



# W-318

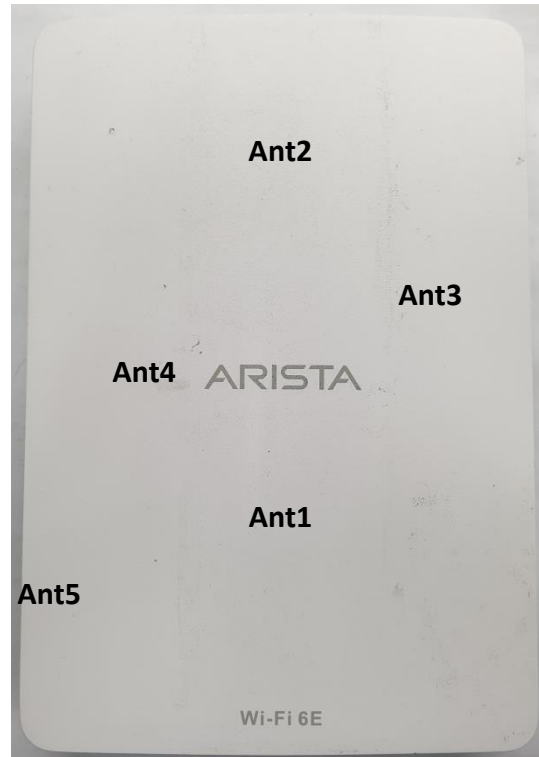
## Antenna Test Report



Senao Networks, Inc.

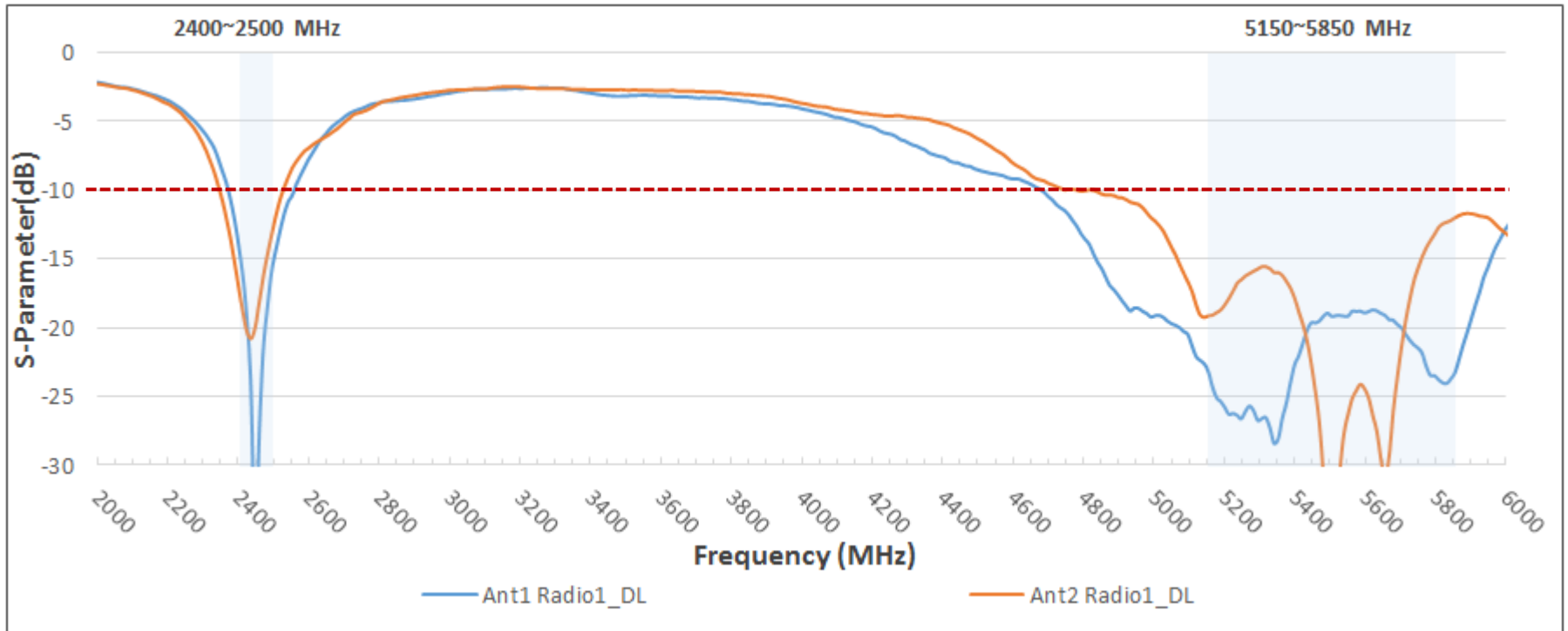
Customer	Arista
Project	W-318
Project Description	Radio1_2.4/5GHz antenna *2 Radio2_6GHz antenna *2 BLE antenna *1
Date	2022/04/27
Prepared by	Kenny
Report Version	A03

