

# APPROVAL SHEET

**PCB ANTENNA**

**2.4~2.5/5.15~5.85GHz Working Frequency**

**Halogens Free Product**

**P/N: RFPCA310710EMLB301**

Customer : 振曜

Customer 's Part No. : 5063-E70P20+710

Production : \_\_\_\_\_

Address : \_\_\_\_\_

佳邦科技股份有限公司

2022.10.18

天線事業部承認書專用




品名：RFPCA310710EMLB301

1. Explanation of part number :

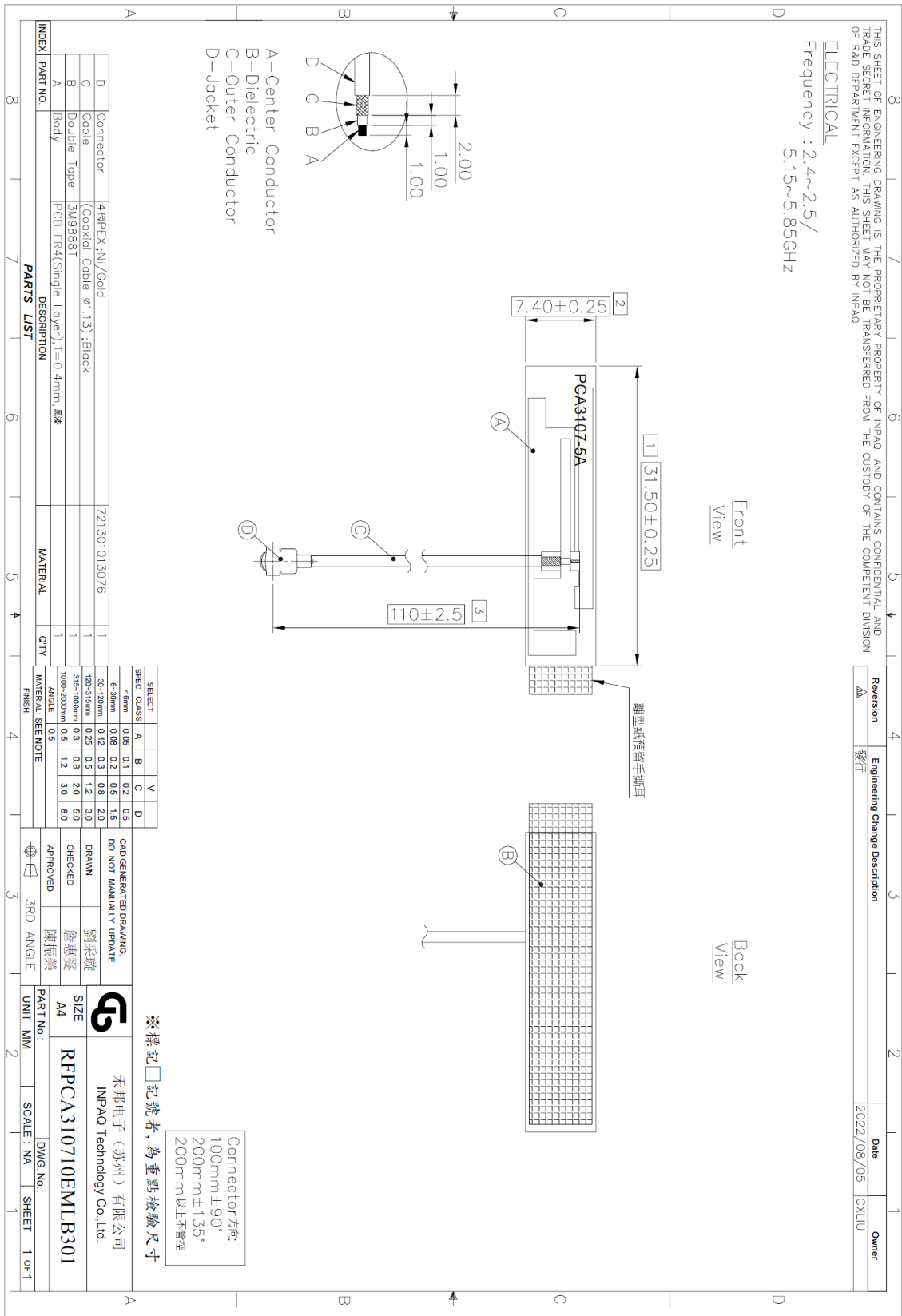
RF	PCA	3107	10	E	M	L	B	3	01
Type Code	Product Code	Connector Dimension (Unit: mm)	Cable Length (unit: cm)	Connector Brand	Type of Connector	Application	Project status	Wire Diameter	Project
RF Device	PCA: PCB Antenna	Per 2 digits of length, width e.g.: 3107 Length 31.5mm, Width 7.4mm	2 digits for cable length e.g.: 11 Length 11cm	A: N C:MCX D:IPEX III E: IPEX IV F: IPEX A13 H: Hirose I: IPEX M: MMCX S: SMA T: TNC U:MURATA N: None	A: Reverse Female B: Reverse Male F: Female M: Male N: None	0: 0GHz 3: 3GHz 5: 5 GHz 6: 6GHz A: 2.4GHz ISM band B: GSM 900/1800 dual band G: GPS band L: 2.4/5.x GHz tri-band N: NFC T:LTE band W: WCDMA band	B: MP T:During Test X: Pile Run	0:None 1:Ø0.81 2:Ø1.32 3:Ø1.13 4:Low Loss Ø1.13 5:Ø0.50 6:RG316 7:Ø1.37 8:RG178 9:Low Loss Ø1.37 A:RG174 E : RG405	01~99 series number

2. Electrical Specification :


Item	Specification
Frequency Range	2.4~2.5/5.15~5.85GHz
Peak Gain	2.64 dBi @2.4~2.5GHz 5.72 dBi@5.15~5.85GHz
Return Loss	-10dB(Max)
VSWR	2 max.
Polarization	Linear
Radiation Pattern	Omni-directional
Impedance	50Ω
Operation Temperature	-20°C ~ +65°C

UNLESS OTHER SPECIFIED TOLERANCES ON : X=N/A      X.X=N/A      X.XX=N/A ANGLES=N/A      HOLEDIA=N/A		 <b>INPAQ TECHNOLOGY CO., LTD.</b>
SCALE : N/A	UNIT : mm	
DRAWN BY : 劉采璇	CHECKED BY : 詹惠雯	THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION
DESIGNED BY : 王志祥	APPROVED BY : 陳振榮	
TITLE : RFPCA310710EMLB301		DOCUMENT NO. ENS070025910-000803514063
		SPEC REV. <b>A1</b>

