

External Antenna Information for AP3000/AP3000X

External Antenna (AP3000X-WW, AP3000X)

Ant.	Brand	Model Name	Antenna Type	Connector	Remark
1	WNC	ML2452-APA2-02	Dipole	Reverse SMA	Radio 1_5G+ Radio 2_2.4G
2	WNC	ML2452-APA2-02	Dipole	Reverse SMA	Radio 1_5G+ Radio 2_2.4G
3	AWAN	7102A0545000	Dipole	Reverse SMA	Radio 1_5G+ Radio 2_2.4G
4	AWAN	7102A0545000	Dipole	Reverse SMA	Radio 1_5G+ Radio 2_2.4G

WNC ML2452-APA2-02 Date Sheet

Customer P/N	ML2452-APA2-02
WNC P/N	81VEAD15.G02
Description	EXTERNAL WIFI ANTENNA, SMA CONNECTOR, WHITE
Version	A01

Provided By Wistron NeWeb Corp	Reviewed By Wistron NeWeb Corp	Approved By Customer
Elyse Lin	James You	

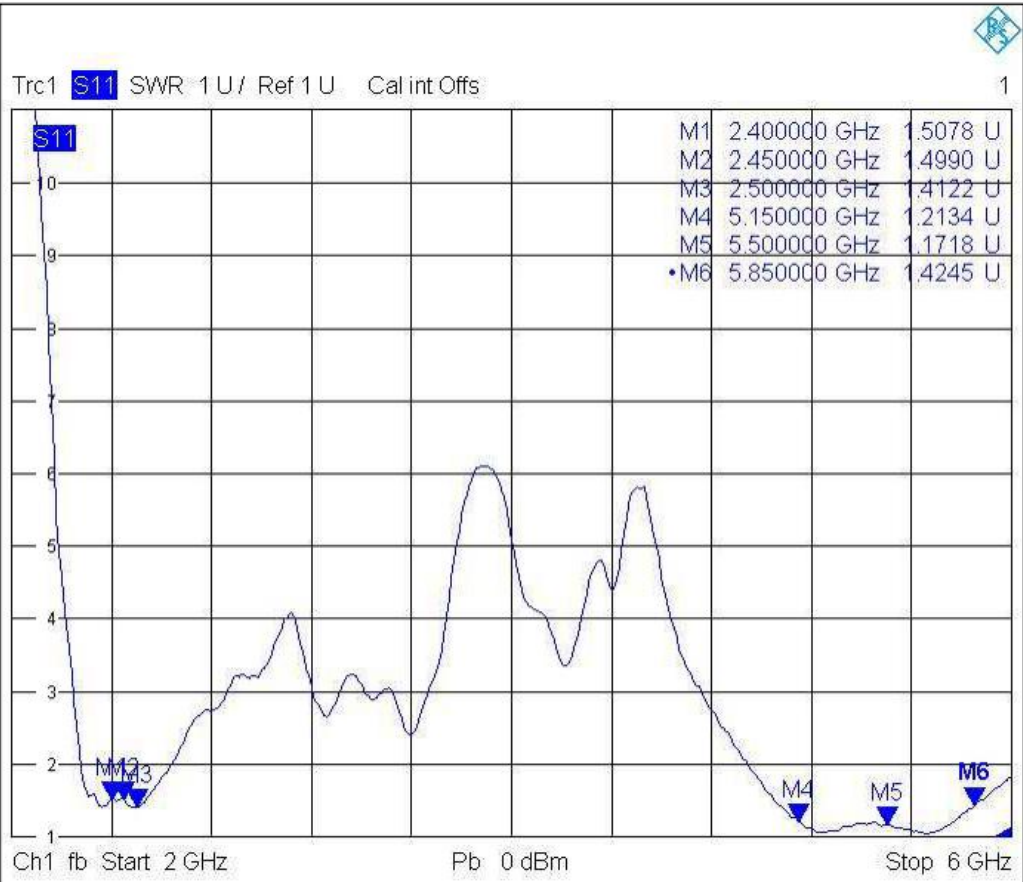
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20 Park Avenue II,
Hsinchu Science Park,
Hsinchu 308, Taiwan, R.O.C.
TEL: +886-3-666-7799
FAX: +886-3-666-7321
<http://www.wneweb.com>

