LYNwave Technology

Antenna & Thermal solution provider

2024

www.lynwave.com

Antenna Field Test Report

Company: Edimax

Model Name: Ant.1: ALX24M-122AA3
Ant.2: ALX24M-122AA4

Application: USB Dongle

Mounting Type:

Date	Owner	Revision	Remark
2024/11/28	Ken	v0.1	1. New antenna sample(hand made sample) + T1 mockup case test
2024/12/02	Ken	v0.2	1. New antenna sample(factory sample) + T1 mockup case test

3F-6, No.327, Xuecheng Rd., Sanxia Dist., New Taipei City
237624, Taiwan
www.lynwave.com
+886 2 3501 8700

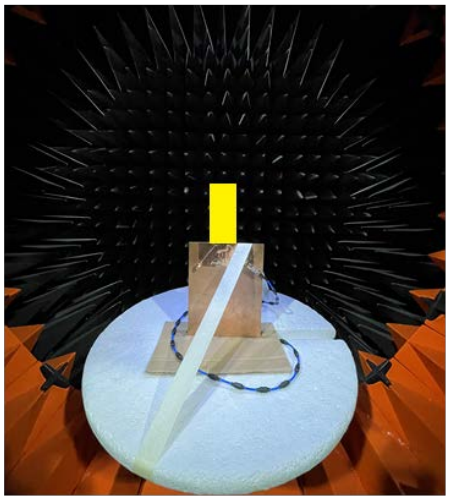
Equipment – antenna S-Parameters measurement

Test equipment: KEYSIGHT E5071C
Correction date:2024/08/27

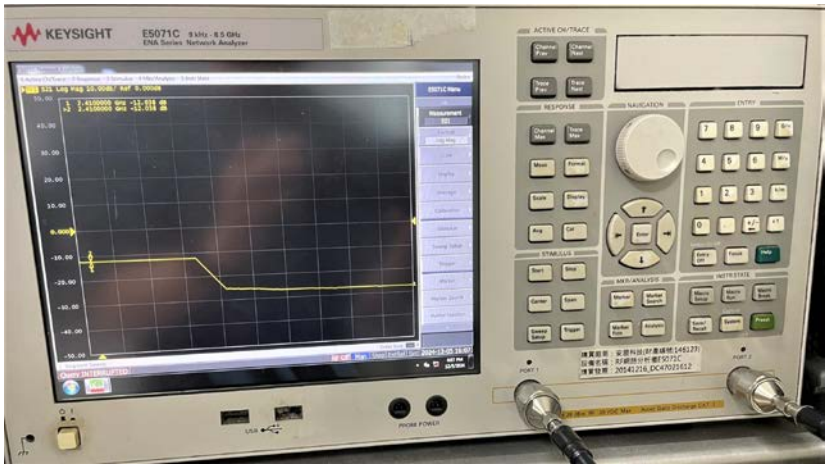
3F-6, No.327, Xuecheng Rd., Sanxia Dist., New Taipei City
237624, Taiwan
www.lynwave.com
+886 2 3501 8700

Equipment – antenna passive measurement

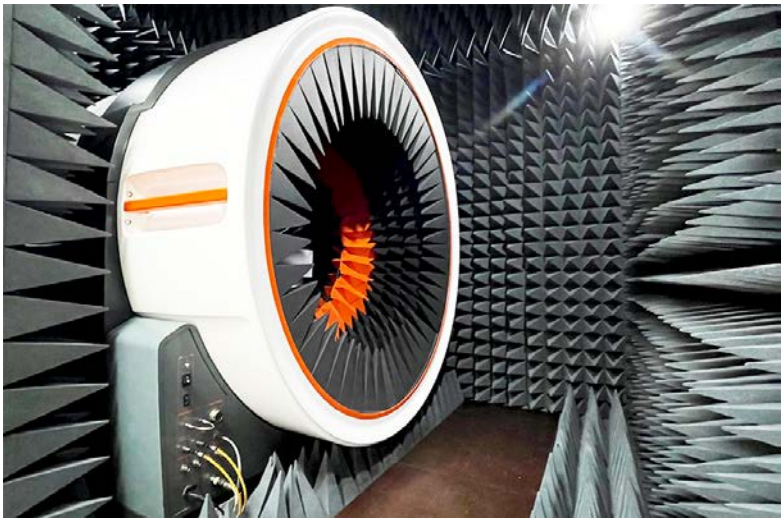
Measurement setup info.



