



產品承認書

Specification for Approval

客戶 (Customer): 易通展科技股份有限公司

Customer Part No.: MAEAI4120XXW1GV

Product Description: R18(Antenna)

Lynwave Part No.: AOX21X-051048-00

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： 2022 年 02 月 14 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

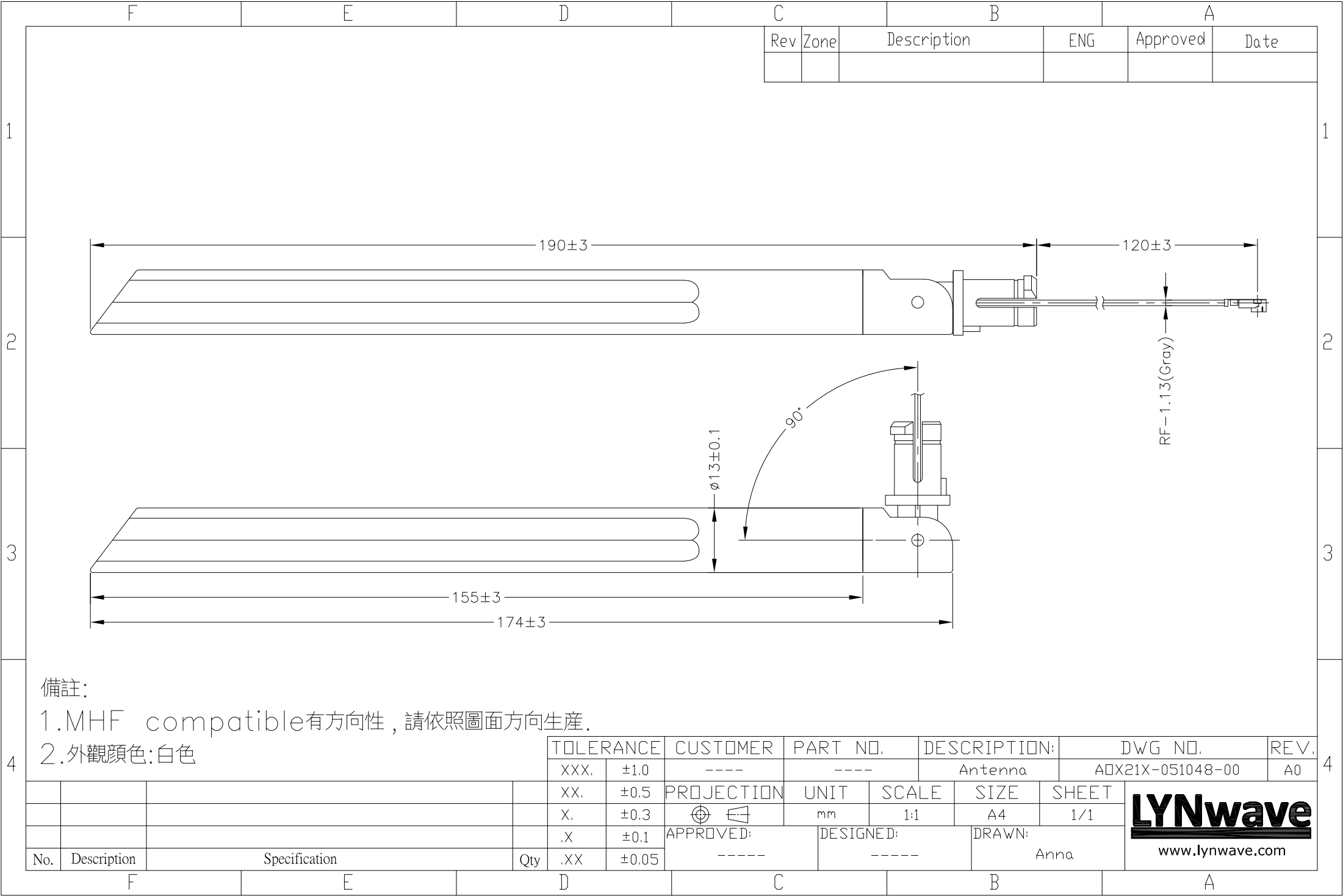
5F., No.655, Xuecheng Rd., Shulin Dist., New Taipei City 238701,

Taiwan Tel: 02-35018700 Fax: 02-35019833

E-mail: service@lynwave.com

Contents

Item	Description	Page
1.	Cover	1
2.	Contents	2
3.	Drawing	3
4.	Test report	4~21
5.	Other	22~27

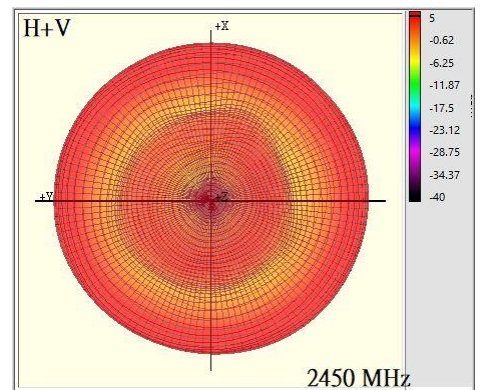


Features

- Single band IEEE 802.11 b/g/n/ax standard
- Case mounting or on board mount
- High efficiency
- Quick integration

