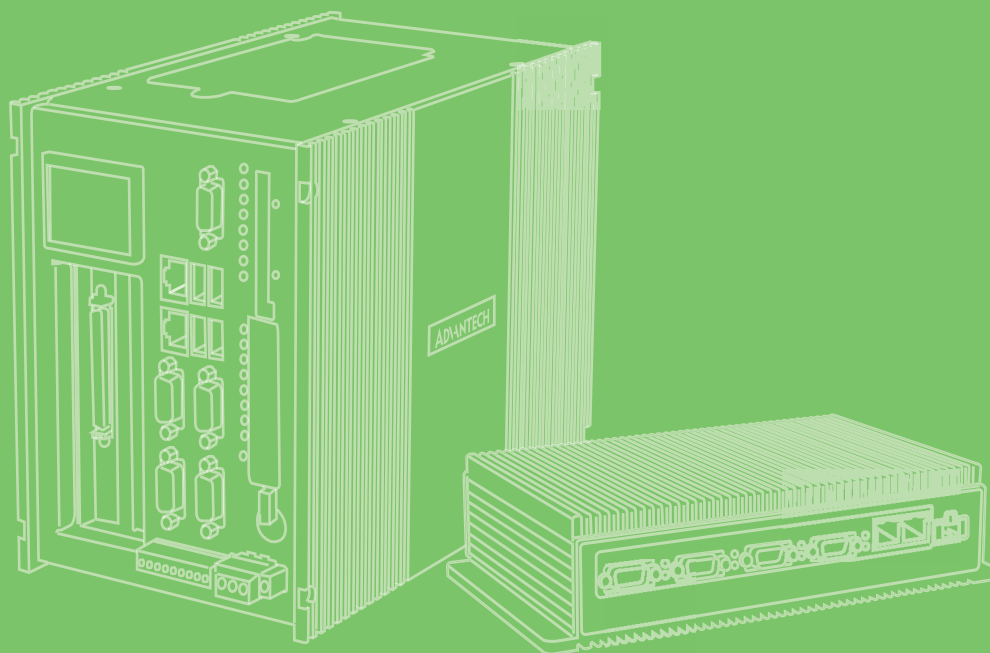


User Manual



UNO-3300G Series

**Intel® Core® i7/Celeron
Processors Embedded
Automation PC, with 2x PCI(e)/
PCI Extension Slots**

ADVANTECH

Enabling an Intelligent Planet

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This manual applies to the below model which is abbreviated as UNO-3300G series products in this article.

- UNO-3382G
- UNO-3384G

Product Warranty (2 years)

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.

Declaration of Conformity

CE

This product has passed the CE test for environmental specifications when shielded cables are used for external wiring. We recommend the use of shielded cables. This kind of cable is available from Advantech. Please contact your local supplier for ordering information.

FCC Class A

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

警告使用者：這是甲類資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當對策。

Technical Support and Assistance

1. Visit the Advantech web site at <http://support.advantech.com> 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

Safety Precaution - Static Electricity

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

- To avoid electrical shock, always disconnect the power from your PC chassis before you work on it. Don't touch any components on the CPU card or other cards while the PC is on.
- 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.

Safety Instructions

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. 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.

Safety Instructions

Manufacturer

ADVANTECH CO., LTD.

1, ALLEY 20, LANE 26, RUEIGUANG ROAD, NEIHU DISTRICT, TAIPEI 114, TAIWAN

Connection for AC mains:

Power installation must be performed with qualified electrician and followed with National Electrical Code, ANSI/NFPA 70 and Canadian Electrical Code, Part I, CSA C22.1.

Use No. 18 AWG, 90°C copper wire with TBS, SA, SIS, FEP, FEPB, MI, RHH, RHW-2, THHN, THHW, THW-2, THWN-2, USE-2, XHH, XHHW, XHHW-2 or ZW-2 type pressure terminal connector and 4.5 lb-in Torque force when connecting to terminal block.

Unit shall be connected to readily accessible Branch Circuit Breaker which rated 20 A

Connection for DC power source:

This product is intended to be supplied by a Listed Power Adapter or DC power source, rated 24Vdc, 4.2A minimum and Tma 55 degree C, if need further assistance, please contact Advantech for further information.

Caution! *Wiring minimum temperature 85 degree C.*



Prudence! *Câblage température minimale de 85 degrés C*



impact rigid = with an impact rating of at least IK09

The enclosure shall be made of metal (except magnesium) or of non-metallic materials having a flammability classification V-1, or better.

Potential for explosion

The device must be installed in an end-use enclosure, which can only be opened by using a tool (a tool-secured enclosure).

Failure to follow these instructions will result in death or serious injury.

Caution!

1. *If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.*
2. *Any parts which are required to be examined or supplied only by the manufacturer or agent.*
3. *The computer is provided with a battery-powered real-time clock circuit. There is a danger of explosion if battery is incorrectly replaced. Replace only with same or equivalent type recommended by the manufacture. Discard used batteries according to the manufacturer's instructions.*

Prudence!

1. *Si l'équipement est utilisé d'une manière non spécifiée par le fabricant, la protection fournie par l'équipement peut être altérée.*
2. *Toutes les pièces qui doivent être examinés ou fournis que par le fabricant ou l'agent.*
3. *L'ordinateur est muni d'un circuit en temps réel de l'horloge alimentée par batterie. Il y a un risque d'explosion si la batterie est remplacée de façon incorrecte. Remplacez uniquement avec le type identique ou équivalent recommandé par le fabricant. Jetez les piles usagées conformément aux instructions du fabricant.*

Contents

Chapter 1	Overview	1
1.1	Introduction	2
1.2	Hardware Specifications	2
1.2.1	General	2
1.3	System Hardware.....	3
1.3.1	I/O Interfaces	3
1.3.2	Environment.....	4
1.3.3	Expansion Board (Optional).....	4
1.4	Safety Precautions	4
1.5	Chassis Dimensions.....	5
	Figure 1.1 UNO-3382G Dimensions	5
	Figure 1.2 UNO-3384G Dimensions	5
1.6	Accessories	5
Chapter 2	Hardware Functionality	7
2.1	Introduction	8
	Figure 2.1 UNO-3382G Dimensions	8
	Figure 2.2 UNO-3384G Dimensions	8
	Figure 2.3 UNO-3382G Bottom View	9
	Figure 2.4 UNO-3382G Front View	9
	Figure 2.5 UNO-3384G Bottom View	9
	Figure 2.6 UNO-3384G Front View	9
2.2	Serial Interface (COM1)	10
	Figure 2.7 Pin header of COM1	10
2.2.1	RS-232/422/485 Interface (COM1).....	10
2.2.2	To switch the internal SW1/SW2 according to the placement	11
	Figure 2.8 Location	11
	Figure 2.9 Without termination.....	11
	Figure 2.10With termination.....	12
2.3	LAN: Ethernet Connector	12
2.4	Power Connector	12
2.5	USB Connector	12
2.6	Display Connector	12
2.7	RTC Battery	13
2.8	Power Button/Power Management	13
	2.8.1 Power mode switch.....	13
	Figure 2.11AT/ATX adjustment	13
2.9	Reset Button	13
2.10	PCI Express Mini Card Socket.....	14
	Figure 2.12PCIE mini card sockets placement.....	14
2.10.1	iDoor Expansion Slot	14
2.11	PCIe Slot	14
2.12	SATA HDD Drive.....	15
	Figure 2.13SATA Mode Selection	15
	Figure 2.14Detecting a RAID configuration	16
	Figure 2.15Creating a RAID Volume	16
2.13	Audio Jack.....	16
2.14	LED Indicators.....	17
Chapter 3	Initial Setup	19
3.1	Connecting Power	20

