

AIW-513 Specification

Brand name	Advantech
Product name	AIW-513
Advantech P/N	1751000717-01
Manufacturer Part Number	RFA-27-W69-U-B70
Manufacture	ARISTOTLE
Manufacture Address	5F., No. 27, Xinmin St., Zhonghe Dist., New Taipei City 235, Taiwan (R.O.C.)
Description	External waterproof Dipole antenna Wi-Fi 5/6/6E/7 applications Straight & 90° bent IP67 level Tri-band 2.4&5&6 GHz
Version	1.0
Date	2024/09/24

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1. Revision History

Version	Date	Change Notification	Description
1.0	2024/09/24	Initial version	



2. Specification

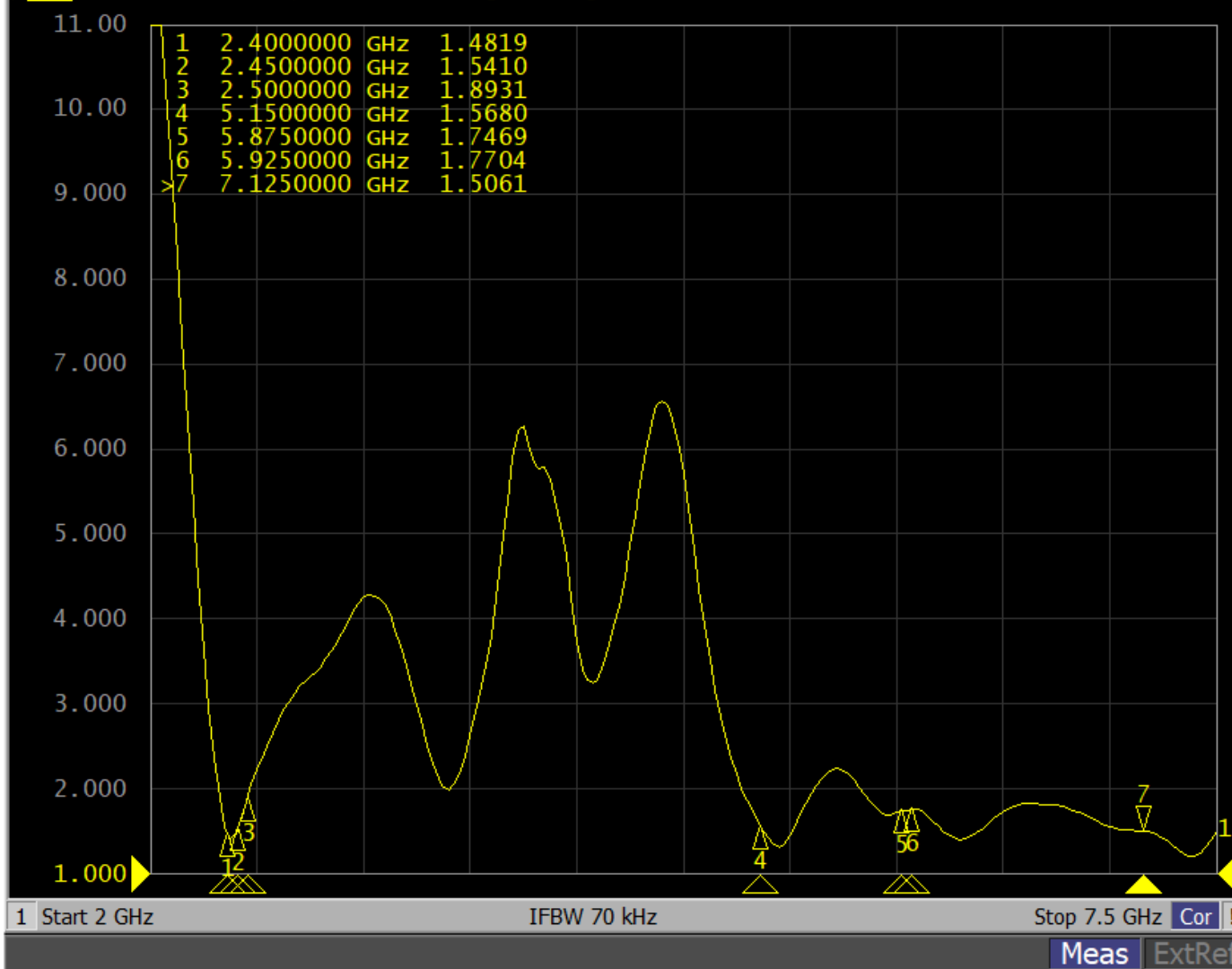
Sample Photo	
 Planner Dimensions (straight): 183*19.2 mm² Connector Diameter: 13.5 mm	
Electrical Characteristics	
Frequency	2400 – 2500 MHz, 5150 – 5850 MHz, 5925 – 7125 MHz
V.S.W. R	≤ 2.5 @ 2400 – 2500 MHz ≤ 3.0 @ 5150 – 5850 MHz ≤ 3.0 @ 5925 – 7125 MHz
Peak Gain	1.48 dBi @ 2400 – 2500 MHz 3.58 dBi @ 5150 – 5850 MHz 4.04 dBi @ 5925 – 7125 MHz
Efficiency	63.7 – 68.3% @ 2400 – 2500 MHz 40.8 – 92.8% @ 5150 – 5850 MHz 54.6 – 73.7% @ 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	
Planner Dimensions (straight)	183*19.2 mm ²
Connector Diameter	13.5 mm
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	IP67
Power Handling	2 W
Humidity	95% @ 25°C

