



## PRODUCT SPECIFICATION OF OUPIIN

# PRODUCT SPECIFICATION

## (產品規格書)

產品名稱 Description	產品料號 Part No.	圖號 Drawing No.
8402-A Series Mini PCI Express	8402-A52GxxA1T	S2620230720-04
	8402-A52GxxA2T	S6520230719-01
	8402-A52GxxA3T	S2620230721-02

PRODUCT NAME (產品名稱)	DOCUMENT No.: (文件編號)	Rev. (版本)	OUPIIN
8402-A Series Mini PCI Express (RoHS)	Q8402-PSS-I004	A (I716)	(歐品)
	Approved (核準)	Checked (審核)	Prepared (製作)
	Q.A. Section Chief	Ruru Chen	2023.09.01



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## 1. SCOPE 範圍

This product specification defines the product performance and the test methods to ascertain the performance of the 8402-A Series Mini PCI Express, Height 3.5mm which is designed and manufactured by Oupiin Electronic Co., Ltd. This product specification is applicable but not only for those part numbers which be shown in the cover page.

本產品規格書規定了由歐品電子有限公司設計生產的 8402-A Series Mini PCI Express 型連接器產品的特性及測試方法。本產品規格書適用於但不局限於封面所顯示的產品料號。

## 2. REFERENCE DOCUMENTS 參考文件

MIL-STD-1344A	Test method for electrical connector	電子連接器測試方法
MIL-STD-202	Test method for electrical components	電子零件測試方法
EIA364	Test method for electrical components	電子零件測試方法

## 3. FEATURE & DIMENSIONS 特徵及尺寸

### 3.1. PRODUCT DIMENSION 產品尺寸

These connectors shall have the dimensions as shown in drawing.

本產品的相關尺寸參考圖面。

### 3.2. PCB/PANEL LAYOUT 印刷電路板佈局

The recommended PCB layout is shown in drawing.

本產品適用的 PCB layout 參考圖面。

### 3.3. BILL OF MATERIAL 材料清單

Harmful material control follow the requirement of RoHS. The bill of material and product number is described in drawing.

有害物質控制符合RoHS指令要求.本產品使用的材料參考附件。

### 3.4. MECHANICAL & ELECTRICAL CHARACTERISTIC 機械及電氣特性

The connector shall have the mechanical and electrical performance as described in drawing.

本產品的機械及電氣特性見圖面。

### 3.5. PACKAGING 包裝

Products shall be packaged according to requirements specified in purchase order for safe delivery, connector container and the packaging method are shown in package specification.

產品可依客戶指定要求包裝，包裝材料與包裝方式參見產品包裝規範。



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### **3.6. RATING CURRENT AND RATING VOLTAGE 額定電流與額定電壓**

Rating current : 0.5A

Rating voltage : 50V AC

額定電流：0.5A

額定電壓：50V AC

### **3.7. STORAGE AND OPERATING TEMPERATURE 儲存與使用溫度**

Operating Temperature : -55°C ~+85°C

Storage Temperature : 0°C ~+40°C, Humidity : 80%RH under. Time limit is 12 months the products are stored.

使用溫度：-55°C ~+85°C

儲存溫度：0°C ~+40°C，濕度：80%RH以下，產品限存時間為12個月。

## **4. ENVIRONMENTAL 環境要求**

### **4.1. SOLDERABILITY 可焊性**

Connectors meet solder-ability to EIA-364-52.and shall be free of contaminants.

產品可焊性符合 EIA-364-52. 標準規定的相關要求，表面不得有污染物。

### **4.2. RESISTANCE TO SOLDER HEAT 耐焊接熱**

#### **4.2.1. INFRARED REFLOW 紅外線回流焊接**

Each cycle consists of three consecutive phases. as shown in Table II.

每個焊接週期包括三個連續的階段，見附表二。

Note: 說明

Device temperature measurements are referenced from the top-center of the package outer surface.

設備溫度量測時以從頂部中間位置測量為準。

## **5. PERFORMANCE AND TEST DESCRIPTION 性能及測試**

### **5.1. REQUIREMENT 要求**

Product is designed to meet electrical, mechanical, and environmental performance requirements specified in Table I.

