna radiation pattern

ANT0

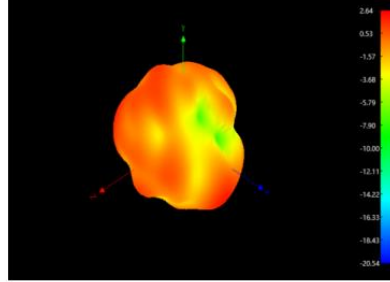


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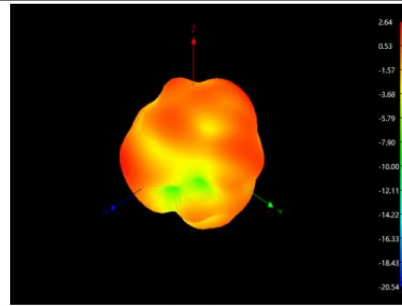
Ant1 3-D Patten Plots



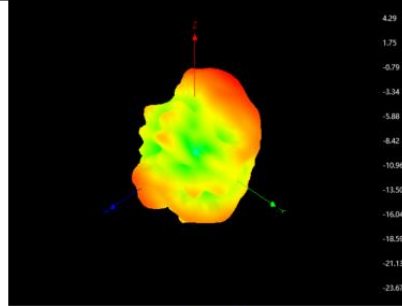
Ant1: 760Mhz



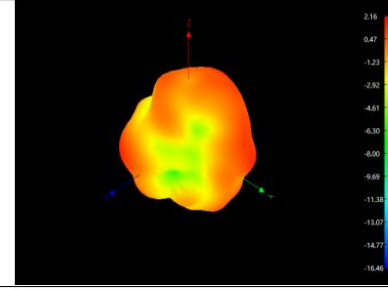
Ant1: 800Mhz



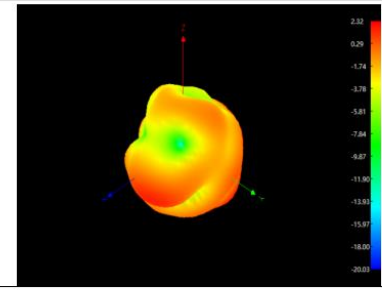
Ant1: 900Mhz



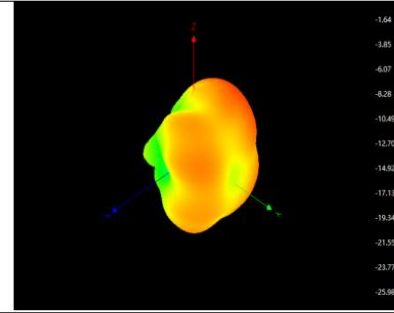
Ant1: 1700Mhz



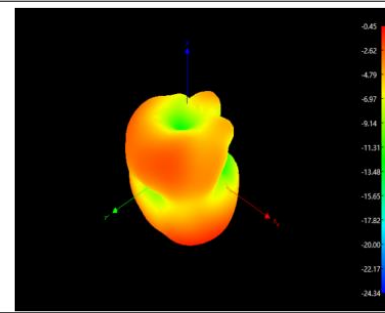
Ant1: 1900Mhz



Ant1: 2100Mhz

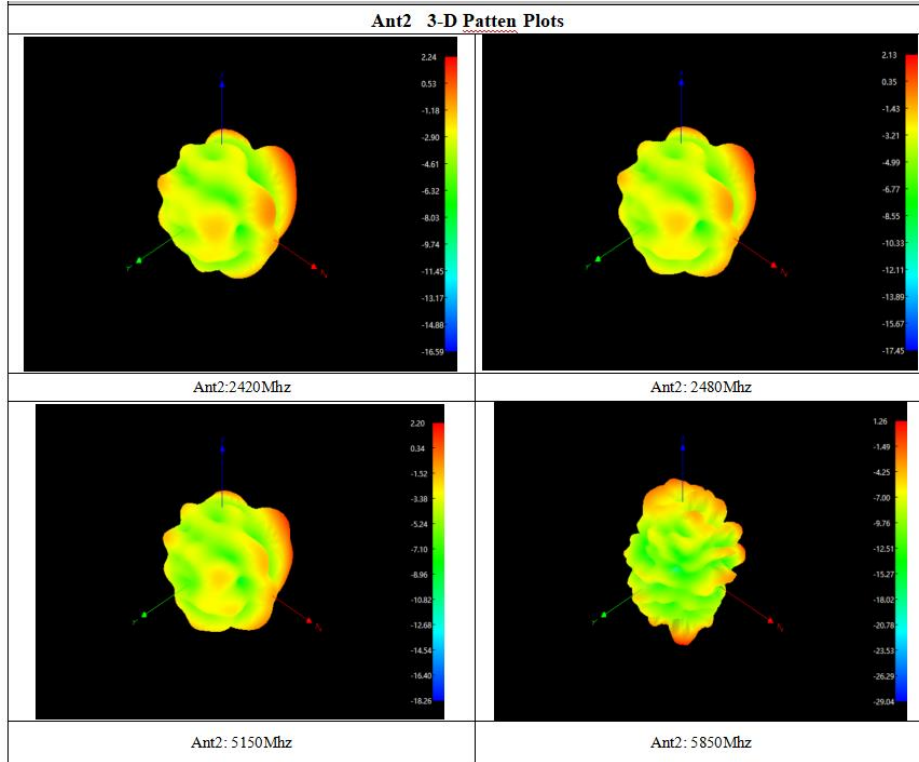