Antenna photo		
A. Electrical Characteristics		
Frequency	2400 ~ 2500 MHz 5150 ~ 5850 MHz	
V.S.W.R.	@2400 ~ 2500 MHz	<= 1.92
	@5150 ~ 5850 MHz	<= 1.92
Antenna Gain Max / Typ (dBi)	@2400 ~ 2500 MHz	3.04 / 2.73
	@5150 ~ 5350 MHz	4.30 / 4.19
	@5470 ~ 5725 MHz	4.96 / 4.64
	@5725 ~ 5850 MHz	4.96 / 4.95
Antenna Efficiency	80% @ 2400 ~ 2500 MHz 72% @ 5150 ~ 5850 MHz	
Polarization	Linear, Vertical	
Impedance	50 Ohm	
B. Material & Mechanical Characteristics		
Material of Plastic	ABS	
Radome Color	Black	
Cable Type	RG-178	
Connector Type	RP-SMA	

WNC ML2452-APA2-02 Antenna Performance

A. VSWR

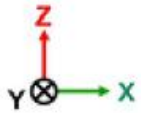
	2400 MHz ~ 2500 MHz	5150 MHz ~ 5850 MHz
VSWR	< 1.92	< 1.92
Return Loss	> 10 dB	> 10 dB



B. Antenna Efficiency and Peak Gain

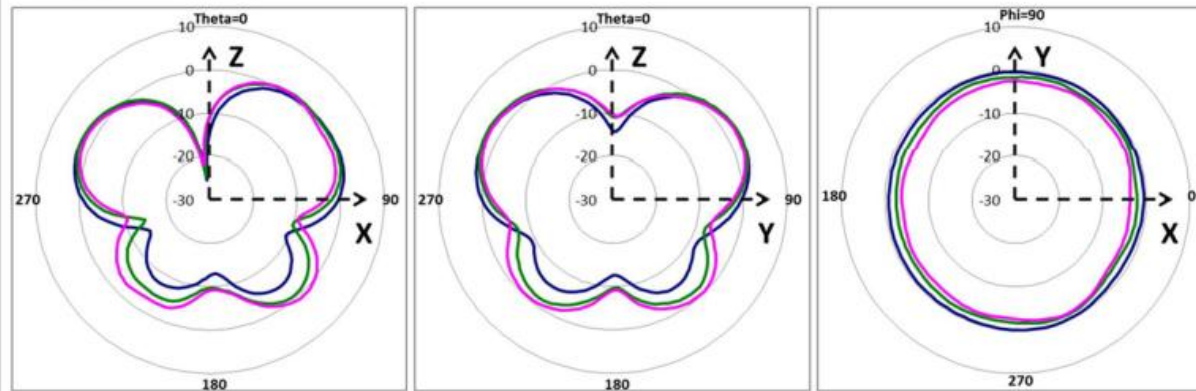
Frequency	2400	2450	2500	Avg.	5150	5350	5470	5550	5725	5750	5850	Avg.
Efficiency	81%	81%	78%	80%	73%	72%	73%	72%	72%	72%	69%	72%
Average Gain (dB)	-0.94	-0.93	-1.07		-1.38	-1.42	-1.38	-1.43	-1.42	-1.44	-1.60	
Peak Gain (dBi)	2.95	3.04	2.19		4.30	4.07	4.44	4.52	4.96	4.95	4.93	