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

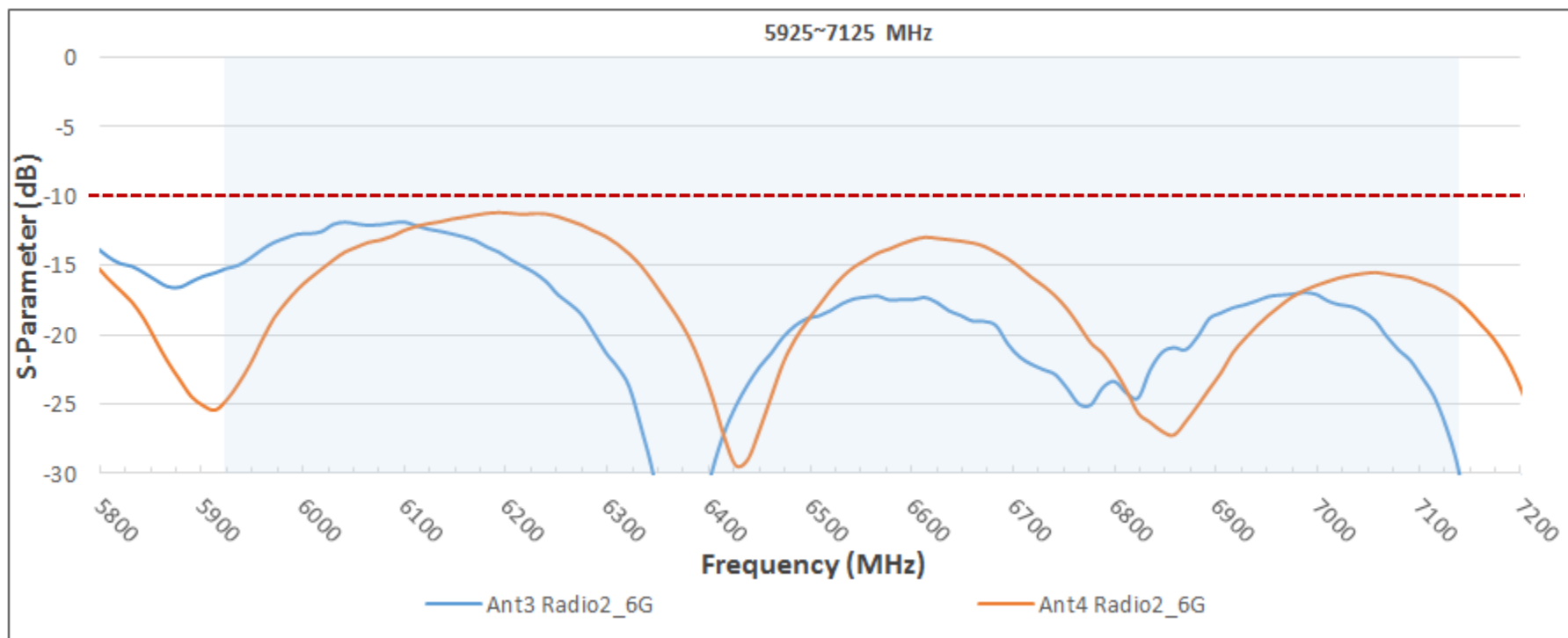


Ant no.	Operating Band	Ant type	Material	Feeding	Cable Length	Dimension
Ant1-2	2400 – 2500 MHz 5150 – 5850 MHz	PIFA	Metal	Cable	1: 165mm 2: 175mm	48*22*8.5 mm <sup>3</sup>
Ant3-4	5925 – 7125 MHz	Dipole	PCB	Cable	3: 185mm 4: 180mm	20*7*1.4 mm <sup>3</sup>
Ant5	2400 – 2500 MHz	Dipole	PCB	Cable	5: 145mm	38.5*6.5*1.4 mm <sup>3</sup>

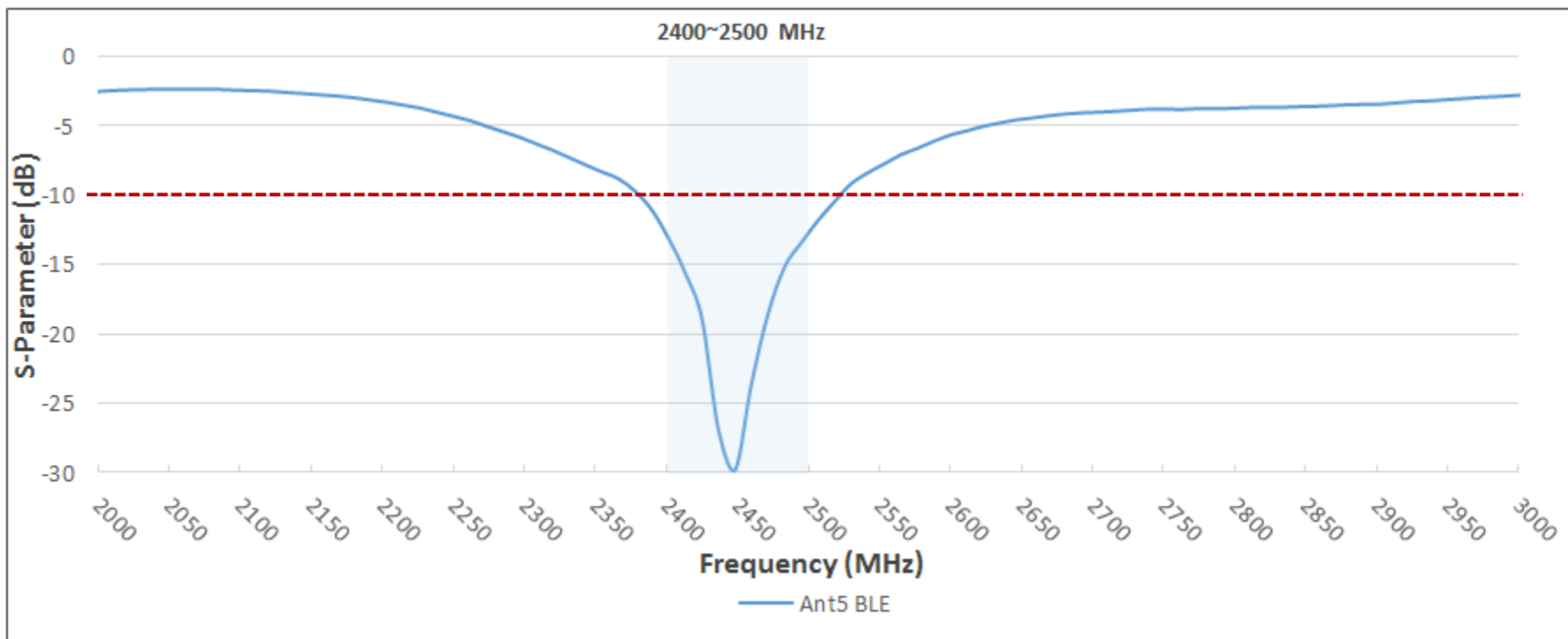
# S11 in Radio1 DL Band



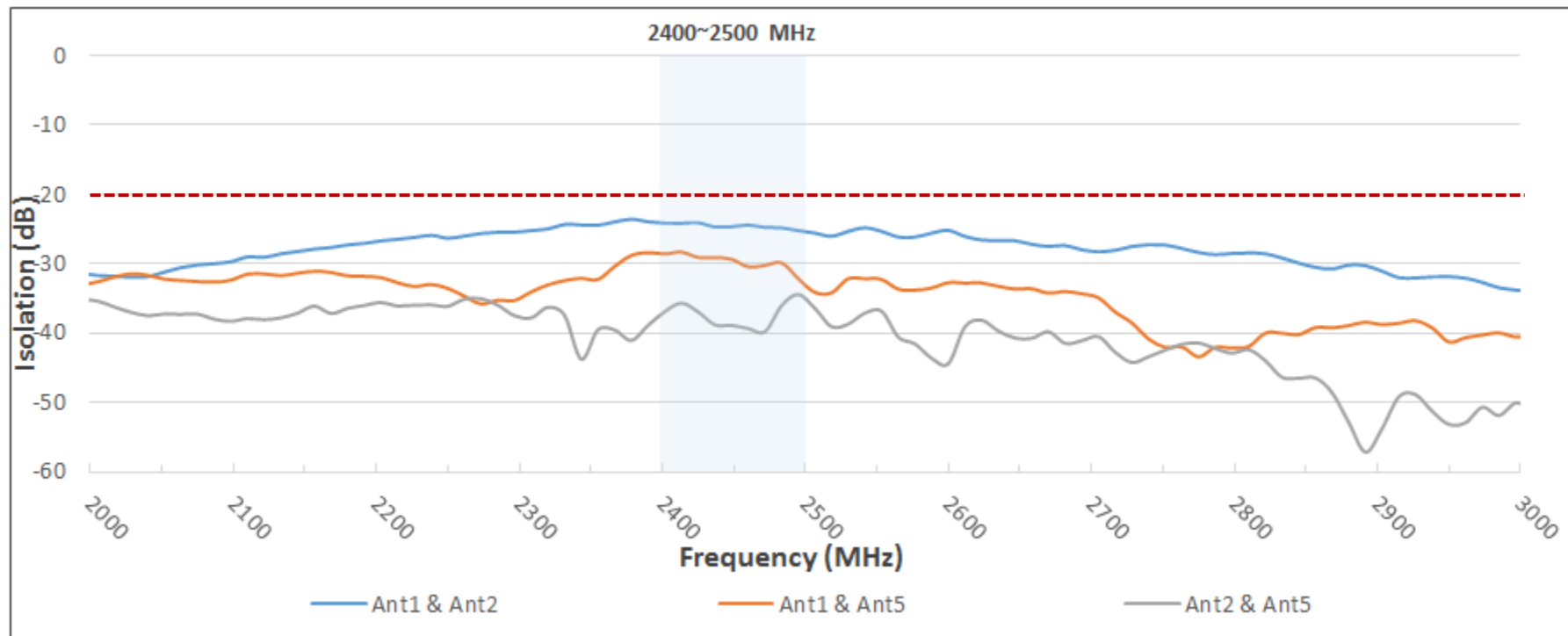
S11		
Freq. (MHz)	Ant1	Ant2
2400	-14.07	-17.12
2450	-36.74	-19.96
2500	-15.90	-13.23
5150	-23.21	-19.14
5500	-19.18	-39.65
5850	-23.27	-12.01



