

Awan AT150ED WiFi/BT Test Report

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- **Antenna Testing Conditions**

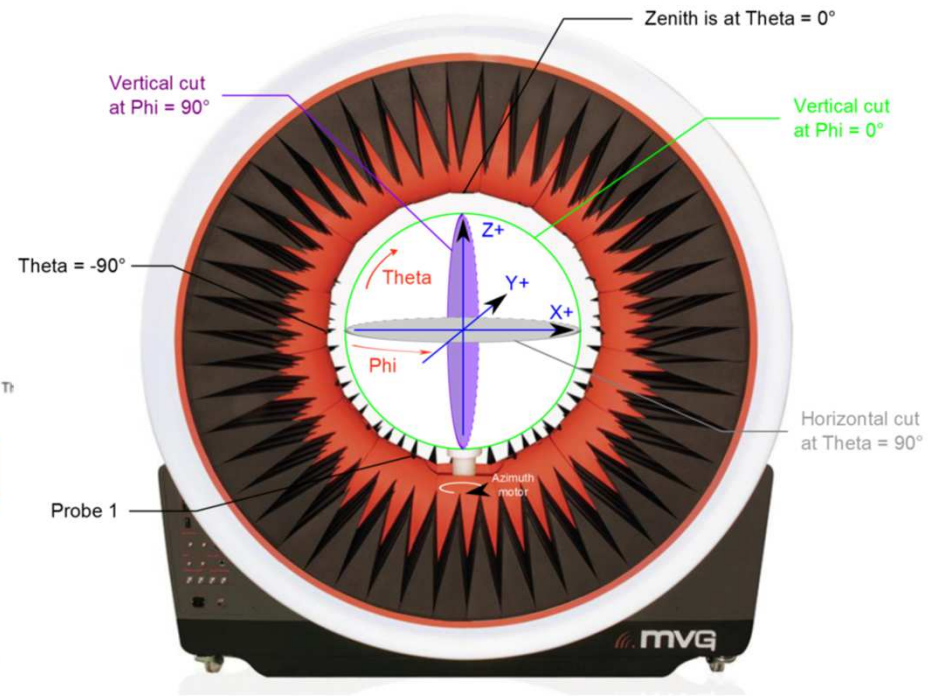
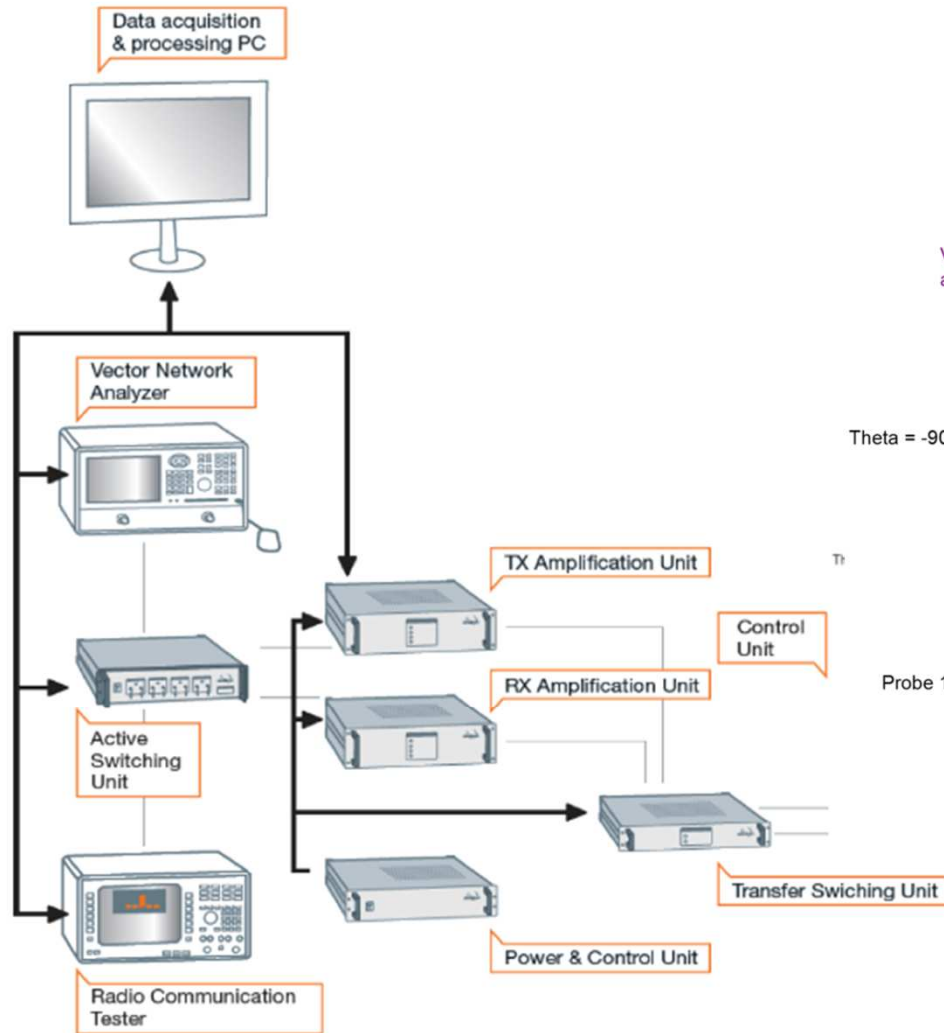
1. Test System
2. Antenna Under Test
3. Antenna Placement

- **Antenna RF characteristics**

1. VSWR & Gain Table
2. Radiation Patterns
3. Isolation

Antenna Test System

Test setup



Antenna Test System

Test Procedure

1. Test Equipment

- A. VSWR and input impedance: KEYSIGHT 5071C Network Analyzer
- B. Antenna gain and efficiency: MVG Satimo chamber

2. Test Setup

2.1 Frequency Range

- A. WLAN: 2000 ~ 6000 MHz

2.2 VSWR

- Step 1: The antenna is arranged on the customer provided test fixture(see figure. 1).
- Step 2: The VSWR of the antenna is measured via KEYSIGHT 5071C Network Analyzer (see figure. 1).

2.3 Radiation pattern and Gain

- A. The 3D chamber provides less than -40dB reflectivity from 500MHz to 8GHz and a 40cm diameter spherical quiet zone. The measurement results are calibrated using both dipoles and standard gain horns (see figure. 2).
- B. The antenna under tested is arranged in the turned table and a decoupling sleeve is used to reduce feed line radiation (see figure. 3).
- C. The measured results of the radiation patterns and antenna gain are obtained from the control system and showed on the monitor (see figure. 4).

Antenna Test System

Test Equipment

Equipment Description↴	Manufacturer	Identification no.↴	Current Calibration date↴	Next calibration date↴
Universal Radio↴ Communication tester↴	Anritsu↴	MT8820C↴	2023/06/30	2023/12/29↴
Network Analyzer↴	Agilent↴	E5071C↴	2023/06/30	2023/12/29↴
Sleeve Dipole↴	MVG↴	SD740↴	2023/06/30	2023/12/29↴
Dual Ridge Horn↴	MVG↴	SH800↴	2023/06/30	2023/12/29↴
Dipole antenna↴	MVG↴	3126-700↴	2023/06/30	2023/12/29↴
Stargate-16-L probe array↴	MVG↴	Stargate-16-L↴	2023/06/30	2023/12/29↴
Measurement software↴	MVG↴	Wave Studio 22.1↴	N/A↴	N/A↴
Wireless protocol tester↴	R&S↴	CMW500↴	2023/06/30	2023/12/29↴

Antenna Under Test

WiFi/BT

Antenna Model	AYF6P-100002	
Antenna Type	PIFA Antenna for WiFi application	
Connector Material	I-PEX MHF1	
Cable Type	Ø1.13	
Polarization	Linear	
Impedance	50Ω	
Radiation pattern	Omni-directional	
Frequency	2400~2500MHz	5150~5850MHz
VSWR	2.0 Max	2.0 Max
Peak gain(dBi)	2.17~2.25	3.26~3.56
Antenna dimension	WiFi(AYF6P-100002)	Figure-1

