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Antenna Report

Version: ***V 2.11***

TEST DATE : 2022/JULY/1st

TEST PERSONNEL :Davin

REVIEWER:Stone

Contents

- Revised History
- Specification
- Antenna Placement & Solution
- Measurement data
- Chamber Information (Test Setup for Radiation Pattern Measurement)
- 2D Radiation Pattern Results
- Results Summary (return loss, isolation, peak gain, efficiency)
- Conclusion & Comments

Revision History

Released Date	Version	Record
2021/05/27	V1.01	Dual Bandx1 2Gx4 5Gx4 BTx1 Antenna simulated report
2021/05/31	V1.02	Dual Bandx1 2Gx4 5Gx4 BTx1 Antenna simulated report
2021/07/15	V1.03	Dual Bandx1 2Gx4 5Gx4 BTx1 Antenna simulated report
2021/09/10	V1.04	Antennas are simulated in a new environment.
2021/09/23	V1.05	Antennas are simulated in a new environment.
2021/12/23	V2.06	Antennas are simulated in a new environment.
2022/03/25	V2.07	Customer ID change. Antennas re-design.
2022/03/31	V2.08	Improve isolation between antennas.
2022/04/08	V2.09	Improve isolation between antennas.
2022/06/09	V2.10	Antennas are designed in new machine.
2022/07/01	V2.11	Wire cutting antennas are designed in machine.

Specification

Requirements of Antenna Design

RF Function	Number of ANT	Frequency Band	Remark
Dual Band	1	2G:2400-2500(MHz)/5G:5150-5850(MHz)	
2G	4	2400-2500(MHz)	
5G	4	5150-5850(MHz)	
BT	1	2400-2500(MHz)	

Requirements of Measurement

Test Item	Specification	Remark
Return Loss	> 10dB	
Isolation	2G>20dB , 5G>25dB	
Peak gain	NA	

Antenna Placement & Solution

EUT Photo : Please refer to EUT Photo-1of Test Set Up Photos (Antenna spec.)

Antenna	ANT Type	Size (L * W * H)	Cable Length (mm)	Cable Type
DB	Pifa ANT	50mm*15mm*7mm	180(Exposed from carrier plate : 60)	Φ=1.13 low loss
BT	Pifa ANT	33mm*7mm*9.5mm	126(Exposed from carrier plate : 70)	Φ=1.13 low loss
2G1	Pifa ANT	33mm*7mm*9.5mm	218(Exposed from carrier plate : 40)	Φ=1.13 low loss
2G2	Pifa ANT	33mm*7mm*9.5mm	168(Exposed from carrier plate : 40)	Φ=1.13 low loss
2G3	Pifa ANT	33mm*7mm*9.5mm	159(Exposed from carrier plate : 60)	Φ=1.13 low loss
2G4	Pifa ANT	33mm*7mm*9.5mm	228(Exposed from carrier plate : 60)	Φ=1.13 low loss

Antenna Placement & Solution

EUT Photo : Please refer to EUT Photo-1of Test Set Up Photos (Antenna spec.)

Antenna	ANT Type	Size (L * W * H)	Cable Length (mm)	Cable Type
5G1	Pifa ANT	28mm*20mm*7.5mm	270(Exposed from carrier plate : 50)	Φ=1.13 low loss
5G2	Pifa ANT	28mm*20mm*7.5mm	189(Exposed from carrier plate : 40)	Φ=1.13 low loss
5G3	Pifa ANT	28mm*20mm*7.5mm	180(Exposed from carrier plate : 60)	Φ=1.13 low loss
5G4	Pifa ANT	28mm*20mm*7.5mm	185(Exposed from carrier plate : 40)	Φ=1.13 low loss

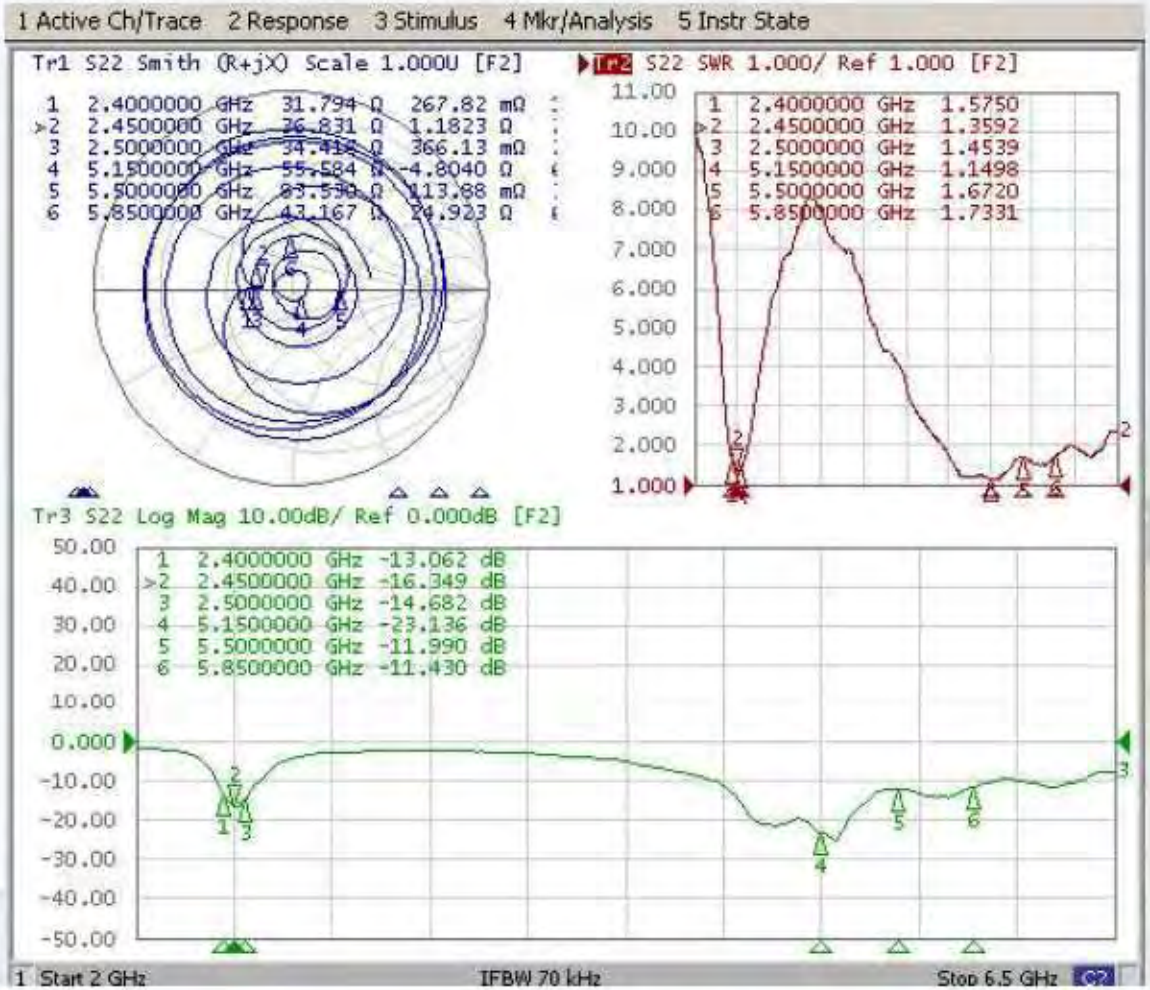
Test Setup for S-parameter Measurement

Equipment	Brand	Model	S/N
Network Analyzer	Keysight	E5071B	MY42403554

Calibration date: 2022/1/24

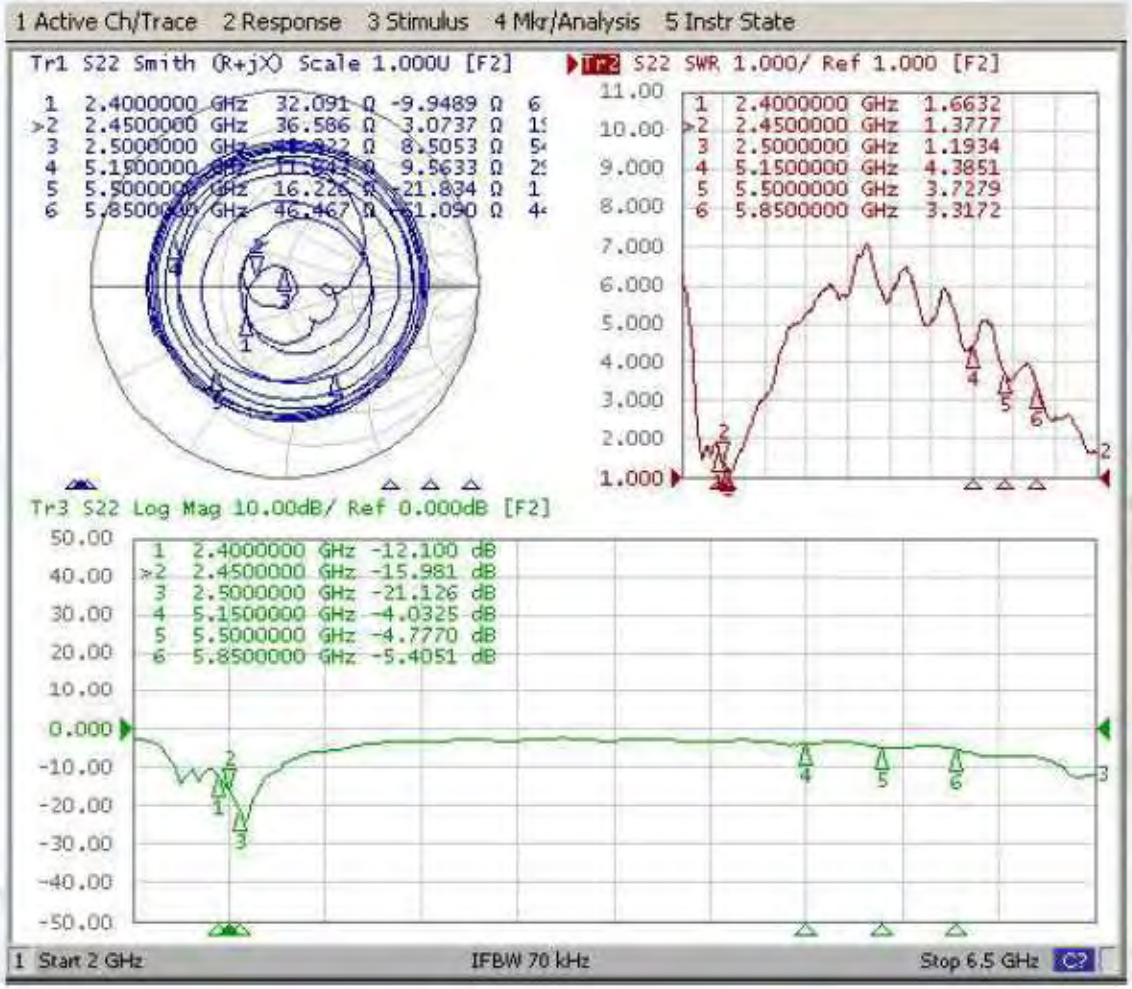
Return Loss Results

DB(Criterion:>10 dB)



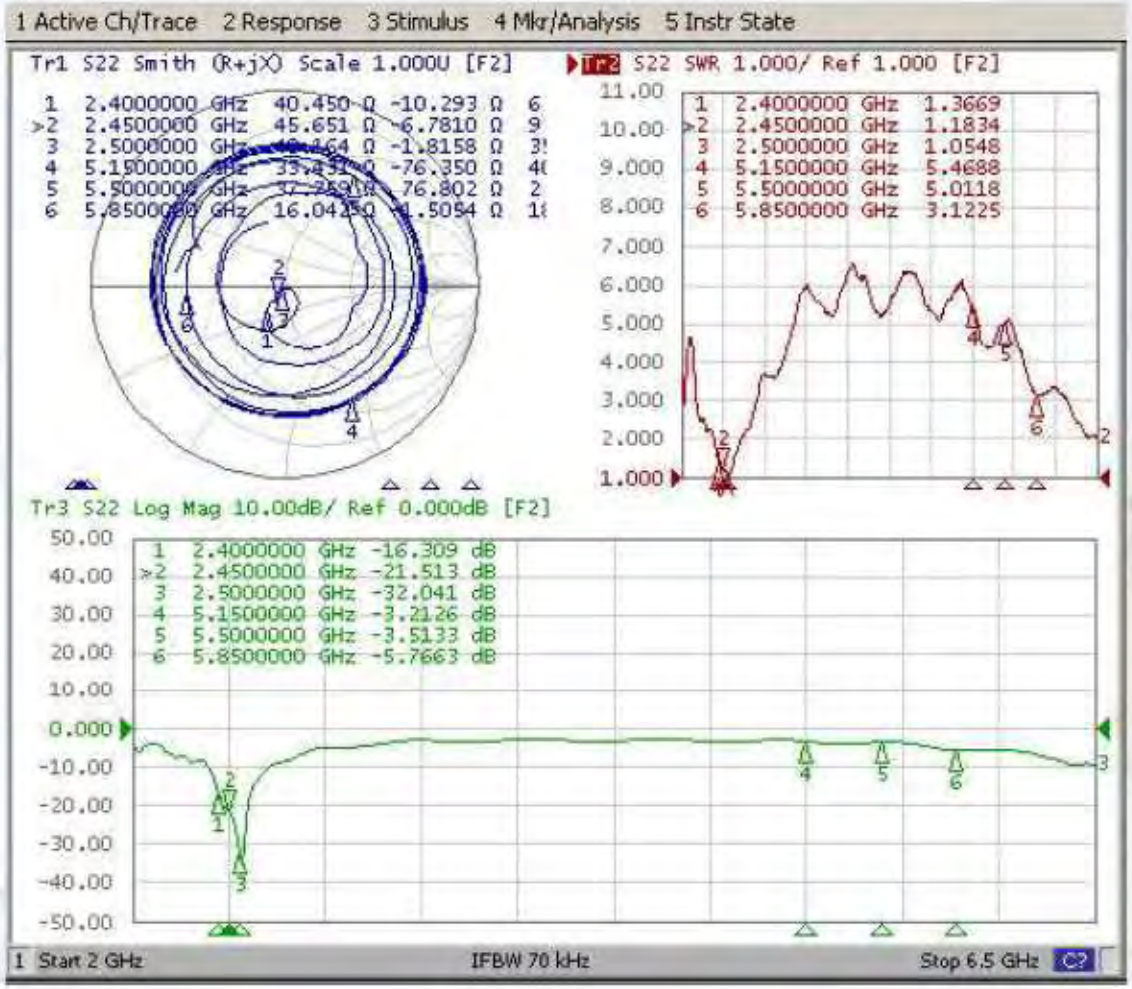
Return Loss Results

2G1(Criterion:>10 dB)



Return Loss Results

2G2(Criterion:>10 dB)

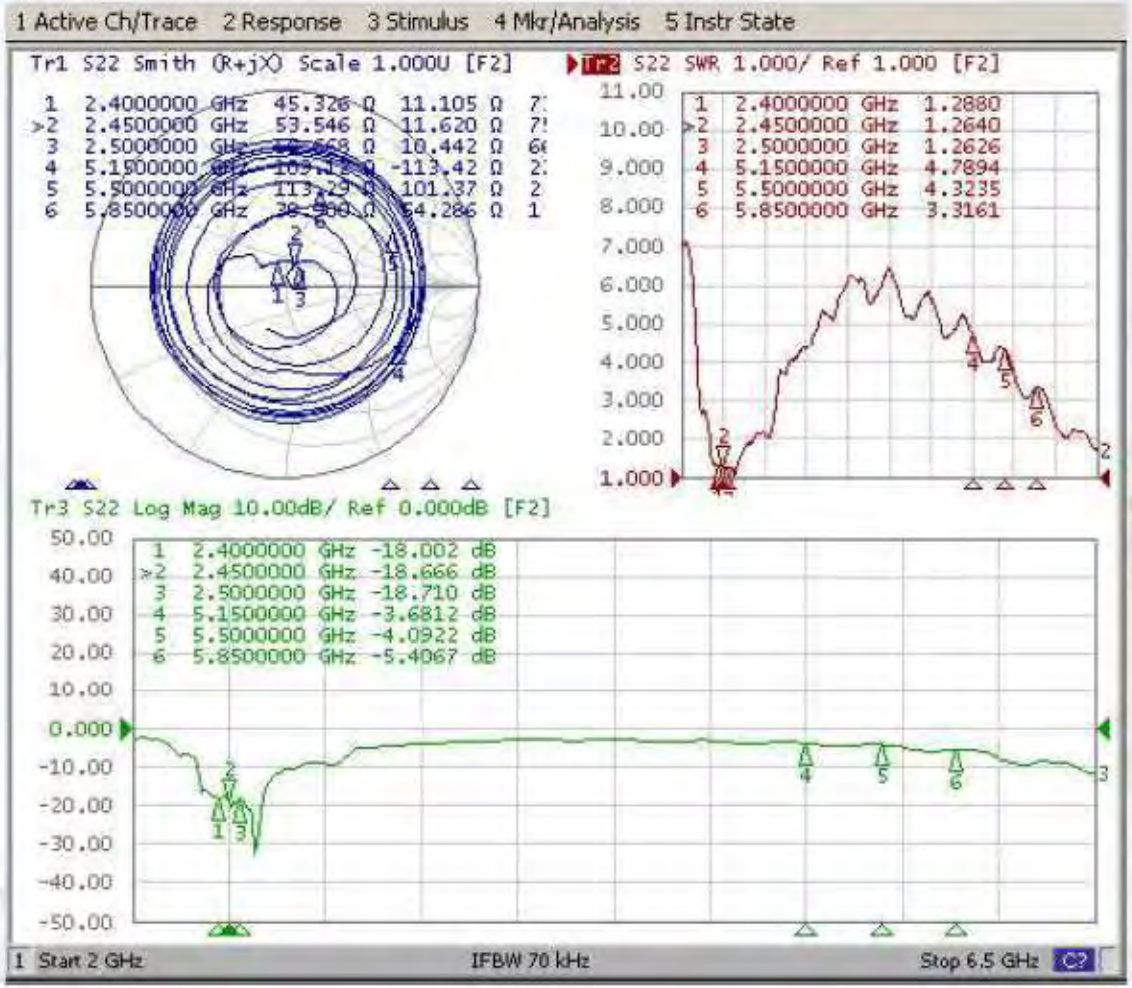


Return Loss Results

2G3(Criterion:>10 dB)

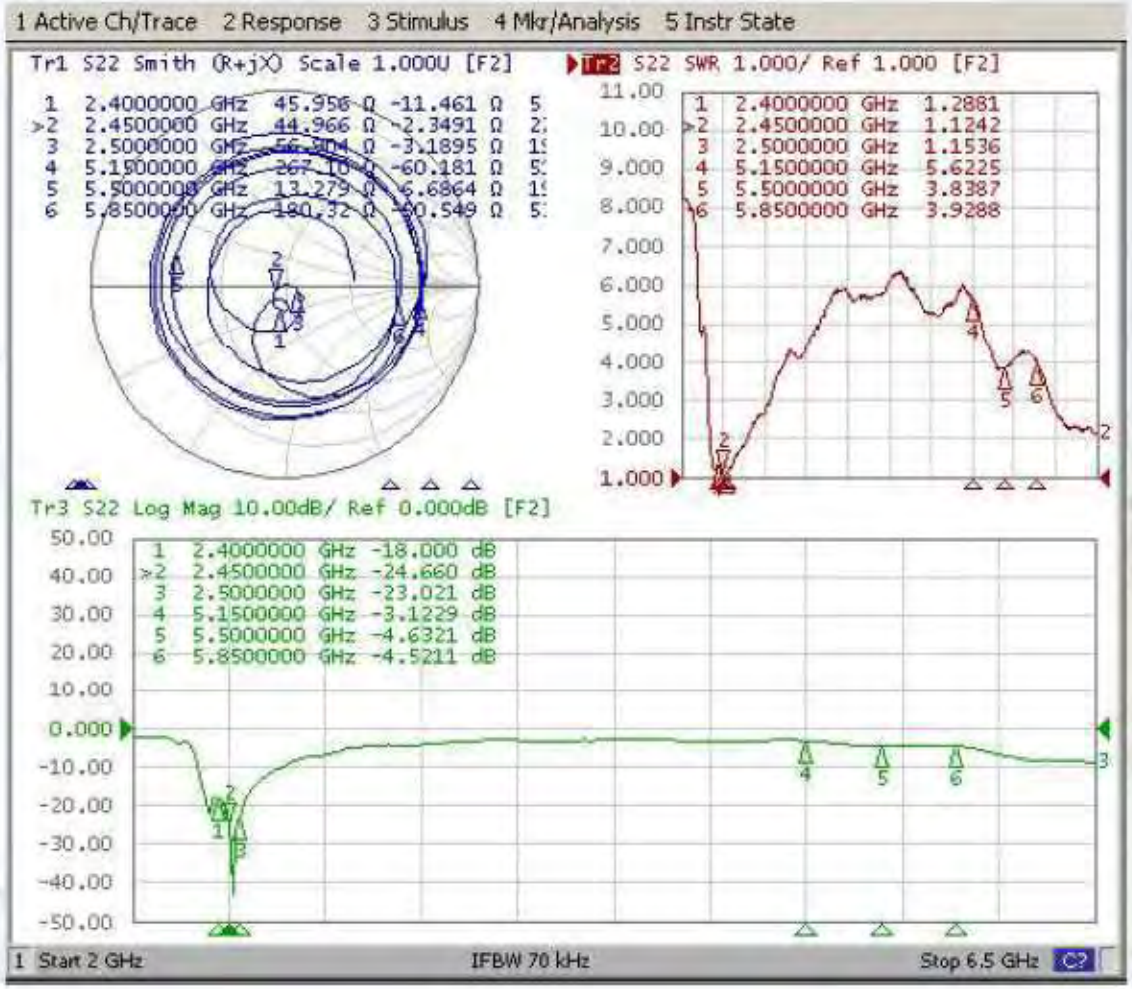
Return Loss Results

2G4(Criterion:>10 dB)



