



# Kunshan Jiahua Electronics Co., Ltd.

文件名称 System Name:	产品品名 Description:	文件编号 Document No.:		
Product specification	Dual-layer-nanosim-conn.	PS-0106		
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## 1. 概述 **Scope:**

### 1.1 说明 **Content**

此份产品规格书是针对由昆山嘉华电子有限公司设计和制造的**叠层双 NANOSIM 卡座**产品所定义的产品性能和测试方法。

This product specification defines the product performance and the test methods to ensure the performance of the **Dual-layer-nanosim conn.**, which is designed and manufactured by Kunshan Jiahua Electronics Co., Ltd.

### 1.2 限制 **Qualification**

所有的测试和检验必须依照本文件中所要求的规格、方法进行。一旦产品的重要制程发生变更，必须立即进行品质验证和测试。

Tests and inspection shall be performed in accordance with the requirements, tests and methods contained herein. A re-qualification test shall be conducted immediately following all major process changes.

## 2. 参考文件 **Referenced Documents:**

EIA364

MIL-STD-883B: Methods 2022 solder Testing.

ISO 7816-1:Identification Cards-integrated circuit cards with contact-dimension and location of the contacts.

GSM11.11:IETS subscriber identity module-interface specification

EIA 481-3 ,SMD tapping standard

VIVO 1990 类连接器-SIM 卡座连接器规格书(V03)

若某些项目被发现本规格书中的内容与以上参考文件要求不一致时，一律依本规格书中的内容为测试依据。

In case of any contradiction between this document and referenced documents, this document will take precedence.

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### 3. 规格要求 Requirements:

#### 3.1 应用条件 Application Condition:

3.1.1 额定电流: 0.5Amps DC Min. per contact  
CURRENT RATING : 0.5Amps DC Min. per contact

3.1.2 额定电压: 10 Volt AC Max.  
VOLTAGE RATING : 10 Volt AC Max

#### 3.1.3 使用环境 Operating Environment:

温度: -40°C to +80°C,相对湿度:25%~85%,此条件下功能不可失效。

Temperature:-40°C to +80°C, Relative Humidity:25%~85%, Without loss of function.

#### 3.1.4 储存环境 Storage Environment:

温度: -40°C to +80°C,相对湿度:0%~90%或更低,此条件下功能不可失效。

Temperature:-40°C to +80°C, Relative Humidity: 0%~90% or Less, Without loss of function.

#### 3.2 绿色环保要求 Health, Safety and Environment

此产品中所有涉及环保有关的有害物质管控标准请参考嘉华系统文件:[JH-GP-213](#)

Hazardous substances (Environment related to be controlled substances) contained in this product should comply with the regulations specified by FAF's [JH-GP-213](#).

#### 3.3 测试说明 Test Description

此产品性能须满足本文件第 4 节中的各项规格要求。除非有特别申明，所有的测试和量测必须在以下条件中进行:

The product is designed to meet the requirements specified in section 3.4. Unless otherwise specified, all tests and measurements are to be performed under the following conditions:

温度 Temperature: 15 to 35°C

相对湿度 Relative Humidity: 25% to 75%

大气压 Atmospheric Pressure: 650 to 800 millimeters (25.6 to 31.5 inches) of Mercury.