### 3. Antenna Drawing :



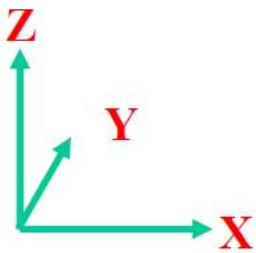
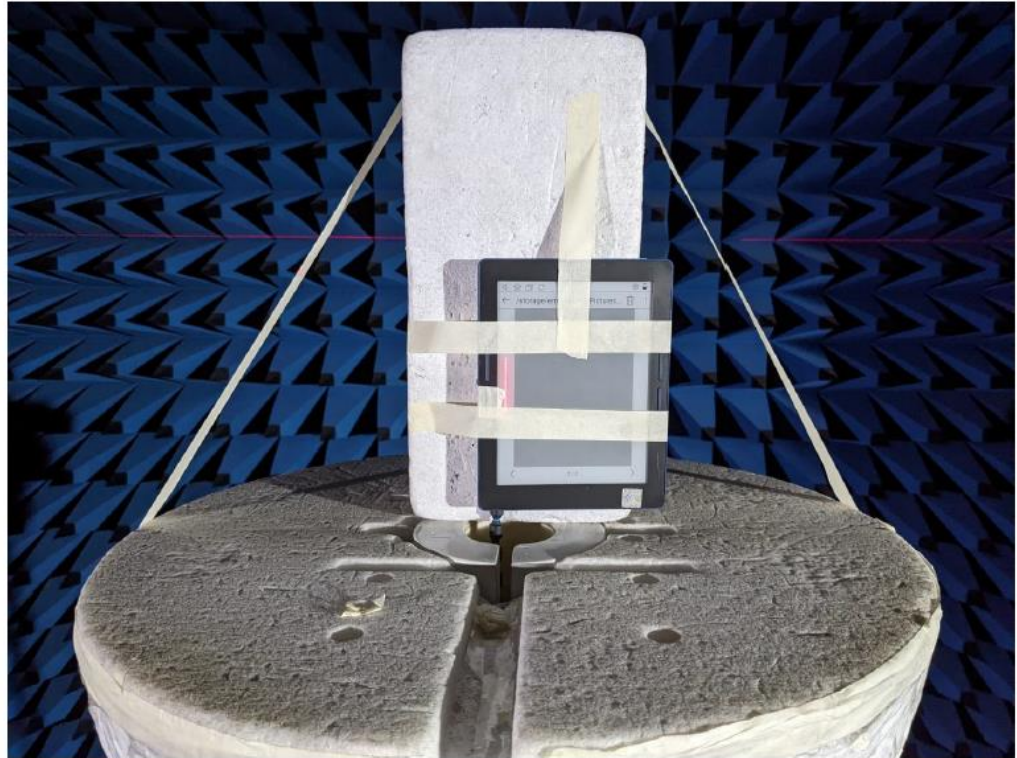
Revision	Engineering Change Description	Date	Owner
1	發行	2022/08/05	CXLUU


UNLESS OTHER SPECIFIED TOLERANCES ON : X=N/A      X.X=N/A      X.XX=N/A ANGLES=N/A      HOLEDIA=N/A		 <b>INPAQ TECHNOLOGY CO., LTD.</b>
SCALE : N/A	UNIT : mm	
DRAWN BY : 劉采璇	CHECKED BY : 詹惠愛	THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION
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TITLE : RFPKA310710EMLB301		DOCUMENT NO. ENS070025910-000803514063
		SPEC REV. <b>A1</b>

