



Antenna Report

MODEL 2028



Contents

1. Antenna Types and manufacturer	2
2. Antenna Gain Measurements.....	2
3. Antenna Gains	4
4. Efficiency & Gain	5
5. 3D Radiation pattern	10



1. Antenna Types and manufacturer

Main/Aux/BT Antenna

- Antenna Type: PIFA
- Antenna Manufacturer: AWAN

2. Antenna Gain Measurements

a. Test Method and test equipment

The gain value is measured by AWAN (antenna manufacturer). Antenna gain is measured in AMS Chamber.

- Test Equipment
 - A. VSWR and input impedance: Agilent E5072A Network Analyzer
 - B. Antenna gain and efficiency: AMS three-dimensional anechoic chamber
- VSWR Test
 - A. The antenna is arranged on the customer provided test fixture
 - B. The VSWR of the antenna is measured via Agilent E5072A Network Analyzer





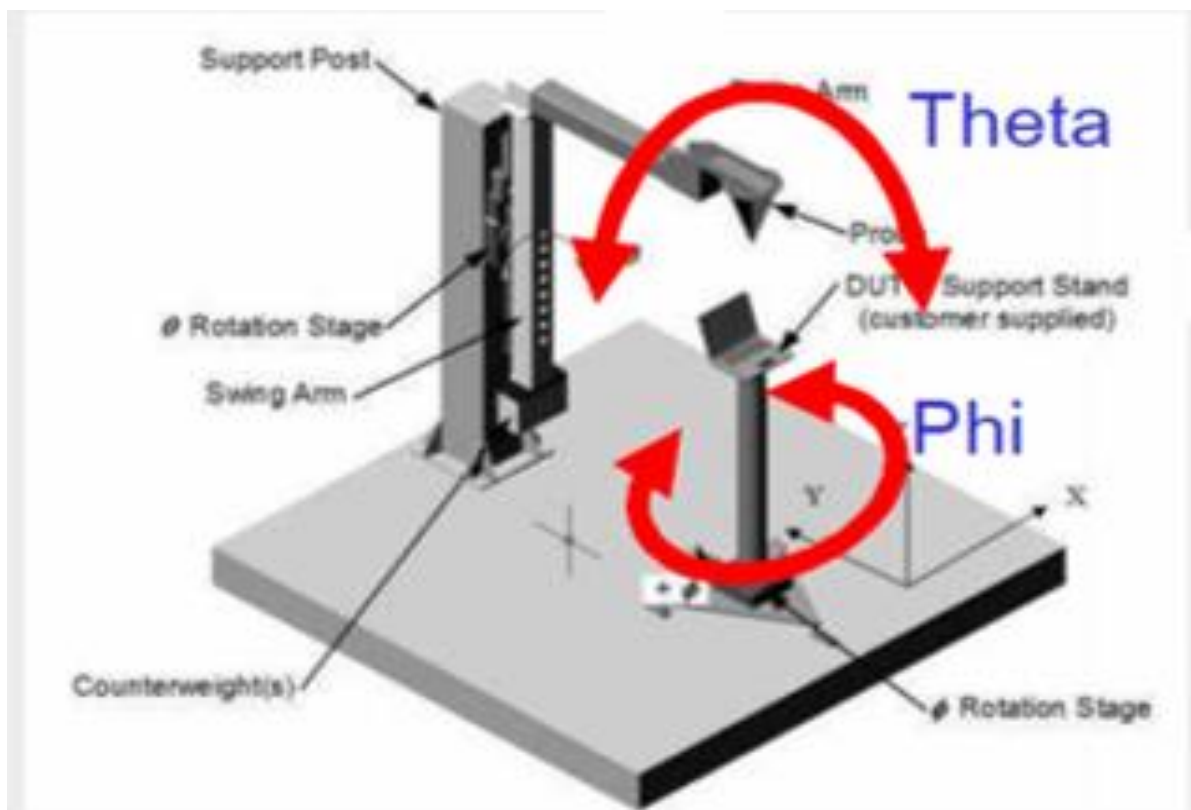
- Radiation pattern and Gain Test

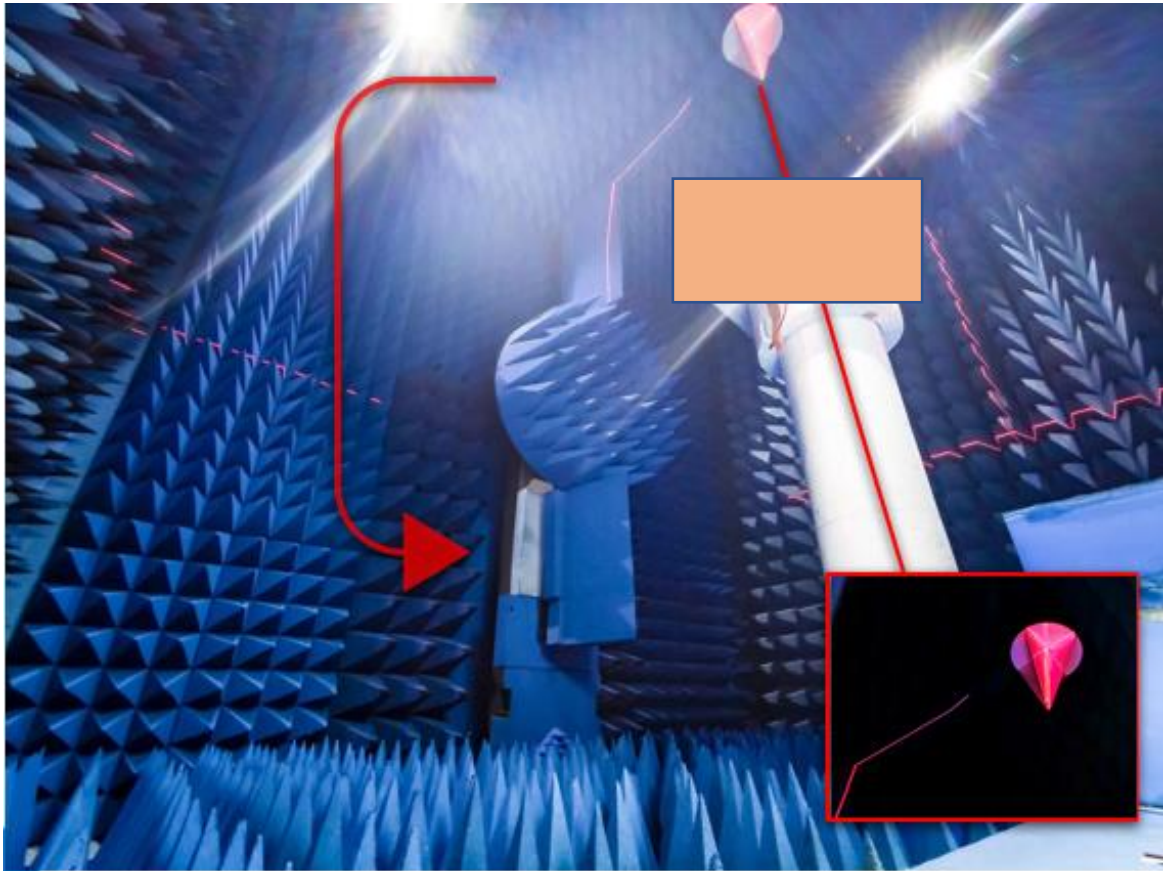