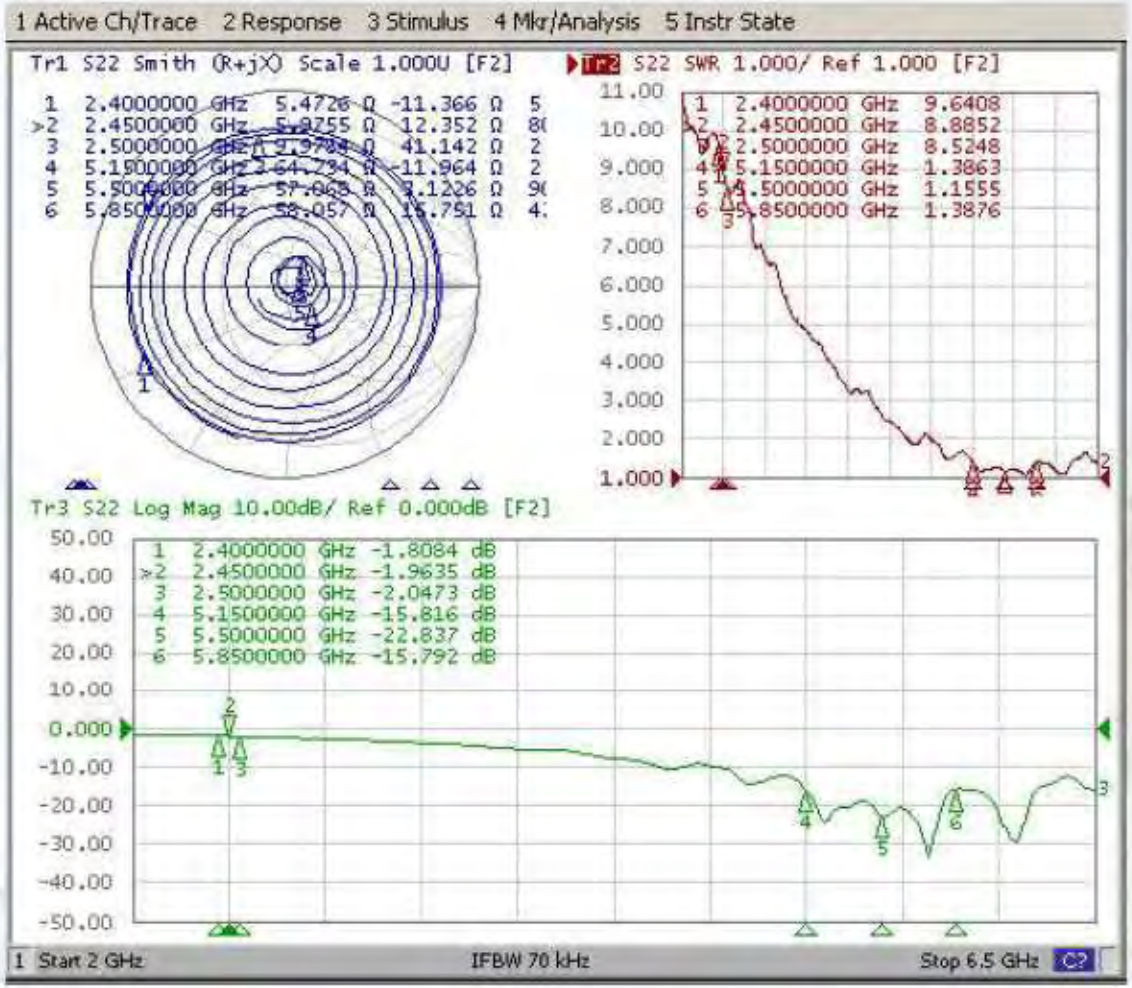
Return Loss Results

BT(Criterion:>10 dB)



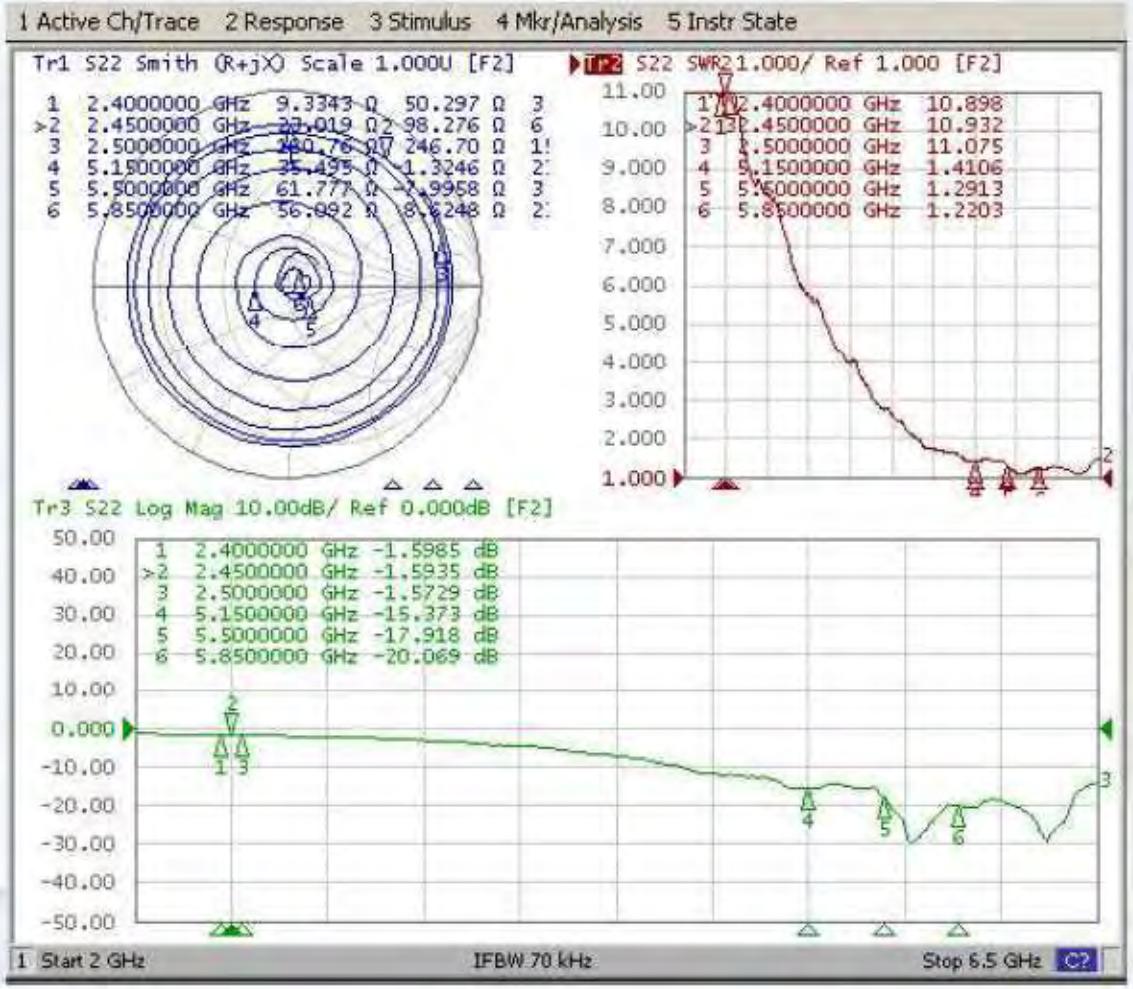
Return Loss Results

5G1(Criterion:>10 dB)



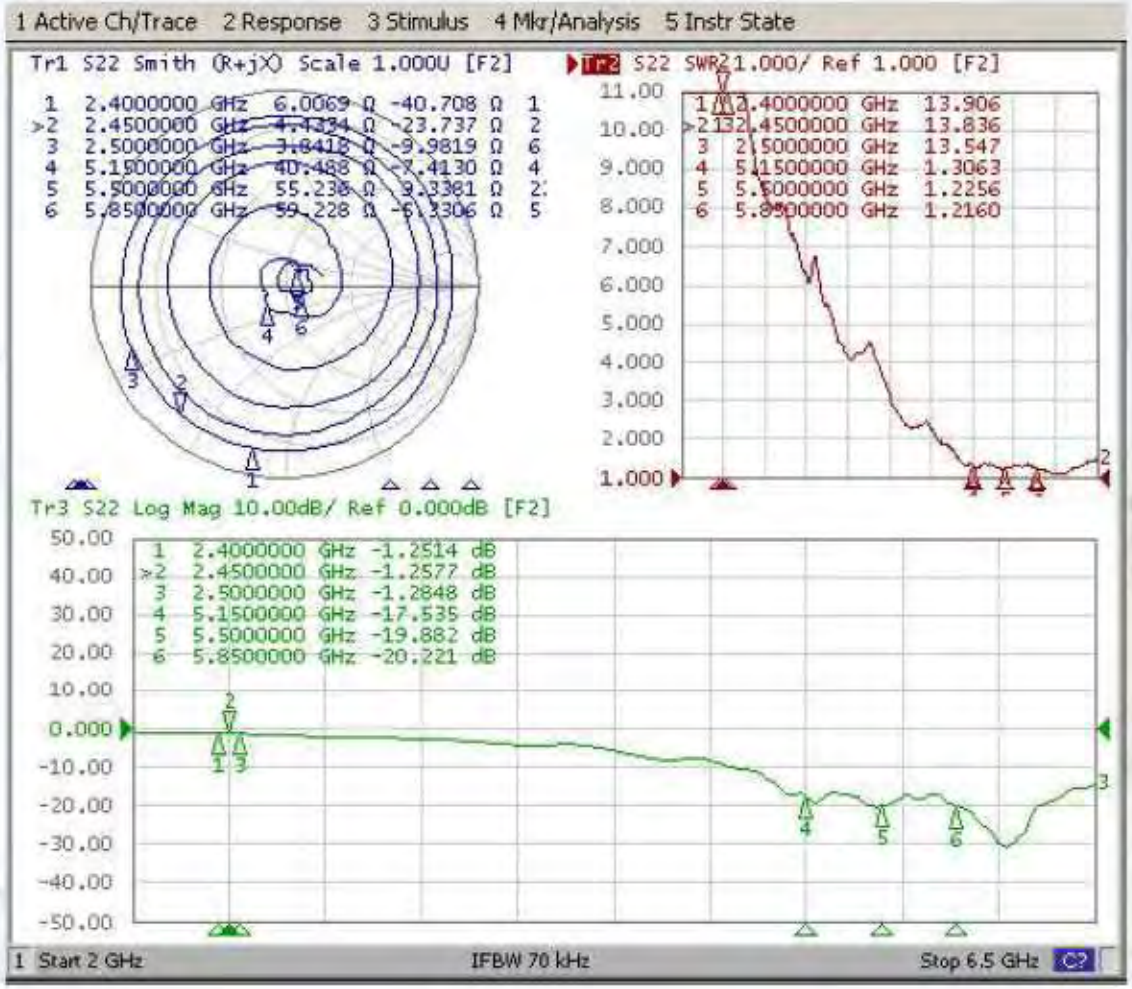
Return Loss Results

5G2(Criterion:>10 dB)



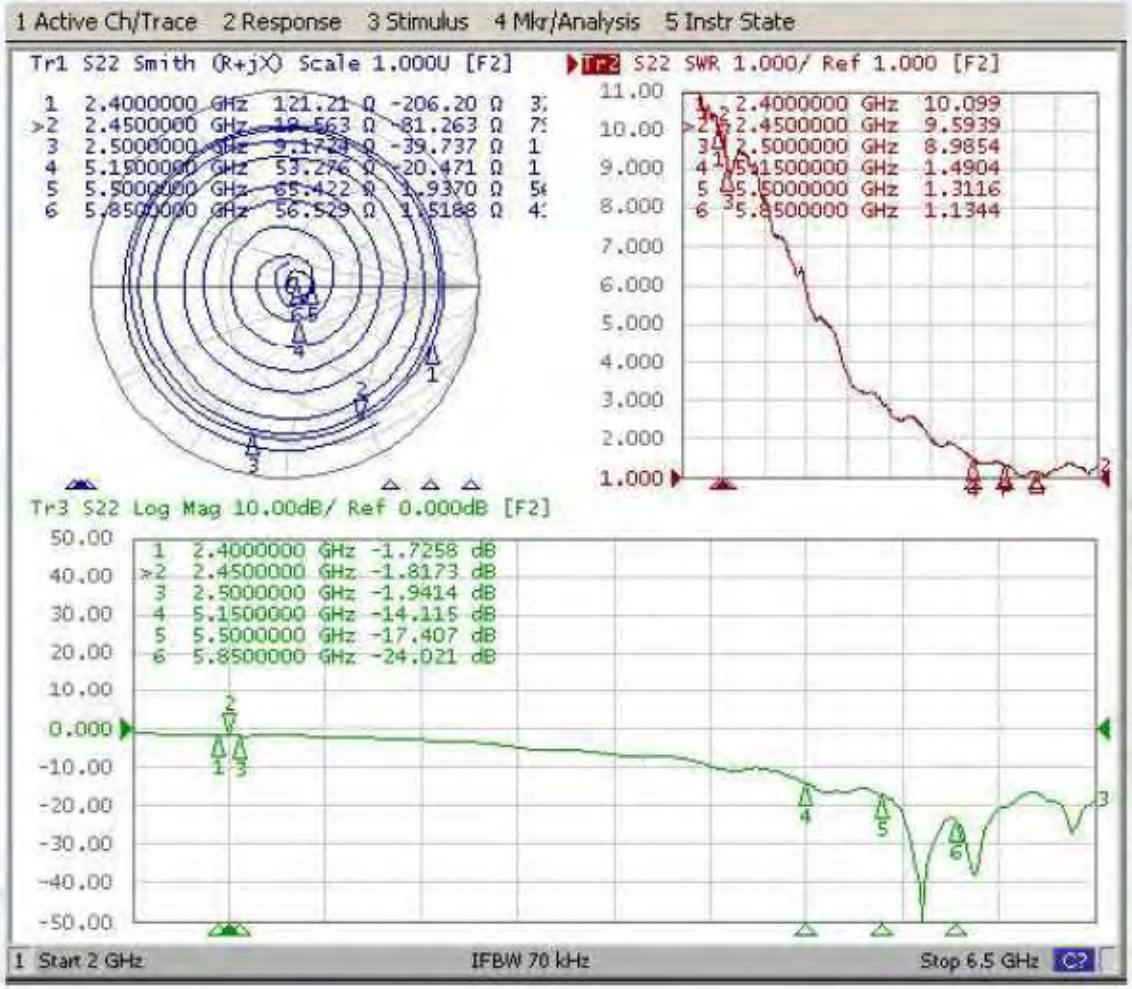
Return Loss Results

5G3(Criterion:>10 dB)



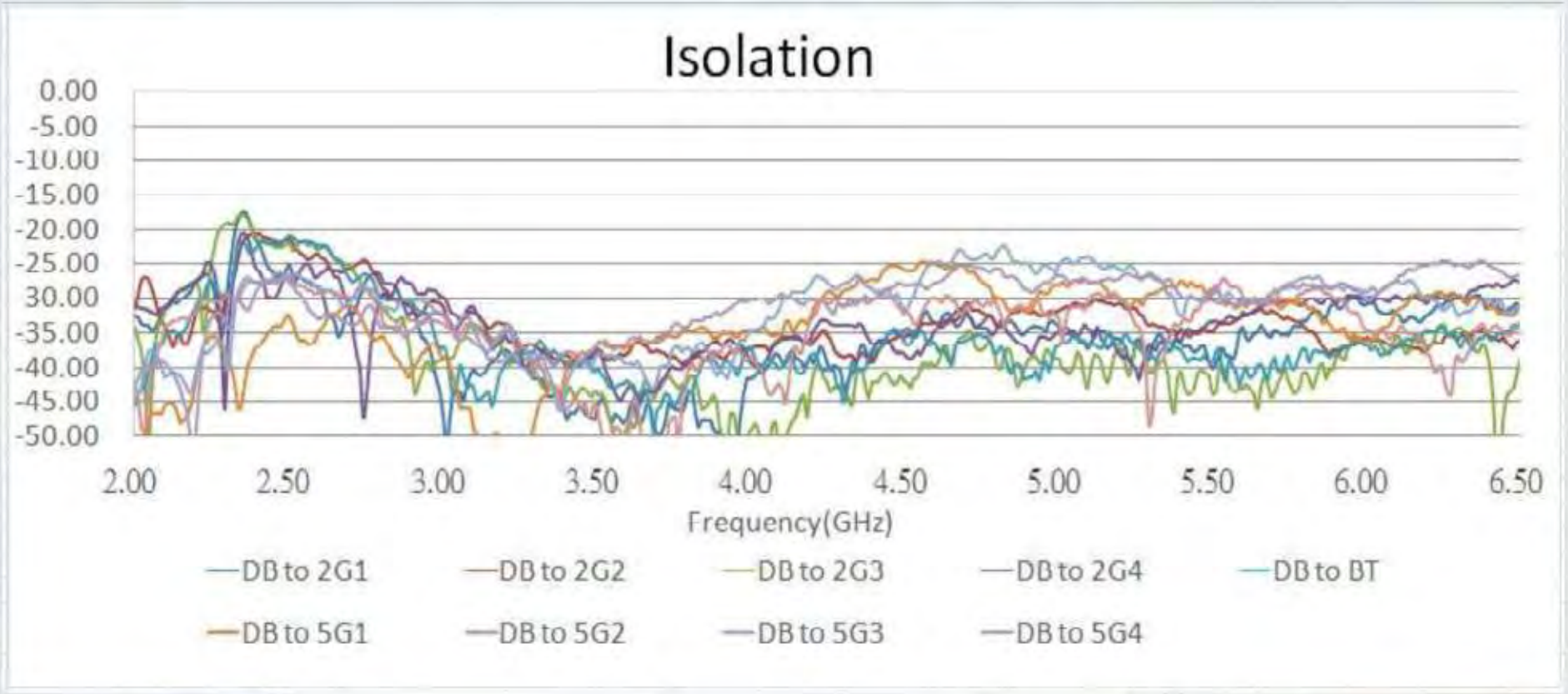
Return Loss Results

5G4(Criterion:>10 dB)



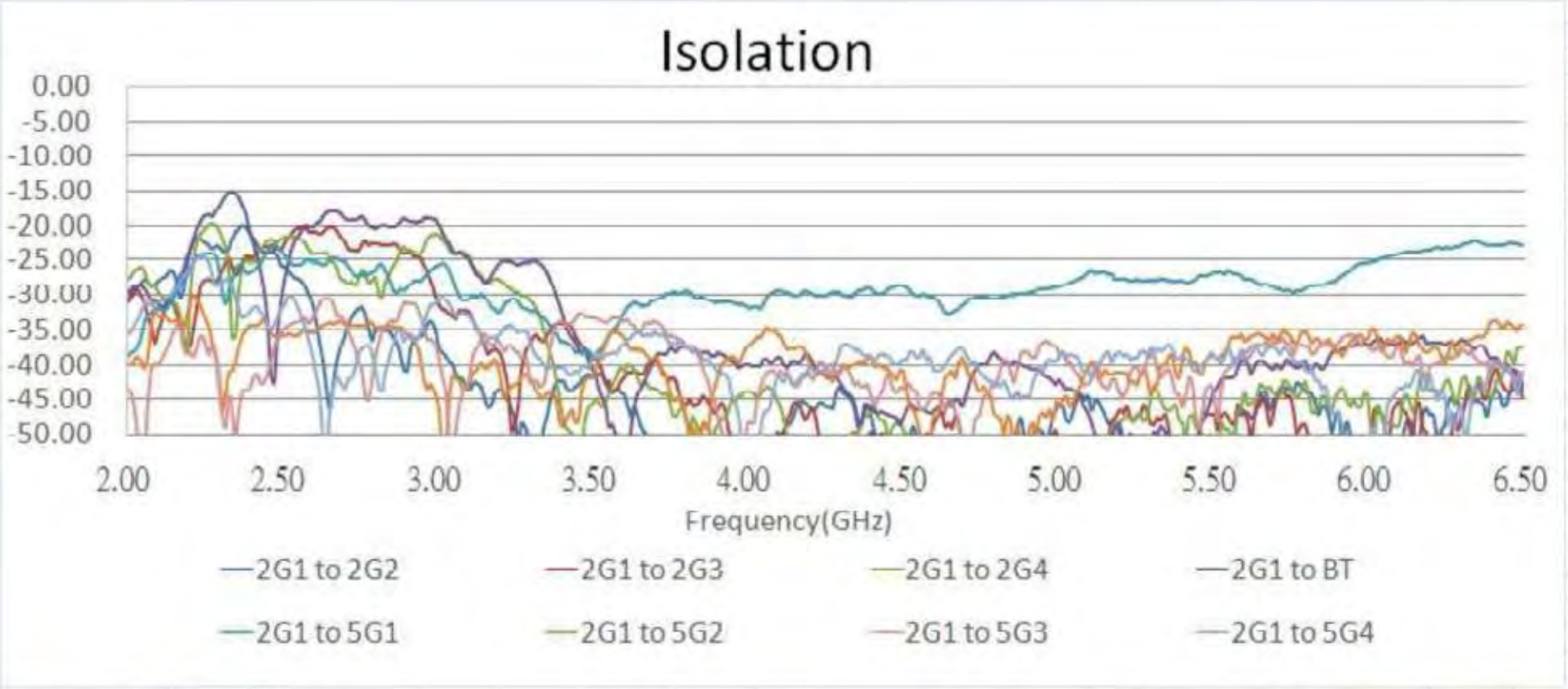
Isolation Results

(Criterion: 2G>20dB , 5G>25dB)