C. Radiation Pattern



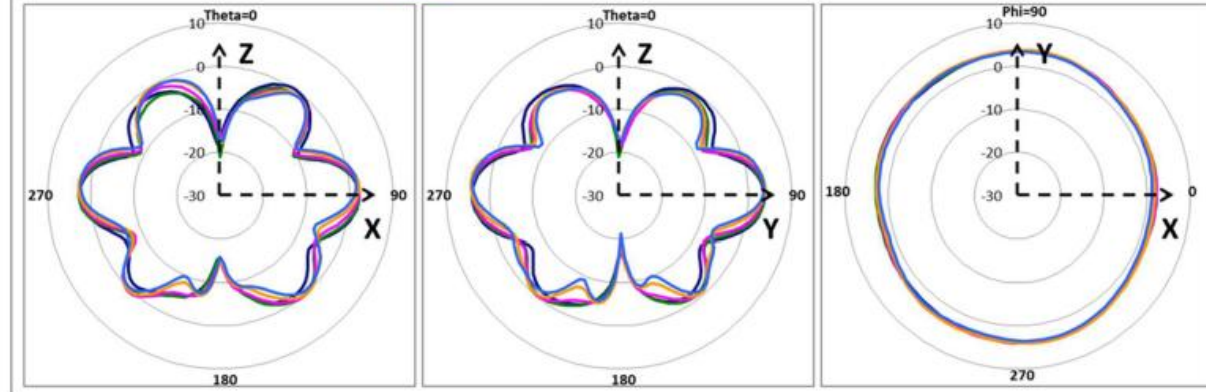
**WNC Sample 2G Radio
Radiation Pattern**

