



FAP-243K

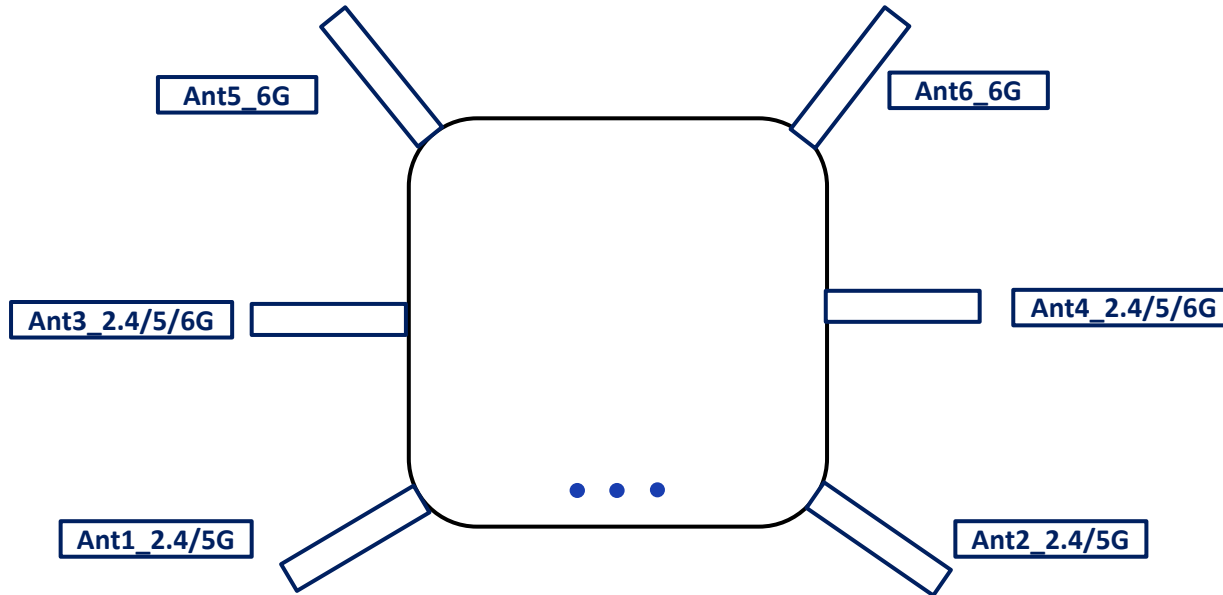
Antenna Test Report



Senao Networks Inc.

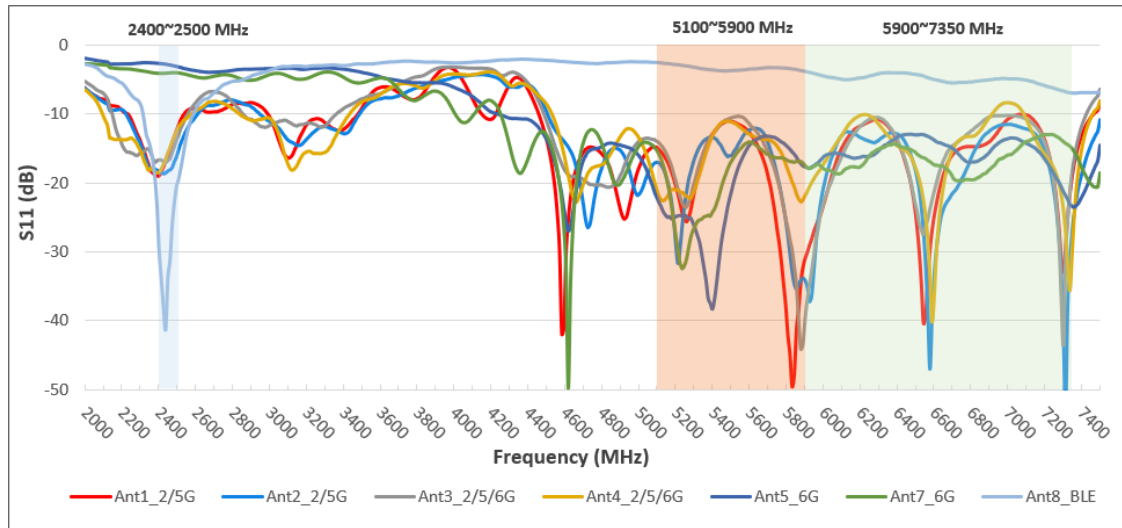
Customer	Fortinet
Project	FAP-243K
Project Description	Dual antenna*2 Tri antenna*2 6G antenna*2 BLE antenna*1
Date	2024/05/24
Prepared by	Tony
Report Version	A02

- **Agenda**
 - Placement and Specification
 - S11 & Isolation
 - Radiation Pattern
 - Combine Pattern
 - Efficiency and Gain



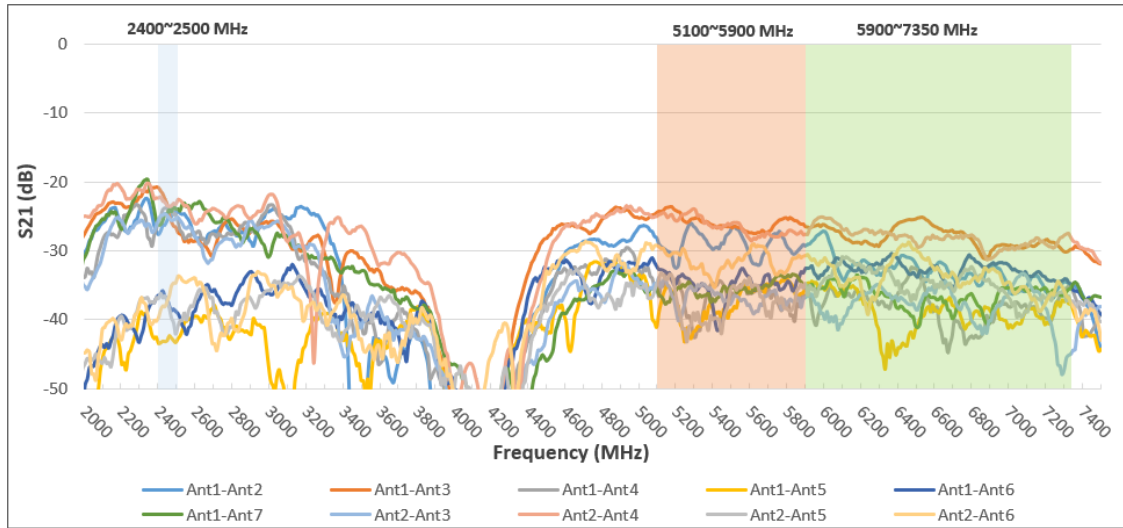
Ant No.	Brand Name	Model Name	Operating Band	Ant Type	Feeding
ANT1	AWAN	7102A0668000	2400MHz ~ 2500 MHz	Dipole	Cable
ANT2		7102A0668000	5150MHz ~ 5895 MHz		
ANT3		7102A0669000	2400MHz ~ 2500 MHz	Dipole	
ANT4		7102A0669000	5150MHz ~ 5895 MHz 5925MHz ~ 7125 MHz		
ANT5		7102A0667000	5925MHz ~ 7125 MHz	Dipole	
ANT6		7102A0667000	5925MHz ~ 7125 MHz	Dipole	
ANT7	Enrack	7102A1239000	2400MHz ~ 2500 MHz	PIFA	

Antenna Return Loss (S11)

