

AIW-514 Specification



Product name	AIW-514
Description	• External 2-in-1 Wi-Fi antenna • Tri-band 2.4&5&6 GHz • Screw mounting • Dimension: Φ45x78.3 mm with IP67 housing
Version	1.0
Date	2025/02/11

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1. Revision History

Version	Date	Change Notification	Description
1.0	2025/02/11	Initial version	



2. Specification

Sample Photo	
 Antenna Dimension: Φ45x78.3mm	
Electrical Characteristics	
Frequency	2400 – 2500 MHz, 5150 – 5850 MHz, 5925 – 7125 MHz
V.S.W.R	ANT0: ≤ 2.0 @ 2400 – 2500 MHz ≤ 2.0 @ 5150 – 5850 MHz ≤ 2.0 @ 5925 – 7125 MHz ANT1: ≤ 2.0 @ 2400 – 2500 MHz ≤ 2.0 @ 5150 – 5850 MHz ≤ 2.0 @ 5925 – 7125 MHz
Peak Gain	ANT0: 2.59 dBi @ 2400 – 2500 MHz 3.58 dBi @ 5150 – 5850 MHz 3.94 dBi @ 5925 – 7125 MHz ANT1: 2.60 dBi @ 2400 – 2500 MHz 3.51 dBi @ 5150 – 5850 MHz 3.91 dBi @ 5925 – 7125 MHz
Efficiency	ANT0: 69 ~ 79.6 % @ 2400 – 2500 MHz 60.5 ~ 77.7 % @ 5150 – 5850 MHz 50.9 ~ 72.8 % @ 5925 – 7125 MHz ANT1: 68.4 ~ 78.1 % @ 2400 – 2500 MHz 64.3 ~ 79.3% @ 5150 – 5850 MHz 65.8 ~ 74.7% @ 5925 – 7125 MHz
Polarization	Linear
Radiation Pattern	Omni-direction
Impedance	50 ohm
Application	Wi-Fi 5 & 6 & 6E & 7, BT, Zigbee
Antenna Type	Dipole
Material & Mechanical Characteristics	
Antenna Length	78.3 mm
Antenna Diameter	Φ 45 mm
Material of Plastic	PC
Cable length	Custom

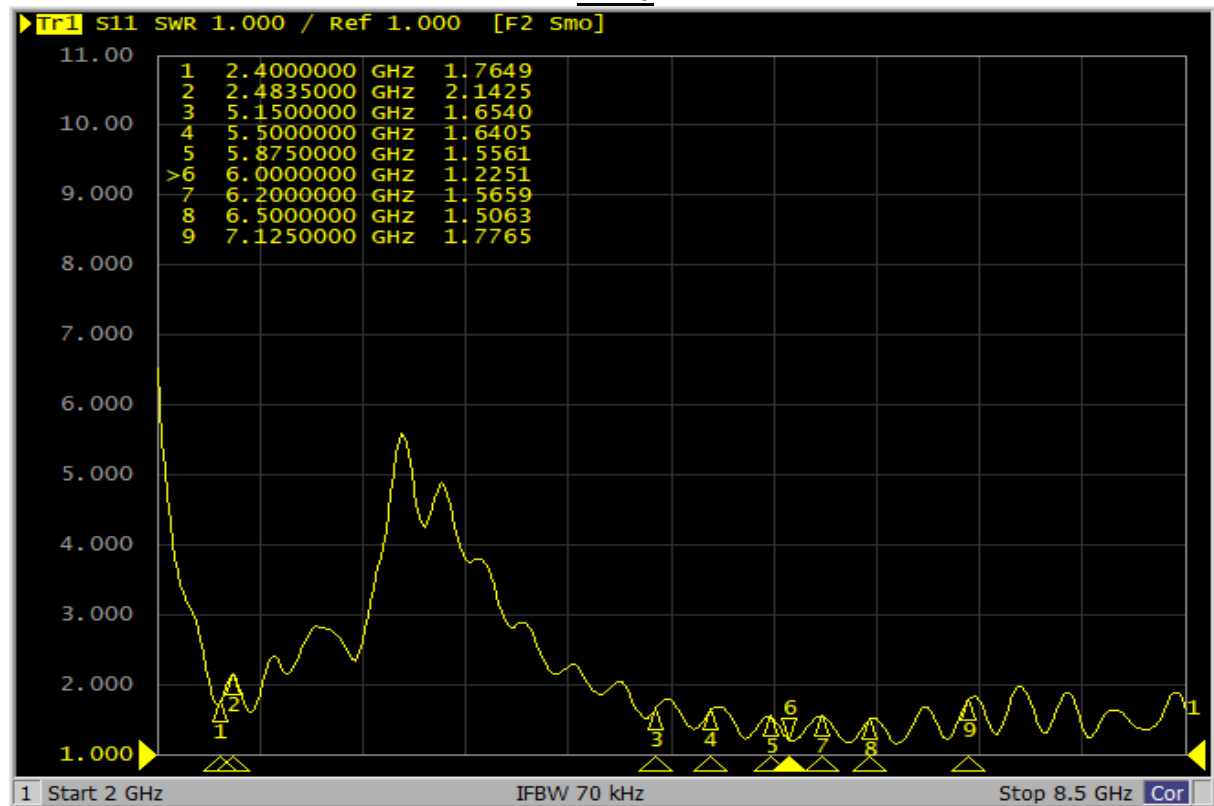
Antenna housing color	Black
Cable Type	ULA100
Connector Type	RP-SMA Male x2

