



**User Manual**

# **EPC-P30X6 Series**

**Thin Embedded Slim Computer**

微型计算机（薄型嵌入式微型计算机）

微型電腦（薄型嵌入式微型電腦）

**ADVANTECH**

*Enabling an Intelligent Planet*

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## Product Warranty (2 years)/ 产品质量保证（两年）/ 產品品質保證（兩年）

Advantech warrants to you, the original purchaser, that each of its products will be free from defects in materials and workmanship for two years from the date of purchase.

This warranty does not apply to any products which have been repaired or altered by persons other than repair personnel authorized by Advantech, or which have been subject to misuse, abuse, accident or improper installation. Advantech assumes no liability under the terms of this warranty as a consequence of such events.

Because of Advantech's high quality-control standards and rigorous testing, most of our customers never need to use our repair service. If an Advantech product is defective, it will be repaired or replaced at no charge during the warranty period. For out-of-warranty repairs, you will be billed according to the cost of replacement materials, service time and freight. Please consult your dealer for more details.

If you think you have a defective product, follow these steps:

1. Collect all the information about the problem encountered. (For example, CPU speed, Advantech products used, other hardware and software used, etc.) Note anything abnormal and list any onscreen messages you get when the problem occurs.
2. Call your dealer and describe the problem. Please have your manual, product, and any helpful information readily available.
3. If your product is diagnosed as defective, obtain an RMA (return merchandise authorization) number from your dealer. This allows us to process your return more quickly.
4. Carefully pack the defective product, a fully-completed Repair and Replacement Order Card and a photocopy proof of purchase date (such as your sales receipt) in a shippable container. A product returned without proof of the purchase date is not eligible for warranty service.
5. Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

从购买之日起，研华为原购买商提供两年的产品质量保证。但对那些未经授权的维修人员维修过的产品并不进行质量保证。研华对于不正确的使用、灾难、错误安装产生的问题有免责权利。

如果研华产品出现故障，在质保期内我们提供免费维修或更换服务。对于出保产品，我们将会酌情收取材料费、人工服务费用。请联系您的销售人员了解详细情况。

如果您认为您购买的产品出现了故障，请遵循以下步骤：

1. 收集您所遇到的问题的信息（例如，CPU 主频、使用的研华产品及其它软件、硬件等）。请注意屏幕上出现的任何不正常信息显示。
2. 打电话给您的供货商，描述故障问题。请借助手册，产品和任何有帮助的信息。
3. 如果您的产品被诊断发生故障，请从您的供货商那里获得 RMA (Return Material Authorization) 序列号。这可以让我们最快的进行故障产品的回收。
4. 请仔细的包装故障产品，并在包装中附上完整的售后服务卡片和购买日期证明（如销售发票）。我们对无法提供购买日期证明的产品不提供质量保证服务。
5. 把相关的 RMA 序列号写在外包装上，并将其运送给销售人员。

從購買之日起，研華為原購買商提供兩年的產品品質保證。但對那些未經授權的維修人員維修過的產品並不進行品質保證。研華對於不正確的使用、災難、錯誤安裝產生的問題有免責權利。

如果研華產品出現故障，在保固期內我們提供免費維修或更換服務。對於保固外產品，我們將會酌收材料費、人工服務費用。請聯繫您的銷售人員瞭解詳細情況。

如果您認為您購買的產品出現了故障，請遵循以下步驟：

1. 收集您所遇到的問題的資訊（例如，CPU 頻率、使用的研華產品及其它軟體、硬體等）。請注意螢幕上出現的任何不正常資訊顯示。
2. 打電話給您的供應商，描述故障問題。請參考手冊，產品和任何有幫助的資訊。
3. 如果您的產品被診斷發生故障，請從您的供應商那裏獲得 RMA (Return Material Authorization) 序號。這可以讓我們儘快的進行故障產品的回收。
4. 請仔細的包裝故障產品，並在包裝中附上完整的售後服務卡片和購買日期證明（如銷售發票）。我們對無法提供購買日期證明的產品不提供保固服務。
5. 把相關的 RMA 序號寫在外包裝上，並將其運送給銷售人員。

## Packing List/ 包裝清單 / 包裝清單

Before setting up the system, check that the items listed below are included and in good condition. If any item is not in accord with the table, please contact your dealer immediately.

- |                                     |                     |
|-------------------------------------|---------------------|
| ■ 1 x P30X6                         |                     |
| ■ 4 x Bottom rubber foot            | P/N: 1990012452S000 |
| ■ 4 x Screws for bottom rubber foot | P/N: 1930003238     |
| ■ 8 x Screws for Hard Disk/ spare   | P/N: 1930002235     |
| ■ 1 x Warranty card                 | P/N: 2190000902     |

安裝系統之前，用戶需確認包裝中含有本設備以及下面所列各項，並確認設備完好。若有任何不符，請立即與經銷商聯繫。

- |                       |                     |
|-----------------------|---------------------|
| ■ 1 x P30X6           |                     |
| ■ 4 x 底座橡膠墊           | P/N: 1990012452S000 |
| ■ 4 x 螺絲，用於底座橡膠墊      | P/N: 1930003238     |
| ■ 8 x 螺絲，用於安裝 HDD/ 備用 | P/N: 1930002235     |
| ■ 1 x 質保卡             | P/N: 2190000902     |

安裝系統之前，用戶需確認包裝中含有以下所列各項，並確認設備完好。若有任何不符，請立即與經銷商聯繫。

- |                       |                     |
|-----------------------|---------------------|
| ■ 1 x P30X6           |                     |
| ■ 4 x 底座橡膠墊           | P/N: 1990012452S000 |
| ■ 4 x 螺絲，用於底座橡膠墊      | P/N: 1930003238     |
| ■ 8 x 螺絲，用於安裝 HDD/ 備用 | P/N: 1930002235     |
| ■ 1 x 保固卡             | P/N: 2190000902     |

# Declaration of Conformity/ 符合性声明 / 符合性聲明

## CE

This product has passed the CE test for environmental specifications. Test conditions for passing included the equipment being operated within an industrial enclosure. In order to protect the product from being damaged by ESD (Electrostatic Discharge) and EMI leakage, we strongly recommend the use of CE-compliant industrial enclosure products.

本产品已经通过 CE 环境规格检测。测试条件之一是在工业环境中进行产品操作。为了使产品免受 ESD（静电放电）和 EMI 泄露造成的损害，强烈建议用户使用符合 CE 标准的工业产品。

本產品已經通過 CE 環境規格檢測。測試條件之一是在工業環境中進行產品操作。為了使產品免受 ESD（靜電放電）和 EMI 洩露造成的損害，強烈建議用戶使用符合 CE 標準的工業產品。

## FCC Class B/FCC B 级 /FCC B 級

### FCC Class B

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

### FCC B 级

根据 FCC 规则第 15 款，本设备已经过检测并被判定符合 B 级数字设备标准。这些限制旨在为居住环境下的系统操作提供合理保护，使其免受有害干扰。本设备会产生、使用和发射无线电频率能量。如果没有按照手册说明正确安装和使用，可能对无线电通讯造成有害干扰。但即使按照手册说明进行安装和使用，也不能保证不会产生干扰。若本设备会对无线电或电视信号接收产生有害干扰，用户可通过开、关设备进行确认。当本设备产生有害干扰时，用户可采取下面的措施来解决干扰问题：

- 调整接收天线的方向或位置
- 增大本设备与接收器之间的距离
- 将本设备的电源接头插在与接收器使用不同电路的电源插座
- 若需技术支持，请咨询经销商或经验丰富的无线电 / 电视技术人员

## FCC B 級

根據 FCC 規則第 15 款，本設備已經過檢測並被判定符合 B 級數位設備標準。這些限制旨在為居住環境下的系統操作提供合理保護，使其免受有害干擾。本設備會產生、使用和發射無線電頻率能量。如果沒有按照手冊說明正確安裝和使用，可能對無線電通訊造成有害干擾。但即使按照手冊說明進行安裝和使用，也並不能保證不會產生干擾。若本設備會對無線電或電視信號接收產生有害干擾，用戶可通過開、關設備進行確認。當本設備產生有害干擾時，用戶可採取下面的措施來解決干擾問題：

- 調整接收天線的方向或位置
- 增大本設備與接收器之間的距離
- 將本設備的電源接頭插在與接收器使用不同電路的電源插座
- 若需技術支援，請諮詢經銷商或經驗豐富的無線電 / 電視技術人員

## Technical Support and Assistance/技术支持与服务/技術支援與服務

1. Visit the Advantech website at [www.advantech.com/support](http://www.advantech.com/support) where you can find the latest information about the product.
2. Contact your distributor, sales representative, or Advantech's customer service center for technical support if you need additional assistance. Please have the following information ready before you call:
  - Product name and serial number
  - Description of your peripheral attachments
  - Description of your software (operating system, version, application software, etc.)
  - A complete description of the problem
  - The exact wording of any error messages

1. 有关该产品的最新信息，请访问研华公司的网站：[www.advantech.com/support](http://www.advantech.com/support)
2. 用户若需技术支持，请与当地分销商、销售代表或研华客服中心联系。进行技术咨询前，用户须将下面各项产品信息收集完整：
  - 产品名称及序列号
  - 外围附加设备的描述
  - 用户软件的描述（操作系统、版本、应用软件等）
  - 产品所出现问题的完整描述
  - 每条错误信息的完整内容

1. 有關該產品的最新資訊，請訪問研華公司的網站：[www.advantech.com/support](http://www.advantech.com/support)
2. 用戶若需技術支援，請與當地分銷商、銷售代表或研華客服中心聯繫。進行技術諮詢前，用戶須將下面各項產品資訊收集完整：
  - 產品名稱及序列號
  - 週邊附加設備的描述
  - 用戶軟體的描述（作業系統、版本、應用軟體等）
  - 產品所出現問題的完整描述
  - 每條錯誤資訊的完整內容



## Warnings and Cautions/ 警告与注意 / 警告與注意

**Warning!** Warnings, if not observed, indicate conditions where there is risk of personal injury!



在操作过程中，用户须特别注意该手册中的警告信息，以免造成人身伤害。

在操作過程中，用戶須特別注意該手冊中的警告資訊，以免造成人身傷害。

**Caution!** Cautions are included to help you avoid damaging hardware or losing data.



该手册中的注意信息可帮助用户避免损坏硬件或丢失数据，例如：

如果电池放置不正确，将有爆炸的危险。因此，只可以使用制造商推荐的同一种或者同等型号的电池进行替换。请按照制造商的指示处理旧电池。

該手冊中的注意資訊可幫助用戶避免損壞硬體或丟失資料，例如：

如果電池放置不正確，將有爆炸的危險。因此，只可以使用製造商推薦的同一種或者同等型號的電池進行替換。請按照製造商的指示處理舊電池。

## Document Feedback/ 意见反馈 / 意見回饋

To assist us in making improvements to this manual, we welcome comments and constructive criticism. Please send all such - in writing - to:

support@advantech.com

为了使手册更加完善，欢迎您对我们的手册进行评价并提出宝贵意见。请将您的意见发送至：support@advantech.com

為了使手冊更加完善，歡迎您對我們的手冊進行評價並提出寶貴意見。請將您的意見發送至：support@advantech.com

## Safety Instructions/ 安全指示

1. Read these safety instructions carefully.
2. Keep this User Manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall may cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
12. Never pour any liquid into an opening. This may cause fire or electrical shock.
13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
14. If one of the following situations arises, get the equipment checked by service personnel:
  - The power cord or plug is damaged.
  - Liquid has penetrated into the equipment.
  - The equipment has been exposed to moisture.
  - The equipment does not work well, or you cannot get it to work according to the user's manual.
  - The equipment has been dropped and damaged.
  - The equipment has obvious signs of breakage.
15. **DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE MAY GO BELOW -20° C (-4° F) OR ABOVE 60 °C (140° F). THIS COULD DAMAGE THE EQUIPMENT. THE EQUIPMENT SHOULD BE IN A CONTROLLED ENVIRONMENT.**
16. **CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER, DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.**
17. This product is intended to be supplied by an UL certified power supply, Tma= 50 degrees Centigrade or equivalent statement provided in operating manual, if power unit is not provided.

The sound pressure level at the operator's position according to IEC 704-1:1982 is no more than 70 dB (A).

**DISCLAIMER:** This set of instructions is given according to IEC 704-1. Advantech disclaims all responsibility for the accuracy of any statements contained herein.