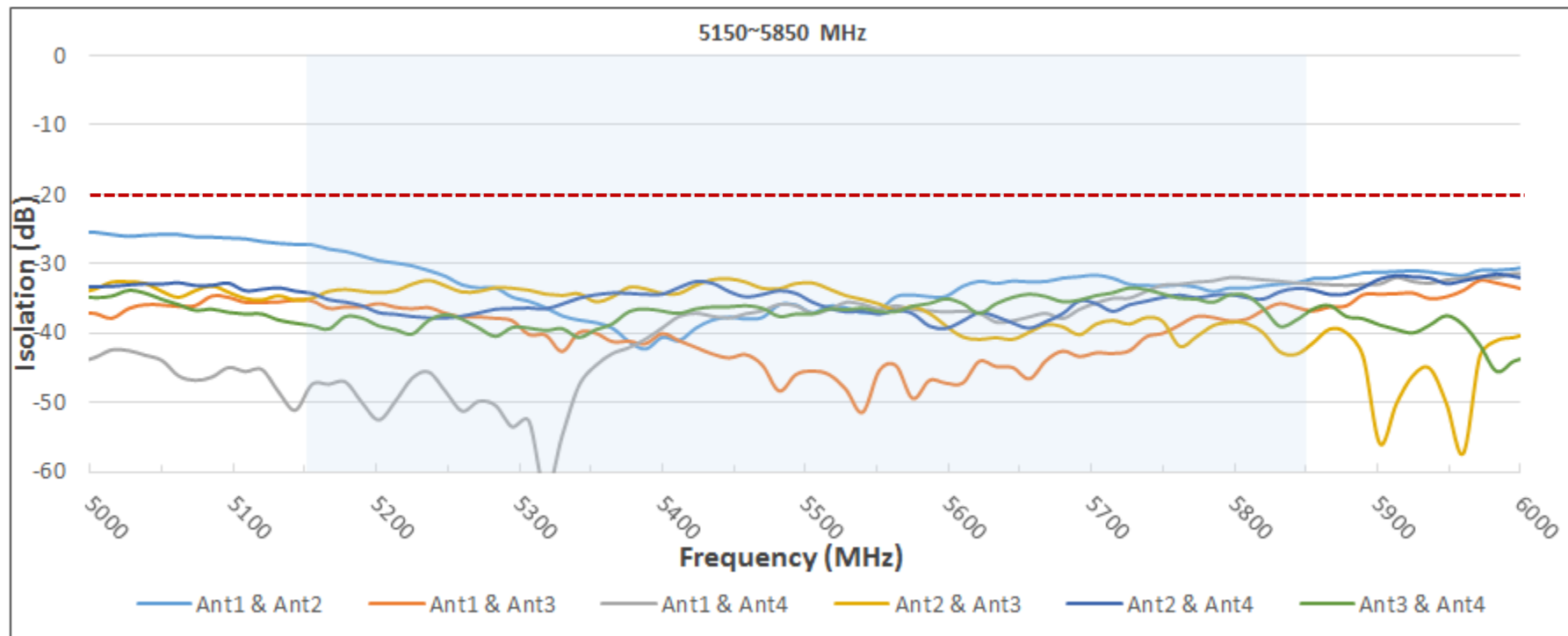
S11		
Freq. (MHz)	Ant3	Ant4
5925	-15.23	-24.71
6500	-18.85	-19.07
7125	-26.62	-17.00



S11	
Freq. (MHz)	Ant5
2400	-13.13
2450	-29.81
2500	-13.43

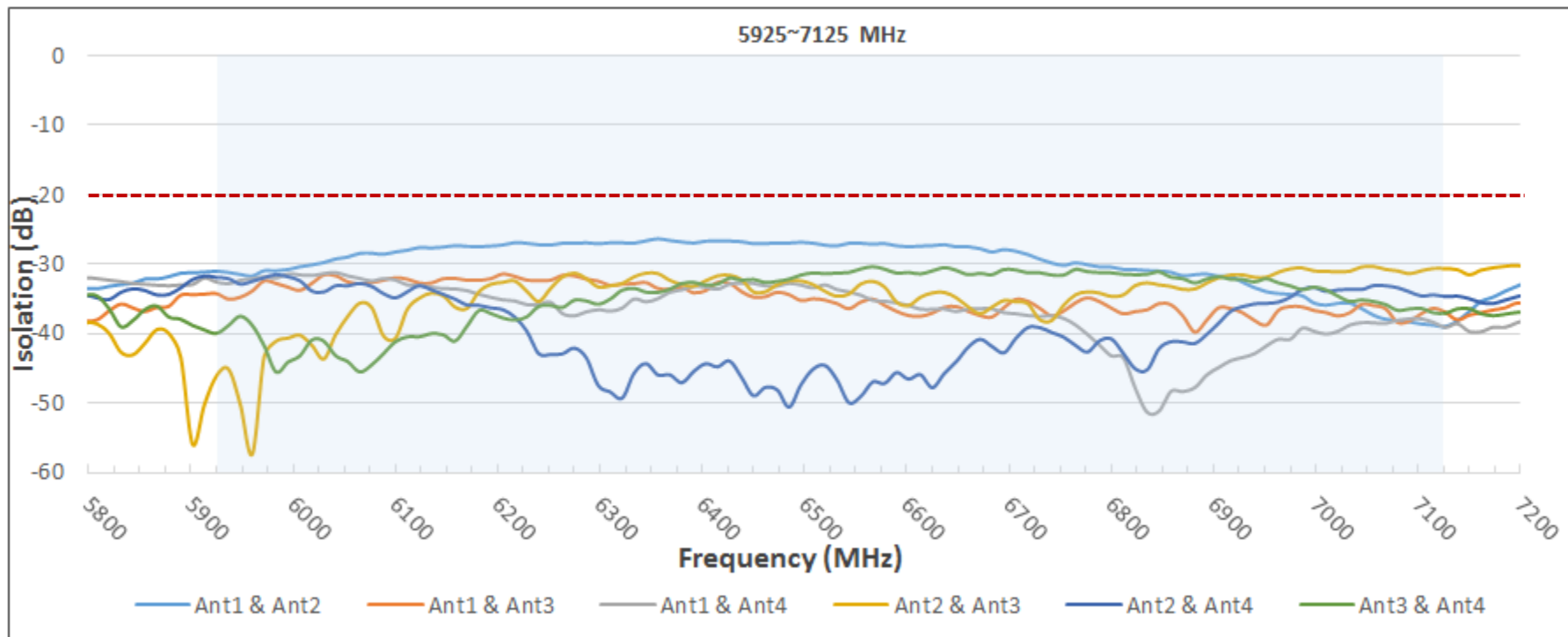


Isolation			
Freq. (MHz)	Ant1 & Ant2	Ant1 & Ant5	Ant2 & Ant5
2400	-24.16	-28.60	-36.93
2450	-24.68	-29.37	-38.89
2500	-25.24	-32.16	-34.44



