



AP610

Antenna Test Report



Senao Networks, Inc.

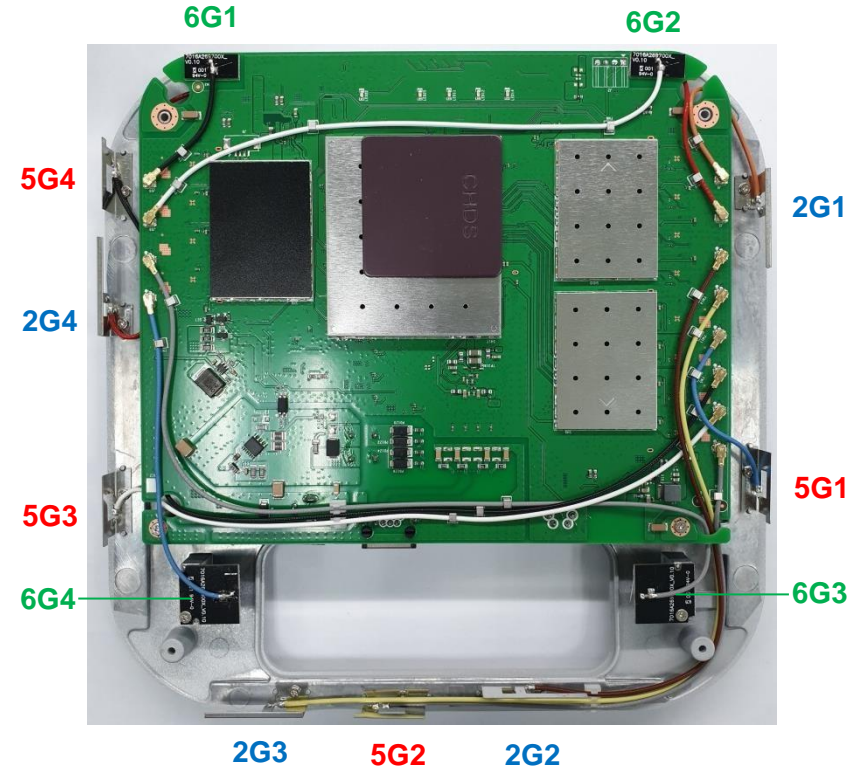
Customer	EnGenius
Project	AP610
Project Description	2.4G antenna *4 5G antenna *4 6G antenna *4
Date	2023/08/11
Prepared by	Kenny
Checked	Tony
Report Version	A01

- **Purpose**

Antenna verification for AP610 device, result as following.

- **Agenda**

- Placement and Specification
- Antenna Part Number
- Return Loss & Isolation
- Radiation Pattern
- Combine Pattern
- Efficiency and Gain

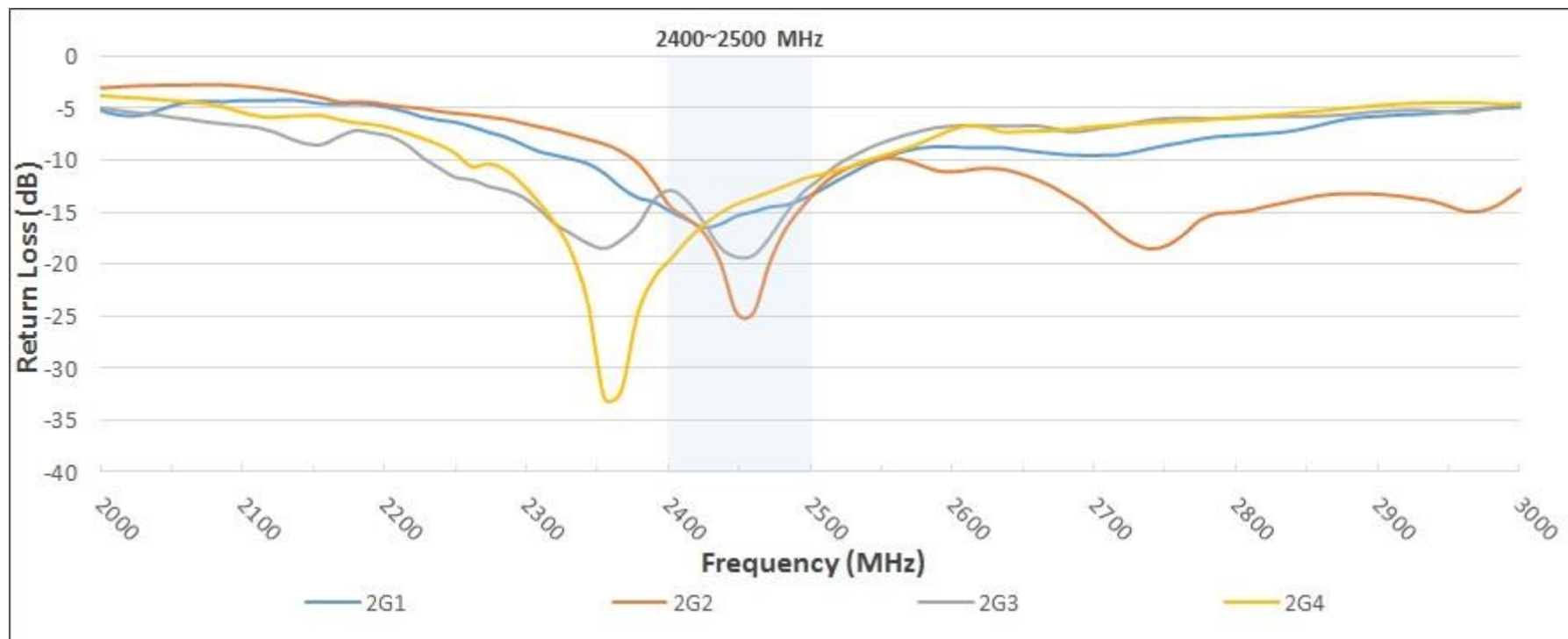


Ant No.	Operating Band	Gain (dBi)	Efficiency (%)	Ant type	Material	Feeding	Dimension
2G1~2G4	2400MHz ~ 2500 MHz	2.22~4.26	60.7~73.9	PIFA	Metal	Cable	29*10*7 mm ³
5G1~5G4	5150MHz ~ 5850 MHz	2.55~5.09	53.1~61.2	PIFA	Metal	Cable	21*10*5 mm ³
6G1~6G4	5925MHz ~ 7125 MHz	3.71~5.48	55.1~65.7	Dipole	PCB	Cable	16*7*1 mm ³
							18*17.6*1.6 mm ³

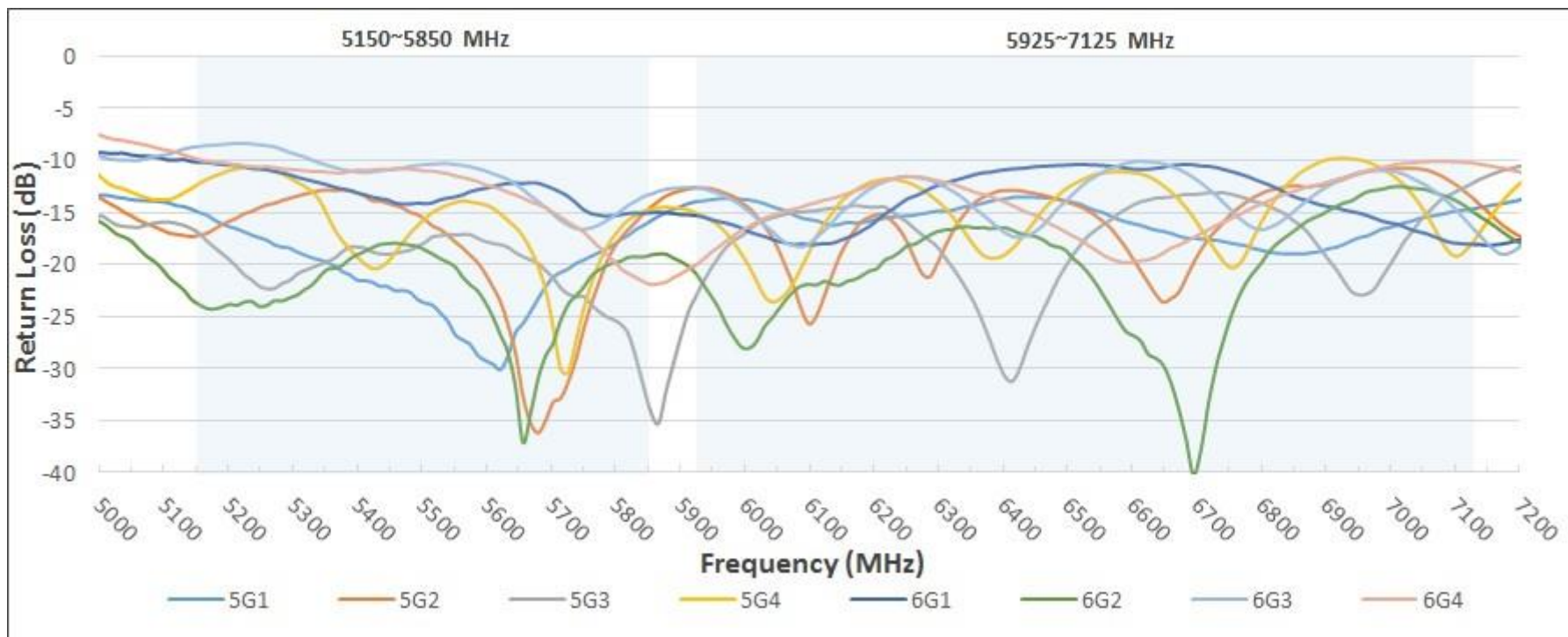


Antenna Part Number

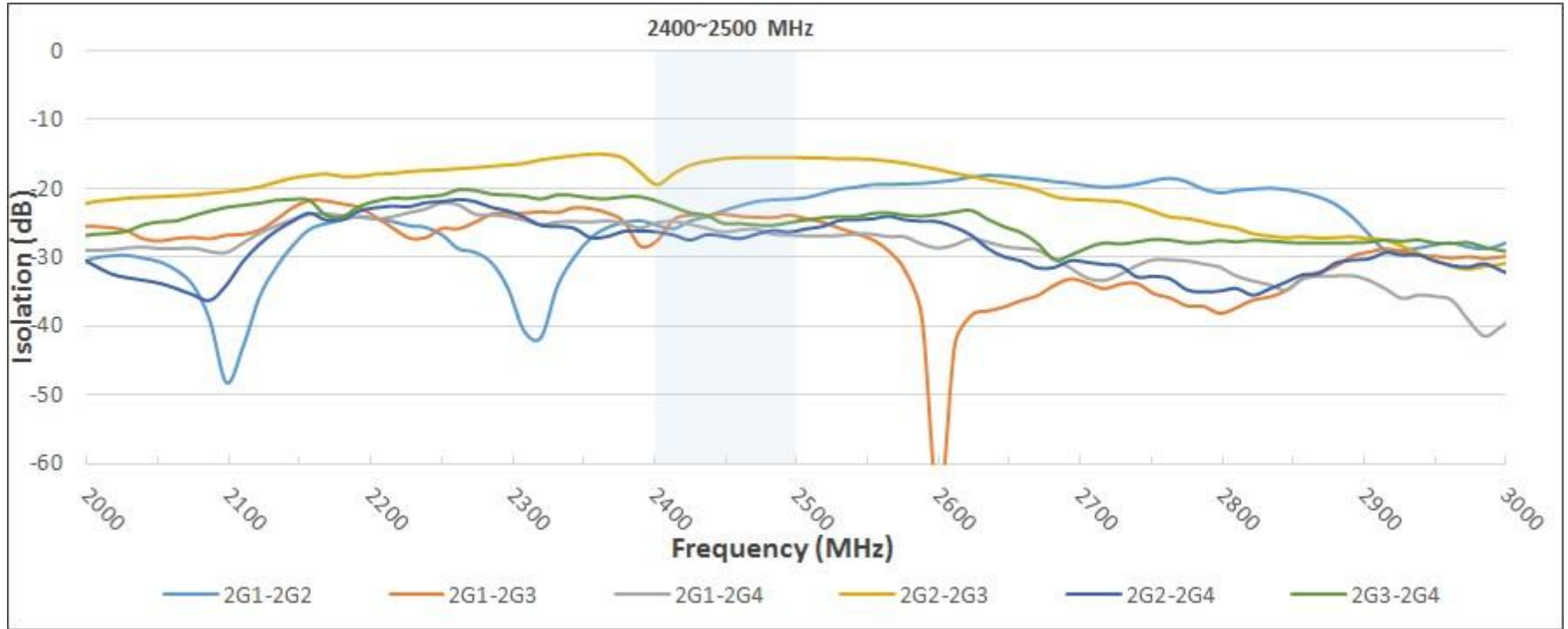
Ant No.	Part Number
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2G2	5718A0662300
2G3	5718A0663300
2G4	5718A0664300
5G1	5718A0665300
5G2	5718A0666300
5G3	5718A0667300
5G4	5718A0668300
6G1	5718A0669300
6G2	5718A0670300
6G3	5718A0671300
6G4	5718A0672300



