

FCC Composite Gain Test Report

TP-Link Systems Inc.

10 Mauchly, Irvine, CA 926187



Copyright © 2024 By TP-Link Systems Inc. All rights reserved.

The drawings, specifications and the data contained in this document are exclusively the property of TP-Link Systems Inc. The information is intended for internal use only and is subject to change without any notice.

With no written permission from TP-Link Systems Inc. this document, in parts or as a whole, shall not be reproduced, copied, or used in any form or by any means to make any derivatives such as translation, transformation, or adaptation, for any purpose whatever.



is a registered trademark of TP-Link Systems Inc. Other brands and product names mentioned herein are trademarks or registered trademarks of their respective holders.

Warning

This document is intended for internal use only. A Non-Disclosure Agreement (NDA) approved by Chief Technology Officer (CTO) is required to release this document under any circumstances.

Basic Information

EUT Description:	BE19000 Tri-Band Wi-Fi 7 XGS-PON Router		
Brand Name:	tp-link		
Model Name:	XGB835v		
Tested By:	Shao Jinwei <u>Shao Jinwei</u>	Date:	2025/06/25

CONTENTS

1	Operation Mode and Antenna Information	5
1.1	EUT Operation Mode	5
1.2	Antenna Information	5
1.3	Test Frequency	5
2	Test System.....	6
2.1	Test Equipment.....	6
2.2	Test Software.....	6
3	Test Summary.....	7
3.1	Measurement Environment	7
3.2	Measurement Quantity	9
3.3	Test Method.....	9
3.4	Directional Gain ($N_{ss}=1$) Calculations	10
3.5	Directional Gain ($N_{ss}=N_{ant}$) Calculations	11
3.6	Test Procedure	11
4	Measured Value and Maximum Gain Positions.....	13
4.1	Antenna Number	13
4.2	2G	13
4.2.1	DG_1SS Max Value Position	13
4.2.2	DG_1SS Max Value Position Calculation	13
4.2.3	DG_NSSmax Max Value Position.....	14
4.2.4	DG_NSSmax Max Value Position Calculation	14
4.3	5G.....	14
4.3.1	DG_1SS Max Value Position	14
4.3.2	DG_1SS Max Value Position Calculation	15
4.3.3	DG_NSSmax Max Value Position.....	15
4.3.4	DG_NSSmax Max Value Position Calculation	15
4.4	6G.....	16
4.4.1	DG_1SS Max Value Position	16
4.4.2	DG_1SS Max Value Position Calculation	16
4.4.3	DG_NSSmax Max Value Position.....	17
4.4.4	DG_NSSmax Max Value Position Calculation	17
5	Test and Calculate Result	17
5.1	Peak Antenna Gain (Single)	17

5.2	DG_1SS Calculate Result	18
5.3	DG_NSSmax Calculate Result.....	18
6	Test Pattern	19
6.1	Antenna Pattern	19
7	Test Pattern	22
7.1	DG_1SS Test Data.....	22
7.2	DG_NSSmax Test Data	32

1 Operation Mode and Antenna Information

1.1 EUT Operation Mode

The **XGB835v**(MODEL NUMBER) is the Three-band wireless router of 8 internal antennas, of which 4 were 2.4G & 5G8 Dual-Band antennas and 4 were 6G antennas

1.2 Antenna Information

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

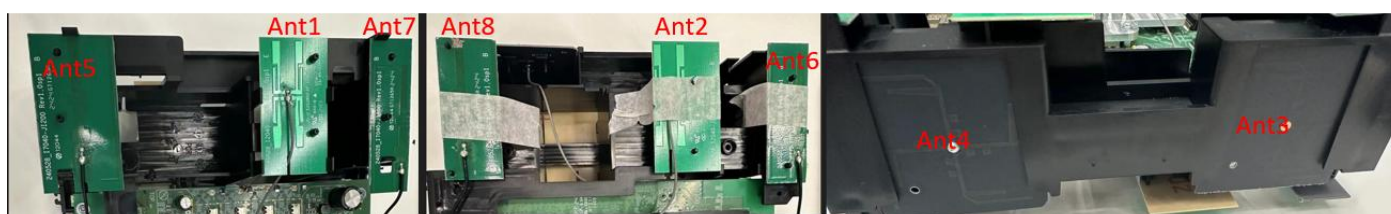


Figure 1-1 Locations of Antennas

The Antenna Information was shown below:

Table 1-1 Antenna Information

Antenna Position	Antenna Type	Connector	Mode of operation
Ant1	Dipole	ipex	2.4G&5G
Ant2	Dipole	ipex	2.4G&5G
Ant3	Dipole	ipex	2.4G&5G
Ant4	Dipole	ipex	2.4G&5G
Ant5	Franklin antenna	ipex	6G
Ant6	Franklin antenna	ipex	6G
Ant7	Franklin antenna	Ipex	6G
Ant8	Franklin antenna	Ipex	6G

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	2026/04/15
Vector Network Analyzer	E5071C	Keysight	MY46315238	24months	2026/05/27

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.

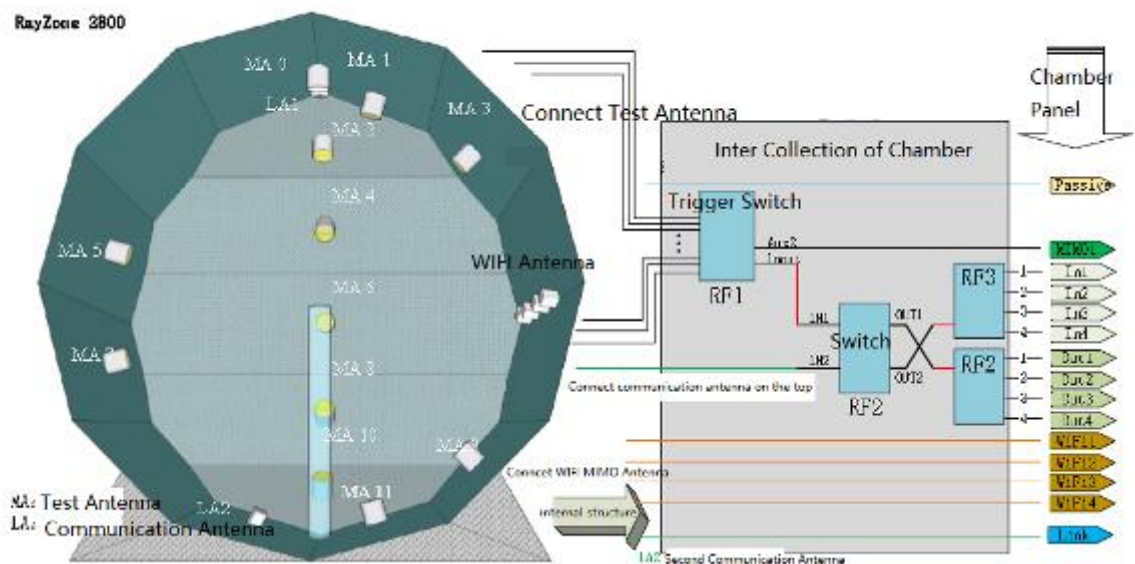


Figure 3-1 Schematic diagram of antenna near-field measurement system

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.

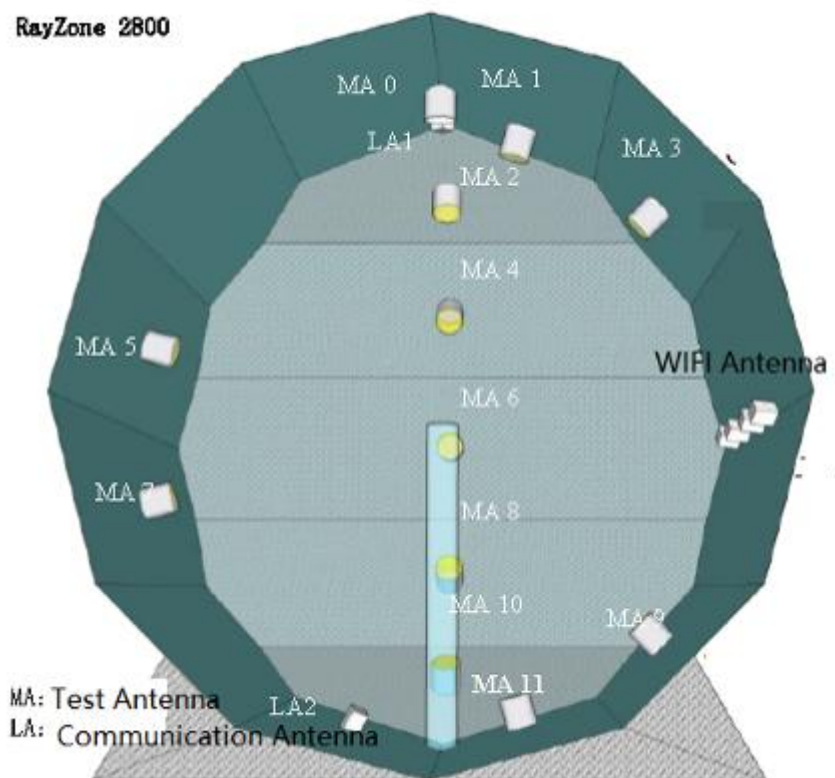


Figure 3-2 Antenna anechoic chamber for near-field measurement

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.

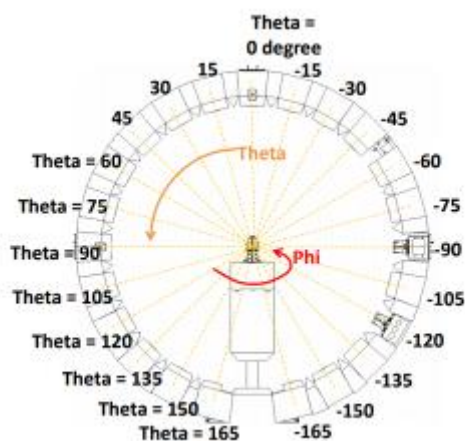


Figure 3-3 System diagram

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.

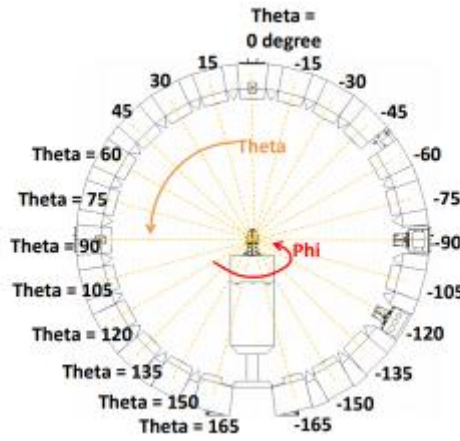


Figure 3-5 Test angle

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.

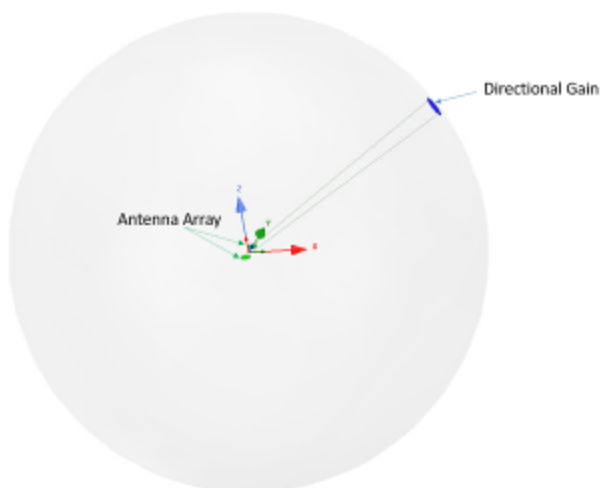


Figure 3-6 Directional Gain Calculation Sketch Map

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	Ant1	Ant1	Ant5
Ant2	Ant2	Ant2	Ant6
Ant3	Ant3	Ant3	Ant7
Ant4	Ant4	Ant4	Ant8

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)	1.59
Ant2(dBi)	2.71
Ant3(dBi)	2.23
Ant4(dBi)	0.25
Polarization	Phi
Φ (°)	0
θ (°)	90

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)]	$10^{(1.59/20)}$
Ant2[10^(G/20)]	$10^{(2.71/20)}$
Ant3[10^(G/20)]	$10^{(2.23/20)}$
Ant4[10^(G/20)]	$10^{(0.25/20)}$
Ant1[10^(G/20)] value	1.201
Ant2[10^(G/20)] value	1.366
Ant3[10^(G/20)] value	1.293

Ant4[10 ^{^(G/20)}] value	1.029
Sum of Ants Value(Antmax)	4.889
DG[10*Log(Antmax ² /Nant)] (dBi)	7.76

4.2.3 DG_NSSmax Max Value Position

Table 4-4 DG_NSSmax Max Value Position

Frequency(GHz)	2.40~2.50
Ant1(dBi)	1.59
Ant2(dBi)	2.71
Ant3(dBi)	2.23
Ant4(dBi)	0.25
Polarization	Theta
Φ (°)	0
θ (°)	90

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 ^{^(1.59/10)}
Ant2[10 ^{^(G/10)}]	10 ^{^(2.71/10)}
Ant3[10 ^{^(G/10)}]	10 ^{^(2.23/10)}
Ant4[10 ^{^(G/10)}]	10 ^{^(0.25/10)}
Ant1[10 ^{^(G/10)}] value	1.442
Ant2[10 ^{^(G/10)}] value	1.866
Ant3[10 ^{^(G/10)}] value	1.671
Ant4[10 ^{^(G/10)}] value	1.059
Sum of Ants Value(Antmax)	6.039
DG[10*Log ₁₀ (Antmax/Nant)] (dBi)	1.79