本產品設計符合附表一所列的機械，電氣及環境要求。



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### **5.2. TEST CONDITION      測試條件**

Unless otherwise specified, all tests shall be performed at ambient environmental conditions.  
除非特別註明，所有測試在室溫條件下完成。

### **5.3. SAMPLE SELECTION      樣品選擇**

Test samples shall be selected at random from current production. No test samples shall be reused. Samples are pre-conditioned with 10 cycles of durability. Each group shall be containing 5 test samples.  
測試樣品從現生產的產品中隨機抽取，所有測試過的樣品不得重複使用。樣品已預先插拔10次，每組測試有5個樣品。



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### Table I : Test Requirements and Methods

#### 附表一：測試要求與方法

Items 項目	Requirements 要求	Test Methods 檢測方法
1. Confirmation of Product 產品確認	Product shall be conforming to the requirements of applicable product drawing. 產品必須滿足相關檔的規定	Visually, dimensions and functionally inspected per applicable product drawing. 依相關產品圖面，檢查產品的外觀、尺寸及功能
2. Contact Resistance 接觸阻抗	55 mΩ Max, Initial. 初始狀態最大 55 mΩ	Subject mated contacts assembled in housing to 10 mA Max, 20 mV Max. Per EIA-364-06 所述固定在外殼裡的端子中測試，電流 10 mA，電壓 20 mV 適用：EIA-364-06
3. Insulation Resistance 絕緣阻抗	500 MΩ Min. 最小 500 MΩ	Apply 500V DC for 1 minute between adjacent contacts in the unmated connector. Per EIA-364-21 在未配對產品相鄰端子間施加 500V DC，時間 1 分鐘 適用：EIA-364-21
4. Dielectric Withstanding Voltage 耐電壓	There shall be no breakdown or flashover. Current leakage : 0.5 mA Max. 無擊穿現象出現或產生火花 漏電流最大 0.5 mA	Apply 300V AC for 1 minute between the adjacent contacts, and between the contacts and ground in the unmated connector. Per EIA-364-20 對未配對產品相鄰端子間以及端子與接地間施加 300V AC，時間 1 分鐘 適用：EIA-364-20
5. Durability 耐久性	After testing, no physical damage. Contact Resistance $\Delta$ 20mΩ max. 測試後，產品外觀無損壞，接觸阻抗最大 $\Delta$ 20mΩ	Repeat mate and unmated for connector 50 cycles, at a speed of 100 mm/min. Per EIA-364-09 重復進行配合產品 50 次插拔，速度 100 mm/分鐘 適用：EIA-364-09



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<p>6. Mating/Unmating Force 插入力/拔出力</p>	<p>22.5N (2.3kgf) Max. 最大 22.5N (2.3kgf)</p>	<p>At a speed of 100mm/min, apply axial insert the mating part into fully or pull out from the subject product. Per EIA-364-13 以 100mm/分鐘的速度，軸向完全插入對配插件到被測產品中或從被測產品中拔出 適用：EIA-364-13</p>
<p>7. Vibration 振動</p>	<p>No electrical discontinuity greater than 1 <math>\mu</math>s shall occur, Contact Resistance <math>\Delta</math>20m<math>\Omega</math> max. 不允許出現超過 1 <math>\mu</math>s 的瞬間斷開，接觸阻抗最大<math>\Delta</math>20m<math>\Omega</math></p>	<p>Vibration Frequency : 10 to 55 Hz Accelerated Velocity : 30.38m/s<sup>2</sup> (3.1G), rms. Vibration Direction : In each of 3 mutually perpendicular planes. Duration : 15 minutes each 100 mA applied. Per EIA-364-28. Method VII condition D. 振動頻率：10 至 55 Hz 加速速度：30.38m/s<sup>2</sup> (3.1G) rms 振動方向：在互相垂直的三個面上 持續時間：每次施加 100 mA，電流 15 分鐘 適用：EIA-364-28 Method VII condition D.</p>
<p>8. Mechanical shock 機械沖擊</p>	<p>No electrical discontinuity greater than 1 <math>\mu</math>s shall occur, Contact Resistance <math>\Delta</math>20m<math>\Omega</math> max. 不允許出現超過 1 <math>\mu</math>s 的瞬間斷開，接觸阻抗最大<math>\Delta</math>20m<math>\Omega</math></p>	<p>Accelerate Velocity : 490m/s<sup>2</sup> (50 G); Waveform : Half-sine shock ; Duration : 11 msec ; 3 drops each to normal and reversed directions of X,Y and Z axes ; Per EIA-364-27 速度 490m/s<sup>2</sup>；半正弦波；持續 11 毫秒；<math>\pm</math>X, <math>\pm</math>Y, <math>\pm</math>Z, 方向各 3 次 適用：EIA-364-27</p>
<p>9. Thermal Shock 溫度沖擊</p>	<p>After testing, no physical damage. Contact Resistance <math>\Delta</math>20m<math>\Omega</math> max. 測試後，產品外觀無損壞，接觸阻抗最大<math>\Delta</math>20m<math>\Omega</math></p>	<p>Temperature range from -55+0/-3<math>^{\circ}</math>C to +85+3/-0<math>^{\circ}</math>C. Start from -55+0/-3<math>^{\circ}</math>C, after 30 minutes, change to +85+3/-0<math>^{\circ}</math>C, total 10 cycles. Per EIA-364-32. 溫度變化範圍：-55+0/-3<math>^{\circ}</math>C ~ +85+3/-0<math>^{\circ}</math>C。從 -55+0/-3<math>^{\circ}</math>C 開始，30 分鐘後換到+85+3/-0<math>^{\circ}</math>C，共 10 個循環 適用：EIA-364-32</p>