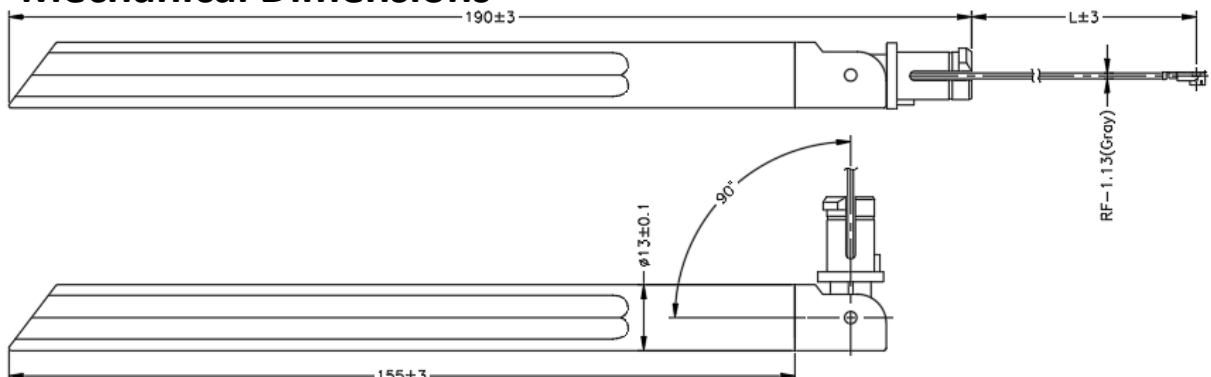
Specification(Preliminary)

Frequency (MHz)	2400 ~ 2500
Peak Gain (dBi)	4.8
VSWR	2.0:1
Power (Watts)	1
Impedance (Ohms)	50
Dimension (mm)	Ø13 x 190
Color	White
Connector	MHF compatible
Cable length (mm)	120
Operating Temp (°C)	-40°C ~ +85°C



2.45GHz

Mechanical Dimensions



LYNwave Technology

Antenna & Thermal solution provider

Antenna Test Report

Project Name: R18

Model Name:

Feature: 2.4G/5G

Application: WiFi AP

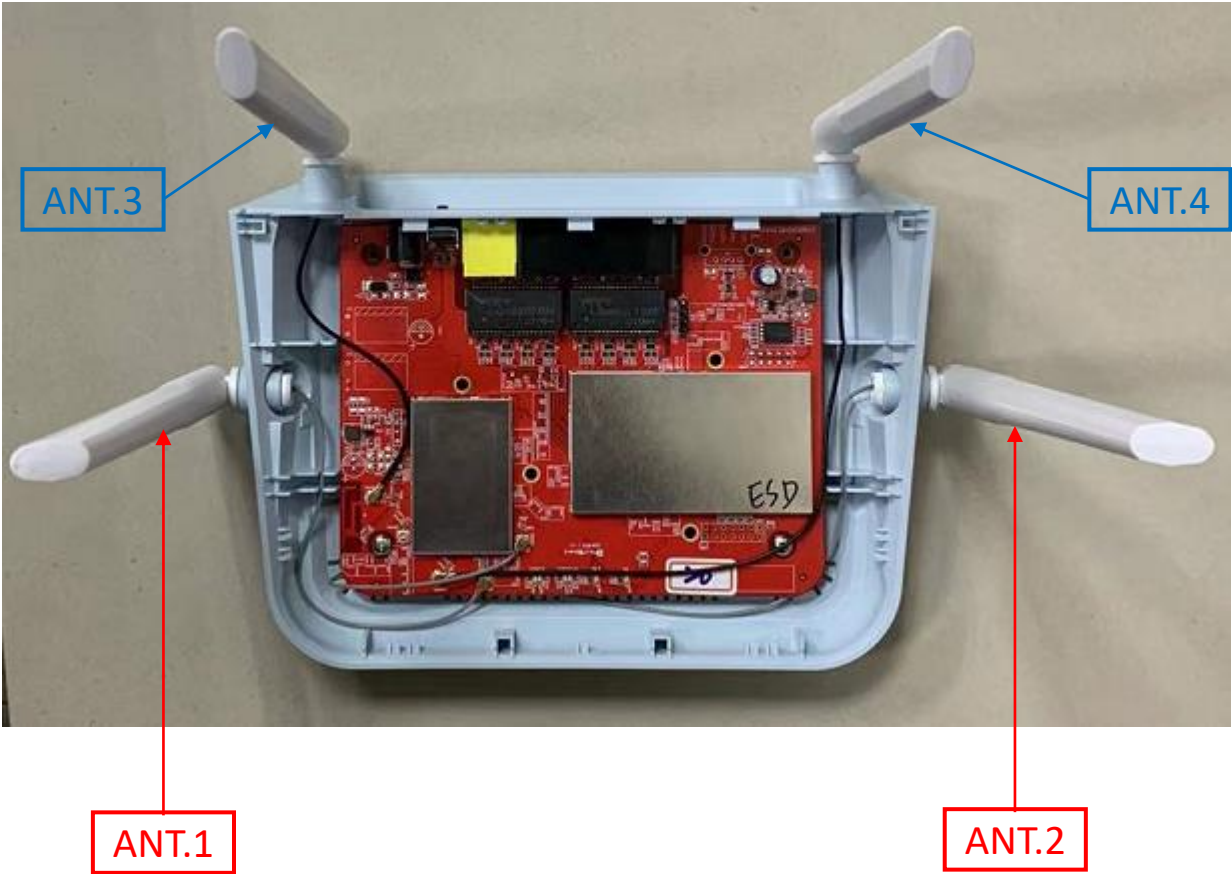
Date	Owner	Revision
11/23	Zino	1. V1 , test