	Figure 3.1 Power Connector.....	20
3.2	Inserting an iDoor Module.....	20
3.3	Installing a Hard Disk.....	22
3.4	Installing an Interface card.....	23
3.5	Installing Power Cable.....	24
3.6	Mounting UNO-3300G Series.....	25
	Figure 3.2 Book mount.....	25
	Figure 3.3 Wall mount.....	26
	Figure 3.4 Detachable PC (Optional)_01.....	27
	Figure 3.5 Detachable PC (Optional)_02.....	27

Appendix A System Settings and Pin Assignments **29**

A.1	System I/O Address and Interrupt Assignment.....	30
	Table A.1: Interrupt Assignments.....	30
A.2	Board Connectors and Switches.....	30
	Figure A.1 Bottom view of System board.....	30
	Figure A.2 Front view of Main/System board.....	31
A.3	Function of connectors & switches.....	31
	Table A.2: Connectors on System board.....	31
	Table A.3: Connectors on System board.....	32
A.4	Audio (Pin header).....	32
	Table A.4: CN16 Audio.....	32
A.5	Internal USB.....	33
	Table A.5: CN20 Internal USB.....	33
A.6	COM1.....	33
	Table A.6: CN35 COM1.....	33
A.7	LAN1/LAN2.....	34
	Table A.7: CN29 LAN1/LAN2.....	34
A.8	External USB3.0.....	35
	Table A.8: CN5 External USB3.0.....	35
A.9	External USB2.0.....	36
	Table A.9: CN34 External USB2.0.....	36
A.10	DISPLAYPORT.....	37
	Table A.10:CN14 DISPLAYPORT.....	37
A.11	HDMI.....	38
	Table A.11:CN36 HDMI.....	38
A.12	Power Connector (PWR).....	39
	Table A.12:Power connector pin assignments.....	39
	Table A.13:SW7 Power Switch.....	39
	Table A.14:SW8 Reset.....	39
	Table A.15:CN8 CFast.....	40
	Table A.16:CN6/CN7 Mini PCIE.....	41
	Table A.17:: CN9 mSATA.....	42
	Table A.18:PCN1: reserve for power output, the voltage is same as power input (CN1).....	44

Chapter 1

Overview

This chapter provides an overview of UNO-3300G series' specifications.

Sections include:

- Introduction
- Hardware specification
- Safety precautions
- Chassis dimensions
- Accessories

1.1 Introduction

AAvantech's UNO-3300G series offer an open and universal automation solution. The newest UNO-3300 series of the Control Cabinet PC have attractive and flexible extension capabilities such as 2 x USB2.0 & 2 x USB3.0 port, 1 x HDMI, 1 x DP, 1 x COM port, 2 x LAN ports, 2 x mPCIe. UNO-3384G also supports 1 x PCIe4 & 1 x PCI expansion. It's a reliable industrial control machine certified by industrial automation standard IEC-61010.

1.2 Hardware Specifications

1.2.1 General

- **Certification:**
 - CE, FCC, UL, CB, IEC-61010, UL-61010
- **Dimensions (W×D×H):**
 - UNO-3382G: 254 x 65.2 x 207 mm (10" x 2.5" x 8.15") Aluminum
 - UNO-3384G: 254 x 103.2 x 207 mm (10" x 4.06" x 8.15") Aluminum
- **Mounting:** Book mount
- **Power Consumption:** 45W (Typical, no card added)
- **Power Requirements:** 24 VDC, support AT/ATX power mode
BIOS AT simulation mode (support system reboot automatically after power recovery)
- **Weight:** UNO-3382G: 3.1kg, UNO-3384G: 3.9kg
- **OS Support:** Windows7/8, WES7, Advantech Linux
- **System Design:** Fanless

1.3 System Hardware

- **CPU:**
 - UNO-3382G-474AE: Intel Core® i7-4650U (4M Cache, 1.7GHz)
 - UNO-3384G-474AE: Intel Core® i7-4650U (4M Cache, 1.7GHz)
 - UNO-3382G-4C3AE: Intel Celeron 2980U (2M Cache, 1.6GHz)
 - UNO-3384G-4C3AE: Intel Celeron 2980U (2M Cache, 1.6GHz)
- **Memory:** 8G/4G DDR3L built-in
- **Indicators:** Six LEDs for power, battery, HDD, COM (active status)
- **Storage:** HDD: 2 × 2.5" SATA HDD/SSD bays, support SATA Gen3.0
- **Display:** 1 ×DP, 1 ×HDMI (support 2 independent displays) 1920*1200
- **Watchdog Timer:** 256 levels time interval, programmable from 1 to 255 sec
- **Expansion Slots:**
 - UNO-3382G: 2 Full-size mPCIe
 - UNO-3384G: 2 Full-size mPCIe, 1x PCIe4, 1x PCIe1
- PCIe max speed is 5GT/s; PCI max speed is 66MHz; system can provide typical 10W for each PCI/PCIE slot, Max 20W for single slot condition:

Condition	Slot1 power	Slot2 power	Total Power limitation (slot1 + slot2 power)
1	typical 10W, Max 20W	NA	<20W (Note1)
2	NA	typical 10W, Max 20W	<20W (Note1)
3	typical 10W, Max 20W	typical 10W, Max 20W	<20W (Note1)

- Each PCI/PCIE slot can support below power rail:

Slot type	A: 3.3V	B: 5V	C: 12V	D:-12V	Note
PCI slot	typical 3.03A Max 6.06A	typical 2A Max 4A	typical 0.83A Max 1.66A	Max 0.5A	A+B+C+D, total power<20W
PCIE slot	typical 3.03A Max 6.06A	typical 2A Max 4A	typical 0.83A Max 1.66A	N/A	A+B+C, total power<20W

Note! Total power consumption combined on PCI and PCIE slots should be less than 20 Watt.



1.3.1 I/O Interfaces

- **Serial Ports:** 1 x RS-232/422/485, DB9, auto flow control, 50 ~ 115.2 kbps
- **LAN Ports:** 2 x RJ45, 10/100/1000 Mbps IEEE 802.3u 1000Base-T Fast Ethernet
- **USB Ports:** 4 x USB Ports (2 x USB 2.0, 2 x USB 3.0 compliant)
- **Displays:** 1 x HDMI, supports 1920 x 1200 @ 60 Hz 24 bpp; 1 x DP, supports 3200 x 2000 @ 60 Hz 24 bpp
- **Power Connector:** 1 x 3 Pin, Terminal Block

1.3.2 Environment

- **Relative Humidity:** 95% @40°C (Non-condensing)
- **Operating Temperature:** 0 ~ 55°C(32 ~ 131°F) @ 5 ~ 85% RH with 0.7m/s airflow (Industry SSD)
- **Storage Temperature:** - 40 ~ 85°C (-104 ~ 185°F)
- **Shock Protection:**
 - IEC 60068-2-27
 - mSATA: 20 G @ wall mount, half sine, 11 ms
- **Vibration Protection:**
 - IEC 60068-2-64 (Random 1 Oct./min, 1hr/axis.)
 - mSATA: 2 Grms @ 5 ~ 500 Hz

1.3.3 Expansion Board (Optional)

- **Model:** UNO-3384G
- **Optional Expansion Type:**
1x PCIe slot, 1 x PClex4 slot; 1x PCI slot, 1 x PCI slot;

1.4 Safety Precautions

The following sections tell how to make each connection. In most cases, you will simply need to connect a standard cable.