Environmental	
Operation Temperature	-40 ~ 85 °C
Storage Temperature	-40 ~ 85 °C
Ingress Protection	IP67

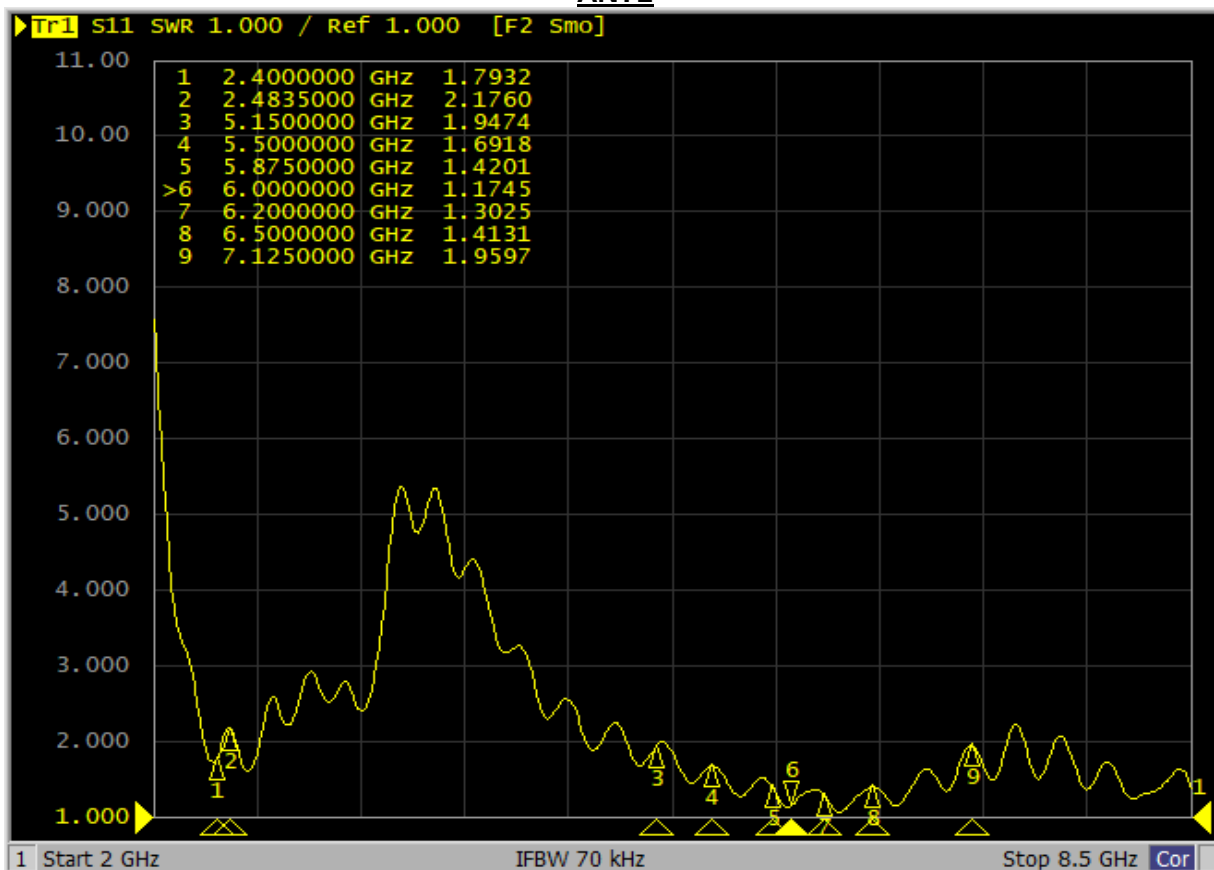


3. Antenna - S Parameter Test Data

ANT0



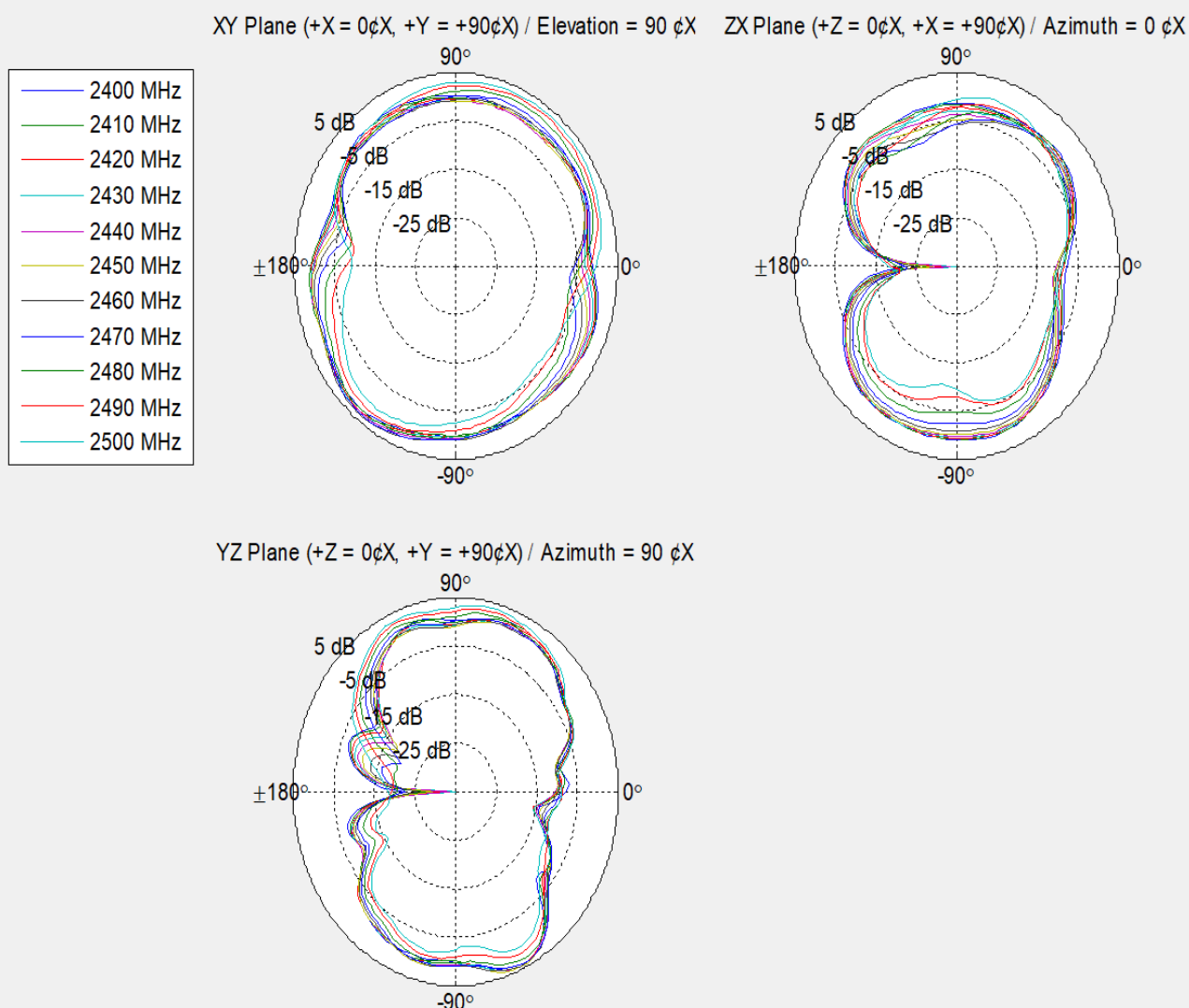
ANT1



4. Antenna – Gain & Radiation Pattern Test Data

ANT0

2G Band = 2400 - 2500 MHz % 2G BAND

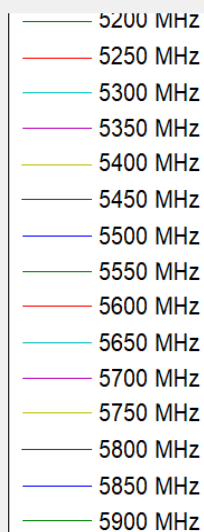


ANT0

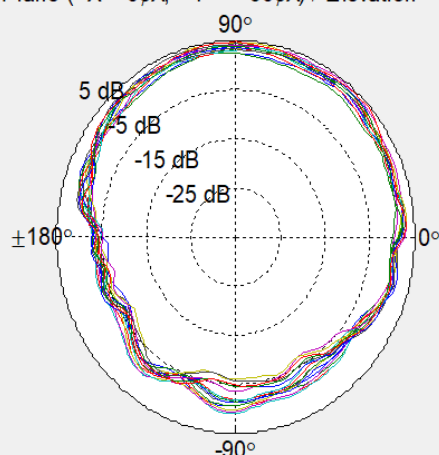
Frequency(MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