4. Performance Report :

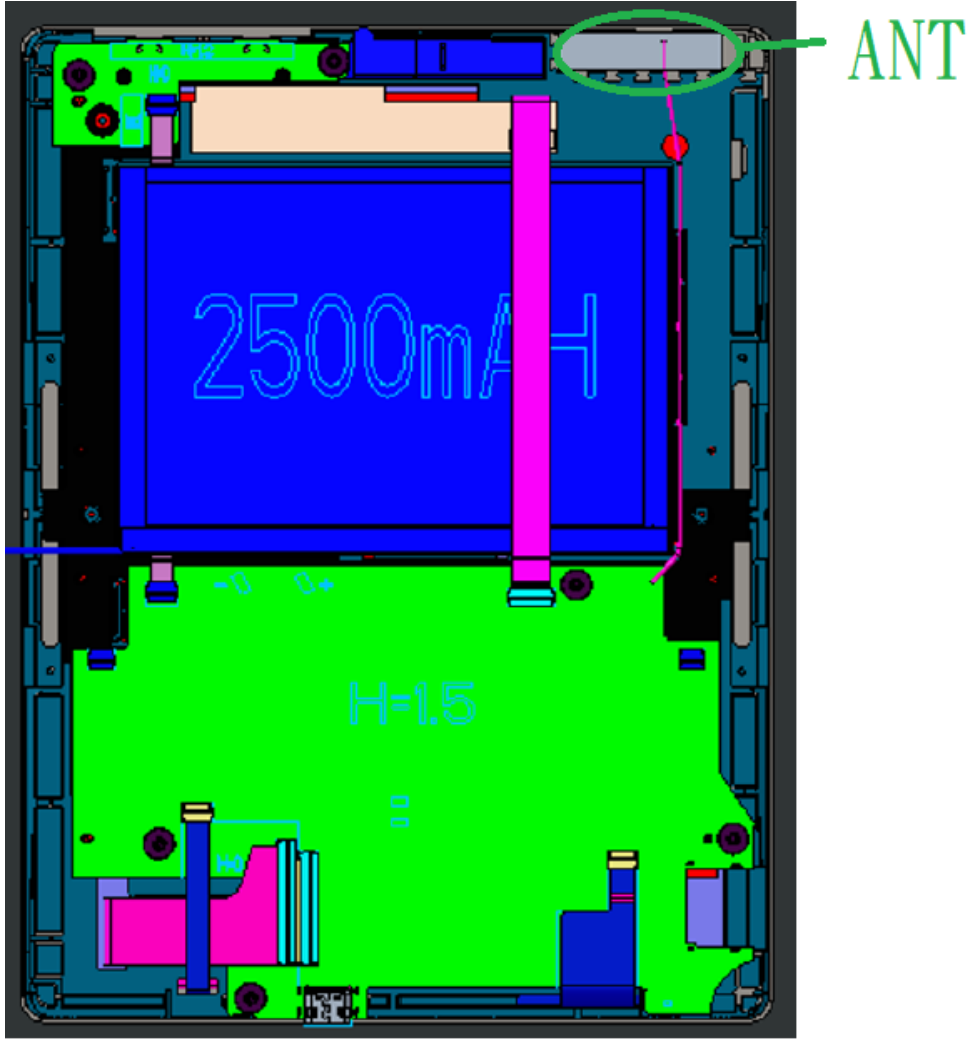
**Test Report**

**Experimental Setup**




UNLESS OTHER SPECIFIED TOLERANCES ON : X=N/A      X.X=N/A      X.XX=N/A ANGLES=N/A      HOLEDIA=N/A		 <b>INPAQ TECHNOLOGY CO., LTD.</b>
SCALE : N/A	UNIT : mm	
DRAWN BY : 劉采璇	CHECKED BY : 詹惠雯	THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION
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TITLE : RFPCA310710EMLB301		DOCUMENT NO. ENS070025910-000803514063
		SPEC REV. <b>A1</b>

Antenna Solution Detail

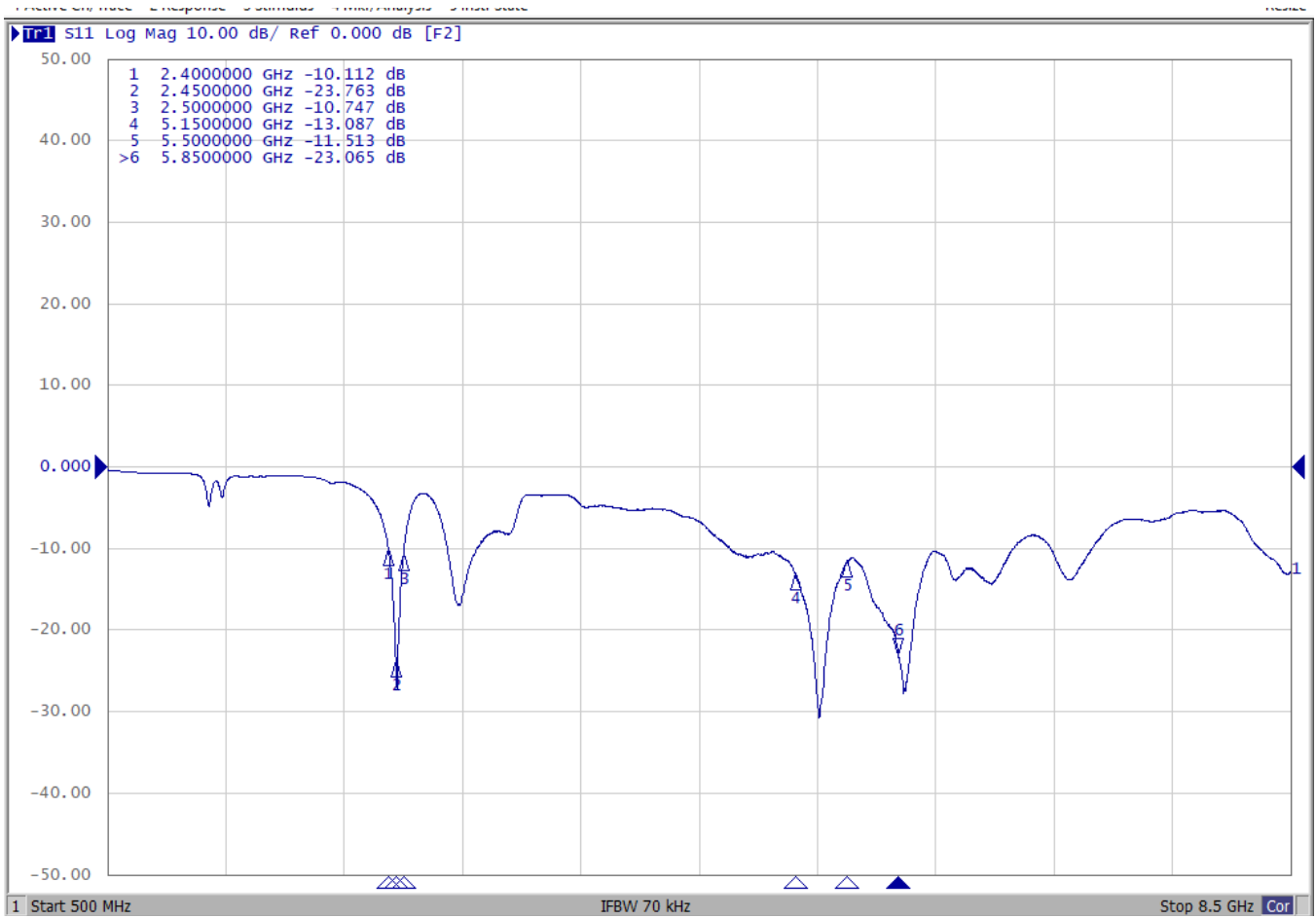



ANT

UNLESS OTHER SPECIFIED TOLERANCES ON : X=N/A      X.X=N/A      X.XX=N/A ANGLES=N/A      HOLEDIA=N/A		 <b>INPAQ TECHNOLOGY CO., LTD.</b>
SCALE : N/A	UNIT : mm	
DRAWN BY : 劉采璇	CHECKED BY : 詹惠雯	THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION
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# Electrical Characteristics