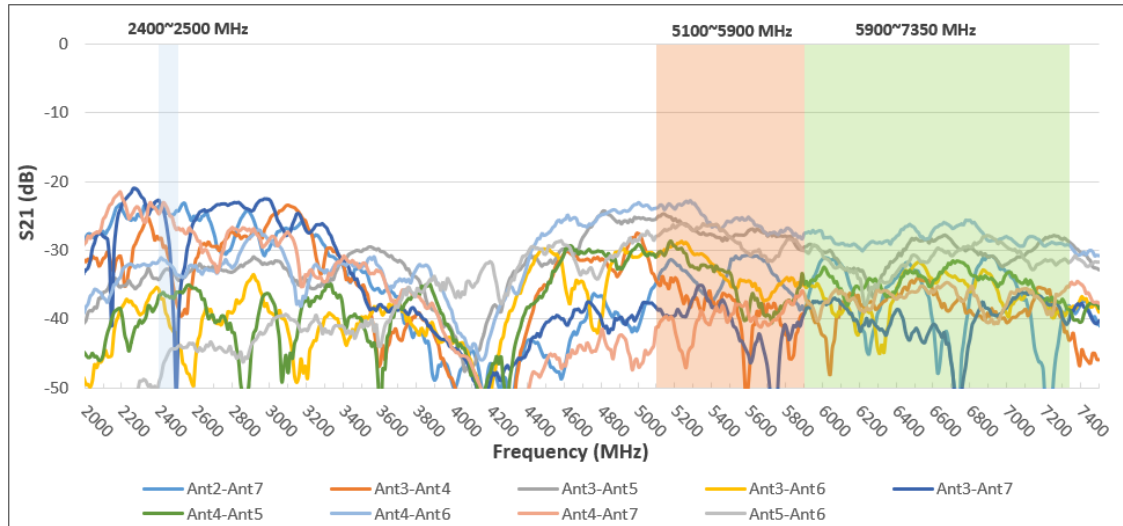


Antenna S11							
Freq. (MHz)	Ant1_2/5G	Ant2_2/5G	Ant3_2/5/6G	Ant4_2/5/6G	Ant5_6G	Ant7_6G	Ant8_BLE
2400	-18.95	-18.20	-16.73	-18.47	-2.67	-4.11	-29.94
2450	-16.05	-18.22	-16.83	-15.64	-2.83	-4.05	-33.79
2500	-12.41	-16.21	-13.92	-12.50	-3.10	-4.01	-20.52
5150	-16.85	-19.64	-16.11	-22.00	-24.95	-19.86	-2.62
5550	-11.63	-13.81	-10.49	-11.96	-16.96	-15.05	-3.56
5850	-47.78	-34.63	-32.22	-20.58	-15.83	-17.01	-3.44
5925	-29.08	-37.19	-34.90	-20.60	-17.87	-17.90	-3.90
6500	-26.41	-19.16	-24.15	-18.42	-13.03	-15.81	-4.23
7125	-10.26	-12.23	-11.05	-11.62	-14.40	-13.90	-5.13

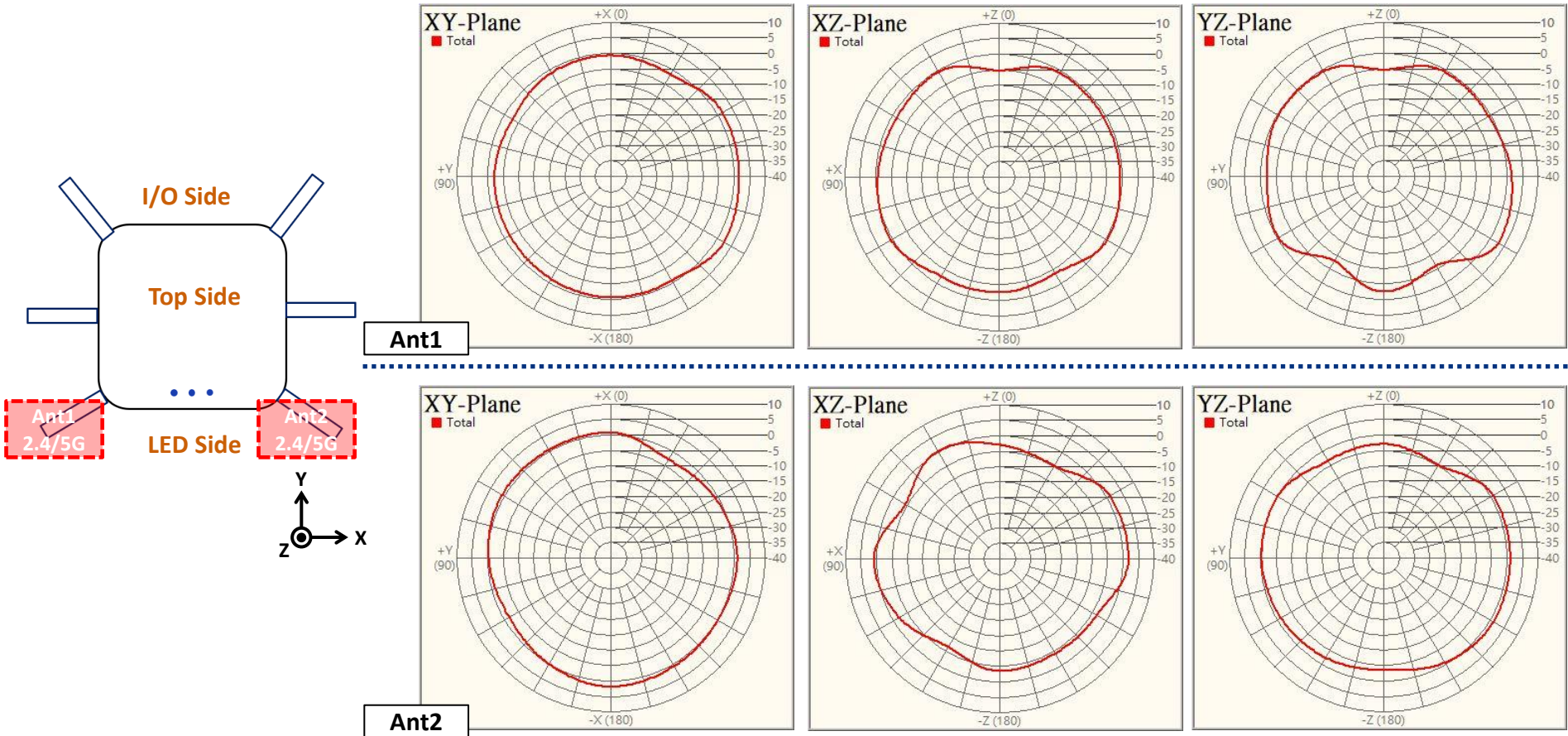
- The gray text indicates that the antenna does not support the corresponding frequency band and can be disregarded.