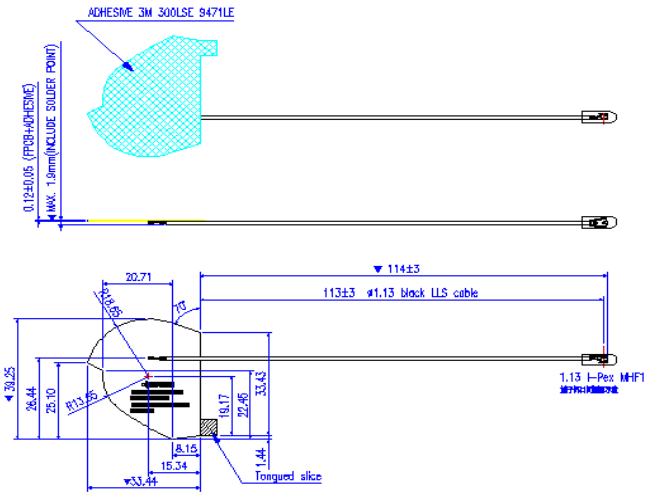


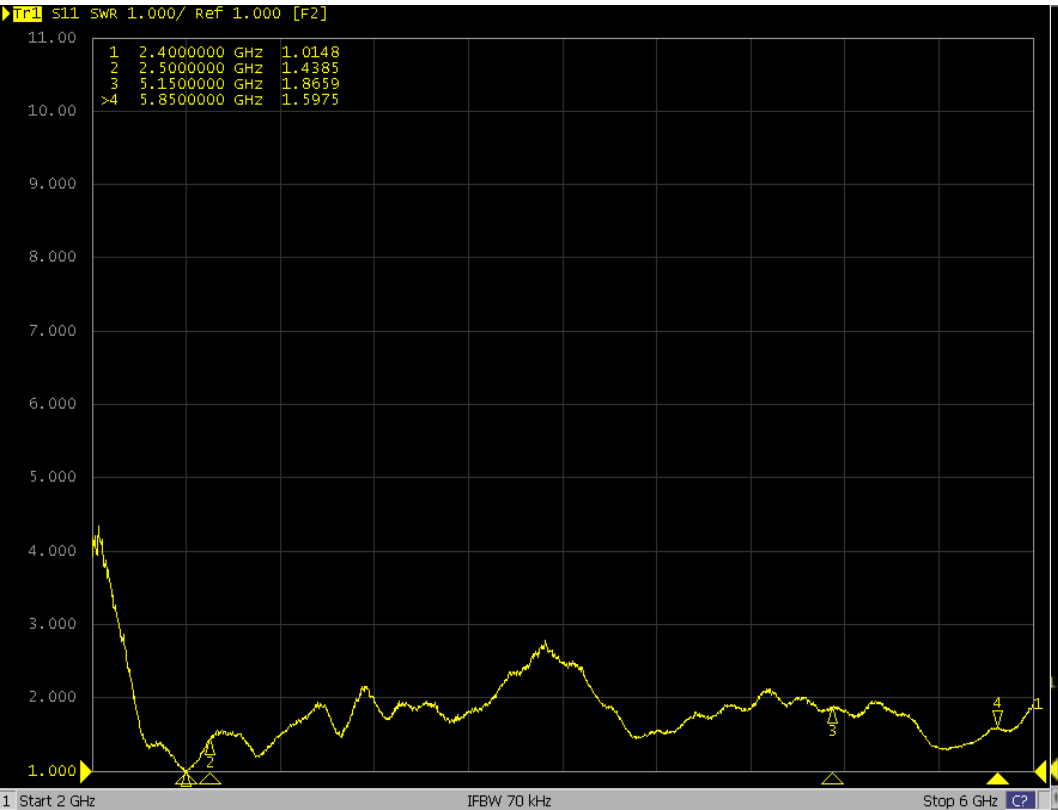
Figure-1 AYF6P-100002

Antenna Under Test

Description	Tester	Measured Date
Measured	William.Lee	2023/08/17

The antenna gain values are used in EMC measurement, the EIRP and/or Conducted power are compliance all FCC requirements and not exceed the limit.

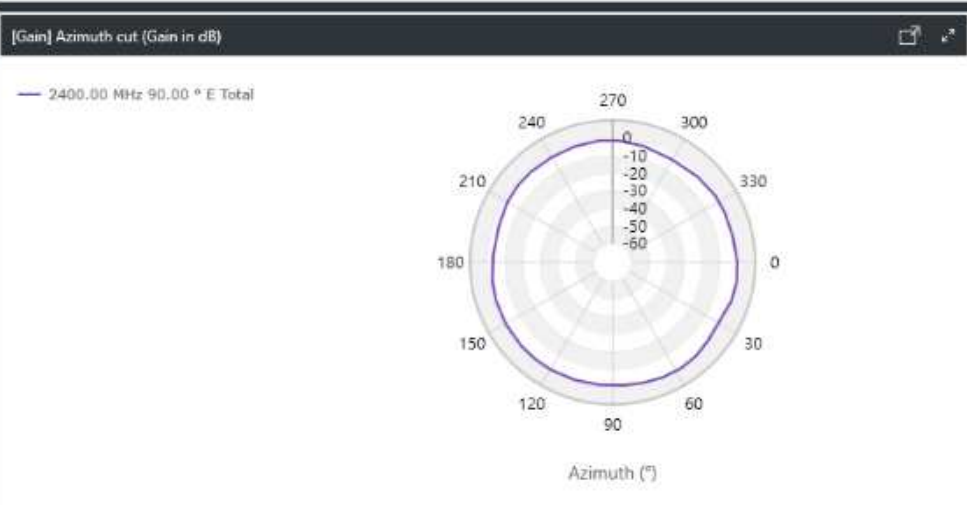
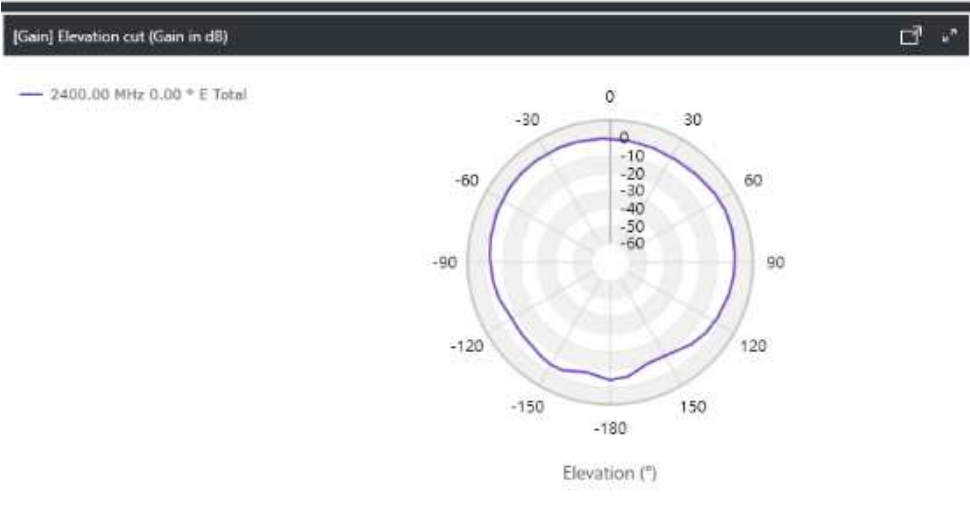
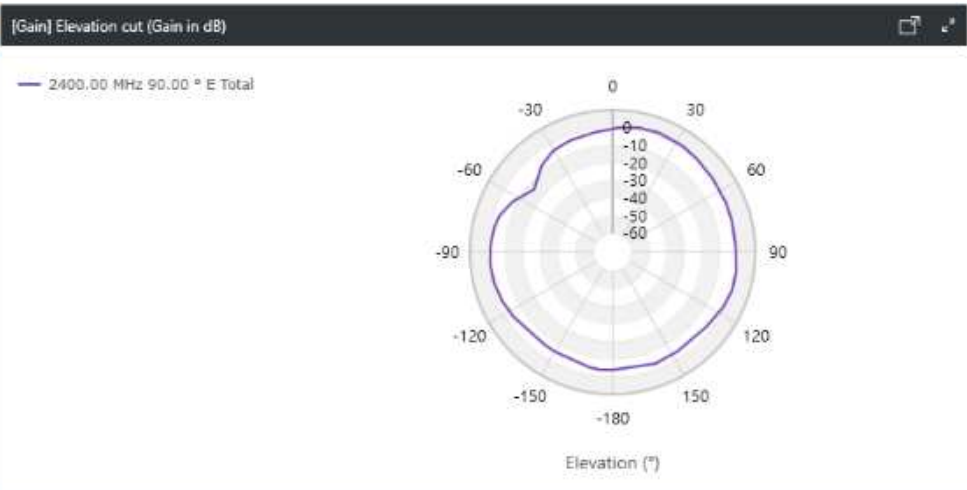
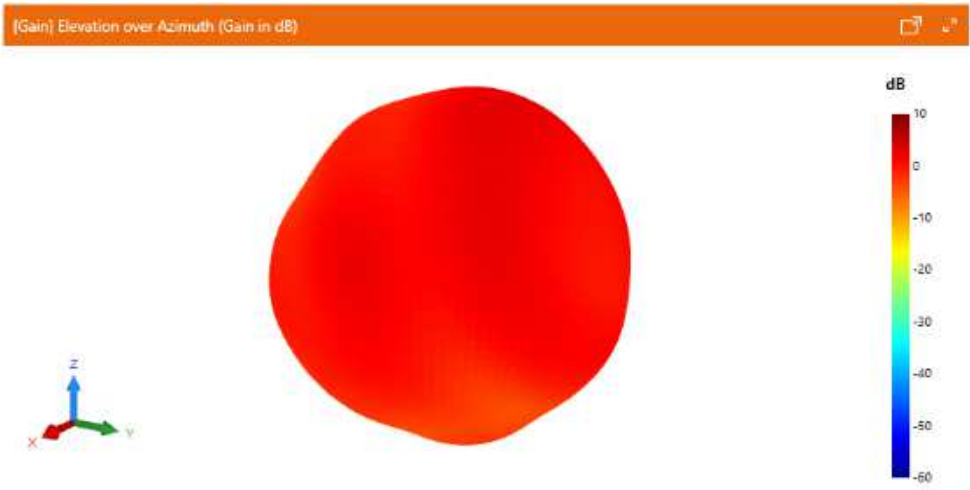
VSWR & Gain Table_WiFi/BT