3. Antenna - S Parameter Test Data

E5063A Network Analyzer

1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State

► **[F2 Smo]** S11 SWR 1.000 / Ref 1.000 [F2 Smo]

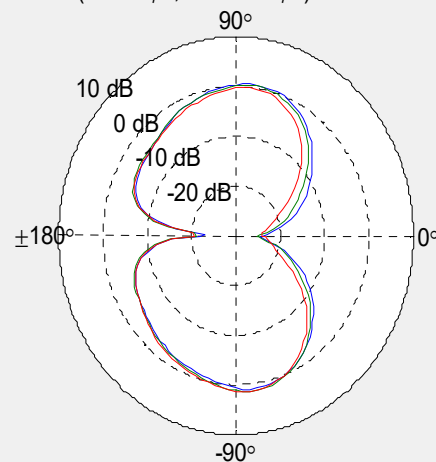
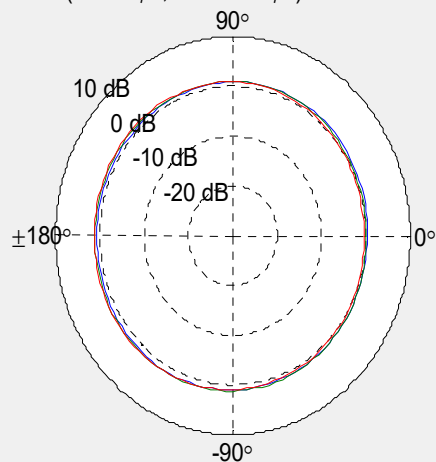


4. Antenna – Gain & Radiation Pattern Test Data

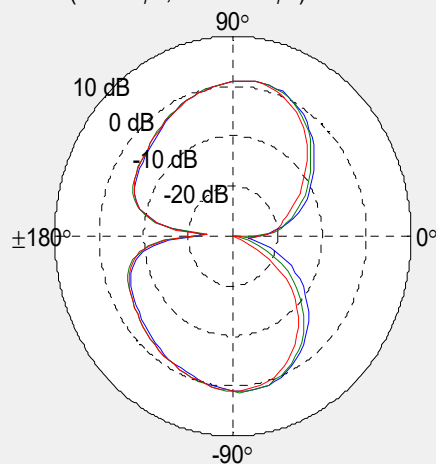
2G Band = 2400 - 2500 MHz % 2G BAND

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

— 2400 MHz
— 2450 MHz
— 2483.5 MHz

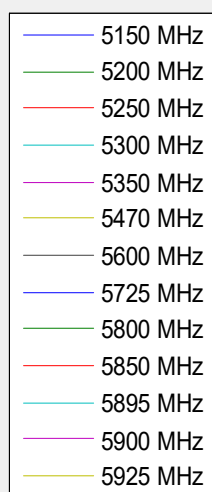


YZ Plane (+Z = 0°X, +Y = +90°X) / Azimuth = 90°X

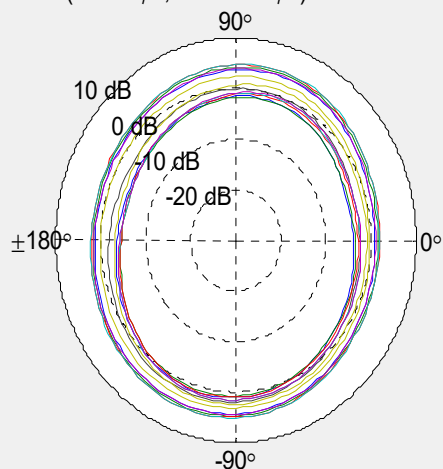


Frequency(MHz)	2400	2450	2500
Peak Gain(dBi)	1.41	1.46	1.48
Efficiency(%)	68.16	68.27	63.70
Efficiency(dB)	-1.66	-1.66	-1.96