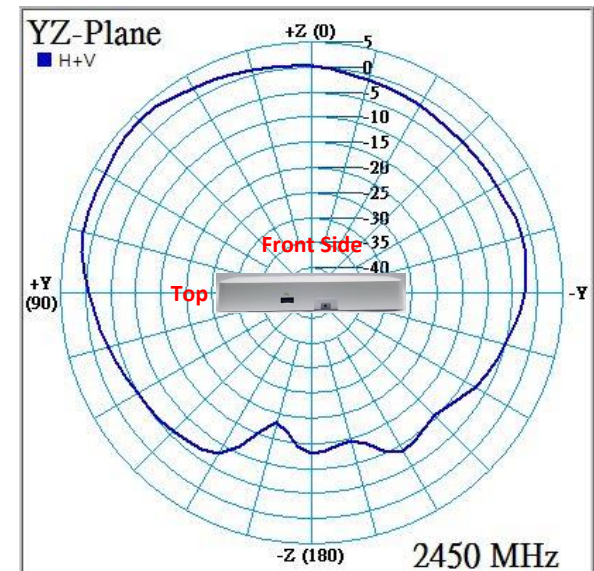
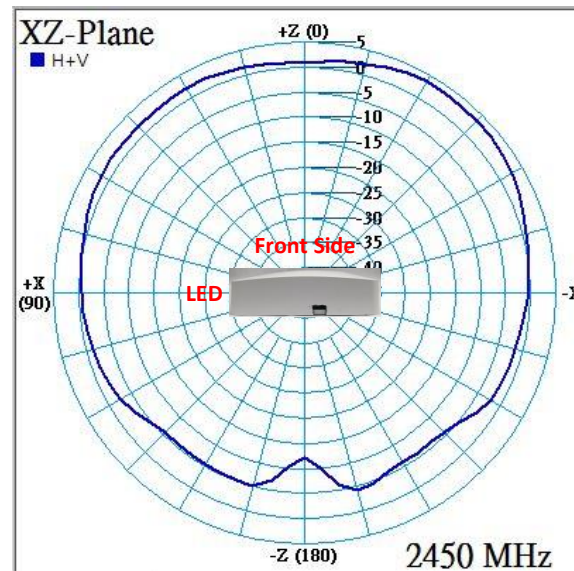
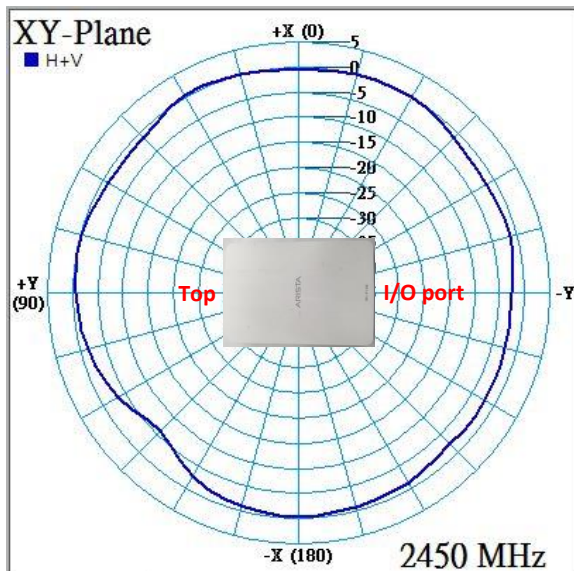
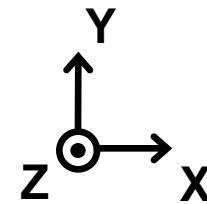
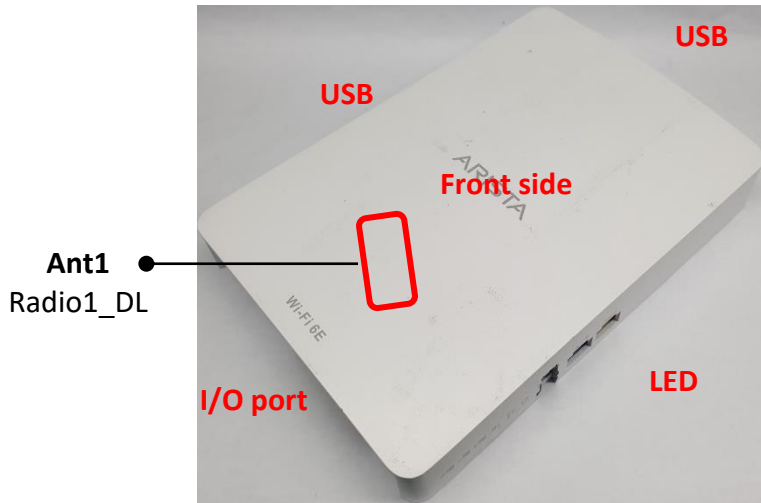
Return Loss						
Freq. (MHz)	Ant1 & Ant2	Ant1 & Ant3	Ant1 & Ant4	Ant2 & Ant3	Ant2 & Ant4	Ant3 & Ant4
5150	-27.28	-35.37	-47.39	-34.97	-34.29	-38.94
5500	-37.09	-45.46	-37.17	-32.79	-35.57	-37.22
5850	-32.16	-36.81	-32.90	-41.41	-33.81	-36.55