Table of Contents

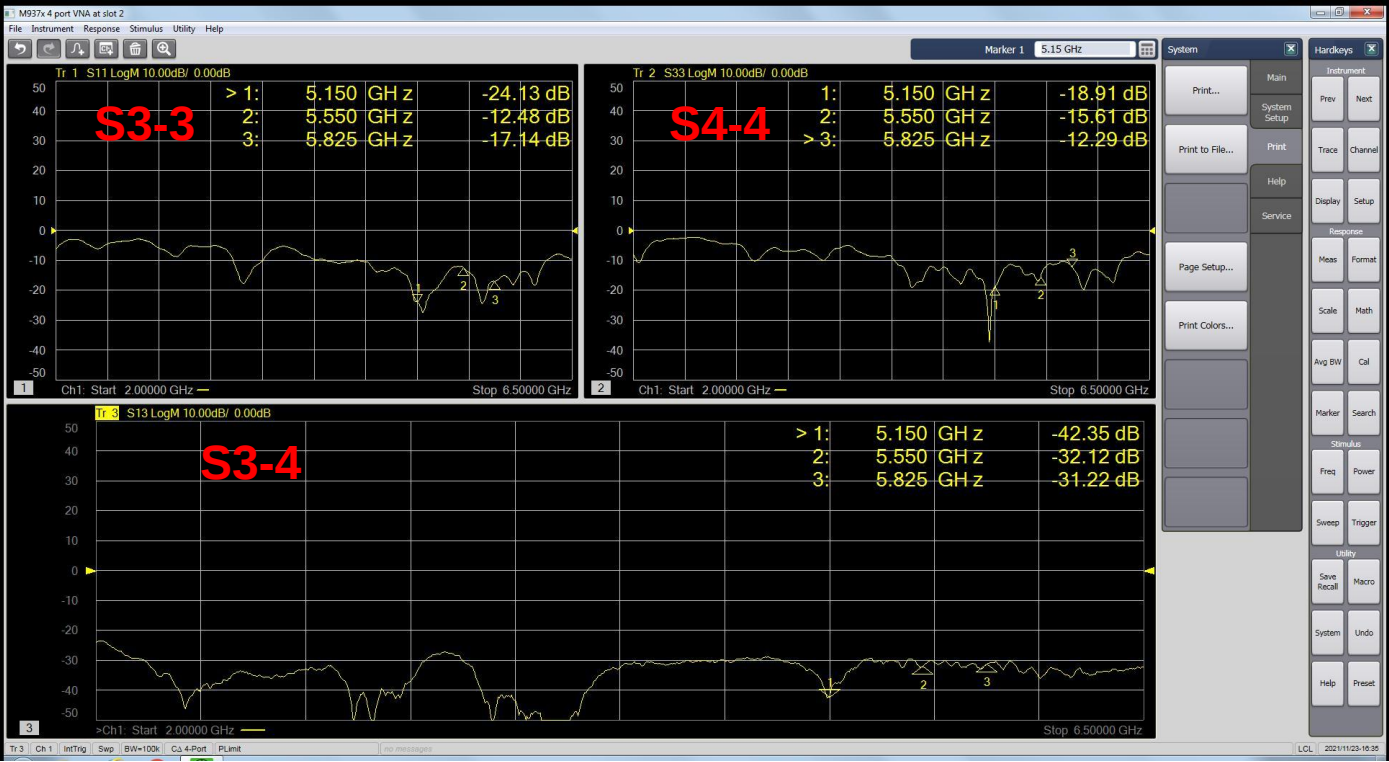
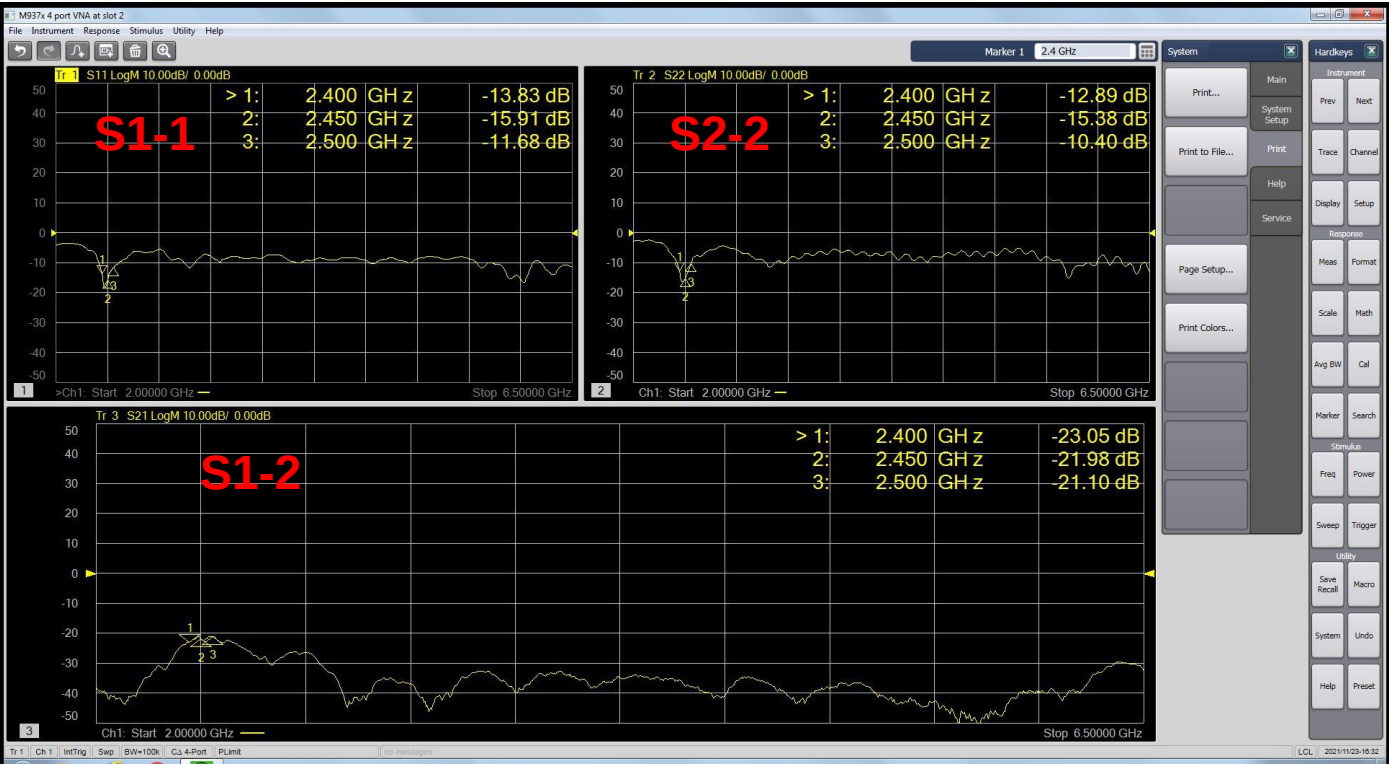
- A. Antenna RF Characteristics
 - 1. Antenna Placement
 - 2. S-Parameters
 - 3. Equipment
 - 4. Gain Table
 - 5. 2D/3D Radiation Pattern
 - 6. Summary

