Nokia AIOSC Indoor 5G Antenna Test Report

May. 14, 2024

John Hsieh | Antenna Design Department

Outline

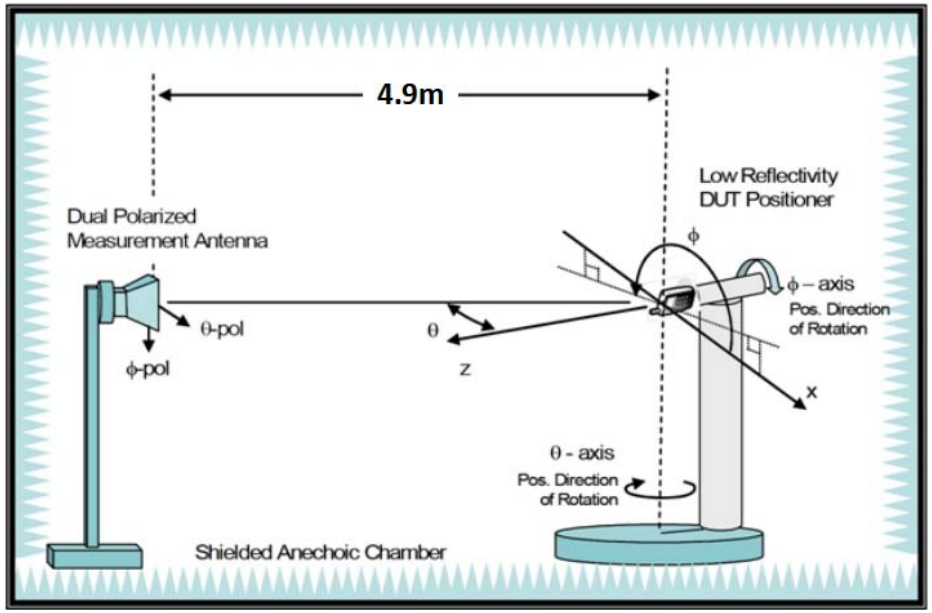
- Test Information
- Test Configuration
- Test Setup & Procedure
- Test Equipment & Calibration
- Antenna Structure & Placement
- Return Loss & Isolation
- Radiation Pattern
- Gain & Efficiency Table
- Directional Gain Calculations
- Raw Data

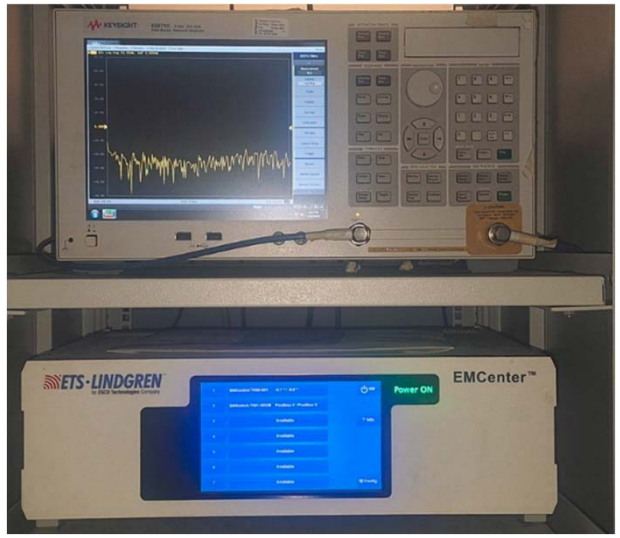
Test Information

Iteam	Description
Brand Name	Sercomm
Equipment	Nokia AIOSC Indoor 5G
Test Location	2F, No. 3-1, YuanQu St. Taipei, Taiwan 115 R.O.C.
Test Condition	Radiation
Test Engineer	John Hsieh, Sercomm
Test Environment	ETS-Lindgren AMS-8500 Antenna Measurement Chamber
Test Date	May 2, 2024 ~ May 14, 2024

Test Configuration

ETS-Lindgren AMS-8500 antenna measurement system with a size of 7.32(L) × 3.66(W) × 3.66(H) m^3 is used for antenna performance test, which is based on the great-circle test method defined by CTIA. The multi-axis positioning system (MAPS) rotates the DUT around two orthogonal axes for full spherical coverage.





Test Configuration

ETS-LINDGREN
An ESCO Technologies Company

Final Proposal For:

Customer:	Sercomm Corporation
Product:	AMS-8500 Antenna Measurement System
Application:	Radiated Wireless Antenna Measurements over the frequency range from 700 MHz to 10 GHz
Proposal Number:	009-14-0078183R3
Submission Date:	11,June, 2014

CTIA Authorized Test Lab
Lab Code: 20021212-00

1301 Arrow Point Drive, Cedar Park, Texas 78613 • Phone 512.531.6400 • Fax 512.531.6500
www.ets-lindgren.com • sales@ets-lindgren.com

Final Proposal For:

Customer:	Sercomm Corporation
Product:	AMS-8500 Antenna Measurement System
Application:	Radiated Wireless Antenna Measurements over the frequency range from 700 MHz to 10 GHz
Proposal Number:	009-14-0078183R3
Submission Date:	11,June, 2014

CTIA Authorized Test Lab
Lab Code: 20021212-00

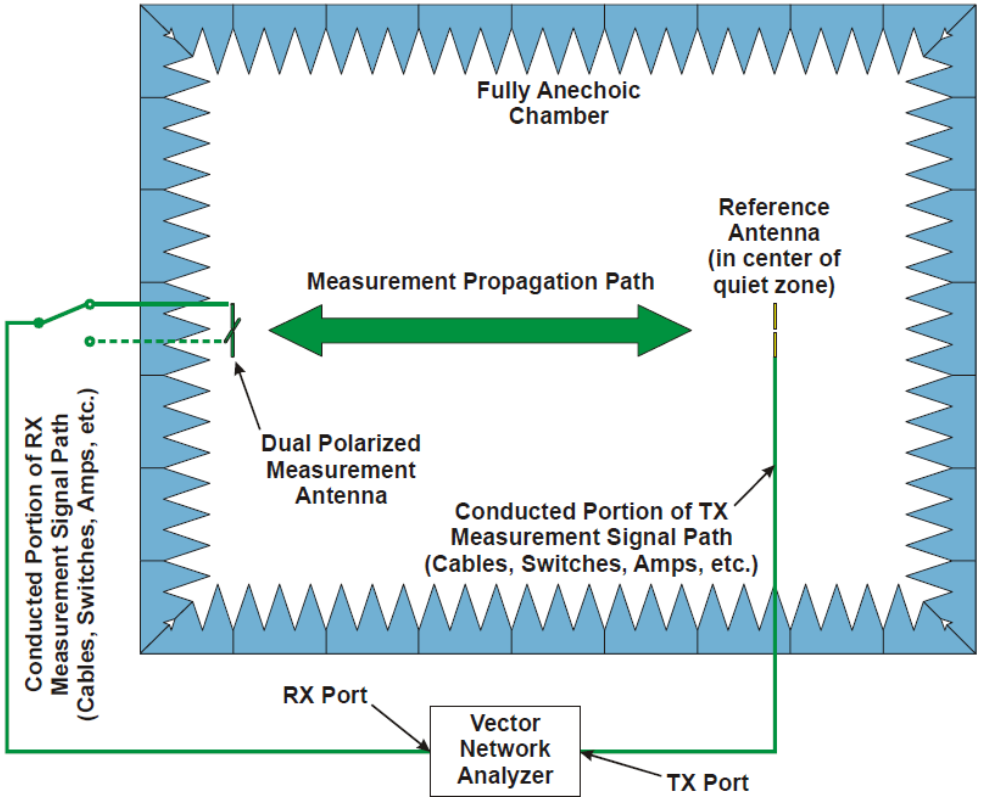
1301 Arrow Point Drive, Cedar Park, Texas 78613 • Phone 512.531.6400 • Fax 512.531.6500
www.ets-lindgren.com • sales@ets-lindgren.com

Test Setup & Procedure

1. Fix the DUT on the dielectric support structure and connect the feeding cable to the antenna used for test
2. Set measurement parameters such as frequency range and sampling angle
3. Perform test and then get far-field data (radiation pattern, gain, efficiency)
4. Repeat test procedure for other antennas

Test Equipment & Calibration

Network analyzer and reference antennas are used for calibration. Path loss and cable loss for different frequency bands can be checked and calculated.



Test Equipment & Calibration

Instrument	Brand	Characteristics	Model No.	Serial No.	Calibration Due Date
Precision Sleeve Dipole	ETS-Lindgren	700 MHz ~ 900 MHz	3126-700	00169715	Dec. 31, 2024
Precision Sleeve Dipole	ETS-Lindgren	900 MHz ~ 1000 MHz	3126-900	00169592	Dec. 31, 2024
Precision Sleeve Dipole	ETS-Lindgren	1400 MHz ~ 1700 MHz	3126-1550	00164599	Dec. 31, 2024
Precision Sleeve Dipole	ETS-Lindgren	1700 MHz ~ 2000 MHz	3126-1850	00169588	Dec. 31, 2024
Precision Sleeve Dipole	ETS-Lindgren	2000 MHz ~ 2300 MHz	3126-2150	00169593	Dec. 31, 2024
Precision Sleeve Dipole	ETS-Lindgren	2300 MHz ~ 2700 MHz	3126-2500	00169597	Dec. 31, 2024
Precision Sleeve Dipole	ETS-Lindgren	3000 MHz ~ 4000 MHz	3126-3500	00239652	Dec. 31, 2024
Precision Sleeve Dipole	ETS-Lindgren	4000 MHz ~ 5000 MHz	3126-4500	00239796	Dec. 31, 2024
Precision Sleeve Dipole	ETS-Lindgren	5000 MHz ~ 6000 MHz	3126-5500	00169728	Dec. 31, 2024
Precision Sleeve Dipole	ETS-Lindgren	6000 MHz ~ 7200 MHz	3126-6500	00235488	Dec. 31, 2024
Horn Antenna	SCHWARZBECK	1 GHz ~ 18 GHz	BBHA 9120D	BBHA 9120D-1294	Jan. 15, 2025
EMQuest Antenna Measurement Software	ETS-Lindgren	Control chamber system	EMQ-100	1437	Non-Calibration Required

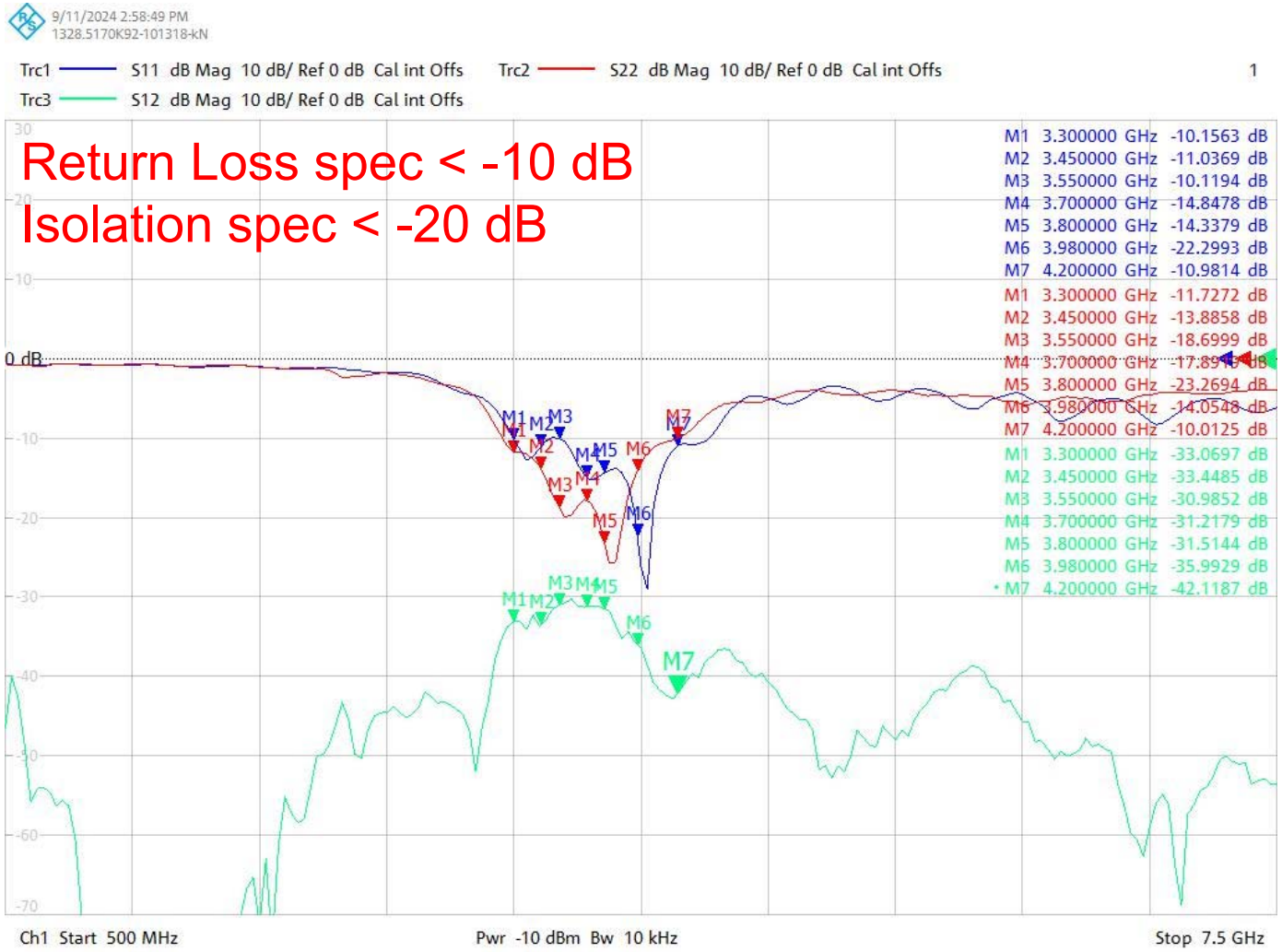
Antenna Structure & Placement

Item	Part number	Connector	Spec	Quantity	Polarization	Ant No.
1	6172006WJH	MMCX	Metal 48mm GY	1	Linear	Ant5
2	6172006XJH	MMCX	Metal 202mm BU	1	Linear	Ant4
3	6172006YJH	MMCX	Metal 49mm WH	1	Linear	Ant3
4	6172006ZJH	MMCX	PCB 212mm RE	1	Linear	Ant2
5	6172007BJH	MMCX	PCB 55mm BL	1	Linear	Ant1

Ant No.	Frequency	Type	Material	Polarization	Feeding
Ant 1 - 2	3300 MHz - 4200 MHz	Dipole	FR4	Horizontal	Cable
Ant 3 - 4	3300 MHz - 4200 MHz	PIFA	Metal	Vertical	Cable
Ant 5	2400 MHz - 2500 MHz	PIFA	Metal	Vertical	Cable

