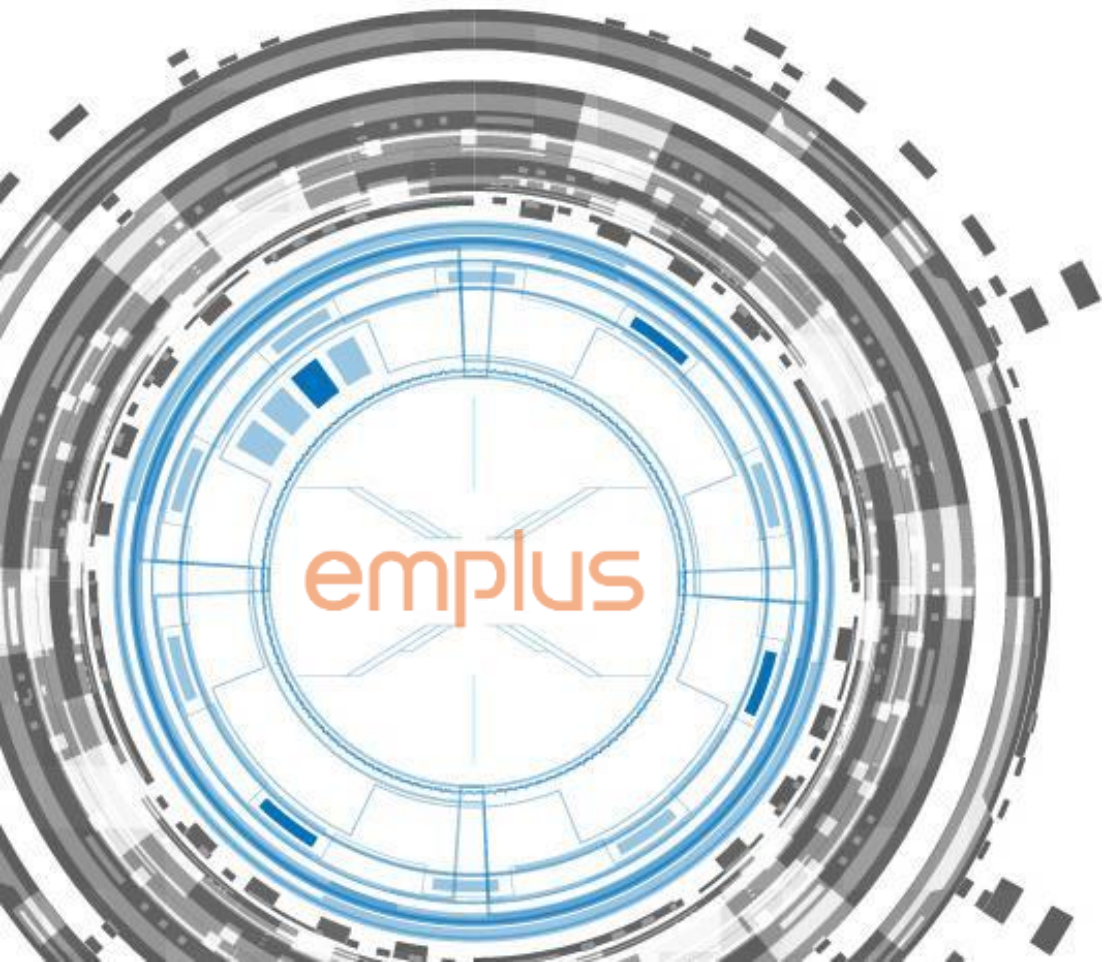




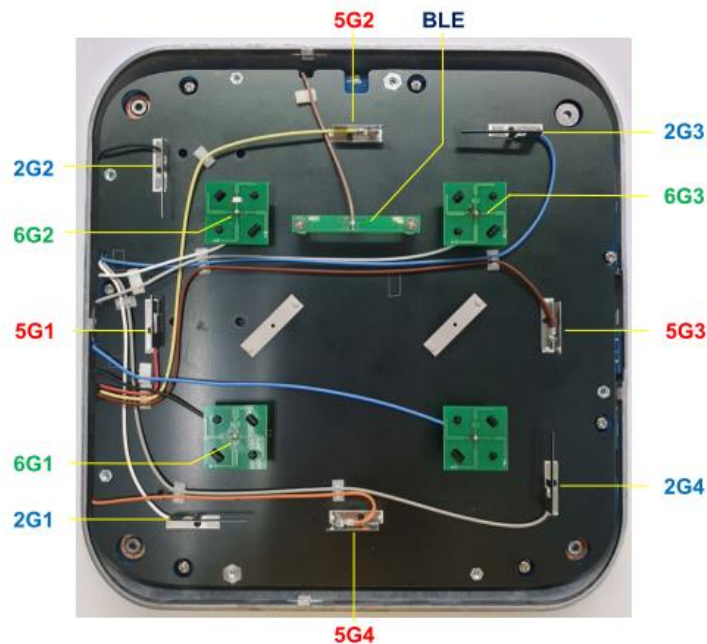
AP One Enterprise Antenna test report

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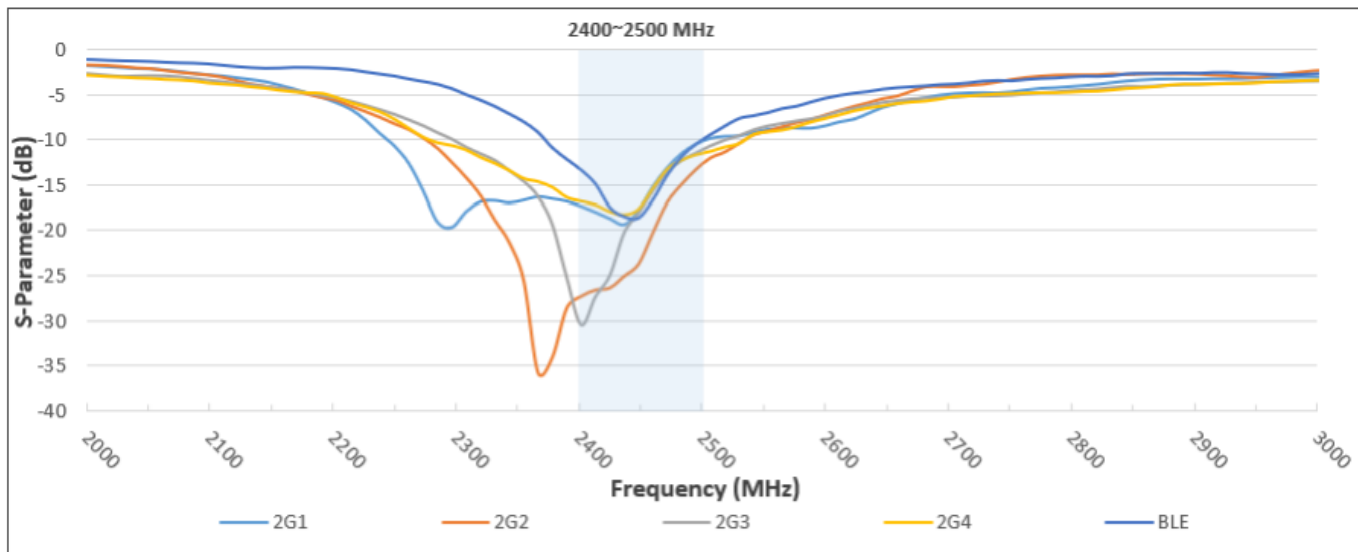
Agenda

- – Placement and Specification
- – Return Loss & Isolation
- – Radiation Pattern
- – Combine Pattern
- – Gain table

