



# Antenna Composite Gain Test Report

FCC ID	VW3FAST5295
Equipment	WiFi 6E Router
Brand Name	SAGEMCOM
Model Name	SAX2V1S
Applicant	SAGEMCOM BROADBAND SAS 250 Route de l'Empereur - 92848 RUEIL MALMAISON CEDEX- FRANCE
Manufacturer	SAGEMCOM BROADBAND SAS 250 Route de l'Empereur - 92848 RUEIL MALMAISON CEDEX- FRANCE
Sample Received	Jul. 01, 2022
Start Test Date	Sep. 29, 2022
Final Test Date	Oct. 06, 2022

Approved by: **Sam Chen**

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## 1. Operation Mode and Antenna Information

Antenna Position	Port			Brand	Model Name	Ant. Type	Connector	Modes of Operation
	2.4 GHz	5GHz	6GHz					
2G ANT1 / 5G ANT1	1	1	-	GALTRONICS	DB1	PIFA	I-PEX	2.4GHz and 5GHz UNII1~UNII4
2G ANT2 / 5G ANT2	2	3	-	GALTRONICS	DB2	PIFA	I-PEX	
2G ANT3 / 5G ANT3	3	2	-	GALTRONICS	DB3	PIFA	I-PEX	
2G ANT4 / 5G ANT4	4	4	-	GALTRONICS	DB4	PIFA	I-PEX	
5G ANT5 / 6G ANT1	-	5	1	GALTRONICS	ANT1	PIFA	I-PEX	5GHz UNII1~UNII4 and 6GHz UNII5~8
5G ANT6 / 6G ANT2	-	6	2	GALTRONICS	ANT2	PIFA	I-PEX	
5G ANT7 / 6G ANT3	-	7	3	GALTRONICS	ANT3	PIFA	I-PEX	
5G ANT8 / 6G ANT4	-	8	4	GALTRONICS	ANT4	PIFA	I-PEX	
6G ANT5	-	-	5	GALTRONICS	6G1	PIFA	I-PEX	6GHz UNII5~8
6G ANT6	-	-	6	GALTRONICS	6G2	PIFA	I-PEX	
6G ANT7	-	-	7	GALTRONICS	6G3	PIFA	I-PEX	
6G ANT8	-	-	8	GALTRONICS	6G4	PIFA	I-PEX	

**Note:**

**2.4GHz Operation Mode (4TX/4RX)**

2G Ant1~4 can be used as transmitting/receiving antenna.

2G Ant1~4 could transmit/receive simultaneously.

**5GHz Operation Mode (4TX/4RX)**

5G Ant1~8 can be used as transmitting/receiving antenna.

There are only four antennas to be used at the same time.

**6GHz Operation Mode (4TX/4RX)**

6G Ant1~8 can be used as transmitting/receiving antenna.

6G Ant1~8 could transmit/receive simultaneously.

There are only four antennas to be used at the same time.

## 2. Table of Antenna Configuration

The configuration of antenna option 1~16 are follows:

<For 5GHz>

Option 1	Option 2	Option 3	Option 4	Option 5	Option 6	Option 7	Option 8
Ant.1	Ant.2	Ant.1	Ant.3	Ant.1	Ant.2	Ant.1	Ant.3
Ant.2	Ant.3	Ant.4	Ant.4	Ant.2	Ant.3	Ant.4	Ant.4
Ant.5	Ant.5	Ant.5	Ant.5	Ant.6	Ant.6	Ant.6	Ant.6
Ant.7	Ant.7	Ant.7	Ant.7	Ant.7	Ant.7	Ant.7	Ant.7
Option 9	Option 10	Option 11	Option 12	Option 13	Option 14	Option 15	Option 16
Ant.1	Ant.2	Ant.1	Ant.3	Ant.1	Ant.2	Ant.1	Ant.3
Ant.2	Ant.3	Ant.4	Ant.4	Ant.2	Ant.3	Ant.4	Ant.4
Ant.5	Ant.5	Ant.5	Ant.5	Ant.6	Ant.6	Ant.6	Ant.6
Ant.8	Ant.8	Ant.8	Ant.8	Ant.8	Ant.8	Ant.8	Ant.8

<For 6GHz>

Option 1	Option 2	Option 3	Option 4	Option 5	Option 6	Option 7	Option 8
Ant.1	Ant.2	Ant.1	Ant.2	Ant.1	Ant.2	Ant.1	Ant.2
Ant.3	Ant.3	Ant.4	Ant.4	Ant.3	Ant.3	Ant.4	Ant.4
Ant.5	Ant.5	Ant.5	Ant.5	Ant.6	Ant.6	Ant.6	Ant.6
Ant.7	Ant.7	Ant.7	Ant.7	Ant.7	Ant.7	Ant.7	Ant.7
Option 9	Option 10	Option 11	Option 12	Option 13	Option 14	Option 15	Option 16
Ant.1	Ant.2	Ant.1	Ant.2	Ant.1	Ant.2	Ant.1	Ant.2
Ant.3	Ant.3	Ant.4	Ant.4	Ant.3	Ant.3	Ant.4	Ant.4
Ant.5	Ant.5	Ant.5	Ant.5	Ant.6	Ant.6	Ant.6	Ant.6
Ant.8	Ant.8	Ant.8	Ant.8	Ant.8	Ant.8	Ant.8	Ant.8

Note 1: The above information was declared by the manufacturer.

Note 2:

The directional gain of the maximum was selected to test.

<For 5GHz> Option 5 for 5GHz UNII1 and option 9 for 5GHz UNII3~4 have been tested and recorded in the test report.

<For 6GHz> Option 15 for 6GHz UNII5, Option 3 for 6GHz UNII6~7 and Option 11 for 6GHz UNII8 have been tested and recorded in the test report.



### 3. Test Frequency

The listed frequency of each bands are selected to represent each frequency bands

Band [MHz]	Test Frequency [MHz]
2400-2483.5	2450
5150-5250	5200
5250-5350	5300
5470-5725	5600
5725-5850	5785
5850-5895	5885
5925-6425	6175
6425-6525	6475
6525-6875	6695
6875-7125	6995

### 4. Testing Location

Testing Location		
Sporton International Inc. Hsinhua Laboratory		
<input checked="" type="checkbox"/>	HWA YA	ADD : No.13-1 & 14-1, Ln. 19, Wen 33rd St., Guishan Dist., Taoyuan City 333, Taiwan R.O.C.

Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
Radiated	05CH03-HY	Rex Liao	23.5-24.5 / 45-55	Sep. 29, 2022 ~ Oct. 06, 2022

Note:

Testing Site Information

Brand Name: TDK

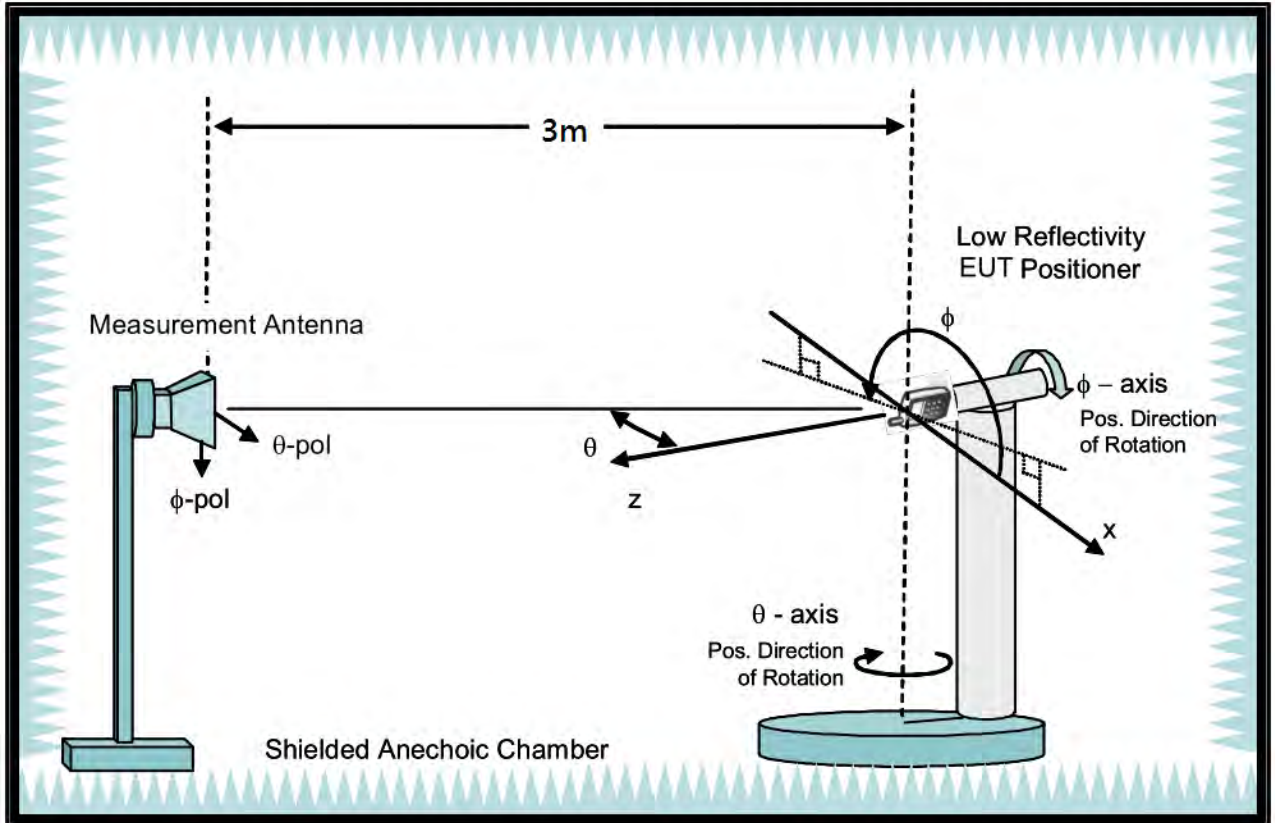
Dimension: 11m\*6m\*6m

Characteristic: Fully Anechoic Chamber

### 5. Test Facility and Configuration

Test configuration: Reference to CITA OTA distributed-axes system configuration.  
 Chamber: Fully Anechoic Chamber.  
 Measurement antenna: Dual Polarization Horn antenna  
 Turntable: Multi-axis positioner (Theta and Phi angle).

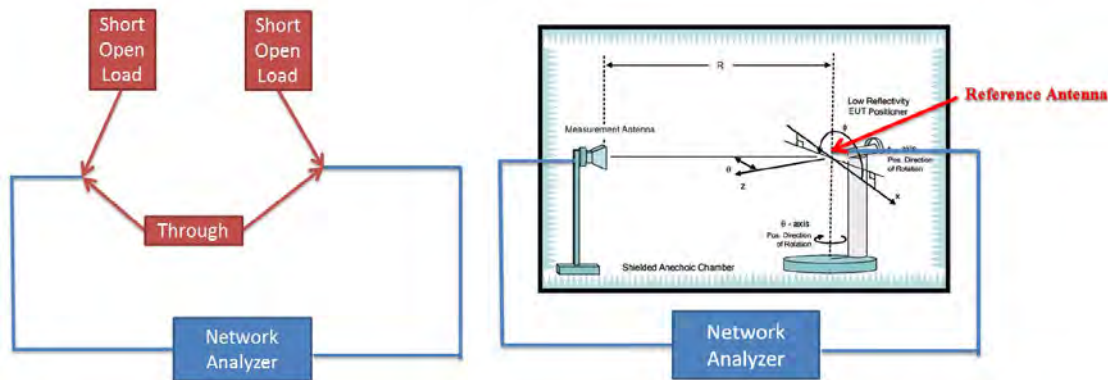
#Reference to CTIA "ctia-test-plan-for-wireless-device-over-the-air-performance-ver-3-7-1"



### 6. Reference Calibration

Connected cables to VNA calibration kit and use network analyzer internal function to do calibration. Do short, open and load to each side. Then connect through to both side and calibrate G values. The cable loss is calibrated and set inside the network analyzer.

Measurement Antenna is connected to port1 of Network analyzer and reference antenna connected to port 2 of Network Analyzer. Record G values and used with reference antenna gain to calculate gain factor.



Frequency (MHz)	2400	2450	2500	5150	5200	5300	5600	5750	5800	5900	6000	6500	7000	7200
G(theta) reading (dB)	-33.55	-33.27	-32.92	-32.91	-32.73	-32.02	-32.67	-32.82	-32.98	-33.18	-32.8	-33.92	-34.62	-35.57
G(phi) reading (dB)	-33.15	-32.7	-32.41	-32.61	-32.43	-31.72	-32.37	-32.51	-32.52	-32.66	-32.5	-33.62	-34.32	-35.48
Reference gain (dBi)	10.1	10.4	10.7	12.5	12.7	13.5	13.4	13.3	13.3	13.2	13.4	12.5	12.1	11.4
Factor(theta) (dB)	43.65	43.67	43.62	45.41	45.43	45.52	46.07	46.12	46.28	46.38	46.2	46.42	46.72	46.97
Factor(phi) (dB)	43.25	43.1	43.11	45.11	45.13	45.22	45.77	45.81	45.82	45.86	45.9	46.12	46.42	46.88

Note:

$$G \text{ reading (dB)} = 20 \cdot \log(V2/V1) = 10 \cdot \log(P2/P1)$$

V2 is the voltage of VNA port2 is measured, V1 is the voltage of VNA port1 is the reference source.

P2 is the power of VNA port2 is measured, P1 is the power of VNA port1 is the reference source.

$$\text{Factor} = \text{gain factor} + \text{power gain conversion} = (\text{Reference antenna gain}) - (G \text{ reading})$$





## **7. Test Method**

EUT set on multi-axis positioner and adjust EUT's physical center to measurement reference center. Measurement antenna set at phi polarization and 1.5 meter height. Port 1 of Network analyzer connect to antenna 1 of EUT. Record G value every 7.5 degree from 0 to 352.5 degree on Phi angle and 0 to 180 on theta angle of multi-axis positioner. Then set measurement antenna to theta polarization and repeat process. Repeat process to each antenna of EUT.

DG steps:

1. Each Phi and Theta polarization antenna gain are measured for all test angles.
2. Composite Phi and Theta antenna gain are computed, using formula in KDB662911 D01 d) (i) and e) (ii), for all angles.
3. Composite antenna gain are examined for all angles to determine max gain and Phi/Theta position. Max gain and phi/theta position are listed in section 8 tables.

Note: Antenna gain = G reading + factor, The factor of chapter five includes reference antenna gain factor and power gain conversion.

## 8. Measured Values and Calculation of Maximum Gain Positions

2G

### DG\_1SS Max Value Position

Frequency (Hz)	2.45G
Ant. 1 (dBi)	-5.79
Ant. 2 (dBi)	-3.1
Ant. 3 (dBi)	-1.06
Ant. 4 (dBi)	3.23
DG [1SS] (dBi)	4.98
Polarization	Phi
$\Theta(^{\circ})$	52.5
$\Phi(^{\circ})$	90

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

### DG\_1SS Max Value Position Calculation

Frequency (Hz)	2.45G
Ant. 1 [10 <sup>(G/20)</sup> ]	10 <sup>(-5.79/20)</sup>
Ant. 2 [10 <sup>(G/20)</sup> ]	10 <sup>(-3.1/20)</sup>
Ant. 3 [10 <sup>(G/20)</sup> ]	10 <sup>(-1.06/20)</sup>
Ant. 4 [10 <sup>(G/20)</sup> ]	10 <sup>(3.23/20)</sup>
Ant. 1 [10 <sup>(G/20)</sup> ] value	0.513
Ant. 2 [10 <sup>(G/20)</sup> ] value	0.7
Ant. 3 [10 <sup>(G/20)</sup> ] value	0.885
Ant. 4 [10 <sup>(G/20)</sup> ] value	1.45
Sum All Antenna [Amax]	3.549
DG [10*log(Amax <sup>2</sup> /Nant)]	4.98

Note:

Directional Gain (1SS) is the max value of every look angle. Each position value is calculated by KDB662911 D01 d) (i).

Directional gain (1SS) =  $10 \cdot \log(10^{(G_{ant1}/20)} + 10^{(G_{ant2}/20)} + 10^{(G_{ant3}/20)} + 10^{(G_{ant4}/20)} + \dots)^2 / N_{ant}$



5G option1

DG\_1SS Max Value Position

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G	5.885G
Ant. 1 (dBi)	-0.59	1.11	-2.06	-1.88	-0.83
Ant. 2 (dBi)	0.95	1.48	1.51	1.89	1.73
Ant. 5 (dBi)	-11.09	-15.76	-19.05	-11.05	-4.26
Ant. 7 (dBi)	2.49	1.43	1.9	2.52	0.55
DG [1SS] (dBi)	5.25	5.26	4.44	5.26	5.59
Polarization	Theta	Theta	Theta	Theta	Theta
$\Theta(^{\circ})$	67.5	75	60	60	67.5
$\Phi(^{\circ})$	52.5	60	30	30	22.5

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

DG\_1SS Max Value Position Calculation

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G	5.885G
Ant. 1 [10^(G/20)]	10^(-0.59/20)	10^(1.11/20)	10^(-2.06/20)	10^(-1.88/20)	10^(-0.83/20)
Ant. 2 [10^(G/20)]	10^(0.95/20)	10^(1.48/20)	10^(1.51/20)	10^(1.89/20)	10^(1.73/20)
Ant. 5 [10^(G/20)]	10^(-11.09/20)	10^(-15.76/20)	10^(-19.05/20)	10^(-11.05/20)	10^(-4.26/20)
Ant. 7 [10^(G/20)]	10^(2.49/20)	10^(1.43/20)	10^(1.9/20)	10^(2.52/20)	10^(0.55/20)
Ant. 1 [10^(G/20)] value	0.934	1.136	0.789	0.805	0.909
Ant. 2 [10^(G/20)] value	1.116	1.186	1.19	1.243	1.22
Ant. 5 [10^(G/20)] value	0.279	0.163	0.112	0.28	0.612
Ant. 7 [10^(G/20)] value	1.332	1.179	1.245	1.337	1.065
Sum All Antenna [Amax]	3.661	3.664	3.335	3.665	3.807
DG [10*log(Amax^2/Nant)]	5.25	5.26	4.44	5.26	5.59

Note:

Directional Gain (1SS) is the max value of every look angle. Each position value is calculated by KDB662911 D01 d) (i).

$$\text{Directional gain (1SS)} = 10 \cdot \log(10^{(G_{ant1}/20)} + 10^{(G_{ant2}/20)} + 10^{(G_{ant3}/20)} + 10^{(G_{ant4}/20)} + \dots)^{2/N_{ant}}$$



5G option2

DG\_1SS Max Value Position

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G	5.885G
Ant. 2 (dBi)	-6.78	-11.23	1.28	1.72	1.73
Ant. 3 (dBi)	2.89	-0.86	-5.19	-5.78	-5.46
Ant. 5 (dBi)	2.15	3.74	-11.66	-11.44	-4.26
Ant. 7 (dBi)	-12.26	-8.8	0.88	1.82	0.55
DG [1SS] (dBi)	4.55	3.75	3.74	4.17	4.69
Polarization	Phi	Phi	Theta	Theta	Theta
$\Theta(^{\circ})$	112.5	112.5	52.5	60	67.5
$\Phi(^{\circ})$	285	247.5	30	22.5	22.5

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

DG\_1SS Max Value Position Calculation

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G	5.885G
Ant. 2 [ $10^{(G/20)}$ ]	$10^{(-6.78/20)}$	$10^{(-11.23/20)}$	$10^{(1.28/20)}$	$10^{(1.72/20)}$	$10^{(1.73/20)}$
Ant. 3 [ $10^{(G/20)}$ ]	$10^{(2.89/20)}$	$10^{(-0.86/20)}$	$10^{(-5.19/20)}$	$10^{(-5.78/20)}$	$10^{(-5.46/20)}$
Ant. 5 [ $10^{(G/20)}$ ]	$10^{(2.15/20)}$	$10^{(3.74/20)}$	$10^{(-11.66/20)}$	$10^{(-11.44/20)}$	$10^{(-4.26/20)}$
Ant. 7 [ $10^{(G/20)}$ ]	$10^{(-12.26/20)}$	$10^{(-8.8/20)}$	$10^{(0.88/20)}$	$10^{(1.82/20)}$	$10^{(0.55/20)}$
Ant. 2 [ $10^{(G/20)}$ ] value	0.458	0.274	1.159	1.219	1.22
Ant. 3 [ $10^{(G/20)}$ ] value	1.395	0.906	0.55	0.514	0.533
Ant. 5 [ $10^{(G/20)}$ ] value	1.281	1.538	0.261	0.268	0.612
Ant. 7 [ $10^{(G/20)}$ ] value	0.244	0.363	1.107	1.233	1.065
Sum All Antenna [Amax]	3.378	3.081	3.077	3.234	3.431
DG [ $10 \cdot \log(A_{max}^2/N_{ant})$ ]	4.55	3.75	3.74	4.17	4.69

Note:

Directional Gain (1SS) is the max value of every look angle. Each position value is calculated by KDB662911 D01 d) (i).

$$\text{Directional gain (1SS)} = 10 \cdot \log(10^{(G_{ant1}/20)} + 10^{(G_{ant2}/20)} + 10^{(G_{ant3}/20)} + 10^{(G_{ant4}/20)} + \dots)^2 / N_{ant}$$



**5G option3**

**DG\_1SS Max Value Position**

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G	5.885G
Ant. 1 (dBi)	2.41	-1.64	0.36	1.79	2.07
Ant. 4 (dBi)	-2.99	-1.3	-6.04	-7.89	-5.86
Ant. 5 (dBi)	-5.12	-7.57	-12.28	-12.4	-9.68
Ant. 7 (dBi)	-0.55	1.43	2.48	3.02	3.43
DG [1SS] (dBi)	4.91	4.31	3.85	4.32	5.08
Polarization	Theta	Theta	Theta	Theta	Theta
$\Theta(^{\circ})$	75	60	75	82.5	82.5
$\Phi(^{\circ})$	165	142.5	150	97.5	97.5

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

**DG\_1SS Max Value Position Calculation**

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G	5.885G
Ant. 1 [ $10^{(G/20)}$ ]	$10^{(2.41/20)}$	$10^{(-1.64/20)}$	$10^{(0.36/20)}$	$10^{(1.79/20)}$	$10^{(2.07/20)}$
Ant. 4 [ $10^{(G/20)}$ ]	$10^{(-2.99/20)}$	$10^{(-1.3/20)}$	$10^{(-6.04/20)}$	$10^{(-7.89/20)}$	$10^{(-5.86/20)}$
Ant. 5 [ $10^{(G/20)}$ ]	$10^{(-5.12/20)}$	$10^{(-7.57/20)}$	$10^{(-12.28/20)}$	$10^{(-12.4/20)}$	$10^{(-9.68/20)}$
Ant. 7 [ $10^{(G/20)}$ ]	$10^{(-0.55/20)}$	$10^{(1.43/20)}$	$10^{(2.48/20)}$	$10^{(3.02/20)}$	$10^{(3.43/20)}$
Ant. 1 [ $10^{(G/20)}$ ] value	1.32	0.828	1.042	1.229	1.269
Ant. 4 [ $10^{(G/20)}$ ] value	0.709	0.861	0.499	0.403	0.509
Ant. 5 [ $10^{(G/20)}$ ] value	0.555	0.418	0.243	0.24	0.328
Ant. 7 [ $10^{(G/20)}$ ] value	0.939	1.179	1.33	1.416	1.484
Sum All Antenna [Amax]	3.522	3.286	3.115	3.288	3.591
DG [ $10 \cdot \log(Amax^2/N_{ant})$ ]	4.91	4.31	3.85	4.32	5.08

Note:

Directional Gain (1SS) is the max value of every look angle. Each position value is calculated by KDB662911 D01 d) (i).

$$\text{Directional gain (1SS)} = 10 \cdot \log(10^{(G_{ant1}/20)} + 10^{(G_{ant2}/20)} + 10^{(G_{ant3}/20)} + 10^{(G_{ant4}/20)} + \dots)^2 / N_{ant}$$



5G option4

DG\_1SS Max Value Position

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G	5.885G
Ant. 3 (dBi)	2.18	4.24	-0.21	3.38	-0.87
Ant. 4 (dBi)	0.28	-3.57	-0.37	-4.32	-2.92
Ant. 5 (dBi)	-4.55	-4.83	-2.01	0.37	-0.09
Ant. 7 (dBi)	-9.2	-11.45	-7.55	-19.39	-6.59
DG [1SS] (dBi)	4.24	3.9	3.94	4.18	3.74
Polarization	Theta	Phi	Theta	Phi	Theta
$\Theta(^{\circ})$	15	37.5	15	37.5	15
$\Phi(^{\circ})$	180	262.5	187.5	262.5	315

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

DG\_1SS Max Value Position Calculation

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G	5.885G
Ant. 3 [ $10^{(G/20)}$ ]	$10^{(2.18/20)}$	$10^{(4.24/20)}$	$10^{(-0.21/20)}$	$10^{(3.38/20)}$	$10^{(-0.87/20)}$
Ant. 4 [ $10^{(G/20)}$ ]	$10^{(0.28/20)}$	$10^{(-3.57/20)}$	$10^{(-0.37/20)}$	$10^{(-4.32/20)}$	$10^{(-2.92/20)}$
Ant. 5 [ $10^{(G/20)}$ ]	$10^{(-4.55/20)}$	$10^{(-4.83/20)}$	$10^{(-2.01/20)}$	$10^{(0.37/20)}$	$10^{(-0.09/20)}$
Ant. 7 [ $10^{(G/20)}$ ]	$10^{(-9.2/20)}$	$10^{(-11.45/20)}$	$10^{(-7.55/20)}$	$10^{(-19.39/20)}$	$10^{(-6.59/20)}$
Ant. 3 [ $10^{(G/20)}$ ] value	1.285	1.629	0.976	1.476	0.905
Ant. 4 [ $10^{(G/20)}$ ] value	1.033	0.663	0.958	0.608	0.714
Ant. 5 [ $10^{(G/20)}$ ] value	0.592	0.573	0.793	1.044	0.99
Ant. 7 [ $10^{(G/20)}$ ] value	0.347	0.268	0.419	0.107	0.468
Sum All Antenna [Amax]	3.257	3.133	3.147	3.235	3.077
DG [ $10^{*log(Amax^2/Nant)}$ ]	4.24	3.9	3.94	4.18	3.74

Note:

Directional Gain (1SS) is the max value of every look angle. Each position value is calculated by KDB662911 D01 d) (i).

Directional gain (1SS) =  $10^{*log(10^{(G_{ant1}/20)}+10^{( G_{ant2}/20)}+ +10^{( G_{ant3}/20)} +10^{( G_{ant4}/20)}+.....)^2/N_{ant}}$



5G option5

DG\_1SS Max Value Position

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G	5.885G
Ant. 1 (dBi)	0.57	-0.42	-2.05	-0.87	-1.54
Ant. 2 (dBi)	1.42	-1.72	-5.69	1.71	-1.15
Ant. 6 (dBi)	-8.08	-3.31	-2.36	-8.16	-6.1
Ant. 7 (dBi)	1.63	1.9	3.98	2.43	2.83
DG [1SS] (dBi)	5.68	5.35	5.23	5.66	5.09
Polarization	Theta	Theta	Theta	Theta	Theta
$\Theta(^{\circ})$	75	97.5	105	60	60
$\Phi(^{\circ})$	67.5	37.5	105	37.5	82.5

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

DG\_1SS Max Value Position Calculation

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G	5.885G
Ant. 1 [ $10^{(G/20)}$ ]	$10^{(0.57/20)}$	$10^{(-0.42/20)}$	$10^{(-2.05/20)}$	$10^{(-0.87/20)}$	$10^{(-1.54/20)}$
Ant. 2 [ $10^{(G/20)}$ ]	$10^{(1.42/20)}$	$10^{(-1.72/20)}$	$10^{(-5.69/20)}$	$10^{(1.71/20)}$	$10^{(-1.15/20)}$
Ant. 6 [ $10^{(G/20)}$ ]	$10^{(-8.08/20)}$	$10^{(-3.31/20)}$	$10^{(-2.36/20)}$	$10^{(-8.16/20)}$	$10^{(-6.1/20)}$
Ant. 7 [ $10^{(G/20)}$ ]	$10^{(1.63/20)}$	$10^{(1.9/20)}$	$10^{(3.98/20)}$	$10^{(2.43/20)}$	$10^{(2.83/20)}$
Ant. 1 [ $10^{(G/20)}$ ] value	1.068	0.953	0.79	0.905	0.838
Ant. 2 [ $10^{(G/20)}$ ] value	1.178	0.82	0.519	1.218	0.876
Ant. 6 [ $10^{(G/20)}$ ] value	0.394	0.683	0.762	0.391	0.495
Ant. 7 [ $10^{(G/20)}$ ] value	1.206	1.245	1.581	1.323	1.385
Sum All Antenna [Amax]	3.846	3.701	3.652	3.836	3.594
DG [ $10 \cdot \log(A_{max}^2/N_{ant})$ ]	5.68	5.35	5.23	5.66	5.09

Note:

Directional Gain (1SS) is the max value of every look angle. Each position value is calculated by KDB662911 D01 d) (i).

$$\text{Directional gain (1SS)} = 10 \cdot \log(10^{(G_{ant1}/20)} + 10^{(G_{ant2}/20)} + 10^{(G_{ant3}/20)} + 10^{(G_{ant4}/20)} + \dots)^2 / N_{ant}$$



**5G option6**

**DG\_1SS Max Value Position**

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G	5.885G
Ant. 2 (dBi)	0.61	0.63	1.07	1.72	1.92
Ant. 3 (dBi)	-5.06	-4.12	-2.86	-5.78	-6.25
Ant. 6 (dBi)	-7.25	-8.84	-10.38	-8.75	-6.82
Ant. 7 (dBi)	1.78	-0.48	0.72	1.82	1.76
DG [1SS] (dBi)	4.33	3.54	4.19	4.43	4.65
Polarization	Theta	Theta	Theta	Theta	Theta
$\Theta(^{\circ})$	45	52.5	52.5	60	60
$\Phi(^{\circ})$	37.5	7.5	22.5	22.5	22.5

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

**DG\_1SS Max Value Position Calculation**

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G	5.885G
Ant. 2 [ $10^{(G/20)}$ ]	$10^{(0.61/20)}$	$10^{(0.63/20)}$	$10^{(1.07/20)}$	$10^{(1.72/20)}$	$10^{(1.92/20)}$
Ant. 3 [ $10^{(G/20)}$ ]	$10^{(-5.06/20)}$	$10^{(-4.12/20)}$	$10^{(-2.86/20)}$	$10^{(-5.78/20)}$	$10^{(-6.25/20)}$
Ant. 6 [ $10^{(G/20)}$ ]	$10^{(-7.25/20)}$	$10^{(-8.84/20)}$	$10^{(-10.38/20)}$	$10^{(-8.75/20)}$	$10^{(-6.82/20)}$
Ant. 7 [ $10^{(G/20)}$ ]	$10^{(1.78/20)}$	$10^{(-0.48/20)}$	$10^{(0.72/20)}$	$10^{(1.82/20)}$	$10^{(1.76/20)}$
Ant. 2 [ $10^{(G/20)}$ ] value	1.073	1.075	1.131	1.219	1.247
Ant. 3 [ $10^{(G/20)}$ ] value	0.558	0.622	0.719	0.514	0.487
Ant. 6 [ $10^{(G/20)}$ ] value	0.434	0.361	0.303	0.365	0.456
Ant. 7 [ $10^{(G/20)}$ ] value	1.227	0.946	1.086	1.233	1.225
Sum All Antenna [Amax]	3.293	3.005	3.24	3.331	3.415
DG [ $10^{*log(Amax^2/Nant)}$ ]	4.33	3.54	4.19	4.43	4.65

Note:

Directional Gain (1SS) is the max value of every look angle. Each position value is calculated by KDB662911 D01 d) (i).

$$\text{Directional gain (1SS)} = 10^{*log(10^{(G_{ant1}/20)} + 10^{(G_{ant2}/20)} + 10^{(G_{ant3}/20)} + 10^{(G_{ant4}/20)} + \dots)^2 / N_{ant}}$$





5G option7

DG\_1SS Max Value Position

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G	5.885G
Ant. 1 (dBi)	0.77	-1.64	0.12	1.03	2.14
Ant. 4 (dBi)	-7.49	-1.3	-7.54	-6.41	-4.22
Ant. 6 (dBi)	-7.01	-3.44	-3.39	-7.53	-8.6
Ant. 7 (dBi)	3.36	1.43	3.62	3.16	2.7
DG [1SS] (dBi)	4.69	4.96	5.17	4.77	5.18
Polarization	Theta	Theta	Theta	Theta	Theta
$\Theta(^{\circ})$	82.5	60	112.5	82.5	82.5
$\Phi(^{\circ})$	82.5	142.5	112.5	105	105

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

DG\_1SS Max Value Position Calculation

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G	5.885G
Ant. 1 [ $10^{(G/20)}$ ]	$10^{(0.77/20)}$	$10^{(-1.64/20)}$	$10^{(0.12/20)}$	$10^{(1.03/20)}$	$10^{(2.14/20)}$
Ant. 4 [ $10^{(G/20)}$ ]	$10^{(-7.49/20)}$	$10^{(-1.3/20)}$	$10^{(-7.54/20)}$	$10^{(-6.41/20)}$	$10^{(-4.22/20)}$
Ant. 6 [ $10^{(G/20)}$ ]	$10^{(-7.01/20)}$	$10^{(-3.44/20)}$	$10^{(-3.39/20)}$	$10^{(-7.53/20)}$	$10^{(-8.6/20)}$
Ant. 7 [ $10^{(G/20)}$ ]	$10^{(3.36/20)}$	$10^{(1.43/20)}$	$10^{(3.62/20)}$	$10^{(3.16/20)}$	$10^{(2.7/20)}$
Ant. 1 [ $10^{(G/20)}$ ] value	1.093	0.828	1.014	1.126	1.279
Ant. 4 [ $10^{(G/20)}$ ] value	0.422	0.861	0.42	0.478	0.615
Ant. 6 [ $10^{(G/20)}$ ] value	0.446	0.673	0.677	0.42	0.372
Ant. 7 [ $10^{(G/20)}$ ] value	1.472	1.179	1.517	1.439	1.365
Sum All Antenna [Amax]	3.433	3.541	3.628	3.463	3.631
DG [ $10 \cdot \log(A_{max}^2/N_{ant})$ ]	4.69	4.96	5.17	4.77	5.18

Note:

Directional Gain (1SS) is the max value of every look angle. Each position value is calculated by KDB662911 D01 d) (i).

$$\text{Directional gain (1SS)} = 10 \cdot \log(10^{(G_{ant1}/20)} + 10^{(G_{ant2}/20)} + 10^{(G_{ant3}/20)} + 10^{(G_{ant4}/20)} + \dots)^2 / N_{ant}$$



5G option8

DG\_1SS Max Value Position

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G	5.885G
Ant. 3 (dBi)	-3.89	-3.76	-4.6	-3.36	-2.98
Ant. 4 (dBi)	3.93	2.41	1.94	3.14	1.86
Ant. 6 (dBi)	0.94	0.56	-0.96	0.34	0.21
Ant. 7 (dBi)	-6.52	-6.48	-7.91	-9.93	-15.75
DG [1SS] (dBi)	5.57	4.88	3.91	4.79	3.91
Polarization	Phi	Phi	Phi	Phi	Phi
$\Theta(^{\circ})$	45	45	30	30	30
$\Phi(^{\circ})$	105	105	112.5	105	105

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

DG\_1SS Max Value Position Calculation

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G	5.885G
Ant. 3 [10 <sup>^(G/20)</sup> ]	10 <sup>^(-3.89/20)</sup>	10 <sup>^(-3.76/20)</sup>	10 <sup>^(-4.6/20)</sup>	10 <sup>^(-3.36/20)</sup>	10 <sup>^(-2.98/20)</sup>
Ant. 4 [10 <sup>^(G/20)</sup> ]	10 <sup>^(3.93/20)</sup>	10 <sup>^(2.41/20)</sup>	10 <sup>^(1.94/20)</sup>	10 <sup>^(3.14/20)</sup>	10 <sup>^(1.86/20)</sup>
Ant. 6 [10 <sup>^(G/20)</sup> ]	10 <sup>^(0.94/20)</sup>	10 <sup>^(0.56/20)</sup>	10 <sup>^(-0.96/20)</sup>	10 <sup>^(0.34/20)</sup>	10 <sup>^(0.21/20)</sup>
Ant. 7 [10 <sup>^(G/20)</sup> ]	10 <sup>^(-6.52/20)</sup>	10 <sup>^(-6.48/20)</sup>	10 <sup>^(-7.91/20)</sup>	10 <sup>^(-9.93/20)</sup>	10 <sup>^(-15.75/20)</sup>
Ant. 3 [10 <sup>^(G/20)</sup> ] value	0.639	0.649	0.589	0.679	0.71
Ant. 4 [10 <sup>^(G/20)</sup> ] value	1.572	1.32	1.25	1.435	1.239
Ant. 6 [10 <sup>^(G/20)</sup> ] value	1.114	1.067	0.895	1.04	1.024
Ant. 7 [10 <sup>^(G/20)</sup> ] value	0.472	0.474	0.402	0.319	0.163
Sum All Antenna [Amax]	3.798	3.509	3.137	3.473	3.136
DG [10*log(Amax <sup>2</sup> /Nant)]	5.57	4.88	3.91	4.79	3.91

Note:

Directional Gain (1SS) is the max value of every look angle. Each position value is calculated by KDB662911 D01 d) (i).

$$\text{Directional gain (1SS)} = 10 \cdot \log(10^{(G_{ant1}/20)} + 10^{(G_{ant2}/20)} + 10^{(G_{ant3}/20)} + 10^{(G_{ant4}/20)} + \dots)^2 / N_{ant}$$



5G option9

DG\_1SS Max Value Position

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G	5.885G
Ant. 1 (dBi)	-5.8	-3.51	-1.64	-1.34	-0.21
Ant. 2 (dBi)	1.71	2.95	2.28	3.15	2.55
Ant. 5 (dBi)	-11.54	-11.81	-13.9	-8.2	-7.71
Ant. 8 (dBi)	4.52	3.6	4.07	5.28	5.46
DG [1SS] (dBi)	5.29	5.67	5.86	7.08	7.24
Polarization	Theta	Theta	Theta	Theta	Theta
$\Theta(^{\circ})$	67.5	67.5	75	75	75
$\Phi(^{\circ})$	337.5	337.5	337.5	337.5	337.5

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

DG\_1SS Max Value Position Calculation

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G	5.885G
Ant. 1 [ $10^{(G/20)}$ ]	$10^{(-5.8/20)}$	$10^{(-3.51/20)}$	$10^{(-1.64/20)}$	$10^{(-1.34/20)}$	$10^{(-0.21/20)}$
Ant. 2 [ $10^{(G/20)}$ ]	$10^{(1.71/20)}$	$10^{(2.95/20)}$	$10^{(2.28/20)}$	$10^{(3.15/20)}$	$10^{(2.55/20)}$
Ant. 5 [ $10^{(G/20)}$ ]	$10^{(-11.54/20)}$	$10^{(-11.81/20)}$	$10^{(-13.9/20)}$	$10^{(-8.2/20)}$	$10^{(-7.71/20)}$
Ant. 8 [ $10^{(G/20)}$ ]	$10^{(4.52/20)}$	$10^{(3.6/20)}$	$10^{(4.07/20)}$	$10^{(5.28/20)}$	$10^{(5.46/20)}$
Ant. 1 [ $10^{(G/20)}$ ] value	0.513	0.668	0.828	0.857	0.976
Ant. 2 [ $10^{(G/20)}$ ] value	1.218	1.404	1.3	1.437	1.341
Ant. 5 [ $10^{(G/20)}$ ] value	0.265	0.257	0.202	0.389	0.412
Ant. 8 [ $10^{(G/20)}$ ] value	1.683	1.514	1.598	1.837	1.875
Sum All Antenna [Amax]	3.678	3.842	3.928	4.52	4.604
DG [ $10 \cdot \log(A_{max}^2/N_{ant})$ ]	5.29	5.67	5.86	7.08	7.24

Note:

Directional Gain (1SS) is the max value of every look angle. Each position value is calculated by KDB662911 D01 d) (i).

$$\text{Directional gain (1SS)} = 10 \cdot \log(10^{(G_{ant1}/20)} + 10^{(G_{ant2}/20)} + 10^{(G_{ant3}/20)} + 10^{(G_{ant4}/20)} + \dots)^2 / N_{ant}$$



5G option10

DG\_1SS Max Value Position

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G	5.885G
Ant. 2 (dBi)	-0.45	2.87	2.03	3.15	2.55
Ant. 3 (dBi)	-4.79	-5.25	-7.19	-11.02	-7.52
Ant. 5 (dBi)	-9.9	-15.72	-12.52	-8.2	-7.71
Ant. 8 (dBi)	5.48	3.63	3.78	5.28	5.46
DG [1SS] (dBi)	5.4	5.15	4.82	5.9	6.13
Polarization	Theta	Theta	Theta	Theta	Theta
$\Theta(^{\circ})$	75	60	67.5	75	75
$\Phi(^{\circ})$	300	337.5	337.5	337.5	337.5

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

DG\_1SS Max Value Position Calculation

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G	5.885G
Ant. 2 [ $10^{(G/20)}$ ]	$10^{(-0.45/20)}$	$10^{(2.87/20)}$	$10^{(2.03/20)}$	$10^{(3.15/20)}$	$10^{(2.55/20)}$
Ant. 3 [ $10^{(G/20)}$ ]	$10^{(-4.79/20)}$	$10^{(-5.25/20)}$	$10^{(-7.19/20)}$	$10^{(-11.02/20)}$	$10^{(-7.52/20)}$
Ant. 5 [ $10^{(G/20)}$ ]	$10^{(-9.9/20)}$	$10^{(-15.72/20)}$	$10^{(-12.52/20)}$	$10^{(-8.2/20)}$	$10^{(-7.71/20)}$
Ant. 8 [ $10^{(G/20)}$ ]	$10^{(5.48/20)}$	$10^{(3.63/20)}$	$10^{(3.78/20)}$	$10^{(5.28/20)}$	$10^{(5.46/20)}$
Ant. 2 [ $10^{(G/20)}$ ] value	0.95	1.392	1.263	1.437	1.341
Ant. 3 [ $10^{(G/20)}$ ] value	0.576	0.546	0.437	0.281	0.421
Ant. 5 [ $10^{(G/20)}$ ] value	0.32	0.164	0.237	0.389	0.412
Ant. 8 [ $10^{(G/20)}$ ] value	1.879	1.519	1.545	1.837	1.875
Sum All Antenna [Amax]	3.725	3.62	3.482	3.944	4.049
DG [ $10 \cdot \log(Amax^2/N_{ant})$ ]	5.4	5.15	4.82	5.9	6.13