Ant1: 2400Mhz



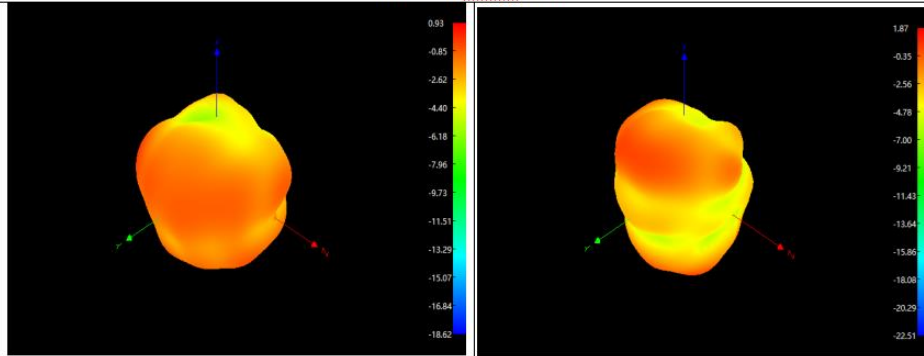
Ant1: 2600Mhz

ANT2



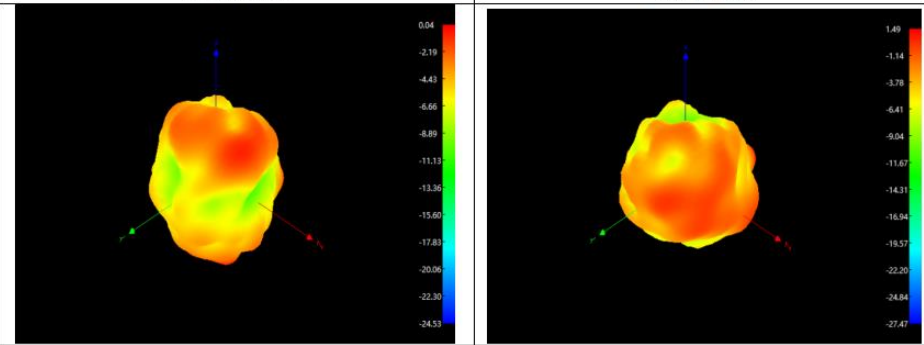
ANT3

Ant3 3-D Patten Plots



Ant3: 1575Mhz

Ant3: 2440Mhz



Ant3: 5150Mhz

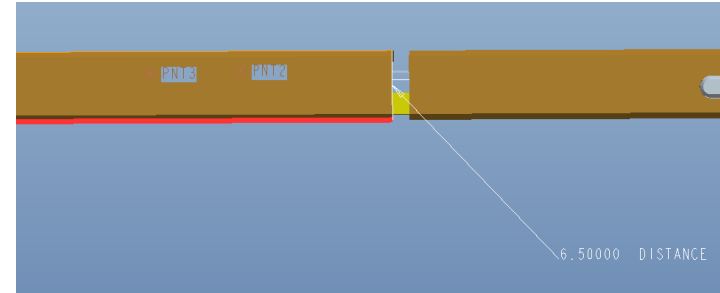
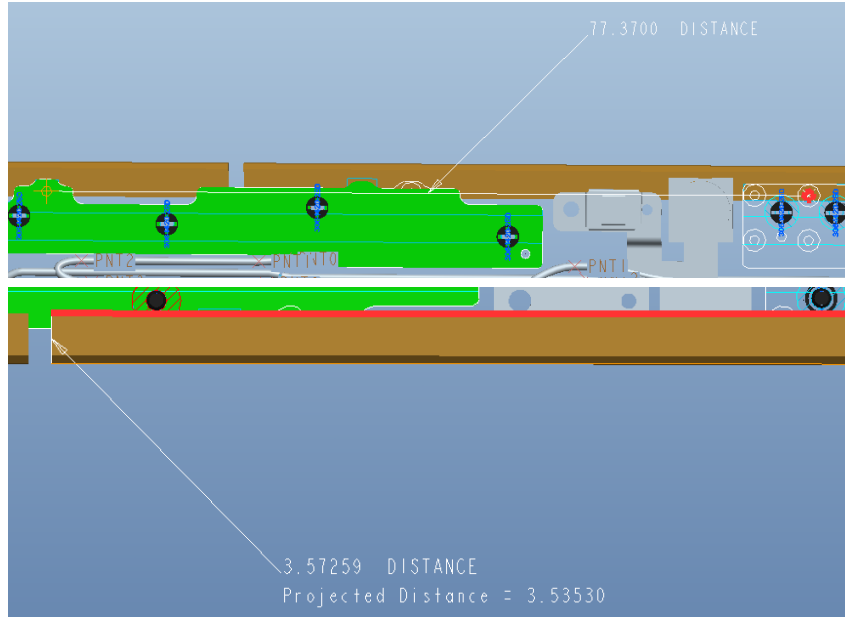
Ant3: 5850Mhz

5. Equipment List

Type of Equipment	Manufacture	Model Number
Network Analyzer	Agilent Technologies	E5071B
Switch control System	GTS	RayZone1800
Software	GTS	MaxSign 100 Patten Measurement software

