

FCC Composite Gain Test Report

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Basic Information

EUT Description:	BE22000 Ceiling Mount Wi-Fi 7 Access Point		
Brand Name:	tp-link		
Model Name:	AP9788		
Tested By:	Shao Jinwei <u>Shao Jinwei</u>	Date:	2026/05/11

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1 Operation Mode and Antenna Information

1.1 EUT Operation Mode

The **AP9788**(MODEL NUMBER) is the Tri-band wireless router of 19 internal antennas, of which 4 were 2.4G antennas ,8 were 5G antennas, 4 were 6G antennas, 1 is ble antenna , 2 were RF antennas

1.2 Antenna Information

The Antennas are internal , the Locations of Antennas are shown below:

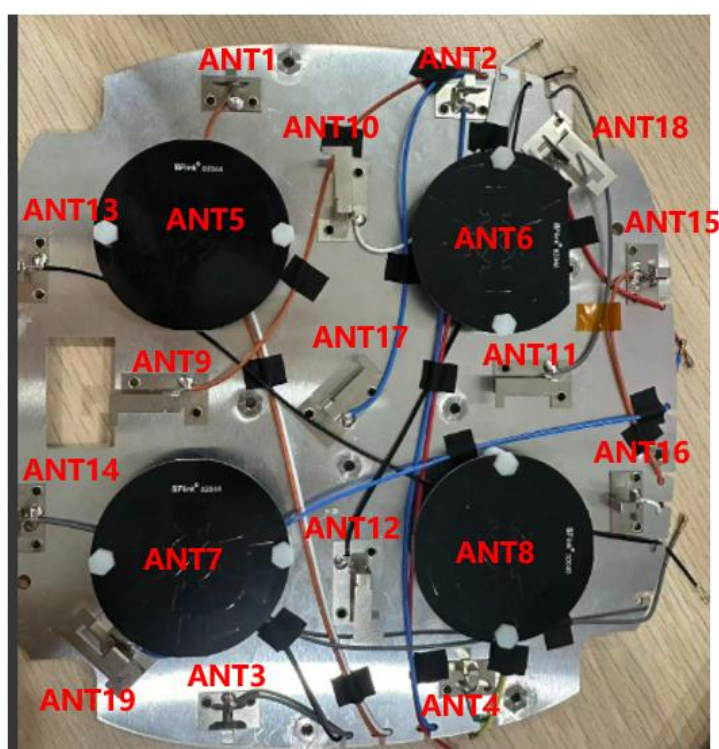


Figure 1-1 Locations of Antennas

The Antenna Information was shown below:

Table 1-1 Antenna Information

Antenna Position	Antenna Type	Connector	Mode of operation
Ant1	PIFA	ipex	5G
Ant2	PIFA	ipex	5G
Ant3	PIFA	ipex	5G
Ant4	PIFA	ipex	5G
Ant5	Monopole	ipex	5G
Ant6	Monopole	ipex	5G
Ant7	Monopole	ipex	5G

Ant8	Monopole	ipex	5G
Ant9	PIFA	ipex	2G
Ant10	PIFA	ipex	2G
Ant11	PIFA	ipex	2G
Ant12	PIFA	ipex	2G
Ant13	PIFA	ipex	6G
Ant14	PIFA	ipex	6G
Ant15	PIFA	ipex	6G
Ant16	PIFA	ipex	6G
Ant17	PIFA	ipex	2G_BLE
Ant18	PIFA	ipex	2&5&6G_RF
Ant19	PIFA	ipex	2&5&6G_RF

1.3 Test Frequency

Test frequency bands are shown in *Table 1-2*.

Table 1-2 Test Frequency

Frequency Band(MHz)
2400-2500
5150-5250
5250-5350
5470-5725
5725-5925
5925-6425
6425-6525
6525-6875
6875-7125

2 Test System

2.1 Test Equipment

Table 2-1 Test System

Equipment	Model	Manufacturer	S/N	Cali. Interval	Cali. Due Date
Chamber	Rayzone2800	GTS	MY53470435	12months	2027/04/15
Vector Network Analyzer	E5071C	Keysight	MY46315238	24months	2027/05/27

2.2 Test Software

Table 2-2 Test Software

Software	Version	Function
GTS MaxSign100	V2.1	Passive Antenna Measurements

3 Test Summary

3.1 Measurement Environment

This measurement experiment adopted an antenna near-field measurement system, and the diagram of the measurement system was shown in Figure 3-1. The excitation signal was generated by the Keysight E5071C (300kHz-20GHz). Under the control of the central computer, the probe rotated in the θ direction, and the EUT rotated in the ϕ direction with the turntable. The probe sampling frame received and collected signals in the near-field range of the EUT. The software system which was controlled by the central computer completed the processing, output and display of the test data.

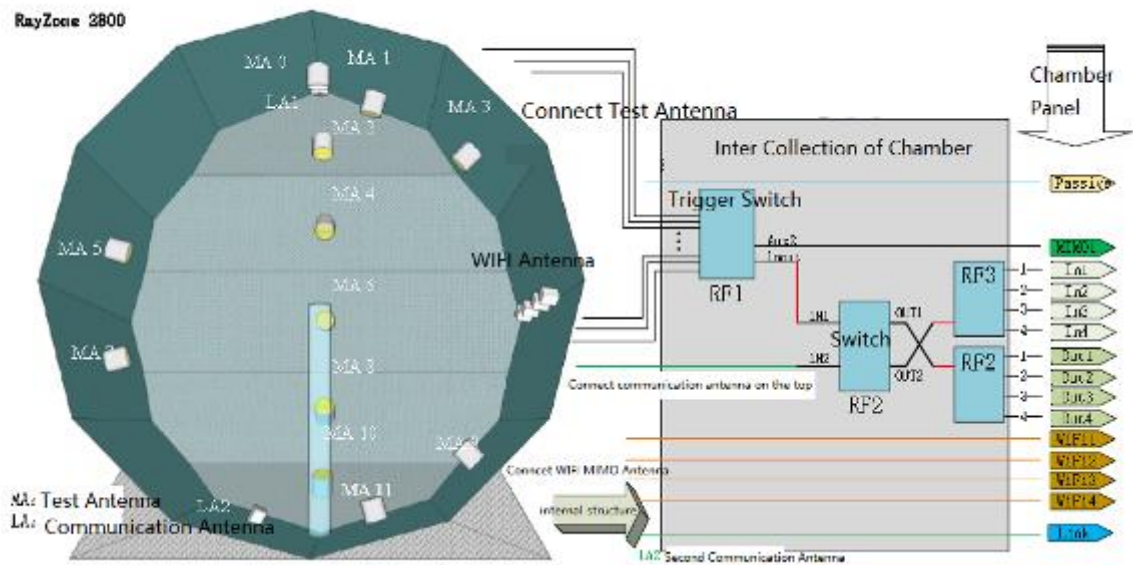


Figure 3-1 Schematic diagram of antenna near-field measurement system

The test site was a full anechoic chamber with a size of 3.0m×3.1m×2.97m, which was built by GTS Rayzone2800. All six surfaces of the anechoic chamber were pasted with absorbing materials. And the chamber was calibrated by the authoritative third-party lab every year. The antenna anechoic chamber measurement system adopted a 13-probe multi-probe system. The probe antennas were evenly distributed on the spherical surface surrounding the EUT, and their operating frequency was 600MHz~8.5GHz.

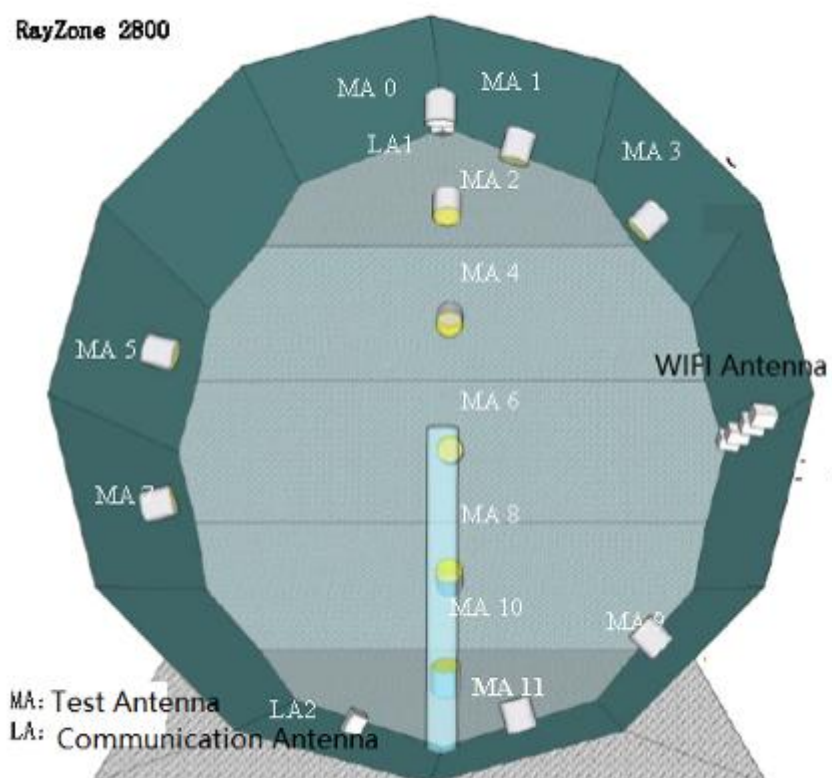


Figure 3-2 Antenna anechoic chamber for near-field measurement

During the measurement, the probe antennas were rotated in the θ direction under the control of the probe holder to sample the near-field data at the θ angle. At the same time, the EUT rotated with the turntable in the ϕ direction to sample the near field data at the ϕ angle. The system diagram was shown in Figure 3-3. From the sampling results, the EUT's near-field test data of θ component, ϕ component and total component could be obtained.

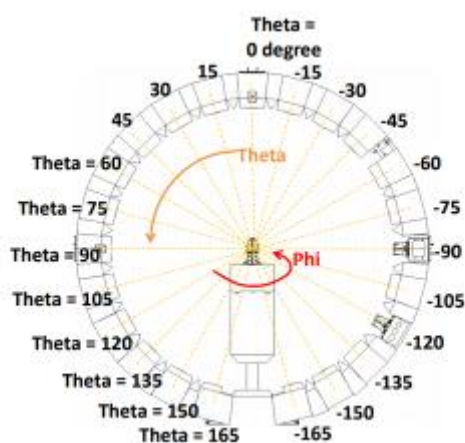


Figure 3-3 System diagram

Before the measurement, calibrated the vector network analyzer, and then connected the input end of each antenna to the output end of the vector network analyzer, and evenly the antennas to be measured. The Calibration information was shown in table 2-1.



Figure 3-4 Antennas measurement diagram

Table 3-1 Calibration information

Measurement Class	Standard
Cal Type	2p/1-2
Cal Kit	N4691B

3.2 Measurement Quantity

In this measurement experiment, the Directional Gain was measured at a certain frequency interval within the whole frequency range. The measurement frequency interval of the 2.4G antennas was 10MHz, while the 5GL and 5GU and 6G antennas was 50MHz.

3.3 Test Method

During the measurement, the probe antennas were rotated in the θ direction under the control of the probe holder to sample the near-field data at the θ angle. At the same time, the EUT rotated with the turntable in the ϕ direction to sample the near field data at the ϕ angle. The sampling accuracy was 15° . The system diagram was shown in Figure 2-6. From the sampling results, the EUT's near-field test data of θ component, ϕ component and total component could be obtained.

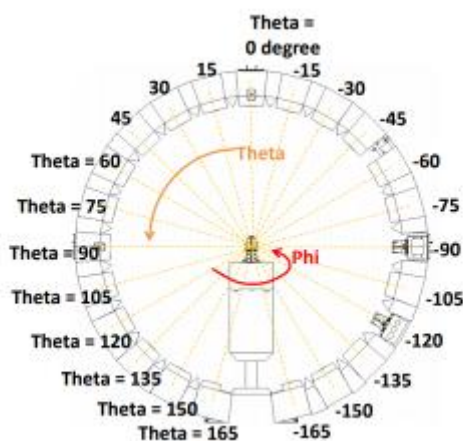


Figure 3-5 Test angle

3.4 Directional Gain (Nss=1) Calculations

Multiple antennas system, each of which has one of two (or three) polarizations that are orthogonal to one another (i.e., cross polarized), The total gain—including array gain—is computed separately for each of the two (or three) polarizations using the procedures presented in this document. The highest of the total gains shall apply.

Theoretical Directional Gain represented the theoretical value calculated by formula 2-1. As we all know, the effect of array gain must be included in the calculation of overall directional antenna gain for devices that transmit on multiple outputs simultaneously in the same band, in the same or in overlapping frequency ranges. Therefore, in formula 2-1, the directional gain calculation needs to include all directions and all Frequencies and all Polarizations, and then take the maximum value as the final directional gain value. Therefore, the calculation formula of theoretical directional gain value can be modified as formula 2-2

$$\text{Directional Gain} = 10\log \left[\frac{\sum_{j=1}^{N_{ss}} \left(\sum_{k=1}^{N_{ANT}} g_{j,k} \right)^2}{N_{ANT}} \right] \quad (2-1)$$

Where

Nss = the number of independent spatial streams of data; NSS =1.

Nant = the total number of antennas: NANT =4 for 2.4G & 5G & 6G antennas

$g_{j,k} = 10^{G_k/20}$ if the kth antenna is being fed by spatial stream j, or zero if it is not;

G_k is the gain in dBi of the kth antenna .

$$\text{Directional Gain} = \text{Maximum} \left[10\log \left[\frac{\sum_{j=1}^{N_{ss}} \left(\sum_{k=1}^{N_{ANT}} g_{j,k} \right)^2}{N_{ANT}} \right] \right] \quad (2-2)$$

Maximum function is the max directional gain overall directions and all frequency all polarizations.

3.5 Directional Gain (Nss=N_{ant}) Calculations

Multiple antennas system, each of which has one of two (or three) polarizations that are orthogonal to one another (i.e., cross polarized), The total gain—including array gain—is computed separately for each of the two (or three) polarizations using the procedures presented in this document. The highest of the total gains shall apply.

Theoretical Directional Gain represented the theoretical value calculated by formula 2-1. As we all know, the effect of array gain must be included in the calculation of overall directional antenna gain for devices that transmit on multiple outputs simultaneously in the same band, in the same or in overlapping frequency ranges. Therefore, in formula 2-1, the directional gain calculation needs to include all directions and all Frequencies and all Polarizations, and then take the maximum value as the final directional gain value. Therefore, the calculation formula of theoretical combined gain value can be modified as formula 2-2

$$\text{Directional Gain} = 10\log \left[\frac{\sum_{j=1}^{N_{ANT}} g_{j,k}}{N_{ANT}} \right] \quad (2-3)$$

Where

Nss = the number of independent spatial streams of data; NSS =Nant.

Nant = the total number of antennas: NANT =4 for 2.4G & 5G & 6G antennas

$$g_{j,k} = 10^{G_k/10} \quad \text{if the } k\text{th antenna is being fed by spatial stream } j, \text{ or zero if it is not;}$$

G_k is the gain in dBi of the kth antenna .

$$\text{Directional Gain} = \text{Maximum} \left[10\log \left[\frac{\sum_{j=1}^{N_{ANT}} g_{j,k}}{N_{ANT}} \right] \right] \quad (2-4)$$

Maximum function is the max directional gain overall directions and all frequency all polarizations.

3.6 Test Procedure

The calculation method of DG (Directional Gain) in this scheme is summarized as follows:

- 1) The antenna anechoic chamber is used to measure the gain of each antenna, the gain of each antenna at this angle is taken every 15° to calculate the Directional Gain;
- 2) Use formula below to calculate and the DG_Nss=1 of the system at this angle is obtained

$$\text{Directional Gain} = 10\log \left[\frac{\sum_{j=1}^{N_{SS}} \left(\sum_{k=1}^{N_{ANT}} g_{j,k} \right)^2}{N_{ANT}} \right] \quad (2-5)$$

- 3) Use formula below to calculate and the DG_Nssmax of the system at this angle is obtained

$$\text{Directional Gain} = 10\log \left[\frac{\sum_{j=1}^{N_{ANT}} g_{j,k}}{N_{ANT}} \right] \quad (2-6)$$

- 4) For each frequency point, the Directional Gain value under 24 different angles can be obtained, and finally the maximum value is taken as the system Directional Gain value.

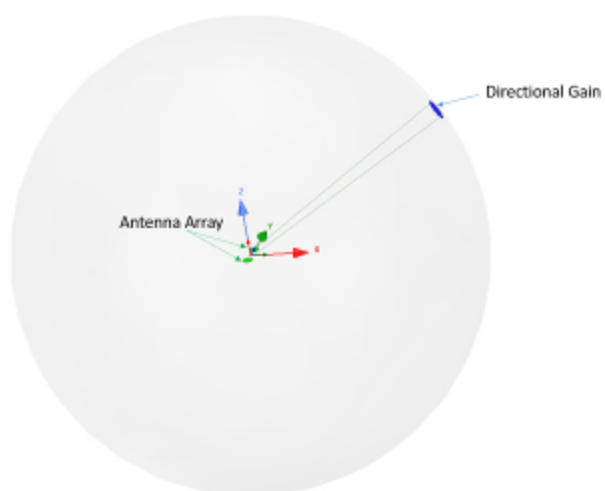


Figure 3-6 Directional Gain Calculation Sketch Map

4 Measured Value and Maximum Gain Positions

4.1 Antenna Number

The Antennas number for measured in the following section was shown below:

Table 4-1 Antennas number

Antenna Number	Antenna Position		
	2G	5G	6G
Ant1	Ant9	Ant1	Ant13
Ant2	Ant10	Ant2	Ant14
Ant3	Ant11	Ant3	Ant15
Ant4	Ant12	Ant4	Ant16
Ant5		Ant5	
Ant6		Ant6	
Ant7		Ant7	
Ant8		Ant8	
Ant9	Ant17		
Ant10	Ant18	Ant18	Ant18
Ant11	Ant19	Ant19	Ant19

4.2 2G

4.2.1 DG_1SS Max Value Position

Table 4-2 DG_1SS Max Value Position

Frequency(GHz)	2.40~2.50
Ant1(dBi)	0.67
Ant2(dBi)	-1.39
Ant3(dBi)	1.13
Ant4(dBi)	1.25
Polarization	Theta
Φ (°)	150
θ (°)	45

4.2.2 DG_1SS Max Value Position Calculation

Table 4-3 DG_1SS Max Value Position Calculation

Frequency(GHz)	2.40~2.50
----------------	-----------

Ant1[10 ^{^(G/20)}]	10 ^{^(0.67/20)}
Ant2[10 ^{^(G/20)}]	10 ^{^(-1.39/20)}
Ant3[10 ^{^(G/20)}]	10 ^{^(1.13/20)}
Ant4[10 ^{^(G/20)}]	10 ^{^(1.25/20)}
Ant1[10 ^{^(G/20)}] value	1.08
Ant2[10 ^{^(G/20)}] value	0.852
Ant3[10 ^{^(G/20)}] value	1.139
Ant4[10 ^{^(G/20)}] value	1.155
Sum of Ants Value(Antmax)	4.226
DG[10*Log(Antmax ² /Nant)] (dBi)	6.5

4.2.3 DG_NSSmax Max Value Position

Table 4-4 DG_NSSmax Max Value Position

Frequency(GHz)	2.40~2.50
Ant1(dBi)	0.67
Ant2(dBi)	-1.39
Ant3(dBi)	1.13
Ant4(dBi)	1.25
Polarization	Theta
Φ (°)	150
θ (°)	45

4.2.4 DG_NSSmax Max Value Position Calculation

Table 4-5 DG_NSSmax Max Value Position Calculation

Frequency(GHz)	2.40~2.50
Ant1[10 ^{^(G/10)}]	10 ^{^(0.67/10)}
Ant2[10 ^{^(G/10)}]	10 ^{^(-1.39/10)}
Ant3[10 ^{^(G/10)}]	10 ^{^(1.13/10)}
Ant4[10 ^{^(G/10)}]	10 ^{^(1.25/10)}
Ant1[10 ^{^(G/10)}] value	1.167
Ant2[10 ^{^(G/10)}] value	0.726
Ant3[10 ^{^(G/10)}] value	1.297
Ant4[10 ^{^(G/10)}] value	1.334
Sum of Ants Value(Antmax)	4.524
DG[10*Log ₁₀ (Antmax/Nant)] (dBi)	0.53

4.3 5G

4.3.1 DG_1SS Max Value Position

Table 4-6 DG_1SS Max Value Position

Frequency(GHz)	5.15~5.25	5.25~5.35	5.47~5.725	5.725~5.925
Ant1(dBi)	2.69	1.53	-4.94	0.59
Ant2(dBi)	-1.44	1.99	0.26	1.43
Ant3(dBi)	-0.14	0.73	2.62	-1.36
Ant4(dBi)	1.08	-1.04	4.8	2.76
Polarization	Theta	Theta	Theta	Theta
Φ (°)	75	90	180	150
θ (°)	75	45	75	75
Ant5(dBi)	-0.67	0	1.31	0.46
Ant6(dBi)	2.02	2.76	2.59	2.02
Ant7(dBi)	0.82	0.85	1.26	1.53
Ant8(dBi)	2.23	2.05	1.48	1.44
Polarization	Theta	Theta	Theta	Theta
Φ (°)	180	270	270	255
θ (°)	45	45	45	45

