



# 產品承認書

## Specification for Approval

客戶 (Customer): 訊舟科技股份有限公司

Customer Part No.:

Product Description: EW-7822UNX

Lynwave Part No.: ALX21M-222AA8-01

客戶簽核 (Customer Approval)

客戶承認 Customer Approval	核准 (Authorized)	檢驗 (Approved)
	日期： 年 月 日	

內部簽核 (Signature)

日期： 2023 年 05 月 16 日

Approved by	Checked by	Tested by
<i>YungMing</i>	<i>Lisa Wei</i>	<i>Zero Chen</i>

綠億科技股份有限公司

**Lynwave Technology Ltd.**

Taiwan: 新北市樹林區學成路 655 號 5 樓

5F., No.655, Xuecheng Rd., Shulin Dist., New Taipei City 238701,

Taiwan Tel: 02-35018700 Fax: 02-35019833

E-mail: service@lynwave.com

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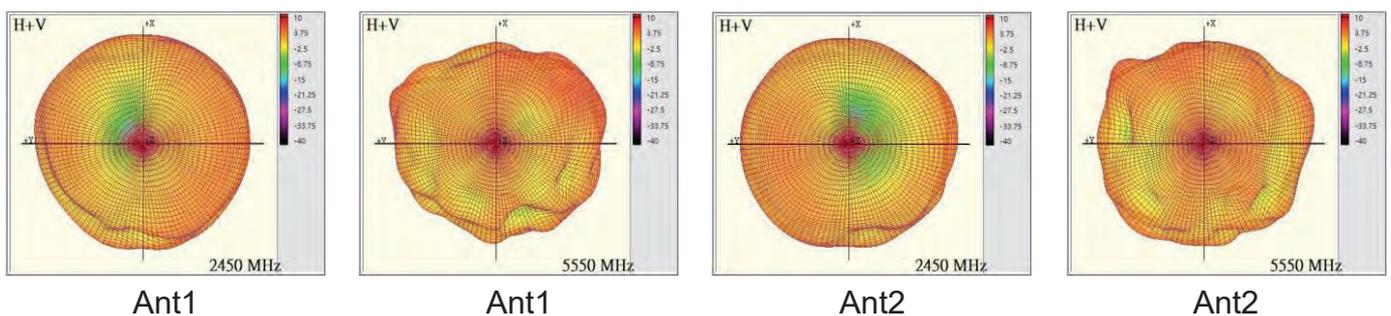
## ALX21M-222AA8-01

### Features

- Dual band IEEE 802.11 a/b/g/n/ac/ax standard
- 2+5GHz indoor embedded Omni-directional antenna
- High efficiency and quick integration

### Applications

- USB Dongle



### Electrical Specification

Category	Specification			
Antenna	1		2	
Frequency (MHz)	2400 - 2500	5150 - 5825	2400 - 2500	5150 - 5825
Peak Gain (dBi)	-0.6	2.6	-0.9	3
VSWR	2.5 : 1			
Polarization	Linear			
Power (Watts)	1			
Impedance (Ohms)	50			
Type	PIFA			

### Mechanical Specification

Category	Specification
Dimension (mm)	12.76 x 9.57 x 4.32
Thickness (mm)	0.3
Weight (g)	TBD
Connector	N/A
Cable	N/A
Cable Length (mm)	N/A
Material	Metal (SUS430)
Operating Temp (°C)	-40°C ~ +85°C
Storage Temp (°C)	23 ± 5°C
Storage Humidity (%)	30% ~ 70%

LYNwave Technology Ltd.  
5F., No. 655, Xuecheng Rd., Shulin Dist.,  
New Taipei City,  
238701, Taiwan

Website: [www.lynwave.com](http://www.lynwave.com)  
Tel: +886 2 3501 8700  
Email: [service@lynwave.com](mailto:service@lynwave.com)



