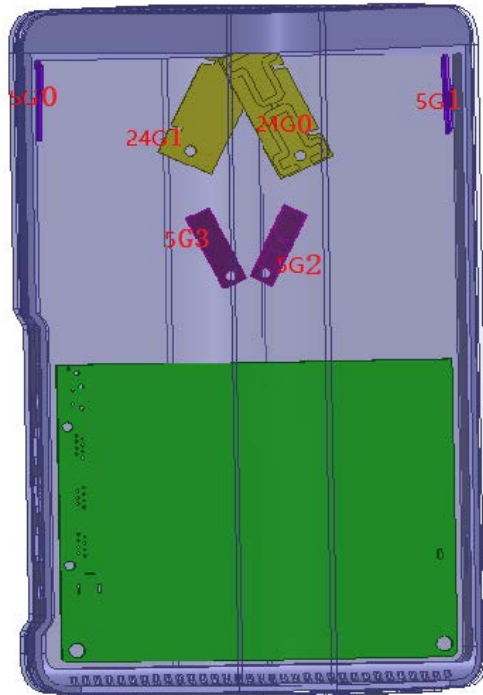


Antenna Passive Test Report

Product Name:MX15 Pro



Test Information

Product Name	MX15 Pro	product code	
Test Category	Antenna passive test	Test location	S parameter (laboratory) Radiation parameter (Barron test room)
Test date	September 20, 2022	Tester	Xiao Pengcheng, Barron staff
Test environment	Temperature : 24°C-28°C	relative humidity: 56%-58%	atmospheric pressure: 100kPa-101kPa
Test items	Normal temperature electrical performance: <input checked="" type="checkbox"/> Return loss <input checked="" type="checkbox"/> gain <input checked="" type="checkbox"/> directional diagram <input checked="" type="checkbox"/> Port isolation		
Analysis of test results	<p>The measured gain of the antenna in the 2.4G frequency band is greater than 3dBi, and the measured gain in the 5G frequency band is greater than 3dBi. The antenna gain meets the requirements.</p> <p>The antenna pattern also achieves omnidirectional coverage.</p> <p>Antenna echo loss<- 10dB, antenna matching is good.</p>		
conclusion	Antenna performance meets the index requirements		

Normal temperature electrical performance test results

2.4G antenna 0

order number	Inspection items	unit	Performance index requirements	Inspection results		sentence
				Sample No:		
1	frequency range	MHz	2400-2500	2400-2500		OK
2	Gain	dBi	4.26	2400	3.74	OK
				2450	3.80	OK
				2500	4.26	OK
3	Isolation degree	dB	≤ -15	2400	-23	OK
				2450	-22	OK
				2500	-23	OK
4	Return loss	dB	≤ -10	2400	-13	OK
				2450	-12	OK
				2500	-11	OK

2.4G antenna 1

order number	Inspection items	unit	Performance index requirements	Inspection results		sentence
				Sample No:		
1	frequency range	MHz	2400-2500	2400-2500		OK
2	Gain	dBi	3.95	2400	3.60	OK
				2450	3.12	OK
				2500	3.95	OK
3	Isolation degree	dB	≤ -15	2400	-23	OK
				2450	-22	OK
				2500	-23	OK
4	Return loss	dB	≤ -10	2400	-14	OK
				2450	-14	OK
				2500	-14	OK

5G antenna 0

order number	Inspection items	unit	Performance index requirements	Inspection results		sentence
				Sample No:		
1	frequency range	MHz	5150-5850	5150-5850		OK
2	Gain	dBi	3.80	5150	3.82	OK
				5500	3.58	OK
				5850	3.80	OK
3	Isolation degree	dB	≤ -15	5150	-27	OK
				5500	-29	OK
				5850	-30	OK
4	Return loss	dB	≤ -10	5150	-17	OK
				5500	-14	OK
				5850	-21	OK

5G antenna 1

order number	Inspection items	unit	Performance index requirements	Inspection results		sentence
				Sample No:		
1	frequency range	MHz	5150-5850	5150-5850		OK
2	Gain	dBi	3.90	5150	3.12	OK
				5500	3.46	OK
				5850	3.90	OK
3	Isolation degree	dB	≤ -15	5150	-27	OK
				5500	-29	OK
				5850	-30	OK
4	Return loss	dB	≤ -10	5150	-17	OK
				5500	-17	OK
				5850	-17	OK

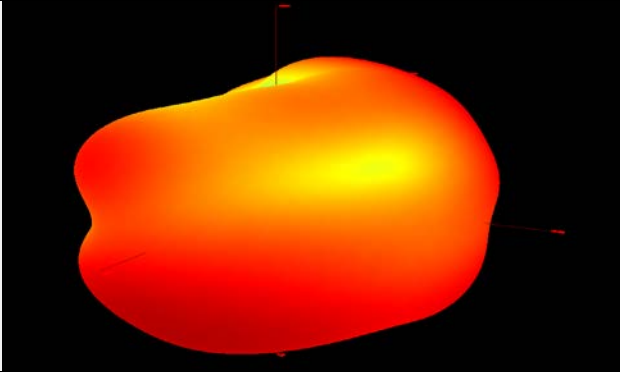
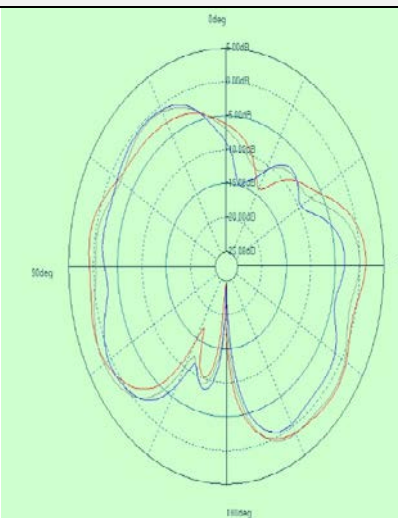
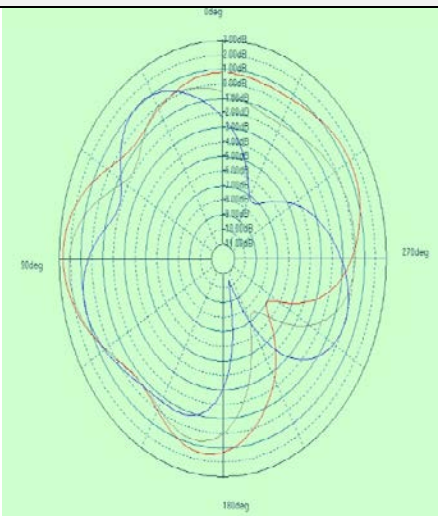
5G antenna 2

order number	Inspection items	unit	Performance index requirements	Inspection results		sentence
				Sample No:		
1	frequency range	MHz	5150-5850	5150-5850		OK
2	Gain	dBi	3.94	5150	3.62	OK
				5500	3.76	OK
				5850	3.94	OK
3	Isolation degree	dB	≤ -15	5150	-27	OK
				5500	-29	OK
				5850	-30	OK
4	Return loss	dB	≤ -10	5150	-12	OK
				5500	-11	OK
				5850	-14	OK