Frequency (MHz)	3D Avg. Gain(dBi)	3D Peak Gain (dBi)	Efficiency(%)
2400	-3.6	2.17	43.65
2450	-3.5	2.25	44.36
2500	-3.5	2.20	44.77
5150	-3.4	3.36	45.71
5250	-3.5	3.32	44.98
5350	-3.3	3.55	46.45
5470	-3.2	3.48	48.19
5725	-3.4	3.55	46.03
5785	-3.4	3.56	45.71
5850	-3.5	3.26	44.57

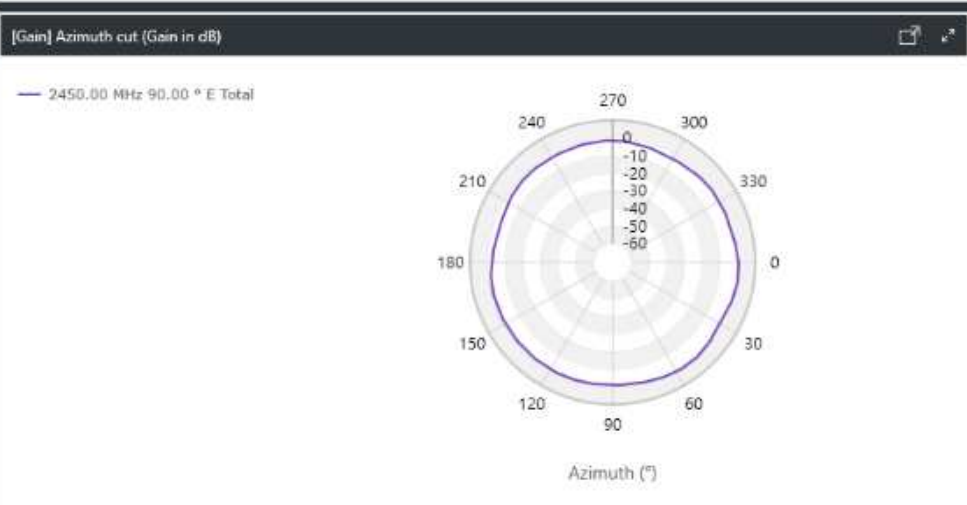
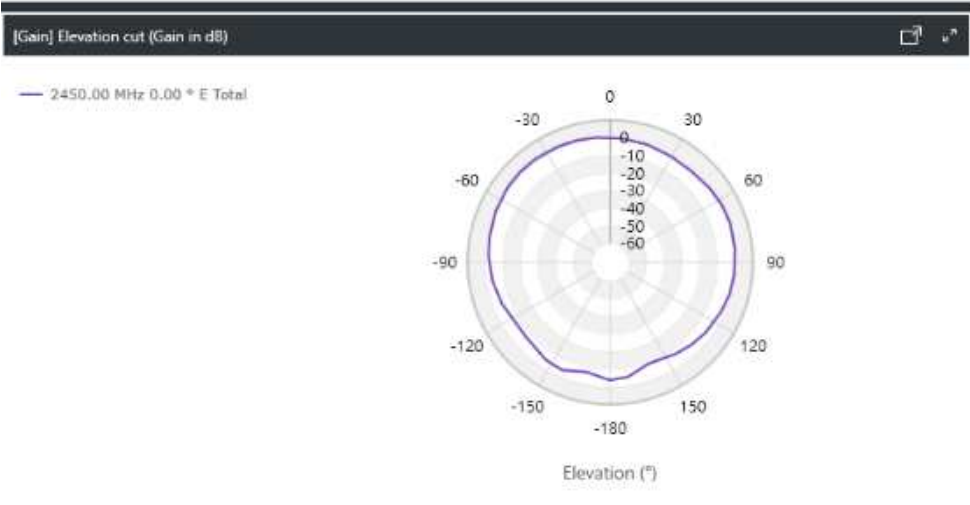
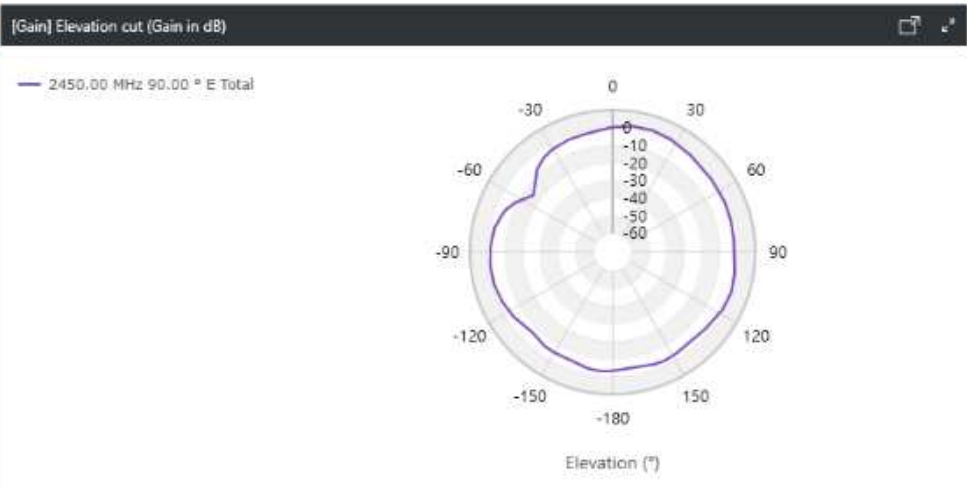
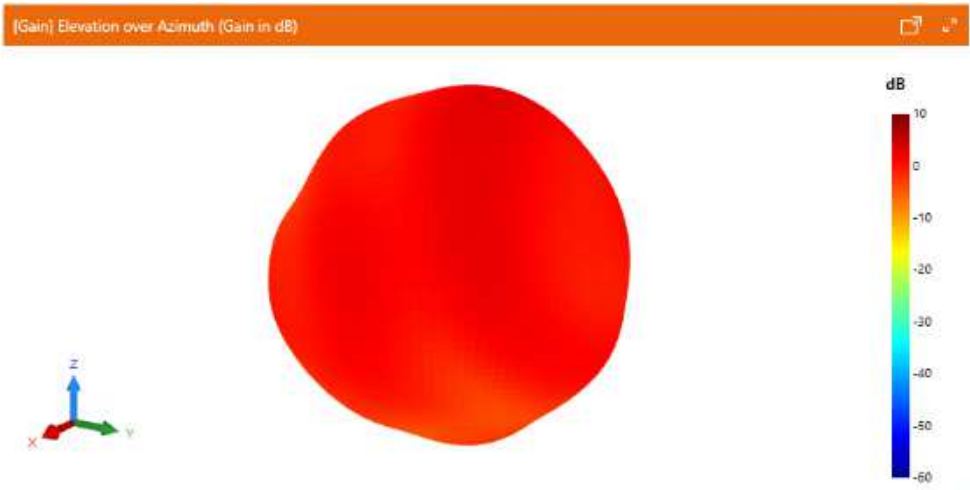
Radiation Patterns_WiFi/BT_2400MHz

3D	ZY-Plane	dB	ZY Plane	ZX Plane	XY Plane
ZX-Plane	XY-Plane	Total(Max.)	1.90	1.29	0.99