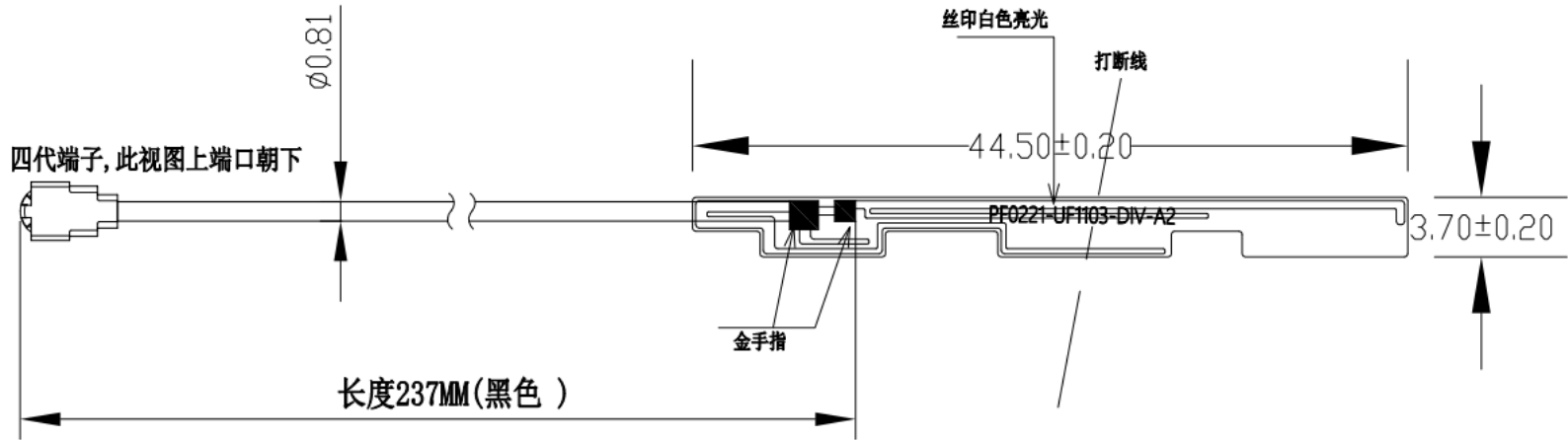
6. Size&Picture

ANT0



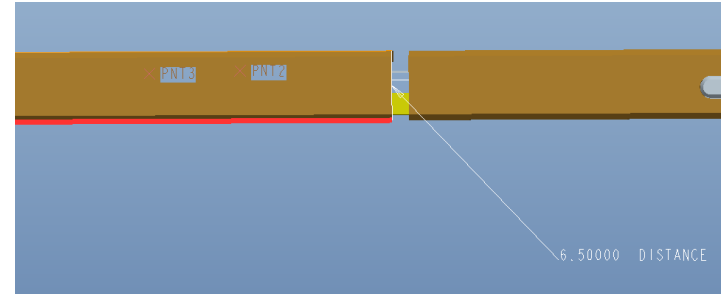
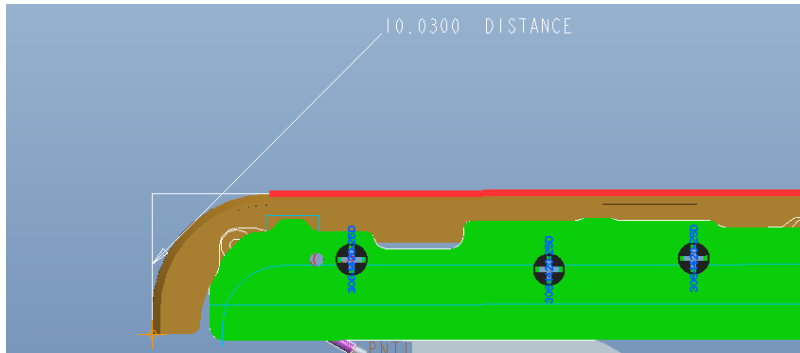
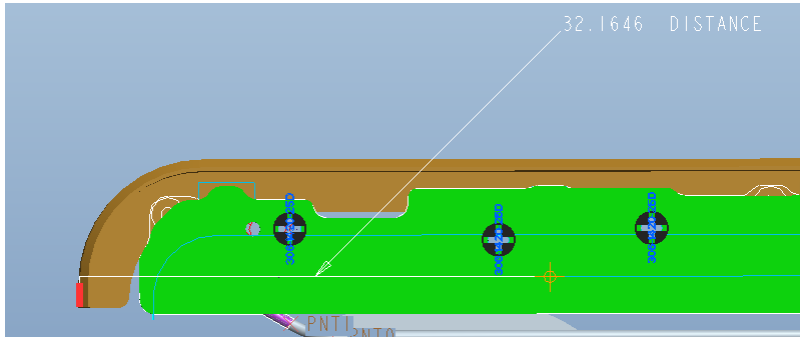