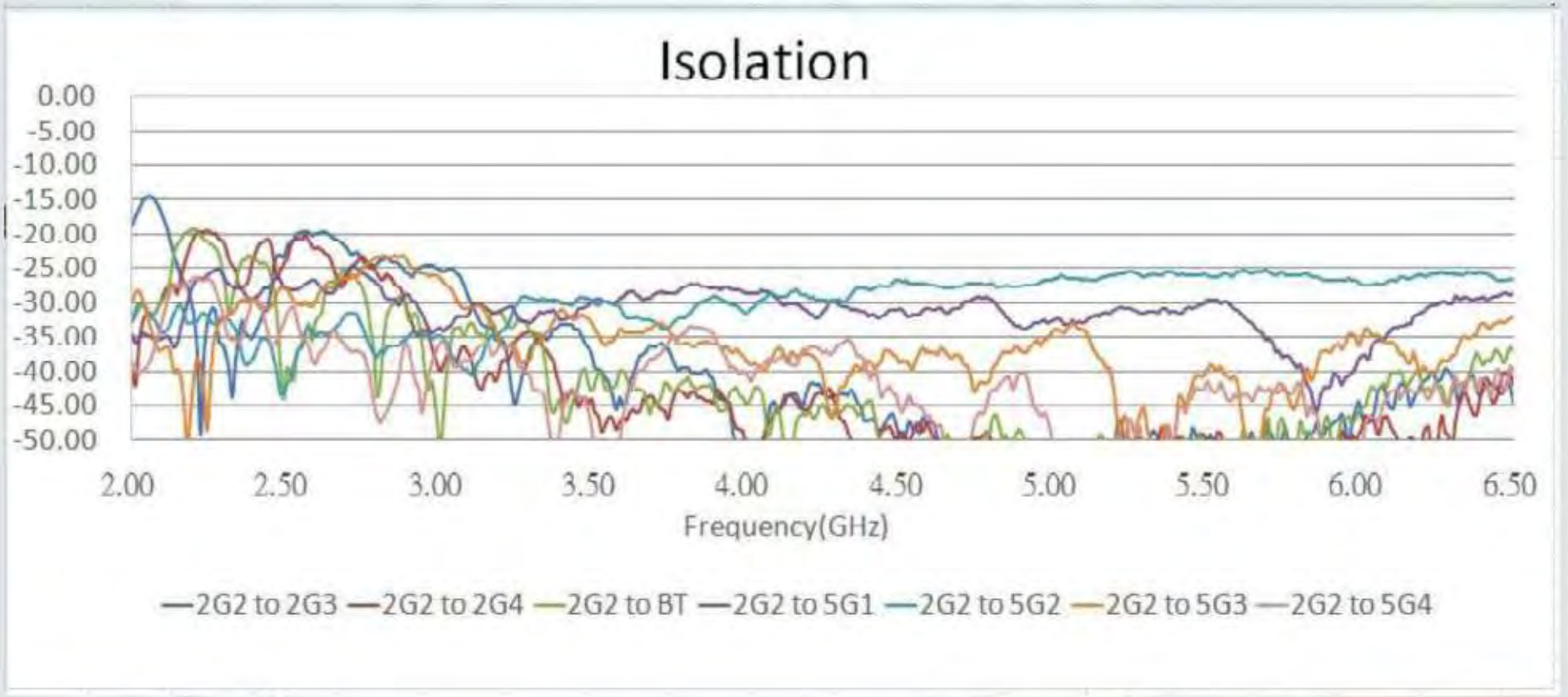
Isolation Results

(Criterion: 2G>20dB , 5G>25dB)



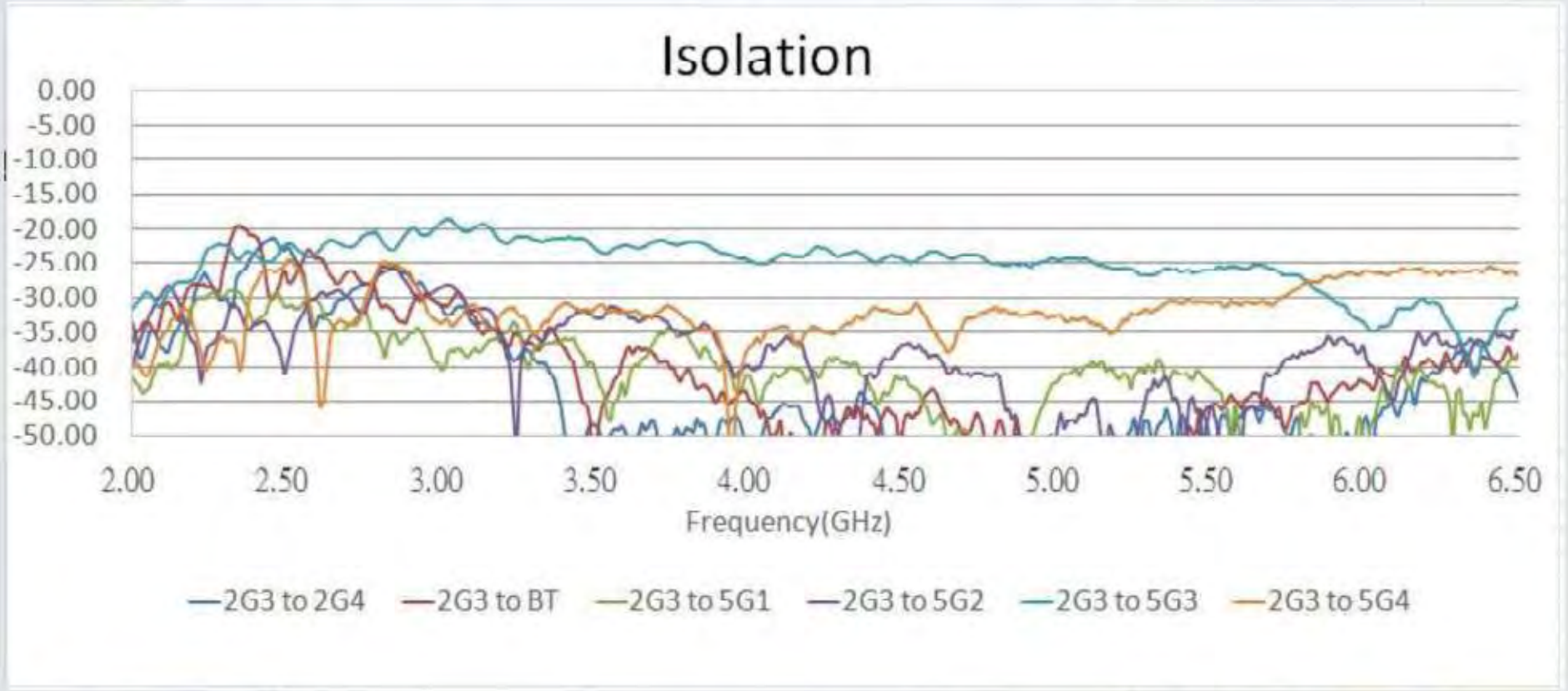
Isolation Results

(Criterion: 2G>20dB , 5G>25dB)



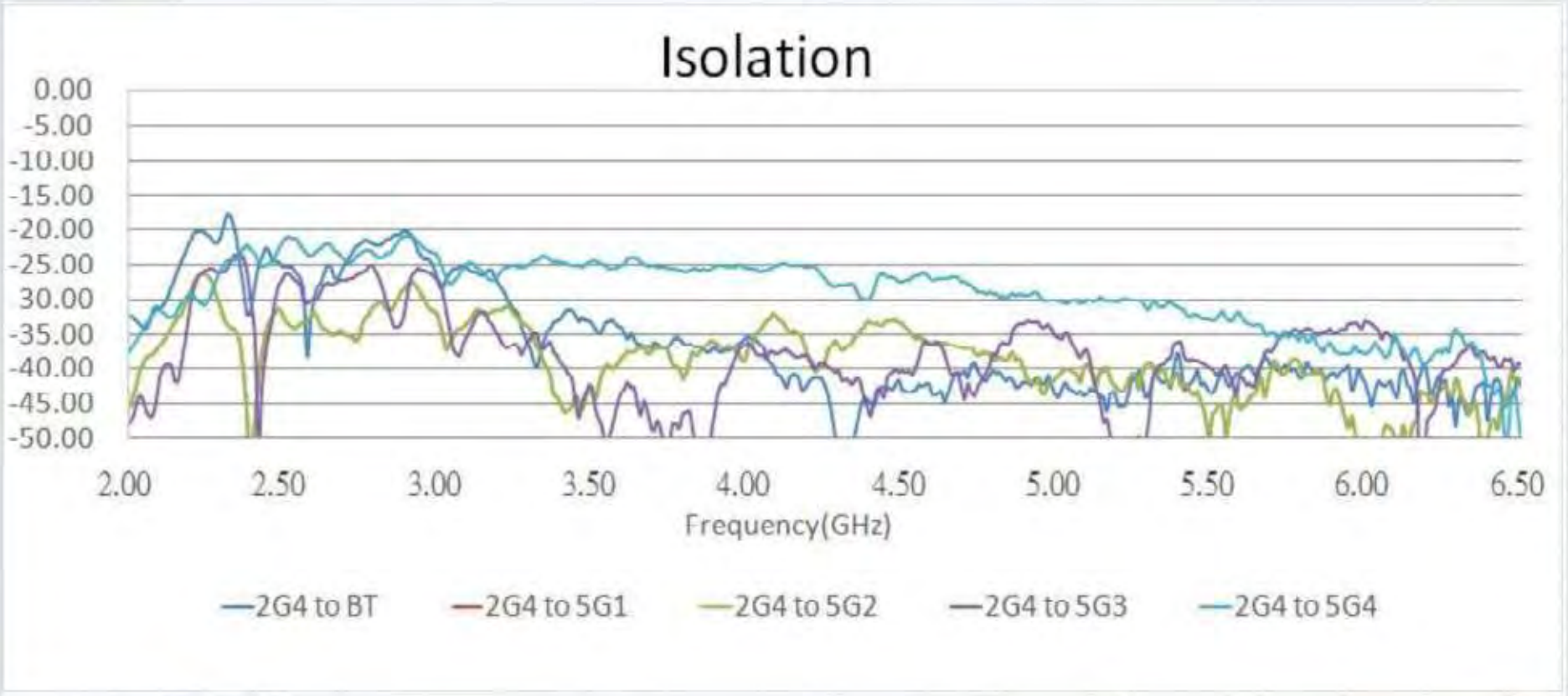
Isolation Results

(Criterion: 2G>20dB , 5G>25dB)



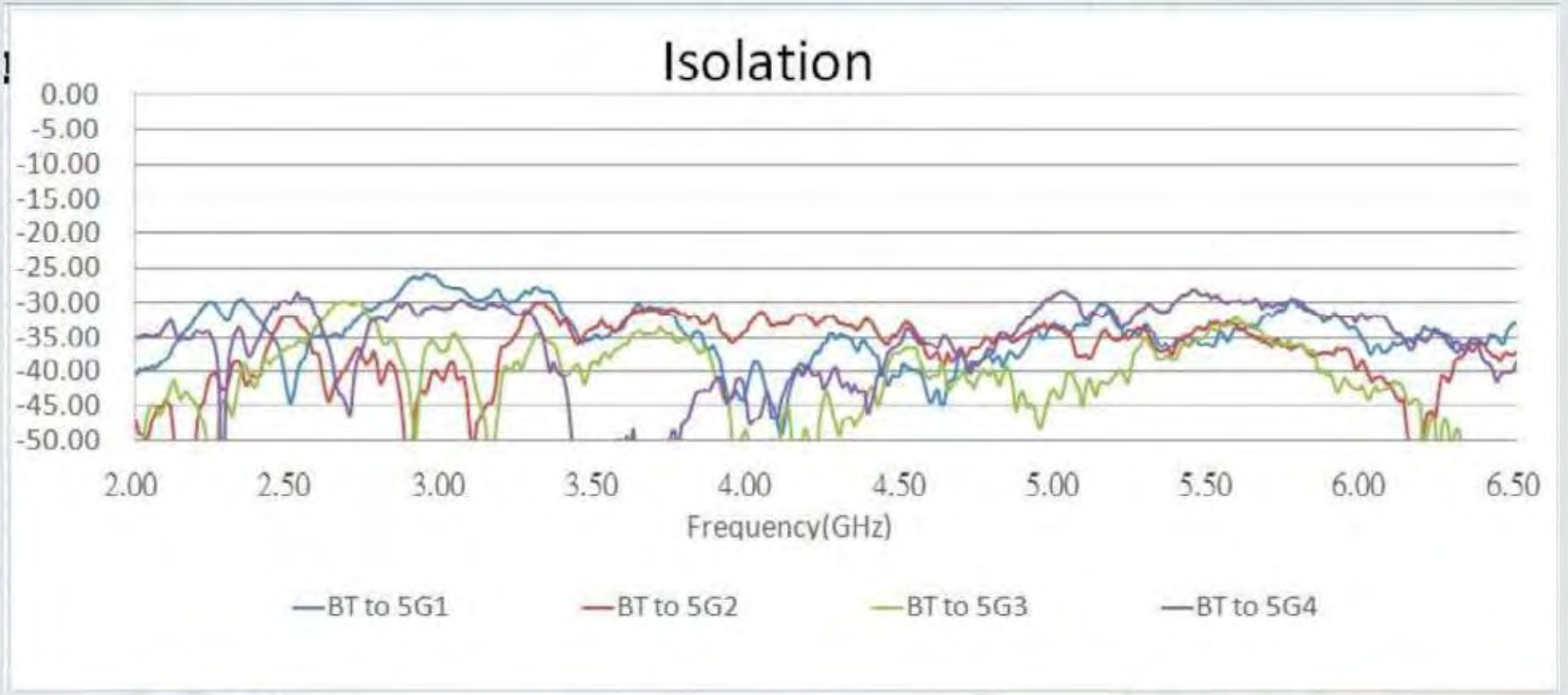
Isolation Results

(Criterion: 2G>20dB , 5G>25dB)



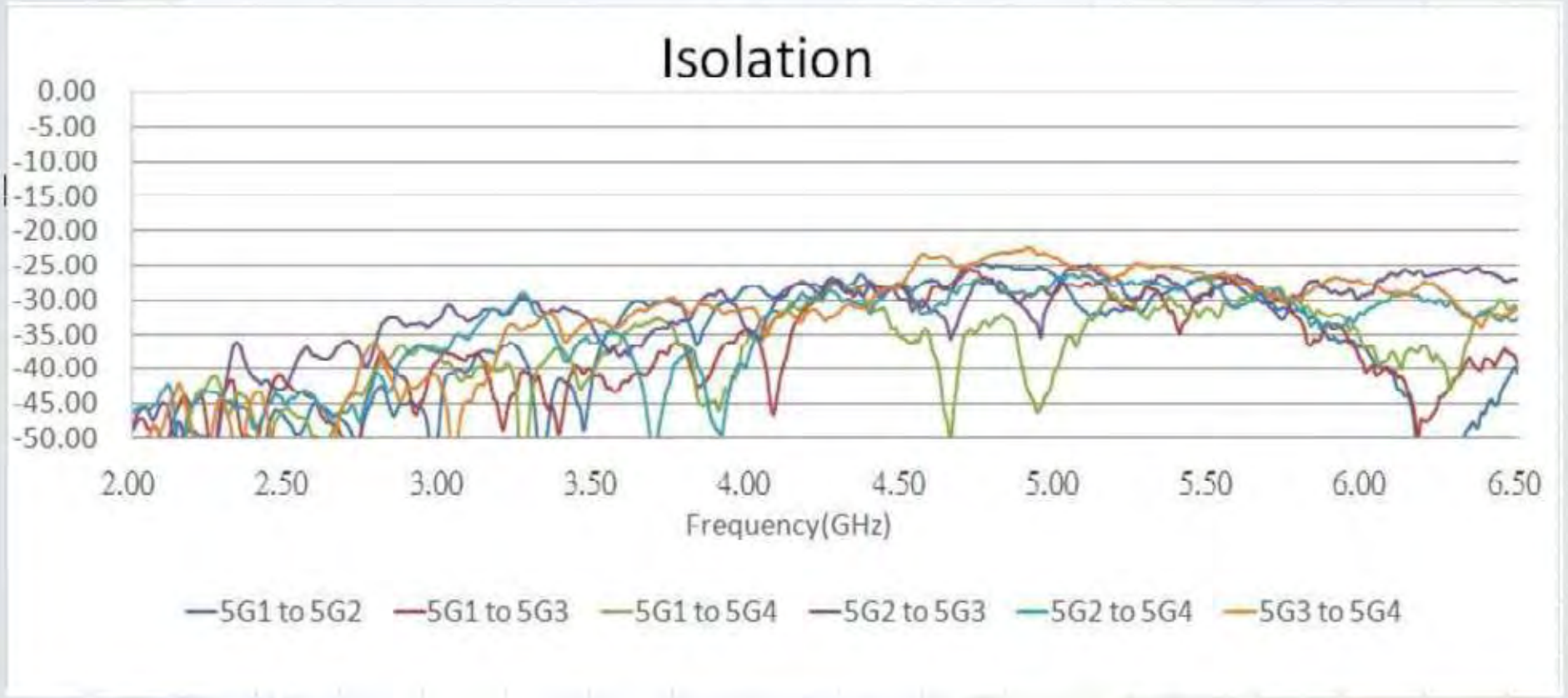
Isolation Results

(Criterion: 2G>20dB , 5G>25dB)



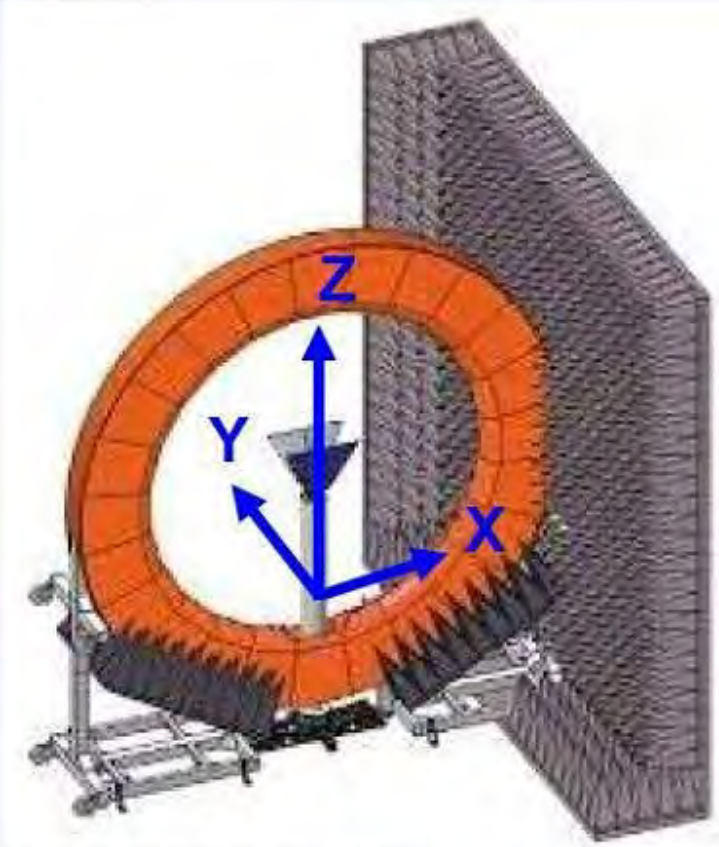
Isolation Results

(Criterion: 2G>20dB , 5G>25dB)



Test Setup for Radiation Pattern Measurement

Chamber Information



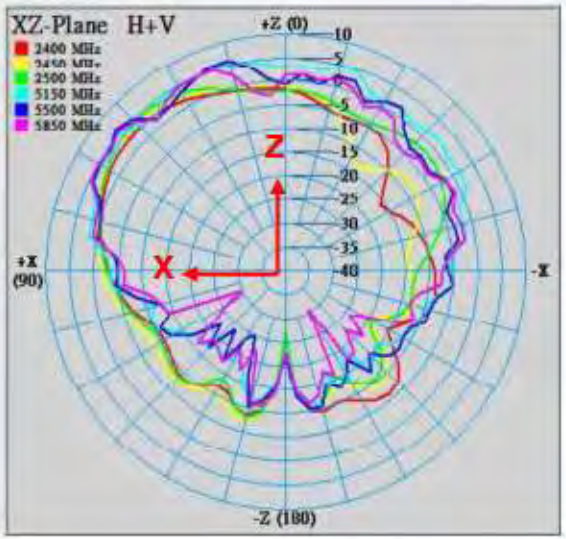
TEST EQUIPMENT & SOFTWARE SYSTEM:SATIMO SG-24L

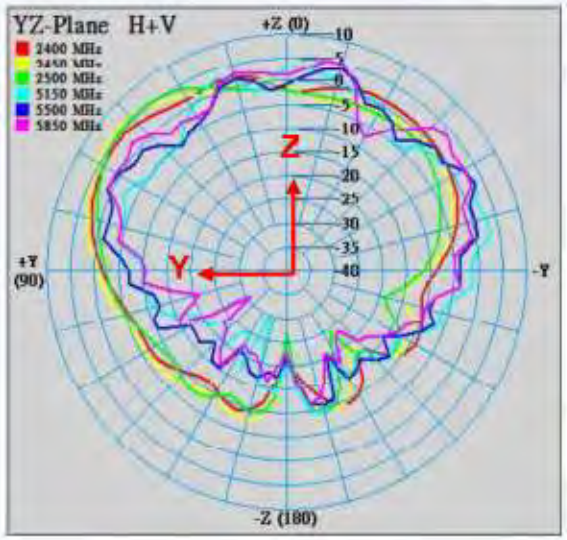
- SATIMO SG-24L Multi-Probe Antenna Measurement System
  - Angle between probes: 15°
  - Frequency range: 400 MHz – 8.5 GHz
  - Chamber Room Size: 5m L x 5m W x 5m H
  - Software: Wave Studio
  - Calibration date: 2021.12.20

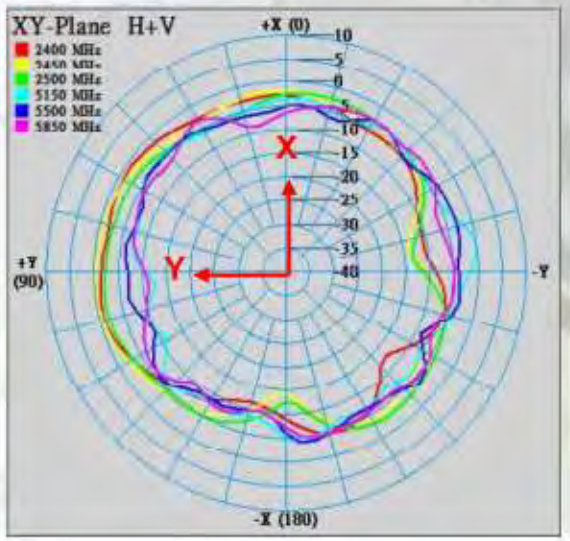
2D Radiation Pattern Results

DB

X-Y-Z Plane Photo : Please refer to X-Y-Z Plane photo-1 of Test Set Up Photos (Antenna spec.)