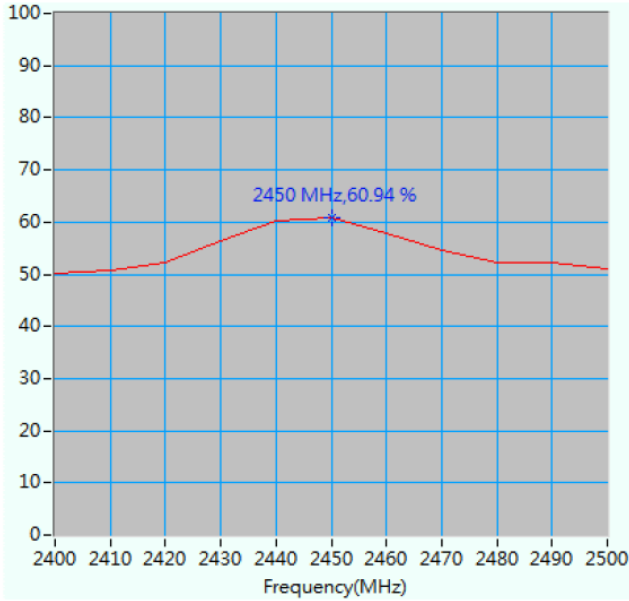
## Return Loss



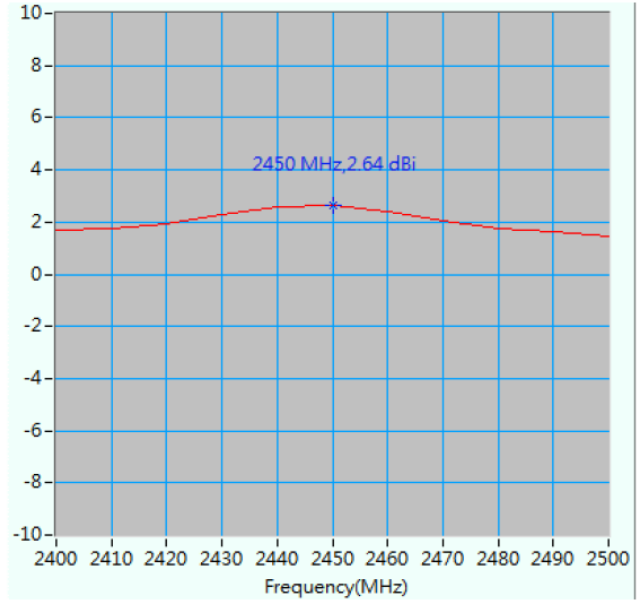
UNLESS OTHER SPECIFIED TOLERANCES ON : X=N/A      X.X=N/A      X.XX=N/A ANGLES=N/A      HOLEDIA=N/A		 <b>INPAQ TECHNOLOGY CO., LTD.</b>	THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION
SCALE : N/A	UNIT : mm		
DRAWN BY : 劉采璇	CHECKED BY : 詹惠雯		
DESIGNED BY : 王志祥	APPROVED BY : 陳振榮		
TITLE : RFPCA310710EMLB301		DOCUMENT NO.	SPEC REV.
		ENS070025910-000803514063	A1