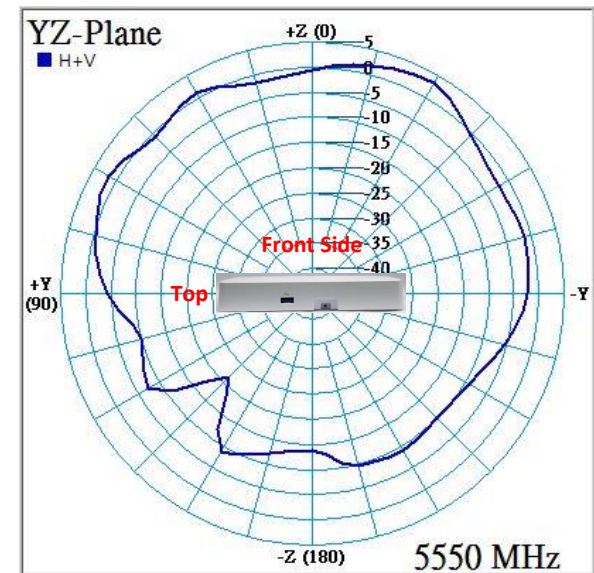
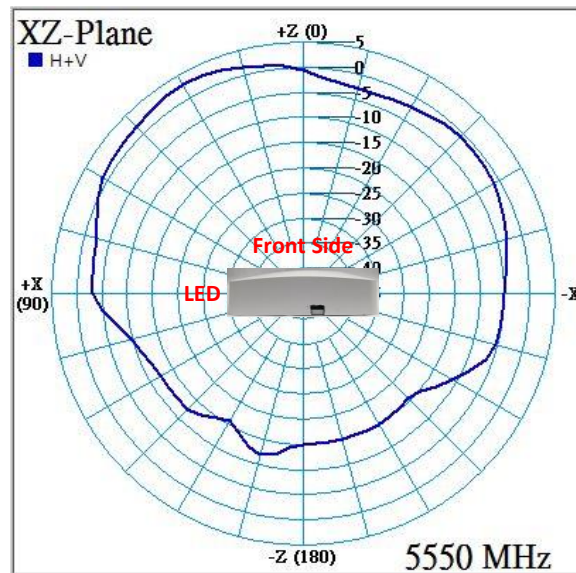
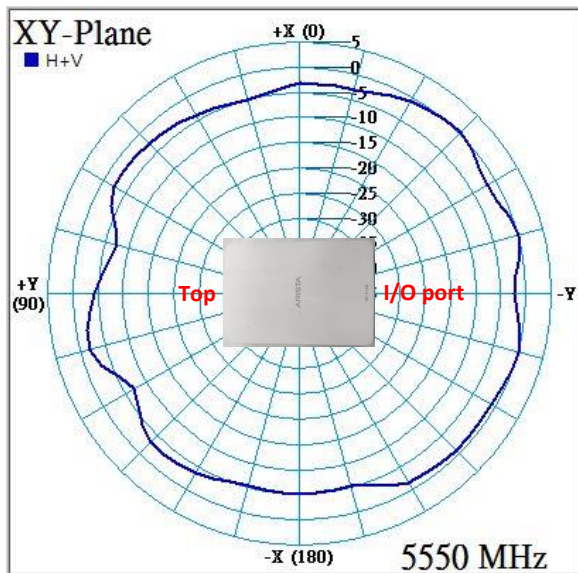
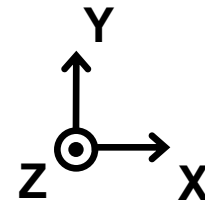
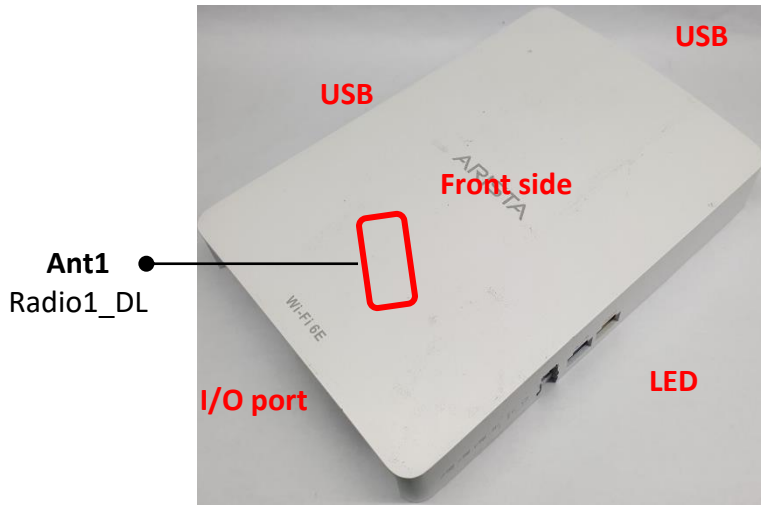


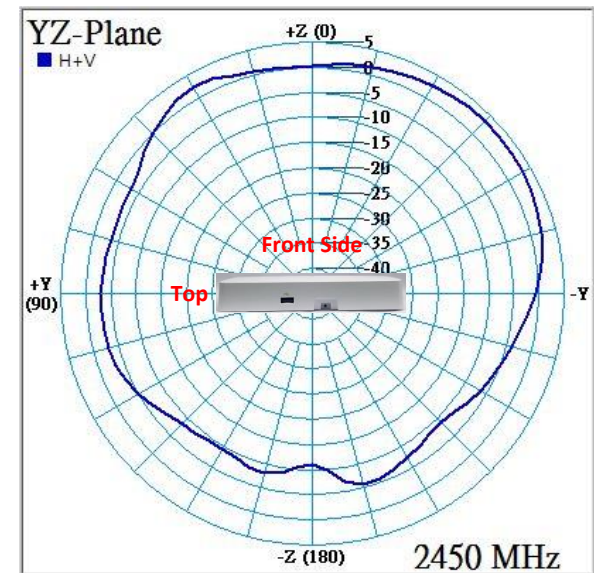
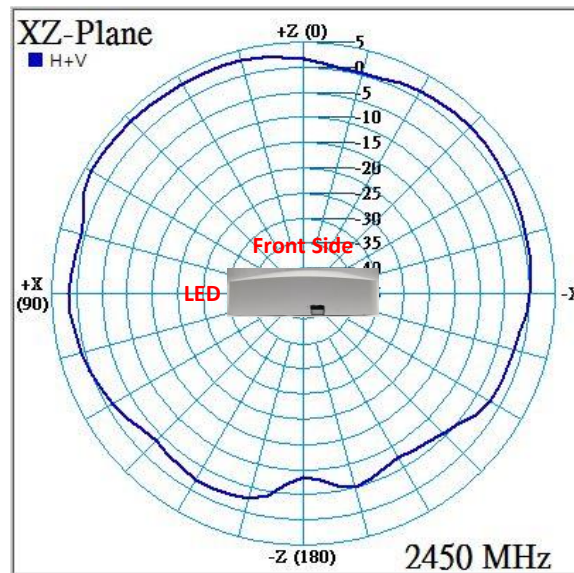
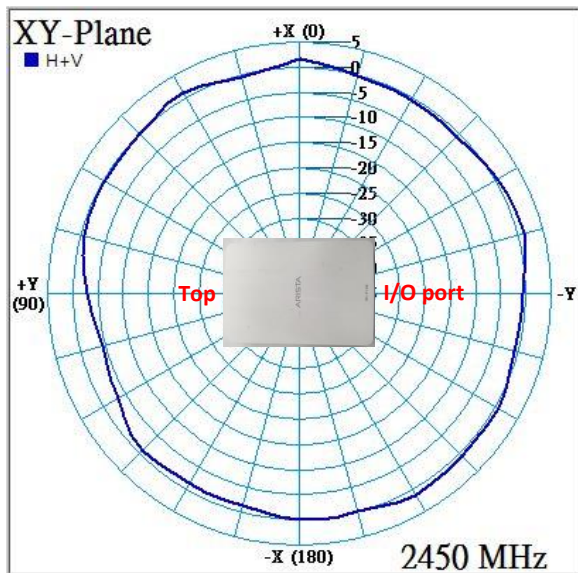
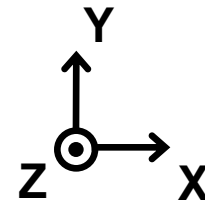
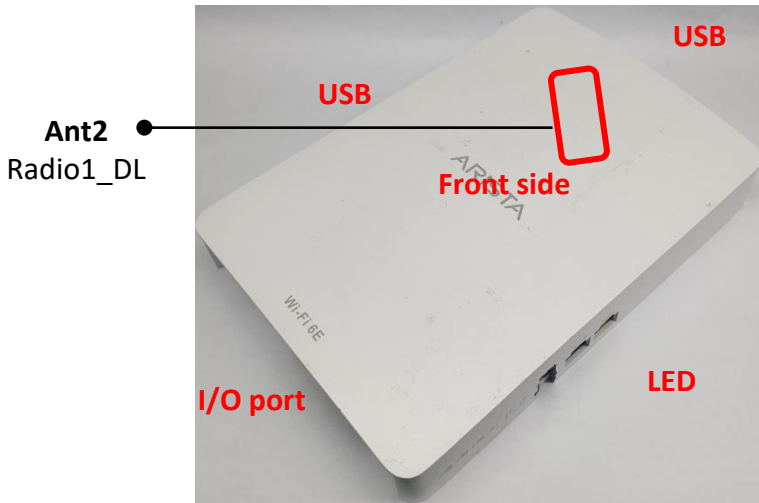
Return Loss						
Freq. (MHz)	Ant1 & Ant2	Ant1 & Ant3	Ant1 & Ant4	Ant2 & Ant3	Ant2 & Ant4	Ant3 & Ant4
5925	-31.04	-34.25	-32.59	-46.10	-31.91	-39.97
6500	-26.85	-35.24	-33.02	-32.42	-47.31	-31.57
7125	-39.00	-36.94	-39.10	-30.67	-34.67	-37.06