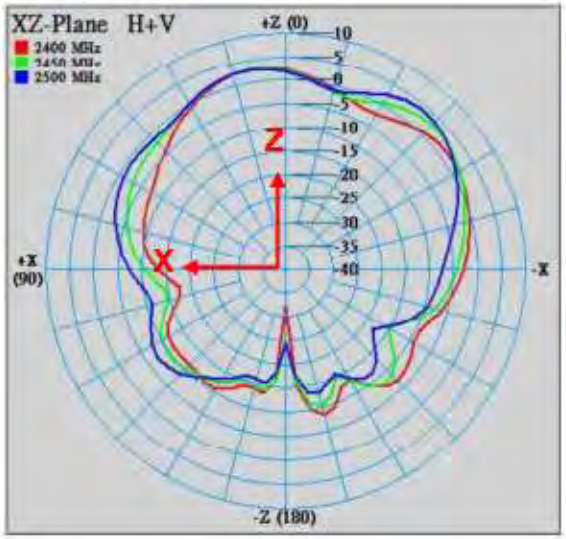


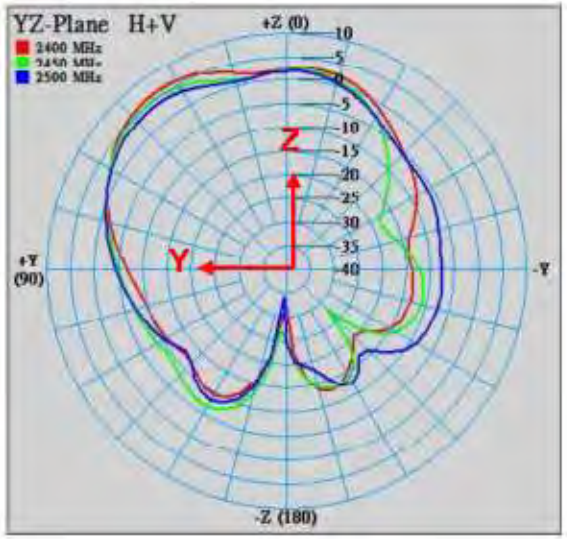


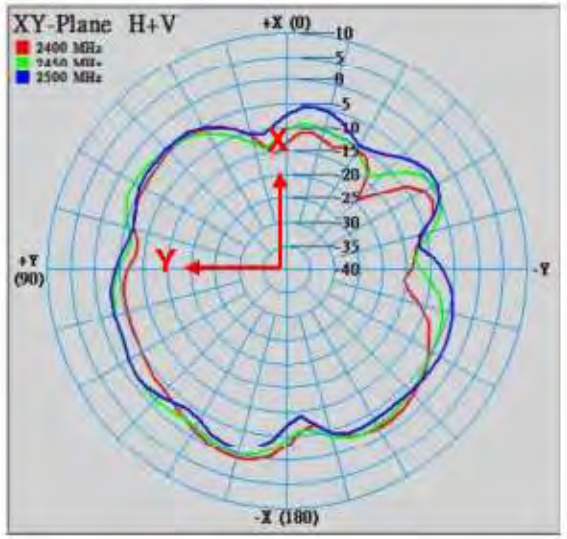
2D Radiation Pattern Results

2G1

X-Y-Z Plane Photo : Please refer to X-Y-Z Plane photo-1 of Test Set Up Photos (Antenna spec.)



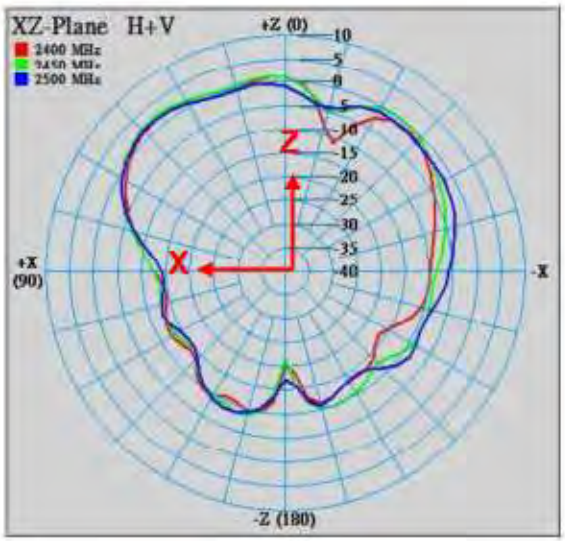


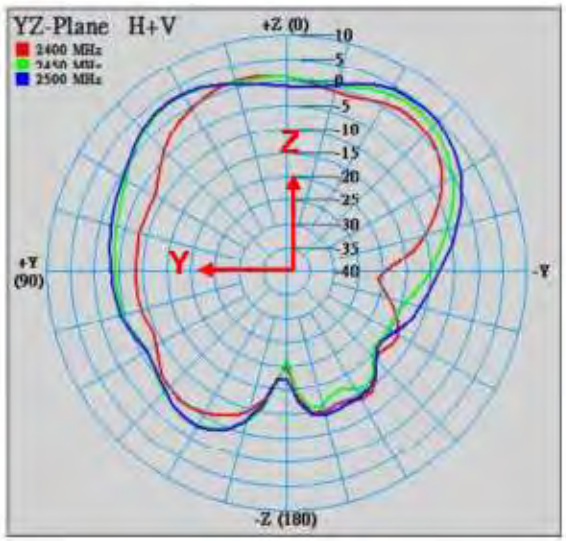


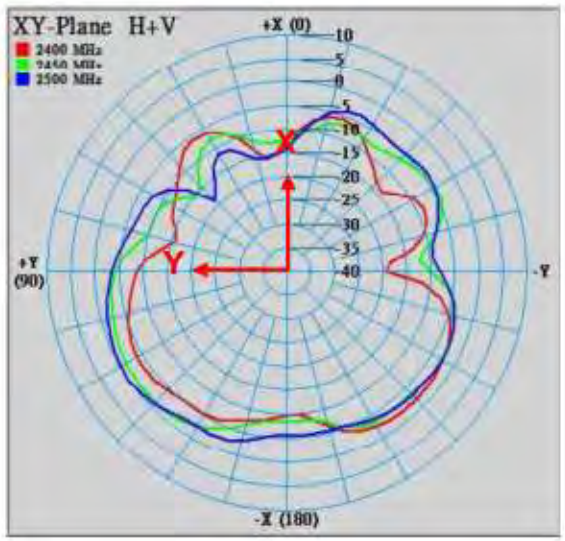
2D Radiation Pattern Results

2G2

X-Y-Z Plane photo : please refer to X-Y-Z Plane photo of Test Set Up Photos (Antenna spec.)



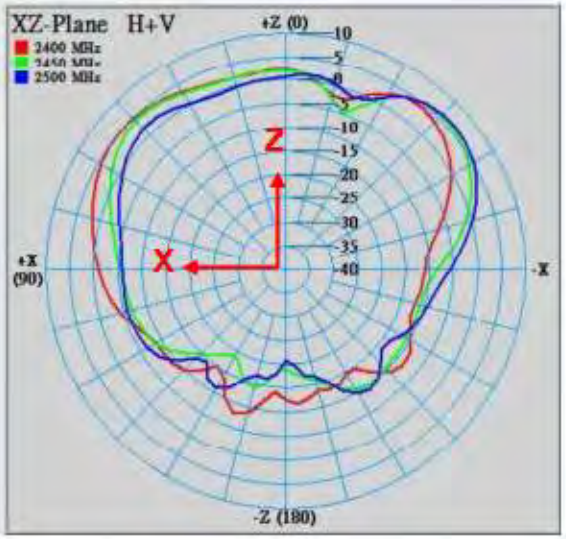


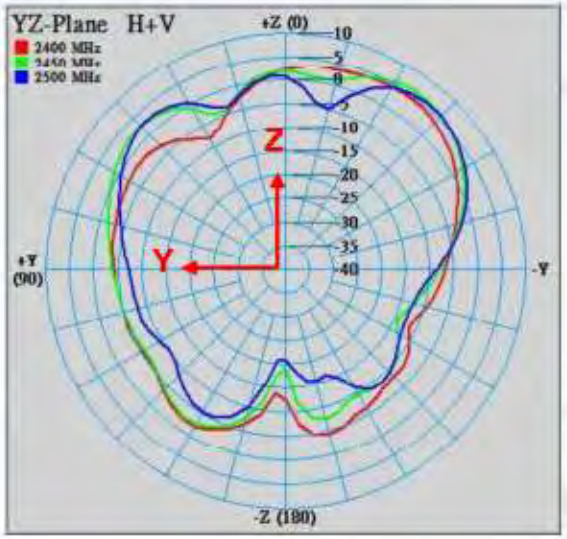


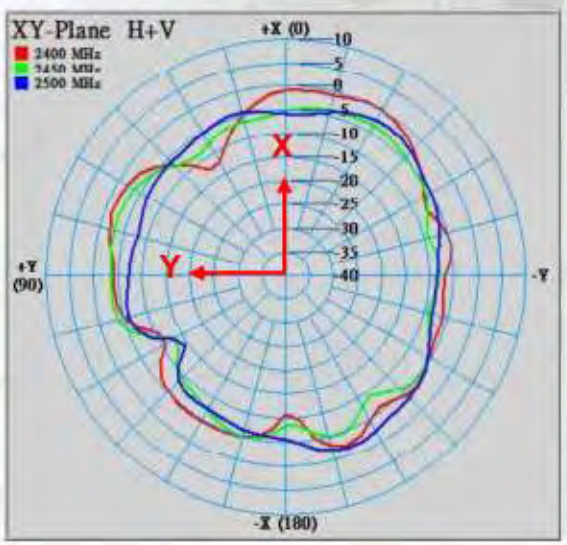
2D Radiation Pattern Results

2G3

X-Y-Z Plane photo : please refer to X-Y-Z Plane photo of Test Set Up Photos (Antenna spec.)



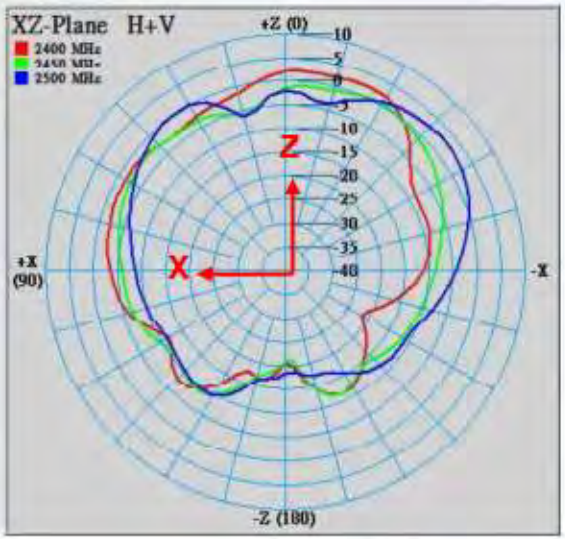


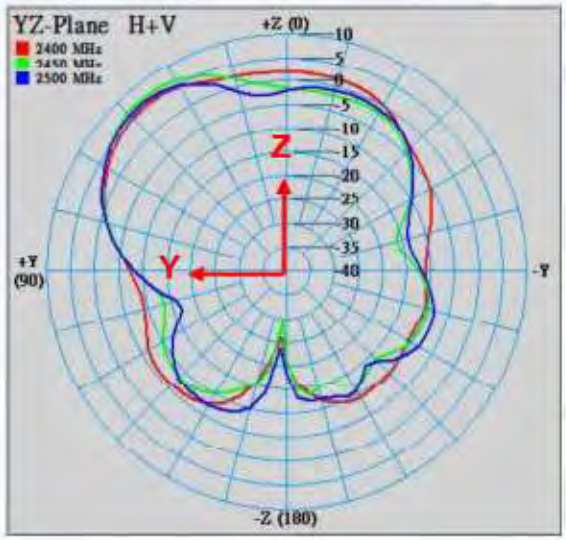


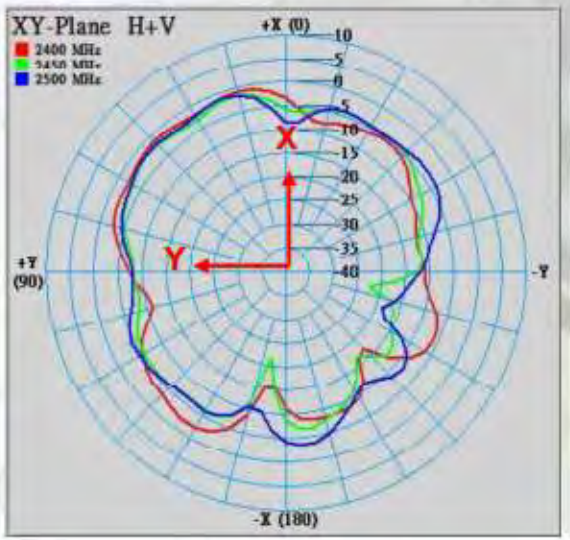
2D Radiation Pattern Results

2G4

X-Y-Z Plane photo : please refer to X-Y-Z Plane photo of Test Set Up Photos (Antenna spec.)



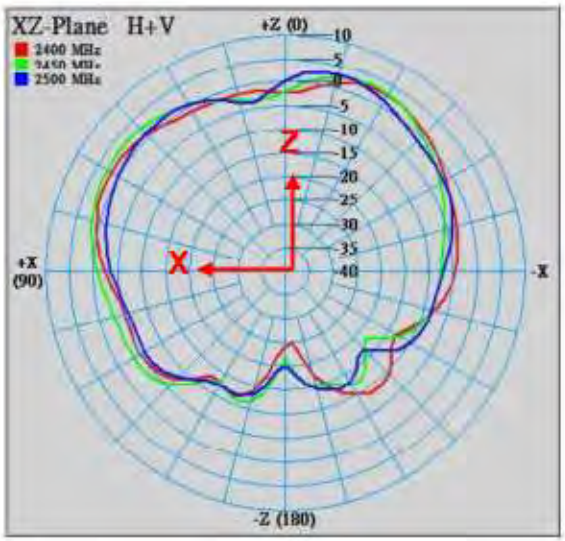


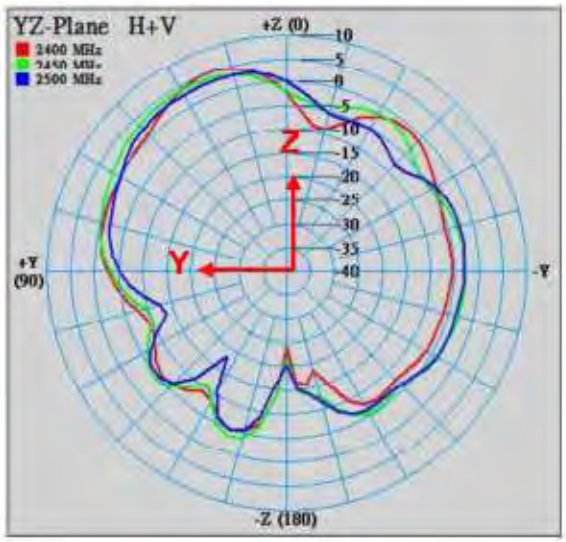


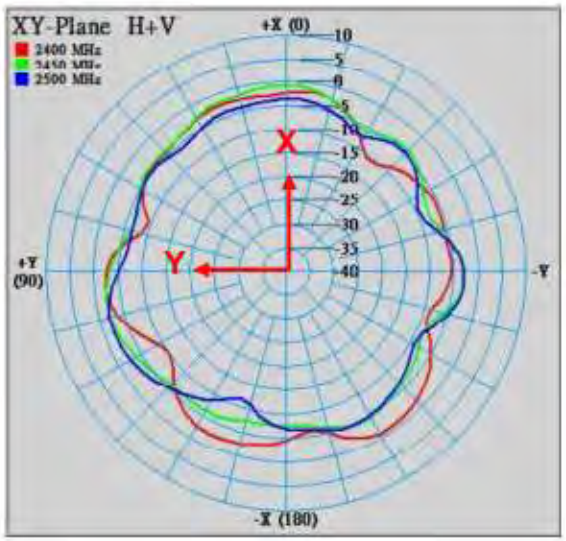
2D Radiation Pattern Results

BT

X-Y-Z Plane photo : please refer to X-Y-Z Plane photo of Test Set Up Photos (Antenna spec.)



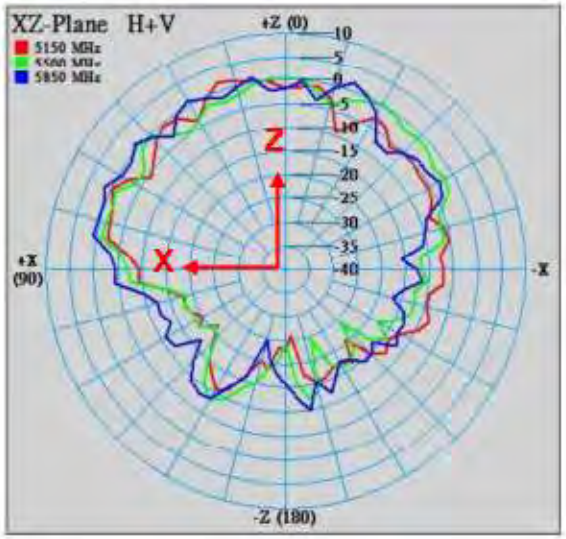


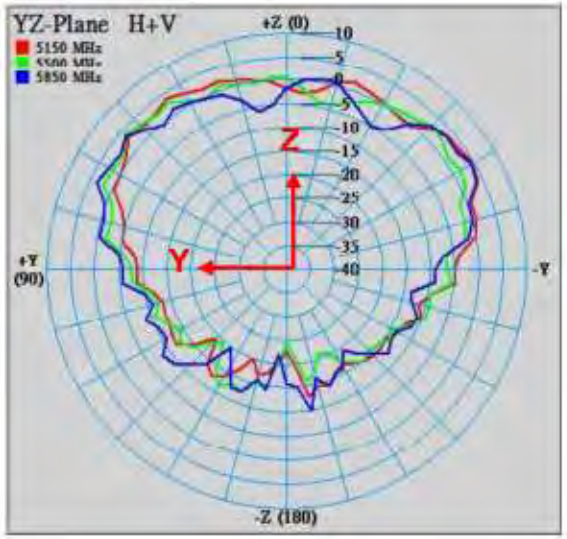


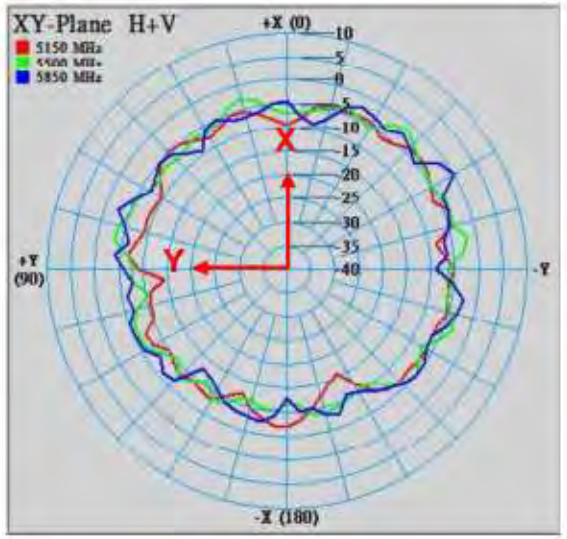
2D Radiation Pattern Results

5G1

X-Y-Z Plane photo : please refer to X-Y-Z Plane photo of Test Set Up Photos (Antenna spec.)