4.3.2 DG_1SS Max Value Position Calculation

Table 4-7 DG_1SS Max Value Position Calculation

Frequency(GHz)	5.15~5.25	5.25~5.35	5.47~5.725	5.725~5.925
Ant1[10 ^{^(G/20)}]	10 ^{^(2.69/20)}	10 ^{^(1.53/20)}	10 ^{^(-4.94/20)}	10 ^{^(0.59/20)}
Ant2[10 ^{^(G/20)}]	10 ^{^(-1.44/20)}	10 ^{^(1.99/20)}	10 ^{^(0.26/20)}	10 ^{^(1.43/20)}
Ant3[10 ^{^(G/20)}]	10 ^{^(-0.14/20)}	10 ^{^(0.73/20)}	10 ^{^(2.62/20)}	10 ^{^(-1.36/20)}
Ant4[10 ^{^(G/20)}]	10 ^{^(1.08/20)}	10 ^{^(-1.04/20)}	10 ^{^(4.80/20)}	10 ^{^(2.76/20)}
Ant1[10 ^{^(G/20)}] value	1.363	1.193	0.566	1.07
Ant2[10 ^{^(G/20)}] value	0.847	1.257	1.03	1.179
Ant3[10 ^{^(G/20)}] value	0.984	1.088	1.352	0.855
Ant4[10 ^{^(G/20)}] value	1.132	0.887	1.738	1.374
Sum of Ants Value(Antmax)	4.327	4.425	4.686	4.478
DG[10*Log(Antmax ² /Nant)] (dBi)	6.7	6.9	7.4	7
Ant5[10 ^{^(G/20)}]	10 ^{^(-0.67/20)}	10 ^{^(-0.00/20)}	10 ^{^(1.31/20)}	10 ^{^(0.46/20)}
Ant6[10 ^{^(G/20)}]	10 ^{^(2.02/20)}	10 ^{^(2.76/20)}	10 ^{^(2.59/20)}	10 ^{^(2.02/20)}
Ant7[10 ^{^(G/20)}]	10 ^{^(0.82/20)}	10 ^{^(0.85/20)}	10 ^{^(1.26/20)}	10 ^{^(1.53/20)}

Ant8[10^{^(G/20)}]	$10^{(2.23/20)}$	$10^{(2.05/20)}$	$10^{(1.48/20)}$	$10^{(1.44/20)}$
Ant5[10^{^(G/20)}] value	0.926	1	1.163	1.054
Ant6[10^{^(G/20)}] value	1.262	1.374	1.347	1.262
Ant7[10^{^(G/20)}] value	1.099	1.103	1.156	1.193
Ant8[10^{^(G/20)}] value	1.293	1.266	1.186	1.18
Sum of Ants Value(Antmax)	4.579	4.743	4.852	4.689
DG[10*Log(Antmax²/Nant)] (dBi)	7.2	7.5	7.7	7.4

4.3.3 DG_NSSmax Max Value Position

Table 4-8 DG_NSSmax Max Value Position

Frequency(GHz)	5.15~5.25	5.25~5.35	5.47~5.725	5.725~5.925
Ant1(dBi)	2.69	1.53	-4.94	0.59
Ant2(dBi)	-1.44	1.99	0.26	1.43
Ant3(dBi)	-0.14	0.73	2.62	-1.36
Ant4(dBi)	1.08	-1.04	4.8	2.76
Polarization	Theta	Theta	Theta	Theta
Φ (°)	75	90	180	150
θ (°)	75	45	75	75
Ant5(dBi)	-0.67	0	1.31	0.46
Ant6dBi)	2.02	2.76	2.59	2.02
Ant7(dBi)	0.82	0.85	1.26	1.53
Ant8(dBi)	2.23	2.05	1.48	1.44
Polarization	Theta	Theta	Theta	Theta
Φ (°)	180	270	270	255
θ (°)	45	45	45	45

4.3.4 DG_NSSmax Max Value Position Calculation

Table 4-9 DG_NSSmax Max Value Position Calculation

Frequency(GHz)	5.15~5.25	5.25~5.35	5.47~5.725	5.725~5.925
Ant1[10^{^(G/10)}]	$10^{(2.69/10)}$	$10^{(1.53/10)}$	$10^{(-4.94/10)}$	$10^{(-10.77/10)}$
Ant2[10^{^(G/10)}]	$10^{(-1.44/10)}$	$10^{(1.99/10)}$	$10^{(0.26/10)}$	$10^{(0.53/10)}$
Ant3[10^{^(G/10)}]	$10^{(-0.14/10)}$	$10^{(0.73/10)}$	$10^{(2.62/10)}$	$10^{(3.25/10)}$
Ant4[10^{^(G/10)}]	$10^{(1.08/10)}$	$10^{(-1.04/10)}$	$10^{(4.80/10)}$	$10^{(3.35/10)}$
Ant1[10^{^(G/10)}] value	1.858	1.422	0.321	0.084
Ant2[10^{^(G/10)}] value	0.718	1.581	1.062	1.13
Ant3[10^{^(G/10)}] value	0.968	1.183	1.828	2.113

Ant4[10 ^{^(G/10)}] value	1.282	0.787	3.02	2.163
Sum of Ants Value(Antmax)	4.826	4.974	6.23	5.49
DG[10*Log ₁₀ (Antmax/Nant)] (dBi)	0.82	0.95	1.92	1.37
Ant5[10 ^{^(G/10)}]	10 ^{^(-0.67/10)}	10 ^{^(-0.00/10)}	10 ^{^(1.31/10)}	10 ^{^(0.46/10)}
Ant6[10 ^{^(G/10)}]	10 ^{^(2.02/10)}	10 ^{^(2.76/10)}	10 ^{^(2.59/10)}	10 ^{^(2.02/10)}
Ant7[10 ^{^(G/10)}]	10 ^{^(0.82/10)}	10 ^{^(0.85/10)}	10 ^{^(1.26/10)}	10 ^{^(1.53/10)}
Ant8[10 ^{^(G/10)}]	10 ^{^(2.23/10)}	10 ^{^(2.05/10)}	10 ^{^(1.48/10)}	10 ^{^(1.44/10)}
Ant5[10 ^{^(G/10)}] value	0.857	1	1.352	1.112
Ant6[10 ^{^(G/10)}] value	1.592	1.888	1.816	1.592
Ant7[10 ^{^(G/10)}] value	1.208	1.216	1.337	1.422
Ant8[10 ^{^(G/10)}] value	1.671	1.603	1.406	1.393
Sum of Ants Value(Antmax)	5.328	5.707	5.91	5.519
DG[10*Log ₁₀ (Antmax/Nant)] (dBi)	1.25	1.54	1.7	1.4

4.4 6G

4.4.1 DG_1SS Max Value Position

Table 4-10 DG_1SS Max Value Position

Frequency(GHz)	5.925~6.425	6.425~6.525	6.525~6.875	6.875~7.125
Ant1(dBi)	-1.47	3.83	1.24	1.26
Ant2(dBi)	3.88	0.8	3.34	3.55
Ant3(dBi)	1.02	1.7	-1.24	-0.42
Ant4(dBi)	3.49	-1.13	4.03	3.68
Polarization	Theta	Theta	Theta	Theta
Φ (°)	90	270	105	105
θ (°)	75	75	75	75

4.4.2 DG_1SS Max Value Position Calculation

Table 4-11 DG_1SS Max Value Position Calculation

Frequency(GHz)	5.925~6.425	6.425~6.525	6.525~6.875	6.875~7.125
Ant1[10 ^{^(G/20)}]	10 ^{^(-1.47/20)}	10 ^{^(3.83/20)}	10 ^{^(1.24/20)}	10 ^{^(1.26/20)}
Ant2[10 ^{^(G/20)}]	10 ^{^(3.88/20)}	10 ^{^(0.80/20)}	10 ^{^(3.34/20)}	10 ^{^(3.55/20)}
Ant3[10 ^{^(G/20)}]	10 ^{^(1.02/20)}	10 ^{^(1.70/20)}	10 ^{^(-1.24/20)}	10 ^{^(-0.42/20)}
Ant4[10 ^{^(G/20)}]	10 ^{^(3.49/20)}	10 ^{^(-1.13/20)}	10 ^{^(4.03/20)}	10 ^{^(3.68/20)}
Ant1[10 ^{^(G/20)}] value	0.844	1.554	1.153	1.156
Ant2[10 ^{^(G/20)}] value	1.563	1.096	1.469	1.505

Ant3[10 ^{^(G/20)}] value	1.125	1.216	0.867	0.953
Ant4[10 ^{^(G/20)}] value	1.495	0.878	1.59	1.528
Sum of Ants Value(Antmax)	5.027	4.745	5.08	5.141
DG[10*Log(Antmax ² /Nant)] (dBi)	8	7.5	8.1	8.2

4.4.3 DG_NSSmax Max Value Position

Table 4-12 DG_NSSmax Max Value Position

Frequency(GHz)	5.925~6.425	6.425~6.525	6.525~6.875	6.875~7.125
Ant1(dBi)	-1.47	1.18	10 ^{^(1.24/10)}	1.26
Ant2(dBi)	3.88	3.06	10 ^{^(3.34/10)}	3.55
Ant3(dBi)	1.02	-2.66	10 ^{^(-1.24/10)}	-0.42
Ant4(dBi)	3.49	3.01	10 ^{^(4.03/10)}	3.68
Polarization	Theta	Theta	Theta	Theta
Φ (°)	90	105	105	105
θ (°)	75	75	75	75

4.4.4 DG_NSSmax Max Value Position Calculation

Table 4-13 DG_NSSmax Max Value Position Calculation

Frequency(GHz)	5.925~6.425	6.425~6.525	6.525~6.875	6.875~7.125
Ant1[10 ^{^(G/10)}]	10 ^{^(-1.47/10)}	10 ^{^(1.18/10)}	10 ^{^(1.24/10)}	10 ^{^(1.26/10)}
Ant2[10 ^{^(G/10)}]	10 ^{^(3.88/10)}	10 ^{^(3.06/10)}	10 ^{^(3.34/10)}	10 ^{^(3.55/10)}
Ant3[10 ^{^(G/10)}]	10 ^{^(1.02/10)}	10 ^{^(-2.66/10)}	10 ^{^(-1.24/10)}	10 ^{^(-0.42/10)}
Ant4[10 ^{^(G/10)}]	10 ^{^(3.49/10)}	10 ^{^(3.01/10)}	10 ^{^(4.03/10)}	10 ^{^(3.68/10)}
Ant1[10 ^{^(G/10)}] value	0.713	1.312	1.33	1.337
Ant2[10 ^{^(G/10)}] value	2.443	2.023	2.158	2.265
Ant3[10 ^{^(G/10)}] value	1.265	0.542	0.752	0.908
Ant4[10 ^{^(G/10)}] value	2.234	2	2.529	2.333
Sum of Ants Value(Antmax)	6.655	5.877	6.769	6.843
DG[10*Log ₁₀ (Antmax/Nant)] (dBi)	2.21	1.67	2.28	2.33

5 Test and Calculate Result

5.1 Peak Antenna Gain (Single)

Table 5-1 Antenna Test Result

Frequency	Ant1	Ant2	Ant3	Ant4	Ant5	Ant6	Ant7	Ant8
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Band(MHz)								
2400-2500	5.66dBi	4.81dBi	4.29dBi	6.29dBi				
5150-5250	4.92dBi	5.19dBi	4.42dBi	4.73dBi	6.01dBi	6.94dBi	6.68dBi	6.57dBi
5250-5350	4.97dBi	5.43dBi	4.80dBi	5.17dBi	6.33dBi	7.23dBi	6.58dBi	7.15dBi
5470-5725	6.32dBi	5.53dBi	5.21dBi	7.02dBi	7.04dBi	7.42dBi	6.33dBi	6.99dBi
5725-5925	6.32dBi	5.10dBi	5.54dBi	5.64dBi	7.04dBi	6.68dBi	6.13dBi	6.30dBi
5925-6425	7.51dBi	6.52dBi	6.31dBi	6.28dBi				
6425-6525	6.22dBi	5.45dBi	6.24dBi	5.93dBi				
6525-6875	6.50dBi	7.24dBi	6.67dBi	6.60dBi				
6875-7125	6.83dBi	7.24dBi	6.52dBi	6.10dBi				

Frequency Band(MHz)	Ant9	Ant10	Ant11
2400-2500	6.52 dBi	3.40dBi	5.41dBi
5150-5250		5.56dBi	5.77dBi
5250-5350		5.68dBi	6.42dBi
5470-5725		6.14dBi	7.75dBi
5725-5925		5.37dBi	7.73dBi
5925-6425		5.70dBi	6.76dBi
6425-6525		5.53dBi	5.37dBi
6525-6875		6.45dBi	6.06dBi
6875-7125		6.02dBi	6.06dBi

5.2 DG_1SS Calculate Result

Table 5-2 Test & Calculate Result

Frequency Band(MHz)	Max Directional Gain	Polarization/ Φ (°) / θ (°)
2400-2450	6.5dBi	Theta/150/45
5150-5250(Ant1~Ant4)	6.7dBi	Theta/75/75
5250-5350(Ant1~Ant4)	6.9dBi	Theta/90/45
5470-5725(Ant1~Ant4)	7.4dBi	Theta/180/75
5725-5925(Ant1~Ant4)	7.0dBi	Theta/150/75
5150-5250(Ant5~Ant8)	7.2dBi	Theta/255/45
5250-5350(Ant5~Ant8)	7.5dBi	Theta/270/45
5470-5725(Ant5~Ant8)	7.7dBi	Theta/270/45
5725-5925(Ant5~Ant8)	7.4dBi	Theta/255/45
5925-6425	8.0dBi	Theta/90/75
6425-6525	7.5dBi	Theta/270/75

6525-6875	8.1dBi	Theta/105/75
6875-7125	8.2dBi	Theta/105/75

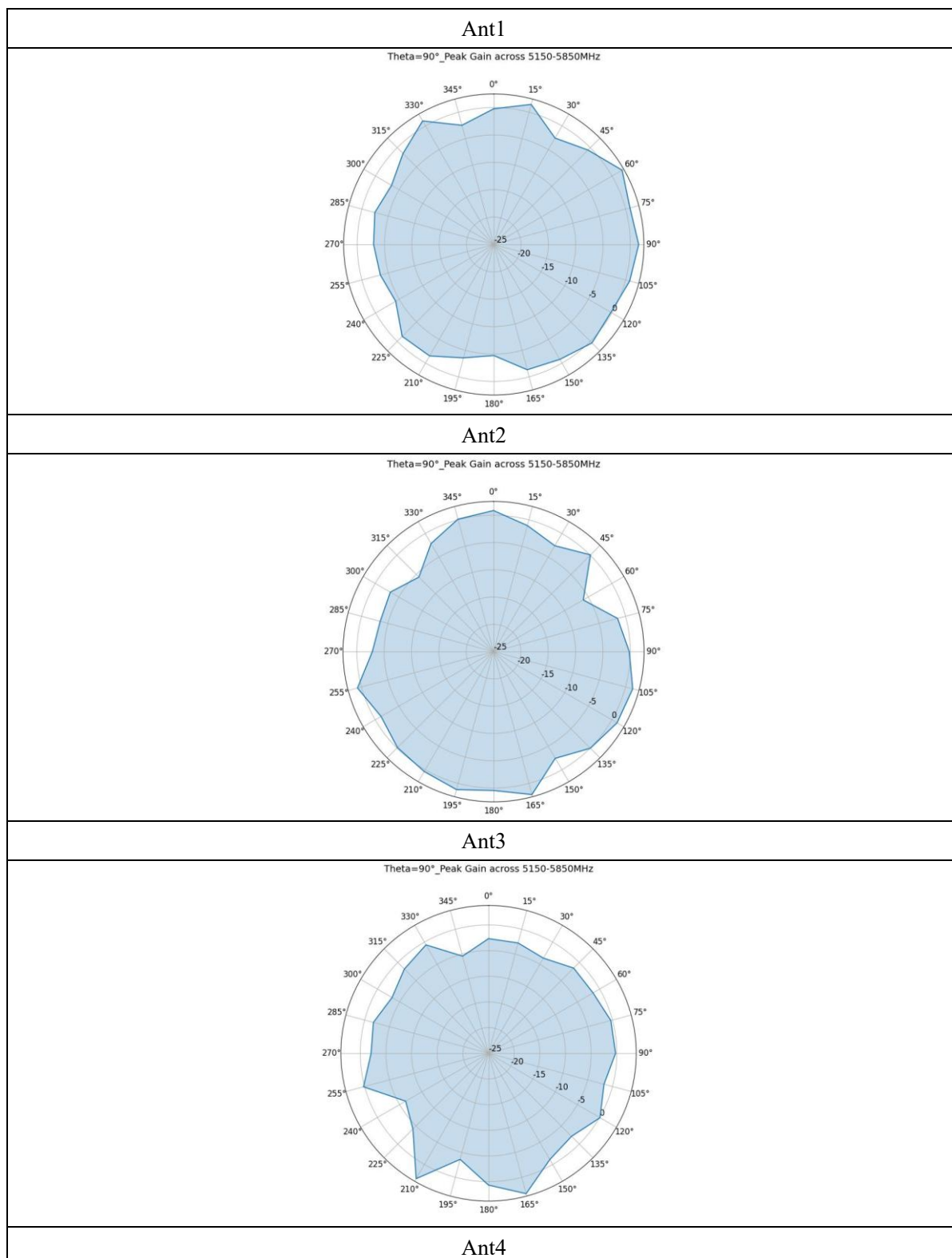
5.3 DG_NSSmax Calculate Result

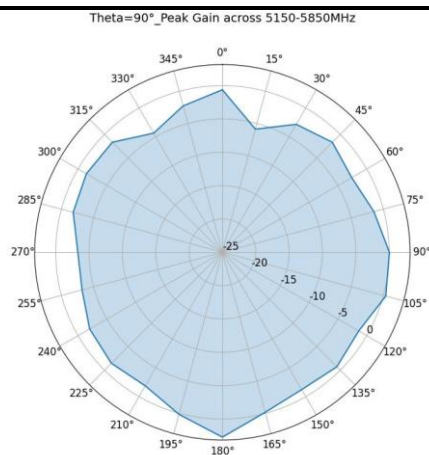
Table 5-3 Test & Calculate Result

Frequency Band(MHz)	Max Directional Gain	Polarization/ Φ (°) / θ (°)
2400-2450	0.53dBi	Theta/150/45
5150-5250(Ant1~Ant4)	0.82dBi	Theta/75/75
5250-5350(Ant1~Ant4)	0.95dBi	Theta/90/45
5470-5725(Ant1~Ant4)	1.92dBi	Theta/180/75
5725-5925(Ant1~Ant4)	1.37 dBi	Theta/150/75
5150-5250(Ant5~Ant8)	1.25dBi	Theta/180/45
5250-5350(Ant5~Ant8)	1.54dBi	Theta/270/45
5470-5725(Ant5~Ant8)	1.70dBi	Theta/270/45
5725-5925(Ant5~Ant8)	1.40dBi	Theta/255/45
5925-6425	2.21 dBi	Theta/90/75
6425-6525	1.67 dBi	Theta/105/75
6525-6875	2.28 dBi	Theta/105/75
6875-7125	2.33 dBi	Theta/105/75