5G antenna 3

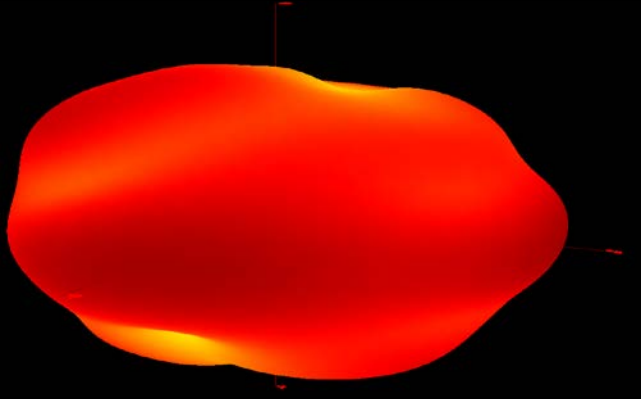
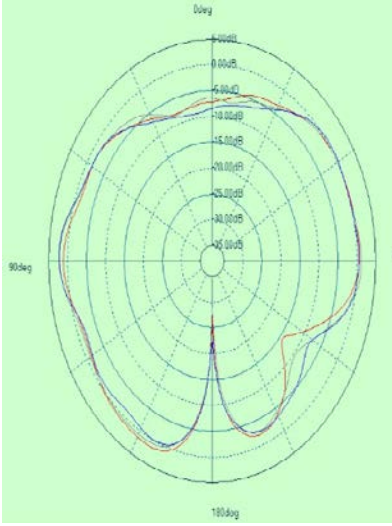
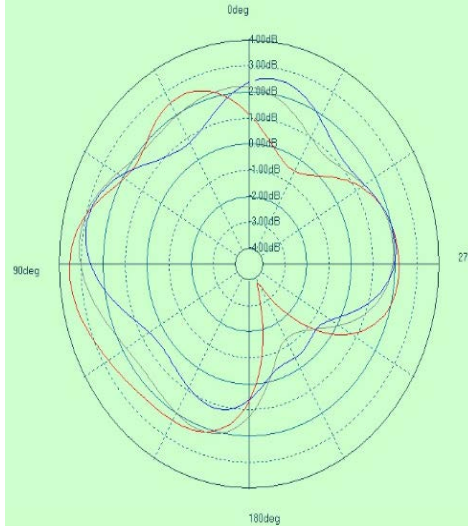
order number	Inspection items	unit	Performance index requirements	Inspection results		sentence
				Sample No:		
1	frequency range	MHz	5150-5850	5150-5850		OK
2	Gain	dBi	3.83	5150	3.32	OK
				5500	3.56	OK
				5850	3.83	OK
3	Isolation degree	dB	≤ -15	5150	-33	OK
				5500	-28	OK
				5850	-29	OK
4	Return loss	dB	≤ -10	5150	-13	OK
				5500	-15	OK
				5850	-13	OK

Test pattern 2.4G antenna 0

Frequency	E Total. dB(dB)	Efficiency()
2400MHz	3.74	78%
2410MHz	3.80	77%
2420MHz	3.75	76%
2430MHz	3.67	77%
2440MHz	3.76	79%
2450MHz	3.80	78%
2460MHz	3.89	77%
2470MHz	3.87	77%
2480MHz	4.09	78%
2490MHz	4.10	75%
2500MHz	4.26	73%
3D Radiation field type		
2D Radiation field type	V PLANE	H PLANE
		

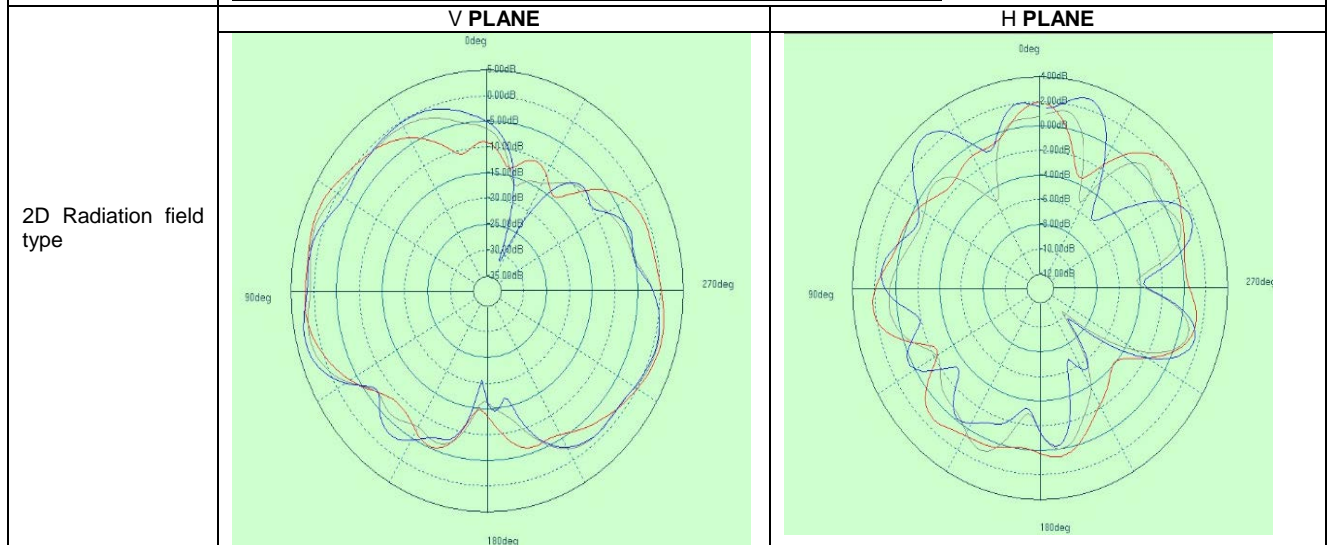
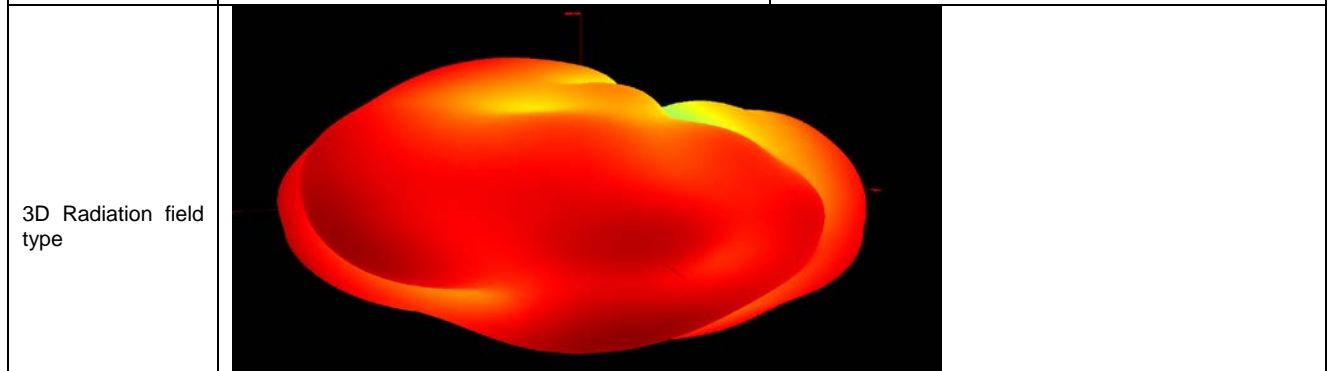
Test pattern 2. 4G antenna 1

Frequency	E Total. dB(dB)	Efficiency()
2400MHz	3.60	84%
2410MHz	3.49	84%
2420MHz	3.01	83%
2430MHz	3.00	84%
2440MHz	3.06	85%
2450MHz	3.12	84%
2460MHz	3.90	82%
2470MHz	3.63	83%
2480MHz	3.72	84%
2490MHz	3.83	81%
2500MHz	3.95	80%

