

T5100A antenna test report

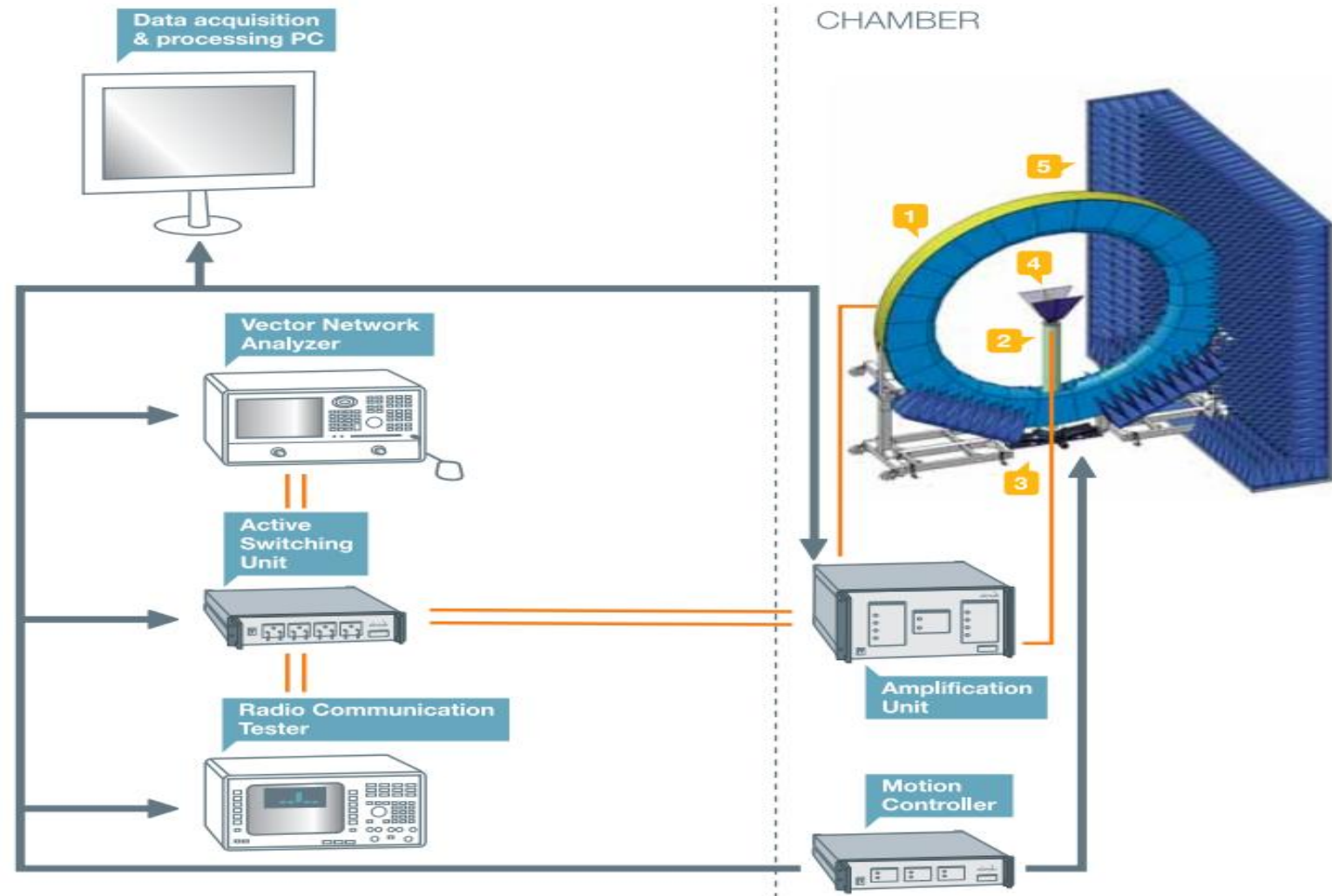
project : T5100A
engineer : Yu
date : 2022.10.31