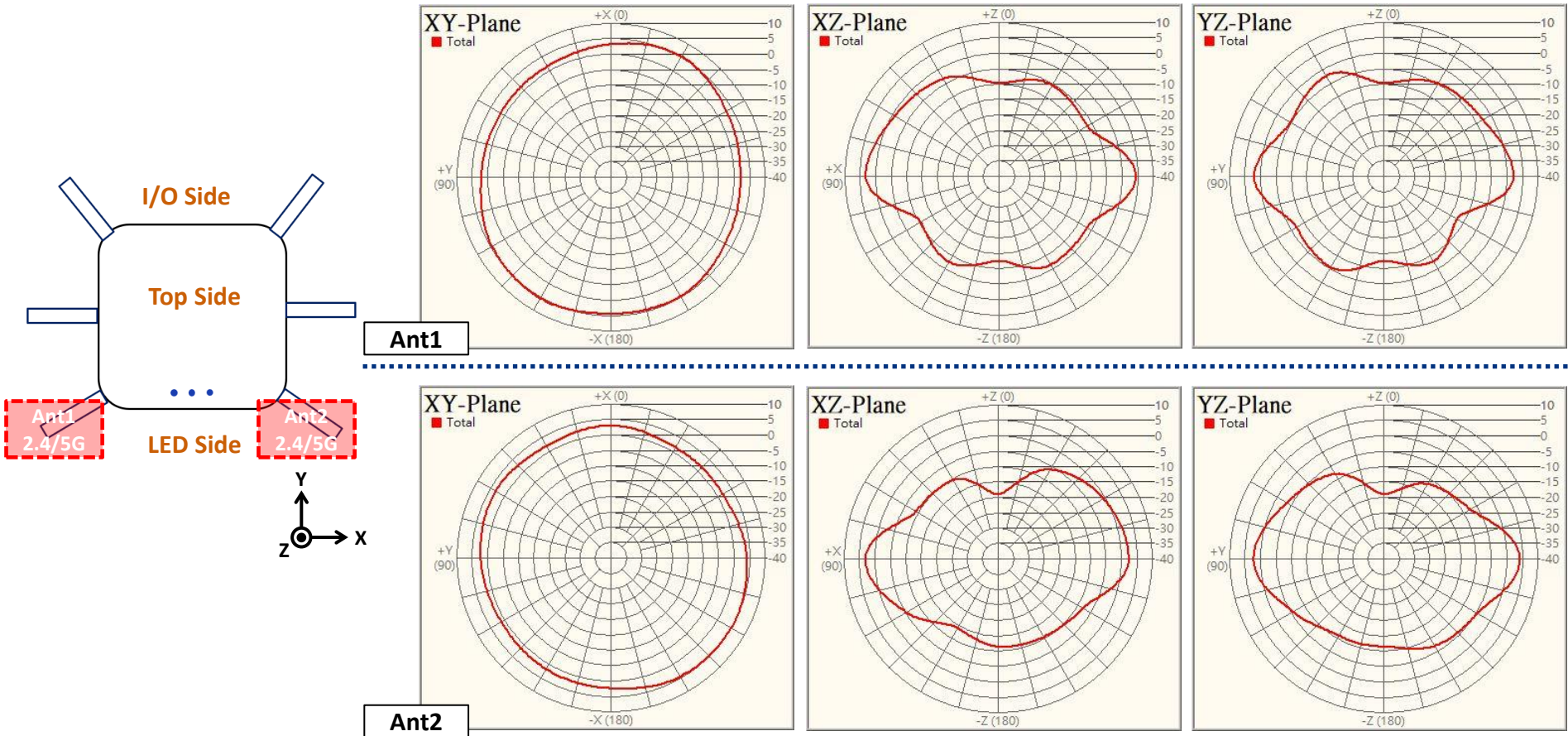


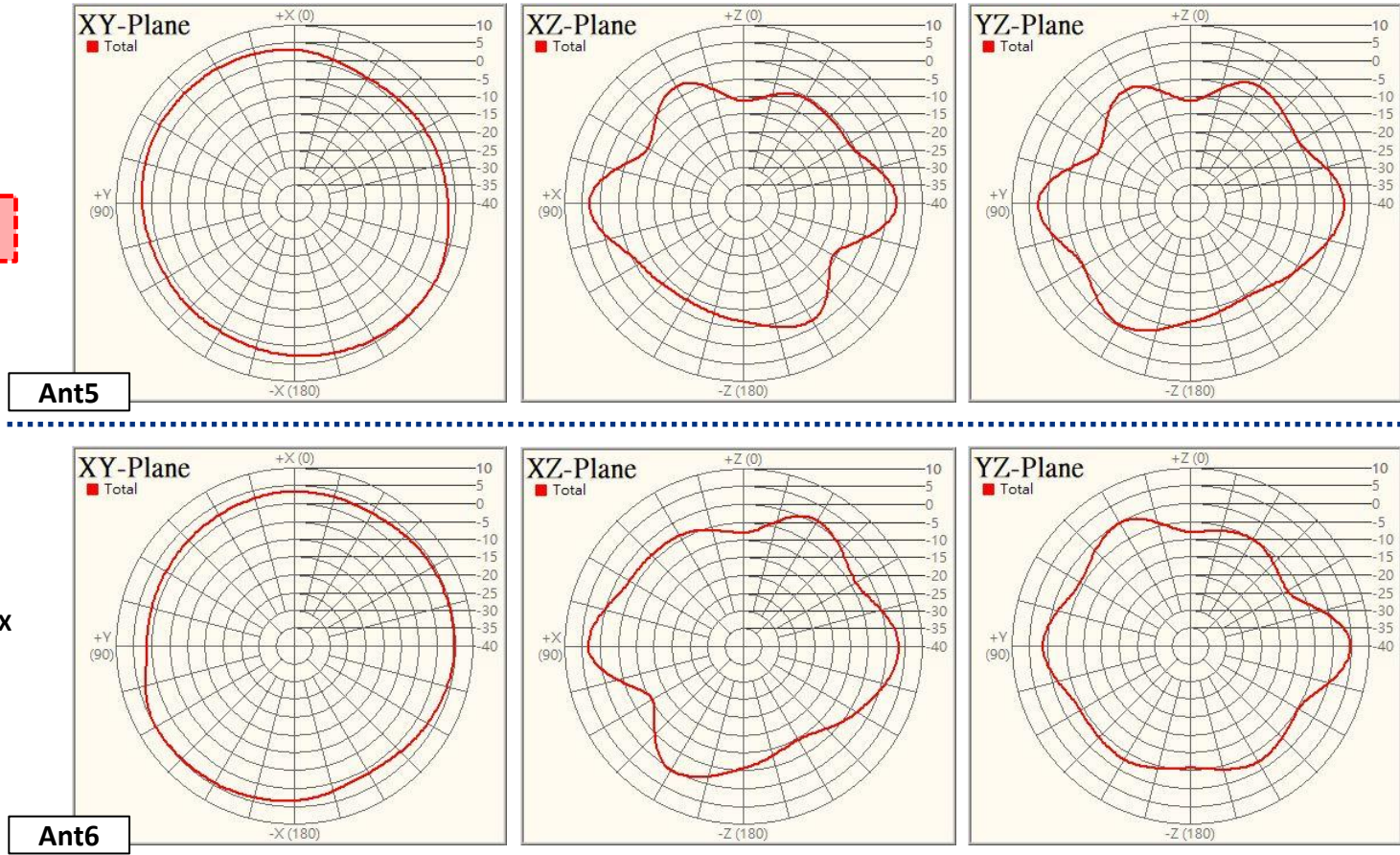
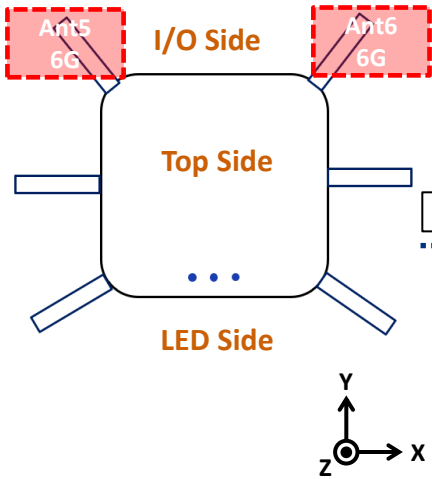
S21 (Isolation)										
Freq. (MHz)	Ant1-Ant2	Ant1-Ant3	Ant1-Ant4	Ant1-Ant5	Ant1-Ant6	Ant1-Ant7	Ant2-Ant3	Ant2-Ant4	Ant2-Ant5	Ant2-Ant6
2400	-27.67	-20.84	-25.73	-43.43	-36.48	-26.30	-25.47	-22.30	-36.99	-39.71
2450	-25.67	-23.26	-23.88	-43.06	-36.98	-24.71	-24.87	-23.40	-37.46	-37.35
2500	-24.70	-26.58	-24.72	-43.32	-38.85	-24.01	-25.32	-23.21	-42.13	-34.61
5150	-30.13	-23.72	-33.34	-34.99	-33.32	-37.52	-35.01	-25.13	-34.17	-30.62
5550	-27.63	-26.68	-34.89	-35.89	-32.76	-35.69	-37.28	-26.37	-35.39	-31.33
5850	-30.21	-25.67	-37.66	-37.06	-34.40	-33.69	-37.03	-27.58	-35.87	-30.97
5925	-29.05	-26.67	-36.35	-34.75	-32.50	-35.14	-36.61	-26.73	-35.13	-30.97
6500	-32.49	-25.25	-32.81	-41.00	-33.84	-41.21	-38.57	-29.42	-35.81	-30.08
7125	-33.78	-29.31	-38.19	-38.45	-33.77	-35.43	-35.50	-28.52	-37.38	-37.10