Peak Gain(dBi)	2.55	2.55	2.53	2.59	2.52	2.59	2.57	2.57	2.26	2.30	2.55
Efficiency(%)	79.59	78.23	75.84	73.59	77.23	76.77	74.06	72.20	69.61	68.97	71.87
Efficiency(dB)	-0.99	-1.07	-1.20	-1.33	-1.12	-1.15	-1.30	-1.41	-1.57	-1.61	-1.43

ANT0

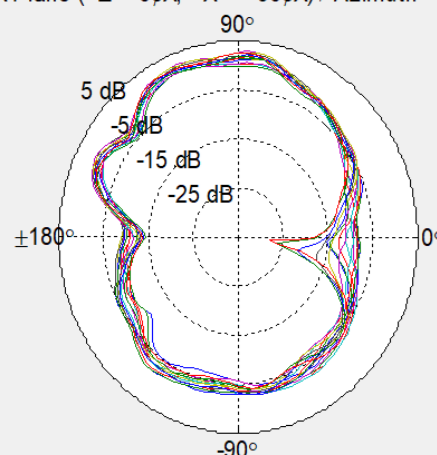
5G Band = 4900 - 5975 MHz



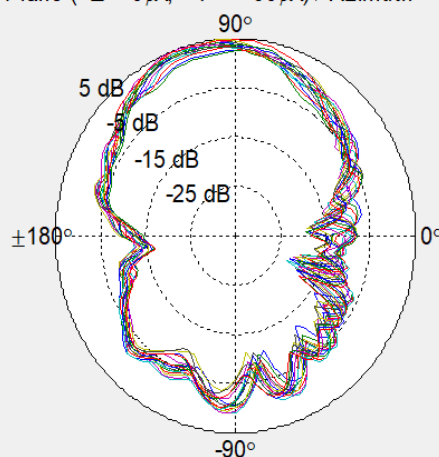
XY Plane (+X = 0°X, +Y = +90°X) / Elevation = 90°X



ZX Plane (+Z = 0°X, +X = +90°X) / Azimuth = 0°X



YZ Plane (+Z = 0°X, +Y = +90°X) / Azimuth = 90°X



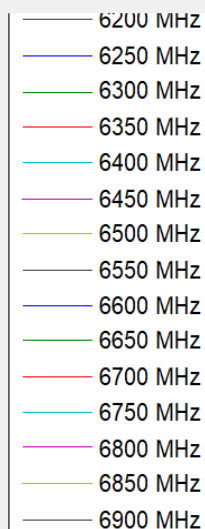