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)	1.32	1.39	1.38	2.58
Ant2(dBi)	0.18	0.73	0.19	0.03
Ant3(dBi)	0.86	0.28	1.74	1.39

Ant4(dBi)	4.04	4.92	1.94	1.27
Polarization	Theta	Theta	Theta	Theta
Φ (°)	195	195	90	90
θ (°)	90	105	90	75

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 ^{^(1.32/20)}	10 ^{^(1.39/20)}	10 ^{^(1.38/20)}	10 ^{^(2.58/20)}
Ant2[10^{^(G/20)}]	10 ^{^(0.18/20)}	10 ^{^(0.73/20)}	10 ^{^(0.19/20)}	10 ^{^(0.03/20)}
Ant3[10^{^(G/20)}]	10 ^{^(0.86/20)}	10 ^{^(0.28/20)}	10 ^{^(1.74/20)}	10 ^{^(1.39/20)}
Ant4[10^{^(G/20)}]	10 ^{^(4.04/20)}	10 ^{^(4.92/20)}	10 ^{^(1.94/20)}	10 ^{^(1.27/20)}
Ant1[10^{^(G/20)}] value	1.164	1.174	1.172	1.346
Ant2[10^{^(G/20)}] value	1.021	1.088	1.022	1.003
Ant3[10^{^(G/20)}] value	1.104	1.033	1.222	1.174
Ant4[10^{^(G/20)}] value	1.592	1.762	1.25	1.157
Sum of Ants Value(Antmax)	4.881	5.056	4.666	4.68
DG[10*Log(Antmax²/Nant)] (dBi)	7.75	8.06	7.36	7.38

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)	0.33	1.39	-0.56	2.58
Ant2(dBi)	5.35	0.73	1.69	0.03
Ant3(dBi)	1.81	0.28	-1.04	1.39
Ant4(dBi)	-3	4.92	3.83	1.27
Polarization	Theta	Theta	Theta	Theta
Φ (°)	315	195	195	90
θ (°)	90	105	90	75

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 ^{^(0.33/10)}	10 ^{^(1.39/10)}	10 ^{^(-0.56/10)}	10 ^{^(2.58/10)}
Ant2[10^{^(G/10)}]	10 ^{^(5.35/10)}	10 ^{^(0.73/10)}	10 ^{^(1.69/10)}	10 ^{^(0.03/10)}
Ant3[10^{^(G/10)}]	10 ^{^(1.81/10)}	10 ^{^(0.28/10)}	10 ^{^(-1.04/10)}	10 ^{^(1.39/10)}

Ant4[10 ^{*(G/10)}]	10 ^{^(-3.00/10)}	10 ^{^(4.92/10)}	10 ^{^(3.83/10)}	10 ^{^(1.27/10)}
Ant1[10 ^{*(G/10)}] value	1.079	1.377	0.879	1.811
Ant2[10 ^{*(G/10)}] value	3.428	1.183	1.476	1.007
Ant3[10 ^{*(G/10)}] value	1.517	1.067	0.787	1.377
Ant4[10 ^{*(G/10)}] value	0.501	3.105	2.415	1.34
Sum of Ants Value(Antmax)	6.525	6.731	5.557	5.535
DG[10*Log ₁₀ (Antmax/Nant)] (dBi)	2.13	2.26	1.43	1.41

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)	-2.03	2.51	1.8	0.53
Ant2(dBi)	2.42	2.06	0.32	0.32
Ant3(dBi)	0.24	-0.39	1.6	0.97
Ant4(dBi)	1.88	-1.21	-7.3	-5.5
Polarization	Theta	Theta	Theta	Theta
Φ (°)	270	270	135	150
θ (°)	75	75	90	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 ^{^(-2.03/20)}	10 ^{^(2.51/20)}	10 ^{^(1.80/20)}	10 ^{^(0.53/20)}
Ant2[10 ^{*(G/20)}]	10 ^{^(2.42/20)}	10 ^{^(2.06/20)}	10 ^{^(0.32/20)}	10 ^{^(0.32/20)}
Ant3[10 ^{*(G/20)}]	10 ^{^(0.24/20)}	10 ^{^(-0.39/20)}	10 ^{^(1.60/20)}	10 ^{^(0.97/20)}
Ant4[10 ^{*(G/20)}]	10 ^{^(1.88/20)}	10 ^{^(-1.21/20)}	10 ^{^(-7.30/20)}	10 ^{^(-5.50/20)}
Ant1[10 ^{*(G/20)}] value	0.792	1.335	1.23	1.063
Ant2[10 ^{*(G/20)}] value	1.321	1.268	1.038	1.038
Ant3[10 ^{*(G/20)}] value	1.028	0.956	1.202	1.118
Ant4[10 ^{*(G/20)}] value	1.242	0.870	0.432	0.531
Sum of Ants Value(Antmax)	4.383	4.429	3.902	3.749
DG[10*Log(Antmax ² /Nant)] (dBi)	5.94	5.95	5.8	5.46

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)	4.54	3.81	3.91	3.07
Ant2(dBi)	-1.26	4.07	2.43	2.86
Ant3(dBi)	3.05	2.32	3.71	3.51
Ant4(dBi)	2.17	-3.83	-5.19	-2.96
Polarization	Theta	Theta	Theta	Theta
Φ (°)	195	135	135	150
θ (°)	90	90	90	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)]	$10^{(4.54/10)}$	$10^{(3.81/10)}$	$10^{(3.91/10)}$	$10^{(3.07/10)}$
Ant2[10^(G/10)]	$10^{(-1.26/10)}$	$10^{(4.07/10)}$	$10^{(2.43/10)}$	$10^{(2.86/10)}$
Ant3[10^(G/10)]	$10^{(3.05/10)}$	$10^{(2.32/10)}$	$10^{(3.71/10)}$	$10^{(3.51/10)}$
Ant4[10^(G/10)]	$10^{(2.17/10)}$	$10^{(-3.83/10)}$	$10^{(-5.19/10)}$	$10^{(-2.96/10)}$
Ant1[10^(G/10)] value	2.844	2.404	2.46	2.028
Ant2[10^(G/10)] value	0.748	2.553	1.75	1.932
Ant3[10^(G/10)] value	2.018	1.706	2.35	2.244
Ant4[10^(G/10)] value	1.648	0.414	0.303	0.506
Sum of Ants Value(Antmax)	7.259	7.077	6.863	6.709
DG[10*Log ₁₀ (Antmax/Nant)] (dBi)	2.59	2.48	2.34	2.25

5 Test and Calculate Result

5.1 Peak Antenna Gain (Single)

Table 5-1 Antenna Test Result

Frequency Band(MHz)	Ant1	Ant2	Ant3	Ant4
2400-2500	2.05dBi	3.90dBi	2.79dBi	3.76dBi
5150-5250	2.51dBi	5.35dBi	2.15dBi	4.04dBi
5250-5350	3.12dBi	4.85dBi	2.53dBi	4.92dBi
5470-5725	2.66dBi	4.36dBi	2.43dBi	4.65dBi

5725-5925	2.59dBi	5.46dBi	2.62dBi	4.29dBi
5925-6425	7.53dBi	6.62dBi	6.69dBi	6.41dBi
6425-6525	7.08dBi	6.65dBi	6.42dBi	6.37dBi
6525-6875	6.18dBi	6.84dBi	6.54dBi	6.35dBi
6875-7125	5.01dBi	5.66dBi	6.54dBi	4.72dBi

5.2 DG_1SS Calculate Result

Table 5-2 Test & Calculate Result

Frequency Band(MHz)	Max Directional Gain	Polarization/ Φ (°) / θ (°)
2400-2450	7.76dBi	Phi/0/90
5150-5250	7.75dBi	Theta/195/90
5250-5350	8.06dBi	Theta/195/105
5470-5725	7.36dBi	Theta/90/90
5725-5925	7.38dBi	Theta/90/75
5925-6425	5.94dBi	Theta/195/90
6425-6525	5.95dBi	Theta/180/90
6525-6875	5.8dBi	Theta/135/90
6875-7125	5.46dBi	Theta/150/75