1. 请仔细阅读此安全操作说明。
2. 请妥善保存此用户手册供日后参考。
3. 用湿抹布清洗设备前，请从插座拔下电源线。请不要使用液体或去污喷雾剂清洗设备。
4. 对于使用电源线的设备，设备周围必须有容易接触到的电源插座。
5. 请不要在潮湿环境中使用设备。
6. 请在安装前确保设备放置在可靠的平面上，意外跌落可能会导致设备损坏。
7. 设备外壳的开口是用于空气对流，从而防止设备过热。**请不要覆盖这些开口。**
8. 当您连接设备到电源插座上前，请确认电源插座的电压是否符合要求。
9. 请将电源线布置在人们不易绊到的位置，并不要在电源线覆盖任何杂物。
10. 请注意设备上的所有警告和注意标语。
11. 如果长时间不使用设备，请将其同电源插座断开，避免设备被超标的电压波动损坏。
12. 请不要让任何液体流入通风口，以免引起火灾或者短路。
13. 请不要自行打开设备。为了确保您的安全，请由经过认证的工程师来打开设备。
14. 如遇下列情况，请由专业人员来维修：
  - 电源线或者插头损坏；
  - 设备内部有液体流入；
  - 设备曾暴露在过于潮湿的环境中使用；
  - 设备无法正常工作，或您无法通过用户手册来使其正常工作；
  - 设备跌落或者损坏；
  - 设备有明显的外观破损。
15. 请不要把设备保存在超出我们建议的温度范围的环境，即不要低于  $-20^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$ ) 或高于  $60^{\circ}\text{C}$  ( $140^{\circ}\text{F}$ )，否则可能会损坏设备。
16. **注意：**计算机配置了由电池供电的实时时钟电路，如果电池放置不正确，将有爆炸的危险。因此，只可以使用制造商推荐的同一种或者同等型号的电池进行替换。请按照制造商的指示处理旧电池。
17. 若产品出货未配电源装置，请参考操作手册中的相关说明，需要选用经过 UL 认证的电源供应器供电，并且可在  $50^{\circ}\text{C}$  环境温度下操作的电源。

根据 IEC 704-1:1982 的规定，操作员所在位置的声压级不可高于 70dB(A)。

**免责声明：**该安全指示符合 IEC 704-1 的要求。研华公司对其内容的准确性不承担任何法律责任。

1. 請仔細閱讀此安全操作說明。
2. 請妥善保存此用戶手冊供日後參考。
3. 用濕抹布清洗設備前，請從插座拔下電源線。請不要使用液體或去汙噴霧劑清洗設備。
4. 對於使用電源線的設備，設備周圍必須有容易接觸到的電源插座。
5. 請不要在潮濕環境中使用設備。
6. 請在安裝前確保設備放置在可靠的平面上，意外跌落可能會導致設備損壞。
7. 設備外殼的開口是用於空氣對流，從而防止設備過熱。**請不要覆蓋這些開口。**
8. 當您連接設備到電源插座上前，請確認電源插座的電壓是否符合要求。
9. 請將電源線佈置在人們不易絆到的位置，並不要在電源線上覆蓋任何雜物。
10. 請注意設備上的所有警告和注意標語。
11. 如果長時間不使用設備，請將其同電源插座斷開，避免設備被超標的電壓波動損壞。
12. 請不要讓任何液體流入通風口，以免引起火災或者短路。
13. 請不要自行打開設備。為了確保您的安全，請由經過認證的工程師來打開設備。
14. 如遇下列情況，請由專業人員來維修：
  - 電源線或者插頭損壞；
  - 設備內部有液體流入；
  - 設備曾暴露在過於潮濕的環境中使用；
  - 設備無法正常工作，或您無法通過用戶手冊來使其正常工作；
  - 設備跌落或者損壞；
  - 設備有明顯的外觀破損。
15. 請不要把設備保存在超出我們建議的溫度範圍的環境，即不要低於  $-20^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$ ) 或高於  $60^{\circ}\text{C}$  ( $140^{\circ}\text{F}$ )，否則可能會損壞設備。
16. **注意：**電腦配置了由電池供電的即時時鐘電路，如果電池放置不正確，將有爆炸的危險。因此，只可以使用製造商推薦的同一種或者同等型號的電池進行替換。請按照製造商的指示處理舊電池。
17. 若產品出貨未附帶電源裝置，請參考操作手冊中的相關說明，需要選用由 UL 認證的電源供應器供電，並且可在  $50^{\circ}\text{C}$  環境溫度下操作之電源。

根據 IEC 704-1:1982 的規定，操作員所在位置的聲壓級不可高於 70dB(A)。

**免責聲明：**該安全指示符合 IEC 704-1 的要求。研華公司對其內容的準確性不承擔任何法律責任。

## Safety Precaution - Electricity/ 安全措施 – 静电防护 / 安全措施 – 靜電防護

Follow these simple precautions to protect yourself from harm and the products from damage.

1. To avoid electrical shock, always disconnect the power from your PC chassis before you work on it.
2. For the sake of the equipment, disconnect power before making any configuration changes. The sudden rush of power as you connect a jumper or install a card may damage sensitive electronic components.
3. Electronic components are also vulnerable to damage by electrostatic discharge. An electrostatic charge can build up on the human body, especially where the air is dry. At minimum, dissipate potential body charge before handling any electronic board by touching a conductive surface on the chassis. Only then remove circuit boards from their antistatic bags. Handle boards by the edges or mounting brackets only; do not touch components or connecting pins.

为了保护您和您的设备免受伤害或损坏，请遵照以下安全措施：

- 操作设备之前，请务必断开机箱电源，以防触电。不可在电源接通时接触 CPU 卡或其他卡上的任何元件。
- 在更改任何配置之前请断开电源，以免在您连接跳线或安装卡时，瞬间电涌损坏敏感电子元件。

為了保護您和您的設備免受傷害或損壞，請遵照以下安全措施：

- 操作設備之前，請務必斷開機箱電源，以防觸電。不可在電源接通時接觸 CPU 卡或其他卡上的任何元件。
- 在更改任何配置之前請關閉電源，以免在您連接跳線或安裝卡時，瞬間電湧損壞敏感電子元件。



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# Chapter 1

General Information

概述

產品資訊

## 1.1 Specifications / 产品规格 / 產品規格

**Table 1.1: General Features of EPC-T2000 series/  
EPC-T2000 系列一般特性**

Chassis Construction 机箱结构 機箱結構	Light-duty steel 轻型钢 輕型鋼	
Cooling System 冷却系统 冷卻系統	System Fan 系统风扇 系統風扇	x2 pcs (8cm/53CFM/57CFM each, support CPU up to 80W) 两个 (每个尺寸为 8cm/53CFM/57CFM, 支持 CPU 到 80W) 兩個 (每個尺寸為 8cm/53CFM/57CFM, 支援 CPU 到 80W)
Disk Drive Bay 磁盘驱动支架 硬碟支架	Internal 2.5" 内部 2.5" 内部 2.5"	1 (support max 7 mm height) 1 (最高支持 7 mm 厚度) 1 (最高支持 7 mm 厚度)
Compatible Motherboard 兼容母版 相容主機板	Motherboard name 母板名称 主機板名稱	EPC-P3000
Front I/O Opening 前部 I/O 开口 前方 I/O 開口	Reserved I/O cutouts 预留 I/O 接口 預留 I/O 接口	6 x COM port (DB-9) 16 bit GPIO (2 x DB-9) 1 x VGA 1 x HDMI 3 x Giga LAN (RJ45) 6 USB3.0 2 Antenna optional (天線加選 / 天線加選) 4 PCIE or PCI expansion slot optional (擴充槽加選 / 擴充槽加選) 1 iDoor optional (擴充槽加選 / 擴充槽加選)
Miscellaneous 其它	LED Indicators LED 指示灯 LED 指示燈	5 (TX1, RX1, TX2, RX2, HDD LED) (Power LED, HDD LED)
	Control 控制	1 (Power switch), 1 x Remote conn (2x3P). Power/RST/ HDD LED
Physical Characteristics 物理特性	Dimensions (W x H x D) 尺寸 (W x H x D)	335 x 260 x 88 mm (13.2" x 10.2" x 3.5")
	Weight 重量	6.54Kg

## 1.2 Environmental Specification/ 环境规格 / 環境規格

**Table 1.2: Environmental Specification/ 环境规格 / 環境規格**

Environment 环境 環境	Operating Temperature 操作溫度	0 ~ 50° C (32 ~ 122° F) with SSD/HDD *HDD specification: 60°C
	Non-operating Temperature 儲存溫度 儲存溫度	-20 ~ 60 °C (-4 ~ 140° F)
	Humidity 湿度 濕度	10~95% @ 40° C, non-condensing
	Vibration (5 ~5 00Hz) 振动 振動	1 Grms (HDD x 2; PCIe cards inserted); 3 Grms (SSD x 1)

## 1.3 Power Supply Options/ 电源选项 / 電源選項

**Table 1.3: Power Supply Options/ 电源选项 / 電源選項**

Part No.	Watts	Input 输入 輸入	Output 输出 輸出
96PSA-A220W24P4-1	220W	AC 100 ~ 240 V	24V, 9.16A
96PSA-A150W19P4-1	150W	AC 100 ~ 240 V	19V, 7.89A

\*150W power adapter supports EPC-P30X6 Without riser card options.

\*\* Please consider the overall power consumption and carefully select the power supply that is right for you.

\*150W 电源供应器只可支援无扩充卡的单体整机。

\*\* 选择电源供器前请考虑整机安装后的电源功耗。

\*150W 電源供應器只可支援無擴充卡的單體整機。

\*\* 選擇電源供器前請考慮整機安裝後的電源功耗。

-----  
\*\*Detail specification refer for EPC-P30X6 datasheet.

\*\* 详细规范，请参阅 EPC-P30X6 数据表。

\*\* 詳細規範，請參閱 EPC-P30X6 資料表。

# 1.4 Dimensions/ 产品尺寸 / 產品尺寸

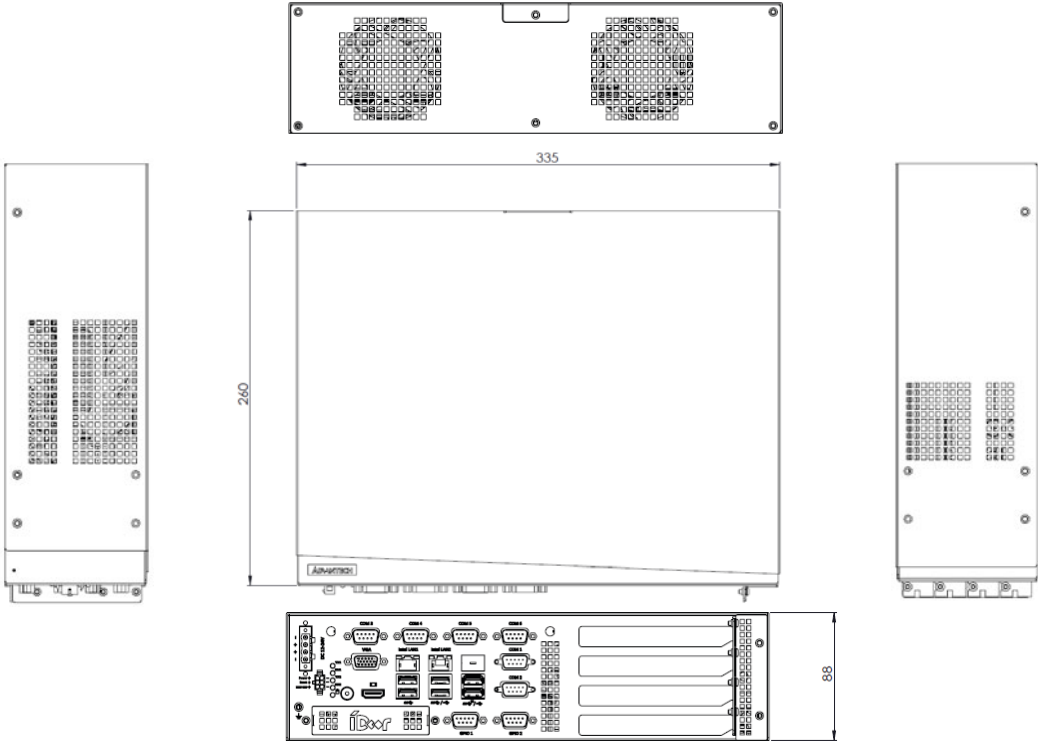
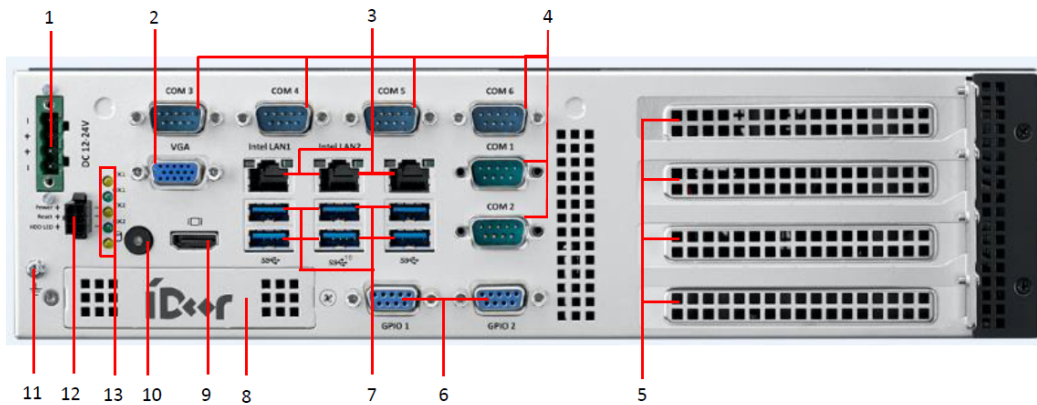


Figure 1.1 Dimensions/ 产品尺寸 / 產品尺寸

## 1.5 IO / 串口



1. 12~24 V DC in
2. VGA
3. LAN1, LAN2, LAN3
4. COM ports
5. PCIe/PCI slot; Default setting is NO riser card equipped

PN	Slot	SATA	SATA Pwr	Remark
EPC-RF484-13A1E	1 PCIex8 + 3 PCIex4	1	1	P3086 sku NO support
EPC-RF48P-22A1E	2 PCIex8 + 2 PCI	1	1	
EPC-RF2F4-11A1E	1 PCIex16 + 1 PCIex4	1	1	
EPC-RF4F1-13A1E	1 PCIex16 + 3 PCIex1	1	1	Custom BIOS needed

6. 16bits GPIO
7. 6 x USB3.0
8. iDoor window
9. HDMI
10. Power Switch w/ LED
11. Grounding Screws
12. Remote Control connector

Power SW +	Power SW -
Reset +	Reset -
HDD LED +	HDD LED -

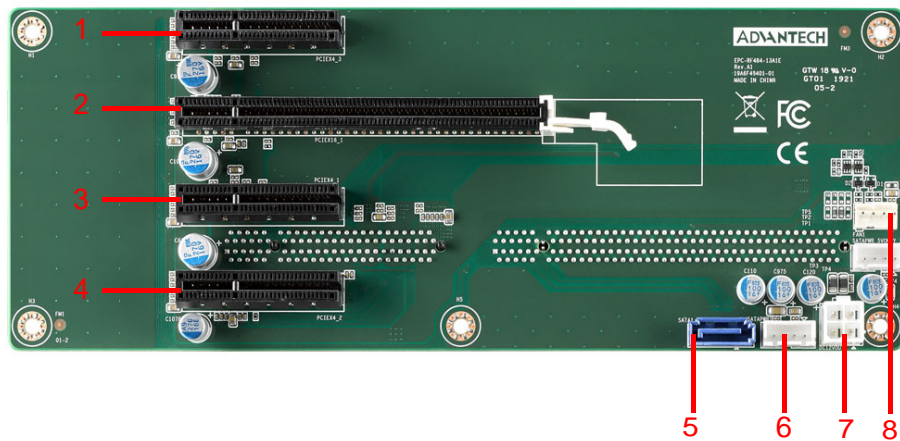
13. LED indicator

- COM1 TX1
- COM1 RX1
- COM2 TX2
- COM2 RX2
- HDD LED

## 1.6 Optional Riser Card/ 转板选择 / 轉板選擇

P3000 PN	Riser Card PN	Slot	SATA	SATA Pwr
	EPC-RF484-13A1E	1 PCIe x8 + 3 PCIe x4	1	1
EPC-P3066EA-00YE EPC-P30665A-00YE	EPC-RF48P-22A1E	2 PCIe x8 + 2 PCI; 1 PCIe x16 + 2 PCI	1	1
	EPC-RF2F4-11A1E	1 PCIe x16 + 1 PCIe x4	1	1
	EPC-RF4F1-13A1E	1 PCIe x16 + 3 PCIe x1	1	1
	EPC-RF48P-22A1E	1 PCIe x16 + 2 PCI	1	1
EPC-P3086CA-00YE	EPC-RF2F4-11A1E	1 PCIe x16 + 1 PCIe x4	1	1
	EPC-RF4F1-13A1E	1 PCIe x16 + 3 PCIe x1	1	1