# Antenna Efficiency and Peak Gain

## 2G

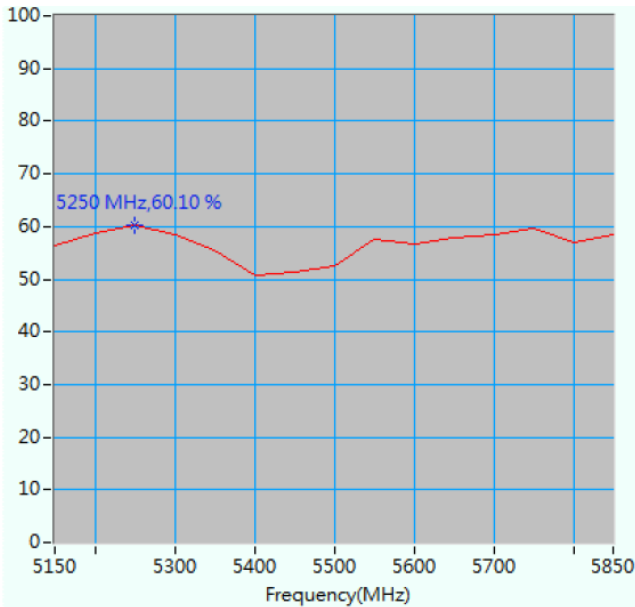


Maximum Efficiency at 2450 MHz : 60.94 %

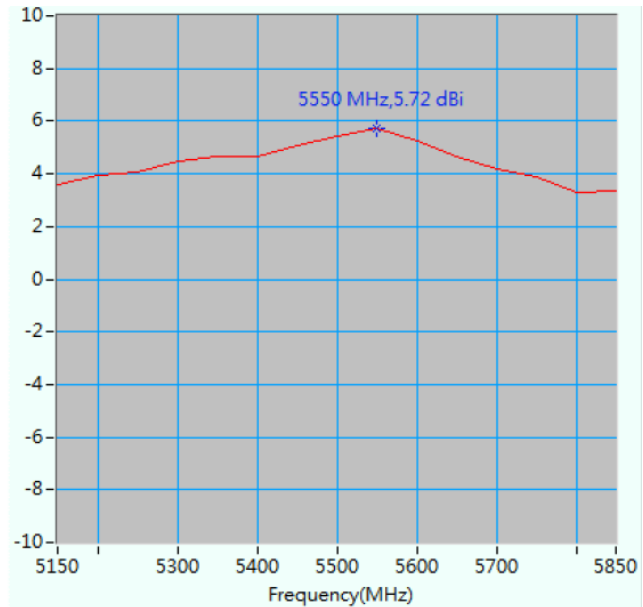


Maximum Peak Gain at 2440 MHz : 2.64 dBi

## 5G



Maximum Efficiency at 2450 MHz : 60.10 %



Maximum Peak Gain at 2440 MHz : 5.72 dBi

UNLESS OTHER SPECIFIED TOLERANCES ON :  
 X=N/A      X.X=N/A      X.XX=N/A  
 ANGLES=N/A      HOLEDIA=N/A



**INPAQ TECHNOLOGY CO., LTD.**

SCALE : N/A

UNIT : mm

DRAWN BY : 劉采璇

CHECKED BY : 詹惠雯

DESIGNED BY : 王志祥

APPROVED BY : 陳振榮

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TITLE : RFPCA310710EMLB301

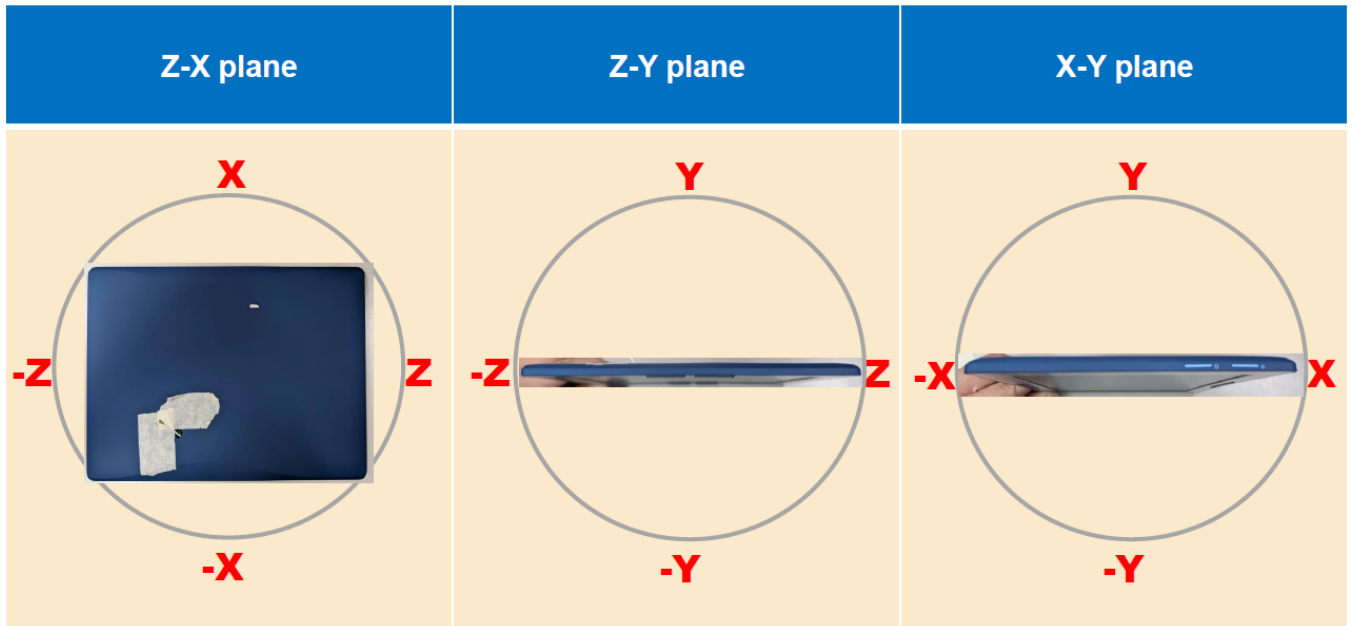
DOCUMENT NO.


ENS070025910-000803514063

SPEC REV. A1



### 3 Views of Antenna



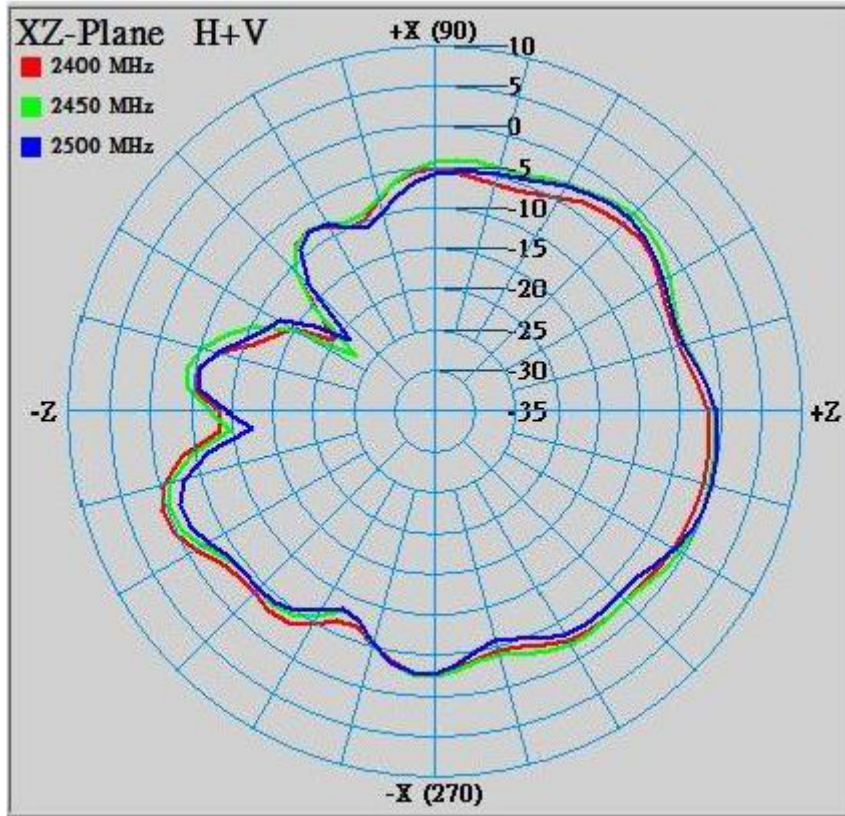
UNLESS OTHER SPECIFIED TOLERANCES ON : X=N/A      X.X=N/A      X.XX=N/A ANGLES=N/A      HOLEDIA=N/A		 INPAQ TECHNOLOGY CO., LTD.	THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION
SCALE : N/A	UNIT : mm		
DRAWN BY : 劉采璇	CHECKED BY : 詹惠雯		
DESIGNED BY : 王志祥	APPROVED BY : 陳振榮		
TITLE : RFPCA310710EMLB301		DOCUMENT NO.	ENS070025910-000803514063
			SPEC REV. A1