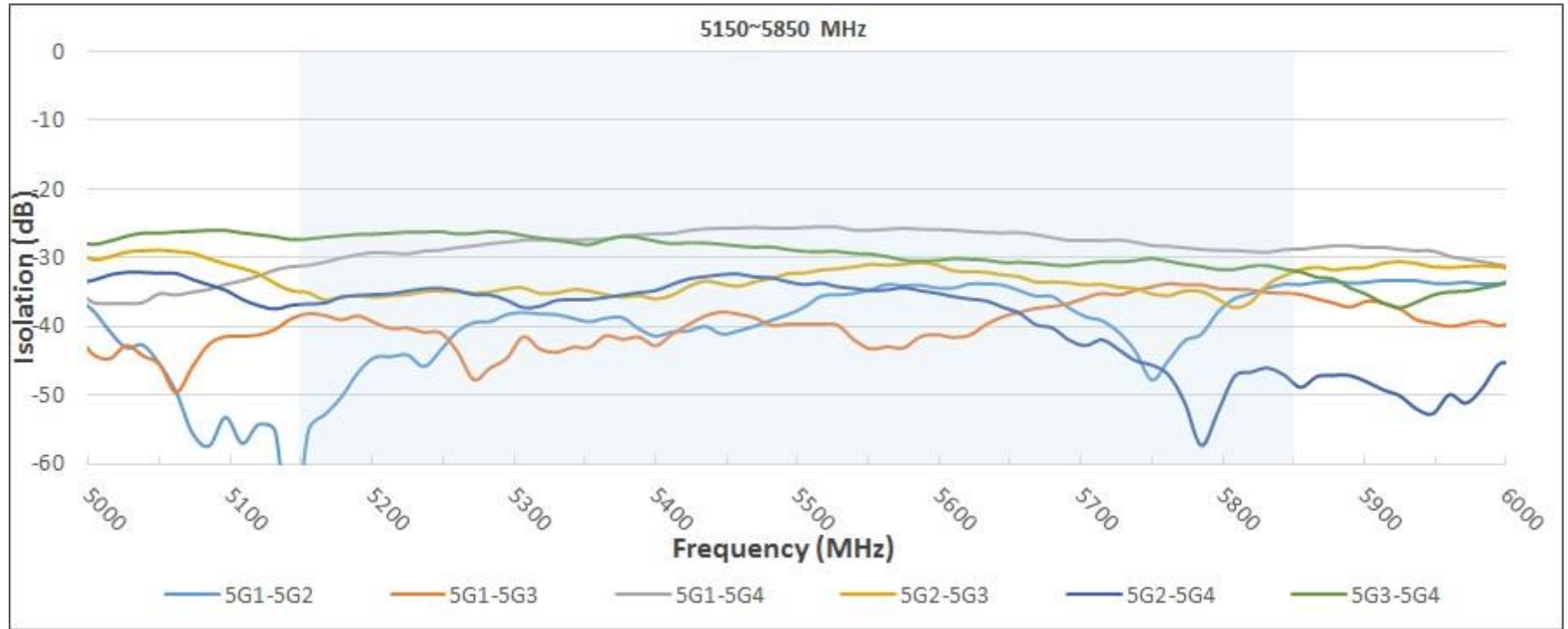
Return Loss				
Freq. (MHz)	2G1	2G2	2G3	2G4
2400	-14.96	-14.52	-12.91	-19.54
2450	-15.35	-24.73	-19.33	-14.22
2500	-13.72	-14.43	-13.08	-11.79



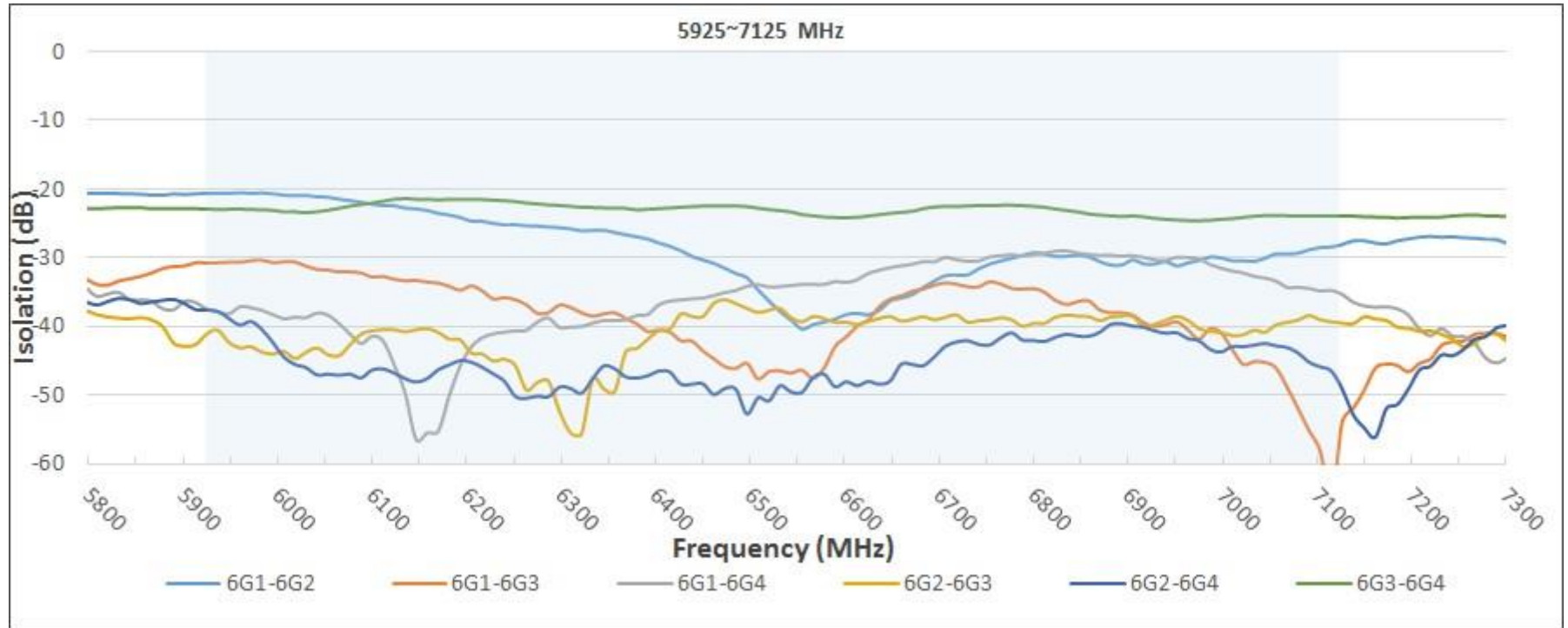
Freq. (MHz)	Return Loss							
	5G1	5G2	5G3	5G4	6G1	6G2	6G3	6G4
5150	-15.01	-17.19	-17.00	-12.23	-10.20	-23.85	-8.66	-9.94
5500	-23.72	-15.69	-17.89	-15.58	-14.16	-18.63	-10.41	-11.03
5850	-15.79	-14.46	-34.29	-14.65	-15.03	-19.09	-13.24	-21.94
5925	-13.96	-12.64	-23.00	-15.06	-15.31	-20.92	-12.62	-20.04
6500	-13.90	-13.95	-20.22	-12.77	-10.46	-18.62	-13.97	-16.86
7125	-14.67	-13.56	-12.23	-17.97	-18.07	-14.90	-16.46	-10.25



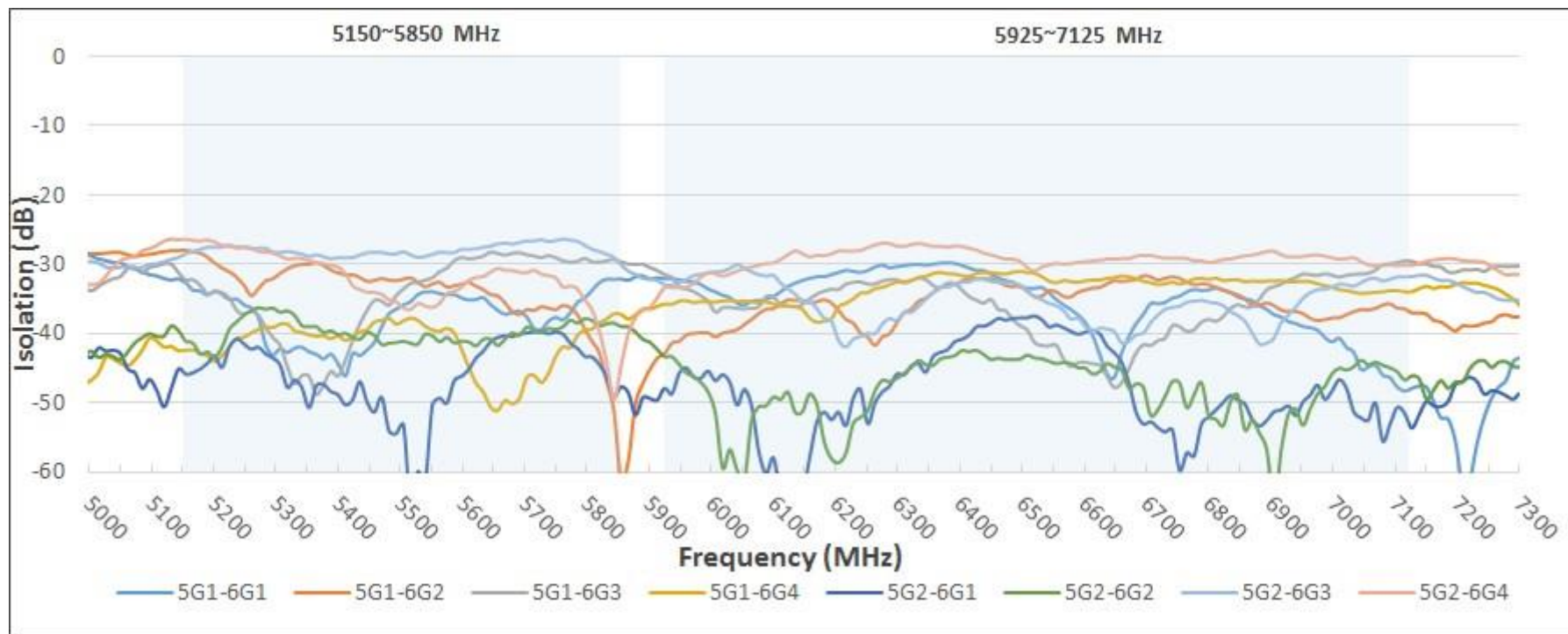
Isolation						
Freq. (MHz)	2G1-2G2	2G1-2G3	2G1-2G4	2G2-2G3	2G2-2G4	2G3-2G4
2400	-25.38	-27.61	-24.98	-19.48	-26.34	-21.87
2450	-23.25	-23.74	-26.36	-15.69	-26.96	-25.09
2500	-21.57	-23.90	-26.82	-15.53	-26.37	-24.99