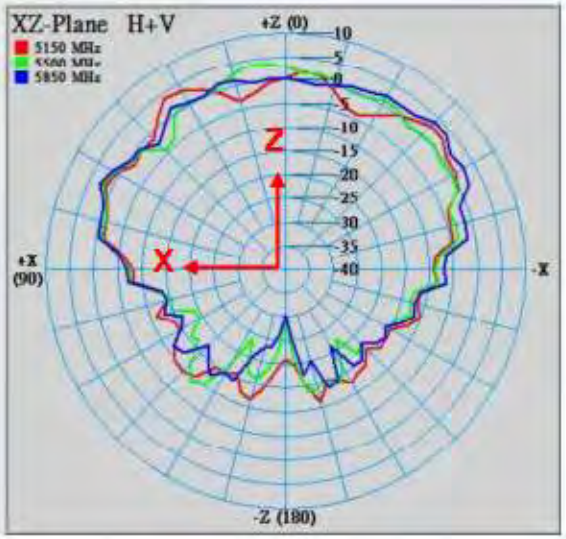


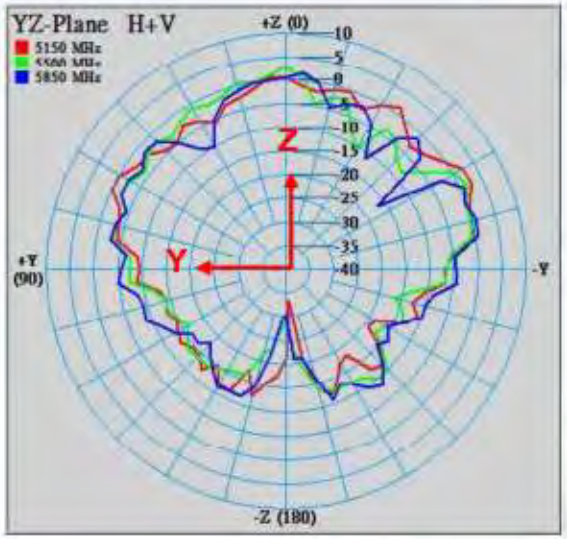


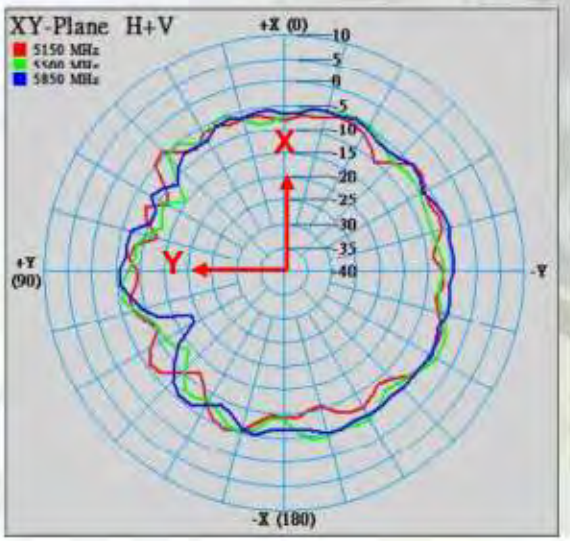
2D Radiation Pattern Results

5G2

X-Y-Z Plane photo : please refer to X-Y-Z Plane photo of Test Set Up Photos (Antenna spec.)



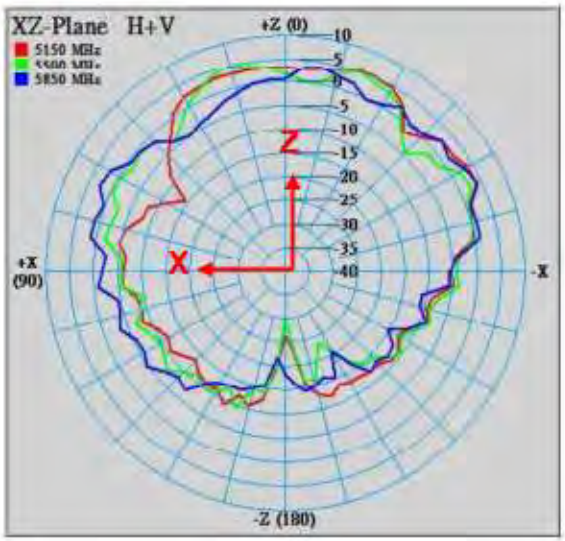


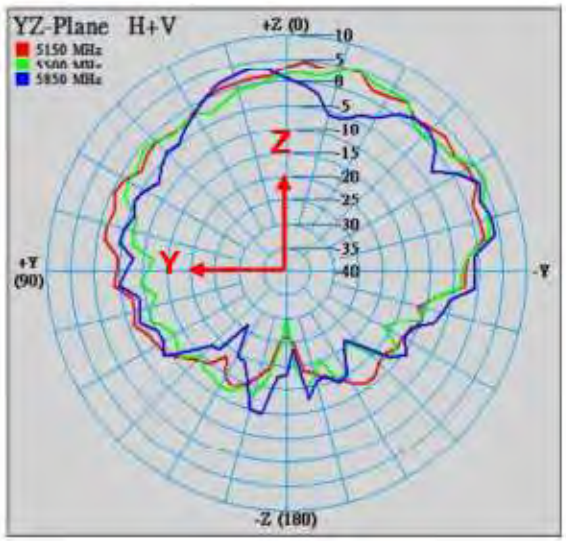


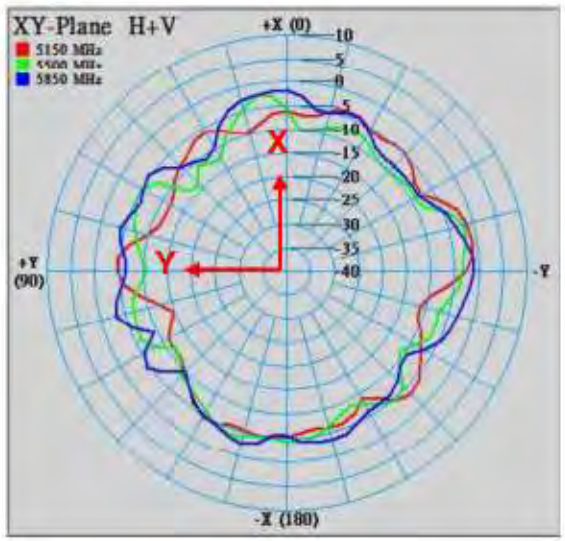
2D Radiation Pattern Results

5G3

X-Y-Z Plane photo : please refer to X-Y-Z Plane photo of Test Set Up Photos (Antenna spec.)



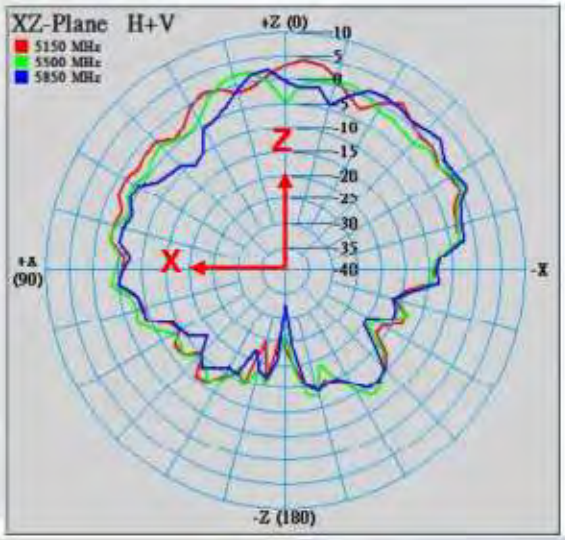


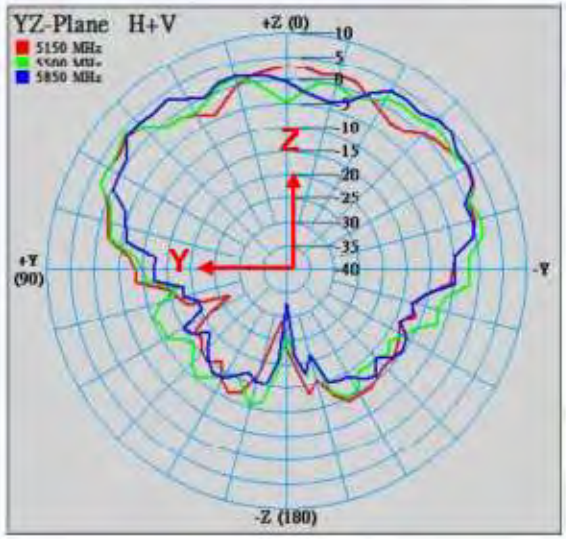


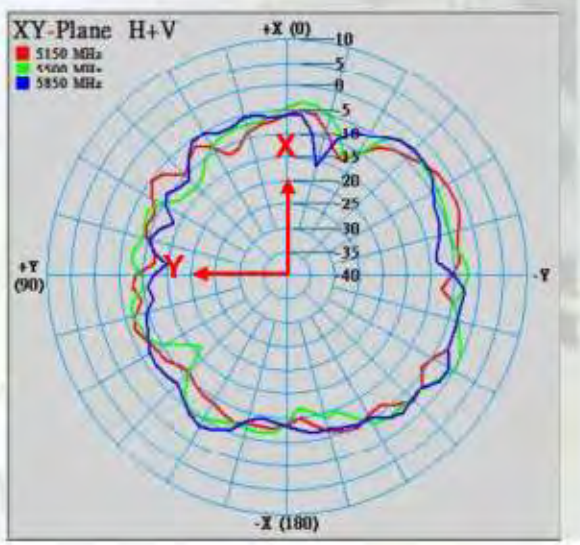
2D Radiation Pattern Results

5G4

X-Y-Z Plane photo : please refer to X-Y-Z Plane photo of Test Set Up Photos (Antenna spec.)







Results Summary

Return Loss (Criterion: >10dB)

Frequency (MHz)	DB (dB)
2400	13
2450	16
2500	14
5150	23
5500	11
5850	11

Frequency (MHz)	2G1 (dB)	2G2 (dB)	2G3 (dB)	2G4 (dB)	BT (dB
2400	12	16	13	18	18
2450	15	21	16	18	24
2500	21	32	22	18	23

Results Summary

Return Loss (Criterion: >10dB)

Frequency (MHz)	5G1 (dB)	5G2 (dB)	5G3 (dB)	5G4 (dB)
5150	15	15	17	14
5500	22	18	20	17
5850	15	20	20	24

Results Summary

Isolation (Criterion: 2G>20dB , 5G>25dB)

Frequency (MHz)	DB & 2G1 (dB)	DB & 2G2 (dB)	DB & 2G3 (dB)	DB & 2G4 (dB)	DB & BT (dB)
2400	21	20	21	25	22
2450	26	21	22	30	21
2500	26	21	22	25	21
5150	36	30	41	34	36
5500	40	34	43	33	38
5850	32	36	39	30	37

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Website : www.whayu.com
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Results Summary

Isolation (Criterion: 2G>20dB , 5G>25dB)

Frequency (MHz)	DB & 5G1 (dB)	DB & 5G2 (dB)	DB & 5G3 (dB)	DB & 5G4 (dB)
2400	37	27	27	28
2450	34	27	27	26
2500	32	27	26	26
5150	28	29	25	27
5500	29	28	28	30
5850	32	28	27	28

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Results Summary

Isolation (Criterion: 2G>20dB , 5G>25dB)

Frequency (MHz)	2G1 & 2G2 (dB)	2G1 & 2G3 (dB)	2G1 & 2G4 (dB)	2G1 & BT (dB)
2400	21	24	25	21
2450	23	23	22	34
2500	25	23	21	29
5150	47	50	52	56
5500	58	47	50	43
5850	45	61	44	40

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Results Summary

Isolation (Criterion: 2G>20dB , 5G>25dB)

Frequency (MHz)	2G1 & 5G1 (dB)	2G1 & 5G2 (dB)	2G1 & 5G3 (dB)	2G1 & 5G4 (dB)
2400	26	34	42	32
2450	23	34	41	34
2500	23	35	35	31
5150	26	40	43	38
5500	26	38	45	38
5850	28	37	37	43

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Results Summary

Isolation (Criterion: 2G>20dB , 5G>25dB)

Frequency (MHz)	2G2 & 2G3 (dB)	2G2 & 2G4 (dB)	2G2 & BT (dB)
2400	34	22	23
2450	28	21	25
2500	22	23	42
5150	51	52	49
5500	50	51	51
5850	48	62	52

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Results Summary

Isolation (Criterion: 2G>20dB , 5G>25dB)

Frequency (MHz)	2G2 & 5G1 (dB)	2G2 & 5G2 (dB)	2G2 & 5G3 (dB)	2G2 & 5G4 (dB)
2400	29	37	29	29
2450	27	36	30	36
2500	27	42	28	32
5150	31	26	38	55
5500	29	25	39	41
5850	45	26	40	46

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Results Summary

Isolation (Criterion: 2G>20dB , 5G>25dB)

Frequency (MHz)	2G3 & 2G4 (dB)	2G3 & BT (dB)
2400	23	21
2450	21	30
2500	22	26
5150	55	55
5500	52	45
5850	54	42

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Results Summary

Isolation (Criterion: 2G>20dB , 5G>25dB)

Frequency (MHz)	2G3 & 5G1 (dB)	2G3 & 5G2 (dB)	2G3 & 5G3 (dB)	2G3 & 5G4 (dB)
2400	33	33	23	27
2450	30	34	24	25
2500	31	40	22	24
5150	39	51	25	34
5500	42	45	26	30
5850	45	37	28	27

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Results Summary

Isolation (Criterion: 2G>20dB , 5G>25dB)

Frequency (MHz)	2G4 & BT (dB)	2G4 & 5G1 (dB)	2G4 & 5G2 (dB)	2G4 & 5G3 (dB)	2G4 & 5G4 (dB)
2400	29	50	50	33	23
2450	22	33	33	35	24
2500	25	32	32	26	21
5150	44	40	40	47	30
5500	43	46	46	40	33
5850	40	40	40	34	37

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Results Summary

Isolation (Criterion: 2G>20dB , 5G>25dB)

Frequency (MHz)	BT & 5G1 (dB)	BT & 5G2 (dB)	BT & 5G3 (dB)	BT & 5G4 (dB)
2400	32	40	40	35
2450	35	34	38	30
2500	43	32	36	29
5150	30	34	41	31
5500	36	32	33	29
5850	31	37	39	31

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Results Summary

Isolation (Criterion: 2G>20dB , 5G>25dB)

Frequency (MHz)	5G1 & 5G2 (dB)	5G1 & 5G3 (dB)	5G1 & 5G4 (dB)	5G2 & 5G3 (dB)	5G2 & 5G4 (dB)	5G3 & 5G4 (dB)
2400	53	49	48	41	48	43
2450	47	42	50	42	44	49
2500	47	41	45	42	44	62
5150	31	27	30	26	26	26
5500	26	28	31	29	27	27
5850	33	35	31	27	33	27

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Results Summary

Peak gain & Efficiency –DB

Frequency (MHz)	Peak Gain (dBi)	Efficiency (%)
2400	6.8	71.6
2450	6.5	73.5
2500	5.8	70.6
5150	5.9	69.3
5500	7.1	68.2
5850	6.9	67.8

Results Summary

Peak gain & Efficiency –2G1

Frequency (MHz)	Peak Gain (dBi)	Efficiency (%)
2400	6.6	69.7
2450	6.2	70.7
2500	6.1	70.4

Results Summary

Peak gain & Efficiency –2G2

Frequency (MHz)	Peak Gain (dBi)	Efficiency (%)
2400	7.2	72.5
2450	6.8	69.2
2500	6.0	70.7

Results Summary

Peak gain & Efficiency –2G3

Frequency (MHz)	Peak Gain (dBi)	Efficiency (%)
2400	6.2	72.6
2450	6.4	72.1
2500	7.0	70.7

Results Summary

Peak gain & Efficiency –2G4

Frequency (MHz)	Peak Gain (dBi)	Efficiency (%)
2400	6.1	72.3
2450	7.1	71.6
2500	6.5	69.2

Results Summary

Peak gain & Efficiency –BT

Frequency (MHz)	Peak Gain (dBi)	Efficiency (%)
2400	5.1	70.9
2450	5.1	68.2
2500	6.1	71.3

Results Summary

Peak gain & Efficiency –5G1

Frequency (MHz)	Peak Gain (dBi)	Efficiency (%)
5150	6.1	63.9
5500	6.8	65.5
5850	7.2	68.3

Results Summary

Peak gain & Efficiency –5G2

Frequency (MHz)	Peak Gain (dBi)	Efficiency (%)
5150	7.1	67.4
5500	6.9	66.7
5850	7.4	65.1

Results Summary

Peak gain & Efficiency –5G3

Frequency (MHz)	Peak Gain (dBi)	Efficiency (%)
5150	6.4	75.6
5500	7.2	75.8
5850	6.0	74.6

Results Summary

Peak gain & Efficiency –5G4

Frequency (MHz)	Peak Gain (dBi)	Efficiency (%)
5150	6.5	69.5
5500	7.2	72.3
5850	6.7	70.6

Summary & Comments

Antenna Performance Summary

- **Meet Specification.**

Comments for Further Improvement

- **To be confirmed by the customer.**

Antenna Datasheet (30 degrees)-5G1

5.0GHz Band

Theta=90.000000000002(deg) X-Y

Angle	Phi	5150MHz
0	0	-7.227
3	0.052359878	-7.549
6	0.104719755	-7.404
9	0.157079633	-7.118
12	0.20943951	-6.583
15	0.261799388	-5.925
18	0.314159265	-5.31
21	0.366519143	-5.336
24	0.41887902	-4.994
27	0.471238898	-4.53
30	0.523598776	-4.012
33	0.575958653	-3.558
36	0.628318531	-3.507
39	0.680678408	-3.791
42	0.733038286	-4.568
45	0.785398163	-5.351
48	0.837758041	-5.97
51	0.890117919	-5.998
54	0.942477796	-5.644
57	0.994837674	-5.244
60	1.047197551	-4.934
63	1.099557429	-4.776
66	1.151917306	-4.693
69	1.204277184	-4.646
72	1.256637061	-4.669
75	1.308996939	-4.872
78	1.361356817	-5.314
81	1.413716694	-6
84	1.466076572	-6.893
87	1.518436449	-7.864
90	1.570796327	-8.723
93	1.623156204	-9.273
96	1.675516082	-9.388
99	1.72787596	-8.993
102	1.780235837	-8.222
105	1.832595715	-7.247
108	1.884955592	-6.255
111	1.93731547	-5.348
114	1.989675347	-4.577
117	2.042035225	-3.989
120	2.094395102	-3.629
123	2.14675498	-3.533
126	2.199114858	-3.722
129	2.251474735	-4.203
132	2.303834613	-4.959
135	2.35619449	-5.919
138	2.408554368	-7.009
141	2.460914245	-8.187
144	2.513274123	-9.152
147	2.565634	-9.548
150	2.617993878	-9.211
153	2.670353756	-8.42
156	2.722713633	-7.395
159	2.775073511	-6.78
162	2.827433388	-6.532
165	2.879793266	-6.425
168	2.932153143	-6.327
171	2.984513021	-6.067
174	3.036872899	-5.659
177	3.089232776	-5.309
180	3.141592654	-5.2
183	3.193952531	-5.403
186	3.246312409	-5.834
189	3.298672286	-6.315
192	3.351032164	-6.638
195	3.403392041	-6.803
198	3.455751919	-6.945
201	3.508111797	-7.255
204	3.560471674	-7.775
207	3.612831552	-8.356
210	3.665191429	-8.858
213	3.717551307	-9.072
216	3.769911184	-8.921
219	3.822271062	-8.625
222	3.874630939	-8.122
225	3.926990817	-7.386
228	3.979350695	-6.508
231	4.031710572	-5.672
234	4.08407045	-5.034
237	4.136430327	-4.661
240	4.188790205	-4.548
243	4.241150082	-4.623
246	4.29350996	-4.814
249	4.345869838	-5.051
252	4.398229715	-5.327
255	4.450589593	-5.652
258	4.50294947	-6.029
261	4.555309348	-6.398
264	4.607669225	-6.652
267	4.660029103	-6.653
270	4.71238898	-6.336
273	4.764748858	-5.73
276	4.817108736	-4.962
279	4.869468613	-4.191
282	4.921828491	-3.54
285	4.974188368	-3.09
288	5.026548246	-2.878
291	5.078908123	-2.906
294	5.131268001	-3.165
297	5.183627878	-3.637
300	5.235987756	-4.311
303	5.288347634	-5.189
306	5.340707511	-6.271
309	5.393067389	-7.381
312	5.445427266	-8.111
315	5.497787144	-8.13
318	5.550147021	-7.32
321	5.602506899	-6.127
324	5.654866777	-4.962
327	5.707226654	-3.99
330	5.759586532	-3.284
333	5.811946409	-2.896
336	5.864306287	-2.662
339	5.916666164	-3.226
342	5.969026042	-4.014
345	6.021385919	-5.07
348	6.073745797	-6.181
351	6.126105675	-6.96
354	6.178465552	-7.193
357	6.23082543	-7.229

