

AIW-512 Specification

Product name	AIW-512-I
Advantech P/N	1751000651-01
Manufacturer Part Number	RFA-27-C2M2-M70-C191
Manufacture	ARISTOTLE
Manufacture Address	5F., No. 27, Xinmin St., Zhonghe Dist., New Taipei City 235, Taiwan (R.O.C.)
Description	External Dipole antenna Wi-Fi 5/6/6E/7 applications Straight & 90° bent IP54 level Tri-band 2.4&5&6 GHz
Version	1.3
Date	2024/09/02

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1. Revision History

Version	Date	Change Notification	Description
1.0	2024/03/07	Initial version	
1.1	2024/05/22	P/N, Temperature	1. Change P/N 2. Modify temperature to -40 ~ 85°C
1.2	2024/08/23	Product name, Peak Gain	1. Product name : AIW-512-I 2. Peak Gian : 5350MHz 2.96 dBi
1.3	2024/09/02	Connector Type	RP-SMA Male



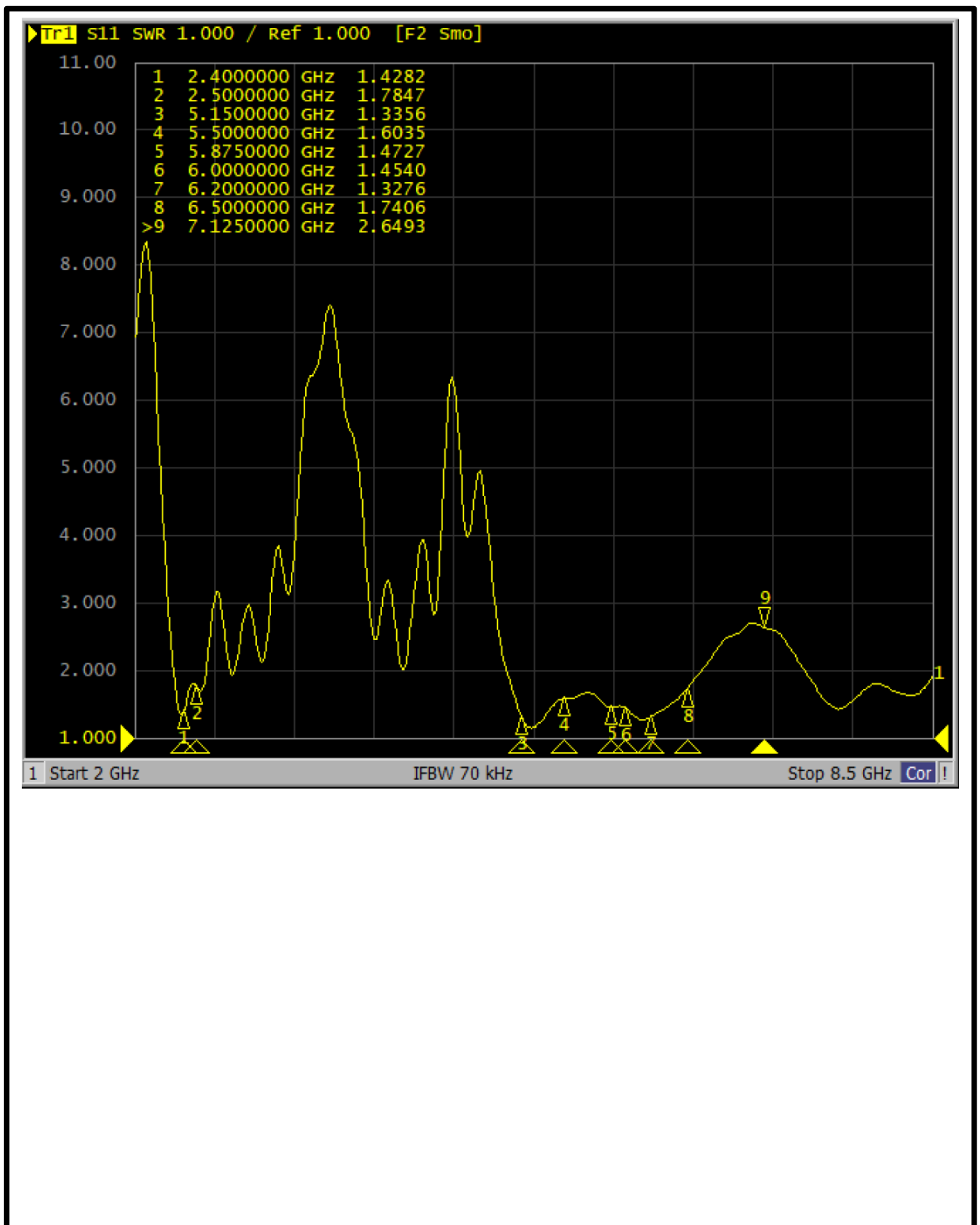
2. Specification

Sample Photo	