— 2400MHz
— 2450MHz
— 2500MHz

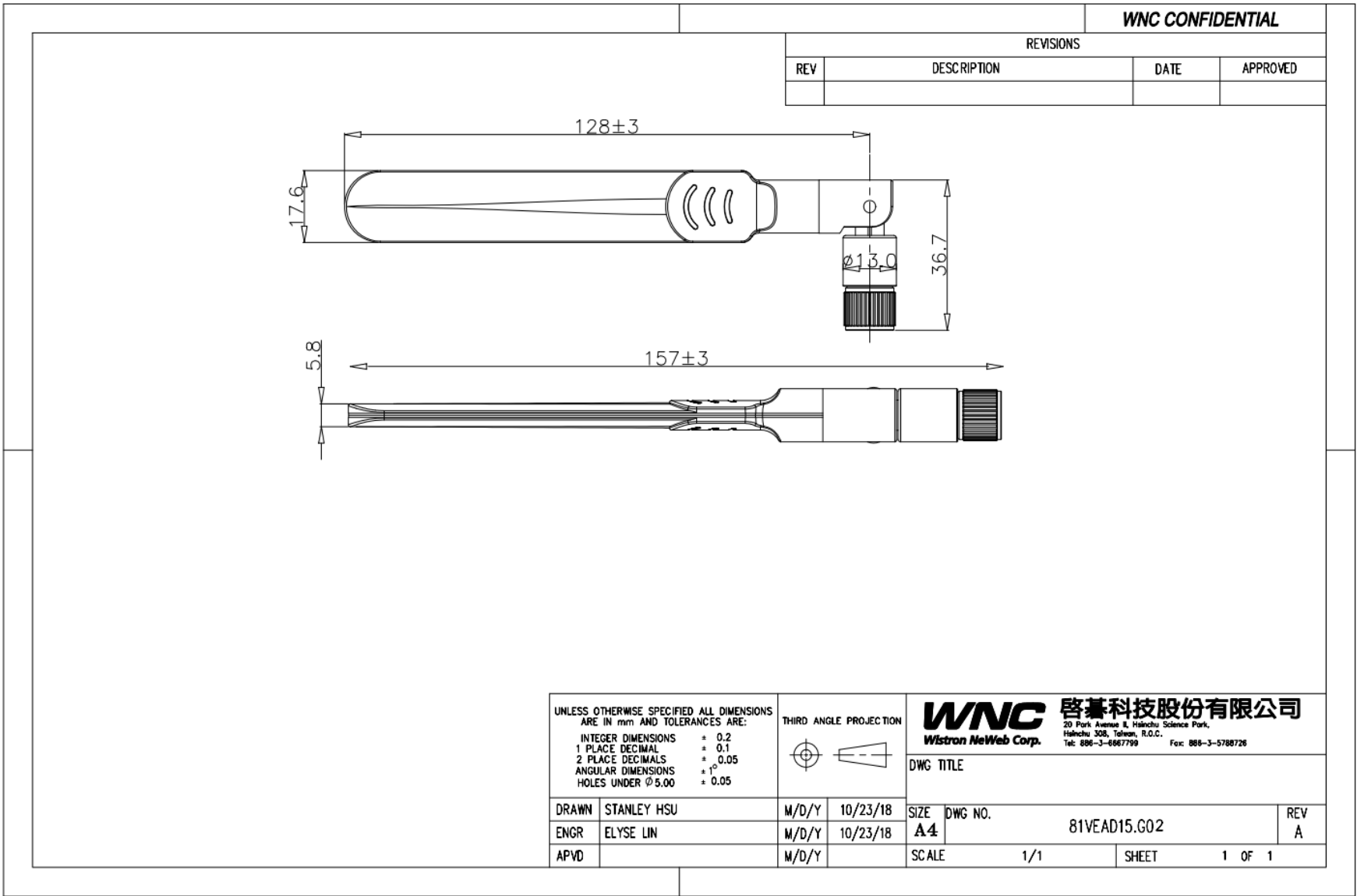


**WNC Sample 5G Radio
Radiation Pattern**

— 5150MHz
— 5350MHz
— 5550MHz
— 5750MHz
— 5850MHz



WNC ML2452-APA2-02 Drawing



AWAN-DB Dipole Antenna

AWAN S/N: A8EEE-000001
Customer S/N: 7102A0545000

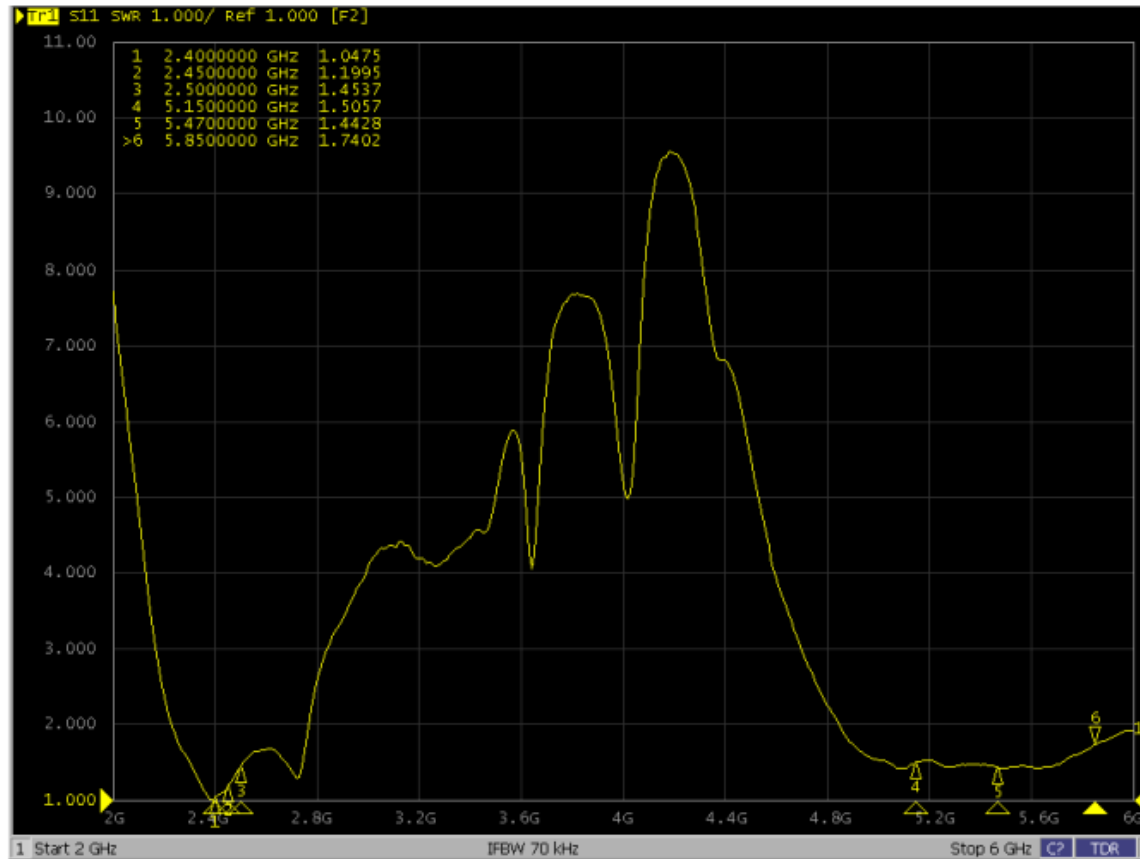


Antenna Proposal

Antenna type	• Dipole array
Frequency	2400 ~ 2500 MHz 5150 ~ 5850MHz
Impedance	50 Ohm Nominal
VSWR	< 2
Gain	2.4G ~ 2.5G @ 3dBi ± 0.5 dBi 5.15G ~ 5.85G @ 5dBi ± 0.5 dBi
Efficiency	2.4G ~ 2.5G @ 55~60% 5.15G ~ 5.85G @ 60~70%
Polarization	Linear
Physical Properties	
Operating Temp	-40 ~ +80 °C
Storage Temperature	-45 ~ +85 °C
Connector	RP-SMA