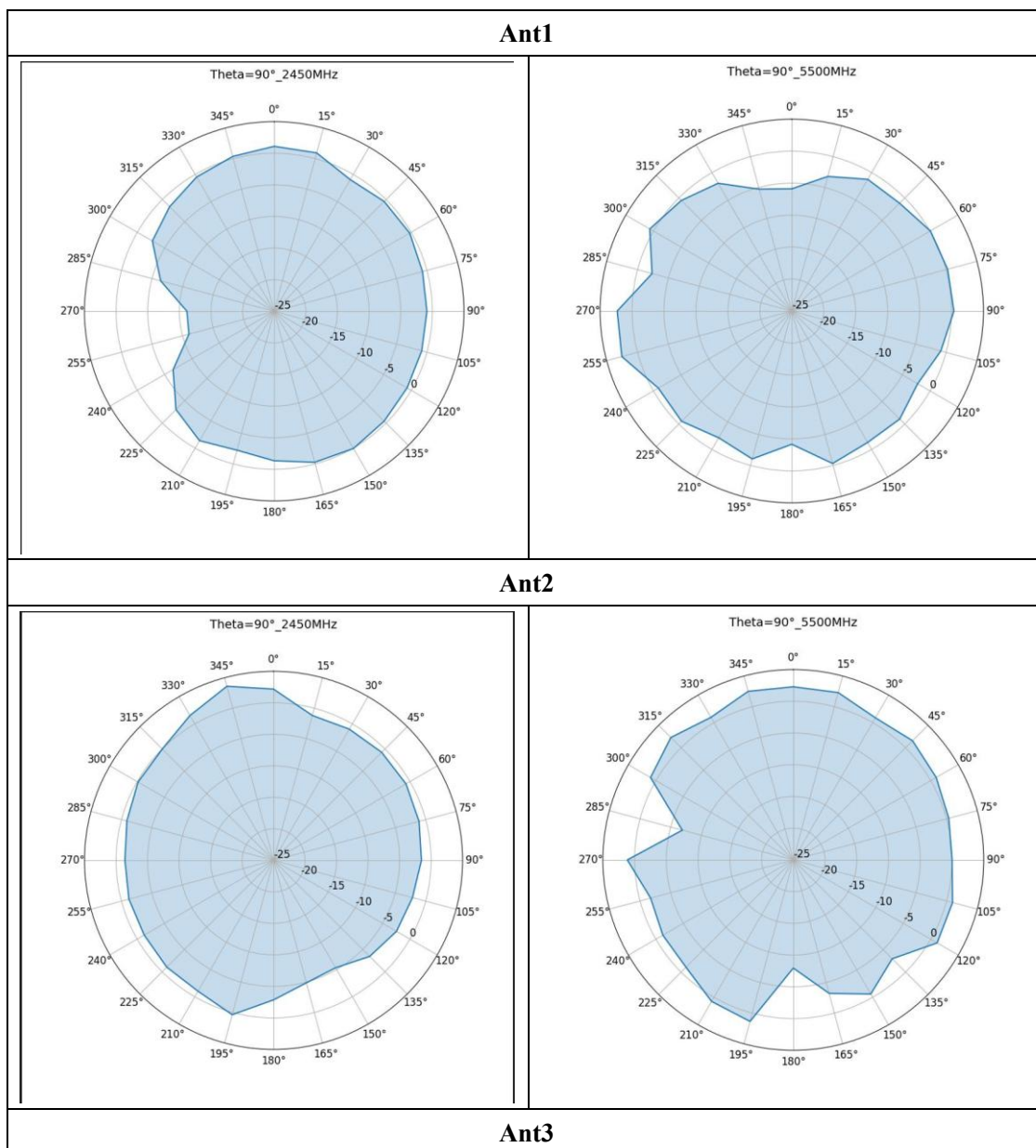
5.3 DG_NSSmax Calculate Result

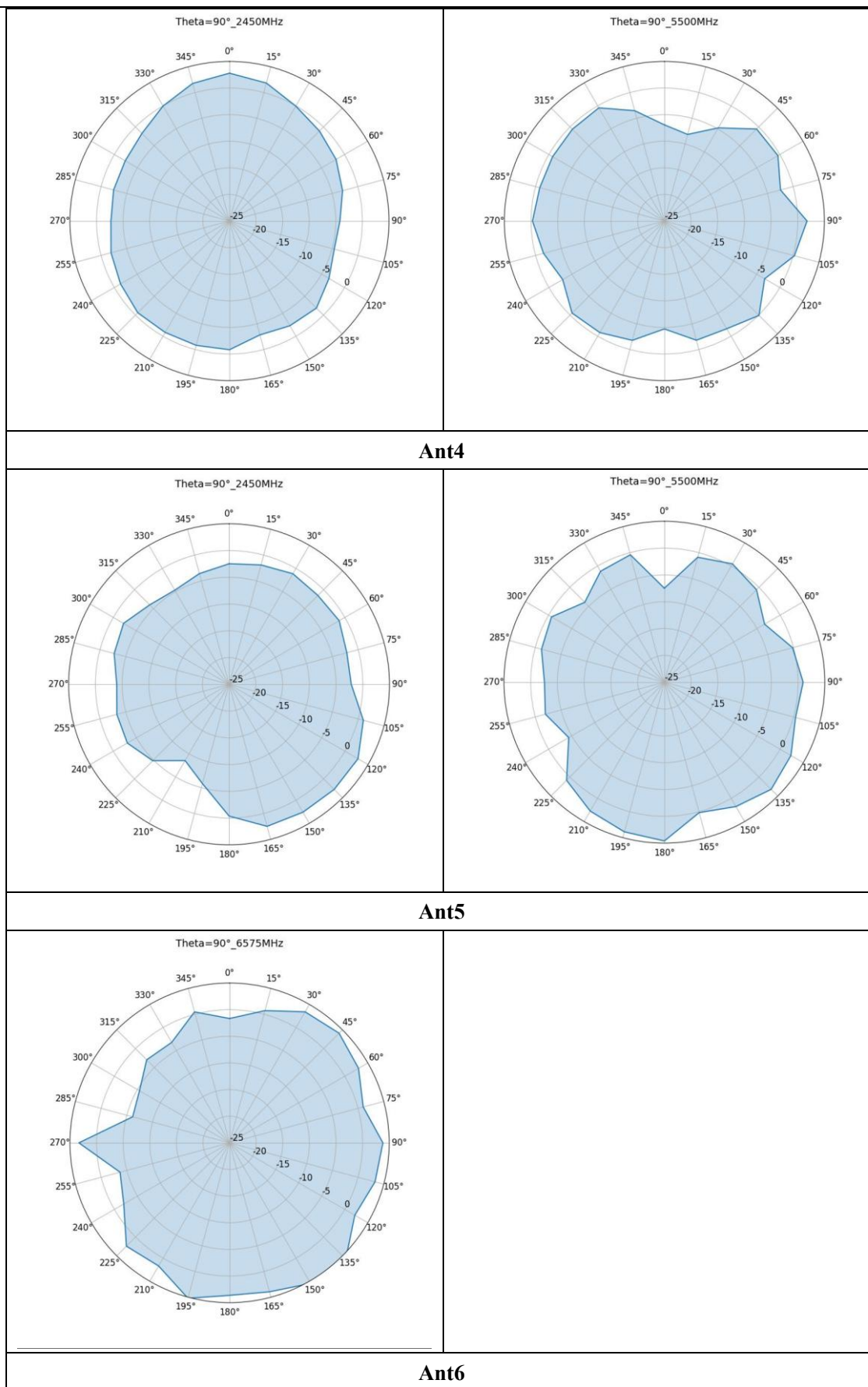
Table 5-3 Test & Calculate Result

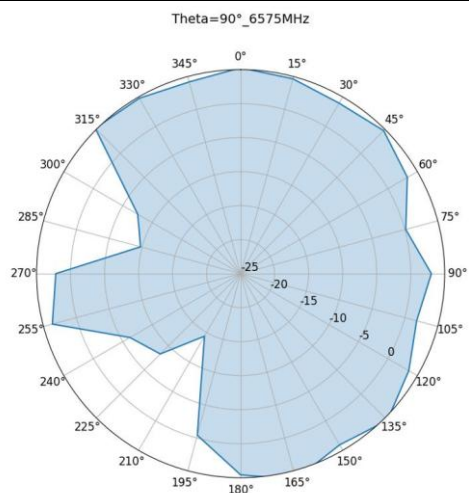
Frequency Band(MHz)	Max Directional Gain	Polarization/ Φ (°) / θ (°)
2400-2450	1.79dBi	Phi/0/90
5150-5250	2.13dBi	Theta/315/90
5250-5350	2.26dBi	Theta/195/105
5470-5725	1.43dBi	Theta/195/90
5725-5925	1.41dBi	Theta/90/75
5925-6425	2.59dBi	Theta/195/90
6425-6525	2.48dBi	Theta/135/90
6525-6875	2.34dBi	Theta/135/90
6875-7125	2.25dBi	Theta/150/75

6 Test Pattern

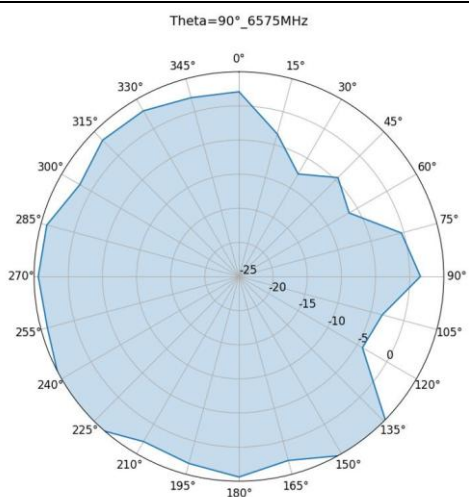
6.1 Antenna Pattern



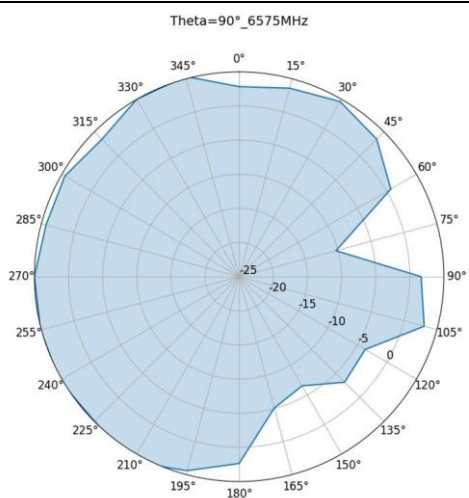




Ant7



Ant8



7 Test Pattern

7.1 DG_1SS Test Data

Ant1													
Freq	2410												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-9.7	-5.95	-3.38	-0.9	-1.15	0.75	1.59	1.1	0.01	-1.78	-3.54	-6.56	-17.14
15	-9.88	-5.45	-2.64	-0.24	-0.5	0.74	1.47	1.41	0.37	-0.26	-3.72	-9.77	-17.14
30	-10.09	-5.27	-2.39	-0.68	-1.72	0.79	-0.48	1.07	-1.68	-0.13	-3.9	-11.06	-17.14
45	-10.39	-5.49	-2.72	-1.62	-4.03	0.18	-0.68	-0.25	-2.5	-1.97	-5	-9.23	-17.14
60	-10.82	-6.01	-3.7	-2.58	-4.38	-1.36	0.07	0.01	-2.29	-3.36	-5.61	-7.66	-17.14
75	-11.26	-6.73	-5.34	-3.79	-4.27	-1.63	-0.06	1.27	-1.99	-3.06	-5.62	-6.97	-17.14
90	-11.29	-7.77	-7.37	-5.21	-4.89	-1.43	-0.19	1.66	-1.78	-2.68	-6.02	-6.06	-17.14
105	-11.16	-9.07	-9.15	-6.77	-5.63	-1.7	-0.21	1.21	-2.06	-3.02	-5.88	-5.76	-17.14
120	-10.88	-10.58	-10.56	-8.03	-6.03	-2.02	-0.57	0.22	-2.6	-3.62	-5.73	-7.02	-17.14
135	-10.67	-12.87	-11.7	-7.83	-5.26	-1.88	-0.83	-1.03	-2.68	-4.37	-6.4	-8.3	-17.14
150	-10.65	-16.11	-12.65	-6.29	-4.43	-0.97	-0.59	-2.01	-2.42	-5.05	-6.15	-8.84	-17.14
165	-10.62	-21.02	-11.97	-4.89	-4.01	-0.42	-1.75	-1.98	-3.51	-5.29	-5.15	-9.84	-17.14
180	-10.39	-20.56	-9.48	-3.41	-4.22	-2.08	-4.26	-3.13	-4.29	-4.41	-4.31	-12.18	-17.14
195	-10.25	-14.75	-6.98	-2.56	-4.79	-3.94	-4.53	-2.17	-3.19	-2.2	-5.23	-17.14	-17.14
210	-10	-11.09	-5.32	-3.09	-5.37	-2.51	-2.27	-1.12	-1.75	-2.13	-8.2	-14.58	-17.14
225	-9.54	-8.82	-4.53	-4.47	-5.78	-1.92	-3.98	-3.75	-3.21	-4.11	-8.67	-8.82	-17.14
240	-9.22	-7.45	-4.46	-6.3	-5.47	-4.91	-9.67	-9.09	-7.03	-6.11	-7.05	-5.36	-17.14
255	-8.99	-6.82	-4.51	-7.25	-6.06	-6.14	-14.57	-6.22	-8.44	-7.41	-5.43	-3.27	-17.14
270	-9.05	-6.58	-4.52	-6.7	-6.75	-4.17	-9.8	-7.74	-10.11	-7.49	-4.41	-2.41	-17.14
285	-9.19	-6.66	-4.33	-4.61	-7.17	-3.82	-6.78	-8.81	-14.17	-7.76	-3.89	-2.28	-17.14
300	-9.34	-6.85	-4.19	-2.67	-6.37	-3.76	-2.24	-4.78	-5.82	-5.03	-3.02	-2.52	-17.14
315	-9.32	-7.06	-4.12	-2.33	-3.27	-2.1	-0.98	-0.65	-2.48	-2.32	-1.87	-2.69	-17.14
330	-9.34	-7	-4.29	-2.47	-2.56	-1.14	-0.41	-1.85	-1.65	-1.92	-1.7	-3.05	-17.14
345	-9.42	-6.57	-4.25	-1.94	-2.77	0.31	0.05	-0.6	-2.63	-2.15	-2.44	-4.22	-17.14

Ant2													
Freq	2410												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-8.62	-12.04	-6.96	-4.16	-2.99	0.95	2.71	2.83	0.7	1.13	-0.9	-0.18	-12.6
15	-8.47	-13.73	-11.6	-10.03	-9.63	-3.43	-1.72	0.07	-1.93	-2.16	-3.68	-0.77	-12.6
30	-8.11	-14.52	-17.62	-15.69	-10.42	-5.14	-3.35	-3.58	-4.42	-5.28	-6.26	-2.19	-12.6
45	-8.05	-13.58	-12.77	-7.39	-5.7	-3.16	-2.2	-2.88	-4.71	-5.18	-4.58	-4.08	-12.6
60	-8.48	-12.52	-9.15	-4.52	-3.67	-2.31	-1.58	-2.02	-4.49	-5.45	-2.84	-5.88	-12.6
75	-8.72	-11.66	-7.32	-2.86	-3.08	-2.19	-1.53	-2.51	-4.98	-6.48	-2.25	-7.59	-12.6
90	-8.7	-10.91	-6.11	-1.66	-2.63	-1.85	-1.24	-3.07	-7.53	-5.67	-3	-9.48	-12.6

105	-8.6	-10.1	-5.6	-0.76	-1.53	0.08	-1.47	-2.51	-9.82	-5.24	-4.81	-10.96	-12.6
120	-8.35	-9.11	-5.1	-0.13	-0.38	0.87	-1.78	-4.19	-8	-6.95	-9.4	-12.39	-12.6
135	-8.32	-7.98	-4.6	-0.15	-0.2	0.12	-3.89	-5.61	-8.44	-11.33	-13.28	-12.6	-12.6
150	-8.72	-6.98	-4.2	-0.69	-0.72	-2.41	-6.54	-6.73	-9.56	-10.27	-7.23	-11.04	-12.6
165	-8.87	-6.3	-3.84	-1.05	-3.56	-6.76	-5.58	-6.01	-6.23	-6.07	-5.68	-9.07	-12.6
180	-8.67	-5.88	-3.64	-2.83	-8.94	-4.57	-1.5	-0.89	-2.69	-5.21	-4.92	-7.33	-12.6
195	-8.45	-5.87	-3.6	-5.92	-8.35	-0.37	1.17	0.96	-2.3	-8.13	-4.57	-5.87	-12.6
210	-8.39	-6.04	-4.11	-8.4	-7.06	0.85	-0.16	0.96	-4.86	-7.1	-5.26	-5.28	-12.6
225	-8.78	-6.47	-5.18	-12.07	-6.11	-2.97	-0.9	-0.49	-5.21	-6.27	-6.3	-4.91	-12.6
240	-9.17	-7.13	-6.47	-14.63	-5.8	-5.69	-1.36	-0.54	-5.48	-6.23	-6.24	-4.1	-12.6
255	-8.97	-8.06	-7.39	-10.56	-4.56	-6.09	-1.52	-0.67	-3.69	-3.27	-5.79	-2.66	-12.6
270	-8.6	-8.94	-7.6	-6.9	-2.76	-5.13	-1.23	-0.27	-2.63	-1.46	-4.04	-0.98	-12.6
285	-8.33	-9.42	-6.95	-5.05	-1.56	-1.64	-0.24	-0.44	-2.25	-0.08	-1.47	0.25	-12.6
300	-8.15	-9.43	-6.01	-3.82	-1.29	-0.01	0.44	0.44	-2.53	0.61	0.08	0.81	-12.6
315	-8.48	-9.29	-5.23	-2.39	-1.62	0.37	0.07	0.64	-2.81	-0.54	0.48	0.83	-12.6
330	-8.91	-9.36	-4.73	-1.54	-1.12	1.58	1.54	1.43	-0.91	-0.9	0.68	0.41	-12.6
345	-8.82	-10.22	-5.04	-1.89	-0.81	2.59	3.84	2.85	1.76	0.75	0.55	0.03	-12.6