3D Radiation field type		
	V PLANE	H PLANE
2D Radiation field type		

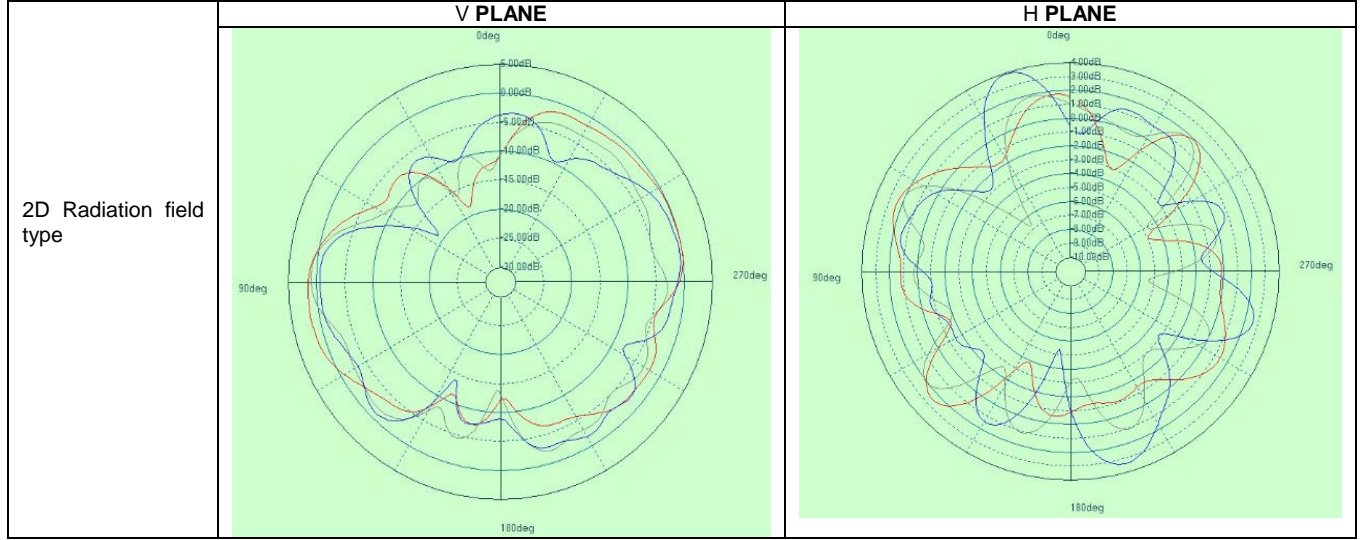
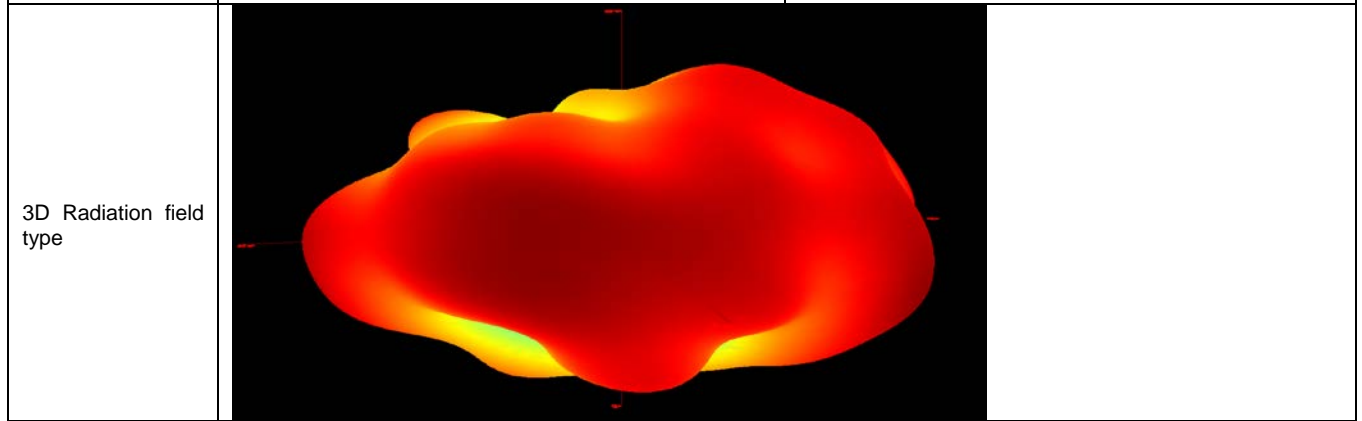
Test pattern 5G antenna 0

Frequency	E Total. dB(dBi)	Efficiency()
5150MHz	3.82	71%
5200MHz	3.86	71%
5250MHz	3.57	70%
5300MHz	3.93	73%
5350MHz	3.45	76%
5400MHz	4.17	74%
5450MHz	3.93	72%
5500MHz	3.58	72%
5550MHz	2.97	72%
5600MHz	3.31	74%
5650MHz	3.31	77%
5700MHz	3.22	77%
5750MHz	3.30	76%
5800MHz	3.30	72%
5850MHz	3.80	76%



Test pattern 5G antenna 1

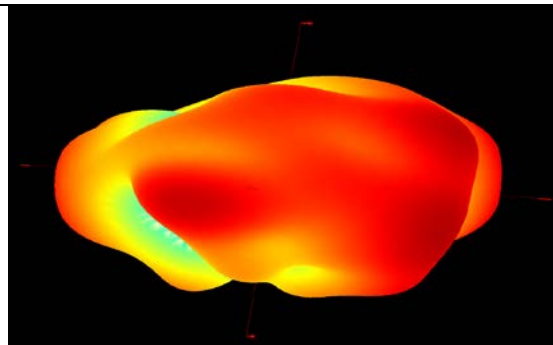
Frequency	E Total. dB(dBi)	Efficiency()
5150MHz	3.12	74%
5200MHz	3.34	71%
5250MHz	3.49	71%
5300MHz	3.53	71%
5350MHz	3.67	75%
5400MHz	3.96	76%
5450MHz	4.08	72%
5500MHz	3.46	78%
5550MHz	3.30	76%
5600MHz	2.87	75%
5650MHz	2.79	77%
5700MHz	3.11	71%
5750MHz	3.52	74%
5800MHz	3.73	76%
5850MHz	3.90	78%



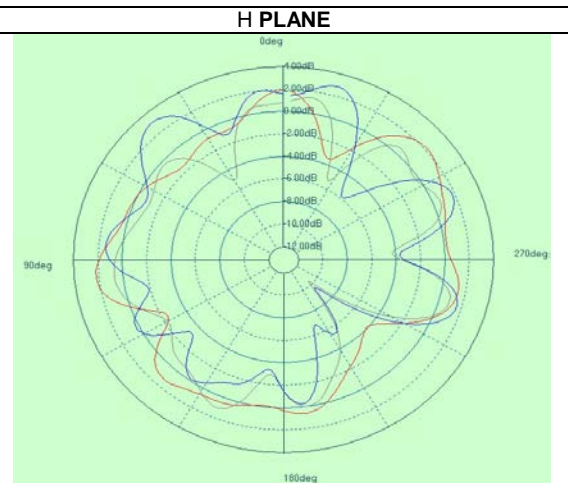
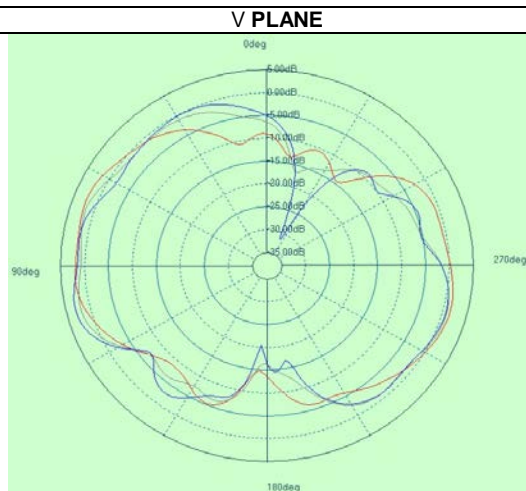
Test pattern 5G antenna 2

Frequency	E Total. dB(dBi)	Efficiency()
5150MHz	3.62	75%
5200MHz	3.64	72%
5250MHz	3.39	71%
5300MHz	3.21	73%
5350MHz	3.77	72%
5400MHz	3.53	74%
5450MHz	4.28	71%
5500MHz	3.76	74%
5550MHz	3.35	72%
5600MHz	3.57	73%
5650MHz	3.39	75%
5700MHz	3.18	72%
5750MHz	3.42	74%
5800MHz	3.24	73%
5850MHz	3.94	75%