Placement and Specification

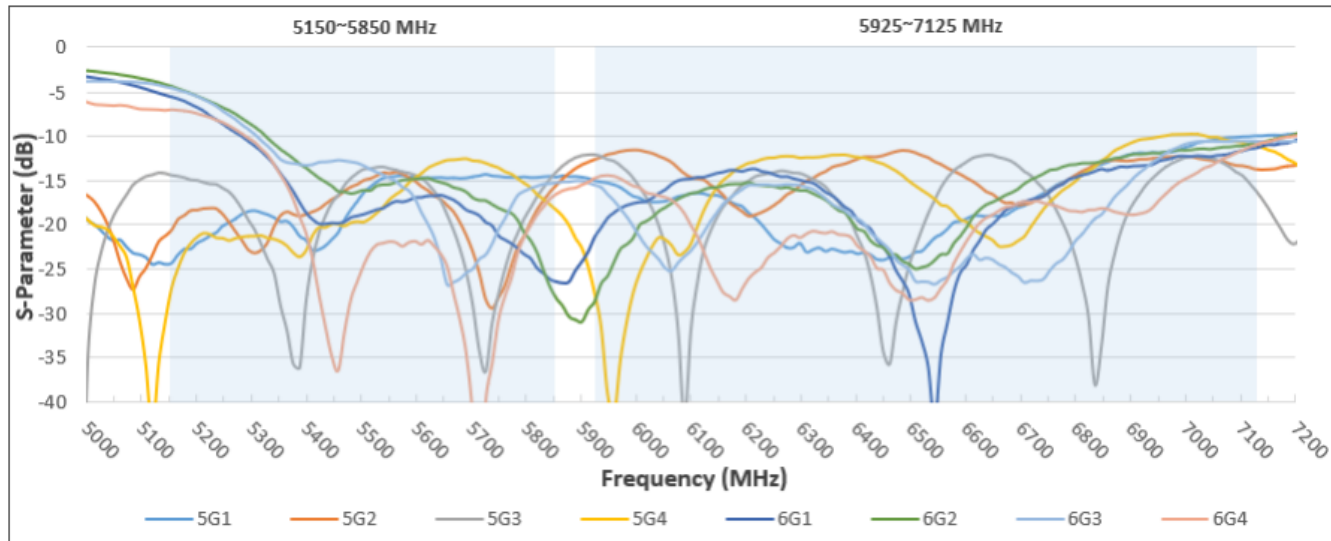


Return Loss



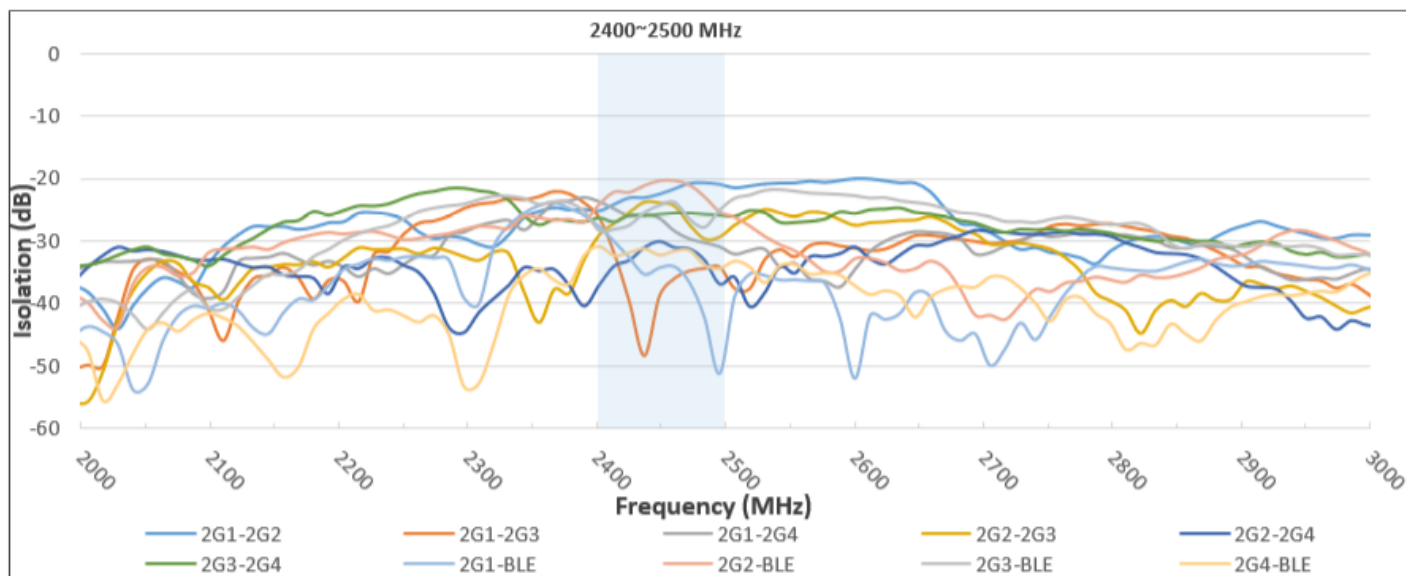
S11					
Freq. (MHz)	2G1	2G2	2G3	2G4	BLE
2400	-17.34	-27.34	-30.40	-16.83	-13.36
2450	-17.82	-23.76	-18.00	-17.69	-18.60
2500	-10.48	-13.32	-11.39	-11.68	-10.51

Return Loss



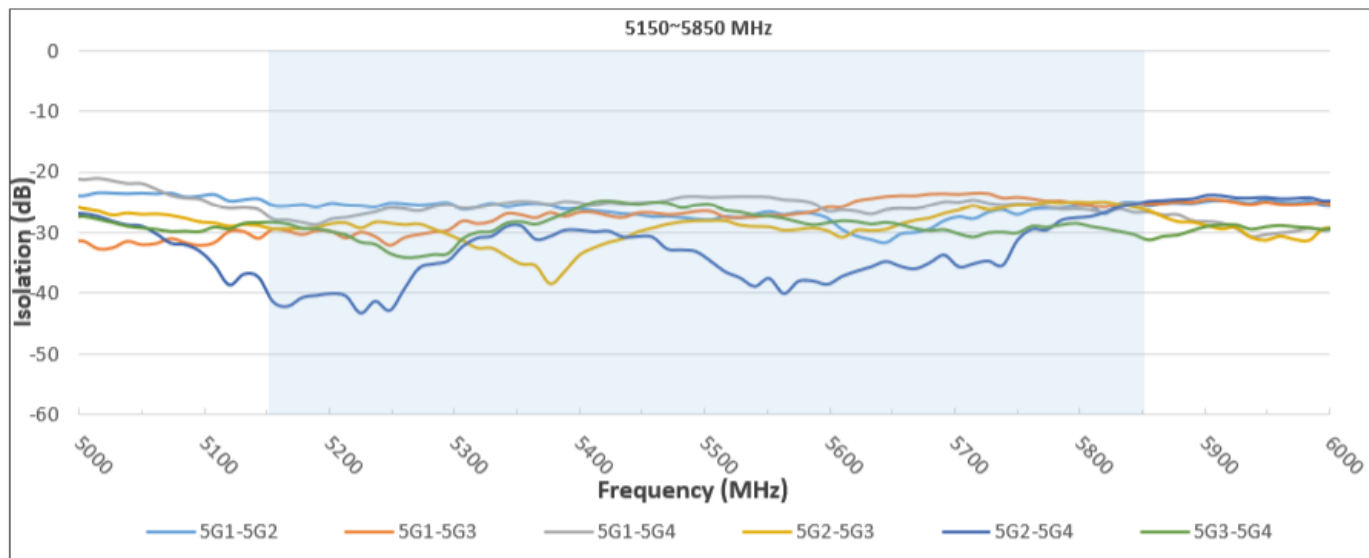
S11								
Freq. (MHz)	5G1	5G2	5G3	5G4	6G1	6G2	6G3	6G4
5150	-24.29	-20.58	-14.40	-27.20	-5.50	-4.22	-4.56	-7.00
5500	-16.27	-14.93	-13.71	-19.66	-18.80	-16.00	-13.38	-24.54
5850	-14.53	-15.50	-14.03	-18.30	-26.45	-28.28	-15.30	-16.54
5925	-14.94	-12.59	-12.08	-27.79	-21.38	-28.65	-15.56	-14.76
6500	-23.59	-11.61	-24.62	-15.01	-27.80	-24.37	-25.16	-28.52
7125	-9.85	-13.69	-16.05	-10.99	-11.32	-10.60	-10.60	-11.00

Isolation



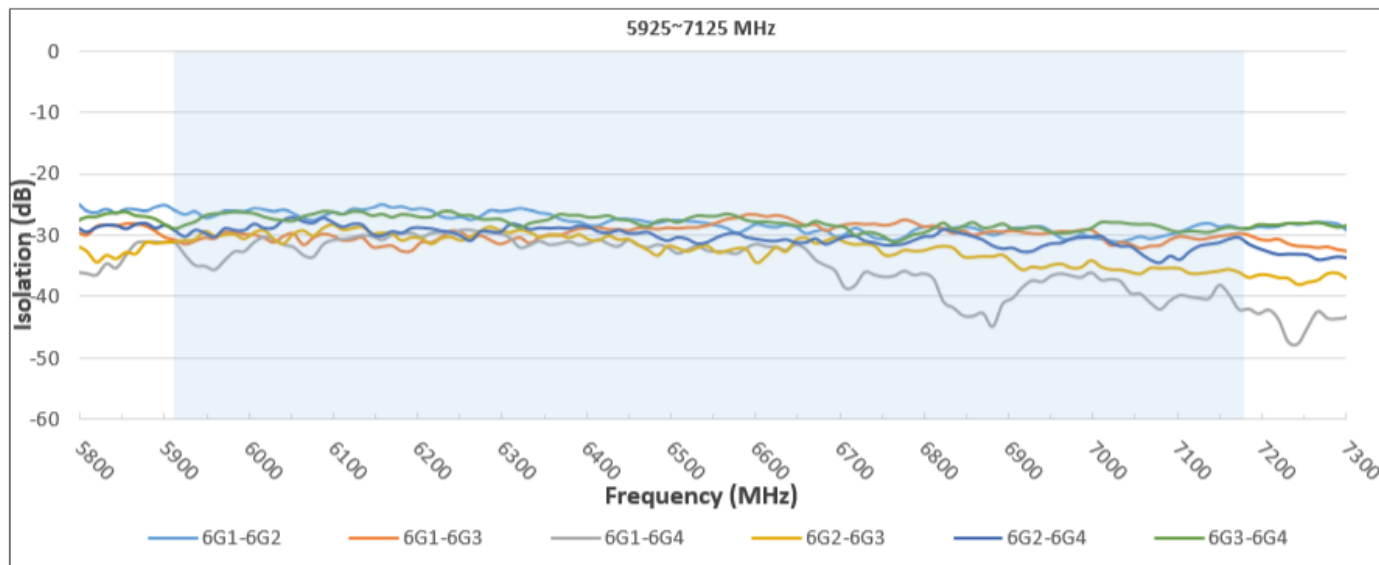
Isolation										
Freq. (MHz)	2G1-2G2	2G1-2G3	2G1-2G4	2G2-2G3	2G2-2G4	2G3-2G4	2G1-BLE	2G2-BLE	2G3-BLE	2G4-BLE
2400	-25.17	-26.30	-23.62	-29.14	-36.97	-26.31	-27.65	-24.16	-28.40	-31.01
2450	-22.48	-38.76	-26.28	-24.02	-30.02	-25.73	-34.21	-20.42	-24.42	-32.37
2500	-20.91	-34.12	-30.84	-29.47	-36.83	-25.86	-51.17	-25.37	-25.15	-34.51