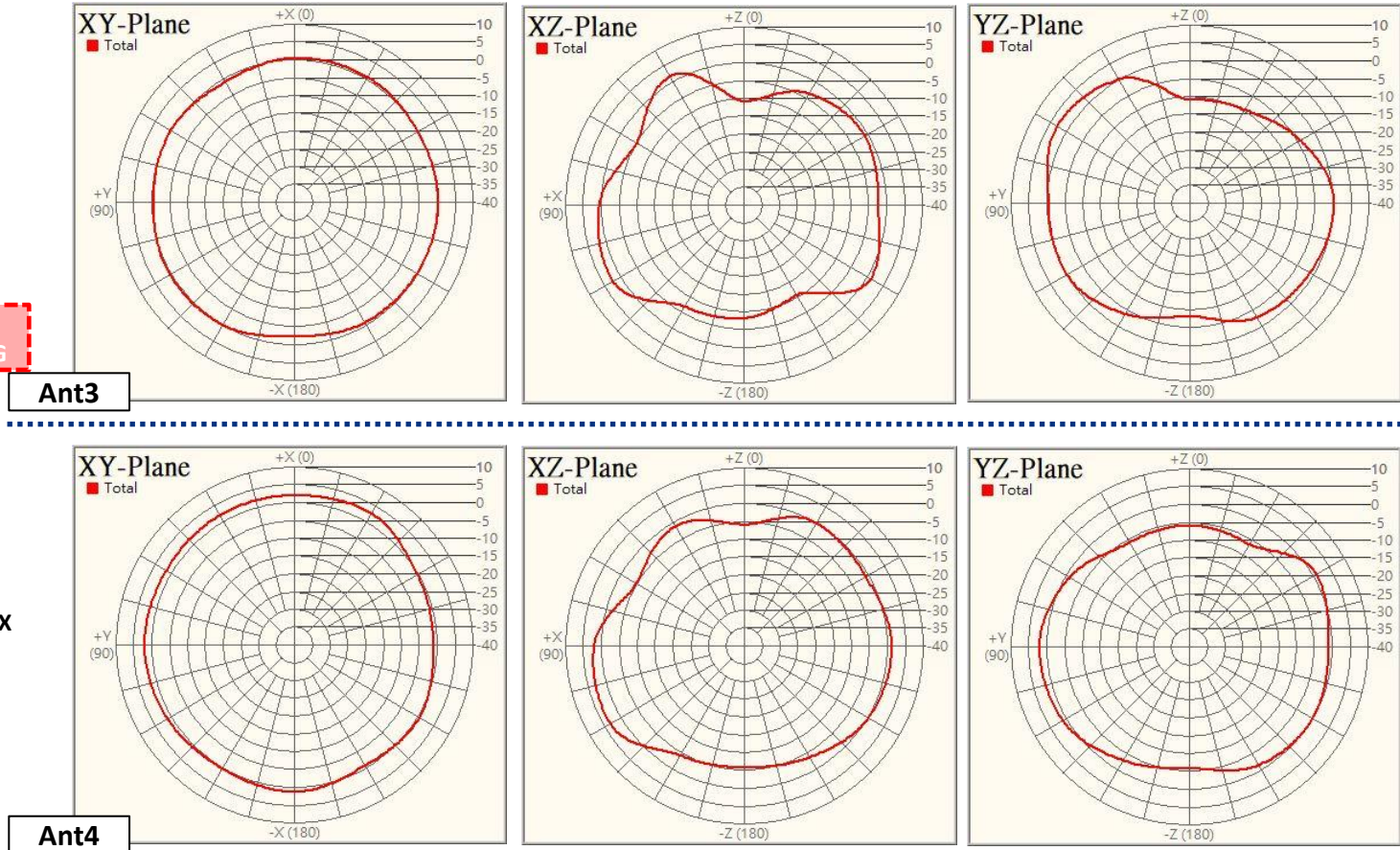
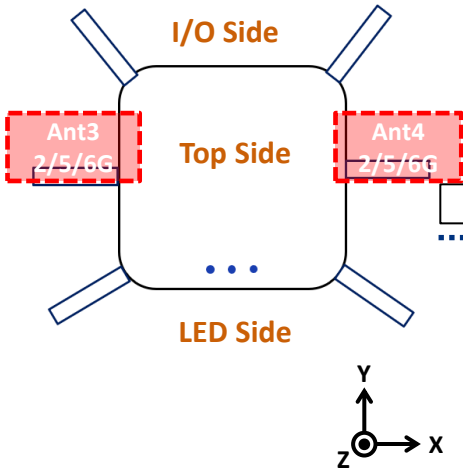


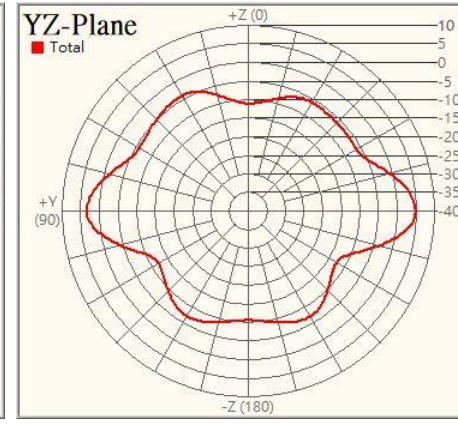
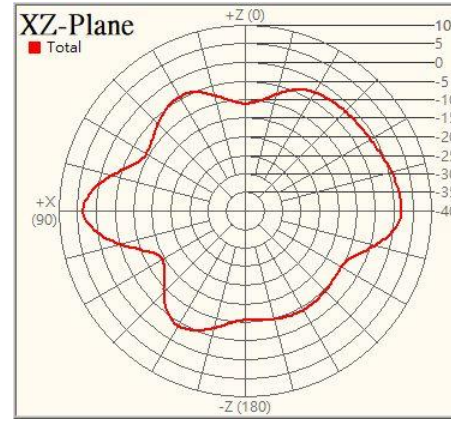
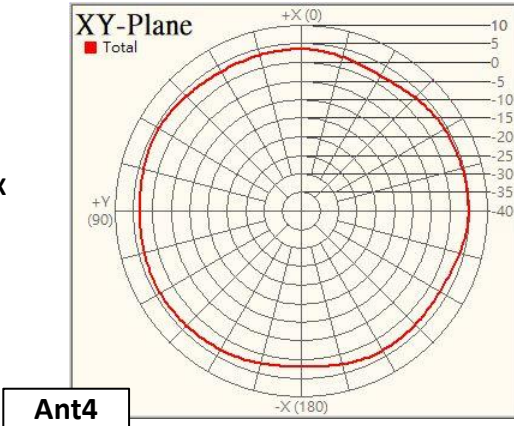
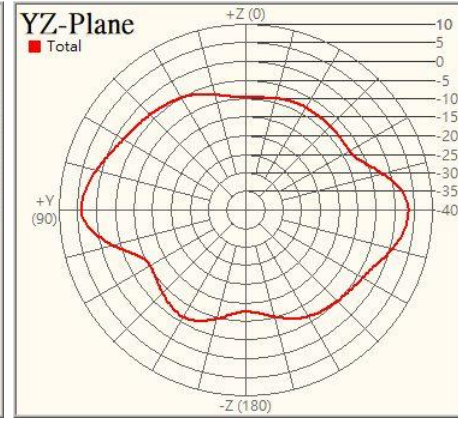
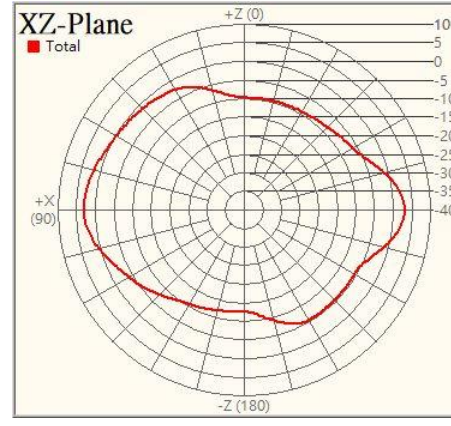
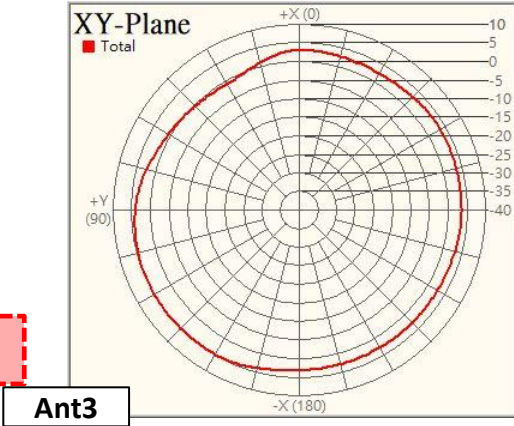
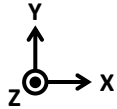
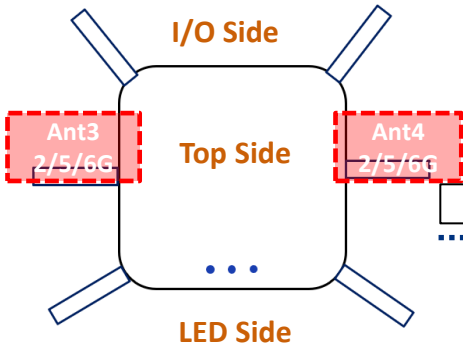
S21 (Isolation)									
Freq. (MHz)	Ant2-Ant7	Ant3-Ant4	Ant3-Ant5	Ant3-Ant6	Ant3-Ant7	Ant4-Ant5	Ant4-Ant6	Ant4-Ant7	Ant5-Ant6
2400	-23.50	-28.36	-34.24	-35.84	-22.75	-36.60	-31.58	-24.78	-49.15
2450	-24.53	-30.69	-32.74	-39.73	-27.42	-36.66	-31.93	-24.11	-45.16
2500	-24.20	-37.50	-33.95	-42.14	-50.89	-36.15	-33.56	-27.06	-44.27
5150	-32.12	-34.87	-24.97	-30.01	-39.44	-30.06	-23.69	-39.73	-27.12
5550	-31.19	-40.23	-27.78	-34.39	-43.08	-37.99	-25.61	-37.98	-28.98
5850	-37.53	-42.41	-29.29	-35.27	-41.09	-37.04	-27.63	-36.78	-28.51
5925	-36.54	-37.41	-29.18	-35.05	-38.33	-35.20	-27.36	-37.83	-30.41
6500	-32.90	-34.21	-28.28	-32.01	-41.33	-33.07	-27.17	-36.15	-30.83
7125	-38.98	-38.64	-30.15	-35.88	-36.18	-34.42	-28.05	-36.31	-32.44