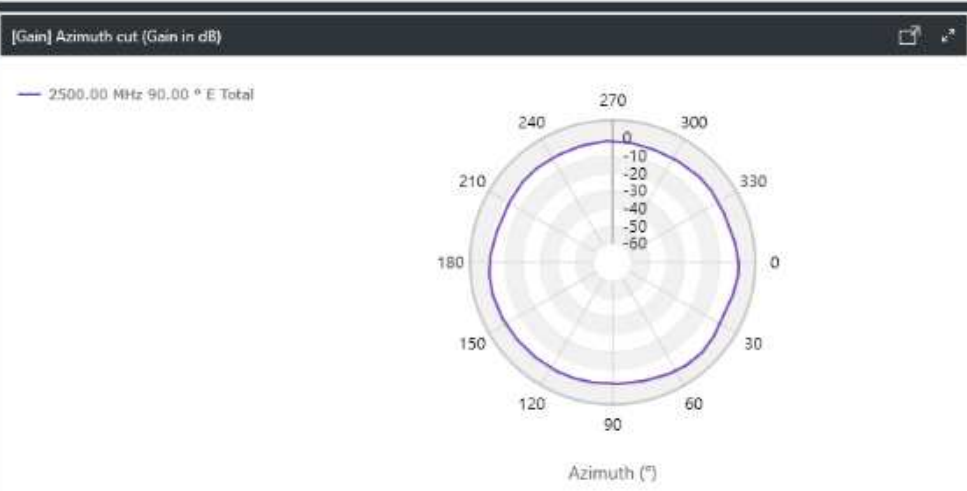
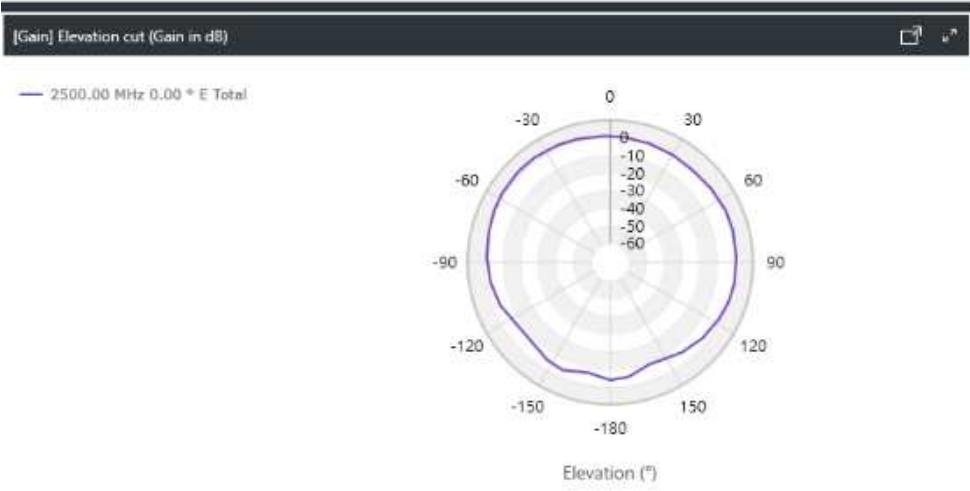
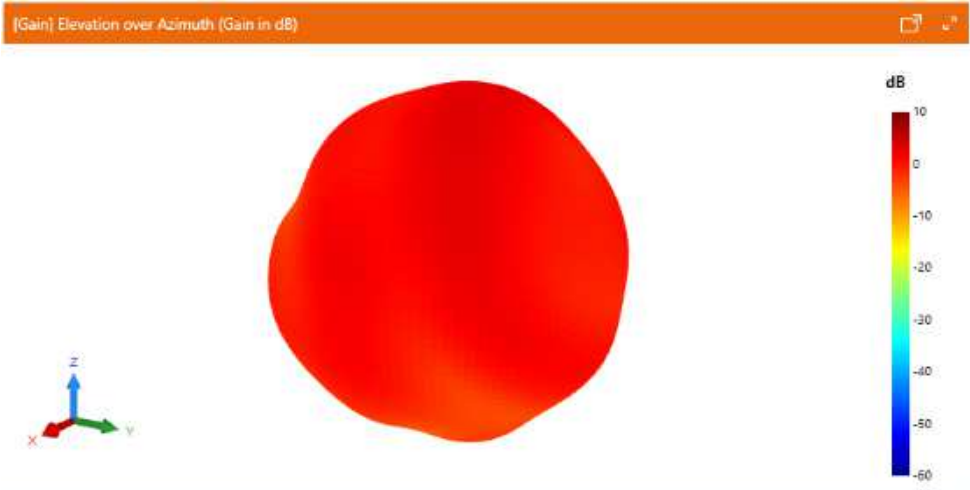
Radiation Patterns_WiFi/BT_2450MHz

3D	ZY-Plane	dB	ZY Plane	ZX Plane	XY Plane
ZX-Plane	XY-Plane	Total(Max.)	2.08	1.64	1.03



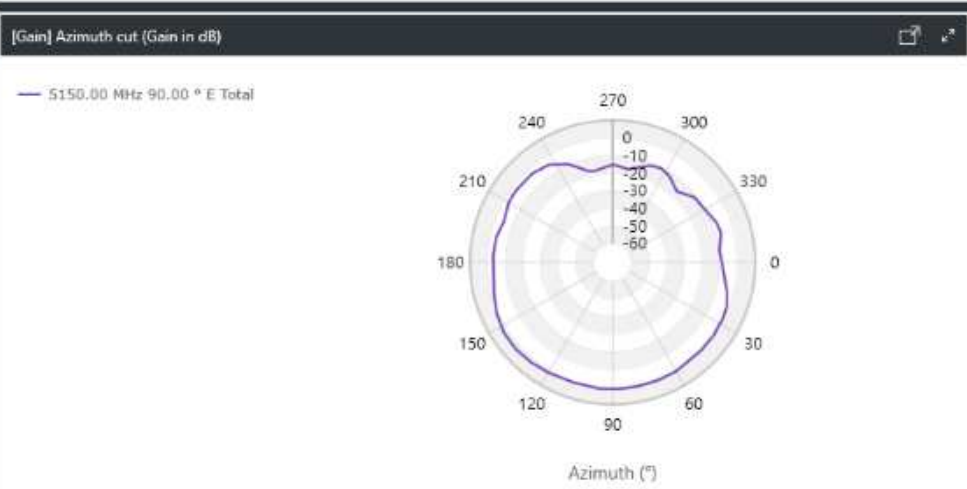
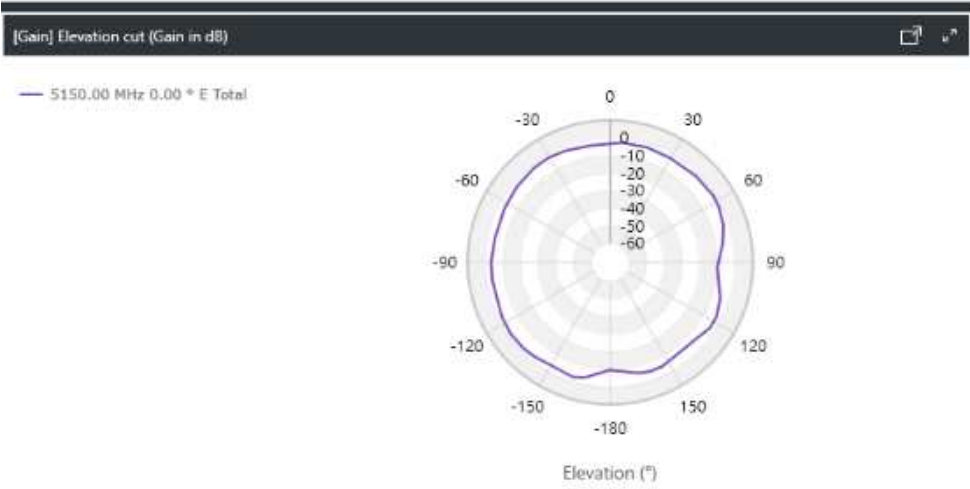
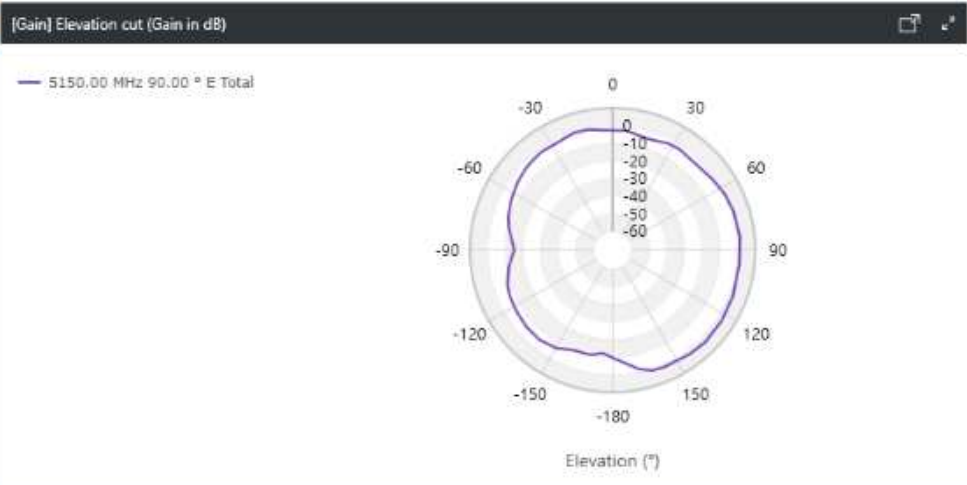
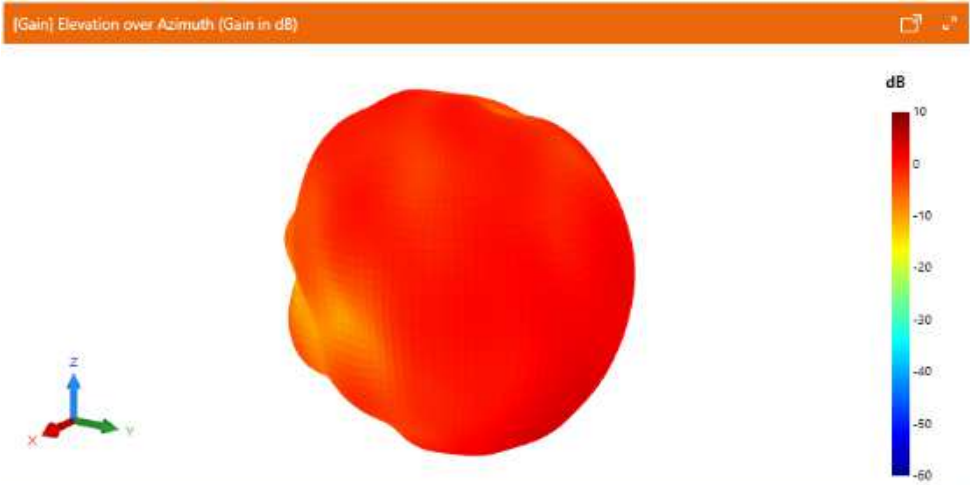
Radiation Patterns_WiFi/BT_2500MHz