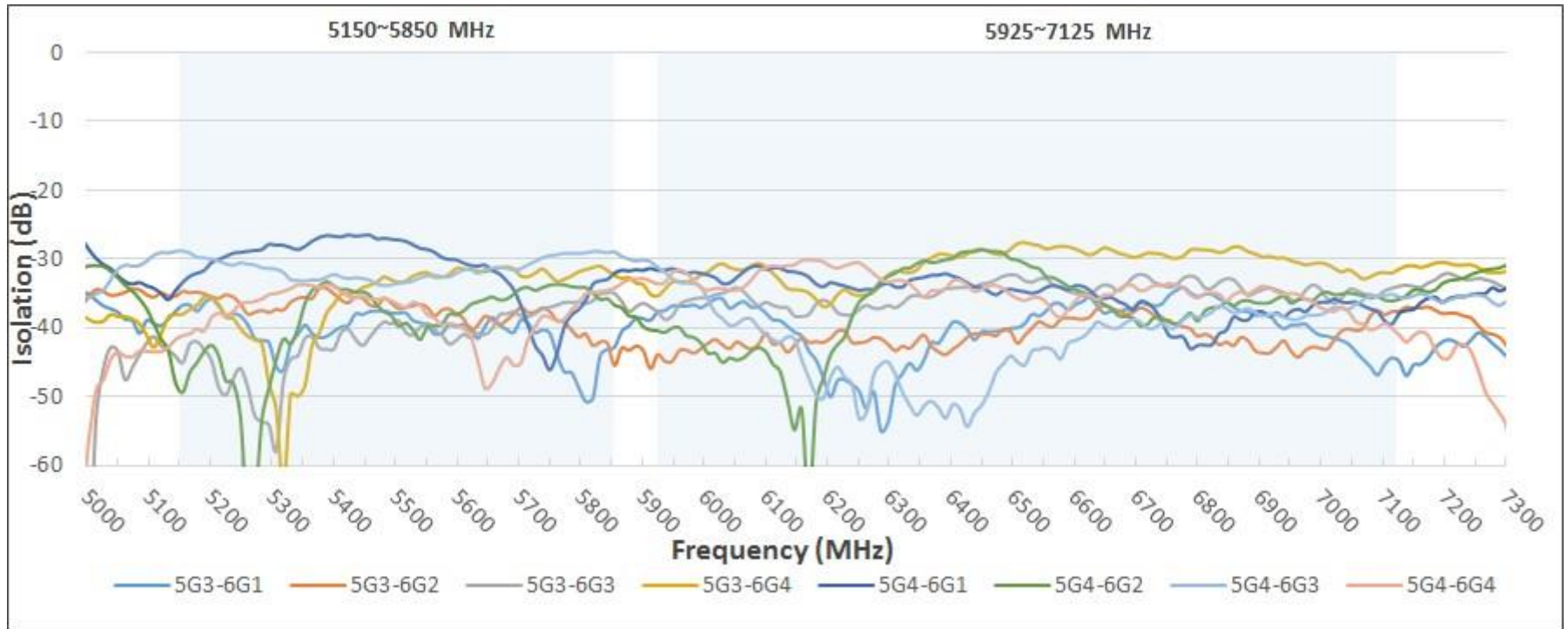
Isolation						
Freq. (MHz)	5G1-5G2	5G1-5G3	5G1-5G4	5G2-5G3	5G2-5G4	5G3-5G4
5150	-55.18	-38.14	-31.13	-35.10	-36.76	-27.30
5500	-37.20	-39.66	-25.61	-32.25	-33.94	-29.10
5850	-33.94	-35.35	-28.77	-31.76	-48.86	-32.08



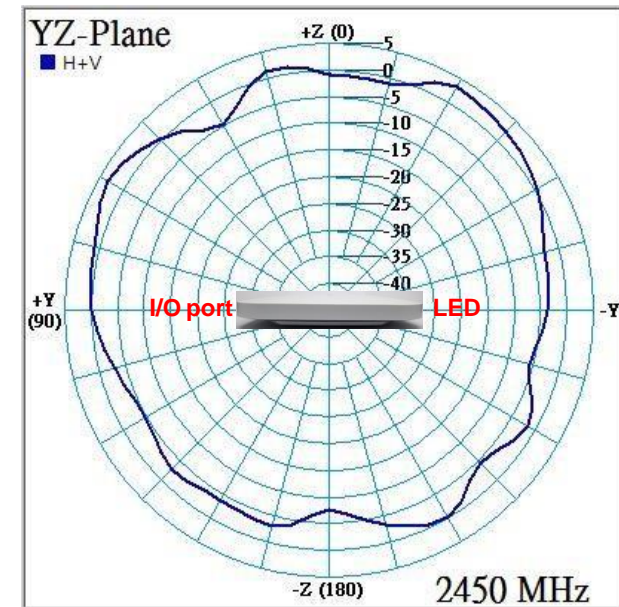
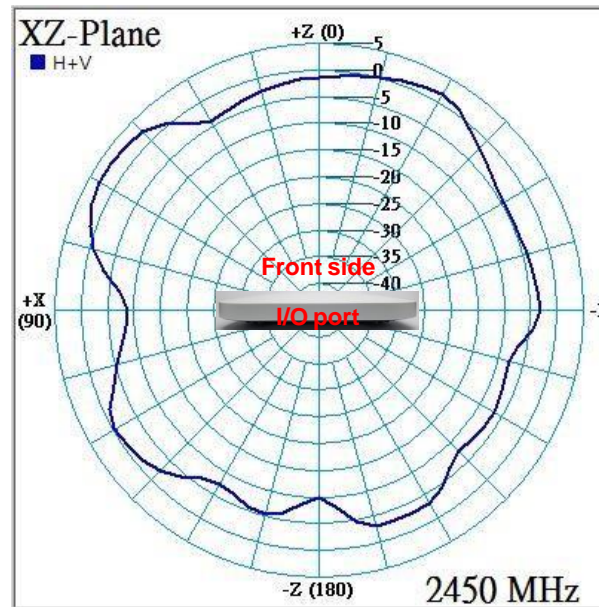
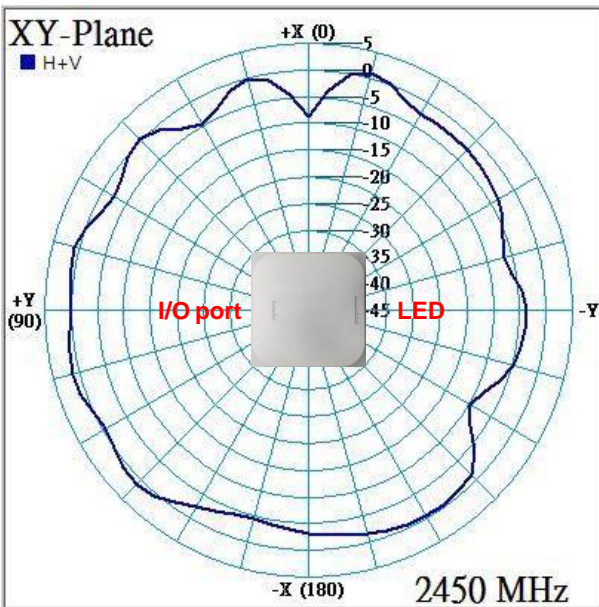
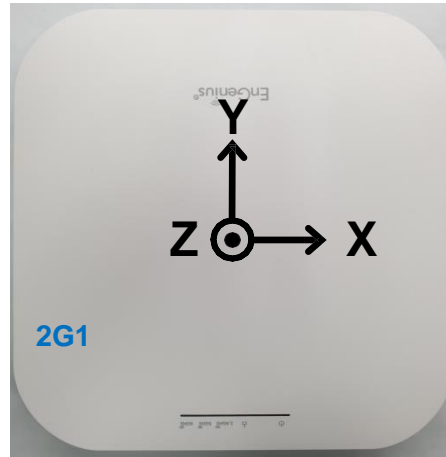
Isolation						
Freq. (MHz)	6G1-6G2	6G1-6G3	6G1-6G4	6G2-6G3	6G2-6G4	6G3-6G4
5925	-20.62	-30.79	-37.48	-41.12	-37.63	-22.95
6500	-32.93	-45.38	-34.18	-37.39	-52.77	-22.60
7125	-28.08	-53.82	-35.38	-39.52	-49.15	-23.97

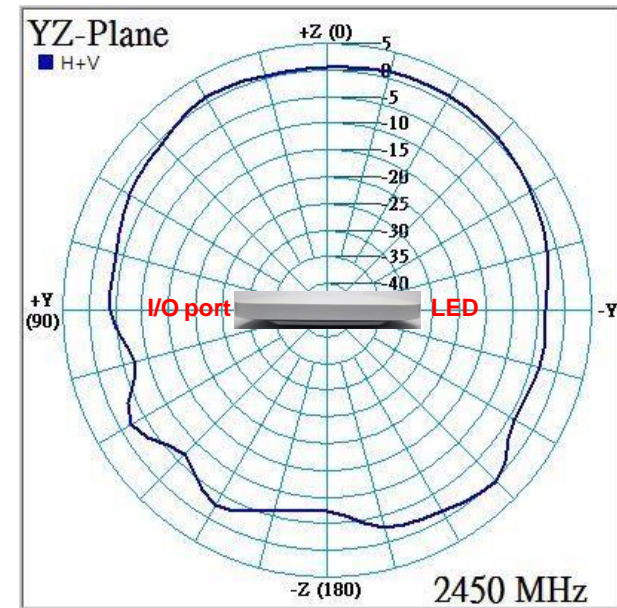
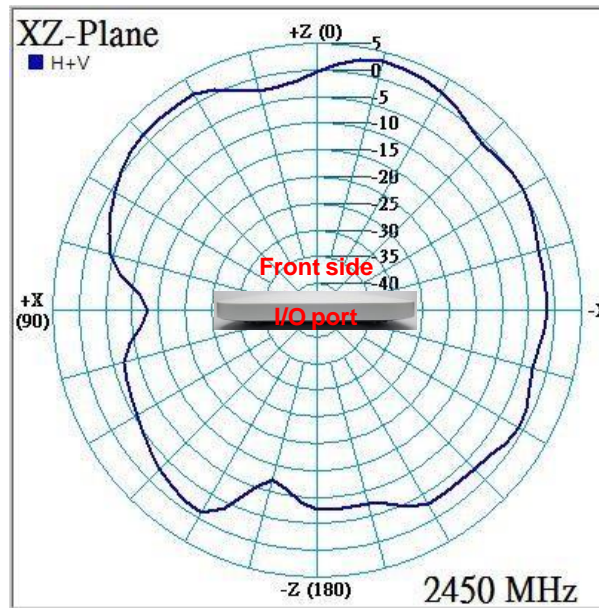
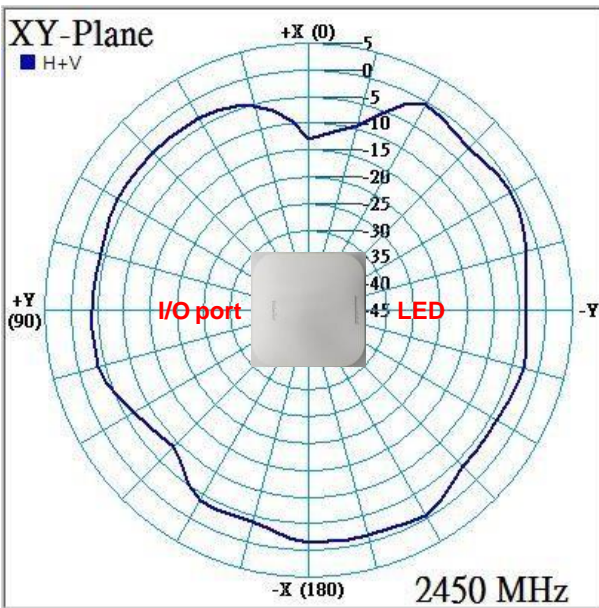
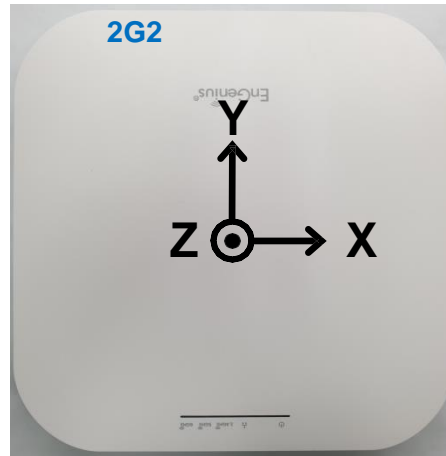