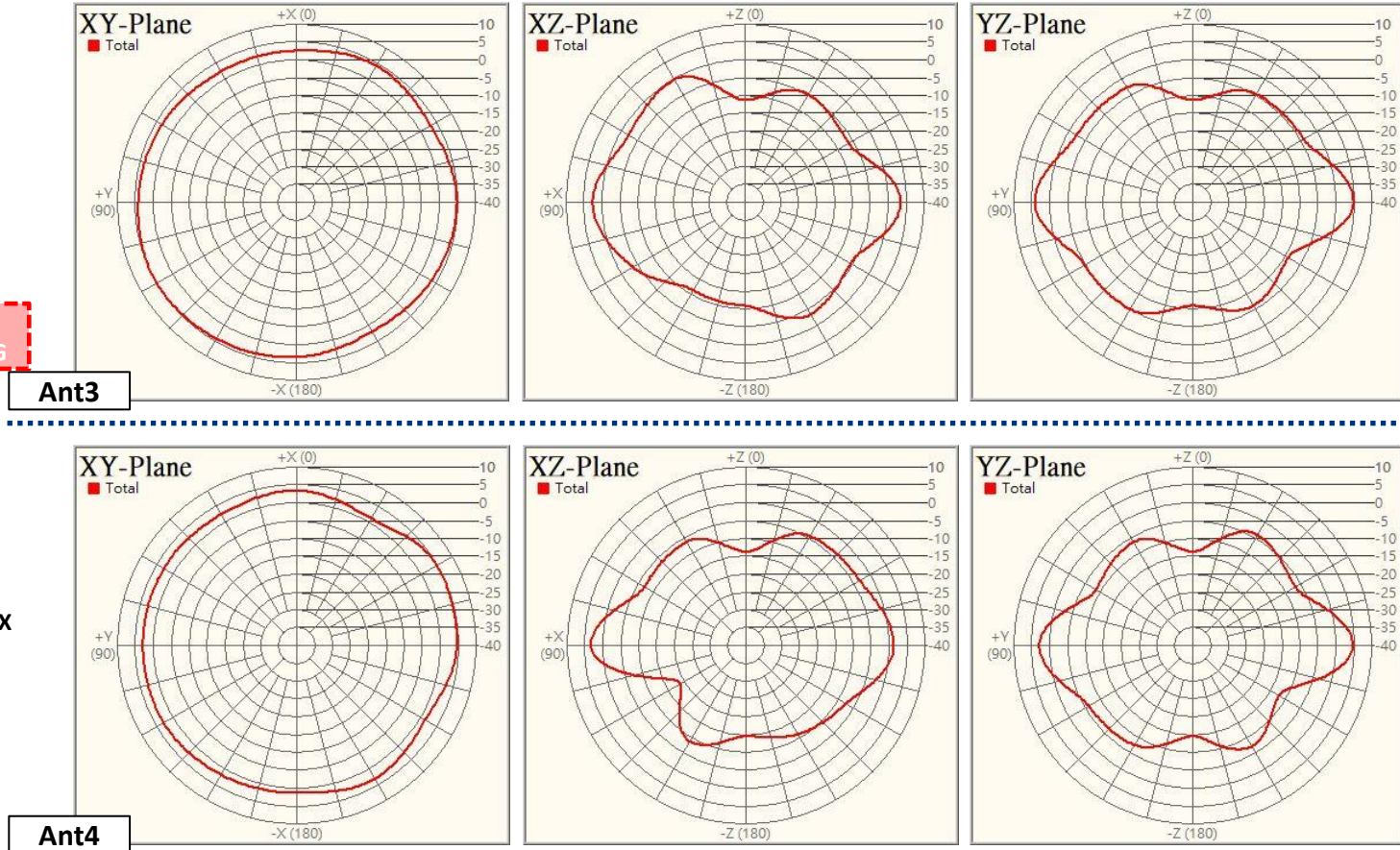
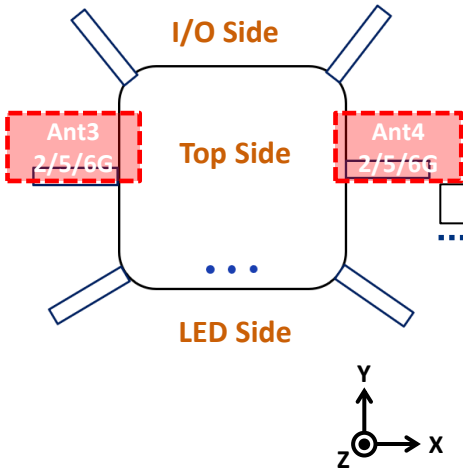


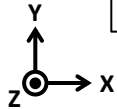
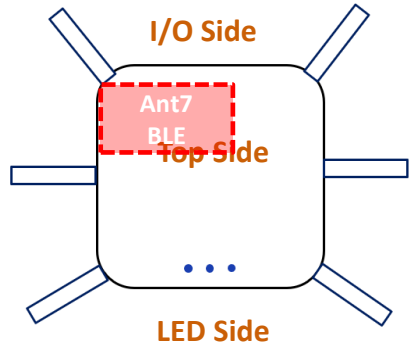




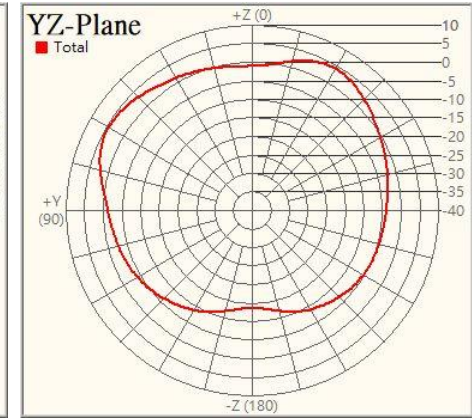
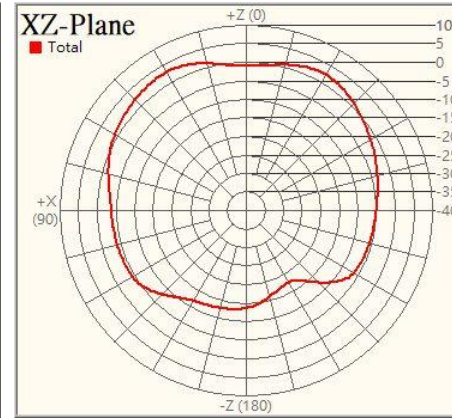
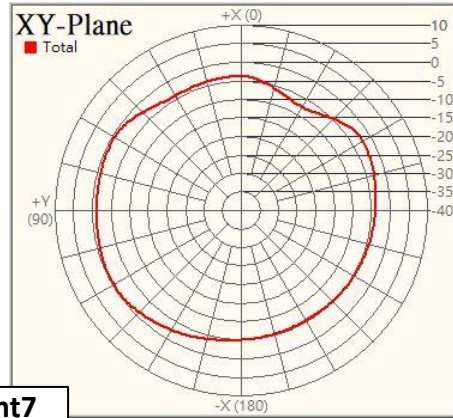