Isolation



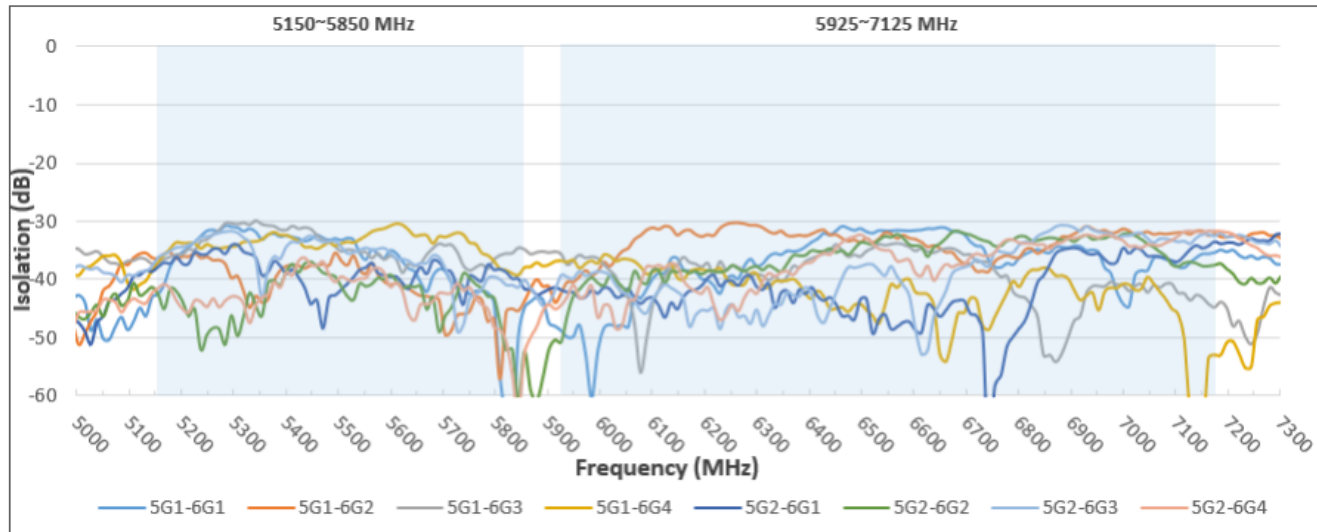
Isolation						
Freq. (MHz)	5G1-5G2	5G1-5G3	5G1-5G4	5G2-5G3	5G2-5G4	5G3-5G4
5150	-25.54	-29.35	-27.82	-29.38	-41.33	-28.29
5500	-27.86	-26.39	-24.28	-28.00	-34.67	-25.42
5850	-25.63	-25.20	-26.67	-26.33	-24.84	-31.21

Isolation



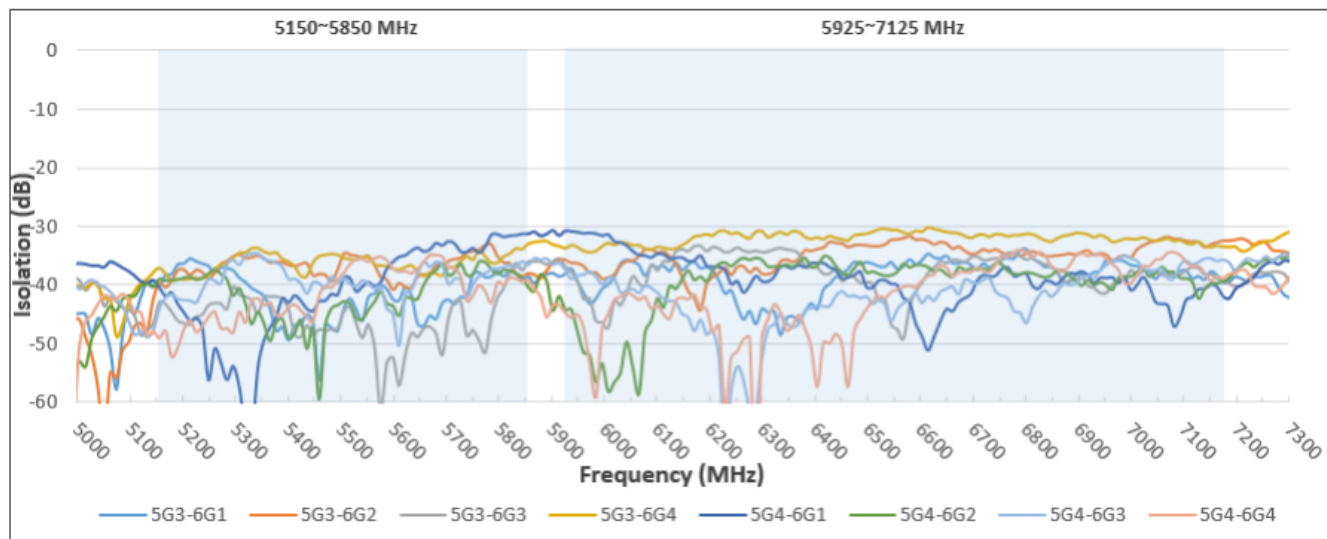
Isolation						
Freq. (MHz)	6G1-6G2	6G1-6G3	6G1-6G4	6G2-6G3	6G2-6G4	6G3-6G4
5925	-26.67	-31.49	-33.17	-30.82	-30.16	-28.32
6500	-27.68	-28.81	-31.91	-31.72	-30.81	-27.48
7125	-28.28	-30.75	-40.19	-36.19	-31.68	-29.42

Isolation



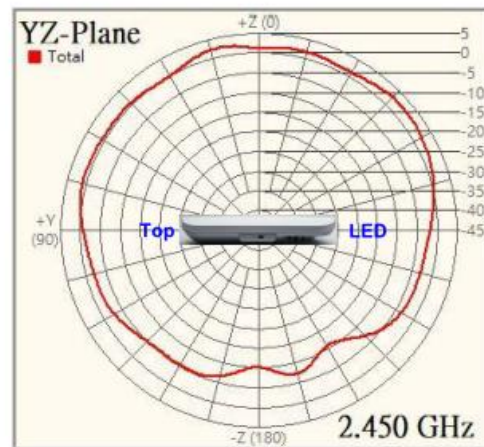
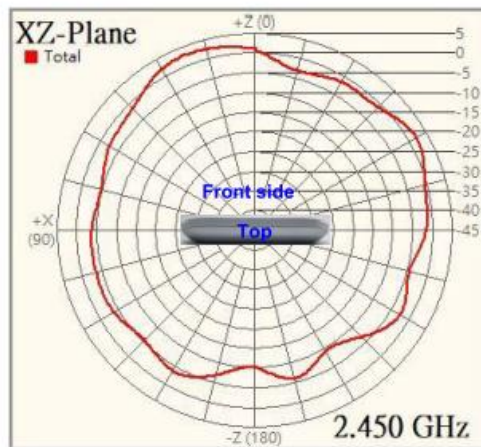
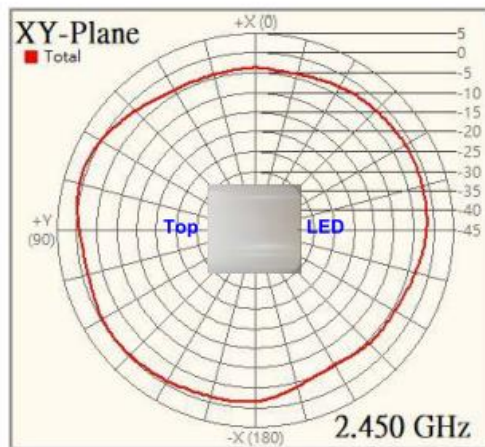
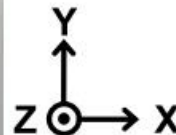
Isolation								
Freq. (MHz)	5G1-6G1	5G1-6G2	5G1-6G3	5G1-6G4	5G2-6G1	5G2-6G2	5G2-6G3	5G2-6G4
5150	-42.49	-36.34	-37.23	-37.02	-37.81	-42.54	-36.14	-41.51
5500	-33.18	-36.77	-35.16	-33.82	-41.74	-41.22	-34.33	-39.50
5850	-44.80	-43.64	-34.84	-37.94	-41.64	-52.38	-40.02	-52.69
5925	-48.79	-42.30	-35.63	-36.78	-41.78	-50.78	-39.22	-44.43
6500	-31.15	-33.56	-36.06	-44.21	-43.39	-33.67	-37.70	-32.31
7125	-37.02	-32.19	-43.58	-62.70	-34.82	-37.02	-33.78	-31.71