MAIN: GSM/WCDMA/LTE: 77.37*3.53*6.50mm PIFA

ANT1



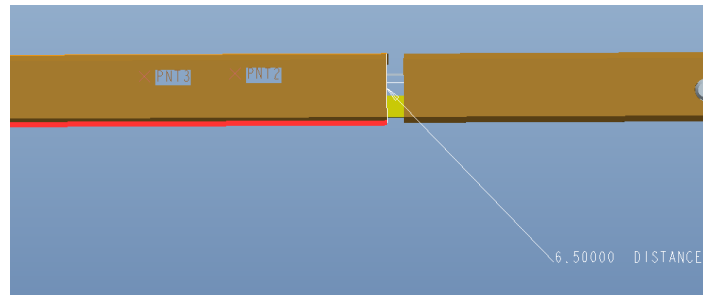
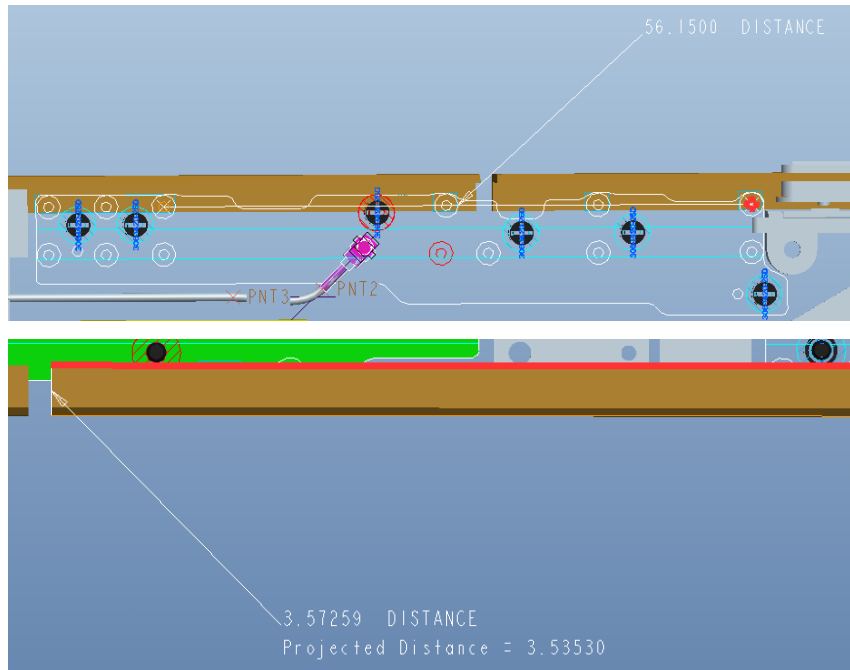
DIV: GSM/WCDMA/LTE: 44.50*3.70*0.12mm PIFA