# Radiation Pattern

2G

Phi=0.00deg

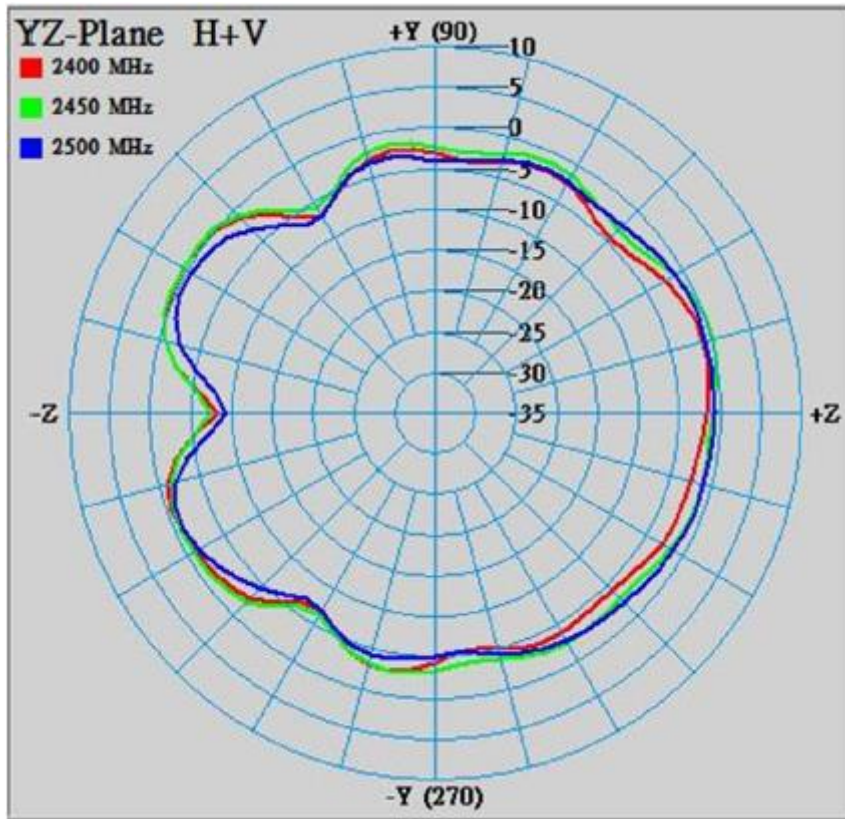
Gain . dB




UNLESS OTHER SPECIFIED TOLERANCES ON :			<b>INPAQ TECHNOLOGY CO., LTD.</b>
X = N/A	X.X = N/A      X.XX = N/A		
ANGLES = N/A		THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION	
SCALE : N/A	UNIT : mm		
DRAWN BY : 劉采璇	CHECKED BY : 詹惠雯		
DESIGNED BY : 王志祥	APPROVED BY : 陳振榮		
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		ENS070025910-000803514063	A1

Phi=90.00deg

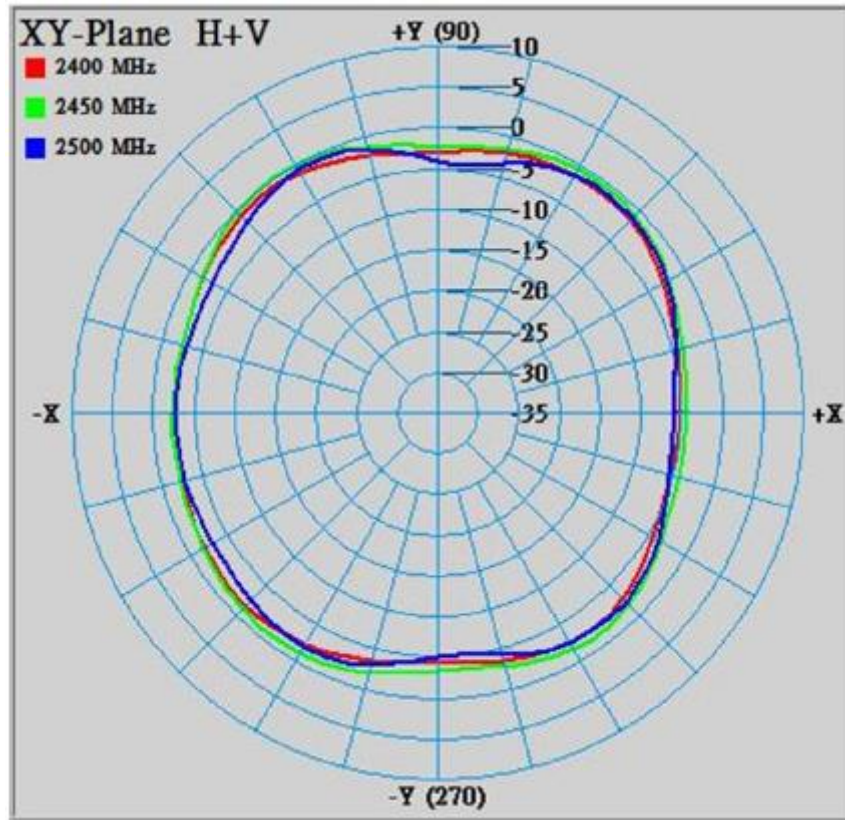
Gain . dB



UNLESS OTHER SPECIFIED TOLERANCES ON :			<b>INPAQ TECHNOLOGY CO., LTD.</b>
X=N/A	X.X=N/A      X.XX=N/A		
ANGLES=N/A		HOLEDIA=N/A	
SCALE : N/A	UNIT : mm	THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION	
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			SPEC REV. A1

Theta=90.00deg

Gain . dB



Frequency [MHz]	ZX plane		ZY plane		XY plane	
	Max Value [dBi]	Average [dBi]	Max Value [dBi]	Average [dBi]	Max Value [dBi]	Average [dBi]
2400	0.74	-3.73	0.67	-2.69	-0.61	-2.58
2450	-0.05	-3.24	0.78	-1.94	0.23	-1.82
2500	0.15	-3.94	-0.29	-2.67	-0.49	-2.79

UNLESS OTHER SPECIFIED TOLERANCES ON :  
 X = N/A      X.X = N/A      X.XX = N/A  
 ANGLES = N/A      HOLEDIA = N/A



INPAQ TECHNOLOGY CO., LTD.

SCALE : N/A      UNIT : mm  
 DRAWN BY : 劉采璇      CHECKED BY : 詹惠雯  
 DESIGNED BY : 王志祥      APPROVED BY : 陳振榮