Antenna Placement

Antenna	Description	Frequency
Ant.1	Single 2.4G	2400 MHz ~ 2500 MHz
Ant.2	Single 2.4G	2400 MHz ~ 2500 MHz
Ant.3	Single 5G	5150 MHz ~ 5825 MHz
Ant.4	Single 5G	5150 MHz ~ 5825 MHz



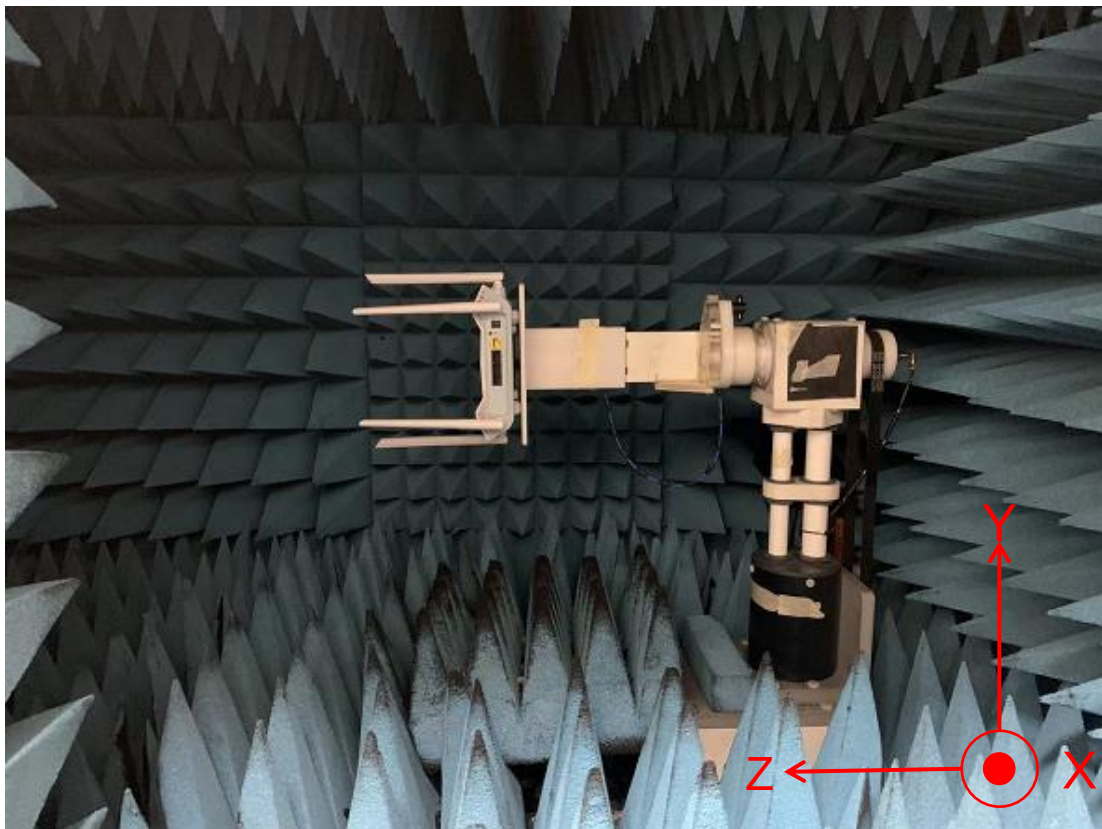
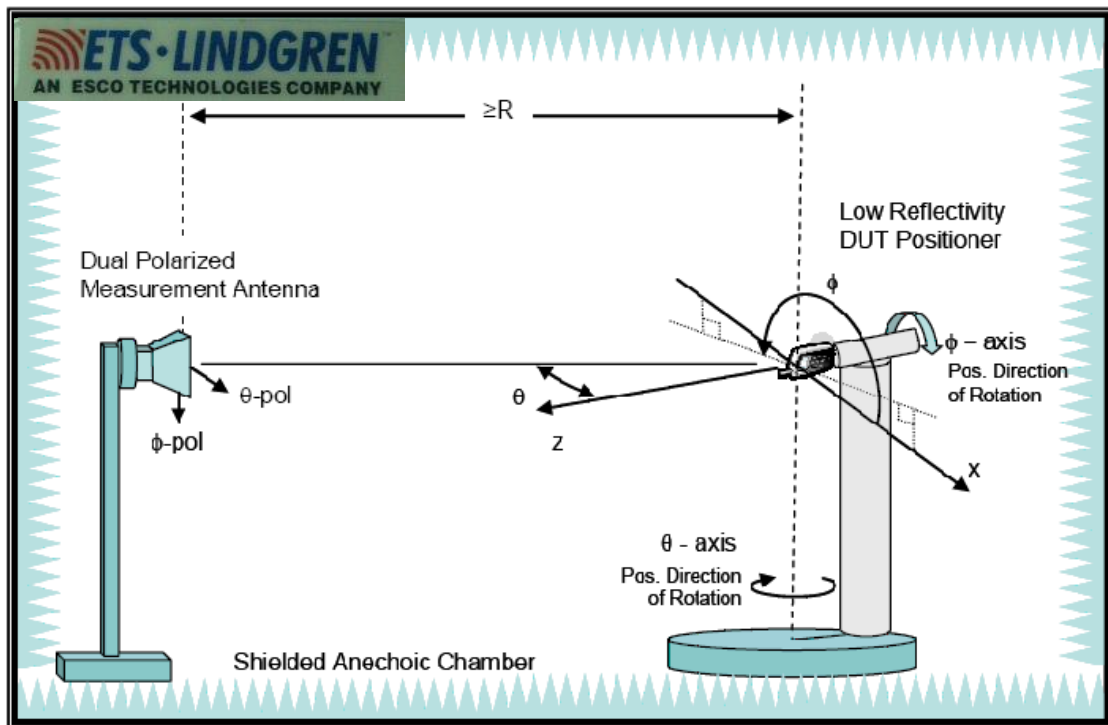
S-Parameters