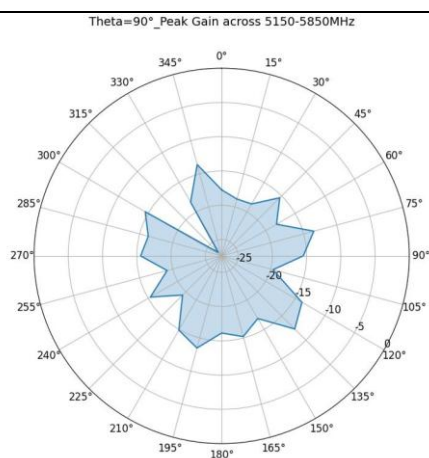
6 Test Pattern

6.1 Antenna Pattern

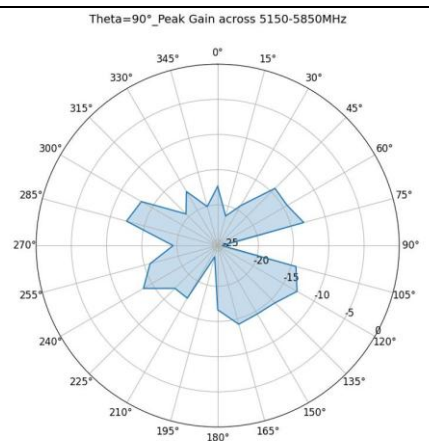




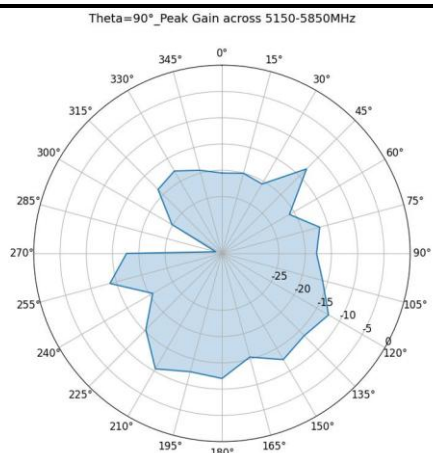
Ant5



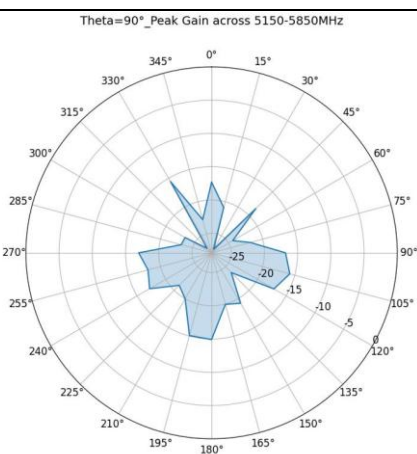
Ant6



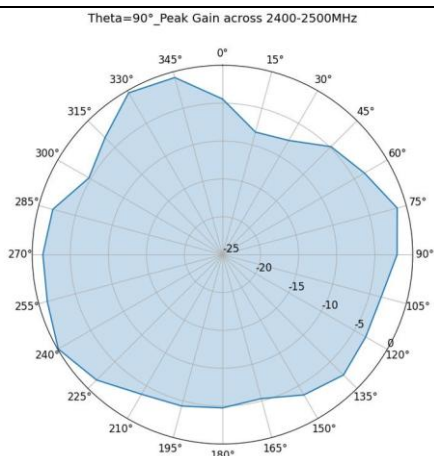
Ant7



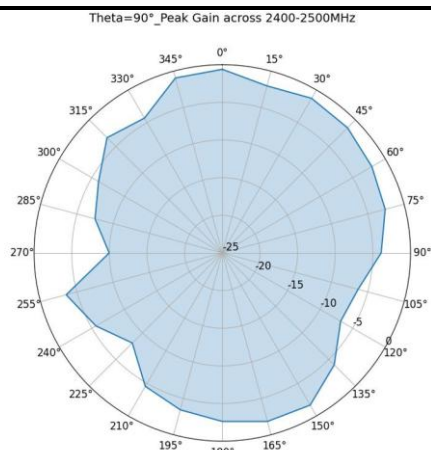
Ant8



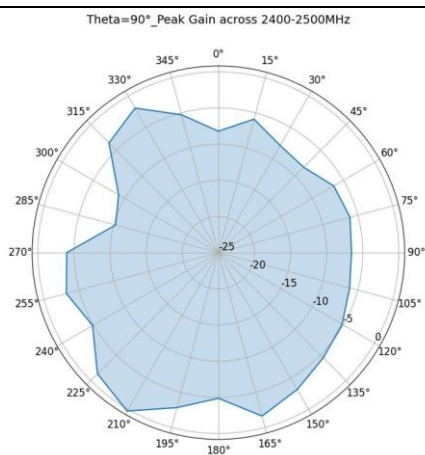
Ant9



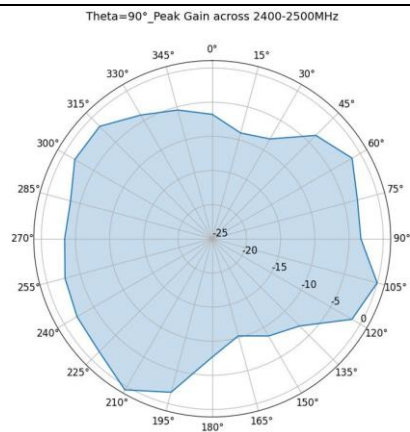
Ant10



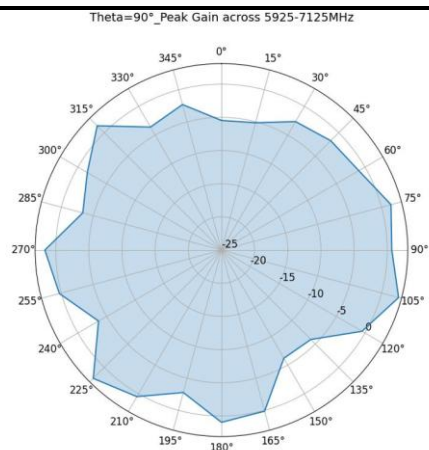
Ant11



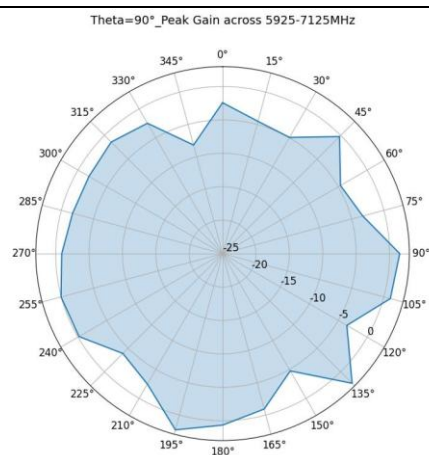
Ant12



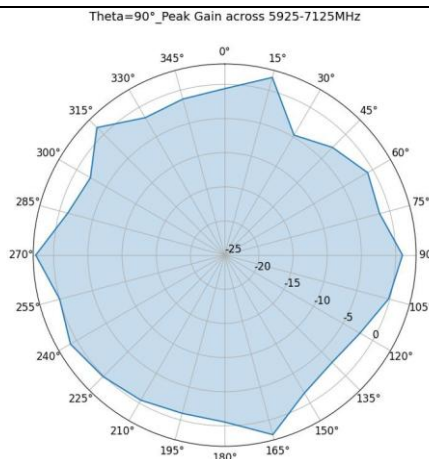
Ant13



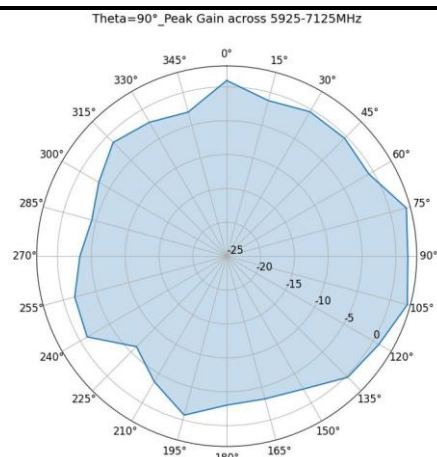
Ant14



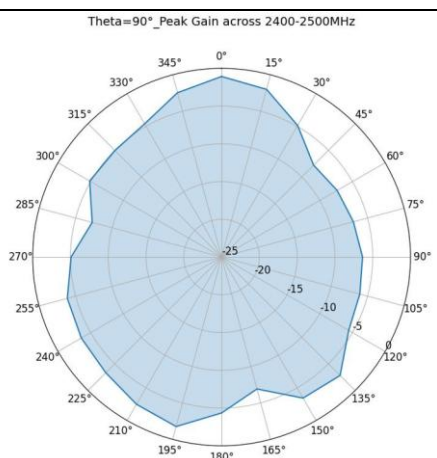
Ant15



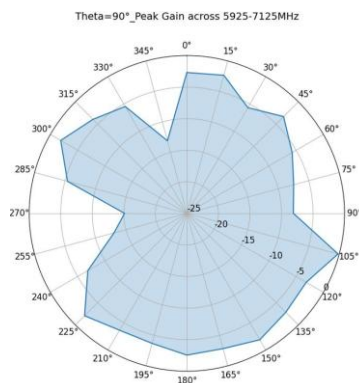
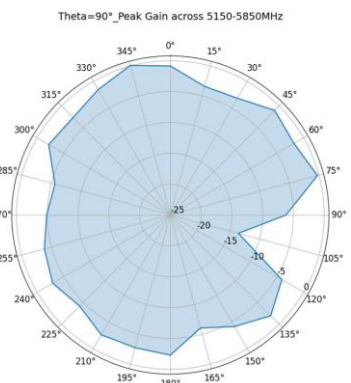
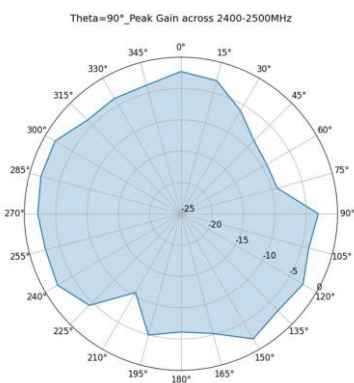
Ant16



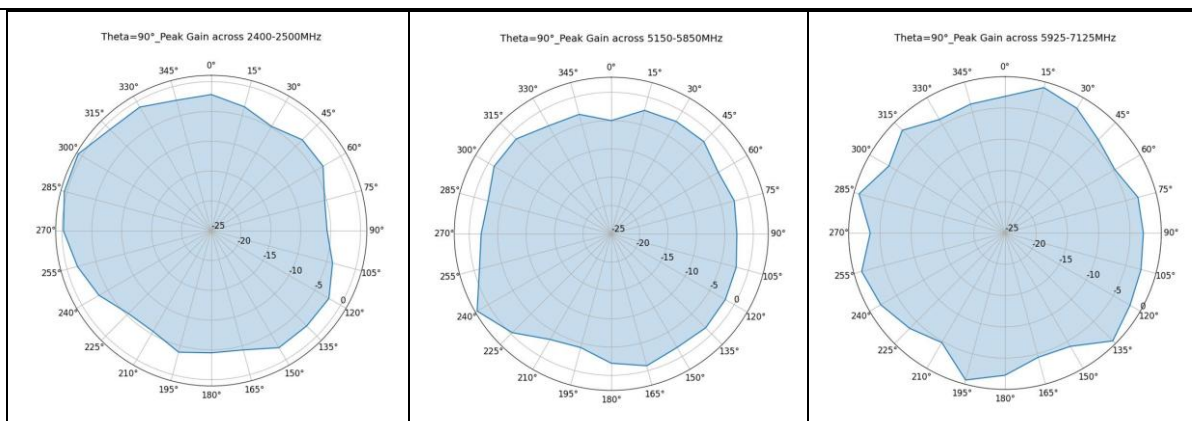
Ant17



Ant18



Ant19



7 Test Pattern

7.1 DG_1SS Test Data

Ant1													
Freq	2450												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-0.15	-0.93	-0.79	2.1	-0.63	-3.32	-7.27	-12.1	-14.13	-10.62	-19.24	-10.99	-15.71
15	-0.27	-1.3	-1.79	0.17	-3.16	-6.34	-10.49	-20.06	-14.56	-10.43	-12.34	-9.6	-15.71
30	-0.35	-1.78	-3.02	-2.26	-3.95	-5.22	-8.41	-11.7	-15.16	-10.78	-8.02	-8.84	-15.71
45	-0.39	-2.22	-3.12	-1.84	-3.07	-4.02	-6.01	-7.89	-10.88	-12.78	-9.09	-10.11	-15.71
60	-0.4	-2.49	-2.39	0.82	0.03	-1.58	-5.58	-7.38	-8.24	-11.56	-15.51	-13.57	-15.71
75	-0.31	-2.38	-2.08	1.02	0.07	-0.79	-3.55	-8.55	-11.56	-9.21	-13.77	-15.71	-15.71
90	-0.32	-1.87	-2.08	-0.03	-1.83	-2.78	-4.68	-7.06	-9.87	-8.07	-10.39	-13.33	-15.71
105	-0.32	-1.23	-1.8	-0.76	-2.67	-3.42	-5.34	-7.95	-11.56	-11.99	-11.39	-11.82	-15.71
120	-0.36	-0.67	-1.29	-0.67	-2.97	-3.77	-5	-5.78	-7.35	-10.24	-13.72	-11.97	-15.71
135	-0.48	-0.3	-0.66	0.54	-1.48	-2.18	-4.72	-7.89	-9.15	-8.93	-13.23	-12.24	-15.71
150	-0.54	-0.2	-0.67	0.67	-2.01	-3.01	-5.2	-7.94	-12.34	-12.53	-13.76	-12.24	-15.71
165	-0.56	-0.26	-1.67	-0.92	-3.83	-5.18	-7.3	-7.24	-10.04	-13.09	-13.86	-12.43	-15.71
180	-0.57	-0.47	-3.46	-3.66	-5.28	-5.42	-7.01	-7.08	-8.96	-9.86	-13.87	-12.16	-15.71
195	-0.44	-0.84	-5.01	-6.39	-5.94	-4.95	-6.59	-7.99	-9.83	-9.06	-12.63	-11.52	-15.71
210	-0.27	-1.31	-4.76	-5.42	-5.82	-5.34	-6.86	-8.44	-10.86	-10.39	-10.61	-10.99	-15.71
225	-0.21	-1.94	-3.4	-2.48	-4.48	-4.15	-5.41	-7.65	-12.69	-10.99	-10.37	-10.81	-15.71
240	-0.19	-2.78	-2.32	-0.26	-1.74	-2.15	-3.43	-6.48	-11.13	-10.7	-11.8	-11.06	-15.71
255	-0.27	-3.56	-2.26	0.45	-0.43	-1.28	-3.8	-6.51	-7.97	-9.81	-13.83	-11.6	-15.71
270	-0.4	-3.7	-2.94	-0.46	-1.41	-1.82	-3.79	-4.44	-7.75	-10.21	-14.13	-12.12	-15.71
285	-0.38	-3.09	-3.08	-1.81	-3	-2.38	-4.45	-6.7	-10.51	-9.64	-12.62	-11.78	-15.71
300	-0.25	-2.16	-2.25	-2.56	-3.58	-3.36	-6.96	-9.93	-9.23	-9.31	-12.37	-10.51	-15.71
315	-0.13	-1.33	-1.58	-1.45	-1.24	-1.87	-5.99	-7.39	-7.88	-10.84	-11.57	-9.12	-15.71
330	-0.05	-0.86	-1.03	0.82	1.34	0.73	-2.89	-5.62	-8.94	-9.54	-9.88	-8.73	-15.71
345	-0.04	-0.72	-0.58	2.4	1.73	0.52	-3.56	-10.53	-18.37	-10.28	-11.54	-9.76	-15.71

Ant2													
Freq	2450												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-0.61	-3.77	-2.69	0.48	-0.72	-1.2	-2.77	-3.82	-7.2	-10.83	-11.99	-12.82	-18.4
15	-0.41	-3.39	-2.69	0.04	-1.18	-1.7	-4.02	-6.47	-9.23	-9.72	-13.63	-12.38	-18.4
30	-0.28	-2.95	-2.46	0.02	-0.99	-1.24	-3.35	-6.29	-11.24	-12.31	-17.15	-12.83	-18.4
45	-0.21	-2.43	-2.37	-0.48	-1.44	-1.68	-3.9	-6.04	-9.76	-15.71	-19.98	-14.4	-18.4
60	-0.27	-1.92	-2.04	-0.69	-2.6	-2.41	-5.16	-7.76	-12.02	-18.28	-18.61	-16.64	-18.4
75	-0.34	-1.58	-1.63	-0.08	-2.79	-2.89	-5.91	-9.61	-15.25	-16.98	-16.59	-18.32	-18.4
90	-0.38	-1.42	-2	-0.59	-3.77	-4.06	-6.54	-9.37	-13.85	-14.82	-15.91	-18.4	-18.4
105	-0.5	-1.24	-2.66	-2.28	-6.32	-7.09	-8.4	-9.68	-13.79	-14.57	-15.65	-17.21	-18.4
120	-0.59	-1.05	-2.77	-3.06	-6.83	-8.09	-8.43	-10.4	-16.05	-16.1	-15.65	-15.45	-18.4
135	-0.54	-0.85	-2.53	-2.58	-4.55	-5.27	-5.95	-7.77	-10.91	-13.78	-15.92	-13.03	-18.4
150	-0.48	-0.56	-1.99	-1.39	-2.07	-2.19	-3.69	-6.47	-8.83	-10.04	-14.89	-11.8	-18.4
165	-0.39	-0.33	-1.37	-0.34	-1.11	-1.34	-3.87	-7.37	-9.28	-8.52	-13.85	-11.85	-18.4
180	-0.37	-0.22	-0.92	-0.05	-1.66	-2.33	-4.91	-6.91	-10.23	-8.73	-15.55	-12.49	-18.4
195	-0.57	-0.13	-0.71	0.32	-2.08	-3.34	-6.46	-9.89	-11.91	-9.93	-18.23	-13.63	-18.4
210	-0.8	-0.18	-0.58	0.96	-1.49	-3.42	-8.66	-11.29	-9.62	-10.17	-15.73	-14.12	-18.4
225	-0.91	-0.35	-0.54	0.69	-2.49	-5.02	-11.64	-9.03	-10.8	-17.31	-13.18	-13.92	-18.4
240	-0.92	-0.64	-0.82	-0.21	-2.46	-3.15	-6.85	-7.42	-10.32	-13.94	-11.66	-14.8	-18.4
255	-0.79	-1.04	-1.86	-2.61	-4.45	-2.92	-5.2	-9.23	-11.48	-11.02	-14.25	-17.51	-18.4
270	-0.6	-1.62	-3.22	-5.27	-11.9	-11.21	-13.07	-13.84	-14.13	-15.26	-18.28	-16.93	-18.4
285	-0.47	-2.42	-3.97	-2.77	-4.66	-6.25	-10.25	-11.62	-11.78	-14.33	-13.03	-13.24	-18.4
300	-0.48	-3.16	-4.08	-1.28	-2.77	-4.16	-10.21	-9.74	-8.98	-10.64	-13.01	-11.76	-18.4
315	-0.56	-3.7	-3.41	-0.37	-2.65	-4.21	-6.14	-5.62	-10.07	-15.05	-14.92	-12.39	-18.4
330	-0.69	-3.98	-2.58	0.68	-1.63	-4.1	-6.51	-6.85	-9.91	-9.6	-11.91	-13.73	-18.4
345	-0.74	-3.98	-2.4	0.97	-0.59	-1.68	-3.32	-5.44	-9.66	-11.45	-11.12	-13.56	-18.4

Ant3													
Freq	2450												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-3.06	-6.21	-7.11	-6.55	-9.58	-9.69	-11.72	-16.76	-14.93	-11.11	-16.74	-11.8	-14.8
15	-2.94	-6.24	-7.51	-3.27	-3.59	-4.62	-8.59	-16.99	-13.68	-8.56	-17.3	-11.53	-14.8
30	-2.88	-4.92	-4.03	0.41	-0.75	-3.33	-10.04	-14.36	-11.52	-10.72	-15.26	-11.11	-14.8
45	-3.02	-3.07	-1.86	0.92	-1.84	-4.73	-9.99	-10.51	-16.08	-19.68	-14.04	-10.45	-14.8
60	-3.26	-1.44	-0.98	-0.05	-3.84	-5.02	-8.28	-12.29	-16.89	-12.63	-12.19	-9.88	-14.8
75	-3.46	-0.34	-0.74	-0.13	-3.43	-5.28	-8.3	-13.2	-16.02	-12.76	-13.52	-9.63	-14.8
90	-3.57	0.4	-1.09	-0.15	-3.1	-5.86	-9.49	-19.33	-18.69	-15.29	-18.17	-9.96	-14.8
105	-3.63	0.8	-1.26	-0.59	-2.38	-4.78	-8.91	-17.59	-14.79	-12.41	-20.61	-11.51	-14.8
120	-3.65	0.8	-0.57	-0.63	-2.23	-3.22	-6.98	-14.41	-16.94	-11.91	-17.38	-13.63	-14.8
135	-3.71	0.31	0.06	0.63	-1.44	-3.29	-6.81	-9.97	-15.45	-15.93	-16.5	-14.8	-14.8
150	-3.66	-0.69	-0.28	1.13	-0.06	-1.71	-6.66	-10.39	-12.78	-15.99	-16.93	-14.49	-14.8
165	-3.6	-2.2	-1.29	-0.11	-1.03	-1.18	-4.36	-9.68	-12.65	-12.53	-14.05	-12.83	-14.8