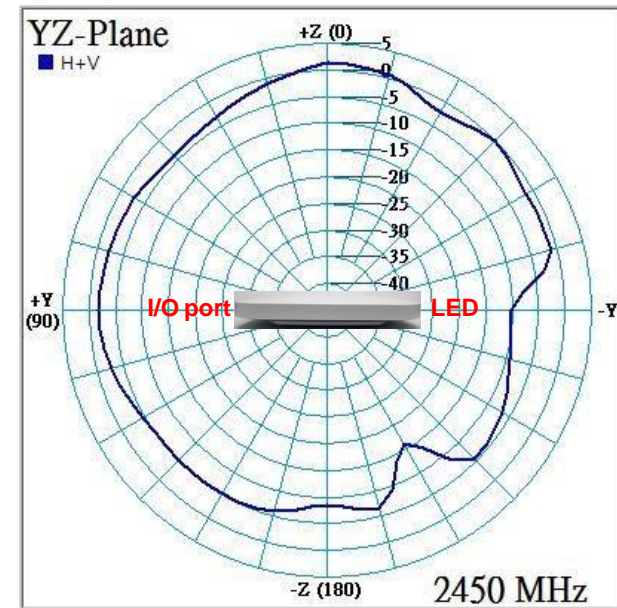
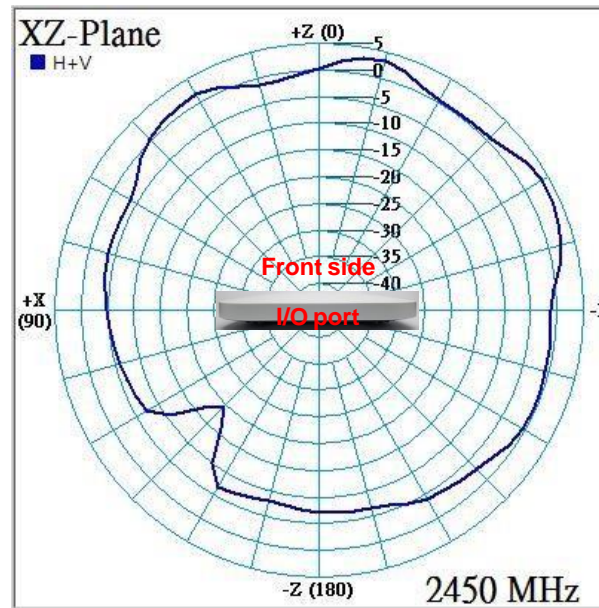
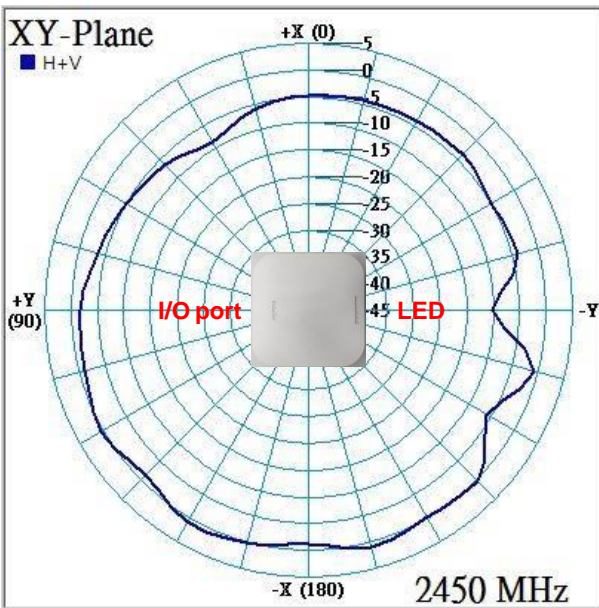
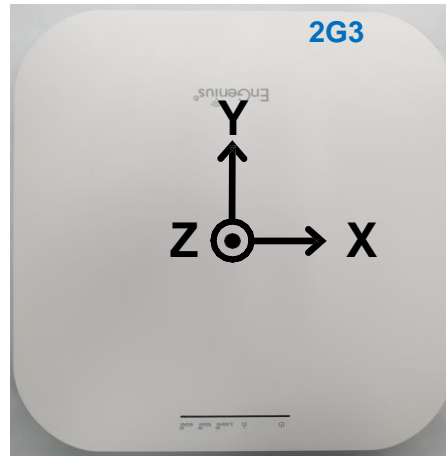
Freq. (MHz)	Isolation							
	5G1-6G1	5G1-6G2	5G1-6G3	5G1-6G4	5G2-6G1	5G2-6G2	5G2-6G3	5G2-6G4
5150	-32.71	-27.97	-32.29	-42.44	-45.91	-41.14	-28.48	-26.41
5500	-35.88	-32.18	-33.59	-38.20	-53.21	-41.13	-28.24	-36.38
5850	-32.14	-61.19	-29.69	-37.25	-47.72	-39.00	-30.09	-44.67
5925	-32.12	-42.92	-31.54	-35.75	-47.92	-43.37	-32.99	-33.40
6500	-33.20	-33.21	-38.90	-31.06	-37.80	-43.71	-33.02	-29.60
7125	-47.95	-37.07	-29.60	-33.98	-53.67	-46.14	-31.80	-30.19

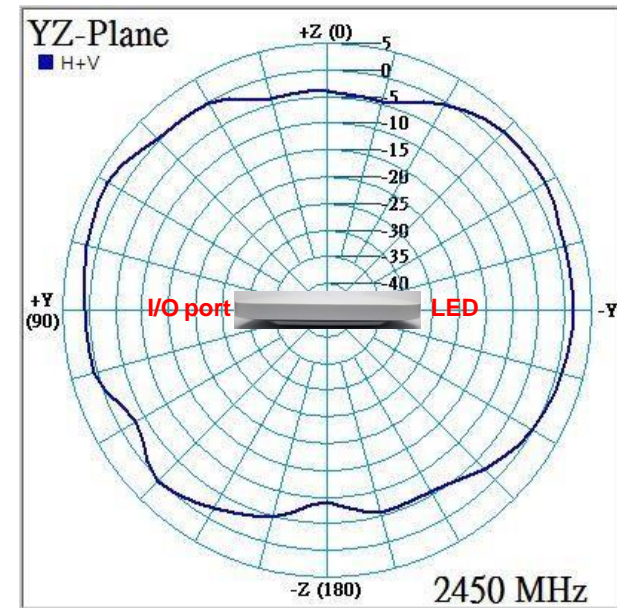
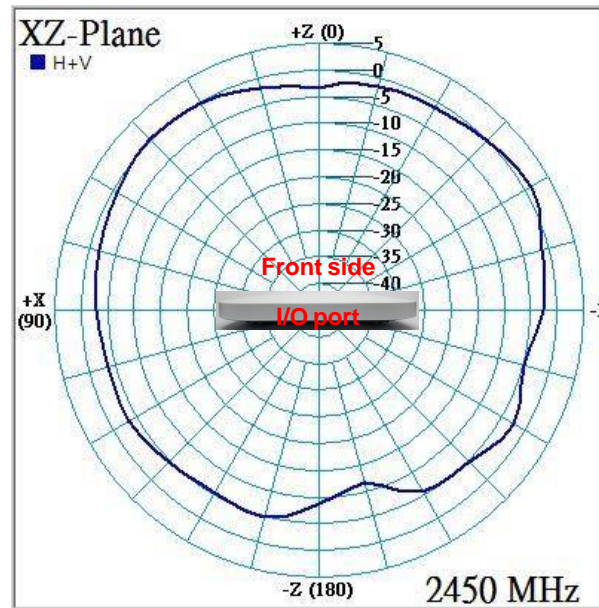
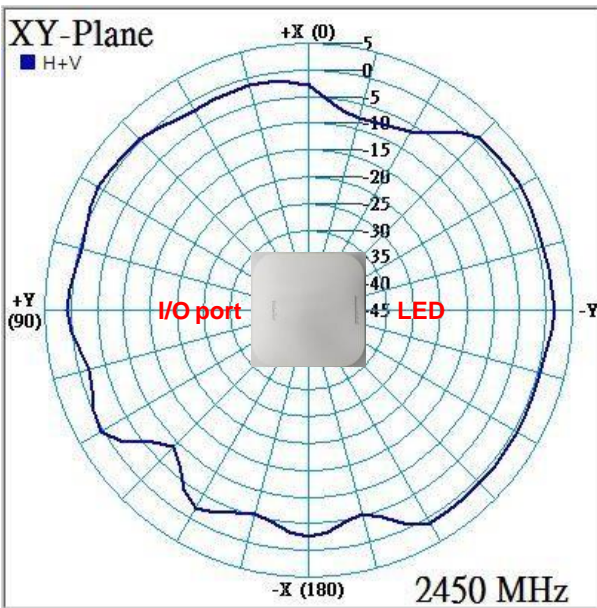
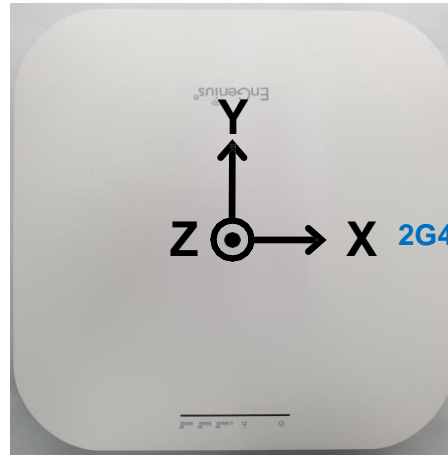