Isolation

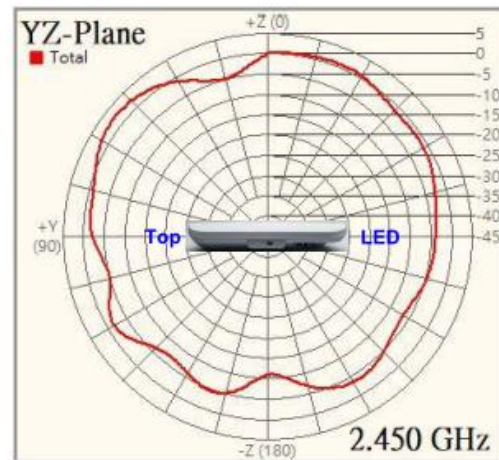
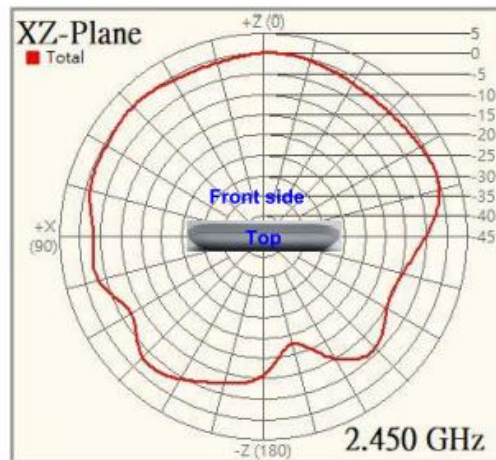
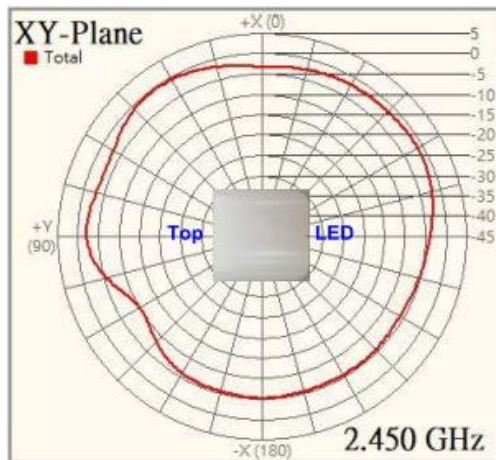
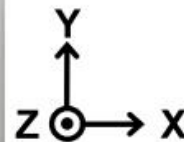


Isolation								
Freq. (MHz)	5G3-6G1	5G3-6G2	5G3-6G3	5G3-6G4	5G4-6G1	5G4-6G2	5G4-6G3	5G4-6G4
5150	-40.17	-39.77	-43.01	-37.19	-40.37	-38.97	-44.05	-49.07
5500	-44.06	-34.69	-44.62	-35.51	-38.74	-42.80	-38.90	-37.92
5850	-38.50	-38.07	-36.09	-33.08	-31.17	-40.38	-36.62	-39.22
5925	-38.12	-35.76	-36.88	-33.85	-30.66	-44.23	-37.50	-44.73
6500	-36.11	-33.29	-39.62	-31.34	-40.26	-37.89	-42.00	-44.15
7125	-38.49	-32.72	-37.26	-32.72	-40.65	-42.31	-36.11	-36.80

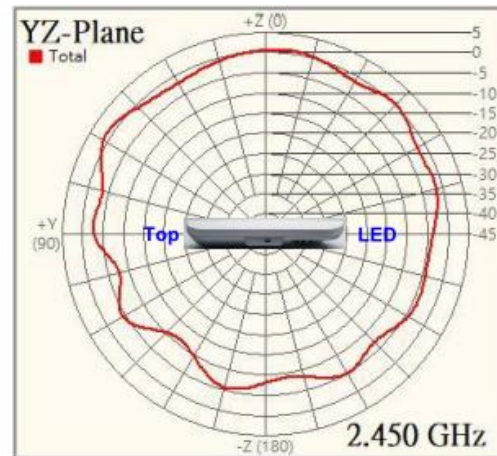
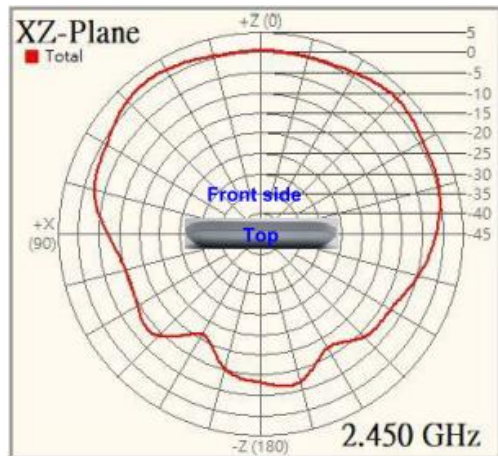
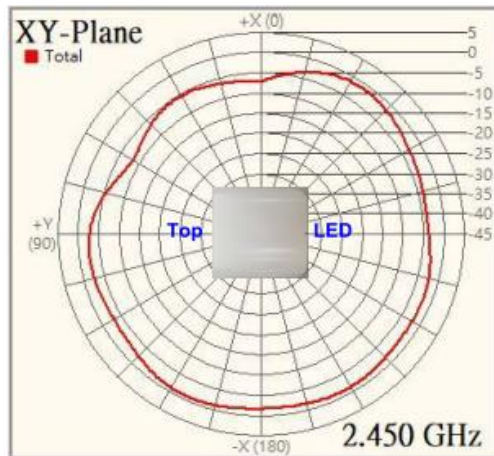
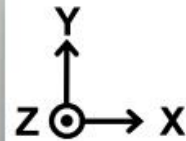
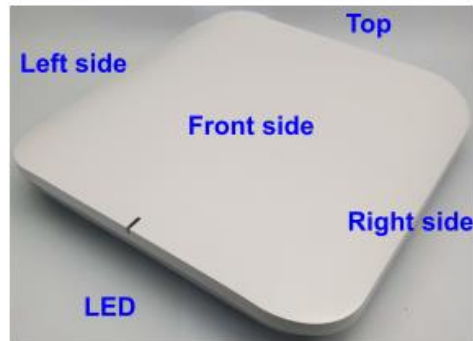
2D pattern : 2-1



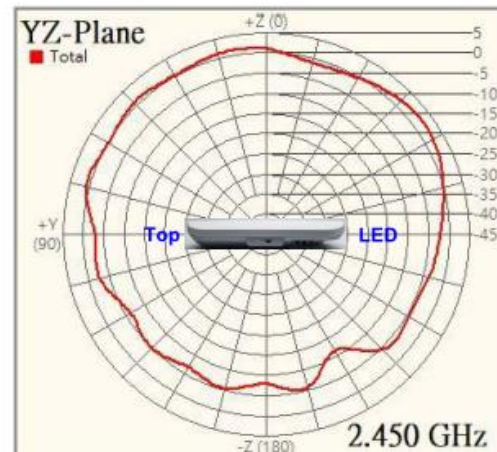
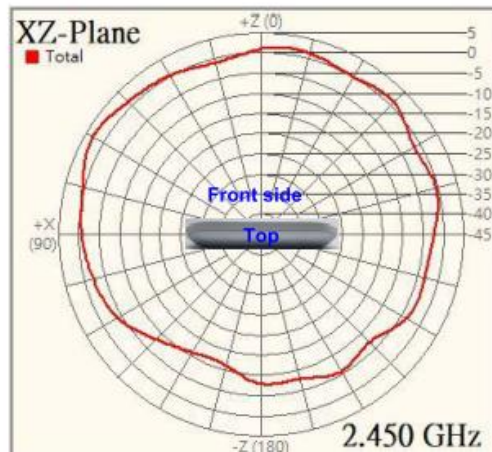
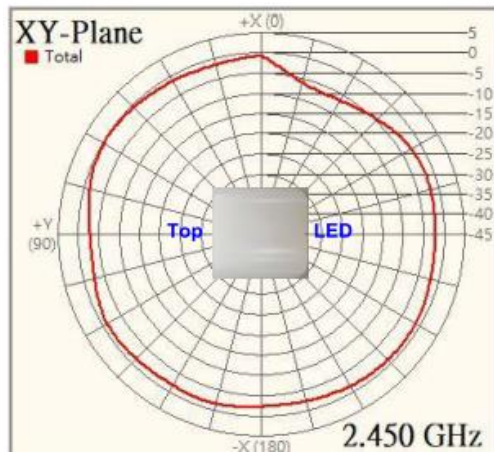
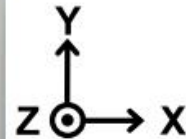
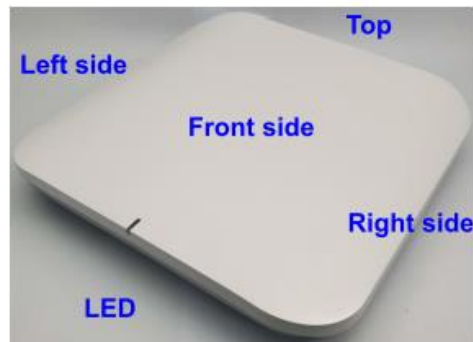
2D pattern : 2-2