Phi=0(deg) X-Z

Angle	Theta	5150MHz
-180	-3.14159265	-30.181
-177	-3.08923278	-30.108
-174	-3.0368729	-27.708
-171	-2.98451302	-22.976
-168	-2.93215314	-19.362
-165	-2.87979327	-17.712
-162	-2.82743339	-17.316
-159	-2.77507351	-17.94
-156	-2.72271363	-19.198
-153	-2.67035376	-20.368
-150	-2.61799388	-18.987
-147	-2.565634	-17.207
-144	-2.51327412	-16.434
-141	-2.46091425	-15.858
-138	-2.40855437	-15.789
-135	-2.35619449	-16.273
-132	-2.30383461	-16.482
-129	-2.25147474	-15.439
-126	-2.19911486	-13.374
-123	-2.14675498	-11.362
-120	-2.0943951	-9.873
-117	-2.04203522	-8.96
-114	-1.98967535	-8.511
-111	-1.93731547	-8.362
-108	-1.88495559	-8.335
-105	-1.83259571	-8.243
-102	-1.78023584	-7.89
-99	-1.72787596	-7.236
-96	-1.67551608	-6.409
-93	-1.6231562	-5.671
-90	-1.57079633	-5.2
-87	-1.51843645	-5.065
-84	-1.46607657	-5.218
-81	-1.41371669	-5.449
-78	-1.36135682	-5.492
-75	-1.30899694	-5.342
-72	-1.25663706	-4.997
-69	-1.20427718	-4.604
-66	-1.15191731	-4.342
-63	-1.09955743	-4.212
-60	-1.04719755	-4.18
-57	-0.99483767	-4.142
-54	-0.9424778	-4.05
-51	-0.89011792	-3.857
-48	-0.83775804	-3.594
-45	-0.78539816	-3.391
-42	-0.73303829	-3.215
-39	-0.68067841	-3.022
-36	-0.62831853	-2.847
-33	-0.57595865	-2.682
-30	-0.52359878	-2.547
-27	-0.4712389	-2.463
-24	-0.41887902	-2.426
-21	-0.36651914	-2.385
-18	-0.31415927	-2.258
-15	-0.26179939	-1.974
-12	-0.20943951	-1.488
-9	-0.15707963	-0.871
-6	-0.10471976	-0.236
-3	-0.05235988	0.326
0	0.00E+00	0.877
3	0.05235988	1.435
6	0.10471976	2.088
9	0.15707963	2.744
12	0.20943951	3.313
15	0.26179939	3.718
18	0.31415927	3.891
21	0.36651914	3.778
24	0.41887902	3.405
27	0.4712389	2.748
30	0.52359878	1.734
33	0.57595865	0.364
36	0.62831853	-1.272
39	0.68067841	-2.809
42	0.73303829	-3.253
45	0.78539816	-2.176
48	0.83775804	-0.419
51	0.89011792	1.241
54	0.9424778	2.313
57	0.99483767	2.767
60	1.04719755	2.623
63	1.09955743	1.945
66	1.15191731	1.032
69	1.20427718	0.389
72	1.25663706	0.362
75	1.30899694	0.625
78	1.36135682	0.607
81	1.41371669	-0.041
84	1.46607657	-1.504
87	1.51843645	-3.792
90	1.57079633	-7.227
93	1.6231562	-11.686
96	1.67551608	-14.927
99	1.72787596	-15.962
102	1.78023584	-15.762
105	1.83259571	-15.72
108	1.88495559	-16.392
111	1.93731547	-16.975
114	1.98967535	-17.611
117	2.04203522	-17.581
120	2.0943951	-16.398
123	2.14675498	-15.866
126	2.19911486	-15.677
129	2.25147474	-15.093
132	2.30383461	-13.986
135	2.35619449	-12.506
138	2.40855437	-11.856
141	2.46091425	-12.435
144	2.51327412	-14.075
147	2.565634	-17.3
150	2.61799388	-20.199
153	2.67035376	-20.498
156	2.72271363	-20.228
159	2.77507351	-20.19
162	2.82743339	-21.162
165	2.87979327	-22.998
168	2.93215314	-24.911
171	2.98451302	-27.909
174	3.0368729	-30.551
177	3.08923278	-29.644

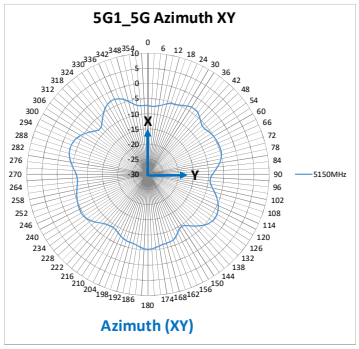
Phi=90.000000000002(deg) Y-Z

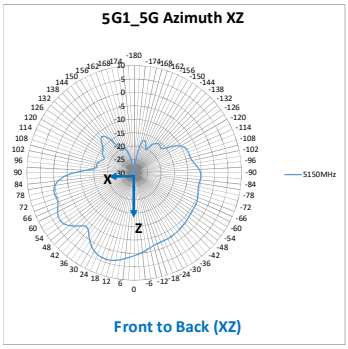
Angle	Theta	5150MHz
-180	-3.141593	-30.181
-177	-3.089233	-29.981
-174	-3.036873	-27.586
-171	-2.984513	-23.231
-168	-2.932153	-20.574
-165	-2.879793	-19.995
-162	-2.827433	-20.184
-159	-2.775074	-20.685
-156	-2.722714	-20.502
-153	-2.670354	-20.127
-150	-2.617994	-21.376
-147	-2.565634	-23.108
-144	-2.513274	-23.247
-141	-2.460914	-19.283
-138	-2.408554	-15.965
-135	-2.356194	-14.539
-132	-2.303835	-13.744
-129	-2.251475	-14.193
-126	-2.199115	-14.892
-123	-2.146755	-15.982
-120	-2.094395	-17.015
-117	-2.042035	-16.891
-114	-1.989675	-15.646
-111	-1.937315	-13.897
-108	-1.884956	-12.293
-105	-1.832596	-10.923
-102	-1.780236	-9.677
-99	-1.727876	-8.6
-96	-1.675516	-7.749
-93	-1.623156	-7.068
-90	-1.570796	-6.336
-87	-1.518436	-5.263
-84	-1.466077	-3.812
-81	-1.413717	-2.149
-78	-1.361357	-0.527
-75	-1.308997	0.913
-72	-1.256637	2.09
-69	-1.204277	2.988
-66	-1.151917	3.634
-63	-1.099557	4.099
-60	-1.047198	4.455
-57	-0.994838	4.749
-54	-0.942478	4.935
-51	-0.890118	4.92
-48	-0.837758	4.603
-45	-0.785398	4.006
-42	-0.733038	3.247
-39	-0.680678	2.606
-36	-0.628319	2.33
-33	-0.575959	2.383
-30	-0.523599	2.582
-27	-0.471239	2.859
-24	-0.418879	3.227
-21	-0.366519	3.719
-18	-0.314159	4.176
-15	-0.261799	4.366
-12	-0.20944	4.2
-9	-0.15708	3.65
-6	-0.10472	2.798
-3	-0.05236	1.847
0	0.00E+00	0.877
3	0.0523599	0.253
6	0.1047198	-0.069
9	0.1570796	0.177
12	0.2094395	0.761
15	0.2617994	1.369
18	0.3141593	1.853
21	0.3665191	2.194
24	0.418879	2.411
27	0.4712389	2.57
30	0.5235988	2.684
33	0.5759587	2.686
36	0.6283185	2.53
39	0.6806784	2.249
42	0.7330383	1.96
45	0.7853982	1.801
48	0.837758	1.862
51	0.8901179	2.048
54	0.9424778	2.206
57	0.9948377	2.166
60	1.0471976	1.833
63	1.0995574	1.175
66	1.1519173	0.255
69	1.2042772	-0.792
72	1.2566371	-1.761
75	1.3089969	-2.583
78	1.3613568	-3.329
81	1.4137167	-4.205
84	1.4660766	-5.381
87	1.5184364	-6.911
90	1.5707963	-8.723
93	1.6231562	-10.64
96	1.6755161	-12.38
99	1.727876	-13.7
102	1.7802358	-14.392
105	1.8325957	-14.232
108	1.8849556	-13.16
111	1.9373155	-11.318
114	1.9896753	-9.892
117	2.0420352	-9.131
120	2.0943951	-9.009
123	2.146755	-9.693
126	2.1991149	-11.408
129	2.2514747	-13.614
132	2.3038346	-15.09
135	2.3561945	-15.243
138	2.4085544	-14.049
141	2.4609142	-12.67
144	2.5132741	-11.9
147	2.565634	-11.68
150	2.6179939	-12.072
153	2.6703538	-13.037
156	2.7227136	-14.23
159	2.7750735	-15.331
162	2.8274334	-16.179
165	2.8797933	-17.106
168	2.9321531	-18.829
171	2.984513	-22.078
174	3.0368729	-26.32
177	3.0892328	-29.193

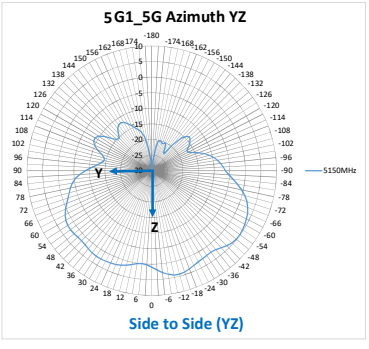
Azimuth(XY)	5150MHz
Max Value 30<θ<150	-3.51
Summry	
Frequency	5150
Elevation angle above 30 degrees	2.69

From to Black(XZ)	5150MHz

Side to Side (YZ)	5150MHz
Max Value 30<θ<150	2.69







Antenna Datasheet (30 degrees)-5G2

5.0GHz Band

Theta=90.000000000002(deg) X-Y

Angle	Phi	5150MHz
0	0	-5.388
3	0.052359878	-7.272
6	0.104719755	-9.462
9	0.157079633	-11.826
12	0.20943951	-13.465
15	0.261799388	-12.842
18	0.314159265	-10.525
21	0.366519143	-8.01
24	0.41887902	-5.905
27	0.471238898	-4.45
30	0.523598776	-3.731
33	0.575958653	-3.644
36	0.628318531	-4.131
39	0.680678408	-5.076
42	0.733038286	-6.256
45	0.785398163	-7.205
48	0.837758041	-7.504
51	0.890117919	-7.305
54	0.942477796	-6.809
57	0.994837674	-6.39
60	1.047197551	-6.252
63	1.099557429	-6.309
66	1.151917306	-6.65
69	1.204277184	-7.004
72	1.256637061	-7.366
75	1.308996939	-7.757
78	1.361356817	-8.021
81	1.413716694	-8.064
84	1.466076572	-7.743
87	1.518436449	-6.976
90	1.570796327	-6.583
93	1.623156204	-6.459
96	1.675516082	-6.684
99	1.72787596	-7.455
102	1.780235837	-8.638
105	1.832595715	-9.697
108	1.884955592	-10.326
111	1.93731547	-10.552
114	1.989675347	-10.362
117	2.042035225	-9.984
120	2.094395102	-9.621
123	2.14675498	-9.083
126	2.199114858	-8.363
129	2.251474735	-7.538
132	2.303834613	-6.678
135	2.35619449	-5.896
138	2.408554368	-5.324
141	2.460914245	-5.082
144	2.513274123	-5.23
147	2.565634	-5.768
150	2.617993878	-6.417
153	2.670353756	-6.727
156	2.722713633	-6.415
159	2.775073511	-5.535
162	2.827433388	-4.655
165	2.879793266	-4.122
168	2.932153143	-3.999
171	2.984513021	-4.198
174	3.036872899	-4.587
177	3.089232776	-4.961
180	3.141592654	-5.247
183	3.193952531	-5.485
186	3.246312409	-5.788
189	3.298672286	-6.114
192	3.351032164	-6.224
195	3.403392041	-5.993
198	3.455751919	-5.481
201	3.508111797	-5.023
204	3.560471674	-4.918
207	3.612831552	-5.252
210	3.665191429	-5.976
213	3.717551307	-6.885
216	3.769911184	-7.526
219	3.822271062	-7.578
222	3.874630939	-6.844
225	3.926990817	-5.377
228	3.979350695	-3.704
231	4.031710572	-2.234
234	4.08407045	-1.19
237	4.136430327	-0.695
240	4.188790205	-0.794
243	4.241150082	-1.464
246	4.29350996	-2.595
249	4.345869838	-3.851
252	4.398229715	-4.649
255	4.450589593	-4.833
258	4.50294947	-4.563
261	4.555309348	-4.139
264	4.607669225	-3.793
267	4.660029103	-3.518
270	4.71238898	-3.401
273	4.764748858	-3.623
276	4.817108736	-4.468
279	4.869468613	-5.958
282	4.921828491	-7.456
285	4.974188368	-9.021
288	5.026548246	-8.514
291	5.078908123	-6.947
294	5.131268001	-6.114
297	5.183627878	-5.383
300	5.235987756	-6.169
303	5.288347634	-7.005
306	5.340707511	-7.09
309	5.393067389	-6.64
312	5.445427266	-6.06
315	5.497787144	-5.33
318	5.550147021	-5.038
321	5.602506899	-5.537
324	5.654866777	-5.92
327	5.707226654	-5.893
330	5.759586532	-5.812
333	5.811946409	-5.62
336	5.864306287	-5.076
339	5.916666164	-5.004
342	5.969026042	-4.948
345	6.021385919	-4.589
348	6.073745797	-4.089
351	6.126105675	-3.686
354	6.178465552	-3.661
357	6.23082543	-4.288

Phi=0(deg) X-Z

Angle	Theta	5150MHz
-180	-3.14159265	-34.653
-177	-3.08923278	-28.527
-174	-3.0368729	-23.479
-171	-2.98451302	-20.083
-168	-2.93215314	-17.499
-165	-2.87979327	-15.218
-162	-2.82743339	-13.141
-159	-2.77507351	-11.484
-156	-2.72271363	-10.481
-153	-2.67035376	-10.323
-150	-2.61799388	-11.267
-147	-2.565634	-13.455
-144	-2.51327412	-16.357
-141	-2.46091425	-18.494
-138	-2.40855437	-18.48
-135	-2.35619449	-17.379
-132	-2.30383461	-16.908
-129	-2.25147474	-16.383
-126	-2.19911486	-15.058
-123	-2.14675498	-13.555
-120	-2.0943951	-12.107
-117	-2.04203522	-10.532
-114	-1.98967535	-9.026
-111	-1.93731547	-7.979
-108	-1.88495559	-7.608
-105	-1.83259571	-7.811
-102	-1.78023584	-8.22
-99	-1.72787596	-8.141
-96	-1.67551608	-7.352
-93	-1.6231562	-6.286
-90	-1.57079633	-5.247
-87	-1.51843645	-4.401
-84	-1.46607657	-3.896
-81	-1.41371669	-3.818
-78	-1.36135682	-4.18
-75	-1.30899694	-4.431
-72	-1.25663706	-3.508
-69	-1.20427718	-1.505
-66	-1.15191731	0.475
-63	-1.09955743	1.923
-60	-1.04719755	2.775
-57	-0.99483767	3.151
-54	-0.9424778	3.186
-51	-0.89011792	2.97
-48	-0.83775804	2.537
-45	-0.78539816	1.937
-42	-0.73303829	1.321
-39	-0.68067841	0.92
-36	-0.62831853	0.81
-33	-0.57595865	0.716
-30	-0.52359878	0.307
-27	-0.4712389	-0.558
-24	-0.41887902	-1.673
-21	-0.36651914	-2.366
-18	-0.31415927	-2.16
-15	-0.26179939	-1.487
-12	-0.20943951	-0.701
-9	-0.15707963	0.146
-6	-0.10471976	1.036
-3	-0.05235988	1.782
0	0.00E+00	2.352
3	0.05235988	2.441
6	0.10471976	2.239
9	0.15707963	1.706
12	0.20943951	1.241
15	0.26179939	1.349
18	0.31415927	2.199
21	0.36651914	3.34
24	0.41887902	4.274
27	0.4712389	4.714
30	0.52359878	4.549
33	0.57595865	3.842
36	0.62831853	2.867
39	0.68067841	1.948
42	0.73303829	1.335
45	0.78539816	0.996
48	0.83775804	0.774
51	0.89011792	0.832
54	0.9424778	1.546
57	0.99483767	2.549
60	1.04719755	3.213
63	1.09955743	3.311
66	1.15191731	2.842
69	1.20427718	2.003
72	1.25663706	1.201
75	1.30899694	0.606
78	1.36135682	0.054
81	1.41371669	-0.887
84	1.46607657	-2.365
87	1.51843645	-4.025
90	1.57079633	-5.388
93	1.6231562	-5.857
96	1.67551608	-6.263
99	1.72787596	-7.049
102	1.78023584	-7.364
105	1.83259571	-8.9
108	1.88495559	-9.837
111	1.93731547	-12.118
114	1.98967535	-14.924
117	2.04203522	-13.426
120	2.0943951	-12.815
123	2.14675498	-11.332
126	2.19911486	-10.303
129	2.25147474	-10.81
132	2.30383461	-12.14
135	2.35619449	-14.101
138	2.40855437	-17.445
141	2.46091425	-21.012
144	2.51327412	-21.987
147	2.565634	-18.645
150	2.61799388	-13.73
153	2.67035376	-11.748
156	2.72271363	-12.091
159	2.77507351	-13.033
162	2.82743339	-14.235
165	2.87979327	-16.646
168	2.93215314	-18.917
171	2.98451302	-20.514
174	3.0368729	-23.534
177	3.08923278	-29.344

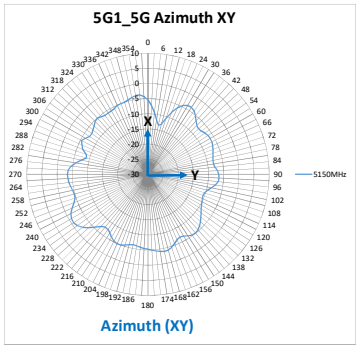
Phi=90.000000000002(deg) Y-Z

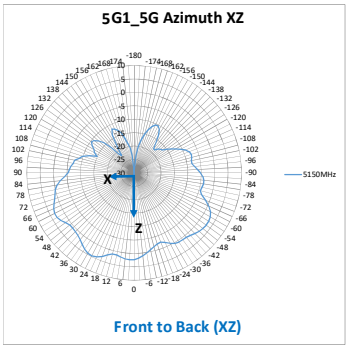
Angle	Theta	5150MHz
-180	-3.141593	-34.653
-177	-3.089233	-30.937
-174	-3.036873	-26.901
-171	-2.984513	-23.388
-168	-2.932153	-20.892
-165	-2.879793	-18.627
-162	-2.827433	-16.561
-159	-2.775074	-15.491
-156	-2.722714	-15.309
-153	-2.670354	-16.467
-150	-2.617994	-17.213
-147	-2.565634	-15.552
-144	-2.513274	-13.309
-141	-2.460914	-11.508
-138	-2.408554	-10.777
-135	-2.356194	-11.288
-132	-2.303835	-12.703
-129	-2.251475	-14.222
-126	-2.199115	-15.209
-123	-2.146755	-15.149
-120	-2.094395	-14.068
-117	-2.042035	-12.821
-114	-1.989675	-11.744
-111	-1.937315	-10.912
-108	-1.884956	-10.502
-105	-1.832596	-10.39
-102	-1.780236	-10.217
-99	-1.727876	-9.525
-96	-1.675516	-8.031
-93	-1.623156	-5.853
-90	-1.570796	-3.401
-87	-1.518436	-1.187
-84	-1.466077	0.54
-81	-1.413717	1.681
-78	-1.361357	2.24
-75	-1.308997	2.304
-72	-1.256637	2.071
-69	-1.204277	1.996
-66	-1.151917	2.314
-63	-1.099557	2.972
-60	-1.047198	3.742
-57	-0.994838	4.224
-54	-0.942478	4.202
-51	-0.890118	3.651
-48	-0.837758	2.745
-45	-0.785398	0.723
-42	-0.733038	-1.786
-39	-0.680678	-4.092
-36	-0.628319	-5.006
-33	-0.575959	-1.939
-30	-0.523599	-1.962
-27	-0.471239	-1.626
-24	-0.418879	-1.24
-21	-0.366519	-1.297
-18	-0.314159	-1.207
-15	-0.261799	-0.824
-12	-0.20944	-0.167
-9	-0.15708	0.652
-6	-0.10472	1.455
-3	-0.05236	2.014
0	0.00E+00	2.352
3	0.0523599	2.16
6	0.1047198	1.672
9	0.1570796	0.776
12	0.2094395	-0.343
15	0.2617994	-1.497
18	0.3141593	-2.544
21	0.3665191	-3.396
24	0.418879	-3.966
27	0.4712389	-4.215
30	0.5235988	-4.141
33	0.5759587	-3.878
36	0.6283185	-3.529
39	0.6806784	-3.212
42	0.7330383	-2.942
45	0.7853982	-2.664
48	0.837758	-2.363
51	0.8901179	-2.034
54	0.9424778	-1.708
57	0.9948377	-1.445
60	1.0471976	-1.318
63	1.0995574	-1.383
66	1.1519173	-1.676
69	1.2042772	-2.211
72	1.2566371	-2.991
75	1.3089969	-3.971
78	1.3613568	-5.057
81	1.4137167	-6.033
84	1.4660766	-6.737
87	1.5184364	-7.151
90	1.5707963	-7.455
93	1.6231562	-7.878
96	1.6755161	-8.507
99	1.727876	-9.341
102	1.7802358	-10.358
105	1.8325957	-11.574
108	1.8849556	-12.915
111	1.9373155	-14.198
114	1.9896753	-14.993
117	2.0420352	-15.31
120	2.0943951	-15.622
123	2.146755	-16.04
126	2.1991149	-16.152
129	2.2514747	-15.846
132	2.3038346	-15.112
135	2.3561945	-14.561
138	2.4085544	-14.155
141	2.4609142	-14.035
144	2.5132741	-14.272
147	2.565634	-14.459
150	2.6179939	-15.78
153	2.6703538	-17.23
156	2.7227136	-18.068
159	2.7750735	-18.16
162	2.8274334	-18.095
165	2.8797933	-18.674
168	2.9321531	-20.091
171	2.984513	-23.183
174	3.0368729	-26.381
177	3.0892328	-30.355