Note:

Directional Gain (1SS) is the max value of every look angle. Each position value is calculated by KDB662911 D01 d) (i).

$$\text{Directional gain (1SS)} = 10 \cdot \log(10^{(G_{ant1}/20)} + 10^{(G_{ant2}/20)} + 10^{(G_{ant3}/20)} + 10^{(G_{ant4}/20)} + \dots)^{2/N_{ant}}$$



5G option11

DG\_1SS Max Value Position

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G	5.885G
Ant. 1 (dBi)	2.41	-8.02	-0.25	-0.19	-0.21
Ant. 4 (dBi)	-2.99	-16.51	-11.39	-18.52	-18.73
Ant. 5 (dBi)	-5.12	-0.35	-10.02	-5.47	-7.71
Ant. 8 (dBi)	-10.37	2.15	2.81	4.21	5.46
DG [1SS] (dBi)	3.19	2.89	3.34	4.23	4.55
Polarization	Theta	Theta	Theta	Theta	Theta
$\Theta(^{\circ})$	75	112.5	75	75	75
$\Phi(^{\circ})$	165	285	0	0	337.5

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

DG\_1SS Max Value Position Calculation

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G	5.885G
Ant. 1 [10 <sup>(G/20)</sup> ]	10 <sup>(2.41/20)</sup>	10 <sup>(-8.02/20)</sup>	10 <sup>(-0.25/20)</sup>	10 <sup>(-0.19/20)</sup>	10 <sup>(-0.21/20)</sup>
Ant. 4 [10 <sup>(G/20)</sup> ]	10 <sup>(-2.99/20)</sup>	10 <sup>(-16.51/20)</sup>	10 <sup>(-11.39/20)</sup>	10 <sup>(-18.52/20)</sup>	10 <sup>(-18.73/20)</sup>
Ant. 5 [10 <sup>(G/20)</sup> ]	10 <sup>(-5.12/20)</sup>	10 <sup>(-0.35/20)</sup>	10 <sup>(-10.02/20)</sup>	10 <sup>(-5.47/20)</sup>	10 <sup>(-7.71/20)</sup>
Ant. 8 [10 <sup>(G/20)</sup> ]	10 <sup>(-10.37/20)</sup>	10 <sup>(2.15/20)</sup>	10 <sup>(2.81/20)</sup>	10 <sup>(4.21/20)</sup>	10 <sup>(5.46/20)</sup>
Ant. 1 [10 <sup>(G/20)</sup> ] value	1.32	0.397	0.972	0.978	0.976
Ant. 4 [10 <sup>(G/20)</sup> ] value	0.709	0.149	0.269	0.119	0.116
Ant. 5 [10 <sup>(G/20)</sup> ] value	0.555	0.961	0.316	0.533	0.412
Ant. 8 [10 <sup>(G/20)</sup> ] value	0.303	1.281	1.382	1.624	1.875
Sum All Antenna [Amax]	2.886	2.788	2.939	3.253	3.378
DG [10*log(Amax <sup>2</sup> /Nant)]	3.19	2.89	3.34	4.23	4.55

Note:

Directional Gain (1SS) is the max value of every look angle. Each position value is calculated by KDB662911 D01 d) (i).

$$\text{Directional gain (1SS)} = 10 \cdot \log(10^{(G_{ant1}/20)} + 10^{(G_{ant2}/20)} + 10^{(G_{ant3}/20)} + 10^{(G_{ant4}/20)} + \dots)^{2/N_{ant}}$$



5G option12

DG\_1SS Max Value Position

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G	5.885G
Ant. 3 (dBi)	0.52	-1.22	3.1	3.38	3.16
Ant. 4 (dBi)	-13.22	-13.03	-5.97	-4.32	-4.49
Ant. 5 (dBi)	2.04	3.64	0.09	0.37	-1.97
Ant. 8 (dBi)	-4.49	-6.14	-7.99	-8.71	-10.34
DG [1SS] (dBi)	3.92	3.82	4.46	4.85	3.91
Polarization	Phi	Phi	Phi	Phi	Phi
$\Theta(^{\circ})$	120	112.5	37.5	37.5	37.5
$\Phi(^{\circ})$	285	255	262.5	262.5	262.5

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

DG\_1SS Max Value Position Calculation

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G	5.885G
Ant. 3 [ $10^{(G/20)}$ ]	$10^{(0.52/20)}$	$10^{(-1.22/20)}$	$10^{(3.1/20)}$	$10^{(3.38/20)}$	$10^{(3.16/20)}$
Ant. 4 [ $10^{(G/20)}$ ]	$10^{(-13.22/20)}$	$10^{(-13.03/20)}$	$10^{(-5.97/20)}$	$10^{(-4.32/20)}$	$10^{(-4.49/20)}$
Ant. 5 [ $10^{(G/20)}$ ]	$10^{(2.04/20)}$	$10^{(3.64/20)}$	$10^{(0.09/20)}$	$10^{(0.37/20)}$	$10^{(-1.97/20)}$
Ant. 8 [ $10^{(G/20)}$ ]	$10^{(-4.49/20)}$	$10^{(-6.14/20)}$	$10^{(-7.99/20)}$	$10^{(-8.71/20)}$	$10^{(-10.34/20)}$
Ant. 3 [ $10^{(G/20)}$ ] value	1.062	0.869	1.429	1.476	1.439
Ant. 4 [ $10^{(G/20)}$ ] value	0.218	0.223	0.503	0.608	0.596
Ant. 5 [ $10^{(G/20)}$ ] value	1.265	1.521	1.01	1.044	0.797
Ant. 8 [ $10^{(G/20)}$ ] value	0.596	0.493	0.399	0.367	0.304
Sum All Antenna [Amax]	3.141	3.106	3.341	3.494	3.136
DG [ $10 \cdot \log(Amax^2/N_{ant})$ ]	3.92	3.82	4.46	4.85	3.91

Note:

Directional Gain (1SS) is the max value of every look angle. Each position value is calculated by KDB662911 D01 d) (i).

$$\text{Directional gain (1SS)} = 10 \cdot \log(10^{(G_{ant1}/20)} + 10^{(G_{ant2}/20)} + 10^{(G_{ant3}/20)} + 10^{(G_{ant4}/20)} + \dots)^2 / N_{ant}$$



5G option13

DG\_1SS Max Value Position

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G	5.885G
Ant. 1 (dBi)	-5.8	-3.51	-2.41	-1.34	-0.21
Ant. 2 (dBi)	1.71	2.95	1.83	3.15	2.55
Ant. 6 (dBi)	-14.94	-18.48	-6.82	-19.18	-18.2
Ant. 8 (dBi)	4.52	3.6	3.82	5.28	5.46
DG [1SS] (dBi)	5.09	5.35	6.02	6.53	6.68
Polarization	Theta	Theta	Theta	Theta	Theta
$\Theta(^{\circ})$	67.5	67.5	90	75	75
$\Phi(^{\circ})$	337.5	337.5	337.5	337.5	337.5

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

DG\_1SS Max Value Position Calculation

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G	5.885G
Ant. 1 [ $10^{(G/20)}$ ]	$10^{(-5.8/20)}$	$10^{(-3.51/20)}$	$10^{(-2.41/20)}$	$10^{(-1.34/20)}$	$10^{(-0.21/20)}$
Ant. 2 [ $10^{(G/20)}$ ]	$10^{(1.71/20)}$	$10^{(2.95/20)}$	$10^{(1.83/20)}$	$10^{(3.15/20)}$	$10^{(2.55/20)}$
Ant. 6 [ $10^{(G/20)}$ ]	$10^{(-14.94/20)}$	$10^{(-18.48/20)}$	$10^{(-6.82/20)}$	$10^{(-19.18/20)}$	$10^{(-18.2/20)}$
Ant. 8 [ $10^{(G/20)}$ ]	$10^{(4.52/20)}$	$10^{(3.6/20)}$	$10^{(3.82/20)}$	$10^{(5.28/20)}$	$10^{(5.46/20)}$
Ant. 1 [ $10^{(G/20)}$ ] value	0.513	0.668	0.758	0.857	0.976
Ant. 2 [ $10^{(G/20)}$ ] value	1.218	1.404	1.235	1.437	1.341
Ant. 6 [ $10^{(G/20)}$ ] value	0.179	0.119	0.456	0.11	0.123
Ant. 8 [ $10^{(G/20)}$ ] value	1.683	1.514	1.552	1.837	1.875
Sum All Antenna [Amax]	3.592	3.705	4.001	4.241	4.315
DG [ $10 \cdot \log(A_{max}^2/N_{ant})$ ]	5.09	5.35	6.02	6.53	6.68

Note:

Directional Gain (1SS) is the max value of every look angle. Each position value is calculated by KDB662911 D01 d) (i).

$$\text{Directional gain (1SS)} = 10 \cdot \log(10^{(G_{ant1}/20)} + 10^{(G_{ant2}/20)} + 10^{(G_{ant3}/20)} + 10^{(G_{ant4}/20)} + \dots)^{2/N_{ant}}$$



5G option14

DG\_1SS Max Value Position

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G	5.885G
Ant. 2 (dBi)	-0.45	2.87	1.83	0.39	2.55
Ant. 3 (dBi)	-4.79	-5.25	-11.58	-2.66	-7.52
Ant. 6 (dBi)	-10.12	-18.02	-6.82	-9.12	-18.2
Ant. 8 (dBi)	5.48	3.63	3.82	4.31	5.46
DG [1SS] (dBi)	5.38	5.06	4.88	5.52	5.48
Polarization	Theta	Theta	Theta	Theta	Theta
$\Theta(^{\circ})$	75	60	90	105	75
$\Phi(^{\circ})$	300	337.5	337.5	255	337.5

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

DG\_1SS Max Value Position Calculation

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G	5.885G
Ant. 2 [ $10^{(G/20)}$ ]	$10^{(-0.45/20)}$	$10^{(2.87/20)}$	$10^{(1.83/20)}$	$10^{(0.39/20)}$	$10^{(2.55/20)}$
Ant. 3 [ $10^{(G/20)}$ ]	$10^{(-4.79/20)}$	$10^{(-5.25/20)}$	$10^{(-11.58/20)}$	$10^{(-2.66/20)}$	$10^{(-7.52/20)}$
Ant. 6 [ $10^{(G/20)}$ ]	$10^{(-10.12/20)}$	$10^{(-18.02/20)}$	$10^{(-6.82/20)}$	$10^{(-9.12/20)}$	$10^{(-18.2/20)}$
Ant. 8 [ $10^{(G/20)}$ ]	$10^{(5.48/20)}$	$10^{(3.63/20)}$	$10^{(3.82/20)}$	$10^{(4.31/20)}$	$10^{(5.46/20)}$
Ant. 2 [ $10^{(G/20)}$ ] value	0.95	1.392	1.235	1.046	1.341
Ant. 3 [ $10^{(G/20)}$ ] value	0.576	0.546	0.264	0.736	0.421
Ant. 6 [ $10^{(G/20)}$ ] value	0.312	0.126	0.456	0.35	0.123
Ant. 8 [ $10^{(G/20)}$ ] value	1.879	1.519	1.552	1.642	1.875
Sum All Antenna [Amax]	3.717	3.582	3.507	3.775	3.76
DG [ $10 \cdot \log(Amax^2/N_{ant})$ ]	5.38	5.06	4.88	5.52	5.48

Note:

Directional Gain (1SS) is the max value of every look angle. Each position value is calculated by KDB662911 D01 d) (i).

$$\text{Directional gain (1SS)} = 10 \cdot \log(10^{(G_{ant1}/20)} + 10^{(G_{ant2}/20)} + 10^{(G_{ant3}/20)} + 10^{(G_{ant4}/20)} + \dots)^2 / N_{ant}$$





5G option15

DG\_1SS Max Value Position

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G	5.885G
Ant. 1 (dBi)	-6.24	-8.29	-16.87	-7.77	-0.21
Ant. 4 (dBi)	3.01	1.23	2.48	0.29	-18.73
Ant. 6 (dBi)	0.4	1.67	1.37	1.13	-18.2
Ant. 8 (dBi)	-4.42	-12.21	-10.46	-8.07	5.46
DG [1SS] (dBi)	4.98	3.51	3.36	3.45	3.78
Polarization	Phi	Phi	Phi	Phi	Theta
$\Theta(^{\circ})$	135	52.5	60	120	75
$\Phi(^{\circ})$	97.5	120	97.5	112.5	337.5

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

DG\_1SS Max Value Position Calculation

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G	5.885G
Ant. 1 [ $10^{(G/20)}$ ]	$10^{(-6.24/20)}$	$10^{(-8.29/20)}$	$10^{(-16.87/20)}$	$10^{(-7.77/20)}$	$10^{(-0.21/20)}$
Ant. 4 [ $10^{(G/20)}$ ]	$10^{(3.01/20)}$	$10^{(1.23/20)}$	$10^{(2.48/20)}$	$10^{(0.29/20)}$	$10^{(-18.73/20)}$
Ant. 6 [ $10^{(G/20)}$ ]	$10^{(0.4/20)}$	$10^{(1.67/20)}$	$10^{(1.37/20)}$	$10^{(1.13/20)}$	$10^{(-18.2/20)}$
Ant. 8 [ $10^{(G/20)}$ ]	$10^{(-4.42/20)}$	$10^{(-12.21/20)}$	$10^{(-10.46/20)}$	$10^{(-8.07/20)}$	$10^{(5.46/20)}$
Ant. 1 [ $10^{(G/20)}$ ] value	0.488	0.385	0.143	0.409	0.976
Ant. 4 [ $10^{(G/20)}$ ] value	1.414	1.152	1.33	1.034	0.116
Ant. 6 [ $10^{(G/20)}$ ] value	1.047	1.212	1.171	1.139	0.123
Ant. 8 [ $10^{(G/20)}$ ] value	0.601	0.245	0.3	0.395	1.875
Sum All Antenna [Amax]	3.55	2.994	2.945	2.977	3.09
DG [ $10^{*log(Amax^2/Nant)}$ ]	4.98	3.51	3.36	3.45	3.78

Note:

Directional Gain (1SS) is the max value of every look angle. Each position value is calculated by KDB662911 D01 d) (i).

$$\text{Directional gain (1SS)} = 10^{*log(10^{(G_{ant1}/20)} + 10^{(G_{ant2}/20)} + 10^{(G_{ant3}/20)} + 10^{(G_{ant4}/20)} + \dots)^2/N_{ant}}$$



5G option16

DG\_1SS Max Value Position

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G	5.885G
Ant. 3 (dBi)	-3.37	-8.91	-8.24	-3.36	-2.98
Ant. 4 (dBi)	2.04	2.58	2.54	3.14	1.86
Ant. 6 (dBi)	1.76	2.93	1.02	0.34	0.21
Ant. 8 (dBi)	-6.69	-17.98	-13.38	-12.88	-12.93
DG [1SS] (dBi)	5.18	4.17	3.71	4.56	4.08
Polarization	Phi	Phi	Phi	Phi	Phi
$\Theta(^{\circ})$	52.5	60	60	30	30
$\Phi(^{\circ})$	75	75	90	105	105

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

DG\_1SS Max Value Position Calculation

Frequency (Hz)	5.2G	5.3G	5.6G	5.785G	5.885G
Ant. 3 [ $10^{(G/20)}$ ]	$10^{(-3.37/20)}$	$10^{(-8.91/20)}$	$10^{(-8.24/20)}$	$10^{(-3.36/20)}$	$10^{(-2.98/20)}$
Ant. 4 [ $10^{(G/20)}$ ]	$10^{(2.04/20)}$	$10^{(2.58/20)}$	$10^{(2.54/20)}$	$10^{(3.14/20)}$	$10^{(1.86/20)}$
Ant. 6 [ $10^{(G/20)}$ ]	$10^{(1.76/20)}$	$10^{(2.93/20)}$	$10^{(1.02/20)}$	$10^{(0.34/20)}$	$10^{(0.21/20)}$
Ant. 8 [ $10^{(G/20)}$ ]	$10^{(-6.69/20)}$	$10^{(-17.98/20)}$	$10^{(-13.38/20)}$	$10^{(-12.88/20)}$	$10^{(-12.93/20)}$
Ant. 3 [ $10^{(G/20)}$ ] value	0.678	0.359	0.387	0.679	0.71
Ant. 4 [ $10^{(G/20)}$ ] value	1.265	1.346	1.34	1.435	1.239
Ant. 6 [ $10^{(G/20)}$ ] value	1.225	1.401	1.125	1.04	1.024
Ant. 8 [ $10^{(G/20)}$ ] value	0.463	0.126	0.214	0.227	0.226
Sum All Antenna [Amax]	3.631	3.232	3.066	3.382	3.199
DG [ $10^{\log(Amax^2/Nant)}$ ]	5.18	4.17	3.71	4.56	4.08

Note:

Directional Gain (1SS) is the max value of every look angle. Each position value is calculated by KDB662911 D01 d) (i).

$$\text{Directional gain (1SS)} = 10^{\log(10^{(G_{ant1}/20)} + 10^{(G_{ant2}/20)} + 10^{(G_{ant3}/20)} + 10^{(G_{ant4}/20)} + \dots)^2 / N_{ant}}$$



6G Option1

DG\_1SS Max Value Position

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 1 (dBi)	4.46	3.72	4.5	0.67
Ant. 3 (dBi)	-18.88	-18.21	-17.77	-17.09
Ant. 5 (dBi)	-1.54	-2.15	-2.08	1.1
Ant. 7 (dBi)	-11.02	0.09	1	1.01
DG [1SS] (dBi)	3.24	4.73	5.38	4.81
Polarization	Phi	Phi	Phi	Phi
Θ(°)	112.5	67.5	60	82.5
Φ(°)	277.5	240	240	240

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

DG\_1SS Max Value Position Calculation

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 1 [10^(G/20)]	10^(4.46/20)	10^(3.72/20)	10^(4.5/20)	10^(0.67/20)
Ant. 3 [10^(G/20)]	10^(-18.88/20)	10^(-18.21/20)	10^(-17.77/20)	10^(-17.09/20)
Ant. 5 [10^(G/20)]	10^(-1.54/20)	10^(-2.15/20)	10^(-2.08/20)	10^(1.1/20)
Ant. 7 [10^(G/20)]	10^(-11.02/20)	10^(0.09/20)	10^(1/20)	10^(1.01/20)
Ant. 1 [10^(G/20)] value	1.671	1.535	1.679	1.08
Ant. 3 [10^(G/20)] value	0.114	0.123	0.129	0.14
Ant. 5 [10^(G/20)] value	0.838	0.781	0.787	1.135
Ant. 7 [10^(G/20)] value	0.281	1.01	1.122	1.123
Sum All Antenna [Amax]	2.904	3.449	3.717	3.478
DG [10*log(Amax^2/Nant)]	3.24	4.73	5.38	4.81

Note:

Directional Gain (1SS) is the max value of every look angle. Each position value is calculated by KDB662911 D01 d) (i).

$$\text{Directional gain (1SS)} = 10 \cdot \log(10^{(G_{ant1}/20)} + 10^{(G_{ant2}/20)} + 10^{(G_{ant3}/20)} + 10^{(G_{ant4}/20)} + \dots)^{2/N_{ant}}$$



**6G Option2**

**DG\_1SS Max Value Position**

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 2 (dBi)	2.14	0.85	1.04	2.96
Ant. 3 (dBi)	-15.3	-17.31	-11.57	-12.64
Ant. 5 (dBi)	0.77	-0.3	-0.52	-3.2
Ant. 7 (dBi)	-9.34	-6.26	-11.83	-6.71
DG [1SS] (dBi)	3.18	2.58	2.24	2.9
Polarization	Phi	Phi	Phi	Phi
Θ(°)	52.5	52.5	52.5	67.5
Φ(°)	45	30	60	90

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

**DG\_1SS Max Value Position Calculation**

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 2 [10 <sup>(G/20)</sup> ]	10 <sup>(2.14/20)</sup>	10 <sup>(0.85/20)</sup>	10 <sup>(1.04/20)</sup>	10 <sup>(2.96/20)</sup>
Ant. 3 [10 <sup>(G/20)</sup> ]	10 <sup>(-15.3/20)</sup>	10 <sup>(-17.31/20)</sup>	10 <sup>(-11.57/20)</sup>	10 <sup>(-12.64/20)</sup>
Ant. 5 [10 <sup>(G/20)</sup> ]	10 <sup>(0.77/20)</sup>	10 <sup>(-0.3/20)</sup>	10 <sup>(-0.52/20)</sup>	10 <sup>(-3.2/20)</sup>
Ant. 7 [10 <sup>(G/20)</sup> ]	10 <sup>(-9.34/20)</sup>	10 <sup>(-6.26/20)</sup>	10 <sup>(-11.83/20)</sup>	10 <sup>(-6.71/20)</sup>
Ant. 2 [10 <sup>(G/20)</sup> ] value	1.279	1.103	1.127	1.406
Ant. 3 [10 <sup>(G/20)</sup> ] value	0.172	0.136	0.264	0.233
Ant. 5 [10 <sup>(G/20)</sup> ] value	1.093	0.966	0.942	0.692
Ant. 7 [10 <sup>(G/20)</sup> ] value	0.341	0.486	0.256	0.462
Sum All Antenna [Amax]	2.885	2.692	2.589	2.793
DG [10*log(Amax <sup>2</sup> /Nant)]	3.18	2.58	2.24	2.9

Note:

Directional Gain (1SS) is the max value of every look angle. Each position value is calculated by KDB662911 D01 d) (i).

$$\text{Directional gain (1SS)} = 10 \cdot \log(10^{(G_{ant1}/20)} + 10^{(G_{ant2}/20)} + 10^{(G_{ant3}/20)} + 10^{(G_{ant4}/20)} + \dots)^{2/N_{ant}}$$



**6G Option3**

**DG\_1SS Max Value Position**

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 1 (dBi)	-6.75	3.72	4.5	0.67
Ant. 4 (dBi)	4.37	-13.44	-14.88	-18.26
Ant. 5 (dBi)	-8.2	-2.15	-2.08	1.1
Ant. 7 (dBi)	-0.74	0.09	1	1.01
DG [1SS] (dBi)	4.66	4.96	5.5	4.76
Polarization	Theta	Phi	Phi	Phi
Θ(°)	105	67.5	60	82.5
Φ(°)	285	240	240	240

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

**DG\_1SS Max Value Position Calculation**

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 1 [10 <sup>(G/20)</sup> ]	10 <sup>(-6.75/20)</sup>	10 <sup>(3.72/20)</sup>	10 <sup>(4.5/20)</sup>	10 <sup>(0.67/20)</sup>
Ant. 4 [10 <sup>(G/20)</sup> ]	10 <sup>(4.37/20)</sup>	10 <sup>(-13.44/20)</sup>	10 <sup>(-14.88/20)</sup>	10 <sup>(-18.26/20)</sup>
Ant. 5 [10 <sup>(G/20)</sup> ]	10 <sup>(-8.2/20)</sup>	10 <sup>(-2.15/20)</sup>	10 <sup>(-2.08/20)</sup>	10 <sup>(1.1/20)</sup>
Ant. 7 [10 <sup>(G/20)</sup> ]	10 <sup>(-0.74/20)</sup>	10 <sup>(0.09/20)</sup>	10 <sup>(1/20)</sup>	10 <sup>(1.01/20)</sup>
Ant. 1 [10 <sup>(G/20)</sup> ] value	0.46	1.535	1.679	1.08
Ant. 4 [10 <sup>(G/20)</sup> ] value	1.654	0.213	0.18	0.122
Ant. 5 [10 <sup>(G/20)</sup> ] value	0.389	0.781	0.787	1.135
Ant. 7 [10 <sup>(G/20)</sup> ] value	0.918	1.01	1.122	1.123
Sum All Antenna [Amax]	3.421	3.539	3.768	3.461
DG [10*log(Amax <sup>2</sup> /Nant)]	4.66	4.96	5.5	4.76

Note:

Directional Gain (1SS) is the max value of every look angle. Each position value is calculated by KDB662911 D01 d) (i).

$$\text{Directional gain (1SS)} = 10 \cdot \log(10^{(G_{ant1}/20)} + 10^{(G_{ant2}/20)} + 10^{(G_{ant3}/20)} + 10^{(G_{ant4}/20)} + \dots)^{2/N_{ant}}$$



6G Option4

DG\_1SS Max Value Position

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 2 (dBi)	-16.15	0.85	-19.46	2.96
Ant. 4 (dBi)	4.37	-16.28	4.16	-15.93
Ant. 5 (dBi)	-8.2	-0.3	-13.13	-3.2
Ant. 7 (dBi)	-0.74	-6.26	-5.04	-6.71
DG [1SS] (dBi)	3.85	2.63	1.94	2.67
Polarization	Theta	Phi	Theta	Phi
Θ(°)	105	52.5	82.5	67.5
Φ(°)	285	30	300	90

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

DG\_1SS Max Value Position Calculation

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 2 [10^(G/20)]	10^(-16.15/20)	10^(0.85/20)	10^(-19.46/20)	10^(2.96/20)
Ant. 4 [10^(G/20)]	10^(4.37/20)	10^(-16.28/20)	10^(4.16/20)	10^(-15.93/20)
Ant. 5 [10^(G/20)]	10^(-8.2/20)	10^(-0.3/20)	10^(-13.13/20)	10^(-3.2/20)
Ant. 7 [10^(G/20)]	10^(-0.74/20)	10^(-6.26/20)	10^(-5.04/20)	10^(-6.71/20)
Ant. 2 [10^(G/20)] value	0.156	1.103	0.106	1.406
Ant. 4 [10^(G/20)] value	1.654	0.153	1.614	0.16
Ant. 5 [10^(G/20)] value	0.389	0.966	0.221	0.692
Ant. 7 [10^(G/20)] value	0.918	0.486	0.56	0.462
Sum All Antenna [Amax]	3.117	2.709	2.501	2.719
DG [10*log(Amax^2/Nant)]	3.85	2.63	1.94	2.67

Note:

Directional Gain (1SS) is the max value of every look angle. Each position value is calculated by KDB662911 D01 d) (i).

$$\text{Directional gain (1SS)} = 10 \cdot \log(10^{(G_{ant1}/20)} + 10^{(G_{ant2}/20)} + 10^{(G_{ant3}/20)} + 10^{(G_{ant4}/20)} + \dots)^{2/N_{ant}}$$



6G Option5

DG\_1SS Max Value Position

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 1 (dBi)	3.52	3.51	4.5	2.9
Ant. 3 (dBi)	-14.07	-16.71	-17.77	-17.71
Ant. 6 (dBi)	-3.65	-4.08	-2.79	-3.51
Ant. 7 (dBi)	-3.88	-0.4	1	1.95
DG [1SS] (dBi)	3.51	4.15	5.24	4.73
Polarization	Phi	Phi	Phi	Phi
Θ(°)	52.5	52.5	60	67.5
Φ(°)	240	240	240	240

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

DG\_1SS Max Value Position Calculation

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 1 [10^(G/20)]	10^(3.52/20)	10^(3.51/20)	10^(4.5/20)	10^(2.9/20)
Ant. 3 [10^(G/20)]	10^(-14.07/20)	10^(-16.71/20)	10^(-17.77/20)	10^(-17.71/20)
Ant. 6 [10^(G/20)]	10^(-3.65/20)	10^(-4.08/20)	10^(-2.79/20)	10^(-3.51/20)
Ant. 7 [10^(G/20)]	10^(-3.88/20)	10^(-0.4/20)	10^(1/20)	10^(1.95/20)
Ant. 1 [10^(G/20)] value	1.5	1.498	1.679	1.396
Ant. 3 [10^(G/20)] value	0.198	0.146	0.129	0.13
Ant. 6 [10^(G/20)] value	0.657	0.625	0.725	0.668
Ant. 7 [10^(G/20)] value	0.64	0.955	1.122	1.252
Sum All Antenna [Amax]	2.994	3.224	3.655	3.446
DG [10*log(Amax^2/Nant)]	3.51	4.15	5.24	4.73

Note:

Directional Gain (1SS) is the max value of every look angle. Each position value is calculated by KDB662911 D01 d) (i).

$$\text{Directional gain (1SS)} = 10 \cdot \log(10^{(G_{ant1}/20)} + 10^{(G_{ant2}/20)} + 10^{(G_{ant3}/20)} + 10^{(G_{ant4}/20)} + \dots)^{2/N_{ant}}$$



6G Option6

DG\_1SS Max Value Position

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 2 (dBi)	2.39	1.84	1.81	2.96
Ant. 3 (dBi)	-17.42	-17.61	-18.98	-12.64
Ant. 6 (dBi)	-2.05	-2.23	0.01	-0.73
Ant. 7 (dBi)	-9.86	-8.77	-5.57	-6.71
DG [1SS] (dBi)	2.15	1.96	3.14	3.58
Polarization	Phi	Phi	Phi	Phi
Θ(°)	60	52.5	82.5	67.5
Φ(°)	45	67.5	60	90

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

DG\_1SS Max Value Position Calculation

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 2 [10^(G/20)]	10^(2.39/20)	10^(1.84/20)	10^(1.81/20)	10^(2.96/20)
Ant. 3 [10^(G/20)]	10^(-17.42/20)	10^(-17.61/20)	10^(-18.98/20)	10^(-12.64/20)
Ant. 6 [10^(G/20)]	10^(-2.05/20)	10^(-2.23/20)	10^(0.01/20)	10^(-0.73/20)
Ant. 7 [10^(G/20)]	10^(-9.86/20)	10^(-8.77/20)	10^(-5.57/20)	10^(-6.71/20)
Ant. 2 [10^(G/20)] value	1.317	1.236	1.232	1.406
Ant. 3 [10^(G/20)] value	0.135	0.132	0.112	0.233
Ant. 6 [10^(G/20)] value	0.79	0.774	1.001	0.919
Ant. 7 [10^(G/20)] value	0.321	0.364	0.527	0.462
Sum All Antenna [Amax]	2.562	2.506	2.872	3.021
DG [10*log(Amax^2/Nant)]	2.15	1.96	3.14	3.58

Note:

Directional Gain (1SS) is the max value of every look angle. Each position value is calculated by KDB662911 D01 d) (i).

$$\text{Directional gain (1SS)} = 10 \cdot \log(10^{(G_{ant1}/20)} + 10^{(G_{ant2}/20)} + 10^{(G_{ant3}/20)} + 10^{(G_{ant4}/20)} + \dots)^{2/N_{ant}}$$





6G Option7

DG\_1SS Max Value Position

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 1 (dBi)	-8.87	3.72	4.5	2.9
Ant. 4 (dBi)	4.62	-13.44	-14.88	-17.23
Ant. 6 (dBi)	-5.28	-6.27	-2.79	-3.51
Ant. 7 (dBi)	-4.9	0.09	1	1.95
DG [1SS] (dBi)	4.02	4.2	5.36	4.74
Polarization	Theta	Phi	Phi	Phi
Θ(°)	120	67.5	60	67.5
Φ(°)	255	240	240	240

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

DG\_1SS Max Value Position Calculation

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 1 [10^(G/20)]	10^(-8.87/20)	10^(3.72/20)	10^(4.5/20)	10^(2.9/20)
Ant. 4 [10^(G/20)]	10^(4.62/20)	10^(-13.44/20)	10^(-14.88/20)	10^(-17.23/20)
Ant. 6 [10^(G/20)]	10^(-5.28/20)	10^(-6.27/20)	10^(-2.79/20)	10^(-3.51/20)
Ant. 7 [10^(G/20)]	10^(-4.9/20)	10^(0.09/20)	10^(1/20)	10^(1.95/20)
Ant. 1 [10^(G/20)] value	0.36	1.535	1.679	1.396
Ant. 4 [10^(G/20)] value	1.702	0.213	0.18	0.138
Ant. 6 [10^(G/20)] value	0.545	0.486	0.725	0.668
Ant. 7 [10^(G/20)] value	0.569	1.01	1.122	1.252
Sum All Antenna [Amax]	3.176	3.244	3.706	3.453
DG [10*log(Amax^2/Nant)]	4.02	4.2	5.36	4.74

Note:

Directional Gain (1SS) is the max value of every look angle. Each position value is calculated by KDB662911 D01 d) (i).

$$\text{Directional gain (1SS)} = 10 \cdot \log(10^{(G_{ant1}/20)} + 10^{(G_{ant2}/20)} + 10^{(G_{ant3}/20)} + 10^{(G_{ant4}/20)} + \dots)^{2/N_{ant}}$$



**6G Option8**

**DG\_1SS Max Value Position**

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 2 (dBi)	-14.41	2.49	1.81	2.96
Ant. 4 (dBi)	4.62	-14.42	-17.57	-15.93
Ant. 6 (dBi)	-5.28	-3.73	0.01	-0.73
Ant. 7 (dBi)	-4.9	-8.43	-5.57	-6.71
DG [1SS] (dBi)	3.54	2.12	3.2	3.37
Polarization	Theta	Phi	Phi	Phi
Θ(°)	120	52.5	82.5	67.5
Φ(°)	255	60	60	90

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

**DG\_1SS Max Value Position Calculation**

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 2 [10 <sup>(G/20)</sup> ]	10 <sup>(-14.41/20)</sup>	10 <sup>(2.49/20)</sup>	10 <sup>(1.81/20)</sup>	10 <sup>(2.96/20)</sup>
Ant. 4 [10 <sup>(G/20)</sup> ]	10 <sup>(4.62/20)</sup>	10 <sup>(-14.42/20)</sup>	10 <sup>(-17.57/20)</sup>	10 <sup>(-15.93/20)</sup>
Ant. 6 [10 <sup>(G/20)</sup> ]	10 <sup>(-5.28/20)</sup>	10 <sup>(-3.73/20)</sup>	10 <sup>(0.01/20)</sup>	10 <sup>(-0.73/20)</sup>
Ant. 7 [10 <sup>(G/20)</sup> ]	10 <sup>(-4.9/20)</sup>	10 <sup>(-8.43/20)</sup>	10 <sup>(-5.57/20)</sup>	10 <sup>(-6.71/20)</sup>
Ant. 2 [10 <sup>(G/20)</sup> ] value	0.19	1.332	1.232	1.406
Ant. 4 [10 <sup>(G/20)</sup> ] value	1.702	0.19	0.132	0.16
Ant. 6 [10 <sup>(G/20)</sup> ] value	0.545	0.651	1.001	0.919
Ant. 7 [10 <sup>(G/20)</sup> ] value	0.569	0.379	0.527	0.462
Sum All Antenna [Amax]	3.006	2.552	2.892	2.947
DG [10*log(Amax <sup>2</sup> /Nant)]	3.54	2.12	3.2	3.37

Note:

Directional Gain (1SS) is the max value of every look angle. Each position value is calculated by KDB662911 D01 d) (i).

$$\text{Directional gain (1SS)} = 10 \cdot \log(10^{(G_{ant1}/20)} + 10^{(G_{ant2}/20)} + 10^{(G_{ant3}/20)} + 10^{(G_{ant4}/20)} + \dots)^{2/N_{ant}}$$



**6G Option9**

**DG\_1SS Max Value Position**

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 2 (dBi)	-14.41	2.49	1.81	2.96
Ant. 4 (dBi)	4.62	-14.42	-17.57	-15.93
Ant. 6 (dBi)	-5.28	-3.73	0.01	-0.73
Ant. 7 (dBi)	-4.9	-8.43	-5.57	-6.71
DG [1SS] (dBi)	3.54	2.12	3.2	3.37
Polarization	Theta	Phi	Phi	Phi
Θ(°)	120	52.5	82.5	67.5
Φ(°)	255	60	60	90

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

**DG\_1SS Max Value Position Calculation**

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 2 [10^(G/20)]	10^(-14.41/20)	10^(2.49/20)	10^(1.81/20)	10^(2.96/20)
Ant. 4 [10^(G/20)]	10^(4.62/20)	10^(-14.42/20)	10^(-17.57/20)	10^(-15.93/20)
Ant. 6 [10^(G/20)]	10^(-5.28/20)	10^(-3.73/20)	10^(0.01/20)	10^(-0.73/20)
Ant. 7 [10^(G/20)]	10^(-4.9/20)	10^(-8.43/20)	10^(-5.57/20)	10^(-6.71/20)
Ant. 2 [10^(G/20)] value	0.19	1.332	1.232	1.406
Ant. 4 [10^(G/20)] value	1.702	0.19	0.132	0.16
Ant. 6 [10^(G/20)] value	0.545	0.651	1.001	0.919
Ant. 7 [10^(G/20)] value	0.569	0.379	0.527	0.462
Sum All Antenna [Amax]	3.006	2.552	2.892	2.947
DG [10*log(Amax^2/Nant)]	3.54	2.12	3.2	3.37

Note:

Directional Gain (1SS) is the max value of every look angle. Each position value is calculated by KDB662911 D01 d) (i).

$$\text{Directional gain (1SS)} = 10 \cdot \log(10^{(G_{ant1}/20)} + 10^{(G_{ant2}/20)} + 10^{(G_{ant3}/20)} + 10^{(G_{ant4}/20)} + \dots)^{2/N_{ant}}$$



**6G Option10**

**DG\_1SS Max Value Position**

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 2 (dBi)	2.14	1.91	1.04	-7.96
Ant. 3 (dBi)	-15.3	-18.82	-11.57	-16.34
Ant. 5 (dBi)	0.77	-0.78	-0.52	-2.73
Ant. 8 (dBi)	-9.18	-8.94	-6.94	2.72
DG [1SS] (dBi)	3.2	2.38	2.87	2.45
Polarization	Phi	Phi	Phi	Phi
Θ(°)	52.5	52.5	52.5	52.5
Φ(°)	45	37.5	60	255

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

**DG\_1SS Max Value Position Calculation**

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 2 [10^(G/20)]	10^(2.14/20)	10^(1.91/20)	10^(1.04/20)	10^(-7.96/20)
Ant. 3 [10^(G/20)]	10^(-15.3/20)	10^(-18.82/20)	10^(-11.57/20)	10^(-16.34/20)
Ant. 5 [10^(G/20)]	10^(0.77/20)	10^(-0.78/20)	10^(-0.52/20)	10^(-2.73/20)
Ant. 8 [10^(G/20)]	10^(-9.18/20)	10^(-8.94/20)	10^(-6.94/20)	10^(2.72/20)
Ant. 2 [10^(G/20)] value	1.279	1.246	1.127	0.4
Ant. 3 [10^(G/20)] value	0.172	0.115	0.264	0.152
Ant. 5 [10^(G/20)] value	1.093	0.914	0.942	0.73
Ant. 8 [10^(G/20)] value	0.348	0.357	0.45	1.368
Sum All Antenna [Amax]	2.891	2.632	2.783	2.65
DG [10*log(Amax^2/Nant)]	3.2	2.38	2.87	2.45

Note:

Directional Gain (1SS) is the max value of every look angle. Each position value is calculated by KDB662911 D01 d) (i).

$$\text{Directional gain (1SS)} = 10 \cdot \log(10^{(G_{ant1}/20)} + 10^{(G_{ant2}/20)} + 10^{(G_{ant3}/20)} + 10^{(G_{ant4}/20)} + \dots)^{2/N_{ant}}$$



6G Option11

DG\_1SS Max Value Position

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 1 (dBi)	-8.87	0.81	0.49	-7.67
Ant. 4 (dBi)	4.62	-12.13	-13.58	3.68
Ant. 5 (dBi)	-13.67	-3.28	-5.61	-17.68
Ant. 8 (dBi)	2.53	2.52	4	3.68
DG [1SS] (dBi)	5.12	4.52	4.55	5.1
Polarization	Theta	Phi	Phi	Theta
$\Theta(^{\circ})$	120	52.5	52.5	97.5
$\Phi(^{\circ})$	255	277.5	277.5	322.5

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

DG\_1SS Max Value Position Calculation

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 1 [10^(G/20)]	10^(-8.87/20)	10^(0.81/20)	10^(0.49/20)	10^(-7.67/20)
Ant. 4 [10^(G/20)]	10^(4.62/20)	10^(-12.13/20)	10^(-13.58/20)	10^(3.68/20)
Ant. 5 [10^(G/20)]	10^(-13.67/20)	10^(-3.28/20)	10^(-5.61/20)	10^(-17.68/20)
Ant. 8 [10^(G/20)]	10^(2.53/20)	10^(2.52/20)	10^(4/20)	10^(3.68/20)
Ant. 1 [10^(G/20)] value	0.36	1.098	1.058	0.414
Ant. 4 [10^(G/20)] value	1.702	0.247	0.209	1.528
Ant. 5 [10^(G/20)] value	0.207	0.685	0.524	0.131
Ant. 8 [10^(G/20)] value	1.338	1.337	1.585	1.528
Sum All Antenna [Amax]	3.608	3.367	3.377	3.599
DG [10*log(Amax^2/Nant)]	5.12	4.52	4.55	5.1

Note:

Directional Gain (1SS) is the max value of every look angle. Each position value is calculated by KDB662911 D01 d) (i).

$$\text{Directional gain (1SS)} = 10 \cdot \log(10^{(G_{ant1}/20)} + 10^{(G_{ant2}/20)} + 10^{(G_{ant3}/20)} + 10^{(G_{ant4}/20)} + \dots)^{2/N_{ant}}$$



6G Option12

DG\_1SS Max Value Position

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 2 (dBi)	-14.41	1.91	-18.52	-18.68
Ant. 4 (dBi)	4.62	-14.64	2.53	3.68
Ant. 5 (dBi)	-13.67	-0.78	-12.49	-17.68
Ant. 8 (dBi)	2.53	-8.94	2.94	3.68
DG [1SS] (dBi)	4.71	2.62	3.8	4.36
Polarization	Theta	Phi	Theta	Theta
Θ(°)	120	52.5	120	97.5
Φ(°)	255	37.5	330	322.5