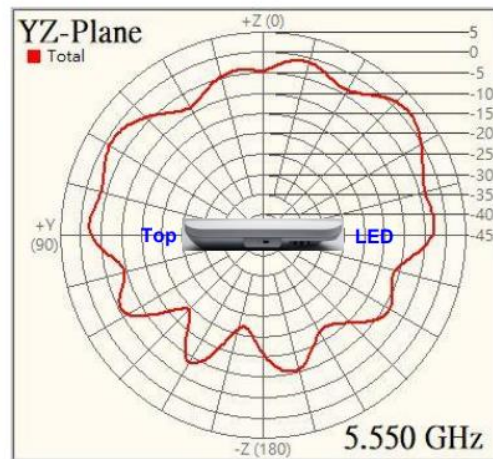
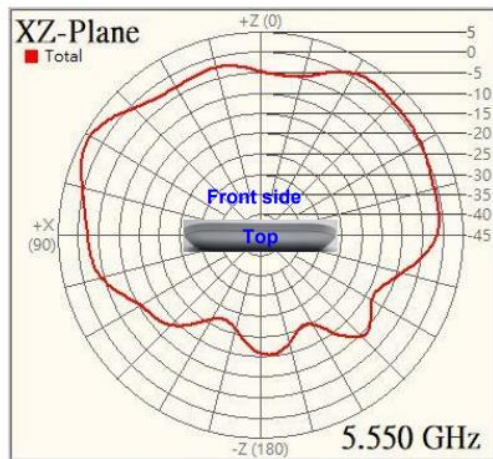
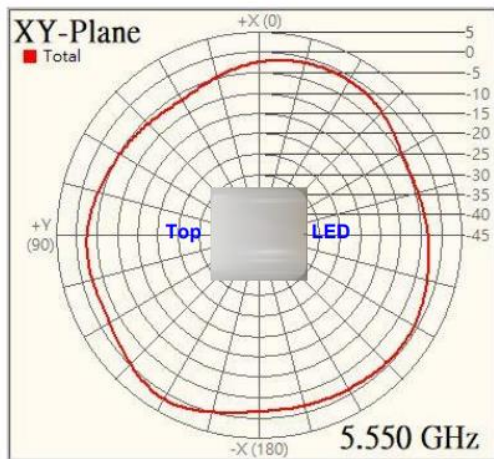
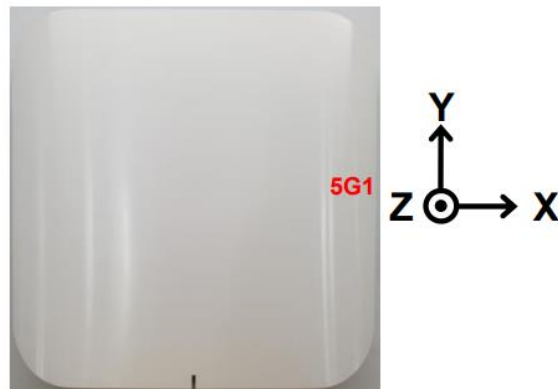
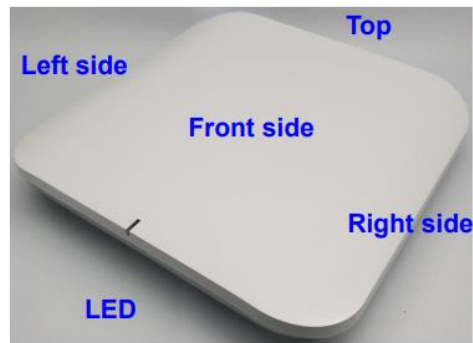
2D pattern : 2-3



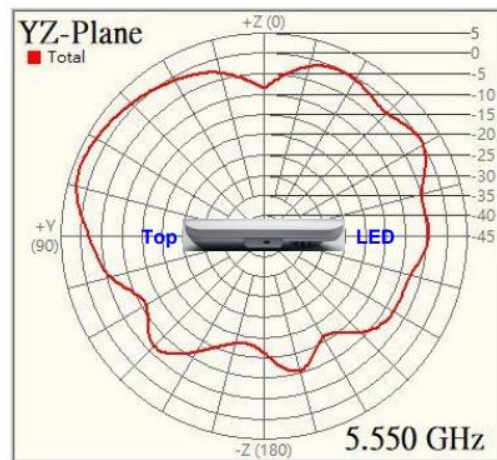
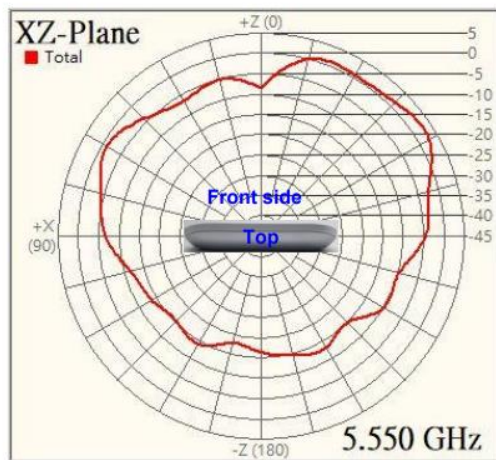
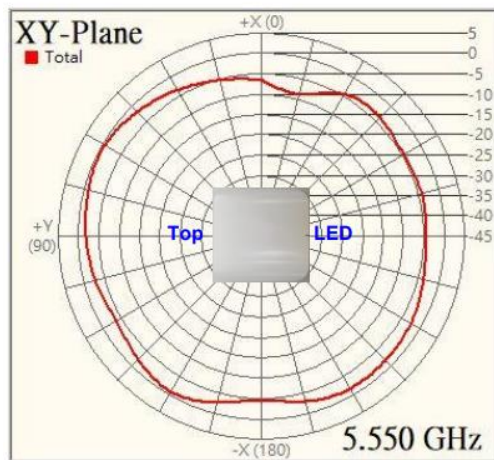
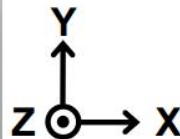
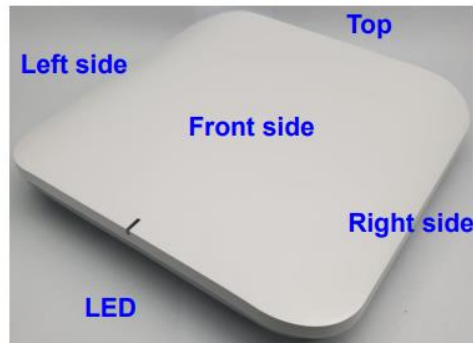
2D pattern : 2-4



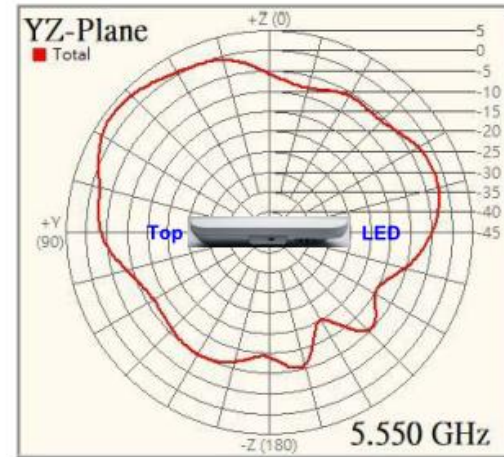
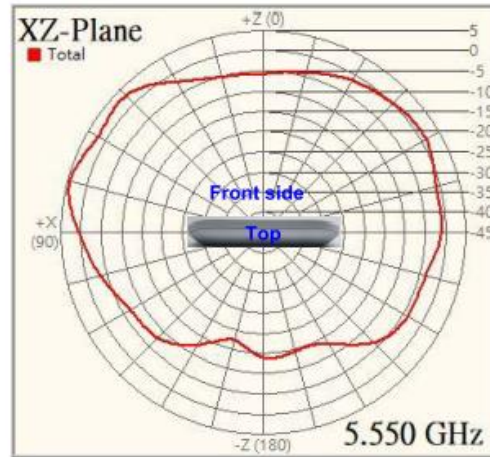
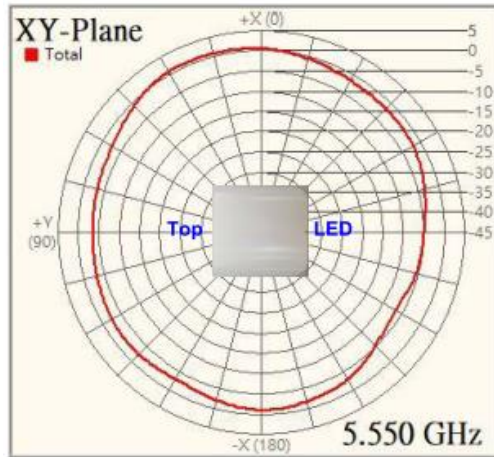
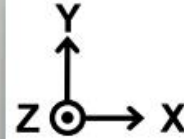
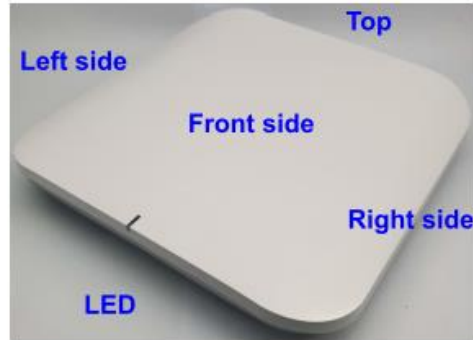
2D pattern : 5-1