Directory

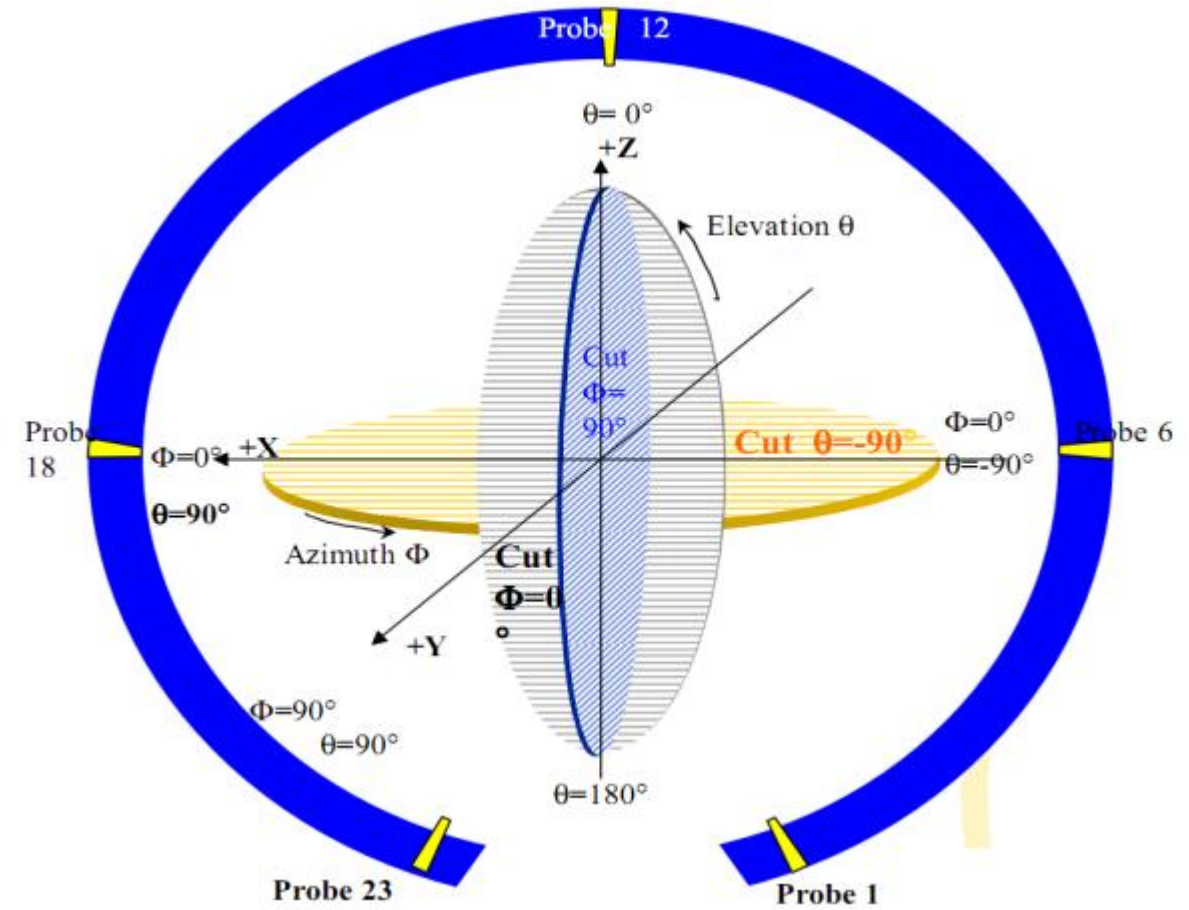
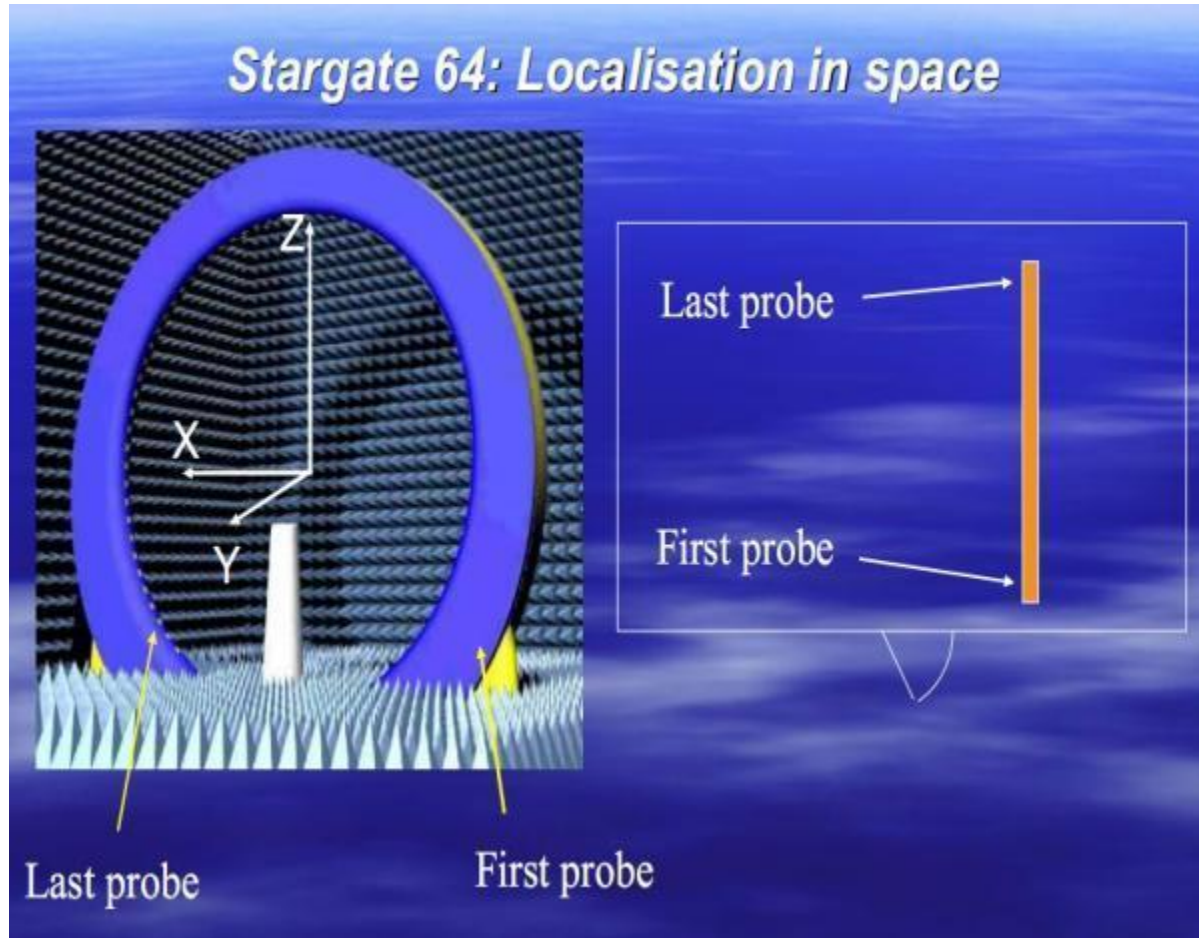
- Introduction to test equipment and test environment
- Introduction to Antenna Information
- Diagram of antenna test
- Antenna test data
 - Antenna matching data
 - Antenna passive/active data