3D	ZY-Plane	dB	ZY Plane	ZX Plane	XY Plane
ZX-Plane	XY-Plane	Total(Max.)	2.06	2.57	1.19



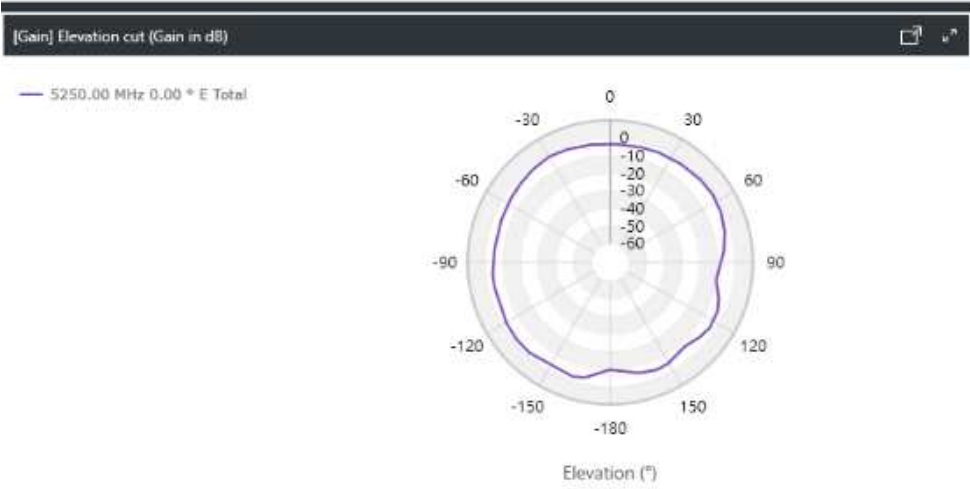
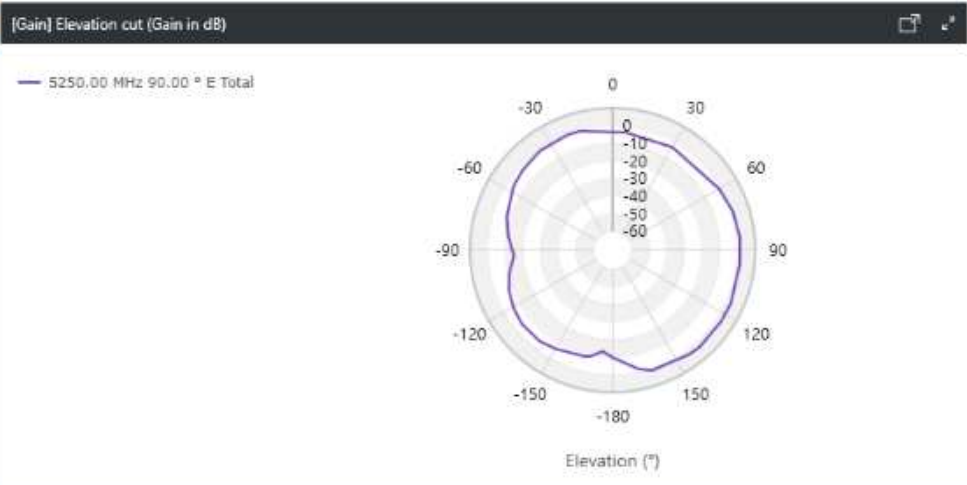
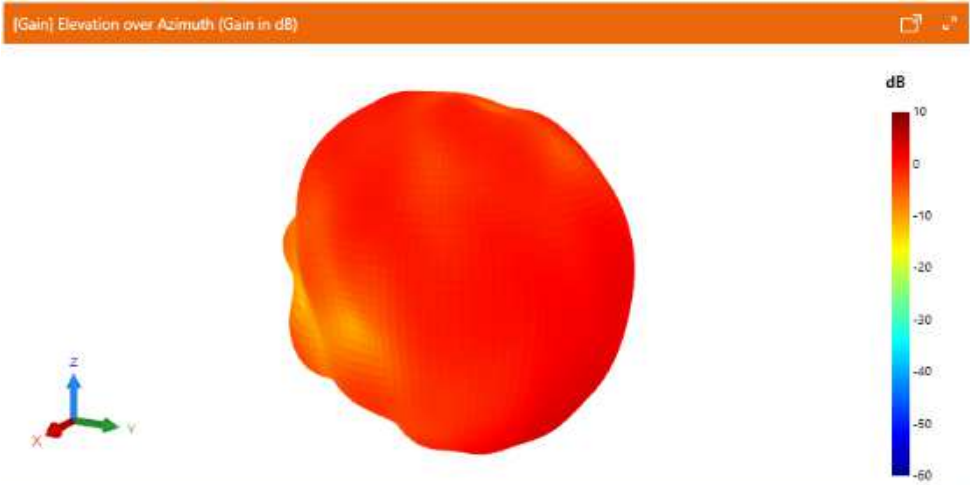
Radiation Patterns_WiFi/BT_5150MHz

3D	ZY-Plane	dB	ZY Plane	ZX Plane	XY Plane
ZX-Plane	XY-Plane	Total(Max.)	2.99	-0.73	2.99



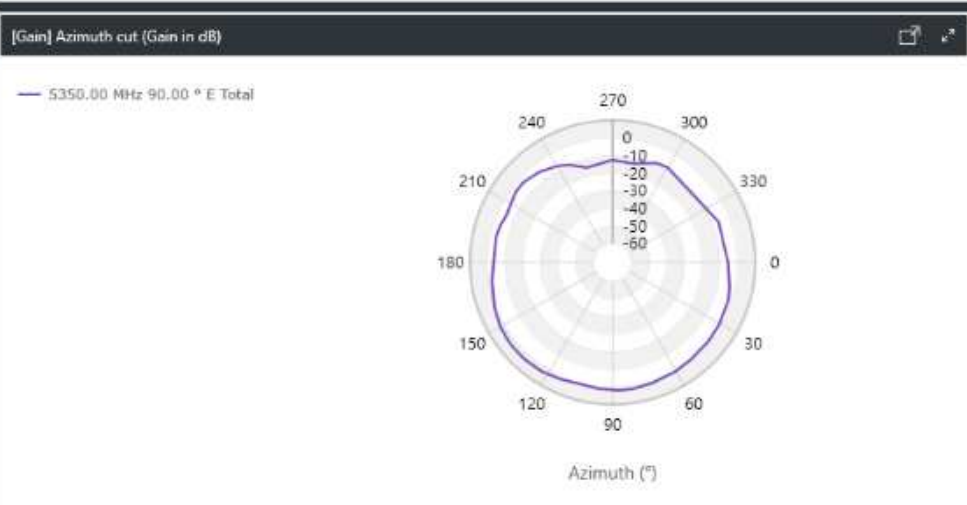
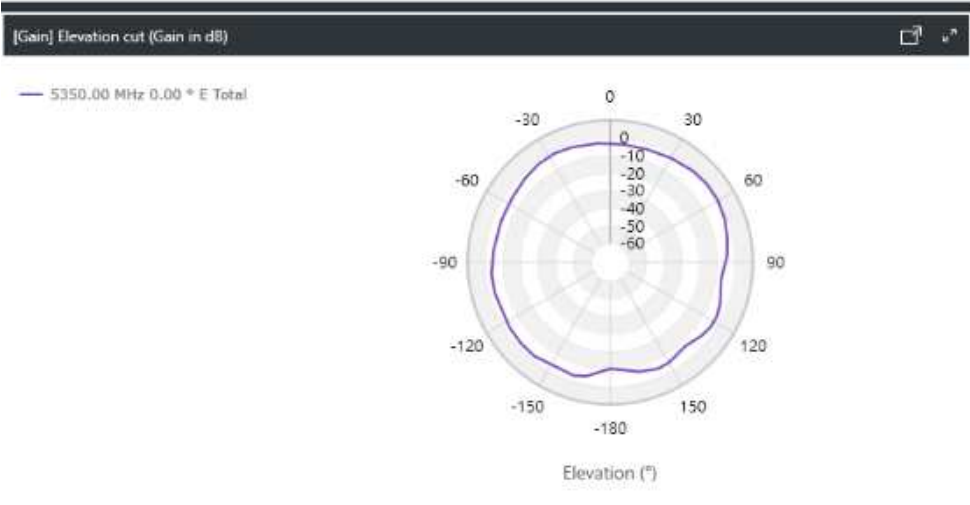
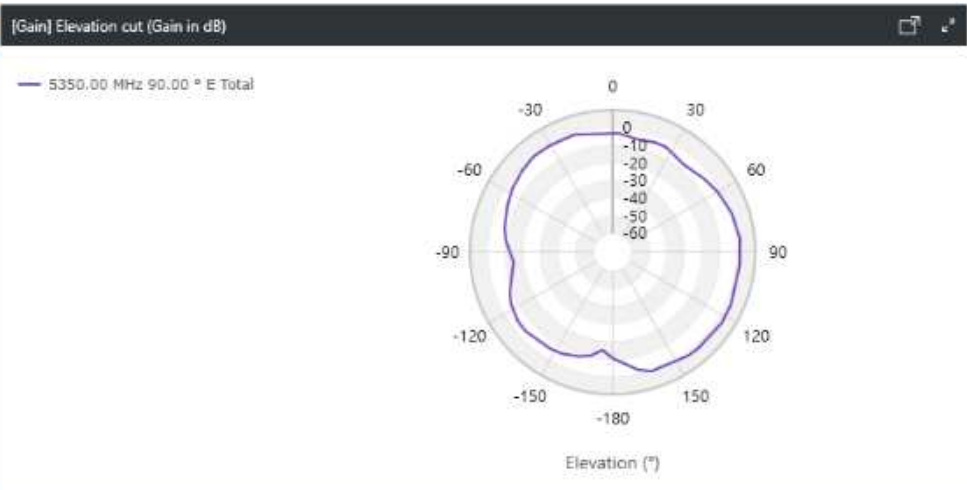
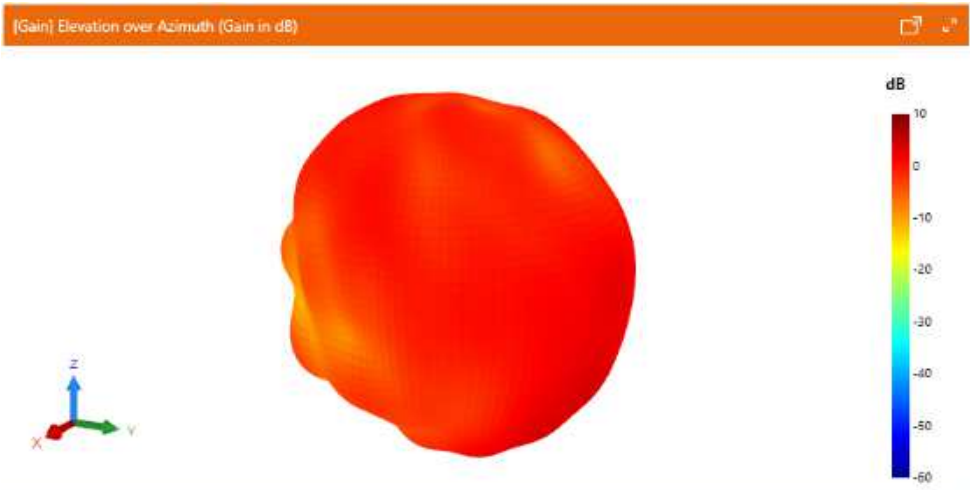
Radiation Patterns_WiFi/BT_5250MHz