Test equipment: KEYSIGHT E5071C
Correction date: 2024/08/27



Test Chamber:
MVG Satomo Starlab
Correction date:
2024/08/27
Test Procedure :
Wavestudio 22.5.6



3F-6, No.327, Xuecheng Rd., Sanxia Dist., New Taipei City
237624, Taiwan
www.lynwave.com
+886 2 3501 8700

Table of Contents

3F-6, No.327, Xuecheng Rd., Sanxia Dist., New Taipei City
237624, Taiwan
www.lynwave.com
+886 2 3501 8700

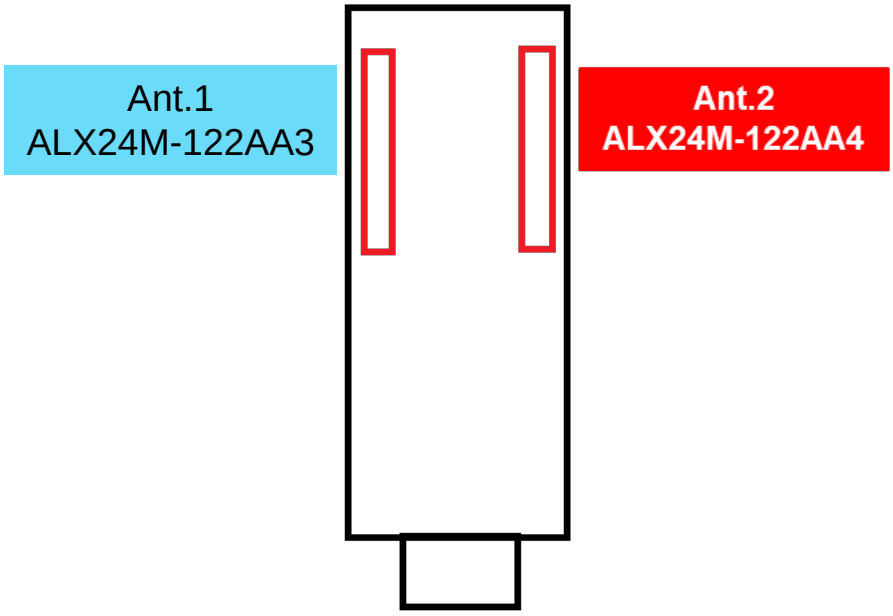
Customer Specification

Ant. No.	Type	Function	Operating Freq.	Radiation Pattern	Connector Type
Ant.1	Metal	Wi-Fi	2400-2500MHz 5150-5850MHz 5925-7125MHz	Omni-directional	IPEX compatible
Ant.2	Metal	Wi-Fi	2400-2500MHz 5150-5850MHz 5925-7125MHz	Omni-directional	IPEX compatible

3F-6, No.327, Xuecheng Rd., Sanxia Dist., New Taipei City
237624, Taiwan
www.lynwave.com
+886 2 3501 8700

Antenna Placement

No.	Function	Material	Frequency(MHz)
Ant.1	Wi-Fi	Metal	2400 – 2500 5150 – 5850 5925 – 7125
Ant.2	Wi-Fi	Metal	2400 – 2500 5150 – 5850 5925 – 7125



3F-6, No.327, Xuecheng Rd., Sanxia Dist., New Taipei City
237624, Taiwan
www.lynwave.com
+886 2 3501 8700

S-Parameters – Ant.1&Ant.2 (Wi-Fi Tri-band)

3F-6, No.327, Xuecheng Rd., Sanxia Dist., New Taipei City
237624, Taiwan
www.lynwave.com
+886 2 3501 8700