ANT2



WiFi6: 32.16*10.03*6.50mm PIFA

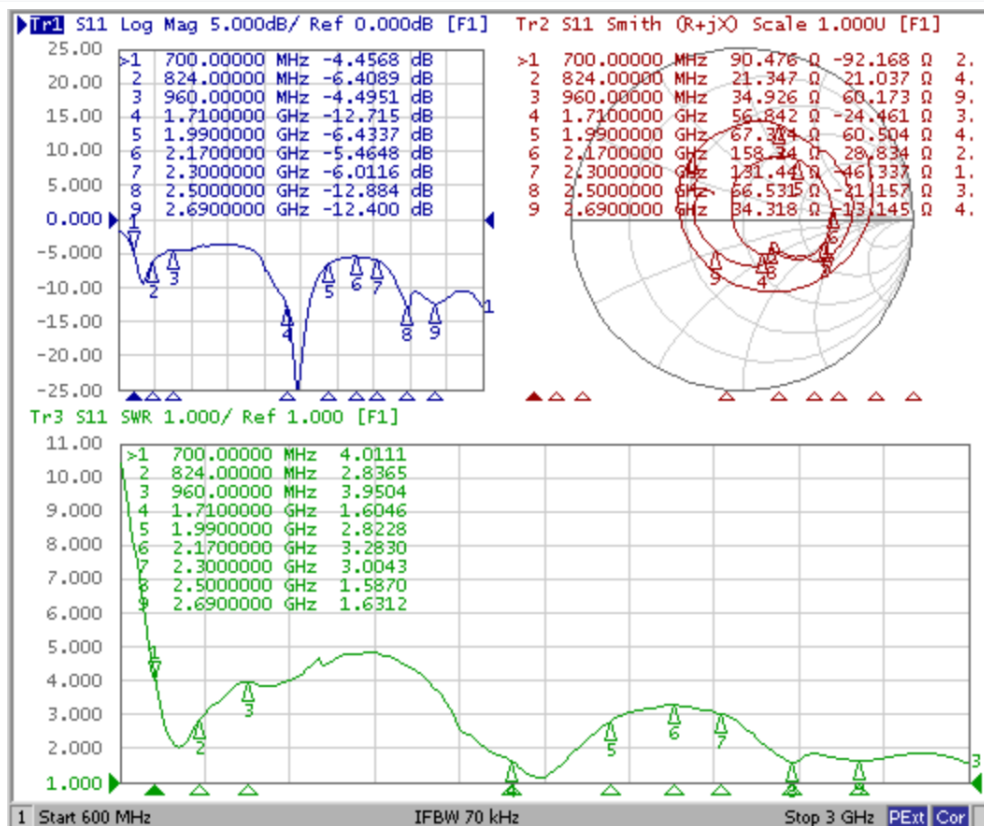
ANT3