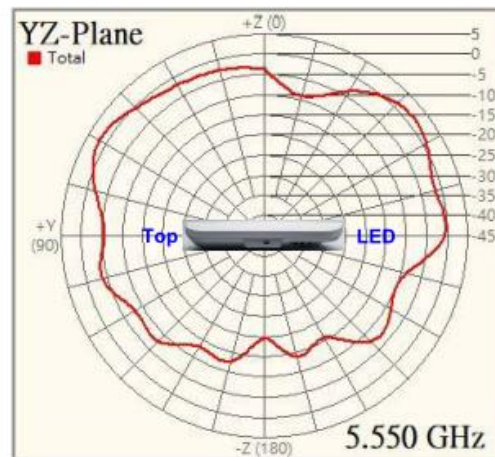
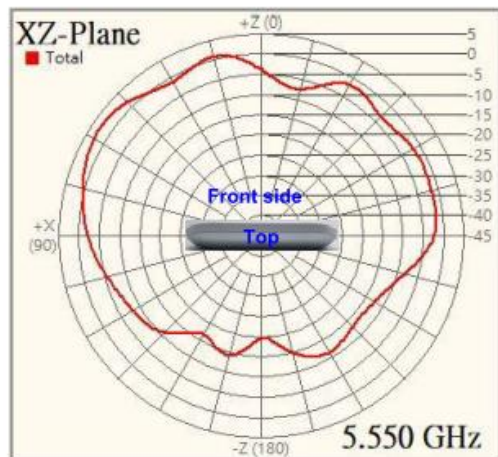
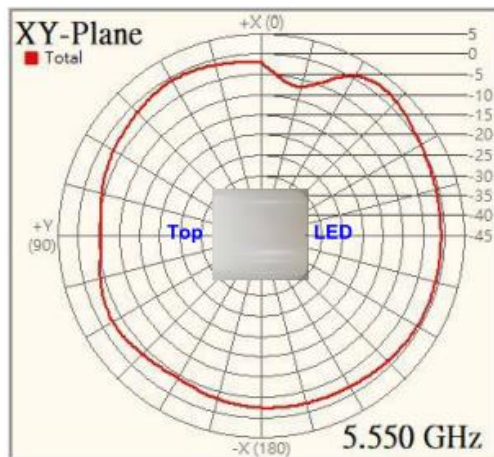
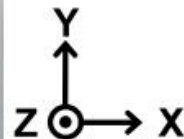
2D pattern : 5-2



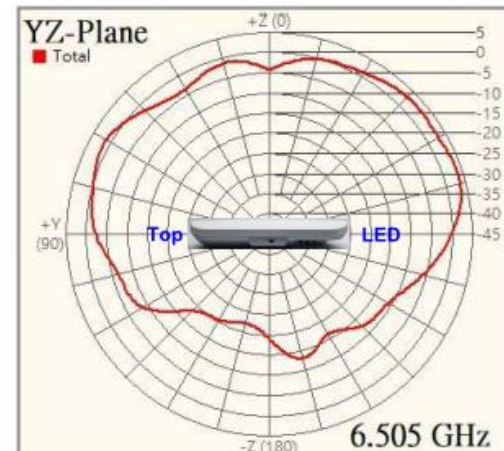
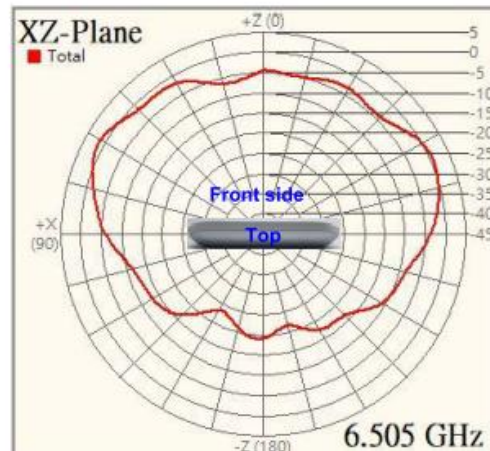
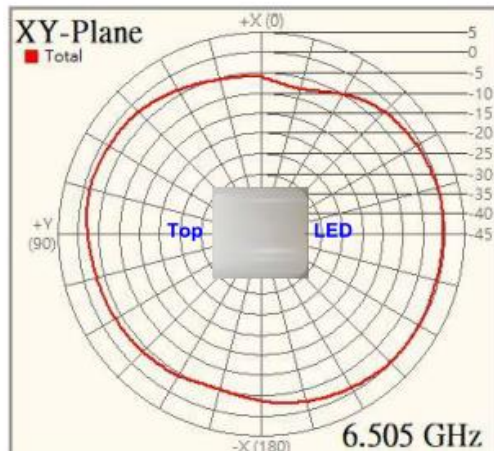
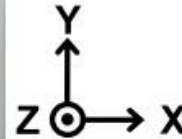
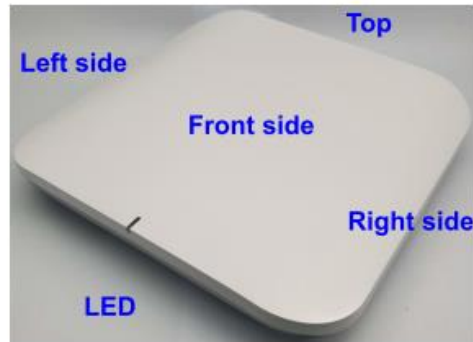
2D pattern : 5-3



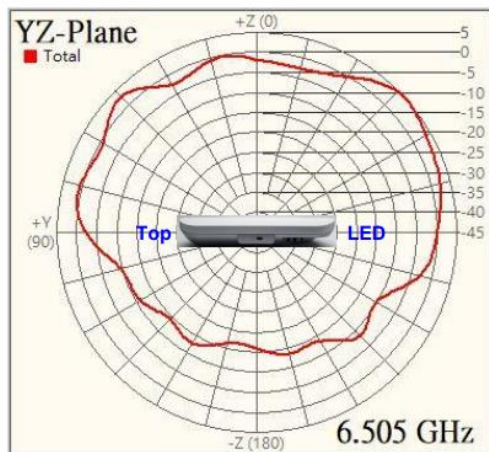
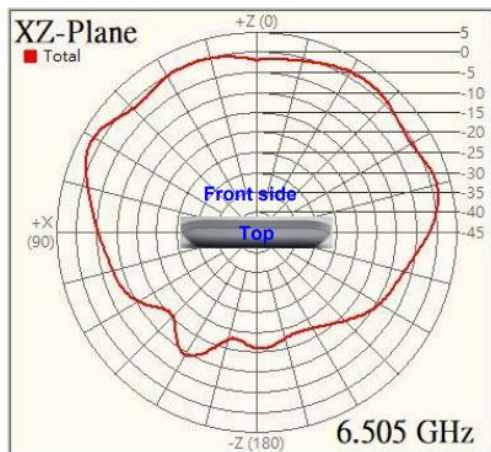
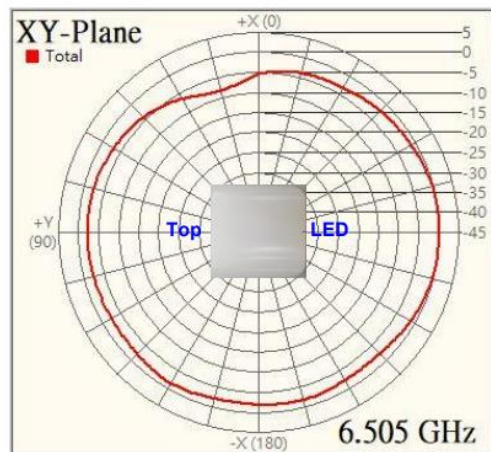
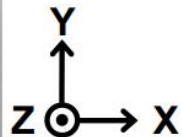
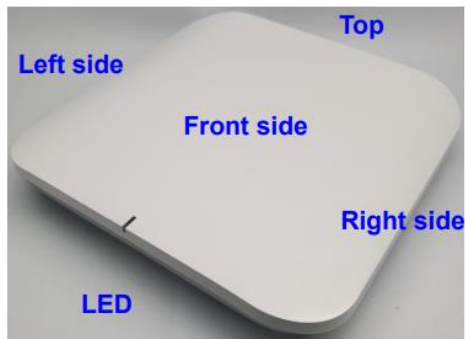
2D pattern : 5-4