 Antenna Length- 111.7 mm Antenna Diameter- 10 mm	
Electrical Characteristics	
Frequency	2400 – 2500 MHz, 5150 – 5850 MHz, 5925 – 7125 MHz
V.S.W. R	≤ 2.0 @ 2400 – 2500 MHz ≤ 2.0 @ 5150 – 5850 MHz ≤ 3.0 @ 5925 – 7125 MHz
Peak Gain	2.87 dBi @ 2400 – 2500 MHz 3.11 dBi @ 5150 – 5850 MHz 3.22 dBi @ 5925 – 7125 MHz
Efficiency	74~78 % @ 2400 – 2500 MHz 71~77 % @ 5150 – 5850 MHz 67~78 % @ 5925 – 7125 MHz
Polarization	Linear
Radiation Pattern	Omni-direction
Impedance	50 ohm
Application	Wi-Fi 6 & 6E & 7, BT, Zigbee
Antenna Type	Dipole
Material & Mechanical Characteristics	
Antenna Length	111.7 mm
Antenna Diameter	10 mm
Material of Radiator	NA
Material of Plastic	ABS
Antenna housing color	Black
Cable Type	RG-178 B/U
Connector Type	RP-SMA Male

Environmental	
Operation Temperature	-40 ~ 85 °C
Storage Temperature(°C)	-40 ~ 85 °C
Ingress Protection	IP54
Power Handling	2 W