Warning! *Always disconnect the power cord from your chassis whenever you are working on it. Do not connect while the power is on. A sudden rush of power can damage sensitive electronic components. Only experienced electronics personnel should open the chassis.*



Caution! *Always ground yourself to remove any static electric charge before touching UNO-3000G series. Modern electronic devices are very sensitive to static electric charges. Use a grounding wrist strap at all times. Place all electronic components on a static-dissipative surface or in a static-shielded bag.*



1.5 Chassis Dimensions

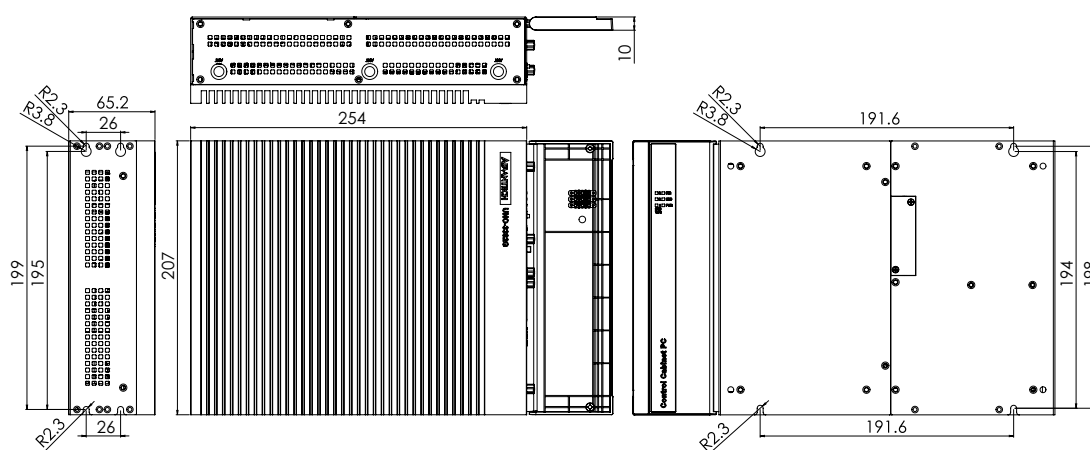


Figure 1.1 UNO-3382G Dimensions

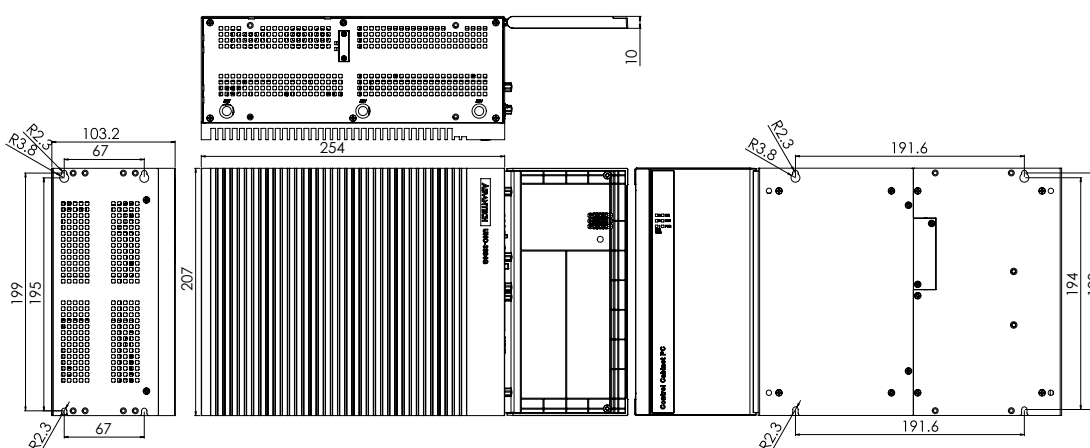


Figure 1.2 UNO-3384G Dimensions

1.6 Accessories

Refer to the below accessories list for UNO-3300G series.

- 1 × 3-pin plug-in block for power wiring
- 1 × Warranty card

Chapter 2

Hardware Functionality

This chapter shows how to setup UNO-3300G series' hardware functions, including connecting peripherals, setting switches and indicators.

Sections include:

- Peripherals
- RS-232 Interface
- RS-422/485 Interface
- LAN / Ethernet Connector
- Power Connector
- Mini PCIe Socket
- Audio Connector
- USB Connector
- DP/HDMI Display Connector

2.1 Introduction

The following figures show the interfaces of UNO-3300 series and the detail information by each peripheral.