S-Parameters



Equipment : ETS Chamber



Gain Table

Ant.1			
Frequency (MHz)	2400	2450	2500
Efficiency(%)	73	75	71
Peak Gain(dBi)	4.1	4.6	4.4
Ant.2			
Frequency (MHz)	2400	2450	2500
Efficiency(%)	72	74	70
Peak Gain(dBi)	3.9	4.2	4.0
Ant.3			
Frequency (MHz)	5150	5550	5825
Efficiency(%)	75	74	72
Peak Gain(dBi)	4.5	5.0	4.9
Ant.4			
Frequency (MHz)	5150	5550	5825
Efficiency(%)	73	76	75
Peak Gain(dBi)	4.6	4.8	4.4

The antenna characteristics

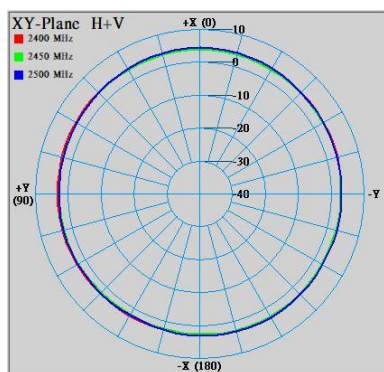
- Return loss < -10dB in operating band
- Isolation
 - All Band > 20 dB
- Efficiency
 - WIFI 2.4 GHz Band $\geq 70\%$
 - WIFI 5 GHz Band $\geq 70\%$
- Gain
 - WIFI 2.4 GHz Band 3.9~4.6dBi
 - WIFI 5 GHz Band 4.4~5.0dBi

Ant.1_2.4GHz 2D.3D Radiation Pattern

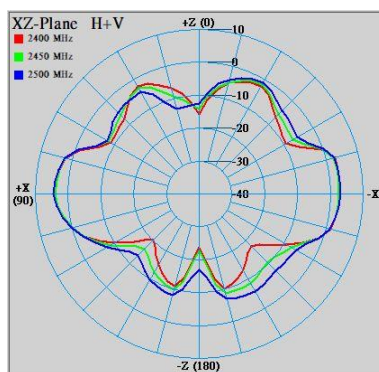
Frequency(MHz) : 2D. 2400~2500
3D. 2450

Radiation Pattern :

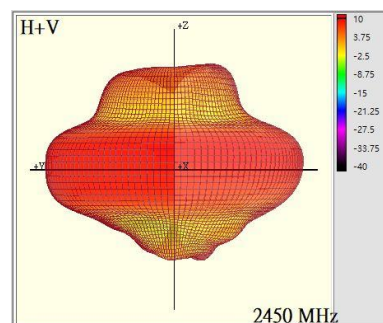
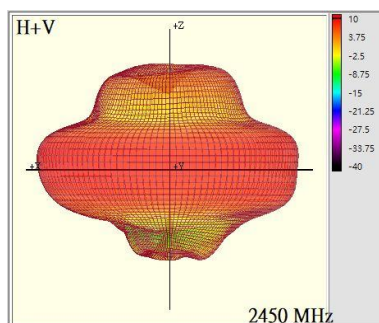
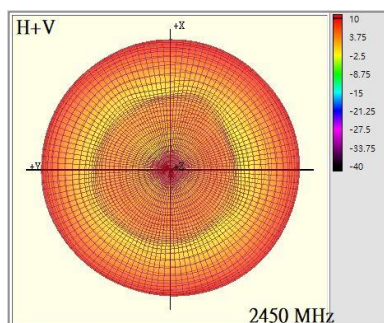
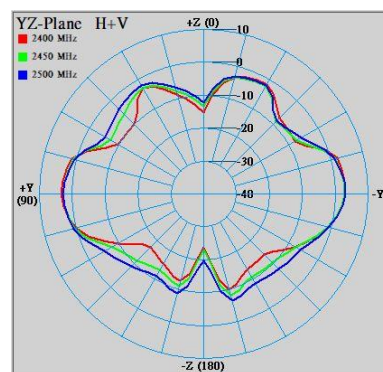
Azimuth Plane



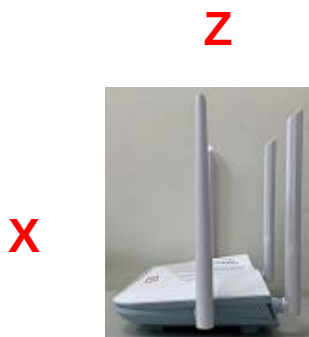
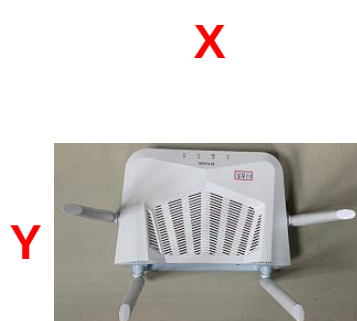
Elevation Plane
phi = 0