1. Introduction to the SG24 testing environment in SATIMO anechoic chamber

Anechoic chamber system configuration diagram



SG24 – Coordinate identification diagram

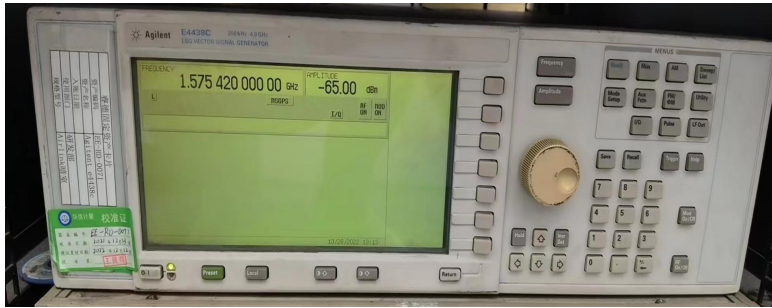
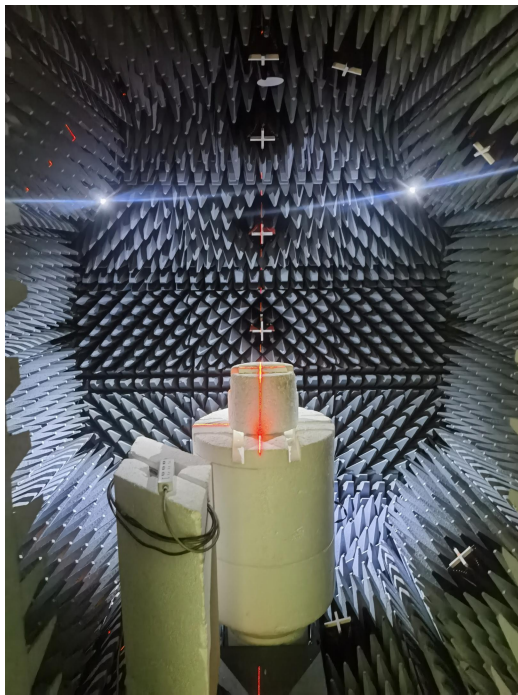


Laboratory test environment and equipment

Test project	The device under test
S11、S12 、VSWR 、LOSS	Network analyze:E5071C
Efficiency、Gain 3D Radiation Pattern	Satimo SG24、Network analyze:E5071B
TRP、TIS	GTS2800、CMW500
GPS	GTS2800、E4438C



Laboratory test environment and equipment



2. Introduction to Antenna Information

T5100A	
Antenna type and frequency band	ANT1 has 2.4GWiFi, BT antenna and GPS antenna ANT2 is a 5GWiFi antenna
Antenna materia	FPC

3. Diagram of antenna test

Passive test

Please refer to Antenna Report-Photo for details.

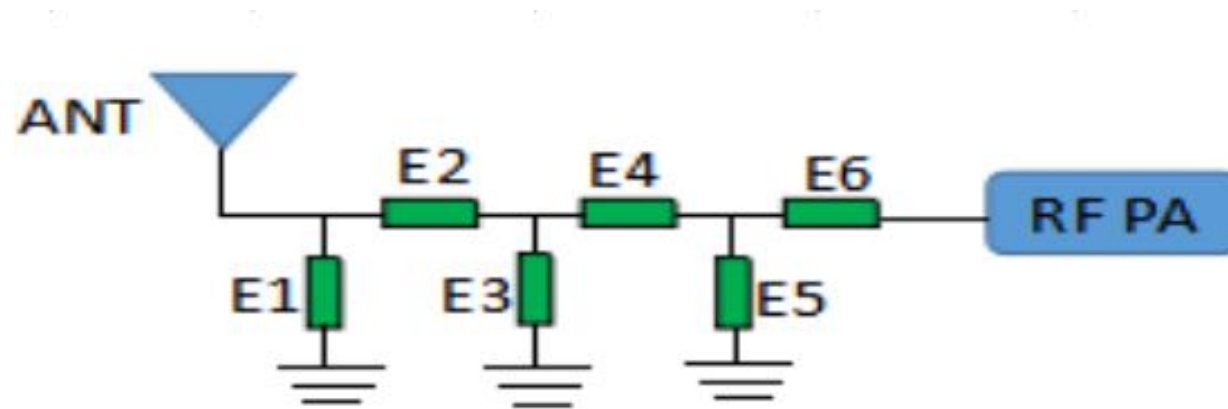
3. Diagram of antenna tes

Active test

Please refer to Antenna Report-Photo for details.

