APPROVAL SHEET

PCB Antenna

2.4 ~ 2.5 GHz Working Frequency

P/N: RFPCA403422IMAB702

Customer：	光寶科技股份有限公司
Customer ‘s Part No.：	3010001408GD
Approval No.：	
Issue Date：	

品名：**RFPCA403422IMAB702**

History List

版本 REV.	修訂者 EDITOR	修訂頁次 PAGE	修訂內容 ITEMS OF CHANGE	申請日期 DATE	生效日期 VALID DATE	ECN 編號 ECN NO.
A0	Huiwenchan	ALL	Temporary Release	2022/08/08	According to the date of PLM Release	N/A
A1	Huiwenchan	P4 P6~P10	依客戶要求更新內容	2022/11/08~11/16	According to the date of PLM Release	N/A

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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.	
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DESIGNED BY : 黃瑞郎	APPROVED BY : 陳振榮		
TITLE : RFPCA403422IMAB702		DOCUMENT NO.	ENS070025970-000803719786 SPEC REV. A1

1.Explanation of part number：

RF	PCA	4034	22	I	M	A	B	7	02
Type Code	Product Code	PCB Dimension (Unit: mm)	Cable Length (unit: cm)	Connector Brand	Type of Connector	Application	Project status	Wire Diameter	Project
Walsin RF Device	PCB Antenna	Per 2 digits of length, width e.g.:4034 Length 40.0mm, Width 34.0mm	2 digits for cable length e.g.:22 Cable Length 22.7cm	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** **6: 6GHz** **5: 5GHz** A: 2.4GHz ISM band B: GSM 900/1800 dual band G: GPS band L: 2.4/5.2/5.8 GHz tri-band **N: NFC** **T: LTE band** W: WCDMA band	B: MP **T:During Test** X: Pile Run	0:None 1:⌀0.81 2:⌀1.32 3:⌀1.13 4:Low Loss ⌀1.13 5:⌀0.5 6:RG316 7：⌀1.37 8:RG178 9:Low Loss ⌀1.37	01~99 series number

2.Electrical Specification：

Item	Specification
Working Frequency Range	2.4 ~ 2.5 GHz
Peak Gain	3.73 dBi(@ 2mm)
Return Loss	-10 dB
VSWR	2 max.
Polarization	Linear Vertical
Radiation Pattern	Directional
Impedance	50Ω
Operation Temperature	－20℃ ～ ＋65℃

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：詹惠雯 | CHECKED BY：詹惠雯
DESIGNED BY：黃瑞郎 | APPROVED BY：陳振榮

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DOCUMENT NO. ENS070025970-000803719786 SPEC REV. A1

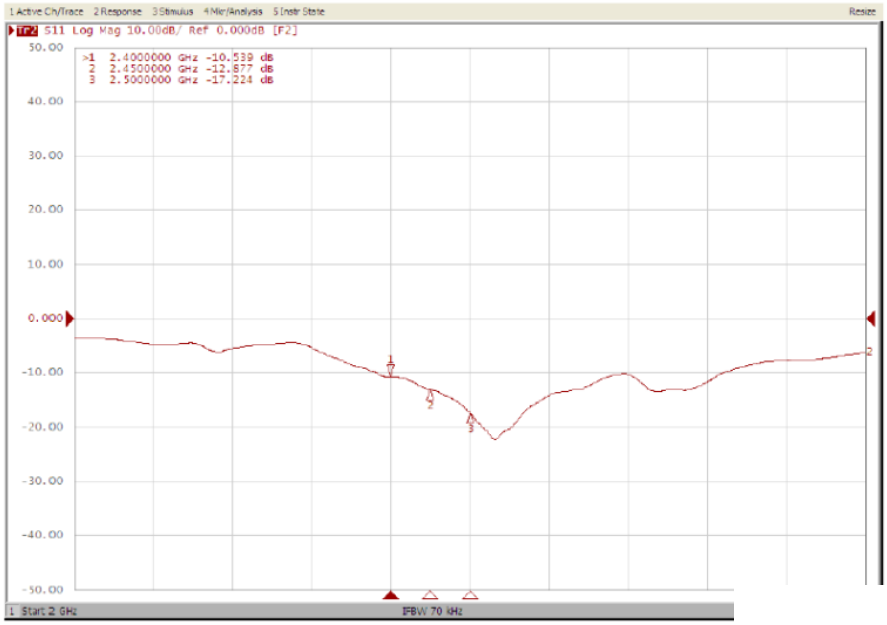
4. Performance Report：

Test Report

■ELECTRICAL CHARACTERISTICS

2 mm

Return Loss



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Antenna Efficiency & Peak Gain