A. The 3D chamber provides less than -40dB reflectivity from 800MHz to 6GHz and a 40cm diameter spherical quiet zone. The measurement results are calibrated using both dipoles and standard gain horns

B. The antenna under tested is arranged in the turned table and a decoupling sleeve is used to reduce feed line radiation

C. The measured results of the radiation patterns and antenna gain are obtained from the control system and showed on the monitor

b. Test Setup:





3. Antenna Gains

Antenna information [↵]					
Vendor [↵]	Type [↵]	Antenna Part number (Main) [↵]		Antenna Part number (Aux) [↵]	
AWAN [↵]	PIFA [↵]	AYP8Y-100011A [↵] (1415-09AM0QS) [↵] AYL00-000002A [↵] (1415-09AP0QS) [↵]		AYP8Y-100012A [↵] (1415-09AW0QS) [↵] AYL00-000003A [↵] (1415-09AN0QS) [↵]	
Peak gain w/ cable loss (dBi)* [↵]					
[↵]	2.4GHz ↓ 2400-2483.5 MHz [↵]	5.2GHz ↓ 5150-5250MHz [↵]	5.3GHz ↓ 5250-5350MHz [↵]	5.6GHz ↓ 5470-5725MHz [↵]	5.8GHz ↓ 5725-5850MHz [↵]
Main [↵]	6.07 [↵]	6.20 [↵]	6.35 [↵]	6.15 [↵]	5.03 [↵]
Aux [↵]	7.32 [↵]	6.35 [↵]	6.35 [↵]	6.49 [↵]	6.49 [↵]