### 1.6.1 EPC-RF484-13A1E



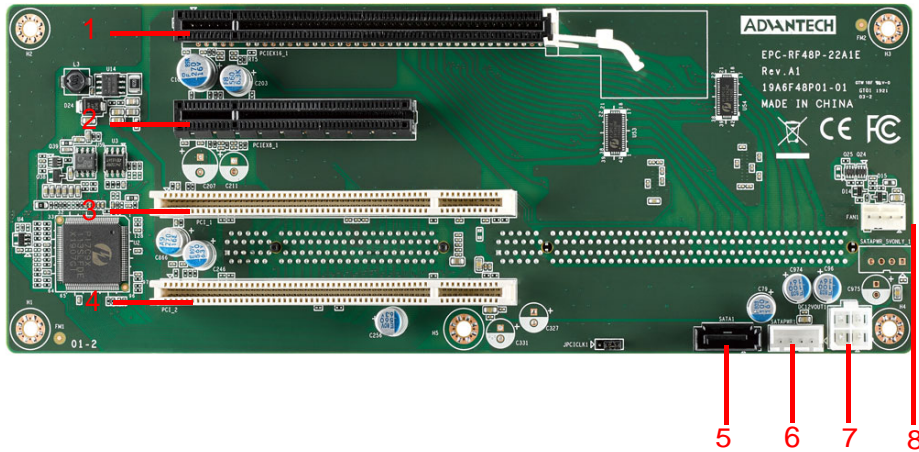
EPC-P3066/P3076 series

1	PCIe x 4	5	SATA
2	PCIe x 8	6	SATA Power
3	PCIe x 4	7	12V output
4	PCIe x 4	8	FAN Power Connector

EPC-P3086 Series NO support this cards



## 1.6.2 EPC-RF48P-22A1E



### EPC-P3066/P3076 series

#### Configuration 1:

1	PCIe x 8	5	SATA
2	PCIe x 8	6	SATA Power
3	PCI	7	12V output
4	PCI	8	FAN Power Connector

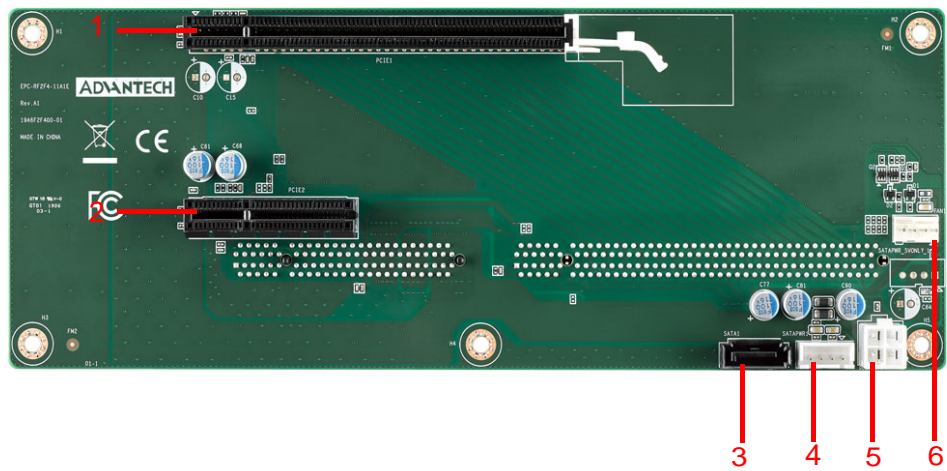
#### Configuration 2:

1	PCIe x 16	5	SATA
2	N/A	6	SATA Power
3	PCI	7	12V output
4	PCI	8	FAN Power Connector

### EPC-P3086 series

1	PCIe x 16	5	SATA
2	N/A	6	SATA Power
3	PCI	7	12V output
4	PCI	8	FAN Power Connector

### 1.6.3 EPC-RF2F4-11A1E



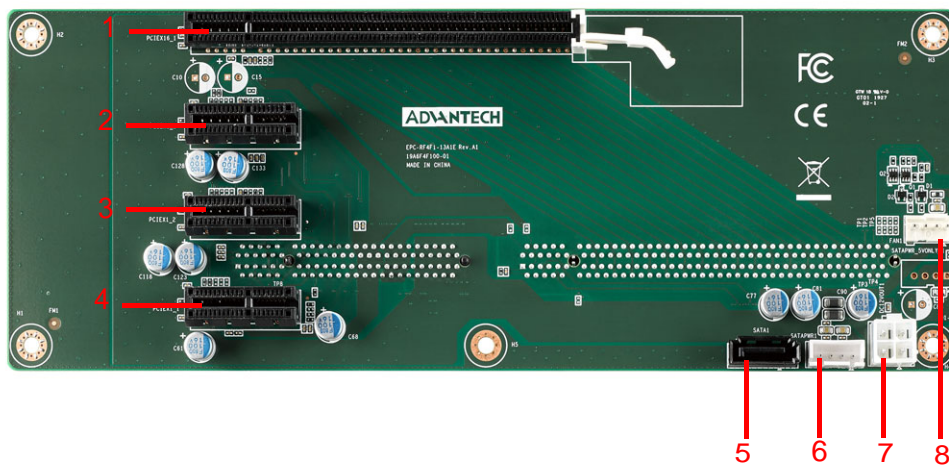
#### EPC-P3066/P3076 series

1	PCIe x 16	5	12V output
2	PCIe x 4	6	FAN Power Connector
3	SATA	7	
4	SATA Power	8	

#### EPC-P3086 series

1	PCIe x 16	5	12V output
2	PCIe x 4	6	FAN Power Connector
3	SATA	7	
4	SATA Power	8	

## 1.6.4 EPC-RF4F1-13A1E



EPC-P3066/P3076 series  
Configuration 1:

1	PCIe x 16	5	SATA
2	PCIe x 1	6	SATA Power
3	PCIe x 1	7	12V output
4	PCIe x 1	8	FAN Power Connector

EPC-P3086 series

1	PCIe x 16	5	SATA
2	PCIe x 1	6	SATA Power
3	PCIe x 1	7	12V output
4	PCIe x 1	8	FAN Power Connector

\*. Custom BIOS is required

\*. Project Base is required



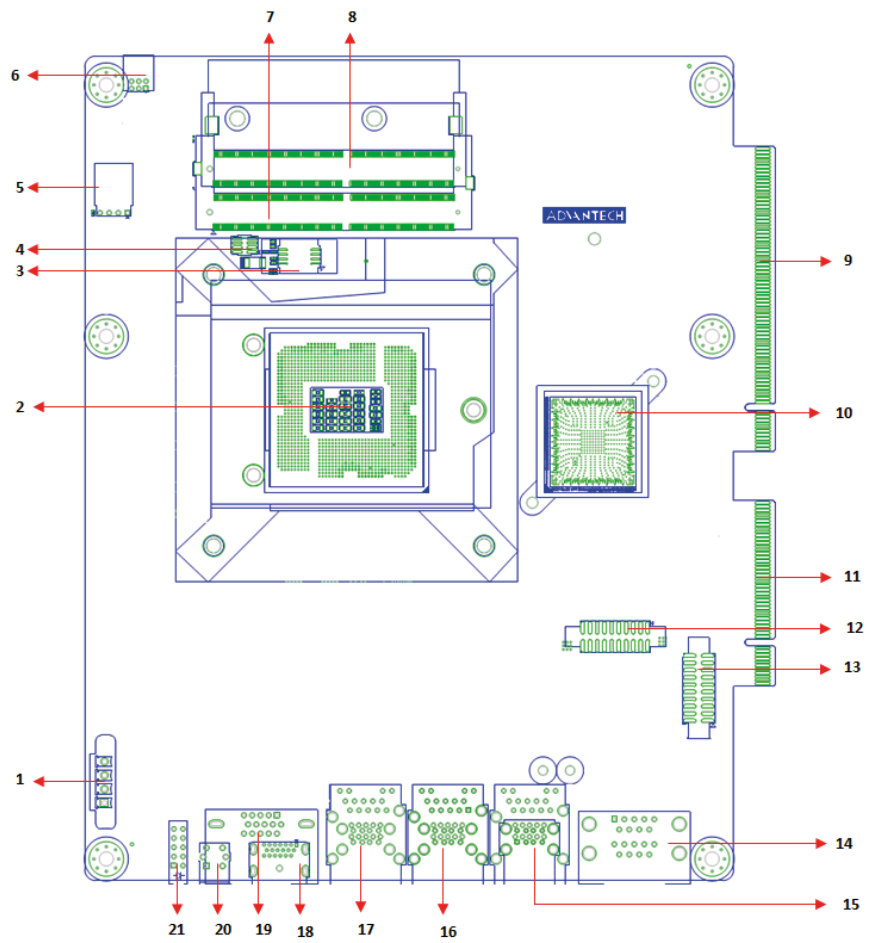
# Chapter 2

Connecting

内部连接

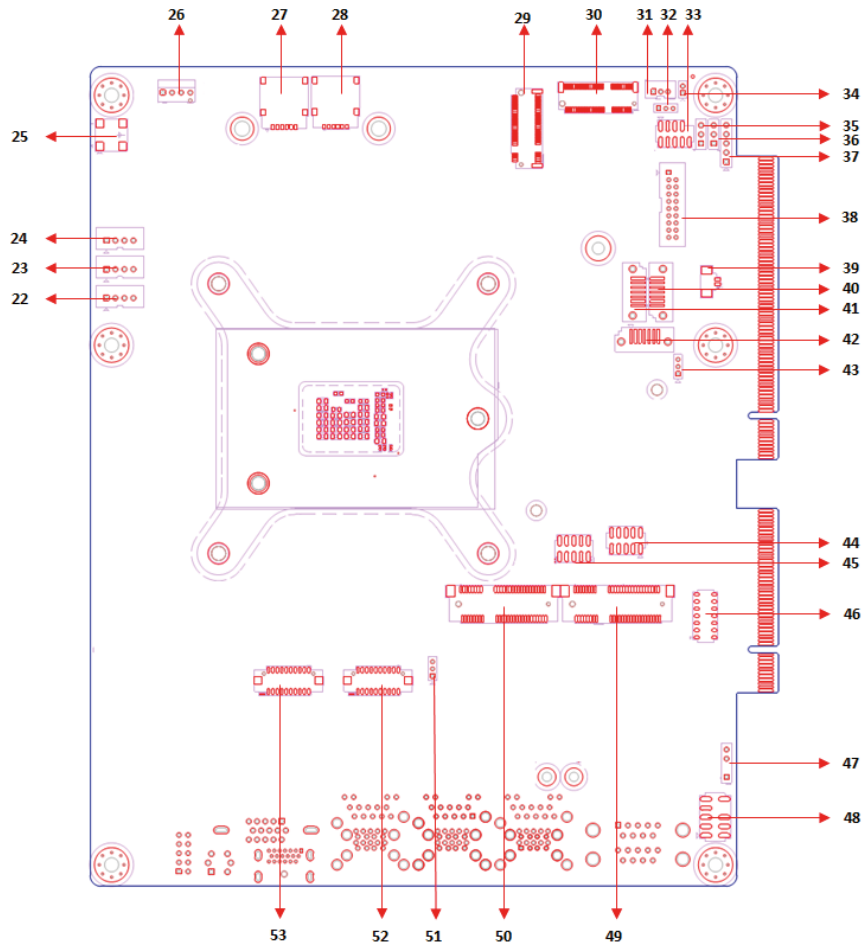
内部連接

## 2.1 Top Layer Overview





## 2.2 Bottom Layer Overview



## 2.3 Connector and Header List

	Description	Part Reference
1	DCIN power connector	DCIN1
2	CPU SCOKET LGA 1151 H4	CPU1
3	SPI BIOS Flash Socket	SPI1
4	SPI Pin Header	SPI_CN1
5	CPU FAN connector	CPUFAN1
6	PWRBTN#/ RESET#/HDD LED Header	JFP1
7	DDR4 SODIMM socket A1	DIMMA1
8	DDR4 SODIMM socket B1	DIMMB1
9	Gold Finger 1	GF1
10	PCH Heatsink	HS1
11	Gold Finger 2	GF2
12	COM5 / 6 connector	COM56
13	COM3 / 4 connector	COM34
14	COM1 / 2 connector	COM12
15	RJ45 + USB3.0 stack connector	LAN3_USB56
16	RJ45 + USB3.0 stack connector	LAN2_USB34
17	RJ45 + USB3.0 stack connector	LAN1_USB12
18	HDMI1 stack connector	HDMI1
19	VGA1 stack connector	VGA1
20	PWRBTN	PWRBTN1
21	UART1/2, STAT LED	LED1
22	SATA Power Connector	SATA_PWR3
23	SATA Power Connector	SATA_PWR2
24	SATA Power Connector	SATA_PWR1
25	Buzzer	SP1
26	System Fan connector	SYSFAN1
27	SIM Card 1	SIM1
28	SIM Card 2	SIM2
29	M.2 B Key connector	M2B1
30	M.2 E Key connector	M2E1
31	AT/ATX Mode selection	PSON1
32	USB Power selection for USB78/ USB910	JUSBPWR2
33	Universal Serial Bus Port 9 / 14	USB910
34	Case Open connector	JCASE1
35	Power LED pin header	JFP2
36	I2C pin header	JFP3
37	Watchdog timer output and OBS beep	JWDT1+JOBS1
38	Universal Serial Bus 3.1 Port 7 / 8	USB78
39	CMOS battery connector	BAT1
40	Serial ATA interface connector	SATA1
41	Serial ATA interface connector	SATA3
42	Serial ATA interface connector	SATA2
43	COMS Mode selection	JCMOS1
44	8-bits General Purpose I/O pin header	GPIO1
45	8-bits General Purpose I/O pin header	GPIO2
46	Low pin count interface connector	LPC1