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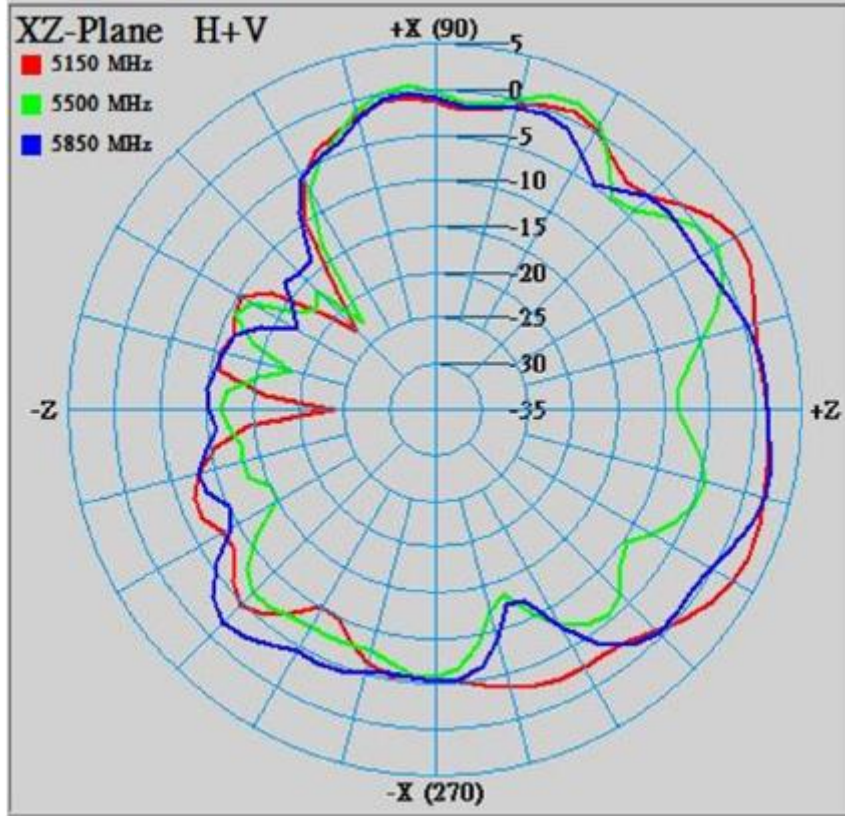
DOCUMENT NO.      ENS070025910-000803514063


SPEC REV.      A1

5G

Phi=0.00deg

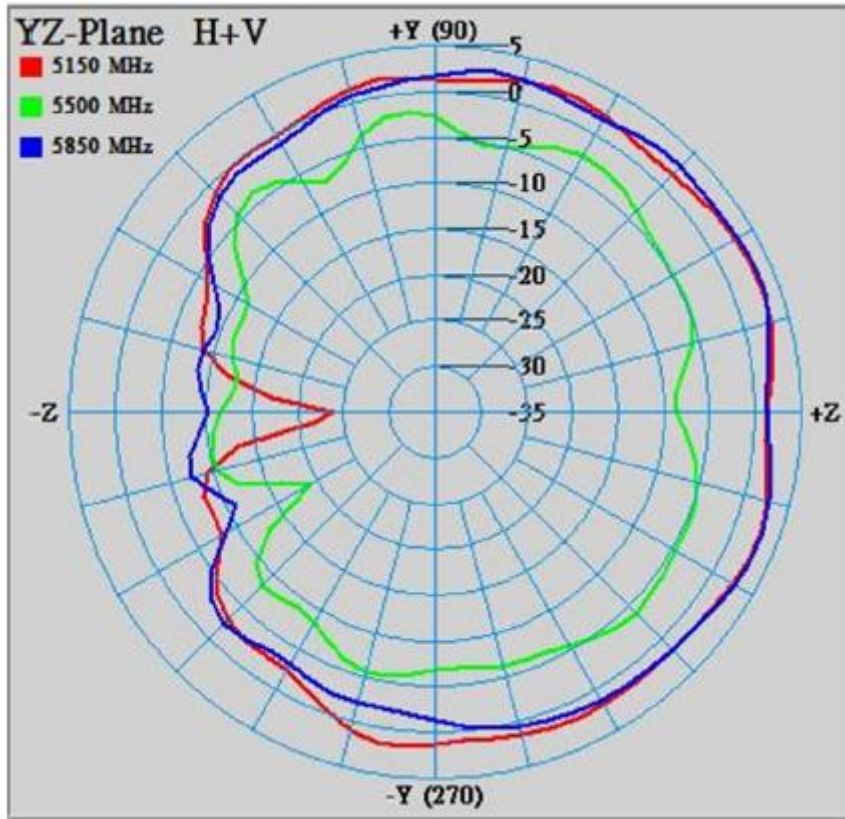
Gain . dB




UNLESS OTHER SPECIFIED TOLERANCES ON :			<b>INPAQ TECHNOLOGY CO., LTD.</b>
X=N/A	X.X=N/A		
ANGLES=N/A		HOLEDIA=N/A	
SCALE : N/A	UNIT : mm	THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION	
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TITLE : RFPCA310710EMLB301		DOCUMENT NO.	ENS070025910-000803514063
			SPEC REV. A1

Phi=90.00deg

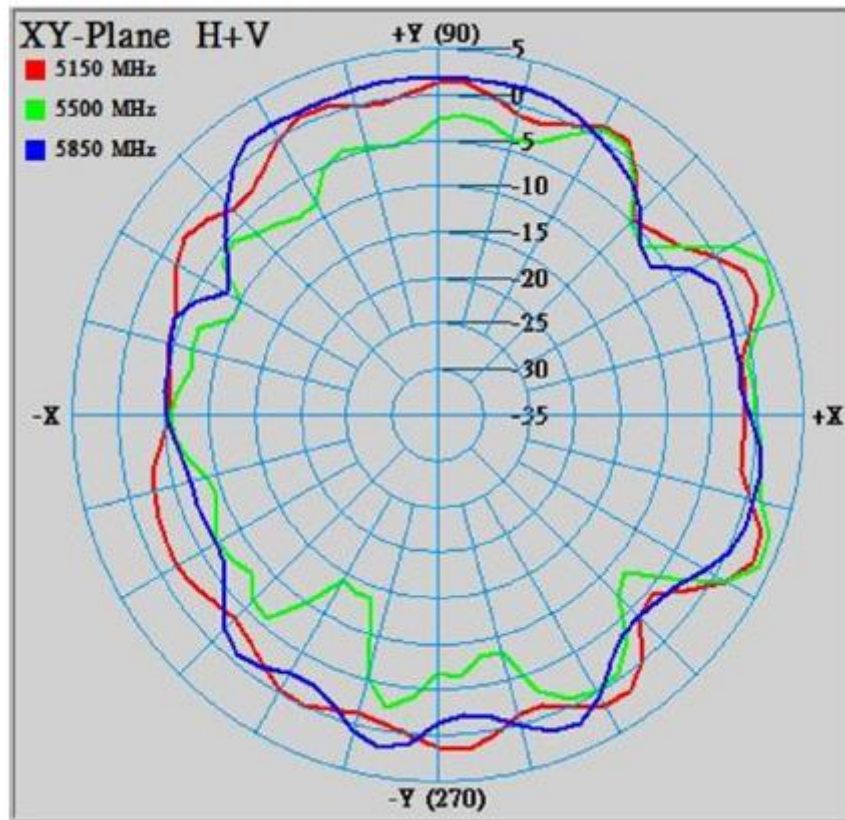
Gain . dB



UNLESS OTHER SPECIFIED TOLERANCES ON : X=N/A      X.X=N/A      X.XX=N/A ANGLES=N/A      HOLEDIA=N/A		 <b>INPAQ TECHNOLOGY CO., LTD.</b>
SCALE : N/A	UNIT : mm	
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TITLE : RFPCA310710EMLB301		DOCUMENT NO. ENS070025910-000803514063
		SPEC REV. <b>A1</b>