Ant3													
Freq	2410												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-7.32	-7.09	-7.32	-4.14	-1.64	2	2.23	1.77	-0.46	-1.47	-3.14	-5.01	-10.84
15	-7.53	-5.81	-5.98	-5.03	-2.32	-0.11	0.44	0.08	-1.85	-3.14	-4.3	-6.37	-10.84
30	-7.64	-4.74	-4.52	-5.08	-3.72	-1.15	-0.74	-0.09	-3.41	-6.22	-5.72	-7.73	-10.84
45	-7.71	-4.02	-3.77	-4.65	-5.14	-0.4	-0.76	-0.63	-4.88	-7.14	-6.79	-7.37	-10.84
60	-7.7	-3.56	-3.98	-5.9	-5.44	-1.19	-1.65	-3.06	-6.02	-7.42	-6.47	-5.39	-10.84
75	-7.47	-3.43	-4.64	-8.66	-4.79	-1.91	-2.99	-3.91	-7.02	-7.53	-5.61	-3.55	-10.84
90	-7.38	-3.5	-4.95	-9.17	-4.83	-2.09	-3.9	-4.12	-7.49	-7.53	-5.54	-2.63	-10.84
105	-7.55	-3.66	-4.71	-6.9	-5.77	-2.73	-4.94	-5.48	-8.16	-7.42	-5.69	-2.9	-10.84
120	-7.9	-4.05	-4.32	-4.63	-6.41	-3.05	-4.16	-4.55	-7.02	-6.44	-5.93	-4.16	-10.84
135	-8.38	-4.73	-4.56	-3.48	-5.75	-2.7	-2.15	-2.38	-4.53	-5.13	-6.7	-5.85	-10.84
150	-8.81	-5.89	-5.51	-4.13	-6.12	-2.71	-2.82	-3.32	-4.44	-4.56	-8.05	-7.74	-10.84
165	-8.88	-7.72	-7.27	-5.58	-6.33	-2.95	-6.24	-4.69	-7.42	-4.92	-8.46	-9.27	-10.84
180	-8.76	-10.34	-8.59	-4.23	-4.32	-2.06	-3.88	-3.75	-5.18	-5.45	-7.57	-10.56	-10.84
195	-8.5	-13.36	-7.55	-2.31	-2.85	0.08	-3.16	-2.22	-3.58	-3.94	-6.21	-10.84	-10.84
210	-8.2	-15	-5.96	-1.75	-2.28	-0.08	-2.31	-3	-3.44	-3.79	-6.76	-10.19	-10.84
225	-7.99	-13.93	-5.01	-1.86	-3.13	-0.47	-2.37	-3.84	-4.32	-6.18	-7.77	-9.15	-10.84
240	-8.11	-12.2	-4.85	-2.39	-3.13	-0.94	-2.27	-2.6	-5.16	-5.96	-7.19	-8.2	-10.84
255	-8.44	-11.04	-5.06	-2.64	-2.64	-1.41	-1.72	-1.63	-4.3	-6.38	-6.56	-7.3	-10.84
270	-8.67	-10.52	-5.31	-2.35	-2.67	-1.15	-2.18	-0.29	-4.24	-5.79	-5.49	-6.33	-10.84
285	-8.48	-10.33	-5.51	-2.16	-2.9	-1.36	-2.41	-0.54	-3.91	-4.15	-4.56	-5.15	-10.84
300	-7.92	-10.39	-5.81	-2.35	-3.1	-1.61	-3.11	-1.5	-3.42	-2.33	-3.45	-4.26	-10.84
315	-7.38	-10.32	-6.34	-2.72	-2.63	-2.04	-2.14	-1.84	-2.61	-1.09	-2.01	-3.73	-10.84

330	-7.14	-9.73	-7.12	-2.97	-1.87	-0.64	0.24	-0.38	-1.59	-1.03	-1.49	-3.69	-10.84
345	-7.14	-8.57	-7.72	-3.38	-1.37	1.71	1.98	2.03	-0.62	-1.31	-2.06	-4.09	-10.84

Ant4													
Freq	2410												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-14.64	-7.34	-3.26	-1.1	-1.26	0.72	0.25	-0.68	-4.72	-4.89	-6.58	-8.04	-15.14
15	-15.52	-8.69	-4.04	-1.15	-1.63	0.1	-0.73	-0.76	-5.05	-3.9	-4.6	-8.41	-15.14
30	-16.44	-10.76	-5.61	-2.21	-2	-1.39	-1.02	-2.93	-5.22	-3.05	-3.97	-9.56	-15.14
45	-15.91	-12.91	-5.68	-2.28	-2.79	-1.97	-1.66	-3.73	-4.83	-2.95	-5.47	-11.43	-15.14
60	-14.76	-12.06	-3.94	-1.43	-2.79	-4.32	-1.12	-2.75	-4.08	-5.19	-9.64	-12.15	-15.14
75	-13.83	-9.6	-2.23	0.15	-2.78	-5.27	-1.88	-3.3	-5.35	-9.81	-19.17	-10.26	-15.14
90	-13.47	-7.69	-1.03	1.92	-1.7	-3.82	-2.4	-4.08	-6.65	-7.71	-9.51	-7.78	-15.14
105	-13.45	-6.41	-0.28	3.12	0.23	-0.63	0.17	-0.21	-2.41	-3.04	-4.87	-5.39	-15.14
120	-13.75	-5.78	-0.15	3.5	1.52	1.5	2.3	2.72	1.01	-0.74	-2.39	-4.84	-15.14
135	-13.76	-5.68	-0.49	3.01	1.49	2.22	2.21	3.3	2.57	0.22	-2.76	-6.19	-15.14
150	-13.7	-6.07	-1.05	1.99	0.46	2.02	1.49	2.39	2.61	0.57	-4.09	-6.47	-15.14
165	-13.81	-6.94	-1.8	0.72	-0.47	1.08	1.31	1.06	1.65	-0.18	-4.48	-6.68	-15.14
180	-14.03	-8.1	-3.12	-0.95	-1.8	-0.68	-0.51	-0.44	-0.92	-2.78	-5.21	-7.52	-15.14
195	-14.28	-9.22	-5.13	-3.18	-5.53	-3.17	-4.2	-3.33	-3.78	-6.03	-6.22	-8.77	-15.14
210	-14.48	-9.57	-7.43	-6.13	-8.79	-6.1	-9.12	-7.15	-8.03	-6.77	-7.37	-10.67	-15.14
225	-14.46	-8.97	-7.78	-6.95	-9.54	-5.22	-6.1	-9.73	-13.18	-5.72	-7.05	-13.67	-15.14
240	-14.43	-7.85	-6.27	-5.29	-6.87	-2.96	-3.64	-5.76	-11.02	-6.97	-7.43	-15.14	-15.14
255	-14.59	-6.8	-4.81	-3.83	-3.88	-2.29	-3.1	-3.63	-8.48	-8.77	-8.81	-12.47	-15.14
270	-15.37	-6.03	-3.97	-2.68	-2.52	-1.06	-2.49	-2.12	-7.96	-10.04	-11.38	-11.07	-15.14
285	-16.94	-5.52	-3.59	-1.75	-1.96	0.09	-0.52	-1.63	-7.52	-11.33	-13.96	-10.83	-15.14
300	-17.9	-5.23	-3.43	-1.42	-2.34	-0.19	-0.15	-2.18	-10.51	-14.69	-13.13	-10.27	-15.14
315	-17.11	-5.29	-3.19	-2.14	-3.05	-1.85	-2.33	-5.17	-10.28	-11.99	-9.28	-9.33	-15.14
330	-15.71	-5.7	-3.05	-2.55	-3.61	-3.45	-2.78	-4.94	-7.56	-8.67	-7.86	-8.65	-15.14
345	-14.62	-6.39	-3.15	-1.75	-2.53	-0.81	-0.36	-1.75	-5.78	-6.16	-7.62	-8.18	-15.14

2450MHz Composite Gain													
Freq	2450												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-3.65	-1.8	1	3.59	4.29	7.14	7.76	7.37	5.14	4.53	2.71	1.61	-7.58
15	-3.84	-1.83	0.55	2.68	3.13	5.49	5.97	6.26	4.11	3.77	1.95	0.42	-7.58
30	-3.93	-1.93	0.04	1.66	2.17	4.55	4.69	4.85	2.44	2.68	1.12	-0.91	-7.58
45	-3.95	-1.96	0.54	2.32	1.68	4.78	4.72	4.27	1.85	1.94	0.6	-1.58	-7.58
60	-4.02	-1.67	1.1	2.58	2	3.81	4.98	4.15	1.9	0.78	0.21	-1.38	-7.58
75	-3.97	-1.28	1.33	2.77	2.33	3.39	4.47	4.16	1.38	-0.35	-0.31	-0.74	-7.58
90	-3.88	-1.04	1.5	3.44	2.62	3.77	4.2	3.97	0.52	0.37	0.3	-0.08	-7.58

105	-3.88	-0.92	1.67	4.24	3.24	4.84	4.63	4.63	1.06	1.52	0.72	0.22	-7.58
120	-3.9	-0.98	1.74	4.77	3.88	5.55	5.28	5.11	2.63	1.95	0.51	-0.55	-7.58
135	-3.99	-1.28	1.53	4.79	4.15	5.67	5.15	5.19	3.67	1.78	-0.51	-1.83	-7.58
150	-4.23	-1.89	1.08	4.32	3.72	5.22	4.39	4.23	3.64	2.02	-0.23	-2.34	-7.58
165	-4.31	-2.89	0.59	3.72	2.68	4.23	3.5	3.55	2.89	2.24	0.2	-2.61	-7.58
180	-4.19	-3.74	0.27	3.25	1.56	3.78	3.63	4.08	2.9	1.62	0.6	-3.14	-7.58
195	-4.05	-4.07	0.35	2.64	0.86	4.34	3.66	4.48	2.83	1.23	0.49	-3.75	-7.58
210	-3.91	-3.82	0.4	1.55	0.49	4.45	3.13	3.93	1.79	1.32	-0.81	-3.52	-7.58
225	-3.84	-3.13	0.48	0.44	0.17	3.54	2.89	2.16	0.29	0.5	-1.38	-2.58	-7.58
240	-3.9	-2.41	0.55	-0.12	0.81	2.59	2.32	2.1	-0.86	-0.29	-0.95	-1.27	-7.58
255	-3.9	-2	0.65	0.47	1.82	2.3	2.1	3.23	0.08	-0.19	-0.53	0.39	-7.58
270	-3.99	-1.81	0.78	1.63	2.51	3.33	2.67	3.89	0.28	0.41	0.13	1.63	-7.58
285	-4.09	-1.74	1.02	2.75	2.88	4.45	3.89	3.76	0.11	1.18	1.12	2.41	-7.58
300	-4	-1.71	1.23	3.5	2.94	4.75	4.88	4.21	0.95	2.22	2.31	2.81	-7.58
315	-3.84	-1.75	1.38	3.63	3.4	4.68	4.73	4.52	2.01	3.04	3.52	3	-7.58
330	-3.72	-1.77	1.34	3.65	3.78	5.29	5.81	4.89	3.46	3.41	3.95	2.85	-7.58
345	-3.57	-1.78	1.14	3.81	4.19	7.07	7.56	6.85	4.63	4.14	3.59	2.39	-7.58

Ant1													
Freq	5250												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-4.55	-4.93	-4.94	-4.36	-3.95	-3.33	-5.13	-1.81	-1.97	-4.88	-10.44	-11.58	-15.16
15	-4.65	-5.06	-5.09	-4.44	-3.61	-2.01	-2.38	-0.54	-2.48	-4.88	-8.05	-10.16	-15.16
30	-4.88	-5.32	-4.93	-2.97	-3.07	-1.2	-0.12	0.35	-1.59	-3.98	-6.63	-7.87	-15.16
45	-4.96	-5.82	-5.22	-2.16	-1.44	-0.17	-0.28	0.67	-1.49	-3.28	-7.33	-7.08	-15.16
60	-4.92	-6.58	-7.26	-2.42	-2.38	-0.71	-0.34	-1.85	-1.37	-2.96	-5.35	-7.01	-15.16
75	-4.85	-7.27	-8.73	-2.49	-2.44	-1.24	-0.91	-2.32	-1.79	-2.07	-5.26	-7.8	-15.16
90	-4.78	-7.48	-8.09	-1.13	-2.65	-2.87	-2.01	-2.31	-2.17	-0.57	-6.15	-8.75	-15.16
105	-4.88	-7.08	-6.95	-0.38	-2.02	-2.25	-1.97	-0.51	-0.5	-0.83	-6.92	-9.48	-15.16
120	-5.12	-6.61	-6.47	-0.79	-1.09	-0.48	-0.66	1.23	0.65	-2.58	-8.27	-9.96	-15.16
135	-5.25	-6.23	-5.99	-1.72	-0.35	0.33	-0.28	2.05	-0.86	-3.99	-9.29	-9.6	-15.16
150	-5.36	-6.01	-5.62	-1.8	-0.83	0.39	0.01	1.89	-1.52	-5.23	-10.65	-8.57	-15.16
165	-5.55	-6.33	-6.59	-3.54	-1.76	-0.72	-0.33	1.01	-3.46	-7.68	-13.48	-8.62	-15.16
180	-5.45	-7.13	-8.62	-2.58	-1.16	-2.03	-0.79	0.89	-2.22	-4.05	-11.56	-10.82	-15.16
195	-5.44	-8.21	-9.28	-0.98	-0.8	-0.38	1.32	1.65	0.07	-1.9	-13.59	-15.16	-15.16
210	-5.49	-9.34	-8.82	-1.68	-4.03	-1.37	-3.07	0.16	-0.26	-2.79	-8.27	-14.04	-15.16
225	-5.2	-10.24	-6.73	-2.25	-4.36	0.07	-0.29	-0.6	-4.01	-5.47	-7.77	-11.8	-15.16
240	-5.16	-10.67	-5.24	-2.92	-2.66	-1.41	-0.86	-3.44	-7.77	-8.81	-14.37	-8.74	-15.16
255	-5.25	-10.21	-4.56	-4.33	-5.29	-1.04	2.29	-0.84	-3.69	-8.25	-6.35	-5.79	-15.16
270	-5.18	-9	-4.48	-3.96	-5.18	-1.01	2.51	1.34	-1.55	-8.38	-6.52	-4.95	-15.16
285	-5.18	-7.45	-5.29	-2.37	-4.36	-1.5	-1.87	-1.47	-6.62	-4.92	-7.1	-5.85	-15.16
300	-5.23	-6.25	-6.56	-1.61	-2.71	1.39	0.86	-0.75	-2.31	-2.03	-7.85	-6.96	-15.16
315	-4.91	-5.57	-6.15	-2.1	-2.82	0.35	0.74	0.11	-2.91	-4.82	-5.21	-7.28	-15.16