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

DG\_1SS Max Value Position Calculation

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 2 [10^(G/20)]	10^(-14.41/20)	10^(1.91/20)	10^(-18.52/20)	10^(-18.68/20)
Ant. 4 [10^(G/20)]	10^(4.62/20)	10^(-14.64/20)	10^(2.53/20)	10^(3.68/20)
Ant. 5 [10^(G/20)]	10^(-13.67/20)	10^(-0.78/20)	10^(-12.49/20)	10^(-17.68/20)
Ant. 8 [10^(G/20)]	10^(2.53/20)	10^(-8.94/20)	10^(2.94/20)	10^(3.68/20)
Ant. 2 [10^(G/20)] value	0.19	1.246	0.119	0.116
Ant. 4 [10^(G/20)] value	1.702	0.185	1.338	1.528
Ant. 5 [10^(G/20)] value	0.207	0.914	0.237	0.131
Ant. 8 [10^(G/20)] value	1.338	0.357	1.403	1.528
Sum All Antenna [Amax]	3.438	2.703	3.097	3.302
DG [10*log(Amax^2/Nant)]	4.71	2.62	3.8	4.36

Note:

Directional Gain (1SS) is the max value of every look angle. Each position value is calculated by KDB662911 D01 d) (i).

$$\text{Directional gain (1SS)} = 10 \cdot \log(10^{(G_{ant1}/20)} + 10^{(G_{ant2}/20)} + 10^{(G_{ant3}/20)} + 10^{(G_{ant4}/20)} + \dots)^{2/N_{ant}}$$



6G Option13

DG\_1SS Max Value Position

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 1 (dBi)	4.46	0.81	0.49	3.26
Ant. 3 (dBi)	-18.88	-19.05	-16.06	-16.51
Ant. 6 (dBi)	-1.49	-4.78	-5.43	-0.65
Ant. 8 (dBi)	-9.12	2.52	4	-3.35
DG [1SS] (dBi)	3.46	3.87	4.44	4.12
Polarization	Phi	Phi	Phi	Phi
Θ(°)	112.5	52.5	52.5	90
Φ(°)	277.5	277.5	277.5	247.5

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

DG\_1SS Max Value Position Calculation

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 1 [10 <sup>(G/20)</sup> ]	10 <sup>(4.46/20)</sup>	10 <sup>(0.81/20)</sup>	10 <sup>(0.49/20)</sup>	10 <sup>(3.26/20)</sup>
Ant. 3 [10 <sup>(G/20)</sup> ]	10 <sup>(-18.88/20)</sup>	10 <sup>(-19.05/20)</sup>	10 <sup>(-16.06/20)</sup>	10 <sup>(-16.51/20)</sup>
Ant. 6 [10 <sup>(G/20)</sup> ]	10 <sup>(-1.49/20)</sup>	10 <sup>(-4.78/20)</sup>	10 <sup>(-5.43/20)</sup>	10 <sup>(-0.65/20)</sup>
Ant. 8 [10 <sup>(G/20)</sup> ]	10 <sup>(-9.12/20)</sup>	10 <sup>(2.52/20)</sup>	10 <sup>(4/20)</sup>	10 <sup>(-3.35/20)</sup>
Ant. 1 [10 <sup>(G/20)</sup> ] value	1.671	1.098	1.058	1.455
Ant. 3 [10 <sup>(G/20)</sup> ] value	0.114	0.112	0.157	0.149
Ant. 6 [10 <sup>(G/20)</sup> ] value	0.842	0.577	0.535	0.928
Ant. 8 [10 <sup>(G/20)</sup> ] value	0.35	1.337	1.585	0.68
Sum All Antenna [Amax]	2.977	3.123	3.336	3.213
DG [10*log(Amax <sup>2</sup> /Nant)]	3.46	3.87	4.44	4.12

Note:

Directional Gain (1SS) is the max value of every look angle. Each position value is calculated by KDB662911 D01 d) (i).

$$\text{Directional gain (1SS)} = 10 \cdot \log(10^{(G_{ant1}/20)} + 10^{(G_{ant2}/20)} + 10^{(G_{ant3}/20)} + 10^{(G_{ant4}/20)} + \dots)^{2/N_{ant}}$$



**6G Option14**

**DG\_1SS Max Value Position**

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 2 (dBi)	-5.85	2.49	2.25	2.3
Ant. 3 (dBi)	3.28	-17.24	-11.69	-10.48
Ant. 6 (dBi)	-18.41	-3.73	-0.45	-1.45
Ant. 8 (dBi)	-6.3	-9.6	-8.29	-7.01
DG [1SS] (dBi)	2.19	1.77	3.2	3.21
Polarization	Theta	Phi	Phi	Phi
Θ(°)	67.5	52.5	82.5	82.5
Φ(°)	75	60	45	45

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

**DG\_1SS Max Value Position Calculation**

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 2 [10 <sup>(G/20)</sup> ]	10 <sup>(-5.85/20)</sup>	10 <sup>(2.49/20)</sup>	10 <sup>(2.25/20)</sup>	10 <sup>(2.3/20)</sup>
Ant. 3 [10 <sup>(G/20)</sup> ]	10 <sup>(3.28/20)</sup>	10 <sup>(-17.24/20)</sup>	10 <sup>(-11.69/20)</sup>	10 <sup>(-10.48/20)</sup>
Ant. 6 [10 <sup>(G/20)</sup> ]	10 <sup>(-18.41/20)</sup>	10 <sup>(-3.73/20)</sup>	10 <sup>(-0.45/20)</sup>	10 <sup>(-1.45/20)</sup>
Ant. 8 [10 <sup>(G/20)</sup> ]	10 <sup>(-6.3/20)</sup>	10 <sup>(-9.6/20)</sup>	10 <sup>(-8.29/20)</sup>	10 <sup>(-7.01/20)</sup>
Ant. 2 [10 <sup>(G/20)</sup> ] value	0.51	1.332	1.296	1.303
Ant. 3 [10 <sup>(G/20)</sup> ] value	1.459	0.137	0.26	0.299
Ant. 6 [10 <sup>(G/20)</sup> ] value	0.12	0.651	0.95	0.846
Ant. 8 [10 <sup>(G/20)</sup> ] value	0.484	0.331	0.385	0.446
Sum All Antenna [Amax]	2.573	2.451	2.891	2.895
DG [10*log(Amax <sup>2</sup> /Nant)]	2.19	1.77	3.2	3.21

Note:

Directional Gain (1SS) is the max value of every look angle. Each position value is calculated by KDB662911 D01 d) (i).

$$\text{Directional gain (1SS)} = 10 \cdot \log(10^{(G_{ant1}/20)} + 10^{(G_{ant2}/20)} + 10^{(G_{ant3}/20)} + 10^{(G_{ant4}/20)} + \dots)^{2/N_{ant}}$$





**6G Option15**

**DG\_1SS Max Value Position**

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 1 (dBi)	-8.87	0.81	0.49	-7.67
Ant. 4 (dBi)	4.62	-12.13	-13.58	3.68
Ant. 6 (dBi)	-5.28	-4.78	-5.43	-19.27
Ant. 8 (dBi)	2.53	2.52	4	3.68
DG [1SS] (dBi)	5.9	4.24	4.58	5.05
Polarization	Theta	Phi	Phi	Theta
Θ(°)	120	52.5	52.5	97.5
Φ(°)	255	277.5	277.5	322.5

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

**DG\_1SS Max Value Position Calculation**

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 1 [10^(G/20)]	10^(-8.87/20)	10^(0.81/20)	10^(0.49/20)	10^(-7.67/20)
Ant. 4 [10^(G/20)]	10^(4.62/20)	10^(-12.13/20)	10^(-13.58/20)	10^(3.68/20)
Ant. 6 [10^(G/20)]	10^(-5.28/20)	10^(-4.78/20)	10^(-5.43/20)	10^(-19.27/20)
Ant. 8 [10^(G/20)]	10^(2.53/20)	10^(2.52/20)	10^(4/20)	10^(3.68/20)
Ant. 1 [10^(G/20)] value	0.36	1.098	1.058	0.414
Ant. 4 [10^(G/20)] value	1.702	0.247	0.209	1.528
Ant. 6 [10^(G/20)] value	0.545	0.577	0.535	0.109
Ant. 8 [10^(G/20)] value	1.338	1.337	1.585	1.528
Sum All Antenna [Amax]	3.945	3.259	3.388	3.577
DG [10*log(Amax^2/Nant)]	5.9	4.24	4.58	5.05

Note:

Directional Gain (1SS) is the max value of every look angle. Each position value is calculated by KDB662911 D01 d) (i).

$$\text{Directional gain (1SS)} = 10 \cdot \log(10^{(G_{ant1}/20)} + 10^{(G_{ant2}/20)} + 10^{(G_{ant3}/20)} + 10^{(G_{ant4}/20)} + \dots)^{2/N_{ant}}$$



**6G Option16**

**DG\_1SS Max Value Position**

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 2 (dBi)	-14.41	-18.15	-18.2	-18.68
Ant. 4 (dBi)	4.62	3.56	3.65	3.68
Ant. 6 (dBi)	-5.28	-18.63	-18.12	-19.27
Ant. 8 (dBi)	2.53	-1.1	1.68	3.68
DG [1SS] (dBi)	5.52	2.37	3.47	4.3
Polarization	Theta	Theta	Theta	Theta
Θ(°)	120	120	120	97.5
Φ(°)	255	255	322.5	322.5

Note: The DG 1SS max value position is the maximum value of section 12 table DG 1SS Result.

**DG\_1SS Max Value Position Calculation**

Frequency (Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 2 [10 <sup>(G/20)</sup> ]	10 <sup>(-14.41/20)</sup>	10 <sup>(-18.15/20)</sup>	10 <sup>(-18.2/20)</sup>	10 <sup>(-18.68/20)</sup>
Ant. 4 [10 <sup>(G/20)</sup> ]	10 <sup>(4.62/20)</sup>	10 <sup>(3.56/20)</sup>	10 <sup>(3.65/20)</sup>	10 <sup>(3.68/20)</sup>
Ant. 6 [10 <sup>(G/20)</sup> ]	10 <sup>(-5.28/20)</sup>	10 <sup>(-18.63/20)</sup>	10 <sup>(-18.12/20)</sup>	10 <sup>(-19.27/20)</sup>
Ant. 8 [10 <sup>(G/20)</sup> ]	10 <sup>(2.53/20)</sup>	10 <sup>(-1.1/20)</sup>	10 <sup>(1.68/20)</sup>	10 <sup>(3.68/20)</sup>
Ant. 2 [10 <sup>(G/20)</sup> ] value	0.19	0.124	0.123	0.116
Ant. 4 [10 <sup>(G/20)</sup> ] value	1.702	1.507	1.522	1.528
Ant. 6 [10 <sup>(G/20)</sup> ] value	0.545	0.117	0.124	0.109
Ant. 8 [10 <sup>(G/20)</sup> ] value	1.338	0.881	1.213	1.528
Sum All Antenna [Amax]	3.775	2.628	2.983	3.28
DG [10*log(Amax <sup>2</sup> /Nant)]	5.52	2.37	3.47	4.3

Note:

Directional Gain (1SS) is the max value of every look angle. Each position value is calculated by KDB662911 D01 d) (i).

$$\text{Directional gain (1SS)} = 10 \cdot \log(10^{(G_{ant1}/20)} + 10^{(G_{ant2}/20)} + 10^{(G_{ant3}/20)} + 10^{(G_{ant4}/20)} + \dots)^{2/N_{ant}}$$



### 9. Summary of Test Result

Freq(Hz)	2.45G
Ant. 1 Max Gain (dBi)	1.86
Ant. 2 Max Gain (dBi)	1.63
Ant. 3 Max Gain (dBi)	4.5
Ant. 4 Max Gain (dBi)	4.78
Ant. 1 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/60/0
Ant. 2 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/37.5/285
Ant. 3 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/120/247.5
Ant. 4 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/82.5/105
Max Gain (dBi)	4.78
DG [1SS] (dBi)	4.98
DG [2SS] (dBi)	4.78
DG [4SS] (dBi)	4.78



<b>Freq(Hz)</b>	<b>5.2G</b>	<b>5.3G</b>	<b>5.6G</b>	<b>5.785G</b>	<b>5.885G</b>
Ant. 1 Max Gain (dBi)	2.95	1.8	2.24	2.33	2.14
Ant. 2 Max Gain (dBi)	2.31	3.25	3.39	3.62	3.56
Ant. 3 Max Gain (dBi)	4.86	4.24	3.23	3.43	3.43
Ant. 4 Max Gain (dBi)	3.95	3.04	2.54	3.38	2.73
Ant. 5 Max Gain (dBi)	4.89	4.29	3.5	3.99	4.43
Ant. 6 Max Gain (dBi)	2.94	2.93	3.09	4.31	3.75
Ant. 7 Max Gain (dBi)	3.55	3.53	4.34	3.5	4.11
Ant. 8 Max Gain (dBi)	5.48	5.08	5.06	5.28	6.24
Ant. 1 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/75/180	Theta/75/180	Theta/90/165	Theta/97.5/165	Theta/82.5/105
Ant. 2 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/90/345	Theta/90/345	Theta/97.5/300	Theta/82.5/345	Theta/67.5/0
Ant. 3 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/30/270	Phi/37.5/262.5	Phi/37.5/285	Phi/37.5/270	Phi/37.5/270
Ant. 4 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/45/97.5	Phi/52.5/97.5	Phi/60/90	Phi/37.5/105	Phi/37.5/105
Ant. 5 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/112.5/202.5	Phi/105/202.5	Phi/97.5/247.5	Phi/75/202.5	Phi/67.5/232.5
Ant. 6 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/112.5/67.5	Phi/60/75	Phi/127.5/90	Phi/127.5/82.5	Phi/127.5/82.5
Ant. 7 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/60/45	Theta/60/45	Theta/105/112.5	Theta/105/105	Theta/97.5/75
Ant. 8 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/75/300	Theta/82.5/285	Theta/97.5/330	Theta/75/337.5	Theta/75/292.5
Max Gain (dBi)	5.48	5.08	5.06	5.28	6.24
DG [1SS] (dBi) option1	5.25	5.26	4.44	5.26	5.59
DG [1SS] (dBi) option2	4.55	3.75	3.74	4.17	4.69
DG [1SS] (dBi) option3	4.91	4.31	3.85	4.32	5.08
DG [1SS] (dBi) option4	4.24	3.9	3.94	4.18	3.74
DG [1SS] (dBi) option5	5.68	5.35	5.23	5.66	5.09
DG [1SS] (dBi) option6	4.33	3.54	4.19	4.43	4.65
DG [1SS] (dBi) option7	4.69	4.96	5.17	4.77	5.18
DG [1SS] (dBi) option8	5.57	4.88	3.91	4.79	3.91
DG [1SS] (dBi) option9	5.29	5.67	5.86	7.08	7.24
DG [1SS] (dBi) option10	5.4	5.15	4.82	5.9	6.13
DG [1SS] (dBi) option11	3.19	2.89	3.34	4.23	4.55
DG [1SS] (dBi) option12	3.92	3.82	4.46	4.85	3.91
DG [1SS] (dBi) option13	5.09	5.35	6.02	6.53	6.68
DG [1SS] (dBi) option14	5.38	5.06	4.88	5.52	5.48
DG [1SS] (dBi) option15	4.98	3.51	3.36	3.45	3.78
DG [1SS] (dBi) option16	5.18	4.17	3.71	4.56	4.08
DG [2SS] (dBi)	5.48	5.08	5.06	5.28	6.24
DG [4SS] (dBi)	5.48	5.08	5.06	5.28	6.24



# Antenna Composite Gain Test Report

Report No. : AP263031

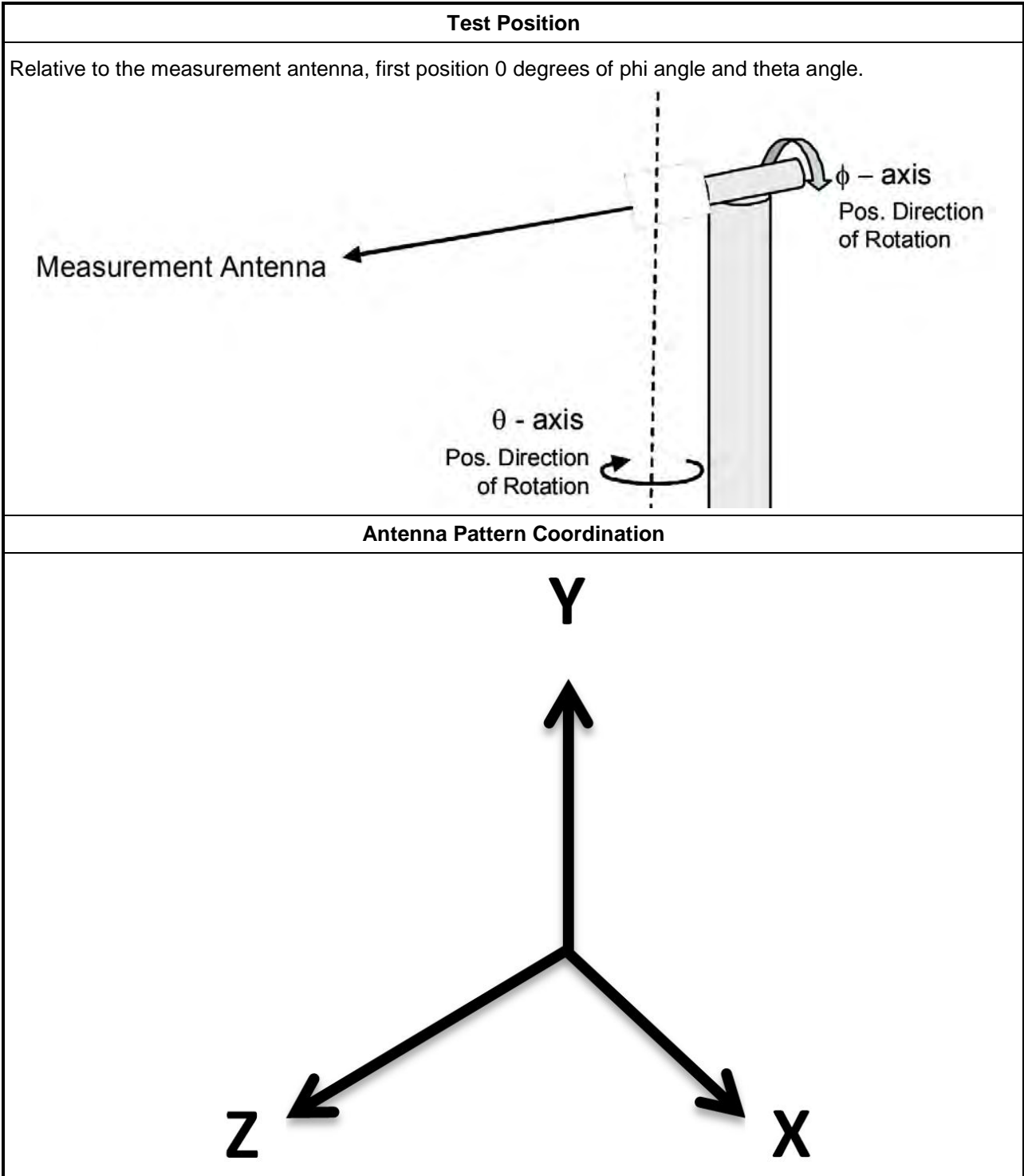
Freq(Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 1 Max Gain (dBi)	4.46	4.1	4.5	3.33
Ant. 2 Max Gain (dBi)	2.63	2.79	2.83	2.96
Ant. 3 Max Gain (dBi)	3.71	2.18	3.63	2.99
Ant. 4 Max Gain (dBi)	4.66	4.23	5.31	4.77
Ant. 5 Max Gain (dBi)	1.06	1.02	1.1	1.1
Ant. 6 Max Gain (dBi)	1.45	1.02	1.12	1.65
Ant. 7 Max Gain (dBi)	3.34	1.84	2.05	2
Ant. 8 Max Gain (dBi)	3.37	2.58	4	3.68
Ant. 1 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/112.5/277.5	Phi/60/240	Phi/60/240	Phi/120/277.5
Ant. 2 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/97.5/112.5	Phi/52.5/52.5	Phi/90/45	Phi/67.5/90
Ant. 3 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/75/82.5	Theta/82.5/127.5	Theta/82.5/120	Theta/82.5/127.5
Ant. 4 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/75/292.5	Theta/75/292.5	Theta/75/292.5	Theta/75/292.5
Ant. 5 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/52.5/37.5	Phi/45/15	Phi/45/97.5	Phi/82.5/240
Ant. 6 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/105/270	Phi/112.5/292.5	Phi/97.5/292.5	Phi/112.5/262.5
Ant. 7 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/97.5/210	Theta/90/195	Theta/90/217.5	Phi/60/277.5
Ant. 8 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/90/330	Phi/52.5/285	Phi/52.5/277.5	Theta/97.5/322.5
Max Gain (dBi)	4.66	4.23	5.31	4.77
DG [1SS] (dBi) option1	3.24	4.73	5.38	4.81
DG [1SS] (dBi) option2	3.18	2.58	2.24	2.9
DG [1SS] (dBi) option3	4.66	4.96	5.5	4.76
DG [1SS] (dBi) option4	3.85	2.63	1.94	2.67
DG [1SS] (dBi) option5	3.51	4.15	5.24	4.73
DG [1SS] (dBi) option6	2.15	1.96	3.14	3.58
DG [1SS] (dBi) option7	4.02	4.2	5.36	4.74
DG [1SS] (dBi) option8	3.54	2.12	3.2	3.37
DG [1SS] (dBi) option9	3.44	4.17	4.41	4.33
DG [1SS] (dBi) option10	3.2	2.38	2.87	2.45
DG [1SS] (dBi) option11	5.12	4.52	4.55	5.1
DG [1SS] (dBi) option12	4.71	2.62	3.8	4.36
DG [1SS] (dBi) option13	3.46	3.87	4.44	4.12
DG [1SS] (dBi) option14	2.19	1.77	3.2	3.21
DG [1SS] (dBi) option15	5.9	4.24	4.58	5.05
DG [1SS] (dBi) option16	5.52	2.37	3.47	4.3
DG [2SS] (dBi)	4.66	4.23	5.31	4.77
DG [4SS] (dBi)	4.66	4.23	5.31	4.77



Note :

1. Antenna max gain is the max value of each individual antenna through all measurement angles.
2. The max gain is the max value of all antennas.
3. Directional Gain (2SS) = Directional Gain (1SS) – 3dB. If directional gain is less than max gain, use max gain as directional gain. Refer to KDB662911D01 (F) (2) (e) (ii)
4. Directional Gain (4SS) = Directional Gain (1SS) – 6dB. If directional gain is less than max gain, use max gain as directional gain. Refer to KDB662911D01 (F) (2) (e) (ii)

### 10. Test Setup



Note:

Photos of Test Position: Please refer to the test photos in the appendix.



### 11. Test Equipment and Calibration Data

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date
Horn Antenna	SCHWARZBECK	BBHA9120D	BBHA 9120D-1543	1GHz~18GHz	May 31, 2022	May. 30, 2023
Dual Polarization Horn Antenna	Sporton	S0209DP	S0209DP-001	2GHz~9GHz	N.C.R.	N.C.R.
ENA Series Network Analyzer	AGILENT	E5071C	MY46419201	100kHz~8.5GHz	Feb. 21, 2022	Feb. 20, 2023
VNA Calibration Kit	TS RF	TS85033E-F	-	DC~9GHz	N.C.R.	N.C.R.
Multi-axis positioner	Sporton	MAPS01	MAPS01-001	Theta / Phi axis	N.C.R.	N.C.R.
Test Software	SPORTON	SENSE-RDG	V1.0.8	-	N.C.R.	N.C.R.

Note: Calibration Interval of instruments listed above is one year.

NCR means Non-Calibration required.





## 12. Test Results

Please refer to the appendix.

Appendix A – Radiated Composite Gain of 2.4GHz and 5GHz U-NII 1~U-NII 4.....Page 50  
Appendix B – Radiated Composite Gain of 6GHz U-NII5~U-NII-8.....Page 122  
Appendix C – Antenna Pattern of 2.4GHz and 5GHz U-NII 1~U-NII 4.....Page 170  
Appendix D – Antenna Pattern of 6GHz U-NII5~U-NII-8.....Page 185  
Appendix E – Test Photos.....Page 197

Freq(Hz)	2.45G
Ant. 1 Max Gain (dBi)	1.86
Ant. 2 Max Gain (dBi)	1.63
Ant. 3 Max Gain (dBi)	4.5
Ant. 4 Max Gain (dBi)	4.78
Ant. 1 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/60/0
Ant. 2 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/37.5/285
Ant. 3 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/120/247.5
Ant. 4 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/82.5/105
Max Gain (dBi)	4.78
DG [1SS] (dBi)	4.98
DG [2SS] (dBi)	4.78
DG [4SS] (dBi)	4.78

Freq(Hz)	5.2G	5.3G	5.6G	5.785G	5.885G
Ant. 1 Max Gain (dBi)	2.95	1.8	2.24	2.33	2.14
Ant. 2 Max Gain (dBi)	2.31	3.25	3.39	3.62	3.56
Ant. 3 Max Gain (dBi)	4.86	4.24	3.23	3.43	3.43
Ant. 4 Max Gain (dBi)	3.95	3.04	2.54	3.38	2.73
Ant. 5 Max Gain (dBi)	4.89	4.29	3.5	3.99	4.43
Ant. 6 Max Gain (dBi)	2.94	2.93	3.09	4.31	3.75
Ant. 7 Max Gain (dBi)	3.55	3.53	4.34	3.5	4.11
Ant. 8 Max Gain (dBi)	5.48	5.08	5.06	5.28	6.24
Ant. 1 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/75/180	Theta/75/180	Theta/90/165	Theta/97.5/165	Theta/82.5/105
Ant. 2 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/90/345	Theta/90/345	Theta/97.5/300	Theta/82.5/345	Theta/67.5/0
Ant. 3 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/30/270	Phi/37.5/262.5	Phi/37.5/285	Phi/37.5/270	Phi/37.5/270
Ant. 4 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/45/97.5	Phi/52.5/97.5	Phi/60/90	Phi/37.5/105	Phi/37.5/105
Ant. 5 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/112.5/202.5	Phi/105/202.5	Phi/97.5/247.5	Phi/75/202.5	Phi/67.5/232.5
Ant. 6 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/112.5/67.5	Phi/60/75	Phi/127.5/90	Phi/127.5/82.5	Phi/127.5/82.5
Ant. 7 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/60/45	Theta/60/45	Theta/105/112.5	Theta/105/105	Theta/97.5/75
Ant. 8 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/75/300	Theta/82.5/285	Theta/97.5/330	Theta/75/337.5	Theta/75/292.5
Max Gain (dBi)	5.48	5.08	5.06	5.28	6.24
DG [1SS] (dBi) option1	5.25	5.26	4.44	5.26	5.59
DG [1SS] (dBi) option2	4.55	3.75	3.74	4.17	4.69
DG [1SS] (dBi) option3	4.91	4.31	3.85	4.32	5.08
DG [1SS] (dBi) option4	4.24	3.9	3.94	4.18	3.74
DG [1SS] (dBi) option5	5.68	5.35	5.23	5.66	5.09
DG [1SS] (dBi) option6	4.33	3.54	4.19	4.43	4.65
DG [1SS] (dBi) option7	4.69	4.96	5.17	4.77	5.18
DG [1SS] (dBi) option8	5.57	4.88	3.91	4.79	3.91
DG [1SS] (dBi) option9	5.29	5.67	5.86	7.08	7.24
DG [1SS] (dBi) option10	5.4	5.15	4.82	5.9	6.13
DG [1SS] (dBi) option11	3.19	2.89	3.34	4.23	4.55
DG [1SS] (dBi) option12	3.92	3.82	4.46	4.85	3.91
DG [1SS] (dBi) option13	5.09	5.35	6.02	6.53	6.68
DG [1SS] (dBi) option14	5.38	5.06	4.88	5.52	5.48
DG [1SS] (dBi) option15	4.98	3.51	3.36	3.45	3.78
DG [1SS] (dBi) option16	5.18	4.17	3.71	4.56	4.08
DG [2SS] (dBi)	5.48	5.08	5.06	5.28	6.24
DG [4SS] (dBi)	5.48	5.08	5.06	5.28	6.24









# Radiated Composite Gain Data <2.4GHz and 5GHz U-NII 1~U-NII 4>

# Appendix A

Theta	1.95/3.1	2.88/3.01	3.37/2.64	1.83/0.21	0.95/3.09	3.84/3.4	2.54/1.63	1.89/1.87	0.94/0.37	0.46/2.04	3.43/3.75	4.02/3.5	3.62/2.87	2.47/1.86	1.03/0.57	-2.2/-2.34	-1.87/-1.42	-1.02/0.33	-0.78/-2.46	-3.89/-3.85	-1.91/-0.51	0.66/0.58	0.65/1.69	2.64/2.35
Theta(90°)	1.39/2.78	3.11/2.77	2.67/1.33	-0.05/-0.3	1.19/3.04	4.04/3.35	2.04/1.71	2.28/1.99	0.91/0.01	-0.37/1.4	2.06/2.83	3.5/3.43	3.69/2.68	1.98/0.96	0.53/-1.02	-1.25/-0.99	-1.08/-0.47	-0.42/0.44	0.03/-1.07	-0.17/-0.27	0.34/0.61	1.06/0.13	-0.17/1.4	2.01/1.36
Theta(105°)	-0.25/0.69	1.05/0.57	1.38/1.03	0.82/1.69	2.73/4.06	4.34/3.12	1.68/2.29	3.55/3.92	2.63/1.1	-0.53/0.95	1.68/2.19	2.35/1.32	2.95/1.51	0.57/0.02	-1.33/1.42	-1.48/-1.91	-2.14/-1.37	-1.32/-1.58	-0.48/-0.48	-0.4/-0.02	-0.06/1.43	-0.35/-0.08	1.27/0.96	
Theta(112.5°)	-0.28/-0.15	0.74/0.26	1.03/0.45	-0.48/0.94	2.52/3.56	3.97/2.76	1.09/1.67	2.94/3.48	2.88/2.41	1.33/1.86	0.79/2.03	2.11/2.2	1.95/0.04	0.36/0.37	-0.74/-1.75	-0.82/-1.48	-0.4/-1.07	-1.47/0.15	0.33/0.48	0.09/-2.26	1.27/1.35	-0.9/-0.58	-0.62/-0.27	0.83/-0.2
Theta(120°)	-0.22/0.33	0.02/0.28	0.30/7.1	0.16/0.58	1.48/2.21	2.67/1.99	0.66/0.77	2.32/2.8	2.87/1.94	0.69/1.4	0.86/1.7	0.93/1.32	1.06/0.51	-1.34/-1.6	-1.58/-4.19	-4.88/-3.99	-2.73/-2.12	-3.79/-3.31	-2.08/-1.96	-0.5/-3.16	-1.14/0.5	-1.18/-4.1	-3.51/-0.78	-1.13/-1.58
Theta(127.5°)	-1.35/-0.77	-0.59/0.13	0.36/0.51	-0.06/-0.13	0.83/1.31	0.81/0	0.73/2.31	2.66/2.17	1.18/0.52	0.33/-0.16	0.42/0.52	-0.27/0.09	-0.38/-1.1	-1.56/-1.01	-1.29/-4.59	-6.15/-2.61	-2.07/-8.27	-3.01/-2.71	-3.16/-3.7	-1.32/-3.98	-1.58/-1.42	-2.17/-3.23	-1.62/0.66	-0.12/-2.06
Theta(135°)	-1.91/-1.64	-1.91/-1.33	-1.03/-1.65	-2.61/-2.35	-1.22/-1.06	-0.91/-0.79	-0.16/0.74	1.15/0.96	0.76/0	-0.85/-0.99	-0.41/-0.87	-0.93/-2.34	-4.74/-6.13	-4.5/-4.11	-5.74/-7.21	-5.99/-5.45	-4.07/-6.24	-3.8/-5.13	-4.36/-2.99	-3.41/-2.76	-3.2/-3.2	-3.14/-7.51	-5.27/-2.02	-0.86/-2.07
Theta(142.5°)	-6.08/-5.01	-5.04/-5.47	-6.27/-5.63	-3.73/-2.39	-2.44/-2.82	-3.03/-3.26	-2.43/-1.07	0.03/0.3	0.04/-0.96	-1.49/-1.03	-1.32/-1.68	-1.97/-2.15	-3.81/-5.63	-4.01/-4.1	-8.82/-8.52	-10.58/-7.36	-6.56/-6.11	-4.34/-4.33	-5.55/-5.53	-3.18/-2.08	-4.1/-7.1	-6.76/-6.36	-3.84/-1.34	-1.37/-3.76
Theta(150°)	-4.66/-5.4	-5.45/-6.04	-7.19/-6.82	-6.94/-6.41	-6.04/-5.57	-6.75/-7.79	-7.34/-5.5	-3.59/-2.55	-2.38/-2.71	-2.89/-2.27	-1.86/-1.46	-0.77/-0.49	-1.99/-2.84	-2.47/-3.01	-3.39/-3.65	-4.76/-5.51	-5.7/-5.17	-4.53/-4.73	-4.64/-4.34	-2.81/-1.37	-2.44/-3.81	-3.98/-3.37	-1.95/-0.74	-0.91/-3.03
Theta(157.5°)	-5.83/-5.75	-6.2/-6.96	-7.67/-8.95	-9.47/-8.24	-6.88/-6.39	-6.66/-6.85	-6.11/-5.22	-4.73/-4.2	-3.98/-3.95	-3.84/-3.92	-4.18/-3.62	-2.24/-1.86	-2.76/-4.12	-4.41/-3.27	-2.43/-2.6	-4.47/-6.96	-7.14/-8.41	-7.34/-4.74	-4.11/-5.4	-5.98/-4.93	-3.49/-3.2	-3.79/-5.03	-4.89/-3.46	-3.56/-4.22
Theta(165°)	-4.8/-5.14	-5.6/-6.35	-7.63/-8.7	-9.16/-10.23	-10.78/-11.4	-11.59/-12.72	-12.2/-11.24	-10.35/-9.27	-7.81/-5.68	-4.06/-2.88	-2.13/-1.7	-1.6/-1.86	-2.64/-4.16	-6.34/-7.16	-7.87/-8.44	-9.1/-8.93	-8.67/-8.81	-8.48/-8.35	-7.38/-5.52	-3.7/-2.65	-2.19/-2.21	-2.99/-4.78	-6.16/-6.26	-5.44/-4.61
Theta(172.5°)	-9.17/-10.9	-11.98/-12.42	-12.36/-11.73	-11.13/-10.77	-10.6/-10.64	-10.85/-11.07	-11.21/-11.32	-10.71/-10.36	-8.99/-8.22	-7.67/-7.21	-7.58/-7.7	-8.27/-9.09	-10.08/-9.81	-9.52/-7.85	-6.66/-6.06	-5.76/-5.78	-6.82/-7.86	-8.22/-9.11	-8.04/-6.95	-5.89/-5.36	-5.15/-5.65	-7.52/-8.22	-7.72/-8.87	-8.95/-8.67
Theta(180°)	-10.73/-11.05	-10.92/-9.99	-10.02/-9.59	-9.81/-9.18	-9.34/-8.98	-9.33/-10.47	-10.11/-10.05	-9.84/-9.65	-9.71/-9.95	-10.21/-10.1	-9.86/-9.72	-9.62/-9.72	-10.32/-10.91	-10.38/-9.74	-9.72/-9.63	-10.15/-10.04	-10.89/-11.29	-10.06/-8.96	-7.86/-6.98	-6.44/-6.2	-6.57/-8.1	-9.42/-9.16	-9.49/-11.25	-12.56/-12.03
Freq(Hz)	5.785G/Pol.	Phi-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG(dB)	Phi(0°)/Phi(7.5°)	Phi(15°)/Phi(22.5°)	Phi(30°)/Phi(37.5°)	Phi(45°)/Phi(52.5°)	Phi(60°)/Phi(67.5°)	Phi(75°)/Phi(82.5°)	Phi(90°)/Phi(97.5°)	Phi(105°)/Phi(112.5°)	Phi(120°)/Phi(127.5°)	Phi(135°)/Phi(142.5°)	Phi(150°)/Phi(157.5°)	Phi(165°)/Phi(172.5°)	Phi(180°)/Phi(187.5°)	Phi(195°)/Phi(202.5°)	Phi(210°)/Phi(217.5°)	Phi(225°)/Phi(232.5°)	Phi(240°)/Phi(247.5°)	Phi(255°)/Phi(262.5°)	Phi(270°)/Phi(277.5°)	Phi(285°)/Phi(292.5°)	Phi(300°)/Phi(307.5°)	Phi(315°)/Phi(322.5°)	Phi(330°)/Phi(337.5°)	Phi(345°)/Phi(352.5°)
Theta(0°)	-2.41/-2.17	-1.73/-1.04	-0.41/-0.02	0.32/0.48	0.41/0.26	-0.21/-0.98	-1.48/-2.19	-2.25/-2.21	-2.03/-2.15	-2.18/-2.51	-2.83/-3.09	-3.26/-3.12	-2.79/-2.4	-1.9/-1.3	-0.76/-0.5	-0.4/-0.6	-1.02/-1.25	-1.59/-1.9	-1.94/-2.44	-2.76/-2.79	-3.05/-3.3	-3.27/-3.25	-3.1/-3.42	-4.08/-3.36
Theta(7.5°)	-2.71/-2.34	-2.17/-1.66	-1.52/-1.04	-0.8/-0.63	-0.45/-0.42	-0.85/-1.47	-2.16/-2.87	-2.97/-2.79	-2.78/-3.05	-3.12/-3.42	-3.72/-4.07	-4.54/-5.05	-5.03/-4.52	-3.53/-2.44	-1.48/-0.6	0.07/0.25	0.18/0.06	-0.17/-0.4	-0.93/-1.55	-2.15/-2.48	-2.8/-2.86	-2.67/-2.72	-2.92/-3.39	-3.46/-2.83
Theta(15°)	-6.34/-6.84	-7.27/-5.5	-6.66/-5.13	-3.97/-3.08	-2.53/-2.05	-1.61/-1.17	-1.31/-1.61	-2.2/2.47	-2.91/-3.07	-3.26/-3.76	-4.5/-5.11	-5.53/-5.64	-5.53/-5.57	-5.15/-4.24	-3.37/-3.27	-1.44/-0.88	-0.53/-0.45	-0.56/-0.73	-1.46/-2.22	-3.25/-4.43	-5.24/-5.3	-4.89/-4.36	-4.55/-4.64	-5.23/-6
Theta(22.5°)	-3.4/-3.98	-4.91/-6.03	-7.13/-7.86	-7.24/-6.77	-6.29/-5.47	-4.48/-3.79	-3.29/-3.34	-3.77/-4.19	-3.78/-3.38	-3.32/-3.99	-4.95/-5.82	-6.39/-6.76	-6.44/-5.51	-4.22/-2.82	-2.07/-1.77	-1.69/-1.8	-1.79/-1.65	-1.38/-1.51	-2.51/-4.17	-5.88/-7.03	-7.44/-6.17	-4.41/-3.05	-2.28/-2.1	-2.64/-3.21
Theta(30°)	-1.71/-2.19	-2.92/-3.28	-3.14/-3.47	-4.25/-5.16	-5.86/-6.43	-5.6/-4.6	-3.99/-3.64	-3.59/-3.76	-4.3/-4.27	-3.86/-3.75	-4.72/-5.79	-6.16/-6.28	-6.32/-5.84	-4.1/-2.35	-1.47/-1.49	-1.76/-2.03	-2.55/-3.4	-4.53/-5.27	-4.67/-4.26	-4.11/-4.66	-5.96/-5.68	-4.13/-2.36	-1.55/-1.08	-0.97/-1
Theta(37.5°)	-3.16/-3.02	-3.89/-4.97	-5.15/-5.42	-5.48/-5.18	-5.75/-6.48	-6.73/-7.06	-5.99/-4.78	-4.21/-3.4	-4.85/-5.26	-5.51/-4.8	-5.24/-6.19	-6.95/-6.56	-4.83/-3.11	-1.8/-0.74	-0.37/-0.41	-0.48/-0.85	-0.83/-1.1	-1.64/-2.44	-2.88/-3.07	-3.52/-4.06	-4.04/-4.46	-4.72/4.74	-2.16/-1.72	-2.11/-2.86
Theta(45°)	-5.66/-6.61	-6.06/-6.75	-7.02/-8.67	-7.5/-8.36	-8.31/-8.05	-8/-8.23	-7.46/-5.4	-4.54/-4.02	-3.3/-3.76	-4.84/-6.37	-7.65/-6.28	-5.63/-5.24	-5.04/-3.53	-2.33/-1.49	-1.83/-1.72	-1.7/-1.26	-0.58/-1.28	-2.38/-2.87	-2.64/-1.41	-2.89/-4.01	-5.15/-5.97	-5.42/-4.36	-3.57/-3.93	-4.74/-4.74
Theta(52.5°)	-4.04/-5.06	-6.16/-6.3	-7.5/-8.66	-9.55/-10.24	-8.98/-7.81	-7.69/-7.25	-5.83/-4.66	-4.2/-4.2	-4.59/-6.54	-8.83/-8.61	-7.75/-5.1	-3.2/-3.8	-4.38/-3.61	-3.09/-2.9	-2.20/-2.59	-0.24/0.32	0.43/-0.5	-2.17/-4.07	-4.59/-3.85	-4.1/-3.47	-2.91/-3.28	-4.82/-5.77	-5.6/-4.45	-3.54/-3.14
Theta(60°)	-4.83/-6.78	-7.61/-7.83	-7.41/-8.17	-9.34/-11.69	-10.18/-8.7	-8.47/-8.45	-7.17/-5.52	-5.81/-6.33	-8.06/-9.13	-9.28/-5.93	-4.3/-3.72	-2.25/-2.61	-3.29/-2.86	-3.89/-4.49	-3.18/-1.9	-0.65/-0.41	-1.02/-1.71	-1.54/-2.89	-4.7/-4.98	-3.44/-2.61	-2.18/-2.38	-3.92/-4.17	-4.7/-4.85	-4.66/-4.54
Theta(67.5°)	-8.94/-9.54	-9.17/-8.4	-5.41/-5.1	-6.38/-8.63	-10.12/-10.25	-9.61/-8.34	-8.28/-8.47	-8.58/-9.32	-8.82/-8.7	-6.14/-4.6	-3.32/-2.71	-1.89/-1.02	-1.72/-0.74	-0.52/-1.93	-1.80/-0.64	0.42/0.24	-1.75/-2.86	-3.42/-3.82	-5.62/-4.19	-2.64/-2.82	-4.03/-5.78	-7.36/-6.85	-5.52/-5.81	-7.23/-7.5
Theta(75°)	-7.47/-8.36	-7.29/-6.64	-6.64/-8.1	-8.72/-10.62	-10.93/-10.76	-8.66/-6.55	-6.33/-4.84	-8.06/-9.2	-10.34/-9.53	-6.61/-6.76	-5.99/-4.19	-1.67/-0.6	-0.66/0.08	0.29/0.4	-0.86/-1.7	-1.79/-0.79	-1.81/-2.89	-3.59/-4.06	-5.1/-3.22	-1.33/-3.78	-4.97/-3.2	-3.51/-3.43	-3.88/-4.96	-5.67/-6.3
Theta(82.5°)	-1.71/-1.55	-4.67/-3.89	-6.28/-8.09	-7.98/-8.07	-6.74/-8.63	-7.89/-9.09	-12.07/-10.39	-7.31/-7.87	-8.31/-7.04	-5.6/-4.87	-1.87/-2.57	-1.65/-1.31	-1.86/-2.62	-1.75/-1.27	-1.61/-2.94	-4.03/-3.75	-2.35/-2.14	-3.68/-3.32	-1.17/-1.46	-3.21/-4.36	-3.54/-1.85	-3.21/-4.89	-1.67/-1.74	
Theta(90°)	-5.06/-5.95	-4.32/-2.53	-2.25/-3.29	-5.25/-8.22	-8.85/-8.65	-10.06/-10.14	-9.41/-8.16	-7.47/-4.17	-3.85/-4.27	-4.27/-4.86	-5.22/-3.25	-2.29/-0.94	-0.33/-0.9	-0.45/-0.6	-2.02/-3.11	-2.69/-2.93	-3.69/-2.77	-0.18/-1.53	-3.53/-2.98	-1.18/-3.36	-3.66/-3.1	-2.75/-4.02	-5/-5.96	-6.39/-4.39
Theta(97.5°)	-7.03/-6.88	-4.65/-4.27	-3.61/-4.82	-6.05/-11.67	-12.07/-10.44	-7.75/-7.29	-7.97/-8.8	-6.12/-3.6	-4.52/-5.1	-4.12/-4.35	-2.4/-1.14	-1.81/-0.96	-1.37/-1.63	-1.94/-2.26	-3.66/-5.01	-3.72/-0.58	-0.65/-0.37	0.11/0.19	-1.71/-1.43	-3.2/-6.91	-2.89/-1.02	-2.52/-3.53	-5.87/-9.1	-5.88/-6.6
Theta(105°)	-6.82/-8.76	-6.82/8.93	-8.35/-6.89	-7.93/-6.9	-7.93/-6.9	-4.8/-4.29	-7.18/-8.6	-5.48/-4.85	-5.52/-4.93	-3.36/-4.3	-2.32/0.63	0.48/-0.11	-1.71/-1.22	-3.38/-2.07	-1.13/-3.55	-9.17/-3.12	-1.58/0.08	-1.08/-1.12	-2.83/-0.83	-3.27/-6.04	-1.25/0.44	-3.19/-3.98	-7.82/-12.3	-10.09/-6.47
Theta(112.5°)	-7.75/-8.62	-7.91/-6.64	-6.61/-6.09	-6.99/-6.78	-5.58/-5.28	-5.31/-5.3	-5.2/-5.78	-5.23/-5.08	-5.17/-3.9	-4.2/-3.56	-2.48/-1.97	-1.72/-1.49	-1.81/-2.12	-3/-1.61	-1.47/-4.91	-9.52/-2.92	-0.95/-0.02	-1.95/-3.35	-4.07/0.39	-0.92/-9.77	-4.63/-1.35	-4.21/-6.33	-6.74/-10.44	-9.11/-7.16
Theta(120°)	-6.56/-8.48	-9.86/-7.92	-7.63/-7.46	-5.71/4	-3.89/-5.3	-7.13/-9.5	-9.42/-8.38	-7.16/-5.91	-5.34/-5.65	-5.83/-4.73	-0.88/-5.63	-4.16/-4.95	-4.18/-3.67	-5.38/-4.32	-4.87/-7.88	-8.07/-3.98	-1.78/-1.43	-2.94/-3.54	-3.58/-0.33	0.29/-2.48	-3.6/-3.65	-5.93/-6.76	-9.64/-7.78	-6.43/-7.9
Theta(127.5°)	-4.12/-4.93	-5.39/-6.54	-6/-5.47	-4.76/-4.24	-4.81/-5.2	-6.29/-5.93	-5.87/-6.8	-7.64/-7.25	-6.24/-7.04	-7.86/-8.68	-8.95/-9.32	-10.16/-9.88	-7.56/-5.5	-2.98/-3.71	-3.94/-3.63	-3.69/-3.34	-0.22/-1.16	0.78/-3.75						