4. Antenna test data

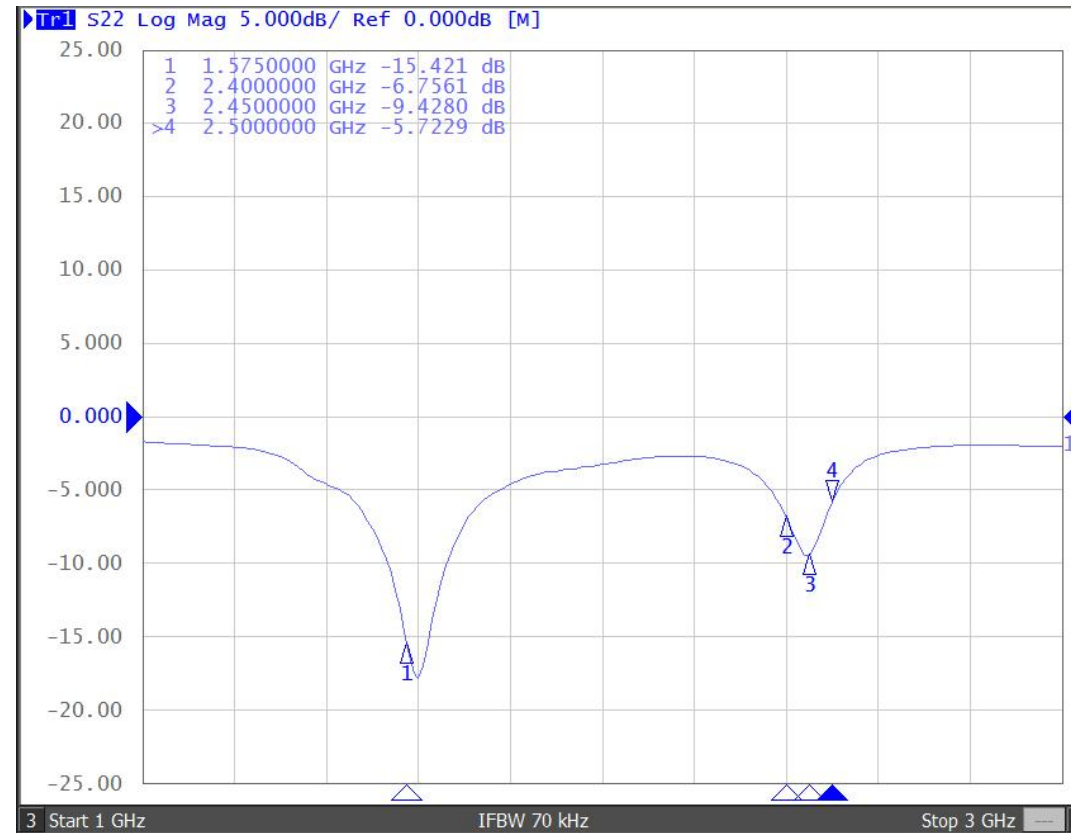
antenna matching (ANT1)



GPS&WIFI Antenna matching	
Element	Value
E1(0201)	8.2NH
E2(0201)	0Ω
E3(0201)	NC
E4(0201)	0Ω
E5(0201)	1.2PF

4. Antenna test data

S11 (ANT1)



4. Antenna test data

Efficiency and gain(ANT1)