# LYNwave Technology

Antenna & Thermal solution provider

## Antenna Test Report

**Project Name:** EW-7822UNX  
**Model Name:**  
**Feature:** Wifi Dual Band  
**Application:** Dongle

Date	Owner	Revision
01/17	Alex	1. Antenna passive measurement with V1 mockup
02/07	Zino	1. Antenna passive measurement with V1 mockup (new thermal sol.)
05/04	Zino	1. Antenna passive measurement with V2 mockup (without heatsink)
06/23	Zino	1. Antenna passive measurement with T2 mockup
07/06	Zino	1. Add USB GND
07/18	Zino	1. Antenna passive measurement with T3 mockup (Grounding USB)

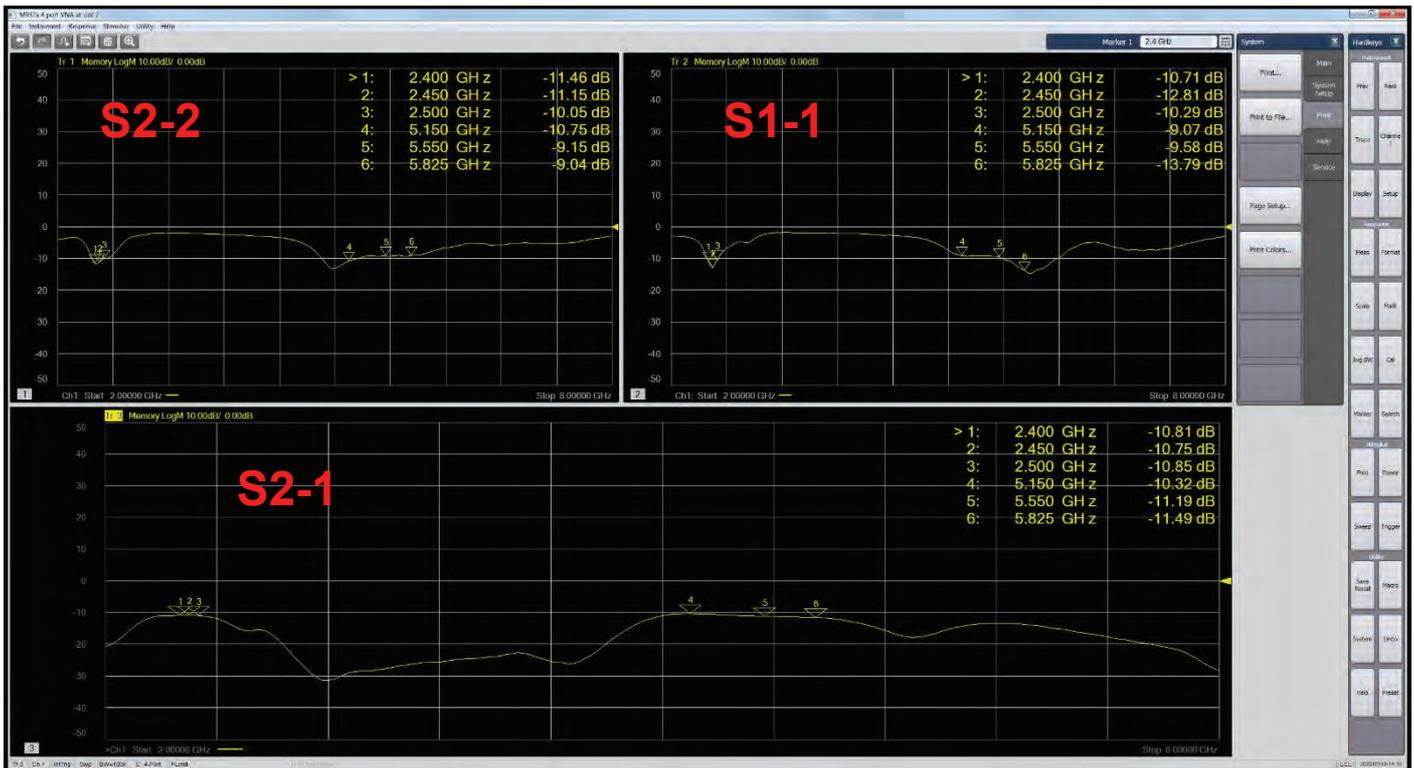
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  - 2. S-Parameters
  - 3. Equipment
  - 4. Gain Table
  - 5. 2D/3D Radiation Pattern
  - 6. Summary