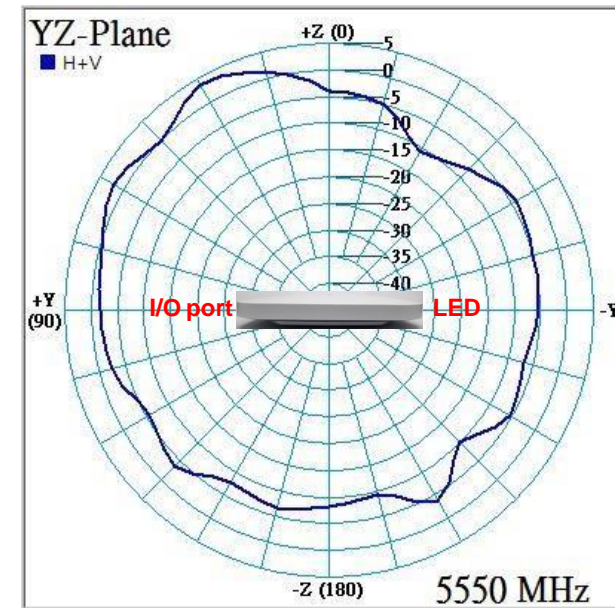
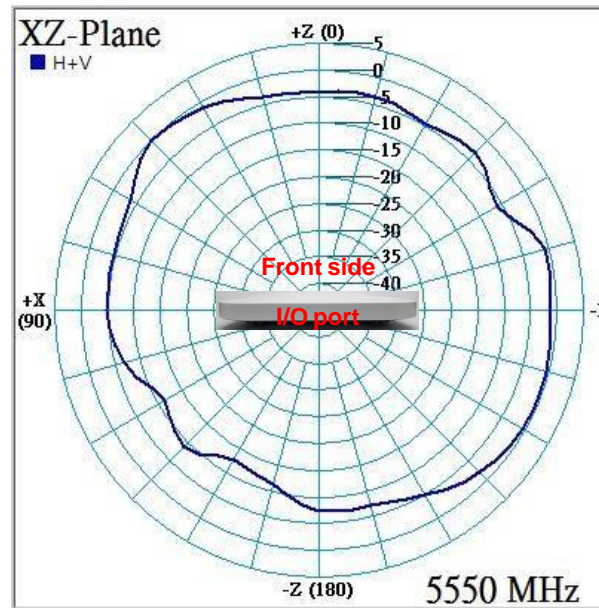
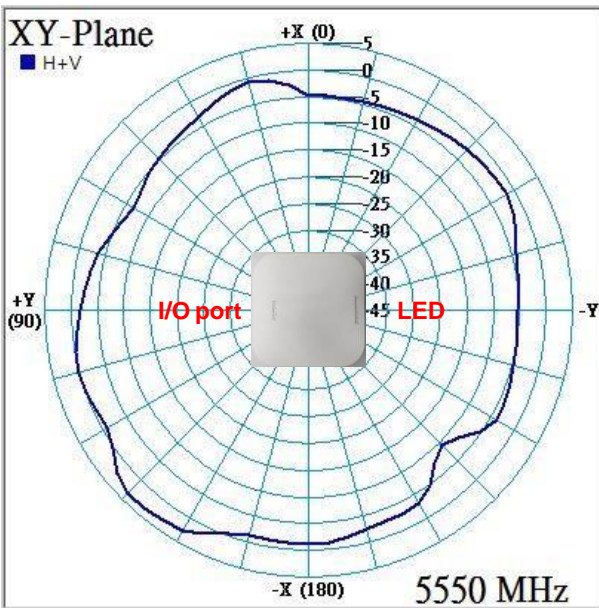
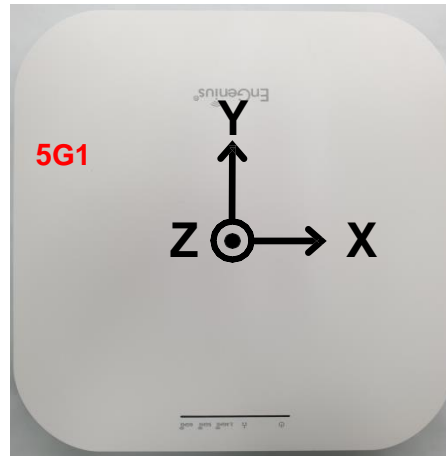
Freq. (MHz)	Isolation							
	5G3-6G1	5G3-6G2	5G3-6G3	5G3-6G4	5G4-6G1	5G4-6G2	5G4-6G3	5G4-6G4
5150	-36.74	-34.72	-45.10	-38.06	-33.44	-49.43	-28.86	-41.17
5500	-37.92	-37.23	-38.99	-33.42	-27.26	-39.81	-33.51	-36.64
5850	-42.83	-45.49	-35.03	-32.40	-32.09	-36.73	-28.99	-34.25
5925	-37.70	-43.91	-37.72	-35.42	-31.72	-40.45	-31.22	-33.65
6500	-40.10	-40.52	-32.31	-28.62	-34.41	-30.00	-44.07	-35.16
7125	-44.90	-37.61	-33.97	-31.48	-37.95	-35.84	-35.53	-41.02

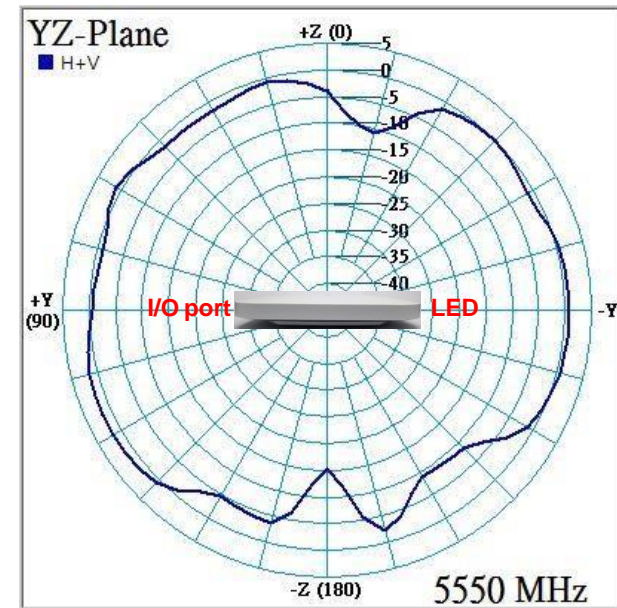
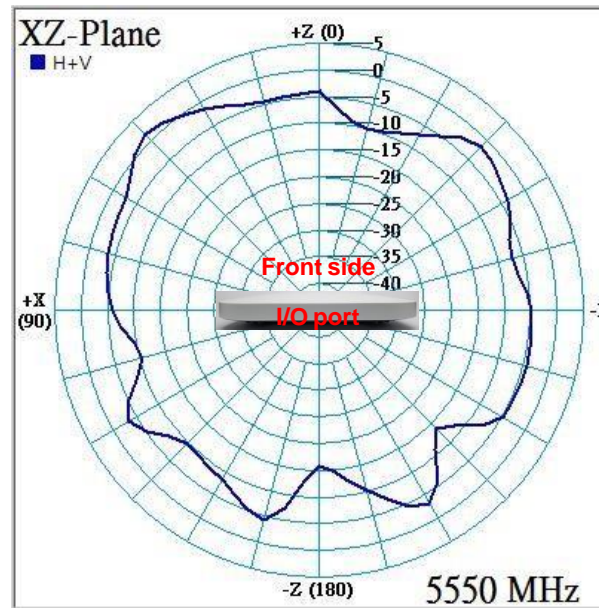
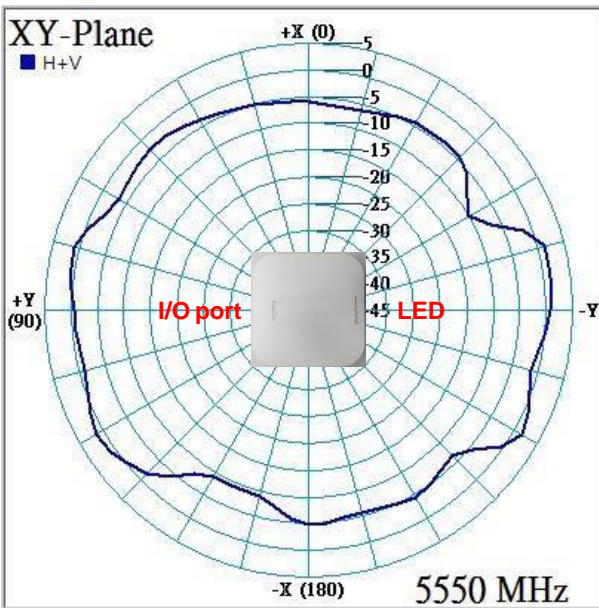
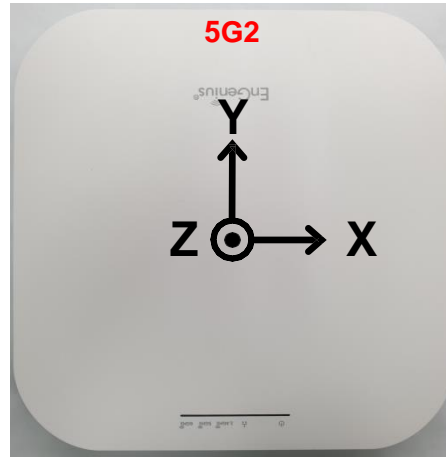


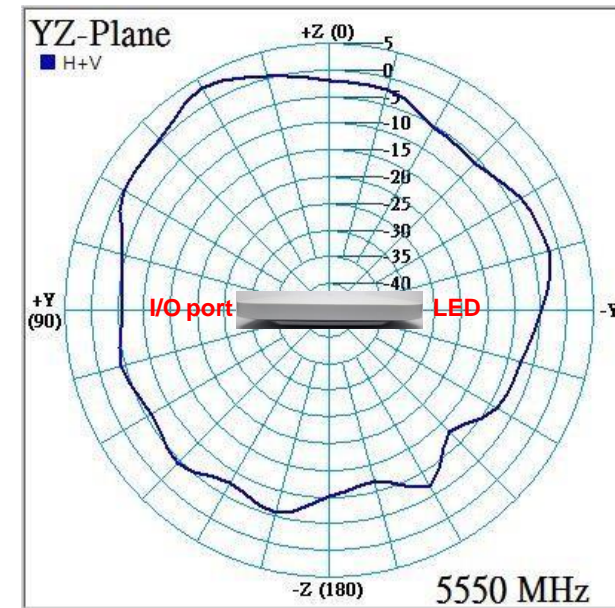
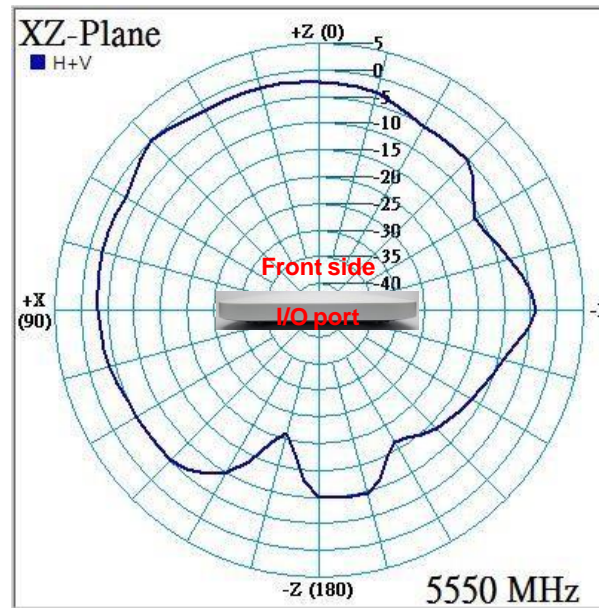
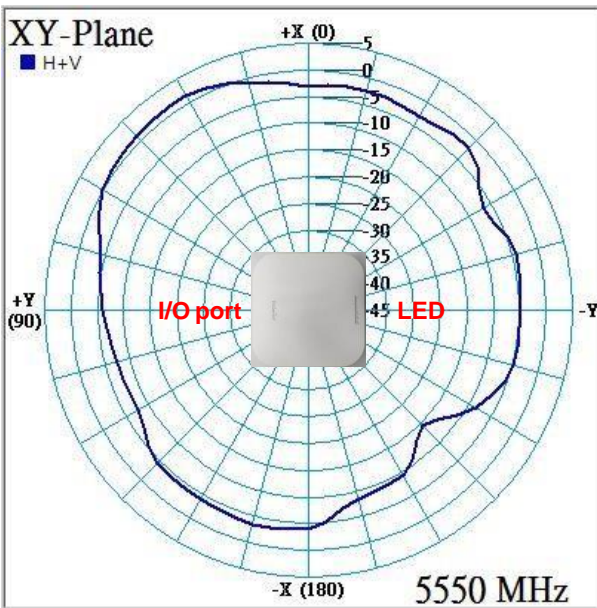
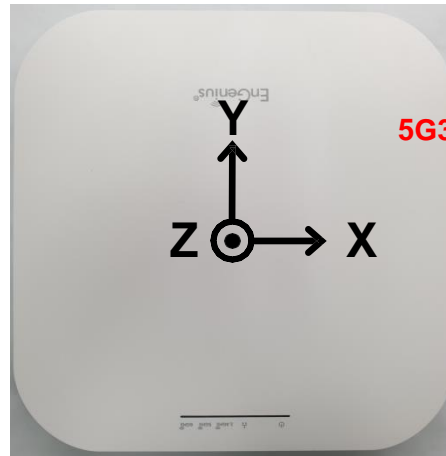