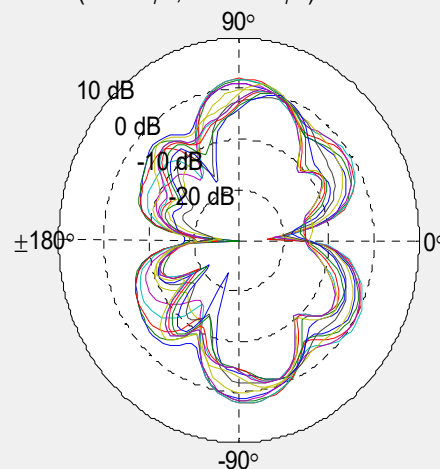
5G Band = 4900 - 5975 MHz



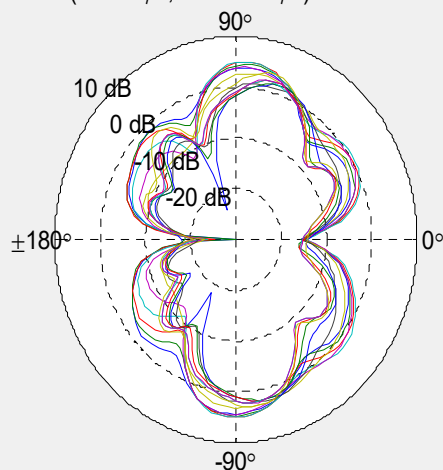
XY Plane (+X = 0°X, +Y = +90°X) / Elevation = 90°X



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



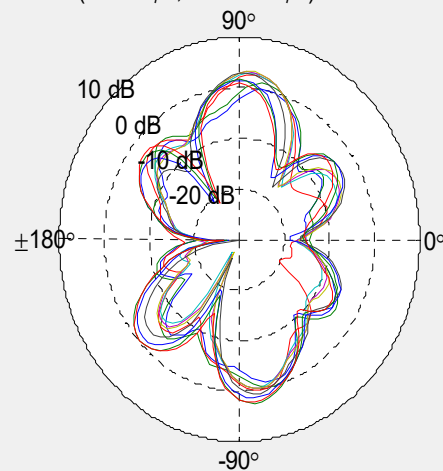
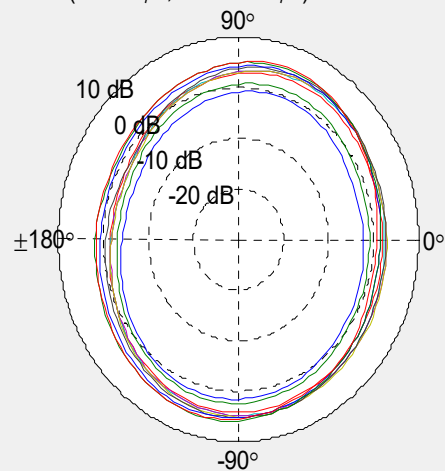
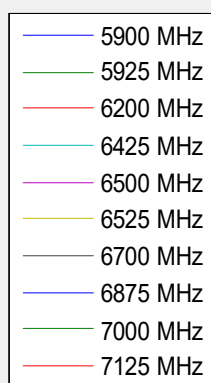
YZ Plane (+Z = 0°X, +Y = +90°X) / Azimuth = 90°X



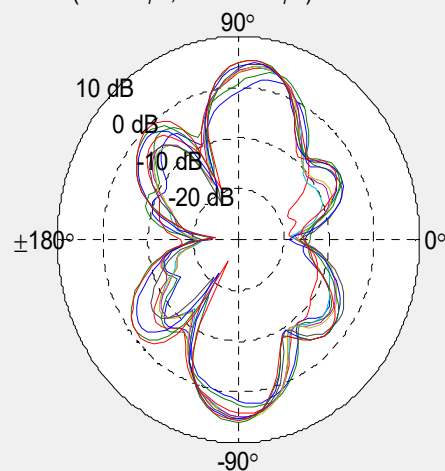
Frequency(MHz)	5150	5250	5350	5470	5600	5725	5785	5850	5925
Peak Gain(dBi)	3.45	3.58	3.53	3.23	2.40	2.21	2.31	2.46	3.86
Efficiency(%)	85.19	92.75	83.18	67.52	48.49	42.06	40.79	41.23	54.58
Efficiency(dB)	-0.70	-0.33	-0.80	-1.71	-3.14	-3.76	-3.89	-3.85	-2.63