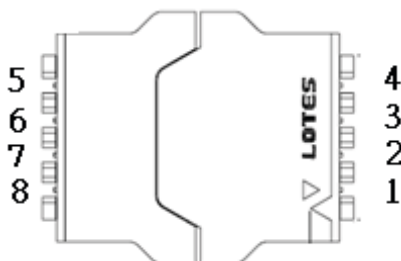
47	HD Audio interface (Digital)	SPDIF1
48	Front panel audio header	FPAUD1
49	Mini-PCIE/MSATA Connector	MINIPCI2
50	Mini-PCIE/MSATA Connector	MINIPCI1
51	USB Power selection for LAN1_USB12 / LAN2_USB34 / LAN3_USB56	JUSBPWR1
52	Display header	DP2
53	Display header	DP1

### 2.3.1 DCIN power connector (DCIN1)



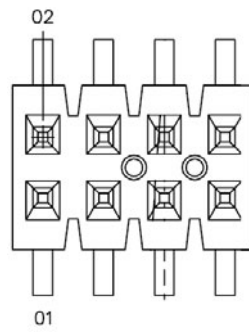
Pin	Signal
1	GND
2	+VDCIN_ADP_IN
3	+VDCIN_ADP_IN
4	GND

### 2.3.2 SPI BIOS flash socket (SPI1)



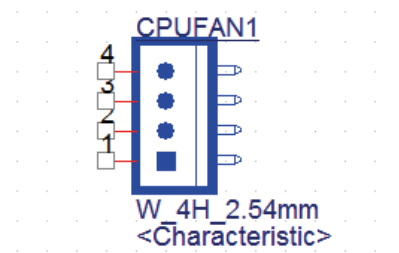
Pin	Signal	Pin	Signal
1	CS#	5	MOSI
2	MISO	6	SCLK
3	WP# / IO2	7	HOLD# / IO3
4	GND	8	+V3.3_SPI

### 2.3.3 SPI Pin Header (SPI\_CN1)



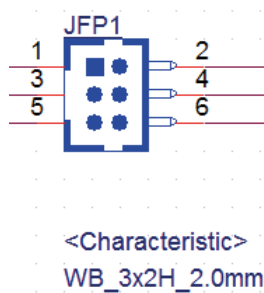
Pin	Signal	Pin	Signal
1	+3.3VSB	2	GND
3	CS#	4	SCLK
5	MISO	6	MOSI
		8	NC

### 2.3.4 CPU FAN connector (CPUFAN1)



Pin	Signal
1	GND
2	CPU FAN VCC
3	CPU FAN SPEED
4	CPU FAN PWM

### 2.3.5 PWRBTN#/ RESET#/HDD LED Header (JFP1)



Pin	Signal	Pin	Signal
1	FP_PANSWIN#	2	GND
3	FP_SYS_RESET#	4	GND
5	FP_SYS_RESET#	6	+V3.3

### 2.3.6 DDR4 SODIMM socket A1 (DIMMA1)

Please see JEDEC STANDARD.

### 2.3.7 DDR4 SODIMM socket B1 (DIMMB1)

Please see JEDEC STANDARD.

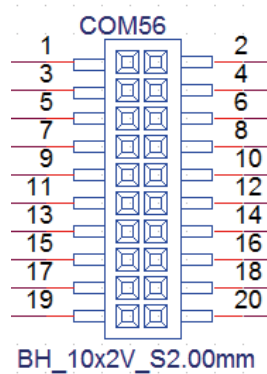
## 2.3.8 Gold Finger 1 (GF1)

x16 PCIe Connector A			
AB01	SMCLK	THERM_R+	AA01
AB02	SMDAT	THERM_R-	AA02
AB03	PERST#	WAKE#	AA03
AB04	NC	GND	AA04
AB05	NC	SATA_TX+	AA05
AB06	NC	SATA_TX-	AA06
AB07	NC	GND	AA07
AB08	NC	SATA_RX+	AA08
AB09	NC	SATA_RX-	AA09
AB10	NC	GND	AA10
AB11	LPC_RST#/ESPI_RST#	+5VSB	AA11
Mechanical Key			
AB12	GND	ATX_PWROK	AA12
AB13	a_PETp0	GND	AA13
AB14	a_PETn0	GND	AA14
AB15	GND	a_PERp0	AA15
AB16	GND	a_PERn0	AA16
AB17	a_PETp1	GND	AA17
AB18	a_PETn1	GND	AA18
AB19	GND	a_PERp1	AA19
AB20	GND	a_PERn1	AA20
AB21	a_PETp2	GND	AA21
AB22	a_PETn2	GND	AA22
AB23	GND	a_PERp2	AA23
AB24	GND	a_PERn2	AA24
AB25	a_PETp3	GND	AA25
AB26	a_PETn3	GND	AA26
AB27	GND	a_PERp3	AA27
AB28	GND	a_PERn3	AA28
AB29	a_PETp4	GND	AA29
AB30	a_PETn4	GND	AA30
AB31	GND	a_PERp4	AA31
AB32	GND	a_PERn4	AA32
AB33	a_PETp5	GND	AA33
AB34	a_PETn5	GND	AA34
AB35	GND	a_PERp5	AA35
AB36	GND	a_PERn5	AA36
AB37	a_PETp6	GND	AA37
AB38	a_PETn6	GND	AA38
AB39	GND	a_PERp6	AA39
AB40	GND	a_PERn6	AA40
AB41	a_PETp7	GND	AA41
AB42	a_PETn7	GND	AA42
AB43	GND	a_PERp7	AA43
AB44	GND	a_PERn7	AA44
AB45	a_PETp8	GND	AA45
AB46	a_PETn8	GND	AA46
AB47	GND	a_PERp8	AA47
AB48	GND	a_PERn8	AA48
AB49	a_PETp9	GND	AA49
AB50	a_PETn9	GND	AA50
AB51	GND	a_PERp9	AA51
AB52	GND	a_PERn9	AA52
AB53	a_PETp10	GND	AA53
AB54	a_PETn10	GND	AA54
AB55	GND	a_PERp10	AA55
AB56	GND	a_PERn10	AA56
AB57	a_PETp11	GND	AA57
AB58	a_PETn11	GND	AA58
AB59	GND	a_PERp11	AA59
AB60	GND	a_PERn11	AA60
AB61	a_PETp12	GND	AA61
AB62	a_PETn12	GND	AA62
AB63	GND	a_PERp12	AA63
AB64	GND	a_PERn12	AA64
AB65	a_PETp13	GND	AA65
AB66	a_PETn13	GND	AA66
AB67	GND	a_PERp13	AA67
AB68	GND	a_PERn13	AA68
AB69	a_PETp14	GND	AA69
AB70	a_PETn14	GND	AA70
AB71	GND	a_PERp14	AA71
AB72	GND	a_PERn14	AA72
AB73	a_PETp15	GND	AA73
AB74	a_PETn15	GND	AA74
AB75	GND	a_PERp15	AA75
AB76	GND	a_PERn15	AA76
AB77	USB2p	GND	AA77
AB78	USB2n	USB3p	AA78
AB79	GND	USB3n	AA79
AB80	USBOC#	GND	AA80
AB81	CFG0	CFG1	AA81
AB82	CFG2	CFG3	AA82

### 2.3.9 Gold Finger 2 (GF2)

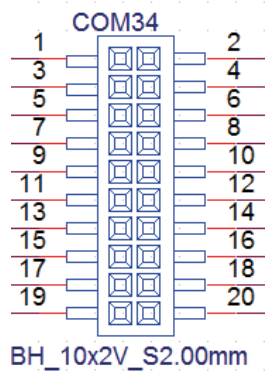
x8 PCIe Connector B			
AA01	GND	PCI_PML*	AA01
AA02	REFCLK3+	GND	AA02
AA03	REFCLK3-	GND	AA03
AA04	GND	REFCLK3+	AA04
AA05	GND	REFCLK3-	AA05
AA06	REFCLK3+	GND	AA06
AA07	REFCLK3-	GND	AA07
AA08	GND	REFCLK3+	AA08
AA09	GND	REFCLK3-	AA09
AA10	FANDEC1	GND	AA10
AA11	FANDEC2	FANPWM	AA11
Mechanical Key			
AA12	GND	GF_PRESENT*	AA12
AA13	b_PETp0	GND	AA13
AA14	b_PETn0	GND	AA14
AA15	GND	b_PERp0	AA15
AA16	GND	b_PERn0	AA16
AA17	b_PETp1	GND	AA17
AA18	b_PETn1	GND	AA18
AA19	GND	b_PERp1	AA19
AA20	GND	b_PERn1	AA20
AA21	b_PETp2	GND	AA21
AA22	b_PETn2	GND	AA22
AA23	GND	b_PERp2	AA23
AA24	GND	b_PERn2	AA24
AA25	b_PETp3	GND	AA25
AA26	b_PETn3	GND	AA26
AA27	GND	b_PERp3	AA27
AA28	GND	b_PERn3	AA28
AA29	+3.3VSB	GND	AA29
AA30	+3.3VSB	GND	AA30
AA31	+3.3VSB	+3.3V	AA31
AA32	+3.3V	+3.3V	AA32
AA33	+3.3V	+3.3V	AA33
AA34	+3.3V	+3.3V	AA34
AA35	+3.3V	+3.3V	AA35
AA36	GND	GND	AA36
AA37	GND	GND	AA37
AA38	+5V	+5V	AA38
AA39	+5V	+5V	AA39
AA40	+5V	+5V	AA40
AA41	+5V	+5V	AA41
AA42	GND	GND	AA42
AA43	GND	GND	AA43
AA44	GND	GND	AA44
AA45	+12V	+12V	AA45
AA46	+12V	+12V	AA46
AA47	+12V	+12V	AA47
AA48	+12V	+12V	AA48
AA49	+12V	+12V	AA49

### 2.3.10 COM5 / 6 connector (COM56)



Pin	Signal	Pin	Signal
1	COM5_DCD#	2	COM5_DSR#
3	COM5_SIN	4	COM5_RTS#
5	COM5_SOUT	6	COM5_CTS#
7	COM5_DTR#	8	COM5_RI
9	GND	10	GND
11	COM6_DCD#	12	COM6_DSR#
13	COM6_SIN	14	COM6_DSR#
15	COM6_SOUT	16	COM6_CTS#
17	COM6_DTR#	18	COM6_RI
19	GND	20	GND

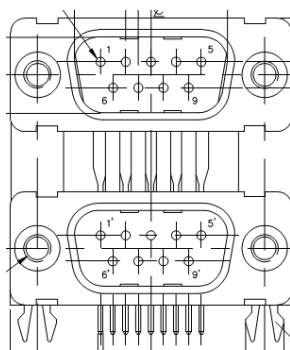
### 2.3.11 COM3 / 4 connector (COM34)



Pin	Signal	Pin	Signal
1	COM3_DCD#	2	COM3_DSR#
3	COM3_SIN	4	COM3_RTS#
5	COM3_SOUT	6	COM3_CTS#
7	COM3_DTR#	8	COM3_RI
9	GND	10	GND
11	COM4_DCD#	12	COM4_DSR#
13	COM4_SIN	14	COM4_DSR#
15	COM4_SOUT	16	COM4_CTS#
17	COM4_DTR#	18	COM4_RI
19	GND	20	GND

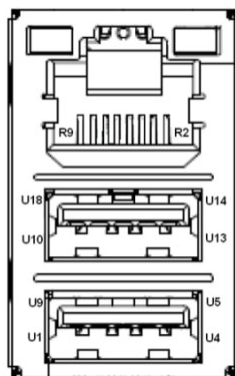


### 2.3.12 COM1 / 2 connector (COM12)



Pin	Signal	Pin	Signal
A1	COM1_422_485_TX-	B1	COM2_422_485_TX-
A2	COM1_422_485_TX+	B2	COM2_422_485_TX+
A3	COM1_422_RX+	B3	COM2_422_RX+
A4	COM1_422_RX-	B4	COM2_422_RX-
A5	GND	B5	GND
A6	COM1_DSR#	B6	COM2_DSR#
A7	COM1_RTS#	B7	COM2_RTS#
A8	COM1_CTS#	B8	COM2_CTS#
A9	COM1_RI	B9	COM2_RI

### 2.3.13 RJ45 + USB3.0 stack connector (LAN3\_USB56)

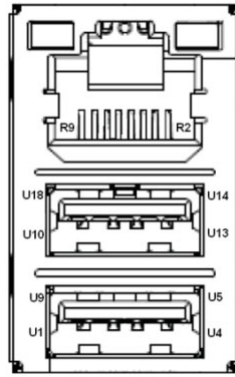


Pin	Signal	Pin	Signal
U1	VBUS (*)	U10	VBUS (*)
U2	D-_3	U11	D-_4
U3	D+_3	U12	D+_4
U4	GND	U13	GND
U5	RX-_3	U14	RX-_4
U6	RX+_3	U15	RX+_4
U7	GND	U16	GND
U8	TX-_3	U17	TX-_4
U9	TX+_3	U18	TX+_4

(\*) Depends on JUSBPWR1 Jump Setting.