# 2D Radiation Pattern – Ant1\_Radio1 2.4GHz

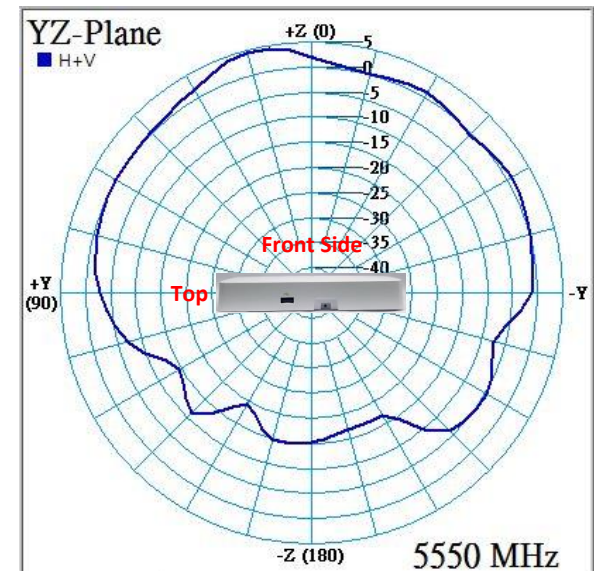
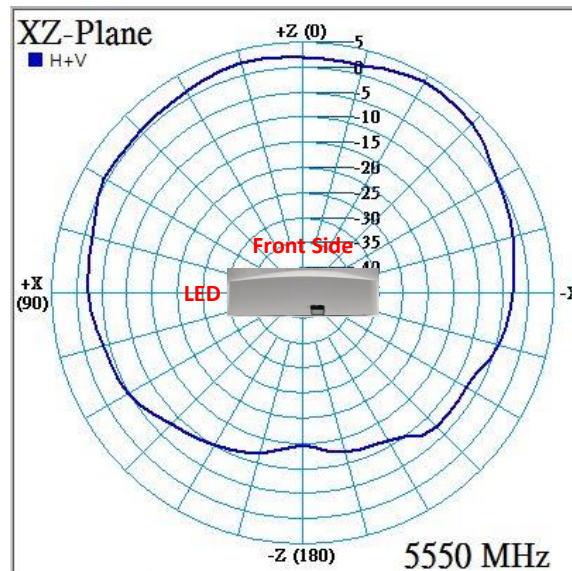
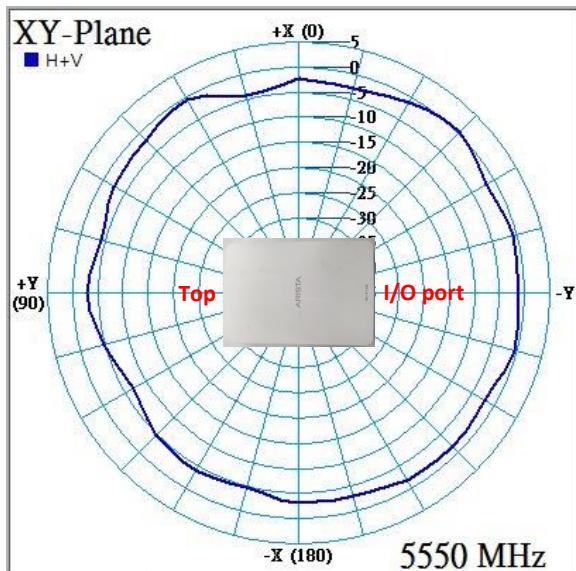
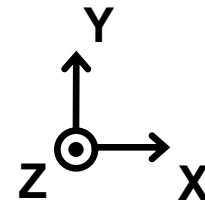
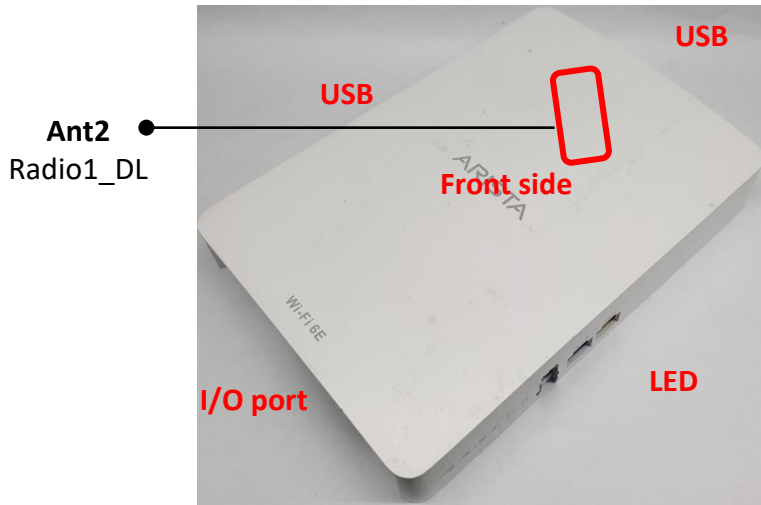