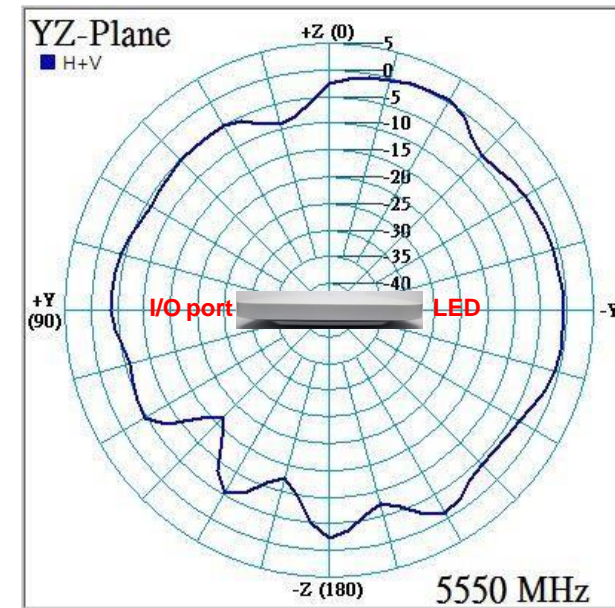
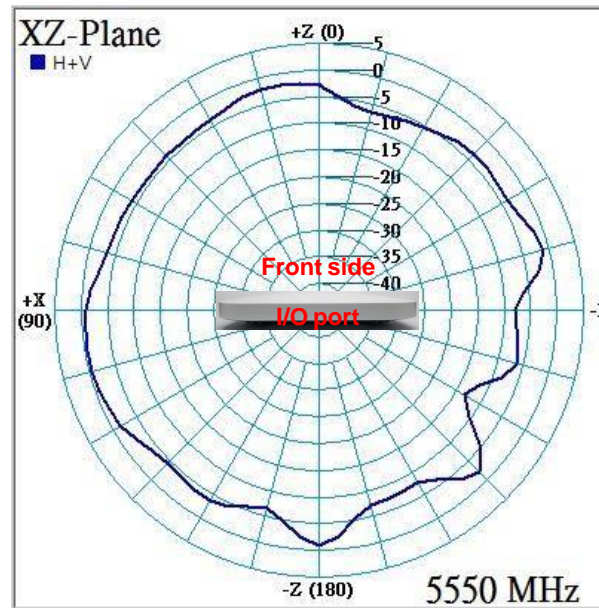
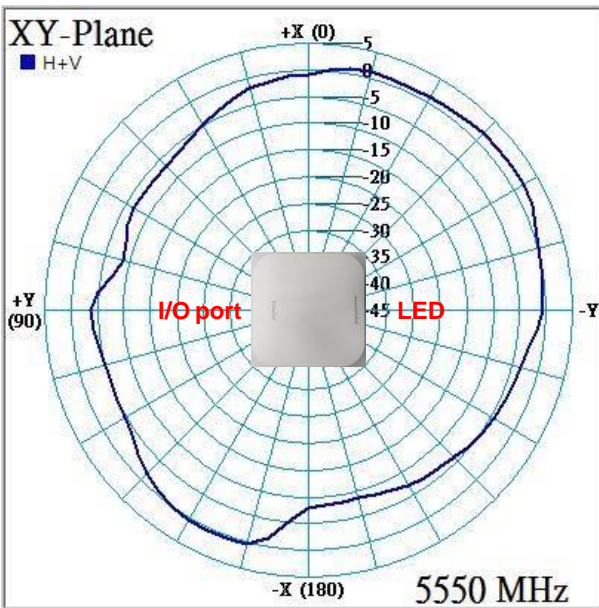
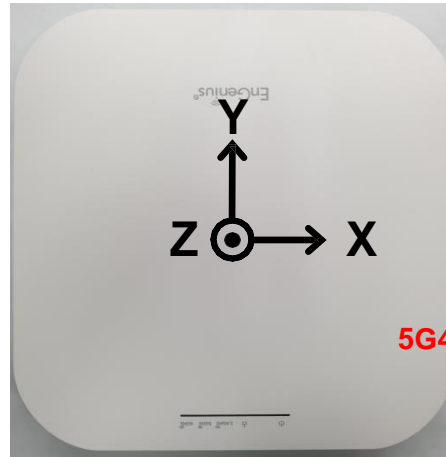




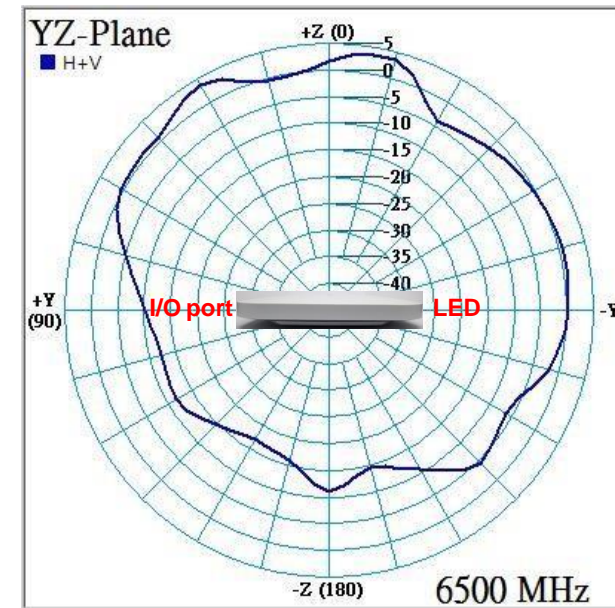
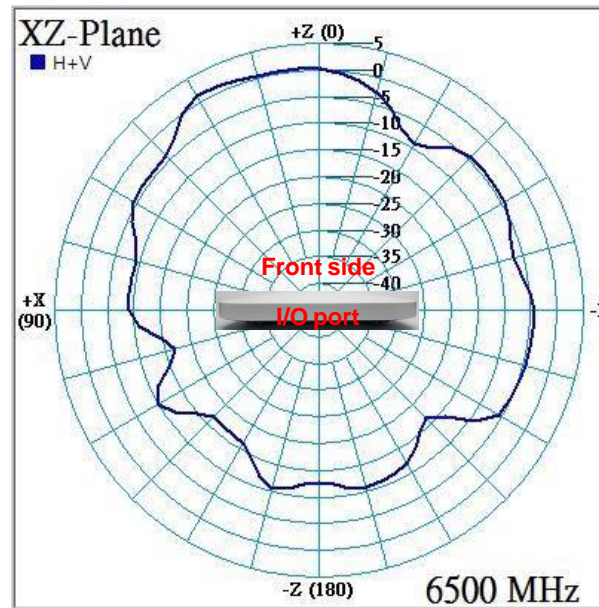
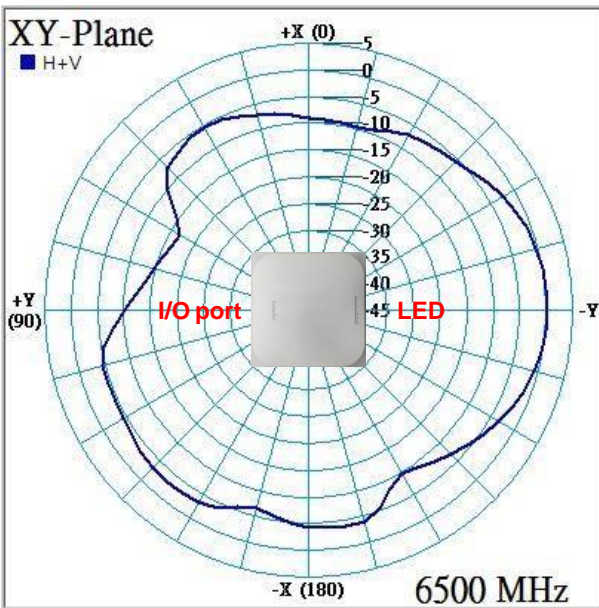
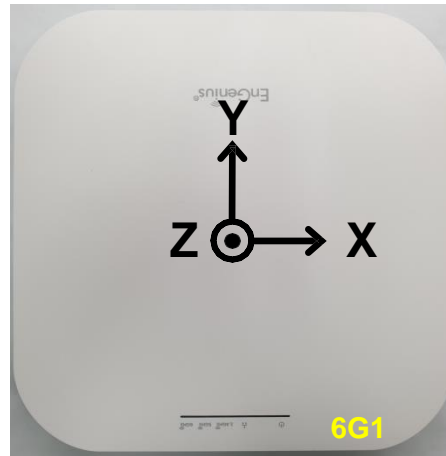