### 4.测试规范和方法 Test Requirements and Methods

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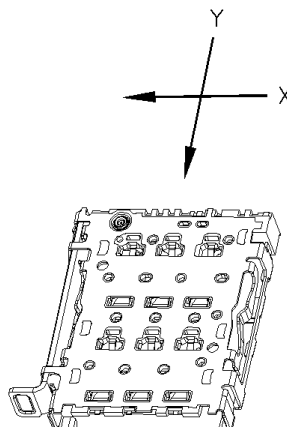
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4.1 外观 Appearance		
项目 Items	规格要求 Requirements	测试方法 Test Methods
4.1 产品外观和尺寸检查  Appearance	所有零件必须组装完好,不能出现毛边,变形,刮伤,以及任何外观破坏等异常;  All components shall be properly assembled and free of burrs, warps, scratches, broken chips, and other abnormalities	依照相应的文件和规格书进行外观,功能,及尺寸的检验量测.  Visual, functional, and dimensional inspection complies with applicable specification and document.
4.2 电气性能 Electrical Performance :		
4.2.1 接触阻抗  Low level contact resistance	初始接触阻抗: 150mΩ Max;  试验后接触阻抗: 175mΩ Max;  Initial: 150mΩ Max;  After test: 175mΩ Max;	测量接触阻抗, 测试电流小于 100mA Measure contact resistance of product and test card PCB with less than current of 100 mA ( exception for the conductor resistance)
4.2.2 绝缘阻抗 Insulation resistance	初始绝缘阻抗: 1000 MΩ Min 试验后绝缘阻抗: 100 MΩ Min  Initial:1000 MΩ Min After test:100 MΩ Min	测试电压: 直流 500V, 测试时间: 1 分钟, 测试相邻两端子之间的绝缘阻抗 Give DC 500V Voltage for 1 minutes and then measure insulation resistance of contact and contact
4.2.3 耐电压 Dielectric withstanding voltage	产品既无电火花也无气体产生 漏电流最大 0.2mA  After the test, Neither creeping discharge nor flashover shall occur. Leakage current 0.2 mA Max	两相邻端子之间加载交流 500V 电压 1 分钟; Give AC 500 V in near contact and insulator for 1 minute
4.3 机械性能 Mechanical Performance :		
4.3.1 正向力  Normal Force	距离塑胶面 0.26mm 位置正向力 30gf Min, 平均值 35gf Min; 距离塑胶面 0.10mm 位置正向力: 50gf~90gf, 平均值 55gf Min; 试验后: 距离塑胶面 0.26mm 位置: 25gf Min; 距离塑胶面 0.10mm 位置正向力 45gf~90gf, 平均值: 50gf Min;	产品固定后, 将弹片端子以 5mm/minute 的速度垂直压缩到距离塑胶面 0.26mm 位置&0.10mm 位置, 测量正向力 NF. 取值时从回程曲线上取值. 使用量程为 2Kg 的荷重元进行测试; After Holding testing product , vertical compression the clip terminal to the plastic surface at the speed of 5 millimeters/minute and testing the positive force NF at this time;

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4.3.2 抓板力  Shear force	抓板力: 3kgf Min; Shear force: 3kgf Min;	产品焊板后, 测量产品抓板力, 测试速度: 12.5mm/min, 测试如图示方向 After Soldering of testing product at PCB, Measure Shear force of Plug at 12.5mm/min;  
4.3.3 插入力  Insertion force	插入力: 8N Max; Insertion force: 8N Max;	产品焊板后, 卡托中装两张 0.84mm 厚卡, 测量卡托插入力, 测试速度: 12.5mm/min After Soldering of testing product at PCB, Measure insertion force of tray at 12.5mm/min;
4.3.4 拔出力  Pulling force	拔出力: 5N Min(耐久前), 3.5N Min(耐久后); Pulling force: 5N Min(Initial), 3.5N Min(After test);	产品焊板后, 卡托中装两张 0.65mm 薄卡, 测量卡托拔出力, 测试速度: 12.5mm/min After Soldering of testing product at PCB, Measure Pulling force of tray at 12.5mm/min;
4.3.5 退卡力  Ejection force	退卡力: 14N Max; Ejection force: 14N Max;	产品焊板后, 卡托中装两张 0.84mm 厚卡, 测量推杆退卡力, 测试速度: 12.5mm/min After Soldering of testing product at PCB, Measure ejection force of lever at 12.5mm/min;