ANT0

Frequency(MHz)	5150	5200	5250	5300	5350	5400	5450	5500	5550	5600	5650	5700
Peak Gain(dBi)	3.31	3.17	3.10	3.50	3.52	3.52	3.46	3.39	3.52	3.58	3.55	3.54
Efficiency(%)	62.43	60.45	69.16	74.67	74.01	74.66	75.77	74.34	74.49	73.74	74.38	76.91
Efficiency(dB)	-2.05	-2.19	-1.60	-1.27	-1.31	-1.27	-1.21	-1.29	-1.28	-1.32	-1.29	-1.14

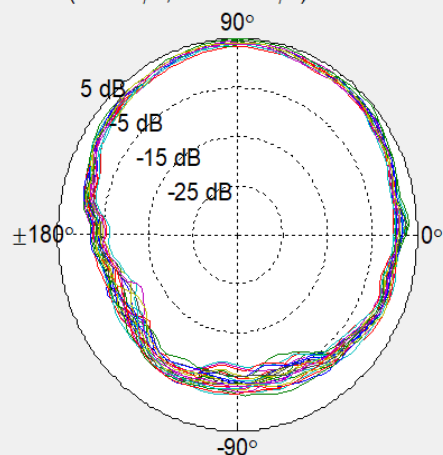
Frequency(MHz)	5750	5800	5850	5900
Peak Gain(dBi)	3.38	3.47	3.51	3.37
Efficiency(%)	76.72	75.28	77.71	71.61
Efficiency(dB)	-1.15	-1.23	-1.10	-1.45