Antenna information [Ⓢ]		
Vendor [Ⓢ]	Type [Ⓢ]	Antenna Part number (BT) [Ⓢ]
AWAN [Ⓢ]	PIFA [Ⓢ]	AYL8Y-100000A [Ⓢ] (1415-09AQOQS) [Ⓢ]
Peak gain w/ cable loss (dBi)* [Ⓢ]		
		2.4GHz ↓ 2400-2483.5 MHz [Ⓢ]
BT [Ⓢ]		2.91 [Ⓢ]

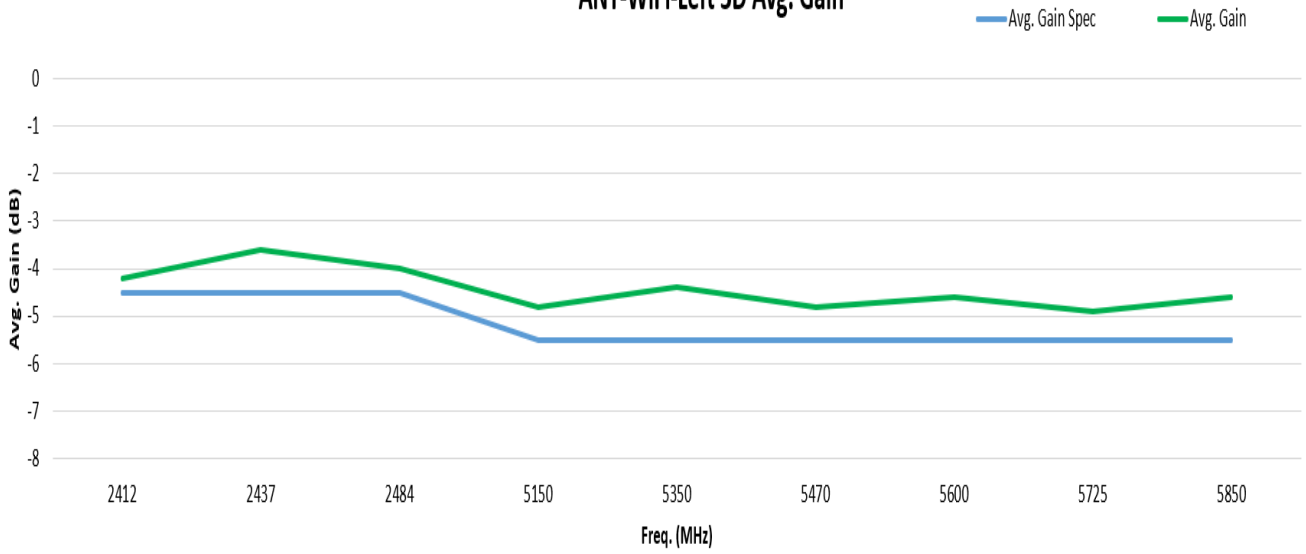
4. Efficiency & Gain

a. Main Antenna

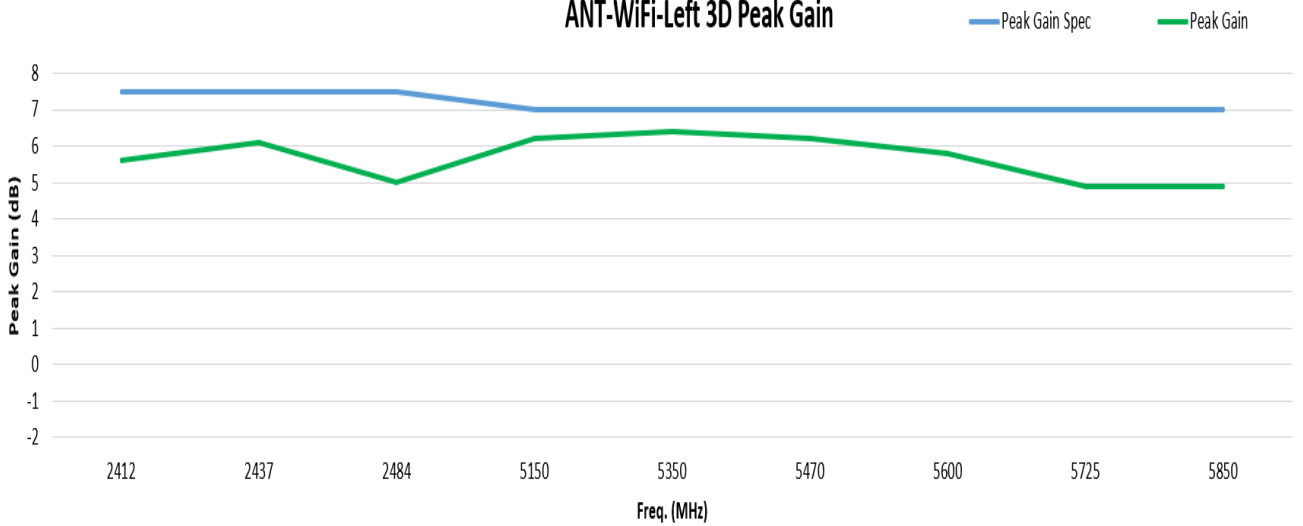
Frequency (MHz)	ANT-WiFi-Left						
	3D Peak Gain				3D Average		
	Spec.	H-pol.	V-pol.	Total	Spec.	3D Gain	Efficiency %
2412	7.5	0.5	4.9	5.60	-4.5	-4.2	38.0
2442	7.5	1.1	5.2	6.07	-4.5	-3.6	43.4
2484	7.5	1.5	4.3	4.96	-4.5	-4.0	39.9
5150	7	4.1	2.4	6.20	-5.5	-4.8	33.5
5350	7	5.2	5.1	6.35	-5.5	-4.4	36.4
5470	7	4.0	5.1	6.15	-5.5	-4.8	32.8
5600	7	3.5	4.4	5.76	-5.5	-4.6	35.0
5725	7	3.1	3.0	4.94	-5.5	-4.9	32.4
5850	7	3.6	4.1	4.91	-5.5	-4.6	34.9