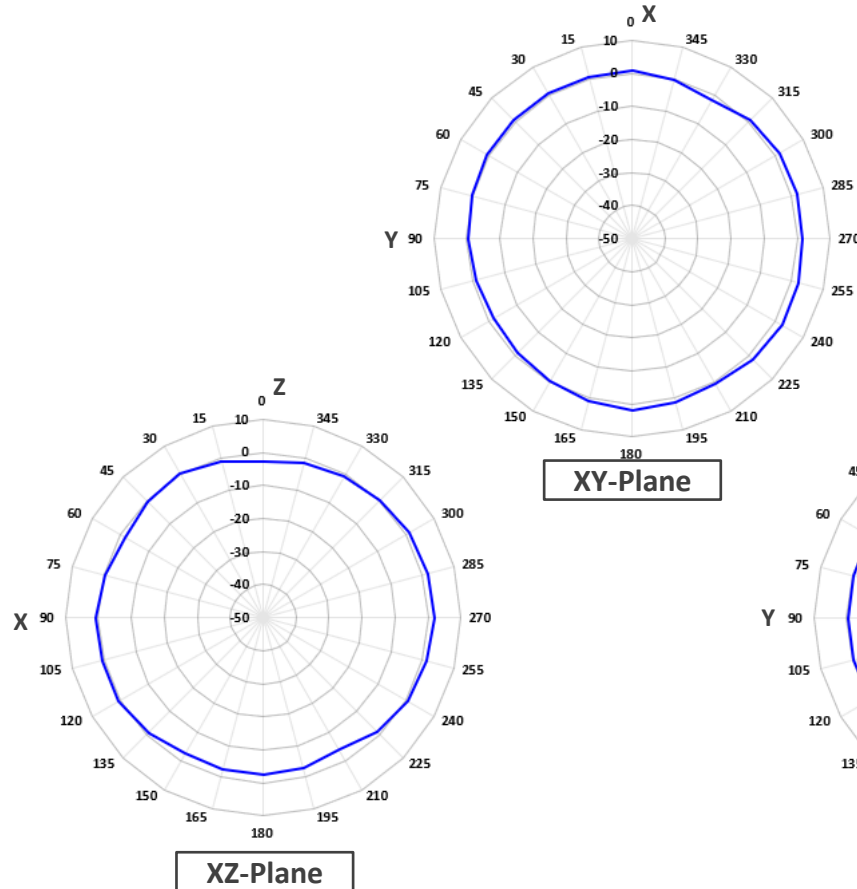
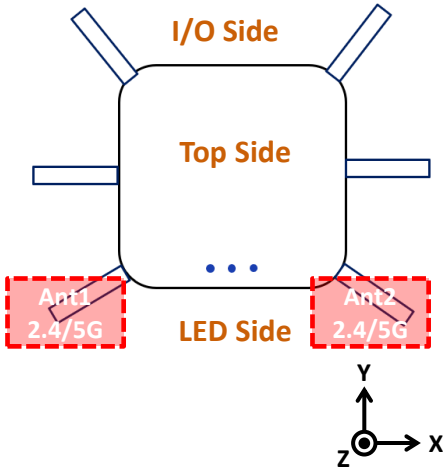


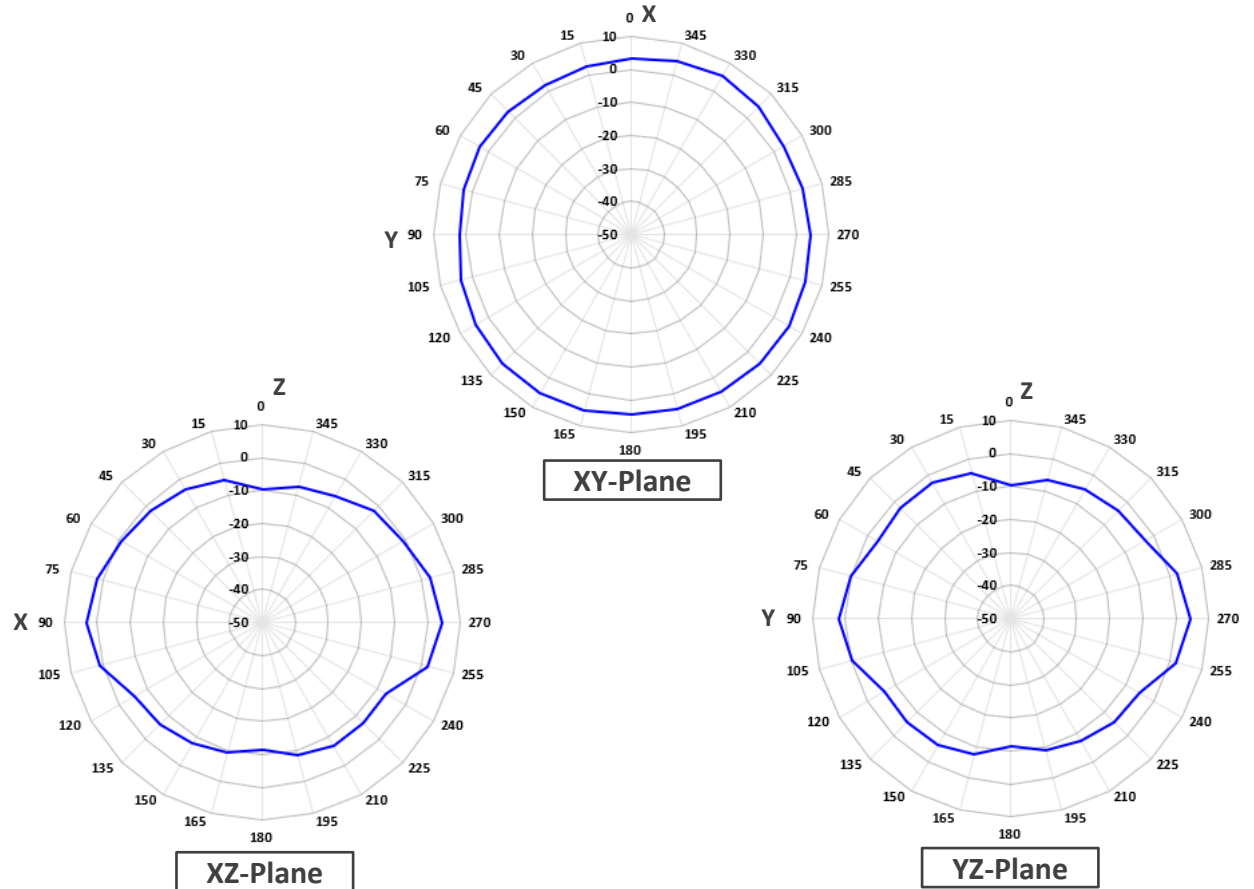
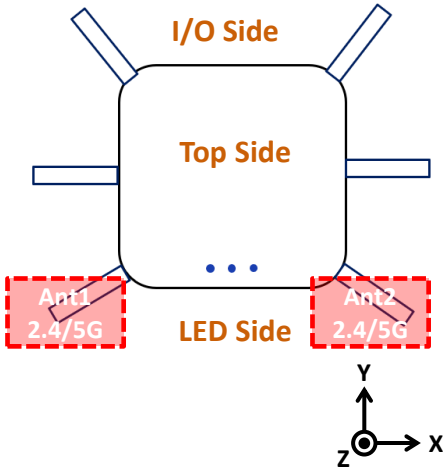