3D Radiation field type

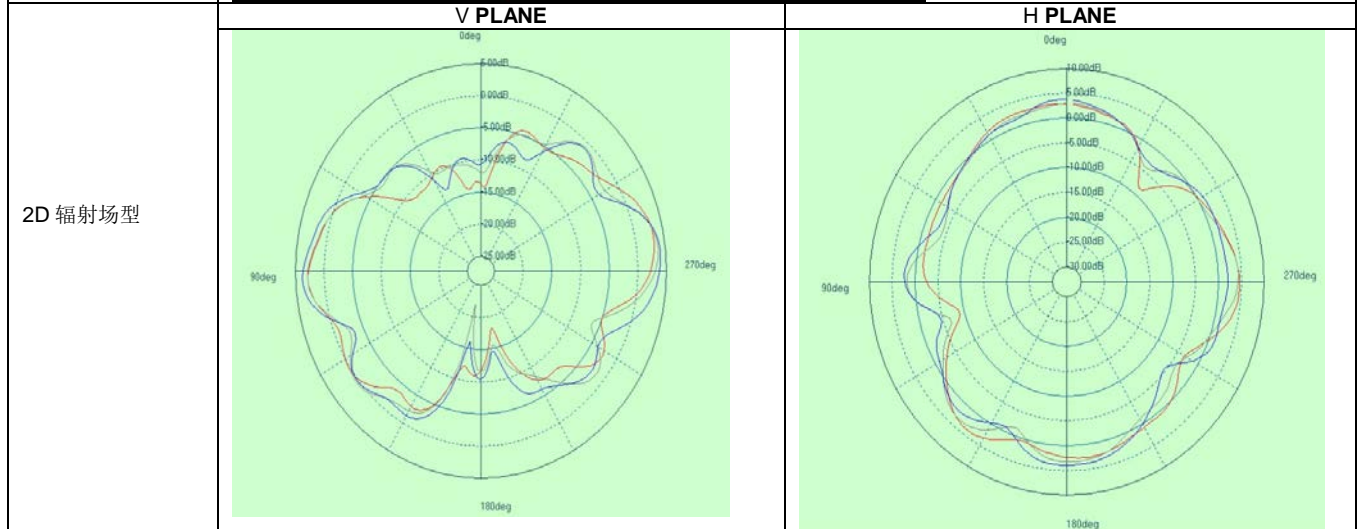
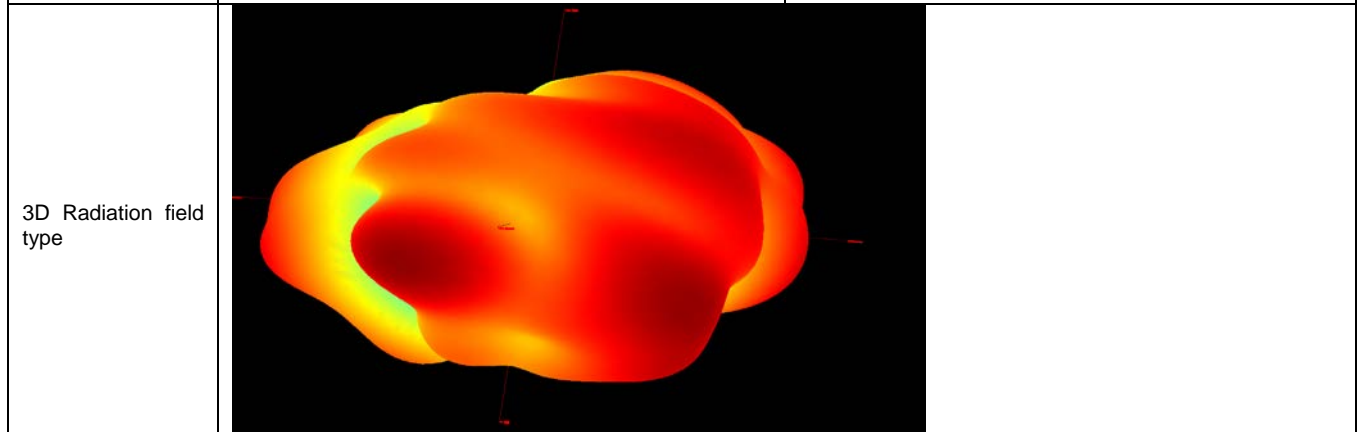