2 mm @2G

Maximum Efficiency at 2460 MHz : 71.05 %

Maximum Peak Gain at 2500 MHz : 3.73 dBi

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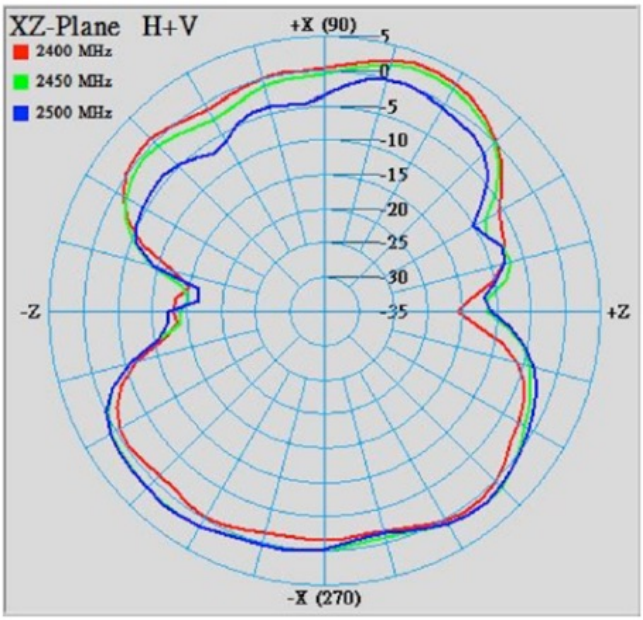
■RADIATION PATTERN

2 mm @2G

X-Z Plane

Phi=0.00deg

Gain . dB



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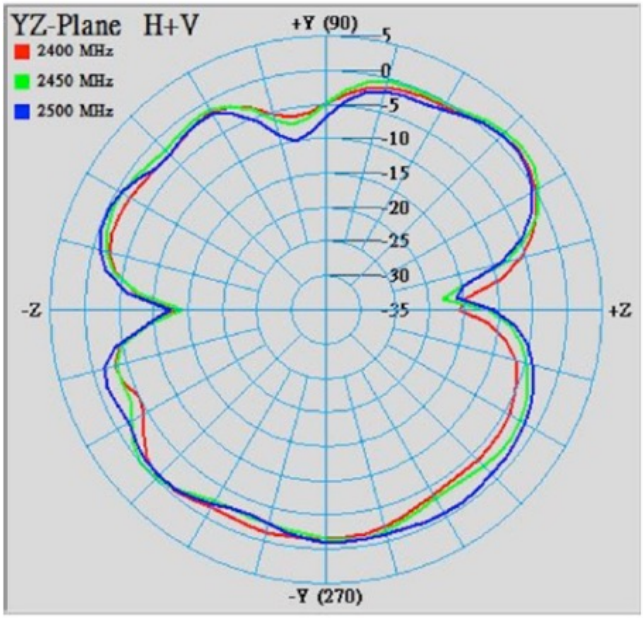
Y-Z Plane