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4.3.6 推杆抗推力	抗推力: 施加 5Kg 力保持 5s,焊点无脱落现象,产品无损坏现象;	产品焊板后, 将卡托完全装入卡座中使推杆始终保持卡托插入状态, 固定推杆和卡座相对位置不能移动, 在推杆处施加 5Kg 力保持 5s,检查是否有焊点脱落及产品机械损坏;
4.3.7 开关端子正向力 Switch Normal Force	正向力: 25gf Min; Normal Force: 25gf Min;	样品过两次回焊炉, 测试设备荷重归零, 使用微动测试设备, 使测试针对位switch端子与卡托配合位置, 以5mm/分钟下压测试头, 力值曲线出现拐点后停止下压, 在曲线最高点取值;
4.3.8 耐久 Durability	1. 试验后接触阻抗: 180mΩMax; 2. 插入力: 8N Max; 3. 拔出力: 3.5N Min; 4. 退卡力: 14N Max; 1. Aftertesting,contact resistance : 180 mΩMax; 2. Insertion force: 8N Max; 3. Pulling force: 3.5N Min; 4. Ejection force: 14N Max;	产品焊板后, 卡托内装两张 0.84mm 厚卡进行 3000 次耐久插拔,速度:400~600 次/小时; 评价正向力之耐久采取机械打压方式, 下压至塑胶表面;  After Soldering of testing product at PCB, Repeat insert&eject at the speed of 400~600cycles/hour as 3000cycles
4.3.9 振动 Vibration	1 没有物理损坏, 端子无变形 2 不产生超过 1 微秒的瞬断 1No have fracture , crack, terminal contact point shake of product 2 No electrical discontinuity longer than 1 u sec.	产品焊板后装入 0.60mm 厚度的 SIM 卡形成回路后测试, 半正弦波, 通以1mA DC电流。 测试频率:10-2000-10 Hz; 振幅: 10mm,加速度:20m/S <sup>2</sup> 波形完成扫描时间:1 minute; 将测试样本配合好之后在X,Y,Z 3个轴向各测试50分钟, 共 150分钟。 half-sine wave, apply 1mA DC current. frequency:10-2000-10 Hz; amplitude: 10mm,acceleration: 20m/S <sup>2</sup> sweep time:1 minute the connector condition is PCB mounting and connector& testing board mating ,it must be tested 50min in each of the 3 axis(X,Y,Z),total 150min. Per EIA-364-28
4.3.10 容错测试	产品端子力臂无影响到功能的破坏;	产品焊板后使用 0.15mm 毛刺假卡进行插拔实验, 共插拔 5 次;

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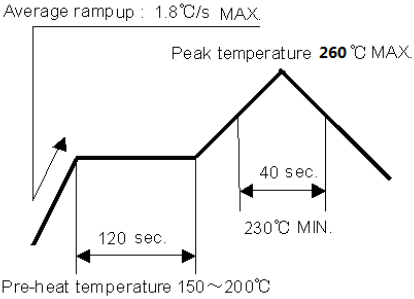
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项目 Items	规格要求 Requirements	测试方法 Test Methods
<b>4.4 环境性能 Environmental Performance :</b>		
4.4.1 恒温恒湿 Humidity	1.产品无损坏,端子无变形 2.测试后接触阻抗:175mΩMax 3.绝缘阻抗:100MΩMim; 1.No have fracture crack ,terminal contact point deflection and shake of product 2.After testing contact resistance: 175 mΩ Max 3. Insulation resistance:100MΩMim;	配合后的产品在以下条件下测试: 温度: 40±2°C; 相对湿度: 92~98% 时间: 96 hours Mated connectors shall be subjected to the following condition: Temperature: 40±2°C Relative humidity: 92 to 98% Period: 96 hours
4.4.2 耐低温 Low Temperature	1.产品无损坏,端子无变形; 2.测试后接触阻抗:175 mΩMax 3.绝缘阻抗:100MΩMim; 1. No have fracture crack, terminal Contact point deflection and shake of product 2. After testing contact resistance: 175 mΩ Max 3. Insulation resistance:100MΩMim;	配合后的产品在以下条件下测试: 温度: -40±2°C; 时间: 96 hours The card shall be mated and exposed to the condition of -40±2°C for 96 hours. Recovery time 1~2 hours
4.4.3 耐高温 High temperature	1.产品无损坏,端子无变形; 2.测试后接触阻抗:175 mΩMax 3.绝缘阻抗:100MΩMim; 1. No have fracture crack, terminal Contact point deflection and shake of product 2. After testing contact resistance: 175 mΩ Max 3. Insulation resistance:100MΩMim;	配合后的产品在以下条件下测试: 温度: 85±2°C 时间: 96h Mated connectors shall be subjected to the following condition: temperature: 85±2°C Duration: 96h