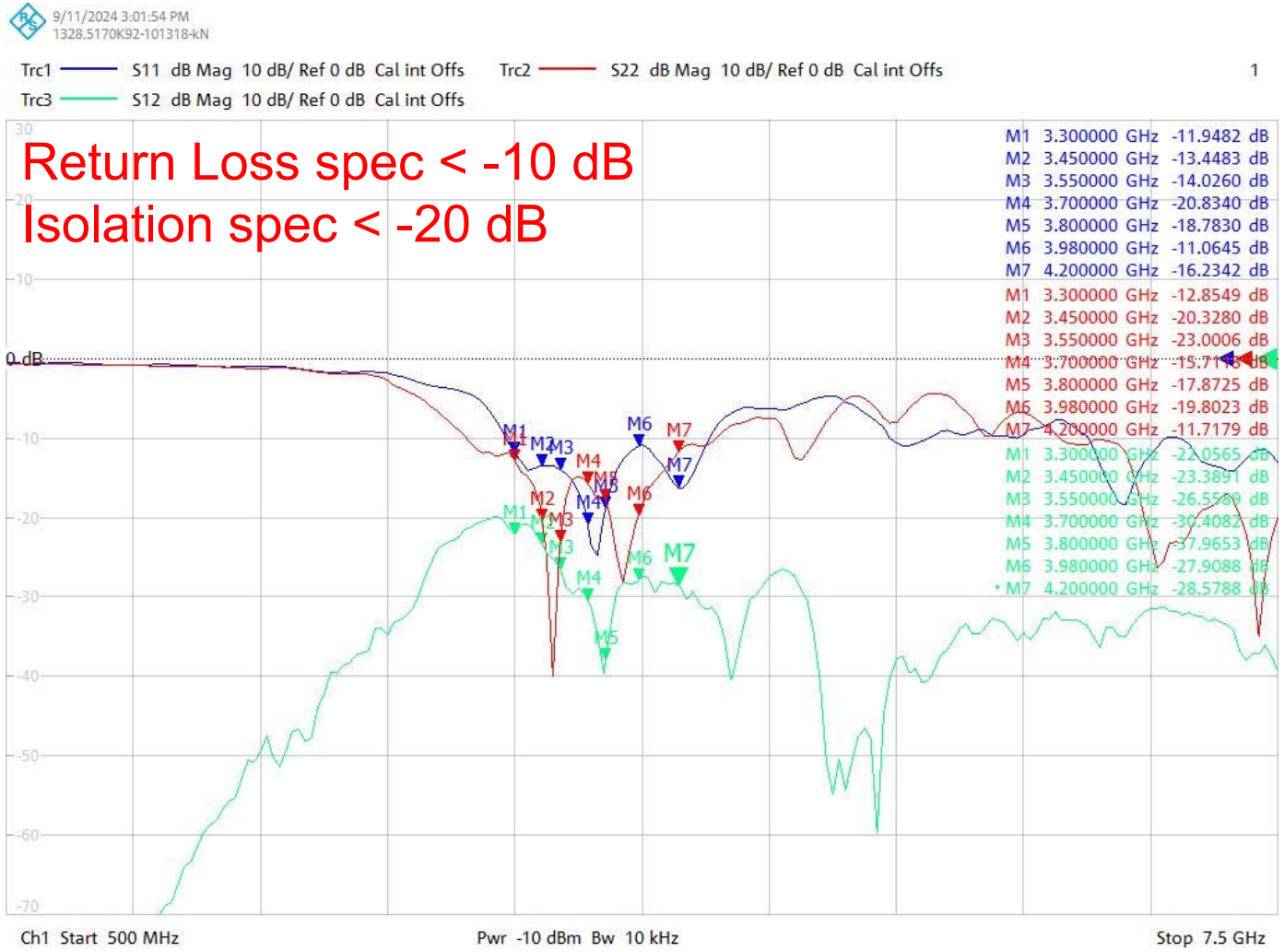
Return Loss & Isolation - Ant 1 & Ant 2

Ant 1
Ant 2
Isolation



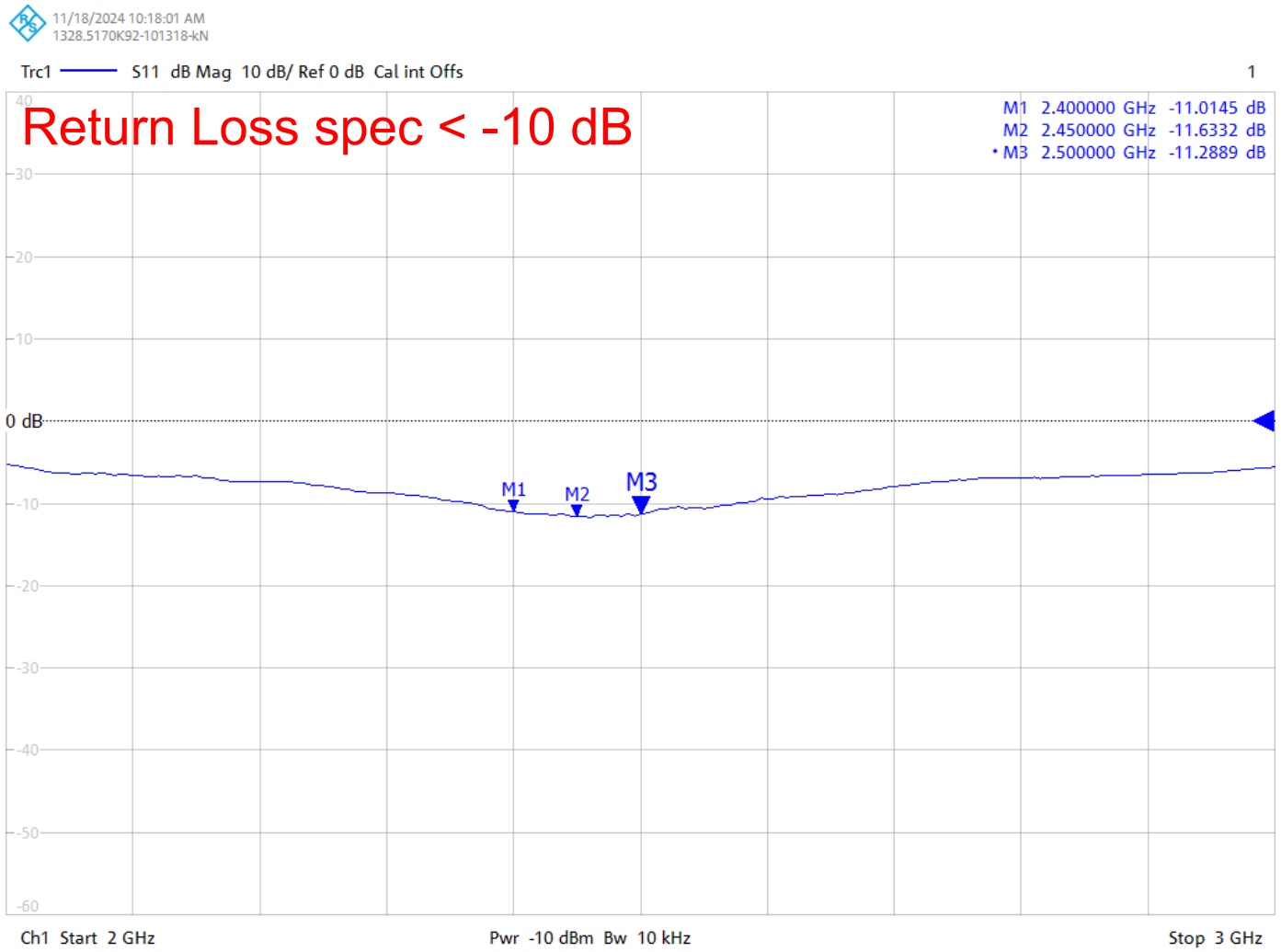
Return Loss & Isolation - Ant 3 & Ant 4

Ant 3
Ant 4
Isolation



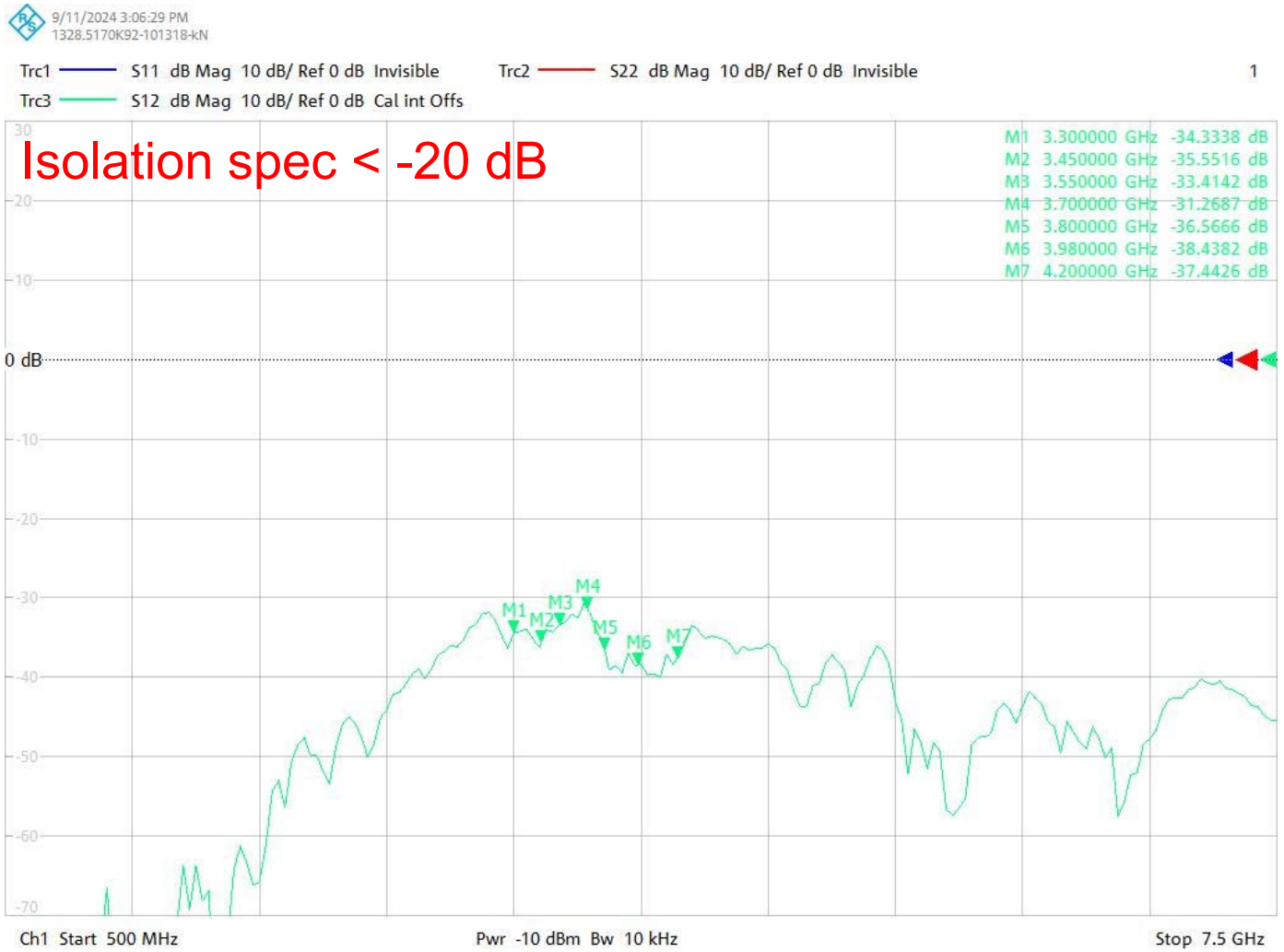
Return Loss - Ant 5

Ant 5



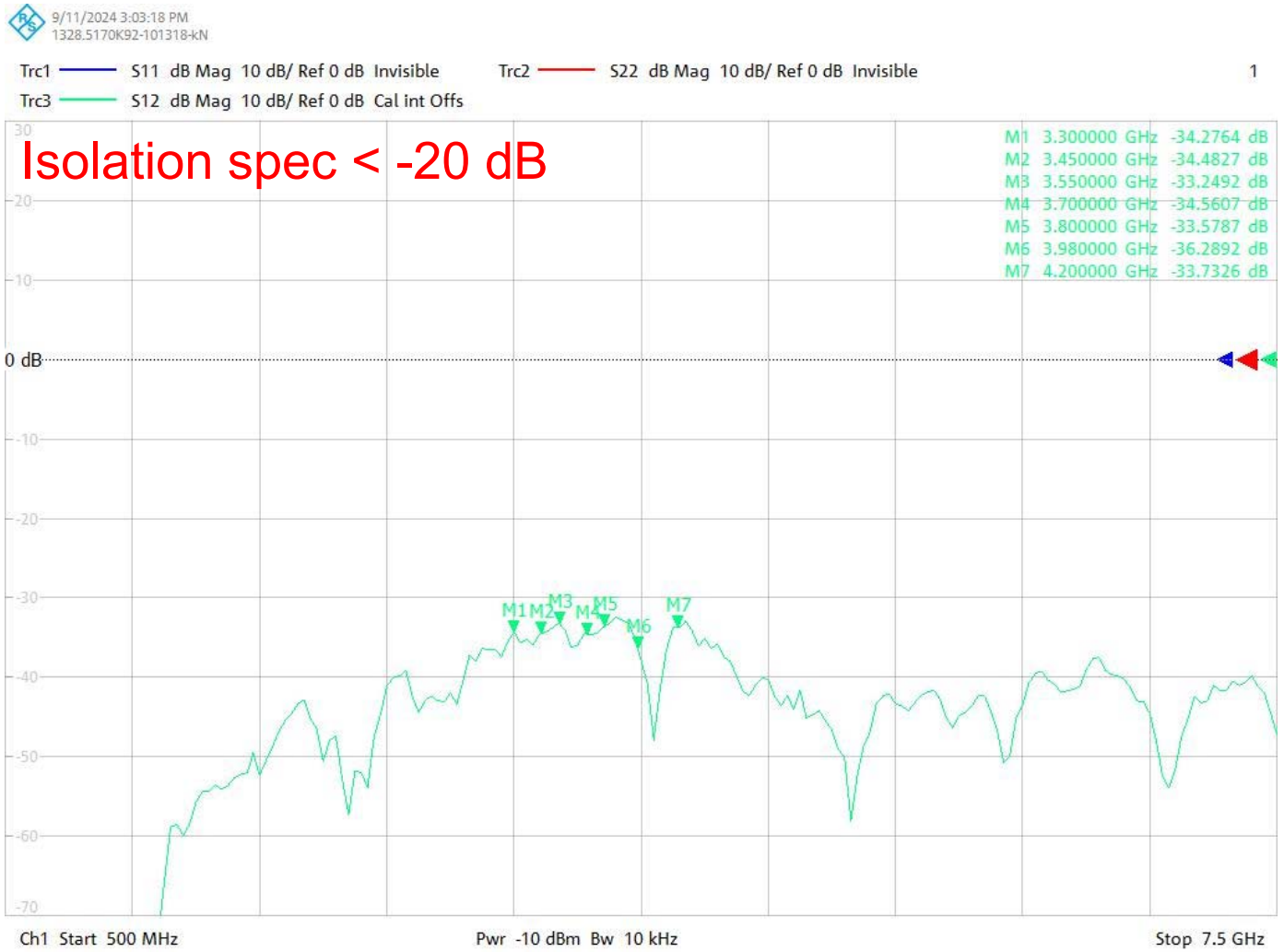
Isolation - Ant 1 & Ant 3

Isolation



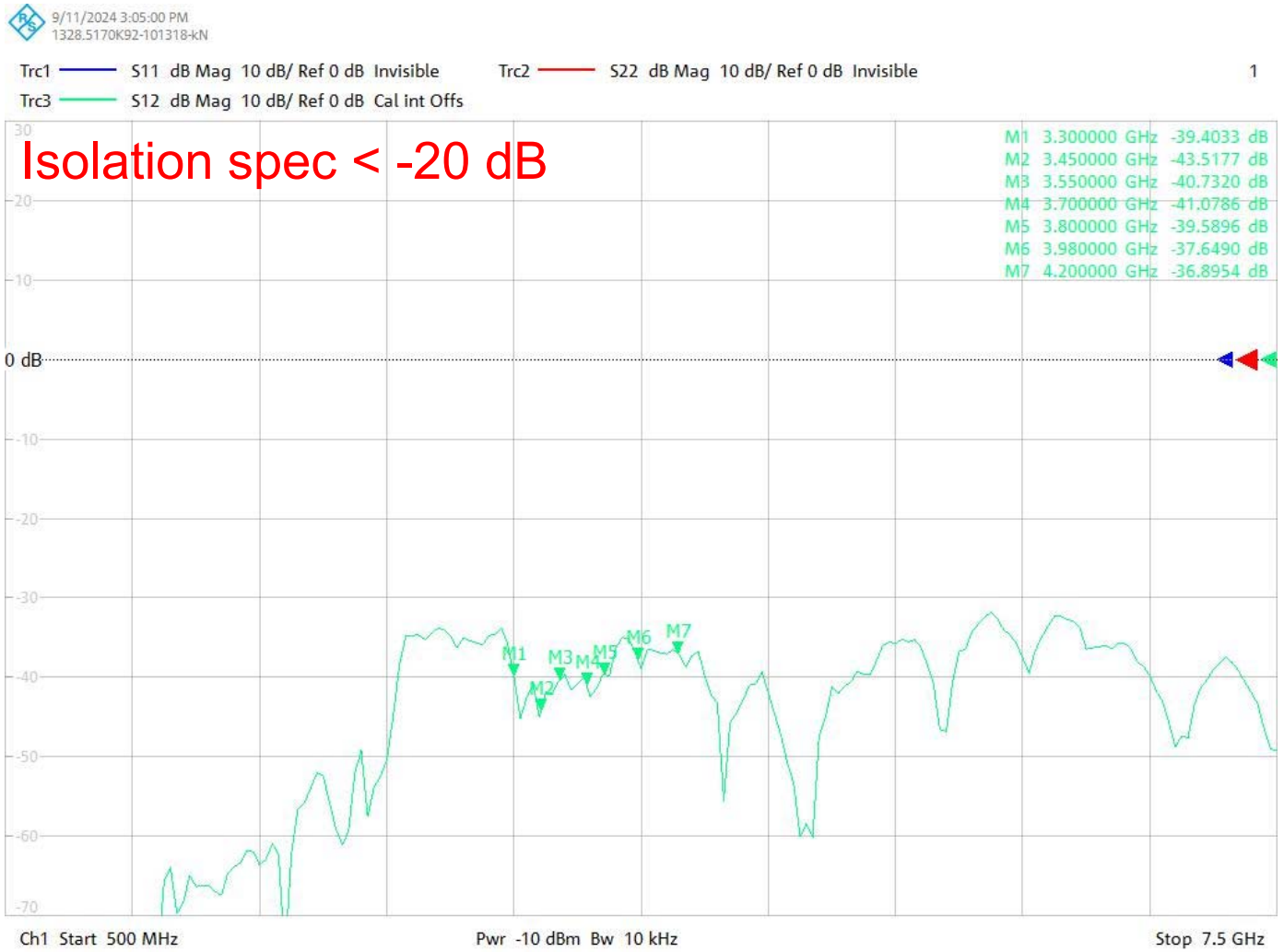
Isolation - Ant 1 & Ant 4

Isolation



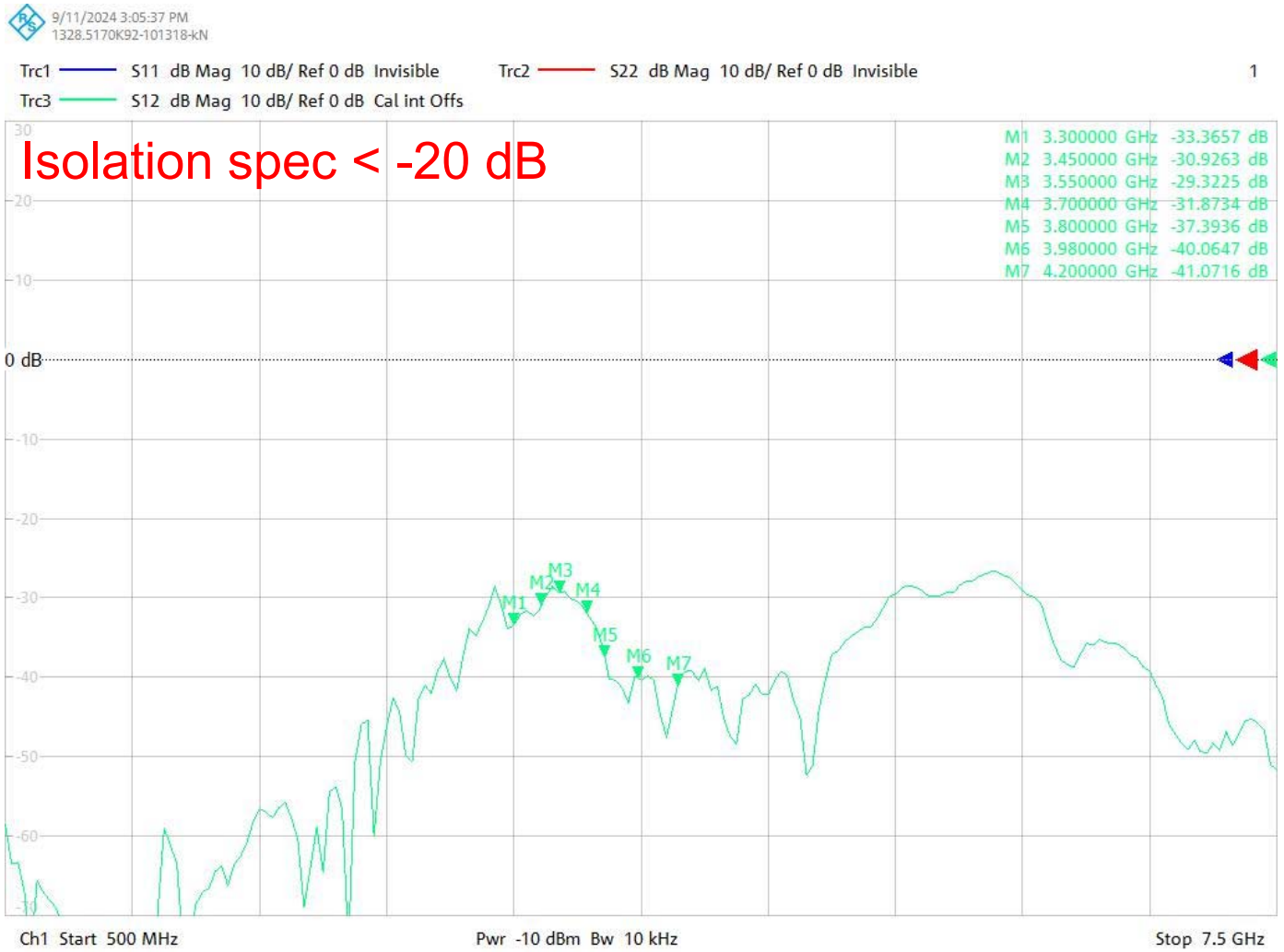
Isolation - Ant 2 & Ant 3

Isolation



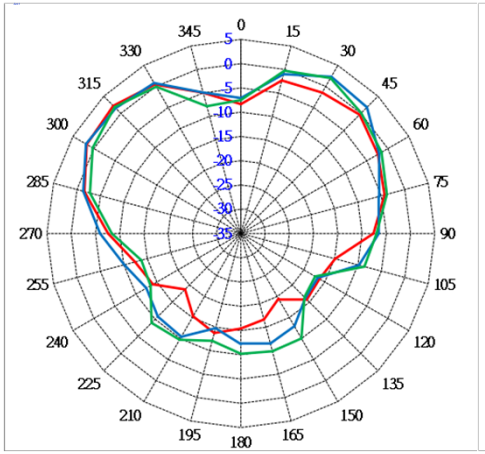
Isolation - Ant 2 & Ant 4

Isolation

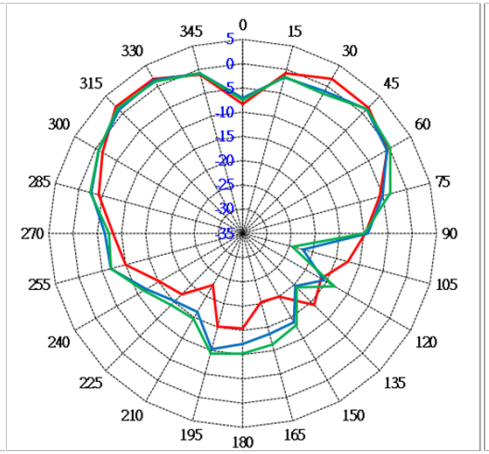


2D Radiation Pattern - Ant 1

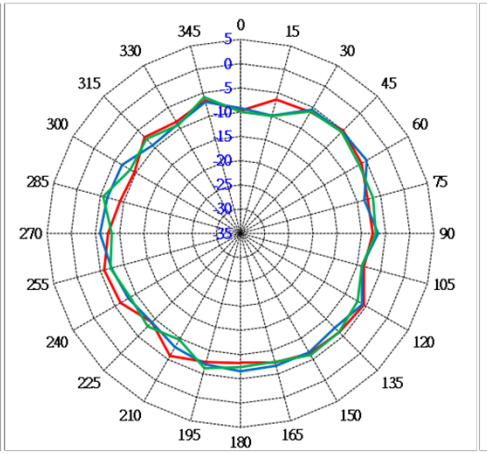
3450MHz
3800MHz
4200MHz



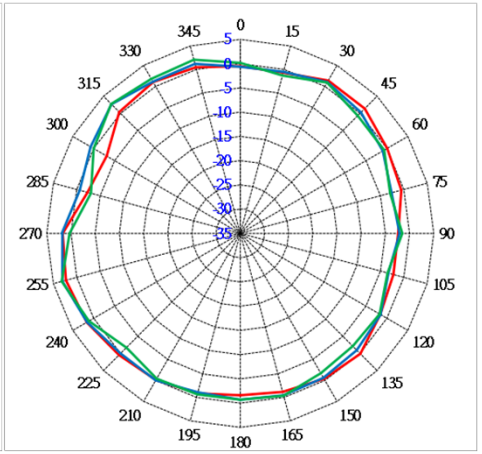
Elevation Plane1
(YZ Plane)



Elevation Plane2
(XZ Plane)



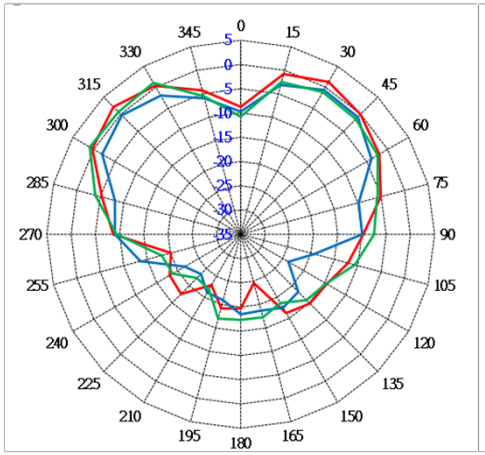
Azimuth Plane



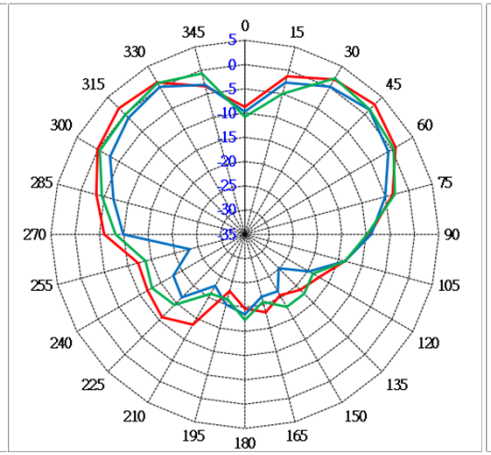
Downtilt 30 degree

2D Radiation Pattern - Ant 2

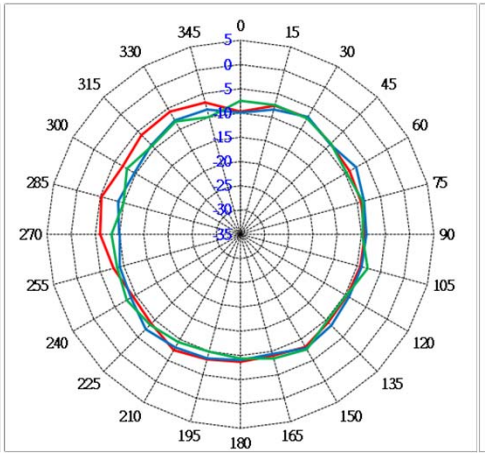
3450MHz
3800MHz
4200MHz



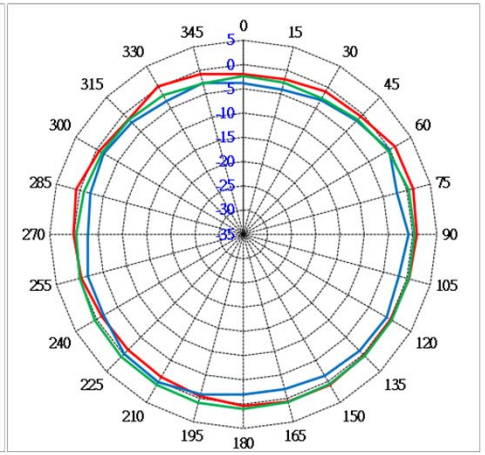
Elevation Plane1
(YZ Plane)