Pin	Signal	Pin	Signal
R2	MDI_0+	R6	MDI_2+
R3	MDI_0-	R7	MDI_2-
R4	MDI_1+	R8	MDI_3+
R5	MDI_1-	R9	MDI_3-

### 2.3.14 RJ45 + USB3.0 stack connector (LAN2\_USB34)

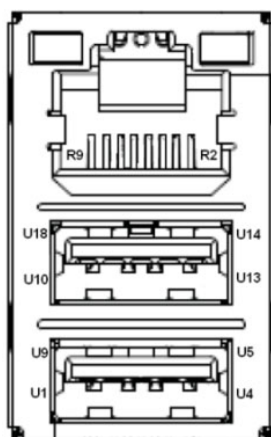


Pin	Signal	Pin	Signal
U1	VBUS (*)	U10	VBUS (*)
U2	D-_3	U11	D-_4
U3	D+_3	U12	D+_4
U4	GND	U13	GND
U5	RX-_3	U14	RX-_4
U6	RX+_3	U15	RX+_4
U7	GND	U16	GND
U8	TX-_3	U17	TX-_4
U9	TX+_3	U18	TX+_4

(\*) Depends on JUSBPWR1 Jump Setting

Pin	Signal	Pin	Signal
R2	MDI_0+	R6	MDI_2+
R3	MDI_0-	R7	MDI_2-
R4	MDI_1+	R8	MDI_3+
R5	MDI_1-	R9	MDI_3-

### 2.3.15 RJ45 + USB3.0 stack connector (LAN1\_USB12)



Pin	Signal	Pin	Signal
U1	VBUS (*)	U10	VBUS (*)
U2	D-_3	U11	D-_4
U3	D+_3	U12	D+_4
U4	GND	U13	GND
U5	RX-_3	U14	RX-_4
U6	RX+_3	U15	RX+_4
U7	GND	U16	GND
U8	TX-_3	U17	TX-_4
U9	TX+_3	U18	TX+_4

(\*) Depends on JUSBPWR1 Jump Setting

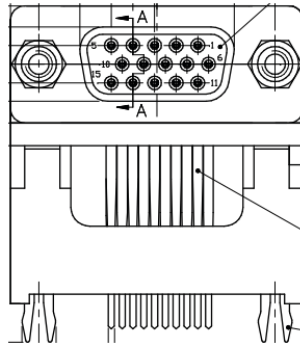
Pin	Signal	Pin	Signal
R2	MDI_0+	R6	MDI_2+
R3	MDI_0-	R7	MDI_2-
R4	MDI_1+	R8	MDI_3+
R5	MDI_1-	R9	MDI_3-

### 2.3.16 HDMI1 stack connector (HDMI1)



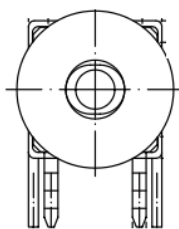
Pin	Signal	Pin	Signal
1	HDMI1_Z_D2+	11	GND
2	GND	12	HDMI1_Z_CLK-
3	HDMI1_Z_D2-	13	x
4	HDMI1_Z_D1+	14	x
5	GND	15	HDMI1_SCL
6	HDMI1_Z_D1-	16	HDMI1_SDA
7	HDMI1_Z_D0+	17	GND
8	GND	18	+V5_HDMI
9	HDMI1_Z_D0-	19	HDMI1_HPD
10	HDMI1_Z_CLK+	20	x

### 2.3.17 VGA1 stack connector (VGA1)

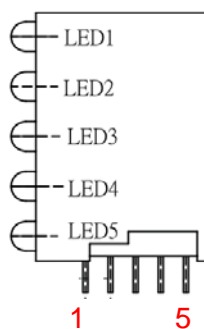


Pin	Signal	Pin	Signal
1	VGA_z_R	2	VGA_z_G
3	VGA_z_B	4	NC
5	GND	6	VGA1_FOC_ON
7	GND	8	GND
9	+V5_VGA	10	GND
11	NC	12	VGA_z_DDAT
13	VGA_z_HS	14	VGA_z_VS
15	VGA_z_DCLK		

### 2.3.18 PWRBTN(PWRBTN1)

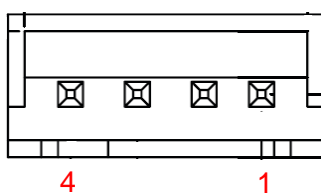


### 2.3.19 UART1/2, STAT LED (LED1)



LED	Signal
1	UART1_SOUT_LED
2	UART1_SIN_LED
3	UART2_SOUT_LED
4	UART2_SIN_LED
5	SATA_PCH_LED#

### 2.3.20 SATA Power Connector (SATA PWR3/PWR2/PWR1)



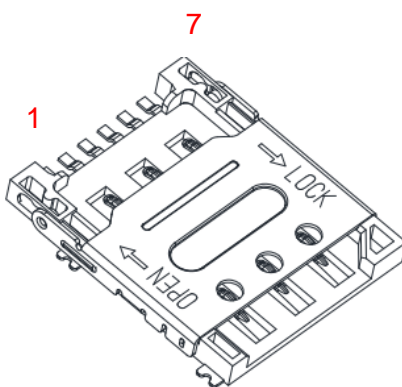
Pin	Signal
1	+V5
2	GND
3	GND
4	+V12

### 2.3.21 System Fan connector (SYSFAN1)



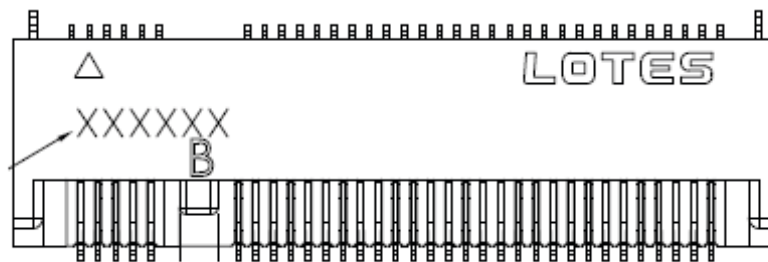
Pin	Signal
1	GND
2	SYSTEM FAN VCC
3	SYSTEM FAN SPEED
4	SYSTEM FAN PWM

### 2.3.22 SIM Card 1 (SIM1/SIM2)



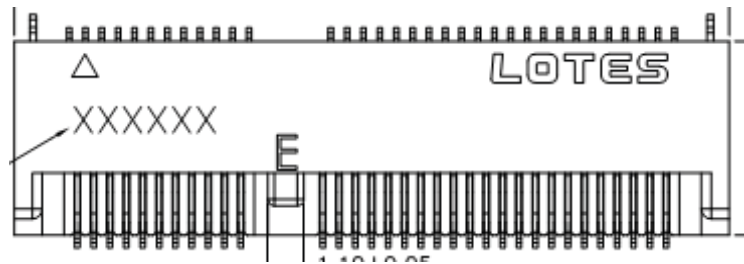
Pin	Signal
1	F_SIM_VUSIM
2	F_SIM_RST
3	F_SIM_CLK
4	NA
5	GND
6	NA
7	F_SIM_DATA

### 2.3.23 M.2 B Key connector(M2B1)



Pin	Signal Pin Definition <sup>6</sup>	Pin	Signal Pin Definition
1	CONFIG_3	2	+3.3V
3	GND	4	+3.3V
5	GND	6	FULL_CARD_POWER_OFF#
7	USB_D+	8	W_DISABLE1#
9	USB_D-	10	LED
11	GND	12	Connector KEY
13	Connector KEY	14	Connector KEY
15	Connector KEY	16	Connector KEY
17	Connector KEY	18	Connector KEY
19	Connector KEY	20	N/C
21	CONFIG_0	22	N/C
23	PCIE_WAKE#	24	N/C
25	DPR	26	M.2_GNSS_DISABLE#
27	GND	28	N/C
29	PERn1/USB3.0-Rx-/SSIC-RxN	30	UIM-RESET (I)
31	PERp1/USB3.0-Rx+/SSIC-RxP	32	UIM-CLK (I)
33	GND	34	UIM-DATA (I/O)
35	PETn1/USB3.0-Tx-/SSIC-TxN	36	UIM-PWR (I)
37	PETp1/USB3.0-Tx+/SSIC-TxP	38	SATA_DEVSLP (O)
39	GND	40	M.2_ISH_SCL
41	PERn0/SATA-B+	42	M.2_ISH_SDA
43	PERp0/SATA-B-	44	N/C
45	GND	46	N/C
47	PETn0/SATA-A-	48	N/C
49	PETp0/SATA-A+	50	PERST#
51	GND	52	CLKREQ#
53	REFCLKn	54	PEWAKE#
55	REFCLKp	56	N/C
57	GND	58	N/C
59	N/C	60	N/C
61	N/C	62	N/C
63	N/C	64	N/C
65	N/C	66	N/C
67	RESET#	68	SUSCLK(32kHz)
69	CONFIG_1	70	+3.3V

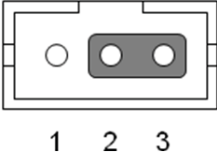
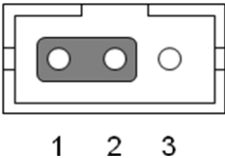
## 2.3.24 M.2 E Key connector (M2E1)



Pin	Signal	Pin	Signal
1	GND	2	3.3V
3	USB_D+	4	3.3V
5	USB_D-	6	LED1# (I)(OD)
7	GND	8	PCM_CLK/I2S SCK (O/I)(0/1.8V)
9	CNV_WR_D1-	10	PCM_SYNC/I2S WS (I/O)(0/1.8V)
11	CNV_WR_D1+	12	PCM_IN/I2S SD_IN (I)(0/1.8V)
13	GND	14	PCM_OUT/I2S SD_OUT (O)(0/1.8V)
15	CNV_WR_D0-	16	LED2# (I)(OD)
17	CNV_WR_D0+	18	GND
19	GND	20	UART WAKE# (I)(0/3.3V)
21	CNV_WR_CLK-	22	UART RXD (I)(0/1.8V)
23	CNV_WR_CLK+	24	Connector Key
25	Connector Key	26	Connector Key
27	Connector Key	28	Connector Key
29	Connector Key	30	Connector Key
31	Connector Key	32	CNV_RGI_DT
33	GND	34	CNV_RGI_RSP
35	PETp0	36	CNV_BRI_DT
37	PETn0	38	PCH_CLINK_RST#
39	GND	40	PCH_CLINK_DATA
41	PERp0	42	PCH_CLINK_CLK
43	PERn0	44	CNV_GNSS_BLANKING
45	GND	46	CNV_MFUART2_TXD
47	REFCLKp0	48	CNV_MFUART2_RXD
49	REFCLKn0	50	SUSCLK(32kHz) (O)(0/3.3V)
51	GND	52	PERST0# (O)(0/3.3V)
53	CLKREQ0# (I/O)(0/3.3V)	54	W_DISABLE2# (O)(0/3.3V)
55	PEWAKE0# (I/O)(0/3.3V)	56	W_DISABLE1# (O)(0/3.3V)
57	GND	58	RESERVED
59	RESERVED/PETp1	60	RESERVED
61	RESERVED/PETn1	62	RESERVED
63	GND	64	M.2_38P4M_REFCLK
65	RESERVED/PERp1	66	RESERVED
67	RESERVED/PERn1	68	RESERVED
69	GND	70	PCIE_WAKE#
71	RESERVED/REFCLKp1	72	3.3V
73	RESERVED/REFCLKn1	74	3.3V
75	GND		



### 2.3.25 AT / ATX Mode selection (PSON1)

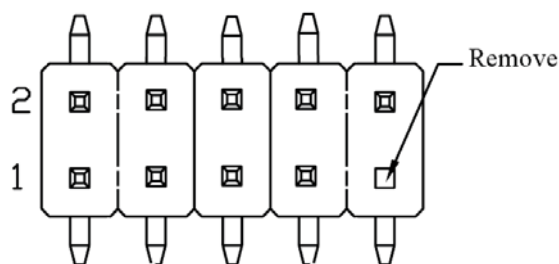
Function	Jumper Setting
ATX Mode (Default)	
AT Mode	

### 2.3.26 USB Power selection header #2 (JUSBPWR2)



Pin	Signal
1 (Default)	+VDUAL
2 (Default)	Advantech define
3	+V5

### 2.3.27 Universal Serial Bus Port 9 /14(USB910)



Pin	Signal	Pin	Signal
1	VBUS (*)	2	VBUS (*)
3	USB_D9-	4	USB_D10-
5	USB_D9+	6	USB_D10+
7	GND	8	GND

(\*) Depends on JUSBPWR2 Jump Setting.

### 2.3.28 Case Open connector (JCASE1)



Pin	Signal
1	Case Open
2	GND

### 2.3.29 Power LED pin header (JFP2)



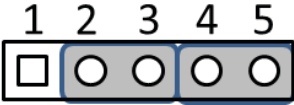
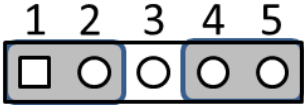
Pin	Signal
1	SIO_SUSLED_R
2	NC
3	SIO_SUSLED_CONN

### 2.3.30 I2C pin header(JFP3)

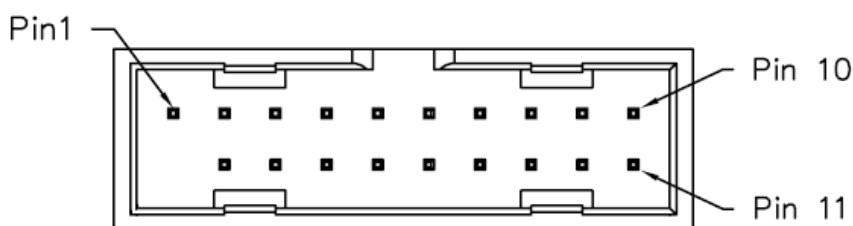


Pin	Signal
1	I2C1_SCL
2	I2C1_SDA
3	GND

### 2.3.31 Watchdog Timer Output and OBS Beep (JWDT1+JOBS1)

Function	Jumper Setting
Watchdog Timer Output(2-3) (Default) OBS BEEP(4-5) (Default)	
Watchdog Timer Disable (1-2) OBS BEEP(4-5) (Default)	
Pin	Signal Pin Definition
1	N/C
2	Watch dog reset# output
3	System reset input#
4	SIO Warning Beep output
5	SP1 Buzzer Beep input

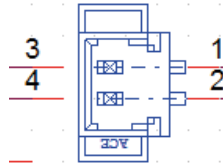
### 2.3.32 Universal Serial Bus 3.1 Port 7 / 8(USB78)



Pin	Signal	Pin	Signal
1	VBUS (*)	11	D+_11
2	RX-_5	12	D-_11
3	RX+_5	13	GND
4	GND	14	TX+_6
5	TX-_5	15	TX-_6
6	TX+_9	16	GND
7	GND	17	RX+_6
8	D-_10	18	RX-_6
9	D+_10	19	VBUS (*)
10	NC		

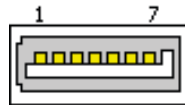
(\*) Depends on JUSBPWR2 Jump Setting.