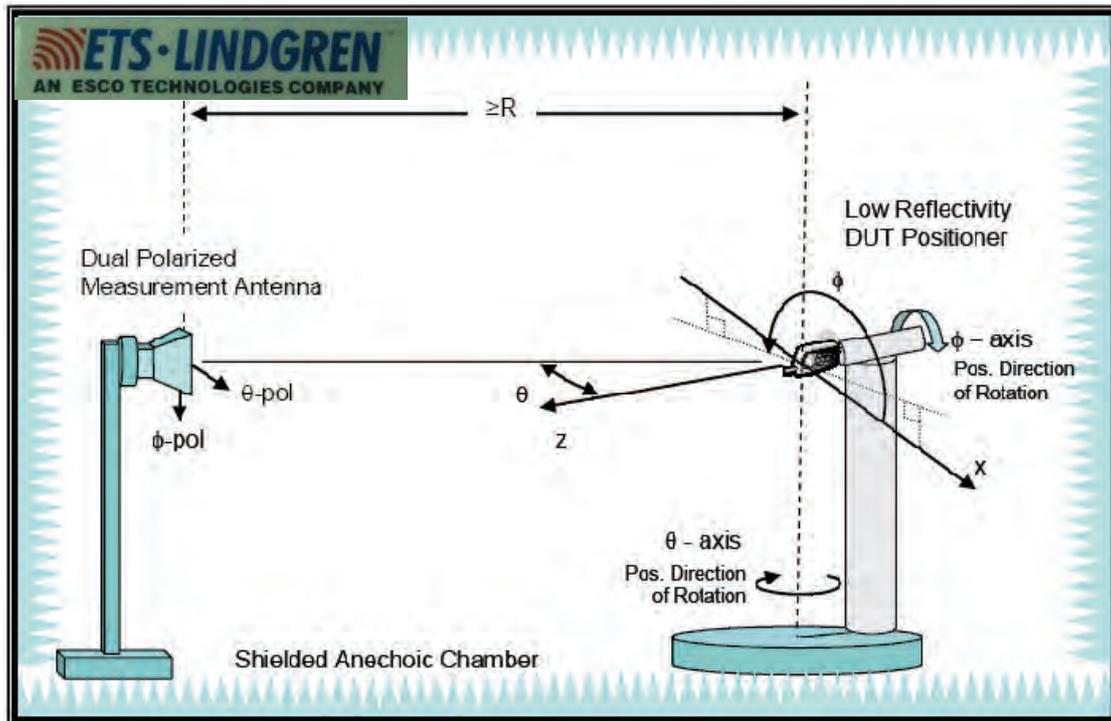
## Antenna Placement

Antenna	Description	Frequency
Ant.1	2.4/5G	2400 MHz ~ 2500 MHz / 5150 MHz ~ 5825 MHz
Ant.2	2.4/5G	2400 MHz ~ 2500 MHz / 5150 MHz ~ 5825 MHz

# S-Parameters



**Equipment :**  
**ETS Chamber**



## Gain Table

Ant.1						
Frequency (MHz)	2400	2450	2500	5150	5550	5825
Efficiency(%)	31	32	33	42	43	42
Peak Gain(dBi)	-1.4	-0.9	-0.6	0.4	1.8	2.6
Ant.2						
Frequency (MHz)	2400	2450	2500	5150	5550	5825
Efficiency(%)	33	33	34	41	43	43
Peak Gain(dBi)	-1.7	-1.1	-0.9	0.5	2.8	3.0

## The antenna characteristics

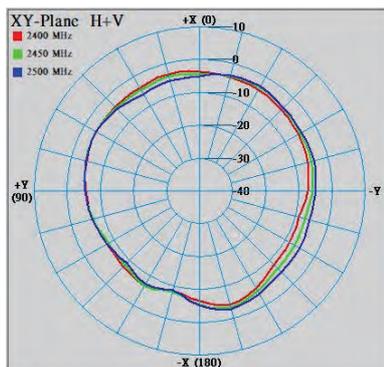
- Return loss < -8dB in operating band
- Isolation
  - All Band > 10 dB
- Efficiency
  - WIFI 2.4GHz Band  $\geq$  30%
  - WIFI 5GHz Band  $\geq$  40%
- Gain
  - WIFI 2.4GHz Band -1.7 ~ -0.6dBi
  - WIFI 5GHz Band 0.4 ~ 3.0dBi