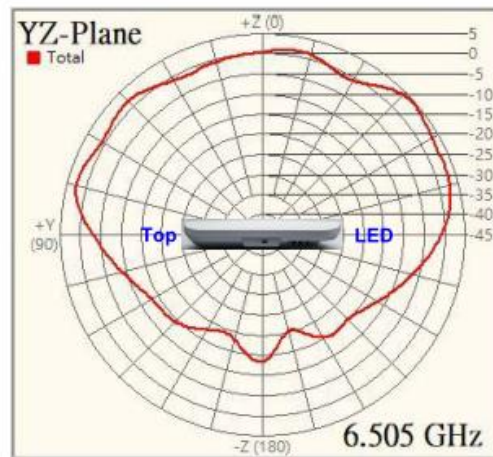
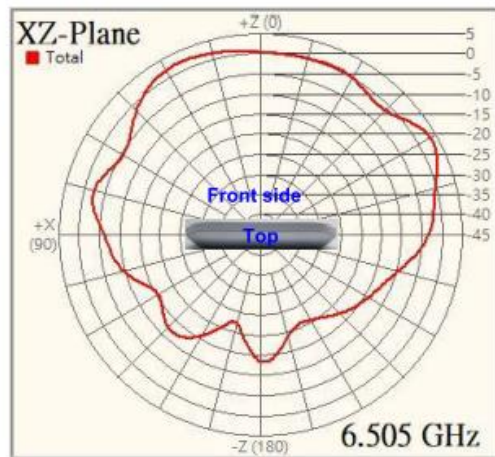
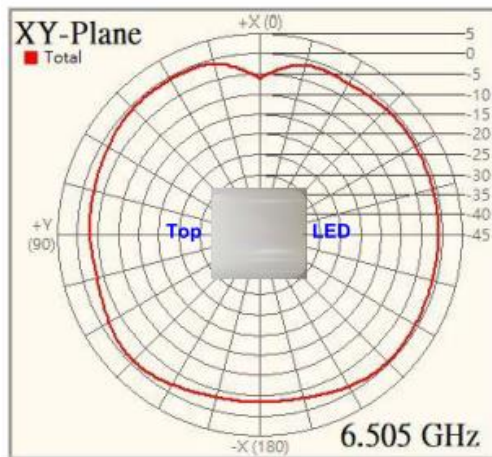
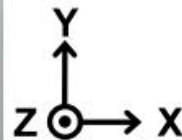
2D pattern : 6-1



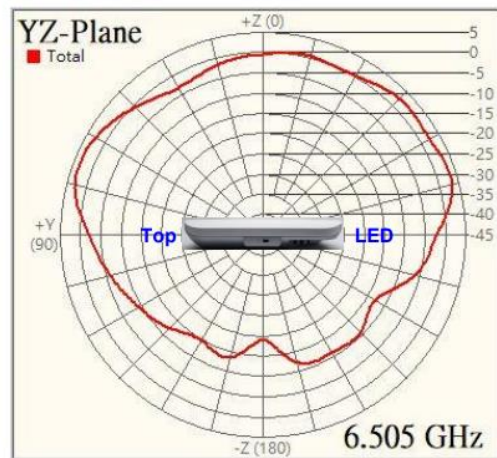
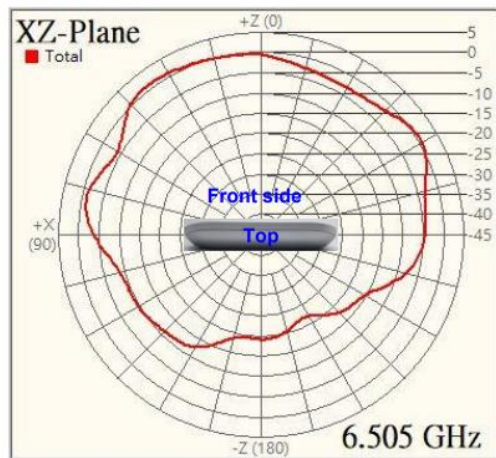
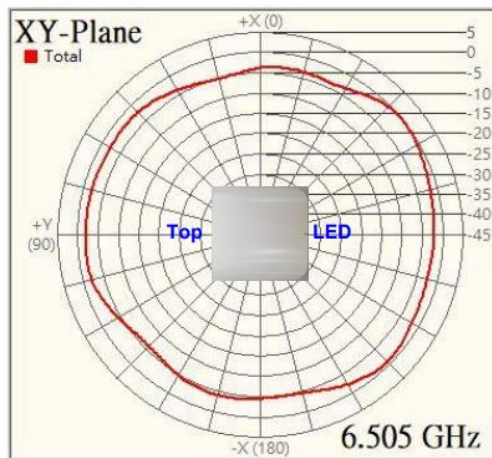
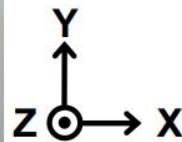
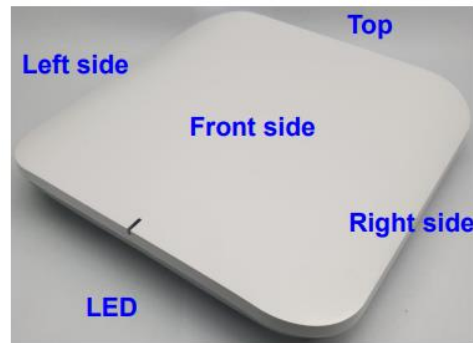
2D pattern : 6-2



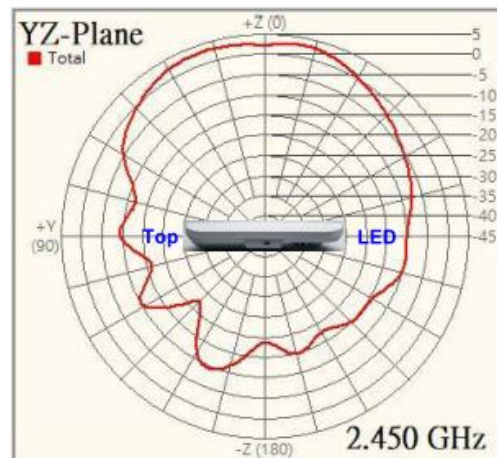
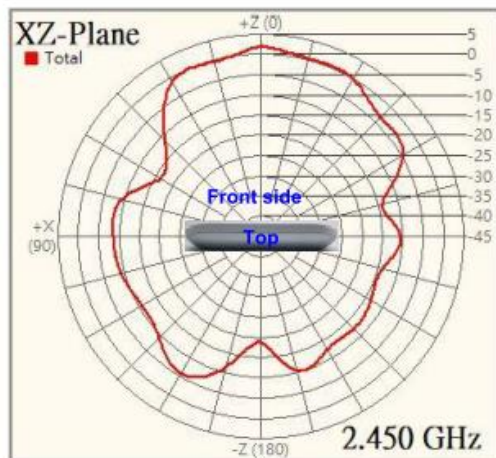
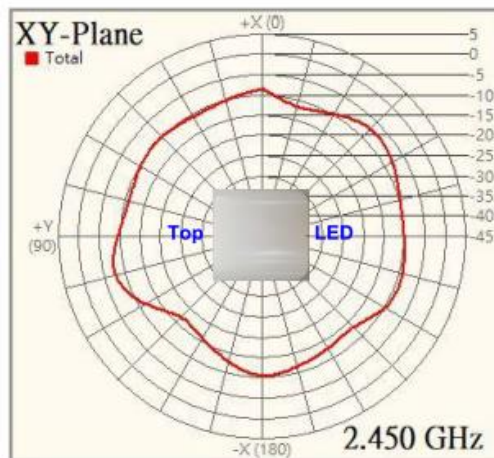
2D pattern : 6-3



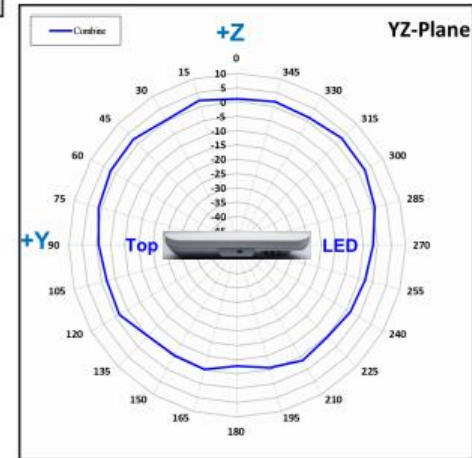
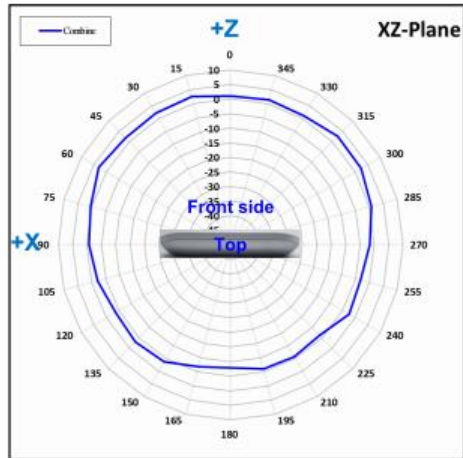
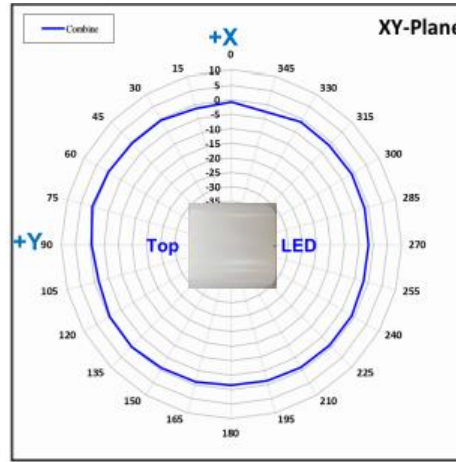
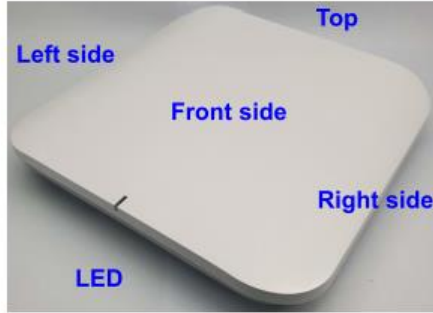
2D pattern : 6-4