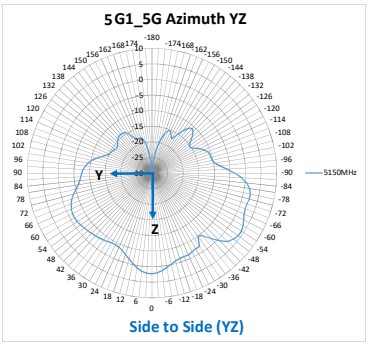
Azimuth(XY)	5150MHz
Max Value 30≤θ<150	-3.64
Summry	
Frquency	5150
Elevation angle above 30 degrees	-1.32

From to Black(XZ)	5150MHz

Side to Side (YZ)	5150MHz
Max Value 30≤θ<150	-1.32







Antenna Datasheet (30 degrees)-5G3

5.0GHz Band

Theta=90.000000000002(deg) X-Y		
Angle	Phi	5150MHz
0	0	-5.425
3	0.052359878	-5.685
6	0.104719755	-6.055
9	0.157079633	-6.531
12	0.20943951	-6.9
15	0.261799388	-6.961
18	0.314159265	-6.747
21	0.366519143	-6.466
24	0.41887902	-6.223
27	0.471238898	-6.066
30	0.523598776	-6.017
33	0.575958653	-6.012
36	0.628318531	-6.015
39	0.680678408	-6.324
42	0.733038286	-7.169
45	0.785398163	-8.734
48	0.837758041	-11.449
51	0.890117919	-15.366
54	0.942477796	-16.274
57	0.994837674	-14.512
60	1.047197551	-11.353
63	1.099557429	-10.416
66	1.151917306	-11.588
69	1.204277184	-12.334
72	1.256637061	-10.785
75	1.308996939	-7.239
78	1.361356817	-4.437
81	1.413716694	-2.709
84	1.466076572	-1.736
87	1.518436449	-1.487
90	1.570796327	-1.896
93	1.623156204	-2.846
96	1.675516082	-4.157
99	1.72787596	-5.514
102	1.780235837	-6.434
105	1.832595715	-6.916
108	1.884955592	-7.033
111	1.93731547	-6.79
114	1.989675347	-6.314
117	2.042035225	-5.485
120	2.094395102	-4.382
123	2.14675498	-3.258
126	2.199114858	-2.245
129	2.251474735	-1.385
132	2.303834613	-0.694
135	2.35619449	-0.191
138	2.408554368	0.09
141	2.460914245	0.11
144	2.513274123	-0.153
147	2.565634	-0.692
150	2.617993878	-1.451
153	2.670353756	-2.307
156	2.722713633	-3.052
159	2.775073511	-3.555
162	2.827433388	-3.773
165	2.879793266	-3.778
168	2.932153143	-3.697
171	2.984513021	-3.619
174	3.036872899	-3.632
177	3.089232776	-3.819
180	3.141592654	-4.173
183	3.193952531	-4.654
186	3.246312409	-5.002
189	3.298672286	-4.895
192	3.351032164	-4.275
195	3.403392041	-3.398
198	3.455751919	-2.643
201	3.508111797	-2.248
204	3.560471674	-2.219
207	3.612831552	-2.461
210	3.665191429	-3.153
213	3.717551307	-3.958
216	3.769911184	-4.8
219	3.822271062	-5.509
222	3.874630939	-5.55
225	3.926990817	-5.688
228	3.979350695	-5.358
231	4.031710572	-4.787
234	4.08407045	-4.322
237	4.136430327	-4.064
240	4.188790205	-4.098
243	4.241150082	-4.447
246	4.29350996	-4.985
249	4.345869838	-5.585
252	4.398229715	-6.059
255	4.450589593	-6.265
258	4.50294947	-6.36
261	4.555309348	-6.444
264	4.607669225	-6.44
267	4.660029103	-6.107
270	4.71238898	-5.313
273	4.764748858	-4.248
276	4.817108736	-3.235
279	4.869468613	-2.535
282	4.921828491	-2.249
285	4.974188368	-2.409
288	5.026548246	-2.999
291	5.078908123	-3.947
294	5.131268001	-5.109
297	5.183627878	-6.224
300	5.235987756	-6.902
303	5.288347634	-6.956
306	5.340707511	-6.512
309	5.393067389	-5.748
312	5.445427266	-4.898
315	5.497787144	-4.102
318	5.550147021	-3.476
321	5.602506899	-3.088
324	5.654866777	-2.973
327	5.707226654	-3.132
330	5.759586532	-3.521
333	5.811946409	-4.071
336	5.864306287	-4.665
339	5.916666164	-5.191
342	5.969026042	-5.554
345	6.021385919	-5.722
348	6.073745797	-5.721
351	6.126105675	-5.61
354	6.178465552	-5.463
357	6.23082543	-5.4

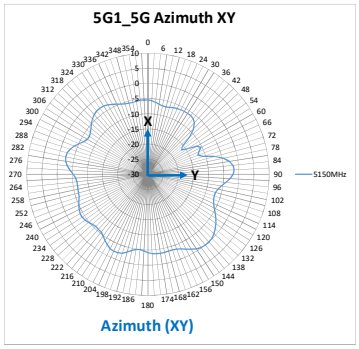
Phi=0(deg) X-Z		
Angle	Theta	5150MHz
-180	-3.14159265	-36.213
-177	-3.08923278	-32.46
-174	-3.0368729	-25.496
-171	-2.98451302	-22.828
-168	-2.93215314	-21.284
-165	-2.87979327	-19.638
-162	-2.82743339	-18.242
-159	-2.77507351	-16.399
-156	-2.72271363	-15.962
-153	-2.67035376	-18.07
-150	-2.61799388	-19.535
-147	-2.565634	-18.794
-144	-2.51327412	-15.362
-141	-2.46091425	-12.915
-138	-2.40855437	-12.159
-135	-2.35619449	-11.896
-132	-2.30383461	-11.774
-129	-2.25147474	-11.817
-126	-2.19911486	-10.815
-123	-2.14675498	-9.251
-120	-2.0943951	-8.355
-117	-2.04203522	-7.338
-114	-1.98967535	-6.448
-111	-1.93731547	-6.159
-108	-1.88495559	-6.599
-105	-1.83259571	-7.632
-102	-1.78023584	-8.886
-99	-1.72787596	-9.541
-96	-1.67551608	-8.963
-93	-1.6231562	-6.967
-90	-1.57079633	-4.173
-87	-1.51843645	-1.529
-84	-1.46607657	0.459
-81	-1.41371669	1.583
-78	-1.36135682	1.969
-75	-1.30899694	2.004
-72	-1.25663706	2.349
-69	-1.20427718	3.322
-66	-1.15191731	4.539
-63	-1.09955743	5.375
-60	-1.04719755	5.566
-57	-0.99483767	5.104
-54	-0.9424778	4.124
-51	-0.89011792	3.069
-48	-0.83775804	2.36
-45	-0.78539816	1.982
-42	-0.73303829	1.738
-39	-0.68067841	1.766
-36	-0.62831853	2.377
-33	-0.57595865	3.474
-30	-0.52359878	4.561
-27	-0.4712389	5.196
-24	-0.41887902	5.27
-21	-0.36651914	4.8
-18	-0.31415927	3.888
-15	-0.26179939	2.756
-12	-0.20943951	1.745
-9	-0.15707963	1.372
-6	-0.10471976	1.879
-3	-0.05235988	2.849
0	0.00E+00	3.972
3	0.05235988	4.73
6	0.10471976	5.209
9	0.15707963	5.265
12	0.20943951	5.018
15	0.26179939	4.488
18	0.31415927	3.734
21	0.36651914	3.035
24	0.41887902	2.251
27	0.4712389	1.39
30	0.52359878	0.647
33	0.57595865	-0.449
36	0.62831853	-1.986
39	0.68067841	-4.274
42	0.73303829	-7.308
45	0.78539816	-8.448
48	0.83775804	-6.566
51	0.89011792	-4.041
54	0.9424778	-2.227
57	0.99483767	-1.15
60	1.04719755	-0.729
63	1.09955743	-0.898
66	1.15191731	-1.538
69	1.20427718	-2.423
72	1.25663706	-3.191
75	1.30899694	-3.656
78	1.36135682	-3.828
81	1.41371669	-3.942
84	1.46607657	-4.198
87	1.51843645	-4.666
90	1.57079633	-5.425
93	1.6231562	-6.531
96	1.67551608	-7.936
99	1.72787596	-9.417
102	1.78023584	-10.5
105	1.83259571	-10.984
108	1.88495559	-10.909
111	1.93731547	-10.311
114	1.98967535	-9.34
117	2.04203522	-8.385
120	2.0943951	-7.783
123	2.14675498	-7.75
126	2.19911486	-8.246
129	2.25147474	-9.086
132	2.30383461	-9.975
135	2.35619449	-10.722
138	2.40855437	-11.167
141	2.46091425	-11.186
144	2.51327412	-10.932
147	2.565634	-10.753
150	2.61799388	-10.967
153	2.67035376	-11.815
156	2.72271363	-13.167
159	2.77507351	-14.397
162	2.82743339	-15
165	2.87979327	-15.453
168	2.93215314	-16.537
171	2.98451302	-19.083
174	3.0368729	-23.302
177	3.08923278	-29.525

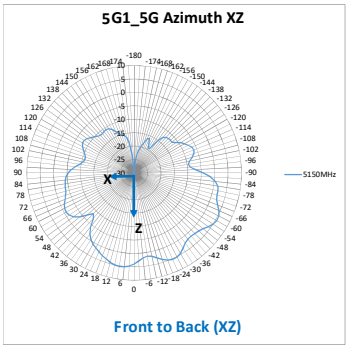
Phi=90.000000000002(deg) Y-Z		
Angle	Theta	5150MHz
-180	-3.141593	-36.213
-177	-3.089233	-32.339
-174	-3.036873	-25.112
-171	-2.984513	-22.235
-168	-2.932153	-19.83
-165	-2.879793	-17.165
-162	-2.827433	-15.025
-159	-2.775074	-13.699
-156	-2.722714	-13.237
-153	-2.670354	-13.496
-150	-2.617994	-14.661
-147	-2.565634	-15.649
-144	-2.513274	-15.05
-141	-2.460914	-14.464
-138	-2.408554	-14.951
-135	-2.356194	-16.48
-132	-2.303835	-18.007
-129	-2.251475	-17.029
-126	-2.199115	-13.439
-123	-2.146755	-10.811
-120	-2.094395	-10.04
-117	-2.042035	-10.131
-114	-1.989675	-10.518
-111	-1.937315	-10.768
-108	-1.884956	-10.368
-105	-1.832596	-9.364
-102	-1.780236	-8.476
-99	-1.727876	-7.829
-96	-1.675516	-7.24
-93	-1.623156	-6.443
-90	-1.570796	-5.313
-87	-1.518436	-3.901
-84	-1.466077	-2.453
-81	-1.413717	-1.186
-78	-1.361357	-0.168
-75	-1.308997	0.652
-72	-1.256637	1.331
-69	-1.204277	1.878
-66	-1.151917	2.277
-63	-1.099557	2.433
-60	-1.047198	2.261
-57	-0.994838	1.757
-54	-0.942478	1.048
-51	-0.890118	0.344
-48	-0.837758	-0.079
-45	-0.785398	-0.08
-42	-0.733038	0.342
-39	-0.680678	1.155
-36	-0.628319	2.281
-33	-0.575959	3.499
-30	-0.523599	4.588
-27	-0.471239	5.39
-24	-0.418879	5.861
-21	-0.366519	6.024
-18	-0.314159	5.946
-15	-0.261799	5.711
-12	-0.20944	5.406
-9	-0.15708	5.096
-6	-0.10472	4.787
-3	-0.05236	4.408
0	0.00E+00	3.972
3	0.0523599	3.318
6	0.1047198	2.446
9	0.1570796	1.406
12	0.2094395	0.5
15	0.2617994	-0.073
18	0.3141593	-0.096
21	0.3665191	0.287
24	0.418879	0.511
27	0.4712389	0.419
30	0.5235988	-0.037
33	0.5759587	-0.909
36	0.6283185	-2.205
39	0.6806784	-3.711
42	0.7330383	-4.808
45	0.7853982	-5.105
48	0.837758	-4.553
51	0.8901179	-2.902
54	0.9424778	-1.9
57	0.9948377	-1.293
60	1.0471976	-0.546
63	1.0995574	-0.017
66	1.1519173	0.311
69	1.2042772	0.527
72	1.2566371	0.566
75	1.3089969	0.412
78	1.3613568	0.096
81	1.4137167	-0.34
84	1.4660766	-0.846
87	1.5184364	-1.373
90	1.5707963	-1.896
93	1.6231562	-2.415
96	1.6755161	-2.963
99	1.727876	-3.585
102	1.7802358	-4.322
105	1.8325957	-5.167
108	1.8849556	-6.046
111	1.9373155	-6.807
114	1.9896753	-7.289
117	2.0420352	-7.468
120	2.0943951	-7.497
123	2.146755	-7.551
126	2.1991149	-7.787
129	2.2514747	-8.313
132	2.3038346	-9.202
135	2.3561945	-10.501
138	2.4085544	-12.119
141	2.4609142	-13.574
144	2.5132741	-14.502
147	2.565634	-14.877
150	2.6179939	-15.109
153	2.6703538	-15.64
156	2.7227136	-16.218
159	2.7750735	-16.652
162	2.8274334	-16.834
165	2.8797933	-17.056
168	2.9321531	-17.973
171	2.984513	-19.223
174	3.0368729	-21.879
177	3.0892328	-29.174

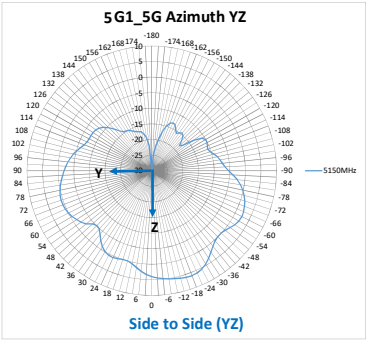
Azimuth(XY)	5150MHz
Max Value 30≤θ<150	0.11
Summry	
Frquency	5150
Elevation angle above 30 degrees	0.57

From to Black(XZ)	5150MHz

Side to Side (YZ)	5150MHz
Max Value 30≤θ<150	0.57







Antenna Datasheet (30 degrees)-5G4

5.0GHz Band

Theta=90.000000000002(deg) X-Y

Angle	Phi	5150MHz
0	0	-5.362
3	0.052359878	-5.628
6	0.104719755	-6.071
9	0.157079633	-6.821
12	0.20943951	-7.534
15	0.261799388	-7.938
18	0.314159265	-8.356
21	0.366519143	-8.876
24	0.41887902	-9.534
27	0.471238898	-10.045
30	0.523598776	-9.37
33	0.575958653	-8.229
36	0.628318531	-7.248
39	0.680678408	-6.353
42	0.733038286	-5.623
45	0.785398163	-5.024
48	0.837758041	-4.541
51	0.890117919	-4.195
54	0.942477796	-3.963
57	0.994837674	-3.74
60	1.047197551	-3.441
63	1.099557429	-3.078
66	1.151917306	-2.79
69	1.204277184	-2.698
72	1.256637061	-2.867
75	1.308996939	-3.276
78	1.361356817	-3.835
81	1.413716694	-4.406
84	1.466076572	-4.865
87	1.518436449	-5.026
90	1.570796327	-4.76
93	1.623156204	-4.144
96	1.675516082	-3.503
99	1.72787596	-3.131
102	1.780235837	-3.231
105	1.832595715	-3.876
108	1.884955592	-5.011
111	1.93731547	-6.424
114	1.989675347	-7.558
117	2.042035225	-8.011
120	2.094395102	-8.022
123	2.14675498	-7.905
126	2.199114858	-7.715
129	2.251474735	-7.439
132	2.303834613	-7.058
135	2.35619449	-6.658
138	2.408554368	-6.336
141	2.460914245	-6.05
144	2.513274123	-5.725
147	2.565634	-5.524
150	2.617993878	-5.272
153	2.670353756	-5.304
156	2.722713633	-5.943
159	2.775073511	-6.809
162	2.827433388	-7.966
165	2.879793266	-8.583
168	2.932153143	-8.517
171	2.984513021	-7.536
174	3.036872899	-6.65
177	3.089232776	-6.096
180	3.141592654	-5.818
183	3.193952531	-5.982
186	3.246312409	-6.487
189	3.298672286	-7.07
192	3.351032164	-7.421
195	3.403392041	-7.461
198	3.455751919	-7.236
201	3.508111797	-6.833
204	3.560471674	-6.333
207	3.612831552	-5.631
210	3.665191429	-4.818
213	3.717551307	-4.086
216	3.769911184	-3.63
219	3.822271062	-3.6
222	3.874630939	-4.058
225	3.926990817	-4.966
228	3.979350695	-6.24
231	4.031710572	-7.635
234	4.08407045	-8.555
237	4.136430327	-8.561
240	4.188790205	-7.966
243	4.241150082	-7.114
246	4.29350996	-6.243
249	4.345869838	-5.462
252	4.398229715	-4.819
255	4.450589593	-4.42
258	4.50294947	-4.355
261	4.555309348	-4.699
264	4.607669225	-5.335
267	4.660029103	-5.878
270	4.71238898	-5.93
273	4.764748858	-5.208
276	4.817108736	-4.113
279	4.869468613	-3.135
282	4.921828491	-2.389
285	4.974188368	-1.864
288	5.026548246	-1.534
291	5.078908123	-1.399
294	5.131268001	-1.551
297	5.183627878	-2.049
300	5.235987756	-2.907
303	5.288347634	-4.028
306	5.340707511	-5.049
309	5.393067389	-5.711
312	5.445427266	-5.953
315	5.497787144	-5.888
318	5.550147021	-5.766
321	5.602506899	-5.622
324	5.654866777	-5.44
327	5.707226654	-5.323
330	5.759586532	-5.679
333	5.811946409	-6.778
336	5.864306287	-7.749
339	5.916666164	-9.601
342	5.969026042	-12.022
345	6.021385919	-11.348
348	6.073745797	-9.702
351	6.126105675	-7.58
354	6.178465552	-6.338
357	6.23082543	-5.779