180	-3.59	-4.04	-1.92	-0.81	-3.98	-4.4	-6.82	-9.18	-11.97	-13.25	-13.59	-10.71	-14.8
195	-3.63	-5.38	-2.22	-0.61	-3.34	-4.82	-6.86	-10.14	-12.51	-12.2	-13.99	-9.44	-14.8
210	-3.69	-5.38	-2.17	-0.79	-2.37	-2.38	-2.97	-5	-9.62	-11.5	-12.71	-9.17	-14.8
225	-3.63	-4.44	-1.56	-0.8	-3.34	-3.12	-3.88	-3.87	-7.64	-9.52	-11.98	-9.6	-14.8
240	-3.4	-3.55	-1.2	-0.82	-3.89	-5.16	-7.19	-8.05	-8.33	-8.21	-11.82	-10.36	-14.8
255	-3.22	-3.07	-1.59	-1.16	-4.35	-4.03	-6	-10.19	-14.62	-9.55	-12.15	-11.21	-14.8
270	-3.07	-3.01	-2.59	-2.05	-5.7	-4.75	-5.9	-5.79	-13.16	-15.27	-13.72	-11.96	-14.8
285	-2.94	-3.28	-3.85	-3.19	-6.8	-8.46	-10.68	-8.32	-9.5	-12.94	-14.57	-12.33	-14.8
300	-2.91	-3.54	-4.73	-4.01	-6.24	-7.95	-11.55	-11.59	-9.16	-10.36	-15.88	-11.75	-14.8
315	-2.96	-3.85	-4.76	-4.62	-5.93	-5.28	-7.18	-10.61	-12.59	-9.77	-15.45	-10.85	-14.8
330	-3.02	-4.38	-4.31	-4.49	-6.83	-5.05	-5.95	-9.1	-17.71	-10.05	-13.82	-10.88	-14.8
345	-3.09	-5.29	-4.77	-4.41	-8.13	-7.96	-9.7	-14.75	-13.95	-11.61	-14.14	-11.41	-14.8

Ant4													
Freq	2450												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-1.52	-0.72	-2.05	-4.3	-8.96	-9.95	-9.09	-11.1	-19.31	-14.02	-20.31	-11.84	-18.1
15	-1.56	-0.27	-1.04	-2.7	-7.75	-9.52	-10.48	-13.93	-13.27	-13.57	-16.55	-10.16	-18.1
30	-1.54	-0.08	-0.71	-2.53	-6.42	-7.38	-8.88	-9.81	-9.39	-11.62	-13.99	-9.69	-18.1
45	-1.49	-0.18	-0.78	-2.71	-4.71	-4.01	-5.55	-6.91	-9.21	-10.76	-12.23	-10.02	-18.1
60	-1.38	-0.59	-1.04	-2.92	-3.87	-2.7	-4.03	-6.74	-10.32	-10.23	-11.64	-10.62	-18.1
75	-1.42	-1.16	-1.44	-3	-4.59	-4.41	-5.86	-8.46	-10.58	-10.52	-12.19	-11.35	-18.1
90	-1.56	-1.79	-2.27	-1.71	-2.91	-3.76	-5.28	-7.46	-11.55	-12.8	-12.77	-12.13	-18.1
105	-1.59	-2.25	-2.7	-0.04	-0.16	-0.17	-2.49	-5.73	-9.35	-8.93	-13.15	-12.92	-18.1
120	-1.61	-2.24	-1.73	0.79	-0.07	-0.28	-4.56	-7.2	-8.09	-8.9	-13.97	-11.91	-18.1
135	-1.61	-1.99	-0.27	0.86	-2.64	-4.57	-10.77	-11.75	-13.73	-14.64	-10.93	-9.62	-18.1
150	-1.49	-1.79	0.56	1.25	-3.67	-7.21	-11.38	-16.73	-17.6	-10.88	-9.72	-8.93	-18.1
165	-1.42	-1.83	0.64	1.38	-4.53	-8.57	-13.52	-17.61	-15.62	-10.51	-13.24	-9.47	-18.1
180	-1.32	-2.11	0.52	2.15	-2.33	-6.25	-10.6	-19.04	-13.95	-12.13	-17.69	-10.3	-18.1
195	-1.21	-2.59	0.36	3.42	1.1	-0.96	-4.55	-9.7	-16.27	-10.04	-10.82	-11.07	-18.1
210	-1.17	-3.13	-0.55	3.16	1.73	0.59	-2.32	-5.21	-9.52	-9.61	-9.47	-11.83	-18.1
225	-1.22	-3.56	-2.17	1.79	0.57	-0.88	-4.76	-6.98	-9.27	-13.54	-12.39	-13.36	-18.1
240	-1.26	-3.76	-3.17	0.61	-0.15	-1.31	-5.46	-8.49	-9.44	-13.5	-15.08	-15.54	-18.1
255	-1.32	-3.61	-2.67	-0.11	-1.59	-2.03	-5.46	-9.34	-9.53	-10.88	-16.41	-17.64	-18.1
270	-1.28	-3.3	-1.87	-0.17	-3.34	-4.1	-6	-8.82	-12.87	-11.79	-15.72	-18.1	-18.1
285	-1.18	-3.02	-1.8	0.02	-2.57	-3.76	-6.9	-7.2	-10.32	-11.39	-12.8	-15.47	-18.1
300	-1.11	-2.83	-2.58	-0.4	-1.92	-2.09	-5.31	-8.83	-9.42	-11.16	-11.95	-13.38	-18.1
315	-1.12	-2.49	-3.69	-1.59	-3.3	-2.65	-4.82	-7.93	-10.79	-11.98	-14.07	-12.9	-18.1
330	-1.16	-1.98	-4.18	-3.58	-5.76	-5.07	-6.87	-8.3	-11.64	-11.93	-19.24	-13.59	-18.1
345	-1.32	-1.33	-3.42	-5.33	-8.16	-8.06	-8.07	-9.96	-15.12	-13.12	-22.95	-13.57	-18.1

2450MHz Composite Gain

Freq	2450												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	4.76	3.4	3.16	4.64	2.07	0.83	-1.06	-3.63	-6.74	-5.52	-10.42	-5.82	-10.59
15	4.79	3.51	3.1	4.72	2.41	0.93	-1.94	-6.77	-6.4	-4.36	-8.69	-4.83	-10.59
30	4.82	3.77	3.55	5.03	3.29	2.02	-1.24	-4.02	-5.57	-5.31	-6.85	-4.47	-10.59
45	4.82	4.12	4.03	5.11	3.35	2.49	-0.07	-1.66	-5.08	-8.1	-6.99	-5.05	-10.59
60	4.77	4.44	4.43	5.42	3.6	3.19	0.39	-2.27	-5.3	-6.67	-8.04	-6.27	-10.59
75	4.73	4.69	4.56	5.6	3.51	2.85	0.28	-3.73	-7.02	-5.88	-7.85	-7.07	-10.59
90	4.66	4.9	4.17	5.43	3.15	1.98	-0.29	-3.64	-6.89	-6.22	-7.79	-6.93	-10.59
105	4.61	5.12	3.94	5.14	3.41	2.52	0.13	-3.24	-6.09	-5.71	-8.54	-7.07	-10.59
120	4.56	5.3	4.47	5.24	3.32	2.61	-0.08	-2.83	-5.01	-5.37	-9.04	-7.1	-10.59
135	4.53	5.36	5.23	5.99	3.58	2.28	-0.77	-3.17	-5.95	-6.86	-7.83	-6.2	-10.59
150	4.57	5.23	5.48	6.5	4.17	2.74	-0.27	-3.58	-6.33	-6.06	-7.39	-5.61	-10.59
165	4.62	4.91	5.15	6.07	3.54	2.46	-0.5	-3.59	-5.54	-4.95	-7.72	-5.52	-10.59
180	4.65	4.44	4.7	5.67	2.82	1.55	-1.08	-3.39	-5.06	-4.79	-9	-5.34	-10.59
195	4.65	4.01	4.35	5.87	3.83	2.66	-0.04	-3.36	-6.31	-4.21	-7.49	-5.27	-10.59
210	4.63	3.74	4.17	6.03	4.44	3.66	1.21	-1.1	-3.87	-4.37	-5.8	-5.33	-10.59
225	4.62	3.59	4.17	5.97	3.8	2.87	0.07	-0.65	-3.88	-6.35	-5.9	-5.72	-10.59
240	4.66	3.43	4.19	5.87	4.07	3.2	0.42	-1.55	-3.72	-5.25	-6.46	-6.63	-10.59
255	4.69	3.27	3.94	5.24	3.49	3.52	0.95	-2.68	-4.54	-4.27	-8.01	-7.93	-10.59
270	4.75	3.15	3.38	4.26	1.23	1.17	-0.55	-1.52	-5.57	-6.83	-9.26	-8.32	-10.59
285	4.84	3.08	2.89	4.18	1.92	1.12	-1.67	-2.24	-4.47	-5.88	-7.2	-7.07	-10.59
300	4.9	3.11	2.67	4.07	2.54	1.89	-2.13	-3.94	-3.17	-4.32	-7.15	-5.77	-10.59
315	4.89	3.24	2.74	4.15	2.9	2.62	0.03	-1.69	-4.14	-5.67	-7.85	-5.16	-10.59
330	4.86	3.34	3.1	4.71	3.43	3.01	0.62	-1.34	-5.44	-4.21	-7.06	-5.46	-10.59
345	4.8	3.39	3.37	5.06	3.34	2.55	0.29	-3.52	-7.68	-5.53	-7.85	-5.9	-10.59

Ant5													
Freq	5150												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-7.81	-2.86	-0.86	-1	-5.81	-8.36	-13.37	-18.06	-23.07	-18.12	-15.42	-18.08	-21.54
15	-7.84	-2.47	-0.66	-1.19	-8.24	-18.24	-19.09	-17.24	-19.87	-13.98	-15.07	-17.59	-21.54
30	-7.8	-2.36	-0.47	-0.71	-8.23	-18.36	-20.68	-14.71	-17.05	-13.99	-13.37	-18.49	-21.54
45	-7.77	-2.7	-0.68	0.69	-6.69	-19.26	-13.05	-13.5	-16.97	-16.25	-11.94	-19.1	-21.54
60	-7.86	-3.03	-0.36	-0.01	-7.58	-14.75	-15.73	-14.44	-16.45	-15.36	-11.57	-21.54	-21.54
75	-8.11	-3.47	-0.95	0.03	-5.93	-8.23	-9.93	-10.01	-15.34	-14.8	-10.62	-18	-21.54
90	-8.34	-4.13	-1.41	-0.7	-6.54	-11.81	-12.32	-14.39	-15.93	-11.68	-13.05	-15.73	-21.54
105	-8.28	-4.55	-1.17	-0.56	-5.41	-9.69	-15.58	-16.3	-12.69	-10.73	-14.84	-14.6	-21.54
120	-7.83	-4.77	0.12	0.52	-7.59	-12.93	-15.29	-11.75	-13.5	-13.21	-13.56	-11.21	-21.54
135	-7.18	-5.25	0.21	0.14	-5.03	-6.47	-10.67	-13.87	-15.45	-12.51	-10.67	-9.15	-21.54
150	-6.7	-6.34	-1.19	-1.87	-7.84	-13.88	-14.65	-14.67	-14.27	-11.43	-10.1	-8.91	-21.54
165	-6.47	-8.87	-1.43	0.06	-5.47	-11.17	-13.24	-13.64	-14.2	-11.62	-11.94	-9.94	-21.54
180	-6.39	-12.21	-1.51	-0.67	-4.96	-7.22	-9.1	-10.58	-12.3	-11.81	-12.05	-10.38	-21.54

195	-6.38	-11.84	-1.58	0.61	-6.8	-12.47	-10.96	-9.81	-9.58	-9.1	-10.01	-10.05	-21.54
210	-6.52	-8.29	-1.39	-0.41	-5.84	-11.65	-22.33	-13.35	-11.71	-8.35	-8.78	-10.18	-21.54
225	-6.48	-4.89	-0.61	-1.36	-7.4	-8.16	-15.27	-16.32	-13.59	-11	-9.41	-10.8	-21.54
240	-6.36	-2.99	-0.09	0.05	-7.68	-8.54	-11.79	-19.04	-16.63	-10.7	-13.02	-11.99	-21.54
255	-6.1	-2.88	-0.26	1.28	-5.93	-10.39	-12.83	-16.9	-19.57	-13.51	-15.06	-12.48	-21.54
270	-6.04	-3.81	-0.72	-0.95	-3.56	-10.87	-15.2	-15.97	-17.81	-15.74	-12.69	-13.31	-21.54
285	-6.09	-4.46	-2.59	-1.46	-5.5	-13.24	-19.14	-17.82	-19.24	-15.23	-13.73	-16.02	-21.54
300	-6.49	-4.31	-3.24	-2.24	-5.75	-15.46	-14.18	-20.27	-19.47	-14.94	-15.43	-17.38	-21.54
315	-6.98	-3.79	-3.64	-3.28	-4.6	-13.03	-21.19	-17.47	-26.29	-18.38	-20.94	-17.24	-21.54
330	-7.43	-3.19	-2.54	-1.7	-3.63	-8.48	-13.13	-20.51	-20.51	-18.91	-21.52	-19.32	-21.54
345	-7.59	-2.94	-1.28	1.5	-4.56	-7.46	-15.69	-12.15	-22.91	-13.98	-15.52	-19.57	-21.54

Ant6													
Freq	5150												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-5.6	-1.35	-2.8	-3.79	-10.1	-12.08	-16.18	-20.17	-18.98	-17.48	-25.2	-26.07	-27.18
15	-5.59	-1.62	-3.52	-1.72	-11.98	-17.79	-13.89	-17.6	-22.32	-20.87	-22.24	-23.66	-27.18
30	-5.68	-1.51	-2.8	0.21	-3.68	-8.73	-14.24	-23.37	-28.6	-25.56	-22.03	-24.22	-27.18
45	-5.65	-1.35	-0.63	-0.6	-7.52	-9.36	-13.3	-14.64	-22.32	-22.8	-23.76	-26.4	-27.18
60	-5.62	-1.4	0.29	0.49	-4.27	-9.52	-13.7	-15.89	-21.97	-16.67	-18.22	-19.55	-27.18
75	-5.49	-1.56	0.64	0.24	-4.65	-10.33	-15.14	-21.78	-21.47	-20.16	-17.59	-16.65	-27.18
90	-5.38	-2.06	1.6	0.98	-7.13	-11.54	-17.77	-19.44	-21.6	-22.85	-23.33	-18.05	-27.18
105	-5.08	-2.95	1.26	0.04	-8.4	-9.32	-11.69	-15.04	-17.03	-20.59	-21.12	-18.48	-27.18
120	-4.87	-3.74	0.23	0.87	-6.89	-10.82	-14.27	-18.54	-22.7	-18.74	-18.82	-17.49	-27.18
135	-4.73	-4.51	-0.13	-0.98	-8.78	-8.34	-11.19	-15.17	-20	-18.66	-16.73	-18.38	-27.18
150	-4.48	-5.83	1.51	1.54	-5.49	-8.62	-12.65	-16.79	-17.82	-16.1	-18.92	-16.53	-27.18
165	-4.4	-7.24	1.72	1.31	-3.77	-6.89	-13.08	-15.06	-17.14	-17.36	-17.88	-14.56	-27.18
180	-4.42	-7.67	1.4	2.02	-2.27	-5.38	-8.61	-11.3	-14.8	-14.35	-16.21	-14.41	-27.18
195	-4.44	-6.51	0.77	0.72	-2.73	-5.39	-11.42	-15.91	-16.2	-13.86	-15.33	-13.84	-27.18
210	-4.43	-4.71	0.41	-1.38	-6.76	-11.34	-14.81	-14.61	-15.73	-13.79	-13.79	-13.1	-27.18
225	-4.45	-3.64	0.25	-0.43	-8.01	-10.61	-13.48	-15.3	-17.2	-14.98	-13.22	-13.87	-27.18
240	-4.35	-3.37	0.67	0.55	-10.62	-14.87	-12.6	-14.92	-17.91	-19.51	-14.64	-14.78	-27.18
255	-4.41	-3.48	1.26	1.13	-9.02	-11.41	-10.99	-11.88	-12.14	-14.2	-22.16	-15.72	-27.18
270	-4.59	-3.32	1.57	1.58	-5.51	-11.55	-19.45	-18.36	-15.88	-12.76	-21.52	-17.54	-27.18
285	-4.88	-2.51	1.22	0.31	-8.48	-11.23	-12.02	-13.42	-15.36	-16.74	-19.63	-19.11	-27.18
300	-5.16	-1.43	0.56	-0.86	-7.6	-8.94	-10.36	-14.47	-17.4	-20.04	-19.1	-20.57	-27.18
315	-5.32	-0.81	0.15	-0.41	-10.5	-16.17	-12.11	-13.62	-19.27	-20.99	-20.29	-21.55	-27.18
330	-5.46	-0.83	-1.14	-0.69	-11.08	-15.3	-12.48	-14.31	-16.76	-27.19	-22.34	-23.36	-27.18
345	-5.5	-1.1	-1.74	-2.33	-13.89	-19.48	-15.07	-16.07	-19.58	-21.35	-22.78	-27.18	-27.18

Ant7													
Freq	5150												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180

0	-11.71	-3.03	-0.05	-1.16	-6.54	-8.42	-11.24	-14.96	-19.1	-23.41	-21.39	-20.5	-29.21
15	-11	-3.36	0.86	-0.81	-8.82	-11.76	-12.29	-17.47	-20.12	-15.54	-16.48	-16.6	-29.21
30	-10.74	-2.7	0.66	-0.39	-6.84	-11.77	-16.46	-20.93	-19.82	-13.62	-15.25	-16.66	-29.21
45	-10.6	-2.04	0.16	0.16	-9.61	-14.07	-20.5	-13.32	-24.31	-16.44	-16.98	-18.92	-29.21
60	-10.78	-1.79	-0.76	0.39	-7.35	-16.39	-20.86	-27.38	-15.21	-18.85	-24.75	-20.4	-29.21
75	-11.48	-1.73	-0.66	-0.92	-5.23	-9.78	-19.68	-22.73	-16.24	-17.62	-16.13	-19.3	-29.21
90	-12.34	-1.99	0.91	0.52	-7.75	-12.39	-18.92	-16.45	-18.66	-21.59	-24.43	-16.2	-29.21
105	-12.1	-2.46	1.16	1.35	-7.56	-14.75	-16.97	-16.12	-19.88	-22.99	-18.19	-16.5	-29.21
120	-11.44	-3.46	-0.86	-2.33	-8.28	-11.04	-11.85	-10.96	-16.2	-18.21	-18	-16.46	-29.21
135	-11.02	-5.59	-4.91	-0.37	-7.83	-10.13	-14.64	-15.3	-16.77	-24.7	-22.39	-14.76	-29.21
150	-10.48	-7.5	-2.86	0.58	-7.32	-9.63	-11.18	-12.41	-16.91	-19.59	-15.55	-15.06	-29.21
165	-10.45	-8.18	-2.03	-2.26	-3.38	-5.61	-8.22	-10.08	-16.46	-15.7	-15.61	-15.23	-29.21
180	-10.82	-7.88	-1.18	0.82	-7.31	-7.6	-9.47	-13.29	-18.93	-17.67	-15.06	-15.27	-29.21
195	-10.93	-6.87	-0.94	0.52	-4.89	-6.28	-7.31	-9.29	-15.13	-17.82	-17.14	-16.13	-29.21
210	-10.77	-5.52	-2.81	-2.41	-4.77	-10.12	-9.09	-10.91	-14.89	-19.52	-16.88	-14.19	-29.21
225	-10.76	-4.53	-2.32	-3.47	-8.63	-12.69	-14.27	-17.09	-23.43	-23.38	-21.59	-13.69	-29.21
240	-10.54	-5.05	-2.4	0.27	-4.1	-12.52	-17.89	-22.48	-25.18	-18.31	-18.67	-15.17	-29.21
255	-10.39	-6.67	-1.71	-0.18	-4.86	-8.67	-13.49	-16.17	-21.48	-19.98	-20.17	-14.76	-29.21
270	-10.37	-7.99	-0.35	1.79	-3.98	-6.92	-12.74	-16.86	-22.31	-25.95	-18.99	-15.23	-29.21
285	-10.06	-7.77	-0.74	-0.91	-7.32	-15.83	-27.35	-26.26	-26.08	-23.72	-18.89	-19.27	-29.21
300	-10.16	-5.21	0.4	-0.27	-6.18	-15.78	-17.86	-18.67	-18.24	-25.15	-19.64	-22.26	-29.21
315	-10.37	-2.33	0.64	-3.19	-8.65	-13.43	-16.72	-22.58	-19.69	-21.01	-19.69	-20.61	-29.21
330	-10.85	-1.26	-1.81	-2.61	-10.52	-11.89	-18.26	-20.56	-19.36	-22.01	-29.3	-22.25	-29.21
345	-11.4	-1.69	-1.06	-0.34	-8.42	-11.35	-16.28	-17.34	-17.4	-30.26	-22.23	-29.21	-29.21