Elevation Plane
phi = 90



Setup :

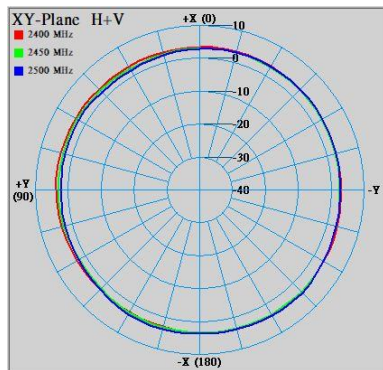


Ant.2_2.4GHz 2D.3D Radiation Pattern

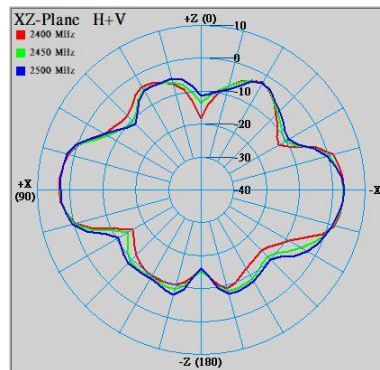
Frequency(MHz) : 2D. 2400~2500
3D. 2450

Radiation Pattern :

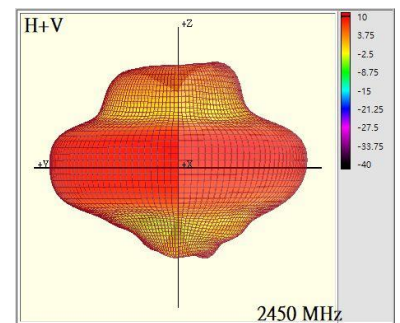
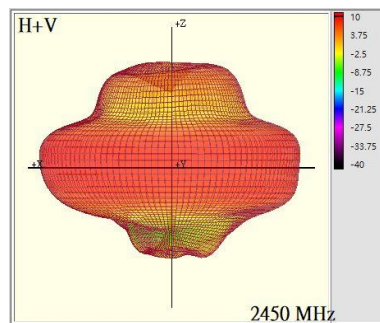
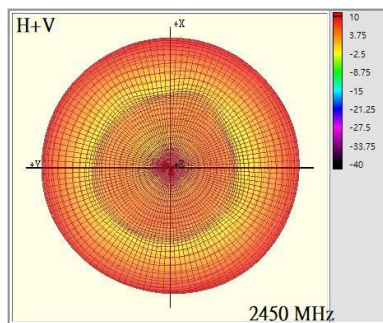
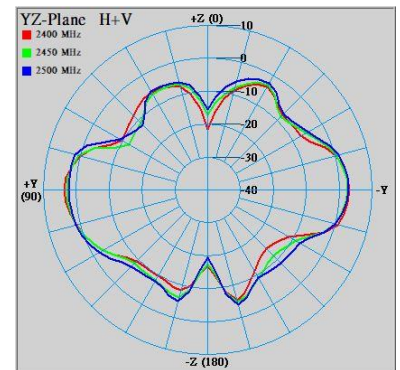
Azimuth Plane



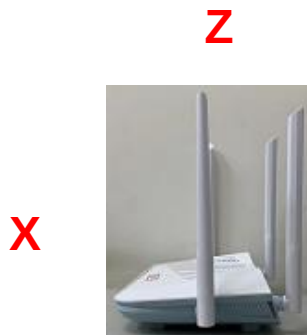
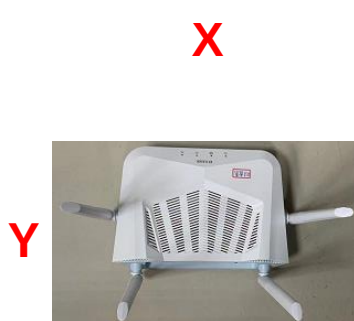
Elevation Plane
phi = 0



Elevation Plane
phi = 90



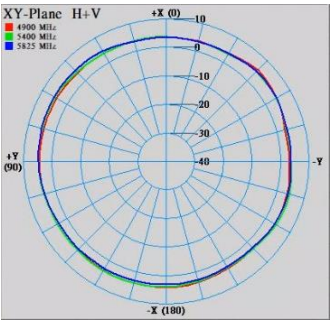
Setup :



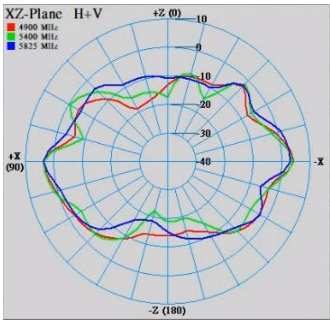
Ant.3_5GHz 2D.3D Radiation Pattern
Frequency(MHz) : 2D. 5150~5825
3D. 5550

Radiation Pattern :