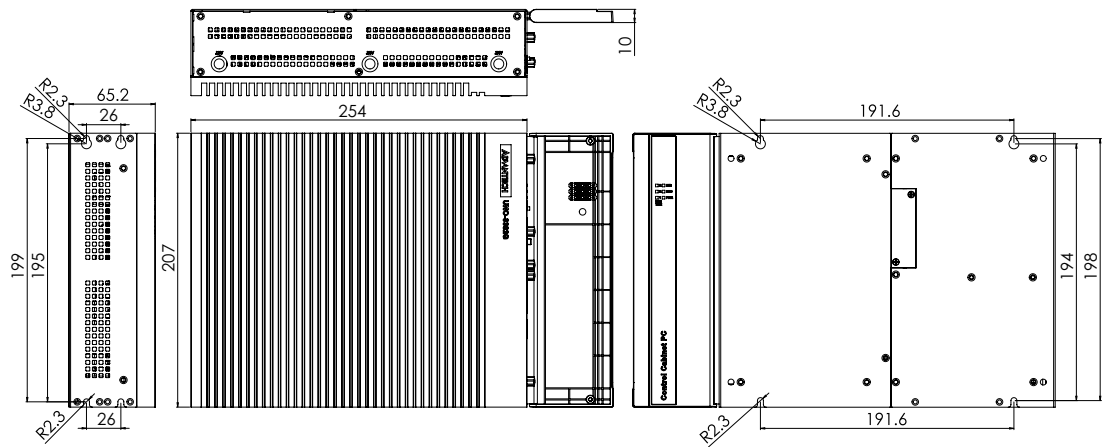


Figure 2.1 UNO-3382G Dimensions

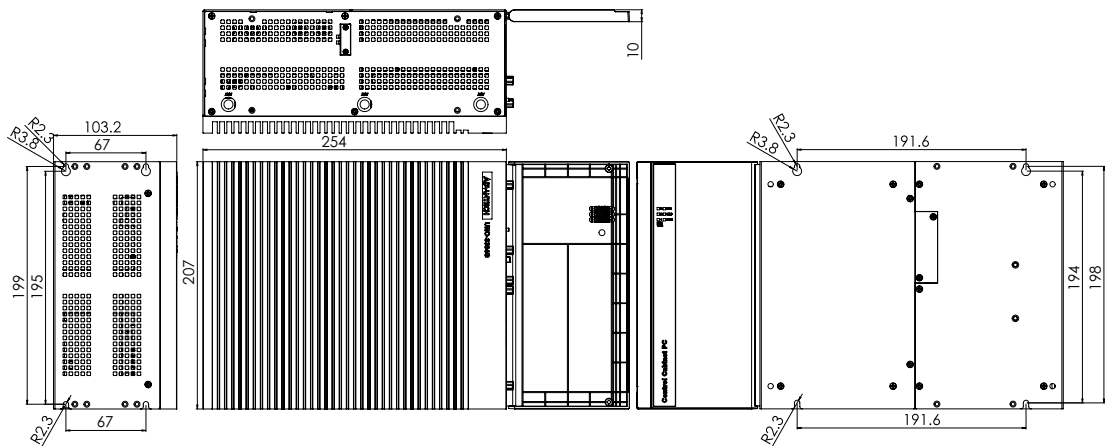


Figure 2.2 UNO-3384G Dimensions

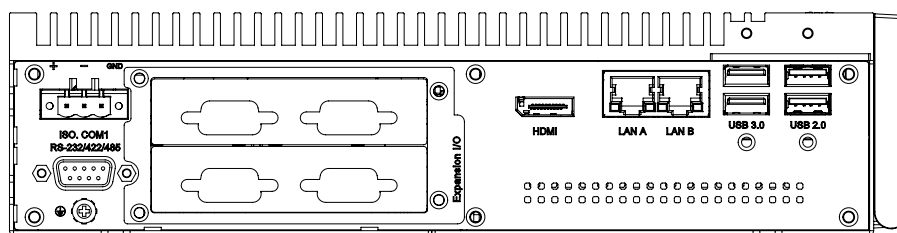


Figure 2.3 UNO-3382G Bottom View

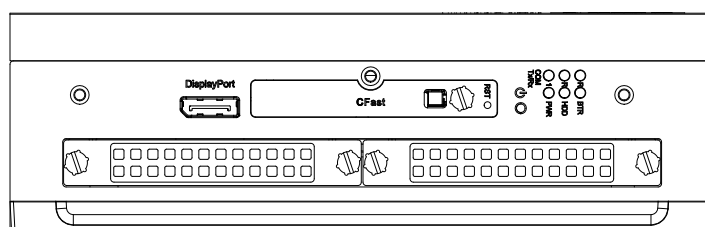


Figure 2.4 UNO-3382G Front View

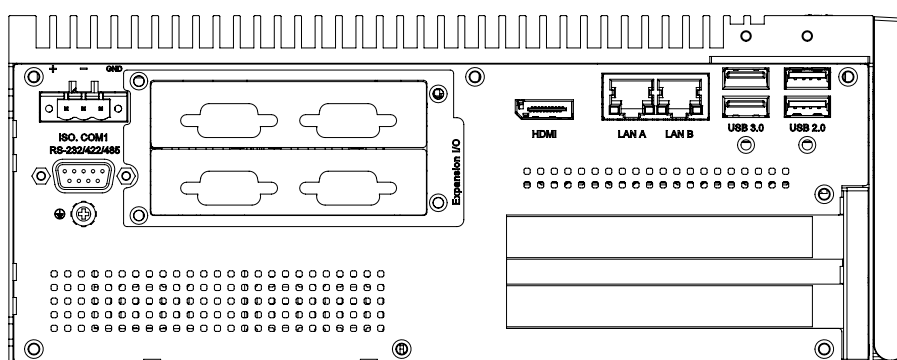


Figure 2.5 UNO-3384G Bottom View

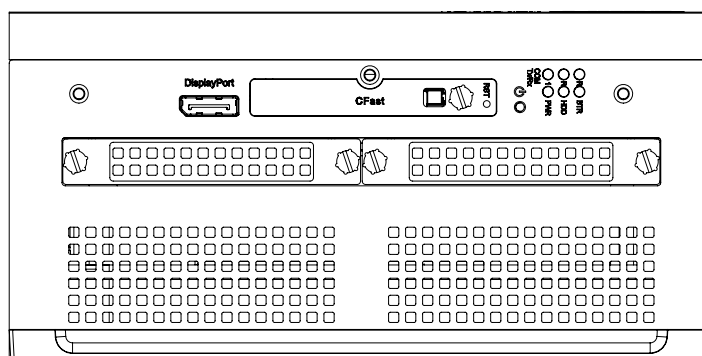


Figure 2.6 UNO-3384G Front View

2.2 Serial Interface (Iso.COM)

The UNO-3300G series offer one standard RS-232/422/485 serial communication interface ports: COM (Pin header CN35).

The IRQ and I/O address of serial ports are listed as below.

COM: 2E8, IRQ4

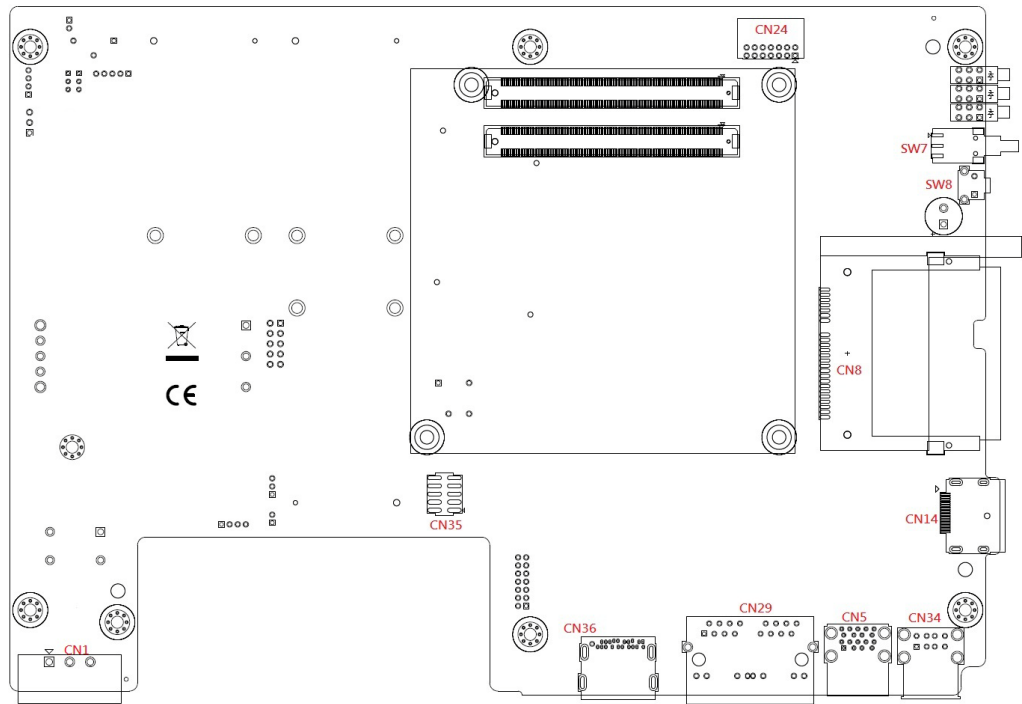


Figure 2.7 Pin header of COM1

2.2.1 RS-232/422/485 Interface (COM)

The UNO-3300 series offers one serial communication interface port (COM), COM allows,

- SW1 for RS-232/422/485 switch
- SW2 for RS485/422 receiver termination setting

In RS-422/485 mode, the UNO-3300 series automatically detects signals to match RS-422 or RS-485 networks.

In RS-485 mode, the UNO-3300 series automatically detects the direction of incoming data and switches its transmission direction accordingly. So no handshaking signal (e.g. RTS signal) is necessary. This lets you conveniently build an RS-485 network with just two wires. More importantly, application software previously written for half duplex RS-232 environments can be maintained without modification.