Ant8													
Freq	5150												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-18.69	-3.48	-1.52	0.04	-5.18	-9.87	-16.72	-21.22	-21.65	-17.47	-17.88	-17.52	-24.03
15	-18.6	-4.35	-0.96	-0.18	-8.69	-16.9	-18.32	-14.2	-22.57	-16.41	-18.05	-18.38	-24.03
30	-18.62	-6.12	0.03	-0.23	-6.26	-11.23	-20.47	-14.84	-22.35	-20.27	-18.54	-18.04	-24.03
45	-19.62	-7.76	0.47	-0.06	-5.24	-9.53	-14.03	-17.94	-19.51	-18.98	-20.21	-18.64	-24.03
60	-20.46	-6.74	0.1	0.57	-5.51	-12.55	-15.45	-16.05	-22.52	-15.76	-15.79	-20.81	-24.03
75	-20.96	-4.84	-1.27	0.24	-5.42	-13.66	-26.56	-24.13	-19.74	-17.86	-20.86	-18.52	-24.03
90	-21.81	-3.69	-1.9	-0.04	-4.54	-10.55	-20.85	-19.31	-28.16	-25.91	-18.08	-16.59	-24.03
105	-20.73	-3.56	-1.49	0.07	-4.62	-9	-12.29	-16.9	-24.4	-23.74	-28.64	-17.26	-24.03
120	-19.45	-4.13	-0.27	0.86	-5.6	-10.44	-16.15	-21.15	-27.4	-24.76	-20.75	-20.05	-24.03
135	-18.83	-4.69	0.91	-1.2	-6.87	-14.87	-23.76	-24.01	-22.21	-21.93	-23.01	-20.32	-24.03
150	-17.55	-4.97	0.13	-0.19	-4.57	-10.66	-13.29	-18.41	-22.03	-21.12	-27.73	-19.66	-24.03
165	-17.63	-5.42	-1.3	1.42	-2.08	-9.16	-18.78	-20.1	-21.05	-21.85	-22.17	-21.25	-24.03
180	-18.28	-5.85	-2.77	2.23	-2	-11.71	-23.08	-17.92	-25.52	-20.48	-19.81	-21.77	-24.03
195	-18.36	-6.41	-2.96	0.5	-5.77	-15.97	-13.08	-15.81	-17.65	-20.37	-19.95	-20.39	-24.03
210	-18.4	-6.99	-1.29	-4.33	-7.32	-13.11	-12.77	-13.06	-20.15	-16.88	-21.2	-20.88	-24.03

225	-17.81	-6.75	-0.01	-1.02	-14.5	-15.98	-22.44	-24.9	-24.16	-21.96	-19.92	-22.96	-24.03
240	-16.97	-5.96	0.09	0.13	-8.7	-15.05	-15.75	-15.14	-18.08	-26.42	-21.3	-22.46	-24.03
255	-16.81	-5.13	-0.03	-0.66	-8.47	-15.4	-16.81	-22.55	-22.79	-21.14	-19.73	-20.7	-24.03
270	-16.62	-3.79	0.05	-0.39	-6.19	-12.9	-23.98	-24.53	-23.89	-22.24	-18.79	-19.11	-24.03
285	-17.01	-2.64	0.55	0.09	-7.81	-13.74	-15.57	-17.87	-28.83	-25.84	-19.99	-17.41	-24.03
300	-17.74	-2.19	0.62	-0.6	-10.83	-20.55	-20.62	-16.36	-14.81	-24.34	-20.03	-19.49	-24.03
315	-18.42	-2.3	0.72	-1.15	-8.55	-14.48	-16.27	-15.23	-23.04	-16.09	-16.23	-24.03	-24.03
330	-19.38	-2.58	0.62	-0.13	-6.1	-11.13	-18.85	-15.7	-18.86	-20.74	-19.33	-23.06	-24.03
345	-19.34	-2.96	-0.65	-0.4	-6.58	-11.6	-23.22	-17.9	-24.14	-16.84	-16.77	-18.9	-24.03

5150MHz Composite Gain													
Freq	5150												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-3.69	3.38	4.78	4.66	-0.69	-3.53	-8.07	-12.24	-14.51	-12.78	-13.2	-13.93	-18.97
15	-3.54	3.13	5.09	5.07	-3.29	-9.72	-9.4	-10.48	-15.11	-10.33	-11.55	-12.65	-18.97
30	-3.51	3.02	5.47	5.75	-0.07	-5.85	-11.5	-11.65	-14.99	-11.09	-10.68	-12.9	-18.97
45	-3.54	2.89	5.87	6.09	-1.1	-6.18	-8.72	-8.64	-14.31	-12.22	-11.1	-14.22	-18.97
60	-3.66	3.02	5.85	6.39	-0.04	-6.89	-10.04	-11.2	-12.42	-10.53	-10.35	-14.52	-18.97
75	-3.87	3.23	5.5	5.94	0.73	-4.26	-9.83	-11.49	-11.82	-11.37	-9.45	-12.04	-18.97
90	-4.12	3.11	5.95	6.24	-0.38	-5.52	-10.82	-11.11	-14	-12.64	-12.47	-10.58	-18.97
105	-3.85	2.68	6.06	6.28	-0.34	-4.38	-7.83	-10.04	-11.46	-11.69	-13.36	-10.57	-18.97
120	-3.4	2.01	5.84	6.1	-1.01	-5.23	-8.21	-8.54	-12.35	-11.78	-11.33	-9.65	-18.97
135	-3.01	1.03	5.32	5.44	-0.99	-3.41	-7.75	-10.28	-12.19	-12.18	-10.67	-8.53	-18.97
150	-2.55	-0.09	5.57	6.13	-0.18	-4.46	-6.83	-9.25	-11.31	-10.2	-9.98	-8.08	-18.97
165	-2.44	-1.3	5.39	6.28	2.43	-1.93	-6.53	-7.99	-10.85	-9.85	-10.11	-8.34	-18.97
180	-2.55	-2.09	5.15	7.2	2.15	-1.66	-4.97	-6.82	-10.59	-9.45	-9.32	-8.55	-18.97
195	-2.58	-1.61	4.95	6.61	1.11	-2.97	-4.4	-6.12	-8.03	-8.2	-8.79	-8.29	-18.97
210	-2.6	-0.25	4.83	4.01	-0.09	-5.47	-7.54	-6.85	-9.09	-7.58	-7.97	-7.78	-18.97
225	-2.54	1.14	5.41	4.53	-3.2	-5.38	-9.72	-11.68	-12.45	-10.34	-8.62	-8.3	-18.97
240	-2.35	1.77	5.67	6.28	-1.41	-6.3	-8.15	-11.35	-12.87	-10.95	-10.29	-9.32	-18.97
255	-2.24	1.61	5.9	6.46	-0.87	-5.11	-7.26	-10.06	-11.88	-10.54	-12.84	-9.41	-18.97
270	-2.27	1.49	6.21	6.61	1.28	-4.23	-10.83	-12.34	-13.35	-11.68	-11.32	-9.99	-18.97
285	-2.37	1.92	5.75	5.56	-1.18	-7.33	-10.89	-11.72	-14.76	-13.25	-11.63	-11.82	-18.97
300	-2.69	2.87	5.75	5.06	-1.35	-8.15	-8.87	-11.14	-11.28	-14.09	-12.32	-13.72	-18.97
315	-3.01	3.78	5.67	4.11	-1.77	-8.17	-9.96	-10.6	-15.61	-12.84	-13.06	-14.49	-18.97
330	-3.39	4.11	4.89	4.79	-1.25	-5.34	-9.18	-11.29	-12.74	-15.69	-16.4	-15.82	-18.97
345	-3.57	3.89	4.85	5.74	-1.71	-5.48	-11	-9.53	-14.57	-12.76	-12.71	-16.56	-18.97

Ant1													
Freq	6875												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-11.37	-8.16	-6.61	-1.85	-3.83	-2.8	-6.89	-8.4	-10.6	-15.58	-18.24	-15.75	-25.49
15	-10.91	-4.99	-4.64	-3.28	-3.77	-5.11	-6.97	-8.95	-15.17	-16.78	-13.97	-17.12	-25.49

30	-10.66	-3.36	-5.46	-4.62	-2.99	-8.66	-12.93	-15.81	-15.6	-17.97	-19.72	-21.04	-25.49
45	-10.93	-4.05	-4.31	-1.42	-4.01	-4.54	-7.45	-9.69	-11.43	-13.68	-20.42	-22.52	-25.49
60	-11.49	-6.09	-0.35	0.09	-0.83	-0.75	-5	-6.82	-10.11	-12.54	-16.57	-19.56	-25.49
75	-11.68	-5.23	-1.16	-0.78	-0.65	-2.35	-5.56	-6.94	-10.58	-10.92	-14.43	-18.72	-25.49
90	-11.37	-6.49	-2.4	-1.25	-0.32	-1	-6.1	-8.05	-11.5	-11.69	-15.61	-24.56	-25.49
105	-11.18	-10.76	-3.85	-1.45	-1.95	1.26	-0.86	-5.01	-10.49	-14.96	-21.64	-23.69	-25.49
120	-10.88	-12.39	-10.16	-3.29	-3.15	-2.27	-3.17	-3.85	-7.41	-14.1	-18.19	-20.83	-25.49
135	-10.96	-11.29	-4.44	-7.67	-4.74	-2.97	-6.47	-9.55	-9.32	-10.08	-16.09	-22.49	-25.49
150	-11.39	-8.93	-3.27	-7.77	-5.64	-3.18	-6.7	-10.24	-14.89	-13.06	-22.63	-25.49	-25.49
165	-11.82	-7.88	-3.04	-1.51	-0.7	4.61	1.89	-3.91	-7.91	-13.43	-14.78	-19.29	-25.49
180	-12.01	-8.55	-3.03	-6.48	-0.05	4.08	-1.19	-6.67	-7.78	-12.59	-15.22	-21.59	-25.49
195	-12.1	-9.33	-2.46	-1.17	-2.72	-0.44	-3.94	-7.35	-17.62	-15.71	-15.8	-14.01	-25.49
210	-12.02	-10.17	-7.58	-5.3	-5.01	-1.49	-5.33	-6.65	-9.27	-18.35	-14.61	-13.62	-25.49
225	-11.84	-10.44	-9.75	-2.03	-1.65	1.33	0.29	-7.68	-14.57	-16.41	-14.54	-18.36	-25.49
240	-11.91	-9.76	-5.76	-0.26	-4.31	-0.3	-8	-6.47	-12.88	-18.45	-17.86	-11.15	-25.49
255	-12.05	-10.48	-6.03	0.11	-3.17	2.93	-0.81	-2.31	-10.26	-21.22	-20.06	-11.76	-25.49
270	-12.01	-10.27	-4.66	-2.73	-1.45	4.47	0.83	-3.88	-8.77	-18.53	-17.34	-12.5	-25.49
285	-11.77	-9.5	-2.55	-3.3	-2.11	1.31	-1.69	-5.27	-9.04	-16.82	-14.05	-10.88	-25.49
300	-11.73	-9.79	-5.17	-2.45	-1.62	-0.63	-3.09	-7.27	-9.02	-11.9	-14.71	-15.61	-25.49
315	-11.81	-9.99	-4.97	-7.28	-4.65	-0.8	-2.61	-3.73	-11.02	-13.38	-13.9	-14.68	-25.49
330	-12.03	-13.19	-8.4	-2.45	-4.85	-4.96	-5.44	-7.92	-8.06	-8.08	-10.79	-13.93	-25.49
345	-11.9	-12.58	-9.67	-3.6	-2.64	-3.77	-4.8	-6.8	-8.18	-11.88	-11.65	-14.42	-25.49

Ant2													
Freq	6875												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-7.09	-8.37	-7.55	-2.93	-2.8	-4.33	-7.62	-8.66	-11.6	-13.96	-14.92	-16.17	-32.43
15	-6.79	-11.01	-9.1	-3.91	-4.09	-3.23	-7.23	-8.46	-9.91	-14.17	-15.53	-13.45	-32.43
30	-7.16	-11.04	-7.36	-5.62	-6.4	-4.04	-6.54	-8.12	-7.65	-8.51	-10.39	-13.29	-32.43
45	-7.54	-7.1	-4.15	-3.71	-4.88	-3.09	-4.1	-7.11	-11.05	-13.41	-12.8	-15.3	-32.43
60	-7.72	-6.4	-5.49	-6.16	-3.22	-1.18	-3.93	-7.12	-9.93	-11.99	-19.71	-15.28	-32.43
75	-7.73	-10.19	-5.09	-2.77	-2.16	0.23	-3.06	-7.48	-11.05	-16.85	-18.32	-10.31	-32.43
90	-7.17	-12.07	-5.96	-2.92	-0.54	3.7	-0.58	-6.69	-13.34	-15.1	-15.64	-14.04	-32.43
105	-6.65	-8.03	-5.43	-1.77	-4.68	3.55	0.06	-3.8	-10.64	-16.75	-20.78	-13.2	-32.43
120	-6.37	-7.9	-8.69	-5.46	-5.31	-1.13	-4.89	-4.5	-13.48	-19.59	-18.84	-9.76	-32.43
135	-6.26	-10.28	-14.07	-4.4	-6.84	0.48	-0.17	-8.23	-18.21	-16.82	-17.45	-15.45	-32.43
150	-6.28	-10.88	-9.15	-2.06	-4.58	-2.19	-1.99	-7.79	-9.58	-14.67	-21.27	-16.59	-32.43
165	-6.43	-11.47	-5.45	-3.78	-2.63	-1.52	-2.71	-7.32	-16.69	-17.68	-13.63	-13.47	-32.43
180	-6.57	-11.42	-2.03	-7.68	-1.21	0.96	-1.93	-8.29	-11.49	-12.19	-17.67	-19.29	-32.43
195	-6.92	-11.07	-3.91	-5.19	0.81	5.35	1.99	-3.57	-18.89	-15.88	-18.9	-19.88	-32.43
210	-6.98	-13.04	-4.23	-5.31	-1.81	-2.33	-8.21	-9.7	-14.56	-13.93	-16.67	-16.6	-32.43
225	-6.72	-13.85	-11.98	-6.37	-4.5	-1.37	-4.94	-9.8	-8.44	-13.81	-17.72	-32.43	-32.43
240	-6.4	-9.37	-6.18	-3.18	-2.22	-0.24	-2.71	-5.3	-9.9	-15.1	-17.07	-19.61	-32.43

255	-6.18	-6.17	-8.36	-3.06	-0.01	-0.86	-4.42	-8.04	-11.91	-13.98	-11.13	-16.12	-32.43
270	-6.5	-6.21	-3.62	-1.31	0.78	0.07	-3.73	-7.49	-11.15	-13.89	-18.68	-14.13	-32.43
285	-7.07	-8.9	-1.37	0.61	0.61	-2	-4.72	-6.86	-8.38	-12.63	-15.34	-13.31	-32.43
300	-7.9	-5.91	-1.14	1.48	0.27	-1.01	-2.55	-4.44	-6.78	-11.72	-14.57	-22.53	-32.43
315	-8.16	-4.56	-5.4	-2.81	-1.64	-0.75	-2.76	-4.92	-9.62	-13.84	-20.14	-20.13	-32.43
330	-7.88	-5.57	-4.4	-3.37	-7.53	-11.01	-11.02	-12.95	-13.1	-15.8	-19.63	-18.38	-32.43
345	-7.4	-6.6	-5.67	-4.82	-4.14	-5.03	-7.77	-9.96	-16.61	-15.25	-16.11	-17.39	-32.43

Ant3													
Freq	6875												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-16.43	-6.97	-6.92	-5.9	-0.68	4.06	-2.84	-6.53	-7.64	-8.19	-19.44	-9.74	-24.97
15	-15.05	-9.3	-7.12	-6.08	-2.09	3.71	1.24	-3.57	-9.23	-10.13	-16.84	-11.38	-24.97
30	-14.64	-11.41	-1.27	-4.24	0.6	-0.81	-4.76	-14.51	-11.42	-11.81	-15.12	-21.69	-24.97
45	-14.98	-5.62	-10.05	-6.51	0.23	1.7	-0.76	-6.37	-10.91	-7.52	-11.16	-24.97	-24.97
60	-15.8	-9	-9.05	-8.58	1.73	2.4	-0.58	-5.93	-8.28	-7.44	-10.55	-17.83	-24.97
75	-16.52	-12.11	-6.14	-2.01	-0.08	0.48	-3.35	-7.26	-6.93	-6.99	-9	-14.31	-24.97
90	-17.28	-3.1	-2.07	-0.63	-1.6	0.68	-3.41	-4.2	-6.42	-9.49	-11.6	-13.13	-24.97
105	-15.73	-2.7	-2.5	1.17	-1.27	-0.42	-3.39	-5.38	-7.17	-11.68	-12.91	-11.68	-24.97
120	-14.25	-5.28	-1.31	2.38	-1.17	-2.9	-2.17	-4.39	-9.37	-11.65	-14.95	-10.88	-24.97
135	-14.47	-6.29	0.44	1.95	-2.86	-2	-4.31	-5.94	-10.16	-13.08	-11.55	-8.26	-24.97
150	-15.9	-5.82	-3.07	3.41	-1.03	-0.68	-3.22	-5.24	-9.68	-14.99	-9.23	-6.24	-24.97
165	-18.55	-4.47	-2.32	2.9	-1.2	0.37	-3.22	-4.55	-7.46	-6.37	-8.74	-5.39	-24.97
180	-22.45	-3.21	0.24	1.54	-0.82	1.7	0.06	-2.34	-5.76	-5.03	-6.95	-5.26	-24.97
195	-20.57	-2.63	-1.75	-1.65	-1.12	-0.27	-3.35	-6.31	-8.11	-9.1	-9.13	-6.68	-24.97
210	-17.47	-3.2	-4.24	-0.97	-3.09	-1.11	-3.33	-4.07	-9.46	-9.78	-11.69	-11.16	-24.97
225	-16.53	-5.66	-4.28	-0.16	-1.14	2.22	-1.42	-3.78	-9.36	-11.89	-12.22	-11.72	-24.97
240	-17.41	-6.09	-2.74	-3.19	1.74	1.81	-2.08	-4.88	-15.02	-8.67	-13.25	-8.91	-24.97
255	-18.26	-6.3	-5.41	-0.85	0.26	0.47	-1.67	-3.23	-10.44	-14.19	-14.54	-15.59	-24.97
270	-20.11	-12.95	-4.59	-0.42	-2.44	-3.81	-6.8	-6.35	-9.38	-13.84	-19.16	-18.16	-24.97
285	-18.74	-9.88	-7.48	-0.53	-3.91	-2.45	-8.66	-9.41	-11.43	-15.04	-12.09	-14.65	-24.97
300	-18.32	-7.81	-10.02	-3.48	-2.63	2.83	-1.78	-8.11	-17.48	-15.5	-15.84	-14.96	-24.97
315	-17.38	-10.4	-7.3	-4.45	-6.62	1.37	-0.77	-3.68	-11.29	-16.75	-21.47	-17.27	-24.97
330	-17.27	-10.53	-5.39	-3.02	-6.63	2.17	-1.2	-5.99	-9.37	-13.65	-12.73	-14.58	-24.97
345	-16.33	-7.97	-6.84	-7.62	-3.78	-4.64	-4.91	-10.16	-19.48	-13.12	-12.32	-11.07	-24.97

Ant4													
Freq	6875												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-2.99	-1.19	-2.16	-6.48	-1.56	1.35	-2.96	-5.71	-10.27	-20.04	-9.64	-10.71	-16.37
15	-3.13	-2.41	-0.64	-0.83	0.46	-0.98	-5.43	-10.29	-13.58	-11.27	-11.99	-13.95	-16.37
30	-3.24	-6.07	-6.21	-6.35	-6.21	-1.64	-4.57	-8.75	-12.93	-14.76	-14.94	-13.61	-16.37
45	-3.35	-10.94	-8.14	-4.39	-6.16	-0.87	-2.66	-7.58	-17.68	-15.03	-19.03	-12.25	-16.37

60	-3.9	-10.75	-4.08	-4.36	-3.83	-0.58	-2.96	-5.25	-8.53	-12.19	-18.03	-9.84	-16.37
75	-4	-11.88	-3.42	1.21	-0.84	2.41	-0.91	-4.82	-9.22	-9.34	-15.53	-12.62	-16.37
90	-3.93	-12.59	-1.58	3.33	2.63	3.37	-1.95	-7.65	-8.27	-9.09	-12.42	-10.89	-16.37
105	-3.63	-10	-2.58	2.99	2.83	3.68	-0.51	-3.9	-10.44	-11.18	-13.13	-11.15	-16.37
120	-3.18	-7.44	-9.12	-0.91	0.13	1.27	-2.77	-5.31	-9.19	-10.39	-12.35	-14.39	-16.37
135	-2.96	-7.85	-5.25	-1.87	-1.22	0.62	-2.58	-5.42	-10.07	-12.5	-11.05	-11.58	-16.37
150	-2.91	-10.01	-7.27	-1.83	-1.85	-1.22	-3.29	-6.59	-9.69	-9.48	-12.59	-12.88	-16.37
165	-2.66	-10.87	-16.94	-6.18	-6.96	-5.15	-3.74	-6.38	-8.49	-8.84	-13.73	-16.37	-16.37
180	-2.45	-11.35	-12.96	-3.92	-9.51	-7.36	-6.34	-7.08	-12.1	-13.36	-15.56	-15.22	-16.37
195	-2.16	-8.52	-8.85	-6.16	-5.73	-5.67	-5.72	-6.71	-10.77	-11.63	-16.83	-13.84	-16.37
210	-1.91	-5.85	-6.83	-4.5	-1.66	-0.93	-2.99	-5.84	-8.55	-10.91	-14.51	-10.83	-16.37
225	-1.89	-5.74	-4.85	-2.46	-0.8	0.92	-0.82	-3.35	-6.25	-6.53	-11.51	-9.3	-16.37
240	-1.87	-7.03	-2.39	1.19	0.34	0.05	-3.14	-7.59	-11.89	-11.6	-10.63	-7.95	-16.37
255	-1.75	-8.01	-1.09	1.74	-2.65	-1.83	-4.58	-5.59	-11.19	-12.24	-14.33	-7.74	-16.37
270	-1.76	-9.78	-1.96	0.2	-3.01	-0.96	-4.47	-5.85	-10.09	-13.41	-14.94	-8.5	-16.37
285	-1.8	-12.34	-1.57	-0.98	-2.27	-0.28	-3.5	-7.79	-8.26	-11.27	-17.33	-9.63	-16.37
300	-1.95	-9.76	-2.44	-1.53	0.34	-0.18	-5.78	-11.06	-9.7	-15.93	-15.63	-11.57	-16.37
315	-2.2	-6.13	-7.24	-0.94	-2.18	0.33	-3.65	-9.06	-10.72	-16.54	-14.84	-10.82	-16.37
330	-2.63	-3.37	-10.52	-10.17	-2.96	-0.79	-7.13	-16.67	-15.91	-11.66	-17.58	-11.81	-16.37
345	-2.81	-1.78	-4.18	-7.56	-7.14	-1.09	-2.82	-8.05	-13.74	-14.42	-14.35	-12.62	-16.37