# Radiated Composite Gain Data <2.4GHz and 5GHz U-NII 1~U-NII 4>

# Appendix A

Theta (°)	0.00/0.00	-0.37/-0.72	-2.04/-2.14	-2.61/-3.49	-4.35/-5.27	-6.18/-6.95	-6.93/-6.43	-5.49/-4.33	-3.05/-2.35	-1.65/-1.17	-0.72/-0.34	-0.17/-0.08	-0.13/-0.27	-0.44/-0.61	-1.02/-1.57	-2.37/-3.28	-4.33/-5.48	-6.41/-7.14	-8.81/-5.73	-11.44/-3.42	-14.28/-1.62	-17.33/-0.45	-20.59/-0.2	-24.04/-0.26
Theta (7.5°)	0.04/-0.25	-0.3/-0.16	-0.21/-0.69	-1.02/-2.05	-2.7/-3.22	-3.68/-4.14	-4.51/-4.58	-4.69/-3.95	-3.25/-2.56	-2.13/-1.57	-1.14/-0.66	-0.16/-0.09	-0.08/-0.27	-0.19/-0.42	-0.92/-1.75	-2.57/-3.6	-4.44/-5.51	-7.27/-7.88	-10.71/-5.57	-14.23/-3.2	-17.89/-1.62	-21.69/-0.45	-25.62/-0.2	-30.04/-0.26
Phi (15°)	1.20/92	1.51/58	1.18/0.91	0.70/11	-0.44/-0.76	-1.66/-2.39	-2.99/-3.28	-3.05/-2.67	-2.70/-2.38	-2.03/-1.51	-0.99/-0.48	-0.15/-0.36	0.84/112	1.15/0.96	0.45/-0.41	-1.68/-2.99	-4.05/-5.04	-6.51/-8.19	-8.25/-6.16	-9.28/-2.53	-10.30/-0.97	-11.33/-0.31	-12.36/-0.85	-13.39/-1.25
Phi (22.5°)	1.55/1.73	1.75/1.35	0.88/0.73	1.05/1.28	1.42/1.13	0.42/-0.5	-1.31/-1.16	-1.08/-2.03	0.27/0.49	0.51/0.67	0.79/0.86	0.82/1.05	1.12/0.97	1.07/1.01	0.74/0.22	-0.42/-1.04	-1.72/-3.18	-5.23/-7.74	-9.03/-6.96	-12.35/-1.51	-16.07/-0.51	-19.80/-0.04	0.36/0.8	1.18/1.34
Phi (30°)	0.50/7.1	0.78/0.95	1.14/1.6	2.42/2.84	2.89/2.52	1.61/0.47	-0.26/-0.74	-0.49/0.64	1.67/1.95	1.79/1.33	1.02	0.76/0.2	-0.3/-0.43	-0.30/0.15	0.64/0.91	0.88/0.62	-0.08/1.83	-3.9/4.97	-5.9/6.18	-5.03/-3.25	-2.31/1.31	-0.8/0.86	-0.81/-0.58	-0.80/0.24
Phi (37.5°)	0.99/1.32	1.10/78	0.63/0.59	1.16/1.42	1.26/0.88	0.27/0.15	-0.17/-0.34	-0.38/0.29	1.08/1.42	1.29/0.91	0.61/0.78	0.98/0.72	-0.11/-0.63	-0.32/0.34	0.63/0.47	0.67/0.75	0.17/1.43	-2.87/-3.76	-4.22/-4.04	-4.33/-3.48	-1.93/-0.14	0.64/0.75	0.45/0.36	0.08/0.26
Phi (45°)	1.85/2.19	2.42/38	2.17/2.02	2.04/1.71	0.96/0.64	0.37/0.09	0.02/0.09	-0.07/-0.21	0.07/0.45	0.58/0.67	0.93/1.32	1.22/0.62	0.47/0.53	0.16/0.26	0.75/0.93	1.16/1.06	-0.25/-2.58	-4.74/-6.25	-6.01/-4.08	-2.12/-1.72	-1.59/-0.89	-0.17/0.02	0.62/0.79	0.86/1.25
Phi (52.5°)	2.57/2.78	2.57/2.46	2.52/2.43	2.52/2.43	2.04/1.02	0.04/0.34	0.37/0.81	0.99/1.12	-0.44/-0.76	-1.05/-1.55	-1.41/0.48	1.17/1.5	1.67/1.38	0.68/0.03	0.12/0.3	0.34/-0.33	-1.49/-2.59	-2.68/-2.36	-1.79/-1.91	-2.01/-3.51	-4.08/-3.45	-2.01/-1.7	-0.88/-1.05	-0.9/-0.32
Phi (60°)	2.88/2.61	2.13/1.96	2.11/2.37	2.61/2.52	1.84/0.82	0.50/0.46	0.76/0.66	0.15/-0.77	-0.93/-0.36	0.62/1.63	1.32/1.7	2.11/1.4	1.11/1.69	1.46/0.41	0.23/0.11	-0.57/-1.86	-3.57/-3.95	-4.01/-4.95	-6.43/-6.46	-5.96/-4.13	-3.69/-2.6	-0.87/0.02	1.36/2.35	2.67/2.67
Phi (67.5°)	1.39/1.73	2.13/2.12	2.42/2.95	3.23/3.03	2.33/1.6	1.81/1.76	0.85/-0.28	-0.88/-0.5	-0.42/-0.24	0.96/1.82	1.76/2.19	2.55/1.69	1.15/1.07	0.99/0.25	-0.18/-0.68	-0.17/-1.39	-2.32/-5.21	-7.23/-6.55	-5.83/-4.12	-3.05/-4.07	-3.56/-2.07	-0.31/0.98	2.12/1.5	1.61/5.3
Phi (75°)	0.50/85	1.44/1.85	2.64/2.29	2.14/2.21	2.39/2.31	1.75/1.39	1.17/0.82	-0.22/-0.96	-0.94/-0.86	-0.20/0.77	0.51/0.4	1.63/1.15	0.73/1.01	1.55/1.04	0.07/-0.69	-2.9/-4.17	-3.87/-3.32	-4.01/-7.12	-7.78/-6.87	-4.19/-2.78	-1.69/-0.55	0.45/0.33	1.25/1.76	1.51/0.13
Phi (82.5°)	-0.60/47	1.51/1.87	2.19/1.64	0.52/-0.1	0.43/0.92	1.71/1.95	0.99/1.12	-0.44/-0.76	-1.05/-1.55	-1.41/0.48	1.17/1.5	1.67/1.38	0.68/0.03	0.12/0.3	0.34/-0.33	-1.49/-2.59	-2.68/-2.36	-1.79/-1.91	-2.01/-3.51	-4.08/-3.45	-2.01/-1.7	-0.88/-1.05	-0.9/-0.32	-0.80/0.41
Phi (90°)	0.31/0.8	1.78/2.41	2.97/2.17	1.13/0.6	-0.75/0.66	1.93/2.01	0.97/-0.15	-1.11/-1.49	-1.52/-4.77	-2.7/-0.32	1.11/1.61	1.73/1.28	1.36/1.15	-1.11/-1.52	-1.08/-1.78	-2.03/-0.79	-1.08/-2.31	-2.63/-3.37	-2.21/-1.8	-1.63/-1.65	-0.71/-1.15	-0.48/0.06	0.89/0.89	
Phi (97.5°)	-1/-0.14	0.50/36	1.37/1.56	0.83/-0.24	-1.65/0.36	1.67/1.81	0.59/0.88	-0.52/-0.08	-0.48/-1.24	-1.21/-0.98	-1.29/0.34	-0.06/-1.07	-0.61/0.14	-0.37/-0.27	-0.65/-3.47	-3.16/-1.73	-0.87/-1.45	-3.24/-4.77	-4.41/-4.17	-1.19/-1.69	-1.35/-1.28	-1.78/-2.7	-3.42/-1.93	-0.16/0.06
Phi (105°)	1.31/-1.01	0.03/0.07	1.10/1.91	-1.50/-1.92	-0.53/-0.92	-0.75/0.94	1.63/1.03	-0.66/-2.41	-1.78/-0.85	-0.61/-1.05	-1.9/-1.8	-2.22/-1.24	-1.02/-0.69	-0.81/-1.32	-2.37/-2.69	-4.05/-4.69	0.2/0.1	-1.34/-1.33	-1.45/-0.06	-0.07/-1.1	-1.42/0.09	-1.48/-2.06	-0.63/-1.67	0.55/0.42
Phi (112.5°)	-2.05/-1.97	-1.08/-1.39	-1.52/-1.55	-1.43/-1.52	-0.07/0.91	0.71/0.22	-1.09/-0.64	-2.36/-1.88	-1.5/-2.12	-1.63/-1.29	-1.67/-1.39	-1.88/-1.52	-1.64/-2.61	-4.65/-4.53	-5.25/-5.8	-4.99/-5.26	-4.24/-4.76	-2.9/-2.05	-1.18/1.17	1.49/-1.93	-1.62/0.91	-1.09/-3.25	-1.86/-0.91	-0.4/-0.13
Phi (120°)	-2.42/-2.74	-1.99/-3.52	-3.21/-1.93	-2.04/-2.56	-1.54/-0.27	-0.68/-1.87	-2.45/-1.77	-1.1/-1.29	-1.73/-2.63	-2.95/-3.17	-4.13/-2.81	-2.12/-2.15	-1.98/-1.87	-2.6/-3.21	-3.41/-7.91	-8.95/-5.87	-4.27/-4.77	-3.4/-4.35	-4.39/-1.48	0.16/-1.36	-1.92/-1.17	-4/5.06	-4.65/-1.53	-0.71/-0.92
Phi (127.5°)	-2.8/-2.51	-3.12/-3.2	-4.07/-4.21	-2.75/-1.48	-1.08/-1.63	-3.12/-3.81	-2.93/-1.88	-1.79/-2.19	-2.11/-2.53	-4.06/-3.83	-3.05/-2.62	-3.19/-2.7	-2.57/-4.62	-7.92/-6.8	-7.72/-8.94	-5.83/-4.71	-4.58/-5.17	-3.34/-3.39	-4.26/-1.43	-0.64/-3.74	-4.01/-4.14	-2.63/-2.92	-3.85/-1.85	-1.86/-2.88
Phi (135°)	-2.25/-1.44	-1.99/-2.15	-1.41/-3.11	-4.36/-3.08	-2.05/-2.96	-5.85/-6.13	-3.86/-2.14	-0.82/-0.45	-1.69/-3.24	-5.69/-6.26	-4.96/-3.36	-3.1/-4.7	-6.45/-6.57	-5.98/-7.31	-6.92/-7.85	-8.66/-5.95	-4.39/-2.77	-1.95/4	-4.6/-2.33	-0.73/-1.13	-1.93/-2.35	-4.16/-7.35	-4.3/-1.6	1.58/0.86
Phi (142.5°)	-4.72/-7.38	-3.88/-3.7	-5.59/-3.89	-2.23/-2.9	-5.26/-8.88	-9.55/-7.49	-4.94/-3.12	-2.05/-2.22	-3.68/-4.87	-4.41/-4.46	-5.33/-4.34	-4.58/-5.82	-4.76/-4.94	-6.18/-5.73	-6.3/-10.37	-10.42/-8.87	-6.21/-3.65	-5.22/-8.25	-5.83/-1.41	0.24/0.4	-3.4/-3.92	-3.11/-3.76	-4.43/-1.44	-0.46/-1.35
Phi (150°)	-4.28/-3.77	-2.93/-4.24	-5.24/-4.44	-4.75/-6.24	-6.87/-6.86	-5.96/-4.05	-3.04/-2.54	-2.74/-3.89	-5.34/-6.09	-6.42/-6.26	-5.74/-5.44	-5.61/-4.64	-4.51/-4.94	-7.91/-8.25	-8.28/-7.17	-8.41/-11.29	-9.26/-8.48	-7.52/-5.51	-5.32/-3.48	-2.53/-1.76	-1.86/-2.79	-2.29/-2.06	-2.88/-2.44	-1.95/-2.68
Phi (157.5°)	0.06/-0.78	-3.73/-6.78	-8.41/-7.74	-6.93/-7.34	-8.14/-9.44	-10.11/-9.39	-8.34/-7.71	-7.22/-7.54	-7.65/-6.96	-5.71/-4.78	-4.11/-3.95	-4.31/-4.92	-5.09/-4.96	-4.71/-5.08	-6.15/-8.44	-10.87/-11.69	-9.51/-8.05	-6.39/-5.06	-5.38/-4.2	-2.14/-0.95	-1.01/-1.61	-1.36/-1.35	-0.85/-0.14	0.77/1.04
Phi (165°)	-2.7/-3.86	-5.2/-6.12	-6.12/-6.32	-7.13/-7.99	-9.37/-10.23	-11.22/-10.64	-10.15/-10.15	-10.38/-11.81	-10.93/-8.23	-5.48/-3.55	-2.5/-2.39	-2.87/-3.67	-4.57/-6.16	-8.28/-9.72	-9.55/-7.7	-8.84/-8.8	-7.01/-5.41	-5.06/-5.8	-6.99/-5.67	-3.09/-1.66	-1.43/-1.76	-1.27/-0.95	-0.63/-0.68	-1.31/-2.22
Phi (172.5°)	-3.92/-3.84	-4.05/-3.95	-4.78/-6.2	-7.31/-8.16	-7.93/-8.49	-10.27/-10.78	-12.72/-12.69	-11.76/-10.13	-8.3/-6.79	-5.24/-4.56	-4.38/-4.57	-4.87/-5.01	-5.15/-5.16	-5.28/-5.88	-6.34/-7.07	-7.88/-7.81	-7.21/-6.36	-5.99/-5.49	-5.03/-4.3	-3.62/-3.25	-3.64/-4.16	-3.63/-3.46	-4.63/-5.65	-5.41/-4.9
Phi (180°)	-6.01/-6.26	-6.37/-6.75	-7.55/-8.35	-8.57/-8.33	-8.07/-7.99	-8.5/-9.31	-9.95/-9.36	-8.23/-7.08	-6.49/-6.15	-5.61/-5.25	-4.65/-4.05	-3.96/-3.6	-3.4/-3.15	-3.12/-3.38	-4.02/-4.71	-5.46/-5.69	-5.88/-6.64	-7.44/-7.57	-7.42/-7.44	-7.83/-7.96	-8.15/-8.52	-7.02/-5.85	-5.53/-6.07	-6.34/-6.45
Freq (Hz)	5.6G/Pol.	Phi	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
DG (dB)	Phi(0°)/Phi(7.5°)	Phi(15°)/Phi(22.5°)	Phi(30°)/Phi(37.5°)	Phi(45°)/Phi(52.5°)	Phi(60°)/Phi(67.5°)	Phi(75°)/Phi(82.5°)	Phi(90°)/Phi(97.5°)	Phi(105°)/Phi(112.5°)	Phi(120°)/Phi(127.5°)	Phi(135°)/Phi(142.5°)	Phi(150°)/Phi(157.5°)	Phi(165°)/Phi(172.5°)	Phi(180°)/Phi(187.5°)	Phi(195°)/Phi(202.5°)	Phi(210°)/Phi(217.5°)	Phi(225°)/Phi(232.5°)	Phi(240°)/Phi(247.5°)	Phi(255°)/Phi(262.5°)	Phi(270°)/Phi(277.5°)	Phi(285°)/Phi(292.5°)	Phi(300°)/Phi(307.5°)	Phi(315°)/Phi(322.5°)	Phi(330°)/Phi(337.5°)	Phi(345°)/Phi(352.5°)
Theta (0°)	-5.4/-4.54	-3.89/-3.31	-2.98/-2.31	-1.35/-0.62	-0.09/0.51	0.69/0.41	0.23/-0.07	-0.36/-0.73	-0.84/-1.22	-1.77/-2.62	-3.74/-4.98	-6.5/-7.34	-8.17/-7.77	-6.36/-5.07	-3.95/-2.9	-2.26/-1.76	-1.47/-1.18	-1.0/0.97	-0.9/-0.78	-0.89/-1.37	-1.63/-1.86	-2.8/-3.72	-4.65/-5.33	-6.64/-6.25
Theta (7.5°)	-8.09/-7.2	-6.19/-5.34	-4.72/-4.5	-3.28/-2.49	-1.64/-0.94	-0.73/-0.66	-0.99/-1.24	-1.55/-1.87	-2.27/-2.64	-3.34/-4.1	-5.26/-6.46	-6.29/-6.15	-4.6/-3.26	-2.17/-0.96	-0.18/0.3	0.71/1.04	1.33/1.48	1.45/1.41	1.39/1.08	0.62/-0.18	-1.04/-1.44	-2.28/-3.28	-4.6/-7.08	-8.69/-8.57
Theta (15°)	-7.71/-6.51	-5.12/-3.8	-2.47/-1.96	-1.24/-0.79	-0.28/0	0.03/0.26	0.35/0	-0.42/-0.94	-1.56/-2.21	-3.48/-4.97	-6.86/-8.42	-7.97/-6.95	-5.1/3.08	-1.33/-0.05	0.79/1.29	1.51/1.72	1.81/1.98	1.95/1.93	1.75/1.32	0.61/0.2	-0.84/-1.21	-1.58/-1.95	-2.83/-4.55	-6.63/-7.75
Theta (22.5°)	-4.86/-3.73	-3.8/-3.5	-2.74/-2.69	-2.29/-1.79	-1.21/-1.29	-1.44/-1.16	-0.69/-0.46	-0.43/-0.57	-0.98/-1.71	-2.86/-4.67	-6.84/-7.82	-8.02/-7.02	-5.41/-3.95	-2.61/-4.2	-0.6/-0.1	0.26/0.46	0.76/1.18	1.42/1.49	1.18/0.81	0.45/-0.1	-0.6/-1	-1.42/-1.56	-2.17/-3.42	-4.74/-5.5
Theta (30°)	-0.79/-7.69	-6.51/-5.66	-4.52/-2.61	-1.68/-1.74	-2.31/-2.88	-3.33/-2.94	-2.95/-2.55	-2.06/-1.68	-1.73/-2.08	-2.77/-3.43	-4.97/-5.98	-6.27/-5.6	-4.44/-2.99	-1.72/-0.79	0.06/0.82	1.33/1.61	1.67/1.52	1.32/1.1	0.74/0.27	-0.37/-0.85	-0.59/-0.54	-0.57/-0.54	-1.09/-2.21	-3.55/-5.55
Theta (37.5°)	-9.3/-9	-6.5/-6.09	-5.64/-4.66	-4.34/-4.82	-5.53/-5.54	-4.64/-3.98	-3.55/-2.35	-1.54/-1.64	-2.6/-3.5	-3.96/-4.42	-5.1/-5.19	-4.96/-5.43	-5.01/-4.15	-2.45/-0.87	0.39/1.13	1.45/1.65	2.32/3							









# Radiated Composite Gain Data <2.4GHz and 5GHz U-NII 1~U-NII 4>

# Appendix A

Theta (°)	Phi (°)	Phi(15°)	Phi(30°)	Phi(45°)	Phi(60°)	Phi(75°)	Phi(90°)	Phi(105°)	Phi(120°)	Phi(135°)	Phi(150°)	Phi(165°)	Phi(180°)	Phi(195°)	Phi(210°)	Phi(225°)	Phi(240°)	Phi(255°)	Phi(270°)	Phi(285°)	Phi(300°)	Phi(315°)	Phi(330°)	Phi(345°)
0(150°)	-5.81/6.45	-6.55/5.61	-4.8/5.37	-5.69/4.58	-3.38/2.67	-1.8/1.05	-0.47/0.22	-0.12/0.27	0.28/0.09	-0.53/0.71	-1.37/2.84	-3.17/3.38	-5.02/6.74	-6.05/5.38	-5/5.22	-6.15/6.81	-6.39/8.42	-9.56/8.66	-8.37/7.72	-6.28/4.78	-5.67/6.97	-7.14/8.07	-6.41/5.21	-5.05/5.28
0(172.5°)	-6.36/6.21	-6.07/6.27	-6.59/6.28	-6.04/6.2	-5.82/4.93	-4.54/3.61	-2.59/1.85	-1.56/1.32	-1.55/1.93	-2.38/2.71	-3.46/3.78	-3.33/2.57	-2.35/2.74	-3.71/4.3	-3.77/2.73	-2.2/2.49	-3.25/3.44	-4.5/5.46	-5.97/6.08	-5.2/4.06	-4.19/5.67	-7.33/8.26	-8.06/7.93	-6.93/6.12
0(165°)	-7.4/8.02	-7.85/7.8	-7.6/7.25	-7.66/7.57	-6.89/6.36	-5.82/5.19	-4.52/4.35	-3.88/3.61	-3.54/3.65	-4.22/5.01	-5.92/6.61	-7.08/7.2	-7.25/6.69	-5.68/4.8	-3.94/3.53	-3.69/4.45	-5.22/5.53	-4.98/4.67	-4.68/5.16	-5.24/5.29	-5.78/7.06	-7.48/8.44	-8.52/8.46	-8.24/7.85
0(172.5°)	-8.87/9.73	-9.64/9.19	-9.38/9.78	-10.75/11.62	-12.51/12.06	-11.06/9.84	-8.99/8.49	-8.09/7.86	-7.46/7.18	-7.35/7.8	-8.25/8.49	-7.74/7.54	-7.43/7.7	-7.53/8.27	-8.43/8.63	-8.17/7.53	-5.96/4.79	-4.03/4.93	-5.45/6.65	-7.37/7.36	-7.81/8.48	-8.66/7.72	-7.21/8.45	
0(180°)	-7.42/7.88	-7.9/7.56	-6.89/6.95	-6.72/6.96	-7.26/7.33	-7.48/8.24	-8.5/8.88	-8.97/8.52	-8.03/7.89	-7.88/7.94	-8.14/8.18	-8.17/8.14	-8.05/8	-7.97/7.64	-7.18/7.01	-6.87/6.87	-6.32/6.55	-6.6/6.93	-7.79/8.39	-8.82/9.1	-9.9/10.29	-10.01/9	-7.81/7.09	-6.8/6.99
Freq(Hz)	5.2G/Pol.	Theta-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG(dB)	Phi(0°)/Phi(7.5°)	Phi(15°)/Phi(22.5°)	Phi(30°)/Phi(37.5°)	Phi(45°)/Phi(52.5°)	Phi(60°)/Phi(67.5°)	Phi(75°)/Phi(82.5°)	Phi(90°)/Phi(97.5°)	Phi(105°)/Phi(112.5°)	Phi(120°)/Phi(127.5°)	Phi(135°)/Phi(142.5°)	Phi(150°)/Phi(157.5°)	Phi(165°)/Phi(172.5°)	Phi(180°)/Phi(187.5°)	Phi(195°)/Phi(202.5°)	Phi(210°)/Phi(217.5°)	Phi(225°)/Phi(232.5°)	Phi(240°)/Phi(247.5°)	Phi(255°)/Phi(262.5°)	Phi(270°)/Phi(277.5°)	Phi(285°)/Phi(292.5°)	Phi(300°)/Phi(307.5°)	Phi(315°)/Phi(322.5°)	Phi(330°)/Phi(337.5°)	Phi(345°)/Phi(352.5°)
0(0°)	-1.26/1.34	-1.11/0.6	-0.23/1	-1.43/1.82	-2.31/3.27	-4.08/4.75	-4.88/4.45	-3.86/3.38	-3.04/2.68	-2.49/2.35	-2.41/2.33	-2.2/2.19	-2.2/2.06	-1.85/1.84	-1.99/2.17	-2.6/2.96	-3.21/3.18	-4.29/4.58	-4.39/3.96	-3.57/3.06	-2.82/2.54	-2.33/2.25	-2.16/1.81	-1.48/1.38
0(7.5°)	-2.18/2.02	-2.23/2.02	-2.1/2.16	-2.49/2.81	-3.06/3.59	-4.01/4.66	-4.96/4.6	-3.96/3.43	-3.02/2.64	-2.1/1.59	-1.13/0.75	-0.49/0.22	0.05/0.39	0.41/0.23	-0.17/0.78	-1.63/2.72	-3.79/4.59	-5.12/5.53	-4.78/4.44	-3.85/3.42	-3.15/2.9	-2.73/2.86	-2.84/2.03	-1.94/2.27
0(15°)	-2.37/1.82	-1.99/2.02	-2.68/3.28	-3.73/4.43	-4.38/4.35	-4.26/3.86	-3.63/3.07	-2.67/2	-1.51/0.86	-0.36/0.06	0.44/0.76	1.12/1.45	1.75/1.76	1.49/1.05	0.28/0.45	-1.15/2	-3.32/4.86	-6.22/6.35	-5.41/4.6	-4.22/4.13	-4.57/4.81	-4.68/4.65	-4.37/3.5	-3/2.71
0(22.5°)	-3.07/2.59	-2.2/2	-2.07/1.91	-1.86/1.69	-1.61/1.52	-1.64/1.93	-1.66/1.47	-1.42/0.95	-0.21/0.58	1.34/1.78	1.85/1.89	1.86/1.91	1.96/1.8	1.63/1.21	0.73/0.26	-0.38/1.34	-3.12/5.04	-6.73/6.23	-6/4.88	-4.26/4.02	-4.24/4.79	-4.65/4.49	-4.24/4.03	-3.97/3.4
0(30°)	-2.6/2.27	-2.06/1.66	-0.86/0.68	-0.4/0.22	-0.13/0.1	-0.33/0.63	-0.56/0.72	-0.77/0.38	0.16/0.69	1.47/2.18	2.22/1.94	1.79/1.93	1.91/1.68	1.34/0.88	0.08/0.93	-2.36/3.54	-3.71/4.29	-4/4.46	-4.4/4.45	-4.37/4.26	-3.91/4.23	-4.01/3.58	-3.22/2.84	
0(37.5°)	-1.31/0.17	0.59/0.73	1.11/1.08	0.59/0.34	0.09/0.15	-0.28/0.55	-0.7/0.69	-0.30/0.45	1.01/1.1	1.29/1.74	2.2/2.43	2.55/2.1	1.45/1.5	1.72/1.36	0.45/0.52	-0.91/1	-1.24/1.98	-2.6/2.68	-3.03/3.33	-3.69/4.23	-4.61/4.92	-4.47/4.31	-4.74/4.41	-4.28/3.13
0(45°)	-0.19/1.01	1.54/1.54	2.07/2.52	2.17/1.66	1.04/0.33	0.37/0.47	0.11/0.08	0.32/1.37	2.38/2.65	2.64/2.34	3.39/3.56	3.19/3.29	2.07/2.07	1.9/1.21	0.12/1.33	-1.71/1.62	-2.13/3.69	-4.29/4.78	-4.86/4.11	-4.29/5.28	-6.68/6.53	-5.58/5.53	-4.45/2.74	-1.8/1.19
0(52.5°)	-0.16/0.18	0.67/1.25	1.85/2.41	2.45/2.49	2.33/1.62	0.89/0.41	0.62/1.24	1.6/1.8	2.18/2.82	3.54/2.27	4.33/4.28	3.57/2.36	2.06/2.25	2.08/1.34	0.02/1.62	-2.94/2.33	-1.89/2.48	-3.3/3.14	-3.47/4.19	-5.45/5.39	-6.29/3.7	-4.74/3.21	-2.42/1.29	
0(60°)	-0.41/0.27	0.91/0.88	2.35/2.62	2.91/2.9	2.28/1.55	1.15/1.71	2.34/2.18	1.98/1.93	1.98/2.67	3.75/2.47	4.34/2.27	3.92/2.98	2.76/2.76	2.41/1.76	1.09/0.27	-0.99/1.19	-0.85/4.06	-1.01/1.18	-1.32/2.08	-4.46/5.22	-5.34/5.72	-5.48/5.47	-4.2/2.97	-1.63/0.64
0(67.5°)	-0.32/0.14	1.01/1.89	2.19/2.43	3.01/3.18	2.27/1.61	1.92/2.52	2.48/2.21	1.78/1.88	2.64/3.18	3.34/3.67	3.58/3.59	3.77/3.01	2.94/2.78	2.23/2.21	1.25/0.86	-2.09/3.39	-3.23/4.08	-3.03/2.5	-3.39/4.73	-7.09/7.98	-6.95/6.19	-6.32/4.7	-3.73/3.02	-2.23/0.85
0(75°)	-0.33/0.3	0.34/1.1	1.71/1.42	1.81/2	1.79/2.03	2.85/2.99	2.63/2.12	2.17/3.11	3.48/4.28	4.56/4.84	4.91/3.95	3.54/2.77	2.79/2.7	1.26/0.26	1.33/2.2	-2.24/2.9	-2.72/2.81	-3.96/4.51	-5.6/7	-6.84/7.07	-7.03/5.79	-4.86/3.77	-2.7/2.2	-2.3/0.99
0(82.5°)	0.020/5.1	1.08/1.43	1.75/1.63	1.14/0.46	-0.47/0.9	0.30/3.82	3.45/2.34	1.87/1.54	1.68/2.46	2.66/3.54	4.07/4.22	4.18/3.66	3.02/2.23	2.45/2.58	1.81/0.73	-1.69/2.76	-3.31/3.8	-3.64/4.92	-5.09/5.58	-5.44/7.52	-8.31/7.7	-5.83/4.48	-3.24/0.49	-3.76/1.5
0(90°)	-2.52/1.76	0.17/1.25	2.08/2.25	1.88/0.98	-1.3/0.09	2.33/3.52	3.39/2.79	1.29/0.7	0.70/1.01	0.63/1.63	2.66/2.29	3.5/3.05	3.17/2.53	2.22/2.35	1.01/0.61	-0.71/0.5	-0.56/3.62	-4.53/5.98	-6.24/4.8	-4.87/5.23	-7.95/7.42	-5.35/6.97	-5/5.02	-5.49/4.7
0(97.5°)	-5.1/3.16	-2.04/0.18	0.92/1.97	1.32/0.51	-0.87/0.64	2.24/2.84	2.25/0.68	0.09/0.52	1.22/1.67	0.81/1.4	1.49/2.19	2.58/2.46	2.59/1.54	1.64/1.23	0.41/0.92	0.10/0.82	0.84/2.11	-6.18/9.4	-8.05/5.93	-3.08/5.74	-6.08/5.57	-5.87/7.02	-8.7/8.37	-7.48/7.01
0(105°)	-2.26/1.37	-1.87/0.24	-0.16/0.96	0.62/0.81	-1.89/0.52	2.19/2.28	1.43/0.49	-0.66/0.21	0.59/1.29	0.88/1.95	1.98/2.56	2.19/65	1.91/0.82	0.67/0.68	-0.37/0.52	-0.46/0.25	-1.14/1.79	-2.99/4.58	-6.28/8.89	-3.7/6.12	-5.83/2.56	-2.93/2.86	-3.97/4.22	-2.77/2.28
0(112.5°)	-4.72/4.44	-2.7/0.47	-0.63/0.47	-1.4/1.75	-0.28/1.37	2.38/2.14	0.74/0.84	0.36/1.2	2.07/1.05	0.36/1.2	1.24/2.25	1.69/85	1.73/0.75	0.60/0.22	-0.47/2.15	-1.83/0.07	-1.54/2.93	-3.86/4.69	-5.78/6.69	-2.9/6.87	-6.93/2.15	-1.56/5.03	-3.97/4.63	-5.31/4.86
0(120°)	-3.12/2.62	-3.04/1.12	0.11/0.41	0.35/0.63	0.07/0.63	0.67/0.82	-0.07/1.02	-0.69/0.72	1.36/0.79	1.03/0.62	0.69/1.1	0.81/1.52	0.89/0.32	-0.09/0.22	-0.92/3.13	-3.08/3.09	-1.62/2.14	-2.57/5	-4.97/2.69	-3.08/7.55	-5.09/3.47	-2.45/5.8	-6.04/3.17	-3.62/4.88
0(127.5°)	-7.98/6.01	-6.41/5.11	-3.55/2.3	-1.49/0.96	-0.36/0.14	-0.43/1.04	-1.72/1.42	0.48/1.57	1.48/1.55	1.27/0.81	0.65/0.35	-0.47/1.11	-1.47/1.84	-1.18/0.73	-1.44/3.98	-5.87/3.07	-1.36/3.36	-3.45/7.63	-5.93/4.19	-4.09/8.26	-7.71/5.76	-3.84/5.91	-7.26/5.92	-6.77/7.74
0(135°)	-3.99/4.94	-5.6/4.32	-4.02/3.79	-2.78/1.94	-2.01/2.46	-3.23/3.23	-2.35/0.82	0.54/1.33	1.68/1.31	0.59/0.26	-0.79/0.85	-1.92/2.2	-2.93/4.61	-1.99/0.66	-1.83/5.33	-6.31/2.56	-2.01/2.09	-2.58/7.8	-5.89/3.97	-2.35/6.87	-7.57/7.17	-8.28/6.95	-6.6/6	-3.49/3.17
0(142.5°)	-2.79/3.15	-4.8/4	-3.92/4.22	-3.48/3.36	-3.64/4.38	-5.58/6.57	-4.94/2.82	-1.36/0.81	-0.61/0.91	-1.99/3.31	-3.68/4.03	-3.65/2.79	-3.55/3.21	-2.74/3.78	-5.85/6.5	-3.55/2.87	-2.63/2.44	-4.76/11.14	-8.54/1.19	-1.01/2.47	-7.41/7.1	-7.37/6.81	-3.16/2.13	-1.65/2.59
0(150°)	-7.42/7.68	-6.81/6.37	-5.88/4.77	-4.68/5.07	-5.38/5.83	-6.91/6.38	-4.76/3.18	-2.54/2.65	-3.02/3.08	-2.48/1.52	-1.23/1.55	-1.23/3.12	-2.64/3.93	-3.52/3.4	-4.71/7.29	-8.21/8.65	-5.52/3.33	-5.7/8.45	-7.72/3.72	-1.54/2.07	-5.1/7.21	-5.81/5.89	-6.28/6.22	-6.74/7.59
0(157.5°)	-4.79/4.32	-3.89/3.66	-3.39/3.46	-2.64/2.54	-2.47/2.29	-2.02/1.69	-1.31/1.08	-1.02/1.28	-1.67/2.09	-2.58/3.11	-3.17/4.39	-4.69/4.73	-4.63/4.4	-4.01/3.41	-2.52/1.89	-1.46/1.4	-1.38/1.12	-1.15/1.23	-1.55/1.99	-2.36/2.38	-4.13/3.24	-4.13/6.46	-8.54/8.94	-8.54/8.94
0(165°)	-7.57/7.46	-6.69/5.9	-5.5/5.36	-5.34/5.61	-5.92/6.65	-8.45/10.14	-10.77/10.89	-10.25/9.77	-8.47/6.67	-5.37/4.56	-4/3.79	-4.25/5.25	-6.26/6.79	-6.27/6.56	-6.63/6.1	-4.29/3.15	-2.92/2.86	-3.36/4.17	-4.97/5.27	-5.2/5.15	-4.63/5.12	-6.78/9.5	-10.16/9.79	-8.61/7.95
0(172.5°)	-7.39/7.14	-7.43/7.6	-7.42/7.72	-7.49/7.5	-8/8.61	-9.32/10.95	-12.2/12.97	-12.4/11.04	-10.85/9.58	-8.13/7.39	-7.33/7.7	-8.48/8.94	-8.23/6.96	-5.9/4.89	-4.11/3.72	-3.56/3.46	-3.53/4.11	-5.03/6.75	-8.58/9.99	-10.56/10.5	-10.17/9.73	-9.96/8.92	-8.8/9.72	-8.97/8.99
0(180°)	-7.59/8.19	-8.41/8.14	-8.27/8.3	-8.33/8.53	-8.94/9.25	-9/8.84	-9.08/8.89	-8.39/8.06	-7.71/7.47	-7.39/7.2	-7.28/7.25	-7.12/7.05	-7.17/7.13	-6.96/6.74	-6.95/7.13	-7.58/8.13	-8.33/8.45	-8.92/10.15	-10.89/11.12	-10.81/10.05	-9.76/9.52	-7.43/6.35	-6.07/6.65	-7.94/7.83
Freq(Hz)	5.3G/Pol.	Phi-	-																					