2.2.2 To switch the internal SW1/SW2 according to the placement

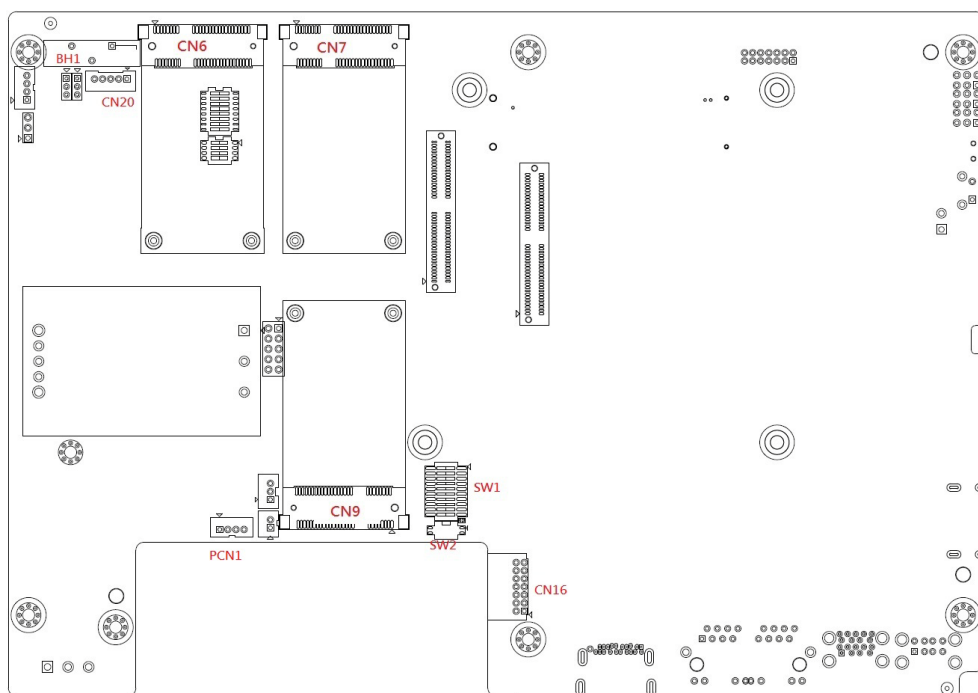


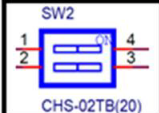
Figure 2.8 Location

■ SW1: COM RS232/422/485 mode setting

COM1 RS232/ 422/ 485 mode setting		
Description	This switch is used to select COM1 RS232/ 422/ 485 mode setting	
RS232 Mode*	Bit 1,2,3,4,5 ON Bit 6,7,8,9,10 OFF	
RS422 Master Mode	Bit 1,2,3,4,5,10 OFF Bit 6,7,8,9 ON	
RS422 Slave Mode	Bit 1,2,3,4,5 OFF Bit 6,7,8,9,10 ON	
RS485 Mode	Bit 1,2,3,4,5,8,9 OFF Bit 6,7,10 ON	

Figure 2.9 Without termination

- SW2: RS422 Rx termination (pin2-pin7)

	Description	On	Off
Bit 1	Termination resistor select for TX of RS422 Termination resistor select for RS485	Enable	Disable*
Bit 2	Termination resistor select for RX of RS422	Enable	Disable*

*Default setting

Figure 2.10 With termination

2.3 LAN: Ethernet Connector

The UNO-3300G series are equipped with four Gigabit LAN controllers. The controller chip used is the Intel Ethernet controller with that is fully compliant with 802.1Qav, IEEE1588/802.1AS, 802.3az standards. The Ethernet port provides four standard RJ-45 jacks on the front I/O and LED indicators in front of the connector to show its status of Link (100Mbps orange LED, 1000Mbps green LED) and Active (flashing green LED) status.

2.4 Power Connector

The UNO-3300G series come with a Phoenix connector that carries 24 VDC external power input, and features reversed wiring protection. Therefore, it will not cause any damage to the system by reversed wiring of ground line and power line. Please refer to Appendix A.

2.5 USB Connector

The USB interface supports Plug and Play, which enables you to connect or disconnect a device, without turning off the computer. This provides four USB connectors, which gives complete Plug & Play and hot swapping for up to 127 external devices. Two of the four connectors are compatible with USB3.0 devices. The USB interface is USB EHCI, Rev. 2.0 compliant. The USB interface can be disabled in the system BIOS setup.

2.6 Display Connector

The UNO-3300G series provide a HDMI and DP controller for a high resolution interface. It supports up to full HD resolution for two independent displays.

2.7 RTC Battery

The RTC Battery to ensure the setting in BIOS and system clock can be kept, even with power disconnected for a short time.

- Type: BR2032 (Using CR2032 is NOT recommended)
- Output Voltage: 3 VDC
- Location: front side removable cover named RTC BTR

2.8 Power Button/Power Management

Press the “PWR” button to power on or power off (ATX type). This product supports the ACPI (Advanced Configuration and Power Interface). As well as power on/off, it supports multiple suspend modes, such as Power on Suspend (S1), Suspend to RAM (S3), and Suspend to Disk (S4).

2.8.1 Power mode switch

User can set AT/ATX mode in BIOS setup menu “Chipset\Restore AC power loss”.

- [Power ON]: AT mode
- [Power OFF]: ATX mode

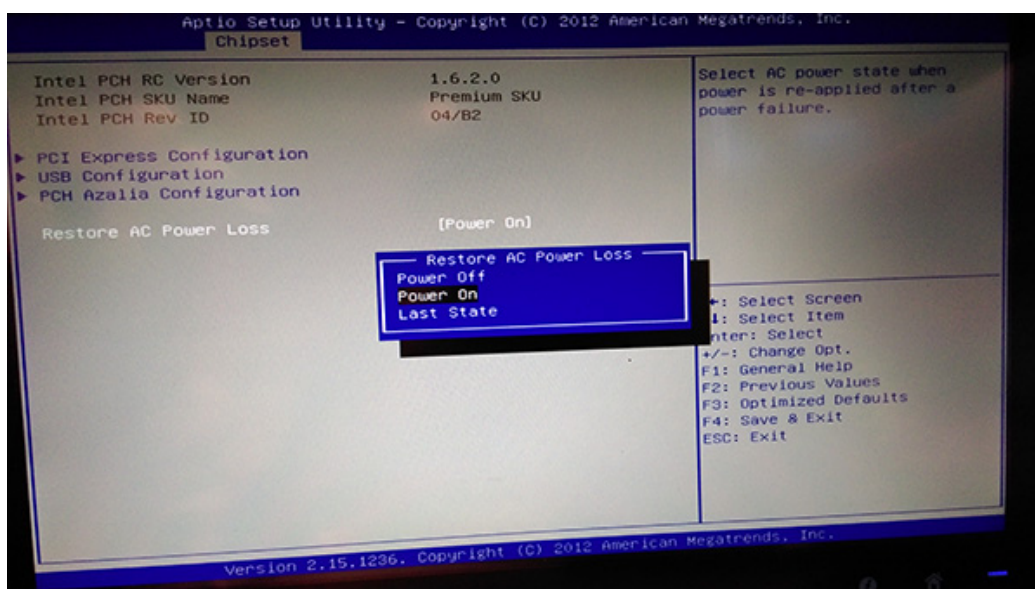


Figure 2.11 AT/ATX adjustment

2.9 Reset Button

Press the “Reset” button to activate the hardware reset function.

2.10 PCI Express Mini Card Socket

There are three sockets for full size PCI Express mini cards. The first interface (CN9) is the default defined for mSATA. The second (CN6) and the third (CN7) interface is mainly target to support iDoor technology/ module for diversified application such as isolated COM port, Profibus, WLAN GPRS, 3G, mRAM and so on. Users can install the card easily by using the optional kit.