3D	ZY-Plane	dB	ZY Plane	ZX Plane	XY Plane
ZX-Plane	XY-Plane	Total(Max.)	2.59	-0.71	3.15



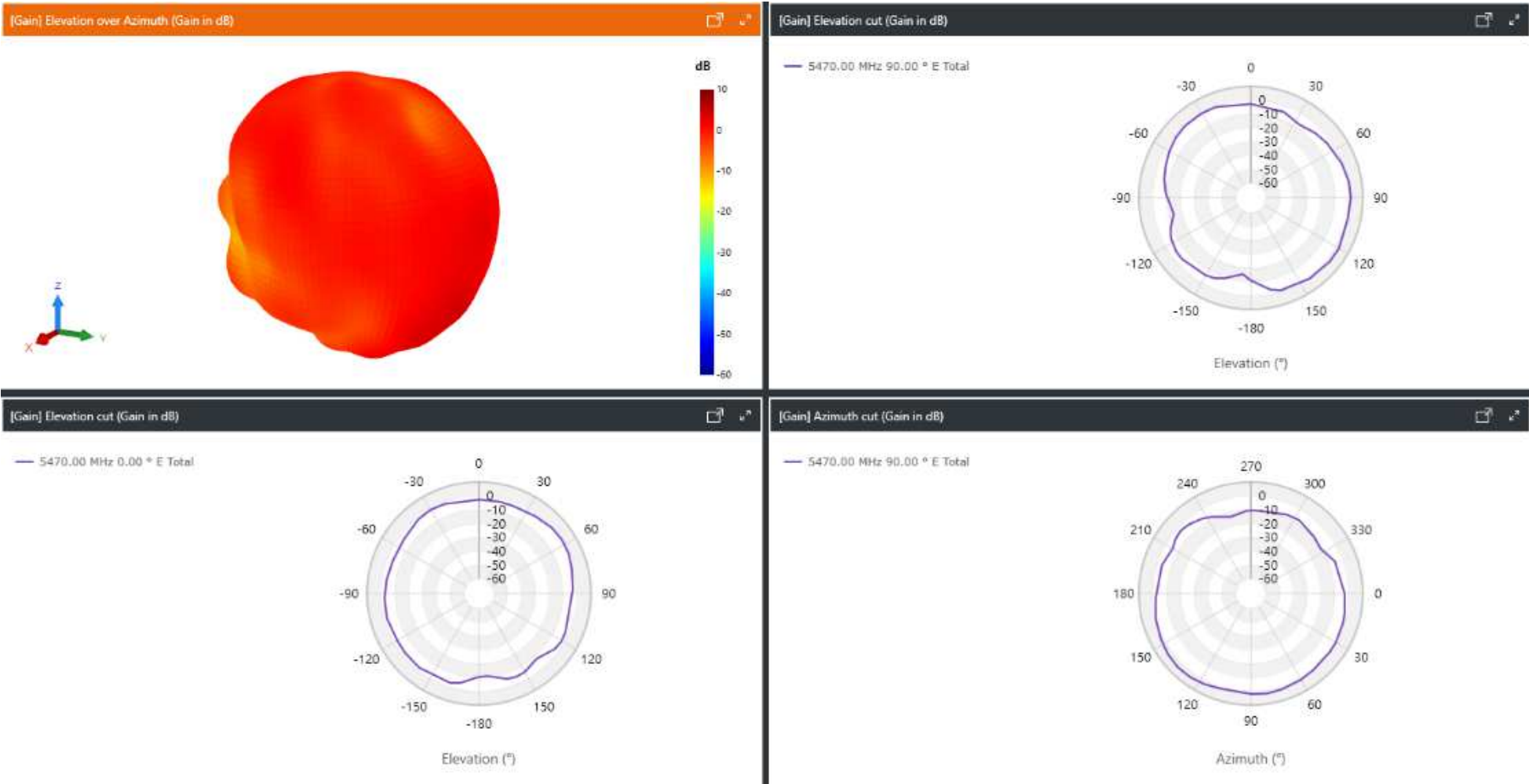
Radiation Patterns_WiFi/BT_5350MHz

3D	ZY-Plane	dB	ZY Plane	ZX Plane	XY Plane
ZX-Plane	XY-Plane	Total(Max.)	3.06	-0.18	3.55