Coordinate Definition

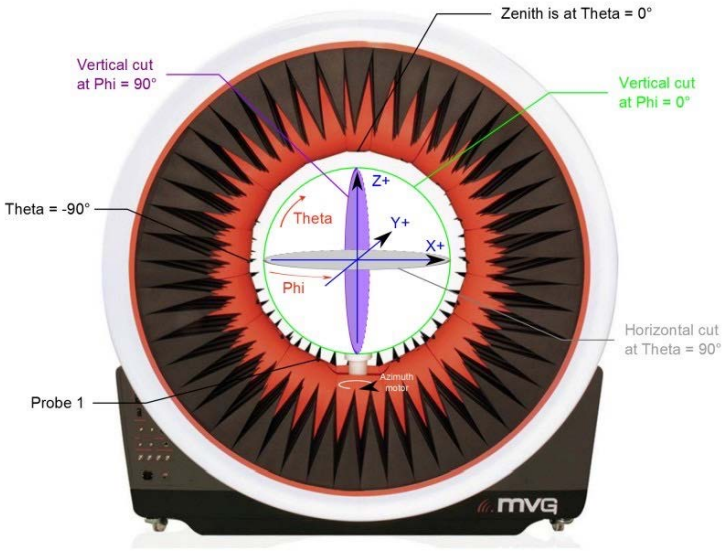
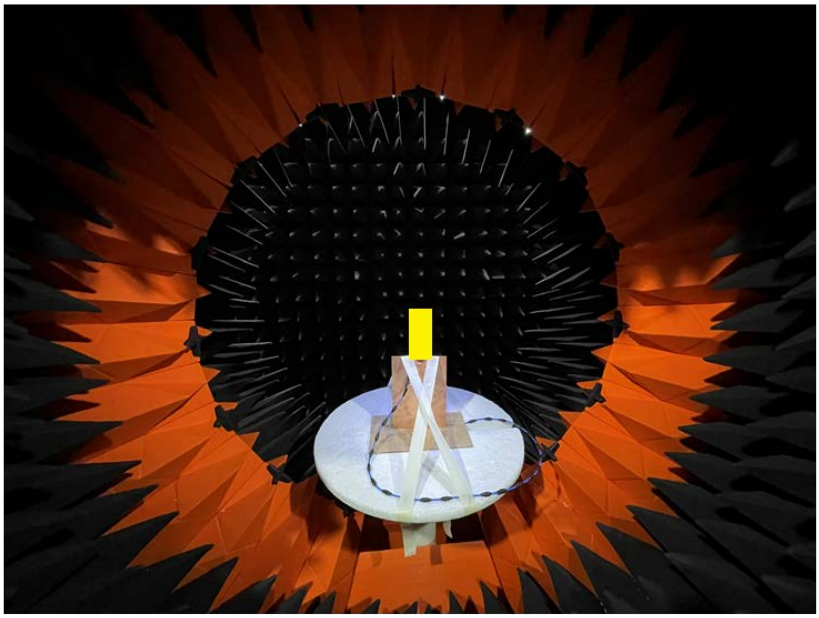
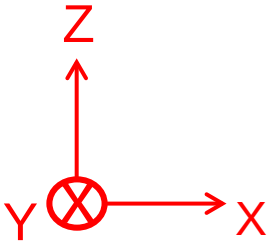


Figure 3.12: StarLab spherical coordinate system





3F-6, No.327, Xuecheng Rd., Sanxia Dist., New Taipei City
237624, Taiwan
www.lynwave.com
+886 2 3501 8700

Gain Table

2.4GHz	Frequency(MHz)	2400	2450	2500
Ant.1	Peak Gain(dBi)	3.2	3.8	3.4
	Efficiency(%)	66	71	69
Ant.2	Peak Gain(dBi)	3.5	3.8	3.3
	Efficiency(%)	66	73	71

5GHz	Frequency(MHz)	5150	5550	5850
Ant.1	Peak Gain(dBi)	2.8	3.2	2.9
	Efficiency(%)	75	76	73
Ant.2	Peak Gain(dBi)	3.1	2.9	3.3
	Efficiency(%)	75	77	74

6GHz	Frequency(MHz)	5925	6525	7125
Ant.1	Peak Gain(dBi)	3.1	4.7	4.6
	Efficiency(%)	76	78	74
Ant.2	Peak Gain(dBi)	4.3	3.5	3.4
	Efficiency(%)	73	76	76