# Radiated Composite Gain Data <2.4GHz and 5GHz U-NII 1~U-NII 4>

# Appendix A

Theta (deg)	Phi (deg)	Phi(15°)	Phi(30°)	Phi(45°)	Phi(60°)	Phi(75°)	Phi(90°)	Phi(105°)	Phi(120°)	Phi(135°)	Phi(150°)	Phi(165°)	Phi(180°)	Phi(195°)	Phi(210°)	Phi(225°)	Phi(240°)	Phi(255°)	Phi(270°)	Phi(285°)	Phi(300°)	Phi(315°)	Phi(330°)	Phi(345°)
0(135°)	5.46/4.76	-6.04/7.25	-5.46/4.76	-5.13/4.54	-3.88/2.73	-1.84/2.05	-2.98/2.25	-1.38/1.37	-2.14/3.76	-5.42/6.25	-4.98/4.91	-6.25/6.31	-6.47/5.66	-3.17/1.58	-2.06/1.35	-2.12/0.67	-0.76/0.43	-1.07/4.67	-7.93/6.35	-4.5/4.72	-7.91/12.53	-9.93/6.23	-7.31/6.39	-4.16/4.87
0(142.5°)	-10.82/12.2	-8.45/7.33	-5.74/4.63	-4.26/3.39	-2.41/1.69	-1.37/1.21	-0.75/1.22	-1.52/1.04	-1.41/3.07	-5.14/6.76	-7.39/7.25	-6.5/5.33	-5.64/4.71	-3.73/3.62	-2.52/2.2	-1.84/2.03	-3.5/2.85	-4.8/7.8	-8.37/7.05	-7.35/9.01	-7.01/6.03	-6.58/8.02	-6.34/7.75	-9.18/9.15
0(150°)	-8.65/9.83	-10.3/10.12	-9.49/8.66	-7.65/5.53	-4.24/3.78	-3.48/2.93	-2.25/1.44	-0.76/1.21	-2.66/4.67	-6.64/7.52	-8.39/8.75	-7.47/5.35	-4.11/3.41	-2.87/2.72	-2.58/2.82	-2.88/4.52	-5.86/5.25	-5.79/7.08	-6.97/6.53	-5.2/5.09	-4.92/5.18	-6.41/8.88	-9.6/9.6	-9.41/8.67
0(157.5°)	-7.6/6.45	-6.21/6.75	-6.92/7.4	-7.15/6.78	-6.59/5.88	-5.24/4.22	-3.54/3.59	-4.04/4.11	-4.45/5.14	-6.34/7.08	-7.02/6.51	-5.53/3.96	-2.41/1.18	-0.37/0.1	-0.39/1.36	-2.77/3.98	-3.71/3.66	-3.36/3.26	-3.06/3.06	-3.19/4.56	-6.24/7.64	-8.64/8.29	-9.39/9.95	-9.52/8.23
0(165°)	-7.63/8.23	-8.03/7.69	-7.22/7.22	-7.3/6.83	-6.05/5.23	-4.55/4.13	-4.24/4.42	-5.13/5.58	-6.14/7.09	-8.63/10.12	-11.41/10.87	-9.53/6.29	-4.46/3.32	-2.98/3.75	-5.36/7.07	-6.82/5.7	-4.98/4.9	-4.89/4.59	-4.1/4.02	-4.58/5.59	-6.36/7.62	-7.96/7.61	-7.21/7.54	-7.65/7.74
0(172.5°)	-9.08/9.3	-9.76/9.85	-9.57/9.44	-9.37/8.95	-8.49/8.32	-8.23/8.3	-8.95/9.03	-9.58/10.03	-10.48/10.17	-9.91/9.64	-9.68/9.7	-9.41/9.03	-8.94/9.24	-9.49/10.74	-12.23/12.48	-11.23/8.96	-7.19/6.09	-5.59/5.28	-5.35/6.09	-7.61/9.3	-10.91/10.95	-11.96/12.28	-10.5/10.08	-9.98/9.4
0(180°)	-8.98/8.72	-8.33/8.28	-9.23/10.43	-11.04/11.4	-11.87/12.59	-12.57/11.84	-11.86/11.54	-11.64/11.31	-10.57/10.41	-10.51/10.92	-11.12/10.45	-10.59/10.35	-10.62/11.7	-11.96/11.45	-10.76/9.94	-9.57/9.32	-9.17/9.48	-8.87/9.16	-10.01/10.68	-10.99/11.65	-11.9/12.29	-11.81/11.38	-10.39/10.02	-9.86/9.12
Freq(Hz)	5.6G/Pol.	Theta	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG(dB)	Phi(0°)/Phi(7.5°)	Phi(15°)/Phi(22.5°)	Phi(30°)/Phi(37.5°)	Phi(45°)/Phi(52.5°)	Phi(60°)/Phi(67.5°)	Phi(75°)/Phi(82.5°)	Phi(90°)/Phi(97.5°)	Phi(105°)/Phi(112.5°)	Phi(120°)/Phi(127.5°)	Phi(135°)/Phi(142.5°)	Phi(150°)/Phi(157.5°)	Phi(165°)/Phi(172.5°)	Phi(180°)/Phi(187.5°)	Phi(195°)/Phi(202.5°)	Phi(210°)/Phi(217.5°)	Phi(225°)/Phi(232.5°)	Phi(240°)/Phi(247.5°)	Phi(255°)/Phi(262.5°)	Phi(270°)/Phi(277.5°)	Phi(285°)/Phi(292.5°)	Phi(300°)/Phi(307.5°)	Phi(315°)/Phi(322.5°)	Phi(330°)/Phi(337.5°)	Phi(345°)/Phi(352.5°)
0(0°)	0.430/1.5	0.04/0.29	-0.01/0.28	-0.54/1.17	-1.96/2.68	-3.78/5.06	-6.03/6.92	-6.32/5.32	-4.24/3.17	-2.3/1.66	-1.23/1.01	-0.93/0.91	-0.78/0.8	-0.93/1.26	-1.49/1.64	-1.88/2.2	-2.8/3.69	-5.09/6.44	-7.55/6.94	-5.53/4.13	-2.98/2.07	-1.18/0.43	-0.070/2.8	0.38/0.39
0(7.5°)	-1.47/-1.2	-1.06/-0.9	-1.01/-1.16	-1.35/-1.44	-1.63/-2.03	-2.7/3.69	-4.23/4.34	-3.81/2.99	-1.89/1.04	-0.32/0.26	0.70/0.94	1.08/1.37	1.52/1.48	1.33/1.1	0.72/0.35	-0.17/0.97	-1.88/2.96	-4.46/6.19	-8.06/7.71	-6.04/4.5	-3.54/2.93	-2.28/1.77	-1.45/1.25	-1.54/1.65
0(15°)	-1.12/-0.8	-0.67/-0.39	-0.36/0.36	-0.59/0.88	-1.27/1.24	-2.81/3.11	-3.23/3.07	-2.04/0.88	-0.06/0.5	0.91/1.1	1.18/1.4	1.78/2.27	2.62/2.85	2.92/2.71	2.38/1.9	1.22/0.42	-0.58/1.61	-2.79/4.38	-6.05/6.22	-5.43/4.45	-4.08/3.85	-3.44/3	-2.58/1.82	-2.16/1.44
0(22.5°)	-0.44/-0.16	-0.65/-1.06	-0.9/0.21	-0.02/0.44	-1.14/2.24	-2.86/3.17	-3.12/2.96	-2.29/1.5	-0.54/0.34	0.87/0.88	0.64/0.49	0.54/0.98	1.47/2.08	2.39/2.46	2.36/1.86	1.15/0.32	-0.63/1.58	-2.52/3.49	-4.17/4.25	-4.15/4.52	-4.83/5.04	-4.38/4.02	-3.59/2.76	-2.96/1.26
0(30°)	-2.84/-1.91	-1.12/-0.74	-0.31/0.49	1.12/1.52	1.66/1.25	0.66/0.35	-1.18/1.66	-1.66/1.18	-0.46/0.39	1.15/1.54	1.63/1.54	1.46/1.3	1.38/1.51	1.75/1.83	1.49/0.79	0.08/0.65	-1.59/2.75	-3.61/4.48	-5.58/6.34	-5.5/4.43	-4.53/4.65	-4.71/4.59	-3.63/3.54	-3.32/2.84
0(37.5°)	-2.38/-1.32	-0.65/-0.21	-0.01/0.32	0.47/0.15	0.06/0.29	0.51/0.16	-0.56/0.65	-0.31/0.19	0.92/1.62	1.97/2.02	2.12/2.18	2.05/1.89	1.81/1.59	1.45/1.59	1.37/0.55	-0.08/0.59	-1.63/3.06	-5.34/7.62	-7.65/7.95	-7.4/6.71	-6.07/5.1	-4.56/4.21	-4.21/4.78	-3.67/2.94
0(45°)	-0.15/1.38	1.94/2.03	2.32/36	1.98/1.14	0.37/0.03	-0.35/0.31	-0.14/0.1	0.31/0.81	1.42/3.7	2.89/2.43	1.93/1.94	1.6/0.88	1.23/2.31	2.81/2.59	1.88/0.56	-0.19/0.74	-1.16/1.67	-2.96/4.92	-5.01/5.54	-5.12/5.09	-5.47/4.95	-4.55/4.16	-4.18/3.68	-2.48/1.48
0(52.5°)	0.12/0.6	1.36/1.99	2.96/3.53	3.32/5.8	1.97/1.3	0.89/0.9	1.03/0.98	0.66/0.73	1.21/1.55	2.22/2.09	1.51/1.93	2.41/1.55	1.09/2.1	2.24/1.33	1.03/0.68	-0.01/0.78	-2.33/3.58	-4.11/3.69	-3.93/3.43	-2.62/3.63	-4.41/5.01	-5.62/5.54	-3.78/3.17	-1.97/0.44
0(60°)	-0.13/0.44	1.11/1.84	2.48/3	3.23/2.72	2.50/1.28	1.11/1.4	1.83/1.64	1.22/1.4	2.22/2.75	2.91/3.5	3.02/2.34	2.84/2.38	1.47/1.87	1.68/0.88	0.58/0.51	0.53/0.15	-1.65/3.63	-4.84/4.75	-4.37/4.17	-3.21/3.32	-4.47/5.75	-5.41/5.11	-4.22/2.52	-1.37/0.64
0(67.5°)	0.38/0.2	1.02/1.91	2.61/2.89	3.31/2.41	2.08/0.63	0.68/1.59	2.35/2.33	1.54/1.55	2.25/2.75	3.15/3.29	3.57/2.97	2.68/1.98	1.39/1.48	0.97/0.65	0.61/0.83	-1.1/2.48	-4.42/6.08	-6.68/5.53	-6.41/5.32	-4.44/4.24	-4.66/4.26	-6.41/5.32	-4.13/2.22	-0.44/0.6
0(75°)	0.36/0.43	0.99/1.52	1.71/2.08	2.41/1.91	1.38/0.55	0.09/0.81	1.64/1.88	1.55/1.66	2.15/2.7	3.06/3.26	3.85/3.53	2.88/2.2	1.48/0.59	0.6/0.44	-0.58/2.37	-2.3/2.64	-4.42/5.54	-5.44/5.88	-4.52/5.14	-4.4/7.72	-8.86/6.91	-4.03/3.26	-3.04/2.4	-1.7/0.64
0(82.5°)	-1.23/-0.52	-0.21/-0.23	-0.43/-1.25	-1.64/-1.36	-2.80/2.81	3.12/1.79	1.86/2.35	2.36/2.22	2.37/2.59	2.66/2.99	3.44/3.53	2.91/2.29	1.29/0.25	-0.06/0.03	-0.99/2.87	-4.24/6.26	-6.4/8.82	-4.88/3.32	-3.02/3.34	-4.05/5.63	-7.27/7.09	-7.57/5.12	-4.98/3.41	-2.92/1.94
0(90°)	-1.12/0.02	0.59/1.27	1.53/0.92	-0.65/2.78	-1.57/0.88	2.21/2.26	1.88/1.41	1.67/1.93	1.59/1.25	1.58/2.48	3.37/3.2	2.81/1.72	1.02/0.27	0.54/0.43	-0.76/1.91	-5.7/6.15	-5.21/6.18	-6.45/6.34	-6.74/7.32	-8.04/12.58	-11.05/7.1	-5.86/5.72	-4.56/3.68	-1.89/0.9
0(97.5°)	-1.66/-0.83	0.04/0.22	-0.04/0.57	-2/2.93	-1.24/0.83	2.19/2.27	1.98/2.03	2.36/1.57	0.79/0.14	0.45/1.24	2.12/1.5	1.91/1.06	0.71/0.22	-0.4/0.89	-1.27/2.86	-3.55/3.82	-4.34/7.49	-4.84/5.04	-4.86/4.88	-5.31/7.96	-8.8/7.03	-5.67/5.05	-5.88/3.84	-2.98/2.4
0(105°)	-0.15/3.91	-2.7/2.08	-1.71/-1.5	-1.41/0.56	0.31/4.1	1.83/1.44	3.12/2.4	2.03/1.07	0.54/0.68	1.48/0.98	1.31/0.06	0.3/1.71	-1.6/1.18	-3.63/3.5	-4.28/4.55	-4.97/5.99	-6.85/7.33	-4.34/4.67	-6.07/5.32	-5.67/2.73	-4.95/4.89	-3.33/3.83	-3.33/3.83	
0(112.5°)	-3.31/3.55	-2.41/2.72	-1.81/1.04	-0.57/0.45	1.14/1.88	1.96/1.19	0.72/1.94	3.23/3.73	3.02/2.42	1.5/1.67	1.32/1.22	0.87/0.17	-0.15/1.31	-0.68/0.83	-1.96/3.37	-2.21/2.62	-2.87/5.17	-7/7.14	-4.76/2.91	-4.25/10.51	-3.86/2.39	-6.4/4.99	-6.17/7.13	-4.49/3.99
0(120°)	-2.08/-1.93	-2.04/-1.31	-0.91/0.2	0.14/0.63	0.98/1.21	1.72/1.27	0.43/0.98	2.43/3.19	3.59/3.19	2.3/2.5	1.81/1.67	0.66/0.58	-0.21/1.21	-1.64/2.31	-2.51/4.14	-4.95/4.7	-4.33/3.03	-6.36/8.23	-4.54/3.36	-2.81/7.48	-5.65/2.7	-5.2/9.16	-8.57/5.64	-5.55/4.61
0(127.5°)	-3.91/3.25	-2.11/0.75	0.13/0.83	0.88/0.44	0.33/0.05	-0.47/0.79	0.05/1.38	2.05/2.61	3.09/2.81	2.65/1.95	1.31/0.54	-0.74/1.06	-1.66/1.72	-1.48/1.39	-2.1/4.68	-6.06/4.55	-3.9/4.64	-6.29/7.72	-4.91/4.74	-3.76/8.78	-4.84/5.43	-7.12/8.6	-6.3/3.91	-4.97/5.99
0(135°)	-2.86/-2.54	-2.89/2.16	-1.66/-1.41	-1.38/-1.02	-0.62/0.79	-0.77/0.67	-0.17/0.84	1.69/2.17	2.68/2.46	1.65/1.11	0.3/0.77	-1.82/4.02	-0.59/6.19	-5.39/3.9	-4.58/6.77	-7.3/7.09	-4.41/8.14	-8.06/10.26	-5.83/4.64	-5.94/7.05	-6.48/6.5	-4.85/9.09	-9.66/8.77	-5.04/3.47
0(142.5°)	-7.41/6.58	-6.67/6.01	-5.59/4.26	-2.65/1.92	-2.14/2.66	-2.86/2.98	-2.16/1.23	-2.07/5.9	1.0/4.2	0.21/0.19	-0.15/0.6	-1.96/3.05	-5.39/6.55	-4.21/4.74	-7.8/9.06	-10.14/6.68	-6.69/7.73	-8.07/7.56	-6.24/6.7	-7.17/9.98	-9.99/6.81	-4.42/3.15	-4.4/6.12	
0(150°)	-3.07/2.74	-3.38/3.72	-4.09/4.55	-5.78/6.35	-6.41/5.55	-6.17/6.42	-6.04/4.68	-3.09/1.92	-1.3/0.9	-0.44/0.35	0.93/1.07	1.31/3.33	0.16/0.65	-0.66/1.32	-2.88/5.07	-6.3/6.53	-6.53/6.44	-7.97/8.6	-7.41/6.29	-4.17/3.86	-6.15/7.08	-5.81/4.69	-3.05/1.59	-1.67/3.3
0(157.5°)	-6.26/5.47	-5.76/6.98	-7.57/7.82	-7.99/7.36	-6.29/5.56	-5.53/5.61	-5.32/4.95	-4.85/4.09	-3.39/2.8	-2.24/1.82	-1.69/1.15	-0.09/0.26	-0.42/1.63	-2.18/1.82	-1.58/2.01	-3.39/5.46	-7.19/9.35	-9.64/7.05	-5.67/5.91	-5.77/4.31	-3.29/3.95	-5.48/6.33	-6.03/5.02	-5.42/5.64
0(165°)	-6.44/6.04	-5.62/5.81	-6.34/6.82	-7.24/7.76	-7.98/8.96	-9.81/11.28	-10.75/9.35	-8.01/6.69	-5.15/3.66	-2.38/1.4	-0.7/0.14	0.08/0.06	-0.66/1.87	-3.91/5.52	-7.1/8.16	-9.02/8.96	-8.89/9.02	-10.06/10.84	-10.3/7.8	-5.39/3.62	-2.76/2.96			







# Radiated Composite Gain Data <2.4GHz and 5GHz U-NII 1~U-NII 4>

# Appendix A

Theta	Phi	Phi(15°)	Phi(30°)	Phi(45°)	Phi(60°)	Phi(75°)	Phi(90°)	Phi(105°)	Phi(120°)	Phi(135°)	Phi(150°)	Phi(165°)	Phi(180°)	Phi(195°)	Phi(210°)	Phi(225°)	Phi(240°)	Phi(255°)	Phi(270°)	Phi(285°)	Phi(300°)	Phi(315°)	Phi(330°)	Phi(345°)	
0(60°)	6.72/-6.59	-4.8/-3.53	-3.22/-2.93	-2.67/-1.4	0.31/1.41	1.55/0.9	0.65/0.83	1.16/1.47	0.9/-0.7	-0.97/-1.75	-2.56/-2.38	-2.37/-2.63	-2.64/-1.11	-0.42/-0.89	-0.92/-0.29	0.11/0.07	0.06/1.1	2.23/1.97	0.34/-0.66	0.30/3.7	-0.99/-2	-3.38/-5.47	-5.66/-5.38	-6.49/-7.55	
0(67.5°)	-6.1/-4.56	-3.86/-2.76	-1.33/-0.42	0.27/0.56	0.26/-0.18	-0.35/-0.22	-0.04/0.22	0.9/1.48	0.85/-0.03	-1.76/-3.21	-2.63/-2.47	-3.36/-4.2	-3.75/-1.87	-1.01/-0.18	0.56/0.34	-0.11/-0.61	-1.05/0.19	1.03/0.51	-0.67/-0.78	-0.36/-1.19	-2.73/-3.31	-4.88/-7.26	-7.68/-8.26	-8.18/-6.78	
0(75°)	-4.99/-4.53	-4.28/-4.29	-4.24/-3.36	-1.97/-1	0.05/0.36	-0.1/-1.13	-2.15/-1.6	-0.87/-0.88	-0.71/-0.62	-1.58/-2.64	-3.49/-3.36	-3.31/-4.09	-4.92/-3.48	-1.64/-1.17	-0.81/-1.65	-2.05/-1.68	-0.8/0.14	-0.16/-0.41	-1.16/-0.2	-0.22/-3.09	-5.92/-4.35	-3.31/-4.95	-6.69/-6.93	-7.17/-5.95	
0(82.5°)	-5.25/-6.06	-5.77/-4.75	-4.27/-3.65	-2.95/-2.62	-2.73/-1.9	-1.42/-1.69	-2.19/-2.59	-1.66/-0.85	-0.68/-0.52	-0.43/-1.39	-2.68/-3.45	-4.1/-4.46	-4.15/-2.63	-1.26/-1.12	-0.47/-1.32	-1.09/-0.19	0.29/0.96	0.89/0.21	0.42/0.94	1.12/-0.94	-2.42/-3.28	-2.82/-3.79	-6.75/-5.58	-8.42/-6.51	
0(90°)	-7.17/-8.38	-7.77/-6.23	-5.47/-3.96	-2.86/-2.45	-2.77/-3.1	-3.54/-3.38	-4.33/-5.23	-4.07/-2.78	-0.96/0.11	-0.15/-0.91	-1.55/-2.53	-4.24/-4.54	-2.49/-2.22	-2.45/-0.98	-0.37/-1.2	0.11/1.02	1.71/2.35	2.56/1.76	1.48/1.91	1.45/0.38	-0.34/-1.28	-2.56/-3.91	-5.82/-8.52	-9.06/-6.97	
0(97.5°)	-4.59/-5.97	-5.72/-4.74	-4.74/-3.83	-2.65/-2.3	-2.34/-2.17	-1.98/-2.14	-2.84/-3.15	-2.49/-2.36	-1.96/-2.15	-2.63/-3.57	-4.93/-6.94	-5.96/-5.96	-3.05/-2.45	-1.61/0.28	0.67/-0.61	-1.13/0.26	1.21/2.02	2.29/2.5	1.94/3.12	2.69/1.19	-0.05/-0.6	-2.89/-4.82	-5.68/-7.43	-7.49/-5.61	
0(105°)	-5.41/-6.46	-6.54/-5.61	-5.76/-4.15	-3.18/-3.15	-3.23/-2	-1.05/-3.1	-1.89/-2.68	-1.47/-0.65	-0.08/-0.42	-1.07/-3.21	-4.87/-4.76	-3.78/-3.22	-1.07/0.05	1.16/1.75	1.48/-0.38	-1.79/0.81	2.09/2.25	2.67/1.64	0.41/1.61	1.67/-0.47	-1.44/-0.8	-1.53/-4.12	-5.43/-6.93	-8.99/-7.44	
0(112.5°)	-5.93/-3.74	-4.09/-4.55	-5.06/-4.89	-3.49/-2.96	-3.27/-3.81	-4.58/-4.91	-4.58/-2.48	-0.90/0.2	0.55/-0.01	-1.64/-3.02	-3.97/-3.03	-3.18/-3.69	-1.78/-0.75	-0.62/0.33	-0.39/1.27	3.29/2.27	3.27/1.28	2.82/1.4	2.82/1.4	-0.27/-0.57	-1.47/-2.96	-4.64/-7.26	-7.71/-6.22		
0(120°)	-6.26/-6.36	-5.43/-4.89	-4.38/-3.99	-2.96/-3.1	-4.1/-5.01	-5.69/-5.76	-4.97/-3.72	-2.71/-1.54	-1.56/-1.16	-1.37/-2.16	-5.3/-6.66	-6.69/-6.01	-4.38/-4.74	-2.9/-1.97	-2.82/-2.13	-0.22/0.62	1.88/1.66	1.3/-0.77	0.06/1.6	1.48/-0.31	-2.85/-1.61	-1.98/-4.05	-3.3/-3.9	-4.76/-4.65	
0(127.5°)	-7.03/-6.62	-6.47/-6.23	-4.34/-4.04	-4.17/-4.32	-4.45/-3.91	-3.19/-3.63	-4.51/-3.89	-2.67/-2.23	-1.43/-0.71	-1.23/-2.85	-4.21/-5.02	-6.68/-6.71	-5.05/-3.62	-3.55/-4.3	-3.91/-2.22	-1.47/-0.87	-0.28/-0.35	-1.07/-2.58	-1.77/-0.68	-0.86/-1.48	-1.78/-1.89	-1.35/-2.13	-3.41/-5.87	-7.24/-9.02	
0(135°)	-7.81/-8.99	-6.08/-5.85	-4.46/-3.47	-3.73/-3.7	-2.49/-0.87	-0.13/-0.43	-1.43/-1.78	-1/0.51	0.01/0	-0.76/-2.27	-4.44/-5.6	-6.3/-6.52	-5.8/-4.74	-3.79/-4.21	-2.72/-1.92	-1.09/0.35	0.99/1.43	-2.51/-3.21	-3.32/-2.65	-2.57/-3.15	-2.62/-1.74	-0.88/-2.08	-5.74/-8.88	-5.43/-5.31	
0(142.5°)	-5.78/-8.77	-8.88/-8.25	-6.53/-4.97	-4.31/-2.86	-1.45/-0.77	-0.86/-1.09	-1.38/-1.07	-0.09/0.25	-0.54/-1.74	-2.71/-3.45	-3.37/-3.37	-2.88/-1.94	-1.15/-1.09	-1.46/-2.58	-3/-1.35	-0.36/-0.12	-0.38/-1.99	-2.24/-2.98	-3.15/-2.48	-3.92/-3.99	-4.53/-4.76	-5.17/-4.86	-4.43/-5.88	-5.58/-4.94	
0(150°)	-6.3/-7.07	-7.24/-6.25	-5.77/-6.48	-6.16/-4.5	-3.23/-3.1	-2.71/-2.02	-1.52/-1.22	-1.38/-1.78	-2.39/-1.74	-2.83/-3.17	-3.24/-3.08	-3.07/-2.46	-2.31/-2.66	-3.27/-3.1	-1.6/-0.84	-1.06/-1.89	-3.13/-4.46	-4.79/-3.38	-2.28/-2.58	-3.9/-5.09	-5.93/-7.22	-7.86/-7.79	-6.37/-6.09	-6.22/-5.75	
0(157.5°)	-8.4/-8.05	-7.39/-6.92	-7.39/-6.92	-6.77/-6.43	-6.78/-6.11	-6.78/-6.11	-6.78/-6.11	-6.78/-6.11	-6.78/-6.11	-6.78/-6.11	-6.78/-6.11	-6.78/-6.11	-6.78/-6.11	-6.78/-6.11	-6.78/-6.11	-6.78/-6.11	-6.78/-6.11	-6.78/-6.11	-6.78/-6.11	-6.78/-6.11	-6.78/-6.11	-6.78/-6.11	-6.78/-6.11	-6.78/-6.11	-6.78/-6.11
0(165°)	-5.13/-5.44	-5.87/-6.84	-7.57/-8.06	-7.91/-7.4	-6.54/-5.46	-4.85/-4.51	-4.26/-4.23	-3.64/-4.81	-5.16/-5.52	-5.74/-6	-6.43/-6.77	-6.76/-6.42	-6.02/-5.55	-5.51/-4.95	-3.82/-2.95	-2.28/-2.05	-2.3/-2.53	-2.56/-1.81	-1.2/-1.21	-1.97/-3.02	-3.99/-4.89	-4.99/-5.14	-5.33/-5.23	-4.93/-5.26	
0(172.5°)	-9.92/-8.84	-7.46/-6.73	-6.24/-6.06	-5.52/-5.14	-4.76/-4.62	-4.95/-5.49	-5.89/-6.32	-6.65/-6.91	-7.55/-7.9	-8.63/-9.17	-9.87/-10.05	-9.56/-9.03	-8.14/-7.11	-6.24/-5.17	-4.16/-3.26	-2.6/-2.13	-2.09/-2.23	-2.36/-2.36	-2.54/-3.04	-3.68/-4.29	-5.16/-6.04	-6.51/-7.18	-8.11/-9.63	-10.26/-10.16	
0(180°)	-8.77/-8.57	-8.35/-8.16	-7.66/-6.62	-5.88/-5.42	-5.06/-4.64	-4.43/-4	-3.65/-3.41	-3.31/-3.46	-3.71/-4.08	-4.52/-5.17	-5.87/-6.37	-7.17/-7.9	-7.96/-7.02	-6/5.08	-4.43/-3.94	-3.67/-3.42	-3.49/-3.38	-3.43/-3.68	-3.95/-4.19	-4.42/-5.07	-5.66/-6.21	-7.26/-7.79	-7.99/-8.24	-8.41/-6.59	
Freq(Hz)	5.3G/Pol.	Theta	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	
DG(dB)	Phi(0°)/Phi(7.5°)	Phi(15°)/Phi(22.5°)	Phi(30°)/Phi(37.5°)	Phi(45°)/Phi(52.5°)	Phi(60°)/Phi(67.5°)	Phi(75°)/Phi(82.5°)	Phi(90°)/Phi(97.5°)	Phi(105°)/Phi(112.5°)	Phi(120°)/Phi(127.5°)	Phi(135°)/Phi(142.5°)	Phi(150°)/Phi(157.5°)	Phi(165°)/Phi(172.5°)	Phi(180°)/Phi(187.5°)	Phi(195°)/Phi(202.5°)	Phi(210°)/Phi(217.5°)	Phi(225°)/Phi(232.5°)	Phi(240°)/Phi(247.5°)	Phi(255°)/Phi(262.5°)	Phi(270°)/Phi(277.5°)	Phi(285°)/Phi(292.5°)	Phi(300°)/Phi(307.5°)	Phi(315°)/Phi(322.5°)	Phi(330°)/Phi(337.5°)	Phi(345°)/Phi(352.5°)	
0(0°)	2.72/7.8	2.4/2.1	1.15/0.89	0.25/-0.67	-1.56/-2.79	-4.09/-5.16	-5.82/-4.49	-4.21/-2.65	-1.16/-0.1	0.76/1.35	1.84/2.26	2.48/2.59	2.48/2.4	1.6/1	0.17/-0.78	-1.96/-3.34	-4.68/-5.86	-6.01/-4.89	-3.16/-1.73	-0.54/0.54	1.17/1.27	1.59/1.98	2.28/2.65		
0(7.5°)	2.42/0.7	1.84/1.69	1.48/0.89	0.32/-0.64	-1.29/-2.22	-3.18/-3.99	-4.55/-4.46	-3.81/-2.63	-1.56/-0.67	0.06/0.77	1.45/2.04	2.73/2.84	2.69/2.47	2.04/4	0.53/-0.43	-1.58/-3.17	-5.21/-6.56	-5.98/-4.34	-2.61/-1.08	0.10/0.97	1.61/1.84	2.06/2.22	2.45/2.63		
0(15°)	2.63/2.22	2.43/2.28	1.63/1.03	0.44/-0.19	-0.96/-1.61	-2.73/-3.83	-4.39/-4.38	-3.43/-2.26	-1.25/-0.43	0.29/0.97	1.54/2.08	2.47/2.92	3.4/3.68	3.82/3.67	3.24/2.44	1.23/-0.14	-1.52/-2.93	-5.04/-7.13	-7.37/-4.98	-2.58/-0.56	0.59/1.13	1.57/2.1	2.45/2.44	2.64/2.78	
0(22.5°)	1.78/1.8	1.74/1.22	0.54/0.02	-0.18/-0.35	-0.45/-0.86	-1.72/-2.6	-3.11/-2.93	-1.69/-0.24	0.88/1.7	2.25/2.66	3.03/3.23	3.42/3.66	3.81/3.81	3.68/3.4	2.97/2.21	1.26/0.3	-0.72/-2.41	-5.2/-8.39	-9/-4.71	-1.82/-0.18	0.60/0.9	0.99/0.96	1.1/1.35	1.66/1.7	
0(30°)	0.30/5.5	0.48/0.46	0.35/0.34	0.63/0.73	0.61/0.05	-1.01/-1.98	-2.07/-1.75	-0.80/0.69	1.75/2.36	3.2/3.3	3.16/3.26	3.23/3.4	2.63/2.4	2.36/2.4	2.42/0.9	1.62/1.1	0.19/-2.1	-5.5/-7.88	-7.99/-6.07	-4.1/-2.67	-1.92/1	-0.62/-0.85	-0.96/-0.81	-3.40/-0.01	
0(37.5°)	-0.27/0.17	0.12/0.02	-0.33/-0.89	-0.71/-0.71	-1.03/-1.61	-2.27/-2.39	-2.89/-2.64	-1.85/-0.4	1.06/1.91	2.33/2.52	2.67/2.91	3.04/2.78	2.09/1.61	1.59/1.68	1.48/0.96	0.95/0.67	-0.31/-2.53	-4.78/-5.94	-5.39/-4.29	-4.2/-3.82	-3.11/-1.61	-0.8/-0.74	-0.98/-1.03	-1.51/-1.27	
0(45°)	-0.07/0.98	1.72/1.77	1.47/0.94	0.53/-0.03	-0.97/-1.53	-1.71/-1.8	-1.91/-1.6	-1.34/-0.38	1.2/1	2.72/2.93	3.07/3.18	3.02/2.17	2.19/2.32	1.94/1.22	0.75/0.33	0.28/0.32	-0.79/-3.55	-6.17/-8.19	-6.44/-6.34	-4.2/-3.66	-2.79/-2.56	-1.92/-1.65	-1.58/-1.07		
0(52.5°)	-0.51/-0.2	0.34/0.62	0.80/0.73	0.73/0.56	-0.28/-1.47	-2.27/-1.51	-1.31/-0.31	-0.06/0.42	1.52/58	3.38/3.83	3.66/3.6	3.23/2.4	2.13/2.55	2.33/1.63	0.86/0.31	-0.23/-0.54	-1.27/-2.37	-5.42/-11.07	-11.37/-8.83	-5.8/-3.61	-3.73/-4.44	-4.64/-3.91	-3.06/-2.36	-1.58/-0.9	
0(60°)	-1.3/-0.76	-0.36/0.12	0.63/0.91	1.08/0.61	-0.38/-1.48	-1.56/-1.22	-0.66/-0.1	0.25/0.44	1.07/2.11	3.11/3.54	3.18/3.12	2.92/1.77	1.31/1.78	1.66/0.89	0.42/-0.25	-1.52/-2.46	-3.17/-2.74	-3.45/-5.51	-8.94/-10.22	-8.36/-5.79	-5.73/-6.35	-5.84/-5.42	-4.3/-3.48	-2.6/-2.06	
0(67.5°)	-3.18/-1.83	-2.41/-1.64	-1.03/0.56	0.77/1.38	-1.77/1.1	-0.34/-1.92	-1.61/-0.8	-0.54/-0.52	-0.02/1.1	1.53/1.83	2.53/2.91	2.62/2.22	1.60/2.7	-0.17/-0.1	-0.16/-0.23	0.12/-1.09	-1.67/-3.19	-7.52/-8.54	-9.41/-8.99	-6.93/-7.48	-7.14/-6.07	-4.86/-3.74	-2.62/-3.92	-4.88/-3.83	
0(75°)	-4.18/-3.85	-2.21/1.07	0.07/0.07	0.11/-0.79	-1.93/-1.93	-1.68/-0.76	0.16/0.91	0.71/0.43	0.85/1.23	1.69/1.95	1.40/92	0.69/-1.15	-2.03/-1.27	-0.82/-0.87	-1.12/-1.69	-3.71/-4.44	-4.64/-4.43	-4.9/-7.98	-12.42/-11.94	-9.28/-8.43	-7.19/-5.57	-4.5/-4.89	-3.98/-3.91	-4.32/4	
0(82.5°)	-4.92/-3.82	-2.36/-1.16	-0.33/-0.32	-1.09/-2.97	-3.62/-3.44	-1.23/0.69	0.9/0.06	-0.4/-0.69	0.15/1.24	1.7/1.1	0.05/-1.68	-2.58/-3.15	-2.61/-1.56	-1.21/-1.94	-3.23/4.55	-4.01/-4.25	-3.93/-5.19	-6.23/-9.11	-7.48/-6.99	-5.31/-6.2	-6.32/7.1	-7.38/-7.42	-7.39/-6.31		
0(90°)	-4.78/-3.81	-1.35/0.28	1.28/1.02	-0.03/-2.64	-7.2/-3.31	-0.04/1.12	0.74/-0.3	-1.71/-2.13	-2.23/-2.59	-1.88/0.09	0.93/0.53	-0.21/-1.67	-1.55/-1.47	-2.24/-3.07	-3.25/-4.76	-4.42/-2.43	-3.19/-4.69	-5.58/-8.35	-7.59/-6.35	-7.99/-7.16	-9.55/-8.45	-5.3/-8.24	-6.96/-7.45	-7.07/-5.08	
0(97.5°)	-5.68/-5.13	-3.63/-2	-1.19/-1.12																						