Phi=90.00deg

Gain . dB



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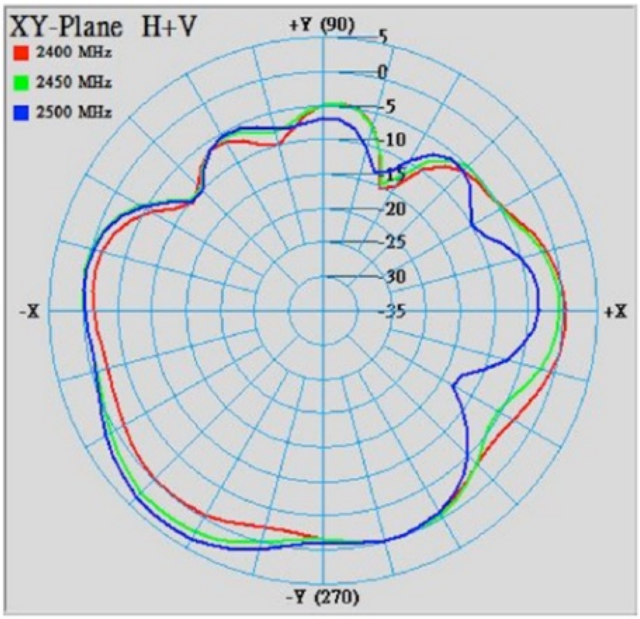
X-Y Plane

Theta=90.00deg

Gain . dB



	ZX plane		ZY plane		XY plane	
Frequency [MHz]	Max Value [dBi]	Average [dBi]	Max Value [dBi]	Average [dBi]	Max Value [dBi]	Average [dBi]
2400	3.43	-1.24	1.31	-2.68	0.38	-2.65
2450	2.70	-1.00	2.00	-2.21	2.69	-1.78
2500	1.65	-1.94	1.23	-2.20	3.73	-1.94

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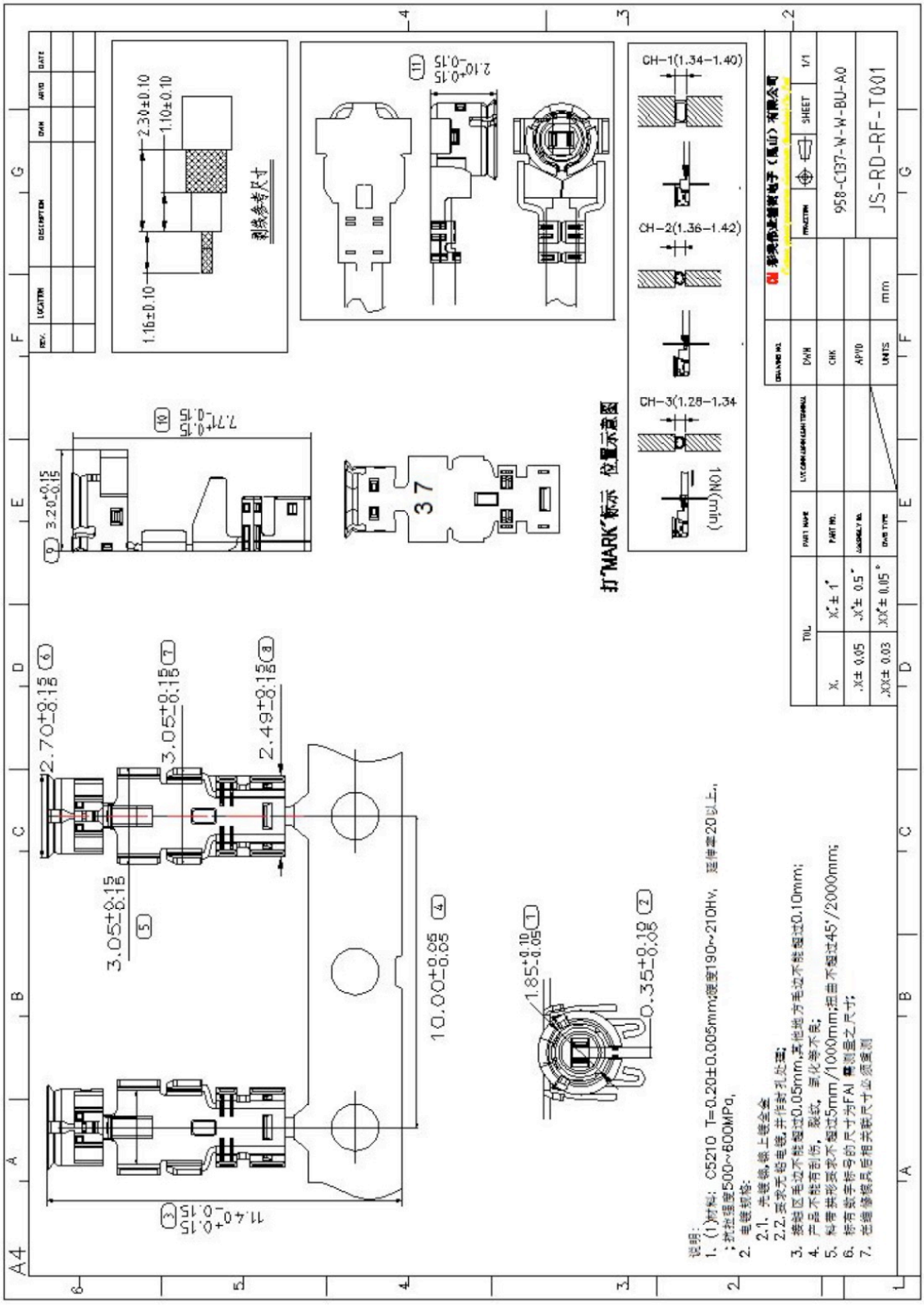
Connector Specification