ANT0

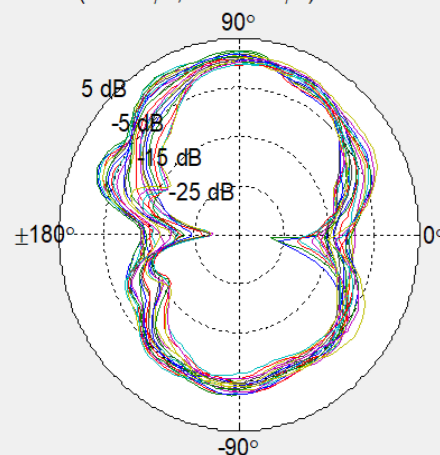
6G Band = 5900 - 8500 MHz



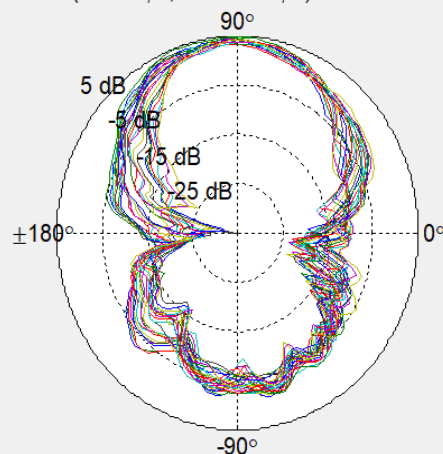
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ZX Plane (+Z = 0°X, +X = +90°X) / Azimuth = 0 °X



YZ Plane (+Z = 0°X, +Y = +90°X) / Azimuth = 90 °X



ANT0

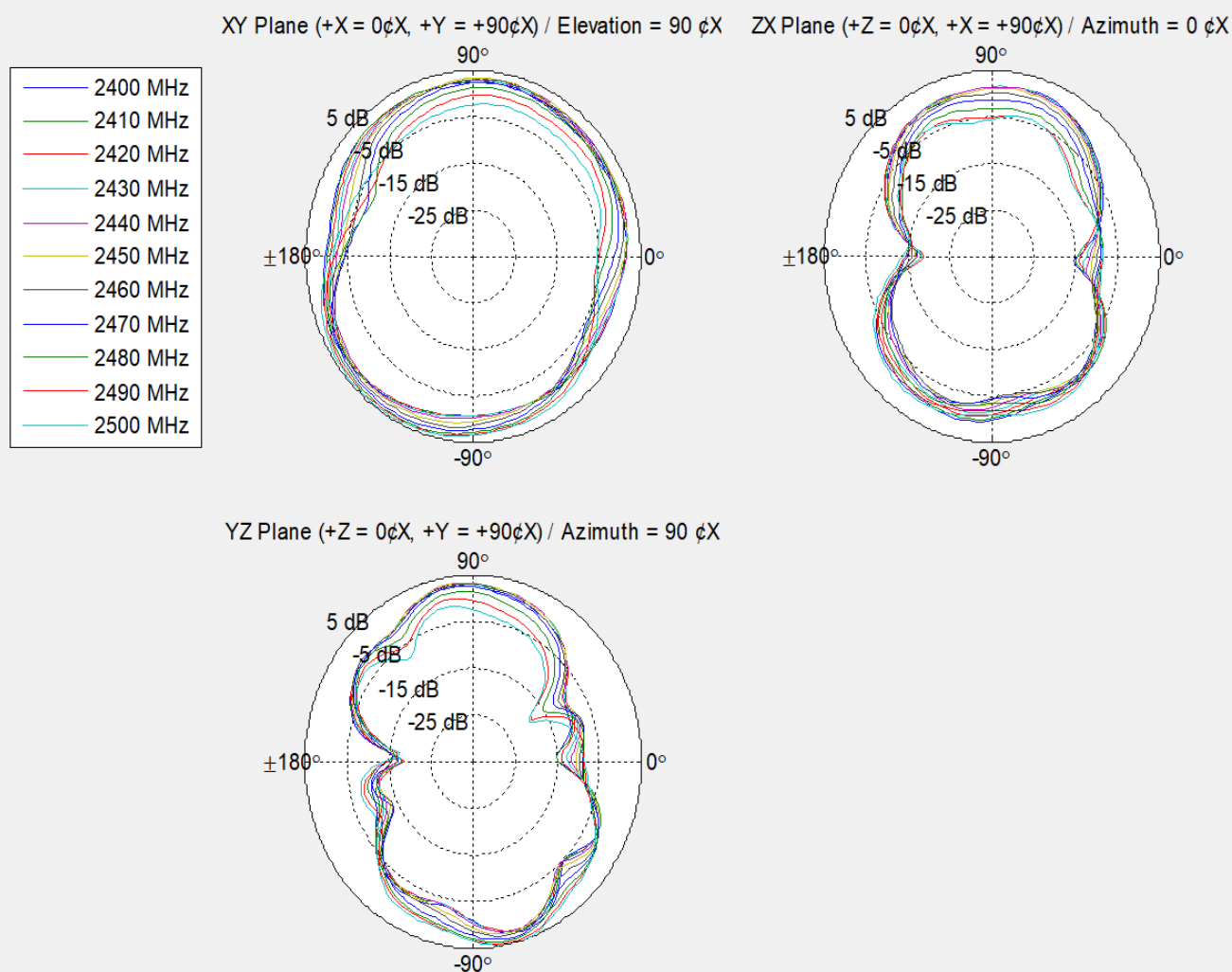
Frequency(MHz)	5950	6000	6050	6100	6150	6200	6250	6300	6350	6400	6450	6500
Peak Gain(dBi)	3.85	3.85	3.84	3.81	3.82	3.89	3.83	3.85	3.90	3.84	3.87	3.81
Efficiency(%)	70.43	66.89	70.91	68.87	69.75	71.04	68.33	72.82	63.97	69.55	68.95	64.21
Efficiency(dB)	-1.52	-1.75	-1.49	-1.62	-1.56	-1.49	-1.65	-1.38	-1.94	-1.58	-1.61	-1.92