Isolation Table

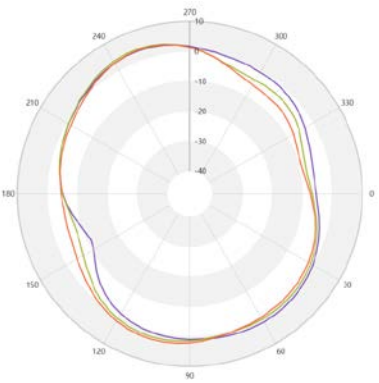
Item	Worst mutual isolation (dB) 2.4GHz Band		Worst mutual isolation (dB) 5GHz Band		Worst mutual isolation (dB) 6GHz Band	
Antenna	Ant.1	Ant.2	Ant.1	Ant.2	Ant.1	Ant.2
Ant.1		-26.9		-16.9		-16.3
Ant.2						

3F-6, No.327, Xuecheng Rd., Sanxia Dist., New Taipei City
237624, Taiwan
www.lynwave.com
+886 2 3501 8700

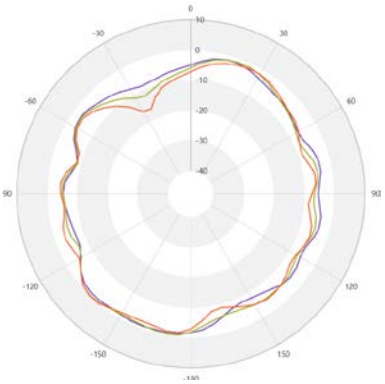
2D Radiation Pattern
Ant.1 (Wi-Fi Tri-band)
Frequency(MHz) : 2400-2500

Radiation Pattern :

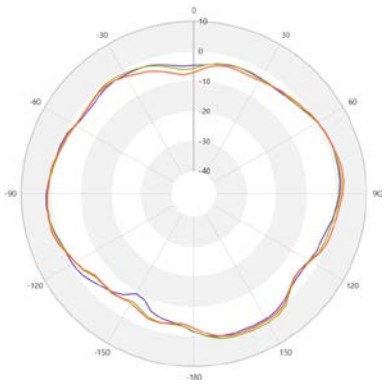
Azimuth Plane
Theta = 90



Elevation Plane
phi = 0



Elevation Plane
phi = 90



2400.00 MHz
2450.00 MHz
2500.00 MHz

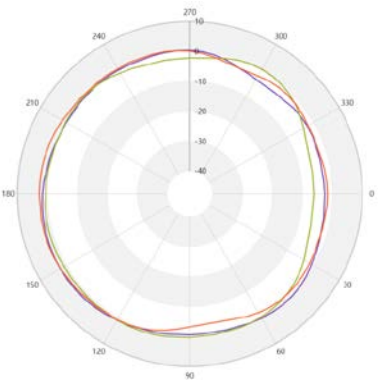
Setup :

3F-6, No.327, Xuecheng Rd., Sanxia Dist., New Taipei City
237624, Taiwan
www.lynwave.com
+886 2 3501 8700

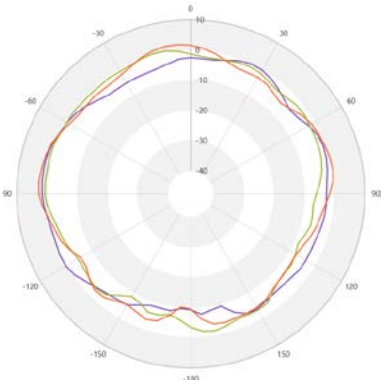
2D Radiation Pattern
Ant.1 (Wi-Fi Tri-band)
Frequency(MHz) : 5150-5850

Radiation Pattern :

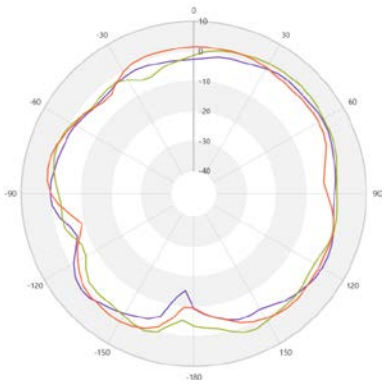
Azimuth Plane
Theta = 90



Elevation Plane
phi = 0



Elevation Plane
phi = 90



5150.00 MHz
5550.00 MHz
5850.00 MHz

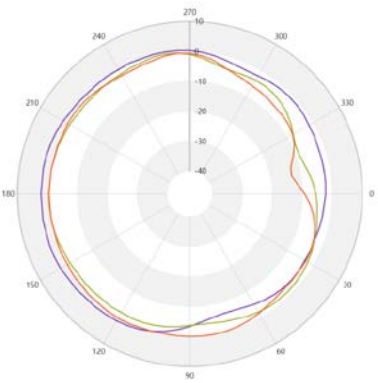
Setup :