# Radiated Composite Gain Data <2.4GHz and 5GHz U-NII 1~U-NII 4>

# Appendix A

Theta	Phi	Phi(15)	Phi(22.5)	Phi(30)	Phi(37.5)	Phi(45)	Phi(52.5)	Phi(60)	Phi(67.5)	Phi(75)	Phi(82.5)	Phi(90)	Phi(97.5)	Phi(105)	Phi(112.5)	Phi(120)	Phi(127.5)	Phi(135)	Phi(142.5)	Phi(150)	Phi(157.5)	Phi(165)	Phi(172.5)	Phi(180)	Phi(187.5)	Phi(195)	Phi(202.5)	Phi(210)	Phi(217.5)	Phi(225)	Phi(232.5)	Phi(240)	Phi(247.5)	Phi(255)	Phi(262.5)	Phi(270)	Phi(277.5)	Phi(285)	Phi(292.5)	Phi(300)	Phi(307.5)	Phi(315)	Phi(322.5)	Phi(330)	Phi(337.5)	Phi(345)	Phi(352.5)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
Theta(30)	-4.42/-4.28	-4.07/-3.36	-1.88/-1.08	-0.66/-0.6	-0.89/-0.63	-0.38/0.6	1.43/1.87	2.09/2.18	1.94/1.48	0.74/-0.1	-1.46/-3.28	-5.21/-6.64	-7.44/-7.21	-5.25/-3.53	-2.32/-1.29	-0.19/0.89	1.78/2.35	2.61/2.93	3.23/3.28	2.8/1.5	-0.33/-1.02	-1.03/-1.18	-1.84/-2.51	-3.81/-3.98	Theta(37.5)	-4.17/-4.92	-5.63/-5.56	-3.85/-2.51	-1.21/-0.03	0.08/0.08	0.10/4.9	1.29/2.05	3.32/2.03	1.49/0.7	-0.36/-0.94	-2.06/-3.58	-5.41/-6.14	-4.47/-2.81	-1.64/-0.74	-0.09/0.65	1.48/2.19	3.09/3.7	4.11/4.18	4.08/3.32	1.99/1.09	1.07/0.55	-0.47/-1.42	-1.03/-1.18	-1.84/-2.51	-3.81/-3.98	Theta(45)	-7.7/-8.42	-7.37/-6.66	-4.66/-2.58	-1.78/-1.24	-0.91/-1.23	-1.37/-0.71	1.78/1.24	0.28/1.27	1.36/1.36	1.35/0.84	-0.17/-1.84	-4.18/-4.36	-4.35/-5.48	-5.33/-4.62	-2.63/-0.92	-0.71/-0.44	0.42/1.37	2.48/2.73	2.71/2.79	3.01/3.32	3.02/1.85	0.25/-0.7	-1.94/-3.9	-4.63/-4.55	-4.48/-5.53	Theta(52.5)	-4.57/-5.77	-7.21/-7.22	-5.89/-4.03	-2.3/-1.42	-0.74/-0.3	-0.16/0.05	0.19/0.03	-0.49/-0.44	-0.03/-0.24	-0.79/-1.12	-1.89/-2.31	-2.77/-3.67	-3.15/-1.97	-0.69/-0.37	-0.27/0.97	2.09/3.17	3.63/2.99	2.13/1.58	1.82/1.93	0.75/-0.18	-0.94/-1.77	-2.65/-3.42	-3.88/-3.16	-3.13/-3.83	Theta(60)	-5.07/-7.33	-8.69/-7.52	-4.73/-2.88	-2.65/-2.87	-1.46/-0.84	-0.75/-1.21	-1.29/0.33	-0.38/-0.58	1.27/-1.62	-1.74/-1.07	-1.74/-2.51	-2.57/-3.36	-4.57/-4.07	-2.7/-2.07	-1.28/0.10	1.09/9	0.68/0.04	0.44/0.56	-0.12/-0.45	-0.41/-1.61	-2.65/-2.88	-3.78/-3.16	-2.54/-2.68	-3.31/-4.24	Theta(67.5)	-7.99/-11.12	-10.65/-7.94	-4.23/-2.84	-2.86/-2.81	-1.8/-1.51	-1.13/0.91	-1.24/-2.17	-3.69/-3.53	-2.32/-0.98	-1.24/-1.59	-1.31/-1.95	-2.71/-2.81	-3.42/-0.88	0.41/0.1	-0.02/0.73	1.74/1.81	0.52/-0.28	-0.64/0.19	-0.23/0.04	-0.3/-1.62	-1.92/-2.82	-4.14/-5.05	-3.8/-4.7	-5.3/-5.3	Theta(75)	-6.04/-7.4	-7.09/-5.99	-4.63/-3.68	-3.26/-3.67	-3.41/-2.17	-0.74/-0.35	-1.46/-3.16	-2.79/-2.47	-1.62/-1.75	-1.47/-1.13	-0.83/-0.43	-0.11/0.16	-0.52/-0.19	0.64/1.1	0.34/0.3	0.5/0.87	0.75/0.76	0.57/0.5	0.11/0.86	1.5/-0.27	-2.44/-3.38	-4.58/-5.07	-4.26/-4.35	-4.66/-4.94	Theta(82.5)	-8.38/-6.01	-4.99/-3.49	-3.63/-2.97	-1.81/-0.98	-0.6/-1.01	-1.17/-1.47	-2.88/-2.98	-1.65/-2.03	-1.99/-1.71	-1.9/-1.67	-1.95/-2.41	-3.69/-3.2	-2.82/-1.78	-0.06/-0.55	-1.81/-1.12	-0.33/0.11	0.35/1.13	-0.14/0.37	0.26/0.7	0.9/-1.38	-2.4/-2.29	-1.11/-1.61	-2.92/-3.78	-5.65/-7.56	Theta(90)	-5.72/-8.65	-6.14/-3.08	-2.35/-2.04	-2.18/-2.45	-2.07/-1.33	-1.38/-1.51	-1.93/-2.3	-2.38/0.09	-0.44/-1.3	-1.58/-2.63	-3.44/-2.12	-2.07/-2.15	-2.89/-2.44	-0.7/-1.04	-1.58/-1.38	-0.87/1.1	1.01/1.17	1.88/1.57	1.45/2.23	2.11/-0.9	-2.99/-1.99	-1.04/-2.77	-5.03/-5.83	-7.41/-6.24	Theta(97.5)	-9.58/-9.29	-7.08/-5.7	-4.24/-3.85	-3.75/-4.99	-3.52/-2.69	-1.09/-1.03	-2.55/-4.37	-1.64/-0.13	-0.07/-0.91	-0.96/-1.21	-2.01/-0.87	-2.41/-2.37	-1.84/-1.63	-3.33/-2.44	-2.87/-4.6	-2.33/-1.24	1.48/2.3	2.78/3.01	2.52/2.58	1.29/-1.27	0.30/9.1	-1.62/-3.44	-5.77/-10.45	-5.75/-6.7	Theta(105)	-4.58/-7.75	-5.68/-8.21	-7.09/-6.3	-6.68/-4.88	-1.74/0.02	-0.66/-1.14	-2.1/-2.38	-0.22/0.97	-0.25/-1.52	-1.43/-0.96	-1.06/-0.89	-0.79/-1.29	-1.64/-0.92	-1.55/-0.79	-0.56/-2.07	-5.18/-0.73	0.59/1.12	0.73/1.28	0.64/1.5	1.22/-1.61	1.32/2.18	-1.53/-3.28	-7.26/-10.07	-7.34/-3.74	Theta(112.5)	-6.28/-7.85	-5.63/-5.13	-5.82/-6.14	-5.94/-3.28	-1.57/-1.75	-2.38/-2.07	-2.27/-2.55	-0.92/0.08	0.12/0.03	-0.54/-0.71	-1.2/-2.46	-2.57/-2.84	-2.55/-0.2	-1.35/-2.28	-2.08/-6.02	-5.71/-0.77	1.38/1.73	0.95/0.18	0.62/2.36	0.22/-3.12	-0.39/0.5	-2.54/-6.31	-7.09/-8.43	-7.94/-6.9	Theta(120)	-6.29/-7.91	-8.5/-7.68	-7.72/-7.8	-5.72/-3.1	-1.82/-1.87	-2.63/-4.22	-3.72/-3.67	-2.87/-1.87	-1.1/-1.15	-2.4/-4.14	-6.13/-5.19	-4.3/-4.71	-4.03/-3.1	-4.07/-3.07	-3.64/-6.37	-4.84/-1.02	0.26/1.19	1.08/-0.53	0.52/2.32	1.48/0.45	0.68/0.37	-2.42/-7.9	-6.39/-6.79	-5.17/-5.24	Theta(127.5)	-4.99/-7.46	-8.04/-8.94	-6.48/-5.05	-4.1/-3.75	-3.06/-2.73	-2.84/-1.94	-1.74/-2.88	-2.87/-1.17	-1.88/-2.99	-4.91/-6.72	-7.46/-6.57	-8.91/-6.72	-6.23/-4.05	-2.03/-2.66	-3.78/-1.91	0.03/0.62	1.94/1.51	0.83/-1.19	0.02/1.24	0.52/-0.68	-1.01/-2.15	-3.85/-5.05	-8.76/-9.23	-3.73/-4.12	Theta(135)	-6.35/-7.86	-7.17/-8.54	-9.33/-8.48	-6.37/-4.55	-3.72/-3.89	-3.76/-3.69	-3.21/-2.92	-3.1/-3.07	-3.52/-4.75	-6.59/-7.71	-6.65/-5.24	-6.04/-7.88	-6.45/-3.83	-3.03/-4.95	-3.06/-1.07	0.01/0.41	0.61/6.7	0.85/-0.25	0.61/2.6	1.04/0.01	-2.33/-2.33	-4.77/-8.11	-7.88/-6.6	-4.39/-4.17	Theta(142.5)	-8.76/-10.2	-8.89/-7.06	-5.01/-3.54	-3.06/-2.65	-2.61/-3.07	-2.75/-2.36	-2.23/-1.89	-1.67/-2.02	-3.19/-3.01	-3.79/-6.2	-6.21/-4.67	-3.9/-3.93	-3.21/-3.9	-4.51/-4.48	-2.72/-0.95	-1.35/-1.33	-0.85/-1.04	-2/-2.27	-1.28/-0.02	-0.62/-1.86	-4.76/-4.41	-2.81/-2.96	-5.35/-6.38	-6.92/-7.81	Theta(150)	-4.43/-5.52	-6.55/-7.18	-9.1/-9.24	-8.3/-7.53	-5.62/-3.34	-2.09/-1.34	-1.17/-1.04	-1.42/-2.63	-4.65/-5.81	-7.6/-9.29	-8.3/-6.13	-4.8/-4.07	-3.72/-3.15	-2.98/-3.61	-3.78/-2.87	-2.24/-3.07	-3.81/-4.21	-4.23/-3.33	-2.5/-1.9	-2.8/-3.7	-3.75/-3.47	-3.14/-3.14	-4.11/-5.44	-5.46/-4.12	Theta(157.5)	-4.73/-6.05	-8.93/-5.64	-5.37/-5.5	-6.42/-7.11	-7.35/-6.87	-5.66/-4.99	-4.69/-4.6	-4.41/-4.14	-4.83/-6.19	-7.45/-7.56	-6.72/-5.22	-4.4/-2.57	-1.11/-0.75	-1.33/-1.52	-1.4/-1.94	-3.87/-6.56	-7.53/-5.44	-3.38/-1.91	-1.85/-2.1	-2.33/-2.37	-2.95/-3.69	-4.04/-3.71	-3.02/-3.1	-3.09/-3.4	Theta(165)	-5.15/-4.89	-5.34/-6.77	-7.99/-8.75	-9.01/-8.74	-7.33/-6.24	-4.98/-4.67	-5.26/-5.57	-6.29/-6.58	-6.38/-6.39	-7.35/-9.14	-9.83/-9.18	-6.73/-4.04	-2.39/-1.64	-1.72/-1.28	-3.03/-4.28	-5.12/-5.12	-4.68/-4.02	-3.68/-3.62	-3.54/-3.73	-4.16/-5.1	-5.61/-5.81	-5.12/-4.97	-5.23/-1.57	-5.7/-5.74	Theta(172.5)	-8.8/-8.41	-7.56/-6.97	-6.54/-6.62	-6.92/-7.78	-8.5/-8.86	-8.8/-8.17	-8.22/-8.36	-8.92/-9.4	-10.51/-11.27	-11.59/-11	-10.46/-8.97	-7.18/-5.46	-4.39/-4.1	-4.22/-4.74	-5.53/-5.42	-5.17/-4.32	-3.91/-3.68	-3.44/-3.22	-3.1/-3.82	-5.09/-6.68	-7.7/-8.8	-10.57/-11.66	-11.05/-10.4	-9.91/-8.24	Theta(180)	-9.76/-9.82	-9.3/-8.66	-7.09/-6.67	-6.62/-6	-5.41/-5.02	-4.77/-4.52	-4.65/-5.3	-5.79/-6.02	-6.38/-6.77	-7.16/-7.72	-8.24/-8.73	-9.39/-9.79	-10.55/-10.41	-10.35/-9.63	-8.92/-8.06	-7.57/-6.74	-6.64/-6.79	-6.3/-5.82	-5.81/-6.18	-6.93/-7.13	-7.05/-7.31	-7.73/-8.14	-8.27/-8.76	-8.91/-8.74	Theta(187.5)	-9.3/-8.66	-7.09/-6.67	-6.62/-6	-5.41/-5.02	-4.77/-4.52	-4.65/-5.3	-5.79/-6.02	-6.38/-6.77	-7.16/-7.72	-8.24/-8.73	-9.39/-9.79	-10.55/-10.41	-10.35/-9.63	-8.92/-8.06	-7.57/-6.74	-6.64/-6.79	-6.3/-5.82	-5.81/-6.18	-6.93/-7.13	-7.05/-7.31	-7.73/-8.14	-8.27/-8.76	-8.91/-8.74	Theta(195)	-9.76/-9.82	-9.3/-8.66	-7.09/-6.67	-6.62/-6	-5.41/-5.02	-4.77/-4.52	-4.65/-5.3	-5.79/-6.02	-6.38/-6.77	-7.16/-7.72	-8.24/-8.73	-9.39/-9.79	-10.55/-10.41	-10.35/-9.63	-8.92/-8.06	-7.57/-6.74	-6.64/-6.79	-6.3/-5.82	-5.81/-6.18	-6.93/-7.13	-7.05/-7.31	-7.73/-8.14	-8.27/-8.76	-8.91/-8.74	Theta(202.5)	-9.76/-9.82	-9.3/-8.66	-7.09/-6.67	-6.62/-6	-5.41/-5.02	-4.77/-4.52	-4.65/-5.3	-5.79/-6.02	-6.38/-6.77	-7.16/-7.72	-8.24/-8.73	-9.39/-9.79	-10.55/-10.41	-10.35/-9.63	-8.92/-8.06	-7.57/-6.74	-6.64/-6.79	-6.3/-5.82	-5.81/-6.18	-6.93/-7.13	-7.05/-7.31	-7.73/-8.14	-8.27/-8.76	-8.91/-8.74	Theta(210)	-9.76/-9.82	-9.3/-8.66	-7.09/-6.67	-6.62/-6	-5.41/-5.02	-4.77/-4.52	-4.65/-5.3	-5.79/-6.02	-6.38/-6.77	-7.16/-7.72	-8.24/-8.73	-9.39/-9.79	-10.55/-10.41	-10.35/-9.63	-8.92/-8.06	-7.57/-6.74	-6.64/-6.79	-6.3/-5.82	-5.81/-6.18	-6.93/-7.13	-7.05/-7.31	-7.73/-8.14	-8.27/-8.76	-8.91/-8.74	Theta(217.5)	-9.76/-9.82	-9.3/-8.66	-7.09/-6.67	-6.62/-6	-5.41/-5.02	-4.77/-4.52	-4.65/-5.3	-5.79/-6.02	-6.38/-6.77	-7.16/-7.72	-8.24/-8.73	-9.39/-9.79	-10.55/-10.41	-10.35/-9.63	-8.92/-8.06	-7.57/-6.74	-6.64/-6.79	-6.3/-5.82	-5.81/-6.18	-6.93/-7.13	-7.05/-7.31	-7.73/-8.14	-8.27/-8.76	-8.91/-8.74	Theta(225)	-9.76/-9.82	-9.3/-8.66	-7.09/-6.67	-6.62/-6	-5.41/-5.02	-4.77/-4.52	-4.65/-5.3	-5.79/-6.02	-6.38/-6.77	-7.16/-7.72	-8.24/-8.73	-9.39/-9.79	-10.55/-10.41	-10.35/-9.63	-8.92/-8.06	-7.57/-6.74	-6.64/-6.79	-6.3/-5.82	-5.81/-6.18	-6.93/-7.13	-7.05/-7.31	-7.73/-8.14	-8.27/-8.76	-8.91/-8.74	Theta(232.5)	-9.76/-9.82	-9.3/-8.66	-7.09/-6.67	-6.62/-6	-5.41/-5.02	-4.77/-4.52	-4.65/-5.3	-5.79/-6.02	-6.38/-6.77	-7.16/-7.72	-8.24/-8.73	-9.39/-9.79	-10.55/-10.41	-10.35/-9.63	-8.92/-8.06	-7.57/-6.74	-6.64/-6.79	-6.3/-5.82	-5.81/-6.18	-6.93/-7.13	-7.05/-7.31	-7.73/-8.14	-8.27/-8.76	-8.91/-8.74	Theta(240)	-9.76/-9.82	-9.3/-8.66	-7.09/-6.67	-6.62/-6	-5.41/-5.02	-4.77/-4.52	-4.65/-5.3	-5.79/-6.02	-6.38/-6.77	-7.16/-7.72	-8.24/-8.73	-9.39/-9.79	-10.55/-10.41	-10.35/-9.63	-8.92/-8.06	-7.57/-6.74	-6.64/-6.79	-6.3/-5.82	-5.81/-6.18	-6.93/-7.13	-7.05/-7.31	-7.73/-8.14	-8.27/-8.76	-8.91/-8.74	Theta(247.5)	-9.76/-9.82	-9.3/-8.66	-7.09/-6.67	-6.62/-6	-5.41/-5.02	-4.77/-4.52	-4.65/-5.3	-5.79/-6.02	-6.38/-6.77	-7.16/-7.72	-8.24/-8.73	-9.39/-9.79	-10.55/-10.41	-10.35/-9.63	-8.92/-8.06	-7.57/-6.74	-6.64/-6.79	-6.3/-5.82	-5.81/-6.18	-6.93/-7.13	-7.05/-7.31	-7.73/-8.14	-8.27/-8.76	-8.91/-8.74	Theta(255)	-9.76/-9.82	-9.3/-8.66	-7.09/-6.67	-6.62/-6	-5.41/-5.02	-4.77/-4.52	-4.65/-5.3	-5.79/-6.02	-6.38/-6.77	-7.16/-7.72	-8.24/-8.73	-9.39/-9.79	-10.55/-10.41	-10.35/-9.63	-8.92/-8.06	-7.57/-6.74	-6.64/-6.79	-6.3/-5.82	-5.81/-6.18	-6.93/-7.13	-7.05/-7.31	-7.73/-8.14	-8.27/-8.76	-8.91/-8.74	Theta(262.5)	-9.76/-9.82	-9.3/-8.66	-7.09/-6.67	-6.62/-6	-5.41/-5.02	-4.77/-4.52	-4.65/-5.3	-5.79/-6.02	-6.38/-6.77	-7.16/-7.72	-8.24/-8.73	-9.39/-9.79	-10.55/-10.41	-10.35/-9.63	-8.



# Radiated Composite Gain Data <2.4GHz and 5GHz U-NII 1~U-NII 4>

# Appendix A

DG(dB)	Φ(0°)Φ(7.5°)	Φ(15°)Φ(22.5°)	Φ(30°)Φ(37.5°)	Φ(45°)Φ(52.5°)	Φ(60°)Φ(67.5°)	Φ(75°)Φ(82.5°)	Φ(90°)Φ(97.5°)	Φ(105°)Φ(112.5°)	Φ(120°)Φ(127.5°)	Φ(135°)Φ(142.5°)	Φ(150°)Φ(157.5°)	Φ(165°)Φ(172.5°)	Φ(180°)Φ(187.5°)	Φ(195°)Φ(202.5°)	Φ(210°)Φ(217.5°)	Φ(225°)Φ(232.5°)	Φ(240°)Φ(247.5°)	Φ(255°)Φ(262.5°)	Φ(270°)Φ(277.5°)	Φ(285°)Φ(292.5°)	Φ(300°)Φ(307.5°)	Φ(315°)Φ(322.5°)	Φ(330°)Φ(337.5°)	Φ(345°)Φ(352.5°)
Θ(0°)	-3.09/-3.93	-4.78/-5.05	-5.37/-6.28	-7.29/-7.54	-6.99/-6.7	-6.19/-5.83	-5.15/-4.56	-4.03/-3.55	-3.09/-2.56	-2.14/-1.72	-1.51/-1.46	-1.53/-1.71	-2.07/-2.48	-2.79/-3.36	-4.53/-5.38	-5.96/-6.32	-6.66/-7.09	-6.88/-6.28	-5.43/-4.62	-3.78/-3.11	-2.87/-2.56	-2.19/-1.78	-1.49/-1.34	-1.72/-2.33
Θ(7.5°)	-1.39/-1.68	-2.41/-3.46	-4.41/-5.62	-6.32/-6.15	-6.31/-6.28	-6.22/-5.96	-5.02/-4.12	-3.55/-3.03	-2.79/-2.62	-2.32/-2.25	-2.46/-2.85	-3.21/-3.38	-3.23/-3.16	-3.45/-4	-4.76/-5.6	-6.52/-7.16	-7.15/-6.75	-6.18/-5.28	-5.17/-4.54	-4.05/-3.64	-3.26/-2.84	-2.46/-2.06	-1.57/-1.36	-1.51/-1.45
Θ(15°)	-1.74/-2.21	-3.57/-4.4	-4.92/-5.01	-4.6/-4.28	-4.35/-4.65	-5.12/-5.81	-5.83/-5.12	-4.41/-3.31	-2.51/-2.12	-1.9/-2.14	-2.51/-3.01	-3.45/-3.71	-3.85/-3.82	-3.47/-3.43	-3.78/-4.4	-5.49/-6.83	-7.73/-7.78	-6.6/-6	-5.27/-4.84	-5.04/-5	-5.06/-4.89	-4.58/-3.84	-3.2/-2.47	-1.75/-1.79
Θ(22.5°)	-4.72/-5.29	-5.83/-5.84	-6.43/-6.63	-6.61/-6.62	-6.59/-5.77	-4.96/-4.5	-3.89/-3.27	-3.03/-2.57	-2.11/-1.79	-1.56/-1.56	-2.16/-2.86	-3.32/-3.69	-4.04/-4.57	-4.35/-4.16	-4.16/-4.31	-4.99/-5.89	-7.15/-8.52	-7.74/-6.84	-6.57/-5.44	-5.86/-6.26	-6.49/-6.59	-5.93/-5.27	-4.61/-4.02	-3.81/-4.37
Θ(30°)	-3.41/-3.28	-3.05/-3.47	-4.79/-5.71	-5.86/-5.5	-4.98/-4.26	-3.85/-3.24	-3.21/-2.72	-1.65/-8.02	-0.51/-0.88	-1.68/-2.52	-3.32/-3.68	-3.92/-4.98	-6.37/-7.24	-7.76/-7.41	-6.71/-5.75	-4.85/-5.58	-5.57/-8.48	-10.99/-9.65	-8.27/-7.41	-6.8/-6.4	-5.96/-5.52	-5.81/-6.08	-5.76/-5.89	-6.05/-4.88
Θ(37.5°)	-2.57/-2.05	-2.01/-2.89	-3.36/-3.86	-3.64/-3.05	-3.29/-2.94	-2.66/-2.36	-1.62/-0.93	-0.6/-0.61	-0.95/-1.19	-1.52/-2.2	-3.42/-4.48	-4.74/-5.79	-6.75/-7.3	-7.5/-6.13	-5.69/-5.31	-5.46/-5.76	-7.04/-9.29	-9.33/-8.98	-5.88/-3.51	-2.69/-3.13	-3.69/-4.59	-5.29/-5.66	-5.71/-4.65	-3.75/-3.09
Θ(45°)	-2.91/-1.76	-1.64/-2.21	-2.01/-1.8	-1.74/-1.72	-1.48/-0.98	-0.8/-1.13	-0.54/-0.44	0.87/0.57	-0.33/-1.32	-2.24/-2.8	-3.56/-4.45	-5.7/-7.05	-7.22/-7.47	-7.49/-6.95	-6.57/-5.42	-5.06/-5.38	-7.08/-8.53	-9.19/-7.83	-7.28/-6.81	-5.7/-4.7	-4.4/-1.9	-5.05/-4.31	-3.87/-3.07	-2.63/-2.2
Θ(52.5°)	-5.52/-4.03	-3.56/-3.99	-3.91/-3.7	-3.36/-2.57	-1.62/-0.93	-0.68/-1.01	-0.35/-0.3	0.51/-0.13	-1.32/-2.89	-4.84/-5.2	-3.35/-3.26	-4.13/-4.73	-5.47/-6.19	-7.53/-7.83	-6.82/-5.94	-5.77/-4.46	-5.92/-7.52	-8.69/-10.76	-11.88/-8.94	-5.85/-4.53	-4.1/-1.15	-4.52/-4.09	-3.37/-3.49	-5.36/-5.43
Θ(60°)	-6.12/-4.16	-3.1/-2.44	-1.94/-2.25	-2.82/-3.3	-3.03/-2.45	-2.58/-4.5	-3.22/-1.11	-0.93/-0.84	-1.82/-3.57	-6.02/-6.93	-5.33/-4.26	-4.8/-6.18	-7.79/-7.34	-6.92/-6.97	-7.35/-8.67	-5.28/-4.75	-5.5/-6.37	-7.85/-11.29	-11.95/-9.61	-7.35/-6.17	-5.8/-5.04	-5.12/-4.78	-6.47/-8.17	-8.86/-7.26
Θ(67.5°)	-4.32/-2.95	-2.38/-2.27	-2.02/-2.09	-2.77/-3.52	-5.21/-4.63	-3.43/-2.78	-2.12/-1.15	-0.19/-0.18	-1.52/-4.25	-7.43/-5.9	-4.42/-4.08	-4.67/-5.32	-6.09/-5.63	-5.56/-6.16	-6.73/-7.37	-6.23/-4.96	-4.97/-6.15	-9.11/-10.48	-11.04/-10.77	-8.5/-5.82	-5.74/-5.25	-3.92/-4.11	-5.06/-5.25	-4.73/-3.71
Θ(75°)	-5.23/-4.61	-5.35/-4.63	-4.86/-4.23	-3.69/-3.19	-2.85/-2.82	-3.17/-2.83	-1.91/-1.99	-2.26/-1.91	-1.37/-1.83	-2.88/-3.87	-4.14/-4.92	-5.06/-6.23	-6.86/-6.06	-5.67/-6.2	-6.85/-7.38	-7.72/-6.89	-8.39/-10.22	-11.74/-9.87	-10.18/-10.4	-10.21/-8.5	-7.22/-6.38	-6.63/-7.28	-8.23/-8.06	-6.87/-5.6
Θ(82.5°)	-5.98/-7.4	-7.94/-8.06	-6.69/-5.12	-4.71/-4.88	-3.82/-2.78	-2.31/-1.28	-1.68/-1.89	-2.06/-1.42	-0.03/-2.3	-1.04/-2.62	-4.77/-7.05	-7.65/-6.87	-5.35/-6.04	-4.52/-3.71	-8.11/-7.48	-4.35/-3.71	-4.64/-7.27	-6.12/-5.14	-7.23/-9.06	-10.46/-6.82	-6.77/-6.38	-6.63/-7.17	-7.14/-6.89	-6.27/-5.1
Θ(90°)	-5.89/-3.84	-3.71/-2.45	-2.66/-2.27	-3.21/-3.81	-1.49/-1.56	-1.49/-1.06	-0.25/-0.07	-0.45/-0.1	<b>1.03/0.36</b>	-1.51/-4.58	-8.24/-10.61	-6.03/-9.92	-9.58/-7.79	-7.66/-9.05	-9.38/-9.93	-4.5/-2.59	-3.43/-5.77	-6.89/-7.47	-9.96/-10.03	-10.48/-6.73	-5.54/-5.48	-4.42/-4.76	-4.6/-4.07	-3.95/-5.09
Θ(97.5°)	-5.92/-4.09	-3.13/-1.7	-0.9/-1.12	-1.61/-2.2	-1.81/-2.09	-2.55/-3.23	-3.09/-2.19	-1.25/-1.19	-1.22/-2.26	-5.91/-9.45	-7.81/-6.22	-5.49/-5.43	-7.85/-5.97	-8.8/-8.5	-8.06/-7.89	-5.52/-6.1	-6.37/-3.7	-3.48/-6.83	-6.55/-6.88	-8.24/-8.4	-6.95/-6.23	-7.56/-7.57	-7.28/-7.66	-7.01/-7.04
Θ(105°)	-6.57/-5.95	-5.46/-3.77	-3.65/-3.54	-3.33/-2.27	-0.74/-0.04	-0.29/-1.56	-2.99/-2.13	-1.93/-1.22	-0.73/-1.43	-2.84/-4.4	-6.81/-5.98	-4.94/-7.3	-4.61/-3.15	-4.61/-6.2	-9.28/-9.08	-5.92/-5.12	-5.07/-5.78	-3.57/-5.86	-8.71/-8.09	-7.6/-7.1	-6.33/-6.67	-8.79/-9.6	-9.94/-10.07	-7.84/-8.8
Θ(112.5°)	-6.92/-5.6	-5.98/-4.77	-4.38/-2.62	-1.16/-0.22	0.37/0.31	-0.25/-1.4	-3.5/-4.7	-1.76/-2.99	-1.97/-2.29	-3.79/-5.87	-8.77/-9.27	-9.47/3.7	-6.28/6.07	-7.28/-7.39	-7.62/-9.42	-7.51/-4.89	-5.69/-5.31	-4.95/-9.12	-7.52/-5.13	-3.71/-4.56	-6.53/-6.29	-3.67/-6.57	-7.22/-8.62	-8.71/-8.84
Θ(120°)	-9.72/-6.2	-3.18/-2.07	-0.29/-0.2	-0.28/-0.42	-0.12/-0.02	-0.21/-1.38	-2.7/-3.92	-4.88/-3.62	-2.63/-1.98	-2.23/-4.78	-7.5/-6.81	-5.04/-4.43	-4.57/-4.33	-7/-6.59	-7.18/-7.68	-8.33/-6.13	-7.99/-5.31	-6.77/-8.42	-8.94/-5.06	-3.6/-2.98	-6.73/-8.24	-6.74/-4.02	-3.9/-6.07	-6.32/-8.12
Θ(127.5°)	-5.68/-5.75	-5.08/-4.19	-3.4/-2.8	-1.74/-0.25	0.55/0.44	-0.16/-0.77	-1.7/-2.04	-1.8/-1.67	-1.94/-1.96	-2.01/-3.3	-5.14/-7.52	-10.21/-10.39	-9.92/-7.51	-7.28/-7.66	-11.05/-9.21	-8.38/-8.23	-7.29/-4.4	-4.84/-10.02	-10.18/-7.17	-4.84/-3.47	-3.74/-5.47	-4.28/-3.68	-4.53/-2.96	-4.32/-5.86
Θ(135°)	-4.1/-2.79	-2.35/-2.74	-2.64/-2.42	-2.23/-2.02	-2.05/-2.33	-2.39/-1.92	-1.39/-0.92	-0.5/-0.43	-0.54/-0.93	-2.01/-3.28	-5.09/-6.61	-6.44/-5.26	-4.64/-4.11	-4.29/-6.68	-5.57/-6.38	-9.59/-7.45	-5.45/-4.63	-5.07/-8.4	-7.14/-3.59	-2.21/-1.16	-2.12/-5.31	-7.99/-4.89	-6.34/-5.48	-3.33/-3.43
Θ(142.5°)	-4.3/-4.73	-3.85/-3.58	-4.71/-6.01	-7.35/-6.47	-6.28/-5.28	-4.23/-4.1	-3.51/-2.43	-1.48/-1.34	-2.62/-4.77	-6.35/-5.32	-3.39/-2.39	-1.84/-3.1	-3.5/-2.57	-2.04/-2.91	-6.23/-6.46	-6.28/-5.38	-1.4/-1.51	-4.49/-9.67	-9.8/-6.3	-3.83/-2.49	-2.39/-3.13	-3.93/-7.05	-5.02/-3.82	-4.62/-4.1
Θ(150°)	-1.13/-1.21	-1.81/-2.33	-2.18/-1.99	-1.98/-2.3	-2.53/-3.2	-3.76/-4.03	-3.94/-2.7	-1.64/-0.57	-0.26/-0.72	-2.07/-3.19	-3.83/-5.17	-5.29/-5.04	-6.61/-6.17	-6.15/-8.06	-8.57/-7.1	-5.33/-3.42	-3.19/-5.33	-7.52/-9.02	-8.04/-6.54	-5.55/-3.73	-3.09/-2.47	-1.69/-1.81	-0.81/-0.43	-0.83/-1.12
Θ(157.5°)	-0.97/-0.48	-0.37/-0.6	-0.76/-0.66	-1.1/1.8	-2.48/-3.4	-4.13/-4.51	-4.7/-7.94	-4.72/-3.79	-5.28/-4.1	-5.14/-6.05	-4.78/-4.54	-7.17/-5.22	-4.48/-4.54	-5.18/-5.82	-5.25/-4.7	-3.43/-3.5	-4.02/-5.04	-5.63/-6.55	-6.75/-6.42	-4.68/-4.46	-4.68/-5.28	-5.48/-4.82	-3.58/-3.28	-2.77/-1.41
Θ(165°)	-1.15/-1.39	-1.51/-1.93	-2.32/-3.01	-4.13/-5.54	-6.71/-7.78	-8.87/-9.2	-9.39/-9.85	-9.65/-8.28	-6.57/-6.08	-6.41/-6.78	-6.57/-6.15	-5.52/-4.49	-3.52/-2.87	-2.56/-2.82	-3.46/-3.93	-4.33/-4.69	-5.16/-5.63	-5.33/-5.24	-5.06/-4.99	-4.99/-5.25	-4.61/-3.93	-3.02/-2.45	-1.69/-1.35	-1.42/-1.14
Θ(172.5°)	-5.28/-5.9	-6.33/-6.12	-6.5/-7.06	-8.02/-8.63	-8.91/-9.52	-9.64/-8.92	-8.7/-8.4	-7.31/-6.45	-5/-4.28	-4.48/-5.37	-6.12/-5.97	-4.85/-3.87	-3.6/-3.81	-4.39/-5.39	-6.82/-8.29	-8.28/-7.75	-6.82/-5.96	-4.98/-4.9	-5.13/-5.64	-5.79/-6.12	-6.33/-6.56	-6.85/-7.09	-6.88/-5.73	-4.85/-5.24
Θ(180°)	-8.14/-8.26	-8.38/-8.4	-8.13/-8.77	-9.35/-10.05	-11.42/-11.88	-11.52/-11.35	-11.06/-10.34	-9.07/-7.39	-6.03/-5.22	-5.05/-5.48	-6.41/-7.39	-8.49/-8.46	-8.79/-9.19	-10.36/-10.87	-10.69/-10.88	-10.24/-10.03	-9.82/-10.39	-10.61/-10.79	-11.11/-11.23	-10.96/-10.38	-10.37/-9.79	-9.39/-8.78	-7.84/-7.96	-7.69/-8.07
Freq(Hz)	5.2G/Pol.	Theta	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
DG(dB)	Φ(0°)Φ(7.5°)	Φ(15°)Φ(22.5°)	Φ(30°)Φ(37.5°)	Φ(45°)Φ(52.5°)	Φ(60°)Φ(67.5°)	Φ(75°)Φ(82.5°)	Φ(90°)Φ(97.5°)	Φ(105°)Φ(112.5°)	Φ(120°)Φ(127.5°)	Φ(135°)Φ(142.5°)	Φ(150°)Φ(157.5°)	Φ(165°)Φ(172.5°)	Φ(180°)Φ(187.5°)	Φ(195°)Φ(202.5°)	Φ(210°)Φ(217.5°)	Φ(225°)Φ(232.5°)	Φ(240°)Φ(247.5°)	Φ(255°)Φ(262.5°)	Φ(270°)Φ(277.5°)	Φ(285°)Φ(292.5°)	Φ(300°)Φ(307.5°)	Φ(315°)Φ(322.5°)	Φ(330°)Φ(337.5°)	Φ(345°)Φ(352.5°)
Θ(0°)	-5.04/-4.56	-3.93/-2.99	-1.99/-2.2	-2.07/-1.87	-1.86/-2.09	-2.45/-2.75	-2.93/-3.3	-3.6/-4.08	-4.39/-4.9	-5.24/-5.36	-5.59/-5.38	-4.95/-5.43	-4.29/-4.11	-3.76/-3.27	-2.88/-2.47	-2.04/-1.62	-1.23/-1.16	-1.19/-1.52	-1.88/-2.43	-3.32/-3.82	-4.56/-5.59	-6.46/-7.02	-6.99/-6.82	-6.35/-6.67
Θ(7.5°)	-3.98/-3.97	-3.48/-2.75	-2.03/-1.59	-1.31/-1.01	-1.02/-1.11	-1.32/-1.95	-2.24/-2.95	-3.32/-3.7	-4.15/-4.89	-5.65/-6.39	-6.32/-6.11	-5.76/-5.55	-5.44/-5.03	-4.76/-4.44	-4.02/-3.79	-3.7/-3.84	-3.96/-4.01	-4.08/-4.22	-4.15/-4.27	-4.49/-4.34	-4.25/-4.2	-4.71/-4.47	-4.51/-4.08	-4.51/-4.08
Θ(15°)	-2.42/-1.94	-1.30/-0.65	-0.51/-0.5	-0.48/-0.27	-0.15/-0.28	0.23/0.02	-0.17/-0.68	-1.28/-1.77	-2.24/-2.29	-2.5/-2.94	-3.6/-3.91	-4.59/-5.1	-5.35/-5.69	-5.31/-4.73	-4.34/-3.86	-3.24/-2.83	-2.84/-3.34	-4.02/-4.76	-5.13/-5.28	-5.28/-4.51	-3.88/-3.24	-2.91/-2.67	-2.87/-2.99	-3.01/-2.78
Θ(22.5°)	-2.12/-1.16	-0.24/0.21	0.23/0.18	0.37/0.81	1.27/1.58	1.58/1.49	1.22/0.88	0.44/0.09	0.01/-0.11	-0.33/-0.68	-1.31/-1.91	-2.88/-3.64	-3.97/-3.69	-3.54/-3.63	-3.46/-2.7	-2.02/-1.58	-1.61/-1.86	-2.32/-2.69	-3.28/-3.4	-5.08/-5.12	-3.81/-2.9	-2.63/-2.59	-2.79/-2.7	-3/2.54
Θ(30°)	-1.31/-1	-0.54/0.13	1.02/1.49	1.79/2	1.73/1.29	0.69/0.6	0.79/																	













# Radiated Composite Gain Data <2.4GHz and 5GHz U-NII 1~U-NII 4>

# Appendix A

Theta (°)	1.12/1.29	1.02/1.44	2.04/2.13	2.13/1.8	1.32/1.18	2.33/3.29	3.02/2	0.44/0.56	-0.21/2.27	-0.25/0.84	1.49/1.62	1.19/0.67	0.79/1	0.35/-1.62	-2.77/-1.24	-0.52/-0.56	-3.15/-5.04	-4.03/-3.27	-3.73/-5.56	-7.2/6.8	-5.88/-3.23	-1.69/-1.42	-0.47/0.28	0.84/1.19
Theta (82.5°)	1.39/1.34	1.51/1.7	2.1/1.97	2.1/1.97	1.68/2.38	2.95/2.61	1.22/0.49	0.34/0.35	-0.66/-1.08	-1.2/0.18	0.22/0.39	0.31/0.08	0.35/0.11	0.11/-1.17	-1.56/-1.47	-1.81/-2.74	-2.36/-2.02	-1.54/-1.77	-2.88/-5.36	-4.52/-3.43	-3.39/-2.73	-0.69/-0.55	-0.82/-0.4	0.55/0.55
Theta (90°)	0.29/1.1	0.41/0.68	1.53/0.95	0.38/-1.35	-0.34/1.74	2.8/2.8	1.28/0.4	0.11/0.25	-0.47/-0.63	-1.56/-0.7	0.14/0.49	0.77/-0.48	-0.07/1.16	-1.29/-2.07	-1.49/-1.67	-0.90/31	0.12/-0.56	-0.61/-0.16	-1.32/-4.78	-5.21/-3.28	-2.45/-0.3	0.73/0.3	0.19/1.1	0.87/0.48
Theta (97.5°)	-0.79/0.31	0.26/0.26	0.39/-1.19	-1.82/-1.36	-0.11/-1.41	2.09/1.85	1.42/1.77	1.21/0.76	-0.24/-0.29	-3.08/-0.95	-0.94/-0.18	0.04/0.14	-0.18/0.62	-1.72/-3.45	-3.61/-2.51	-2.25/-1.38	-1.33/-1.16	-1.79/-0.4	-1.74/-3.96	-2.91/-1.52	-0.09/-0.76	-0.83/-0.36	-0.45/0.18	1.02/-0.09
Theta (105°)	-1.21/-0.16	0.15/0.65	-0.33/-0.97	-1.22/0.17	1.38/2.73	2.67/1.8	1.13/2.3	3.55/3.24	0.43/-2.27	-4.19/-1.75	-2.07/0.96	-0.74/-1.56	-0.10/0.62	-1.85/-3.74	-4.58/-3.51	-1.62/-1.42	-1.21/-0.71	-0.83/-1.9	-2.81/-3.27	-3.12/-1.46	-1.95/-1.69	-1.83/-2.2	-2.73/-2.24	-1.27/0.95
Theta (112.5°)	-2.91/-1.94	-0.8/0.14	1.13/0.29	-1.4/-1.37	-0.5/1.24	2.63/2.2	0.86/1.4	2.65/2.47	0.88/-1.42	-1.97/-1.65	-2.14/-0.3	-0.26/0.28	-0.54/2.86	-3.58/4.19	-5.75/-6.21	-4.16/-3.95	-2.92/-1.67	-1.49/-0.21	0.3/-1.72	-1.63/-2.12	-1.37/-2.18	-2.32/-3.79	-2.47/-2.32	-1.61/-2.18
Theta (120°)	-2.46/-1.05	0.06/-0.15	0.04/-0.26	-1.7/-2.04	-0.28/1.15	1.56/0.79	0.35/0.27	1.21/1.91	1.57/0.45	-0.51/-1.68	-1.66/-0.73	-1.29/-0.89	-1.06/-2.09	-3.85/-3.48	-4.12/-8.11	-6.21/-5.11	-2.6/-4.4	-2.84/-1.45	-2.46/-6.07	-4.11/-3.31	-4.17/-3.15	-2.66/-3.69	-3.61/-2.51	-2.94/-2.85
Theta (127.5°)	-3.58/-2.5	-2.54/-1.54	-2.22/-2.94	-2.98/-1.92	0.01/1.34	1.26/0.59	1.26/2.39	2.37/1.68	0.21/0.02	-0.5/-1.06	-0.37/-0.07	-1.05/-1.27	-0.91/-2.02	-4.41/-4.07	-3.62/-7.56	-6.75/-2.21	-3.56/-2.65	-1.95/-2.26	-5.17/-4.79	-4.91/-3.63	-2.97/-3.99	-3.55/-4.1	-3.52/-1.12	-1.87/-3.39
Theta (135°)	-5.08/-3.38	-3.09/-2.31	-0.73/-1.46	-1.45/-0.58	0.68/0.76	0.17/-0.24	-0.36/0.2	0.78/0.25	-0.67/-1.29	-1.72/-1.67	-0.63/-1.33	-1.64/-1.64	-3.66/-5.93	-4.11/-4.83	-7.05/-9.23	-5.85/-3.61	-3.12/-6.14	-4.97/-6.02	-6.21/-4.21	-3.9/-7.8	-1.96/-1.95	-6.22/-5.88	-3.53/-2.46	-0.5/-1.4
Theta (142.5°)	-3.93/-5.07	-1.75/-1.59	-2.87/-3.21	-2.67/-3.3	-3.99/-4.22	-4.17/-4.18	-2.99/-2.53	0.15/-2.28	-3.28/-3.98	-4.66/-3.35	-3.04/-3.32	-3/3.56	-4.86/-6.44	-6.53/-6.44	-6.82/-8.28	-5.73/-6.25	-4.17/-6.14	-4.14/-4.95	-5.59/-5.35	-4.5/-5.6	-4.45/-4.55	-5.59/-8.92	-7.45/-9.88	-2.55/-1.93
Theta (150°)	-1.38/-1.44	-1.2/-1.94	-2.86/-2.73	-2.95/-3.64	-5.1/-5.91	-5.35/-5.17	-4.92/-4.57	-4.87/-5.45	-6.68/-0.04	-7.61/-5.66	-4.52/-3.37	-2.59/-1.39	-1.44/-2.28	-3.03/-3.73	-3.37/-1.98	-2.31/-4.95	-7.6/-6.5	-3.08/-2.6	-3.34/-3.33	-3.04/-2.9	-3.6/-4.52	-3.52/-1.71	-1.29/-0.36	-0.15/-0.72
Theta (157.5°)	1.55/0.1	-1.82/-3.91	-6.28/-7.73	-7.39/-6.19	-5.47/-5.18	-5.36/-5.51	-5.37/-4.79	-4.62/-5.23	-6.81/-7.95	-7.9/-7.65	-7.66/-6.91	-6.47/-6.19	-6.43/-6.64	-5.96/-4.36	-3.66/-4.07	-6.67/-9.59	-7.86/-7.16	-5.28/-3.93	-4.18/-5.21	-5.51/-6.29	-6.15/-5.29	-4.92/-3.02	-0.69/0.9	1.73/1.98
Theta (165°)	-0.64/-1.54	-2.79/-4.23	-5.05/-4.85	-4.54/-5.27	-6.23/-6.71	-7.14/-6.84	-6.17/-6.08	-6.09/-6.33	-6.3/-5.58	-4.73/-4.02	-3.61/-3.43	-2.88/-2.64	-2.89/-3.27	-4.24/-4.99	-5.27/-5.78	-6.43/-6.13	-5.5/-5.41	-5.62/-5.9	-6.11/-6.37	-6.01/-4.93	-2.94/-1.16	-0.48/-0.37	-0.29/-0.39	-0.49/-0.52
Theta (172.5°)	-3.88/-3.91	-4.96/-6	-6.61/-7.02	-7.59/-8.37	-8.87/-9.4	-8.11/-7.51	-7.29/-7.41	-7.35/-7.38	-6.82/-6.65	-6.59/-5.79	-5.43/-4.78	-4.99/-5.65	-6.58/-7.37	-7.79/-8.52	-9.28/-9.42	-9.4/-8.6	-8.45/-8.11	-8.33/-7.89	-7.33/-6.33	-5.3/-4.64	-4.09/-3.09	-3.09/-3.72	-4.41/-5.06	-4.8/-4.3
Theta (180°)	-6.49/-6.44	-7.82/-7.83	-7.79/-7.76	-8.14/-8.21	-8.16/-7.75	-7.6/-7.61	-7.38/-1.13	-6.13/-5.04	-4.27/-3.86	-3.76/-3.78	-3.72/-3.81	-3.81/-3.92	-4.18/-4.65	-5.02/-5.34	-5.85/-6.51	-6.77/-7.84	-8.98/-10.65	-11.01/-10.53	-9.39/-8.51	-8.09/-7.44	-6.68/-6.52	-7.15/-8.81	-9.59/-9	-8.31/-7.89
Freq(Hz)	5.7855G/Pol.	Phi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG(dB)	Phi(0°)Phi(7.5°)	Phi(15°)Phi(22.5°)	Phi(30°)Phi(37.5°)	Phi(45°)Phi(52.5°)	Phi(60°)Phi(67.5°)	Phi(75°)Phi(82.5°)	Phi(90°)Phi(97.5°)	Phi(105°)Phi(112.5°)	Phi(120°)Phi(127.5°)	Phi(135°)Phi(142.5°)	Phi(150°)Phi(157.5°)	Phi(165°)Phi(172.5°)	Phi(180°)Phi(187.5°)	Phi(195°)Phi(202.5°)	Phi(210°)Phi(217.5°)	Phi(225°)Phi(232.5°)	Phi(240°)Phi(247.5°)	Phi(255°)Phi(262.5°)	Phi(270°)Phi(277.5°)	Phi(285°)Phi(292.5°)	Phi(300°)Phi(307.5°)	Phi(315°)Phi(322.5°)	Phi(330°)Phi(337.5°)	Phi(345°)Phi(352.5°)
Theta(0°)	-5.63/-4.54	-2.53/-1.08	0.18/1.02	1.58/2.05	2.25/2.3	2.21/1.96	1.66/1.22	1.12/1.02	0.86/0.38	-0.23/-1.19	-2.35/-3.81	-5.66/-6.06	-5.91/-4.47	-2.62/-0.87	0.19/0.91	1.38/1.6	1.79/1.92	1.97/1.91	1.88/1.59	1.27/0.84	0.26/0.42	-0.75/-1.42	-2.56/-4.37	-7.55/-6.41
Theta(7.5°)	-5.43/-4.03	-2.14/-1.24	-0.38/0.54	0.94/1.32	1.74/2.04	2.11/2	1.64/1.36	1.35/1.52	1.47/0.99	0.49/0.23	-1.03/-2.07	-3.37/-5.13	-6.26/-5.73	-4.66/-3.04	-1.67/-0.53	0.48/1.14	1.52/1.75	1.89/1.83	1.6/1.16	0.58/-0.04	-0.82/-1.5	-2.08/-3.42	-5.43/-7.04	-7.31/-6
Theta(15°)	-5.38/-4.28	-3.63/-3.37	-2.48/-1.36	-0.50/-1.9	0.85/1.4	1.82/0.6	2.01/2.06	1.72/1.39	0.99/0.73	0.2/0.43	-1.53/-2.9	-4.2/-5.11	-5.63/-5.37	-4.5/-3.24	-2.03/-1.01	-0.09/0.6	0.99/1.23	1.21/1.03	0.57/0.13	-0.51/-1.41	-2.35/-3.36	-4.43/-5.11	-6.16/-6.13	-6.2/-5.85
Theta(22.5°)	-4.09/-5.33	-5.6/-4.52	-3.34/-1.81	-0.71/-0.12	0.4/1.11	1.63/2.03	2.26/2.28	2.12/1.81	1.37/0.76	0.02/-1.33	-3.18/-5.37	-7.46/-8.7	-8.98/-7.35	-5.14/-3.13	-1.75/-0.89	-1.07/0.53	0.97/1.1	0.84/0.31	-0.6/-1.57	-2.47/-3.16	-3.48/-3.27	-2.94/-2.69	-2.47/-2.69	-3.07/-3.96
Theta(30°)	-2.33/-2.61	-2.13/-1.71	-1.23/-0.92	-0.67/-0.45	-0.07/0.69	0.99/1.51	2.17/2.42	2.48/2.1	1.48/0.87	-0.3/-2.05	-4.8/-6.94	-7.4/-7.52	-8.77/-7.56	-6.28/-5.13	-3.99/-2.98	-1.58/-3.02	0.17/0.24	0.12/0.26	-0.64/-1.5	-2.33/-2.36	-1.81/-1.29	-0.98/-1.09	-1.38/-1.59	-1.38/-1.59
Theta(37.5°)	-3.7/-4.24	-4.75/-3.73	-2.71/-1.3	-0.19/0.27	0.24/0.02	0.17/0.55	1.08/1.45	1.68/1.57	0.9/-0.18	-1.51/-3.64	-6.85/-8.86	-10.07/-8.41	-6.09/-4.77	-3.6/-2.79	-0.5/-0.08	-0.04/-0.13	-0.37/0.77	-0.23/-0.19	-0.57/-0.93	-0.01/1.38	-1.78/-1.72	-1.89/-2	-1.89/-2	-3.27/-3.25
Theta(45°)	-5.09/-5.62	-5.75/-4.55	-2.07/-0.69	-0.28/-0.5	-0.62/-0.82	-0.82/-0.87	-0.89/-0.56	0.24/0.81	0.76/-0.35	-2.42/-4.63	-7.04/-7.27	-6.88/-7.24	-6.75/-6.43	-4.89/-3.08	-2.21/-1.28	-0.71/-0.5	-0.16/-0.58	-2.15/-2.36	-1.4/-0.48	-0.07/-0.06	-1.31/-1.92	-2.71/-3.26	-3.61/-3.95	-4.16/-4.35
Theta(52.5°)	-1.76/-1.43	-2.57/-3.16	-3.16/-2.92	-2.57/-2.69	-2.65/-2.52	-1.97/-1.41	-0.99/-1.21	-1.09/-0.82	-0.9/-1.83	-3.54/-4.18	-4.7/-5.97	-6.41/-5.67	-4.98/-5.27	-4.14/-2.87	-2.22/-3.18	-0.86/-1.78	-2.76/-2.71	-2.46/-2.07	-1.89/-2.19	-3.06/-3.68	-3.96/-3.33	-2.32/-1.69	-2.14/-2.24	-2.14/-2.24
Theta(60°)	-5.89/-6.26	-5.81/-4.91	-4.19/-2.82	-2.79/-3.12	-3.28/-3.37	-2.42/-2.01	-1.01/0.21	-1.24/-2.37	-3.23/-4.02	-4.64/-4.23	-3.99/-4.6	-5.82/-8.06	-7.48/-6.62	-4.71/-3.92	-1.97/-2.46	-3.34/-4	-3.93/-4.31	-3.96/-3.74	-4.28/-4.2	-3.29/-3.8	-4.58/-3.65	-2.87/-3.58	-4.07/-3.58	-4.07/-3.58
Theta(67.5°)	-8.18/-6.53	-5.8/-5.4	-5.09/-4.27	-3.66/-3.3	-2.63/-2.1	-0.99/-0.54	-0.59/-1.37	-2.82/-2.5	-2.11/-2.57	-4.37/-6.17	-5.33/-3.46	-3.28/-3.87	-4.58/-4.47	-3.65/-4.75	-5.28/-4.75	-3.27/4.18	-3.28/-3.34	-4.84/-4.05	-3.05/-3.16	-4.02/-3.81	-3.79/-3.81	-4.66/-5.79	-5.42/-6.34	-7.98/-7.93
Theta(75°)	-6.41/-6.07	-5.82/-5.39	-4.92/-5.35	-5.26/-5.8	-5.48/-4.01	-1.97/-1.36	-1.75/-2.02	-2.81/-2.77	-2.55/-3.78	-5.29/-4.17	-2.98/-2.03	-1.82/-2.54	-3.25/-3.74	-3.72/-5.71	-6.41/-6.59	-5.56/-5.53	-3.22/-2.59	-3.12/-3.32	-2.95/-2.85	-2.57/-2.92	-4.13/-4.44	-5.51/-7.7	-7.76/-7.71	-8.54/-8.11
Theta(82.5°)	-9.5/-8.61	-6.61/-4.8	-5.07/-6.75	-8.12/-8.99	-6.16/-3.94	-2.6/-1.9	-0.91/0.29	-1.09/-0.82	-0.9/-1.83	-3.54/-4.18	-4.7/-5.97	-6.41/-5.67	-4.98/-5.27	-4.14/-2.87	-2.22/-3.18	-0.86/-1.78	-2.76/-2.71	-2.46/-2.07	-1.89/-2.19	-3.06/-3.68	-3.96/-3.33	-2.32/-1.69	-2.14/-2.24	-2.14/-2.24
Theta(90°)	-6.57/-6.35	-6.41/-5.33	-5.58/-5.29	-5.29/-5.96	-6.18/-5.35	-3.61/-1.19	0.50/0.59	0.89/0.84	-0.31/0.89	-2.02/-3.89	-5.26/-6.09	-5.36/-4.02	-4.07/-3.36	-3.41/-5.09	-4.63/-3.21	-2.91/-0.88	-0.76/-1.57	-1.82/-1.69	-1.85/-0.99	-0.27/-1.26	-2.73/-4.1	-3.58/-4.52	-6.2/-9.12	-11.92/-9.51
Theta(97.5°)	-8.56/-7.22	-5.93/-6.68	-3.62/-3.41	-4.4/-5.1	-4.02/-3.4	-1.13/-0.36	-0.21/0.51	0.48/0.04	0.34/0.07	0.25/-0.48	-1.26/-1.78	-5.05/-6.08	-3.5/-2.73	-4.49/-6.12	-9.01/-8.52	-3.10/1.3	-0.47/-1.14	-0.27/-1.22	-0.54/-1.21	-1.99/-2.42	-2.41/-3.93	-5.85/-8.19	-9.01/-9.78	-7.99/-8.34
Theta(105°)	-6.79/-7.27	-5.68/-5.23	-3.08/-3.32	-3.08/-1.63	-0.33/-0.29	-1.19/-1.58	-1.92/-1.76	-0.97/0.36	-0.15/-0.87	-0.79/0.07	-0.12/-0.98	-2.79/-3.6	-4.2/-3.76	-3.89/-5.56	-6.98/-3.4	-4.29/-2.66	-1.89/-2.23	-2.2/-3.76	-2.29/-2.59	-1.88/-2.04	-2.41/-2.03	-5.57/-9.2	-7.97/-7.77	-7.4/-5.72
Theta(112.5°)	-8.73/-7.95	-6.88/-7.07	-6.56/-4.82	-2.95/-1.14	-0.01/0.3	-0.46/-0.84	-0.89/-1.48	0.08/0.67	-0.16/-1.37	-2.21/-3.87	-5.91/-4.11	-4.89/-5.69	-6.24/-3.89	-3.7/-7.47	-9.77/-10.16	-6.73/-3.41	-2.32/-3.41	-2.32/-2.48	-1.1/-1.68	-5.				



