Frequency(MHz)	6550	6600	6650	6700	6750	6800	6850	6900	6950	7000	7050	7100
Peak Gain(dBi)	3.82	3.88	3.90	3.86	3.86	3.82	3.87	3.89	3.88	3.94	3.91	3.85
Efficiency(%)	63.65	68.15	66.48	65.75	62.89	64.66	60.03	59.97	62.54	65.61	55.47	50.94
Efficiency(dB)	-1.96	-1.67	-1.77	-1.82	-2.01	-1.89	-2.22	-2.22	-2.04	-1.83	-2.56	-2.93

Frequency(MHz)	7150	7200
Peak Gain(dBi)	3.90	3.82
Efficiency(%)	55.90	62.69
Efficiency(dB)	-2.53	-2.03

ANT1

2G Band = 2400 - 2500 MHz % 2G BAND

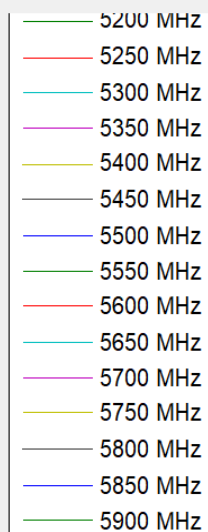


ANT1

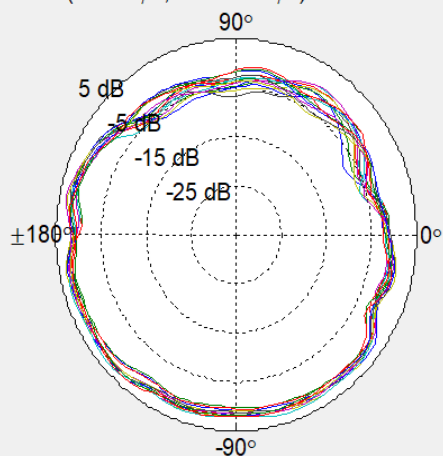
Frequency(MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
Peak Gain(dBi)	2.26	2.26	2.27	2.54	2.53	2.56	2.53	2.59	2.57	2.60	2.56
Efficiency(%)	78.11	76.48	74.02	76.89	74.82	73.62	70.86	69.62	68.41	68.92	72.90
Efficiency(dB)	-1.07	-1.16	-1.31	-1.14	-1.26	-1.33	-1.50	-1.57	-1.65	-1.62	-1.37