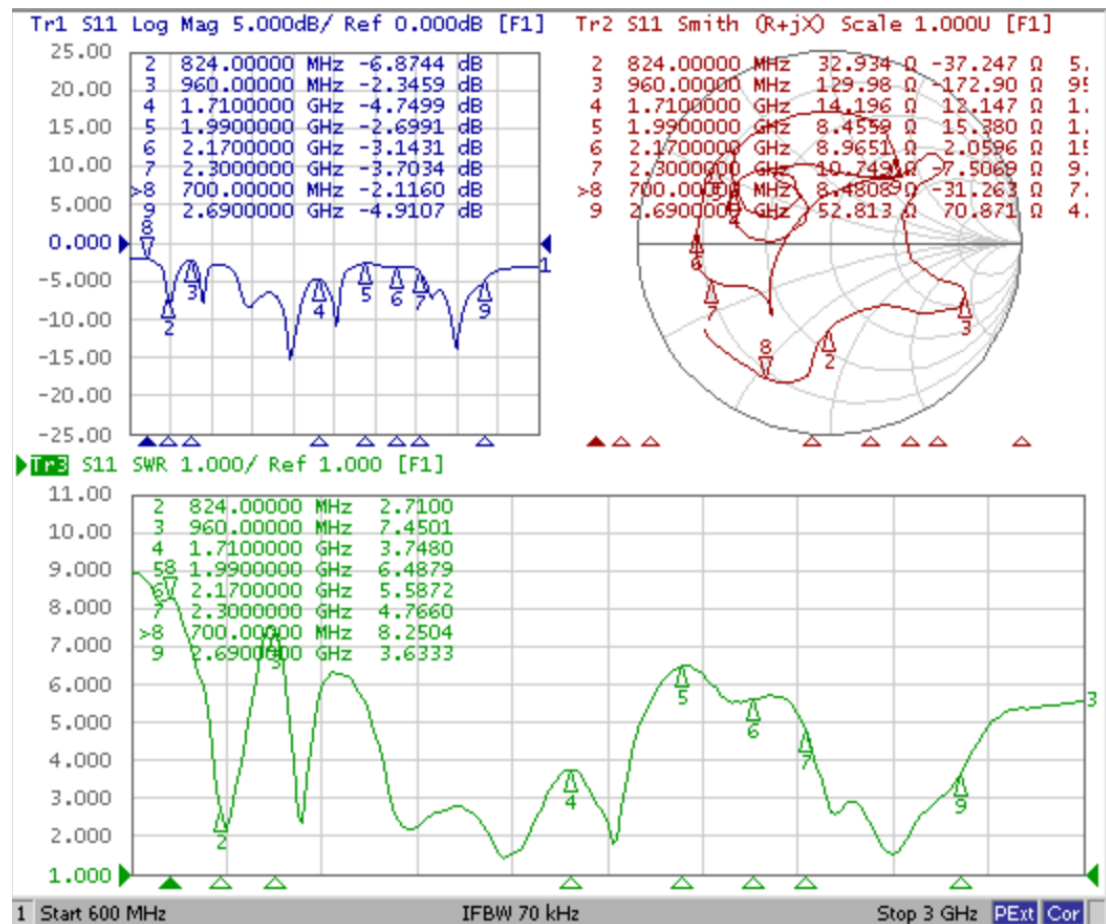
WGB: 56.15*3.53*6.50mm PIFA

7. S11

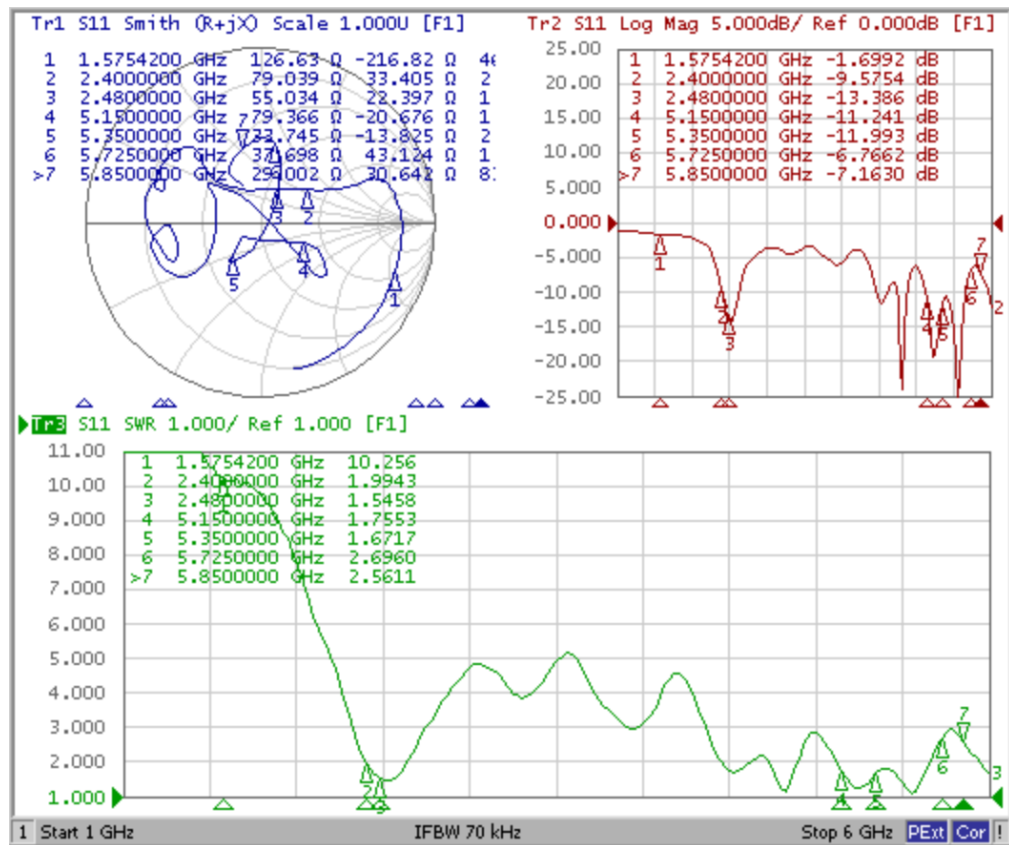