Theta=90.00deg

Gain . dB



Frequency [MHz]	ZX plane		ZY plane		XY plane	
	Max Value [dBi]	Average [dBi]	Max Value [dBi]	Average [dBi]	Max Value [dBi]	Average [dBi]
5150	2.99	-1.94	3.21	0.49	3.23	-0.72
5500	1.94	-4.73	-2.05	-5.95	4.69	-2.44
5850	2.30	-2.82	3.36	0.26	2.11	-0.99

UNLESS OTHER SPECIFIED TOLERANCES ON :  
 X=N/A      X.X=N/A      X.XX=N/A  
 ANGLES=N/A      HOLEDIA=N/A



**INPAQ TECHNOLOGY CO., LTD.**

SCALE : N/A      UNIT : mm  
 DRAWN BY : 劉采璇      CHECKED BY : 詹惠雯  
 DESIGNED BY : 王志祥      APPROVED BY : 陳振榮

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TITLE : RFPKA310710EMLB301

DOCUMENT NO.	ENS070025910-000803514063	SPEC REV.
		A1

### 5. Reliability test :

Report Completion/Modify date: 2022/10/10



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## ENVIRONMENT TEST DATA

TEST ITEM	鹽霧實驗
NO.	RFPCA310710EMLB301
TEST CONDITION	溶液PH值 : 6.5-7.2, 5%的中性鹽水噴霧48H

Test Process:

實驗前

鹽霧48H後

測試結果:OK

Test Result:	SPEC : 盐雾48H测试OK					
	NO	1	2	3	4	5
	判定	OK	OK	OK	OK	OK

UNLESS OTHER SPECIFIED TOLERANCES ON : X=N/A      X.X=N/A      X.XX=N/A ANGLES=N/A      HOLEDIA=N/A		<b>INPAQ TECHNOLOGY CO., LTD.</b>
SCALE : N/A      UNIT : mm DRAWN BY : 劉采璇      CHECKED BY : 詹惠雯 DESIGNED BY : 王志祥      APPROVED BY : 陳振榮	THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION	
TITLE : RFPCA310710EMLB301	DOCUMENT NO.      ENS070025910-000803514063	SPEC REV. <b>A1</b>



Report Completion/Modify date: 2022/10/10

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## ENVIRONMENT TEST DATA

TEST ITEM	拉力實驗
NO.	RFPCA310710EMLB301
TEST CONDITION	拉拔力 ≥ 1KG

Test Process:

實驗後






鹽霧48H後















測試結果:OK

Test Result:	SPEC : 拉力測試OK'					
	NO	1	2	3	4	5
	判定	OK	OK	OK	OK	OK

UNLESS OTHER SPECIFIED TOLERANCES ON : X=N/A      X.X=N/A      X.XX=N/A ANGLES=N/A      HOLEDIA=N/A			<b>INPAQ TECHNOLOGY CO., LTD.</b>
SCALE : N/A	UNIT : mm		THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION
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TITLE : RFPCA310710EMLB301		DOCUMENT NO.	ENS070025910-000803514063
			SPEC REV. <b>A1</b>

6. Package :

禾邦電子有限公司						
RFPCA310710EMLB301生規			頁次： 6 之 4			
			版次： A0版			
			制修訂日期： 2022/8/6			
<b>產品包裝圖示：</b>						
<b>圖一</b>						
		⇒			⇒	
單pcs產品示意图			PE袋			25pcs/扎, 200PCS/袋, PE袋需封口
<b>圖二</b>						
		⇒			⇒	
珍珠棉			外箱			珍珠棉放入外箱
<b>圖三</b>						
		⇒			⇒	
		⇒				
<b>產品包裝規範：</b>						
1. 將每25pcs產品使用珍珠棉將端子端用橡皮筋包扎,然後裝入PE袋內,每PE袋200pcs, PE袋需封口并粘貼制造標,如圖示(一)						
2. 將珍珠棉放入外箱中(如圖示二)						
3. 將裝好的成品(如圖示三)放入外箱中,每箱放4000pcs產品,上下各放1片珍珠棉,不滿整箱時需用填充物填充參考文件號 Y-WI-09-281將包裝好的外箱左上方貼標籤,封箱為“工”字型即六面封箱						
Metal Antenna 370625 RFMTA370625IMAB301 75BI031604 10						
						
-WW0121-031922193619-200 75BI031604 0001						
		第一排: 機種+空格+Antenna+空格+規格的6-11位 第二排: 規格+空格+批號+空格+數量 第三排: 條碼內容: 規格+批號+序號(同第四排最後的4碼流水碼)+數量(單位是K/PCS) 第四排: “-”+打印者工號+“-”月份+日期+年+時+分+秒+“-”+“當次打印的”標籤數量” +批號+4碼流水碼				
製造標籤規格: 銅版紙(L85±5mm*W25±3mm) 字體規格: 標楷體		標籤註冊權屬(PSA)華新科技股份有限公司				
製造條碼規格: code 128 (高度80mm)						
核准:	何耀輝	審核:	趙文豹	制定:	李連杰	

UNLESS OTHER SPECIFIED TOLERANCES ON :			<b>INPAQ TECHNOLOGY CO., LTD.</b>
X=N/A	X.X=N/A		
ANGLES=N/A		HOLEDIA=N/A	
SCALE : N/A	UNIT : mm		
DRAWN BY : 劉采璇	CHECKED BY : 詹惠雯		
DESIGNED BY : 王志祥	APPROVED BY : 陳振榮		
TITLE : RFPCA310710EMLB301		DOCUMENT NO.	ENS070025910-000803514063
			SPEC REV. A1