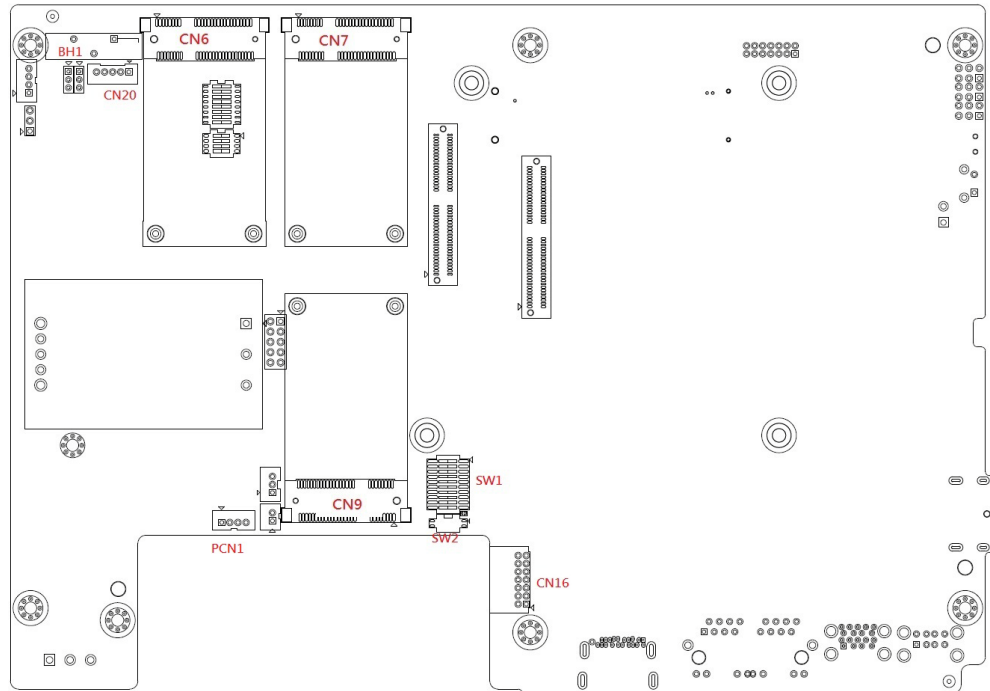


Figure 2.12 PCIE mini card sockets placement

2.10.1 iDoor Expansion Slot

At the front side, there's a iDoor Expansion slot that provide user to install Mini-PCle modules to extend extra I/O port for specific application, like Isolation COM, Digital I/O, CANOpen modules.

2.11 PCIe Slot

In order to fulfill user's extensive requirements, UNO-3384G provide one PCIe x4 slot. The PCIe slot could provide user to install standard PCIe card compatible with PCIe x4, for example, USB expansion card, Ethernet expansion card...etc.

Regarding PCI/PCIE max power support, user needs to consider PCI/PCIE card thermal limitation.

The thermal limitation as below table:

Condition	Slot1 power	Slot2 power
PCI/PCIE card without FAN	3W (Note2)	3W (Note2)
PCI card with FAN-on-card	6W (Note3)	6W (Note3)
PCIE card with FAN-on-card	10W (Note3)	10W (Note3)

PCI/PCle Card need wide temperature (at least +70° C).

The system can provide total 20W power for slot1+slot2, it depend on PCI/PCIE card thermal solution. If PCI/PCIE card hasn't any FAN on the module, using Max 3W PCI/PCIE card is recommendation; If PCI/PCIE card has FAN on the module, using Max 6W PCI/ 10W PCIE card is recommendation; If PCI/PCIE card has FAN on the module and PCI/PCIE card can work under over 80°C environment, system can provide total 20W power for slot1+slot2.

2.12 SATA HDD Drive

The UNO-3300G series product supports two 2.5" SATA HDD with up to 6Gbps speed.

The UNO-3300G support RAID0 and RAID1. The RAID function should be enabled in BIOS setup before you install an operating system into a RAID volume. User can enable RAID function in BIOS sub-menu "Advance\SATA Configuration".

Please follow the below steps to create a RAID volume.

1. Mount two SATA HDDs in the system.
2. Power on the system.
3. Press "F2" to enter into BIOS setup during POST.
4. Enable RAID mode in BIOS setup menu "Advance\SATA Configuration".

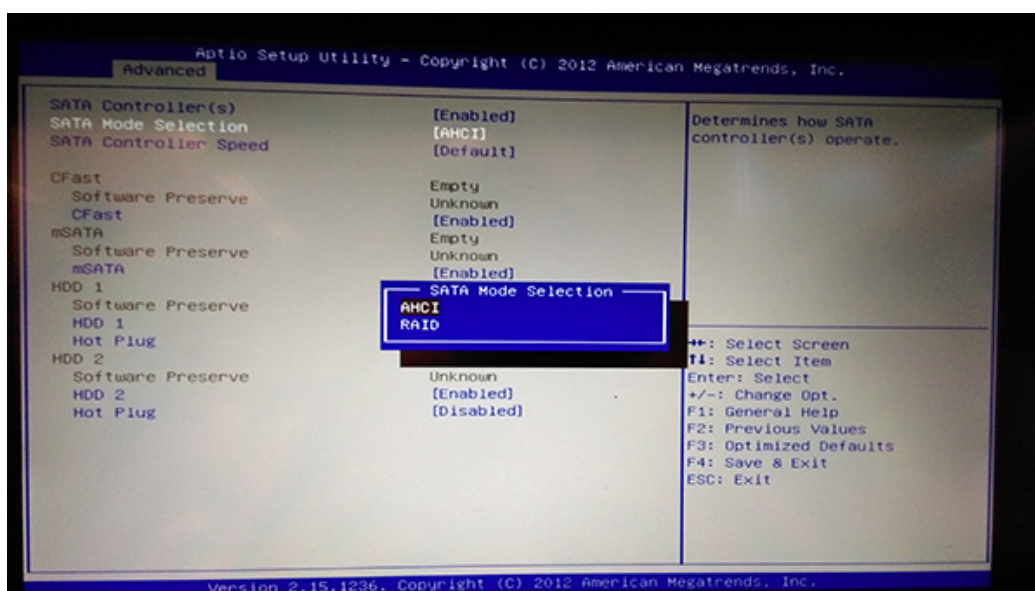


Figure 2.13 SATA Mode Selection

5. Press "F4" to save and exist the BIOS setup.
6. Press "Ctrl+I" to enter RAID configuration utility when the Intel Rapid Storage Technology option ROM screen appears.