# Ant.1\_ 2D.3D Radiation Pattern

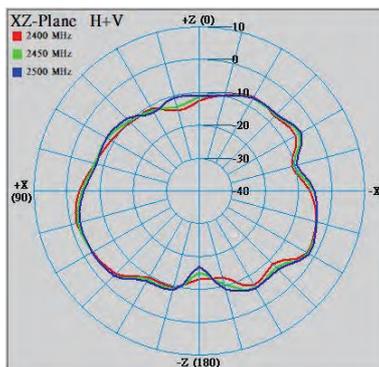
Frequency(MHz) : 2D. 2400~2500  
3D. 2450

Radiation Pattern :

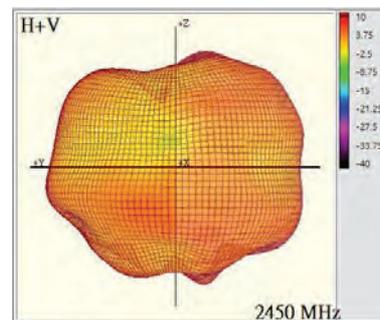
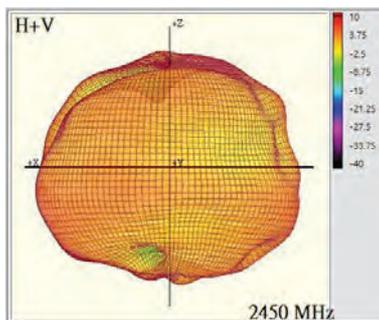
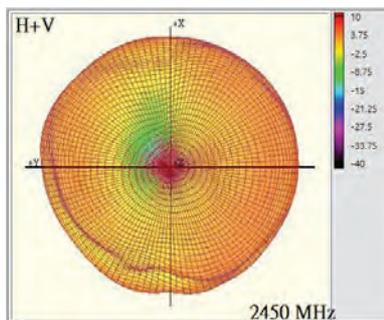
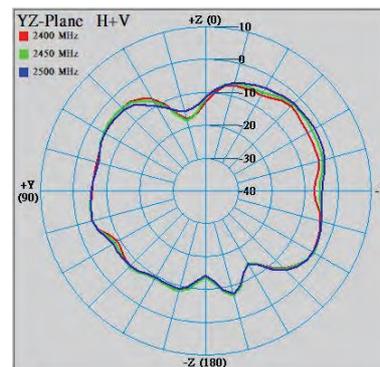
Azimuth Plane



Elevation Plane  
phi = 0



Elevation Plane  
phi = 90

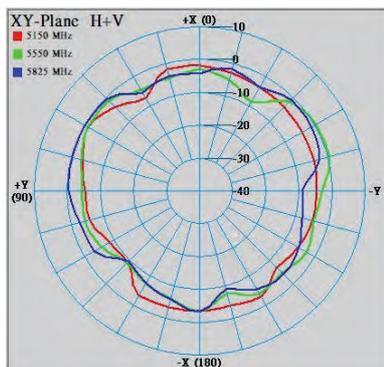


# Ant.1\_ 2D.3D Radiation Pattern

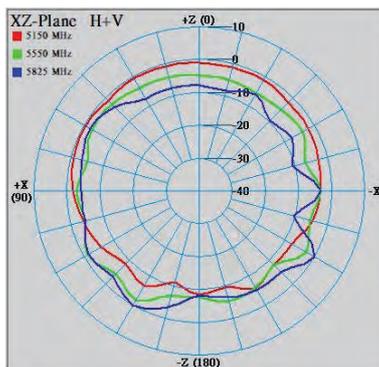
Frequency(MHz) : 2D. 5150~5825  
3D. 5550