2D Radiation field type

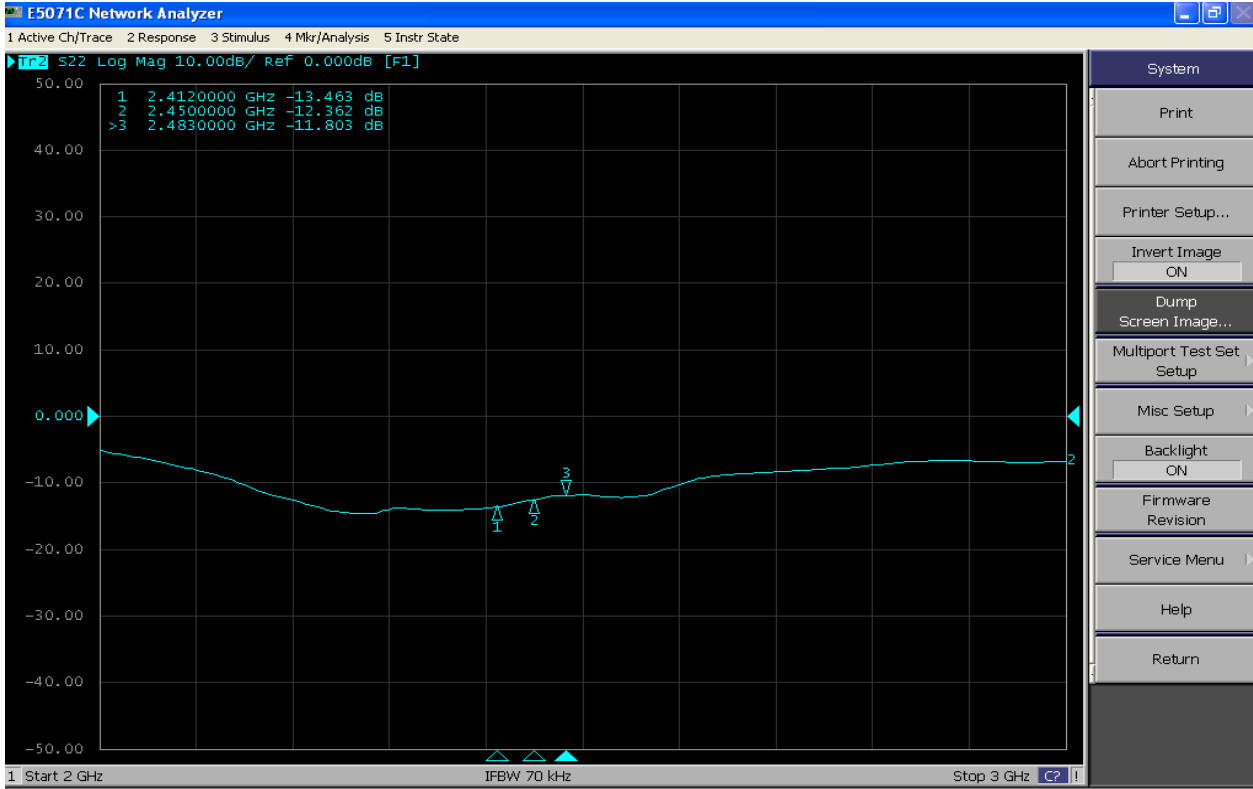


Test pattern 5G antenna 3

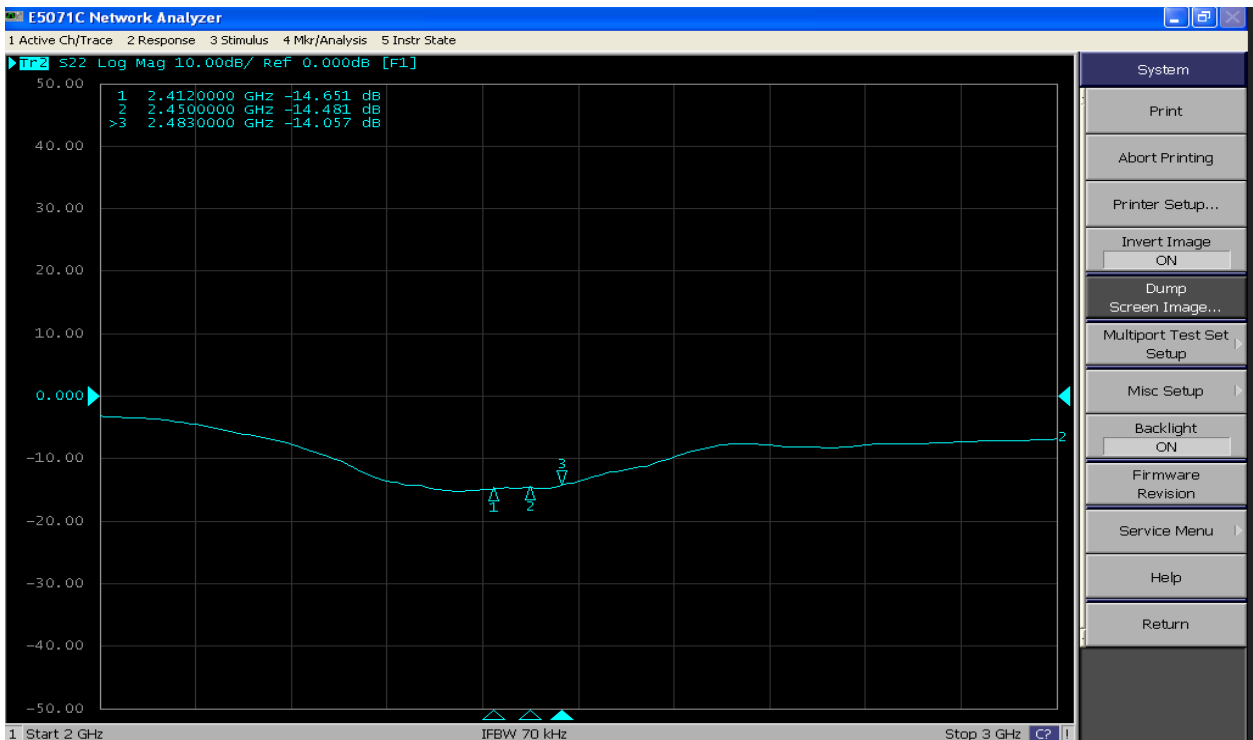
Frequency	E Total. dB(dBi)	Efficiency()
5150MHz	3.32	76%
5200MHz	3.54	73%
5250MHz	3.56	74%
5300MHz	3.78	75%
5350MHz	3.39	71%
5400MHz	3.51	73%
5450MHz	4.26	73%
5500MHz	3.56	76%
5550MHz	3.35	71%
5600MHz	3.53	72%
5650MHz	3.29	73%
5700MHz	3.26	74%
5750MHz	3.78	72%
5800MHz	3.84	72%
5850MHz	3.83	72%



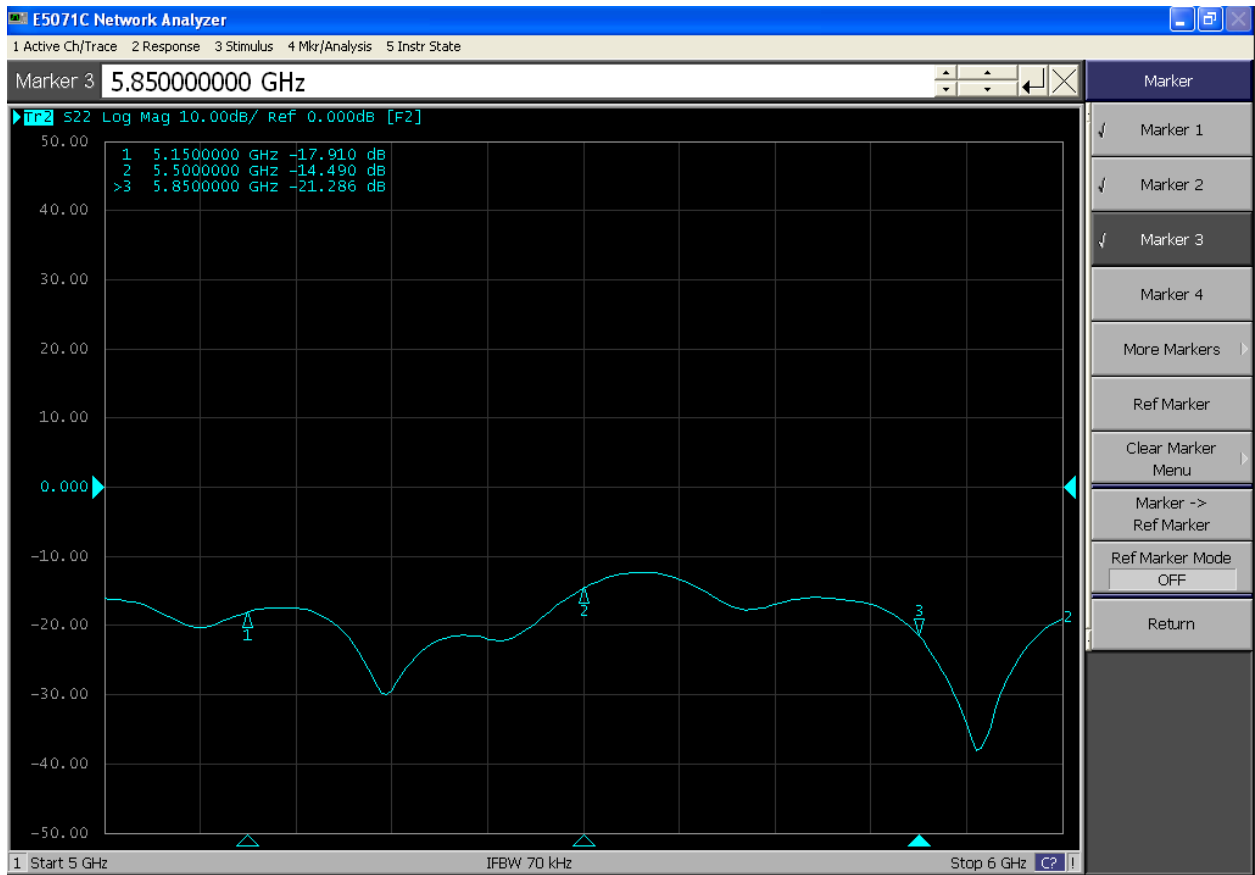
S Parameter diagram 2.4G Antenna 0 return loss test