330	-4.73	-5.2	-5.41	-1.31	-1.77	-2.46	-0.5	0.06	-1.05	-3.15	-4.26	-7.19	-15.16
345	-4.6	-5.04	-5.67	-2.66	-1.14	-1.57	-1.3	1.27	-0.16	-2.57	-4.99	-9.11	-15.16

Ant2													
Freq	5250												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-16.01	-11.06	-5.21	-2.15	0.12	1.61	0.99	-0.67	-2.46	-0.69	-6.62	-4.89	-15.22
15	-15.25	-10.79	-4.37	-1.23	-1.6	1.74	1.27	-0.14	-3.77	-8.07	-7.08	-4.62	-15.22
30	-15.01	-10.25	-5.15	-1.51	-1.34	1.94	0.98	0.56	0.41	-6.58	-15.14	-4.55	-15.22
45	-15.12	-9.96	-6.25	-2.88	-1.12	2.27	1.81	0.5	-1.14	-0.14	-15.65	-5.13	-15.22
60	-15.26	-10.15	-7.01	-3.57	-1.95	0.69	0.03	-1.32	-2.8	2.44	-8.11	-5.67	-15.22
75	-15.6	-10.62	-6.83	-4.96	-3.27	-1.72	-1.05	-2.72	-7.26	0.39	-8.3	-5.24	-15.22
90	-16.3	-11.5	-7.89	-7.44	-4.8	-0.91	0.4	-0.79	-6.04	-0.11	-5.32	-6.08	-15.22
105	-15.64	-13.25	-9.91	-9.93	-6.63	0.75	1.99	1.27	-2.61	-0.24	-7.7	-7.93	-15.22
120	-14.89	-15.78	-11.23	-7.77	-5.94	1.08	0.73	-1.33	-3.49	-4.37	-10.67	-7.63	-15.22
135	-14.93	-17.4	-11.44	-6	-6.33	-0.05	-1.99	-7.21	-8.95	-7.97	-7.91	-6.28	-15.22
150	-14.99	-17.05	-10.86	-5.58	-6.45	-0.66	-0.78	-3.56	-5.54	-7	-6.12	-7.42	-15.22
165	-15.31	-15.56	-8.93	-5.97	-6.62	-1.82	-0.93	-2.78	-8.02	-5.23	-5.62	-12.76	-15.22
180	-15.86	-12.74	-6.77	-2.85	-2.94	-2.65	-3.09	-4.84	-6.4	-10.24	-7.52	-8.76	-15.22
195	-15.59	-10.29	-7.44	-3.62	-0.26	0.61	0.18	-1.67	-4.2	-5.37	-7.4	-2.94	-15.22
210	-14.89	-9.36	-8.96	-7.04	-1.19	1.93	2.92	0.8	-5	-6.68	-5.76	-0.74	-15.22
225	-14.91	-9.32	-10.53	-10.11	-7.61	-0.56	-0.67	-4.44	-4.36	-3.68	-5.69	-2.28	-15.22
240	-15.32	-10.21	-12.67	-5.11	-10.83	-2.81	-0.61	-5.88	-11.31	-8.15	-9.39	-4.63	-15.22
255	-15.42	-12.36	-10.84	-1.32	-7.25	-4.47	-0.5	-3.45	-6.41	-5.22	-14.67	-5.72	-15.22
270	-15.59	-15.29	-11.22	-1.73	-6.67	-2.7	1.64	-2.35	-6.29	-4.28	-4.78	-6.18	-15.22
285	-15.2	-16.58	-19.01	-3.49	-4.73	-4.34	-0.06	0.02	-7.59	-7.37	-5.6	-7.9	-15.22
300	-15.01	-15.62	-12.81	-2.8	-1.56	1.73	2.15	-0.68	-4.84	-6.82	-5.76	-11.95	-15.22
315	-15.09	-14.35	-10	-0.47	-0.87	3.41	4.85	4.27	-1	-6.23	-3.12	-15.22	-15.22
330	-15.61	-13.25	-11.23	-2.6	-1.26	0.71	1.63	1.11	-3.13	-1.89	-2.12	-9.76	-15.22
345	-15.73	-11.97	-8.67	-4.35	-1.59	0.3	1.08	2.06	1.36	-0.25	-4.42	-6.21	-15.22

Ant3													
Freq	5250												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-7.19	-6.91	-7.24	-3.45	-3.25	-4.92	-3.54	-0.37	-2.04	-7.15	-10.52	-8.6	-14.81
15	-7.33	-7.34	-6.35	-2.12	-1.53	-4.51	-2.45	0.47	-1.42	-5.94	-11.08	-9.73	-14.81
30	-7.57	-7.63	-5.83	-1.95	-3.15	-3.72	-3.59	-1.14	-2.84	-5.56	-6.84	-14.81	-14.81
45	-7.8	-7.92	-6.51	-2.91	-3.45	-1.84	-1.02	-2.15	-3.29	-6.96	-8.88	-11.5	-14.81
60	-7.9	-8.58	-5.85	-1.86	-3.8	0.18	-1.27	-3.03	-3.22	-4.5	-11.24	-9.01	-14.81
75	-7.79	-9.4	-5.13	-1.41	-6.52	-1.64	-2.17	-1.88	-4.39	-5.84	-7.8	-8.92	-14.81
90	-7.63	-10.01	-5.5	-3.12	-7.56	-0.93	1.6	1.7	-1.64	-5.94	-5.72	-7.77	-14.81
105	-7.47	-10.28	-6.67	-5.27	-5.73	-2.82	-0.1	0.53	-3.7	-8.19	-6.71	-8.92	-14.81

120	-7.34	-10.6	-8.07	-5.88	-4.1	-1.12	-2.6	-1.99	-3.95	-7.33	-8.05	-8.67	-14.81
135	-7.34	-10.57	-7.79	-5.09	-5.5	0.44	-0.4	-1.32	-2.25	-1.52	-6.26	-7.41	-14.81
150	-7.59	-10.15	-6.66	-3.02	-3.86	-2.05	0.05	0.46	-1.53	-1.71	-7.75	-7.2	-14.81
165	-7.43	-9.23	-6.76	-1.77	-2.79	-1.2	0.34	1.46	-0.7	-2.73	-12.71	-7.81	-14.81
180	-7.59	-8.79	-6.83	-2.23	-4.25	-5.46	0.21	0.11	-2.61	-5.19	-11.2	-7.96	-14.81
195	-7.26	-8.72	-7.66	-4.09	-4.56	-1.59	0.86	0.75	-2.52	-5.98	-8.05	-8.71	-14.81
210	-6.96	-8.53	-8.34	-3.57	-4.58	-1.41	1.62	-0.01	-2.76	-3.57	-8.37	-10.35	-14.81
225	-6.98	-8.63	-7.43	-3.31	-1.44	-1.03	1.27	0.64	-2.1	-5.07	-7.08	-11.18	-14.81
240	-6.84	-8.13	-7.59	-1.1	0.28	-0.52	-1.15	1.35	0.03	-4.58	-8.88	-11.13	-14.81
255	-6.79	-7.4	-6	-0.88	-0.37	-1.69	-0.69	0.14	-0.84	-2.16	-8.2	-10.28	-14.81
270	-7.16	-6.82	-4.77	-1.02	-0.67	-1.86	-1.76	-1.72	-0.65	-2.35	-12.09	-9.81	-14.81
285	-7.14	-6.72	-4.13	-1.3	-1.35	-0.79	-0.52	-1.76	-0.64	-1.7	-8.14	-10	-14.81
300	-7.17	-6.78	-3.64	-0.87	-1.5	0.49	0.46	0.28	0.13	-1.33	-5.09	-10.61	-14.81
315	-7.39	-7.04	-4.72	-1.65	-1.94	0.09	1.37	2.15	0.24	-4.31	-6.27	-10.37	-14.81
330	-7.11	-7.11	-5.6	-1.58	-1.48	-0.9	0.22	1.74	-0.59	-5.82	-10.99	-9.15	-14.81
345	-7.09	-6.85	-5.92	-1.79	-2.33	-3.2	-0.64	0.98	-1.23	-4.74	-11.44	-9.32	-14.81

Ant4													
Freq	5250												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-14.95	-10.51	-11.3	-9.23	-5.72	-3.07	-3.01	-6.75	-8.35	-9.48	-10.44	-8.12	-11.94
15	-15.75	-9.74	-6.39	-6.6	-7.81	-1.57	-1.85	-5.05	-9.91	-13.17	-9.61	-9.81	-11.94
30	-15.76	-10.06	-5.14	-4.33	-1.79	2.19	2.53	0.92	-4.38	-14.5	-7.88	-11.94	-11.94
45	-16.7	-11.59	-5.22	-2.31	-1.97	0.17	-3.2	-8.77	-8.44	-5.51	-16.9	-8.62	-11.94
60	-17.11	-13.67	-6.53	-3.34	-3.01	-0.24	-0.99	-3.39	-6.4	-1.96	-9.57	-4.37	-11.94
75	-16.58	-16.74	-7.64	-2.34	-2.04	0.34	2.71	-0.67	-3.85	-0.5	-5.28	-1.93	-11.94
90	-16.12	-18.58	-9.36	-0.05	-0.27	-0.16	1.62	-2.55	-2.48	-2.43	-3.03	-1.18	-11.94
105	-16.17	-16.95	-11.43	-1.08	-0.16	1.72	3.93	1.05	0.75	-1.37	-1.56	-1.72	-11.94
120	-15.49	-14.39	-10.09	-5	0.33	1.81	1.17	2.09	2.86	-4.56	-4.28	-3.44	-11.94
135	-16.37	-12.95	-8.91	-2.95	1.36	3.53	3.67	2.9	1.04	-4.23	-9.48	-4.96	-11.94
150	-16.72	-12.13	-10.08	-1.86	-0.84	0.88	0.65	-3.83	-4.54	-2.39	-9.65	-5.9	-11.94
165	-16.87	-11.78	-10.41	-4.17	-4.05	-1.2	0.94	1.38	-4.32	-3.5	-13.16	-7.02	-11.94
180	-16.51	-11.72	-12.07	-6.2	-2.14	0.72	3.8	3.65	-1.97	-4.33	-11.15	-8.13	-11.94
195	-16.05	-12.52	-13.24	-5.6	-1.84	1.05	4.04	3.66	-1.36	-5.3	-10.72	-9.75	-11.94
210	-14.93	-13.56	-17.36	-5.03	-2.83	-0.62	2.31	1.65	-1.41	-6.9	-5.53	-5.71	-11.94
225	-14.98	-13.47	-18.48	-4.02	-1.66	1.47	0.44	-1.75	-1.92	-2.63	-2.57	-1.54	-11.94
240	-14.88	-13.42	-15.49	-3.44	-0.31	1.08	-1.46	-0.78	-2.91	-1.91	-2.82	-0.64	-11.94
255	-15.1	-12.8	-12.29	-1.35	-0.47	-2.97	-2.47	-3.17	-7.58	-3.87	-2.15	-1.47	-11.94
270	-15.25	-12.14	-11.82	-2.09	0.4	-0.73	0.62	-2.26	-5.56	-4.97	-3.22	-3.17	-11.94
285	-15.64	-11.08	-12.57	-4.66	0.22	1.93	2.59	0.51	-4.16	-7.44	-9.56	-6.53	-11.94
300	-15.16	-10.78	-11.6	-7.74	-2.35	-0.25	-0.58	-2.94	-11.85	-6.62	-15.21	-7.93	-11.94
315	-15.22	-12.69	-9.73	-9.11	-3.71	-1.1	-2.91	-7.22	-13.73	-5.77	-8.04	-6.22	-11.94
330	-15.13	-14.77	-9.42	-5.21	-3.35	0.29	0.49	-2.1	-5.08	-6.29	-7.08	-5.54	-11.94

345	-14.9	-12.68	-11.58	-4.69	-2.49	-0.12	-0.25	-3.39	-6.1	-3.27	-8.94	-6.6	-11.94
-----	-------	--------	--------	-------	-------	-------	-------	-------	------	-------	-------	------	--------