ANT-WiFi-Left 3D Avg. Gain



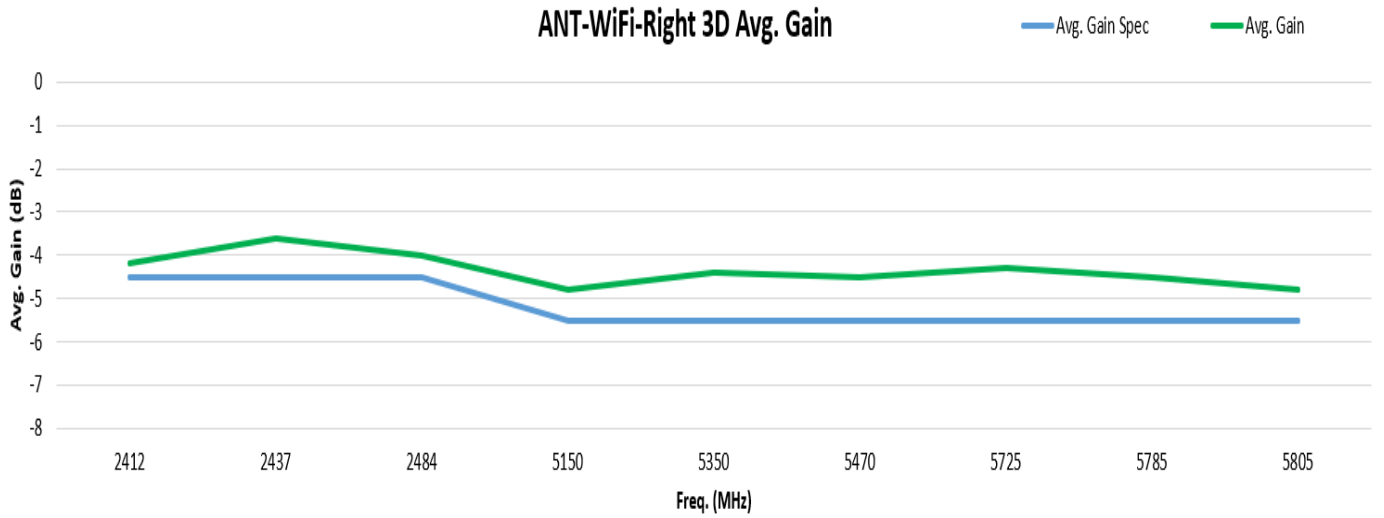
ANT-WiFi-Left 3D Peak Gain

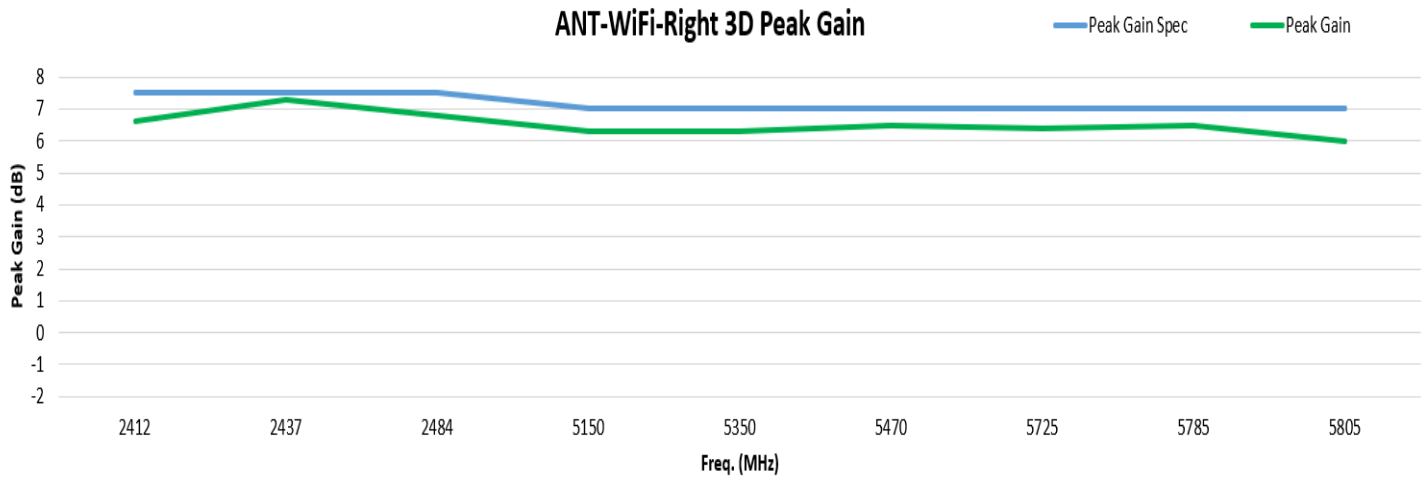


b. Auxiliary Antenna



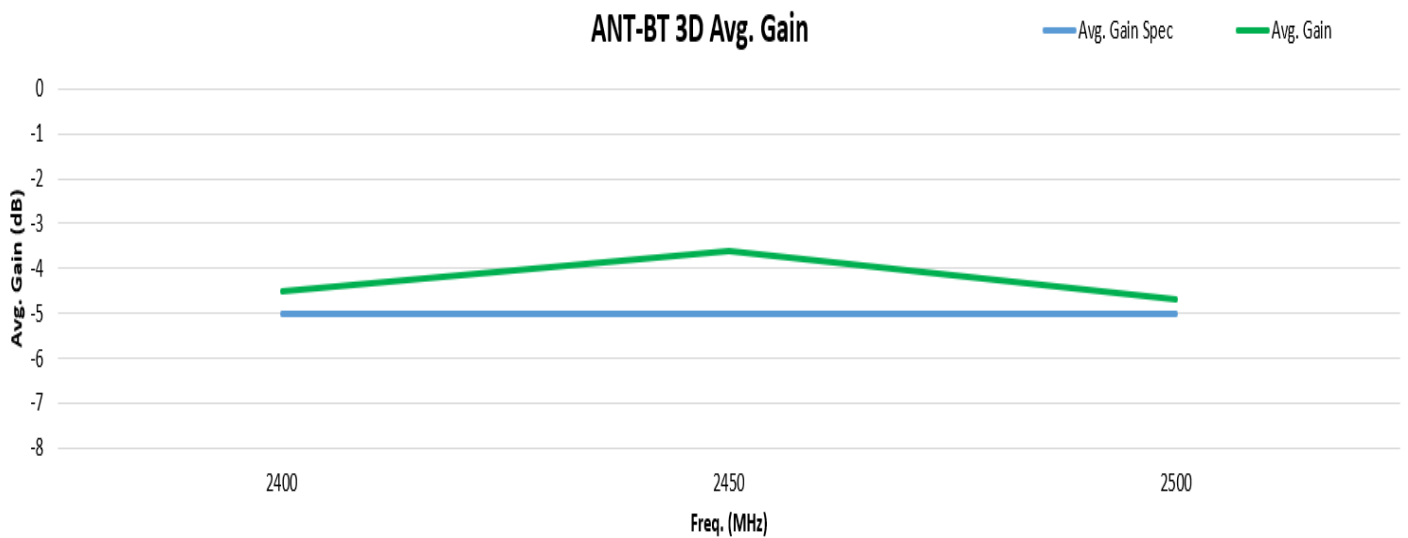
Frequency (MHz)	ANT-WiFi-Right						
	3D Peak Gain				3D Average		
	Spec.	H-pol.	V-pol.	Total	Spec.	3D Gain	Efficiency %
2412	7.5	-0.8	5.8	6.61	-4.5	-4.2	38.4
2442	7.5	0.8	6.6	7.32	-4.5	-3.6	47.2
2484	7.5	0.8	5.8	6.77	-4.5	-4.0	41.5
5150	7	3.6	2.3	6.28	-5.5	-4.8	33.4
5350	7	4.7	2.7	6.33	-5.5	-4.4	36.8
5470	7	4.6	3.0	6.48	-5.5	-4.5	35.6
5600	7	4.1	4.4	6.36	-5.5	-4.3	37.4
5725	7	4.0	4.4	6.49	-5.5	-4.5	35.6
5850	7	3.0	3.1	6.01	-5.5	-4.8	33.0