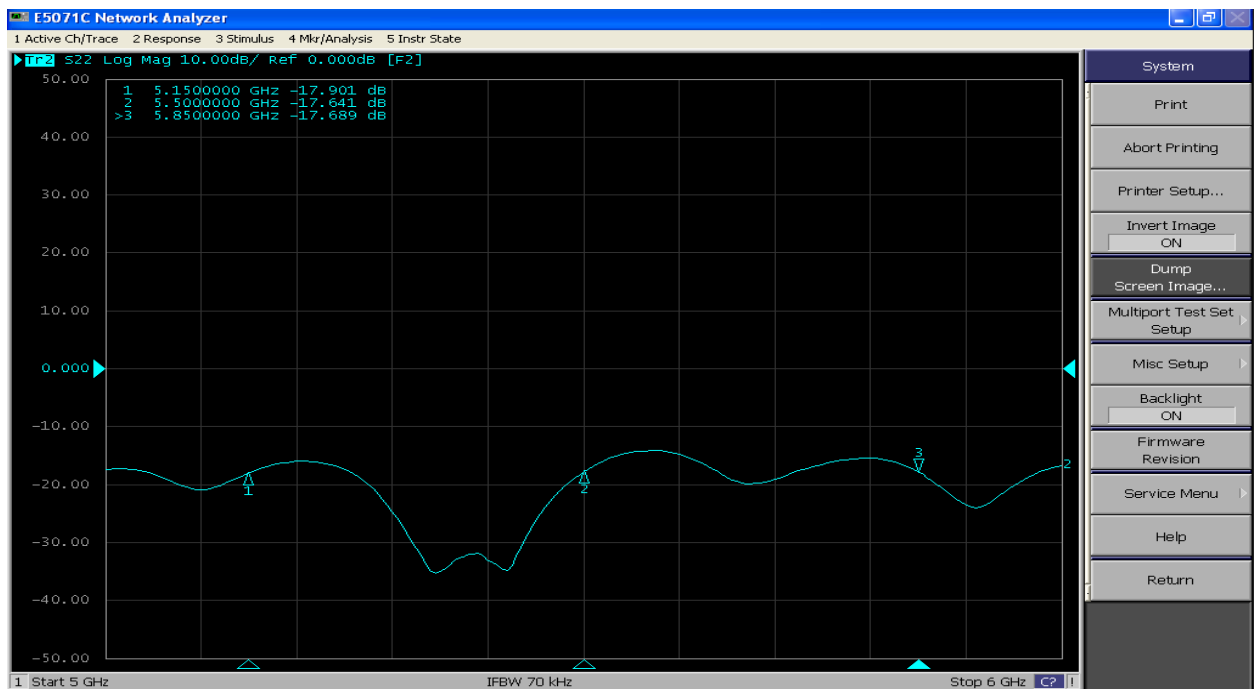
2.4G Antenna 1 return loss test



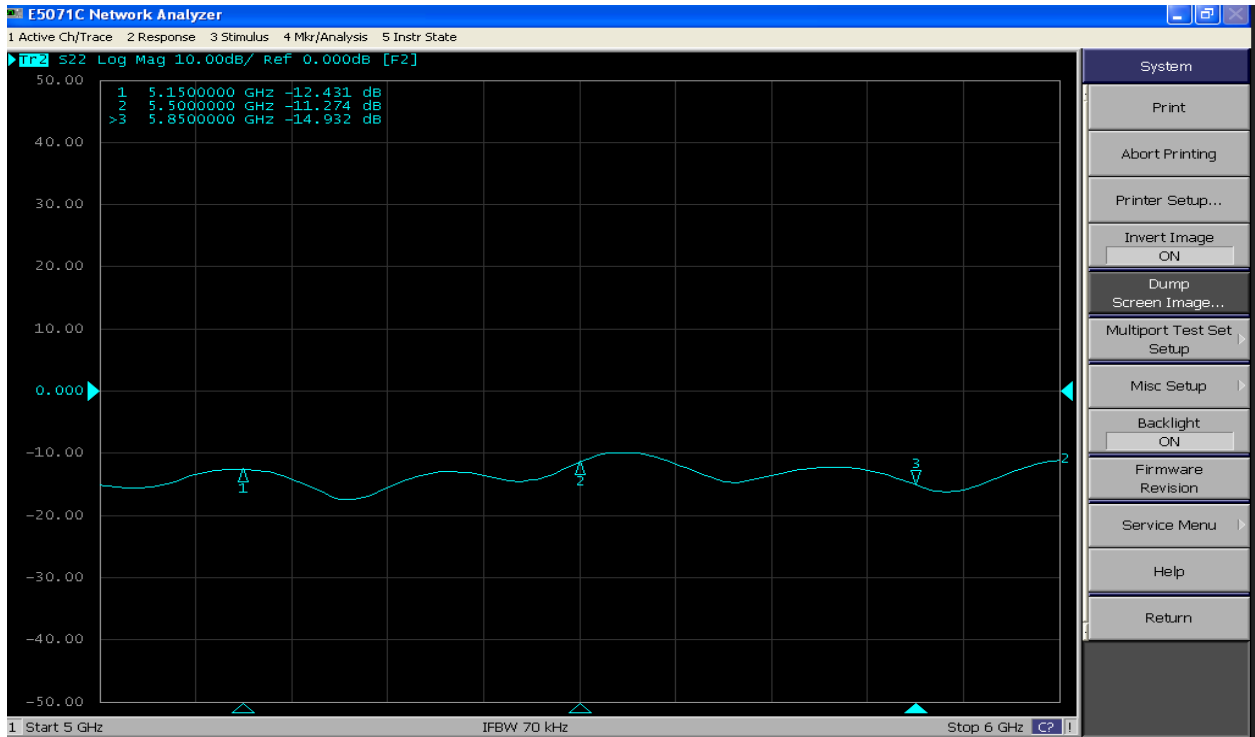
5G antenna 0 return loss test



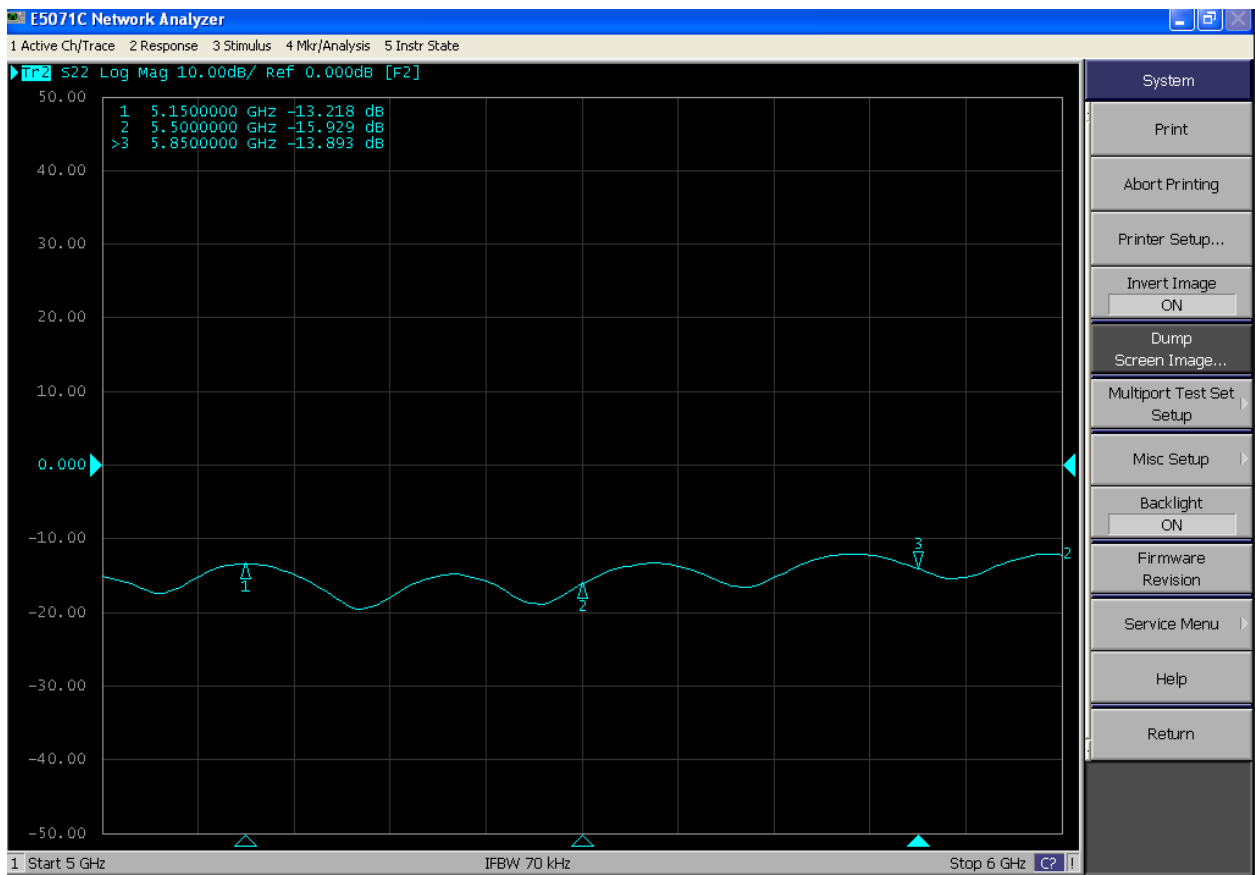
5G Antenna 1 Return Loss Test



5G antenna 2 return loss test