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<p>4.4.4 热冲击 Thermal shock</p>	<p>1.产品无损坏,端子无变形; 2.测试后接触阻抗:100 mΩMax 3. 绝缘阻抗: 100MΩMim; 1. No have fracture crack, terminal Contact point deflection and shake of product 2. After testing contact resistance: 100 mΩ Max 3. Insulation resistance:100MΩMim;</p>	<p>参考测试标准: EIA-364-32; -40℃和+80℃各 30 分钟, 总计 5 个循环。 Comply with method EIA-364-32. -40℃ for 30 minutes and +80℃ for 30 minutes for 5 cycles.</p>
<p>4.4.5 盐雾测试 Salt Spray Test</p>	<p>40 倍显微镜下观察,接触区无腐蚀;</p>	<p>盐水浓度: 5±1% 时间: 48 小时 温度: 35±2℃ Mated connector shall be subjected to the following condition Concentration : 5±1% Spray time : 48hours Temperature : 35±2℃</p>
<p>4.4.6 吃锡性测试 Solder ability</p>	<p>焊脚吃锡面积 95%以上 More than 95% of area dipped in molten solder should be coated by solder</p>	<p>温度: 255℃±5℃ 粘锡时间: 3~5 秒 Solder Temperature : 255℃±5℃ Immersion Duration : 3~5 seconds</p>
<p>4.4.7 耐 Reflow 高温 Resistance to Reflow Soldering Heat</p>	<p>1.无损坏, 端子无变形; 2.产品结构无破坏; 1.No have fracture crack ,terminal contact point deflection and shake of product 2.No have break down outer feature/structure</p>	<p>根据下图温度条件测试产品的耐焊接热 The connector shall be tested resistance to soldering heat in the following conditions, The temperature shall be measured on the surface of PCB</p> 

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## 4.5 Test Sequence

Group number	A	B	C	D	E	F	G	H	J	K	L	M	N	P
4.1 外观检查	1, 4	1, 6	1	1, 3	1, 3	1, 6	1, 5	1, 5	1, 5	1, 3	1, 4	1, 3	1, 3	1, 3
4.2.1 接触阻抗						2, 7	2, 6	2, 6	2, 6		2, 5			
4.2.2 绝缘阻抗						3, 8	3, 7	3, 7	3, 7					
4.2.3 耐电压						4								
4.3.1 正向力	2, 5													
4.3.2 抓板力			2											
4.3.3 插入力		2, 7												
4.3.4 拔出力		3, 8												
4.3.5 退卡力		4, 9												
4.3.6 推杆抗推力				2										
4.3.7 开关端子正向力														2
4.3.8 耐久	3	5												
4.3.9 振动											3			
4.3.10 容错测试					2									
4.4.1 恒温恒湿						5								
4.4.2 耐低温							4							
4.4.3 耐高温								4						
4.4.4 热冲击									4					
4.4.5 盐雾试验										2				
4.4.6 吃锡性试验												2		
4.4.7 耐 Reflow 高温													2	
样品数量	8	8	8	8	8	8	8	8	8	8	8	8	8	8

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