5250MHz Composite Gain													
Freq	5250												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-3.31	-1.96	-0.81	1.6	3.09	3.96	3.66	3.96	2.68	1.09	-3.31	-1.95	-8.15
15	-3.4	-1.92	0.51	2.67	2.73	4.72	4.81	4.96	2.17	-1.47	-2.8	-2.23	-8.15
30	-3.55	-2.05	0.76	3.4	3.72	6.15	6.25	6.23	4.1	-0.83	-2.5	-2.91	-8.15
45	-3.78	-2.53	0.24	3.46	4.07	6.25	5.53	4.31	2.87	2.44	-5.21	-1.76	-8.15
60	-3.86	-3.35	-0.63	3.25	3.26	6.02	5.39	3.66	2.76	4.68	-2.27	-0.33	-8.15
75	-3.78	-4.35	-0.96	3.32	2.62	5	5.87	4.16	1.91	4.32	-0.53	0.48	-8.15
90	-3.73	-5.02	-1.57	3.51	2.61	4.86	6.54	5.2	3.1	4.04	1.05	0.6	-8.15
105	-3.65	-5.13	-2.49	2.62	2.79	5.58	7.26	6.63	4.68	3.88	0.67	-0.37	-8.15
120	-3.53	-5.07	-2.75	1.56	3.66	6.42	5.8	6.19	5.51	1.47	-1.49	-1.04	-8.15
135	-3.69	-4.85	-2.29	2.25	3.93	7.21	6.54	5.93	3.98	1.89	-2.12	-0.88	-8.15
150	-3.87	-4.44	-2	3.08	3.33	5.73	6.02	5.12	2.92	2.2	-2.35	-1.2	-8.15
165	-3.96	-4.07	-2.01	2.29	2.4	4.79	6.05	6.45	2.28	1.44	-4.53	-2.77	-8.15
180	-4	-3.78	-2.3	2.69	3.47	3.94	6.42	6.48	2.89	0.39	-4.17	-2.83	-8.15
195	-3.8	-3.76	-3.1	2.61	4.31	6	7.75	7.33	4.16	1.54	-3.59	-2.05	-8.15
210	-3.48	-3.97	-4.17	1.91	2.96	5.77	7.26	6.7	3.84	1.23	-0.86	-0.27	-8.15
225	-3.38	-4.21	-3.72	1.57	2.59	6.06	6.24	4.68	2.99	1.88	0.48	0.59	-8.15
240	-3.36	-4.39	-3.32	3	3.58	5.22	5.01	4.25	1.58	0.62	-1.87	0.66	-8.15
255	-3.42	-4.4	-1.82	4.15	3.18	3.58	5.85	4.32	1.79	1.42	-0.74	0.75	-8.15
270	-3.55	-4.22	-1.38	3.89	3.49	4.48	6.91	4.91	2.85	1.29	-0.05	0.32	-8.15
285	-3.55	-3.66	-2.43	3.16	3.71	5.13	6.21	5.4	1.7	0.99	-1.46	-1.41	-8.15
300	-3.49	-3.1	-1.83	3.14	4.01	6.89	6.8	5.08	2.31	2.19	-1.67	-3.11	-8.15
315	-3.45	-3.13	-1.33	3.26	3.75	6.87	7.46	6.78	3.05	0.77	0.54	-3.11	-8.15
330	-3.34	-3.16	-1.55	3.48	4.09	5.52	6.51	6.34	3.74	1.93	0.51	-1.73	-8.15
345	-3.26	-2.51	-1.63	2.73	4.15	4.98	5.79	6.49	4.9	3.47	-0.97	-1.67	-8.15

Ant1													
Freq	5700												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-10.07	-9.27	-4.7	-1.71	-5.08	-4.39	-7.33	-5.68	-3.91	-4.66	-9.26	-11.2	-14.47
15	-9.79	-9.85	-4.3	-3.14	-5.6	-4.22	-6.04	-3.37	-2.74	-6.21	-9.98	-9.72	-14.47
30	-9.65	-10.35	-5.68	-2.6	-2.97	-2.74	-3.3	-0.35	-2.29	-5.95	-11.49	-7.75	-14.47
45	-9.64	-10.75	-4.79	-2.2	-2.66	-1.18	-2.37	-0.51	-3.62	-4.53	-13.96	-6.32	-14.47
60	-9.58	-10.98	-4.57	-3.28	-3.67	-1.21	-0.62	0.08	-4.22	-2.33	-6.68	-4.9	-14.47
75	-9.64	-11.05	-5.25	-4.85	-1.7	0.14	1.06	0.84	-1.18	-2.76	-1.69	-4.97	-14.47
90	-9.98	-11.7	-6.45	-4.91	-1.1	1.31	1.38	1.2	0.55	-4.08	-1.88	-6.05	-14.47
105	-9.94	-13	-8.02	-3.96	-1	0.88	0.72	0.1	-0.13	-3.41	-3.91	-6.63	-14.47
120	-9.82	-14.86	-8.99	-3.15	-2.06	-0.72	-0.41	-2.21	-0.75	-2.03	-7.5	-6.69	-14.47

135	-9.75	-16.63	-9.9	-4.5	-2.21	0.51	-1.16	-0.74	-0.11	-2.96	-11.02	-6.45	-14.47
150	-9.51	-14.81	-10.48	-7.27	-2.5	-0.06	-0.36	0.12	-2.42	-10.95	-12.13	-7.15	-14.47
165	-9.53	-11.09	-6.6	-3.72	-2.21	-1.7	-0.67	-1.24	-3.43	-9.01	-14.74	-7.05	-14.47
180	-9.68	-8.31	-6.88	-5.27	-4.96	-2.29	-3.39	-3.36	-3.54	-3.22	-9.12	-7.15	-14.47
195	-9.88	-6.78	-9.36	-6.25	-1.71	-2.13	-2.35	-4.37	-3.12	-3.65	-8.15	-10.01	-14.47
210	-10.45	-5.49	-5.86	-0.9	-2.13	-1.2	-2.47	-2.77	-0.01	-2.5	-12.88	-13.86	-14.47
225	-10.5	-4.35	-4.81	-0.81	-2.69	-1.95	-0.87	-1.27	-1.37	-4.22	-8.67	-14.47	-14.47
240	-10.37	-3.44	-4.83	0.16	-3.26	-3.19	-1.57	-4.97	-5.65	-6.62	-23.35	-8.5	-14.47
255	-10.08	-3	-4.14	-0.37	-6.65	-4.14	1.62	-2.58	-5.13	-6.66	-6.8	-4.67	-14.47
270	-9.75	-2.92	-4.04	-0.26	-9.29	-2.17	2.32	1.54	-3.25	-9.97	-6.72	-3.98	-14.47
285	-9.73	-3.26	-5.69	-0.04	-5.25	-4.25	-2.38	-3.24	-9.14	-5.74	-7.11	-5.67	-14.47
300	-10.26	-4.26	-6.58	-1.38	-1.31	-0.47	0.82	-0.32	-2.78	-3.21	-6.19	-8.66	-14.47
315	-10.38	-5.95	-5.66	-2.73	-1.98	-3.08	-1.66	-1.67	-3.65	-5.73	-3.44	-10.71	-14.47
330	-10.45	-7.82	-6.09	-3.21	-1.61	-2.45	-5.13	-1.55	-2.21	-2.77	-5.49	-9.89	-14.47
345	-10.21	-8.76	-7.05	-4.36	-5.53	-5.95	-10.12	-5	-4.3	-5.45	-6.9	-10.17	-14.47

Ant2													
Freq	5700												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-13.44	-20.15	-10.57	-3.23	-1.89	1.56	1.35	1.48	-0.4	-3.48	-8	-7.65	-21.81
15	-13.39	-16.44	-13.74	-7.01	-2.93	0.43	0.68	-1.55	-4.57	-6.59	-15.76	-13.73	-21.81
30	-13.06	-14.6	-14.03	-11.11	-4.83	-0.56	1.3	-0.02	-1.71	-4.25	-10.37	-21.81	-21.81
45	-12.38	-14.12	-13.46	-8.95	-8.7	-0.4	1.52	1.49	-2.72	-3.96	-9.26	-13.67	-21.81
60	-12.01	-14.87	-11.43	-6.27	-7.04	-0.08	0.88	-0.73	-4.76	-1.35	-5.93	-9.33	-21.81
75	-12.34	-15.75	-9.88	-5.61	-2.49	-0.41	0.23	-1.37	-2.83	-2.52	-6.54	-8.1	-21.81
90	-14.15	-15.42	-7.06	-4.68	-5.04	-1.44	0.19	0.09	-2.48	-5.57	-5.43	-9.54	-21.81
105	-15.23	-15.82	-6.74	-6.99	-5.1	-6.08	-2.98	-0.38	-1.09	-4.4	-6.23	-11.14	-21.81
120	-15.2	-17.64	-7.78	-10.09	-2.94	-0.92	-0.9	-1.55	-1.39	-4.49	-6.72	-13.04	-21.81
135	-14.63	-23.94	-11.27	-10.5	-4.8	-0.29	-1.25	-7.94	-9.3	-15.13	-7.71	-14.61	-21.81
150	-14.4	-27.28	-15.2	-6.66	-7.39	-0.43	1.05	-7.16	-7.74	-10.43	-7.82	-12.92	-21.81
165	-14.62	-17.36	-11.77	-5.86	-6.11	-4.87	-3.12	-4.22	-6.85	-5.49	-7.54	-11.17	-21.81
180	-14.85	-14.76	-11.04	-7.47	-6.78	-5.99	-8.01	-9.65	-7.82	-5.26	-4.89	-9.83	-21.81
195	-15.5	-15.17	-12.21	-7.82	-1.43	1.99	2.26	0.52	-4.45	-4.87	-5.37	-4.54	-21.81
210	-15.88	-16.84	-8.97	-7.4	-5.28	-2.62	-0.52	-3.11	-12.13	-7.26	-5.84	-1.4	-21.81
225	-14.97	-19.27	-9.65	-11.09	-14.12	-5.39	-2.27	-2.99	-7.02	-6.92	-4.96	-0.98	-21.81
240	-14.92	-16.32	-12.82	-9.12	-9.81	-7.08	-6.12	-6.65	-10.82	-12.16	-8.65	-1.69	-21.81
255	-14.66	-11.6	-14.04	-7.08	-5.06	-1.05	-1.71	-6.76	-7.75	-5.46	-9.99	-3.7	-21.81
270	-14.02	-9.12	-11.9	-6.44	-4	-1.94	-2.23	-3.85	-11.65	-3.77	-5.79	-8.24	-21.81
285	-13.56	-8.3	-8.66	-6.24	-3.33	-1.78	-4.92	-4.56	-5.83	-5.49	-8.18	-15.27	-21.81
300	-13.47	-8.54	-7.83	-3.45	-4.43	0.79	0.16	-1.5	-6.26	-17.2	-7.42	-20.03	-21.81
315	-12.58	-9.41	-12.7	-3.51	-3.83	-1.04	1.09	0.64	-5.8	-4.41	-4.35	-15.6	-21.81
330	-12.3	-11.12	-13.11	-6.99	-2.2	-0.54	0.76	1.14	0.25	-0.22	-4.54	-10.49	-21.81
345	-12.36	-15.01	-9.16	-4.48	-1.96	1.61	4.02	4.01	3.61	1.86	-5.99	-6.3	-21.81

Ant3													
Freq	5700												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-10.7	-8.91	-6.82	-3.77	-4.54	-4.32	-7.18	-2.15	-5	-7.85	-7.96	-6.22	-15.63
15	-10.57	-11.69	-6.1	-2.83	-3.48	-3.12	-8.66	-3.64	-4.13	-8.02	-10.91	-12.01	-15.63
30	-10.71	-12.09	-3.64	-0.21	-1.84	-3.16	-3.01	-2.69	-3.26	-3.29	-7.14	-13.24	-15.63
45	-11.1	-11	-3.77	0.45	-2.77	-3	-0.41	-3.13	-6.39	-7.09	-4.39	-9.36	-15.63
60	-11.15	-10.69	-3.59	0.36	-1.65	-0.94	1.19	-2.12	-4.69	-3.96	-5.56	-7.38	-15.63
75	-10.63	-11.89	-3.01	1.15	-6.88	-1.88	-2.21	-5.1	-8.68	-3.7	-4.53	-6.4	-15.63
90	-10.24	-13.95	-3.5	0.03	-12.63	0.03	1.74	1.88	-3.16	-2.99	-3.57	-4.53	-15.63
105	-10.02	-16.08	-4.69	-1.31	-6.93	-1.76	-0.91	0.75	-7.63	-6.82	-4.19	-3.09	-15.63
120	-10.01	-16.06	-6.51	-2.71	-4.23	0.38	-2.7	-2.45	-3.71	-7.42	-4.84	-3.48	-15.63
135	-10.2	-13.85	-8.19	-4.63	-3.47	1.3	0.76	-0.03	-2.11	-1.67	-3.76	-5.32	-15.63
150	-10.17	-10.51	-9.12	-3.6	-2.36	0.13	-0.63	-1.76	-0.66	-0.86	-4.75	-8.54	-15.63
165	-10.18	-7.95	-8.02	-5.48	-2.25	-2.34	-1.09	-2.2	-2.26	-0.79	-7.45	-9.07	-15.63
180	-10.41	-6.62	-5.76	-5.96	-3.83	-3.24	-5.2	-2.28	-2.68	-4.17	-10.52	-9.17	-15.63
195	-10.8	-6.43	-6.28	-4.62	-6.61	-6.03	-3.95	-1.25	-2.78	-6.38	-13.84	-8.37	-15.63
210	-10.67	-6.84	-7.04	-2.71	-3.25	-1.6	-0.74	-0.02	-1.12	-8.1	-12.79	-8.42	-15.63
225	-10.86	-6.96	-5.56	-1.49	-1.94	-0.01	-1.99	-0.81	-0.31	-4.58	-7.09	-10.82	-15.63
240	-10.57	-7.04	-4.28	-1.29	-2.55	0.47	-1.37	-0.39	-1.79	-2.53	-8.26	-15.63	-15.63
255	-10.61	-6.94	-4.09	-3.01	-3.85	0.39	0.43	2.09	-0.54	-0.71	-5.61	-13.56	-15.63
270	-10.88	-6.78	-4.05	-3.31	-5.76	0.34	0.84	1.96	1.21	-1.4	-7.73	-11.24	-15.63
285	-11.47	-6.52	-3.89	-2.77	-5.52	0.1	-0.44	-0.1	1.39	-2.6	-6.32	-10.38	-15.63
300	-11.49	-5.89	-3.49	-1.79	-3.81	-0.22	-0.33	-1	0.06	-2.51	-7.13	-8.94	-15.63
315	-11.93	-5.34	-2.95	-0.31	-1.65	-1.08	-1.97	-0.78	0.33	-4.69	-7.65	-6.39	-15.63
330	-11.66	-5.63	-3.36	-0.42	-1.56	-2.06	-0.86	0.3	-1.16	-6.21	-8.62	-5.66	-15.63
345	-11.1	-6.75	-3.99	-2.88	-2.33	-3.88	-4.11	-0.86	-2.63	-8.67	-9.26	-5.03	-15.63