ANT1			
f(MHz)	Effi (%)	Effi (dB)	Peak Gain(dBi)
1550	46%	-3.4	2.0
1560	48%	-3.2	2.1
1570	51%	-2.9	2.4
1575	52%	-2.8	2.5
1580	53%	-2.8	2.6
1590	55%	-2.6	2.6
1600	56%	-2.6	2.6
1610	55%	-2.6	2.6
1620	54%	-2.7	2.5
1630	52%	-2.8	2.4
1640	50%	-3.0	2.3
1650	47%	-3.2	2.0
1660	45%	-3.4	1.9
2400	43%	-3.7	1.4
2410	44%	-3.6	1.5
2420	46%	-3.4	1.5
2430	44%	-3.5	1.4
2440	43%	-3.7	1.4
2450	41%	-3.9	1.4
2460	39%	-4.0	1.1
2470	37%	-4.3	1.0
2480	35%	-4.6	0.9
2490	34%	-4.7	0.7
2500	32%	-5.0	0.6

4. Antenna test data

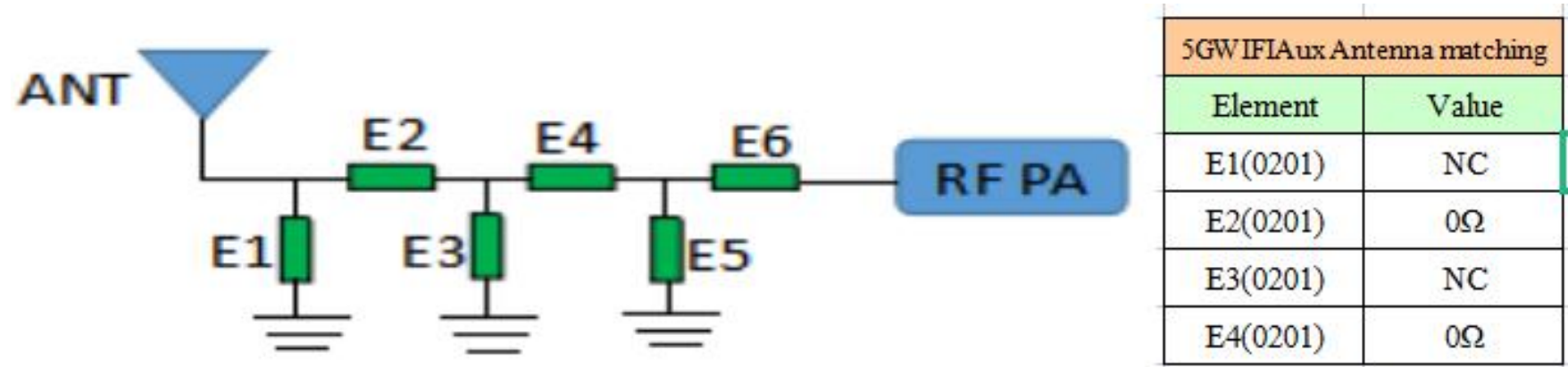
OTA (ANT1)

ANT1			
802.11b/rate(11Mbps)	1	6	11
TRP (dBm)	13.63	13.35	12.66
TIS (dBm)	-83.19	-82.23	-81.95
GPS	-154.21		

Test Result	Bluetooth		
	0	39	78
Frequency (MHz)	2402	2441	2480
TRP (dBm)	5.73	5.79	7.1
TIS (dBm)	-87.56	-88.33	-87.18