Elevation Plane2
(XZ Plane)



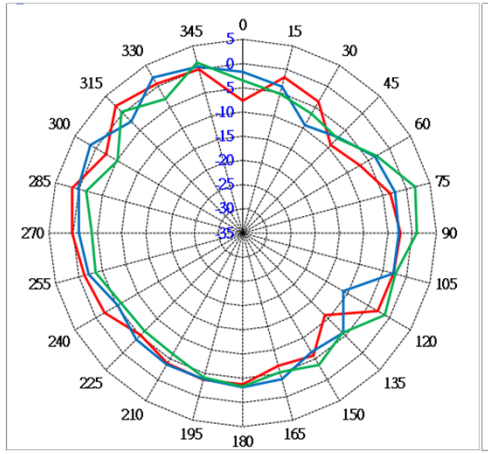
Azimuth Plane



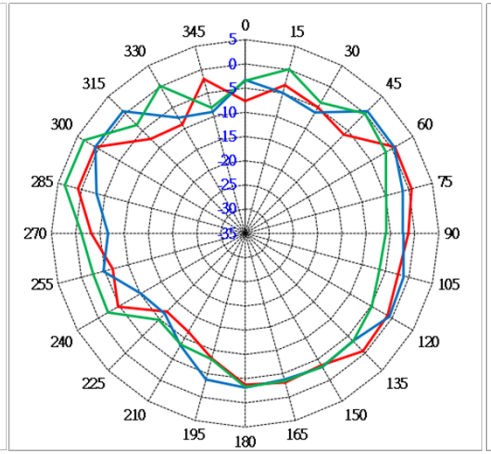
Downtilt 30 degree

2D Radiation Pattern - Ant 3

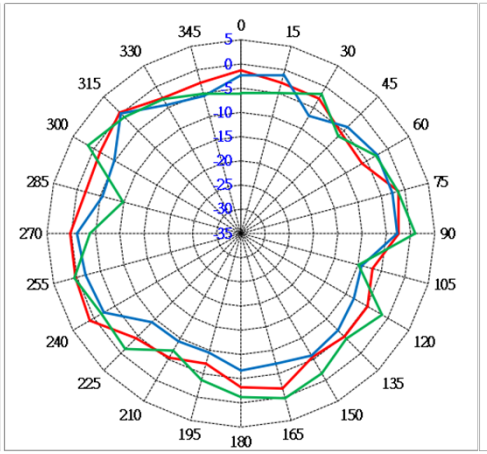
3450MHz
3800MHz
4200MHz



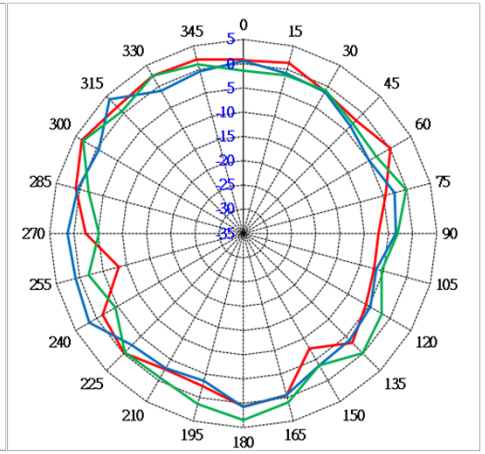
Elevation Plane1
(YZ Plane)



Elevation Plane2
(XZ Plane)



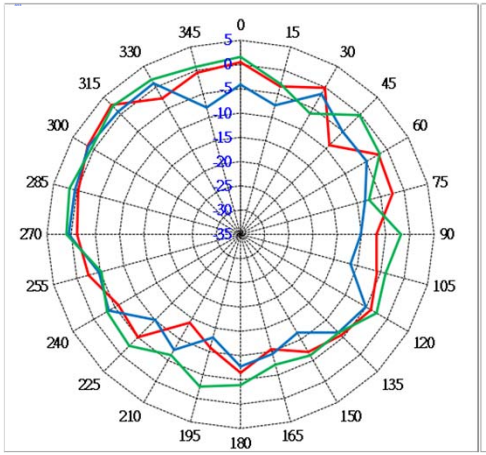
Azimuth Plane



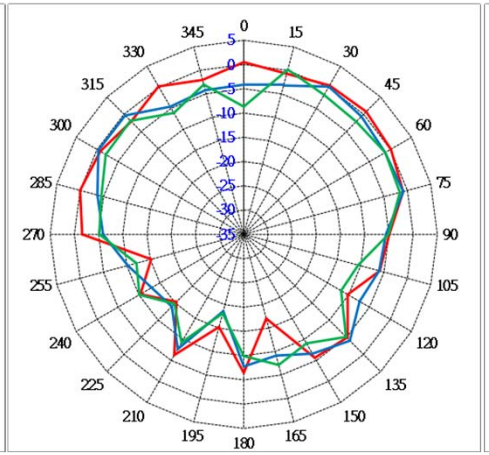
Downtilt 30 degree

2D Radiation Pattern - Ant 4

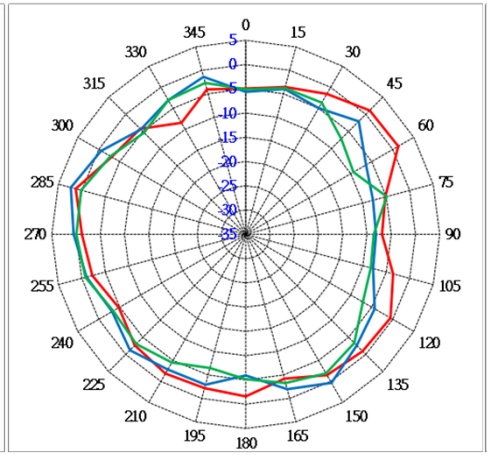
3450MHz
3800MHz
4200MHz



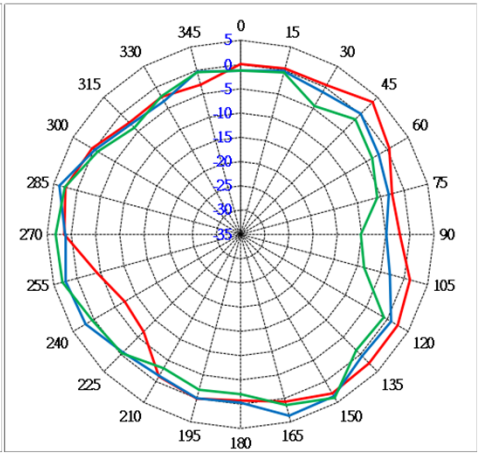
Elevation Plane1
(YZ Plane)



Elevation Plane2
(XZ Plane)



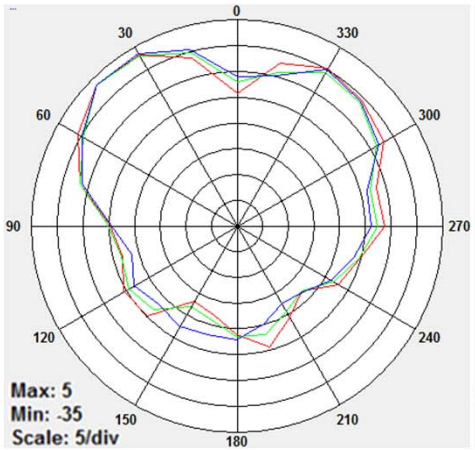
Azimuth Plane



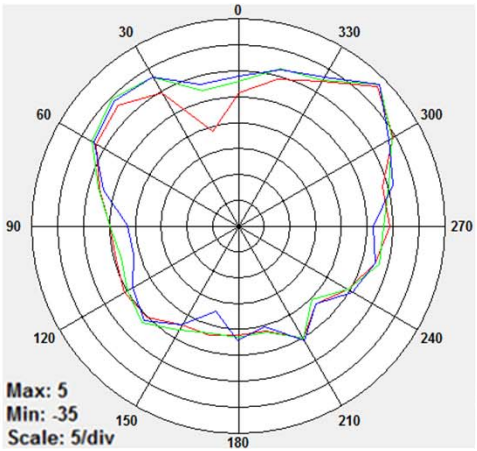
Downtilt 30 degree

2D Radiation Pattern - Ant 5 @2G

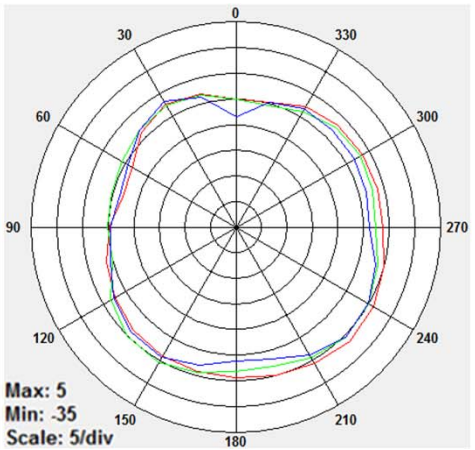
2400MHz
2450MHz
2500MHz



Elevation Plane1
(YZ Plane)

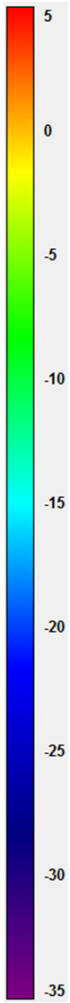


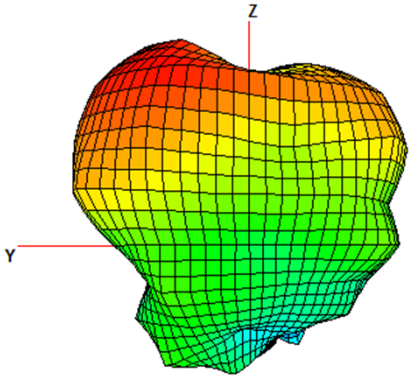
Elevation Plane2
(XZ Plane)



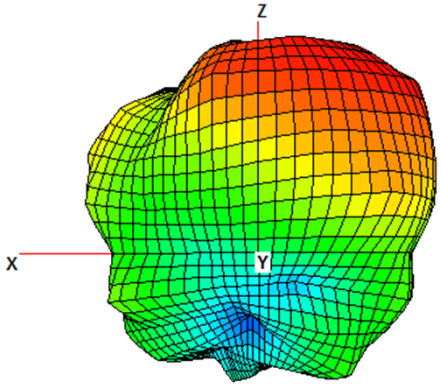
Azimuth Plane

3D Radiation Pattern - Ant 5 @2450MHz

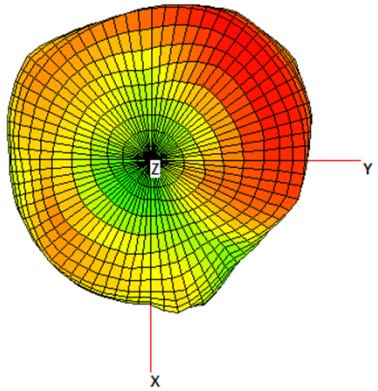




Elevation Plane1
(YZ Plane)



Elevation Plane2
(XZ Plane)



Azimuth Plane

Peak Gain & Efficiency @ Ant 1 ~ 4

Frequency	Peak Gain (dBi)	Efficiency (%)
Ant 1		
3450 MHz	3.67	71.2
3550 MHz	3.83	72.5
3700 MHz	4.37	70.4
3800 MHz	4.59	75.1
3980 MHz	4.32	74.8
4200 MHz	4.24	70.9
Ant 2		
3450 MHz	3.61	71.8
3550 MHz	4.12	72.3
3700 MHz	4.06	70.4
3800 MHz	4.34	73.7
3980 MHz	4.27	72.1
4200 MHz	4.09	70.8

Frequency	Peak Gain (dBi)	Efficiency (%)
Ant 3		
3450 MHz	4.02	72.8
3550 MHz	4.33	71.5
3700 MHz	4.58	73.7
3800 MHz	4.26	74.4
3980 MHz	4.34	71.3
4200 MHz	4.25	72.6
Ant 4		
3450 MHz	3.85	73.2
3550 MHz	4.15	72.5
3700 MHz	4.32	71.8
3800 MHz	4.29	73.3
3980 MHz	4.36	70.1
4200 MHz	4.14	71.6

	Ant 1	Ant 2	Ant 3	Ant 4
Average Gain (dBi)	4.17	4.08	4.30	4.19

Peak Gain & Efficiency @ Ant 5

Frequency	Peak Gain (dBi)	Efficiency (%)
2400 MHz	4.67	70.2
2450 MHz	4.83	71.5
2500 MHz	4.37	70.4

Directional Gain Calculation (1/2)

Ant No.	Frequency	Type	Material	Polarization	Feeding
Ant 1 - 2	3300 MHz - 4200 MHz	Dipole	FR4	Horizontal	Cable
Ant 3 - 4	3300 MHz - 4200 MHz	PIFA	Metal	Vertical	Cable

Frequency (MHz)	Ant 1 Peak Gain (dBi)	Ant 2 Peak Gain (dBi)	Ant 3 Peak Gain (dBi)	Ant 4 Peak Gain (dBi)
3450	3.67	3.61	4.02	3.85
3550	3.83	4.12	4.33	4.15
3700	4.37	4.06	4.58	4.32
3800	4.59	4.34	4.26	4.29
3980	4.32	4.27	4.34	4.36
4200	4.24	4.09	4.25	4.14

Description	Directional Gain Calculation (dBi)
• The device has 4 FR1 antennas, where Ant 1 & 2 are horizontal polarization and Ant 3 & 4 are vertical polarization. These two co-polarized antenna pairs are with orthogonal polarization to each other. • According to the regulation KDB 662911, the correlated gain for Ant 1 & 2 and Ant 3 & 4 can be calculated respectively. Then select the maximum value between them as directional gain. • Directional correlated gain formula = $10\log[(10^{G1/20}+10^{G2/20}+...+10^{Gn/20})^2/N_{ant}]$dBi	DG @ 3450MHz = 5.52 DG @ 3550MHz = 5.32 DG @ 3700MHz = 5.46 DG @ 3800MHz = 5.27 DG @ 3980MHz = 5.38 DG @ 4200MHz = 5.49

Directional Gain Calculation (2/2)

Description	Directional Gain Calculation (dBi)
• 3450MHz maximum correlated gain is 5.52dBi from Ant 3 and Ant 4. This occurs at phi 285 / theta 45 and calculation $=10\log[(10^{Ant3/20}+10^{Ant4/20})^2/2]dBi = 10\log[(10^{3.53/20}+10^{1.36/20})^2/2]dBi = 5.52dBi$ • 3550MHz maximum correlated gain is 5.32dBi from Ant 1 and Ant 2. This occurs at phi 45 / theta 45 and calculation $=10\log[(10^{Ant1/20}+10^{Ant2/20})^2/2]dBi = 10\log[(10^{3/20}+10^{1.56/20})^2/2]dBi = 5.32dBi$ • 3700MHz maximum correlated gain is 5.46dBi from Ant 1 and Ant 2. This occurs at phi 165 / theta 45 and calculation $=10\log[(10^{Ant1/20}+10^{Ant2/20})^2/2]dBi = 10\log[(10^{1.44/20}+10^{3.36/20})^2/2]dBi = 5.46dBi$ • 3800MHz maximum correlated gain is 5.27dBi from Ant 3 and Ant 4. This occurs at phi 285 / theta 60 and calculation $=10\log[(10^{Ant3/20}+10^{Ant4/20})^2/2]dBi = 10\log[(10^{0.41/20}+10^{3.78/20})^2/2]dBi = 5.27dBi$ • 3980MHz maximum correlated gain is 5.38dBi from Ant 1 and Ant 2. This occurs at phi 225 / theta 45 and calculation $=10\log[(10^{Ant1/20}+10^{Ant2/20})^2/2]dBi = 10\log[(10^{2.83/20}+10^{1.88/20})^2/2]dBi = 5.38dBi$ • 4200MHz maximum correlated gain is 5.49dBi from Ant 3 and Ant 4. This occurs at phi 255 / theta 45 and calculation $=10\log[(10^{Ant3/20}+10^{Ant4/20})^2/2]dBi = 10\log[(10^{4.02/20}+10^{0.61/20})^2/2]dBi = 5.49dBi$	DG @ 3450MHz = 5.52 DG @ 3550MHz = 5.32 DG @ 3700MHz = 5.46 DG @ 3800MHz = 5.27 DG @ 3980MHz = 5.38 DG @ 4200MHz = 5.49

Appendix

Raw Data Ant 1 @ 3450MHz

Theta Angle (°)	0	15	30	45	60	75	90	105	120	135	150	165	180
Phi Angle (°)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)
0	-8.34	-0.83	1.8	1.66	-0.52	-5.76	-9.7	-12.52	-16.33	-14.14	-19.95	-20.35	-15.41
15	-8.34	-0.42	2.75	2.34	-0.69	-4.44	-6.43	-12.19	-13.97	-17.36	-14.56	-20.37	-15.41
30	-8.34	-0.23	2.05	2.82	1.38	-1.95	-6.1	-11.06	-18.68	-13.03	-16.16	-18.59	-15.41
45	-8.34	-1.39	1.25	2.83	1.39	-1.82	-5	-8.83	-14.13	-13.31	-16.84	-19.22	-15.41
60	-8.34	-2.3	0.66	2.31	0.07	-2.12	-6.12	-10.75	-11.58	-15.32	-16.19	-19.25	-15.41
75	-8.34	-2.64	-1.08	0.33	-0.53	-4.4	-7.78	-9.4	-18.51	-14.34	-14.46	-18.3	-15.41
90	-8.34	-2.35	-1.47	-0.37	-2.36	-4.31	-7.66	-14.87	-16.28	-15.76	-19.49	-16.65	-15.41
105	-8.34	-1.91	-0.35	-0.24	-2.23	-5.74	-8.58	-12.15	-16.93	-18.86	-15.45	-14.58	-15.41
120	-8.34	-2.24	0.81	0.73	-1.58	-3.38	-5.54	-9.34	-13.38	-12.26	-12.03	-14.13	-15.41
135	-8.34	-2.21	1.81	1.93	0.1	-2.28	-6.15	-6.66	-8.22	-10.95	-12.61	-13.95	-15.41
150	-8.34	-2.1	2.21	1.97	-0.37	-3.51	-6.42	-6.97	-9.92	-12.56	-15.07	-14.44	-15.41
165	-8.34	-1.78	2.18	1.45	-1.17	-3.81	-7.44	-9.17	-13.25	-15.72	-17.2	-14.71	-15.41
180	-8.34	-1.12	1.8	1.97	-1.63	-4.26	-8.26	-10.01	-15.19	-17.24	-22.69	-15.09	-15.41
195	-8.34	-0.85	1.83	2.12	-0.85	-3.23	-7.54	-11.3	-17.55	-25.38	-23.22	-15.6	-15.41
210	-8.34	-0.74	1.92	2.16	-0.1	-3.4	-5.83	-10.36	-13.69	-18.83	-18.72	-15.53	-15.41
225	-8.34	-1.43	2.17	2.83	0.46	-4.42	-9.08	-10.88	-12.61	-21.68	-18.51	-13.72	-15.41
240	-8.34	-2.83	1.9	3.05	1.66	-2.33	-6.36	-12.6	-17.05	-16.54	-20.98	-12.86	-15.41
255	-8.34	-3.98	1.29	3.14	2.32	-1.64	-5.82	-12.89	-15.33	-18.94	-15.76	-12.21	-15.41
270	-8.34	-4.97	0.47	2.22	1.72	-1.58	-7.61	-12.39	-14.05	-18.71	-15.3	-13.77	-15.41
285	-8.34	-4.78	-0.31	-2.12	-2.3	-3.79	-9.23	-15.06	-15.55	-20.65	-17.24	-15.41	-15.41
300	-8.34	-4.1	-0.11	-2.82	-3.1	-6.26	-9.69	-16.57	-21.08	-16.84	-19.04	-16.91	-15.41
315	-8.34	-3.5	0.45	0.74	0.39	-2.59	-6.96	-11.2	-11.78	-15.64	-24.07	-16.62	-15.41
330	-8.34	-2.94	0.72	2.24	1.03	-2.52	-8.44	-12.59	-18.57	-18.47	-16.08	-17.31	-15.41
345	-8.34	-1.99	0.32	2.28	0.46	-4.56	-6.62	-20.44	-19.85	-22.66	-16.7	-18.09	-15.41
360	-8.34	-0.83	1.8	1.66	-0.52	-5.76	-9.7	-12.52	-16.33	-14.14	-19.95	-20.35	-15.41