Figure 2.14 Detecting a RAID configuration

7. Create a RAID volume in RAID configuration utility.

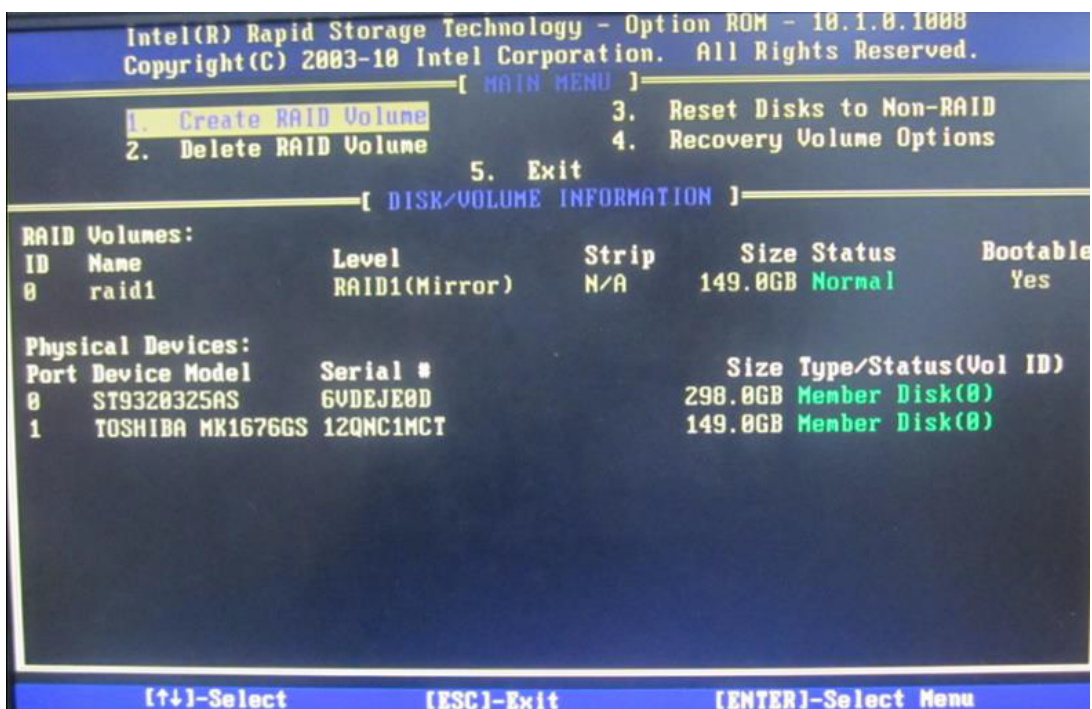


Figure 2.15 Creating a RAID Volume

8. Follow standard procedure to install OS into the RAID volume.

Note!



1. The Maximum height of 2.5" HDD supported on UNO-3300G is 9.5 mm, and Maximum Power is 5V / 700mA per SATA port.
2. Hot-swappable function of HDD is in conflict with operation of RAID.

2.13 Audio Jack

This product provides one Line-out port, one Line-in and one MIC (Pin Header).

2.14 LED Indicators

There are four LEDs to indicate the status of the system power, storage read/write, COM1 transmit/receive.

- PWR: Green means normal, yellow is stand by.
- HDD, Tx/Rx1: Flashing green means signals are being transmitted and received.
- RTC: Red means RTC voltage low.
R: reserved for end user, the 2 LED is Green.

Chapter 3

Initial Setup

This chapter introduces how to initialize UNO-3000G series.

Sections include:

- Chassis Grounding
- Connecting Power
- Connecting a Hard Disk
- BIOS Setup and System Assignments

3.1 Connecting Power

Connect one 24 VDC power source to an UNO-3300G series product. The power source can be from either a power adapter or an in-house power source.

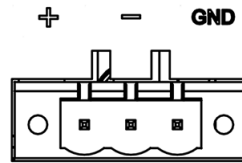
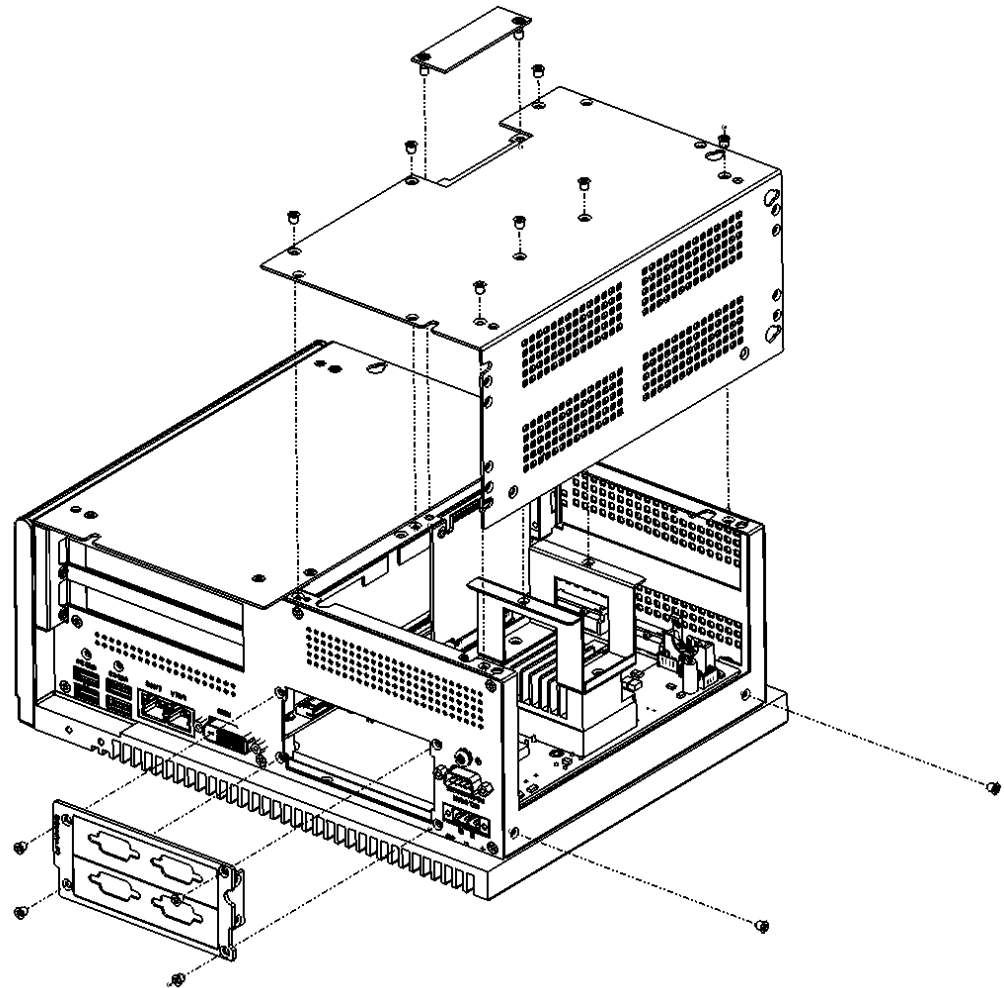


Figure 3.1 Power Connector

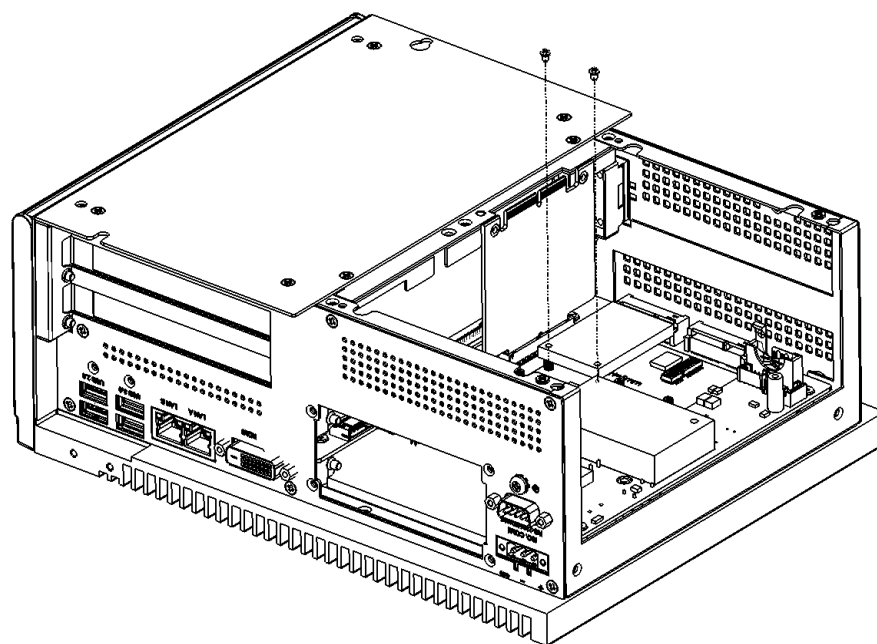
3.2 Inserting an iDoor Module

The UNO-3300 series have dual iDoor slots for various expansions. Follow the below exploded diagram to install iDoor modules into the system.