c. BT Antenna

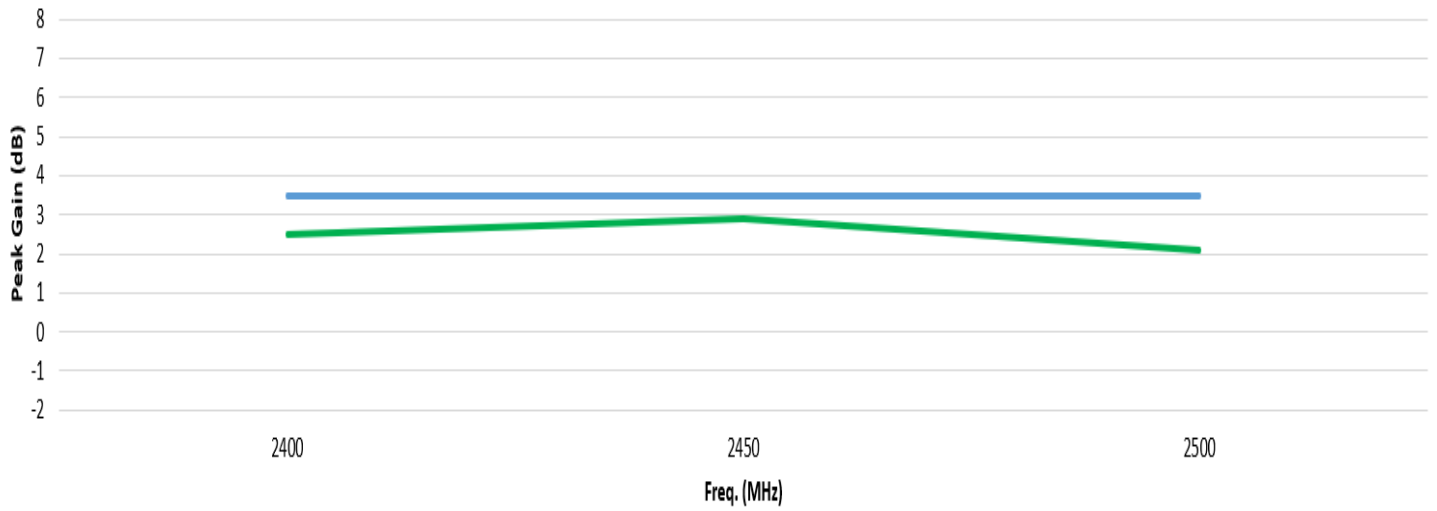
Frequency (MHz)	ANT-BT						
	3D Peak Gain				3D Average		
	Spec.	H-pol.	V-pol.	Total	Spec.	3D Gain	Efficiency %
2400	3.5	-5.3	2.1	2.45	-5	-4.5	35.4
2450	3.5	-2.4	2.2	2.91	-5	-3.6	43.6
2500	3.5	-3.5	1.9	2.10	-5	-4.7	33.8