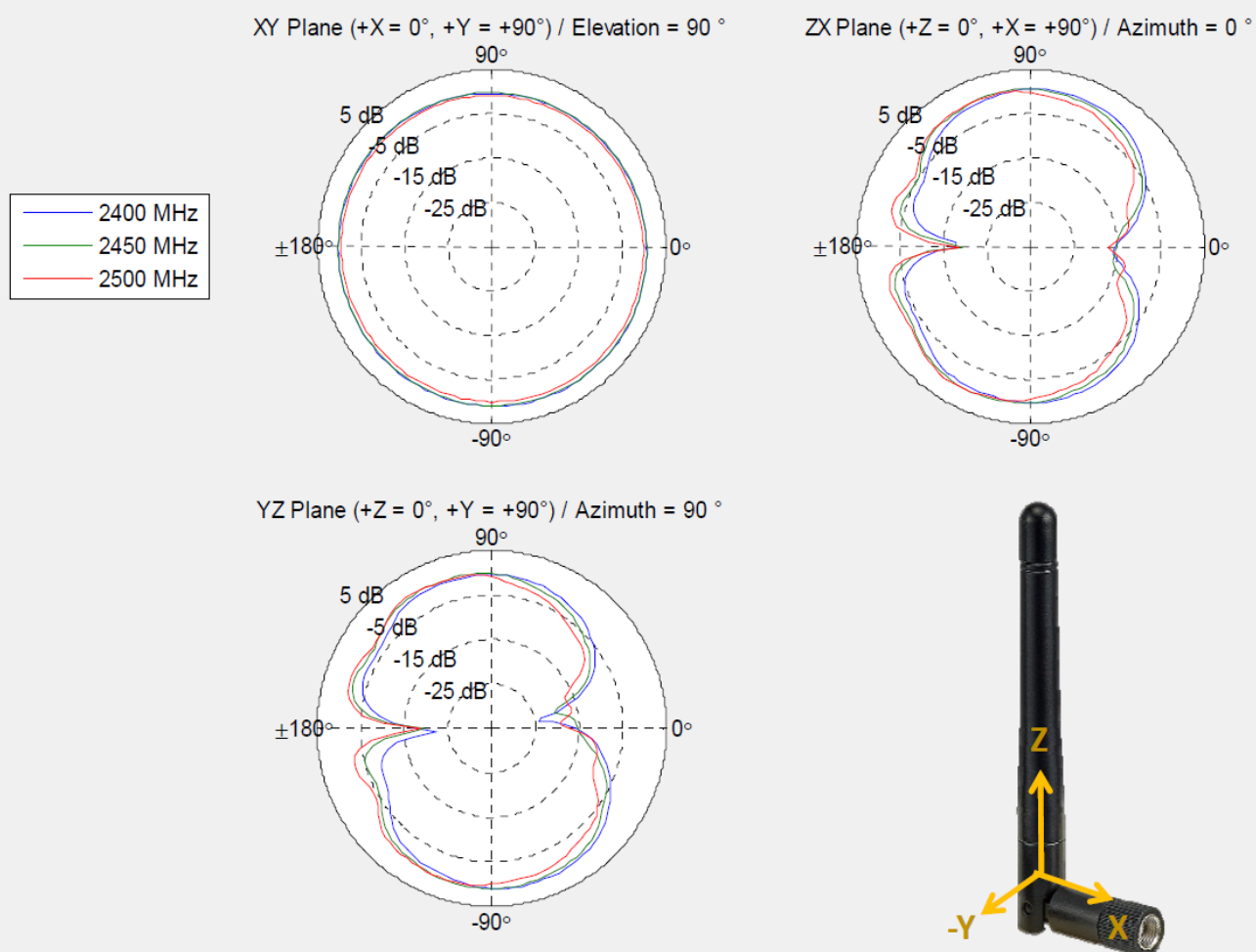


3. Antenna - S Parameter Test Data



4. Antenna – Gain & Radiation Pattern Test Data

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

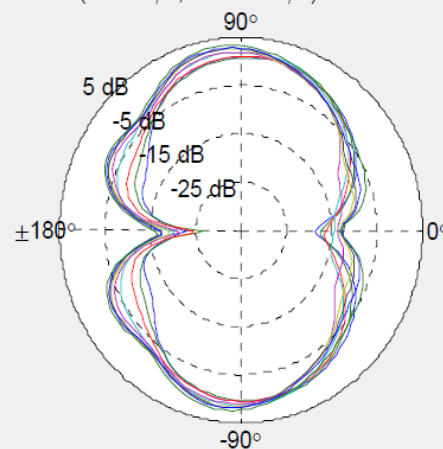
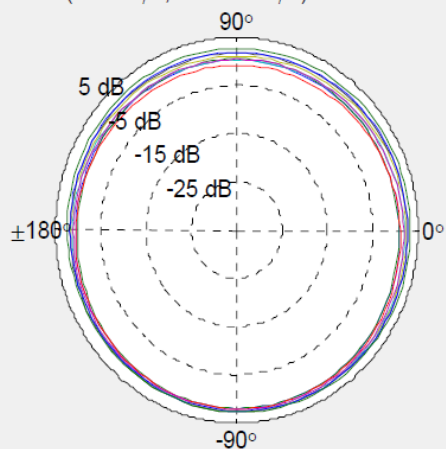
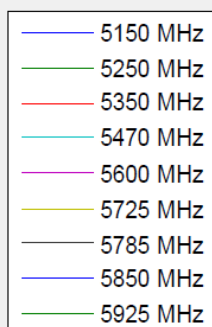


Frequency(MHz)	2400	2450	2500
Peak Gain(dBi)	2.61	2.87	2.49
Efficiency(%)	77.54	75.72	73.59
Efficiency(dB)	-1.10	-1.21	-1.33