ANTO



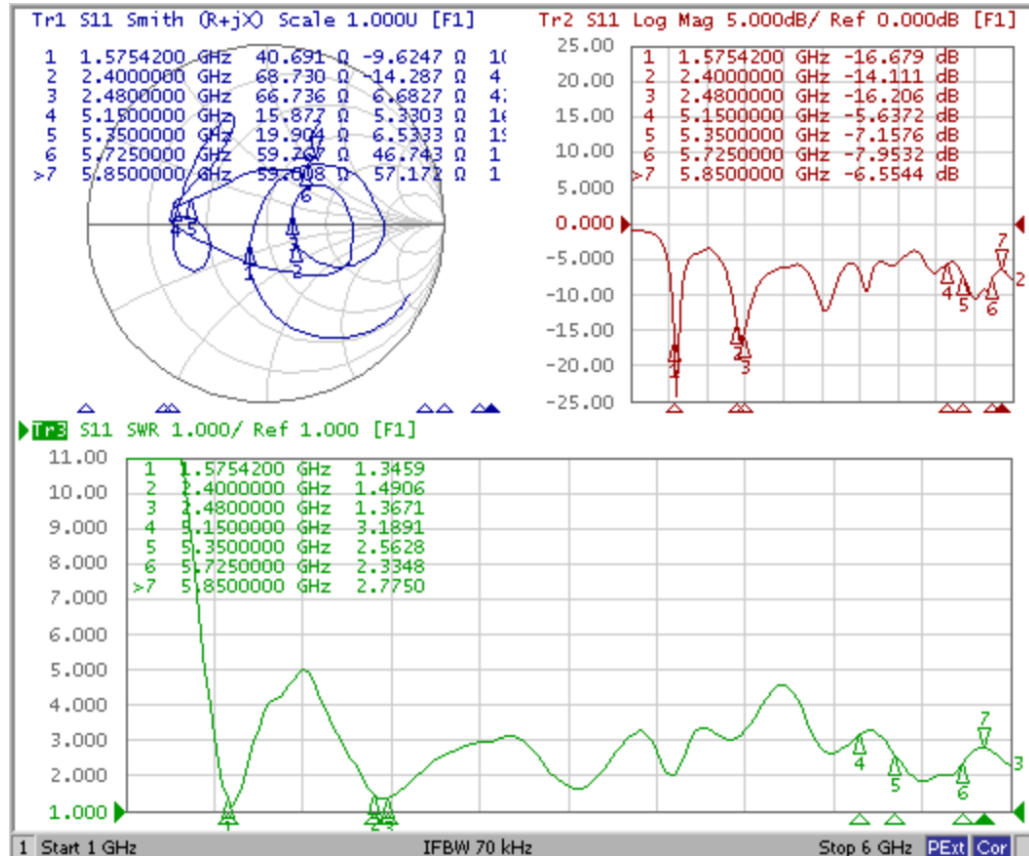
ANT1



ANT2



ANT3



THE END