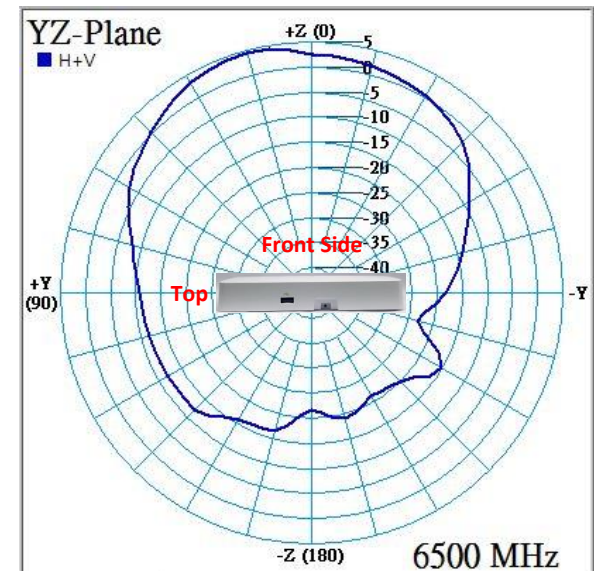
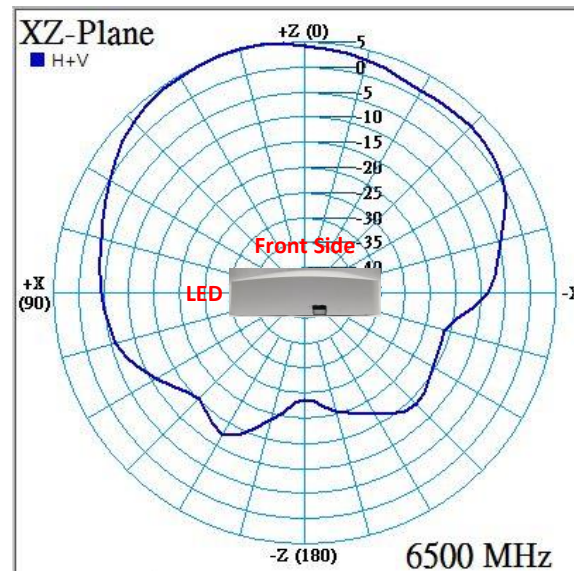
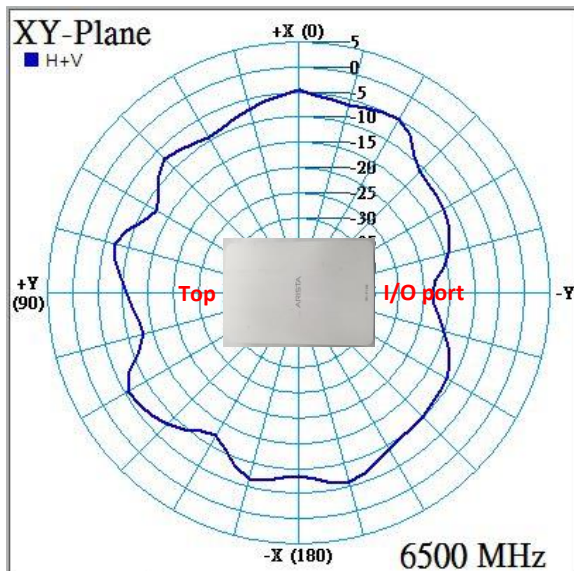
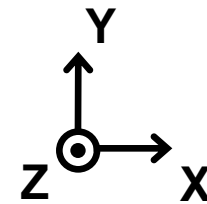
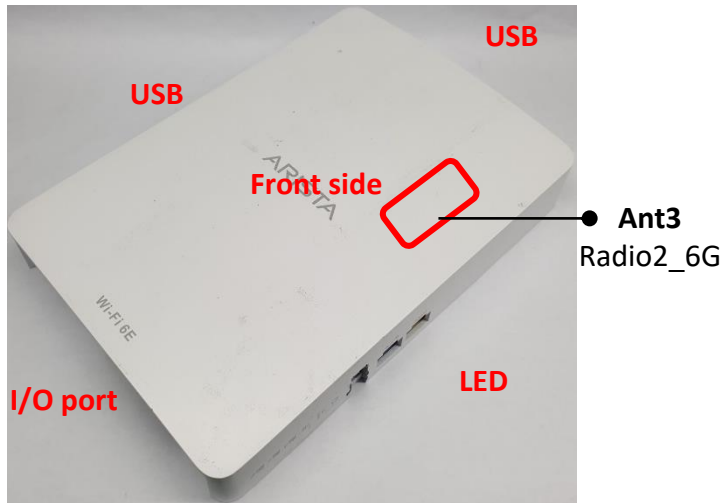
# 2D Radiation Pattern – Ant1\_Radio1 5GHz



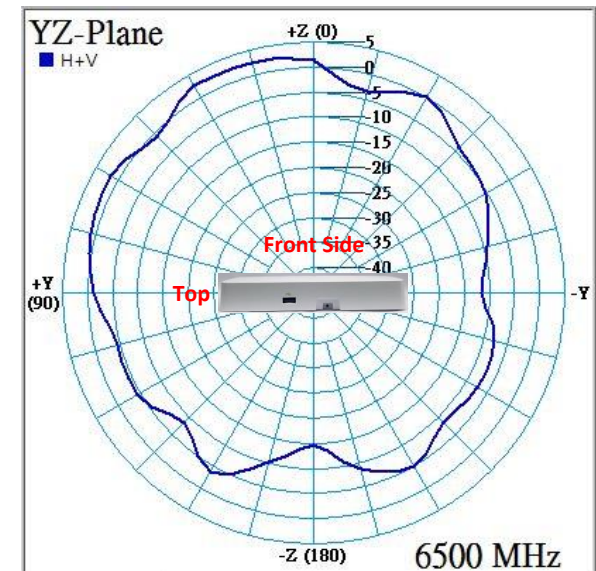
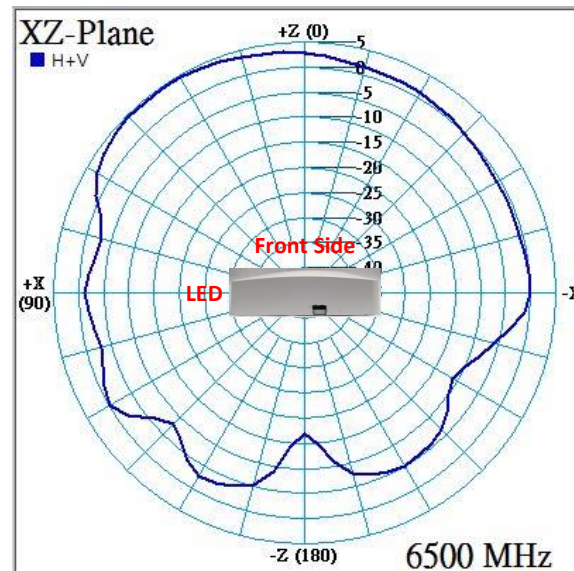
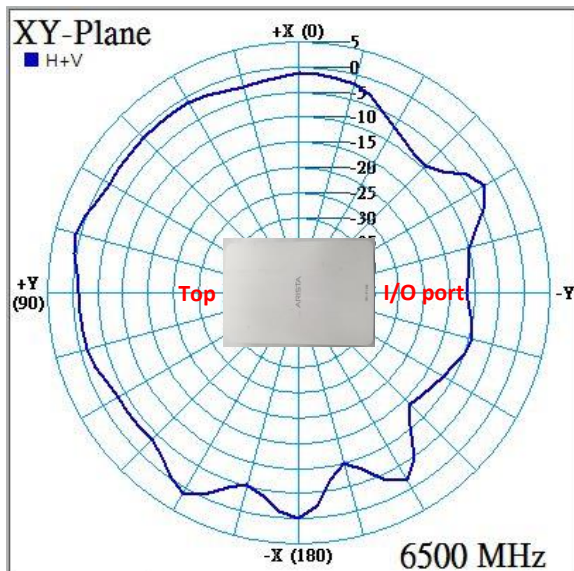
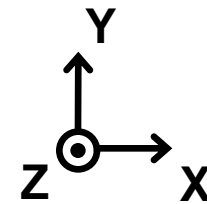
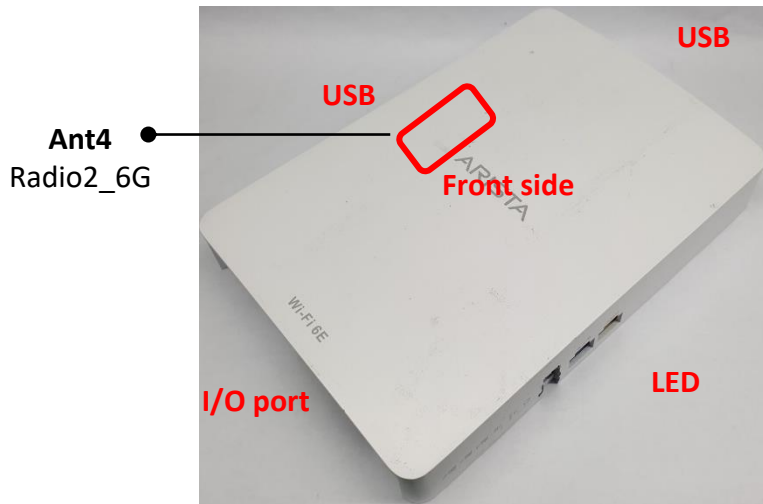