6875MHz Composite Gain													
Freq	6875												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-2.09	0.39	0.49	1.95	3.88	6.23	1.22	-1.22	-3.88	-7.37	-8.66	-6.6	-16.91
15	-1.85	-0.24	1.24	2.7	3.84	5.27	2.18	-1.4	-5.61	-6.7	-8.37	-7.72	-16.91
30	-1.91	-1.28	1.27	0.85	2.76	2.72	-0.6	-5.13	-5.4	-6.55	-8.4	-10.51	-16.91
45	-2.15	-0.56	-0.29	2.2	2.67	4.64	2.61	-1.58	-6.34	-5.86	-8.96	-11.26	-16.91
60	-2.63	-1.83	1.83	1.87	4.77	6.11	3.06	-0.23	-3.15	-4.75	-9.45	-8.78	-16.91
75	-2.79	-3.35	2.28	5.07	5.12	6.37	2.96	-0.54	-3.27	-4.32	-7.61	-7.46	-16.91
90	-2.61	-1.63	3.18	5.97	6.21	7.92	3.24	-0.49	-3.45	-5.02	-7.61	-8.36	-16.91
105	-2.14	-1.23	2.51	6.48	5.18	8.2	4.94	1.52	-3.54	-7.32	-10.16	-7.73	-16.91
120	-1.65	-1.87	-0.5	4.69	3.88	4.91	2.83	1.52	-3.58	-7.27	-9.66	-7.01	-16.91
135	-1.57	-2.68	1.57	3.73	2.35	5.19	2.94	-1.11	-5.28	-6.78	-7.58	-7	-16.91
150	-1.78	-2.67	0.71	4.83	2.95	4.25	2.39	-1.26	-4.67	-6.74	-8.63	-6.79	-16.91
165	-2.01	-2.19	0.61	4.54	3.47	6.31	4.39	0.59	-3.42	-4.54	-6.36	-5.93	-16.91
180	-2.22	-1.92	2.77	2.66	3.83	6.77	3.98	0.24	-2.86	-4.04	-6.74	-6.83	-16.91
195	-2.09	-1.24	2.18	2.74	4.15	6.63	3.78	0.16	-6.67	-6.58	-8.3	-6.31	-16.91
210	-1.75	-1.24	0.43	2.2	3.23	4.57	1.29	-0.32	-4.14	-6.64	-8.17	-6.74	-16.91
225	-1.56	-2.26	-1.11	3.54	4.11	6.89	4.5	0.27	-3.14	-5.34	-7.66	-8.56	-16.91
240	-1.55	-1.91	1.92	4.87	5.21	6.39	2.32	0.02	-6.21	-6.68	-8.18	-4.88	-16.91
255	-1.51	-1.55	1.21	5.68	4.76	6.39	3.31	1.5	-4.91	-8.8	-8.44	-6.1	-16.91
270	-1.73	-3.45	2.38	5.02	4.61	6.49	2.94	0.23	-3.78	-8.67	-11.35	-6.62	-16.91

285	-1.78	-4.04	3.1	5.08	4.26	5.29	1.73	-1.18	-3.17	-7.66	-8.47	-5.88	-16.91
300	-2.04	-2.15	1.93	4.73	5.2	6.41	2.84	-1.38	-3.92	-7.52	-9.15	-9.33	-16.91
315	-2.16	-1.39	-0.14	2.45	2.47	6.1	3.64	0.93	-4.62	-8.97	-10.97	-9.02	-16.91
330	-2.33	-1.3	-0.83	1.76	0.71	3.65	0.53	-3.91	-5.06	-5.8	-8.45	-8.35	-16.91
345	-2.18	-0.37	-0.35	0.3	1.75	2.53	1.12	-2.61	-7.44	-7.55	-7.42	-7.55	-16.91

7.2 DG_NSSmax Test Data

Ant1													
Freq	2450												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-0.15	-0.93	-0.79	2.1	-0.63	-3.32	-7.27	-12.1	-14.13	-10.62	-19.24	-10.99	-15.71
15	-0.27	-1.3	-1.79	0.17	-3.16	-6.34	-10.49	-20.06	-14.56	-10.43	-12.34	-9.6	-15.71
30	-0.35	-1.78	-3.02	-2.26	-3.95	-5.22	-8.41	-11.7	-15.16	-10.78	-8.02	-8.84	-15.71
45	-0.39	-2.22	-3.12	-1.84	-3.07	-4.02	-6.01	-7.89	-10.88	-12.78	-9.09	-10.11	-15.71
60	-0.4	-2.49	-2.39	0.82	0.03	-1.58	-5.58	-7.38	-8.24	-11.56	-15.51	-13.57	-15.71
75	-0.31	-2.38	-2.08	1.02	0.07	-0.79	-3.55	-8.55	-11.56	-9.21	-13.77	-15.71	-15.71
90	-0.32	-1.87	-2.08	-0.03	-1.83	-2.78	-4.68	-7.06	-9.87	-8.07	-10.39	-13.33	-15.71
105	-0.32	-1.23	-1.8	-0.76	-2.67	-3.42	-5.34	-7.95	-11.56	-11.99	-11.39	-11.82	-15.71
120	-0.36	-0.67	-1.29	-0.67	-2.97	-3.77	-5	-5.78	-7.35	-10.24	-13.72	-11.97	-15.71
135	-0.48	-0.3	-0.66	0.54	-1.48	-2.18	-4.72	-7.89	-9.15	-8.93	-13.23	-12.24	-15.71
150	-0.54	-0.2	-0.67	0.67	-2.01	-3.01	-5.2	-7.94	-12.34	-12.53	-13.76	-12.24	-15.71
165	-0.56	-0.26	-1.67	-0.92	-3.83	-5.18	-7.3	-7.24	-10.04	-13.09	-13.86	-12.43	-15.71
180	-0.57	-0.47	-3.46	-3.66	-5.28	-5.42	-7.01	-7.08	-8.96	-9.86	-13.87	-12.16	-15.71
195	-0.44	-0.84	-5.01	-6.39	-5.94	-4.95	-6.59	-7.99	-9.83	-9.06	-12.63	-11.52	-15.71
210	-0.27	-1.31	-4.76	-5.42	-5.82	-5.34	-6.86	-8.44	-10.86	-10.39	-10.61	-10.99	-15.71
225	-0.21	-1.94	-3.4	-2.48	-4.48	-4.15	-5.41	-7.65	-12.69	-10.99	-10.37	-10.81	-15.71
240	-0.19	-2.78	-2.32	-0.26	-1.74	-2.15	-3.43	-6.48	-11.13	-10.7	-11.8	-11.06	-15.71
255	-0.27	-3.56	-2.26	0.45	-0.43	-1.28	-3.8	-6.51	-7.97	-9.81	-13.83	-11.6	-15.71
270	-0.4	-3.7	-2.94	-0.46	-1.41	-1.82	-3.79	-4.44	-7.75	-10.21	-14.13	-12.12	-15.71
285	-0.38	-3.09	-3.08	-1.81	-3	-2.38	-4.45	-6.7	-10.51	-9.64	-12.62	-11.78	-15.71
300	-0.25	-2.16	-2.25	-2.56	-3.58	-3.36	-6.96	-9.93	-9.23	-9.31	-12.37	-10.51	-15.71
315	-0.13	-1.33	-1.58	-1.45	-1.24	-1.87	-5.99	-7.39	-7.88	-10.84	-11.57	-9.12	-15.71
330	-0.05	-0.86	-1.03	0.82	1.34	0.73	-2.89	-5.62	-8.94	-9.54	-9.88	-8.73	-15.71
345	-0.04	-0.72	-0.58	2.4	1.73	0.52	-3.56	-10.53	-18.37	-10.28	-11.54	-9.76	-15.71

Ant2													
Freq	2450												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-0.61	-3.77	-2.69	0.48	-0.72	-1.2	-2.77	-3.82	-7.2	-10.83	-11.99	-12.82	-18.4
15	-0.41	-3.39	-2.69	0.04	-1.18	-1.7	-4.02	-6.47	-9.23	-9.72	-13.63	-12.38	-18.4
30	-0.28	-2.95	-2.46	0.02	-0.99	-1.24	-3.35	-6.29	-11.24	-12.31	-17.15	-12.83	-18.4

45	-0.21	-2.43	-2.37	-0.48	-1.44	-1.68	-3.9	-6.04	-9.76	-15.71	-19.98	-14.4	-18.4
60	-0.27	-1.92	-2.04	-0.69	-2.6	-2.41	-5.16	-7.76	-12.02	-18.28	-18.61	-16.64	-18.4
75	-0.34	-1.58	-1.63	-0.08	-2.79	-2.89	-5.91	-9.61	-15.25	-16.98	-16.59	-18.32	-18.4
90	-0.38	-1.42	-2	-0.59	-3.77	-4.06	-6.54	-9.37	-13.85	-14.82	-15.91	-18.4	-18.4
105	-0.5	-1.24	-2.66	-2.28	-6.32	-7.09	-8.4	-9.68	-13.79	-14.57	-15.65	-17.21	-18.4
120	-0.59	-1.05	-2.77	-3.06	-6.83	-8.09	-8.43	-10.4	-16.05	-16.1	-15.65	-15.45	-18.4
135	-0.54	-0.85	-2.53	-2.58	-4.55	-5.27	-5.95	-7.77	-10.91	-13.78	-15.92	-13.03	-18.4
150	-0.48	-0.56	-1.99	-1.39	-2.07	-2.19	-3.69	-6.47	-8.83	-10.04	-14.89	-11.8	-18.4
165	-0.39	-0.33	-1.37	-0.34	-1.11	-1.34	-3.87	-7.37	-9.28	-8.52	-13.85	-11.85	-18.4
180	-0.37	-0.22	-0.92	-0.05	-1.66	-2.33	-4.91	-6.91	-10.23	-8.73	-15.55	-12.49	-18.4
195	-0.57	-0.13	-0.71	0.32	-2.08	-3.34	-6.46	-9.89	-11.91	-9.93	-18.23	-13.63	-18.4
210	-0.8	-0.18	-0.58	0.96	-1.49	-3.42	-8.66	-11.29	-9.62	-10.17	-15.73	-14.12	-18.4
225	-0.91	-0.35	-0.54	0.69	-2.49	-5.02	-11.64	-9.03	-10.8	-17.31	-13.18	-13.92	-18.4
240	-0.92	-0.64	-0.82	-0.21	-2.46	-3.15	-6.85	-7.42	-10.32	-13.94	-11.66	-14.8	-18.4
255	-0.79	-1.04	-1.86	-2.61	-4.45	-2.92	-5.2	-9.23	-11.48	-11.02	-14.25	-17.51	-18.4
270	-0.6	-1.62	-3.22	-5.27	-11.9	-11.21	-13.07	-13.84	-14.13	-15.26	-18.28	-16.93	-18.4
285	-0.47	-2.42	-3.97	-2.77	-4.66	-6.25	-10.25	-11.62	-11.78	-14.33	-13.03	-13.24	-18.4
300	-0.48	-3.16	-4.08	-1.28	-2.77	-4.16	-10.21	-9.74	-8.98	-10.64	-13.01	-11.76	-18.4
315	-0.56	-3.7	-3.41	-0.37	-2.65	-4.21	-6.14	-5.62	-10.07	-15.05	-14.92	-12.39	-18.4
330	-0.69	-3.98	-2.58	0.68	-1.63	-4.1	-6.51	-6.85	-9.91	-9.6	-11.91	-13.73	-18.4
345	-0.74	-3.98	-2.4	0.97	-0.59	-1.68	-3.32	-5.44	-9.66	-11.45	-11.12	-13.56	-18.4

Ant3													
Freq	2450												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-3.06	-6.21	-7.11	-6.55	-9.58	-9.69	-11.72	-16.76	-14.93	-11.11	-16.74	-11.8	-14.8
15	-2.94	-6.24	-7.51	-3.27	-3.59	-4.62	-8.59	-16.99	-13.68	-8.56	-17.3	-11.53	-14.8
30	-2.88	-4.92	-4.03	0.41	-0.75	-3.33	-10.04	-14.36	-11.52	-10.72	-15.26	-11.11	-14.8
45	-3.02	-3.07	-1.86	0.92	-1.84	-4.73	-9.99	-10.51	-16.08	-19.68	-14.04	-10.45	-14.8
60	-3.26	-1.44	-0.98	-0.05	-3.84	-5.02	-8.28	-12.29	-16.89	-12.63	-12.19	-9.88	-14.8
75	-3.46	-0.34	-0.74	-0.13	-3.43	-5.28	-8.3	-13.2	-16.02	-12.76	-13.52	-9.63	-14.8
90	-3.57	0.4	-1.09	-0.15	-3.1	-5.86	-9.49	-19.33	-18.69	-15.29	-18.17	-9.96	-14.8
105	-3.63	0.8	-1.26	-0.59	-2.38	-4.78	-8.91	-17.59	-14.79	-12.41	-20.61	-11.51	-14.8
120	-3.65	0.8	-0.57	-0.63	-2.23	-3.22	-6.98	-14.41	-16.94	-11.91	-17.38	-13.63	-14.8
135	-3.71	0.31	0.06	0.63	-1.44	-3.29	-6.81	-9.97	-15.45	-15.93	-16.5	-14.8	-14.8
150	-3.66	-0.69	-0.28	1.13	-0.06	-1.71	-6.66	-10.39	-12.78	-15.99	-16.93	-14.49	-14.8
165	-3.6	-2.2	-1.29	-0.11	-1.03	-1.18	-4.36	-9.68	-12.65	-12.53	-14.05	-12.83	-14.8
180	-3.59	-4.04	-1.92	-0.81	-3.98	-4.4	-6.82	-9.18	-11.97	-13.25	-13.59	-10.71	-14.8
195	-3.63	-5.38	-2.22	-0.61	-3.34	-4.82	-6.86	-10.14	-12.51	-12.2	-13.99	-9.44	-14.8
210	-3.69	-5.38	-2.17	-0.79	-2.37	-2.38	-2.97	-5	-9.62	-11.5	-12.71	-9.17	-14.8
225	-3.63	-4.44	-1.56	-0.8	-3.34	-3.12	-3.88	-3.87	-7.64	-9.52	-11.98	-9.6	-14.8
240	-3.4	-3.55	-1.2	-0.82	-3.89	-5.16	-7.19	-8.05	-8.33	-8.21	-11.82	-10.36	-14.8
255	-3.22	-3.07	-1.59	-1.16	-4.35	-4.03	-6	-10.19	-14.62	-9.55	-12.15	-11.21	-14.8

270	-3.07	-3.01	-2.59	-2.05	-5.7	-4.75	-5.9	-5.79	-13.16	-15.27	-13.72	-11.96	-14.8
285	-2.94	-3.28	-3.85	-3.19	-6.8	-8.46	-10.68	-8.32	-9.5	-12.94	-14.57	-12.33	-14.8
300	-2.91	-3.54	-4.73	-4.01	-6.24	-7.95	-11.55	-11.59	-9.16	-10.36	-15.88	-11.75	-14.8
315	-2.96	-3.85	-4.76	-4.62	-5.93	-5.28	-7.18	-10.61	-12.59	-9.77	-15.45	-10.85	-14.8
330	-3.02	-4.38	-4.31	-4.49	-6.83	-5.05	-5.95	-9.1	-17.71	-10.05	-13.82	-10.88	-14.8
345	-3.09	-5.29	-4.77	-4.41	-8.13	-7.96	-9.7	-14.75	-13.95	-11.61	-14.14	-11.41	-14.8

Ant4													
Freq	2450												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-1.52	-0.72	-2.05	-4.3	-8.96	-9.95	-9.09	-11.1	-19.31	-14.02	-20.31	-11.84	-18.1
15	-1.56	-0.27	-1.04	-2.7	-7.75	-9.52	-10.48	-13.93	-13.27	-13.57	-16.55	-10.16	-18.1
30	-1.54	-0.08	-0.71	-2.53	-6.42	-7.38	-8.88	-9.81	-9.39	-11.62	-13.99	-9.69	-18.1
45	-1.49	-0.18	-0.78	-2.71	-4.71	-4.01	-5.55	-6.91	-9.21	-10.76	-12.23	-10.02	-18.1
60	-1.38	-0.59	-1.04	-2.92	-3.87	-2.7	-4.03	-6.74	-10.32	-10.23	-11.64	-10.62	-18.1
75	-1.42	-1.16	-1.44	-3	-4.59	-4.41	-5.86	-8.46	-10.58	-10.52	-12.19	-11.35	-18.1
90	-1.56	-1.79	-2.27	-1.71	-2.91	-3.76	-5.28	-7.46	-11.55	-12.8	-12.77	-12.13	-18.1
105	-1.59	-2.25	-2.7	-0.04	-0.16	-0.17	-2.49	-5.73	-9.35	-8.93	-13.15	-12.92	-18.1
120	-1.61	-2.24	-1.73	0.79	-0.07	-0.28	-4.56	-7.2	-8.09	-8.9	-13.97	-11.91	-18.1
135	-1.61	-1.99	-0.27	0.86	-2.64	-4.57	-10.77	-11.75	-13.73	-14.64	-10.93	-9.62	-18.1
150	-1.49	-1.79	0.56	1.25	-3.67	-7.21	-11.38	-16.73	-17.6	-10.88	-9.72	-8.93	-18.1
165	-1.42	-1.83	0.64	1.38	-4.53	-8.57	-13.52	-17.61	-15.62	-10.51	-13.24	-9.47	-18.1
180	-1.32	-2.11	0.52	2.15	-2.33	-6.25	-10.6	-19.04	-13.95	-12.13	-17.69	-10.3	-18.1
195	-1.21	-2.59	0.36	3.42	1.1	-0.96	-4.55	-9.7	-16.27	-10.04	-10.82	-11.07	-18.1
210	-1.17	-3.13	-0.55	3.16	1.73	0.59	-2.32	-5.21	-9.52	-9.61	-9.47	-11.83	-18.1
225	-1.22	-3.56	-2.17	1.79	0.57	-0.88	-4.76	-6.98	-9.27	-13.54	-12.39	-13.36	-18.1
240	-1.26	-3.76	-3.17	0.61	-0.15	-1.31	-5.46	-8.49	-9.44	-13.5	-15.08	-15.54	-18.1
255	-1.32	-3.61	-2.67	-0.11	-1.59	-2.03	-5.46	-9.34	-9.53	-10.88	-16.41	-17.64	-18.1
270	-1.28	-3.3	-1.87	-0.17	-3.34	-4.1	-6	-8.82	-12.87	-11.79	-15.72	-18.1	-18.1
285	-1.18	-3.02	-1.8	0.02	-2.57	-3.76	-6.9	-7.2	-10.32	-11.39	-12.8	-15.47	-18.1
300	-1.11	-2.83	-2.58	-0.4	-1.92	-2.09	-5.31	-8.83	-9.42	-11.16	-11.95	-13.38	-18.1
315	-1.12	-2.49	-3.69	-1.59	-3.3	-2.65	-4.82	-7.93	-10.79	-11.98	-14.07	-12.9	-18.1
330	-1.16	-1.98	-4.18	-3.58	-5.76	-5.07	-6.87	-8.3	-11.64	-11.93	-19.24	-13.59	-18.1
345	-1.32	-1.33	-3.42	-5.33	-8.16	-8.06	-8.07	-9.96	-15.12	-13.12	-22.95	-13.57	-18.1

2450MHz Composite Gain													
Freq	2450												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-1.2	-2.38	-2.62	-0.79	-3.12	-4.46	-6.45	-8.42	-11.66	-11.45	-15.78	-11.81	-16.48
15	-1.17	-2.26	-2.67	-1.17	-3.35	-4.67	-7.49	-11.31	-12.14	-10.22	-14.48	-10.78	-16.48
30	-1.14	-2.09	-2.38	-0.89	-2.46	-3.72	-6.8	-9.55	-11.38	-11.31	-12.1	-10.37	-16.48
45	-1.14	-1.83	-1.95	-0.81	-2.59	-3.45	-5.86	-7.54	-10.81	-13.61	-12.35	-10.92	-16.48