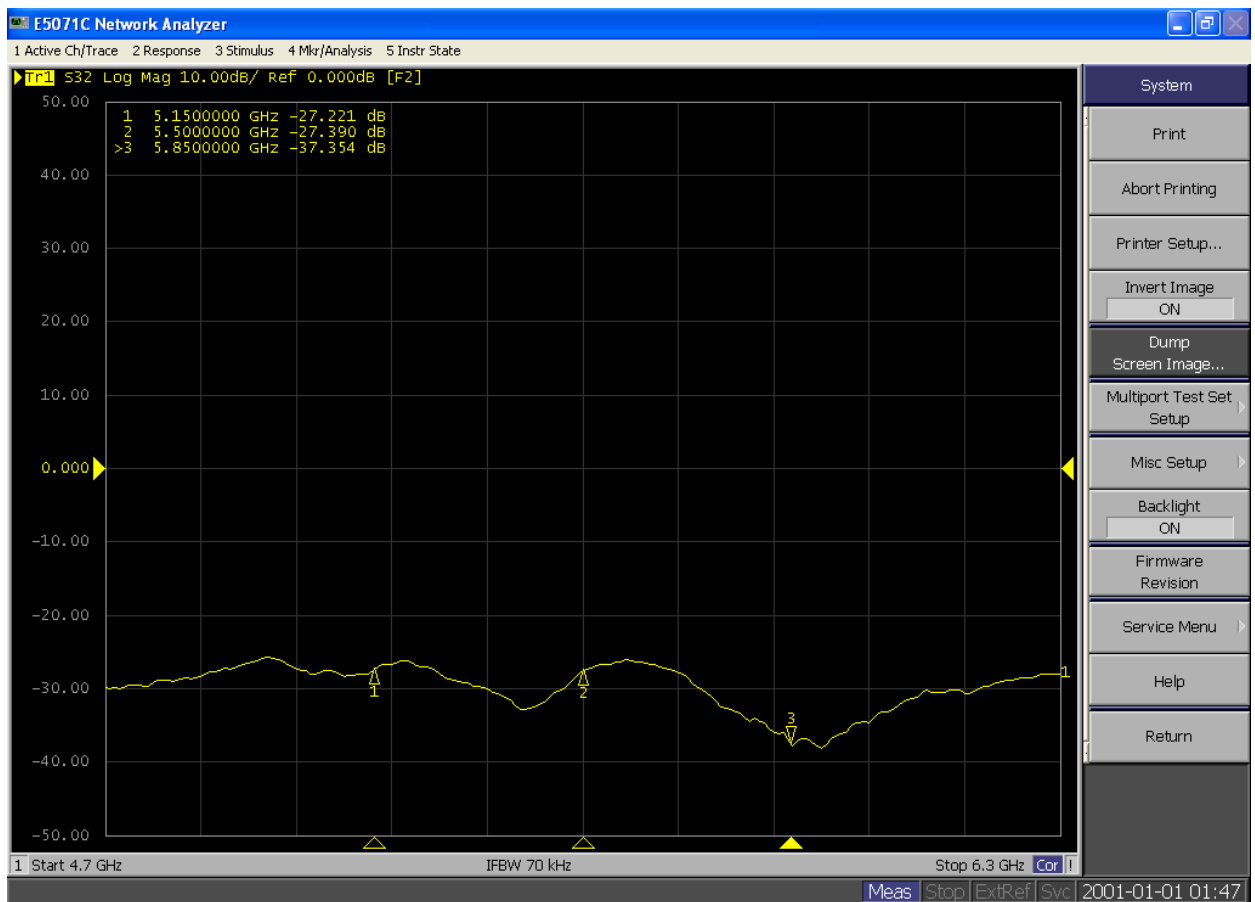
5G antenna 3 return loss test



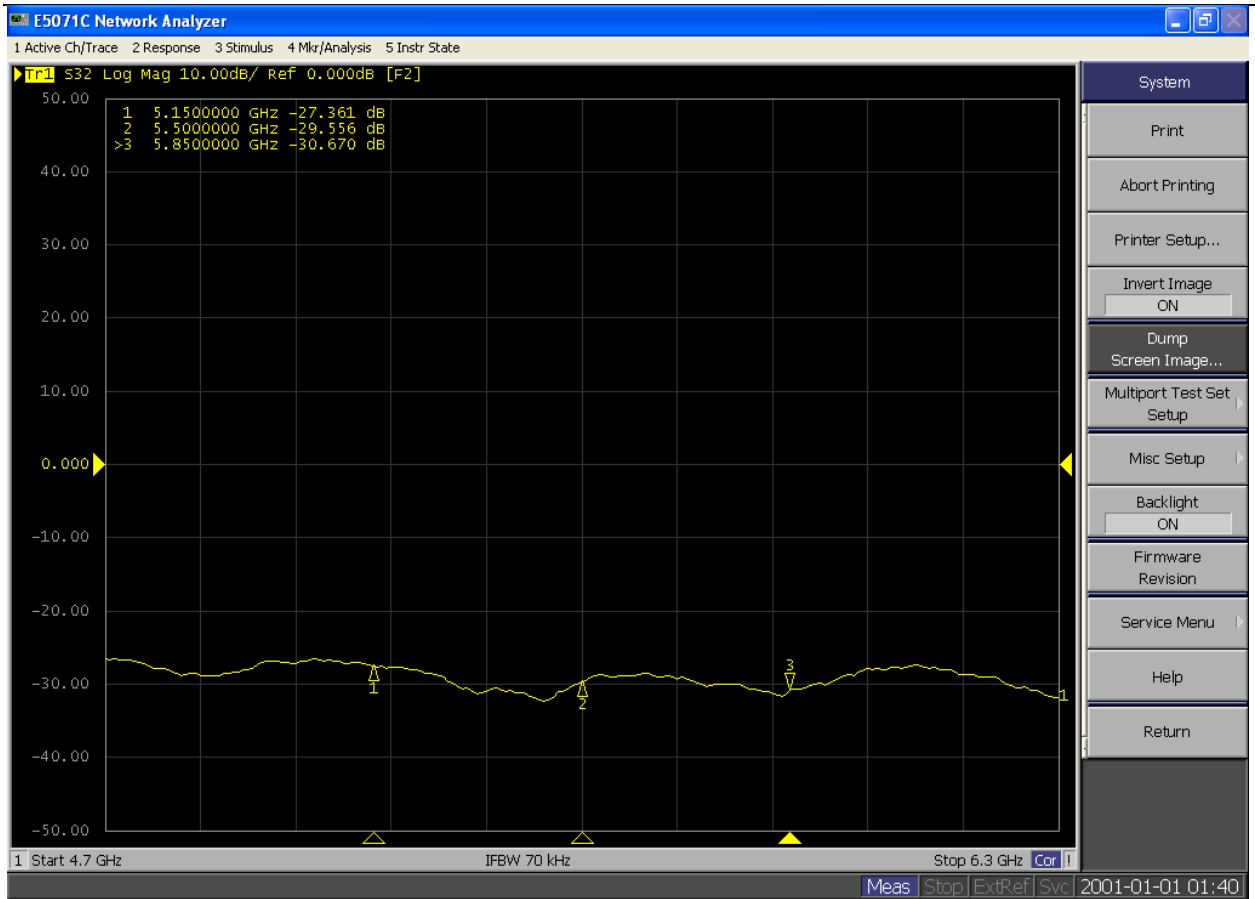
2.4G antenna isolation test



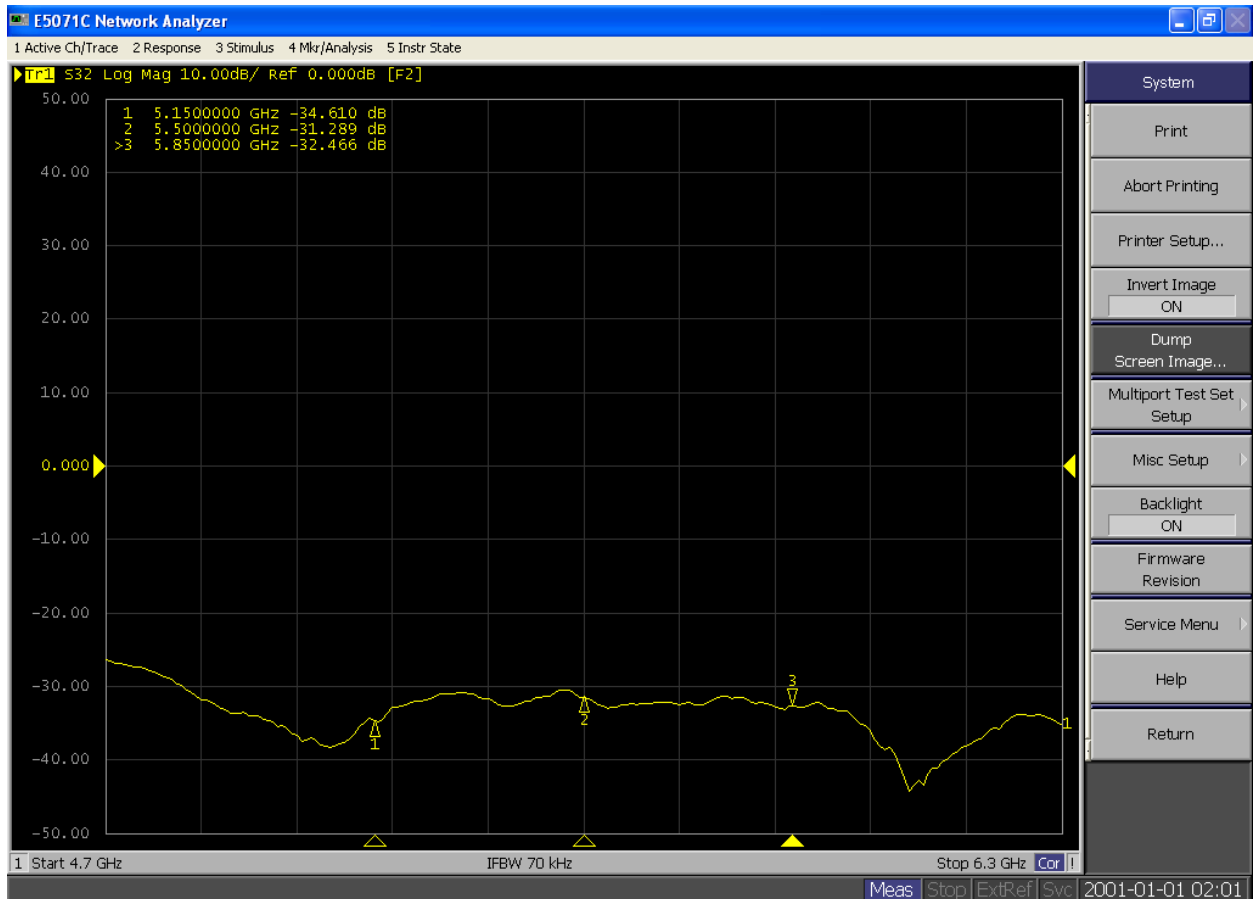
5G antenna isolation test (antenna 0 vs antenna 1)