ANT1

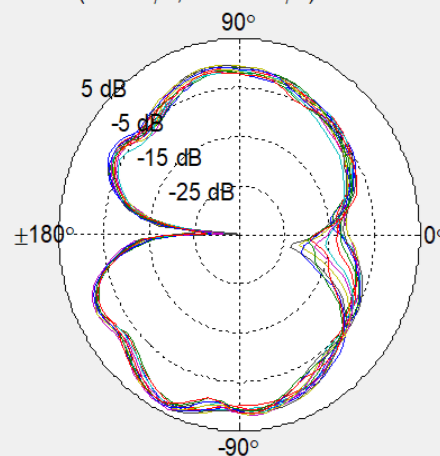
5G Band = 4900 - 5975 MHz



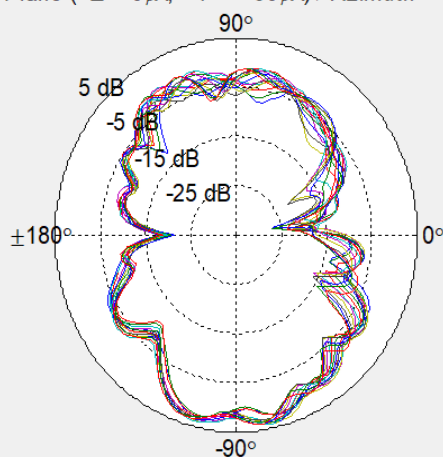
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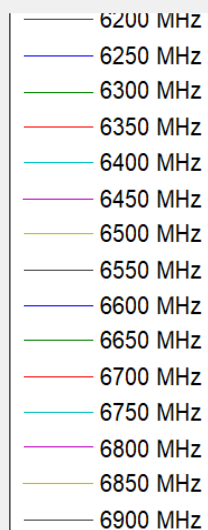
ANT1

Frequency(MHz)	5150	5200	5250	5300	5350	5400	5450	5500	5550	5600	5650	5700
Peak Gain(dBi)	3.47	3.49	3.48	3.43	3.50	3.43	3.43	3.44	3.46	3.48	3.45	3.50
Efficiency(%)	68.52	64.26	67.60	72.05	73.00	75.80	75.30	76.62	77.15	73.34	79.27	76.42
Efficiency(dB)	-1.64	-1.92	-1.70	-1.42	-1.37	-1.20	-1.23	-1.16	-1.13	-1.35	-1.01	-1.17

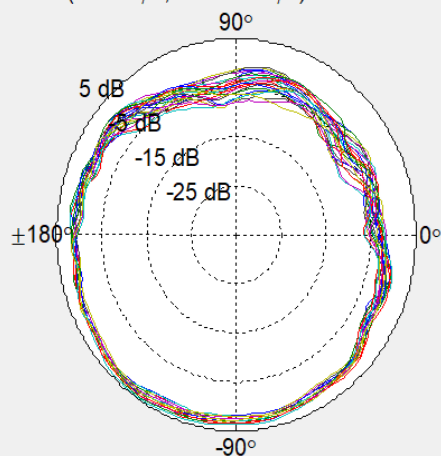
Frequency(MHz)	5750	5800	5850	5900
Peak Gain(dBi)	3.50	3.50	3.51	3.50
Efficiency(%)	75.09	72.24	76.43	70.05
Efficiency(dB)	-1.24	-1.41	-1.17	-1.55