60	-1.18	-1.55	-1.57	-0.51	-2.26	-2.76	-5.51	-8.09	-10.89	-12.33	-13.69	-11.95	-16.48
75	-1.21	-1.3	-1.45	-0.32	-2.32	-3	-5.59	-9.59	-12.75	-11.52	-13.75	-12.52	-16.48
90	-1.27	-1.07	-1.84	-0.57	-2.85	-3.98	-6.15	-9	-12.45	-11.69	-13.35	-12.54	-16.48
105	-1.33	-0.83	-2.06	-0.84	-2.37	-3.13	-5.49	-8.6	-11.86	-11.49	-14.06	-12.87	-16.48
120	-1.37	-0.65	-1.52	-0.69	-2.41	-3.03	-5.98	-8.37	-10.17	-11.07	-14.95	-13.01	-16.48
135	-1.41	-0.63	-0.74	0.06	-2.36	-3.66	-6.56	-9.06	-11.65	-12.41	-13.56	-12.01	-16.48
150	-1.37	-0.77	-0.5	0.53	-1.76	-3.08	-5.94	-9.04	-11.88	-11.84	-12.98	-11.41	-16.48
165	-1.32	-1.07	-0.82	0.09	-2.35	-3.14	-5.99	-9.06	-11.27	-10.78	-13.74	-11.43	-16.48
180	-1.29	-1.46	-1.21	-0.12	-3.09	-4.34	-6.9	-8.75	-10.89	-10.63	-14.89	-11.32	-16.48
195	-1.29	-1.81	-1.47	0.39	-1.83	-3.2	-6.01	-9.34	-12.07	-10.16	-13.18	-11.17	-16.48
210	-1.3	-2.08	-1.71	0.45	-1.19	-2.09	-4.46	-6.8	-9.87	-10.36	-11.55	-11.18	-16.48
225	-1.32	-2.29	-1.8	0.08	-2	-3	-5.61	-6.44	-9.71	-11.97	-11.85	-11.56	-16.48
240	-1.29	-2.49	-1.78	-0.14	-1.85	-2.72	-5.47	-7.54	-9.68	-10.95	-12.38	-12.38	-16.48
255	-1.27	-2.68	-2.08	-0.71	-2.36	-2.45	-5.04	-8.58	-10.26	-10.27	-13.9	-13.47	-16.48
270	-1.22	-2.83	-2.63	-1.58	-4.2	-4.38	-6.13	-7.01	-11.16	-12.58	-15.13	-13.96	-16.48
285	-1.13	-2.94	-3.09	-1.75	-3.96	-4.63	-7.31	-8.09	-10.45	-11.72	-13.19	-13	-16.48
300	-1.07	-2.89	-3.29	-1.86	-3.36	-3.92	-7.82	-9.91	-9.19	-10.31	-13.06	-11.73	-16.48
315	-1.07	-2.72	-3.2	-1.75	-2.97	-3.3	-5.95	-7.54	-10	-11.51	-13.73	-11.06	-16.48
330	-1.1	-2.56	-2.81	-1.01	-2	-2.6	-5.24	-7.26	-11.03	-10.18	-12.58	-11.22	-16.48
345	-1.16	-2.44	-2.52	-0.41	-1.76	-2.75	-5.34	-8.96	-13.15	-11.5	-13.21	-11.77	-16.48

Ant5													
Freq	5150												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-7.81	-2.86	-0.86	-1	-5.81	-8.36	-13.37	-18.06	-23.07	-18.12	-15.42	-18.08	-21.54
15	-7.84	-2.47	-0.66	-1.19	-8.24	-18.24	-19.09	-17.24	-19.87	-13.98	-15.07	-17.59	-21.54
30	-7.8	-2.36	-0.47	-0.71	-8.23	-18.36	-20.68	-14.71	-17.05	-13.99	-13.37	-18.49	-21.54
45	-7.77	-2.7	-0.68	0.69	-6.69	-19.26	-13.05	-13.5	-16.97	-16.25	-11.94	-19.1	-21.54
60	-7.86	-3.03	-0.36	-0.01	-7.58	-14.75	-15.73	-14.44	-16.45	-15.36	-11.57	-21.54	-21.54
75	-8.11	-3.47	-0.95	0.03	-5.93	-8.23	-9.93	-10.01	-15.34	-14.8	-10.62	-18	-21.54
90	-8.34	-4.13	-1.41	-0.7	-6.54	-11.81	-12.32	-14.39	-15.93	-11.68	-13.05	-15.73	-21.54
105	-8.28	-4.55	-1.17	-0.56	-5.41	-9.69	-15.58	-16.3	-12.69	-10.73	-14.84	-14.6	-21.54
120	-7.83	-4.77	0.12	0.52	-7.59	-12.93	-15.29	-11.75	-13.5	-13.21	-13.56	-11.21	-21.54
135	-7.18	-5.25	0.21	0.14	-5.03	-6.47	-10.67	-13.87	-15.45	-12.51	-10.67	-9.15	-21.54
150	-6.7	-6.34	-1.19	-1.87	-7.84	-13.88	-14.65	-14.67	-14.27	-11.43	-10.1	-8.91	-21.54
165	-6.47	-8.87	-1.43	0.06	-5.47	-11.17	-13.24	-13.64	-14.2	-11.62	-11.94	-9.94	-21.54
180	-6.39	-12.21	-1.51	-0.67	-4.96	-7.22	-9.1	-10.58	-12.3	-11.81	-12.05	-10.38	-21.54
195	-6.38	-11.84	-1.58	0.61	-6.8	-12.47	-10.96	-9.81	-9.58	-9.1	-10.01	-10.05	-21.54
210	-6.52	-8.29	-1.39	-0.41	-5.84	-11.65	-22.33	-13.35	-11.71	-8.35	-8.78	-10.18	-21.54
225	-6.48	-4.89	-0.61	-1.36	-7.4	-8.16	-15.27	-16.32	-13.59	-11	-9.41	-10.8	-21.54
240	-6.36	-2.99	-0.09	0.05	-7.68	-8.54	-11.79	-19.04	-16.63	-10.7	-13.02	-11.99	-21.54
255	-6.1	-2.88	-0.26	1.28	-5.93	-10.39	-12.83	-16.9	-19.57	-13.51	-15.06	-12.48	-21.54
270	-6.04	-3.81	-0.72	-0.95	-3.56	-10.87	-15.2	-15.97	-17.81	-15.74	-12.69	-13.31	-21.54

285	-6.09	-4.46	-2.59	-1.46	-5.5	-13.24	-19.14	-17.82	-19.24	-15.23	-13.73	-16.02	-21.54
300	-6.49	-4.31	-3.24	-2.24	-5.75	-15.46	-14.18	-20.27	-19.47	-14.94	-15.43	-17.38	-21.54
315	-6.98	-3.79	-3.64	-3.28	-4.6	-13.03	-21.19	-17.47	-26.29	-18.38	-20.94	-17.24	-21.54
330	-7.43	-3.19	-2.54	-1.7	-3.63	-8.48	-13.13	-20.51	-20.51	-18.91	-21.52	-19.32	-21.54
345	-7.59	-2.94	-1.28	1.5	-4.56	-7.46	-15.69	-12.15	-22.91	-13.98	-15.52	-19.57	-21.54

Ant6													
Freq	5150												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-5.6	-1.35	-2.8	-3.79	-10.1	-12.08	-16.18	-20.17	-18.98	-17.48	-25.2	-26.07	-27.18
15	-5.59	-1.62	-3.52	-1.72	-11.98	-17.79	-13.89	-17.6	-22.32	-20.87	-22.24	-23.66	-27.18
30	-5.68	-1.51	-2.8	0.21	-3.68	-8.73	-14.24	-23.37	-28.6	-25.56	-22.03	-24.22	-27.18
45	-5.65	-1.35	-0.63	-0.6	-7.52	-9.36	-13.3	-14.64	-22.32	-22.8	-23.76	-26.4	-27.18
60	-5.62	-1.4	0.29	0.49	-4.27	-9.52	-13.7	-15.89	-21.97	-16.67	-18.22	-19.55	-27.18
75	-5.49	-1.56	0.64	0.24	-4.65	-10.33	-15.14	-21.78	-21.47	-20.16	-17.59	-16.65	-27.18
90	-5.38	-2.06	1.6	0.98	-7.13	-11.54	-17.77	-19.44	-21.6	-22.85	-23.33	-18.05	-27.18
105	-5.08	-2.95	1.26	0.04	-8.4	-9.32	-11.69	-15.04	-17.03	-20.59	-21.12	-18.48	-27.18
120	-4.87	-3.74	0.23	0.87	-6.89	-10.82	-14.27	-18.54	-22.7	-18.74	-18.82	-17.49	-27.18
135	-4.73	-4.51	-0.13	-0.98	-8.78	-8.34	-11.19	-15.17	-20	-18.66	-16.73	-18.38	-27.18
150	-4.48	-5.83	1.51	1.54	-5.49	-8.62	-12.65	-16.79	-17.82	-16.1	-18.92	-16.53	-27.18
165	-4.4	-7.24	1.72	1.31	-3.77	-6.89	-13.08	-15.06	-17.14	-17.36	-17.88	-14.56	-27.18
180	-4.42	-7.67	1.4	2.02	-2.27	-5.38	-8.61	-11.3	-14.8	-14.35	-16.21	-14.41	-27.18
195	-4.44	-6.51	0.77	0.72	-2.73	-5.39	-11.42	-15.91	-16.2	-13.86	-15.33	-13.84	-27.18
210	-4.43	-4.71	0.41	-1.38	-6.76	-11.34	-14.81	-14.61	-15.73	-13.79	-13.79	-13.1	-27.18
225	-4.45	-3.64	0.25	-0.43	-8.01	-10.61	-13.48	-15.3	-17.2	-14.98	-13.22	-13.87	-27.18
240	-4.35	-3.37	0.67	0.55	-10.62	-14.87	-12.6	-14.92	-17.91	-19.51	-14.64	-14.78	-27.18
255	-4.41	-3.48	1.26	1.13	-9.02	-11.41	-10.99	-11.88	-12.14	-14.2	-22.16	-15.72	-27.18
270	-4.59	-3.32	1.57	1.58	-5.51	-11.55	-19.45	-18.36	-15.88	-12.76	-21.52	-17.54	-27.18
285	-4.88	-2.51	1.22	0.31	-8.48	-11.23	-12.02	-13.42	-15.36	-16.74	-19.63	-19.11	-27.18
300	-5.16	-1.43	0.56	-0.86	-7.6	-8.94	-10.36	-14.47	-17.4	-20.04	-19.1	-20.57	-27.18
315	-5.32	-0.81	0.15	-0.41	-10.5	-16.17	-12.11	-13.62	-19.27	-20.99	-20.29	-21.55	-27.18
330	-5.46	-0.83	-1.14	-0.69	-11.08	-15.3	-12.48	-14.31	-16.76	-27.19	-22.34	-23.36	-27.18
345	-5.5	-1.1	-1.74	-2.33	-13.89	-19.48	-15.07	-16.07	-19.58	-21.35	-22.78	-27.18	-27.18

Ant7													
Freq	5150												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-11.71	-3.03	-0.05	-1.16	-6.54	-8.42	-11.24	-14.96	-19.1	-23.41	-21.39	-20.5	-29.21
15	-11	-3.36	0.86	-0.81	-8.82	-11.76	-12.29	-17.47	-20.12	-15.54	-16.48	-16.6	-29.21
30	-10.74	-2.7	0.66	-0.39	-6.84	-11.77	-16.46	-20.93	-19.82	-13.62	-15.25	-16.66	-29.21
45	-10.6	-2.04	0.16	0.16	-9.61	-14.07	-20.5	-13.32	-24.31	-16.44	-16.98	-18.92	-29.21
60	-10.78	-1.79	-0.76	0.39	-7.35	-16.39	-20.86	-27.38	-15.21	-18.85	-24.75	-20.4	-29.21
75	-11.48	-1.73	-0.66	-0.92	-5.23	-9.78	-19.68	-22.73	-16.24	-17.62	-16.13	-19.3	-29.21

90	-12.34	-1.99	0.91	0.52	-7.75	-12.39	-18.92	-16.45	-18.66	-21.59	-24.43	-16.2	-29.21
105	-12.1	-2.46	1.16	1.35	-7.56	-14.75	-16.97	-16.12	-19.88	-22.99	-18.19	-16.5	-29.21
120	-11.44	-3.46	-0.86	-2.33	-8.28	-11.04	-11.85	-10.96	-16.2	-18.21	-18	-16.46	-29.21
135	-11.02	-5.59	-4.91	-0.37	-7.83	-10.13	-14.64	-15.3	-16.77	-24.7	-22.39	-14.76	-29.21
150	-10.48	-7.5	-2.86	0.58	-7.32	-9.63	-11.18	-12.41	-16.91	-19.59	-15.55	-15.06	-29.21
165	-10.45	-8.18	-2.03	-2.26	-3.38	-5.61	-8.22	-10.08	-16.46	-15.7	-15.61	-15.23	-29.21
180	-10.82	-7.88	-1.18	0.82	-7.31	-7.6	-9.47	-13.29	-18.93	-17.67	-15.06	-15.27	-29.21
195	-10.93	-6.87	-0.94	0.52	-4.89	-6.28	-7.31	-9.29	-15.13	-17.82	-17.14	-16.13	-29.21
210	-10.77	-5.52	-2.81	-2.41	-4.77	-10.12	-9.09	-10.91	-14.89	-19.52	-16.88	-14.19	-29.21
225	-10.76	-4.53	-2.32	-3.47	-8.63	-12.69	-14.27	-17.09	-23.43	-23.38	-21.59	-13.69	-29.21
240	-10.54	-5.05	-2.4	0.27	-4.1	-12.52	-17.89	-22.48	-25.18	-18.31	-18.67	-15.17	-29.21
255	-10.39	-6.67	-1.71	-0.18	-4.86	-8.67	-13.49	-16.17	-21.48	-19.98	-20.17	-14.76	-29.21
270	-10.37	-7.99	-0.35	1.79	-3.98	-6.92	-12.74	-16.86	-22.31	-25.95	-18.99	-15.23	-29.21
285	-10.06	-7.77	-0.74	-0.91	-7.32	-15.83	-27.35	-26.26	-26.08	-23.72	-18.89	-19.27	-29.21
300	-10.16	-5.21	0.4	-0.27	-6.18	-15.78	-17.86	-18.67	-18.24	-25.15	-19.64	-22.26	-29.21
315	-10.37	-2.33	0.64	-3.19	-8.65	-13.43	-16.72	-22.58	-19.69	-21.01	-19.69	-20.61	-29.21
330	-10.85	-1.26	-1.81	-2.61	-10.52	-11.89	-18.26	-20.56	-19.36	-22.01	-29.3	-22.25	-29.21
345	-11.4	-1.69	-1.06	-0.34	-8.42	-11.35	-16.28	-17.34	-17.4	-30.26	-22.23	-29.21	-29.21

Ant8													
Freq	5150												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-18.69	-3.48	-1.52	0.04	-5.18	-9.87	-16.72	-21.22	-21.65	-17.47	-17.88	-17.52	-24.03
15	-18.6	-4.35	-0.96	-0.18	-8.69	-16.9	-18.32	-14.2	-22.57	-16.41	-18.05	-18.38	-24.03
30	-18.62	-6.12	0.03	-0.23	-6.26	-11.23	-20.47	-14.84	-22.35	-20.27	-18.54	-18.04	-24.03
45	-19.62	-7.76	0.47	-0.06	-5.24	-9.53	-14.03	-17.94	-19.51	-18.98	-20.21	-18.64	-24.03
60	-20.46	-6.74	0.1	0.57	-5.51	-12.55	-15.45	-16.05	-22.52	-15.76	-15.79	-20.81	-24.03
75	-20.96	-4.84	-1.27	0.24	-5.42	-13.66	-26.56	-24.13	-19.74	-17.86	-20.86	-18.52	-24.03
90	-21.81	-3.69	-1.9	-0.04	-4.54	-10.55	-20.85	-19.31	-28.16	-25.91	-18.08	-16.59	-24.03
105	-20.73	-3.56	-1.49	0.07	-4.62	-9	-12.29	-16.9	-24.4	-23.74	-28.64	-17.26	-24.03
120	-19.45	-4.13	-0.27	0.86	-5.6	-10.44	-16.15	-21.15	-27.4	-24.76	-20.75	-20.05	-24.03
135	-18.83	-4.69	0.91	-1.2	-6.87	-14.87	-23.76	-24.01	-22.21	-21.93	-23.01	-20.32	-24.03
150	-17.55	-4.97	0.13	-0.19	-4.57	-10.66	-13.29	-18.41	-22.03	-21.12	-27.73	-19.66	-24.03
165	-17.63	-5.42	-1.3	1.42	-2.08	-9.16	-18.78	-20.1	-21.05	-21.85	-22.17	-21.25	-24.03
180	-18.28	-5.85	-2.77	2.23	-2	-11.71	-23.08	-17.92	-25.52	-20.48	-19.81	-21.77	-24.03
195	-18.36	-6.41	-2.96	0.5	-5.77	-15.97	-13.08	-15.81	-17.65	-20.37	-19.95	-20.39	-24.03
210	-18.4	-6.99	-1.29	-4.33	-7.32	-13.11	-12.77	-13.06	-20.15	-16.88	-21.2	-20.88	-24.03
225	-17.81	-6.75	-0.01	-1.02	-14.5	-15.98	-22.44	-24.9	-24.16	-21.96	-19.92	-22.96	-24.03
240	-16.97	-5.96	0.09	0.13	-8.7	-15.05	-15.75	-15.14	-18.08	-26.42	-21.3	-22.46	-24.03
255	-16.81	-5.13	-0.03	-0.66	-8.47	-15.4	-16.81	-22.55	-22.79	-21.14	-19.73	-20.7	-24.03
270	-16.62	-3.79	0.05	-0.39	-6.19	-12.9	-23.98	-24.53	-23.89	-22.24	-18.79	-19.11	-24.03
285	-17.01	-2.64	0.55	0.09	-7.81	-13.74	-15.57	-17.87	-28.83	-25.84	-19.99	-17.41	-24.03
300	-17.74	-2.19	0.62	-0.6	-10.83	-20.55	-20.62	-16.36	-14.81	-24.34	-20.03	-19.49	-24.03

315	-18.42	-2.3	0.72	-1.15	-8.55	-14.48	-16.27	-15.23	-23.04	-16.09	-16.23	-24.03	-24.03
330	-19.38	-2.58	0.62	-0.13	-6.1	-11.13	-18.85	-15.7	-18.86	-20.74	-19.33	-23.06	-24.03
345	-19.34	-2.96	-0.65	-0.4	-6.58	-11.6	-23.22	-17.9	-24.14	-16.84	-16.77	-18.9	-24.03

5250MHz Composite Gain													
Freq	5250												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-4.5	1.74	3.15	3.07	-2.21	-5.1	-9.46	-13.57	-16.03	-14.22	-14.25	-15.18	-20.19
15	-4.41	1.51	3.54	3.4	-4.87	-10.94	-10.65	-12.03	-16.71	-11.73	-12.92	-14.04	-20.19
30	-4.4	1.48	3.87	4.07	-1.58	-7.05	-12.77	-12.69	-15.96	-11.88	-11.85	-14.26	-20.19
45	-4.38	1.46	4.2	4.41	-2.65	-7.23	-10.07	-10.17	-15.57	-13.6	-11.78	-15.54	-20.19
60	-4.43	1.53	4.18	4.71	-1.62	-8.18	-11.42	-12.22	-13.57	-12.13	-11.09	-16.18	-20.19
75	-4.55	1.64	3.84	4.26	-0.94	-5.76	-10.06	-11.05	-13.18	-12.85	-10.32	-13.67	-20.19
90	-4.68	1.48	4.39	4.57	-1.97	-7.18	-11.84	-12.54	-14.91	-12.51	-13.03	-12.22	-20.19
105	-4.44	1.03	4.46	4.62	-1.89	-5.84	-9.26	-11.7	-12.26	-11.57	-14.12	-12.14	-20.19
120	-4.09	0.34	4.17	4.5	-2.63	-6.87	-9.73	-9.41	-12.88	-12.67	-12.57	-10.68	-20.19
135	-3.76	-0.65	3.85	3.77	-2.56	-4.68	-8.66	-11.47	-13.51	-12.68	-10.97	-9.16	-20.19
150	-3.37	-1.73	4.03	4.53	-1.76	-5.96	-8.42	-10.65	-12.62	-11.07	-10.22	-8.83	-20.19
165	-3.26	-2.89	3.85	4.7	0.83	-3.37	-7.52	-9.07	-12.25	-10.86	-11.12	-9.28	-20.19
180	-3.3	-3.52	3.61	5.59	0.7	-3.1	-5.9	-8.17	-11.36	-10.58	-10.61	-9.53	-20.19
195	-3.32	-3.09	3.37	4.93	-0.44	-3.85	-5.8	-7.3	-9.08	-8.9	-9.68	-9.28	-20.19
210	-3.35	-1.83	3.22	2.44	-1.72	-7.09	-8.36	-8.43	-10.34	-8.26	-8.62	-8.87	-20.19
225	-3.33	-0.47	3.78	2.91	-4.58	-6.65	-10.97	-12.89	-13.16	-10.81	-9.14	-9.33	-20.19
240	-3.19	0.16	4.05	4.59	-2.75	-7.53	-9.53	-12.6	-14.16	-11.14	-11.46	-10.46	-20.19
255	-3.11	0.04	4.28	4.81	-2.39	-6.52	-8.73	-11.07	-12.41	-11.67	-14.08	-10.7	-20.19
270	-3.17	-0.04	4.57	5.01	-0.34	-5.59	-11.73	-13.62	-14.49	-12.23	-12.3	-11.4	-20.19
285	-3.29	0.44	4.18	3.91	-2.79	-8.87	-11.49	-12.61	-15.17	-14.04	-12.86	-13.4	-20.19
300	-3.6	1.32	4.19	3.41	-2.85	-8.86	-9.77	-12.55	-12.79	-14.8	-13.77	-15.22	-20.19
315	-3.9	2.16	4.12	2.51	-3.16	-9.78	-11.11	-11.82	-16.93	-14.28	-14.52	-15.82	-20.19
330	-4.21	2.48	3.29	3.16	-2.41	-6.72	-10.44	-12.56	-14.31	-16.98	-17.58	-17.33	-20.19
345	-4.36	2.24	3.18	4.16	-2.9	-6.45	-12.31	-10.88	-15.86	-13.29	-13.87	-17.36	-20.19