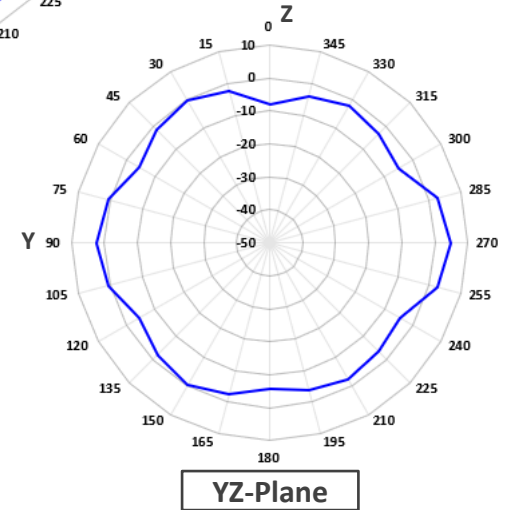
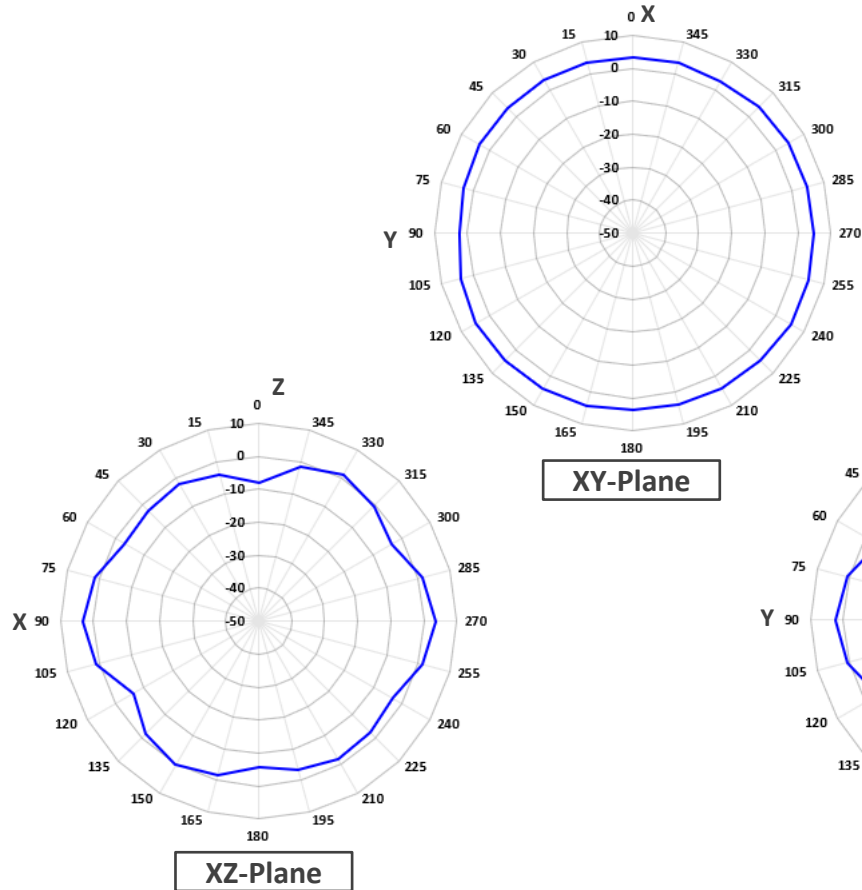
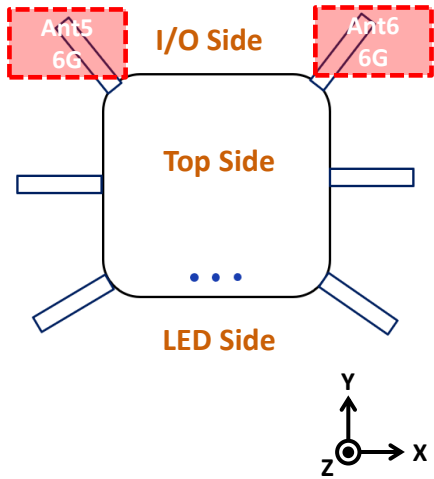


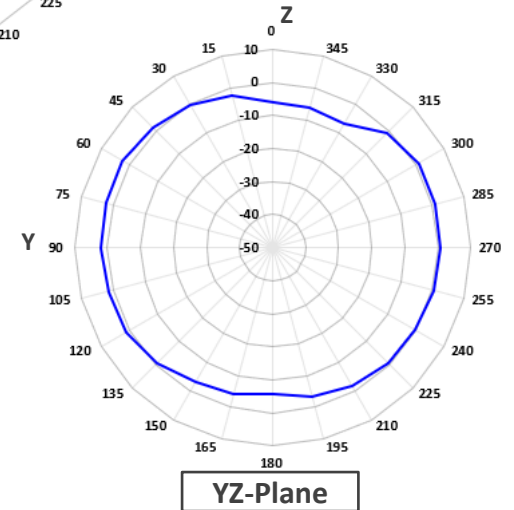
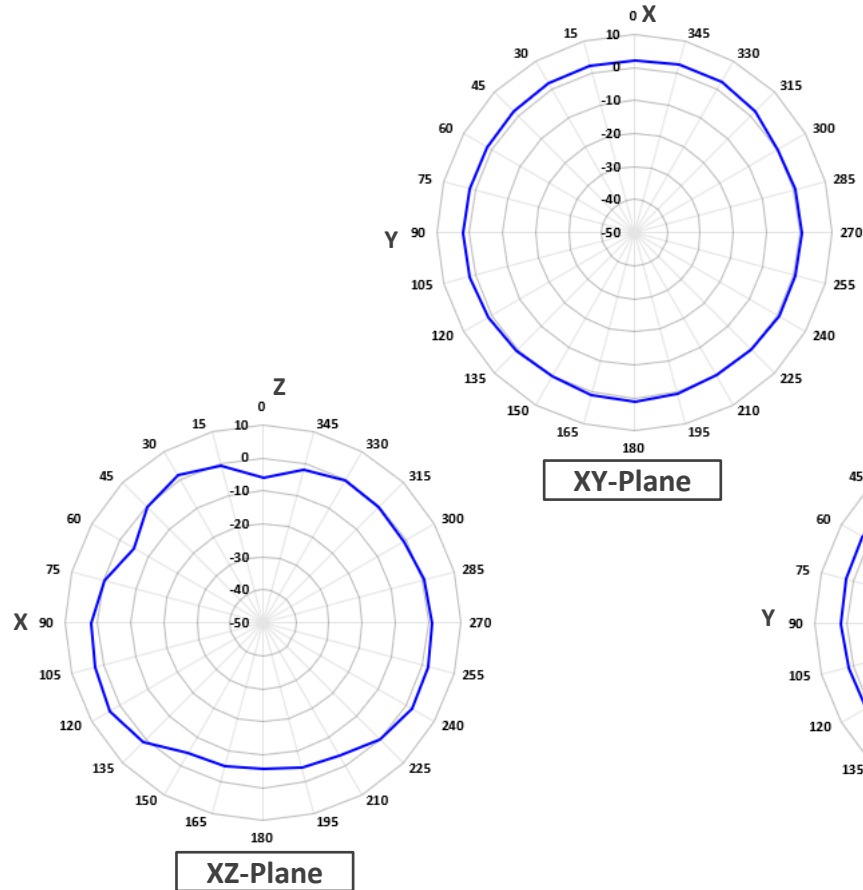
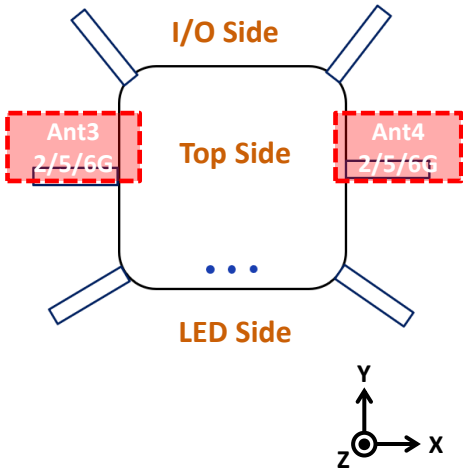
Ant7