6G Band = 5900 - 8500 MHz

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

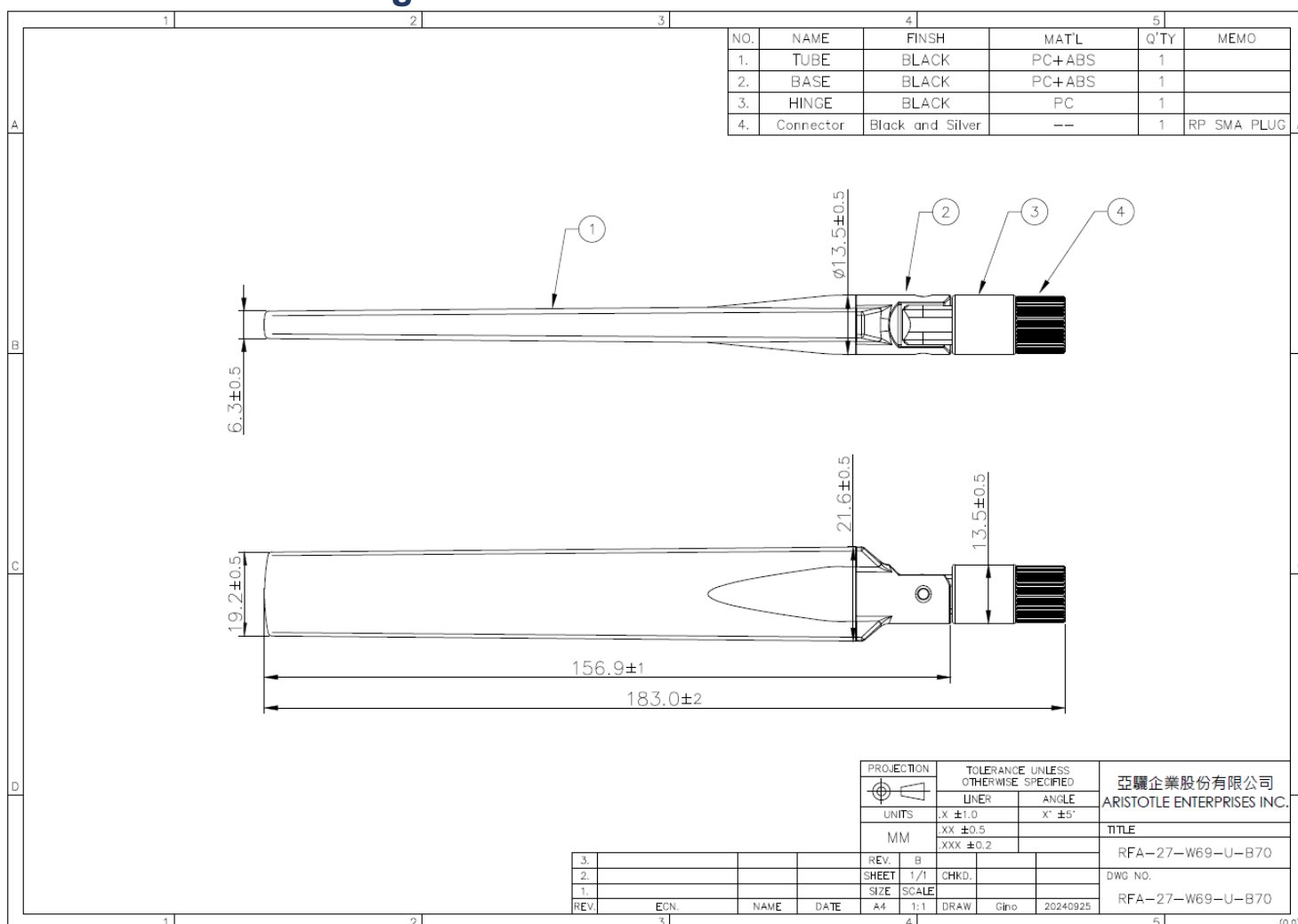


YZ Plane (+Z = 0°X, +Y = +90°X) / Azimuth = 90°X



Frequency(MHz)	6200	6425	6500	6525	6700	6875	7000	7125
Peak Gain(dBi)	3.78	3.95	3.92	3.83	3.96	3.97	4.04	3.98
Efficiency(%)	60.15	60.13	61.65	62.66	64.35	67.39	73.66	70.76
Efficiency(dB)	-2.21	-2.21	-2.10	-2.03	-1.91	-1.71	-1.33	-1.50

5. Mechanical Drawing



6. Packing Drawing

產品包裝規範 PACKING CRITERION

Part Number	1751000717-01	Name	AIW-513
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① 小包裝10PCS

② 中包裝50PCS—1袋

③ 大包裝500PCS—1箱

④ 封箱

夾鏈袋

標籤

PE袋

每層中包裝2袋
共五層

外箱

PROJECTION		TOLERANCE UNLESS OTHERWISE SPECIFIED		亞驛企業股份有限公司	
		UNITS	ANGLE	ARISTOTLE ENTERPRISES INC.	
MM		.X ±1.0	X' ±5°	TITLE	
		XX ±0.5		RFA-27-W69-U-B70	
		XXX ±0.2		DWG NO.	
				RFA-27-W69-U-B70_包裝 SOP	

3.				REV.	A		
2.				SHEET	1 / 1	CHKD.	
1.				SIZE	SCALE		
REV.	ECN.	NAME	DATE	A4	1:1	DRAW	Gino 20240918