### 2.3.33 CMOS battery connector (BAT1)



Pin	Signal
1	VBAT
2	GND

### 2.3.34 Serial ATA interface connector (SATA1/SATA2/SATA3)

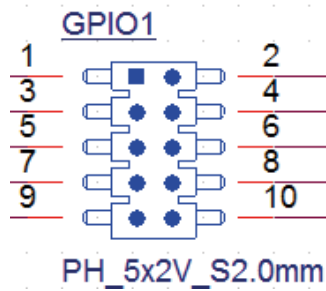


Pin	Signal
1	GND
2	TX+
3	TX-
4	GND
5	RX-
6	RX+
7	GND

### 2.3.35 CMOS Clear Jumper (JCMOS1)

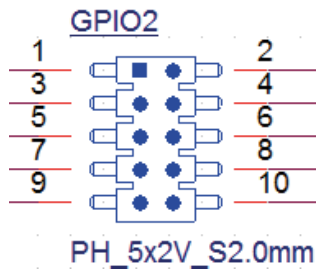
Function	Jumper Setting
Keep COMS Data (Default)	<div style="text-align: center;"> <span style="margin-right: 10px;">1</span> <span style="margin-right: 10px;">2</span> <span>3</span> </div>
Clear CMOS Date	<div style="text-align: center;"> <span style="margin-right: 10px;">1</span> <span style="margin-right: 10px;">2</span> <span>3</span> </div>

### 2.3.36 General Purpose I/O Pin Header (GPIO1)



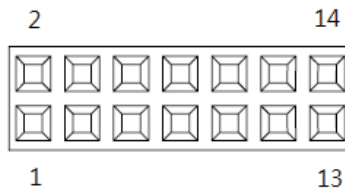
Pin	Signal	Pin	Signal
1	GPIO0	2	GPIO4
3	GPIO1	4	GPIO5
5	GPIO2	6	GPIO6
7	GPIO3	8	GPIO7
9	+V5_DUAL	10	GND

### 2.3.37 General Purpose I/O Pin Header (GPIO2)



Pin	Signal	Pin	Signal
1	GPIO8	2	GPIO12
3	GPIO9	4	GPIO13
5	GPIO10	6	GPIO14
7	GPIO11	8	GPIO15
9	+V5_DUAL	10	GND

### 2.3.38 Low pin count interface connector (LPC1)



Pin	Signal	Pin	Signal
1	CLK (24MHz)	2	AD1
3	RESET#	4	AD0
5	FRAME#	6	+3.3V
7	AD3	8	GND

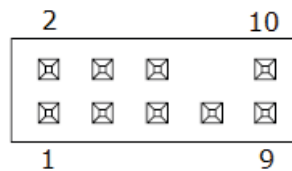
9	AD2	10	SMB CLK
11	SERIRQ	12	SMB DAT
13	+5VSB	14	+5V

### 2.3.39 HD Audio interface (SPDIF1)



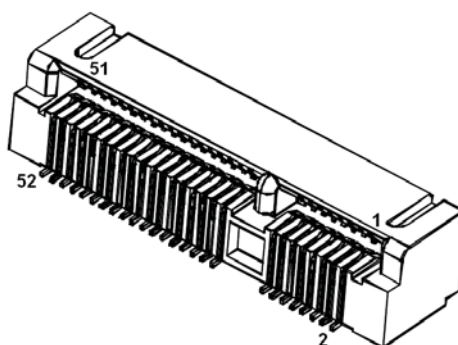
Pin	Signal
1	+5V
2	NA
3	SPDIF OUT
4	GND

### 2.3.40 Front panel audio pin header (FPAUD1)



Pin	Signal	Pin	Signal
1	MIC IN-L	2	GND
3	MIC IN-R	4	FPAUD_DETECT#
5	LINE OUT-R	6	SENSE R1
7	SENSE	8	NA
9	LINE OUT-L	10	SENSE R2

## 2.3.41 MINIPCIIE and mSATA Connector (MINI-PCIE1/2)



**Table 2.1: MINIPCIIE**

Pin	Signal	Pin	Signal
1	WAKE#	2	+3.3Vaux
3	Reserved	4	GND
5	Reserved	6	+1.5V
7	CLKREQ#	8	Reserved
9	GND	10	Reserved
11	REFCLK-	12	Reserved
13	REFCLK+	14	Reserved
15	GND	16	Reserved
17	Reserved	18	GND
19	Reserved	20	DISABLE#
21	DETECT#	22	RESET#
23	PCIE_RX+	24	+3.3Vaux
25	PCIE_RX-	26	GND
27	GND	28	+1.5V
29	GND	30	SMB_CLK
31	PCIE_TX-	32	SMB_DATA
33	PCIE_TX+	34	GND
35	GND	36	USB_D-
37	GND	38	USB_D+
39	+3.3Vaux	40	GND
41	+3.3Vaux	42	Reserved
43	V1.2_DETECT#	44	LED_WLAN#
45	Reserved	46	Reserved
47	Reserved	48	+1.5V
49	Reserved	50	GND
51	MSATA_DETECT#	52	+3.3Vaux

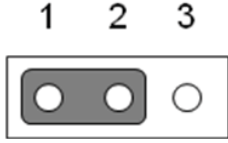

**Table 2.2: mSATA**

Pin	Signal	Pin	Signal
1	Reserved	2	+3.3V
3	Reserved	4	GND
5	Reserved	6	+1.5V
7	Reserved	8	Reserved
9	GND	10	Reserved
11	Reserved	12	Reserved

**Table 2.2: mSATA**

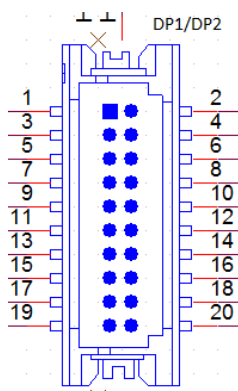
13	Reserved	14	Reserved
15	GND	16	Reserved
17	Reserved	18	GND
19	Reserved	20	Reserved
21	DETECT#	22	Reserved
23	RX+	24	+3.3V
25	RX-	26	GND
27	GND	28	+1.5V
29	GND	30	SMB_CLK
31	TX-	32	SMB_DATA
33	TX+	34	GND
35	GND	36	Reserved
37	GND	38	Reserved
39	+3.3V	40	GND
41	+3.3V	42	Reserved
43	Reserved	44	Reserved
45	Reserved	46	Reserved
47	Reserved	48	+1.5V
49	Reserved	50	GND
51	MSATA_DETECT#	52	+3.3V

### 2.3.42 USB Power selection for USB Power selection for LAN1\_USB12 / LAN2\_USB34 / LAN3\_USB56 (JUSBPWR1)

Function	Jumper Setting
Set USB VBUS as +5VSB(Default)	 <p style="text-align: center;">1    2    3</p>
Set USB VBUS as +5V	 <p style="text-align: center;">1    2    3</p>



### 2.3.43 Display header(DP1/DP2)



Pin	Signal	Pin	Signal
1	GND	2	GND
3	DDPC_TX0-_B	4	DDPC_TX3-_B
5	DDPC_TX0+_B	6	DDPC_TX3+_B
7	GND	8	DP1_CONFIG1
9	DDPC_TX1-_B	10	DP1_CONFIG2
11	DDPC_TX1+_B	12	DDIC_CPU_AUXN_CN
13	GND	14	DDIC_CPU_AUXP_CN
15	DDPC_TX2-_B	16	GND
17	DDPC_TX2+_B	18	DDPC_HPD_Q
19	+VCC_DP1	20	+VCC_DP1

## 2.4 Jumper Setting List

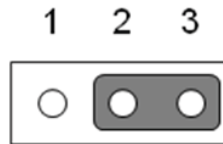
	Description	Part Reference
1	RTC / CMOS clear	JCOMS1
2	Watchdog timer output and OBS beep	JIR1+JOBS1
3	Case open header	JCASE1

### 2.4.1 CMOS clear (JCOMS1)

Function	Jumper Setting
Keep CMOS Data (Default)	

---

Clear CMOS Data



---

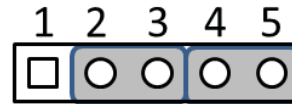
## 2.4.2 Watchdog timer output and OBS beep (JIR1+JOBS1)

---

Function	Jumper Setting
----------	----------------

---

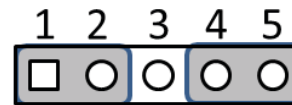
Watchdog Timer Output(2-3) (Default)  
OBS BEEP(4-5) (Default)



(4 and 6)+(8 and 9)

---

Watchdog Timer Disable (1-2)  
OBS BEEP(4-5) (Default)



(1 and 2)+(8 and 9)

---

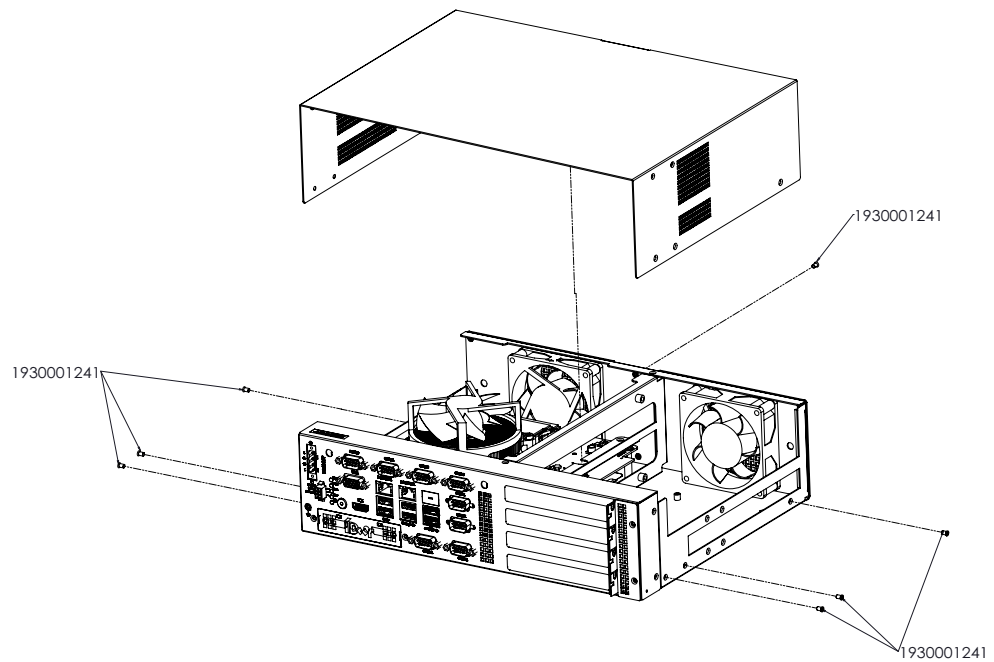
# Chapter 3

Mechanical Assemble

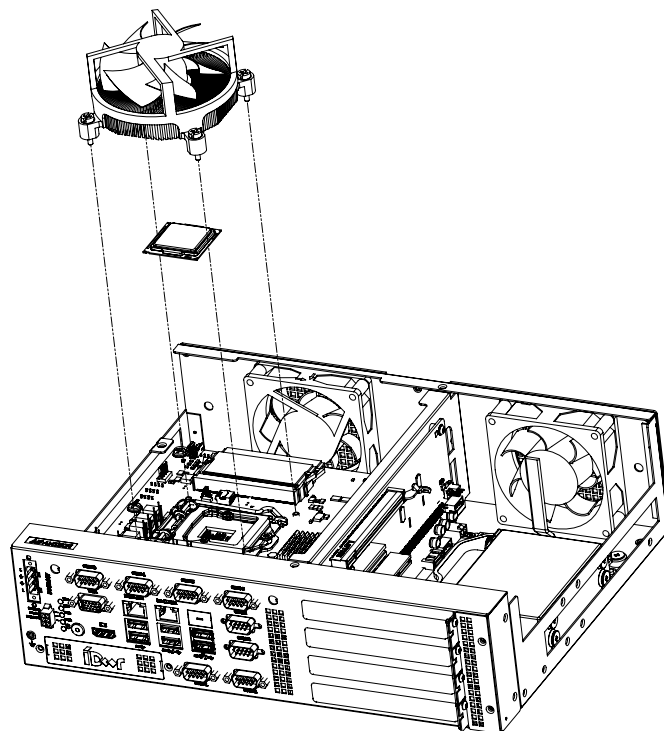
组装

組裝

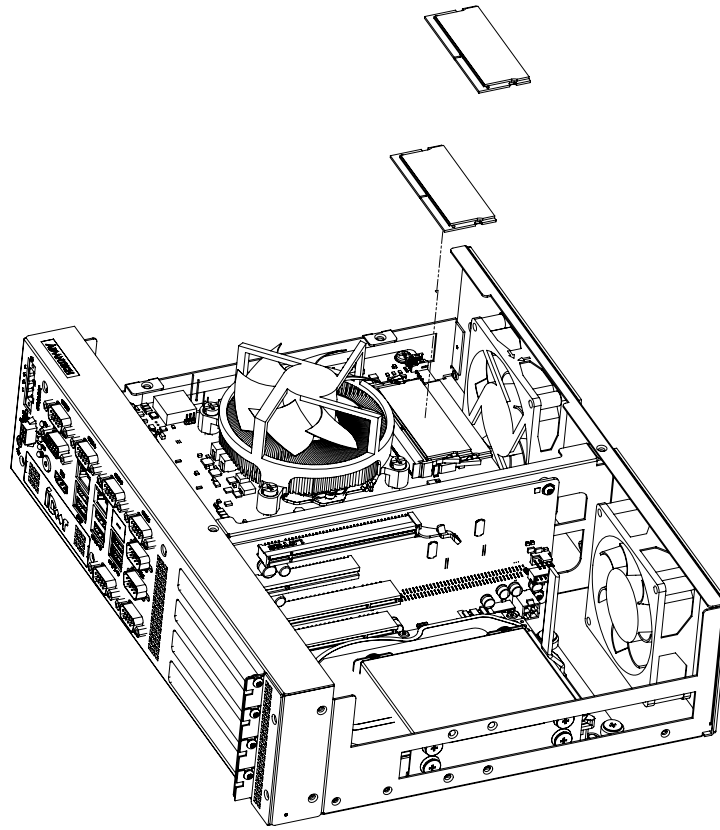
### 3.1 Top cover assemble / 上盖组装 / 上蓋組裝