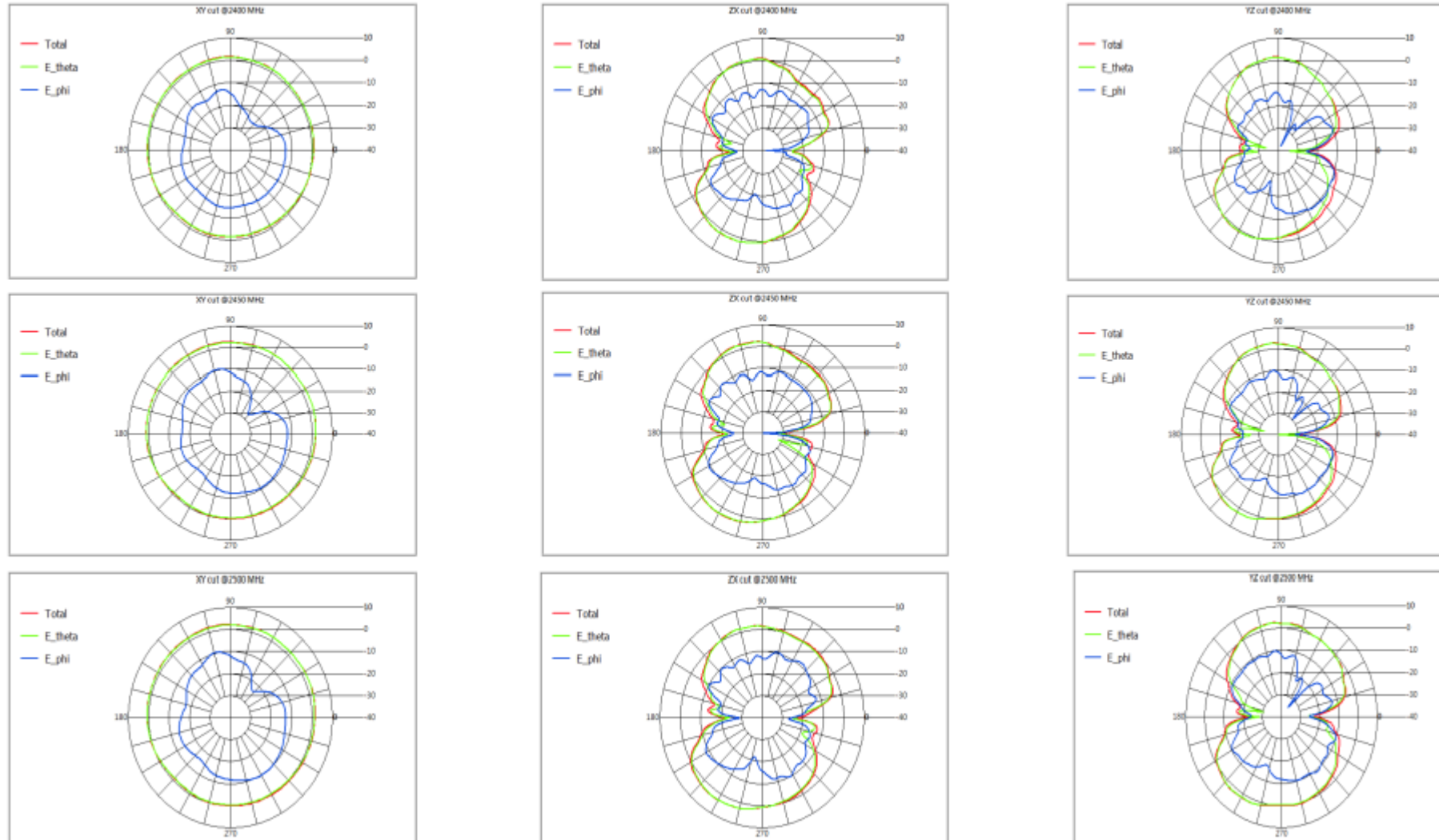
AWAN 7102A0545000 Antenna Performance

VSWR

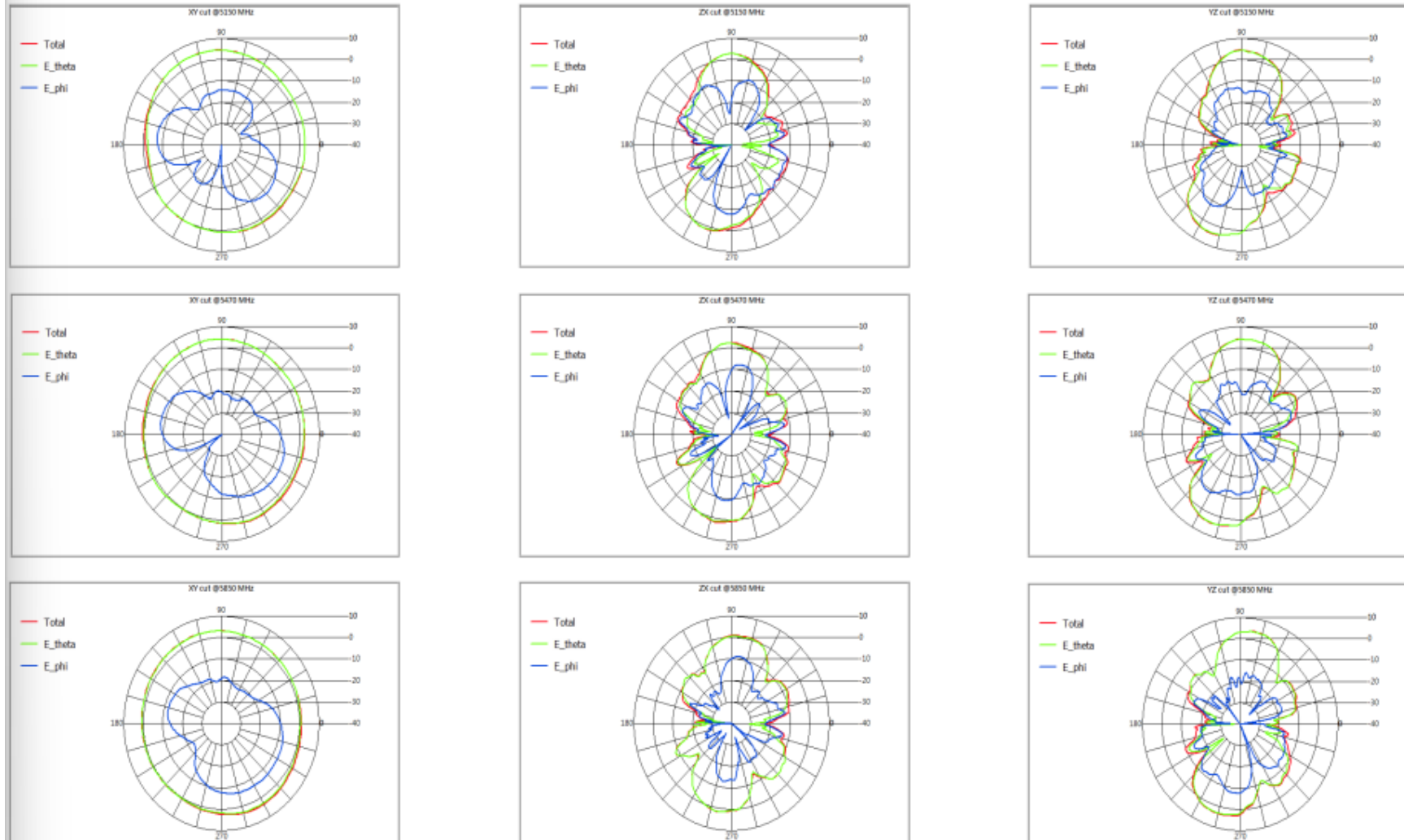


Frequency (MHz)	Peak Gain (dBi)	Efficiency (dB)	Efficiency (%)
2400	3.08	-2.20	60.28
2450	3.17	-2.27	59.33
2500	3.23	-2.35	58.15
5150	5.11	-1.90	64.63
5250	4.67	-1.85	65.37
5350	5.02	-1.63	67.75
5470	4.85	-1.95	63.79
5725	5.15	-2.04	62.55
5850	5.22	-2.17	60.64