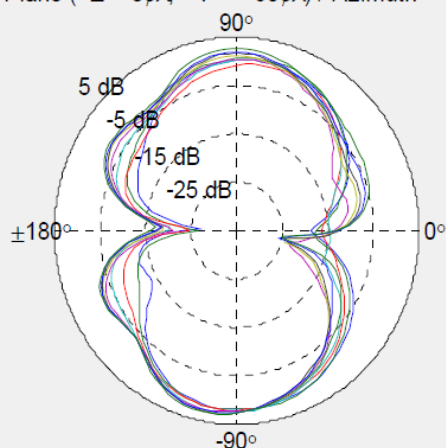
5G Band = 4900 - 5975 MHz

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

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

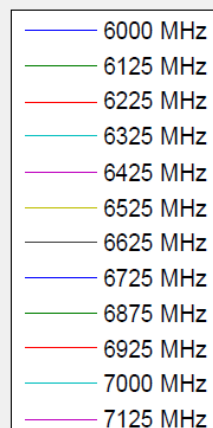


YZ Plane (+Z = 0°X, +Y = +90°X) / Azimuth = 90° X

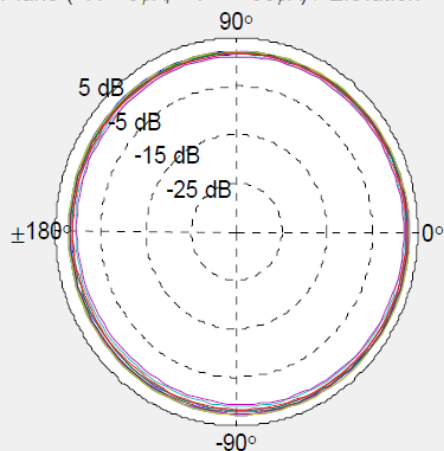


Frequency(MHz)	5150	5250	5350	5470	5600	5725	5785	5850	5925
Peak Gain(dBi)	2.82	2.82	2.96	3.11	2.99	3.04	3.06	2.98	3.15
Efficiency(%)	73.92	75.31	71.01	77.30	74.57	75.44	76.28	77.29	77.45
Efficiency(dB)	-1.31	-1.23	-1.49	-1.12	-1.27	-1.22	-1.18	-1.12	-1.11

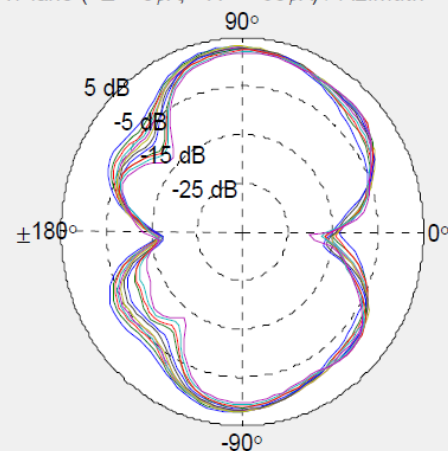
6G Band = 6000 - 8500 MHz



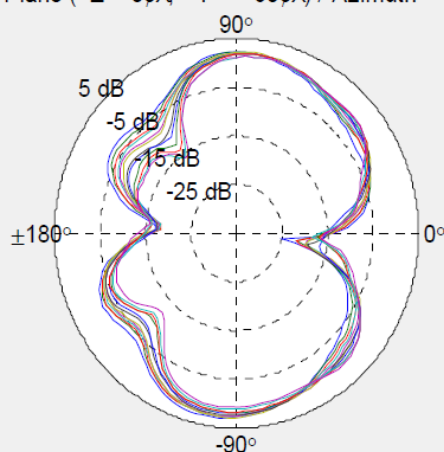
XY Plane (+X = 0°X, +Y = +90°X) / Elevation = 90°