Radiation Pattern :

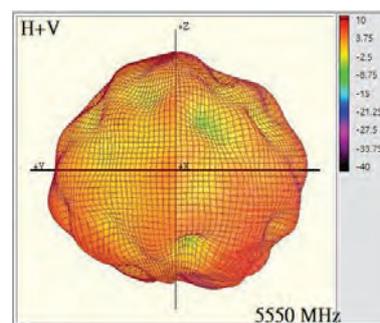
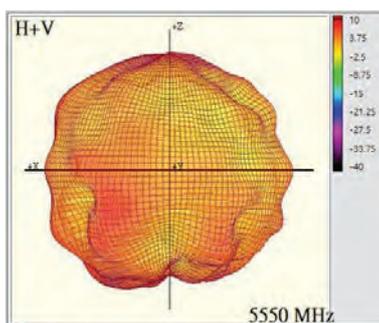
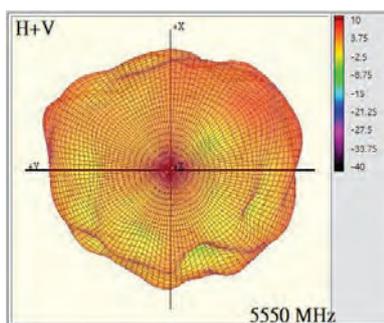
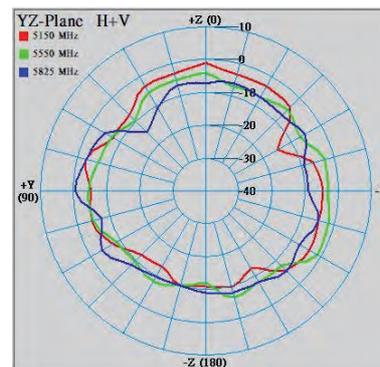
Azimuth Plane



Elevation Plane  
phi = 0



Elevation Plane  
phi = 90

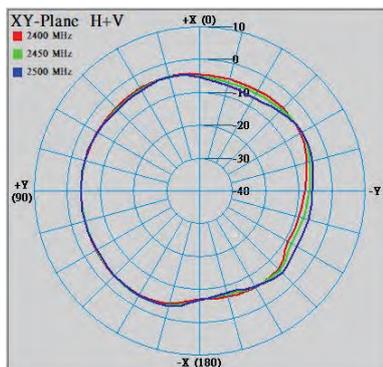


# Ant.2\_ 2D.3D Radiation Pattern

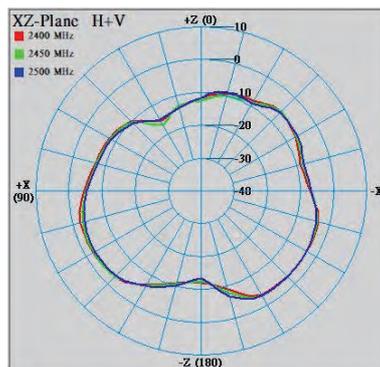
Frequency(MHz) : 2D. 2400~2500  
3D. 2450

Radiation Pattern :

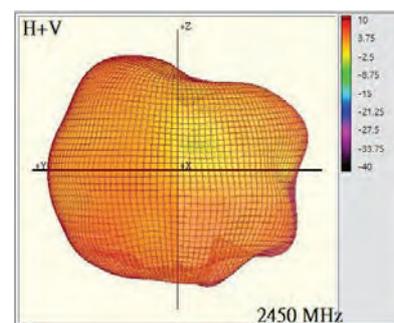
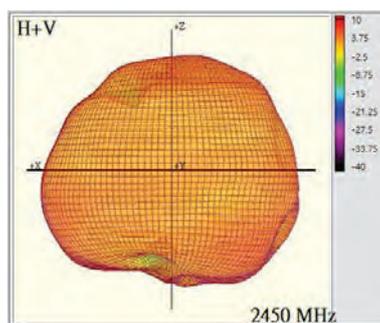
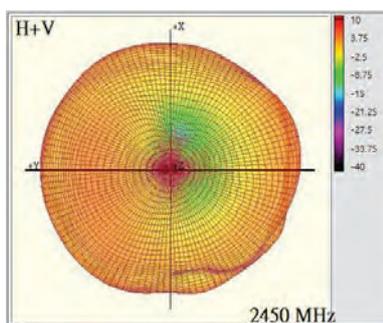
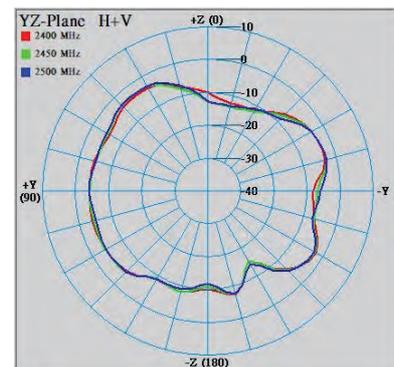
Azimuth Plane