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<p>10. Test temperature rise 溫升測試</p>	<p>The temperature rise above ambient shall not exceed 30°C 溫升不能超過 30°C</p>	<p>Mate connectors, measure the temperature rise at rated current until temperature stable. Ambient conditions - Still air 25°C Per EIA-364-70 配對連接器，測量額定電流下的溫升，直至溫度穩定，周圍環境溫度 25°C 適用：EIA-364-70</p>
<p>11. Humidity-Temperature Cycle 溫濕度循環</p>	<p>After testing, no physical damage. Contact Resistance <math>\Delta 20\text{m}\Omega</math> max. 測試後，產品外觀無損壞，接觸阻抗最大<math>\Delta 20\text{m}\Omega</math></p>	<p>Subject product to 25±3~65±3°C, 50±3~80±3%.R.H, 24 Cycles. Per EIA-364-31 產品置於 25±3~65±3°C，相對濕度：50±3~80±3%，循環 24 次 適用：EIA-364-31</p>
<p>12. High Temperature Life 高溫老化</p>	<p>After testing, no physical damage. Contact Resistance <math>\Delta 20\text{m}\Omega</math> max. 測試後，產品外觀無損壞，接觸阻抗最大<math>\Delta 20\text{m}\Omega</math></p>	<p>Subject product to 115°C for 240 hours continuously. Per EIA-364-17 產品置於 115°C，連續 240 小時 適用：EIA-364-17</p>
<p>13. Salt Spray 鹽霧</p>	<p>No detrimental corrosion allowed in contact area and base metal exposed. 接觸區域和裸露的金屬不允許有害腐蝕</p>	<p>5±1% salt concentration(PH=7.0), 35±2°C, Gold Flash &amp; 10μ" Au for 8 hours ; 30μ" Au for 48 hours. Per EIA-364-26. 鹽水濃度 5±1%(PH=7.0)，溫度 35±2°C，Gold Flash &amp; 10μ" Au 時間 8 小時；30μ" Au 時間 48 小時。 適用：EIA-364-26</p>
<p>14. Solder ability 可焊性</p>	<p>There shall have a solder coverage of 95% minimum. 產品在測試完成後，焊接部位粘錫面積大於 95%</p>	<p>Soldering time : 3 to 5 Seconds Temperature : 260+0/-5°C Per EIA-364-52 焊接時間：3~5 秒 焊接溫度：260+0/-5°C 適用：EIA-364-52</p>