# 2D Radiation Pattern – Ant2\_Radio1 5GHz

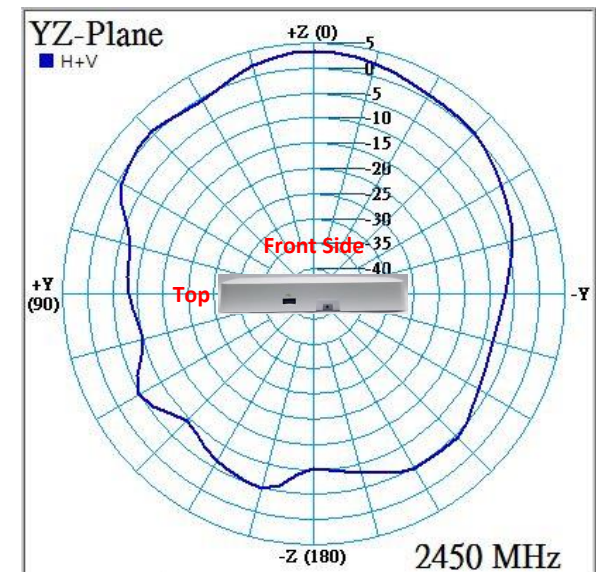
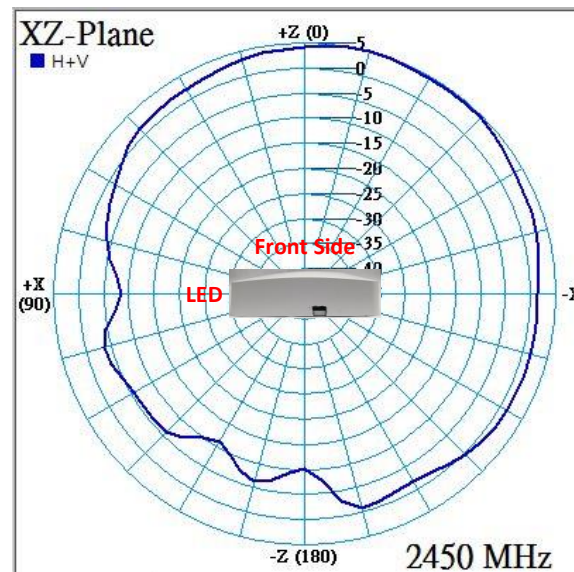
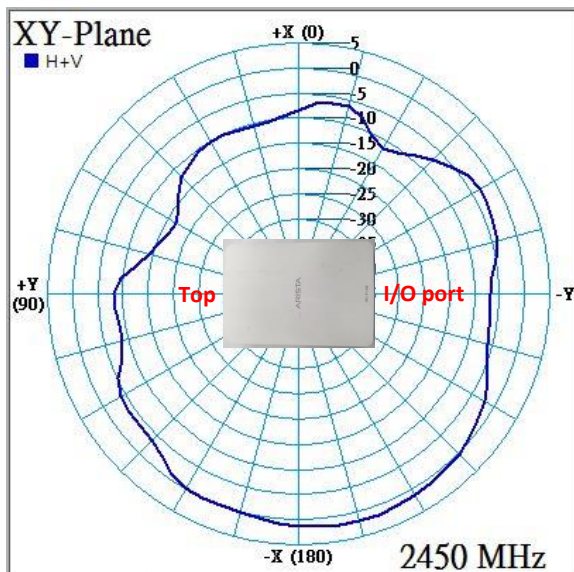
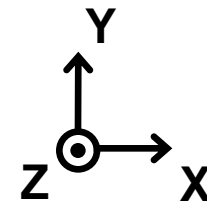
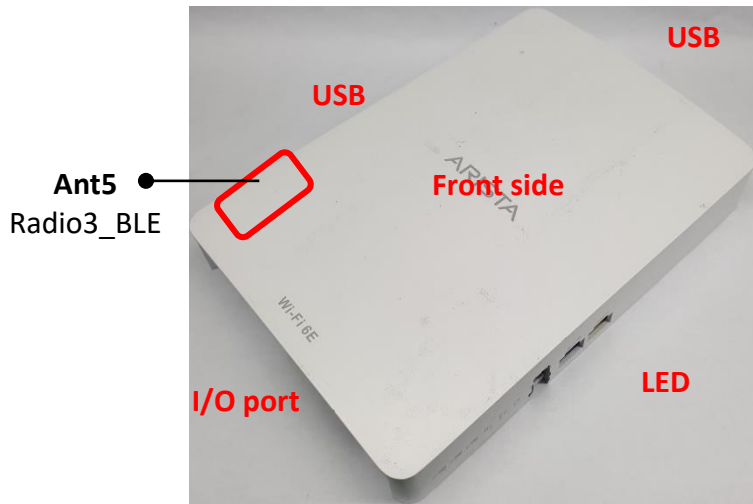




# 2D Radiation Pattern – Ant4\_Radio2 6GHz



# 2D Radiation Pattern – Ant5\_BLE 2.4GHz





**Radio1\_2.4/5GHz Antenna Performance**

Freq. (MHz)	Ant1		Ant2	
	Efficiency (%)	Peak Gain (dBi)	Efficiency (%)	Peak Gain (dBi)
<b>2400</b>	66.5	4.11	66.5	4.05
<b>2450</b>	68.6	4.10	68.6	4.32
<b>2500</b>	66.9	4.44	66.1	4.10
<b>5150</b>	65.2	5.79	69.4	5.31
<b>5500</b>	67.9	5.86	67.4	5.29
<b>5850</b>	67.9	5.58	65.9	5.17

**BLE Antenna Performance**

Freq. (MHz)	Ant5	
	Efficiency (%)	Peak Gain (dBi)
<b>2400</b>	65.8	5.12
<b>2450</b>	67.1	5.02
<b>2500</b>	68.9	5.21

**Radio2\_6GHz Antenna Performance**

Freq. (MHz)	Ant3		Ant4	
	Efficiency (%)	Peak Gain (dBi)	Efficiency (%)	Peak Gain (dBi)
<b>5925</b>	66.2	5.64	65.1	5.21
<b>6500</b>	66.2	5.61	67.6	5.37
<b>7125</b>	65.9	5.20	66.0	5.39