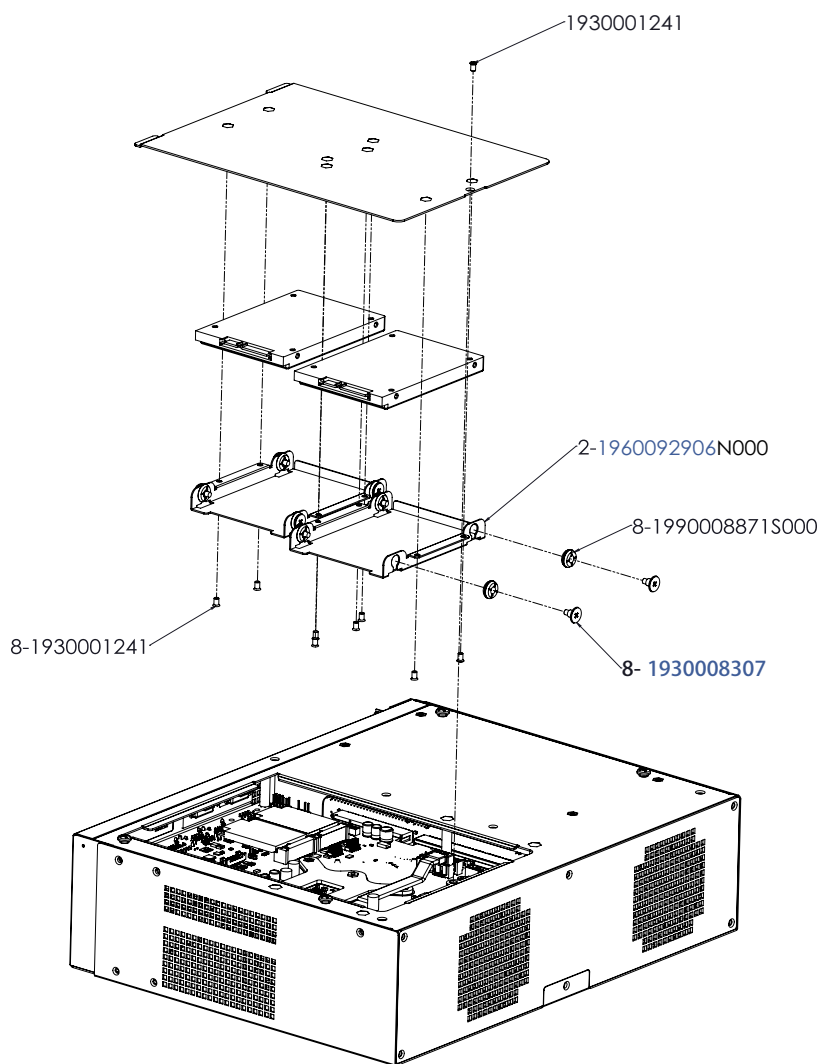
### 3.2 CPU cooler assemble / CPU cooler 组装 / CPU cooler 組裝



### 3.3 RAM module assemble / RAM module 组装 / RAM module 组装



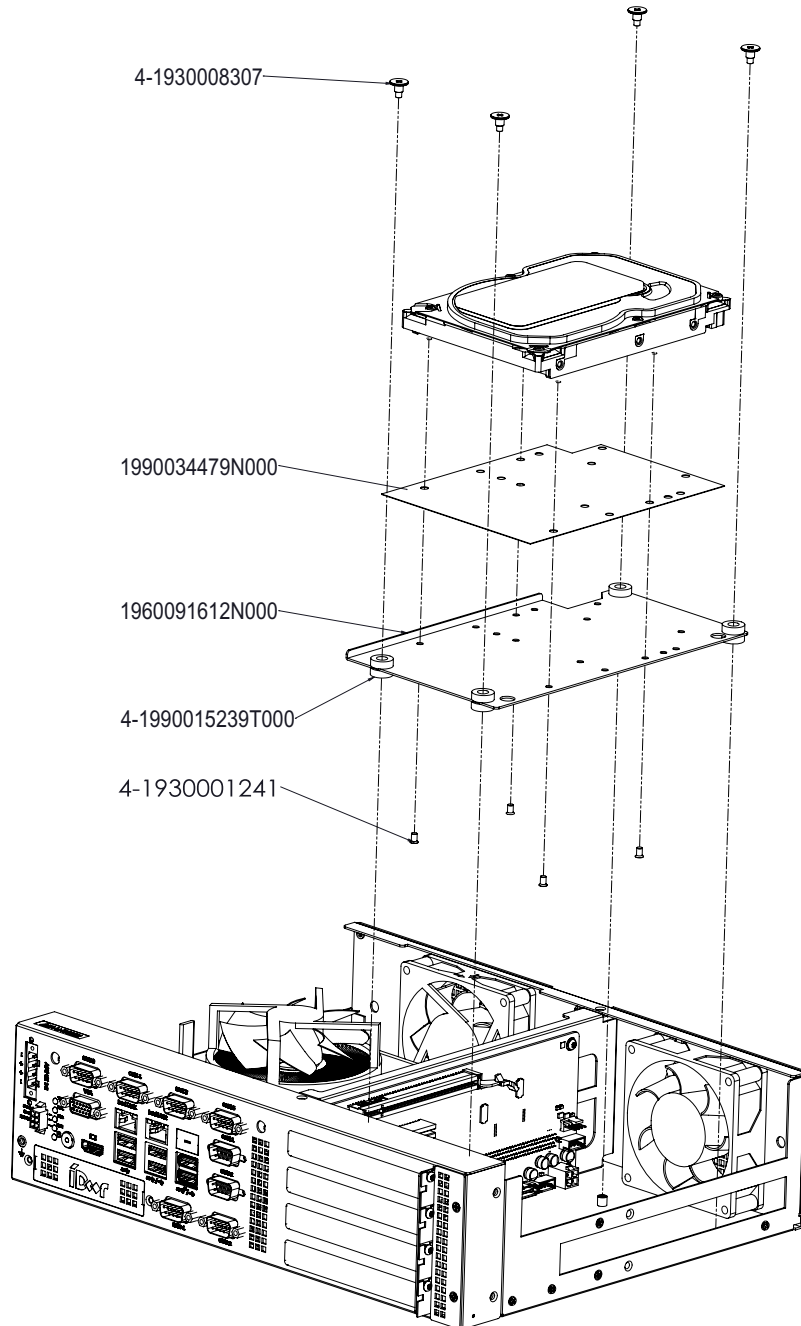
### 3.4 2.5" HDD assemble / 2.5" HDD 组装 / 2.5" HDD 組裝



Default

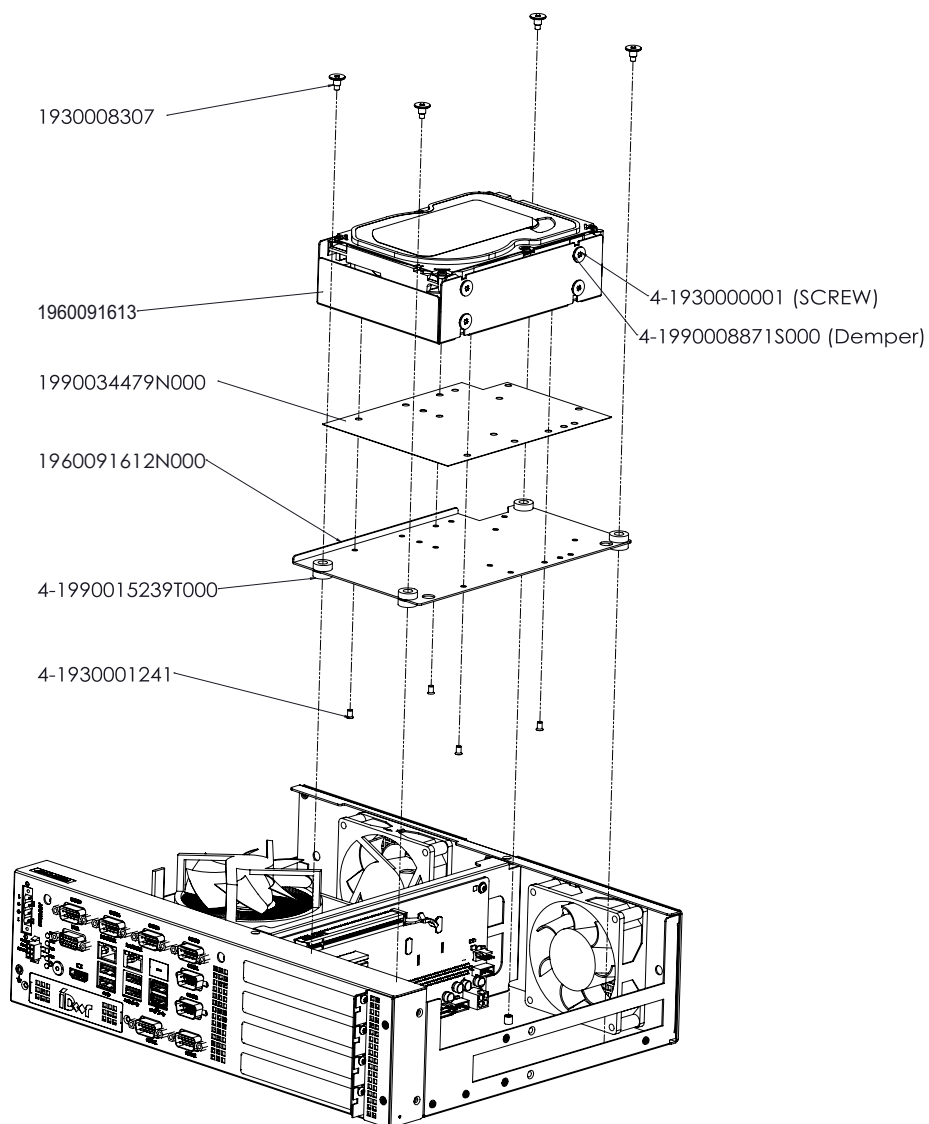
### 3.5 Expansion Area HDD assemble/ Expansion Area HDD 组装 / Expansion Area HDD 组装