ANT1

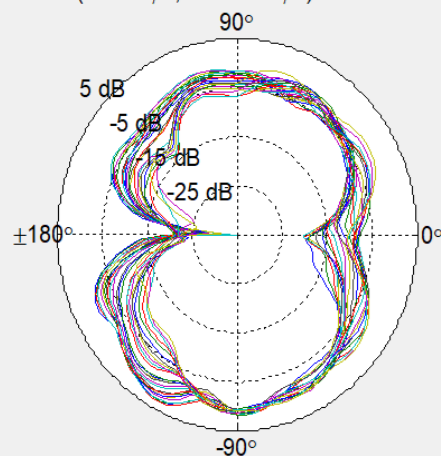
6G Band = 5900 - 8500 MHz



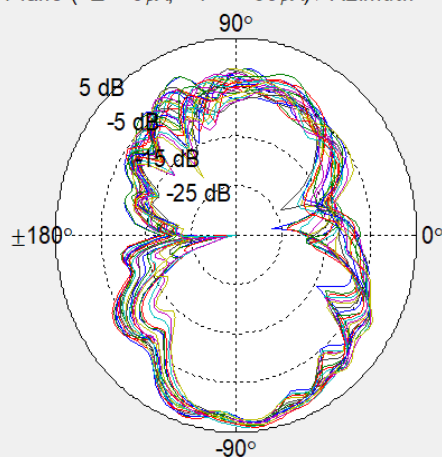
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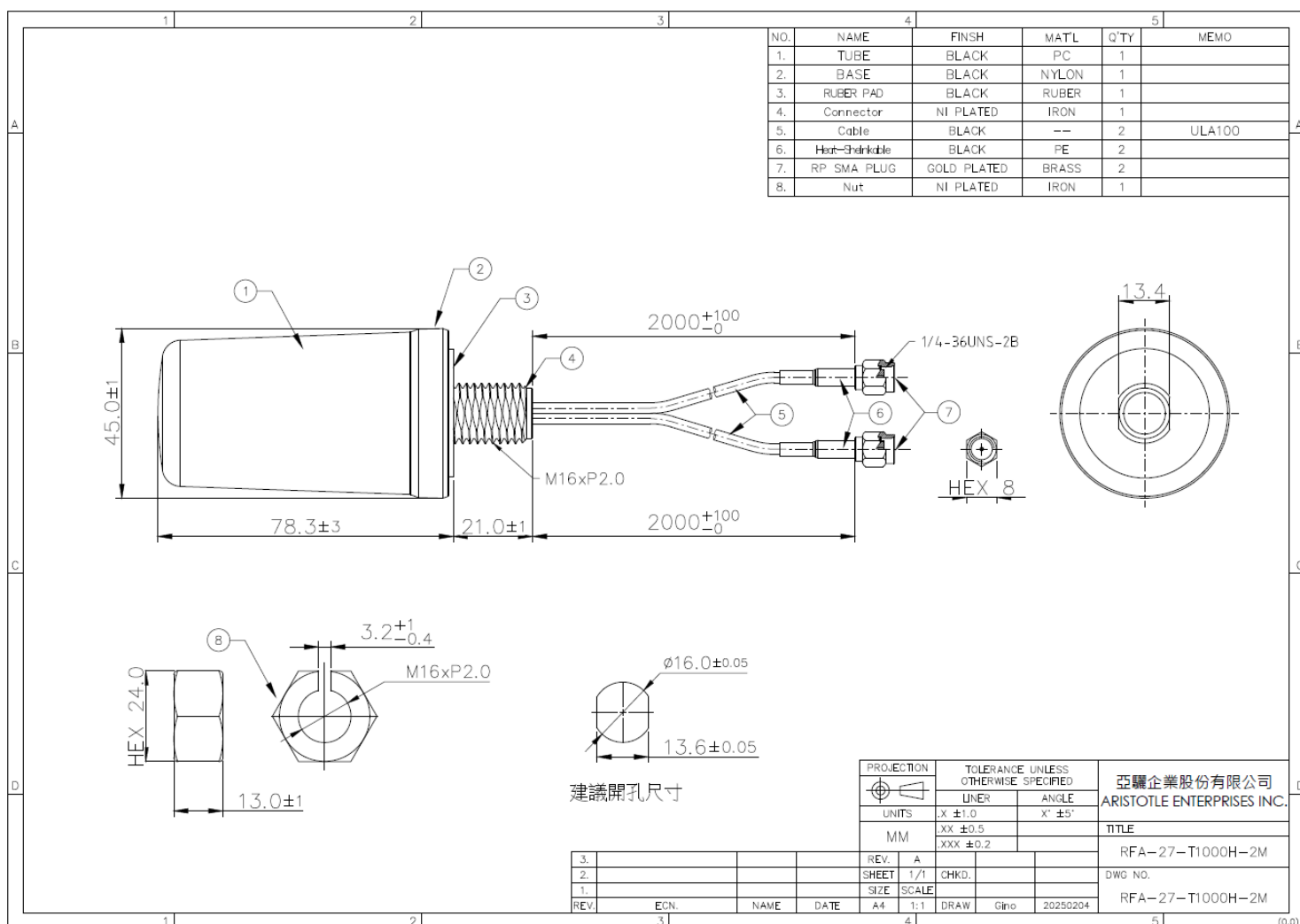
ANT1

Frequency(MHz)	5950	6000	6050	6100	6150	6200	6250	6300	6350	6400	6450	6500
Peak Gain(dBi)	3.83	3.84	3.86	3.83	3.87	3.86	3.90	3.91	3.89	3.88	3.84	3.84
Efficiency(%)	74.67	70.78	69.86	68.92	64.48	66.74	72.90	68.41	72.14	71.83	69.13	66.17
Efficiency(dB)	-1.27	-1.50	-1.56	-1.62	-1.91	-1.76	-1.37	-1.65	-1.42	-1.44	-1.60	-1.79

Frequency(MHz)	6550	6600	6650	6700	6750	6800	6850	6900	6950	7000	7050	7100
Peak Gain(dBi)	3.89	3.83	3.87	3.85	3.87	3.87	3.84	3.88	3.91	3.87	3.84	3.84
Efficiency(%)	65.78	66.46	69.89	68.63	69.43	66.15	64.06	61.18	63.19	66.32	62.85	57.53
Efficiency(dB)	-1.82	-1.77	-1.56	-1.63	-1.58	-1.79	-1.93	-2.13	-1.99	-1.78	-2.02	-2.40

Frequency(MHz)	6550	6600
Peak Gain(dBi)	3.87	3.83
Efficiency(%)	59.51	64.51
Efficiency(dB)	-2.25	-1.90

5. Mechanical Drawing



6. Packing Drawing

產品包裝規範
PACKING CRITERION