# Radiated Composite Gain Data <2.4GHz and 5GHz U-NII 1~U-NII 4>

# Appendix A

Θ(97.5°)	-7.39/-6.44	-4.14/-3.32	-3.08/-1.81	-2.15/-1.58	0.16/1.24	2.25/2.68	1.41/0.06	1.46/2.38	3.26/2.62	1.98/0.35	-2.04/2.82	-4.65/-6.39	-6.6/-5.93	-6.83/-8.22	-10.52/-8.29	-3.28/0.7	-0.44/-1.14	-2.21/3.07	-1.37/-1.35	-1.99/-3.75	-3.97/-4.16	-5.29/-5.89	-9.35/-9.67	-7.27/-7.6
Θ(105°)	-7.96/-8.77	-6.07/-4.51	-3.45/-2.41	-1.24/0.28	2.12/4.8	2.1/4.48	0.91/1.18	2.36/3.4	2.63/1.33	0.63/0.32	-1.12/2.55	-4.9/-7.19	-7.78/-8.53	-7.26/-9.24	-10.04/-9.29	-6.85/-5.09	-3.6/-3.07	-3.55/-4.57	-3.81/-2.85	-3.61/4.43	-3.38/-3.1	-5.51/-7.89	-7.44/-9.38	-8.07/-7.32
Θ(112.5°)	-8.45/-9.65	-8.31/-8.18	-5.61/-3.26	-0.93/0.52	2/2.58	2.49/2.32	2.04/2.06	3.31/3.41	2.34/0.94	0.12/2.39	-5.35/-5.4	-5.99/-6.92	-6.57/-4.61	-4.71/-8.61	-9.71/-12.17	-7.13/-4.34	-2/3.49	-3.74/-4.18	-2.44/-4.3	-7.43/-4.6	-4.69/-5.79	-7.28/-8.47	-6.72/-6.87	-8.71/-7.87
Θ(120°)	-4.59/-5.06	-5.31/-5.56	-5.36/-3.05	-0.68/0.87	1.68/2.27	2.63/2.64	2.49/2.17	2.1/1.7	1.17/0.79	-1.6/-4.35	-5.74/-5.44	-5.65/-6.4	-6.6/-8.18	-8.51/-8.53	-6.97/-5.05	-4.84/-2.16	-2.66/-1.72	-3.37/-4.97	-2.23/-2.02	-6.83/-4.64	-2.61/-3.71	-6.1/-6.84	-6.4/-6.95	-3.61/-3.52
Θ(127.5°)	-6.34/-7.49	-7.9/-5.92	-3.45/-1.6	-0.14/0.37	1.08/1.37	1.38/1.79	1.66/1.41	1.27/0.87	0.51/-0.66	-2.34/-4.16	-5.02/-3.58	-4.04/-5.93	-5.86/-5.06	-5.59/-7.91	-8.98/-8.66	-5.73/-3.77	-2.83/-1.52	-4.09/-6.62	-2.73/-2.7	-3.93/-4.62	-2.49/-4.11	-5.15/-6.24	-9.59/-8.98	-4.88/-3.82
Θ(135°)	-4.32/-4.97	-3.99/-4.08	-4.12/-3.43	-1.34/0.55	1.31/1.76	2.04/2.09	1.61/0.86	0.15/-0.85	-1.6/-2.14	-3.79/-5.88	-6.45/-6.18	-5.83/-6.25	-5.57/-4.1	-6.37/-9.81	-7.68/-7.5	-4.93/-3	-1.74/-1.71	-4.95/-5.04	-3.85/-4.34	-4.53/-4.41	-5.23/-4.35	-4.31/-5.97	-5.59/-5.83	-6.19/-3.79
Θ(142.5°)	-2.81/-2.51	-1.75/-1.75	-1.09/-0.4	-0.26/0.04	0.05/0.14	0.44/0.71	1/1.14	0.73/0.4	-1.71/-2.54	-3.99/-5.64	-6.2/-5.01	-3.36/-3.35	-2.23/-3.27	-7.14/-10.39	-9.08/-7.15	-7.15/-5.62	-4.64/-4.14	-5.67/-5.07	-5.44/-4.79	-5.31/-4.74	-6.78/-7.04	-5.99/-5.63	-6.53/-4.59	-3.65/-2.76
Θ(150°)	-0.11/-1.52	-1.33/-1.67	-2.54/-3.26	-3.13/-2.45	-1.51/-0.69	-0.02/0.38	0.53/0.58	0.17/0.67	-2.71/-4.78	-6.95/-7.55	-5.5/-5.07	-1.43/-4.99	-4.78/-4.52	-4.6/-5.63	-5.84/-6.03	-4.66/-5.93	-6.48/-6.06	-5.1/-4.72	-6.38/-8.71	-7.22/-7.57	-7.63/-6.97	-6.1/-5.05	-3.49/-1.69	
Θ(157.5°)	-1.41/-0.86	-1.56/-2.19	-2.36/-2.64	-3.03/-3.02	-2.58/-1.9	-1.31/-0.84	-0.78/-1.03	-0.13/-2.5	-4.16/-6.38	-8.35/-7.81	-5.14/-3.48	-1.84/-0.54	0.2/0.37	-0.04/-0.64	-1.55/-3.16	-5.45/-7.94	-9.14/-8.51	-6.76/-5.43	-4.65/-4.63	-5.39/-5.92	-6.26/-6.38	-5.04/-3.59	-2.59/-1.55	-0.48/-0.03
Θ(165°)	-3.38/-2.34	-2.41/-3.07	-3.44/-3.17	-3.1/-2.96	-2.55/-2.3	-2.23/-2.28	-3.12/-3.88	-5.16/-6.36	-6.9/-7.19	-7.87/-9.48	-9.37/-7.9	-5.49/-3.38	-2.12/-1.54	-1.56/-1.89	-2.44/-3.5	-4.94/-5.62	-5.88/-6.26	-6.28/-6.33	-6.51/-6.36	-6.57/-7.01	-6.5/-5.48	-5.27/-6.04	-7.29/-7.71	-6.96/-5.53
Θ(172.5°)	-6.28/-6.91	-6.43/-5.54	-5.04/-4.89	-4.63/-4.85	-5.06/-5.25	-5.06/-5.16	-5.48/-6.48	-7.71/-8.42	-9.48/-11.13	-10.64/-10.44	-10.28/-9.19	-7.71/-5.8	-4.57/-3.37	-2.47/-2.29	-2.44/-2.91	-3.37/-4.09	-4.47/-4.86	-5.13/-4.55	-5.09/-5.04	-5.75/-6.26	-7.14/-7.44	-7.83/-8.65	-8.53/-7.47	-6.53/-5.86
Θ(180°)	-7.47/-7.55	-6.63/-6.64	-5.16/-5.03	-5.05/-5.4	-5.5/-5.43	-5.39/-5.3	-5.29/-5.57	-5.44/-5.58	-5.46/-5.31	-5.51/-5.77	-6.02/-6.43	-7.21/-7.75	-8.95/-9.87	-10.91/-10.57	-10.04/-9.08	-8.36/-7.69	-6.91/-6.44	-6.66/-6.74	-6.55/-6.88	-7.3/-8.4	-8.26/-8.56	-8.69/-8.64	-7.82/-7.01	-6.91/-7.21
Freq(Hz)	5.885G/Pol.	Theta	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG(dB)	Φ(0°)Φ(7.5°)	Φ(15°)Φ(22.5°)	Φ(30°)Φ(37.5°)	Φ(45°)Φ(52.5°)	Φ(60°)Φ(67.5°)	Φ(75°)Φ(82.5°)	Φ(90°)Φ(97.5°)	Φ(105°)Φ(112.5°)	Φ(120°)Φ(127.5°)	Φ(135°)Φ(142.5°)	Φ(150°)Φ(157.5°)	Φ(165°)Φ(172.5°)	Φ(180°)Φ(187.5°)	Φ(195°)Φ(202.5°)	Φ(210°)Φ(217.5°)	Φ(225°)Φ(232.5°)	Φ(240°)Φ(247.5°)	Φ(255°)Φ(262.5°)	Φ(270°)Φ(277.5°)	Φ(285°)Φ(292.5°)	Φ(300°)Φ(307.5°)	Φ(315°)Φ(322.5°)	Φ(330°)Φ(337.5°)	Φ(345°)Φ(352.5°)
Θ(0°)	3.28/3.26	3.28/3.17	2.61/2.44	1.97/1.08	0.11/-0.89	-1.98/-2.9	-3.5/-3.76	-3.09/-1.92	-0.65/0.46	1.42/2.12	2.65/2.92	2.94/2.88	2.81/2.72	2.43/1.96	1.83/1.53	1.07/0.4	-0.46/-1.66	-2.72/-3.31	-3.65/-3.07	-2.26/-0.9	0.35/1.28	1.81/2.31	2.75/3.21	3.43/4.7
Θ(7.5°)	2.24/1.9	1.58/1.44	1.09/0.95	0.95/0.47	0.01/-0.59	-1.48/-2.15	-2.95/-3.46	-3.27/-2.45	-1.45/-0.49	0.56/1.57	2.39/2.96	3.27/3.44	3.4/3.23	3.09/2.92	2.49/2.04	1.36/0.46	-0.73/-2.17	-3.69/-4.27	-4.08/-2.96	-1.10/-0.12	0.96/1.67	2.06/2.31	2.48/2.49	2.64/2.45
Θ(15°)	0.97/0.38	-0.19/-0.24	-0.41/-0.54	-0.72/-1.08	-1.12/-1.62	-2.29/-2.13	-2.36/-2.77	-3.02/-4.21	-1.57/-0.25	0.88/1.75	2.32/2.63	2.87/2.96	2.91/2.93	2.9/2.78	2.41/1.79	1.05/0.03	-1.45/-3.3	-5.05/-5.81	-5.16/-3.45	-1.67/-0.33	0.73/1.49	1.91/1.93	1.71/1.43	1.62/1.36
Θ(22.5°)	0.38/0.25	0.27/0.68	1.04/1.14	0.88/0.5	0.06/-0.87	-1.52/-1.78	-1.93/-2.48	-2.81/-2.26	-0.46/0.88	1.85/2.45	2.67/2.85	2.62/2.79	2.82/2.71	2.46/2.12	1.73/1.24	0.58/-0.22	-1.15/-3.5	-5.06/-5.79	-4.71/-2.64	-1.49/-0.63	0.06/0.36	0.25/0.15	-0.02/0.38	0.80/0.62
Θ(30°)	1.18/1.4	1.65/2.01	2.42/4.5	2.06/1.69	0.95/-0.02	-0.77/-1.1	-1.28/-1.78	-1.74/-1.41	-0.31/1.32	2.51/2.67	2.31/5.5	0.85/0.76	1.03/1.29	1.38/1.17	0.86/0.54	0.33/-0.3	-1.59/-2.9	-4.18/-5.26	-4.94/-3.92	-3.02/-1.89	-1.33/-1.2	-0.94/-0.61	-0.44/0.14	0.49/0.94
Θ(37.5°)	1.49/2.24	2.42/2.58	2.54/2.15	1.58/1.26	0.85/0.45	0.15/-0.13	-0.74/-0.86	-0.84/-0.65	-0.61/0.47	1.71/1.88	1.29/0.71	0.49/0.62	1.1/1.7	1.7/0.98	0.1/-0.78	1.42/-1.5	-1.52/-2.4	-3.27/-3.88	-4.03/-4.39	-3.19/-3.01	-3.24/-2.49	-2.11/6.9	-2.1/2.05	-1.24/0.41
Θ(45°)	2.5/3.07	2.87/2.63	2.42/2.31	1.56/0.95	0.88/1.14	1.32/1.09	0.36/0.72	-1.28/-1.06	-0.29/0.61	1.89/2.8	2.36/1.39	1.23/1.41	1.53/1.59	1.47/1.04	0.24/0.23	0.21/-0.12	-1.41/-2.25	-3.77/-6.05	-5.67/-4.5	-5.07/-4.37	-3.21/2.95	-2.31/1.48	-2.0/2.88	1.49/1.87
Θ(52.5°)	1.78/2.07	1.92/2.05	2.35/2.59	1.98/1.06	0.61/0.76	1/1.21	1.26/0.78	0.03/0.21	1.34/4.23	2.97/2.86	1.98/0.83	0.71/1.14	1.85/2.3	2.31/1.94	0.79/0.3	-0.8/-1.68	-2.56/-4.33	-7.04/-7.66	-7.9/-8.67	-4.6/-2.98	-2.61/-2.87	-3.15/-2.3	-1.32/0.41	1.19/1.26
Θ(60°)	0.05/1.17	1.97/2.69	2.86/2.96	2.05/1.36	0.87/0.97	1.02/1.26	2.09/2	1.27/0.86	1.17/1.5	1.78/2.12	1.96/1.06	0.69/0.32	0.36/0.25	0.27/0.26	0.04/0.43	-1.41/-1.99	-3.04/-4.74	-6.94/-10.16	-8.53/-7.13	-6.2/-5.51	-6.85/-7.96	-6.28/-4.73	-4.27/2.78	-1.84/0.71
Θ(67.5°)	-4.93/-2.84	-0.39/0.5	0.99/1.57	0.88/-0.11	-0.83/-0.6	-0.28/0.6	1.29/1.73	2.03/1.23	0.68/1.06	1.71/2.49	2.77/1.74	0.6/-0.36	-1.23/-1.35	-1.01/-0.46	-0.3/-0.92	-2.64/-3.88	-3.41/-3.61	-5.42/-7.85	-11.58/-8.89	-6.14/-7.95	-10.01/-9.38	-8.2/-6.97	-5.87/-5.29	-4.89/-4.94
Θ(75°)	-4.84/-4.89	-3.96/-2.44	-1.0/-4.4	-1.37/-3.51	-4.23/-3.4	-1.76/0.16	1.72/3.5	2.62/2.1	1.35/0.2	0.87/1.29	2.31/0.79	-1.11/-1.89	-2.69/-2.55	-2.51/-2.37	-2.87/-3.95	-5.17/-7.03	-8.89/-8.18	-5.85/-4.99	-6.65/-5.97	-6.8/-7.48	-6.73/-6.56	-4.85/-4.5	-4.06/-5.72	
Θ(82.5°)	-6.61/-5.56	-5.29/-3.21	-2.26/-1.18	-2.17/-3.14	-4.46/-3.16	-0.75/0.67	1.32/2.17	2.51/1.9	0.53/0.28	0.92/1.5	2.0/5.5	-1.05/-3.08	-3.06/-2.37	-3.82/-3.39	-2.95/-2.69	-3.37/-3.73	-5.65/-5.95	-8.64/-10.71	-7.26/-6.28	-6.29/-7.6	-6.84/-9.21	-6.75/-8.88	-6.95/-6.72	-4.86/-5.19
Θ(90°)	-4.39/-3.65	-3.7/-3.26	-3.85/-4.04	-4.76/-4.19	-2.2/-0.61	0.70/0.91	1.34/1.83	2.21/5.7	0.05/-0.55	-0.5/-0.3	0.21/-1.12	-2.75/-5.6	-7.47/-5.07	-3.79/-3.69	-3.21/-3.35	-3.21/-3.13	-2.51/-2.72	-4.56/-5.46	-6.06/-9.03	-8.7/-5.83	-6.68/-7.72	-6.24/-7.63	-7.82/-8.01	-6.27/-3.92
Θ(97.5°)	-3.14/-3.25	-3.41/-3.14	-2.76/-4	-4.71/-2.99	0.25/2.38	2.62/1.9	1.49/1.88	2.08/0.77	-0.34/-0.32	-0.1/-0.33	-0.94/-2.59	-4.03/-5.59	-6.05/-4.85	-3.99/-5.19	-5.42/-5.33	-4.42/-2.66	-1.12/-2.77	-4.5/-3.81	-5.11/-6	-7.02/-6.88	-7.92/-11.36	-10.84/-8.6	-8.17/-6.84	-6.62/-3.82
Θ(105°)	-5.62/-6.51	-4.62/-3.27	-1.27/-0.93	-0.91/0.22	1.37/1.92	1.97/2.36	1.66/1.87	1.69/0.08	-1.98/-1.41	-0.09/-0.24	-0.43/-1.83	-3/2.63	-4.09/-4.88	-4.79/-6.09	-6.31/-6.49	-4.44/-3.51	-2.94/-2.72	-3.84/-6.08	-7.8/-9.18	-7.42/-12.24	-12.19/-8.33	-6.06/-5.85	-6.95/-6.6	-6.09/-5.64
Θ(112.5°)	-5.03/-4.58	-3.01/-2.11	-0.94/0.31	-0.22/0.35	0.07/0.89	0.84/0.64	1.02/2.07	2.35/1.3	-0.31/-1.17	-0.35/-0.64	-0.45/-0.59	-0.38/-0.91	-1.53/-3.67	-4.53/-6.78	-7.36/8.11	-6.61/-5.02	-2.44/-4.21	-5.08/-5.9	-5.45/-7.24	-7.62/-6.4	-8.91/-8.41	-9.36/-10.52	-8.83/-7.99	-6.78/-6.14
Θ(120°)	-5.87/-3.79	-1.62/-0.58	-0.65/0.29	1.21/4.4	1.67/0.87	0.33/0.58	1.32/1.93	2.38/2.5	2.13/2.08	1.39/0.95	0.08/-0.85	-1.47/-2.49	-2.48/-3.44	-4.33/-5.48	-5.54/-8.71	-8.87/-8.41	-5.01/-5.03	-6.94/-6.53	-4.9/-7.25	-6.49/-8.68	-10.17/-8.74	-8.38/-6.27	-6.29/-6.04	-5.72/-5.24
Θ(127.5°)	-5.62/-4.98	-5.14/-4.07	-2.28/-0.34	1.1/1.87	1.64/0.99	-0.01/0.76	1.72/2.34	2.31/2.29	2.72/2.59	1.87/0.94	0.3/-1.03	-2.01/-3.31	-2.68/-3.65	-5.71/-3.2	-3.47/-6.68	-8.23/4.84	-3.47/-4.74	-5.79/-6.06	-5.65/-8.01	-7.08/-6.19	-7.06/-8.41	-7.11/-12	-9.31/-8.88	-4.87/-3.95
Θ(135°)	-7.94/-6.38	-4.86/-5.46	-3.23/-1.98	-0.40/0.98	1.76/1.55	0.82/0.63	1.95/2.49	2.32/2.5	2.43/2.03	1.17/-0.1	-1.24/-3	-3.78/-3.71	-1.9/-2.68	-1.71/-0.85	-2.22/-4.76	-8.25/-4.49	-3.7/-5.38	-8.7/-9.32	-5.8/-6.39	-9.17/-7.9	-7.19/-7.35	-7.8/-6.38	-7.22/-7.26	-4.91/-5.58
Θ(142.5°)	-4.62/-5.74	-2.29/-0.8	-0.62/0.08	0.64/0.89	0.4/-0.64	-1.25/-2.25	-2.28/-1.37	-0.92/-0.86	-0.52/-0.23	-1.02/-1.5	-1.93/-1.59	-2.35/-2.68	-4.77/-8.18	-7.66/-6.81	-7.23/-6.64	-6.97/-4.55	-2.69/-3.8	-5.36/-8.19	-6.38/-3.41	-3.92/-10.59	-7.19/-6.6	-7.6/-5.58	-3.28/-4.27	-5.73/-7.97
Θ(150°)	-1.73/-0.56	-0.30	0.28/0.31	-0.32/-1.73	-3.7/-5.41	-5.38/-4.11	-2.85/-2.77	-2.96/-2.51	-2.2/-2.65	-3.53/-2.77	-1.27/-0.97	-1.5/-0.77	-1.04/-2.41	-3.17/-2.33	-2.49/-3.03	-4.16/-5.97	-5.99/-5.45	-5.4/-5.9	-6/-6.43	-6.78/-8.44	-10.82/-9.03	-5.19/-3.54	-2.64/-2.01	-2.39/-2.95
Θ(157.5°)	2.02/1.53	0.5/-0.55	-1.74/-2.61	-3.69/-4.37	-4.19/-3.33	-3.16/-3.37	-3.07/3.19	-4.2																







# Radiated Composite Gain Data <2.4GHz and 5GHz U-NII 1~U-NII 4>

# Appendix A

Theta (°)	Phi (°)	Phi(15°)	Phi(30°)	Phi(45°)	Phi(60°)	Phi(75°)	Phi(90°)	Phi(105°)	Phi(120°)	Phi(135°)	Phi(150°)	Phi(165°)	Phi(180°)	Phi(195°)	Phi(210°)	Phi(225°)	Phi(240°)	Phi(255°)	Phi(270°)	Phi(285°)	Phi(300°)	Phi(315°)	Phi(330°)	Phi(345°)
0(15°)	-7.25/-7.86	-8.28/-8.31	-7.89/-6.81	-5.73/-4.86	-3.91/-3.28	-2.71/-2.02	-1.72/-1.76	-2.03/-2.44	-3.12/-3.88	-4.55/-5.43	-6.68/-7.66	-8.19/-8.32	-7.97/-7.86	-7.29/-6.23	-5/-3.51	-0.69/-0.45	-0.4/-0.28	-0.71/-1.34	-2.37/-3.45	-4.1/-3.93	-3.51/-3.16	-3.73/-4.32	-5.74/-6.64	
0(22.5°)	-4.43/-4.71	-5.48/-6.61	-7.71/-8.58	-8.59/-7.99	-7.17/-6.51	-5.51/-4.73	-3.89/-3.89	-3.97/-4.38	-4.08/-3.88	-4.11/-5.07	-6.12/-6.56	-6.55/-6.44	-5.76/-4.83	-4.23/-3.45	-2.95/-2.59	-2.5/-2.29	-1.79/-1.15	-0.52/-0.24	-0.72/-2.03	-3.5/-4.68	-5.55/-4.96	-4.13/-3.49	-3.07/-2.79	-3.35/-3.91
0(30°)	-2.98/-3.5	-4.49/-5.05	-6.64/-5.08	-6.12/-6.61	-6.09/-6.38	-5.35/-4.48	-3.99/-4	-4.21/-4.77	-5.48/-5.47	-4.51/-4.01	-4.71/-5.97	-6.49/-6.21	-5.58/-4.71	-3.14/-1.73	-1.0/-0.95	-1.55/-1.99	-2.02/-1.85	-2.01/-2.76	-2.97/-3.1	-3.15/-3.5	-4.47/-4.27	-3.32/-1.97	-1.49/-1.39	-1.44/-1.96
0(37.5°)	-2.88/-3.24	-3.97/-4.97	-6.11/-4.75	-7.74/-6.92	-6.59/-6.38	-6.62/-6.91	-6.92/-6.54	-6.19/-6.4	-7.06/-7	-6.71/-5.42	-5.33/-6.23	-7.01/-6.52	-5.52/-4.12	-2.34/-0.95	-0.19/-0.26	0.09/-0.4	-0.51/-0.8	-1.05/-1.06	-1.6/-2.1	-2.91/-3.4	-3.45/-4.06	-3.65/-2.66	-2.22/-1.49	-1.29/-2.05
0(45°)	-3.25/-3.08	-3.45/-5.85	-8.71/-8.15	-8.62/-9.5	-8.47/-7.31	-7.68/-8.29	-7.97/-6.16	-5.68/-5.79	-5.09/-4.9	-5.4/-6.32	-7.59/-6.22	-4.81/-4.76	-4.77/-3.02	-1.93/-1.39	-1.66/-1.41	-1.15/-0.67	-0.51/-1.14	-1.42/-1.53	-1.35/-0.5	-2.11/-2.87	-3.17/-3.16	-2.82/-2.25	-1.99/-1.84	
0(52.5°)	-3.11/-3.37	-3.62/-4.15	-5.18/-6.41	-7.48/-6.96	-5.73/-5.51	-6.46/-6.2	-5.6/-5.24	-5.31/-5.31	-5.68/-7.16	-8.72/-8.65	-7.54/-5.17	-3.46/-4.39	-3.95/-2.97	-2.45/-2.01	-1.72/-0.69	-0.160/0.27	0.64/0.16	-1.42/-3.88	-4.52/-3.75	-2.85/-2.04	-1.37/-1.7	-2.44/-2.83	-3.22/-3.04	-2.88/-2.6
0(60°)	-4.96/-5.82	-6.72/-7.03	-5.34/-5.89	-5.68/-6.52	-5.8/-5.53	-6.26/-6.47	-6.08/-5.38	-5.96/-6.12	-8.02/-9	-9.34/-5.49	-3.27/-3.12	-2.17/-2.65	-2.92/-2.43	-3.41/-4.41	-3.19/-2.03	-0.020/0.33	-0.82/-1.2	-0.62/-1.95	-4.24/-4.16	-2.18/-1.16	-1.29/-1.14	-2.55/-3.27	-3.63/-3.76	-3.79/-3.84
0(67.5°)	-8.43/-7.56	-7.03/-4.95	-2.75/-2.76	-3.89/-6.53	-8.5/-8.12	-7.14/-5.02	-7.23/-9.5	-9.05/-8.69	-5.72/-3.9	-2.73/-3.24	-2.59/-1.71	-1.16/-2.26	-1.81/-0.22	0.91/0.9	-1.17/-2.29	-1.53/-2.12	-3.31/-2.13	-0.66/-1.1	-2.52/-4.92	-6.42/-6.24	-5.3/-3.73	-6.26/-6.8		
0(75°)	-6/-5.96	-5.28/-4.5	-4.13/-4.4	-4.96/-6.65	-8.94/-10.84	-6.94/-3.31	-3.5/-3.63	-6.65/-7.91	-9.01/-9.74	-5.92/-4.96	-4.21/-3.4	-1.48/-2.08	-0.76/-0.26	0.660/0.2	-0.68/-1.78	-1.130/0.56	-0.67/-1.91	-1.08/-1.44	-3.29/-2.12	0.31/0.7	-2.36/-2.15	-2.94/-2.76	-3.61/-4.68	-5.05/-9.15
0(82.5°)	-6.46/-4.58	-4.11/-3.13	-4.99/-6.11	-5.53/-5.47	-6.31/-7.06	-9.31/-8.68	-7.43/-10.02	-10.56/-7	-5.39/-5.1	-4.55/-3.74	-2.57/-2.64	-1.28/-1.12	-1.71/-2.17	-1.57/-1.84	-3.43/-3.54	-0.9/-0.23	-1.09/-0.95	0.37/-1.74	-0.93/-0.39	-0.43/-0.69	-1.98/-3.75	-5.02/-7.2		
0(90°)	-4.2/-5.72	-3.67/-2.56	-2.89/-4.57	-5.62/-7.41	-7.89/-7.64	-10.04/-9.24	-10.31/-8.93	-8.94/-5.91	-5.31/-4.57	-4.11/-4.58	-6.7/-4.62	-2.85/-1.5	-0.87/-0.74	-0.07/-0.71	-2.4/-3.43	-1.62/-1.1	-1.95/-2.47	-0.16/-1.85	-1.78/-0.89	0.68/-1.76	-1.9/-1.83	-2.49/-3.82	-5.07/-6.23	-6.53/-4.3
0(97.5°)	-6.18/-6.43	-4.91/-4.84	-3.85/-5.26	-7/-11.89	-12.34/-11.51	-8.76/-7.77	-7.9/-8.86	-6.98/-4.7	-4.8/-4.64	-4.52/-5.61	-3.8/-1.61	-2.24/-0.75	-2.29/-1.42	-2.16/-2.85	-3.16/-4.4	-3.22/-0.17	-0.50/0.1	1.11/0.49	-1.8/-0.07	-0.83/-3.62	-1.63/-0.8	-2.61/-3.56	-5.74/-8.18	-5.32/-4.69
0(105°)	-5.96/-7.03	-6.02/-9.3	-9.85/-6.8	-6.74/-5.87	-7.99/-9.25	-7.22/-4.77	-7.22/-8.83	-6.66/-6.85	-6.65/-6.58	-5.05/-8.42	-4.68/-3.68	-1.06/-1.42	-3.18/-2.18	-4.26/-3.62	-1.73/-3.93	-6.6/-2.9	-1.64/1.1	0.52/0.56	-0.79/0.69	0.56/3.8	-0.76/0.62	-2.41/3.33	-6.56/-7.97	-4.66/-4.44
0(112.5°)	-7.13/-8.18	-8.94/-6.45	-6.06/-5.96	-7.68/-9.85	-7.71/-6.95	-5.91/-5.42	-4.99/-5.2	-6.17/-7.71	-8.82/-6.79	-7.81/-5.68	-4.28/-4.81	-3.65/-2.89	-3.27/-3.62	-3.66/-2.31	-0.81/-4.22	-9.05/-2.22	-0.45/0.72	-1.26/-2.89	-2.24/1.85	-0.18/-7.24	-3.87/-1.19	-3.25/-5.05	-5.2/-6.96	-7.21/-6.14
0(120°)	-6.49/-7.21	-8.02/-6.2	-6.78/-7.01	-5.33/-5.11	-5.03/-7.43	-10.17/-8.43	-8.15/-7.66	-6.24/-4.78	-6.51/-8.26	-8.52/-5.01	-5.69/-4.49	-3.76/-6.47	-5.44/-4.73	-5.24/-5.44	-5.27/-11.69	-9.08/-3.7	-2.08/-0.88	-3/-3.97	-3.70/65	1.2/-2.8	-2.9/-4.02	-6.3/-6.27	-7.03/-4.97	-6.11/-5.96
0(127.5°)	-3.75/-4.27	-4.38/-5.62	-4.12/-5.15	-4.2/-4.36	-6.51/-6.62	-6.77/-5.52	-5.24/-6.64	-7.88/-7.78	-7.42/-9.31	-8.38/-8.67	-8.43/-9.63	-10.69/-9.82	-7.85/-5.34	-3.33/-3.6	-4.08/-2.31	-3.72/-1.74	-0.35/-0.78	-0.1/-3.55	-4.55/-2.3	-1.8/-2.47	-5.19/-6.18	-5.17/-4.93	-5.47/-5.6	-3.91/-1.8
0(135°)	-5.23/-3.96	-3.89/-5.63	-5.06/-5.27	-6.74/-8.2	-6.49/-9.49	-10.21/-8.4	-7.63/-9.18	-8.76/-6.99	-6.11/-6.61	-8.52/-10.07	-8.62/-6.72	-6.72/-6.61	-6.43/-4.34	-3.77/-1.38	-3/-2.69	-2.53/-3.14	-2.98/-1.76	0.59/-2.35	-2.88/-0.76	-1.47/-2.73	-3.87/-1.72	-8.28/-7.55	-8.91/-5.33	-3.36/-3.95
0(142.5°)	-1.03/-1.33	-1.53/-3.82	-5.22/-4.17	-5.13/-5.87	-6.97/-8.06	-7.47/-5.14	-5.67/-5.74	-6.44/-5.99	-5.51/-4.9	-4.23/-4.38	-8.65/-6.11	-5.67/-6.86	-7.21/-6.55	-4.39/-2.67	-2.95/-1.19	-1.68/-4.37	-4.96/-2.45	-2.26/-4.26	-3.35/-0.8	-5.85/-4.54	-5.17/-5.29	-7.08/-6.2	-5.55/-10.32	-10.76/-9.07
0(150°)	-5.62/-6.2	-9.03/-9.61	-9.71/-9.55	-9.34/-3.1	-10.23/-9.75	-8.87/-8.4	-8.32/-7.44	-6.11/-5	-4.82/-4.72	-5.6/-6.81	-8.31/-9.28	-8.7/-8.7	-8.36/-7.31	-6.66/-7.65	-8.42/-5.61	-5.03/-7.66	-6.66/-4.15	-4.59/-6.19	-6.71/-4.76	-4.25/-5.15	-5.47/-4.14	-4.63/-7.5	-5.73/-6.9	-8.7/-3.6
0(157.5°)	-4.81/-4.48	-4.64/-4.85	-6.34/-9.2	-10.41/-10.78	-10.66/-10.88	-10.94/-10.48	-9.27/-8.31	-6.76/-6.15	-5.75/-5.64	-5.43/-5.44	-5.77/-5.74	-6.06/-6.21	-5.66/-5.47	-5.37/-5.57	-6.46/-7.05	-7.89/-7.98	-6.56/-4.41	-3.21/-3.45	-3.88/-3.41	-3.64/-5.31	-7.35/-8.09	-6.98/-5.55	-5.49/-6.26	-5.13/-4.12
0(165°)	-7.9/-8.11	-8.3/-9.95	-11.98/-11.52	-10.65/-9.95	-9.02/-8.17	-7.74/-7.9	-8.52/-8.71	-9.32/-8.8	-8.5/-8.03	-7.65/-7.09	-6.71/-6.4	-5.79/-4.98	-4.54/-4.47	-5.1/-6.19	-6.38/-5.77	-5.03/-4.49	-4.15/-3.71	-3.72/-3.7	-3.76/-4.29	-5.39/-6.85	-7.76/-8.06	-6.56/-5.68	-5.88/-6.61	-7.46/-7.99
0(172.5°)	-7.33/-7.61	-7.5/-7.59	-7.18/-7.51	-7.49/-8.38	-8.66/-9.93	-11.32/-10.95	-10.84/-10.29	-10.01/-10.5	-10.87/-10.44	-9.6/-9.37	-9.51/-9.51	-8.8/-8.36	-7.97/-8.38	-8.83/-8.92	-8.28/-7.93	-7.35/-6.49	-5.85/-5.37	-5.25/-5.36	-5.92/-6.94	-8.08/-9.14	-9.83/-9.9	-10.81/-10.12	-9.33/-9.09	-8.82/-8.02
0(180°)	-10.16/-9.5	-8.31/-8	-6.96/-7	-7.17/-7.39	-7.66/-8.38	-8.69/-8.7	-9.15/-9.45	-10.24/-11.1	-11.72/-11.57	-12.03/-12.07	-12.38/-11.78	-10.95/-10.48	-9.91/-9.42	-9.01/-8.68	-8.95/-8.88	-8.42/-8.34	-8.14/-8.27	-8.44/-8.32	-8.93/-10.07	-11.28/-11.38	-11.63/-11.41	-10.25/-9.44	-9.32/-9.56	-9.59/-9.79
Freq(Hz)	5.785G/Pol.	Theta	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DG(dB)	Phi(0°)/Phi(7.5°)	Phi(15°)/Phi(22.5°)	Phi(30°)/Phi(37.5°)	Phi(45°)/Phi(52.5°)	Phi(60°)/Phi(67.5°)	Phi(75°)/Phi(82.5°)	Phi(90°)/Phi(97.5°)	Phi(105°)/Phi(112.5°)	Phi(120°)/Phi(127.5°)	Phi(135°)/Phi(142.5°)	Phi(150°)/Phi(157.5°)	Phi(165°)/Phi(172.5°)	Phi(180°)/Phi(187.5°)	Phi(195°)/Phi(202.5°)	Phi(210°)/Phi(217.5°)	Phi(225°)/Phi(232.5°)	Phi(240°)/Phi(247.5°)	Phi(255°)/Phi(262.5°)	Phi(270°)/Phi(277.5°)	Phi(285°)/Phi(292.5°)	Phi(300°)/Phi(307.5°)	Phi(315°)/Phi(322.5°)	Phi(330°)/Phi(337.5°)	Phi(345°)/Phi(352.5°)
0(0°)	-0.59/-0.99	-1.41/-2.23	-2.89/-3.38	-3.74/-3.9	-4.33/-4.46	-4.83/-5.23	-5.12/-6.45	-4.04/-3.61	-3.08/-2.53	-2.03/-1.75	-1.51/-1.21	-1.05/-0.98	-1.11/-1.25	-1.62/-2.09	-2.35/-2.54	-3/-3.63	-4.19/-4.62	-4.92/-5.01	-4.98/-4.89	-4.22/-4.11	-3.33/-2.67	-2.07/-1.77	-1.54/-0.92	-0.62/-0.59
0(7.5°)	-1.63/-1.85	-1.93/-2.24	-2.91/-3.23	-3.29/-3.64	-3.97/-4.37	-4.77/-5.14	-5.81/-6.19	-5.13/-5.79	-5.02/-4.33	-3.75/-3.3	-2.71/-1.88	-1.34/-0.96	-0.91/-1.05	-1.34/-1.7	-2.35/-3.17	-4.03/-4.6	-5.28/-6.01	-5.49/-4.42	-3.03/-2.23	-1.66/-1.57	-1.45/-1.22	-1.32/-1.28	-1.34/-1.2	-1.43/-1.71
0(15°)	-2.77/-2.95	-2.57/-2.32	-2.21/-2.06	-2.3/-2.93	-3.17/-3.34	-3.49/-3.61	-3.4/-3.52	-3.51/-3.59	-3.5/-3.94	-4.01/-4.43	-4.63/-4.33	-3.67/-2.92	-2.32/-1.97	-1.84/-1.83	-2.23/-2.99	-3.93/-5.08	-6.01/-5.64	-5.33/-4.64	-3.73/-2.91	-2.33/-1.91	-1.83/-1.94	-2.29/-2.53	-2.98/-2.47	-2.39/-2.6
0(22.5°)	-0.99/-1.42	-2.27/-2.31	-1.76/-0.81	-0.53/-0.86	-1.24/-1.46	-1.42/-1.43	-1.48/-1.73	-2.18/-2.51	-2.99/-3.34	-3.99/-4.41	-4.09/-3.66	-3.2/-3.1	-2.84/-2.75	-2.74/-2.92	-2.92/-3.3	-3.85/-4.55	-4.81/-4.8	-4.95/-4.86	-4.05/-3.2	-2.58/-2.87	-2.51/-2.33	-2.96/-4.01	-3.91/-2.67	-1.48/-1.06
0(30°)	-1.07/-0.51	-0.85/-0.57	0.01/0.58	0.82/0.27	-0.71/-1.6	-1.75/-1.41	-1.58/-2.12	-2.65/-3.25	-3.73/-3.97	-3.81/-3.69	-3.4/-3.06	-2.47/-2.46	-2.54/-2.34	-1.71/-1.42	-1.72/-2.41	-3.81/-5.41	-5.03/-4.27	-3.33/-1.86	-0.38/0.1	0.06/0.9	-2.1/-2	-2.45/-3.59	-2.89/-2.11	-1.29/-1.32
0(37.5°)	-0.82/-0.77	-0.07/0.51	1.55/1.69	1.01/0.51	0.30/2.4	-0.09/-0.74	-1.74/-1.75	-2.27/-3.49	-3.69/-3.61	-4.33/-3.37	-4.81/-3.68	-3.8/-3.56	-2.38/-1.93	-1.66/-1.06	-0.27/-0.79	-2.19/-2.71	-3.05/-3.69	-2.64/-0.48	-0.27/-0.58	-0.83/-1.68	-3.02/-3.15	-3.04/-2.12	-0.7/-0.56	-1.21/-1.51
0(45°)	1.24/1.8	1.75/1.37	1.62/0.6	1.41/0.88	0.54/-0.26	-1.11/-1.27	-1.57/-1.77	-2.09/-2.22	-2.59/-3.69	-4.49/-5.53	-5.53/-3.84	-2.43/-3.2	-3.95/-4.1	-1.56/-4.1	0.34/0.21	-0.96/-1.4	-2.01/-1.35	-0.22/-0.19	0.08/0.12	-0.53/-2.05	-2.66/-1.05	-0.31/-0.5	0.28/0.32	1.03/0.72
0(52.5°)	3.01/2.94	2.54/2.99	3.08/2.07	1.41/4.2																				