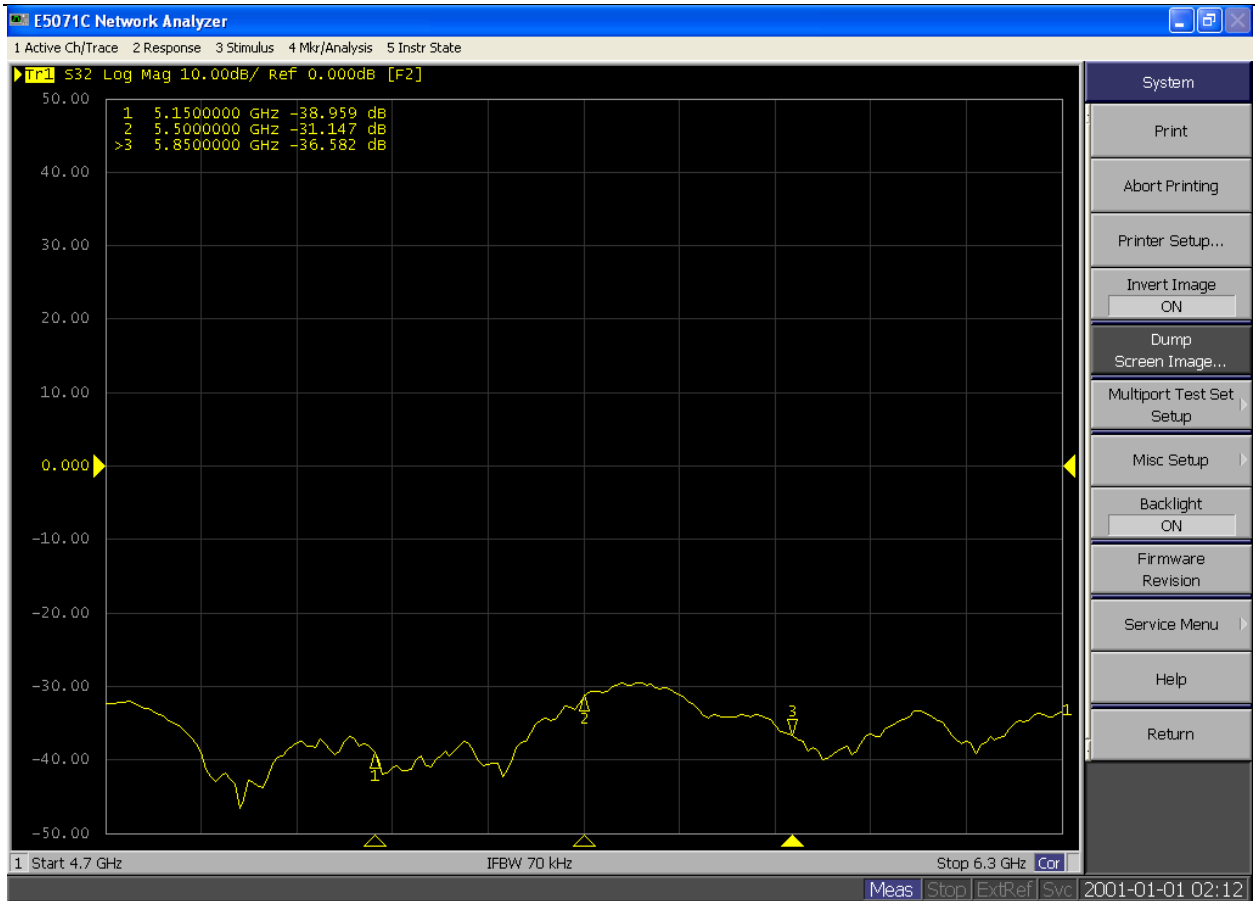
5G Antenna Isolation Test (Antenna 0 VS Antenna 2)



5G antenna isolation test (antenna 0 VS antenna 3)



5G antenna isolation test (antenna 2VS antenna 3)



5G antenna isolation test (antenna 1 VS antenna 3)