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Cable Specification

型号 Type	RF-1.37/50	料号 P/N	
结构图 Structure drawing			

结构特性 Structure characteristics

结构 Structure	项目 Item	标准值 Standard value
①内导体 Inner conductor	材料 Material	镀银铜线 Silverplated copper wire
	组成:总根数/单根外径(mm) Makeup:total / O.D. of every wire(mm)	7/0.102
	(绞合)标称外径(mm) (Intertwist)NOM.O.D.(mm)	0.306±0.02
②绝缘层 Insulation	材料 Material	聚全氟乙丙烯 FEP
	颜色 Color	透明 Clarity
	标称外径(mm) NOM.O.D.(mm)	0.9±0.03
③外导体 Outer conductor	材料 Material	镀锡铜线 Tinned copper wire
	组成:总根数/单根外径(mm) Makeup:total / O.D. of every wire(mm)	5/0.05
	标称外径(mm) NOM.O.D.(mm)	1.13±0.05
	覆盖率(%) Coverage ratio(%)	90±5
④护套层 Jacket	材料 Material	聚全氟乙丙烯 FEP
	颜色 Color	橙 Orange
	标称外径(mm) NOM.O.D.(mm)	1.37±0.05

电性能特性 Electrical characteristics

项目 Item	标准值 Standard value	项目 Item	频率 Frequency	标准值 Standard value 单位 Unit:dB/m
电容(pF/m) Capacitance(pF/m)	96	衰减 Attenuation	1GHz	≤1.7
速率(%) Velocity(%)	70		2GHz	≤2.5
阻抗(Ω) Impedance(Ω)	50±2		3GHz	≤3
驻波比 Standing wave ratio	≤1.3@0-6GHz		4GHz	≤3.5
最大工作电压(V) Max.operating voltage(V)	1000		5GHz	≤4
最大工作频率(GHz) Max.operating frequency(GHz)	6		6GHz	≤4.5

可靠性 Dependability

项目 Item	单位 Unit	标准值 Standard value
最小弯曲半径(一次) Min.bending radius static	mm	5
最小弯曲半径(重复) Min.bending radius repeated	mm	—
工作温度范围 Operating temperature	℃	-55~+200

包装 Packing

项目 Item	单位 Unit	标准值 Standard value
包装方式 Packing mode	/	纸盘 Papery plate
每盘长度 The length of each plate	m	500
每盘接头数 Each connector plate number	/	≤3
每段最短长度 The shortest length of each root	m	≥10

使用提示 Use tips

存储环境 Storage environment	温度：30℃以下；湿度：20%~65%
最佳保存周期 The best save cycle	2个月；2个月以上作业性下降，加上锡效果变差,但电性能不受影响。夏季高温高湿环境开封后需尽快流转
加工温度 Processing temperature	260℃的极限情况下，可短时间承受；300℃以上分子通常带有的等端基会分解；400℃以上发生显著的热分解
铁氟龙收缩 Teflon Shrink	固有材料特性。绝缘：0.2mm以下；护套：0.3mm以下
护套窜动 Jacket traverse	加工长度（护套残留长度）低于5cm易发生

其他 Other

特殊加工工艺，请与供方协商后使用

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ANGLES=N/A HOLEDIA=N/A

INPAQ TECHNOLOGY CO., LTD.