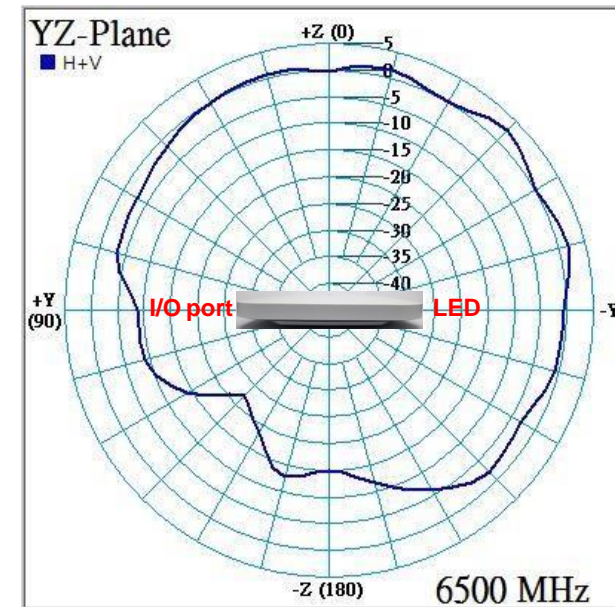
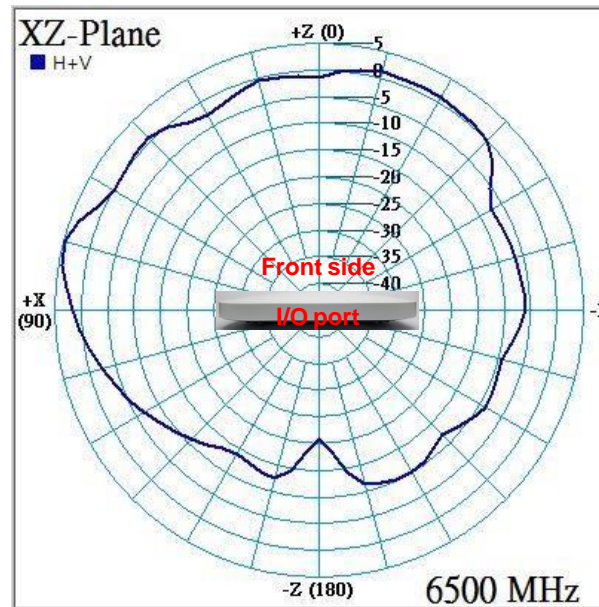
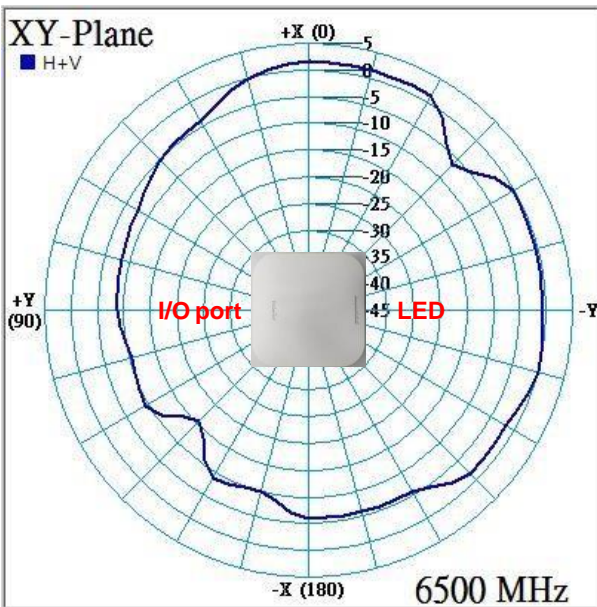
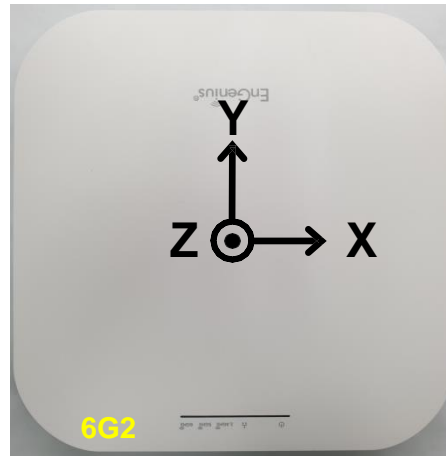


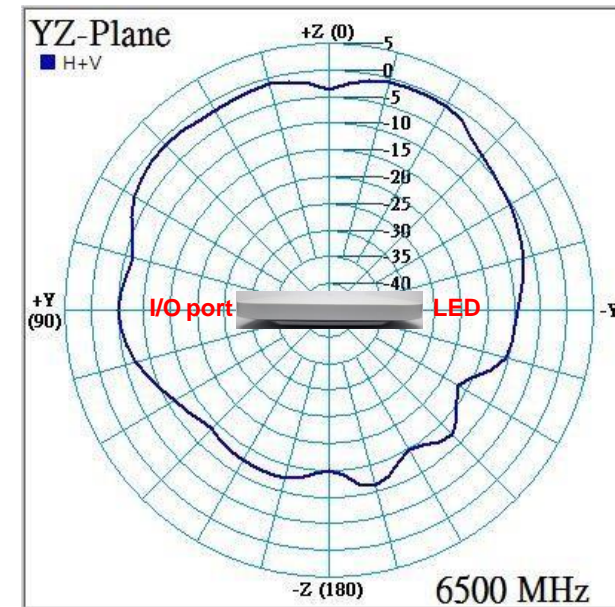
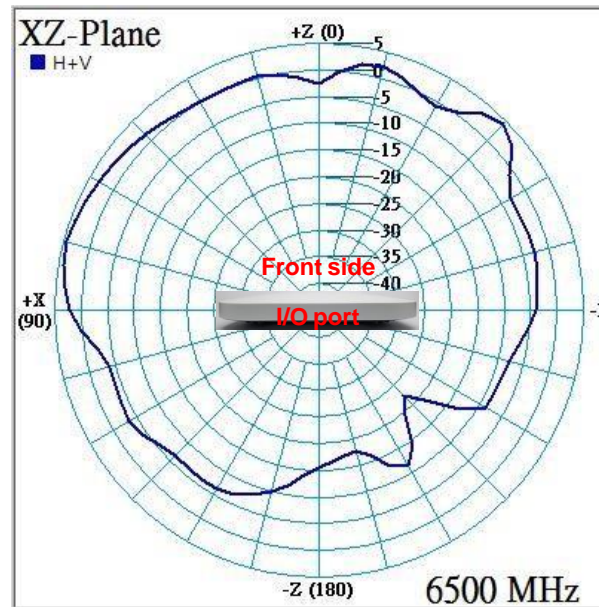
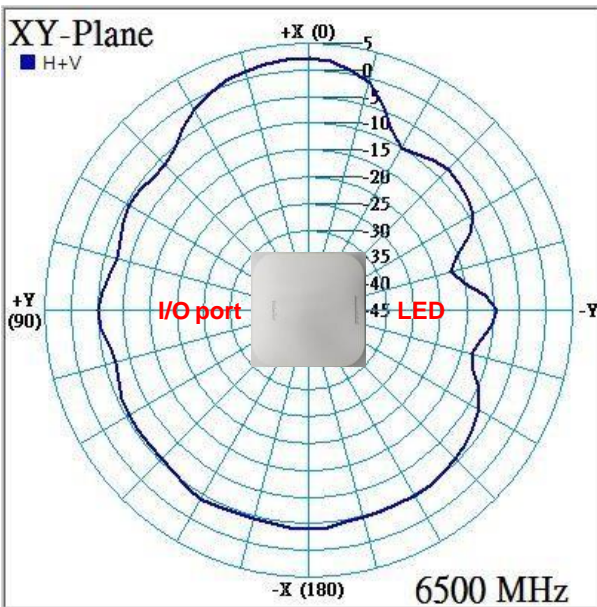
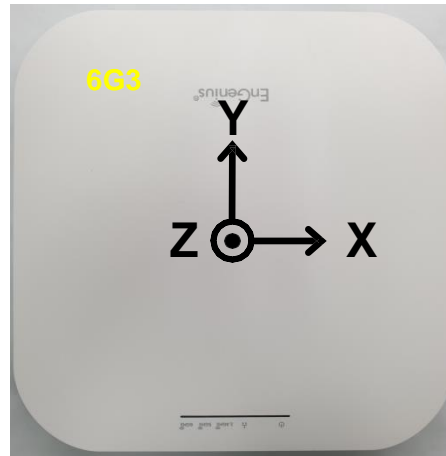


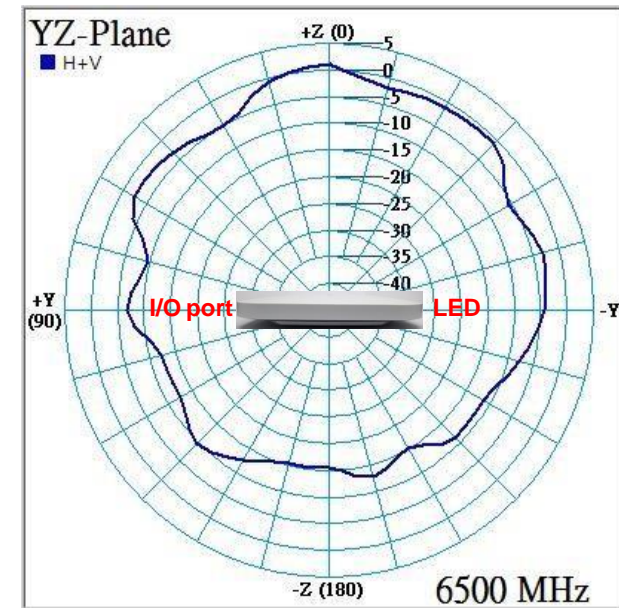
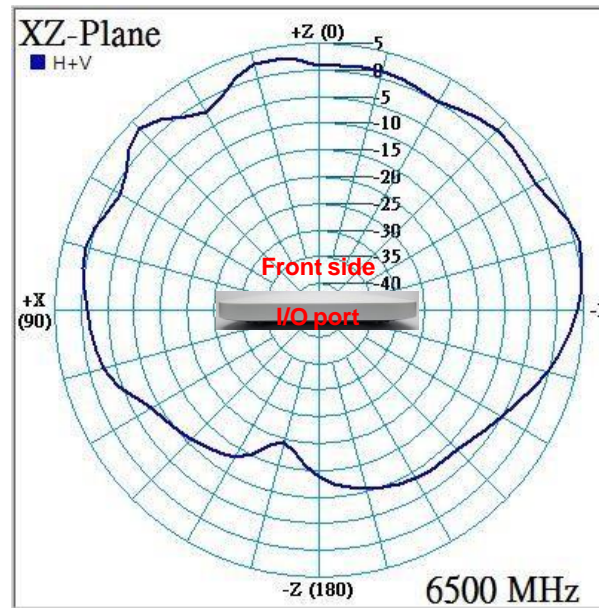
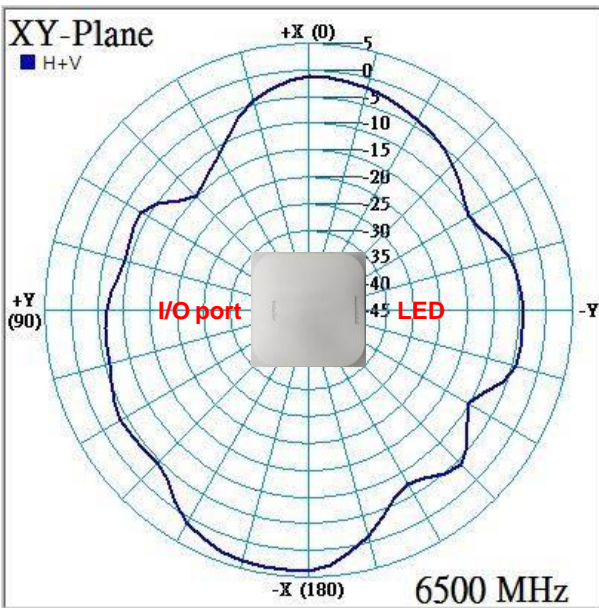
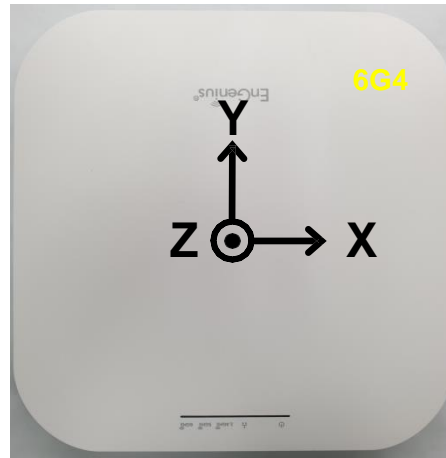