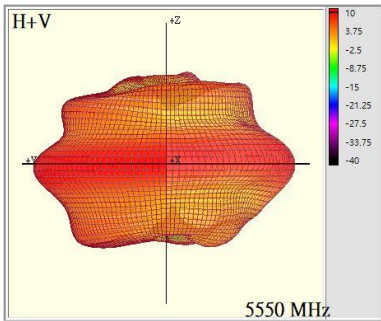
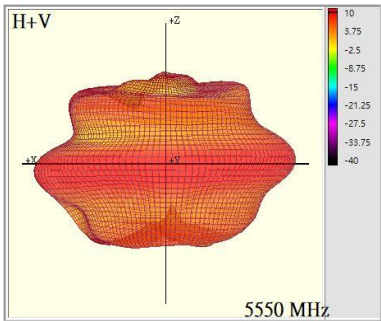
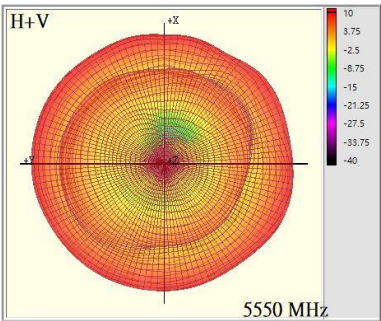
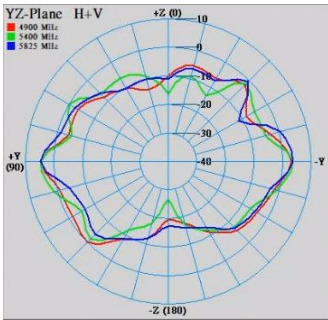
Azimuth Plane



Elevation Plane
 $\phi = 0$



Elevation Plane
 $\phi = 90$



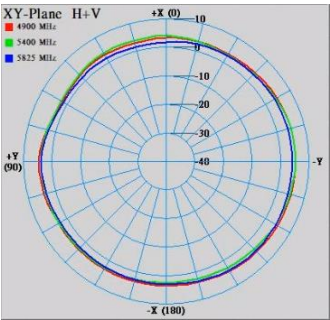
Setup :



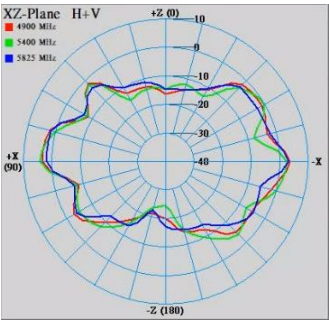
Ant.4_5GHz 2D.3D Radiation Pattern
Frequency(MHz) : 2D. 5150~5825
3D. 5550

Radiation Pattern :

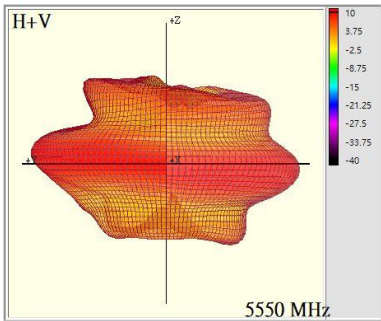
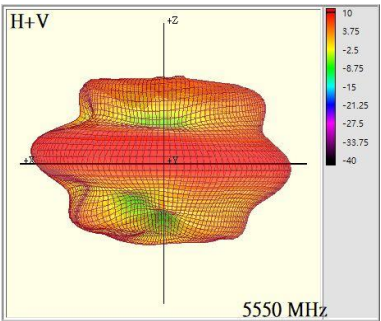
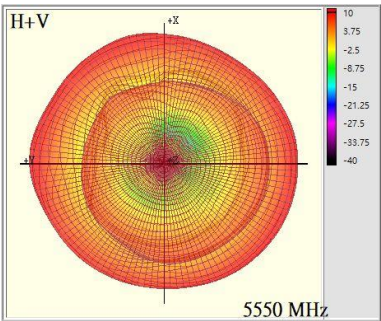
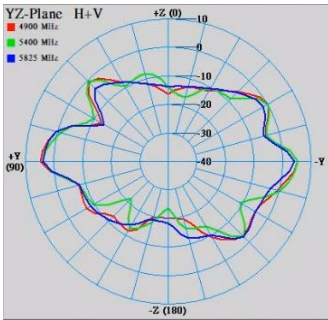
Azimuth Plane



Elevation Plane
 $\phi = 0$



Elevation Plane
 $\phi = 90$



Setup :



Summary

- The antenna test is finish ◦

www.lynwave.com



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



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

熔體流動測試報告

部門	注塑			圖面版本	/版	
料號	六脚刀鋒天线			測試日期	2021/8/20	
模號				塑膠材質	TPEE	
穴號 / 穴數				荷重 kg	2.16	
設定溫度℃	260			烘烤時間H	烘烤時間2H, 烘烤溫度120℃	
測試結果 (單位:g/10min)	MI值規格	第一次切料	第二次切料	第三次切料	MI平均值	判定
	≦20	14.6	15.0	15.4	15.00	OK
測試照片	(第一次切料)					
						
	(第二次切料)					
						
	(第三次切料)					
						
备注：测试样品由QC提供						
測試判定	■合格 □不合格		主管審核		測試者	
			向继江		杨辉丽	

冰醋酸試驗報告

生产部门	注塑	試驗日期	2021/8/20
品名規格	六脚刀锋天线	綜合判定	OK
零件編碼			

試驗目的： ☐ 新產品開發試驗 ☐ 設計變更試驗
☒ 量產追蹤試驗 ☐ 其他特殊需求試驗

設備名稱： 冰醋酸 99.5%

試驗規格： 浸泡冰醋酸3分鐘後，用清水沖洗乾淨，用20倍放大鏡全檢不可破裂

試驗時間： 3 分鐘

試驗數量： 3PCS



试验前产品状态



试验后产品状态

Sample	外觀檢驗	判定
1	無破裂	OK
2	無破裂	OK
3	無破裂	OK

補充說明：

測試樣品由QC提供.