Phi=0(deg) X-Z

Angle	Theta	5150MHz
-180	-3.14159265	-34.178
-177	-3.08923278	-27.133
-174	-3.0368729	-22.31
-171	-2.98451302	-22.112
-168	-2.93215314	-28.441
-165	-2.87979327	-31.537
-162	-2.82743339	-23.437
-159	-2.77507351	-14.319
-156	-2.72271363	-12.605
-153	-2.67035376	-13.198
-150	-2.61799388	-13.767
-147	-2.565634	-14.292
-144	-2.51327412	-13.557
-141	-2.46091425	-11.347
-138	-2.40855437	-10.078
-135	-2.35619449	-10.556
-132	-2.30383461	-12.544
-129	-2.25147474	-17.704
-126	-2.19911486	-23.224
-123	-2.14675498	-22.129
-120	-2.0943951	-16.677
-117	-2.04203522	-15.592
-114	-1.98967535	-17.085
-111	-1.93731547	-17.497
-108	-1.88495559	-16.009
-105	-1.83259571	-13.583
-102	-1.78023584	-11.546
-99	-1.72787596	-10.151
-96	-1.67551608	-9.106
-93	-1.6231562	-7.783
-90	-1.57079633	-5.818
-87	-1.51843645	-3.65
-84	-1.46607657	-1.894
-81	-1.41371669	-0.868
-78	-1.36135682	-0.615
-75	-1.30899694	-0.911
-72	-1.25663706	-1.286
-69	-1.20427718	-1.029
-66	-1.15191731	-0.144
-63	-1.09955743	0.732
-60	-1.04719755	1.265
-57	-0.99483767	1.331
-54	-0.9424778	1.056
-51	-0.89011792	0.545
-48	-0.83775804	-0.229
-45	-0.78539816	-1.314
-42	-0.73303829	-2.502
-39	-0.68067841	-2.708
-36	-0.62831853	-1.598
-33	-0.57595865	-0.192
-30	-0.52359878	0.811
-27	-0.4712389	1.157
-24	-0.41887902	1.057
-21	-0.36651914	0.855
-18	-0.31415927	0.855
-15	-0.26179939	1.08
-12	-0.20943951	1.416
-9	-0.15707963	1.791
-6	-0.10471976	2.129
-3	-0.05235988	2.234
0	0.00E+00	2.114
3	0.05235988	1.377
6	0.10471976	0.214
9	0.15707963	-1.225
12	0.20943951	-1.97
15	0.26179939	-1.841
18	0.31415927	-1.32
21	0.36651914	-1.099
24	0.41887902	-1.34
27	0.4712389	-1.791
30	0.52359878	-2.348
33	0.57595865	-2.762
36	0.62831853	-2.649
39	0.68067841	-2.443
42	0.73303829	-2.044
45	0.78539816	-1.482
48	0.83775804	-1.102
51	0.89011792	-1.007
54	0.9424778	-1.228
57	0.99483767	-1.678
60	1.04719755	-2.202
63	1.09955743	-2.628
66	1.15191731	-2.826
69	1.20427718	-2.763
72	1.25663706	-2.566
75	1.30899694	-2.426
78	1.36135682	-2.523
81	1.41371669	-2.91
84	1.46607657	-3.58
87	1.51843645	-4.435
90	1.57079633	-5.362
93	1.6231562	-6.337
96	1.67551608	-7.346
99	1.72787596	-8.279
102	1.78023584	-8.965
105	1.83259571	-9.422
108	1.88495559	-9.807
111	1.93731547	-10.283
114	1.98967535	-10.97
117	2.04203522	-11.827
120	2.0943951	-12.644
123	2.14675498	-13.206
126	2.19911486	-13.274
129	2.25147474	-12.794
132	2.30383461	-12.351
135	2.35619449	-12.445
138	2.40855437	-13.246
141	2.46091425	-14.232
144	2.51327412	-14.864
147	2.565634	-14.961
150	2.61799388	-14.959
153	2.67035376	-15.787
156	2.72271363	-19.009
159	2.77507351	-24.143
162	2.82743339	-27.404
165	2.87979327	-25.759
168	2.93215314	-23.878
171	2.98451302	-24.519
174	3.0368729	-27.748
177	3.08923278	-31.917

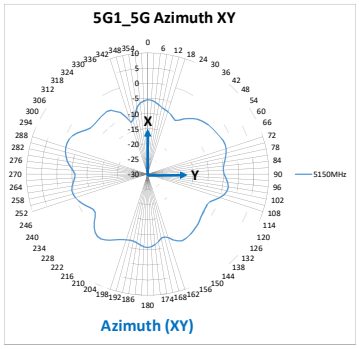
Phi=90.000000000002(deg) Y-Z

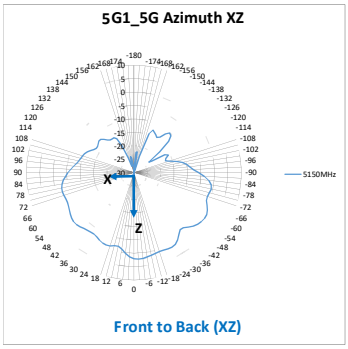
Angle	Theta	5150MHz
-180	-3.141593	-34.178
-177	-3.089233	-31.085
-174	-3.036873	-26.134
-171	-2.984513	-20.605
-168	-2.932153	-16.89
-165	-2.879793	-15.284
-162	-2.827433	-14.233
-159	-2.775074	-13.582
-156	-2.722714	-13.286
-153	-2.670354	-13.054
-150	-2.617994	-12.655
-147	-2.565634	-11.953
-144	-2.513274	-11.201
-141	-2.460914	-10.563
-138	-2.408554	-10.08
-135	-2.356194	-9.806
-132	-2.303835	-9.301
-129	-2.251475	-8.232
-126	-2.199115	-7.21
-123	-2.146755	-6.465
-120	-2.094395	-6.064
-117	-2.042035	-6.113
-114	-1.989675	-6.526
-111	-1.937315	-7.149
-108	-1.884956	-7.75
-105	-1.832596	-8.064
-102	-1.780236	-7.893
-99	-1.727876	-7.379
-96	-1.675516	-6.763
-93	-1.623156	-6.259
-90	-1.570796	-5.93
-87	-1.518436	-5.668
-84	-1.466077	-5.198
-81	-1.413717	-4.339
-78	-1.361357	-3.024
-75	-1.308997	-1.43
-72	-1.256637	0.129
-69	-1.204277	1.465
-66	-1.151917	2.492
-63	-1.099557	3.208
-60	-1.047198	3.634
-57	-0.994838	3.809
-54	-0.942478	3.73
-51	-0.890118	3.399
-48	-0.837758	2.798
-45	-0.785398	1.9
-42	-0.733038	0.743
-39	-0.680678	-0.541
-36	-0.628319	-1.841
-33	-0.575959	-2.811
-30	-0.523599	-2.648
-27	-0.471239	-1.38
-24	-0.418879	0.208
-21	-0.366519	1.54
-18	-0.314159	2.34
-15	-0.261799	2.603
-12	-0.20944	2.429
-9	-0.15708	2.043
-6	-0.10472	1.736
-3	-0.05236	1.776
0	0.00E+00	2.114
3	0.0523599	2.647
6	0.1047198	3.1
9	0.1570796	3.399
12	0.2094395	3.446
15	0.2617994	3.164
18	0.3141593	2.6
21	0.3665191	1.888
24	0.418879	1.076
27	0.4712389	0.263
30	0.5235988	-0.344
33	0.5759587	-0.583
36	0.6283185	-0.242
39	0.6806784	0.575
42	0.7330383	1.463
45	0.7853982	2.171
48	0.837758	2.649
51	0.8901179	3.029
54	0.9424778	3.399
57	0.9948377	3.735
60	1.0471976	3.915
63	1.0995574	3.764
66	1.1519173	3.198
69	1.2042772	2.208
72	1.2566371	0.879
75	1.3089969	-0.61
78	1.3613568	-2.034
81	1.4137167	-3.187
84	1.4660766	-4.014
87	1.5184364	-4.52
90	1.5707963	-4.76
93	1.6231562	-4.968
96	1.6755161	-5.446
99	1.727876	-6.286
102	1.7802358	-7.565
105	1.8325957	-9.526
108	1.8849556	-12.127
111	1.9373155	-14.862
114	1.9896753	-15.948
117	2.0420352	-13.404
120	2.0943951	-12.06
123	2.146755	-11.25
126	2.1991149	-11.114
129	2.2514747	-11.948
132	2.3038346	-13.361
135	2.3561945	-14.676
138	2.4085544	-15.228
141	2.4609142	-15.076
144	2.5132741	-14.587
147	2.565634	-14.238
150	2.6179939	-14.196
153	2.6703538	-14.413
156	2.7227136	-14.849
159	2.7750735	-15.531
162	2.8274334	-16.544
165	2.8797933	-18.222
168	2.9321531	-20.885
171	2.984513	-24.104
174	3.0368729	-27.488
177	3.0892328	-31.15

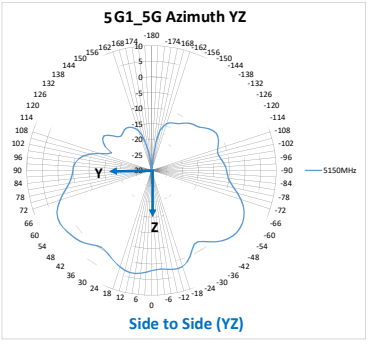
Azimuth(XY)	5150MHz
Max Value 30≤θ<150	-2.70
Summry	
Frquency	5150
Elevation angle above 30 degrees	3.92

From to Black(XZ)	5150MHz

Side to Side (YZ)	5150MHz
Max Value 30≤θ<150	3.92







Antenna Datasheet (30 degrees)-DB

5.0GHz Band

Theta=90.000000000002(deg) X-Y

Angle	Phi	5150MHz
0	0	-2.844
3	0.052359878	-2.287
6	0.104719755	-1.985
9	0.157079633	-1.911
12	0.20943951	-2.167
15	0.261799388	-2.824
18	0.314159265	-3.859
21	0.366519143	-5.153
24	0.41887902	-6.522
27	0.471238898	-7.47
30	0.523598776	-7.271
33	0.575958653	-6.492
36	0.628318531	-5.746
39	0.680678408	-5.236
42	0.733038286	-4.896
45	0.785398163	-4.57
48	0.837758041	-4.113
51	0.890117919	-3.574
54	0.942477796	-3.206
57	0.994837674	-3.193
60	1.047197551	-3.485
63	1.099557429	-4.16
66	1.151917306	-5.031
69	1.204277184	-6.074
72	1.256637061	-7.142
75	1.308996939	-7.559
78	1.361356817	-6.968
81	1.413716694	-5.8
84	1.466076572	-4.535
87	1.518436449	-3.682
90	1.570796327	-3.689
93	1.623156204	-4.431
96	1.675516082	-5.824
99	1.72787596	-7.652
102	1.780235837	-9.113
105	1.832595715	-10.163
108	1.884955592	-11.134
111	1.93731547	-10.972
114	1.989675347	-8.99
117	2.042035225	-6.131
120	2.094395102	-3.547
123	2.14675498	-2.031
126	2.199114858	-1.535
129	2.251474735	-1.923
132	2.303834613	-3.276
135	2.35619449	-5.334
138	2.408554368	-7.646
141	2.460914245	-9.629
144	2.513274123	-9.896
147	2.565634	-9.461
150	2.617993878	-8.717
153	2.670353756	-7.281
156	2.722713633	-5.682
159	2.775073511	-4.525
162	2.827433388	-4.16
165	2.879793266	-4.508
168	2.932153143	-5.54
171	2.984513021	-6.625
174	3.036872899	-6.846
177	3.089232776	-5.941
180	3.141592654	-4.803
183	3.193952531	-4.05
186	3.246312409	-3.846
189	3.298672286	-4.136
192	3.351032164	-4.854
195	3.403392041	-5.631
198	3.455751919	-5.917
201	3.508111797	-5.443
204	3.560471674	-4.322
207	3.612831552	-3.286
210	3.665191429	-2.72
213	3.717551307	-2.72
216	3.769911184	-3.241
219	3.822271062	-4.07
222	3.874630939	-4.757
225	3.926990817	-4.835
228	3.979350695	-4.296
231	4.031710572	-3.605
234	4.08407045	-3.045
237	4.136430327	-2.746
240	4.188790205	-2.775
243	4.241150082	-3.205
246	4.29350996	-3.807
249	4.345869838	-4.792
252	4.398229715	-5.583
255	4.450589593	-5.358
258	4.50294947	-4.14
261	4.555309348	-2.685
264	4.607669225	-1.541
267	4.660029103	-0.805
270	4.71238898	-0.583
273	4.764748858	-0.689
276	4.817108736	-1.007
279	4.869468613	-1.429
282	4.921828491	-1.808
285	4.974188368	-2.24
288	5.026548246	-2.7
291	5.078908123	-3.258
294	5.131268001	-3.871
297	5.183627878	-4.372
300	5.235987756	-4.715
303	5.288347634	-4.793
306	5.340707511	-4.697
309	5.393067389	-4.573
312	5.445427266	-4.411
315	5.497787144	-4.249
318	5.550147021	-3.995
321	5.602506899	-3.723
324	5.654866777	-3.429
327	5.707226654	-2.992
330	5.759586532	-2.738
333	5.811946409	-2.412
336	5.864306287	-2.086
339	5.916666164	-1.893
342	5.969026042	-1.905
345	6.021385919	-2.166
348	6.073745797	-2.645
351	6.126105675	-3.147
354	6.178465552	-3.438
357	6.23082543	-3.303

Phi=0(deg) X-Z

Angle	Theta	5150MHz
-180	-3.14159265	-23.026
-177	-3.08923278	-17.201
-174	-3.0368729	-12.577
-171	-2.98451302	-10.915
-168	-2.93215314	-10.584
-165	-2.87979327	-12.599
-162	-2.82743339	-17.448
-159	-2.77507351	-18.354
-156	-2.72271363	-16.451
-153	-2.67035376	-14.544
-150	-2.61799388	-14.564
-147	-2.565634	-17.209
-144	-2.51327412	-19.543
-141	-2.46091425	-19.135
-138	-2.40855437	-17.634
-135	-2.35619449	-15.349
-132	-2.30383461	-15.15
-129	-2.25147474	-16.794
-126	-2.19911486	-17.163
-123	-2.14675498	-15.449
-120	-2.0943951	-14.177
-117	-2.04203522	-13.155
-114	-1.98967535	-12.461
-111	-1.93731547	-12.148
-108	-1.88495559	-11.986
-105	-1.83259571	-11.434
-102	-1.78023584	-10.343
-99	-1.72787596	-8.936
-96	-1.67551608	-7.391
-93	-1.6231562	-5.995
-90	-1.57079633	-4.803
-87	-1.51843645	-3.741
-84	-1.46607657	-2.802
-81	-1.41371669	-2.016
-78	-1.36135682	-1.431
-75	-1.30899694	-1.029
-72	-1.25663706	-0.718
-69	-1.20427718	-0.269
-66	-1.15191731	0.472
-63	-1.09955743	1.477
-60	-1.04719755	2.533
-57	-0.99483767	3.332
-54	-0.9424778	3.705
-51	-0.89011792	3.544
-48	-0.83775804	2.811
-45	-0.78539816	1.688
-42	-0.73303829	0.403
-39	-0.68067841	-0.916
-36	-0.62831853	-1.871
-33	-0.57595865	-2.417
-30	-0.52359878	-2.269
-27	-0.4712389	-0.889
-24	-0.41887902	1.095
-21	-0.36651914	2.579
-18	-0.31415927	3.601
-15	-0.26179939	3.819
-12	-0.20943951	3.695
-9	-0.15707963	3.594
-6	-0.10471976	3.29
-3	-0.05235988	2.745
0	0.00E+00	2.03
3	0.05235988	1.436
6	0.10471976	1.703
9	0.15707963	2.982
12	0.20943951	4.332
15	0.26179939	5.127
18	0.31415927	5.321
21	0.36651914	4.954
24	0.41887902	4.355
27	0.4712389	3.754
30	0.52359878	3.152
33	0.57595865	2.534
36	0.62831853	2.096
39	0.68067841	2.167
42	0.73303829	2.936
45	0.78539816	4.132
48	0.83775804	5.065
51	0.89011792	5.519
54	0.9424778	5.564
57	0.99483767	5.321
60	1.04719755	4.944
63	1.09955743	4.564
66	1.15191731	4.167
69	1.20427718	3.686
72	1.25663706	3.039
75	1.30899694	2.207
78	1.36135682	1.217
81	1.41371669	0.151
84	1.46607657	-0.909
87	1.51843645	-1.894
90	1.57079633	-2.844
93	1.6231562	-3.875
96	1.67551608	-5.073
99	1.72787596	-6.303
102	1.78023584	-7.059
105	1.83259571	-7.182
108	1.88495559	-7.017
111	1.93731547	-7.175
114	1.98967535	-8.07
117	2.04203522	-9.814
120	2.0943951	-12.453
123	2.14675498	-15.561
126	2.19911486	-17.921
129	2.25147474	-18.611
132	2.30383461	-18.928
135	2.35619449	-19.797
138	2.40855437	-21.253
141	2.46091425	-22.826
144	2.51327412	-22.96
147	2.565634	-22.316
150	2.61799388	-19.508
153	2.67035376	-17.502
156	2.72271363	-17.051
159	2.77507351	-16.041
162	2.82743339	-14.717
165	2.87979327	-13.49
168	2.93215314	-12.635
171	2.98451302	-12.806
174	3.0368729	-14.231
177	3.08923278	-19.28

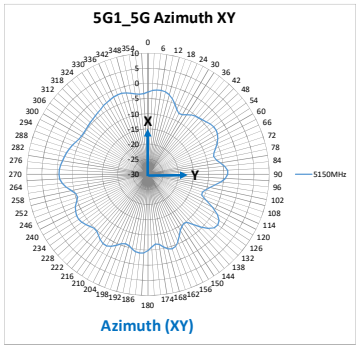
Phi=90.000000000002(deg) Y-Z

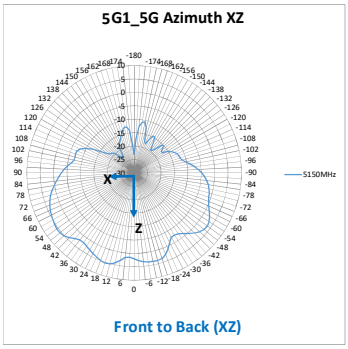
Angle	Theta	5150MHz
-180	-3.141593	-23.026
-177	-3.089233	-20.723
-174	-3.036873	-17.916
-171	-2.984513	-14.945
-168	-2.932153	-12.897
-165	-2.879793	-11.91
-162	-2.827433	-11.635
-159	-2.775074	-11.65
-156	-2.722714	-11.738
-153	-2.670354	-12.21
-150	-2.617994	-13.915
-147	-2.565634	-17.146
-144	-2.513274	-18.708
-141	-2.460914	-16.393
-138	-2.408554	-11.604
-135	-2.356194	-15.023
-132	-2.303835	-29.236
-129	-2.251475	-29.947
-126	-2.199115	-18.665
-123	-2.146755	-7.646
-120	-2.094395	-8.98
-117	-2.042035	-9.411
-114	-1.989675	-8.43
-111	-1.937315	-7.538
-108	-1.884956	-6.054
-105	-1.832596	-4.28
-102	-1.780236	-3.052
-99	-1.727876	-2.255
-96	-1.675516	-1.643
-93	-1.623156	-1.114
-90	-1.570796	-0.583
-87	-1.518436	0.022
-84	-1.466077	0.679
-81	-1.413717	1.304
-78	-1.361357	1.793
-75	-1.308997	2.116
-72	-1.256637	2.31
-69	-1.204277	2.422
-66	-1.151917	2.424
-63	-1.099557	2.199
-60	-1.047198	1.639
-57	-0.994838	0.715
-54	-0.942478	-0.28
-51	-0.890118	-1.018
-48	-0.837758	-1.218
-45	-0.785398	-1.139
-42	-0.733038	-1.109
-39	-0.680678	-1.157
-36	-0.628319	-1.152
-33	-0.575959	-0.764
-30	-0.523599	-0.019
-27	-0.471239	1.025
-24	-0.418879	2.003
-21	-0.366519	2.57
-18	-0.314159	2.55
-15	-0.261799	1.575
-12	-0.20944	-0.405
-9	-0.15708	-1.71
-6	-0.10472	-1.348
-3	-0.05236	0.091
0	0.00E+00	2.03
3	0.0523599	2.847
6	0.1047198	3.293
9	0.1570796	3.243
12	0.2094395	2.902
15	0.2617994	2.17
18	0.3141593	0.826
21	0.3665191	-1.023
24	0.418879	-2.599
27	0.4712389	-2.525
30	0.5235988	-1.411
33	0.5759587	-0.888
36	0.6283185	-1.467
39	0.6806784	-2.956
42	0.7330383	-4.541
45	0.7853982	-5.405
48	0.837758	-5.113
51	0.8901179	-4.46
54	0.9424778	-3.928
57	0.9948377	-2.959
60	1.0471976	-1.679
63	1.0995574	-0.619
66	1.1519173	-0.047
69	1.2042772	-0.08
72	1.2566371	-0.601
75	1.3089969	-1.39
78	1.3613568	-2.238
81	1.4137167	-2.942
84	1.4660766	-3.366
87	1.5184364	-3.552
90	1.5707963	-3.689
93	1.6231562	-4.041
96	1.6755161	-4.8
99	1.727876	-6.049
102	1.7802358	-7.736
105	1.8325957	-9.584
108	1.8849556	-11.409
111	1.9373155	-13.053
114	1.9896753	-14.986
117	2.0420352	-18.693
120	2.0943951	-23.274
123	2.146755	-26.347
126	2.1991149	-24.953
129	2.2514747	-19.091
132	2.3038346	-13.932
135	2.3561945	-16.164
138	2.4085544	-19.724
141	2.4609142	-19.645
144	2.5132741	-18.7
147	2.565634	-12.687
150	2.6179939	-14.432
153	2.6703538	-18.037
156	2.7227136	-20.584
159	2.7750735	-21.223
162	2.8274334	-18.653
165	2.8797933	-14.255
168	2.9321531	-13.241
171	2.984513	-16.428
174	3.0368729	-19.89
177	3.0892328	-22.481

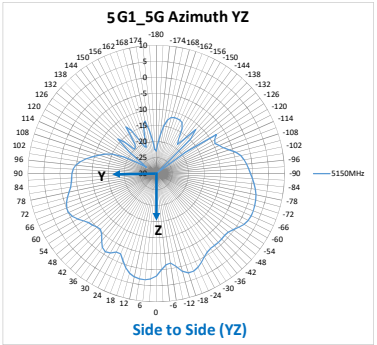
Azimuth(XY)	5150MHz
Max Value 30<θ<150	-1.535
Summry	
Frquency	5150
Elevation angle above 30 degrees	-0.047

From to Black(XZ)	5150MHz

Side to Side (YZ)	5150MHz
Max Value 30<θ<150	-0.047







Antenna Test Setup Photos (30 degrees) :

Please refer to Test Setup Photos (30 degrees) of the Test Set Up Photos (Antenna spec)