Ant4													
Freq	5700												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-13.22	-11.75	-10.2	-8.1	-13.54	-4.56	-4.3	-6.43	-5.05	-7.81	-8.06	-15.78	-19.58
15	-13.36	-12.33	-11.47	-7.16	-7.95	-1.17	0.89	-2.14	-9.96	-12.01	-9.58	-10.76	-19.58
30	-12.81	-14.18	-12.36	-8.52	-5.81	1.19	0.75	-1.51	-5.9	-13.07	-11	-10.59	-19.58
45	-12.08	-16.63	-10.94	-8.03	-7.02	-0.33	-1.14	-5.03	-12.19	-9.55	-12.82	-11.18	-19.58
60	-11.95	-18.88	-10.02	-7.96	-9.61	-2.21	-1.79	-5.01	-6.91	-3.42	-5.02	-8.33	-19.58
75	-12.6	-21.56	-13.82	-7.11	-4.53	-3.71	-0.36	-2.04	-7.78	-2.33	-2.85	-5.17	-19.58
90	-12.76	-21.67	-9.74	-11.56	-1.99	-0.6	1.94	-1.89	-9.49	-2.7	-1.28	-4.49	-19.58
105	-13.02	-20.54	-5.98	-9.84	-3.42	-3.8	-0.38	0.82	-3.1	-1.61	-0.91	-3.71	-19.58
120	-12.73	-19.67	-4.77	-4	-4.35	0.63	3.03	2.56	-0.6	-2.33	-4.96	-5.94	-19.58
135	-12.59	-21.65	-4.87	-3.91	-5.24	-0.27	0.79	-1.46	-2.87	-1.13	-15.8	-13.09	-19.58

150	-12.65	-19.58	-7.28	-5.5	-3.83	-0.07	2.3	0.48	-4.38	-0.58	-20.78	-16.77	-19.58
165	-12.3	-14.36	-9.33	-6.04	-2.3	-1.78	-1.2	0.28	-0.75	-1.03	-12.93	-19.58	-19.58
180	-11.83	-11.36	-6.8	-4.56	-2.04	0.86	3.41	3.1	0.43	-1.31	-8.87	-13.78	-19.58
195	-12.01	-10.46	-5.54	-3.88	-1.75	-0.12	3.46	4.51	-1.08	-2.63	-13.09	-14.45	-19.58
210	-11.94	-10.15	-5.17	-5.13	-0.83	-0.77	0.59	1.47	-3.57	-2.9	-19.02	-12.84	-19.58
225	-12.22	-8.95	-7.19	-6.31	-4.02	-2.81	0.2	-3.68	-2.9	-4.7	-8.2	-9.17	-19.58
240	-12.67	-8.05	-8.15	-6.95	-4.44	0.61	0.25	-2.23	-1.4	-2.12	-7.45	-7.06	-19.58
255	-12.56	-8.21	-9.45	-7.75	-5.46	-0.63	-2.86	-2.28	-3.13	-3.42	-4.45	-7.56	-19.58
270	-12.2	-8.69	-11.91	-8.91	-7.75	-1.92	-0.64	-0.63	-2.64	-5.2	-3.83	-8.51	-19.58
285	-12.28	-9.53	-15.03	-8.02	-6.96	-2.14	-1.27	-1.55	-3.64	-5.86	-8.63	-8.46	-19.58
300	-12.01	-10.48	-14.96	-9.49	-8.97	-2.63	-1.87	-2.51	-7.54	-3.61	-11.32	-8.85	-19.58
315	-11.75	-11.58	-12.67	-12.45	-12.08	-4.81	-5.29	-9.69	-13.46	-8.37	-8.37	-8.48	-19.58
330	-11.97	-12.15	-12.55	-8.41	-4.64	-3.63	-7.37	-9.58	-7.94	-7.44	-10.5	-8.86	-19.58
345	-12.87	-12.01	-11.02	-10.45	-5.36	-0.08	0.68	-1.55	-5.84	-7.49	-13.62	-10.31	-19.58

5700MHz Composite Gain													
Freq	5700												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-5.71	-5.52	-1.71	2.12	0.69	3.52	2.43	3.42	2.65	0.28	-2.28	-3.47	-11.36
15	-5.61	-6.24	-2.06	1.23	1.25	4.19	3.69	3.39	1.06	-1.91	-5.22	-5.41	-11.36
30	-5.42	-6.61	-1.84	1.48	2.3	4.88	5.21	4.94	2.87	0.1	-3.8	-5.98	-11.36
45	-5.21	-6.78	-1.31	2.22	1.12	4.86	5.54	4.58	0.49	0.01	-3.24	-3.7	-11.36
60	-5.1	-7.24	-0.74	2.32	1.05	4.94	6.02	4.28	0.94	3.31	0.24	-1.3	-11.36
75	-5.2	-8.16	-1.02	2.54	2.34	4.68	5.78	4.36	1.48	3.21	2.31	-0.05	-11.36
90	-5.59	-8.96	-0.38	1.65	1.83	5.9	7.36	6.45	3.07	2.26	3.13	0.09	-11.36
105	-5.76	-9.94	-0.25	1.07	2.18	3.71	5.23	6.36	3.47	2.16	2.42	0.41	-11.36
120	-5.65	-10.85	-0.85	1.48	2.68	5.89	6.03	5.36	4.49	2.21	0.09	-0.63	-11.36
135	-5.56	-12.1	-2.19	0.5	2.17	6.36	5.86	3.98	3.02	2.24	-2.48	-2.94	-11.36
150	-5.45	-10.06	-4.04	0.38	2.22	5.92	6.69	4.42	2.6	1.68	-3.58	-4.55	-11.36
165	-5.42	-5.97	-2.71	0.8	2.95	3.44	4.55	4.33	2.97	2.57	-4.06	-4.6	-11.36
180	-5.46	-3.71	-1.38	0.27	1.79	3.7	3.82	4.1	3.1	2.65	-2.06	-3.65	-11.36
195	-5.78	-3.04	-1.94	0.51	3.39	4.92	6.41	6.47	3.25	1.75	-3.38	-2.62	-11.36
210	-5.96	-2.85	-0.62	2.33	3.3	4.5	5.3	5.12	2.89	1.19	-5.36	-1.61	-11.36
225	-5.95	-2.38	-0.59	1.99	1.44	3.69	4.84	3.91	3.47	0.98	-1.09	-1.32	-11.36
240	-5.92	-1.59	-0.89	2.54	1.42	4.25	4.12	2.79	1.85	1	-4.1	-0.88	-11.36
255	-5.78	-0.87	-1.01	2	0.82	4.82	5.57	4.2	2.28	2.26	-0.46	-0.6	-11.36
270	-5.55	-0.49	-1.09	1.9	-0.45	4.66	6.26	6.06	3.04	1.46	0.12	-1.57	-11.36
285	-5.63	-0.55	-1.39	2.3	0.85	4.14	3.92	3.82	2.58	1.21	-1.49	-3.27	-11.36
300	-5.71	-0.95	-1.3	2.52	1.8	5.47	5.77	4.72	2.41	0.98	-1.79	-4.53	-11.36
315	-5.6	-1.69	-1.42	2.28	1.99	3.66	4.35	3.93	1.66	0.35	0.32	-3.65	-11.36
330	-5.55	-2.77	-1.77	1.84	3.6	3.92	3.46	4.46	3.75	2.33	-0.95	-2.49	-11.36
345	-5.55	-4.06	-1.38	0.91	2.38	4.45	5.12	5.78	4.54	2.16	-2.46	-1.62	-11.36

7.2 DG_NSSmax Test Data

Ant1													
Freq	5850												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-4.28	-6.64	-6.82	-2.43	-4.45	-4.68	-8.4	-6.09	-3.76	-3.04	-5.66	-7.13	-12.08
15	-4.29	-7.35	-7.3	-3.36	-4.36	-2.46	-5.9	-3.88	-2	-4.08	-6.34	-6.35	-12.08
30	-4.36	-8.52	-6.26	-3.04	-3.13	-2.11	-6.08	-0.31	-1.12	-5.33	-10.61	-5.04	-12.08
45	-4.35	-9.75	-4.75	-3.23	-1.14	0.82	-2.4	0.46	-2.49	-3.91	-15.97	-3.22	-12.08
60	-4.22	-10.5	-4.09	-2.84	-2.55	0.02	-1.35	1.32	-3.97	-3.15	-7.65	-1.96	-12.08
75	-4.09	-10.93	-3.55	-4.31	-1.68	1.02	0.08	1.06	-0.56	-3.63	-1.55	-2.57	-12.08
90	-4.11	-11.88	-3.98	-6.63	-1.05	2.58	1.3	1.25	1.51	-3.23	-1.75	-4.59	-12.08
105	-4.18	-13.74	-4.53	-7.66	-0.61	1.93	1.45	1.3	0.5	-3.24	-4.34	-6.52	-12.08
120	-4.23	-16.02	-4.91	-4.59	-1.91	-0.08	0.3	-0.37	-1.69	-1.17	-7.61	-7.25	-12.08
135	-4.23	-16.38	-6.18	-3.66	-2.23	-0.67	0.02	-0.98	-1.3	-1.97	-11.04	-6.83	-12.08
150	-4.15	-13.26	-9.32	-4.81	-1.44	-0.45	-0.87	0.27	-2.42	-11.38	-15.4	-6.41	-12.08
165	-4.06	-9.61	-8.5	-2.85	-1.33	-1.89	-0.62	-0.01	-3.05	-7.74	-16.91	-6.25	-12.08
180	-4.01	-6.9	-6.44	-2.41	-4.17	-1.93	-2.48	-1.89	-2.08	-0.96	-6.63	-6.37	-12.08
195	-3.91	-5.21	-8.74	-5.52	-3.46	-1.55	-2.88	-3.76	-2.7	-1.81	-4.47	-7.41	-12.08
210	-4.1	-3.92	-7.15	-0.16	-1.09	-0.81	-1.04	-3.86	-1.17	-0.65	-6.12	-9.28	-12.08
225	-4.29	-2.98	-5.5	0.79	-2	-1.6	-0.28	-1.72	-1.68	-2.58	-5.18	-12.08	-12.08
240	-4.33	-2.48	-3.94	0.61	-1.9	-2.3	0.47	-2.59	-5.13	-5.52	-19.36	-7.52	-12.08
255	-4.3	-2.28	-3.7	-0.23	-5.54	-5.57	1.08	-3.45	-5.71	-6.56	-5.8	-3.37	-12.08
270	-4.18	-2.5	-4.09	-0.84	-6.74	-2.97	2.28	2.51	-4.37	-8.89	-6.89	-2.97	-12.08
285	-4.01	-3.04	-5.07	-0.02	-3.13	-3.94	-2.35	-3.37	-7.12	-6.68	-7.29	-5.37	-12.08
300	-4.24	-3.86	-5.81	-1.55	-0.35	0.04	1.75	0.94	-3.58	-3.03	-5.05	-10.13	-12.08
315	-4.41	-4.78	-6.19	-4.66	-1.14	-1.29	-1.96	-2.14	-3.99	-5.79	-2.66	-10.83	-12.08
330	-4.4	-5.48	-8.27	-5.7	-1.49	-1.27	-5.21	-2.36	-1.97	-1.9	-5.33	-7.73	-12.08
345	-4.33	-5.98	-7.37	-5.57	-4.91	-4.89	-13.54	-5.92	-5.15	-5.08	-5.56	-6.95	-12.08

Ant2													
Freq	5850												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-14.82	-16.29	-12.18	-5.11	-4.03	1.22	0.19	0.76	-1.05	-3.56	-7.41	-5.54	-18.85
15	-15.36	-18.07	-15.69	-11.87	-4.51	0.9	0.54	-1.98	-6.22	-6.42	-11.91	-10.97	-18.85
30	-15.38	-17	-16.37	-13.05	-7.07	0.34	2.97	1.89	-1.53	-2.2	-7.98	-13.29	-18.85
45	-14.87	-16.56	-8.78	-4.02	-6.72	-2.39	-0.16	1.1	-2.55	-4.6	-9.48	-8.97	-18.85
60	-14.1	-16.15	-6.98	-3.19	-5.09	-0.98	0.18	-0.63	-5.14	-3.68	-10.39	-6.08	-18.85
75	-13.88	-16.27	-8.31	-7.16	-2.41	0.08	-0.47	-0.64	-1.38	-3.36	-8.67	-5.51	-18.85
90	-14.74	-15.98	-8.02	-6.4	-3.51	0.03	-0.77	0.73	-1.02	-5.89	-6.02	-7.68	-18.85
105	-15.64	-15.53	-6.01	-6.25	-6.38	-4.84	-4.66	-0.26	-0.26	-7.65	-7.45	-9.09	-18.85
120	-16.79	-15.34	-5.34	-8.11	-3.97	-1.79	-2.53	-1.72	-2.21	-8.32	-8.72	-10.4	-18.85