Ant1													
Freq	6875												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-11.37	-8.16	-6.61	-1.85	-3.83	-2.8	-6.89	-8.4	-10.6	-15.58	-18.24	-15.75	-25.49
15	-10.91	-4.99	-4.64	-3.28	-3.77	-5.11	-6.97	-8.95	-15.17	-16.78	-13.97	-17.12	-25.49
30	-10.66	-3.36	-5.46	-4.62	-2.99	-8.66	-12.93	-15.81	-15.6	-17.97	-19.72	-21.04	-25.49
45	-10.93	-4.05	-4.31	-1.42	-4.01	-4.54	-7.45	-9.69	-11.43	-13.68	-20.42	-22.52	-25.49
60	-11.49	-6.09	-0.35	0.09	-0.83	-0.75	-5	-6.82	-10.11	-12.54	-16.57	-19.56	-25.49
75	-11.68	-5.23	-1.16	-0.78	-0.65	-2.35	-5.56	-6.94	-10.58	-10.92	-14.43	-18.72	-25.49
90	-11.37	-6.49	-2.4	-1.25	-0.32	-1	-6.1	-8.05	-11.5	-11.69	-15.61	-24.56	-25.49
105	-11.18	-10.76	-3.85	-1.45	-1.95	1.26	-0.86	-5.01	-10.49	-14.96	-21.64	-23.69	-25.49

120	-10.88	-12.39	-10.16	-3.29	-3.15	-2.27	-3.17	-3.85	-7.41	-14.1	-18.19	-20.83	-25.49
135	-10.96	-11.29	-4.44	-7.67	-4.74	-2.97	-6.47	-9.55	-9.32	-10.08	-16.09	-22.49	-25.49
150	-11.39	-8.93	-3.27	-7.77	-5.64	-3.18	-6.7	-10.24	-14.89	-13.06	-22.63	-25.49	-25.49
165	-11.82	-7.88	-3.04	-1.51	-0.7	4.61	1.89	-3.91	-7.91	-13.43	-14.78	-19.29	-25.49
180	-12.01	-8.55	-3.03	-6.48	-0.05	4.08	-1.19	-6.67	-7.78	-12.59	-15.22	-21.59	-25.49
195	-12.1	-9.33	-2.46	-1.17	-2.72	-0.44	-3.94	-7.35	-17.62	-15.71	-15.8	-14.01	-25.49
210	-12.02	-10.17	-7.58	-5.3	-5.01	-1.49	-5.33	-6.65	-9.27	-18.35	-14.61	-13.62	-25.49
225	-11.84	-10.44	-9.75	-2.03	-1.65	1.33	0.29	-7.68	-14.57	-16.41	-14.54	-18.36	-25.49
240	-11.91	-9.76	-5.76	-0.26	-4.31	-0.3	-8	-6.47	-12.88	-18.45	-17.86	-11.15	-25.49
255	-12.05	-10.48	-6.03	0.11	-3.17	2.93	-0.81	-2.31	-10.26	-21.22	-20.06	-11.76	-25.49
270	-12.01	-10.27	-4.66	-2.73	-1.45	4.47	0.83	-3.88	-8.77	-18.53	-17.34	-12.5	-25.49
285	-11.77	-9.5	-2.55	-3.3	-2.11	1.31	-1.69	-5.27	-9.04	-16.82	-14.05	-10.88	-25.49
300	-11.73	-9.79	-5.17	-2.45	-1.62	-0.63	-3.09	-7.27	-9.02	-11.9	-14.71	-15.61	-25.49
315	-11.81	-9.99	-4.97	-7.28	-4.65	-0.8	-2.61	-3.73	-11.02	-13.38	-13.9	-14.68	-25.49
330	-12.03	-13.19	-8.4	-2.45	-4.85	-4.96	-5.44	-7.92	-8.06	-8.08	-10.79	-13.93	-25.49
345	-11.9	-12.58	-9.67	-3.6	-2.64	-3.77	-4.8	-6.8	-8.18	-11.88	-11.65	-14.42	-25.49

Ant2													
Freq	6875												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-7.09	-8.37	-7.55	-2.93	-2.8	-4.33	-7.62	-8.66	-11.6	-13.96	-14.92	-16.17	-32.43
15	-6.79	-11.01	-9.1	-3.91	-4.09	-3.23	-7.23	-8.46	-9.91	-14.17	-15.53	-13.45	-32.43
30	-7.16	-11.04	-7.36	-5.62	-6.4	-4.04	-6.54	-8.12	-7.65	-8.51	-10.39	-13.29	-32.43
45	-7.54	-7.1	-4.15	-3.71	-4.88	-3.09	-4.1	-7.11	-11.05	-13.41	-12.8	-15.3	-32.43
60	-7.72	-6.4	-5.49	-6.16	-3.22	-1.18	-3.93	-7.12	-9.93	-11.99	-19.71	-15.28	-32.43
75	-7.73	-10.19	-5.09	-2.77	-2.16	0.23	-3.06	-7.48	-11.05	-16.85	-18.32	-10.31	-32.43
90	-7.17	-12.07	-5.96	-2.92	-0.54	3.7	-0.58	-6.69	-13.34	-15.1	-15.64	-14.04	-32.43
105	-6.65	-8.03	-5.43	-1.77	-4.68	3.55	0.06	-3.8	-10.64	-16.75	-20.78	-13.2	-32.43
120	-6.37	-7.9	-8.69	-5.46	-5.31	-1.13	-4.89	-4.5	-13.48	-19.59	-18.84	-9.76	-32.43
135	-6.26	-10.28	-14.07	-4.4	-6.84	0.48	-0.17	-8.23	-18.21	-16.82	-17.45	-15.45	-32.43
150	-6.28	-10.88	-9.15	-2.06	-4.58	-2.19	-1.99	-7.79	-9.58	-14.67	-21.27	-16.59	-32.43
165	-6.43	-11.47	-5.45	-3.78	-2.63	-1.52	-2.71	-7.32	-16.69	-17.68	-13.63	-13.47	-32.43
180	-6.57	-11.42	-2.03	-7.68	-1.21	0.96	-1.93	-8.29	-11.49	-12.19	-17.67	-19.29	-32.43
195	-6.92	-11.07	-3.91	-5.19	0.81	5.35	1.99	-3.57	-18.89	-15.88	-18.9	-19.88	-32.43
210	-6.98	-13.04	-4.23	-5.31	-1.81	-2.33	-8.21	-9.7	-14.56	-13.93	-16.67	-16.6	-32.43
225	-6.72	-13.85	-11.98	-6.37	-4.5	-1.37	-4.94	-9.8	-8.44	-13.81	-17.72	-32.43	-32.43
240	-6.4	-9.37	-6.18	-3.18	-2.22	-0.24	-2.71	-5.3	-9.9	-15.1	-17.07	-19.61	-32.43
255	-6.18	-6.17	-8.36	-3.06	-0.01	-0.86	-4.42	-8.04	-11.91	-13.98	-11.13	-16.12	-32.43
270	-6.5	-6.21	-3.62	-1.31	0.78	0.07	-3.73	-7.49	-11.15	-13.89	-18.68	-14.13	-32.43
285	-7.07	-8.9	-1.37	0.61	0.61	-2	-4.72	-6.86	-8.38	-12.63	-15.34	-13.31	-32.43
300	-7.9	-5.91	-1.14	1.48	0.27	-1.01	-2.55	-4.44	-6.78	-11.72	-14.57	-22.53	-32.43
315	-8.16	-4.56	-5.4	-2.81	-1.64	-0.75	-2.76	-4.92	-9.62	-13.84	-20.14	-20.13	-32.43
330	-7.88	-5.57	-4.4	-3.37	-7.53	-11.01	-11.02	-12.95	-13.1	-15.8	-19.63	-18.38	-32.43

345	-7.4	-6.6	-5.67	-4.82	-4.14	-5.03	-7.77	-9.96	-16.61	-15.25	-16.11	-17.39	-32.43
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Ant3													
Freq	6875												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-16.43	-6.97	-6.92	-5.9	-0.68	4.06	-2.84	-6.53	-7.64	-8.19	-19.44	-9.74	-24.97
15	-15.05	-9.3	-7.12	-6.08	-2.09	3.71	1.24	-3.57	-9.23	-10.13	-16.84	-11.38	-24.97
30	-14.64	-11.41	-1.27	-4.24	0.6	-0.81	-4.76	-14.51	-11.42	-11.81	-15.12	-21.69	-24.97
45	-14.98	-5.62	-10.05	-6.51	0.23	1.7	-0.76	-6.37	-10.91	-7.52	-11.16	-24.97	-24.97
60	-15.8	-9	-9.05	-8.58	1.73	2.4	-0.58	-5.93	-8.28	-7.44	-10.55	-17.83	-24.97
75	-16.52	-12.11	-6.14	-2.01	-0.08	0.48	-3.35	-7.26	-6.93	-6.99	-9	-14.31	-24.97
90	-17.28	-3.1	-2.07	-0.63	-1.6	0.68	-3.41	-4.2	-6.42	-9.49	-11.6	-13.13	-24.97
105	-15.73	-2.7	-2.5	1.17	-1.27	-0.42	-3.39	-5.38	-7.17	-11.68	-12.91	-11.68	-24.97
120	-14.25	-5.28	-1.31	2.38	-1.17	-2.9	-2.17	-4.39	-9.37	-11.65	-14.95	-10.88	-24.97
135	-14.47	-6.29	0.44	1.95	-2.86	-2	-4.31	-5.94	-10.16	-13.08	-11.55	-8.26	-24.97
150	-15.9	-5.82	-3.07	3.41	-1.03	-0.68	-3.22	-5.24	-9.68	-14.99	-9.23	-6.24	-24.97
165	-18.55	-4.47	-2.32	2.9	-1.2	0.37	-3.22	-4.55	-7.46	-6.37	-8.74	-5.39	-24.97
180	-22.45	-3.21	0.24	1.54	-0.82	1.7	0.06	-2.34	-5.76	-5.03	-6.95	-5.26	-24.97
195	-20.57	-2.63	-1.75	-1.65	-1.12	-0.27	-3.35	-6.31	-8.11	-9.1	-9.13	-6.68	-24.97
210	-17.47	-3.2	-4.24	-0.97	-3.09	-1.11	-3.33	-4.07	-9.46	-9.78	-11.69	-11.16	-24.97
225	-16.53	-5.66	-4.28	-0.16	-1.14	2.22	-1.42	-3.78	-9.36	-11.89	-12.22	-11.72	-24.97
240	-17.41	-6.09	-2.74	-3.19	1.74	1.81	-2.08	-4.88	-15.02	-8.67	-13.25	-8.91	-24.97
255	-18.26	-6.3	-5.41	-0.85	0.26	0.47	-1.67	-3.23	-10.44	-14.19	-14.54	-15.59	-24.97
270	-20.11	-12.95	-4.59	-0.42	-2.44	-3.81	-6.8	-6.35	-9.38	-13.84	-19.16	-18.16	-24.97
285	-18.74	-9.88	-7.48	-0.53	-3.91	-2.45	-8.66	-9.41	-11.43	-15.04	-12.09	-14.65	-24.97
300	-18.32	-7.81	-10.02	-3.48	-2.63	2.83	-1.78	-8.11	-17.48	-15.5	-15.84	-14.96	-24.97
315	-17.38	-10.4	-7.3	-4.45	-6.62	1.37	-0.77	-3.68	-11.29	-16.75	-21.47	-17.27	-24.97
330	-17.27	-10.53	-5.39	-3.02	-6.63	2.17	-1.2	-5.99	-9.37	-13.65	-12.73	-14.58	-24.97
345	-16.33	-7.97	-6.84	-7.62	-3.78	-4.64	-4.91	-10.16	-19.48	-13.12	-12.32	-11.07	-24.97

Ant4													
Freq	6875												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-2.99	-1.19	-2.16	-6.48	-1.56	1.35	-2.96	-5.71	-10.27	-20.04	-9.64	-10.71	-16.37
15	-3.13	-2.41	-0.64	-0.83	0.46	-0.98	-5.43	-10.29	-13.58	-11.27	-11.99	-13.95	-16.37
30	-3.24	-6.07	-6.21	-6.35	-6.21	-1.64	-4.57	-8.75	-12.93	-14.76	-14.94	-13.61	-16.37
45	-3.35	-10.94	-8.14	-4.39	-6.16	-0.87	-2.66	-7.58	-17.68	-15.03	-19.03	-12.25	-16.37
60	-3.9	-10.75	-4.08	-4.36	-3.83	-0.58	-2.96	-5.25	-8.53	-12.19	-18.03	-9.84	-16.37
75	-4	-11.88	-3.42	1.21	-0.84	2.41	-0.91	-4.82	-9.22	-9.34	-15.53	-12.62	-16.37
90	-3.93	-12.59	-1.58	3.33	2.63	3.37	-1.95	-7.65	-8.27	-9.09	-12.42	-10.89	-16.37
105	-3.63	-10	-2.58	2.99	2.83	3.68	-0.51	-3.9	-10.44	-11.18	-13.13	-11.15	-16.37
120	-3.18	-7.44	-9.12	-0.91	0.13	1.27	-2.77	-5.31	-9.19	-10.39	-12.35	-14.39	-16.37
135	-2.96	-7.85	-5.25	-1.87	-1.22	0.62	-2.58	-5.42	-10.07	-12.5	-11.05	-11.58	-16.37

150	-2.91	-10.01	-7.27	-1.83	-1.85	-1.22	-3.29	-6.59	-9.69	-9.48	-12.59	-12.88	-16.37
165	-2.66	-10.87	-16.94	-6.18	-6.96	-5.15	-3.74	-6.38	-8.49	-8.84	-13.73	-16.37	-16.37
180	-2.45	-11.35	-12.96	-3.92	-9.51	-7.36	-6.34	-7.08	-12.1	-13.36	-15.56	-15.22	-16.37
195	-2.16	-8.52	-8.85	-6.16	-5.73	-5.67	-5.72	-6.71	-10.77	-11.63	-16.83	-13.84	-16.37
210	-1.91	-5.85	-6.83	-4.5	-1.66	-0.93	-2.99	-5.84	-8.55	-10.91	-14.51	-10.83	-16.37
225	-1.89	-5.74	-4.85	-2.46	-0.8	0.92	-0.82	-3.35	-6.25	-6.53	-11.51	-9.3	-16.37
240	-1.87	-7.03	-2.39	1.19	0.34	0.05	-3.14	-7.59	-11.89	-11.6	-10.63	-7.95	-16.37
255	-1.75	-8.01	-1.09	1.74	-2.65	-1.83	-4.58	-5.59	-11.19	-12.24	-14.33	-7.74	-16.37
270	-1.76	-9.78	-1.96	0.2	-3.01	-0.96	-4.47	-5.85	-10.09	-13.41	-14.94	-8.5	-16.37
285	-1.8	-12.34	-1.57	-0.98	-2.27	-0.28	-3.5	-7.79	-8.26	-11.27	-17.33	-9.63	-16.37
300	-1.95	-9.76	-2.44	-1.53	0.34	-0.18	-5.78	-11.06	-9.7	-15.93	-15.63	-11.57	-16.37
315	-2.2	-6.13	-7.24	-0.94	-2.18	0.33	-3.65	-9.06	-10.72	-16.54	-14.84	-10.82	-16.37
330	-2.63	-3.37	-10.52	-10.17	-2.96	-0.79	-7.13	-16.67	-15.91	-11.66	-17.58	-11.81	-16.37
345	-2.81	-1.78	-4.18	-7.56	-7.14	-1.09	-2.82	-8.05	-13.74	-14.42	-14.35	-12.62	-16.37

6875MHz Composite Gain													
Freq	6875												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-5.14	-3.13	-3.32	-1.97	-0.16	2.69	-2.66	-5.26	-7.87	-10.52	-11.9	-10.3	-19.41
15	-5.06	-3.77	-2.3	-1.23	-0.08	1.81	-1.11	-5.08	-9.42	-10.5	-12.31	-11.64	-19.41
30	-5.17	-4.79	-2.51	-3.24	-0.87	-1.02	-4.33	-8.7	-9.05	-10.04	-11.96	-13.92	-19.41
45	-5.37	-4.38	-4.1	-1.74	-1.08	0.84	-1.23	-5.64	-10.18	-9.4	-12.35	-14.22	-19.41
60	-5.85	-5.77	-1.77	-1.66	0.93	2.12	-0.91	-4.33	-7.25	-8.57	-12.78	-12.06	-19.41
75	-5.96	-6.95	-1.64	1.07	1.02	2.4	-1.02	-4.6	-7.24	-7.92	-11.02	-11.16	-19.41
90	-5.75	-4.93	-0.82	2.18	2.24	3.99	-0.68	-4.48	-7.19	-8.89	-11.55	-11.75	-19.41
105	-5.36	-4.69	-1.55	2.57	1.48	4.22	0.9	-2.58	-7.52	-11.18	-13.52	-11.19	-19.41
120	-4.94	-5.7	-3.74	1.05	-0.03	0.94	-1.25	-2.59	-7.48	-10.91	-13.4	-10.48	-19.41
135	-4.79	-6.59	-1.57	0.26	-1.54	1.19	-0.89	-5.08	-8.99	-10.62	-11.32	-10.1	-19.41
150	-4.86	-6.56	-3.08	1.48	-0.99	0.17	-1.6	-5.21	-8.6	-10.55	-11.4	-9.16	-19.41
165	-4.84	-5.85	-2.71	1.08	-0.41	2.85	0.61	-3.44	-7.1	-7.86	-10.11	-8.46	-19.41
180	-4.8	-5.31	-0.64	-0.65	0.16	3.25	0.1	-3.55	-6.61	-7.36	-9.71	-8.73	-19.41
195	-4.68	-4.68	-1.64	-1.14	0.31	3.31	0.21	-3.83	-9.84	-10.25	-11.53	-9.27	-19.41
210	-4.47	-4.66	-3.58	-1.71	-0.81	0.46	-2.64	-4.24	-8.04	-10.3	-12.11	-10.62	-19.41
225	-4.36	-5.87	-4.74	-0.35	0.08	2.85	0.55	-3.5	-6.88	-8.67	-11.51	-11.12	-19.41
240	-4.3	-5.9	-2.05	0.94	1.37	2.31	-1.58	-4.05	-10.15	-10.15	-11.83	-8.37	-19.41
255	-4.19	-5.54	-2.48	1.71	0.76	2.45	-0.67	-2.38	-9.01	-12.51	-12.12	-9.55	-19.41
270	-4.29	-7.24	-1.67	0.96	0.62	2.89	-0.71	-3.8	-7.87	-12.61	-15.31	-10.13	-19.41
285	-4.41	-8.09	-0.78	1.06	0.29	1.3	-2.1	-5.19	-7.22	-11.55	-12.4	-9.79	-19.41
300	-4.67	-6.12	-1.72	0.82	1.16	2.44	-1.18	-5.21	-7.5	-11.45	-13.26	-12.84	-19.41
315	-4.89	-5.18	-4.21	-1.4	-1.46	2.02	-0.43	-3	-8.72	-12.97	-14.57	-12.51	-19.41
330	-5.15	-4.72	-4.66	-2.02	-3.24	0.46	-2.93	-7.27	-8.73	-9.46	-11.95	-12.21	-19.41
345	-5.14	-3.73	-4.27	-3.66	-2.25	-1.45	-2.85	-6.63	-10.56	-11.59	-11.38	-11.41	-19.41