3F-6, No.327, Xuecheng Rd., Sanxia Dist., New Taipei City
237624, Taiwan
www.lynwave.com
+886 2 3501 8700

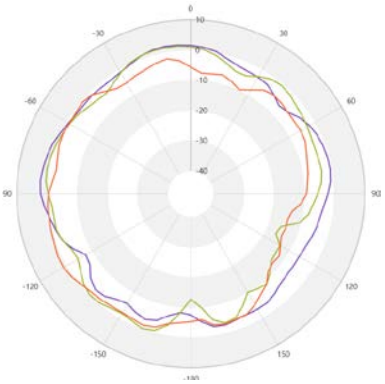
2D Radiation Pattern
Ant.1 (Wi-Fi Tri-band)
Frequency(MHz) : 5925-7125

Radiation Pattern :

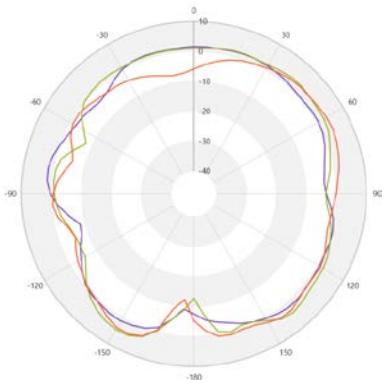
Azimuth Plane
Theta = 90



Elevation Plane
phi = 0



Elevation Plane
phi = 90



5925.00 MHz
6525.00 MHz
7125.00 MHz

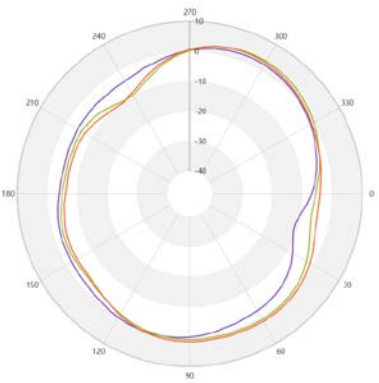
Setup :

3F-6, No.327, Xuecheng Rd., Sanxia Dist., New Taipei City
237624, Taiwan
www.lynwave.com
+886 2 3501 8700

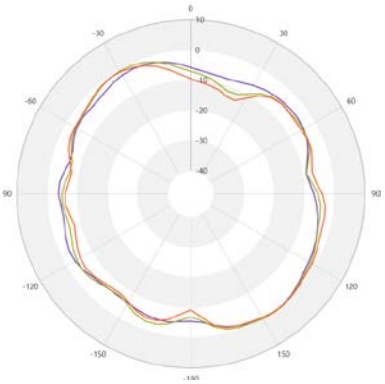
2D Radiation Pattern
Ant.2 (Wi-Fi Tri-band)
Frequency(MHz) : 2400-2500

Radiation Pattern :

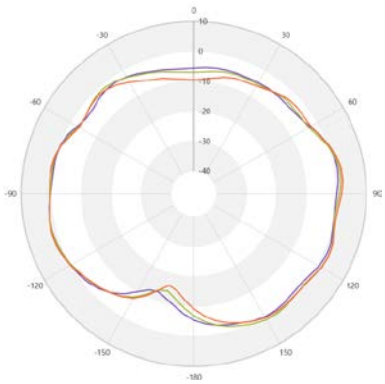
Azimuth Plane
Theta = 90



Elevation Plane
phi = 0



Elevation Plane
phi = 90



2400.00 MHz
2450.00 MHz
2500.00 MHz

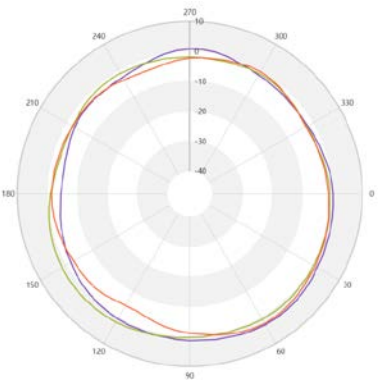
Setup :