#### 3.5.1 3.5" HDD x1



PN:EPC-BRKP-00G02

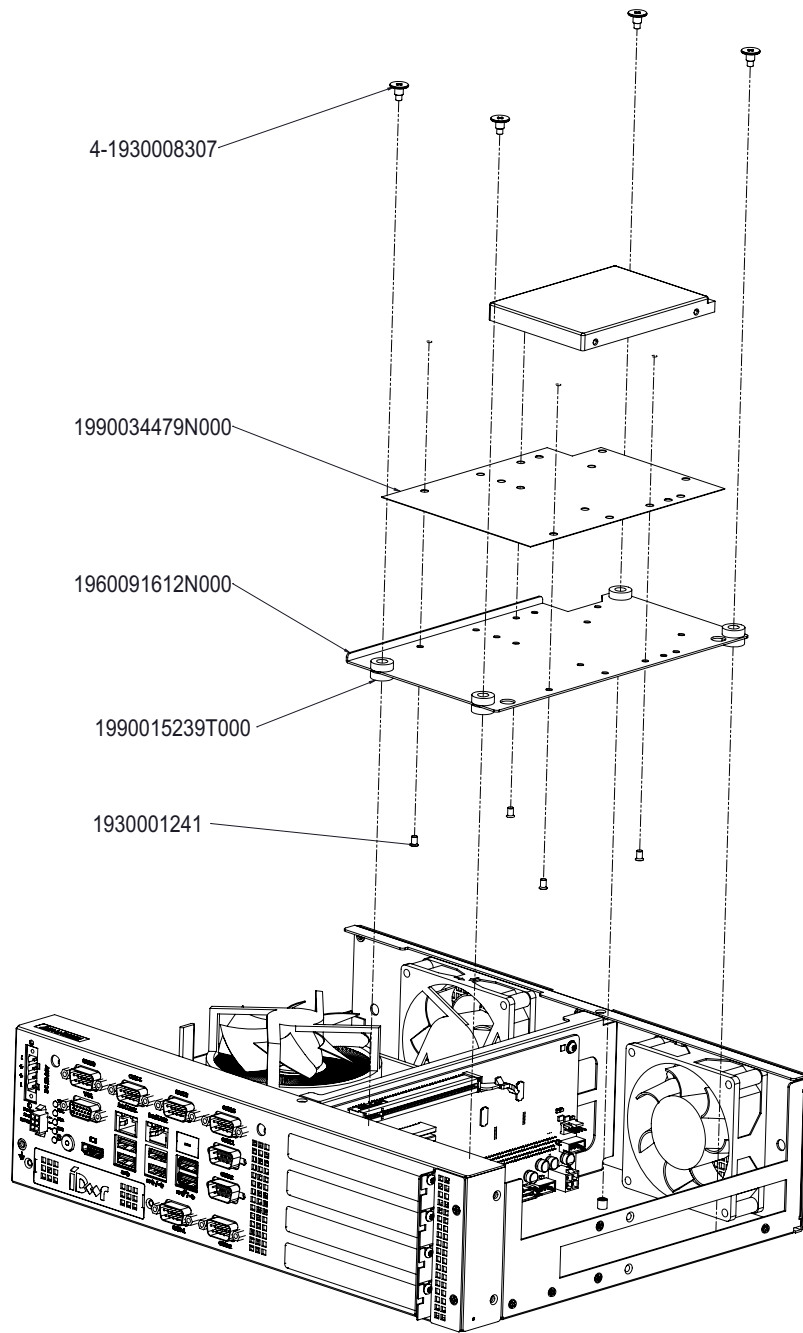
### 3.5.2 3.5" HDD x2



PN: EPC-BRKP-00G00

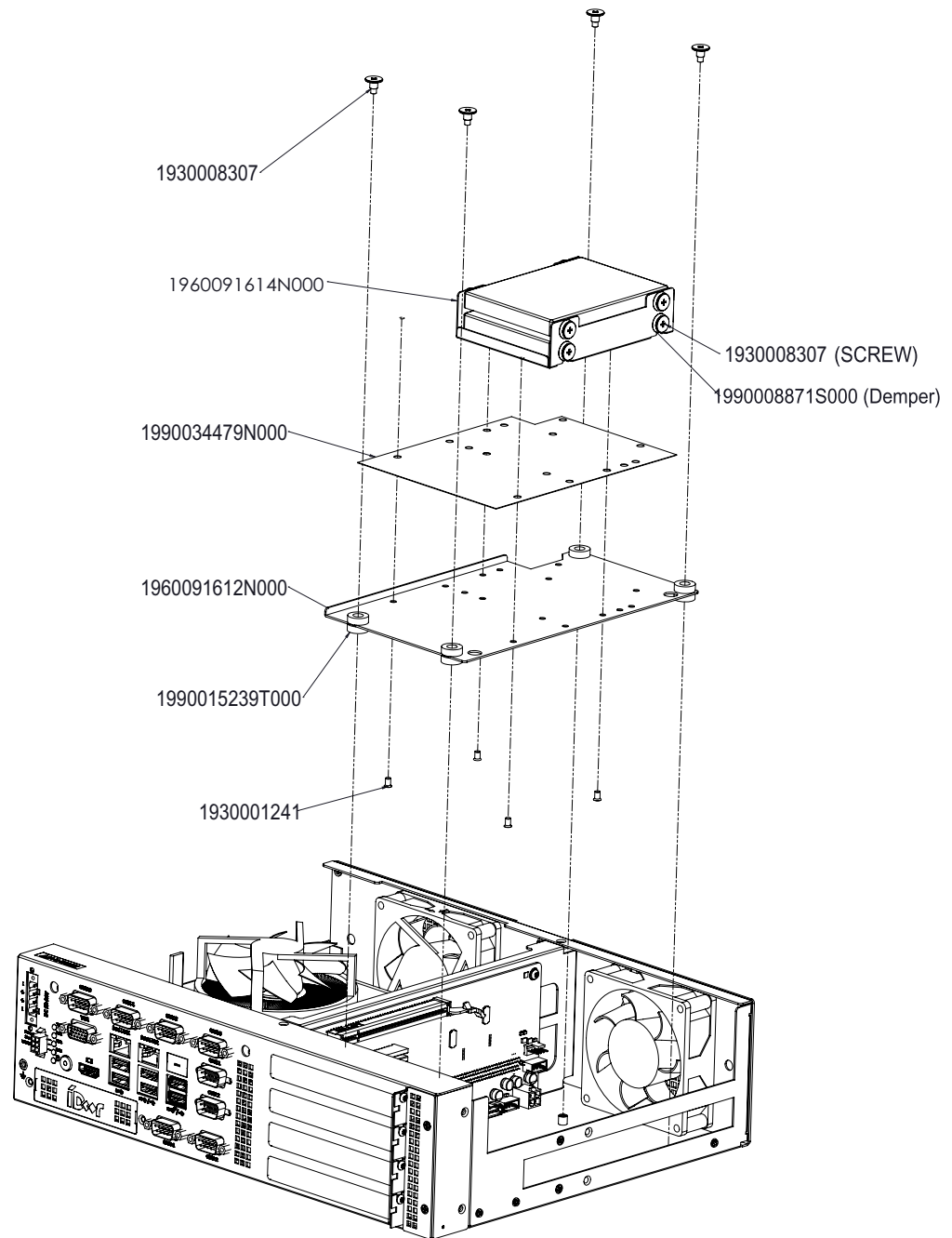


### 3.5.3 2.5" HDD x1



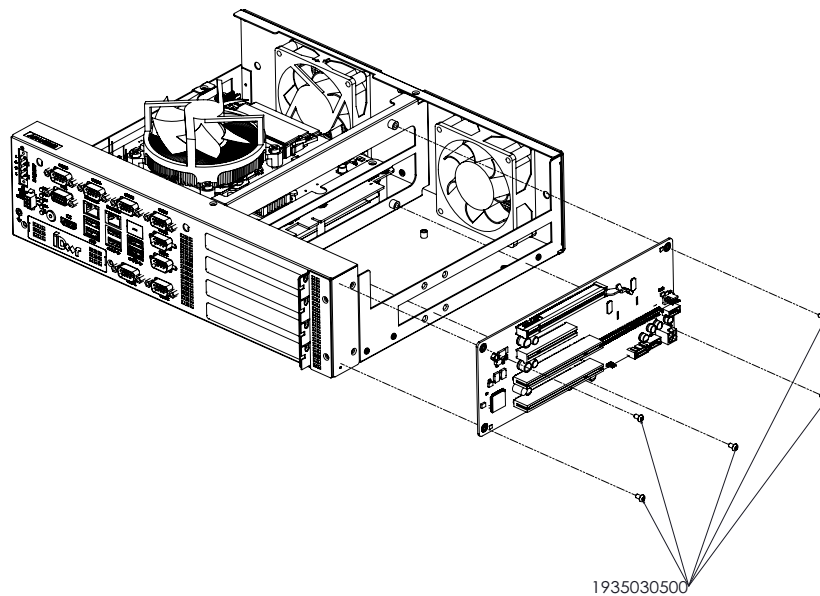
PN:EPC-BRKP-00G03

### 3.5.4 2.5" HDD x2



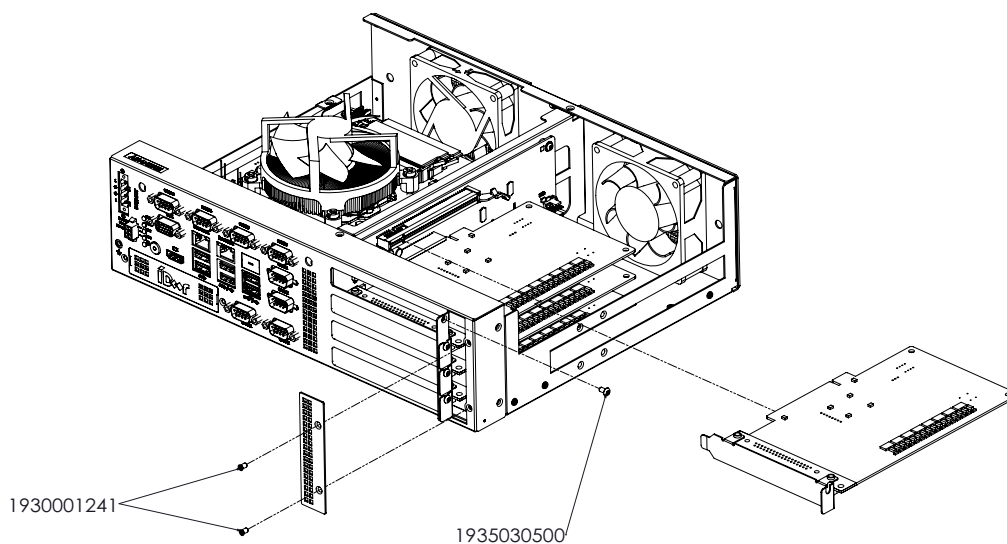
PN: EPC-BRKP-00G01

### 3.6 Riser Card assemble/ 转板组装 / 轉板組裝

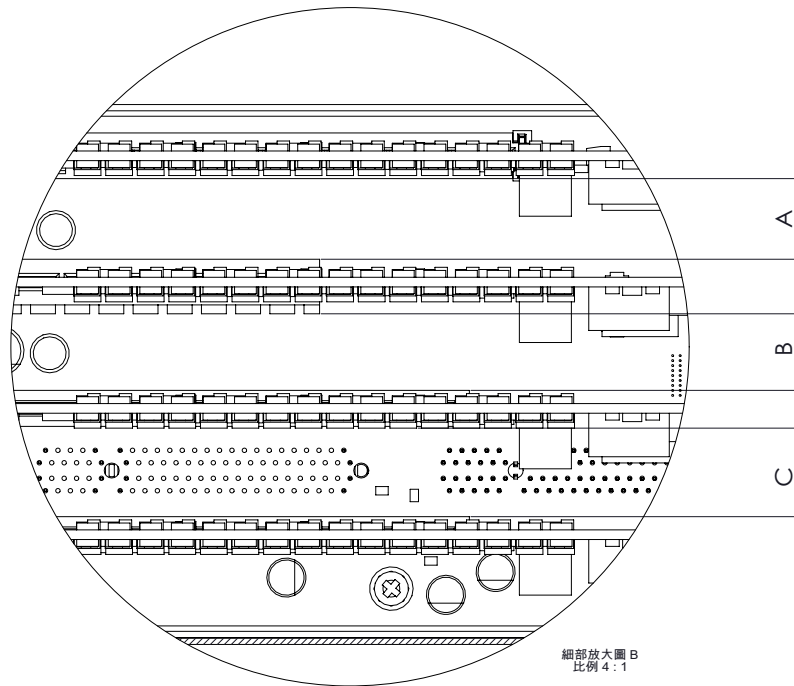
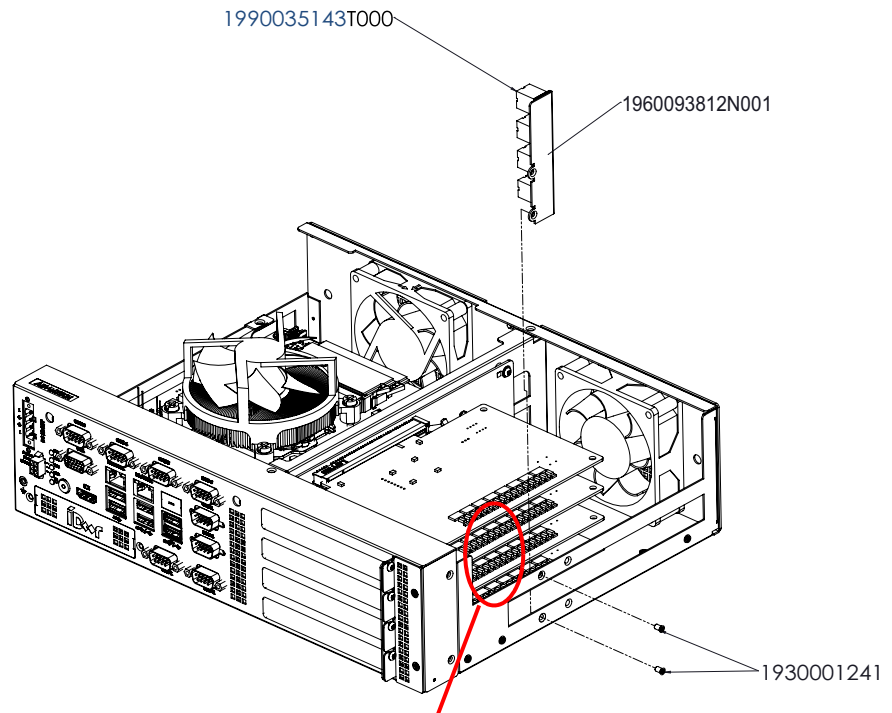


### 3.7 PCIe & PCI card assemble / PCIe & PCI card 组装 / PCIe & PCI card 組裝

#### 3.7.1 PCIe Card or PCI card insert and fix

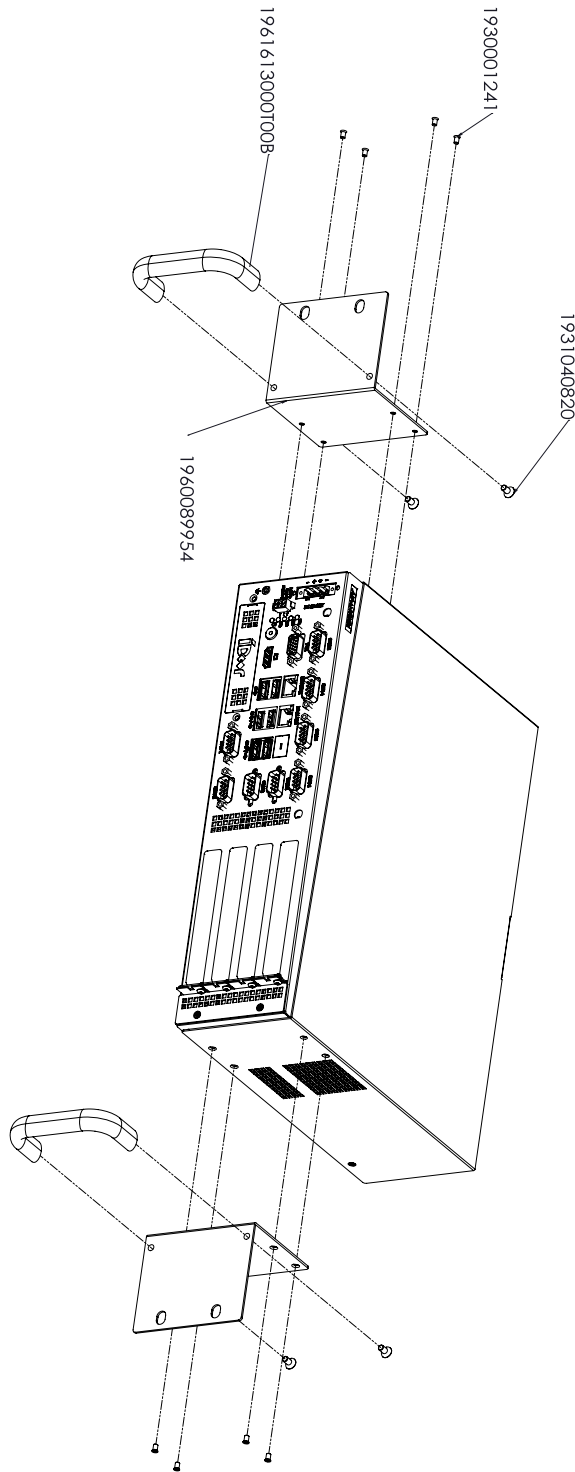


### 3.7.2 PCIe card fixer / PCIe card 挡片 / PCIe card 擋片



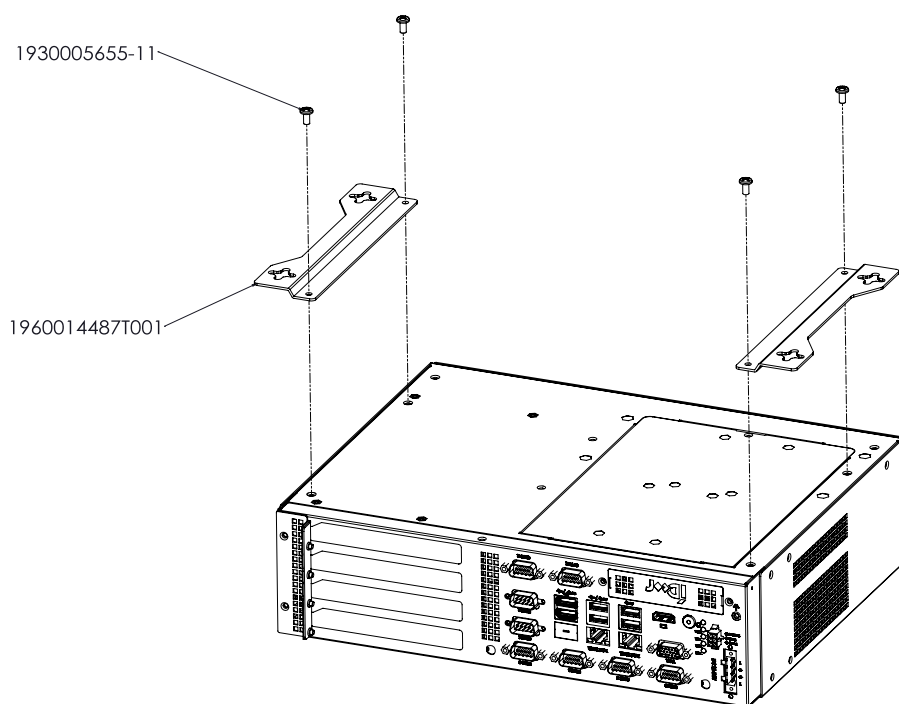
Keep a 5mm gap between PCIe / PCI cards for air flow  
 $A = B = C = 5\text{mm}$

### 3.8 Rack mount / 机架安装 / 機架安裝



PN: EPC-BRKP-RM001

### 3.9 Wall mount / 壁挂式安装 / 壁掛式安裝



PN: AIMB-0BRK-WM02E



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