SCALE：N/A | UNIT：mm

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SPEC REV. A1

Cable UL Certificate

UL Product iQ™

AVLV2.E318898 - Appliance Wiring Material - Component

Appliance Wiring Material - Component

See General Information for Appliance Wiring Material - Component

SHENYU COMMUNICATION TECHNOLOGY INC
275 E Waihuan Rd
Jiangyin, Jiangsu 214400 CHINA

E318898

Table of Recognized Styles

Single-conductor, thermoplastic insulation.							
1226	1354	1708	1766	1882	10008	10248	
1227	1371	1709	1847	1886	10011	10362	
1330	1538	1710	1857	1887	10064	10518	
1331	1577	1723	1858	1901	10072	11085	
1332	1591	1726	1859	1927	10111	11149	
1333	1592	1727	1860	10005	10231	11180	
Multiple-conductor, thermoplastic insulation.							
20276	21100	21533					

Style(s) 11149 can be assigned the IEC 60332-2 flammability rating

Marking: Company name, voltage rating, temperature rating, conductor size, conductor material if other than copper, and use.

Last Updated on 2020-04-21

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Sample Test Report

佳邦科技股份有限公司
INPAQ TECHNOLOGY CO.,LTD
新品測試記錄表

□原料承認□半成品承認■成品承認				禾邦料號：	RFPCA403422IMAB702		品　名：		天線
供應商：	禾邦電子（蘇州）有限公司			數 量 ：	10pcs		日　期：		2022/8/1
測試項目	尺寸								
	1	2	3						
規格範圍	34.00 ± 0.2	40.00 ± 0.2	227.00 ± 2						
中心值	34.00	40.00	227.00						
公差	0.40	0.40	4.00						
規格上限	34.20	40.20	229.00						
規格下限	33.80	39.80	225.00						
測試儀器									
1	34.00	40.00	227.00						
2	34.00	40.00	227.00						
3	34.00	40.03	227.50						
4	34.04	40.00	227.00						
5	34.00	40.00	227.00						
6	34.00	40.00	227.00						
7	34.00	40.00	227.00						
8	34.05	40.06	227.50						
9	34.00	40.00	227.00						
10	34.00	40.00	227.00						
Max	34.05	40.06	227.50						
Min	34.00	40.00	227.00						
AVG	34.01	40.01	227.10						
STD	0.02	0.02	0.21						
Ca	0.05	0.05	0.05						
Cp	3.49	3.29	3.16						
Cpk	3.33	3.14	3.00						
判定	OK	OK	OK						