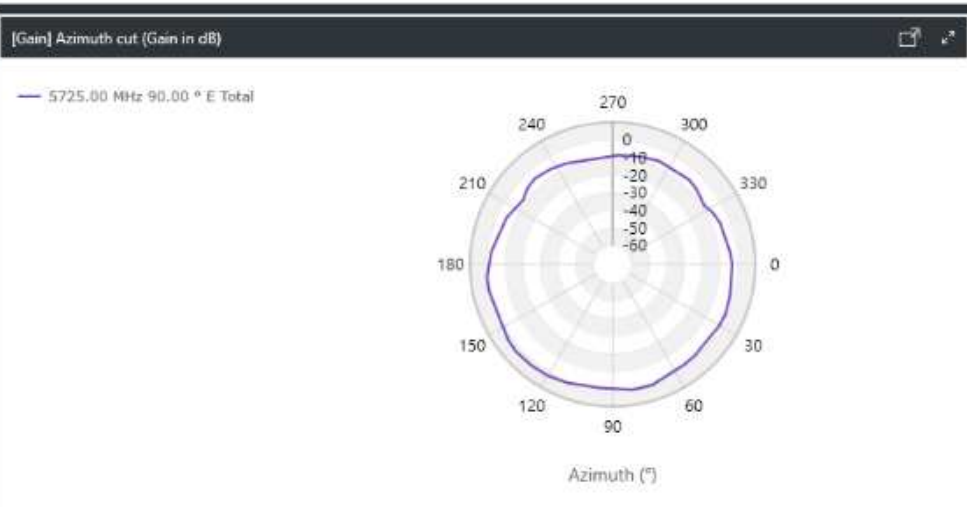
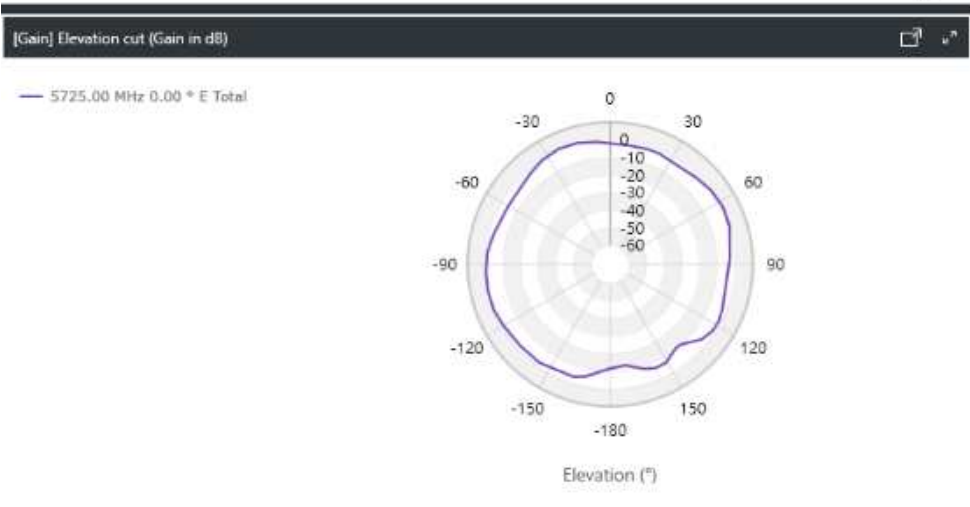
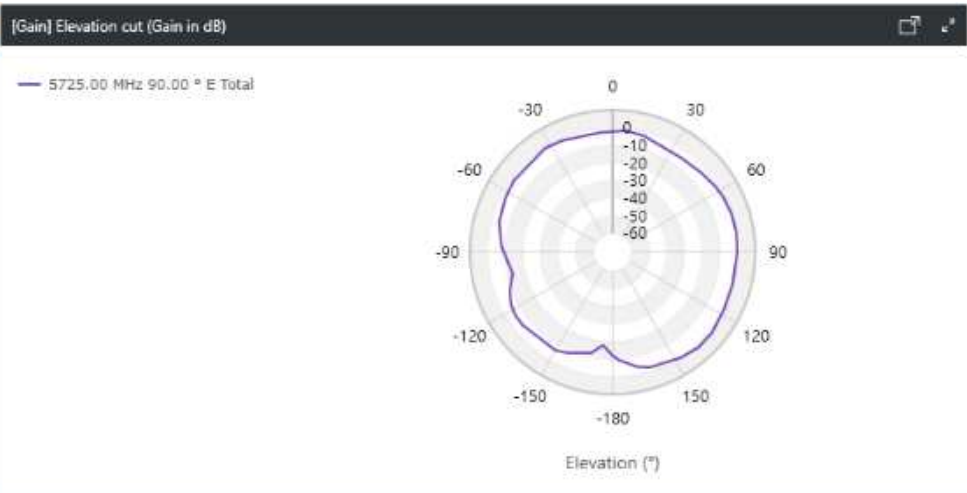
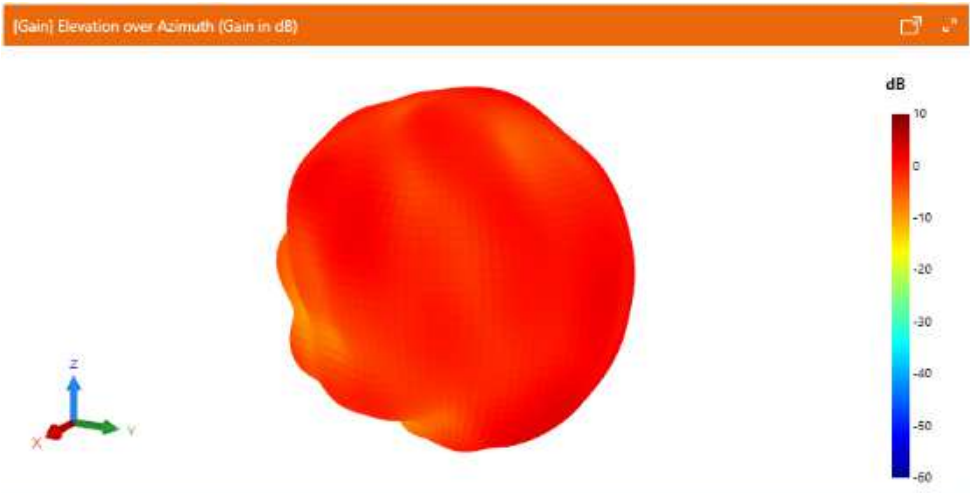
Radiation Patterns_WiFi/BT_5470MHz

3D	ZY-Plane	dB	ZY Plane	ZX Plane	XY Plane
ZX-Plane	XY-Plane	Total(Max.)	3.03	0.69	3.88



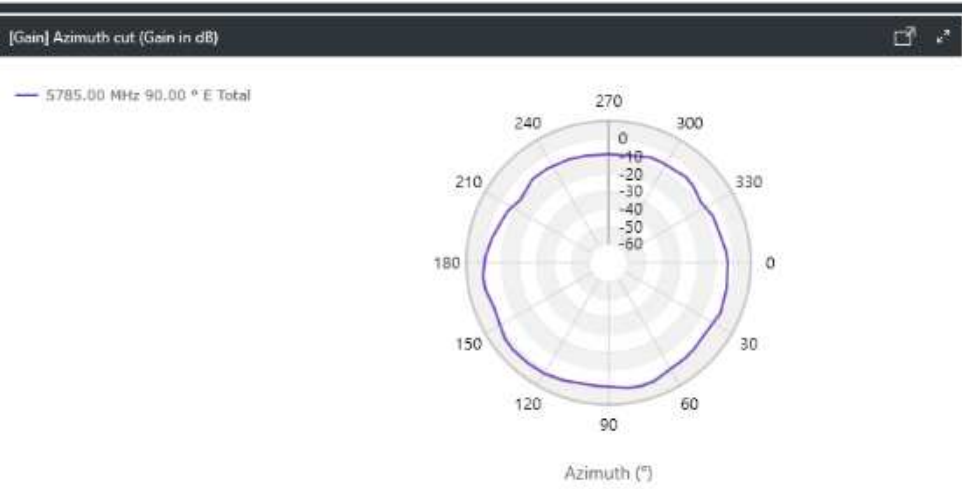
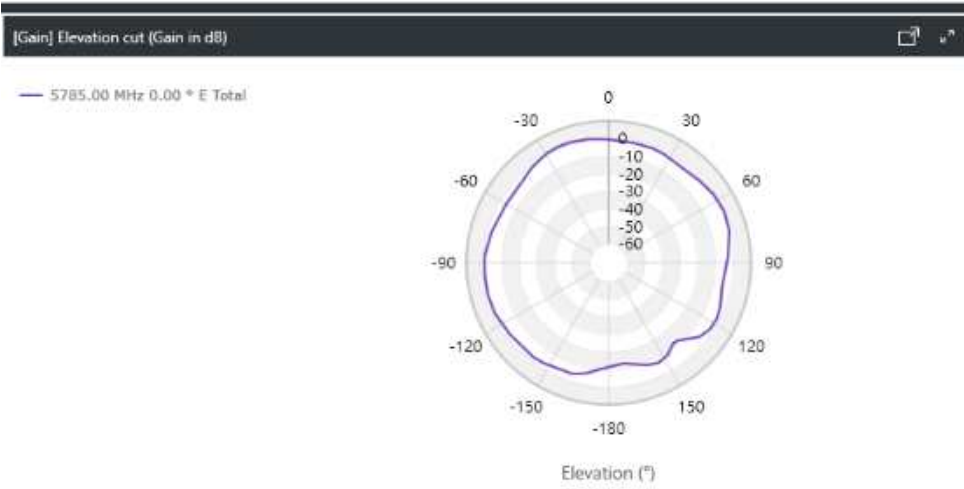
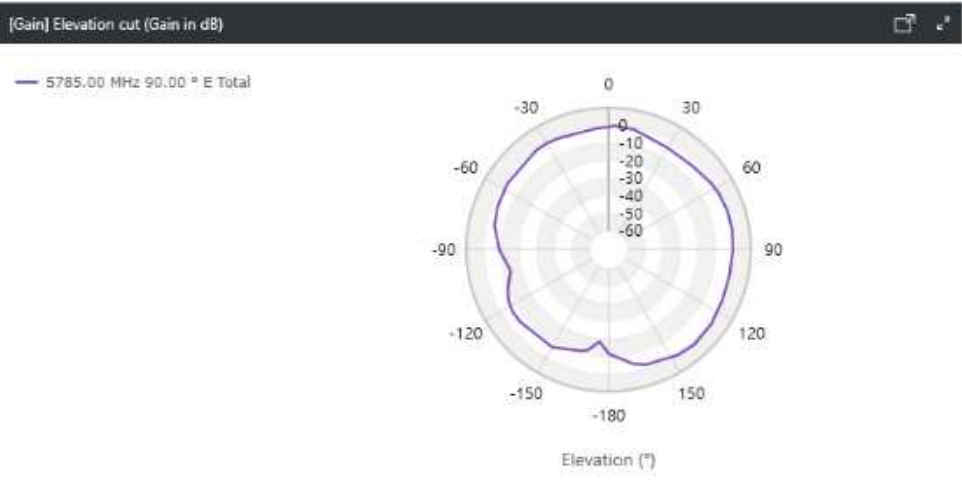
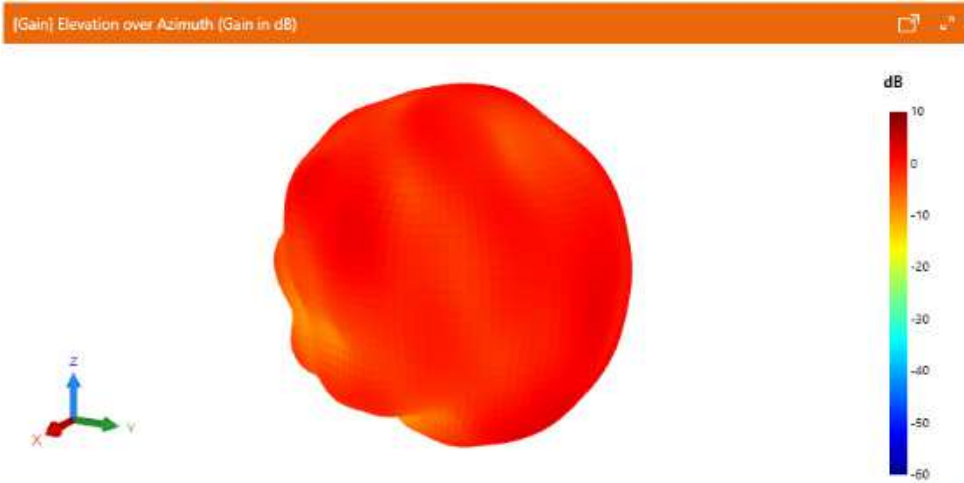
Radiation Patterns_WiFi/BT_5725MHz