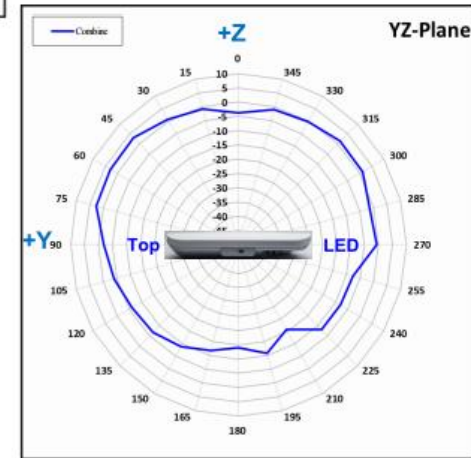
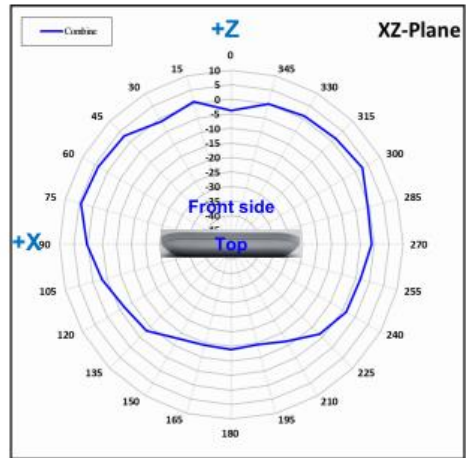
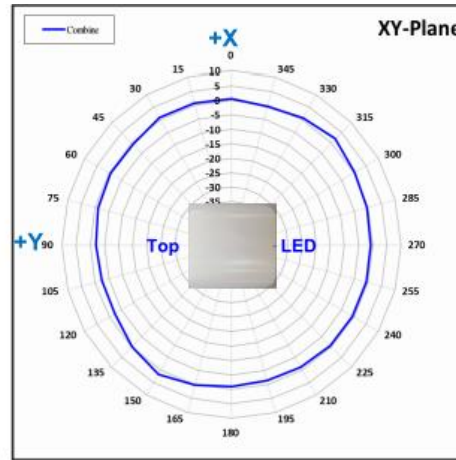
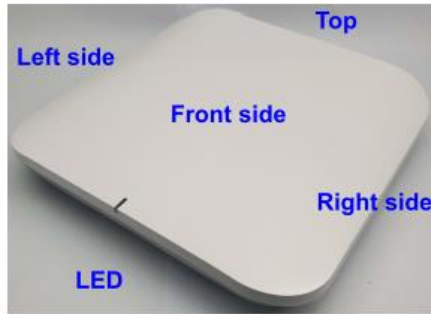
2D pattern : BLE



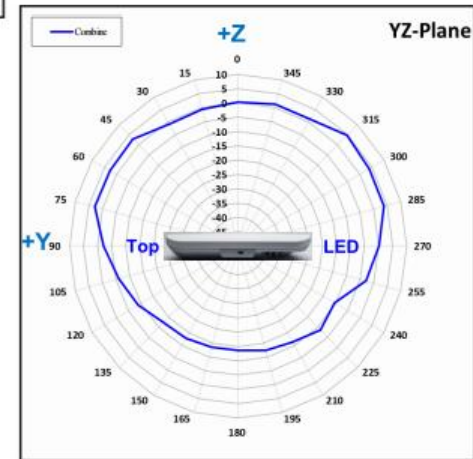
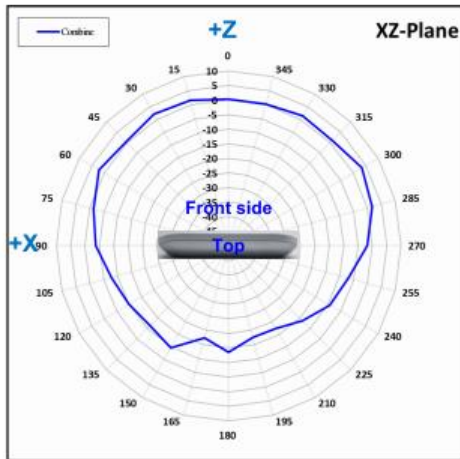
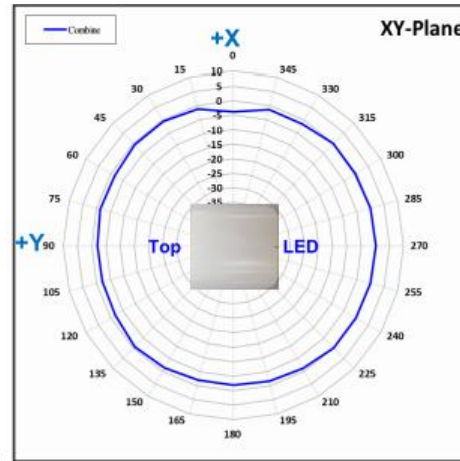
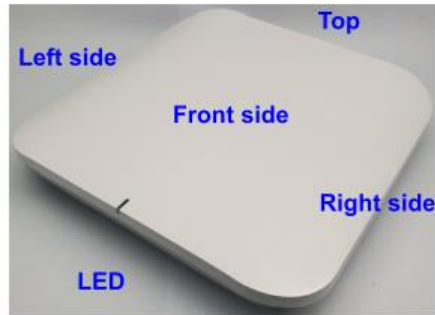
Combine pattern : 2.4GHz



Combine pattern : 5GHz



Combine pattern : 6GHz



Gain table : 2G ant

Freq(Hz)	2.4G	2.45G	2.4835G
Ant. 1 Max Gain (dBi)	2.71	2.64	2.82
Ant. 2 Max Gain (dBi)	2.38	2.35	2.39
Ant. 3 Max Gain (dBi)	2.01	2.29	2.33
Ant. 4 Max Gain (dBi)	2.17	2.32	2.69
Ant. 1 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/15/300	Phi/30/67.5	Theta/60/172.5
Ant. 2 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/45/210	Theta/60/112.5	Theta/52.5/120
Ant. 3 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/22.5/255	Theta/60/45	Phi/22.5/262.5
Ant. 4 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/22.5/30	Phi/30/172.5	Theta/52.5/135
Max Gain (dBi)	2.71	2.64	2.82
DG [1SS] (dBi)	5.18	6.27	6.46
DG [2SS] (dBi)	2.71	3.27	3.46
DG [4SS] (dBi)	2.71	2.64	2.82

Gain table : 5G ant

Freq(Hz)	5.2G	5.3G	5.6G	5.785G
Ant. 1 Max Gain (dBi)	4.81	4.19	5.45	4.98
Ant. 2 Max Gain (dBi)	2.63	3.44	5.31	5.17
Ant. 3 Max Gain (dBi)	5.06	5.29	4.27	3.96
Ant. 4 Max Gain (dBi)	3.72	3.52	4.66	4.51
Ant. 1 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/52.5/292.5	Theta/60/345	Theta/75/150	Theta/52.5/307.5
Ant. 2 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/75/52.5	Theta/75/150	Theta/60/150	Theta/60/150
Ant. 3 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/52.5/112.5	Theta/67.5/7.5	Theta/75/22.5	Theta/60/52.5
Ant. 4 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/60/22.5	Theta/75/315	Theta/67.5/232.5	Theta/75/322.5
Max Gain (dBi)	5.06	5.29	5.45	5.17
DG [1SS] (dBi)	7.31	7.57	8.57	8.92
DG [2SS] (dBi)	5.06	5.29	5.57	5.92
DG [4SS] (dBi)	5.06	5.29	5.45	5.17

Gain table : 6G ant

Freq(Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 1 Max Gain (dBi)	4.96	4.99	4.98	4.78
Ant. 2 Max Gain (dBi)	4.72	4.74	4.53	4.69
Ant. 3 Max Gain (dBi)	4.88	4.63	4.47	4.94
Ant. 4 Max Gain (dBi)	4.77	4.84	4.61	4.26
Ant. 1 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/60/322.5	Phi/45/277.5	Phi/45/277.5	Phi/45/285
Ant. 2 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/37.5/270	Phi/75/262.5	Phi/75/285	Phi/67.5/292.5
Ant. 3 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/75/307.5	Phi/75/285	Phi/75/300	Phi/82.5/300
Ant. 4 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/45/322.5	Phi/52.5/307.5	Phi/52.5/300	Phi/45/277.5
Max Gain (dBi)	4.96	4.99	4.98	4.94
DG [1SS] (dBi)	9.98	9.93	9.53	9.86
DG [2SS] (dBi)	6.98	6.93	6.53	6.86
DG [4SS] (dBi)	4.96	4.99	4.98	4.94

Gain table : Note

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)

Gain table : BLE

Antenna Performance		
Freq. (MHz)	BLE	
	Efficiency (%)	Peak Gain (dBi)
2400	60.3	3.06
2450	62.3	3.07
2500	61.5	3.07