ANT-BT 3D Peak Gain

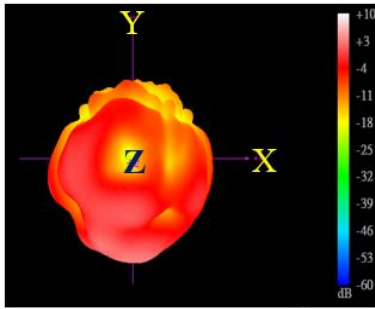
Peak Gain Spec Peak Gain



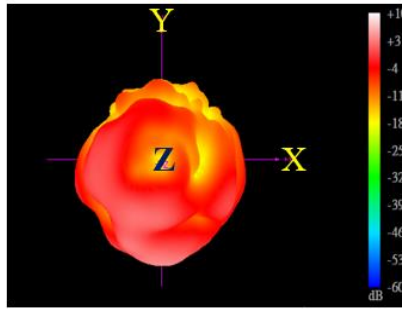


5. 3D Radiation pattern

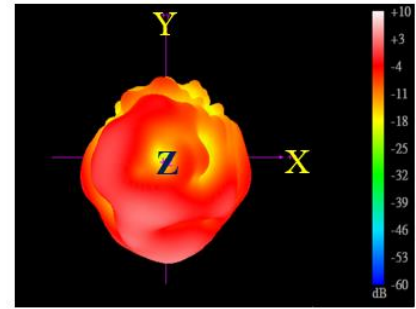
a. Main Antenna



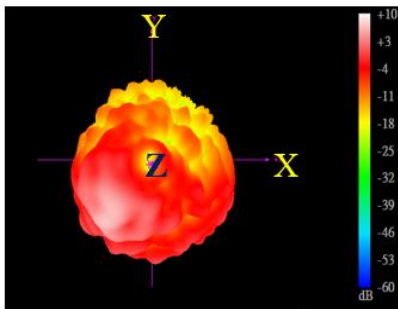
2412 MHz



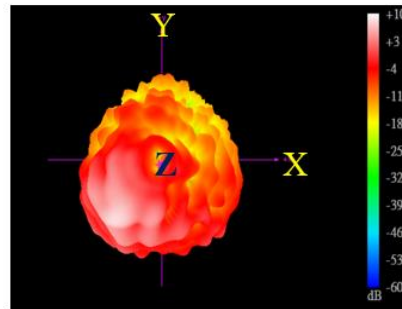
2442 MHz



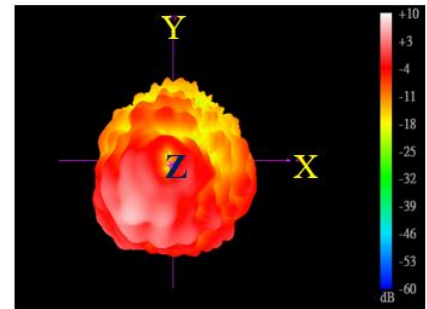
2484 MHz



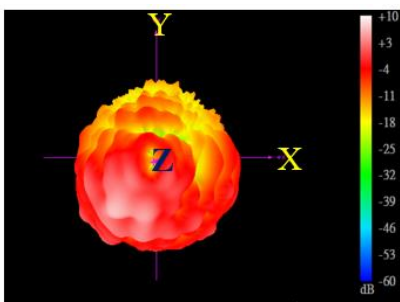
5150 MHz



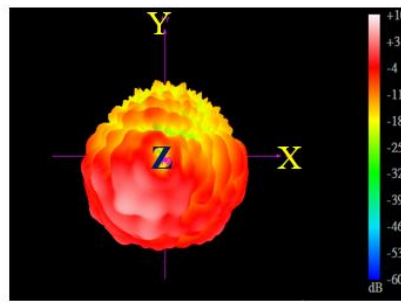
5350 MHz



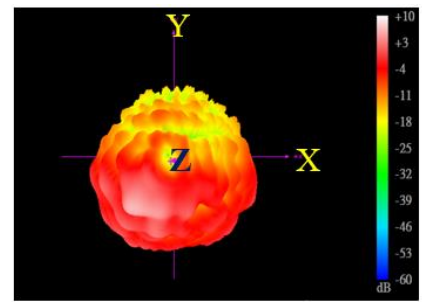
5470 MHz



5600 MHz



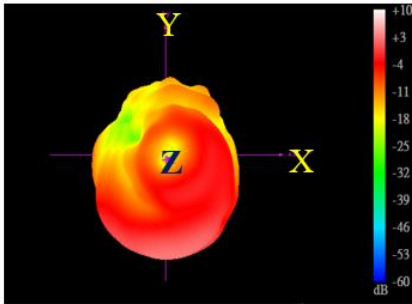
5725 MHz



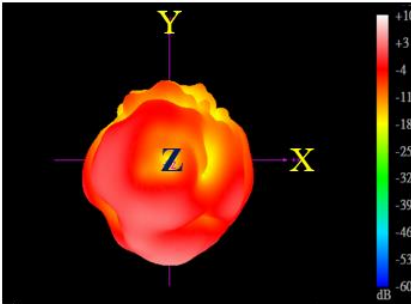