Raw Data Ant 1 @ 3550MHz

Theta Angle (°)	0	15	30	45	60	75	90	105	120	135	150	165	180
Phi Angle (°)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)
0	-13.35	-2.22	1.07	1.21	-1.16	-7.01	-15.28	-15.01	-17.25	-16.53	-15.7	-15.51	-13.56
15	-13.35	-0.98	1.87	2.09	-1.53	-6.52	-8.95	-11.91	-15.86	-22.05	-14.16	-16.04	-13.56
30	-13.35	-0.64	1.06	1.43	-0.22	-3.87	-6.81	-15.24	-17.12	-13.75	-17.04	-16.37	-13.56
45	-13.35	-0.96	1.52	3	1.03	-2.66	-6.86	-9.01	-18.85	-13.52	-15.73	-17.39	-13.56
60	-13.35	-1.65	0.97	2.03	-0.81	-3.08	-5.14	-11.4	-12.55	-15.06	-13.03	-17.15	-13.56
75	-13.35	-1.96	0.13	0.93	-0.28	-3.93	-9.04	-9.29	-14.76	-13.23	-13.9	-16.47	-13.56
90	-13.35	-2.16	-0.88	-0.32	-2.43	-6.61	-8.23	-14.74	-16.23	-14.09	-17.01	-14.76	-13.56
105	-13.35	-2.23	-0.97	-1.2	-2.68	-5.6	-11.58	-12.18	-18.12	-21.5	-13.91	-14.35	-13.56
120	-13.35	-1.8	-0.04	-0.15	-2.01	-3.84	-5.68	-11.11	-15	-11.87	-11.03	-14.15	-13.56
135	-13.35	-1.38	1.07	1.21	-1.26	-2.48	-6.05	-7.95	-8.58	-9.55	-11.51	-12.44	-13.56
150	-13.35	-1.36	1.43	1.47	-1.72	-4	-8.5	-7.05	-8.34	-10.56	-13.53	-12.61	-13.56
165	-13.35	-1.69	1.21	1.03	-1.35	-4.07	-6.85	-8.87	-11.1	-13.95	-16.3	-12.75	-13.56
180	-13.35	-1.42	1.02	1.17	-1.65	-4.08	-7.24	-9.23	-13.61	-15.69	-19.83	-13.44	-13.56
195	-13.35	-1.05	1.28	1.82	-1.67	-3.54	-6.77	-10.67	-15.66	-20.66	-23.57	-14.39	-13.56
210	-13.35	-1.13	1.46	2.18	-0.07	-4	-6.27	-10.67	-17.16	-22.45	-21.77	-15.47	-13.56
225	-13.35	-1.62	1.19	2.1	-0.03	-4.71	-11.54	-9.87	-13.1	-19.84	-19.37	-13.63	-13.56
240	-13.35	-2.42	1.27	2.51	1.25	-3.16	-7.7	-15.28	-15.88	-19.98	-22.9	-12.89	-13.56
255	-13.35	-4.24	0.59	2.49	2.31	-2.5	-7.01	-16.24	-15.33	-18.03	-16.48	-11.93	-13.56
270	-13.35	-6.41	-0.93	1.49	1.16	-2.27	-7.76	-12.64	-16.78	-19.89	-17.05	-13.21	-13.56
285	-13.35	-6.17	-1.14	-1.6	-1.88	-3.61	-9.39	-14.15	-16.32	-18.29	-19.14	-15.35	-13.56
300	-13.35	-5.09	-0.15	-1.92	-1.75	-5.34	-8.68	-19.11	-20.01	-18.62	-26.43	-16.07	-13.56
315	-13.35	-4.3	0.1	0.95	0.68	-3.25	-9.42	-18.27	-13.4	-22.01	-22.57	-16.16	-13.56
330	-13.35	-3.82	-0.25	1.93	0.75	-3.4	-8.38	-15.05	-20.31	-16.61	-18.12	-16.05	-13.56
345	-13.35	-3.09	-1.12	1.67	-0.15	-4.66	-11.2	-21.14	-27.51	-16.97	-16.56	-15.93	-13.56
360	-13.35	-2.22	1.07	1.21	-1.16	-7.01	-15.28	-15.01	-17.25	-16.53	-15.7	-15.51	-13.56

Raw Data Ant 1 @ 3700MHz

Theta Angle (°)	0	15	30	45	60	75	90	105	120	135	150	165	180
Phi Angle (°)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)
0	-20.62	-1.82	1.52	1.68	-0.96	-6.3	-11.23	-14.24	-17.68	-14.1	-24.48	-22.61	-22.85
15	-20.62	-1.22	2.27	2.18	-0.48	-4.37	-7.83	-13.01	-15.41	-17.04	-17.44	-25.64	-22.85
30	-20.62	-0.96	2.48	2.67	0.72	-2.39	-6.51	-11.65	-18.88	-15.71	-18.55	-27.21	-22.85
45	-20.62	-1.45	1.2	1.85	0.83	-1.84	-5.14	-8.67	-12.58	-14.09	-22.26	-21.41	-22.85
60	-20.62	-2.65	-0.5	0.82	-0.42	-2.23	-5.99	-11.18	-14.28	-19.56	-25.27	-19.36	-22.85
75	-20.62	-2.95	-0.93	-0.71	-2.35	-4.72	-8.51	-12.43	-16.26	-19.61	-22.96	-21.01	-22.85
90	-20.62	-2.29	-0.96	-1.13	-2.64	-4.74	-9.9	-13.95	-21.97	-18.49	-20.72	-20.5	-22.85
105	-20.62	-1.81	0.24	-0.03	-2.17	-5.47	-8.45	-12.72	-13.16	-17.19	-17.83	-20.41	-22.85
120	-20.62	-1.39	1.33	0.65	-1.66	-3.44	-6.35	-10.35	-12.22	-14.24	-14.22	-20.15	-22.85
135	-20.62	-1.22	1.79	1.01	-0.87	-2.91	-5.59	-7.7	-11.94	-13.6	-14.08	-19.9	-22.85
150	-20.62	-1.44	1.92	1.09	-1.23	-3.41	-6.06	-7.57	-11.32	-13.93	-15.89	-21.84	-22.85
165	-20.62	-1	1.57	1.44	-1.53	-4.86	-7.45	-9.44	-15.52	-16.45	-19.5	-21.06	-22.85
180	-20.62	-0.7	1.14	1.87	-1.16	-4.27	-7.86	-11.25	-18.67	-25.71	-24.11	-21.34	-22.85
195	-20.62	-0.52	1.92	1.43	-1.38	-4.39	-8.83	-10.55	-17.32	-20.15	-18.84	-18.63	-22.85
210	-20.62	-1.27	1.98	1.72	-0.51	-2.95	-5.99	-9.8	-12.59	-18.65	-16.04	-17.43	-22.85
225	-20.62	-2.11	1.61	2.26	-0.75	-4.89	-8.17	-12.04	-13.87	-22.73	-18.53	-16.3	-22.85
240	-20.62	-3.08	1.29	2.1	0.92	-3.53	-9.3	-14.61	-17.33	-14.64	-27.95	-17	-22.85
255	-20.62	-4.05	0.71	2.79	1.64	-1.53	-7.59	-14.18	-21.03	-16.98	-16.92	-15.74	-22.85
270	-20.62	-5.73	-0.15	1.95	0.7	-2.23	-8.26	-11.61	-18.33	-19.73	-21.62	-17.55	-22.85
285	-20.62	-5.47	-1.26	-1.5	-2.37	-4.37	-9.55	-12.38	-18.43	-17.74	-22.54	-20.26	-22.85
300	-20.62	-3.95	-0.59	-3.2	-2.81	-6.41	-9.72	-17.11	-15.09	-17.25	-15.72	-18.89	-22.85
315	-20.62	-2.7	0.91	0.33	-0.04	-2.67	-6.51	-9.76	-13.15	-14.01	-18.94	-17.71	-22.85
330	-20.62	-2.01	1.47	1.99	0.24	-3.61	-10.43	-12.96	-19.24	-17.61	-19.16	-17.88	-22.85
345	-20.62	-1.89	1.11	2.12	-0.38	-5.36	-12.58	-20.01	-15.82	-20.48	-18.63	-19.32	-22.85
360	-20.62	-1.82	1.52	1.68	-0.96	-6.3	-11.23	-14.24	-17.68	-14.1	-24.48	-22.61	-22.85

Raw Data Ant 1 @ 3800MHz

Theta Angle (°)	0	15	30	45	60	75	90	105	120	135	150	165	180
Phi Angle (°)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)
0	-7.08	-1.72	-1.15	1.19	-0.64	-5.11	-9.17	-22.13	-15.68	-19.64	-13.85	-13.54	-12.2
15	-7.08	-1.29	-0.56	0.21	-0.51	-5.59	-9.86	-11.4	-14.65	-18.09	-12.69	-14.19	-12.2
30	-7.08	-1.28	1.47	3.23	1.01	-3.12	-5.55	-9.56	-10.7	-14.5	-14.23	-13.96	-12.2
45	-7.08	-0.93	2.06	2.52	0.28	-1.91	-5.33	-6.24	-11.9	-12.93	-13.48	-12.84	-12.2
60	-7.08	-1.06	1.87	0.24	-0.98	-2.71	-4.87	-9.73	-13.66	-14.05	-15.64	-11.89	-12.2
75	-7.08	-1.09	1.75	0.3	-2.62	-2.89	-8.49	-11.6	-9.99	-17.75	-11.09	-11.78	-12.2
90	-7.08	-1.01	2.31	1.78	-2.07	-5.57	-6.56	-9.79	-16.71	-16.21	-12.93	-11.53	-12.2
105	-7.08	0.02	2.96	1.68	-3.3	-6.63	-9.01	-14.9	-14.52	-15.92	-9.27	-10.44	-12.2
120	-7.08	0.95	2.56	1.51	-1.51	-3.31	-5.84	-9.42	-15.29	-13.16	-10.23	-9.75	-12.2
135	-7.08	1.23	2.12	1.41	-0.95	-2.65	-7.46	-9.41	-8.75	-9.58	-8.86	-10.06	-12.2
150	-7.08	0.94	2.08	1.67	-0.62	-1.75	-6.68	-7.59	-8.4	-8.55	-9.4	-10.16	-12.2
165	-7.08	0.33	1.73	2.04	-0.44	-2.66	-6.74	-5.77	-10.65	-12.05	-12.42	-11.05	-12.2
180	-7.08	-0.83	1.5	1.05	-0.71	-2.68	-6.58	-6.85	-12.03	-15.23	-16.3	-10.29	-12.2
195	-7.08	-2.28	1.37	1.84	-1.08	-3.75	-7.04	-7.39	-13.89	-18.56	-15.72	-10.27	-12.2
210	-7.08	-3.21	0.78	2.25	-0.02	-4.36	-7.91	-10.15	-14.79	-32.29	-22.86	-12.64	-12.2
225	-7.08	-3.29	1.5	2.26	0.01	-4.21	-9.07	-10.15	-14.93	-28.63	-20.02	-13	-12.2
240	-7.08	-3.55	1.68	3.62	1.58	-1.4	-8.22	-14.01	-14.48	-18.42	-15.19	-11.72	-12.2
255	-7.08	-3.88	1.06	3.62	3.09	-0.65	-7.36	-13.72	-17.38	-19.21	-13.06	-13.24	-12.2
270	-7.08	-4.92	0.81	1.53	1.9	-1.34	-5.95	-10.1	-12.49	-10.78	-10.43	-14.8	-12.2
285	-7.08	-5.22	1.14	-1.12	-0.63	-2.92	-6.49	-15.51	-12.82	-14.28	-12.26	-15.3	-12.2
300	-7.08	-3.6	1.56	1.03	0.73	-3.88	-6.73	-11.87	-12.28	-17.73	-20.69	-14.18	-12.2
315	-7.08	-2.93	1.08	3.45	2.66	-1.38	-9.31	-11.2	-17.7	-16.63	-15.74	-15	-12.2
330	-7.08	-2.32	-0.92	3.14	1.12	-3.04	-9.01	-11.77	-16.32	-13.07	-23.92	-15.6	-12.2
345	-7.08	-1.97	-1.87	0.37	1.19	-2.52	-6.94	-11.47	-16.89	-13.06	-20.19	-15.14	-12.2
360	-7.08	-1.72	-1.15	1.19	-0.64	-5.11	-9.17	-22.13	-15.68	-19.64	-13.85	-13.54	-12.2

Raw Data Ant 1 @ 3980MHz

Theta Angle (°)	0	15	30	45	60	75	90	105	120	135	150	165	180
Phi Angle (°)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)
0	-11.81	-5.04	-2.58	0.26	-0.05	-4.66	-10.51	-16.43	-19.1	-32.49	-28.65	-24.62	-36.01
15	-11.81	-3.98	-2.19	1.11	0.95	-3.13	-9.83	-14.16	-18.08	-18.79	-22.72	-25.35	-36.01
30	-11.81	-2.45	-0.84	0.1	-1	-5.05	-8.59	-14.73	-18.85	-21.03	-28.39	-20.6	-36.01
45	-11.81	-1.23	-0.05	-0.45	-1.92	-4.82	-10.61	-16.01	-18.59	-21.6	-23.13	-18.36	-36.01
60	-11.81	-0.24	0	0.66	-2.22	-5.76	-8.58	-12.14	-14.56	-17.97	-20.09	-17.98	-36.01
75	-11.81	-0.16	0.13	0.6	-1.31	-5.11	-10.93	-15.82	-26.24	-22.5	-19.46	-20.1	-36.01
90	-11.81	-0.36	-0.07	-1.85	-3.24	-6.3	-11.34	-13.63	-15.03	-24.33	-23.01	-21.8	-36.01
105	-11.81	-0.95	0.37	-0.92	-2.18	-4.61	-9.01	-12.26	-16.48	-20.82	-17.25	-19.86	-36.01
120	-11.81	-0.95	0.31	-0.65	-3.43	-5.53	-11.56	-15.19	-16.64	-19.06	-24.84	-24.28	-36.01
135	-11.81	-0.51	0.21	0.77	-2.34	-6.58	-10.99	-13.03	-19.29	-19.18	-28.82	-36.35	-36.01
150	-11.81	-0.32	1.07	1.25	-2.64	-7.2	-11.48	-13.49	-13.78	-18.28	-22.67	-26.35	-36.01
165	-11.81	-0.5	1.81	1.43	-2.41	-5.48	-12.28	-13.64	-19.73	-20.76	-18.33	-22.81	-36.01
180	-11.81	-1.64	1	1.9	-2.05	-6.57	-10.18	-13.96	-19.14	-18.89	-17.73	-24.14	-36.01
195	-11.81	-3.05	0.3	1.44	-0.86	-5.45	-10.99	-14.21	-16.08	-19	-23.09	-25	-36.01
210	-11.81	-4.17	0.97	1.13	-1.4	-5.14	-12.03	-14.99	-16.31	-22.84	-26.47	-27.72	-36.01
225	-11.81	-3.81	0.97	2.83	0	-4.37	-10.32	-13.47	-16.77	-18.89	-23.6	-27.19	-36.01
240	-11.81	-3.28	-0.01	1.73	-0.54	-4.56	-10.01	-15.19	-23.14	-20.97	-23.62	-27.76	-36.01
255	-11.81	-3.23	0.68	2.22	0.8	-3.53	-9.59	-16.3	-16	-18.83	-19.55	-25.9	-36.01
270	-11.81	-3.56	0.49	0.54	-0.98	-4.08	-9.04	-17.01	-17.67	-24.19	-16.25	-25.67	-36.01
285	-11.81	-3.94	0.75	-0.08	-2.06	-4.89	-11.79	-22.68	-19.24	-21.37	-23.66	-23.4	-36.01
300	-11.81	-3.73	1.67	1.07	0.22	-4.76	-8.29	-15.2	-17.32	-29.91	-19.92	-27.98	-36.01
315	-11.81	-3.46	0.83	1.84	0.78	-2.79	-9.64	-17.13	-18.08	-17.83	-21.43	-27.39	-36.01
330	-11.81	-3.69	-1.16	1.3	-0.22	-5.43	-16.2	-20.47	-19.73	-16.45	-19.44	-30.66	-36.01
345	-11.81	-5.36	-2.16	-0.19	0	-5.57	-11.06	-16.72	-17.91	-24.16	-21.98	-24.43	-36.01
360	-11.81	-5.04	-2.58	0.26	-0.05	-4.66	-10.51	-16.43	-19.1	-32.49	-28.65	-24.62	-36.01

Raw Data Ant 1 @ 4200MHz

Theta Angle (°)	0	15	30	45	60	75	90	105	120	135	150	165	180
Phi Angle (°)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)
0	-7.5	-1.55	-1.77	1.24	0.16	-3.6	-9.91	-24.36	-13.17	-19.25	-13.08	-11.28	-10.21
15	-7.5	-1.94	0.05	-0.62	-1.3	-6.14	-9.95	-14.84	-11.73	-17.87	-12.67	-11.68	-10.21
30	-7.5	-1.52	1.56	2.32	0.9	-2.91	-5.95	-8.38	-9.66	-16.28	-13.2	-11.59	-10.21
45	-7.5	-1.23	2.09	0.77	-0.67	-2.56	-5.44	-7.37	-9.33	-12.69	-15.11	-11.24	-10.21
60	-7.5	-0.96	1.7	0.47	-0.65	-3.26	-6.68	-9.29	-17.84	-13.44	-14.49	-9.95	-10.21
75	-7.5	-0.73	1.63	0.99	-2.93	-3.91	-6.65	-15.44	-9.54	-16.44	-9.45	-9.37	-10.21
90	-7.5	-0.27	1.99	0.11	-1.51	-3.83	-7.02	-8.63	-17.31	-16.47	-10.03	-9.87	-10.21
105	-7.5	0.26	2.02	0.23	-3.48	-6.47	-9.04	-15	-17.24	-12.2	-7.81	-9.51	-10.21
120	-7.5	0.74	1.89	0.96	-1.74	-5.57	-7.04	-9.63	-21.3	-11.28	-10.18	-9.44	-10.21
135	-7.5	1.42	1.64	0.13	-2.12	-4.41	-6.22	-10.89	-8.25	-9.46	-9.56	-9.7	-10.21
150	-7.5	0.97	1.5	0.61	-1.71	-2.02	-6.03	-6.49	-7.64	-6.6	-10.4	-10.19	-10.21
165	-7.5	-0.02	1.16	2.05	-0.36	-2.6	-7.58	-6.18	-9.57	-10.41	-11.71	-10.21	-10.21
180	-7.5	-0.86	1.14	1.51	-0.71	-2.46	-7.43	-6.89	-11.43	-14.12	-14.69	-9.46	-10.21
195	-7.5	-2.32	1.81	1.09	-0.64	-3.22	-6.21	-6.25	-10.7	-16.02	-13.36	-8.92	-10.21
210	-7.5	-3.63	1.45	1.48	-0.42	-3.84	-9.7	-9.4	-13.57	-22.31	-21.05	-11.36	-10.21
225	-7.5	-4.88	1.37	2.25	-1.7	-3.61	-7.86	-8.61	-13.61	-21.11	-16.84	-12.06	-10.21
240	-7.5	-6.59	1.3	3.87	1.13	-2.03	-8.68	-11.1	-13.68	-14.85	-13.81	-11.33	-10.21
255	-7.5	-7.89	0.52	3.45	3.22	-0.42	-7.16	-15.26	-14.63	-14.79	-11.31	-10.96	-10.21
270	-7.5	-7.84	-0.07	1.84	0.3	-2.77	-8.38	-13.74	-13.49	-8.95	-9.71	-12.1	-10.21
285	-7.5	-5.37	1.51	-1.35	-3.03	-3.95	-5.61	-13.97	-11.06	-14.54	-9.62	-12.52	-10.21
300	-7.5	-3.86	1.95	0.43	0	-4.96	-8.7	-14.53	-12.98	-16.68	-14.98	-12.71	-10.21
315	-7.5	-2.34	1.16	2.29	2.74	-1.11	-7.47	-8.91	-16.26	-12.68	-13.33	-15.28	-10.21
330	-7.5	-1.06	0.42	3.13	1.79	-3.7	-9.22	-12.14	-16.36	-11.67	-21.37	-14.23	-10.21
345	-7.5	-0.91	-0.5	1.75	2.07	-1.77	-5.91	-9.71	-14.35	-11.69	-22.69	-12.54	-10.21
360	-7.5	-1.55	-1.77	1.24	0.16	-3.6	-9.91	-24.36	-13.17	-19.25	-13.08	-11.28	-10.21