# Radiated Composite Gain Data <2.4GHz and 5GHz U-NII 1~U-NII 4>

# Appendix A

Theta (deg)	Phi (deg)	Phi(15°)	Phi(30°)	Phi(45°)	Phi(60°)	Phi(75°)	Phi(90°)	Phi(105°)	Phi(120°)	Phi(135°)	Phi(150°)	Phi(165°)	Phi(180°)	Phi(195°)	Phi(210°)	Phi(225°)	Phi(240°)	Phi(255°)	Phi(270°)	Phi(285°)	Phi(300°)	Phi(315°)	Phi(330°)	Phi(345°)	
0(150°)	6.18/-5.53	-3.96/-5.48	-6.56/-5.02	-4.54/-4.78	-4.59/-4.25	-3.62/-2.61	-2.94/-3.27	-3.89/-5.32	-6.58/-6.21	-5.48/-4.45	-3.96/-4.78	-5.44/-4.08	-4.76/-6.16	-7.11/-7.23	-9.19/-8.45	-8.94/-10.8	-6.48/-5.3	-5.49/-4.64	-4.61/-3.17	-1.33/-0.57	-1.56/-2.71	-1.36/-1.53	-2.22/-2.09	-2.62/-4.27	
0(172.5°)	0.09/-1.7	-3.78/-6.73	-7.97/-6.69	-5.33/-5.04	-5.13/-5.44	-6.23/-5.8	-5.05/-5.14	-5.67/-7.31	-8.78/-8.64	-7.21/-6.07	-5.18/-5.14	-5.02/-5.88	-6.48/-5.17	-3.5/-3.11	-3.75/-5.73	-8.71/-11.43	-9.03/-7.32	-6.22/-4.22	-3.95/-3.7	-2.13/-0.75	-0.74/-1.54	-1.47/-1.62	-1.42/-0.68	0.54/1.08	
0(165°)	-1.49/-2.8	-4.18/-4.69	-4.08/-3.29	-3.24/-3.67	-4.51/-5	-5.81/-6.62	-7.5/-8.46	-9.66/-11.03	-9.82/-6.91	-4.33/-2.48	-1.43/-1.2	-1.57/-2.36	-3.43/-4.96	-6.35/-6.54	-6.18/-5.96	-6.59/-6.92	-5.29/-4.09	-4.38/-5.6	-6.93/-5.62	-2.78/-0.88	-0.11/0.09	0.5/0.73	0.79/0.56	-0.18/-1.15	
0(172.5°)	-1.93/-1.56	-1.54/-1.52	-1.96/-2.85	-3.71/-4.64	-5.04/-5.72	-7.29/-9.01	-11.67/-12.03	-11.27/-9.48	-10.73/-6.02	-4.6/-4.1	-3.9/-4.15	-4.78/-5.3	-5.39/-5.05	-4.7/-4.85	-4.92/-5.45	-6.25/-6.24	-6.02/-5.53	-5.76/-5.8	-5.41/-4.62	-3.54/-2.61	-2.57/-2.7	-2.11/-1.88	-2.85/-3.47	-3.51/-2.88	
0(180°)	-4.81/-4.71	-4.57/-5.01	-6.43/-7.78	-8.18/-8.27	-8.43/-8.41	-7.49/-8.99	-9.66/-8.45	-10.03/-5.72	-5.19/-4.94	-4.61/-4.4	-3.75/-3.24	-3.14/-3	-3.02/-2.86	-2.89/-3.17	-3.66/-4.28	-4.82/-5.06	-5.51/-6.39	-7.51/-7.44	-7.34/-7.45	-7.91/-7.98	-8.33/-8.37	-6.91/-5.55	-4.84/-5.22	-5.46/-5.49	
Freq(Hz)	5.6G/Pol.	Phi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
DG(dB)	Phi(0°)/Phi(7.5°)	Phi(15°)/Phi(22.5°)	Phi(30°)/Phi(37.5°)	Phi(45°)/Phi(52.5°)	Phi(60°)/Phi(67.5°)	Phi(75°)/Phi(82.5°)	Phi(90°)/Phi(97.5°)	Phi(105°)/Phi(112.5°)	Phi(120°)/Phi(127.5°)	Phi(135°)/Phi(142.5°)	Phi(150°)/Phi(157.5°)	Phi(165°)/Phi(172.5°)	Phi(180°)/Phi(187.5°)	Phi(195°)/Phi(202.5°)	Phi(210°)/Phi(217.5°)	Phi(225°)/Phi(232.5°)	Phi(240°)/Phi(247.5°)	Phi(255°)/Phi(262.5°)	Phi(270°)/Phi(277.5°)	Phi(285°)/Phi(292.5°)	Phi(300°)/Phi(307.5°)	Phi(315°)/Phi(322.5°)	Phi(330°)/Phi(337.5°)	Phi(345°)/Phi(352.5°)	
0(0°)	-8.76/-8.15	-6.82/-5.83	-5.44/-4.14	-2.56/-1.61	-0.73/0.36	0.77/0.82	0.87/0.77	0.42/0.05	-0.48/-1.05	-1.8/-3.08	-4.71/-6.58	-8.61/-9.6	-10.74/-10.37	-8.54/-7.27	-6.05/-5.09	-4.3/-3.42	-2.63/-1.69	-1.02/-0.72	-0.56/-0.58	-0.59/-1.08	-1.36/-1.89	-3.39/-5.28	-6.41/-6.9	-7.12/-9.13	
0(7.5°)	-9.76/-9.16	-7.58/-6.6	-6.03/-5.92	-4.72/-4	-2.99/-1.82	-1.28/-1.06	-1.06/-1.18	-1.35/-1.72	-2.47/-3.2	-4.17/-5.42	-7.26/-9.4	-9.87/-10.6	-13.36/-13.3	-5.1/-3.24	-2.05/-1.27	-0.54/0.2	0.81/1.35	1.71/1.97	2.06/1.81	1.45/0.79	0.11/-0.53	-1.44/-2.67	-4.03/-6.5	-8.08/-9.25	
0(15°)	-10.2/-8.45	-6.61/-5.09	-3.22/-2.48	-1.55/-1.14	-0.97/-0.74	-0.63/-0.26	0.0/-0.29	-0.48/-1.02	-1.64/-2.51	-3.98/-5.72	-7.55/-9.02	-9.75/-9.02	-12.06/-12.1	-6.06/-5.85	-3.86/-2.12	-1.0/-1.6	0.38/0.03	1.43/1.87	2.13/2.4	2.49/2.24	1.68/0.9	0.17/-0.65	-1.44/-2.23	-3.3/-5.22	-7.45/-9.49
0(22.5°)	-6.49/-4.96	-5.18/-4.74	-3.63/-3.9	-3.15/-2.3	-1.51/-1.46	-1.8/-1.7	-1.39/-1.35	-1.47/-1.77	-2.44/-3.43	-4.37/-5.91	-7.85/-8.64	-9.04/-8.31	-8.65/-5.4	-3.95/-2.42	-1.29/-0.58	0.20/0.28	0.82/1.49	1.94/2.19	2.1/1.69	1.41/0.87	0.3/-0.07	-1.09/-1.52	-2.46/-4.2	-4.66/-7.5	
0(30°)	-5.97/-6.5	-5.59/-5.13	-4.65/-3.36	-2.26/-2.02	-2.49/-2.68	-3.29/-3.17	-3.54/-3.47	-3.42/-3.33	-3.58/-4.05	-4.25/-5.12	-6.93/-8.21	-8.27/-6.97	-5.59/-3.87	-2.22/-1.27	-0.56/0.4	1.09/1.68	1.91/2.08	2.15/1.89	1.39/0.65	0.2/0.24	-0.42/-0.28	-0.77/-1.58	-3.08/-4.26		
0(37.5°)	-7.35/-6.67	-5.07/-5.06	-4.96/-4.71	-4.84/-5.33	-5.69/-5.08	-4.29/-3.85	-4.03/-3.21	-2.73/-2.99	-4.3/-5.4	-5.88/-6.15	-6.62/-6.4	-5.78/-5.72	-5.17/-3.58	-1.98/-0.78	0.27/1.19	1.93/2.44	2.91/3.32	3.66/3.66	3.21/2.75	2.02/1.44	0.98/0.47	-0.62/-1.46	-2.29/-4.03	-4.91/-5.83	
0(45°)	-6.14/-6.99	-3.82/-3.65	-4.46/-4.79	-6.27/-9.18	-10.65/-9.77	-8.24/-6.74	-6.76/-7.17	-7/-7.5	-3.4/-3.14	-3.93/-4.3	-3.98/-4.01	-4.32/-4.2	-3.46/-2.75	-1.42/-0.25	0.53/1.11	1.44/1.72	2.32/2.68	2.47/2.11	2.16/2.59	2.48/1.77	1.03/0.58	-0.47/-1.4	-1.73/-2.91	-4.05/-5.19	
0(52.5°)	-3.03/-4.55	-5.38/-4.4	-5.41/-6.65	-7.17/-7.82	-8.07/-6.41	-5.79/-5.76	-5.14/-3.7	-3.97/-4.21	-4.37/-4.65	-4.61/-3.28	-2.1/-2.1	-1.76/-1.8	-2.17/-1.55	-0.99/-0.13	1.35/1.98	1.86/1.56	1.48/1.27	1.89/1.92	1.0/1.4	0.55/0.41	-0.23/-0.53	-0.76/-0.78	-0.65/-1.12	-1.81/-2.62	
0(60°)	-5.64/-5.44	-6.14/-5.41	-4.52/-6.1	-6.37/-6.73	-7.51/-6.37	-4.69/-4.51	-5.11/-6.51	-6.88/-5.77	-6.29/-6.87	-7.97/-6.93	-4.84/-3.9	-3.6/-4.16	-3.96/-2.79	-1.43/-0.31	-0.22/-0.08	0.32/0.09	0.11/1.13	1.75/0.69	0.55/1	1.03/0.35	-0.25/-0.19	-0.05/0.11	-0.44/-2.09	-3.97/-3.92	
0(67.5°)	-5.84/-7.69	-8.28/-6.45	-4.8/-3.9	-4.34/-6.13	-6.93/-7.15	-7.26/-5.99	-4.48/-4.87	-6.9/-9.26	-8.9/-8.3	-7.04/-5.42	-4.08/-3.87	-2.93/-3.2	-5.28/-2.43	-1.19/-0.61	-0.35/1.26	2.5/2.44	1.58/2.45	2.92/2.29	1.15/1.25	2.32/2.25	1.33/0.21	-1.23/-2.05	-1.53/-2.94	-5.23/-5.23	
0(75°)	-4.77/-5.23	-5.68/-5.87	-6.23/-7.56	-7.37/-8.7	-9.63/-8.17	-4.97/-2.65	-3.35/-6.87	-8.23/-7.7	-7.98/-7.38	-5.96/-6.01	-3.41/-2.3	-2.44/-1.58	-2.49/2.26	-1.06/-0.58	0.01/0.29	0.71/1.22	1.07/1.18	2.47/2.24	1.69/2.95	4.07/2.91	1.41/0.64	-0.88/-2.95	-4.23/-6.1	-8.84/-9.4	
0(82.5°)	-6.13/-7.18	-7.69/-7.85	-8.77/-8.97	-9.41/-7.72	-7.05/-6.11	-5.45/-6.16	-7.33/-7.47	-5.52/-6.36	-8.51/-7.7	-6.37/-5.91	-5.69/-4.16	-5.36/-4.24	-3.79/-1.5	-0.96/-1.85	-1.52/-1.74	-2.31/-0.97	0.63/0.71	1.23/1.22	1.89/3.2	3.56/2.03	0.93/0.16	-0.29/-1.82	-3.97/-4.84	-6/-6.34	
0(90°)	-5.09/-8.93	-6.25/-6.23	-6.89/-8.45	-9.62/-8.45	-8.41/-9.5	-8.16/-7.82	-7.56/-6.92	-4.75/-4.27	-5.57/-2.72	-5.25/-5.15	-6.63/-3.88	-8.24/-7.42	-7.35/-3.78	-2.9/-3.65	-3.39/-3.31	-1.54/1.52	2.18/1.87	0.92/0.71	1.5/2.41	1.78/0.12	0.50/0.77	-0.52/-3.38	-6.94/-8.09	-7.29/-5.07	
0(97.5°)	-6.35/-8.41	-5.58/-5.7	-7.56/-9.22	-12.54/-12.34	-10.9/-10.96	-9.52/-7.3	-7.17/-8.64	-8.58/-5.88	-6.45/-7.78	-4.88/-5.68	-5.22/-3.12	-4.46/-3.96	-4.9/-1.5	-2.85/-2.35	-1.26/-2.3	0.16/2.21	2.63/2.76	2.98/2.06	1.35/2.61	2.79/1.29	1.23/1.1	-1.34/-2.81	-4.67/-9.72	-8.73/-5.26	
0(105°)	-3.68/-6.71	-7.58/-8.88	-8.93/-6.96	-6.93/-8.84	-8.04/-6.42	-7.97/-10.07	-8.53/-9.64	-8.6/-8.85	-9.06/-8.54	-5.65/-4.08	-4.02/-4.11	-3.76/-1.93	-2.48/-1.81	-0.08/-2.77	-2.07/0.4	1.02/2.36	2.89/2.68	2.05/0.65	2.96/1.92	1.96/1.73	-1.87/-2.45	-5.32/-6.5	-6/-6.87		
0(112.5°)	-7.42/-6.07	-9.78/-9.6	-6.76/-7.4	-7.91/-9.2	-7.11/-10.3	-5.76/-5.86	-7.68/-9.49	-10.02/-10.46	-11.04/-10.11	-9.29/-8.33	-11.49/-8.7	-6.52/-7.39	-6.82/-6.72	-4.22/2.66	-4.61/1.07	1.22/2.52	1.68/3.83	2.14/-0.51	2.98/6.65	1.40/-0.19	-2.98/-6.65	-7.14/-6.97	-6.6/-6.6		
0(120°)	-6.5/-7.8	-8.51/-8.18	-10.91/-10.42	-8.83/-9.84	-9.28/-8.14	-8.16/-9.2	-8.76/-8.02	-7.1/-7.09	-9.09/-10.18	-10.48/-9.49	-8.83/-3.33	-6.87/-10.45	-8.02/-4.44	-3.99/-3.26	-2.74/-6.71	-3.71/1.4	2.12/3.1	2.35/0.72	1.48/3.6	3.29/0.19	-0.74/-3.2	-4.24/-4.7	-5.42/-6.51	-7.71/-5.51	
0(127.5°)	-7.77/-7.36	-8.47/-6.32	-5.36/-6.87	-6.36/-8.48	-10.36/-7.47	-7.04/-7.97	-9.97/-10.69	-8.85/-8.07	-8.5/-10.67	-10.79/-8.22	-8.15/-11.07	-11.54/-10.2	-5.17/-3.46	-3.4/-2.69	-2.93/-1.83	-0.2/2.26	2.31/2.21	1.47/0.35	0.79/1.66	1.25/1.16	-1.54/-2.93	-4.34/-3.71	-6.69/-7.84	-5.54/-5.74	
0(135°)	-6.66/-6.63	-7.01/-8.43	-6.59/-7.01	-8.1/-8.16	-10.2/-10	-8.74/-8.43	-10.23/-11.27	-10.71/-9.41	-8.9/-9.43	-10.54/-10.34	-7.55/-5.77	-5.97/-6.75	-6.05/-2.67	-1.9/-2.19	-0.42/0.18	0.91/1.11	1.52/0.88	0.14/-0.76	-0.48/0.74	0.93/-0.62	-2.82/-2.78	-3.31/-4.9	-7.32/-6.82	-6.85/-7.4	
0(142.5°)	-7.86/-10.2	-8.96/-9.41	-9.23/-7.12	-7.93/-7.38	-6.36/-6.48	-7.24/-8.31	-9.11/-10.24	-9.45/-7.81	-8.63/-9.36	-9.32/-7.84	-7.82/-7.56	-7.79/-6.18	-3.47/-3.07	-1.92/-1.4	-1.73/-0.82	-0.12/-0.5	-0.22/-1.1	-1.73/-1.94	-0.38/0.54	-0.54/-2.82	-3.69/-3.04	-2.91/-3.67	-6.16/-9.94	-9.61/-7.85	
0(150°)	-4.07/-5.39	-7.71/-7.81	-7.52/-9.28	-11.12/-8.84	-7.22/-7.14	-6.87/-7.72	-8.84/-8.49	-6.79/-5.71	-5.59/-5.17	-5.44/-7.72	-9.65/-9.29	-8.07/-7.03	-7.68/-6.66	-4.42/-3.48	-3.59/-2.3	-1.56/-1.89	-3.01/-2.99	-3.09/-3.08	-1.75/-1.3	-2.03/-2.86	-2.14/-1.57	-2.73/-4.95	-5.08/-5.1	-6.04/-7.52	
0(157.5°)	-7.42/-6.99	-6.71/-7.19	-7.97/-7.59	-7.9/-9.2	-9.41/-9.51	-9.68/-10.15	-10.65/-11.45	-12.03/-10.85	-9.89/-8.23	-8.02/-8.28	-6.89/-6.03	-4.86/-4.13	-3.74/-3.62	-3.43/-3.41	-3.66/-2.79	-3/-3.9	-4.56/-4.11	-2.49/-2.02	-2.97/-4.74	-4.57/-5.12	-2.49/-4.74	-4.33/-4.15	-5.71/-4.72		
0(165°)	-5.73/-5.46	-5.56/-6.86	-6.84/-7.26	-7.83/-8.17	-7.15/-6.63	-6.99/-7.47	-7.85/-2.22	-9.89/-8.67	-7.68/-7.11	-6.98/-7.21	-7.98/-8.34	-7.52/-6.1	-5.07/-4.52	-4.4/-5.06	-5.07/-4.03	-2.86/-1.85	-1.28/-1.42	-1.91/-1.95	-1.52/-1.54	-2.09/-3.01	-3.68/-4.55	-5.51/-6.56	-7.44/-7.43	-7.6/-6.93	
0(172.5°)	-11.3/-10.69	-9.18/-7.02	-5.94/-5.71	-5.41/-5.67	-5.77/-7.09	-8.55/-8.94	-8.89/-8.91	-8.26/-8.38	-8.12/-7.64	-7.24/-7.33	-7.3/-6.5	-5.62/-5.21	-5.09/-5.18	-5.02/-4.76	-4.68/-4.07	-3.75/-3.21	-2.69/-2.32	-2.16/-2.05	-2.2/-2.77	-4.03/-5.31	-6/-6.79	-8.49/-8.78	-8.92/-9.19	-9.8/-11.16	
0(180°)	-9.16/-8.97	-9.12/-9.33	-9.01/-7.91	-7.48/-6.93	-6.66/-6.56	-6.11/-5.71	-4.78/-4.69	-5.05/-5.35	-5.9/-6.67	-7.41/-7.91	-8.38/-8.88	-9.78/-10.44	-10.45/-8.93	-7.36/-6.23	-5.56/-4.95	-4.39/-4.12	-3.89/-4.07	-4.3/-4.48	-4.76/-5	-5.03/-5.15	-5.38/-5.98	-6.2/-5.7	-5.65/-6.75	-8.21/-8.2	
Freq(Hz)	5.6G/																								





# Radiated Composite Gain Data <2.4GHz and 5GHz U-NII 1~U-NII 4>

# Appendix A

Theta (°)	Phi (°)	Phi(15°)	Phi(30°)	Phi(45°)	Phi(60°)	Phi(75°)	Phi(90°)	Phi(105°)	Phi(120°)	Phi(135°)	Phi(150°)	Phi(165°)	Phi(180°)	Phi(195°)	Phi(210°)	Phi(225°)	Phi(240°)	Phi(255°)	Phi(270°)	Phi(285°)	Phi(300°)	Phi(315°)	Phi(330°)	Phi(345°)	
0	0	-0.95/-1.26	-2.5/-4.47	-3.36/-4.59	-4.9/-5.2	-4.59/-4.69	-5.07/-6.1	-7.37/-7.12	-6.38/-5.9	-5.03/-5.64	-6.52/-7.61	-6.46/-7.5	-6.77/-5.08	-6.72/-10.85	-4.19/-3.49	-7.1/-6.09	-4.99/-4.56	-4.71/-1.84	-0.39/-0.42	-1.48/-2.64	-3.31/-1.76	-1.71/-1.9	-1.99/-0.38	0.91/0.89	1.79/0.61
0	15	-5.72/-6.59	-3.2/-2.44	-3.59/-4.19	-5.5/-4.92	-3.93/-4.69	-6.45/-8.18	-9.34/-10.07	-7.95/-6.79	-6.9/-7.59	-9.12/-7.83	-6.78/-6.9	-6.64/-4.14	-4.58/-5.01	-4.68/-5.53	-5.97/-7.02	-7.04/-5.37	-2.16/-0.3	-1.01/-1.07	-1.11/-1.25	-1.58/-1.54	-2.13/-2.62	-5.21/-5.58	-0.44/-0.2	-1.13/-2.99
0	30	-6.77/-7.27	-2.23/-4.07	-6.03/-5.9	-6.06/-6.35	-7.97/-8.56	-7.94/-9.2	-9.99/-8.61	-7.31/-6.29	-6.24/-7.31	-9.87/-9.17	-6.77/-6.76	-5.61/-3.98	-4.41/-5.07	-6.18/-4.87	-8.19/-5.91	-6.14/-4.77	-2/-0.26	-0.4/-1.9	-1.28/-0.88	-0.9/-0.49	-2.14/-5.29	-5.05/-4.47	-3.49/-2.64	-3.18/-6.61
0	45	-0.47/-1.81	-3.66/-5.48	-7.51/-9.06	-10.33/-8.77	-6.99/-5.71	-6.17/-7.42	-7.65/-7.15	-6.76/-6.29	-8.58/-9.66	-11.45/-11.93	-11.2/-9.76	-7.27/-4.93	-4.4/-4.68	-5.37/-6.46	-5.82/-4.94	-4.22/-3.25	-2.77/-3.92	-4.48/-3.84	-3.02/-3.28	-2.87/-2.46	-2.96/-3.83	-3.9/-3.35	-1.81/-1.03	0.28/0.52
0	60	-1.56/-2.37	-3.65/-4.76	-6.17/-7.87	-8.25/-8.73	-10.12/-11.59	-11.72/-10.35	-8.91/-8.04	-8.23/-8.82	-9.5/-9.52	-8.93/-9.35	-9.59/-8.39	-5.69/-4	-3.55/-3.92	-4.88/-6.32	-7.12/-6.87	-6.48/-6.15	-6.16/-5.74	-4.55/-3.1	-2.42/-2.55	-2.63/-1.73	-0.58/0.11	-0.11/-0.89	-0.91/-0.69	-0.63/-0.99
0	75	-3.8/-4.08	-5.12/-6.05	-7.43/-8.44	-10.12/-11.37	-11.13/-10.53	-8.36/-8.31	-9.02/-9.27	-8.79/-9.01	-9.28/-8.32	-7.46/-7.45	-7.67/-7.48	-6.65/-6	-5.77/-5.76	-6.36/-7.51	-9.27/-11.21	-11.34/-10.44	-9.77/-8.12	-7.39/-6.41	-5.57/-4.68	-3.88/-2.91	-2.39/-1.88	-1.88/-2.9	-4.15/-4.6	-4.19/-4.13
0	90	-5.88/-6.55	-8.68/-10.02	-10.47/-10.71	-11.58/-9.78	-8.81/-7.69	-7.08/-8.21	-9.37/-10.08	-10.33/-9.98	-9.31/-8.65	-8.16/-7.72	-7.14/-6.65	-6.28/-6.15	-6.66/-7.55	-7.64/-8.12	-8/-7.74	-7.15/-6.83	-7.16/-8.33	-9.93/-10.35	-8.81/-6.86	-5.82/-5.28	-5.29/-5.52	-6.34/-7.57	-7.83/-7.46	-7.24/-6.52
0	105	-0.47/-1.81	-3.66/-5.48	-7.51/-9.06	-10.33/-8.77	-6.99/-5.71	-6.17/-7.42	-7.65/-7.15	-6.76/-6.29	-8.58/-9.66	-11.45/-11.93	-11.2/-9.76	-7.27/-4.93	-4.4/-4.68	-5.37/-6.46	-5.82/-4.94	-4.22/-3.25	-2.77/-3.92	-4.48/-3.84	-3.02/-3.28	-2.87/-2.46	-2.96/-3.83	-3.9/-3.35	-1.81/-1.03	0.28/0.52
0	120	-1.56/-2.37	-3.65/-4.76	-6.17/-7.87	-8.25/-8.73	-10.12/-11.59	-11.72/-10.35	-8.91/-8.04	-8.23/-8.82	-9.5/-9.52	-8.93/-9.35	-9.59/-8.39	-5.69/-4	-3.55/-3.92	-4.88/-6.32	-7.12/-6.87	-6.48/-6.15	-6.16/-5.74	-4.55/-3.1	-2.42/-2.55	-2.63/-1.73	-0.58/0.11	-0.11/-0.89	-0.91/-0.69	-0.63/-0.99
0	135	-3.8/-4.08	-5.12/-6.05	-7.43/-8.44	-10.12/-11.37	-11.13/-10.53	-8.36/-8.31	-9.02/-9.27	-8.79/-9.01	-9.28/-8.32	-7.46/-7.45	-7.67/-7.48	-6.65/-6	-5.77/-5.76	-6.36/-7.51	-9.27/-11.21	-11.34/-10.44	-9.77/-8.12	-7.39/-6.41	-5.57/-4.68	-3.88/-2.91	-2.39/-1.88	-1.88/-2.9	-4.15/-4.6	-4.19/-4.13
0	150	-5.88/-6.55	-8.68/-10.02	-10.47/-10.71	-11.58/-9.78	-8.81/-7.69	-7.08/-8.21	-9.37/-10.08	-10.33/-9.98	-9.31/-8.65	-8.16/-7.72	-7.14/-6.65	-6.28/-6.15	-6.66/-7.55	-7.64/-8.12	-8/-7.74	-7.15/-6.83	-7.16/-8.33	-9.93/-10.35	-8.81/-6.86	-5.82/-5.28	-5.29/-5.52	-6.34/-7.57	-7.83/-7.46	-7.24/-6.52
0	165	-0.47/-1.81	-3.66/-5.48	-7.51/-9.06	-10.33/-8.77	-6.99/-5.71	-6.17/-7.42	-7.65/-7.15	-6.76/-6.29	-8.58/-9.66	-11.45/-11.93	-11.2/-9.76	-7.27/-4.93	-4.4/-4.68	-5.37/-6.46	-5.82/-4.94	-4.22/-3.25	-2.77/-3.92	-4.48/-3.84	-3.02/-3.28	-2.87/-2.46	-2.96/-3.83	-3.9/-3.35	-1.81/-1.03	0.28/0.52
0	180	-1.56/-2.37	-3.65/-4.76	-6.17/-7.87	-8.25/-8.73	-10.12/-11.59	-11.72/-10.35	-8.91/-8.04	-8.23/-8.82	-9.5/-9.52	-8.93/-9.35	-9.59/-8.39	-5.69/-4	-3.55/-3.92	-4.88/-6.32	-7.12/-6.87	-6.48/-6.15	-6.16/-5.74	-4.55/-3.1	-2.42/-2.55	-2.63/-1.73	-0.58/0.11	-0.11/-0.89	-0.91/-0.69	-0.63/-0.99
0	195	-3.8/-4.08	-5.12/-6.05	-7.43/-8.44	-10.12/-11.37	-11.13/-10.53	-8.36/-8.31	-9.02/-9.27	-8.79/-9.01	-9.28/-8.32	-7.46/-7.45	-7.67/-7.48	-6.65/-6	-5.77/-5.76	-6.36/-7.51	-9.27/-11.21	-11.34/-10.44	-9.77/-8.12	-7.39/-6.41	-5.57/-4.68	-3.88/-2.91	-2.39/-1.88	-1.88/-2.9	-4.15/-4.6	-4.19/-4.13
0	210	-5.88/-6.55	-8.68/-10.02	-10.47/-10.71	-11.58/-9.78	-8.81/-7.69	-7.08/-8.21	-9.37/-10.08	-10.33/-9.98	-9.31/-8.65	-8.16/-7.72	-7.14/-6.65	-6.28/-6.15	-6.66/-7.55	-7.64/-8.12	-8/-7.74	-7.15/-6.83	-7.16/-8.33	-9.93/-10.35	-8.81/-6.86	-5.82/-5.28	-5.29/-5.52	-6.34/-7.57	-7.83/-7.46	-7.24/-6.52
0	225	-0.47/-1.81	-3.66/-5.48	-7.51/-9.06	-10.33/-8.77	-6.99/-5.71	-6.17/-7.42	-7.65/-7.15	-6.76/-6.29	-8.58/-9.66	-11.45/-11.93	-11.2/-9.76	-7.27/-4.93	-4.4/-4.68	-5.37/-6.46	-5.82/-4.94	-4.22/-3.25	-2.77/-3.92	-4.48/-3.84	-3.02/-3.28	-2.87/-2.46	-2.96/-3.83	-3.9/-3.35	-1.81/-1.03	0.28/0.52
0	240	-1.56/-2.37	-3.65/-4.76	-6.17/-7.87	-8.25/-8.73	-10.12/-11.59	-11.72/-10.35	-8.91/-8.04	-8.23/-8.82	-9.5/-9.52	-8.93/-9.35	-9.59/-8.39	-5.69/-4	-3.55/-3.92	-4.88/-6.32	-7.12/-6.87	-6.48/-6.15	-6.16/-5.74	-4.55/-3.1	-2.42/-2.55	-2.63/-1.73	-0.58/0.11	-0.11/-0.89	-0.91/-0.69	-0.63/-0.99
0	255	-3.8/-4.08	-5.12/-6.05	-7.43/-8.44	-10.12/-11.37	-11.13/-10.53	-8.36/-8.31	-9.02/-9.27	-8.79/-9.01	-9.28/-8.32	-7.46/-7.45	-7.67/-7.48	-6.65/-6	-5.77/-5.76	-6.36/-7.51	-9.27/-11.21	-11.34/-10.44	-9.77/-8.12	-7.39/-6.41	-5.57/-4.68	-3.88/-2.91	-2.39/-1.88	-1.88/-2.9	-4.15/-4.6	-4.19/-4.13
0	270	-5.88/-6.55	-8.68/-10.02	-10.47/-10.71	-11.58/-9.78	-8.81/-7.69	-7.08/-8.21	-9.37/-10.08	-10.33/-9.98	-9.31/-8.65	-8.16/-7.72	-7.14/-6.65	-6.28/-6.15	-6.66/-7.55	-7.64/-8.12	-8/-7.74	-7.15/-6.83	-7.16/-8.33	-9.93/-10.35	-8.81/-6.86	-5.82/-5.28	-5.29/-5.52	-6.34/-7.57	-7.83/-7.46	-7.24/-6.52
0	285	-0.47/-1.81	-3.66/-5.48	-7.51/-9.06	-10.33/-8.77	-6.99/-5.71	-6.17/-7.42	-7.65/-7.15	-6.76/-6.29	-8.58/-9.66	-11.45/-11.93	-11.2/-9.76	-7.27/-4.93	-4.4/-4.68	-5.37/-6.46	-5.82/-4.94	-4.22/-3.25	-2.77/-3.92	-4.48/-3.84	-3.02/-3.28	-2.87/-2.46	-2.96/-3.83	-3.9/-3.35	-1.81/-1.03	0.28/0.52
0	300	-1.56/-2.37	-3.65/-4.76	-6.17/-7.87	-8.25/-8.73	-10.12/-11.59	-11.72/-10.35	-8.91/-8.04	-8.23/-8.82	-9.5/-9.52	-8.93/-9.35	-9.59/-8.39	-5.69/-4	-3.55/-3.92	-4.88/-6.32	-7.12/-6.87	-6.48/-6.15	-6.16/-5.74	-4.55/-3.1	-2.42/-2.55	-2.63/-1.73	-0.58/0.11	-0.11/-0.89	-0.91/-0.69	-0.63/-0.99
0	315	-3.8/-4.08	-5.12/-6.05	-7.43/-8.44	-10.12/-11.37	-11.13/-10.53	-8.36/-8.31	-9.02/-9.27	-8.79/-9.01	-9.28/-8.32	-7.46/-7.45	-7.67/-7.48	-6.65/-6	-5.77/-5.76	-6.36/-7.51	-9.27/-11.21	-11.34/-10.44	-9.77/-8.12	-7.39/-6.41	-5.57/-4.68	-3.88/-2.91	-2.39/-1.88	-1.88/-2.9	-4.15/-4.6	-4.19/-4.13
0	330	-5.88/-6.55	-8.68/-10.02	-10.47/-10.71	-11.58/-9.78	-8.81/-7.69	-7.08/-8.21	-9.37/-10.08	-10.33/-9.98	-9.31/-8.65	-8.16/-7.72	-7.14/-6.65	-6.28/-6.15	-6.66/-7.55	-7.64/-8.12	-8/-7.74	-7.15/-6.83	-7.16/-8.33	-9.93/-10.35	-8.81/-6.86	-5.82/-5.28	-5.29/-5.52	-6.34/-7.57	-7.83/-7.46	-7.24/-6.52
0	345	-0.47/-1.81	-3.66/-5.48	-7.51/-9.06	-10.33/-8.77	-6.99/-5.71	-6.17/-7.42	-7.65/-7.15	-6.76/-6.29	-8.58/-9.66	-11.45/-11.93	-11.2/-9.76	-7.27/-4.93	-4.4/-4.68	-5.37/-6.46	-5.82/-4.94	-4.22/-3.25	-2.77/-3.92	-4.48/-3.84	-3.02/-3.28	-2.87/-2.46	-2.96/-3.83	-3.9/-3.35	-1.81/-1.03	0.28/0.52
0	360	-1.56/-2.37	-3.65/-4.76	-6.17/-7.87	-8.25/-8.73	-10.12/-11.59	-11.72/-10.35	-8.91/-8.04	-8.23/-8.82	-9.5/-9.52	-8.93/-9.35	-9.59/-8.39	-5.69/-4	-3.55/-3.92	-4.88/-6.32	-7.12/-6.87	-6.48/-6.15	-6.16/-5.74	-4.55/-3.1	-2.42/-2.55	-2.63/-1.73	-0.58/0.11	-0.11/-0.89	-0.91/-0.69	-0.63/-0.99

## 5G option11

Theta (°)	Phi (°)	Phi(15°)	Phi(30°)	Phi(45°)	Phi(60°)	Phi(75°)	Phi(90°)	Phi(105°)	Phi(120°)	Phi(135°)	Phi(150°)	Phi(165°)	Phi(180°)	Phi(195°)	Phi(210°)	Phi(225°)	Phi(240°)	Phi(255°)	Phi(270°)	Phi(285°)	Phi(300°)	Phi(315°)	Phi(330°)	Phi(345°)	
0	0	-7.49/-5.35	-4.02/-3.58	-2.91/2.58	-2.36/2.21	-2.05/-1.82	-1.61/-1.72	-1.56/-1.37	-1.45/-1.64	-1.19/-2.25	-2.84/-3.17	-3.75/-4.61	-6.11/-6.72	-6.61/-5.39	-4.35/-3.69	-3.12/-2.89	-2.74/-2.44	-2.17/-2.21	-2.01/-1.83	-1.77/-1.69	-1.62/-1.93	-2.49/-2.87	-3.02/-3.24	-3.6/-4.47	-5.89/-7.65
0	15	-8.08/-6.39	-5.51/-4.75	-3.54/-2.89	-2.34/-1.97	-2.1/2.18	-2.18/-2.46	-2.34/-2.15	-2.23/-2.22	-2.21/-2.05	-1.76/-1.94	-2.46/-3.38	-4.38/-5.58	-6.19/-5.73	-4.53/-3.72	-2.95/-2.41	-2.15/-1.95	-1.91/-1.75	-1.61/-1.6	-1.72/-1.93	-2.01/-2.32	-2.63/-2.96	-3.42/-3.98	-4.22/-5.01	-6.33/-7.47
0	30	-9.11/-8	-6.73/-5.22	-3.72/-2.55	-1.76/-1.64	-1.94/-2.38	-2.8/-3.08	-3.07/-3.03	-2.65/-2.4	-2.16/-1.98	-1.76/-1.6	-1.38/-1.59	-2.07/-2.91	-3.74/-4.31	-4.1/-3.27	-2.39/-1.82	-1.42/-1.26	-1.34/-1.54	-2.08/-2.69	-3.29/-3.86	-4.22/-4.3	-4.05/-3.74	-3.8/-4.46	-5.56/-5.87	-6.59/-8.64
0	45	-6.17/-6.64	-6.06/-4.45	-3.1/-2.11	-1.38/-1.21	-1.19/-1.43	-1.68/-1.47	-1.98/-1.99	-2.04/-1.71	-1.71/-1.86	-1.73/-1.53	-1.59/-1.88	-2.6/-3.63	-4.08/-4.02	-2.04/-3.1	-3.5/-3.03	-1.34/-2	-3.28/-4.48	-5.32/-5.11	-4.43/-4.13	-2.58/-2.42	-4.25/-4.83	-6.03/-6.25	-6.41/-6.87	
0	60	-5.53/-6.47	-5.66/-6.79	-6.45/-5.4	-3.43/-1.87	-1.01/-0.67	-0.44/-0.42	-0.95/-1.91	-2.2/-1.95	-1.06/-0.79	-1.57/-2.37	-3.15/-3.94	-4.69/-5.29	-5.16/-4.81	-4.09/-3.15	-2.05/-1.46	-1.59/-2.25	-2.53/-2.44	-2.89/-3.44	-3.53/-3.79	-3.8/-3.48	-3.32/-3.65	-4.61/-5.17	-5.9/-5.92	
0	75	-5.59/-6.12	-5.06/-4.51	-4.23/-4.83	-4.55/3	-1.64/-1.04																			