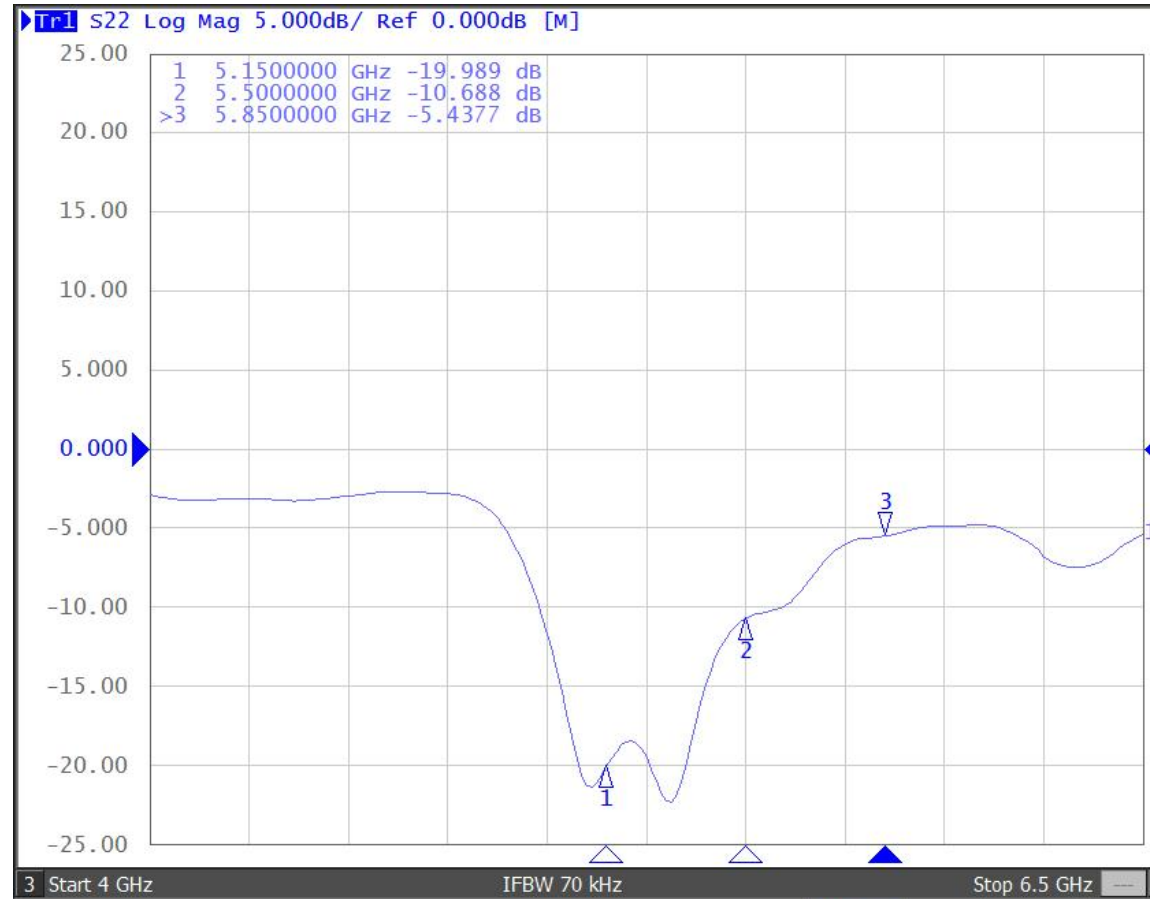
4. Antenna test data

antenna matching (ANT2)



4. Antenna test data

S11 (ANT2)



4. Antenna test data

Efficiency and gain(ANT2)

ANT2			
f(MHz)	Effi (%)	Effi (dB)	Peak Gain(dBi)
5150	20%	-7.0	1.2
5200	22%	-6.6	1.4
5250	22%	-6.6	1.3
5300	22%	-6.5	1.3
5350	22%	-6.6	1.3
5400	21%	-6.8	1.2
5450	21%	-6.8	1.1
5500	21%	-6.8	1.1
5550	20%	-6.9	1.0
5600	20%	-6.9	1.0
5650	20%	-6.9	1.0
5700	19%	-7.1	1.0
5750	20%	-6.9	1.1
5800	21%	-6.8	1.2
5850	20%	-6.9	1.1

4. Antenna test data

OTA (ANT2)

ANT2								
802.11a/rate(54MBps)	36	60	165		802.11a/rate(6MBps)	36	60	165
TRP (dBm)	9.73	9.57	8.97		TRP (dBm)	11.71	11.38	11.05
TIS (dBm)	-71.5	-71.55	-70.39		TIS (dBm)	-90.51	-90.33	-89.64