材料名稱	料號	廠商	備註
天線	RFPCA403422IMAB702		

備注：

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.	
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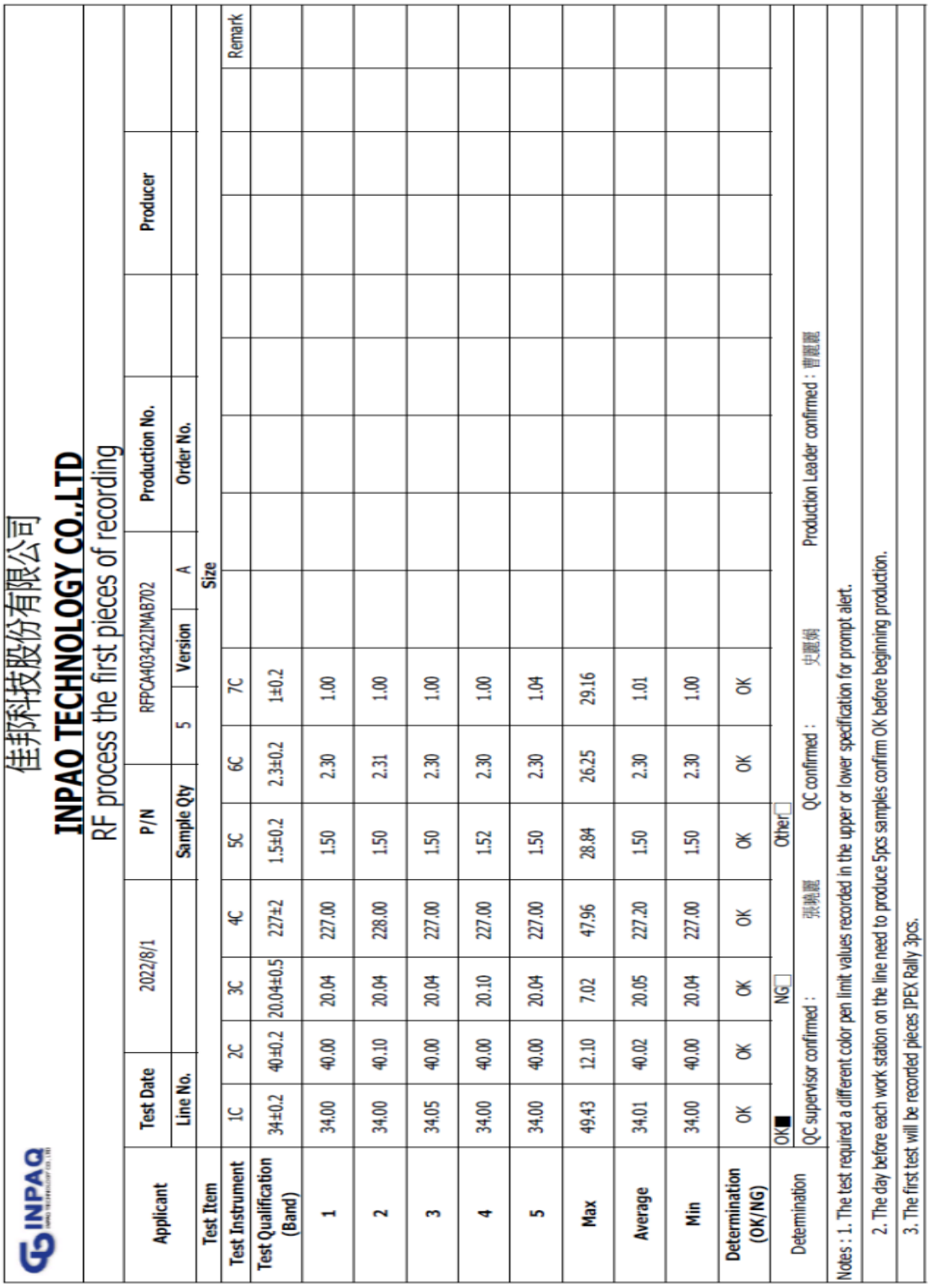

佳邦科技股份有限公司

INPAQ TECHNOLOGY CO.,LTD

RF process the first pieces of recording

Applicant		Test Date	2022/8/1		P/N	RFPCA403422IMAB702		Production No.			Producer			
		Line No.			Sample Qty	5	Version	A	Order No.					
Test Item		Size												Remark
Test Instrument		1C	2C	3C	4C	5C	6C	7C						
Test Qualification (Band)		34±0.2	40±0.2	20.04±0.5	227±2	1.5±0.2	2.3±0.2	1±0.2						
1		34.00	40.00	20.04	227.00	1.50	2.30	1.00						
2		34.00	40.10	20.04	228.00	1.50	2.31	1.00						
3		34.05	40.00	20.04	227.00	1.50	2.30	1.00						
4		34.00	40.00	20.10	227.00	1.52	2.30	1.00						
5		34.00	40.00	20.04	227.00	1.50	2.30	1.04						
Max		49.43	12.10	7.02	47.96	28.84	26.25	29.16						
Average		34.01	40.02	20.05	227.20	1.50	2.30	1.01						
Min		34.00	40.00	20.04	227.00	1.50	2.30	1.00						
Determination (OK/NG)		OK	OK	OK	OK	OK	OK	OK						
Determination	OK■ NG□ Other□													
	QC supervisor confirmed : 張姚麗					QC confirmed : 史麗娟			Production Leader confirmed : 曹麗麗					

Notes : 1. The test required a different color pen limit values recorded in the upper or lower specification for prompt alert.

2. The day before each work station on the line need to produce 5pcs samples confirm OK before beginning production.

3. The first test will be recorded pieces IPEX Rally 3pcs.

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