Raw Data Ant 2 @ 3450MHz

Theta Angle (°)	0	15	30	45	60	75	90	105	120	135	150	165	180
Phi Angle (°)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)
0	-8.72	-0.8	1.27	-0.05	-1.98	-5.08	-9.71	-12.09	-14.5	-14.82	-16.24	-24.59	-19.71
15	-8.72	-0.69	1.16	0.3	-1.9	-5.36	-7.55	-10.39	-12.28	-13.46	-13.55	-21.37	-19.71
30	-8.72	-0.27	2.07	1.12	-1.01	-4.2	-7.25	-10.27	-11.72	-13.63	-14.19	-20.85	-19.71
45	-8.72	-0.44	2.36	1.71	-0.64	-4.41	-8.63	-13.53	-16.65	-14.41	-18.56	-17.68	-19.71
60	-8.72	-1.17	2.01	2.66	1.19	-4.09	-8.94	-17.5	-19.09	-18.35	-18.08	-16.58	-19.71
75	-8.72	-1.33	1.43	2.5	1.33	-3.21	-9.18	-14.98	-20.31	-19.62	-21.71	-16.42	-19.71
90	-8.72	-1.28	1.86	2.84	0.87	-3.48	-9.25	-13.68	-17.34	-18.85	-20.51	-18.38	-19.71
105	-8.72	-1.59	1.62	2.55	0.47	-4.44	-9.33	-20.3	-18.68	-18.7	-16.04	-23.7	-19.71
120	-8.72	-2.2	0.28	1.38	0.15	-5.35	-9.58	-14.71	-17.8	-16.67	-19.52	-25.84	-19.71
135	-8.72	-3.03	-0.28	1.19	0.31	-5.12	-9.33	-15.22	-14.35	-16.07	-23.14	-21.37	-19.71
150	-8.72	-3.75	0.69	1.59	0.81	-4.03	-8.17	-14.17	-16	-16.78	-24.89	-18.21	-19.71
165	-8.72	-4.21	1.11	2.5	0.69	-4.04	-9.08	-16.92	-28.4	-21.63	-21.27	-17.94	-19.71
180	-8.72	-4.28	0.35	2.14	0.36	-5.36	-8.7	-20.1	-18.07	-17.61	-22.91	-19.3	-19.71
195	-8.72	-3.54	-0.04	0.9	-0.47	-6.55	-8.3	-16.81	-15.72	-18.68	-19.33	-20.21	-19.71
210	-8.72	-2.95	0.02	0.28	-1.05	-3.94	-7.41	-14.56	-15.84	-19.88	-20.49	-21.66	-19.71
225	-8.72	-3.25	0.08	-0.54	-1.33	-3.49	-8.94	-14.13	-19.35	-18.44	-23.11	-20.23	-19.71
240	-8.72	-3.74	-0.01	-0.08	-1.2	-4.43	-9.35	-14.04	-22.76	-13.78	-24.44	-23.85	-19.71
255	-8.72	-3.85	0.45	0.72	-0.33	-4.22	-7.85	-13.92	-16.71	-12.2	-14.55	-23.75	-19.71
270	-8.72	-3.41	1.18	1.75	0.09	-3.29	-5.99	-12.2	-11.84	-10.85	-13.53	-22.89	-19.71
285	-8.72	-2.52	0.88	1.8	0.77	-2.29	-5.25	-8.82	-8.73	-11.72	-12.65	-21.27	-19.71
300	-8.72	-1.83	0.66	1.76	-0.62	-3.11	-6.91	-9.61	-11.33	-11.96	-13.49	-23.72	-19.71
315	-8.72	-1.07	0.99	1.62	-1.48	-4.15	-6.07	-10.26	-12.64	-12.98	-17	-21.7	-19.71
330	-8.72	-0.82	1.05	1.51	0.23	-3.05	-5.82	-8.56	-12.7	-15.79	-19.61	-20.88	-19.71
345	-8.72	-0.68	1.15	0.64	-0.81	-4.27	-6.88	-12.2	-14.83	-17.83	-17.65	-20.78	-19.71
360	-8.72	-0.8	1.27	-0.05	-1.98	-5.08	-9.71	-12.09	-14.5	-14.82	-16.24	-24.59	-19.71

Raw Data Ant 2 @ 3550MHz

Theta Angle (°)	0	15	30	45	60	75	90	105	120	135	150	165	180
Phi Angle (°)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)
0	-11.42	-1.44	-0.45	-0.56	-4.35	-7.66	-10.91	-13.11	-12.19	-12.29	-11.9	-14.55	-17.13
15	-11.42	-1.7	0.33	0.04	-2.02	-4.78	-7.83	-9.42	-9.26	-11.66	-11.63	-13.33	-17.13
30	-11.42	-1.87	0.65	1.06	-1.59	-4.15	-8.22	-10.2	-10.7	-9.29	-13.28	-12.38	-17.13
45	-11.42	-1.36	1.8	1.56	-0.76	-4.24	-9.59	-13.51	-15.93	-13.86	-11.12	-13.99	-17.13
60	-11.42	-1.16	2.02	1.58	-1.18	-5.45	-12.04	-16.67	-22.85	-17.77	-14.77	-15.65	-17.13
75	-11.42	-2.06	1.65	2.1	0.82	-4.64	-10.32	-18.27	-19.06	-20.28	-15.72	-15.35	-17.13
90	-11.42	-3.06	1.79	1.86	0.07	-4.44	-8.97	-14.11	-17.11	-18.18	-20.17	-15.37	-17.13
105	-11.42	-2.99	1.56	2.36	-0.17	-6.29	-13.36	-15.3	-19.71	-17.78	-16.02	-17.93	-17.13
120	-11.42	-2.35	1.08	1.95	-0.08	-5.02	-11.33	-15.73	-14.04	-18.39	-17.15	-18.29	-17.13
135	-11.42	-2.37	0.92	1.4	0.02	-5.16	-11.3	-15.52	-16.6	-16.18	-31.89	-17.34	-17.13
150	-11.42	-2.91	1.08	2.53	1.23	-5.46	-11.08	-13.43	-15.65	-19.53	-25.4	-16.06	-17.13
165	-11.42	-3.05	0.5	3.08	0.61	-4.87	-11.33	-13.84	-24.71	-17.71	-18.65	-16.92	-17.13
180	-11.42	-3.93	1.06	1.39	0.54	-5.34	-13.63	-19.52	-17.39	-22.69	-18.3	-17.85	-17.13
195	-11.42	-4.23	1.67	1.76	0.24	-5.5	-13.67	-16.85	-14.97	-18.72	-21.42	-17.28	-17.13
210	-11.42	-4.43	0.36	0.28	-0.22	-4.53	-7.6	-13.94	-14.53	-20.59	-19.17	-16.9	-17.13
225	-11.42	-4.45	0.15	-0.51	-1.03	-3.3	-5.55	-12.37	-13.58	-18.39	-27.66	-19.42	-17.13
240	-11.42	-4.15	0.05	-0.85	-1.29	-2.57	-6.89	-12.44	-13.88	-15.94	-17.52	-18.58	-17.13
255	-11.42	-3.12	0	-1.14	-2.9	-6.4	-11.11	-16.64	-26.93	-14.03	-15.8	-16.21	-17.13
270	-11.42	-2.93	-0.4	0.83	-0.44	-4.59	-9.51	-17.85	-13.43	-10.46	-13.1	-14.85	-17.13
285	-11.42	-2.5	0.25	1.67	-0.53	-3.48	-8.6	-10.29	-9.62	-11.58	-15.11	-15.06	-17.13
300	-11.42	-2.48	-0.16	-0.03	-1.43	-4.78	-8	-11.12	-13.94	-14.57	-15.91	-15.3	-17.13
315	-11.42	-2.1	0.21	-0.83	-1.75	-6.72	-7.96	-10.96	-11.93	-13.73	-15.4	-13.21	-17.13
330	-11.42	-1.86	0.87	0.31	-0.41	-4.3	-5.65	-8.14	-11.06	-13.14	-14.3	-13.15	-17.13
345	-11.42	-1.71	0.73	0.91	-0.73	-4.27	-7.93	-9.9	-12.08	-12.77	-15.06	-14.39	-17.13
360	-11.42	-1.44	-0.45	-0.56	-4.35	-7.66	-10.91	-13.11	-12.19	-12.29	-11.9	-14.55	-17.13

Raw Data Ant 2 @ 3700MHz

Theta Angle (°)	0	15	30	45	60	75	90	105	120	135	150	165	180
Phi Angle (°)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)
0	-9.96	0.14	1.15	-0.1	-2.82	-6.6	-12.23	-13.95	-12.25	-11.29	-9.59	-13.74	-12.94
15	-9.96	0.31	0.87	-0.2	-1.24	-5.01	-6.62	-8.93	-8.58	-10.63	-10.35	-13.18	-12.94
30	-9.96	-0.06	1.62	1.59	-0.76	-4.06	-6	-8.29	-8.8	-9.01	-11.59	-12.42	-12.94
45	-9.96	-0.52	2.11	2.09	0.26	-3.01	-8.1	-10.54	-13.22	-11.48	-10.23	-13.35	-12.94
60	-9.96	-0.75	2.69	2.33	0	-3.5	-9.32	-14.14	-19.08	-15.56	-11.87	-12.64	-12.94
75	-9.96	-0.83	2.78	2.53	1.32	-3.82	-9.61	-17.72	-16.32	-16.14	-14.9	-12.25	-12.94
90	-9.96	-1.63	2.79	2.96	0.49	-3.64	-8.46	-12.36	-16.97	-17.17	-16.08	-13.22	-12.94
105	-9.96	-2.37	2.21	3.35	1.25	-6.11	-11.66	-13.97	-17.8	-17.75	-16.82	-15.9	-12.94
120	-9.96	-2.36	1.82	2.46	1.49	-3.93	-9.9	-16.05	-13.22	-14.04	-18	-15.8	-12.94
135	-9.96	-2.54	1.92	2.08	0.39	-5.5	-12.88	-20.28	-18.69	-17.37	-21.53	-13.89	-12.94
150	-9.96	-2.91	1.87	3.23	2.03	-4.47	-13.12	-16.07	-20.26	-18.33	-19.02	-13.02	-12.94
165	-9.96	-2.98	1.47	3.36	0.57	-6.9	-13.95	-12.79	-18.31	-17.98	-16.59	-14.14	-12.94
180	-9.96	-2.61	2.33	2.4	0.74	-3.68	-11.49	-14.46	-17.56	-19.76	-15.23	-16.6	-12.94
195	-9.96	-2.22	2.09	2.31	1.51	-3.25	-11.44	-17.77	-14.96	-24.48	-15.74	-15.37	-12.94
210	-9.96	-2.16	0.16	0.36	1.63	-3.36	-8.55	-13.19	-13.15	-18.54	-20.02	-15.76	-12.94
225	-9.96	-2.55	0.52	1.72	1.85	-2.41	-4.28	-11.46	-10.28	-17.77	-24.39	-16.77	-12.94
240	-9.96	-2.79	0.24	0.99	0.14	-1.34	-4.81	-11.37	-10.7	-13.99	-17.92	-13.48	-12.94
255	-9.96	-2.21	-0.11	-0.58	-1.15	-3.18	-8.77	-13.1	-16.75	-14.29	-14.85	-11.17	-12.94
270	-9.96	-1.77	1.09	1.6	-0.41	-3.83	-9.27	-16.51	-16.97	-11.99	-11.8	-10.11	-12.94
285	-9.96	-1.49	1.91	2.31	-0.01	-3.54	-8.57	-11.16	-11.19	-11.06	-15.81	-11.07	-12.94
300	-9.96	-1.95	1	1.27	-0.02	-3.86	-6.82	-10.21	-12.21	-13.73	-12.72	-10.92	-12.94
315	-9.96	-2.2	0.85	0.42	-1.42	-6.51	-8.56	-13.34	-10.86	-12.46	-11.72	-9.21	-12.94
330	-9.96	-1.72	1.95	0.52	-0.94	-3.78	-5.1	-7.24	-8.72	-12.36	-9.97	-9.56	-12.94
345	-9.96	-1.03	2.5	1.48	-0.68	-3.23	-6.67	-7.51	-9.17	-8.57	-10.05	-11.13	-12.94
360	-9.96	0.14	1.15	-0.1	-2.82	-6.6	-12.23	-13.95	-12.25	-11.29	-9.59	-13.74	-12.94

Raw Data Ant 2 @ 3800MHz

Theta Angle (°)	0	15	30	45	60	75	90	105	120	135	150	165	180
Phi Angle (°)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)
0	-9.71	-3.14	-0.64	-0.84	-3.86	-9.79	-9.93	-19.28	-23.65	-18.22	-17.52	-18.71	-18.5
15	-9.71	-3.03	-0.42	-2.06	-4.12	-8.42	-8.38	-17.12	-24.18	-20.76	-18.74	-17.36	-18.5
30	-9.71	-2.38	0.02	-0.34	-3	-6.31	-7.07	-12.78	-26.4	-18.2	-19.83	-18.24	-18.5
45	-9.71	-2.52	-0.23	0.05	-1.88	-6.05	-8.75	-15.69	-20.02	-19	-22.78	-19.71	-18.5
60	-9.71	-2.45	0.47	1.57	-0.17	-4.53	-7.38	-13.29	-20.32	-27.14	-28.46	-20.14	-18.5
75	-9.71	-2.53	1.52	0.76	-2.12	-7.38	-8.55	-17.22	-21.46	-23.98	-21.91	-23.52	-18.5
90	-9.71	-2.62	0.15	1.32	-0.84	-5.04	-8.96	-13.66	-19.72	-25.13	-21.46	-21.69	-18.5
105	-9.71	-3.09	0.58	1.87	-1.73	-9.44	-9.07	-17.38	-16.89	-15.56	-22.02	-19.5	-18.5
120	-9.71	-4.06	1.7	0.57	-0.8	-5.85	-9.11	-17.77	-17.65	-23.52	-18.29	-19.33	-18.5
135	-9.71	-5.21	1.46	0.8	-1.05	-5.43	-8.43	-14.97	-15.93	-21.81	-18.13	-17.61	-18.5
150	-9.71	-6.23	0.06	1.07	-1.35	-5.44	-7.87	-16.25	-22.43	-18.29	-21.82	-15.34	-18.5
165	-9.71	-6.31	-1.45	-0.34	-1.98	-8.18	-9.46	-18.06	-22.07	-18.6	-17.66	-16.85	-18.5
180	-9.71	-5.97	-1.98	-0.31	-1.99	-8.13	-9.04	-13.58	-21.66	-23.39	-21.13	-20.93	-18.5
195	-9.71	-6.17	-2.22	-1.14	-0.89	-5.35	-8.51	-16.9	-23.95	-23.92	-23.45	-19.01	-18.5
210	-9.71	-7.51	-1.72	-0.13	0.19	-4.25	-8.06	-19.73	-16.21	-16.71	-18.85	-18.09	-18.5
225	-9.71	-8.53	-3	-0.06	-0.17	-4.05	-7.31	-15.72	-14.22	-20.33	-18.28	-16.33	-18.5
240	-9.71	-6.08	-2.58	-0.48	-1.67	-5.08	-8.86	-15.93	-12.45	-17.65	-17.9	-16.03	-18.5
255	-9.71	-3.82	-1.05	-0.47	-1.72	-4.01	-9.16	-14.55	-18.84	-16.1	-17.64	-17.15	-18.5
270	-9.71	-3.07	0.1	-1.04	-2.9	-6.94	-9.92	-23.21	-17.97	-16.64	-22.75	-20.02	-18.5
285	-9.71	-2.08	1.23	-0.98	-2.27	-5.04	-8.83	-12.14	-15.17	-15.04	-24.45	-14.86	-18.5
300	-9.71	-2.29	1.03	-1.75	-1.68	-4.62	-9.68	-11.13	-13.85	-17.95	-18.43	-12.14	-18.5
315	-9.71	-2.89	0.37	-1.9	-2.38	-6.39	-8.96	-12.54	-19.21	-17.45	-14.02	-12.96	-18.5
330	-9.71	-2.72	-0.13	-1.13	-3.29	-6.24	-7.89	-13.37	-15.07	-14.13	-12.93	-14.98	-18.5
345	-9.71	-2.9	-0.63	-1.62	-2.7	-7.37	-8.38	-13.11	-12.77	-15.12	-16.34	-16.41	-18.5
360	-9.71	-3.14	-0.64	-0.84	-3.86	-9.79	-9.93	-19.28	-23.65	-18.22	-17.52	-18.71	-18.5

Raw Data Ant 2 @ 3980MHz

Theta Angle (°)	0	15	30	45	60	75	90	105	120	135	150	165	180
Phi Angle (°)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)
0	-11.6	-0.92	0.55	-0.11	-3.43	-6.5	-11.23	-16.11	-16.67	-16.47	-14.05	-16.86	-14.33
15	-11.6	-0.48	-0.34	-0.35	-2.6	-7.09	-8.63	-13.43	-12.74	-15.6	-13.45	-18.45	-14.33
30	-11.6	-0.42	0.58	0.12	-1.96	-5.65	-8.41	-11.71	-11.95	-12.12	-16.57	-16.34	-14.33
45	-11.6	-0.75	1.54	1.19	-0.55	-4.42	-8.4	-13.08	-16.61	-14.74	-14.39	-17.23	-14.33
60	-11.6	-1.19	2.4	2.23	-0.33	-3.98	-10.24	-14.64	-21.24	-19.22	-16.18	-17.58	-14.33
75	-11.6	-1.86	2.37	2.31	0.2	-4.78	-11.8	-17.73	-18.81	-18.91	-17.45	-15.81	-14.33
90	-11.6	-2.57	2.37	2.74	0.38	-4.53	-9.86	-13.53	-17.43	-18.83	-18.98	-15.8	-14.33
105	-11.6	-3.37	1.63	2.72	0.63	-7.58	-14.32	-18.65	-23.26	-19.01	-21.11	-16.26	-14.33
120	-11.6	-3.8	1.12	1.23	0.64	-3.59	-8.88	-14.81	-15.02	-15.75	-19.16	-16.07	-14.33
135	-11.6	-3.91	1.34	1.1	-0.51	-5.29	-12.4	-16.77	-16.55	-18.92	-19.33	-13.99	-14.33
150	-11.6	-3.57	1.17	1.62	0.19	-4.78	-10.26	-16.09	-18.7	-17.77	-20.29	-14.13	-14.33
165	-11.6	-3.15	0.8	1.72	-0.54	-8.02	-15.44	-15.63	-19.42	-18.74	-18.21	-16.15	-14.33
180	-11.6	-3.36	1.12	0.99	-0.26	-4.95	-11.22	-15.46	-18.67	-27.06	-15.39	-17.1	-14.33
195	-11.6	-3.94	0.05	1.17	1.76	-3.33	-9.08	-17.9	-17.85	-24.01	-17.39	-16.54	-14.33
210	-11.6	-4.24	-0.84	0.27	1.62	-3.51	-11.52	-18.27	-15.99	-15.7	-22.4	-16.71	-14.33
225	-11.6	-4.54	-0.25	1.88	1.74	-3.57	-6.06	-14.16	-11.87	-16.87	-21.05	-16.43	-14.33
240	-11.6	-4.03	-1.75	0.53	-0.4	-2.64	-6.11	-12.17	-11.24	-17.69	-16.48	-13.16	-14.33
255	-11.6	-2.71	-1.24	-0.55	-1.84	-3.99	-9.65	-13.09	-14.3	-19.37	-16.75	-11.42	-14.33
270	-11.6	-2.67	0.65	1.24	-1.46	-4.41	-9.05	-13.91	-16.09	-14.98	-13.13	-12.49	-14.33
285	-11.6	-2.57	1.17	1.26	-0.73	-5.21	-8.72	-13.53	-11.66	-12.7	-18.28	-15.01	-14.33
300	-11.6	-3.38	0.49	1.17	-0.49	-3.81	-7.28	-10.77	-11.41	-15.77	-14.99	-12.84	-14.33
315	-11.6	-3.5	0.82	0.39	-2.25	-5.84	-9.08	-12.31	-14.85	-13.44	-16.24	-10.73	-14.33
330	-11.6	-2.97	1.12	-0.21	-1.56	-4.8	-7.41	-9.12	-10.88	-14.32	-11.49	-11.41	-14.33
345	-11.6	-2.24	1.34	0.59	-1.44	-4.11	-7.24	-9.45	-10.62	-10.4	-12.2	-13.33	-14.33
360	-11.6	-0.92	0.55	-0.11	-3.43	-6.5	-11.23	-16.11	-16.67	-16.47	-14.05	-16.86	-14.33