Elevation Plane  
phi = 0



Elevation Plane  
phi = 90

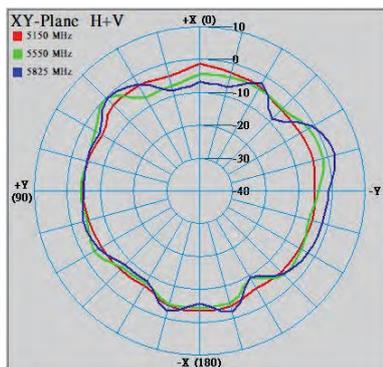


# Ant.2\_ 2D.3D Radiation Pattern

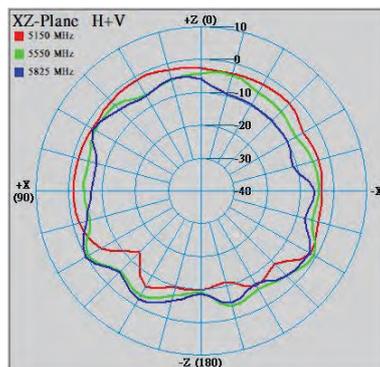
Frequency(MHz) : 2D. 5150~5825  
3D. 5550

Radiation Pattern :

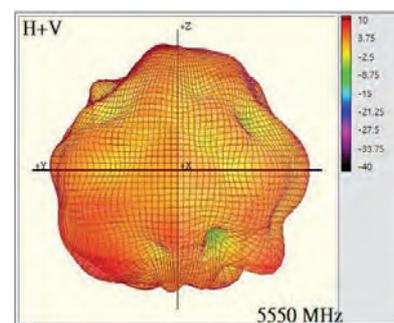
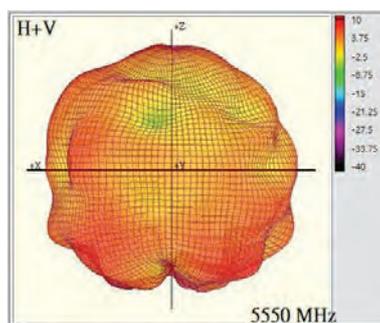
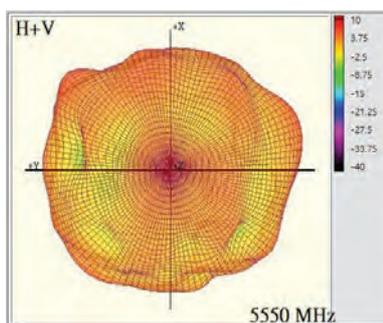
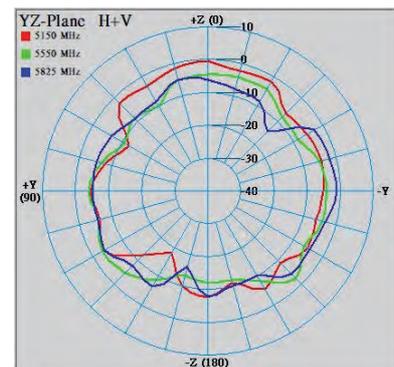
Azimuth Plane



Elevation Plane  
phi = 0



Elevation Plane  
phi = 90



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