核 准	张昊	確 認	向继平	製表	杨辉丽
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落球試驗報告

日期：2021/8/20

生产部门	注塑	試驗數量	3pcs
零件編號	上下固	沖擊值	7.056（根据ASTM D2463）
落球重量	1000g	模穴號	
落球高度	0.9m	綜合判定	OK
测试条件	落球测试机。落球重1KG, 高度0.9M, 冲击值7.056（根据ASTM D2463）		
試驗要求	鉚釘孔兩側各落球3次, 再用20倍放大鏡檢查，不可破裂（斷面光滑的裂痕）。		
測試結果	鉚釘孔兩側各落球3次后，用20倍放大鏡檢查無破裂（無斷面光滑的裂痕）。		
試驗圖片 (示意圖)	（以长管状物固定落球冲击点） 測試前圖片 測試后圖片（无破裂）   		
測試結果	樣品編號	是否破裂，是否有斷面光滑的脆裂	判定
	1	無破裂，無斷面光滑的脆裂。	OK
	2	無破裂，無斷面光滑的脆裂。	OK
	3	無破裂，無斷面光滑的脆裂。	OK
備注： 測試樣品由QC提供。			
核准： 张昊		審核：向继平	制表： 王国英

實照



实际生产地&零件单重

生产地	零件	材质	单重
广东东莞	杆套	TPEE	9.530g
广东东莞	上固	PC+PBT	1.867g
广东东莞	下固	PC+PBT	1.449g
广东东莞	铆钉	POM	0.025g

Antenna 成品編碼原則

共 14 碼

X X X X X X - X X X X X X - X X

① ② ③ ④~⑤ ⑥ ⑦~⑧ ⑨ ⑩~⑪ ⑫ 【⑬~⑭】←2017 年改為最後二碼流水號

E.g.

ALA120-092031-125055

ALA150-051020-000000

ALX17P-051XX0-00

ALX18M-221AA0-00

AEX19P-051AA0-00

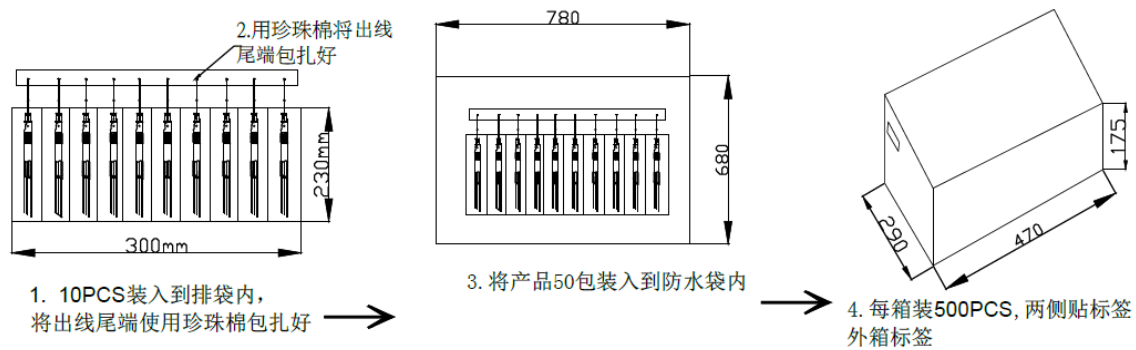
Number	Item
①	Product category A – Antenna C – Cable Assembly → 另有 Cable Assembly 編碼原則 S – Smart antenna M – Module I – Integration system O – Outdoor antenna (e.g. Patch)
②	Research and development L – Lynwave O – Purchased E – OEM
③	應用類別碼 X –
④~⑤	Years 取西元的末 2 碼, 例: 2018 年取 “18”
⑥	Antenna Material P – PCB F – FPCB M – Metal X – Other

⑦~⑧	Frequency band 01 – LTE (791~960MHz,1710~2170MHz,2500~2690MHz) 02 – LoRa (780~1020 MHz) 03 – Z-wave (868~915MHz) 04 – DECT (1880~1920MHz) 05 – 11 b / g / n (2400~2500MHz) 06 –低頻 (470~510MHz) 07 – 2G/3G (868~960MHz,1710~2170MHz) 08 – 13.56MHz 09 – 11 a / n / ac / ax (5150~5825MHz) 10 – GPS (1575MHz) 、 (1565~1585MHz) 11 –其他 (e.g.RFID) 12 – Numerous Frequency band 15 – 5GNR 16 – WiFi 6E (5950~7225MHz) 21 – GSM+IMT (880/920/960MHz,1920/2000/2170MHz) 22 – 11 a / b / g / n / ac / ax (2400~2500MHz+5150~5825MHz) 23 – GPRS (850/900/1800/1900MHz)
⑨	Antenna type 0 – Monopole 1 – Dipole 2 – PIFA 3 – Loop 4 – Chip 5 – Coil 6 – Numerous types 7 – Patch
⑩~⑪	Antenna gain XX – Embedded 及 Other product 適用 → 僅 2017 年使用 目前不使用 AA – Embedded 及 Other product 適用 ----- ↓ 以下 patch 及 外接 dipole 適用 01 – 1 dBi 02 – 2 dBi …以此類推
⑫	流水號 (主體不同時) 0 ~ 9 ~ A ~ Z (不使用 I 與 O) , 共 34 碼可用
⑬~⑭	流水號 (線材/輔料不同時) 00~99

水口料比例如下：

水口料比例		
材料	原料	水口
POM	100%	0%
TPEE	100%	0%
PC+PBT	100%	0%

包裝規範書

產品名稱	Dipole天線	客戶名稱		版次	A
綠億料號		客戶料號		製作日期	2021/8/5
產品包裝說明		產品包裝圖示			
一、包裝： (1)10 pcs/排袋 (2)將出線尾端使用珍珠棉包紮好 (3)將50包裝入到防水袋內 (4)每箱500 pcs 二、裝箱： (1)每箱50袋 (2)外箱須貼外箱標籤 (3)封箱並用打包袋固定 註: 以實際裝箱數量為準		 1. 10PCS裝入到排袋內，將出線尾端使用珍珠棉包紮好 2. 用珍珠棉將出線尾端包紮好 3. 將產品50包裝入到防水袋內 4. 每箱裝500PCS, 兩側貼標籤外箱標籤			

核准：徐永銘

審核：張良鉅

製表：魏詩怡