5850 MHz



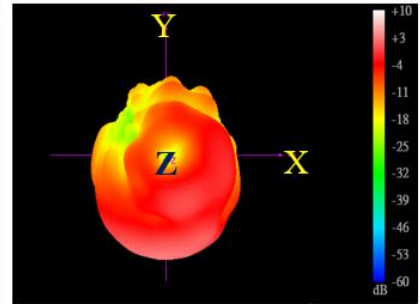
b. Auxiliary Antenna



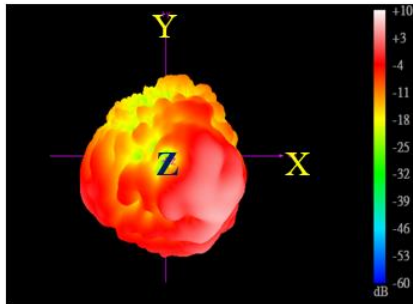
2412 MHz



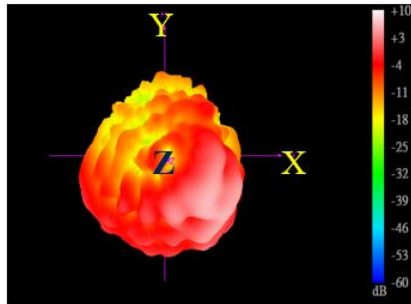
2442 MHz



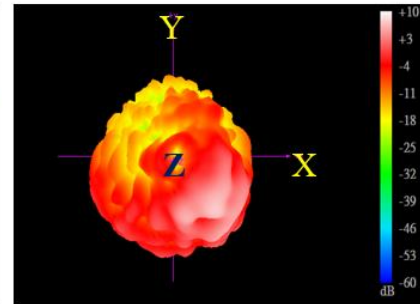
2484 MHz



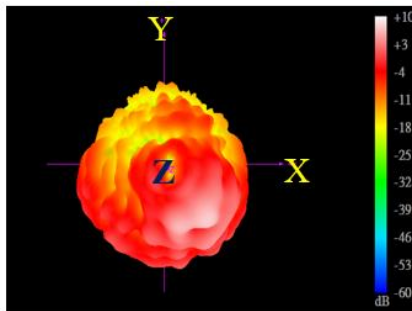
5150 MHz



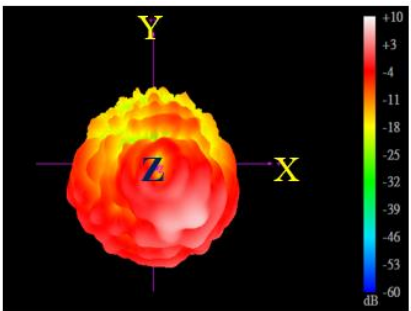
5350 MHz



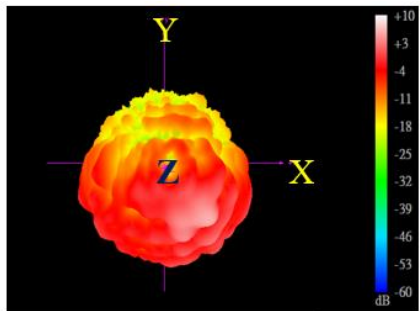
5470 MHz



5600 MHz



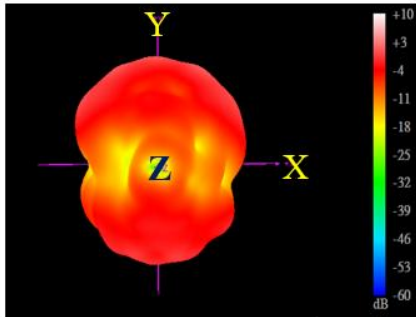
5725 MHz



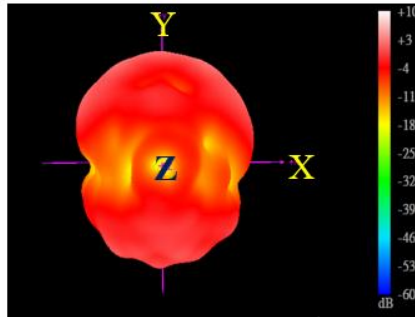
5850 MHz



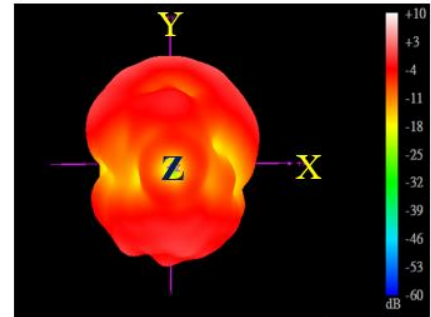
c. BT Antenna



2400 MHz



2450 MHz



2500 MHz