Raw Data Ant 2 @ 4200MHz

Theta Angle (°)	0	15	30	45	60	75	90	105	120	135	150	165	180
Phi Angle (°)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)
0	-10.76	-2.49	-1.15	-1.41	-2.37	-5.89	-7.48	-10.62	-14.67	-15.8	-18.64	-17.29	-17.35
15	-10.76	-2.2	-1.25	0.12	-2.62	-5.64	-7.42	-13.7	-14.91	-15.78	-17.88	-17.9	-17.35
30	-10.76	-1.51	-1.33	0.53	-2.62	-5.32	-7.42	-17.75	-15.44	-17.66	-16.81	-18.26	-17.35
45	-10.76	-1.03	-0.23	0.75	-1.55	-5	-8.55	-21.8	-16.64	-19.55	-16.97	-18.57	-17.35
60	-10.76	-2.35	0.94	1.14	-0.48	-4.34	-9.68	-19.13	-17.84	-19.04	-17.13	-19	-17.35
75	-10.76	-3.67	2.11	1.56	0.4	-3.66	-8.81	-16.36	-19.03	-18.37	-17.28	-19.81	-17.35
90	-10.76	-4.99	2.13	1.41	0.4	-2.98	-9.82	-13.6	-18.8	-17.71	-17.74	-20.62	-17.35
105	-10.76	-5.7	1.91	1.25	0.39	-2.68	-7.78	-12.43	-18.39	-18	-18.39	-21.42	-17.35
120	-10.76	-5.91	1.68	1.12	0.39	-3.09	-9.74	-14.5	-17.98	-20.23	-19.04	-20.36	-17.35
135	-10.76	-6.12	1.5	1.01	0.45	-3.5	-9.7	-16.57	-17.64	-22.46	-19.69	-19.3	-17.35
150	-10.76	-6.33	1.35	0.92	0.63	-3.91	-7.59	-18.64	-18.02	-24.69	-20.4	-18.24	-17.35
165	-10.76	-5.93	1.2	0.73	0.8	-3.97	-8.48	-18.81	-18.39	-24.02	-21.13	-17.18	-17.35
180	-10.76	-5.52	1.05	0.68	0.98	-3.93	-9.37	-18.11	-18.77	-22.25	-21.86	-17	-17.35
195	-10.76	-5.1	0.87	0.45	0.94	-3.9	-9.95	-17.42	-18.55	-20.48	-22.31	-17.69	-17.35
210	-10.76	-4.14	0.52	0.32	0.81	-3.96	-9.32	-16.73	-17.11	-18.86	-21.39	-18.39	-17.35
225	-10.76	-2.92	0.17	0.26	0.68	-4.14	-8.58	-16.05	-15.67	-17.55	-20.46	-19.09	-17.35
240	-10.76	-1.7	-0.18	0.17	0.45	-4.32	-7.86	-15.38	-14.23	-16.25	-19.54	-19.78	-17.35
255	-10.76	-0.48	0.34	-0.12	0	-4.5	-8.6	-14.7	-13.54	-14.94	-20.17	-20.47	-17.35
270	-10.76	-0.68	0.99	-0.14	-0.46	-4.47	-8.34	-13.8	-12.89	-14.45	-20.87	-21.17	-17.35
285	-10.76	-1.12	1.63	-0.16	-0.91	-4.36	-9.98	-12.8	-12.24	-14.52	-21.57	-21.45	-17.35
300	-10.76	-1.55	1.67	-0.18	-1.3	-4.25	-7.91	-11.81	-11.87	-14.6	-21.49	-21.37	-17.35
315	-10.76	-1.94	1.24	-0.23	-1.59	-4.27	-9.19	-11	-12.06	-14.79	-19.92	-21.28	-17.35
330	-10.76	-2.14	0.81	-0.36	-1.89	-5.15	-8.16	-12.19	-12.25	-17.12	-18.35	-20.49	-17.35
345	-10.76	-2.28	0.29	-0.24	-2.81	-5.76	-9.97	-13.66	-18.19	-18.28	-17.92	-17.57	-17.35
360	-10.76	-2.49	-1.16	-1.45	-2.37	-5.89	-7.46	-10.59	-14.65	-15.79	-18.64	-17.28	-17.35

Raw Data Ant 3 @ 3450MHz

Theta Angle (°)	0	15	30	45	60	75	90	105	120	135	150	165	180
Phi Angle (°)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)
0	-7.67	-3.31	-4.96	-6.17	0.69	0.57	-1.31	-2.32	-1.06	-0.62	-3.56	-3.13	-3.76
15	-7.67	-3.4	-3.58	-2.25	1.4	-0.82	-2.77	-0.98	-1.82	0.84	-1.17	-2.99	-3.76
30	-7.67	-5.09	-1.88	-2.48	-1.19	-1.31	-2.82	-6.95	-5.2	-1.63	-1.27	-3.41	-3.76
45	-7.67	-3.24	-0.72	-3.21	-2.05	-3.69	-5.72	-3.91	-7.78	-11.68	-5.53	-4.62	-3.76
60	-7.67	-1.39	-1.33	-1.23	0.11	-4.95	-6.13	-2.52	-5.2	-4.03	-9.2	-5.89	-3.76
75	-7.67	-1.31	-3.19	-1.6	-4.56	-2.63	-1.35	-2.66	-4.3	-4.7	-4.59	-5.99	-3.76
90	-7.67	-1.72	-3.69	-9.3	-7.06	-3.46	-2.43	-2.76	-2.8	-11.02	-5.79	-6.62	-3.76
105	-7.67	-1.95	-0.09	-4.48	-7	-6.54	-6.91	-15.23	-19.29	-9.06	-18.78	-7.06	-3.76
120	-7.67	-1.18	-0.15	-2.23	-5.72	-4.69	-4.85	-8.1	-7.06	-11.85	-9.6	-9.91	-3.76
135	-7.67	-0.85	-3.44	-5.31	-3.13	-3.93	-4.84	-6.7	-5.99	-14.06	-11.28	-9.97	-3.76
150	-7.67	-1.51	-3.81	-7.25	-7.64	-3.6	-5.51	-5.88	-5.57	-9.26	-15.67	-9.24	-3.76
165	-7.67	-2.41	-6.62	-2.8	-0.46	-0.52	-1.85	-7.15	-4.42	-8.5	-9.67	-8.26	-3.76
180	-7.67	-1.99	-9.03	-7.41	0.67	0.73	-3.23	-6.69	-4.71	-12.15	-11.54	-8.29	-3.76
195	-7.67	-0.56	-5.56	-7.82	-2.45	-3.56	-7.16	-10.53	-9.61	-4.79	-7.32	-8.88	-3.76
210	-7.67	0.71	-5.24	-5.28	-2.69	-2.95	-5.38	-9.26	-11.49	-7.48	-12.87	-9.25	-3.76
225	-7.67	1	-3.02	0.53	-0.17	-2.45	-4.4	-13.06	-9.35	-3.92	-8.6	-7.59	-3.76
240	-7.67	0.69	-0.79	-0.02	-1.46	1.74	0.99	-2.36	-2.76	-5.68	-4.58	-5.71	-3.76
255	-7.67	0.41	0.45	0.6	-8.37	0.87	0.32	-1.82	-4.17	-2.77	-6.67	-4.11	-3.76
270	-7.67	0	0.57	2.07	-2.44	1.32	0.21	-1.18	-2.08	-5.2	-3.92	-3.64	-3.76
285	-7.67	-0.09	-0.63	3.53	0.82	0.42	-1.83	-5.44	-5.91	-5.14	-5.44	-3.32	-3.76
300	-7.67	-0.97	0.61	2.37	3.52	-0.53	-1.45	-4.84	-4.98	-9.23	-12.06	-4.76	-3.76
315	-7.67	-2.43	2.94	2.67	1.87	4.09	0.34	0.04	-4.86	-9.65	-4.69	-8.3	-3.76
330	-7.67	-4.49	2.42	2.04	2.51	-1.05	-2.72	-4.35	-7.22	-6.73	-3.59	-10.66	-3.76
345	-7.67	-5.17	-1.46	-0.94	2.12	-0.41	-2.78	-5.59	-10.44	-7.67	-5.52	-7.24	-3.76
360	-7.67	-3.31	-4.96	-6.17	0.69	0.57	-1.31	-2.32	-1.06	-0.62	-3.56	-3.13	-3.76

Raw Data Ant 3 @ 3550MHz

Theta Angle (°)	0	15	30	45	60	75	90	105	120	135	150	165	180
Phi Angle (°)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)
0	-11.35	-12.9	-1	-6.98	-1.71	-0.57	-1.47	-1.97	-2.17	-2.68	-3.51	-5.9	-7.36
15	-11.35	-10.3	-1.48	-7.23	0.75	-0.39	-2.79	-1.7	-4.34	-1.3	-2.32	-4.8	-7.36
30	-11.35	-9.28	-1.4	-0.69	-0.15	-2.25	-5.65	-4.51	-5.16	-1	-1.46	-4.52	-7.36
45	-11.35	-7.36	-1.5	-0.38	-2.42	-3.2	-4.54	-4.78	-5.99	-6.86	-4	-4.54	-7.36
60	-11.35	-4.61	-1.73	-1.42	-0.77	-1.36	-2.78	-3.56	-4.38	-7.24	-11.16	-5.3	-7.36
75	-11.35	-4.53	-3.12	-5.74	-5.35	-7.94	-10.1	-6.71	-8.07	-9.19	-10.29	-6.08	-7.36
90	-11.35	-5.85	-0.94	-6.78	-2.75	-5.25	-7.83	-9.17	-10.67	-16.43	-12.88	-7.9	-7.36
105	-11.35	-5.78	1.74	-0.51	-3.24	-0.67	-1.2	-5.69	-10.76	-13.2	-11.8	-11.33	-7.36
120	-11.35	-3.29	0.95	1.19	-1.87	-3.32	-5.89	-3.95	-4.03	-10.11	-7.91	-12.46	-7.36
135	-11.35	-1.85	-1.35	-4.51	-3.34	-5.33	-4.54	-7.59	-5.79	-10.91	-11.75	-8.91	-7.36
150	-11.35	-1.28	-2.48	-4.33	-3.95	-7.31	-7.75	-6.24	-7.14	-9.19	-10.08	-6.56	-7.36
165	-11.35	-0.69	-6.26	-1.52	-1.37	-1.97	-4.3	-8.95	-4.92	-7.69	-7.86	-6.49	-7.36
180	-11.35	0.26	-7.79	-5.33	-2.76	-1.68	-6.82	-9.48	-8.24	-15.65	-9.85	-7.78	-7.36
195	-11.35	1.69	-2.75	-8.08	-9.6	-12.25	-13.23	-14.35	-11.7	-4.91	-5.33	-6.99	-7.36
210	-11.35	2.48	-0.45	-3.54	-6.44	-7.13	-6.51	-11.59	-10.31	-6.29	-10.04	-7.25	-7.36
225	-11.35	2.31	1.87	1.19	-3.06	-4.28	-7.55	-12.42	-8.88	-3.24	-7.51	-8.57	-7.36
240	-11.35	1.7	3.7	2.46	-0.11	2.71	1.55	-1.59	-2.55	-5.81	-3.71	-8.76	-7.36
255	-11.35	0.64	3.13	1.21	-2.22	3.56	2.03	-0.67	-3.33	-3.08	-6.7	-7.87	-7.36
270	-11.35	-0.25	0.3	1.57	-4.64	-1.51	-1.99	-2.93	-2.89	-5.38	-6.32	-6.45	-7.36
285	-11.35	-0.56	-0.89	1.42	0.95	1.12	-1.08	-4.43	-4.68	-6.28	-5.46	-5.57	-7.36
300	-11.35	-2.95	-0.3	1.27	1.97	-3.01	-4.36	-6.91	-9.03	-10.24	-15.38	-5.62	-7.36
315	-11.35	-6.25	0.28	1.92	2.66	3.45	0.87	-0.2	-5.35	-7.35	-8.34	-6.47	-7.36
330	-11.35	-8.27	2.63	1.1	1.08	-3.33	-2.78	-6.67	-8.58	-7.08	-3.86	-7.74	-7.36
345	-11.35	-12.38	1.04	1.73	0.5	-0.72	-2.84	-7.43	-8.86	-9.38	-4.58	-8.74	-7.36
360	-11.35	-12.9	-1	-6.98	-1.71	-0.57	-1.47	-1.97	-2.17	-2.68	-3.51	-5.9	-7.36

Raw Data Ant 3 @ 3700MHz

Theta Angle (°)	0	15	30	45	60	75	90	105	120	135	150	165	180
Phi Angle (°)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)
0	-9.57	-5.21	-6.86	-8.07	-1.21	-1.33	-3.21	-4.22	-2.96	-2.52	-5.46	-5.03	-5.66
15	-9.57	-5.3	-5.48	-4.15	-0.5	-2.72	-4.67	-2.88	-3.72	-1.06	-3.07	-4.89	-5.66
30	-9.57	-6.99	-3.78	-4.38	-3.09	-3.21	-4.72	-8.85	-7.1	-3.53	-3.17	-5.31	-5.66
45	-9.57	-5.14	-2.62	-5.11	-3.95	-5.59	-7.62	-5.81	-9.68	-13.58	-7.43	-6.52	-5.66
60	-9.57	-3.29	-3.23	-3.13	-1.79	-6.85	-8.03	-4.42	-7.1	-5.93	-11.1	-7.79	-5.66
75	-9.57	-3.21	-5.09	-3.5	-6.46	-4.53	-3.25	-4.56	-6.2	-6.6	-6.49	-7.89	-5.66
90	-9.57	-3.62	-5.59	-11.2	-8.96	-5.36	-4.33	-4.66	-4.7	-12.92	-7.69	-8.52	-5.66
105	-9.57	-3.85	-1.99	-6.38	-8.9	-8.44	-8.81	-17.13	-21.19	-10.96	-20.68	-8.96	-5.66
120	-9.57	-3.08	-2.05	-4.13	-7.62	-6.59	-6.75	-10	-8.96	-13.75	-11.5	-11.81	-5.66
135	-9.57	-2.75	-5.34	-7.21	-5.03	-5.83	-6.74	-8.6	-7.89	-15.96	-13.18	-11.87	-5.66
150	-9.57	-3.41	-5.71	-9.15	-9.54	-5.5	-7.41	-7.78	-7.47	-11.16	-17.57	-11.14	-5.66
165	-9.57	-4.31	-8.52	-4.7	-2.36	-2.42	-3.75	-9.05	-6.32	-10.4	-11.57	-10.16	-5.66
180	-9.57	-3.89	-13.93	-9.31	-1.23	-1.17	-5.13	-8.59	-6.61	-26.05	-13.44	-10.19	-5.66
195	-9.57	-2.46	-7.46	-9.72	-4.35	-5.46	-9.06	-12.43	-11.51	-6.69	-9.22	-10.78	-5.66
210	-9.57	-1.19	-7.14	-7.18	-4.59	-4.85	-7.28	-11.16	-13.39	-9.38	-14.77	-11.15	-5.66
225	-9.57	-0.9	-4.92	-1.37	-2.07	-4.35	-6.3	-14.96	-11.25	-5.82	-10.5	-9.49	-5.66
240	-9.57	-1.21	-2.69	-1.92	-3.36	-0.16	-0.91	-4.26	-4.66	-7.58	-6.48	-7.61	-5.66
255	-9.57	-1.49	-1.45	-1.3	-10.27	-1.03	-1.58	-3.72	-6.07	-4.67	-8.57	-6.01	-5.66
270	-9.57	-1.9	-1.33	0.17	-4.34	-0.58	-1.69	-3.08	-3.98	-7.1	-5.82	-5.54	-5.66
285	-9.57	-1.99	-2.53	1.63	-1.08	-1.48	-3.73	-7.34	-7.81	-7.04	-7.34	-5.22	-5.66
300	-9.57	-2.87	-1.29	0.47	1.62	-2.43	-3.35	-6.74	-6.88	-11.13	-13.96	-6.66	-5.66
315	-9.57	-4.33	1.04	0.77	-0.03	2.19	-1.56	-1.86	-6.76	-11.55	-6.59	-10.2	-5.66
330	-9.57	-6.39	0.52	0.14	0.61	-2.95	-4.62	-6.25	-9.12	-8.63	-5.49	-12.56	-5.66
345	-9.57	-7.07	-3.36	-2.84	0.22	-2.31	-4.68	-7.49	-12.34	-9.57	-7.42	-9.14	-5.66
360	-9.57	-5.21	-6.86	-8.07	-1.21	-1.33	-3.21	-4.22	-2.96	-2.52	-5.46	-5.03	-5.66

Raw Data Ant 3 @ 3800MHz

Theta Angle (°)	0	15	30	45	60	75	90	105	120	135	150	165	180
Phi Angle (°)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)
0	-3.32	-4.97	-6.18	0.68	0.56	-1.32	-2.33	-1.07	-0.63	-3.57	-3.14	-3.77	-3.17
15	-3.41	-3.59	-2.26	1.39	-0.83	-2.78	-0.99	-1.83	0.83	-1.18	-3	-3.77	-3.17
30	-5.1	-1.89	-2.49	-1.2	-1.32	-2.83	-6.96	-5.21	-1.64	-1.28	-3.42	-3.77	-3.17
45	-3.25	-0.73	-3.22	-2.06	-3.7	-5.73	-3.92	-7.79	-11.69	-5.54	-4.63	-3.77	-3.17
60	-1.4	-1.34	-1.24	0.1	-4.96	-6.14	-2.53	-5.21	-4.04	-9.21	-5.9	-3.77	-3.17
75	-1.32	-3.2	-1.61	-4.57	-2.64	-1.36	-2.67	-4.31	-4.71	-4.6	-6	-3.77	-3.17
90	-1.73	-3.7	-9.31	-7.07	-3.47	-2.44	-2.77	-2.81	-11.03	-5.8	-6.63	-3.77	-3.17
105	-1.96	-0.1	-4.49	-7.01	-6.55	-6.92	-9.24	-19.3	-9.07	-18.79	-7.07	-3.77	-3.17
120	-1.19	-0.16	-2.24	-5.73	-4.7	-4.86	-8.11	-7.07	-11.86	-9.61	-9.92	-3.77	-3.17
135	-0.86	-3.45	-5.32	-3.14	-3.94	-4.85	-6.71	-6	-14.07	-11.29	-9.98	-3.77	-3.17
150	-1.52	-3.82	-7.26	-7.65	-3.61	-5.52	-5.89	-5.58	-9.27	-15.68	-9.25	-3.77	-3.17
165	-2.42	-6.63	-2.81	-0.47	-0.53	-1.86	-7.16	-4.43	-8.51	-9.68	-8.27	-3.77	-3.17
180	-2	-9.04	-7.42	0.66	0.72	-3.24	-6.7	-4.72	-10.16	-11.55	-8.3	-3.77	-3.17
195	-0.57	-5.57	-7.83	-2.46	-3.57	-7.17	-9.54	-9.62	-4.8	-7.33	-8.89	-3.77	-3.17
210	0.7	-5.25	-5.29	-2.7	-2.96	-5.39	-9.27	-11.5	-7.49	-12.88	-9.26	-3.77	-3.17
225	0.99	-3.03	0.52	-0.18	-2.46	-4.41	-9.07	-9.36	-3.93	-8.61	-7.6	-3.77	-3.17
240	0.68	-0.8	-0.03	-1.47	1.73	0.98	-2.37	-2.77	-5.69	-4.59	-5.72	-3.77	-3.17
255	0.4	0.44	0.59	-8.38	0.86	0.31	-1.83	-4.18	-2.78	-6.68	-4.12	-3.77	-3.17
270	-0.01	0.56	2.06	-2.45	1.31	0.2	-1.19	-2.09	-5.21	-3.93	-3.65	-3.77	-3.17
285	-0.1	-0.64	3.52	0.81	0.41	-1.84	-5.45	-5.92	-5.15	-5.45	-3.33	-3.77	-3.17
300	-0.98	0.6	2.36	3.51	-0.54	-1.46	-4.85	-4.99	-9.24	-12.07	-4.77	-3.77	-3.17
315	-2.44	2.93	2.66	1.86	4.08	0.33	0.03	-4.87	-9.66	-4.7	-8.31	-3.77	-3.17
330	-4.5	2.41	2.03	2.5	-1.06	-2.73	-4.36	-7.23	-6.74	-3.6	-10.67	-3.77	-3.17
345	-5.18	-1.47	-0.95	2.11	-0.42	-2.79	-5.6	-10.45	-7.68	-5.53	-7.25	-3.77	-3.17
360	-3.32	-4.97	-6.18	0.68	0.56	-1.32	-2.33	-1.07	-0.63	-3.57	-3.14	-3.77	-3.17

Raw Data Ant 3 @ 3980MHz

Theta Angle (°)	0	15	30	45	60	75	90	105	120	135	150	165	180
Phi Angle (°)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)
0	-5.11	0.21	-5.83	-1.35	-0.69	-2.04	-3.26	-4.36	-3.34	-1.39	-3.69	-2.64	-3.2
15	-5.11	-0.66	-6.17	0.46	0.39	-3.93	-6.11	-3.8	-3.87	-1.72	-2.25	-3.03	-3.2
30	-5.11	-1.71	-6.33	-1.7	-2.38	-3.95	-4.57	-7.15	-8.93	-6.51	-4.11	-3.84	-3.2
45	-5.11	-0.77	-5.15	-5.87	-3.76	-5.72	-6.02	-4.52	-5.32	-8.48	-10.84	-4.79	-3.2
60	-5.11	-0.71	-3.57	0.2	-2.21	-3.74	-5.07	-5.26	-6.48	-3.38	-6.94	-5.2	-3.2
75	-5.11	-1.5	-2.93	0.57	-0.9	1.62	1.49	-0.29	-2.42	-2.65	-2.04	-5.05	-3.2
90	-5.11	-2.84	-7.11	-5.29	-7.36	0.67	0.57	-0.96	-0.6	-6.11	-4.08	-5.36	-3.2
105	-5.11	-3.54	-4.97	-7.08	-6.99	-11.69	-12.55	-9.52	-7.98	-6.16	-14.38	-5.43	-3.2
120	-5.11	-3.53	-2.36	-12.77	-9.15	-7.79	-6.43	-12.85	-14.36	-8.44	-11.5	-7.46	-3.2
135	-5.11	-4.02	-5.88	-4.32	-5.15	-4.3	-6.49	-7.51	-8.96	-10.77	-12.38	-8.23	-3.2
150	-5.11	-4.77	-5.99	-6.62	-8.51	-2.87	-3.72	-7.41	-6.68	-14.24	-17.13	-7.94	-3.2
165	-5.11	-5.6	-3.03	-6.31	-0.72	0.3	-2.08	-4.37	-4.52	-12.4	-10.37	-7.5	-3.2
180	-5.11	-6.97	-2.44	-8.74	0.88	0.01	-2.97	-6.4	-5.21	-12.06	-12.15	-7.86	-3.2
195	-5.11	-9.06	-2.25	-2.83	-1.87	-1.63	-6.16	-9.39	-7.62	-8.21	-10.61	-10.44	-3.2
210	-5.11	-8.1	-4.76	-5.49	-2.52	-3.23	-6.69	-9.34	-13.51	-11.86	-14.06	-11.87	-3.2
225	-5.11	-4.05	-6.76	-4.3	-1.19	-1.64	-3.13	-11.77	-9.84	-6.31	-9.36	-7.46	-3.2
240	-5.11	-1.56	-4.99	-1.77	-6.17	-2.96	-1.49	-5	-4.56	-6.3	-6.38	-5.78	-3.2
255	-5.11	-0.09	0.11	3.09	-6.03	-1.4	-0.98	-3.35	-4.22	-3.05	-5.95	-4.26	-3.2
270	-5.11	0.19	-0.42	2.96	-2.97	1.19	-0.52	-1	-4.34	-8.02	-5.55	-4.66	-3.2
285	-5.11	0.96	-1.93	2.97	-0.95	-4.15	-7.71	-13.56	-10.51	-6.09	-9.25	-5.25	-3.2
300	-5.11	0.73	1.91	1	2.42	-0.83	-1.39	-3.88	-5.4	-8.2	-7.32	-7.75	-3.2
315	-5.11	0.12	2.87	1.62	-0.47	1.93	-1.65	-2.78	-5.85	-12.24	-4.27	-12.38	-3.2
330	-5.11	-0.55	-0.97	1.17	2.69	-0.22	-3.49	-4.51	-9.29	-7.86	-7.29	-7.61	-3.2
345	-5.11	-0.26	-6.29	-1.54	1.9	-1.97	-7.15	-7.78	-13.71	-9.73	-8.08	-4.21	-3.2
360	-5.11	0.21	-5.83	-1.35	-0.69	-2.04	-3.26	-4.36	-3.34	-1.39	-3.69	-2.64	-3.2