3D	ZY-Plane	dB	ZY Plane	ZX Plane	XY Plane
ZX-Plane	XY-Plane	Total(Max.)	1.93	1.20	2.86



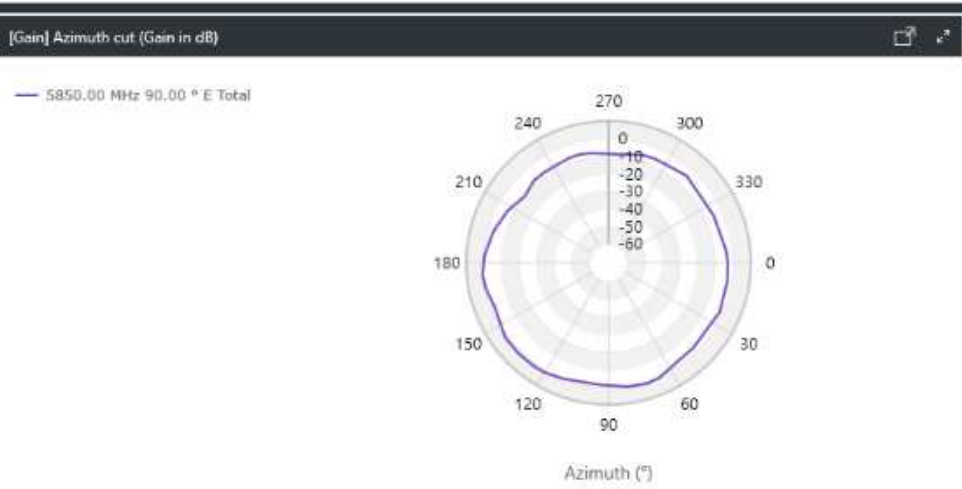
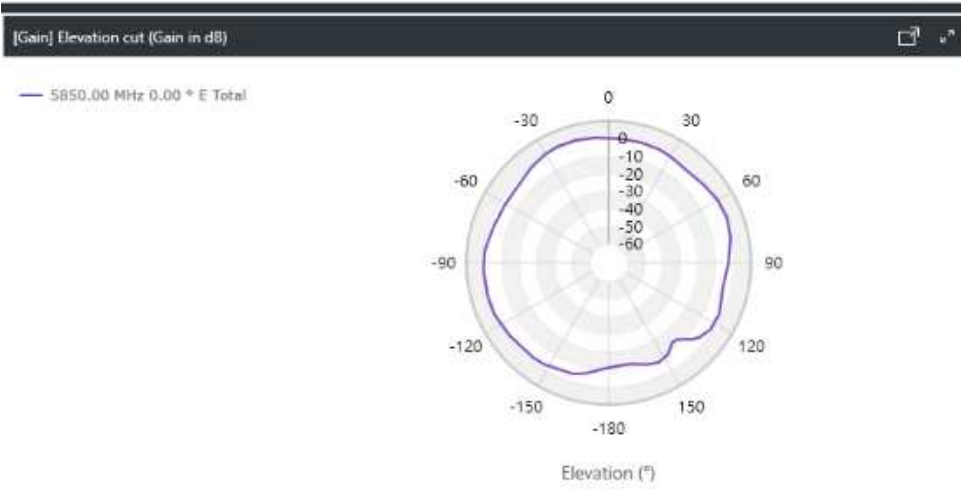
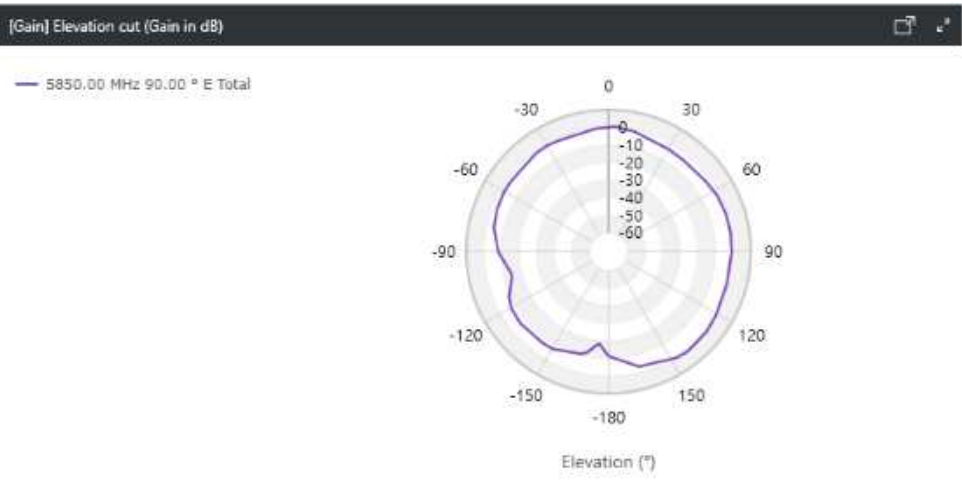
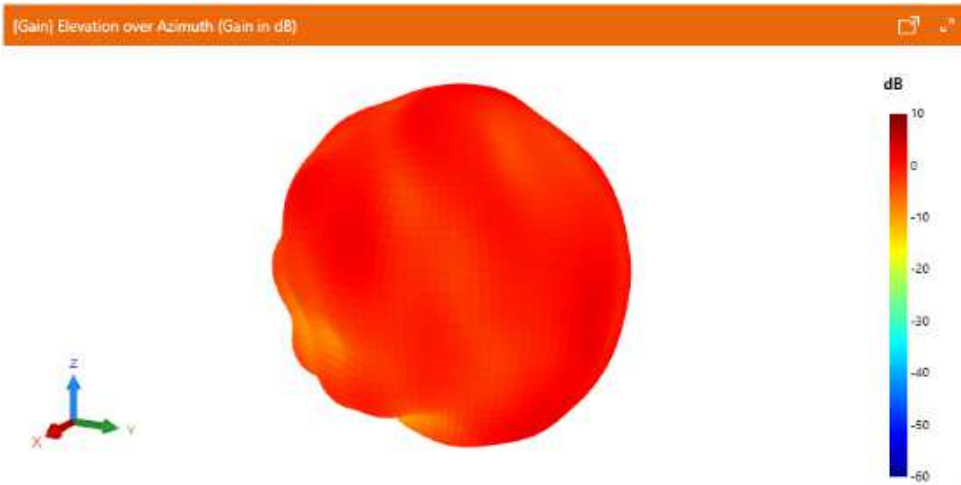
Radiation Patterns_WiFi/BT_5785MHz

3D	ZY-Plane	dB	ZY Plane	ZX Plane	XY Plane
ZX-Plane	XY-Plane	Total(Max.)	1.69	1.51	2.39



Radiation Patterns_WiFi/BT_5850MHz

3D	ZY-Plane	dB	ZY Plane	ZX Plane	XY Plane
ZX-Plane	XY-Plane	Total(Max.)	1.30	1.57	1.92





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THANK YOU