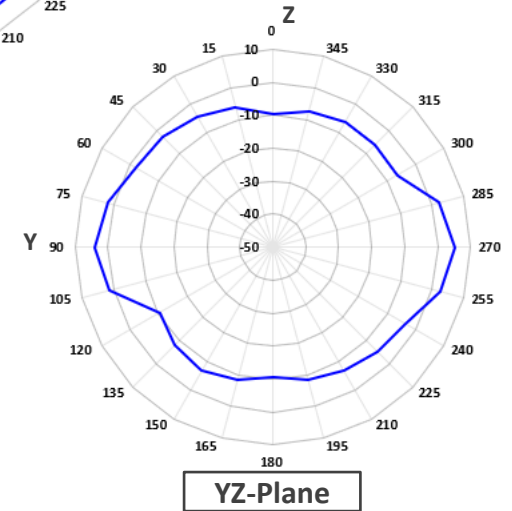
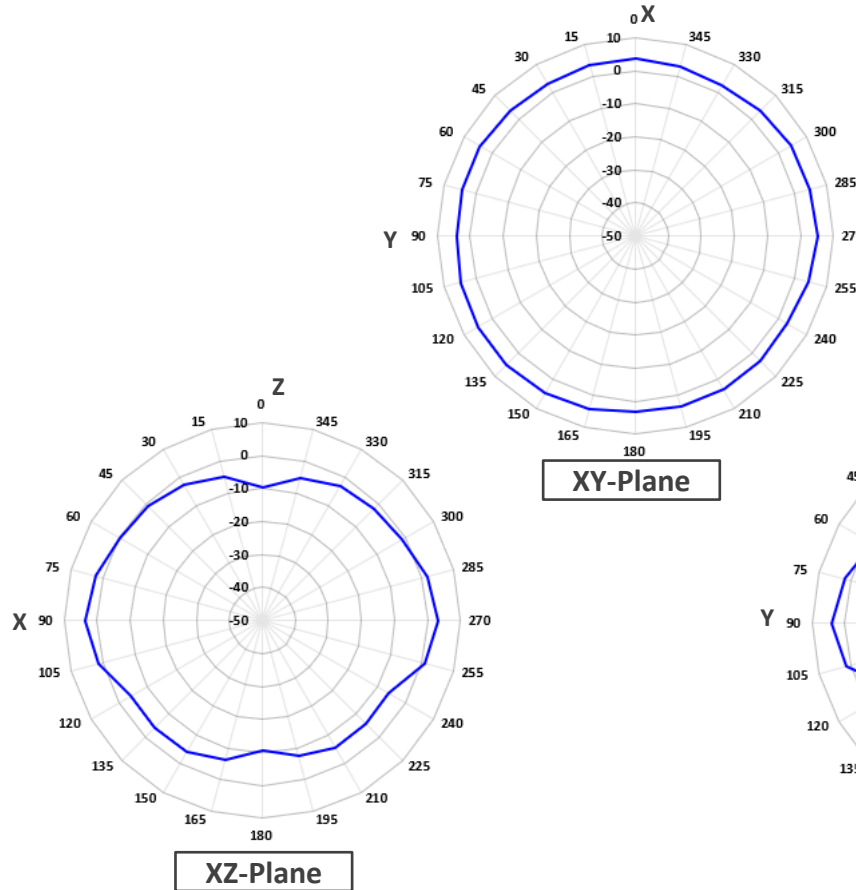
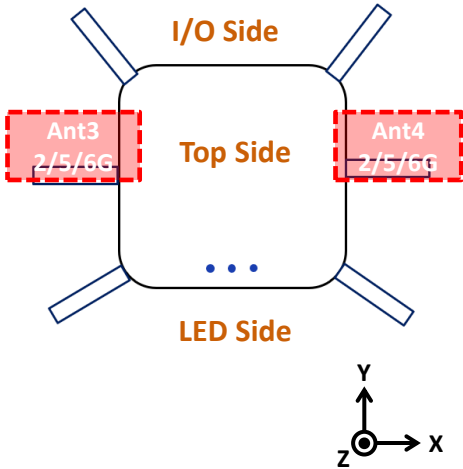


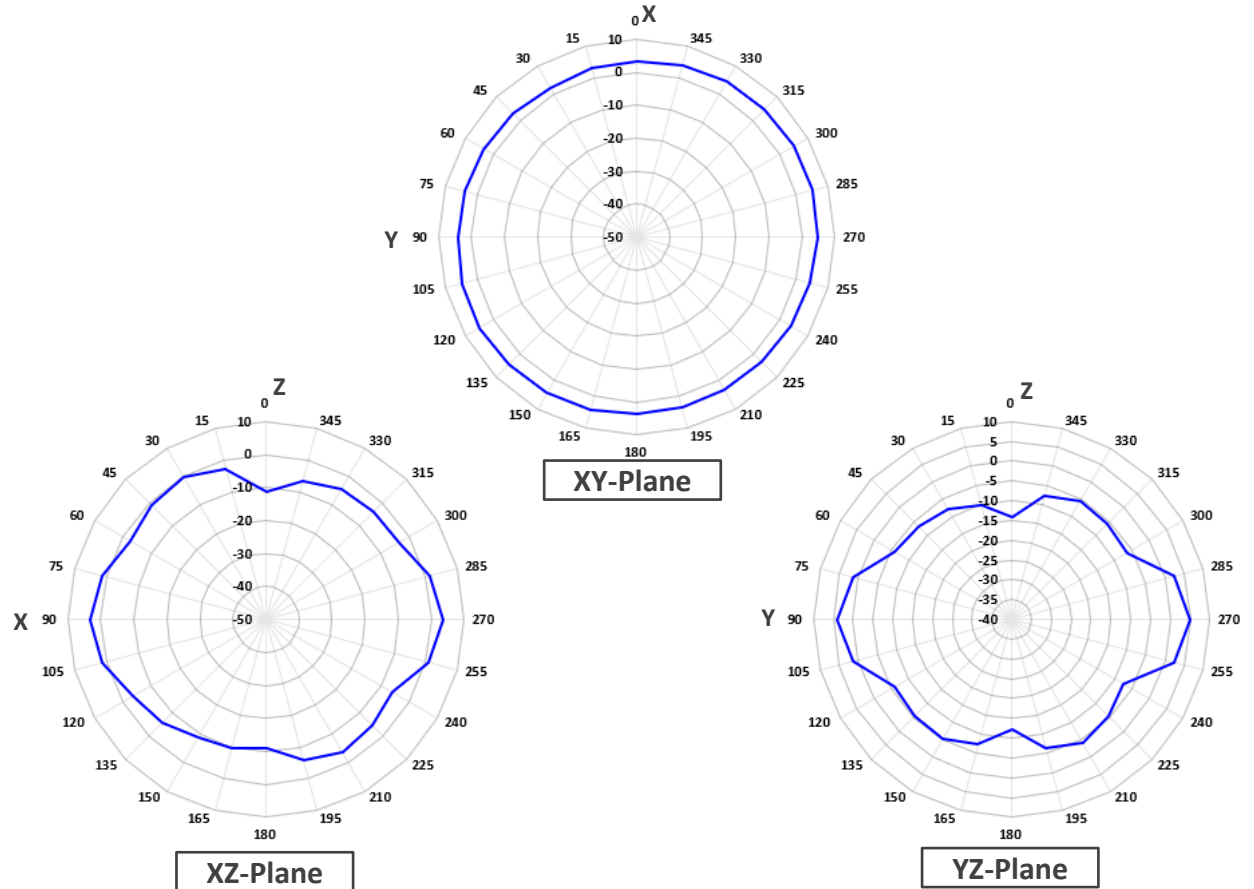
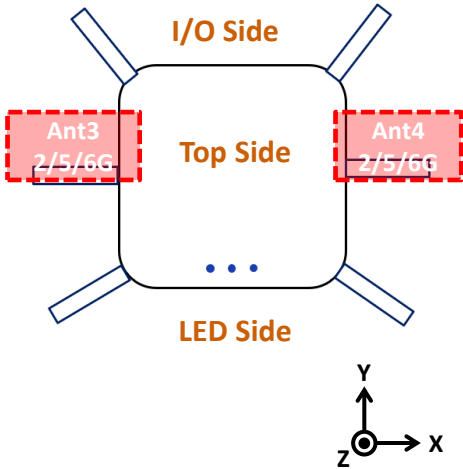












Freq. (MHz)	ANT1_2/5G		ANT2_2/5G		ANT3_2/5/6G		ANT4_2/5/6G		ANT5_6G		ANT6_6G		ANT7_BLE	
	Efficiency (%)	Peak Gain (dBi)	Efficiency (%)	Peak Gain (dBi)	Efficiency (%)	Peak Gain (dBi)	Efficiency (%)	Peak Gain (dBi)	Efficiency (%)	Peak Gain (dBi)	Efficiency (%)	Peak Gain (dBi)	Efficiency (%)	Peak Gain (dBi)
2400	68.07	3.40	71.56	3.40	69.74	3.10	63.27	3.47					67.53	4.21
2450	69.23	3.28	65.13	3.04	69.80	3.27	70.05	3.37					72.96	4.61
2500	71.19	3.53	68.20	3.03	69.89	2.95	70.50	3.12					66.17	4.82
5150	69.40	5.37	61.46	5.34	68.59	5.21	61.72	5.05						
5500	71.94	5.51	68.72	5.19	62.22	5.06	67.09	5.02						
5850	61.63	5.18	68.03	5.18	64.40	5.05	67.01	4.89						
5895	63.68	5.06	61.28	5.27	67.67	4.68	67.65	5.03						
5925					67.14	4.61	63.78	5.07	66.37	4.61	64.36	4.77		
6500					68.46	5.12	62.16	5.10	67.80	5.15	60.43	4.95		
7125					63.52	5.32	59.57	4.93	68.89	5.20	63.06	5.03		