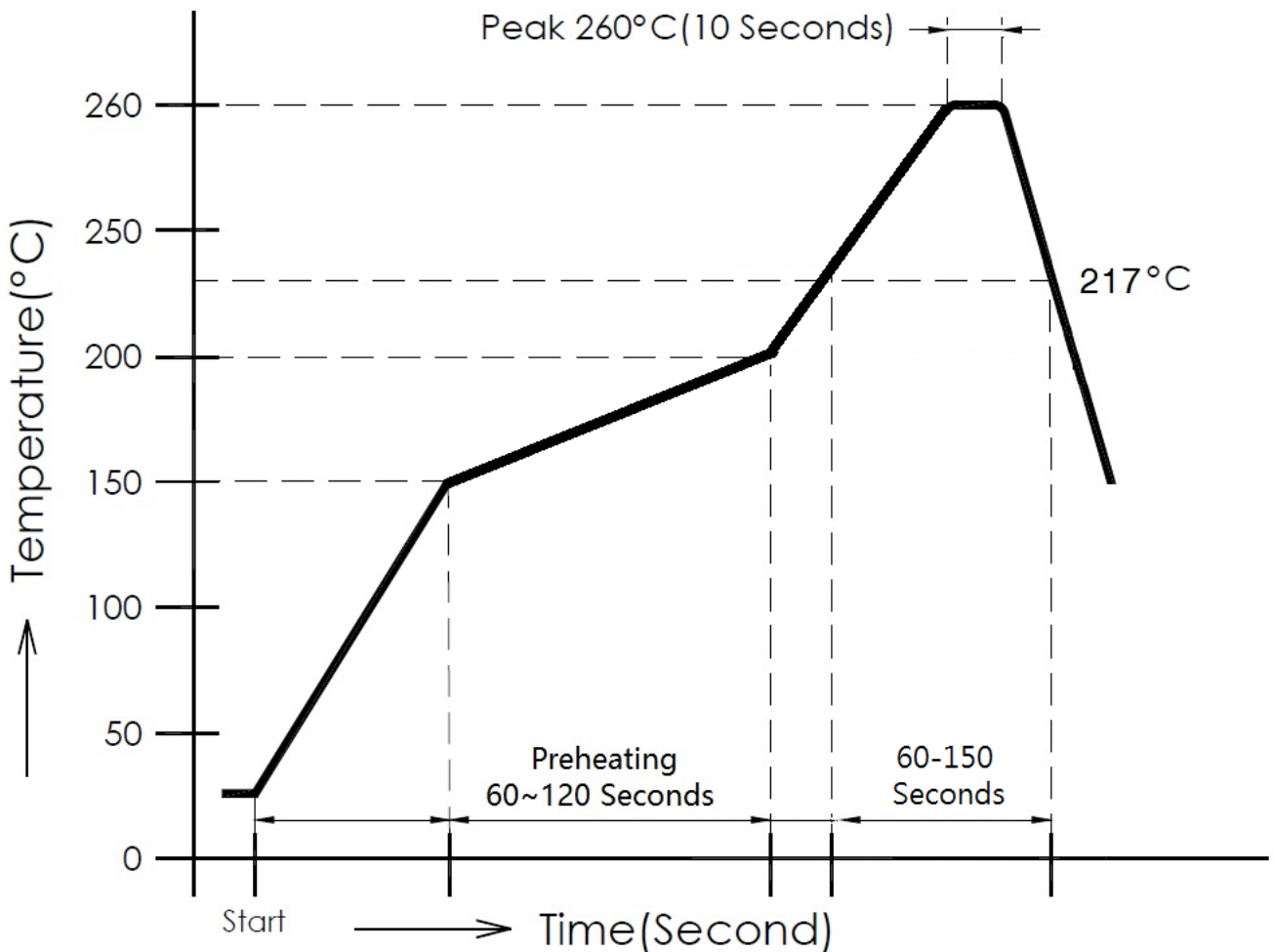


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Table II : Reflow Soldering Profile

附表二：回流焊曲線圖

Parameter 參數	Reference 參考	Specification 規格
Ramp-up (升溫區)	25°C ~150°C	3°C /S Max
Pre-heating (預熱區)	150°C ~200°C	60~120 sec
Time maintained above(保持時間)	217°C	60-150 sec
Peak Temperature	260+0/-5°C	10 sec



This profile is the minimum requirement for evaluating soldering heat resistance of components. Heat transfer method used for reflow soldering is hot air convection. The actual air temperatures used to achieve the specified profile largely dependent on the reflow equipment.

這個曲線圖是評估元件器件焊接抗熱的基本要求，應用在對焊接中的熱傳遞方式是熱氣對流，達到特定曲線圖地實際溫度主要依賴與回流焊接設備。