Raw Data Ant 3 @ 4200MHz

Theta Angle (°)	0	15	30	45	60	75	90	105	120	135	150	165	180
Phi Angle (°)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)
0	-3.49	0.1	-3.82	-0.01	-1.45	-4.85	-5.99	-6.29	-4.82	-3.49	-3.24	-3.43	-3.31
15	-3.49	-0.16	-3.31	2.26	-1.24	-5.51	-4.98	-5.68	-4.93	-3.55	-3.13	-4.63	-3.31
30	-3.49	0.37	-3.63	0.39	-0.95	-1.15	-1.74	-2.8	-7.73	-7.97	-8.21	-7.1	-3.31
45	-3.49	0.68	-3.57	-0.37	-2.99	-6.86	-6.6	-7.77	-4.26	-6.46	-12.98	-9.28	-3.31
60	-3.49	-0.22	-0.76	0.26	-3.27	-1.51	-2.85	-6.58	-6.17	-6.7	-6.62	-8.77	-3.31
75	-3.49	-2.75	-1.04	-0.21	-0.16	0.43	-1.46	-2.39	-4.87	-4.67	-2.42	-6.57	-3.31
90	-3.49	-5.24	-6.56	-7.35	-3.1	1.86	0.95	-2.38	-1.13	-5.85	-3.54	-5.26	-3.31
105	-3.49	-8.46	-6.61	-7.29	-5.41	-8.13	-9.89	-9.28	-9.41	-5.98	-15.01	-4.66	-3.31
120	-3.49	-14.46	-3.21	-15.38	-1.92	-2	-1.4	-5.15	-10.18	-6.98	-16.4	-6.58	-3.31
135	-3.49	-12.72	-5.53	-1.04	-0.13	-0.83	-4.26	-4.43	-6.34	-8.46	-13.24	-7.72	-3.31
150	-3.49	-9.02	-2.59	-1.69	-3.61	-1.45	-1.63	-5.88	-4.54	-12.26	-11.56	-6.4	-3.31
165	-3.49	-7.24	0.05	-1.55	1.01	2.56	0.23	-0.95	-2.76	-7.06	-8.15	-6.67	-3.31
180	-3.49	-8.13	0.2	-3.35	3.45	3.56	-1.2	-2.52	-2.32	-9.77	-8.47	-8.1	-3.31
195	-3.49	-12.91	1.74	1.65	1.39	1.54	-3.65	-6.32	-4.13	-6.46	-9.53	-10.15	-3.31
210	-3.49	-6.54	0.65	0.34	-0.66	-1.11	-7.07	-7.94	-9	-11.78	-10.54	-11.68	-3.31
225	-3.49	-2.28	-0.84	-0.57	-0.38	0.25	-1.26	-9.18	-8.98	-5.78	-7.06	-8.47	-3.31
240	-3.49	-0.33	-1.17	-0.27	-4.49	-0.5	-1.8	-3.87	-4.47	-4.63	-5.67	-6.21	-3.31
255	-3.49	0.73	-0.14	4.02	-1.92	0.5	0.57	-3.61	-4.09	-3.12	-5.98	-3.77	-3.31
270	-3.49	1.43	-3.05	0.39	-5.17	-1.55	-3.86	-3.56	-6.03	-6.36	-6.15	-4.11	-3.31
285	-3.49	2.86	-1.72	-2.56	-1.91	-5.26	-9.83	-12.23	-7.06	-5.44	-8.51	-5.62	-3.31
300	-3.49	2.83	0.73	-1.1	3.23	2.34	1.4	-2.58	-5.35	-10.67	-3.55	-8.02	-3.31
315	-3.49	2.51	0.35	1.79	0.54	2.26	-1.01	-2.89	-6.3	-11.4	-4.96	-10.36	-3.31
330	-3.49	2.05	-2.69	1.63	2.5	1.21	-2.96	-4.41	-12.62	-7.76	-8.88	-5.5	-3.31
345	-3.49	1.13	-4.53	1.02	1.08	-1.84	-5.12	-6.72	-6.02	-4.81	-6.59	-3.4	-3.31
360	-3.49	0.1	-3.82	-0.01	-1.45	-4.85	-5.99	-6.29	-4.82	-3.49	-3.24	-3.43	-3.31

Raw Data Ant 4 @ 3450MHz

Theta Angle (°)	0	15	30	45	60	75	90	105	120	135	150	165	180
Phi Angle (°)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)
0	0.49	-0.72	0.44	0.77	0.1	-0.91	-4.93	-5.92	-10.21	-4.89	-5.63	-17.04	-6.47
15	0.49	-0.27	1.95	1.45	0.39	-0.69	-3.56	-5.81	-6.92	-7.42	-8.6	-14	-6.47
30	0.49	-1.14	0.25	1.36	0.51	-1.06	-1.57	-6.86	-19.5	-5.8	-7.01	-11.61	-6.47
45	0.49	-2.37	-1.45	-0.8	3.57	2.85	1.13	-1.66	-5.85	-6.61	-11.18	-8.32	-6.47
60	0.49	-3.49	1.16	-1.5	0.47	3.24	1.32	0.06	-4.93	-2.09	-11.67	-7	-6.47
75	0.49	-3.73	1.4	-0.05	-2.6	-4.89	-5.22	-11.05	-5.12	-5.66	-7.05	-7.63	-6.47
90	0.49	-3.43	-0.12	-9.02	-2.09	-2.48	-6.9	-5.77	-3.89	-5.6	-7.02	-10.49	-6.47
105	0.49	-3.43	0.56	1.01	1.23	-1.3	-3.54	-2.57	-4.41	-11.73	-6.02	-14.76	-6.47
120	0.49	-3.05	-1.86	0.77	2.48	0.97	-0.54	-1.43	-7.21	-6.03	-6.47	-13.08	-6.47
135	0.49	-2.19	-1.14	1.02	2.55	1.69	-0.94	-2.91	-5.87	-6.82	-16.35	-7.72	-6.47
150	0.49	-1.29	1.54	1.74	2.85	1.2	-1.5	-4.11	-8.63	-6.85	-11.03	-4.94	-6.47
165	0.49	-8.94	1.83	-6.37	0.69	-8.47	-4.21	-11.6	-11.7	-10.86	-10.56	-4.65	-6.47
180	0.49	-2.05	0.22	-2.1	-0.76	0.01	-1.61	-15.2	-10.35	-15.34	-6.29	-15.24	-6.47
195	0.49	-4.73	-3.95	-6.32	0.04	-0.54	-2.19	-3.33	-12.8	-6.63	-4.71	-9.54	-6.47
210	0.49	-7.51	-9.29	-4.31	-1.2	-0.7	-1.88	-2.94	-3.15	-4.74	-5.27	-8.21	-6.47
225	0.49	-8.17	-6.14	-3.66	-6.64	-4.11	-2.65	-2.38	-5.47	-5.27	-4.44	-7.76	-6.47
240	0.49	-5.8	-2.69	-3.88	-7.33	-3.61	-4.79	-5.35	-4.9	-8.4	-5.94	-8	-6.47
255	0.49	-2.87	-2.71	-1.06	-4.29	-1.25	-2.24	-4.56	-5.62	-6.19	-16.95	-9.84	-6.47
270	0.49	-0.5	-2.64	2.72	1.46	-0.27	-1.22	-2.49	-5.86	-5.02	-13.99	-10.83	-6.47
285	0.49	0.71	-2.09	1.36	2.49	2.06	1.3	-1.07	-1.25	-3.29	-6.82	-9.78	-6.47
300	0.49	1.61	-1.3	-1.52	0.45	-1.15	-3.08	-5.44	-4.9	-1.96	-3.3	-8.55	-6.47
315	0.49	0.67	-0.42	-4.47	-2.44	-2.78	-4.22	-5.72	-8.93	-4.83	-1.96	-6.28	-6.47
330	0.49	-1.17	-0.47	-1.44	-2.29	-4.44	-8.46	-8.87	-9.1	-8.58	-3.65	-6.08	-6.47
345	0.49	-2.21	-3.41	-5.46	-3.07	-1.02	-4.07	-5.16	-4.47	-4.22	-10.84	-10.38	-6.47
360	0.49	-0.72	0.44	0.77	0.1	-0.91	-4.93	-5.92	-10.21	-4.89	-5.63	-17.04	-6.47

Raw Data Ant 4 @ 3550MHz

Theta Angle (°)	0	15	30	45	60	75	90	105	120	135	150	165	180
Phi Angle (°)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)
0	-4.54	-3.64	-0.24	-1.03	-1.67	-1.27	-6.03	-6.44	-7.77	-4.4	-7.01	-9.54	-8.17
15	-4.54	-1.59	-0.69	-0.56	-0.63	-3.37	-4.38	-8.58	-8.74	-4.93	-9.99	-10.46	-8.17
30	-4.54	0.01	-0.46	0.75	-1.52	-1.78	-5.35	-5.74	-10.39	-6.04	-6.99	-13.2	-8.17
45	-4.54	-0.1	0.15	-3.26	-0.26	-0.6	-2.45	-3.95	-3.59	-14.68	-16.26	-11.61	-8.17
60	-4.54	-2.02	0.5	-1.08	-2.46	-2.09	-6.76	-4.17	-6.11	-7.06	-16.74	-8.34	-8.17
75	-4.54	-5.11	-0.02	0.17	-3.7	-8.02	-8.23	-11.48	-13.25	-5.81	-15.93	-8.4	-8.17
90	-4.54	-7.86	-1.98	-5.53	-5.29	-8.75	-10.54	-11.87	-5.51	-6.79	-11.95	-9.89	-8.17
105	-4.54	-6.78	-2.3	-3.4	-3.47	-5.79	-10.22	-6.54	-11.87	-7.93	-7.2	-13.77	-8.17
120	-4.54	-4.12	-0.01	0.74	0.51	-1.02	-4.7	-7.22	-6.1	-6.71	-8.6	-11.78	-8.17
135	-4.54	-2.08	1.59	2.29	0.08	-2.23	-3.03	-4.5	-6.42	-7.11	-11.49	-8.95	-8.17
150	-4.54	-1.99	0.3	2.24	3.12	1.88	-0.06	-2.17	-6.67	-10.08	-9.44	-8.01	-8.17
165	-4.54	-6.86	-1.28	-2.28	3.29	-2.09	-2.37	-4.13	-14.69	-11.61	-7.42	-9.34	-8.17
180	-4.54	-4.64	-5.01	-0.74	-0.71	-4.09	-6.33	-10.59	-13.42	-14.37	-8.12	-19.02	-8.17
195	-4.54	-7.24	-7.11	-2.66	-0.43	-0.52	-3.32	-6.33	-6.57	-7.94	-8.82	-10.99	-8.17
210	-4.54	-7.14	-3.72	-4.04	-1.73	-2.75	-3.24	-2.71	-13.36	-3.79	-7.62	-7.8	-8.17
225	-4.54	-5.82	-2.67	-4.38	-1	-1.68	-1.64	-5.03	-2.36	-8.53	-5.77	-7.45	-8.17
240	-4.54	-6.68	-2.11	-1.24	1.6	-0.01	-3.58	-4.36	-4.8	-7.43	-8.54	-8.35	-8.17
255	-4.54	-8.61	-0.88	-1.52	2.05	0.59	-1.42	-5.02	-7.23	-10.25	-10.5	-10.28	-8.17
270	-4.54	-8.33	0.55	0.37	0.88	0.02	0.09	-5.12	-3.97	-10.48	-7.91	-13.39	-8.17
285	-4.54	-6.45	-1.59	0.53	3.39	3.19	1.94	-1.12	-3	-4.49	-5.08	-19.24	-8.17
300	-4.54	-3.61	-1.98	-0.05	-0.59	1.31	-0.97	-1.61	-3.95	-1.93	-3.81	-15.09	-8.17
315	-4.54	-3.42	-3.58	-3.76	-3.29	-2.8	-4.81	-4.22	-8.46	-3.11	-2.69	-10.3	-8.17
330	-4.54	-4.74	-1.99	-5.14	-3.71	-2.05	-3.46	-6.66	-6.23	-11.21	-3.01	-8.8	-8.17
345	-4.54	-6.31	-2.55	-4.25	-0.69	-0.06	-1.79	-4.85	-4.52	-5.96	-10.89	-8.93	-8.17
360	-4.54	-3.64	-0.24	-1.03	-1.67	-1.27	-6.03	-6.44	-7.77	-4.4	-7.01	-9.54	-8.17

Raw Data Ant 4 @ 3700MHz

Theta Angle (°)	0	15	30	45	60	75	90	105	120	135	150	165	180
Phi Angle (°)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)
0	-5.64	-1.72	1.55	-0.28	-1.66	-0.36	-5.6	-6.17	-8.33	-4.04	-6.28	-7.42	-10.01
15	-5.64	-0.18	1.04	1.16	0.11	-2.95	-3.99	-9.84	-8.39	-6.04	-9.58	-8.69	-10.01
30	-5.64	0.77	1.1	1.21	-1.82	-0.95	-4.37	-3.82	-9.75	-5.93	-7.75	-11.76	-10.01
45	-5.64	0.57	1.92	-2.36	0.94	-1.17	-3.48	-4.19	-3.05	-15.78	-11.26	-11.19	-10.01
60	-5.64	-1.31	1.07	-0.14	-1.6	-2.65	-8.05	-6.74	-5.34	-5.46	-13.57	-7.95	-10.01
75	-5.64	-3.72	-0.75	0.45	-3.35	-5.1	-6.39	-7.3	-12.9	-4.59	-15.45	-7	-10.01
90	-5.64	-3.44	-3.93	-4.97	-8.12	-13.11	-10.64	-18.61	-7.1	-6.46	-10.37	-8.64	-10.01
105	-5.64	-1.84	-3.87	-3.95	-4.39	-8.86	-12.53	-11.43	-8.15	-5.72	-7.04	-14.36	-10.01
120	-5.64	-0.27	0.08	1.03	1.43	-0.93	-3.55	-6.92	-6.65	-6.56	-6.92	-14.74	-10.01
135	-5.64	0.77	1.8	1.51	0.46	-1.33	-1.66	-1.76	-3.67	-7.54	-8.39	-10.61	-10.01
150	-5.64	0.65	0.57	3.12	4.16	4.17	0.91	-0.8	-7.39	-14.37	-8.9	-11.08	-10.01
165	-5.64	-5.12	-0.94	-2.17	3.47	-2.32	-2.02	-3.69	-11.42	-10	-6.24	-12.89	-10.01
180	-5.64	-2.23	-4.53	-0.75	-0.46	-5.83	-5.26	-10.8	-12.14	-14.3	-7.02	-16.33	-10.01
195	-5.64	-5.13	-4.71	-1.43	-0.86	-2.67	-3.59	-7.84	-6.48	-8.14	-6.09	-7.92	-10.01
210	-5.64	-5.89	-3.45	-2.77	-2.19	-2.87	-2.52	-0.82	-6.63	-3.88	-4.59	-6.27	-10.01
225	-5.64	-3.75	-2.98	-0.59	-0.66	-3.05	-2.12	-5.23	-2.94	-4.52	-4.72	-7.2	-10.01
240	-5.64	-2.85	-1.08	2.95	2.11	-0.97	-3.9	-5.51	-4.66	-4.79	-6.68	-8.89	-10.01
255	-5.64	-2.98	-0.41	2.81	4.15	2.24	-0.5	-3.23	-4.86	-7.73	-6.72	-10.9	-10.01
270	-5.64	-4.57	1.46	2.22	4.08	2.3	1.59	-3.23	-2.91	-4.73	-5.4	-13.15	-10.01
285	-5.64	-4.79	0.44	1.68	4.21	3.68	2.09	-1.05	-3.3	-3.94	-3.43	-16.93	-10.01
300	-5.64	-2.22	-1.24	-0.19	1.23	2.63	-0.35	-0.94	-4.25	-1.76	-3.89	-12.24	-10.01
315	-5.64	-2	-1.59	-3.89	-4.11	-2.87	-5.36	-4.86	-7.46	-2.42	-3.22	-8.12	-10.01
330	-5.64	-3.66	-0.89	-5.34	-1.54	-0.34	-1.48	-5.9	-4.49	-10.61	-2.24	-8.7	-10.01
345	-5.64	-4.8	-1.4	-2.04	0.71	1.63	-0.96	-3.1	-2.71	-5.91	-9.16	-7.93	-10.01
360	-5.64	-1.72	1.55	-0.28	-1.66	-0.36	-5.6	-6.17	-8.33	-4.04	-6.28	-7.42	-10.01

Raw Data Ant 4 @ 3800MHz

Theta Angle (°)	0	15	30	45	60	75	90	105	120	135	150	165	180
Phi Angle (°)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)
0	-4.15	-3.25	0.15	-0.64	-1.28	-0.88	-5.64	-6.05	-7.38	-4.01	-6.62	-9.15	-7.78
15	-4.15	-1.2	-0.3	-0.17	-0.24	-2.98	-3.99	-8.19	-8.35	-4.54	-9.6	-10.07	-7.78
30	-4.15	0.4	-0.07	1.14	-1.13	-1.39	-4.96	-5.35	-10	-5.65	-6.6	-12.81	-7.78
45	-4.15	0.29	0.54	-2.87	0.13	-0.21	-2.06	-3.56	-3.2	-14.29	-15.87	-11.22	-7.78
60	-4.15	-1.63	0.89	-0.69	-2.07	-1.7	-6.37	-3.78	-5.72	-6.67	-16.35	-7.95	-7.78
75	-4.15	-4.72	0.37	0.56	-3.31	-7.63	-7.84	-11.09	-12.86	-5.42	-15.54	-8.01	-7.78
90	-4.15	-7.47	-1.59	-5.14	-4.9	-8.36	-8.15	-11.48	-5.12	-6.4	-11.56	-9.5	-7.78
105	-4.15	-6.39	-1.91	-3.01	-3.08	-5.4	-7.83	-6.15	-11.48	-7.54	-6.81	-13.38	-7.78
120	-4.15	-3.73	0.38	1.13	0.9	-0.63	-4.31	-6.83	-5.71	-6.32	-8.21	-11.39	-7.78
135	-4.15	-1.69	1.98	2.68	0.47	-1.84	-2.64	-4.11	-6.03	-6.72	-11.1	-8.56	-7.78
150	-4.15	-1.6	0.69	2.63	3.51	2.27	0.33	-1.78	-6.28	-9.69	-9.05	-7.62	-7.78
165	-4.15	-6.47	-0.89	-1.89	3.68	-1.7	-1.98	-3.74	-14.3	-11.22	-7.03	-8.95	-7.78
180	-4.15	-4.25	-4.62	-0.35	-0.32	-3.7	-5.94	-10.2	-13.03	-13.98	-7.73	-18.63	-7.78
195	-4.15	-6.85	-6.72	-2.27	-0.04	-0.13	-2.93	-5.94	-6.18	-7.55	-8.43	-10.6	-7.78
210	-4.15	-6.75	-3.33	-3.65	-1.34	-2.36	-2.85	-2.32	-12.97	-3.4	-7.23	-7.41	-7.78
225	-4.15	-5.43	-2.28	-3.99	-0.61	-1.29	-1.25	-4.64	-1.97	-8.14	-5.38	-7.06	-7.78
240	-4.15	-6.29	-1.72	-0.85	1.99	0.38	-3.19	-3.97	-4.41	-7.04	-8.15	-7.96	-7.78
255	-4.15	-8.22	-0.49	-1.13	2.44	0.98	-1.03	-4.63	-6.84	-9.86	-10.11	-9.89	-7.78
270	-4.15	-7.94	0.94	0.76	1.27	0.41	0.48	-4.73	-3.58	-10.09	-7.52	-13	-7.78
285	-4.15	-6.06	-1.2	0.92	3.78	3.58	2.33	-0.73	-2.61	-4.1	-4.69	-18.85	-7.78
300	-4.15	-3.22	-1.59	0.34	-0.2	1.7	-0.58	-1.22	-3.56	-1.54	-3.42	-14.7	-7.78
315	-4.15	-3.03	-3.19	-3.37	-2.9	-2.41	-4.42	-3.83	-8.07	-2.72	-2.3	-9.91	-7.78
330	-4.15	-4.35	-1.6	-4.75	-3.32	-1.66	-3.07	-6.27	-5.84	-10.82	-2.62	-8.41	-7.78
345	-4.15	-5.92	-2.16	-3.86	-0.3	0.33	-1.4	-4.46	-4.13	-5.57	-10.5	-8.54	-7.78
360	-4.15	-3.25	0.15	-0.64	-1.28	-0.88	-5.64	-6.05	-7.38	-4.01	-6.62	-9.15	-7.78