2D Radiation Pattern – 6G1 @ 6.5GHz

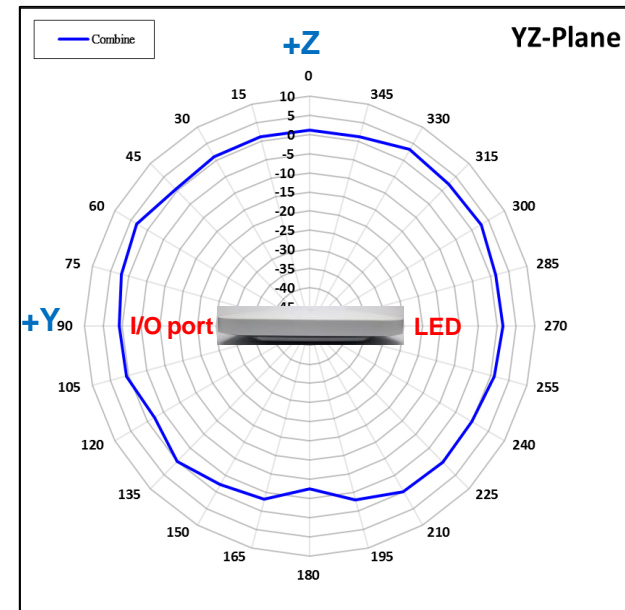
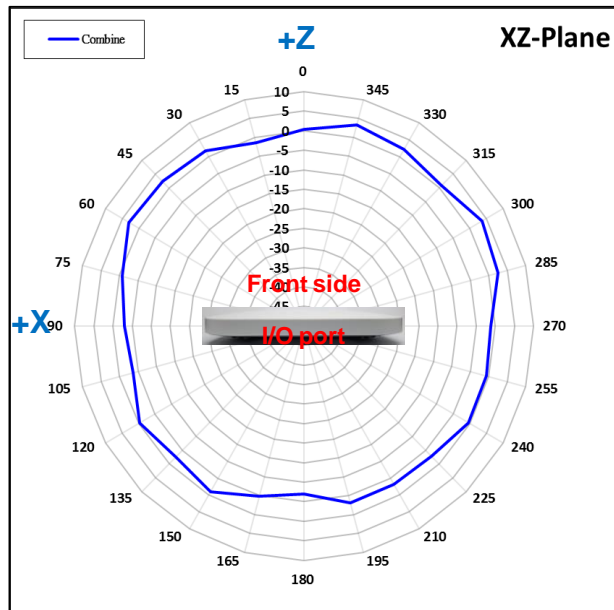
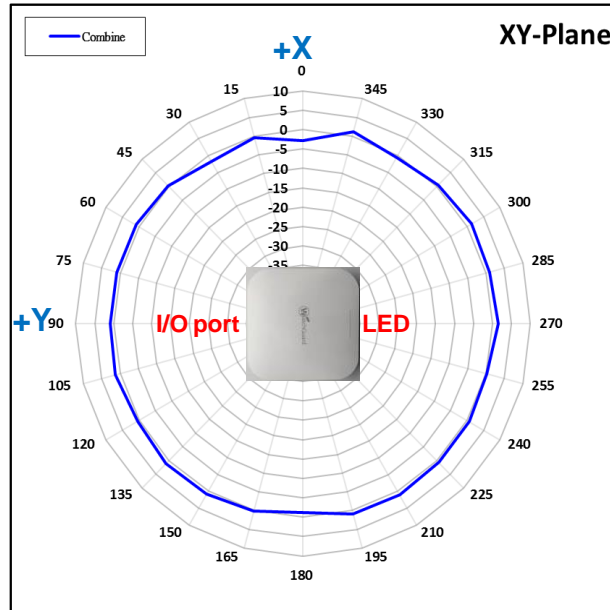


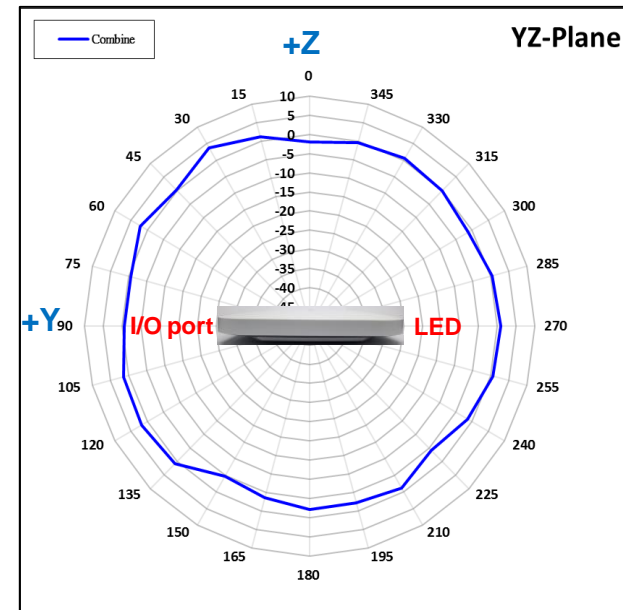
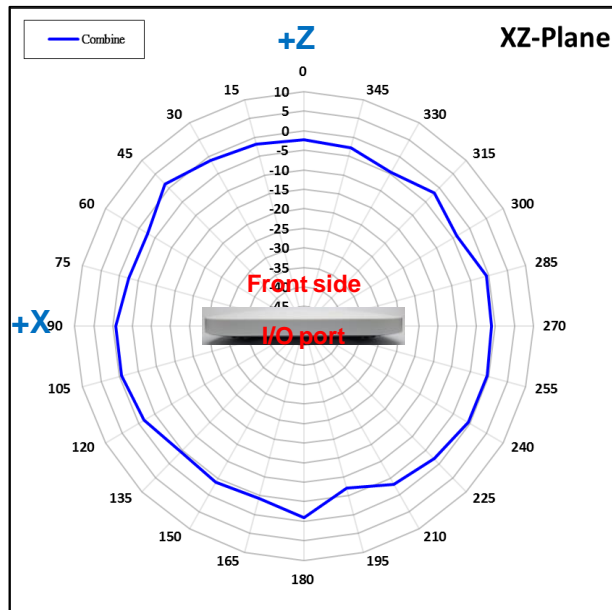
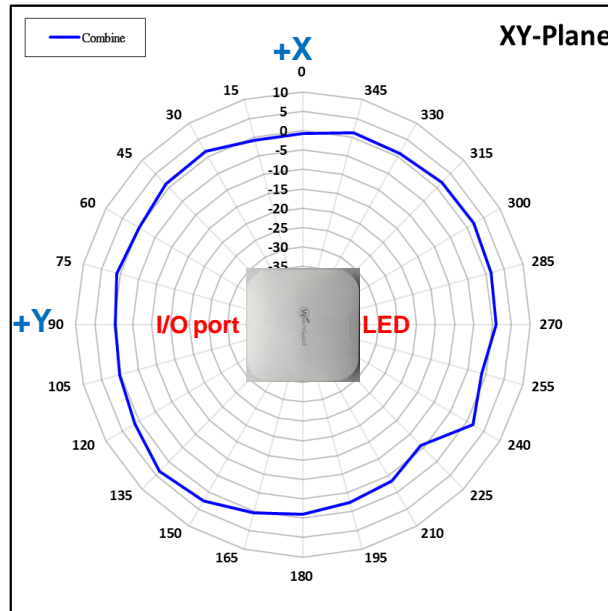


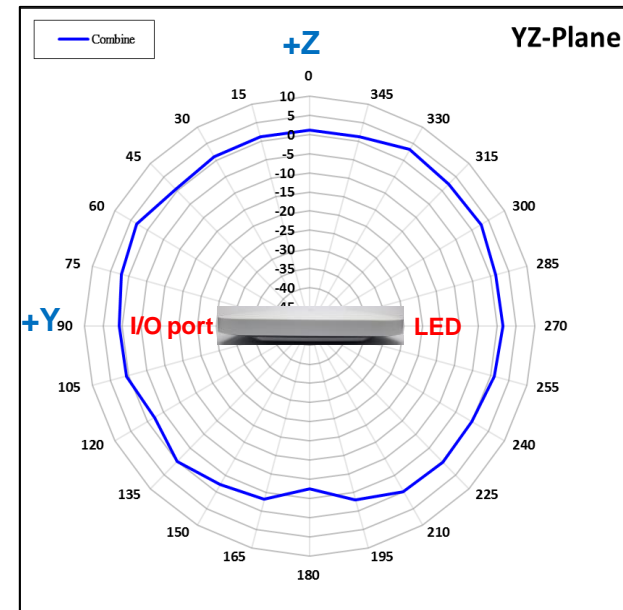
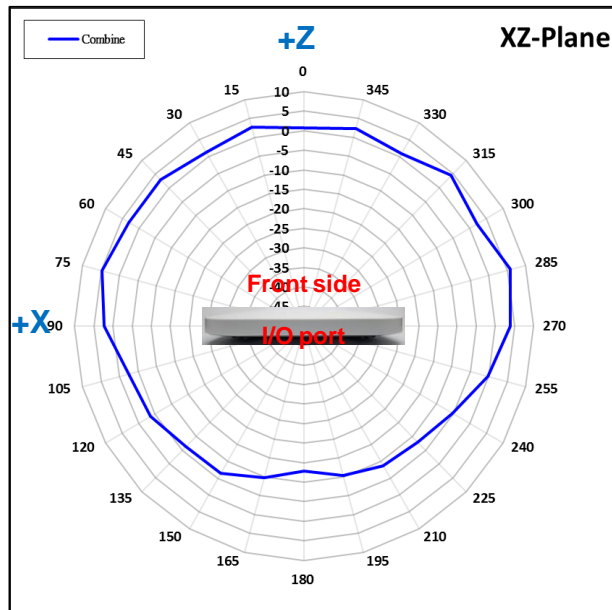
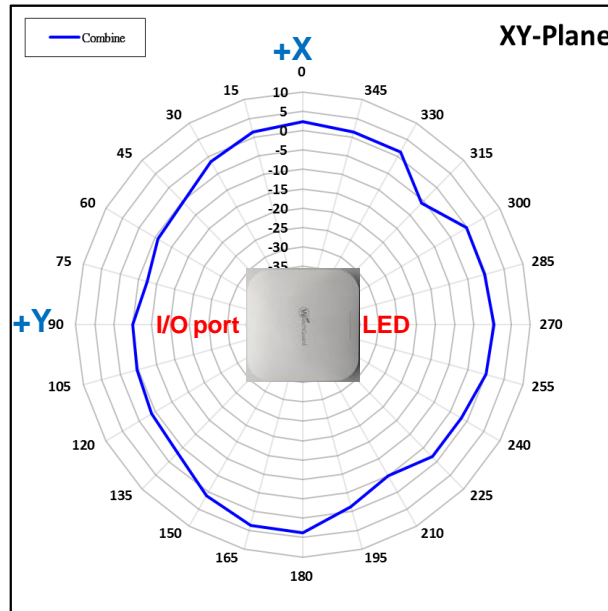




Combine pattern – 2G @ 2.45 GHz







Antenna Efficiency and Gain

Antenna Performance								
Freq. (MHz)	2G1		2G2		2G3		2G4	
	Efficiency (%)	Peak Gain (dBi)	Efficiency (%)	Peak Gain (dBi)	Efficiency (%)	Peak Gain (dBi)	Efficiency (%)	Peak Gain (dBi)
2400	61.7	3.00	60.7	3.51	63.6	3.89	64.8	2.22
2450	67.2	3.30	67.5	4.11	62.5	3.71	72.0	2.90
2500	69.3	4.07	72.1	4.26	63.7	3.80	73.9	3.15

Antenna Performance								
Freq. (MHz)	5G1		5G2		5G3		5G4	
	Efficiency (%)	Peak Gain (dBi)	Efficiency (%)	Peak Gain (dBi)	Efficiency (%)	Peak Gain (dBi)	Efficiency (%)	Peak Gain (dBi)
5150	61.2	4.87	61.8	4.01	52.6	4.36	53.1	3.59
5500	59.8	4.73	58.2	2.55	53.3	4.49	53.5	3.18
5850	60.3	5.09	61.5	3.04	54.3	4.56	56.4	4.01

Antenna Performance								
Freq. (MHz)	6G1		6G2		6G3		6G4	
	Efficiency (%)	Peak Gain (dBi)	Efficiency (%)	Peak Gain (dBi)	Efficiency (%)	Peak Gain (dBi)	Efficiency (%)	Peak Gain (dBi)
5925	55.6	5.30	60.8	4.66	55.8	4.68	57.1	5.44
6500	55.2	3.71	57.5	4.74	55.1	4.44	57.5	5.38
7125	65.7	5.06	53.8	3.96	62.2	5.43	58.4	5.48