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

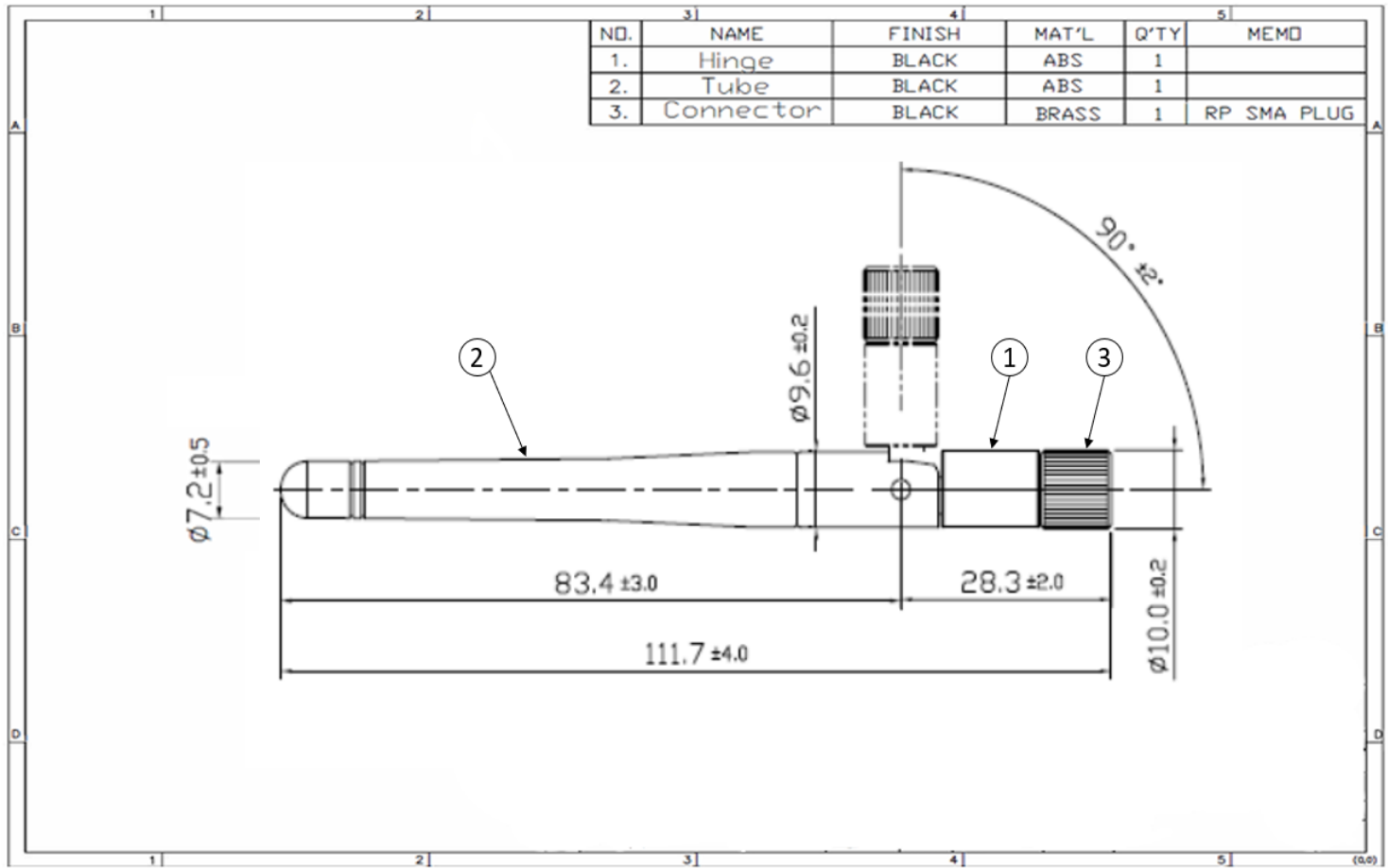


YZ Plane (+Z = 0°X, +Y = +90°X) / Azimuth = 90°



Frequency(MHz)	6000	6125	6225	6325	6425	6525	6625	6725	6875	6925	7000	7125
Peak Gain(dBi)	3.22	2.97	2.79	2.89	2.78	3.08	2.72	2.65	2.61	2.47	2.04	1.94
Efficiency(%)	78.45	76.42	74.59	74.65	75.03	76.18	74.17	72.63	70.68	70.77	69.84	67.23
Efficiency(dB)	-1.05	-1.17	-1.27	-1.27	-1.25	-1.18	-1.30	-1.39	-1.51	-1.50	-1.56	-1.72

5. Mechanical Drawing



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6. Packing Drawing

產品包裝規範 PACKING CRITERION