135	-18.37	-14.69	-6.88	-9.41	-6.98	-1.64	-1.26	-7.67	-8.71	-18.26	-7.45	-11.65	-18.85
150	-18.3	-12.98	-10.91	-6.15	-5.58	-2.19	0.98	-6.51	-11.81	-13.5	-7.63	-11.68	-18.85
165	-17.69	-11.76	-14.87	-5.76	-3.48	-5.41	-4.87	-3.97	-7.36	-8.25	-11.06	-9.79	-18.85
180	-17.05	-12.9	-16.27	-8.85	-8.2	-6.57	-5.1	-7.35	-9.75	-6.2	-4.72	-8.61	-18.85
195	-16.51	-18.47	-10.21	-7.62	-2.8	3.37	3.72	2.02	-3.32	-3.78	-5.39	-4.33	-18.85
210	-16.04	-34.86	-8.41	-7.47	-3.13	-1.4	0.18	-2.55	-11.27	-5.6	-5.54	-1.52	-18.85
225	-17.09	-18.34	-7.49	-7.82	-10.84	-8.85	-4.72	-2.56	-8.33	-6.42	-4.71	-1.37	-18.85
240	-17.26	-14.15	-8.06	-8.7	-8.77	-5.6	-5.04	-6.78	-14.46	-12.86	-10.06	-2.76	-18.85
255	-17.6	-11.72	-10.78	-6.98	-4.98	-0.08	0.01	-6.1	-11.35	-10.19	-6.97	-6.21	-18.85
270	-17.19	-9.87	-8.87	-6.05	-4.38	-1.9	-0.48	-1.86	-7.33	-4.03	-7.13	-12.07	-18.85
285	-16.18	-8.45	-6.42	-6.8	-3.25	-0.79	-2.66	-5.21	-6.5	-5.92	-13.81	-15.9	-18.85
300	-14.83	-7.68	-7.86	-2.08	-3.29	0.92	0.48	-2.95	-7.52	-12.52	-10.76	-18.85	-18.85
315	-14.26	-7.82	-17.01	-2.6	-1.58	-0.46	0.58	-0.74	-7.82	-4.77	-6.29	-17.78	-18.85
330	-13.67	-9.15	-10.82	-7.71	-1.1	0.55	2	2.64	0.26	-1.03	-7.74	-9.04	-18.85
345	-13.84	-11.9	-10.59	-6.42	-1.3	3.41	5.46	4.61	2.89	1.23	-6.42	-4.6	-18.85

Ant3													
Freq	5850												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-9.17	-6.4	-3.52	-2.18	-3.31	-2.94	-7.5	-1.11	-2.95	-5.89	-6.97	-7.03	-11.07
15	-9.18	-8.29	-4.85	-1.76	-3.27	-3.66	-8.58	-4.78	-4.27	-7.97	-10.17	-11.07	-11.07
30	-9.23	-10.95	-3.68	1.22	-0.27	-1.72	-2.53	-2.53	-3.44	-2.46	-7.66	-10.6	-11.07
45	-9.35	-12.48	-2.7	0.44	-1.29	-3.07	-0.36	-2.47	-7.4	-6.02	-4.15	-9.59	-11.07
60	-9.46	-12.51	-4.04	0.43	0.04	-0.72	1.93	-0.24	-5.27	-3.3	-6.34	-7.94	-11.07
75	-9.42	-13.92	-5.6	1.15	-3.29	-2.34	-0.79	-5	-8.17	-4.53	-4.95	-5.09	-11.07
90	-9.05	-17.02	-5.44	0.08	-9.43	1.39	2.18	2.62	-3.94	-3.78	-3.06	-2.32	-11.07
105	-9	-18.64	-5.93	-0.94	-7.85	0.32	-1.34	1.48	-8.63	-9.14	-3.38	-1.07	-11.07
120	-9.05	-14.25	-6.92	-2.6	-4.34	1.24	-1.02	-1.01	-4.82	-5.33	-4.75	-1.55	-11.07
135	-9.32	-10.59	-6.54	-3.21	-4.42	0.98	0.5	-0.09	-1.9	-0.17	-3.89	-4.06	-11.07
150	-9.37	-8.15	-6.56	-2.15	-1.74	0.11	0.91	-0.54	0.04	0.71	-4	-8.97	-11.07
165	-9.46	-6.46	-5.54	-5.7	-2.1	-2.32	-0.87	-2.1	-2.1	-0.02	-6.04	-8.96	-11.07
180	-9.53	-5.59	-4.71	-4.92	-3.56	-3.33	-4.76	-2.17	-2.78	-3.46	-9.46	-7.77	-11.07
195	-9.79	-5.45	-5.55	-4.12	-3.49	-5.1	-3.27	-1.36	-2.52	-5.46	-10.89	-7.26	-11.07
210	-9.85	-6.42	-7.57	-1.85	-1.51	-2.1	-0.94	0.56	-0.6	-6.36	-11.07	-7.15	-11.07
225	-9.87	-7.48	-6.67	-2.02	-1.81	-0.57	-0.35	-1.41	0.23	-3.77	-7.13	-7.7	-11.07
240	-9.65	-8.56	-4.61	-1.56	-2.31	0.98	-0.06	0.21	-1.23	-2.29	-8.65	-8.76	-11.07
255	-9.6	-9.33	-4.56	-1.84	-2.47	0.91	0.48	2.49	0.38	-0.63	-6.05	-7.35	-11.07
270	-9.67	-9.54	-5.23	-2.08	-2.42	0.75	0.65	2.15	1.79	-0.93	-9.05	-7.17	-11.07
285	-10.01	-9.23	-5.9	-2.32	-2.97	0.48	-0.54	0.09	1.75	-2.13	-5.46	-7.28	-11.07
300	-10.07	-7.99	-5.95	-1.99	-2.89	-0.33	0.92	-0.81	-0.25	-1.03	-5.25	-7.8	-11.07
315	-9.91	-6.64	-4.75	-0.91	-1.76	-0.71	0.28	-0.96	-0.21	-3.71	-8.56	-6.73	-11.07
330	-9.75	-5.75	-3.47	-0.23	-0.64	-1.66	-1.37	0.23	-0.12	-4.9	-10.04	-6.67	-11.07
345	-9.56	-5.62	-3.09	-0.92	-1.86	-2.18	-4.35	0.66	-1.9	-7.16	-9.69	-6.3	-11.07

Ant4													
Freq	5850												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-11.45	-11.03	-9.08	-5.15	-13.53	-3.62	-3.87	-7.86	-7.76	-9.39	-9.09	-21.77	-24.6
15	-11.51	-13.67	-9.6	-4.82	-7.34	0.79	2.84	-0.19	-8.89	-13.05	-8.96	-11.34	-24.6
30	-11.07	-18	-13.1	-6.68	-6.1	1.39	1.22	-0.7	-6.03	-12.95	-11.71	-11.45	-24.6
45	-10.44	-17.81	-11.56	-6.06	-7.15	-0.74	-1.23	-6.35	-15.3	-11.26	-8.6	-10.59	-24.6
60	-10.36	-16.57	-9.29	-4.45	-10.06	-3.42	-1.16	-2.34	-6.58	-4.59	-4.56	-7.7	-24.6
75	-10.75	-15.56	-9.54	-6.41	-2.52	-1.55	-0.21	-1.9	-8.05	-3.25	-4.37	-3.94	-24.6
90	-10.83	-13.43	-6.99	-10.81	-2.5	1.27	1.44	-0.9	-8.74	-3.51	-1.95	-3.32	-24.6
105	-10.83	-12.32	-4.46	-5.5	-5.94	-1.65	0.26	1.9	-4	-4.13	-1.27	-3.28	-24.6
120	-10.54	-11.61	-3.51	-0.91	-4.69	0.45	3.66	3.82	-0.89	-4.48	-5.62	-5.55	-24.6
135	-10.04	-12.57	-4.14	-0.65	-2.13	0.4	1.33	0.38	-2.84	-1.86	-15.48	-14.46	-24.6
150	-9.93	-13.85	-5.84	-1.53	-1.05	0.57	2.55	1.95	-2.09	0.32	-13.93	-24.6	-24.6
165	-9.79	-14.49	-9.71	-4.51	-0.31	1.71	2.57	2.57	-0.03	-0.9	-13.19	-14.59	-24.6
180	-9.58	-12.06	-7.66	-6.87	-2.16	-0.73	2.49	2.52	-1.11	-1.36	-9	-10.3	-24.6
195	-9.85	-9.84	-4.6	-4.31	0.01	-1.5	1.46	3.68	-0.97	-1.35	-8.42	-10.96	-24.6
210	-9.96	-9.72	-4.9	-2.79	0.99	0.4	1.97	2.51	-1.86	-2.4	-11.05	-12.62	-24.6
225	-9.98	-10.61	-5.49	-5.61	-1.71	-0.45	1.08	-1.47	-3.24	-5.72	-10.77	-8.41	-24.6
240	-10.15	-10.41	-7.82	-7.33	-2.99	1.11	-0.92	-3.94	-2.96	-3.35	-13.09	-5.07	-24.6
255	-10.13	-9.82	-7.18	-4.85	-4.59	-0.25	-3.93	-4.75	-3.46	-4.63	-10.81	-5.69	-24.6
270	-10.04	-9.71	-7.9	-4.8	-5.16	-0.96	-2.9	-3.23	-3.59	-4.04	-8.32	-7.24	-24.6
285	-10.38	-10.13	-11.33	-6.41	-5.66	-2.72	-2.25	-4.13	-4.7	-7.9	-15.01	-8.56	-24.6
300	-10.42	-10.82	-14.18	-7.66	-6.96	-2.43	-1.08	-4.22	-9.4	-2.95	-13.44	-12.37	-24.6
315	-10.38	-11.74	-11.5	-17.09	-9.23	-2.21	-1.14	-6.29	-11.11	-9.03	-8.96	-11.03	-24.6
330	-10.61	-11.62	-11.27	-9.09	-6.08	-1.93	-2.24	-6.32	-7.98	-7.47	-12.61	-9.66	-24.6
345	-11.17	-10.69	-11.65	-7.67	-8.29	-2.5	-0.46	-3.28	-8.26	-10.49	-16.24	-11.28	-24.6

5850MHz Composite Gain													
Freq	5850												
Phi\Theta	0	15	30	45	60	75	90	105	120	135	150	165	180
0	-3.05	-3.23	-1.31	2.42	0.51	3.82	1.81	3.14	2.46	0.89	-1.18	-2.53	-9.1
15	-3.13	-4.84	-2.5	1.31	1.27	5.14	4.43	3.5	1.04	-1.29	-3.08	-3.64	-9.1
30	-3.09	-6.69	-2.42	2.08	2.3	5.62	5.58	5.75	3.2	1.2	-3.3	-3.48	-9.1
45	-2.93	-7.53	-0.27	3.13	2.41	4.81	5.03	4.67	0.4	0	-2.58	-1.55	-9.1
60	-2.78	-7.54	0.19	3.7	2.35	4.84	6.02	5.65	0.83	2.36	-0.96	0.45	-9.1
75	-2.76	-7.9	-0.41	2.5	3.56	5.42	5.68	4.67	2.2	2.34	1.49	1.82	-9.1
90	-2.81	-8.32	0.05	0.99	2.42	7.38	7.12	7.04	3.75	1.98	2.98	1.76	-9.1
105	-2.94	-8.73	0.82	1.32	1.3	5.31	5.23	7.16	3.61	0.31	2.19	1.56	-9.1
120	-3.04	-8.12	0.94	2.36	2.36	6.04	6.44	6.49	3.74	1.57	-0.51	0.43	-9.1
135	-3.15	-7.26	0.15	2.32	2.3	5.85	6.22	4.46	2.77	2.63	-2.43	-2.31	-9.1

150	-3.09	-5.71	-1.9	2.56	3.74	5.59	7	5.33	2.94	2.29	-2.99	-4.78	-9.1
165	-2.99	-4.06	-3.03	1.4	4.29	4.41	5.46	5.49	3.27	2.59	-4.88	-3.39	-9.1
180	-2.88	-2.77	-1.8	0.59	1.77	3.14	4.13	4.48	2.67	3.26	-1.22	-2.13	-9.1
195	-2.9	-2.36	-0.96	0.74	3.71	5.36	6.28	6.63	3.69	3.07	-0.91	-1.16	-9.1
210	-2.97	-2.74	-0.89	3.34	4.96	5.09	6.15	5.55	3.19	2.58	-2.03	-0.65	-9.1
225	-3.17	-2.22	-0.23	2.98	2.65	3.75	5.21	4.24	3.3	1.53	-0.62	-0.47	-9.1
240	-3.19	-1.82	0.11	2.62	2.42	4.98	4.88	3.11	1.3	0.85	-5.91	0.3	-9.1
255	-3.2	-1.45	-0.13	2.93	1.71	5.1	5.64	3.75	1.96	1.2	-1.17	0.49	-9.1
270	-3.1	-1.25	-0.29	2.82	1.49	4.86	6.11	6.26	3.3	1.99	-1.78	-0.76	-9.1
285	-3.07	-1.21	-0.85	2.6	2.34	4.44	4.11	3.1	2.67	0.65	-3.43	-2.47	-9.1
300	-3.04	-1.21	-1.85	3.02	2.96	5.65	6.6	4.49	1.56	2.08	-1.89	-5.4	-9.1
315	-2.99	-1.37	-2.64	1.46	3.15	4.88	5.52	3.75	1.19	0.41	-0.22	-4.75	-9.1
330	-2.91	-1.62	-1.84	1.04	3.94	5	4.7	5.17	4.12	2.55	-2.5	-2.18	-9.1
345	-2.98	-2.09	-1.49	1.28	2.35	5.05	5.2	5.96	3.91	1.75	-2.58	-0.94	-9.1