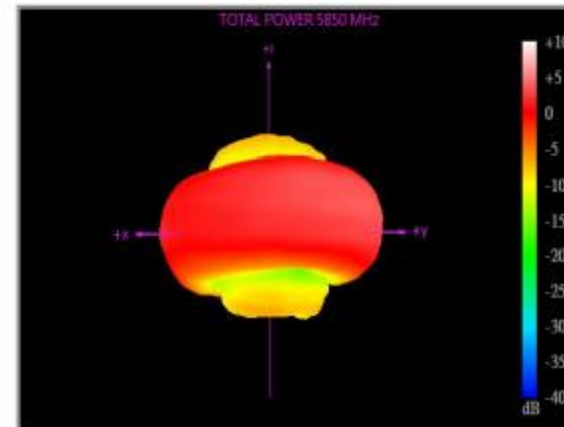
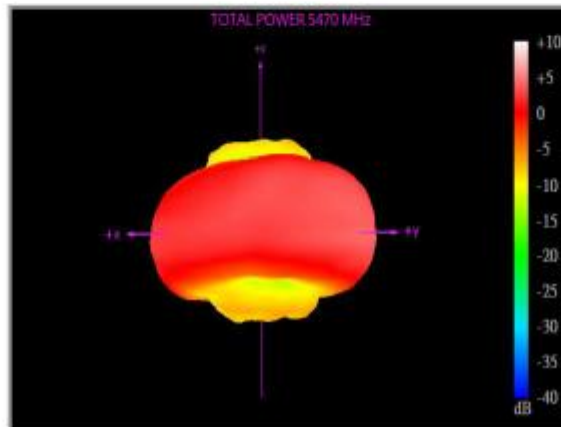
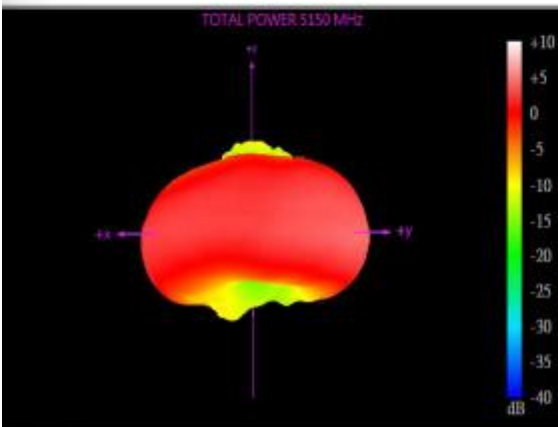
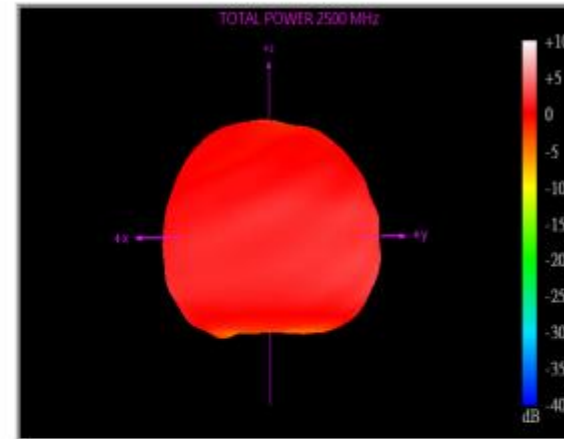
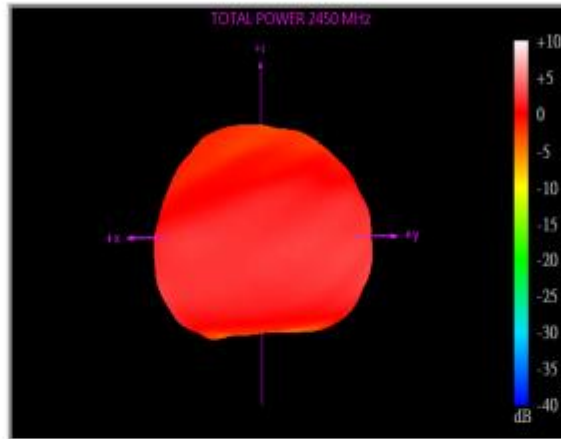
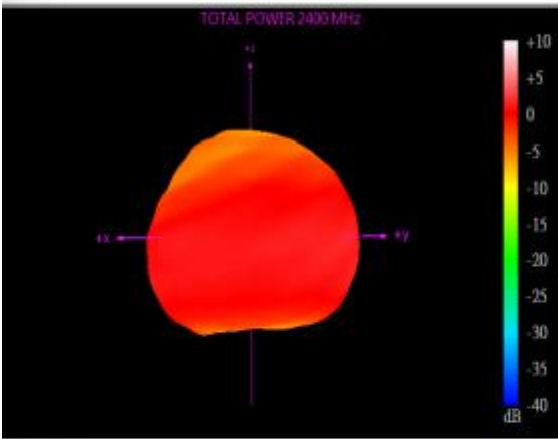
Radiation pattern 2.4G (2D)