Raw Data Ant 4 @ 3980MHz

Theta Angle (°)	0	15	30	45	60	75	90	105	120	135	150	165	180
Phi Angle (°)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)
0	-8.21	0.62	-1.35	-1.68	-0.78	-1.15	-4.65	-10.06	-11.32	-4.65	-8.61	-6.68	-9.46
15	-8.21	1.39	-2.85	-0.65	0	-2.45	-3.33	-8.71	-10.25	-7.4	-9.79	-7.27	-9.46
30	-8.21	1.12	-1.52	-2.56	-4	-1.05	-3.19	-4.42	-8.84	-6.62	-9.59	-9.27	-9.46
45	-8.21	-0.58	-0.3	-4.11	-1.02	-4.63	-6.69	-6.02	-3.52	-13.77	-10.66	-12.97	-9.46
60	-8.21	-2.6	-0.12	-1.52	-3.14	-6.99	-8.89	-10.55	-5.22	-6.31	-11.29	-10.2	-9.46
75	-8.21	-3.28	-1.03	-0.89	-5.31	-3.73	-4.45	-6.67	-9.84	-6.37	-12.84	-8.72	-9.46
90	-8.21	-2.73	-3.01	-9.13	-9.69	-10.01	-8.15	-13.87	-8.25	-6.83	-12.53	-8.86	-9.46
105	-8.21	-2.49	-1.88	-5.26	-8.12	-14.99	-10.85	-16.63	-7.9	-7.48	-8.92	-11.75	-9.46
120	-8.21	-1.33	-1.08	0.51	-0.37	-4.19	-6.66	-9.29	-10.35	-9.93	-6.44	-13.35	-9.46
135	-8.21	0.38	-0.84	-0.8	-0.76	-0.56	-2.89	-3.28	-3.34	-10.74	-8.18	-13.5	-9.46
150	-8.21	0.88	0.8	2.86	4.34	3.55	-1.46	-2.93	-9.05	-11.62	-8.81	-14.6	-9.46
165	-8.21	-5.65	-0.5	-4.41	1.87	-5.15	-2.82	-5.43	-6.38	-7.91	-7.35	-14.47	-9.46
180	-8.21	-2.58	-5.64	-1.44	-1.61	-4.08	-4.69	-11.59	-9.63	-14.3	-8.81	-17.69	-9.46
195	-8.21	-6.87	-4.57	-1.18	-1.38	-6.95	-6.03	-8.79	-7.91	-7.38	-6.01	-8.68	-9.46
210	-8.21	-7.36	-3.13	-2.16	-2.69	-3.98	-4.04	-2.85	-5.89	-5.21	-5.01	-6.39	-9.46
225	-8.21	-4.28	-3.31	-0.64	0.13	-2.21	-2.6	-4.23	-6.44	-3.84	-6.33	-7.62	-9.46
240	-8.21	-3.58	-0.92	1.33	0.88	-0.74	-2.99	-8.25	-6.98	-6.9	-6.26	-10.95	-9.46
255	-8.21	-4.55	-0.3	0.47	3.59	2.8	-0.31	-4.73	-5.56	-7.4	-5.73	-13.44	-9.46
270	-8.21	-6.13	0.44	-0.29	3.7	2.99	0.38	-3.85	-5.63	-5.58	-6.57	-12.09	-9.46
285	-8.21	-5.54	-1.76	0.21	3.08	3.26	0.61	-2.1	-4.34	-4.82	-5.37	-14.46	-9.46
300	-8.21	-2.17	-6.4	-1.56	-0.42	0.15	-2.33	-5.22	-6.27	-3.32	-4.4	-16.73	-9.46
315	-8.21	-2.52	-1.79	-5.29	-3.46	-3.73	-4.9	-5.93	-7.94	-4.39	-5.3	-9.49	-9.46
330	-8.21	-5.83	-4.68	-7.37	-1.71	-1.54	-2.59	-8.47	-4.85	-11.85	-4.14	-9.25	-9.46
345	-8.21	-3.61	-6.07	-2.59	0.06	0.98	-2.22	-4.2	-4.34	-7.09	-10.84	-8.29	-9.46
360	-8.21	0.62	-1.35	-1.68	-0.78	-1.15	-4.65	-10.06	-11.32	-4.65	-8.61	-6.68	-9.46

Raw Data Ant 4 @ 4200MHz

Theta Angle (°)	0	15	30	45	60	75	90	105	120	135	150	165	180
Phi Angle (°)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)
0	-8.07	0.76	-1.21	-1.54	-0.64	-1.01	-4.51	-9.92	-11.18	-4.51	-8.47	-6.54	-9.32
15	-8.07	1.53	-2.71	-0.51	0.14	-2.31	-3.19	-8.57	-10.11	-7.26	-9.65	-7.13	-9.32
30	-8.07	1.26	-1.38	-2.42	-3.86	-0.91	-3.05	-4.28	-8.7	-6.48	-9.45	-9.13	-9.32
45	-8.07	-0.44	-0.16	-3.97	-0.88	-4.49	-6.55	-5.88	-3.38	-13.63	-10.52	-12.83	-9.32
60	-8.07	-2.46	0.02	-1.38	-3	-6.85	-8.75	-10.41	-5.08	-6.17	-11.15	-10.06	-9.32
75	-8.07	-3.14	-0.89	-0.75	-5.17	-3.59	-4.31	-6.53	-9.7	-6.23	-12.7	-8.58	-9.32
90	-8.07	-2.59	-2.87	-8.99	-9.55	-9.87	-8.01	-13.73	-8.11	-6.69	-12.39	-8.72	-9.32
105	-8.07	-2.35	-1.74	-5.12	-7.98	-14.85	-7.71	-16.49	-7.76	-7.34	-8.78	-11.61	-9.32
120	-8.07	-1.19	-0.94	0.65	-0.23	-4.05	-6.52	-9.15	-10.21	-9.79	-6.3	-13.21	-9.32
135	-8.07	0.52	-0.7	-0.66	-0.62	-0.42	-2.75	-3.14	-3.2	-10.6	-8.04	-13.36	-9.32
150	-8.07	1.02	0.94	3	4.14	3.69	-1.32	-2.79	-8.91	-11.48	-8.67	-14.46	-9.32
165	-8.07	-5.51	-0.36	-4.27	2.01	-5.01	-2.68	-5.29	-6.24	-7.77	-7.21	-14.33	-9.32
180	-8.07	-2.44	-5.5	-1.3	-1.47	-3.94	-4.55	-11.45	-9.49	-14.16	-8.67	-17.55	-9.32
195	-8.07	-6.73	-4.43	-1.04	-1.24	-6.81	-5.89	-8.65	-7.77	-7.24	-5.87	-8.54	-9.32
210	-8.07	-7.22	-2.99	-2.02	-2.55	-3.84	-3.9	-2.71	-5.75	-5.07	-4.87	-6.25	-9.32
225	-8.07	-4.14	-3.17	-0.5	0.27	-2.07	-2.46	-4.09	-6.3	-3.7	-6.19	-7.48	-9.32
240	-8.07	-3.44	-0.78	1.47	1.02	-0.6	-2.85	-8.11	-6.84	-6.76	-6.12	-10.81	-9.32
255	-8.07	-4.41	-0.16	0.61	3.73	2.94	-0.17	-4.59	-5.42	-7.26	-5.59	-13.3	-9.32
270	-8.07	-5.99	0.58	-0.15	3.84	3.13	0.52	-3.71	-5.49	-5.44	-6.43	-11.95	-9.32
285	-8.07	-5.4	-1.62	0.35	3.22	3.4	0.75	-1.96	-4.2	-4.68	-5.23	-14.32	-9.32
300	-8.07	-2.03	-6.26	-1.42	-0.28	0.29	-2.19	-5.08	-6.13	-3.18	-4.26	-16.59	-9.32
315	-8.07	-2.38	-1.65	-5.15	-3.32	-3.59	-4.76	-5.79	-7.8	-4.25	-5.16	-9.35	-9.32
330	-8.07	-5.69	-4.54	-7.23	-1.57	-1.4	-2.45	-8.33	-4.71	-11.71	-4	-9.11	-9.32
345	-8.07	-3.47	-5.93	-2.45	0.2	1.12	-2.08	-4.06	-4.2	-6.95	-10.7	-8.15	-9.32
360	-8.07	0.76	-1.21	-1.54	-0.64	-1.01	-4.51	-9.92	-11.18	-4.51	-8.47	-6.54	-9.32

Raw Data Ant 5 @ 2400MHz

Theta Angle (°)	0	15	30	45	60	75	90	105	120	135	150	165	180
Phi Angle (°)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)
0	-9.54	-16.25	-5.61	-2.29	-3.41	-7.27	-10.22	-10.69	-9.64	-10.15	-13.26	-13.43	-14.05
15	-9.54	-16.22	-5.27	-1.92	-3.02	-5.41	-8.42	-9.49	-7.61	-9.18	-13.63	-13.7	-14.05
30	-9.54	-9.53	-3.89	-3.95	-4.64	-5.66	-7.56	-5.97	-8.24	-9.92	-14.44	-13.17	-14.05
45	-9.54	-5.25	-2.05	-4.03	-4.73	-6.45	-10.18	-5.93	-9.23	-11.33	-15.25	-13.26	-14.05
60	-9.54	-2.61	-0.17	-0.62	-4.25	-6.67	-12.79	-8.45	-10.82	-11.68	-16.27	-14.49	-14.05
75	-9.54	-0.78	1.31	2.61	-2.92	-6.88	-12.85	-10.84	-12.41	-11.65	-17.39	-15.71	-14.05
90	-9.54	-1.65	2.65	3.22	-0.43	-5.17	-10.96	-12.86	-10.6	-10.95	-18.5	-18.59	-14.05
105	-9.54	-2.51	3.98	3.84	2.06	-2.46	-9.1	-14.89	-8.64	-9.35	-16.37	-22	-14.05
120	-9.54	-3.39	3.38	4	0.95	0.24	-8.04	-13.32	-7.44	-7.75	-13.25	-24.13	-14.05
135	-9.54	-4.26	2.77	3.68	-0.84	-0.83	-6.97	-9.73	-8.95	-6.15	-10.58	-20.42	-14.05
150	-9.54	-5.14	1.58	3.37	-2.6	-4.26	-6.28	-6.14	-10.47	-8.91	-9.97	-16.71	-14.05
165	-9.54	-5.53	-0.98	3.08	-1.71	-7.69	-6.05	-7.03	-11.03	-12.2	-9.37	-14.13	-14.05
180	-9.54	-5.93	-3.55	2.83	-0.83	-7.83	-5.83	-8.07	-10.74	-14.1	-12.32	-14.27	-14.05
195	-9.54	-5.65	-3.15	2.59	-0.03	-4.99	-5.33	-9.11	-10.44	-12.76	-16.59	-14.42	-14.05
210	-9.54	-3.52	-2.03	2.12	0.39	-2.15	-4.59	-9.04	-10.02	-11.43	-20.86	-14.04	-14.05
225	-9.54	-1.39	-1.05	1.47	0.82	-2.5	-3.85	-8.73	-9.6	-12.69	-25.05	-12.9	-14.05
240	-9.54	-0.93	-0.59	0.81	0.1	-4.87	-4.39	-8.43	-9.91	-14.97	-21.42	-11.76	-14.05
255	-9.54	-1.74	-0.13	-0.04	-1.24	-7.24	-5.51	-9.41	-11.36	-17.26	-17.79	-11.24	-14.05
270	-9.54	-2.54	0.08	-0.9	-2.22	-7.3	-6.53	-10.84	-12.82	-17.27	-15.28	-10.9	-14.05
285	-9.54	-4.95	-0.27	-1	-1.8	-6.08	-6.58	-11.82	-12.55	-17.28	-13.41	-10.8	-14.05
300	-9.54	-7.39	-0.61	-0.31	-1.38	-4.87	-6.62	-10.59	-11.44	-16.25	-11.54	-11.95	-14.05
315	-9.54	-9.71	-3.27	0.38	-1.07	-4.3	-7.2	-9.36	-10.81	-12.99	-12.81	-13.1	-14.05
330	-9.54	-11.92	-6.39	-0.74	-1.81	-3.9	-7.97	-9.53	-11.34	-10.63	-14.34	-13.02	-14.05
345	-9.54	-14.76	-6.82	-1.87	-2.38	-5.62	-9.93	-10.41	-11.8	-11.03	-12.83	-12.49	-14.05
360	-9.54	-16.25	-5.53	-2.31	-3.53	-7.4	-10.39	-10.72	-9.59	-10.09	-13.21	-13.5	-14.05

Raw Data Ant 5 @ 2450MHz

Theta Angle (°)	0	15	30	45	60	75	90	105	120	135	150	165	180
Phi Angle (°)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)
0	-7.26	-8.15	-1.97	-0.66	-2.41	-7.03	-10.35	-11.6	-10.38	-8.86	-11.93	-13.87	-13.71
15	-7.26	-6.81	-2.62	-0.35	-2.66	-4.12	-8.6	-9.14	-7.45	-8.03	-11.78	-13.89	-13.71
30	-7.26	-4.14	-2.79	-3.52	-5.54	-5.63	-7.79	-5.43	-9.22	-9.47	-13.6	-13.2	-13.71
45	-7.26	-2.11	-1.03	-4.26	-6.03	-8.21	-8.64	-5.46	-11.13	-11.72	-15.41	-13.09	-13.71
60	-7.26	-0.53	0.9	-0.62	-5.65	-7.47	-9.49	-8.22	-13.28	-13.28	-16.23	-14	-13.71
75	-7.26	0.43	1.98	2.8	-4.35	-6.72	-9.95	-10.7	-15.43	-14.6	-16.64	-14.9	-13.71
90	-7.26	-0.7	2.75	3.36	-1.8	-4.88	-10.12	-12.3	-12.7	-14.15	-17.05	-16.77	-13.71
105	-7.26	-1.82	3.52	3.92	0.76	-2.49	-10.21	-13.9	-9.73	-11.34	-15.19	-18.95	-13.71
120	-7.26	-2.62	3.75	4.31	1.06	-0.09	-7.95	-12.11	-7.53	-8.53	-12.64	-20.28	-13.71
135	-7.26	-3.23	3.98	4.51	0.95	-0.37	-5.68	-8.42	-8.05	-5.73	-10.45	-17.72	-13.71
150	-7.26	-3.83	3.12	4.72	0.82	-2.31	-4.96	-4.73	-8.57	-8.97	-9.94	-15.15	-13.71
165	-7.26	-3.86	-0.29	4.24	-0.18	-4.24	-6.15	-6.09	-9.55	-12.95	-9.42	-13.5	-13.71
180	-7.26	-3.89	-3.69	3.11	-1.18	-4.99	-7.34	-7.62	-10.93	-15.3	-11.53	-14.02	-13.71
195	-7.26	-3.74	-3.68	1.98	-1.85	-4.64	-7.29	-9.16	-12.31	-13.89	-14.61	-14.55	-13.71
210	-7.26	-3.11	-2.84	1.1	-1.06	-4.3	-6.1	-9.48	-11.38	-12.48	-17.69	-14.77	-13.71
225	-7.26	-2.48	-2.08	0.43	-0.27	-5.38	-4.91	-9.56	-10.4	-13.79	-20.72	-14.54	-13.71
240	-7.26	-2.7	-1.67	-0.24	-1.03	-7.38	-5.43	-9.63	-10.46	-16.17	-19.48	-14.31	-13.71
255	-7.26	-3.57	-1.26	-0.78	-2.64	-9.38	-6.74	-10.06	-12.12	-18.55	-18.24	-13.92	-13.71
270	-7.26	-4.44	-0.84	-1.33	-3.8	-8.94	-7.87	-10.61	-13.78	-17.62	-16.65	-13.47	-13.71
285	-7.26	-6.61	-0.42	-1.1	-3.22	-7.18	-7.46	-11.1	-13.78	-16.68	-14.86	-13.15	-13.71
300	-7.26	-8.82	0.01	-0.05	-2.65	-5.42	-7.04	-11.24	-12.96	-15.44	-13.08	-13.46	-13.71
315	-7.26	-10.43	-1.23	0.99	-2.14	-5.15	-7.92	-11.38	-12.41	-13.57	-14.03	-13.78	-13.71
330	-7.26	-11.48	-2.8	0.02	-2.37	-5.29	-9.27	-11.01	-12.53	-11.97	-15.21	-13.23	-13.71
345	-7.26	-10.02	-2.65	-0.85	-2.32	-6.11	-10.64	-11.59	-14.44	-11.5	-13.49	-12.7	-13.71
360	-7.26	-8.15	-1.89	-0.65	-2.48	-7.12	-10.5	-11.62	-10.14	-8.73	-11.82	-13.97	-13.71

Raw Data Ant 5 @ 2500MHz

Theta Angle (°)	0	15	30	45	60	75	90	105	120	135	150	165	180
Phi Angle (°)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)	Response (dB)
0	-6.19	-6.83	-1.99	-1.18	-2.93	-8.18	-13.66	-14.12	-11.63	-9.3	-13.28	-18.08	-13.08
15	-6.19	-5.92	-2.95	-0.75	-1.91	-3.7	-9.72	-9.99	-7.43	-8.55	-12.71	-16.65	-13.08
30	-6.19	-3.28	-3.88	-3.3	-4.36	-5.13	-7.04	-5.63	-9.18	-9.67	-13.86	-13.35	-13.08
45	-6.19	-1.24	-1.42	-3.71	-4.84	-8.09	-9.2	-5.96	-11.18	-11.47	-15	-11.36	-13.08
60	-6.19	0.38	1.32	-0.25	-4.59	-7.85	-11.37	-9.73	-13.61	-14.18	-14.65	-11.69	-13.08
75	-6.19	1.25	2.57	2.99	-3.52	-7.6	-11.75	-12.91	-16.03	-17.21	-13.71	-12.02	-13.08
90	-6.19	-0.34	3.28	3.31	-1.32	-5.72	-10.77	-14.3	-13.56	-17.33	-12.76	-14.54	-13.08
105	-6.19	-1.94	3.99	3.62	0.88	-3	-9.76	-15.68	-10.86	-13.56	-11.99	-17.75	-13.08
120	-6.19	-2.87	3.93	3.9	1.36	-0.28	-8.14	-13.6	-8.67	-9.8	-11.27	-20.08	-13.08
135	-6.19	-3.4	3.86	4.14	1.53	-0.24	-6.52	-9.57	-8.34	-6.04	-10.56	-18.39	-13.08
150	-6.19	-3.93	2.98	4.38	1.66	-1.85	-6.33	-5.54	-8.01	-8.5	-9.81	-16.7	-13.08
165	-6.19	-3.96	0.23	4.01	-0.46	-3.46	-7.92	-6.87	-8.61	-11.74	-9.07	-15.39	-13.08
180	-6.19	-3.98	-2.53	3.05	-2.57	-4.26	-9.5	-8.38	-10.07	-13.87	-10.74	-14.99	-13.08
195	-6.19	-3.81	-2.14	2.09	-3.96	-4.31	-9.21	-9.9	-11.52	-13.45	-13.31	-14.58	-13.08
210	-6.19	-3.1	-0.98	1.51	-2.17	-4.37	-7.2	-10.51	-11.1	-13.02	-15.87	-14.46	-13.08
225	-6.19	-2.39	-0.11	1.25	-0.38	-5.4	-5.18	-10.93	-10.64	-14.17	-18.44	-14.74	-13.08
240	-6.19	-2.76	-0.28	0.98	-0.73	-7.06	-5.76	-11.36	-11.05	-15.93	-21.67	-15.03	-13.08
255	-6.19	-3.95	-0.44	-0.15	-2.25	-8.71	-7.52	-11.54	-12.79	-17.69	-24.9	-15.26	-13.08
270	-6.19	-5.14	-0.3	-1.29	-3.46	-8.98	-9.08	-11.64	-14.53	-17.04	-22.77	-15.46	-13.08
285	-6.19	-6.15	0.51	-1.35	-3.47	-8.51	-8.79	-12.04	-15.91	-16.39	-17.64	-15.81	-13.08
300	-6.19	-7.15	1.32	-0.28	-3.48	-8.03	-8.5	-13.97	-17.12	-15.5	-12.51	-16.84	-13.08
315	-6.19	-7.51	0.67	0.79	-3.44	-7.28	-8.49	-15.9	-16.91	-14.09	-13.91	-17.87	-13.08
330	-6.19	-7.26	-0.45	0.17	-2.95	-6.45	-8.57	-12.98	-13.16	-12.68	-15.97	-18.26	-13.08
345	-6.19	-6.92	-0.88	-0.61	-3.03	-6.52	-10.11	-12.17	-14.36	-11.6	-15.01	-18.45	-13.08
360	-6.19	-6.83	-2	-1.2	-3.07	-8.29	-14.13	-14.26	-11.57	-9.18	-13.12	-17.97	-13.08

SERCOMM

WWW.SERCOMM.COM