3F-6, No.327, Xuecheng Rd., Sanxia Dist., New Taipei City
237624, Taiwan
www.lynwave.com
+886 2 3501 8700

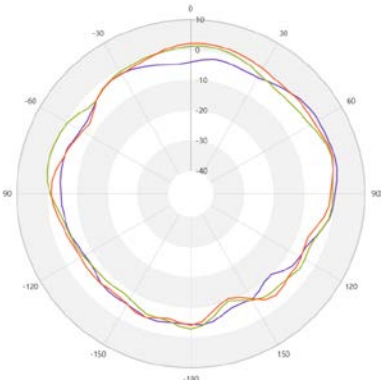
2D Radiation Pattern
Ant.2 (Wi-Fi Tri-band)
Frequency(MHz) : 5150-5850

Radiation Pattern :

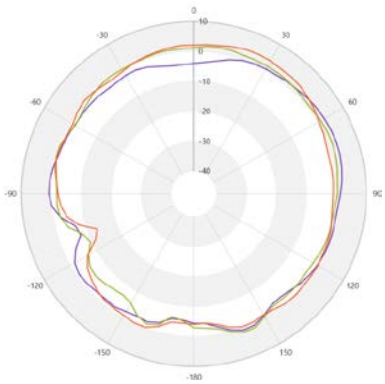
Azimuth Plane
Theta = 90



Elevation Plane
phi = 0



Elevation Plane
phi = 90



5150.00 MHz
5550.00 MHz
5850.00 MHz

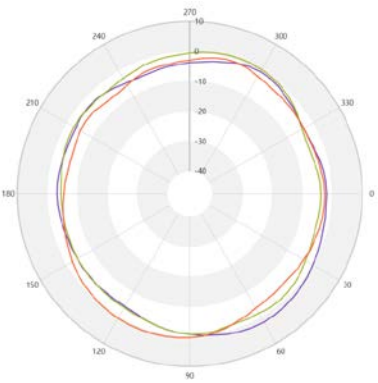
Setup :

3F-6, No.327, Xuecheng Rd., Sanxia Dist., New Taipei City
237624, Taiwan
www.lynwave.com
+886 2 3501 8700

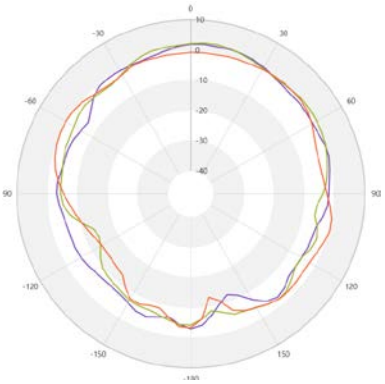
2D Radiation Pattern
Ant.2 (Wi-Fi Tri-band)
Frequency(MHz) : 5925-7125

Radiation Pattern :

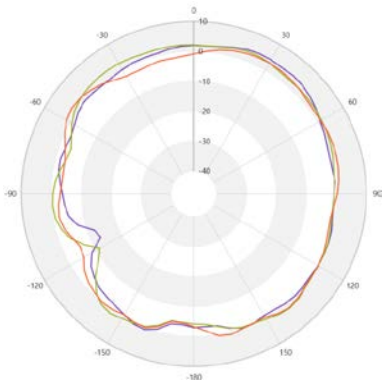
Azimuth Plane
Theta = 90



Elevation Plane
phi = 0



Elevation Plane
phi = 90



5925.00 MHz
6525.00 MHz
7125.00 MHz

Setup :

3F-6, No.327, Xuecheng Rd., Sanxia Dist., New Taipei City
237624, Taiwan
www.lynwave.com
+886 2 3501 8700

www.lynwave.com

https://www.facebook.com/LYNwaveTechnology/

https://www.linkedin.com/company/lynwave-technology-ltd./

https://lynwave.en.alibaba.com/

3F-6, No.327, Xuecheng Rd., Sanxia Dist., New Taipei City
237624, Taiwan
www.lynwave.com
+886 2 3501 8700