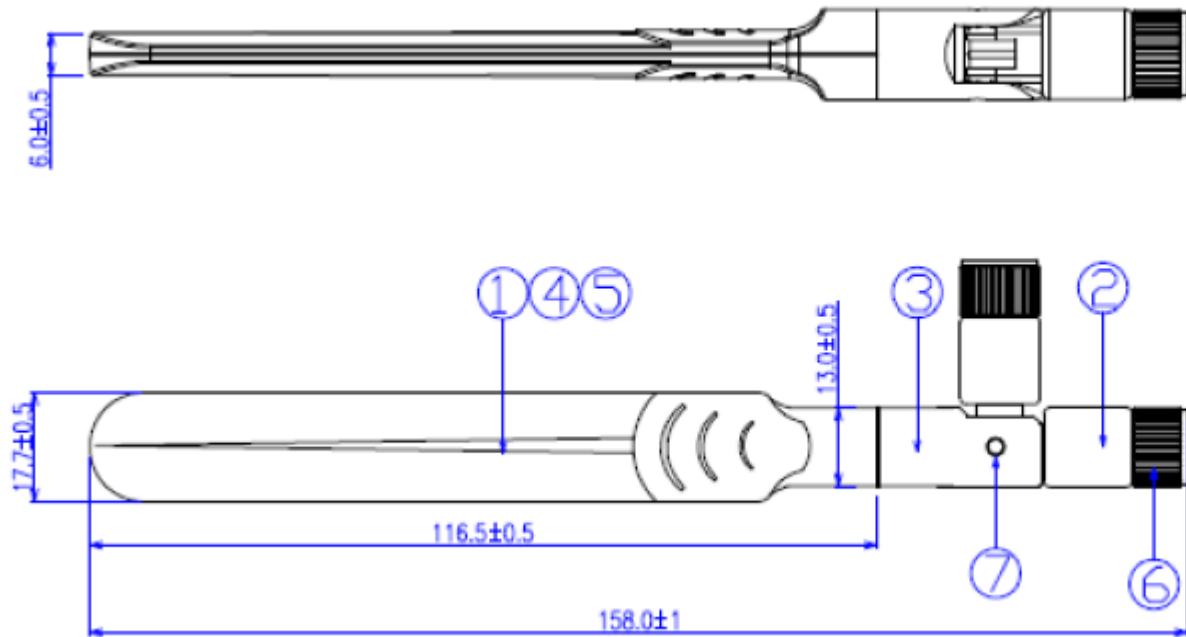
Radiation pattern 5G (2D)

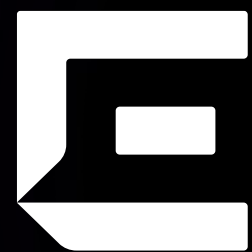


Radiation pattern 2.4G & 5G(3D)



AWAN 7102A0545000 Drawing





Extreme[®]
networks