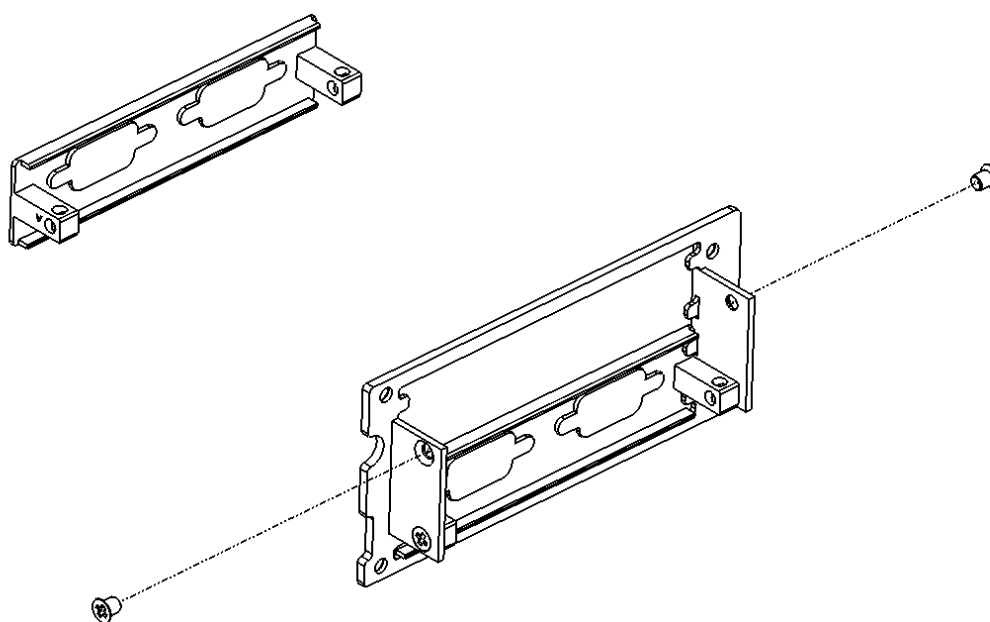
1. Remove the screws from the base plate and lift to remove.



2. Insert & lock the mini-PCI card using screws.



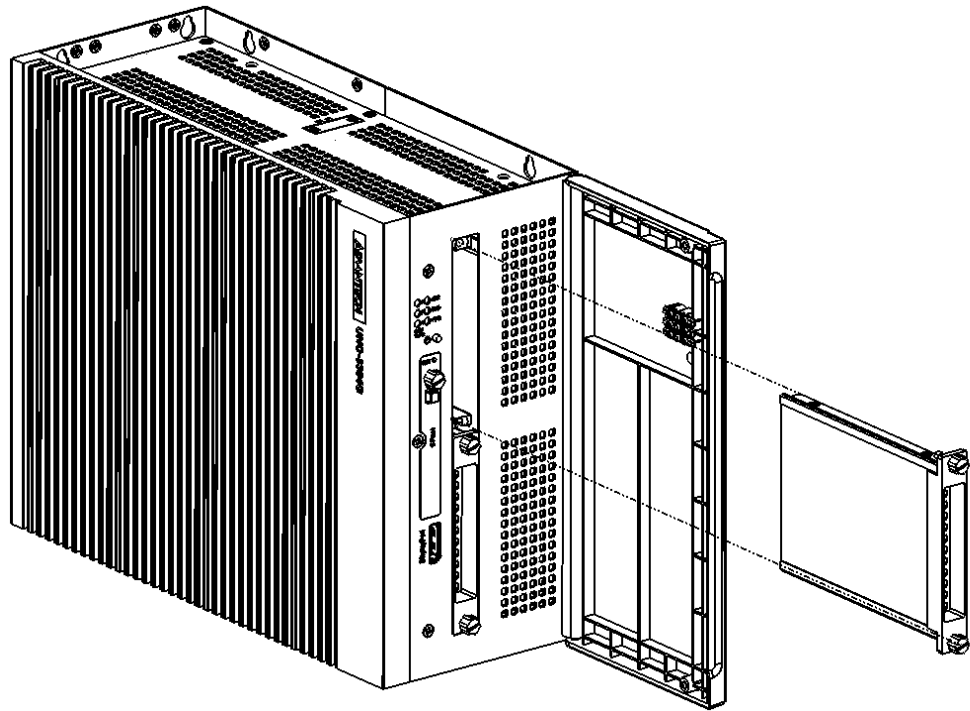
3. Replacing the blanking plate with the iDoor plate.



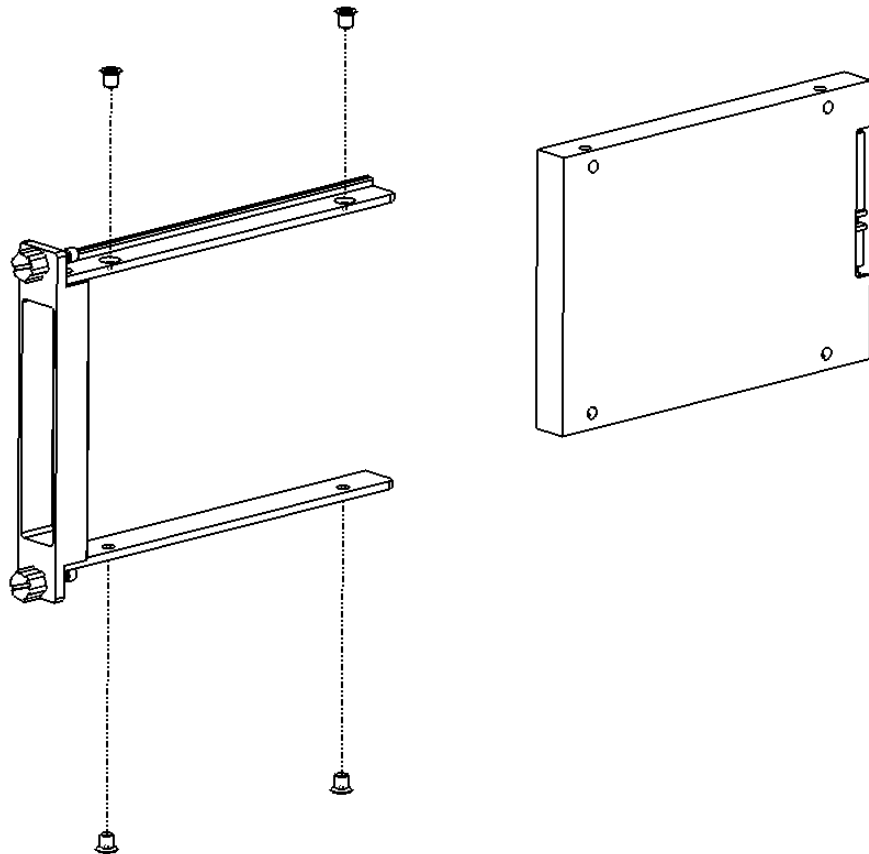
3.3 Installing a Hard Disk

Follow the steps below to install a HDD/SSD into the system.

1. Release thumb screw and pull up the HDD/SSD bracket.



2. Screw the HDD/SSD to the bracket.



3. Put the bracket back & tighten the thumb screw.

Note! Available 130 mm space upon HDD bracket.

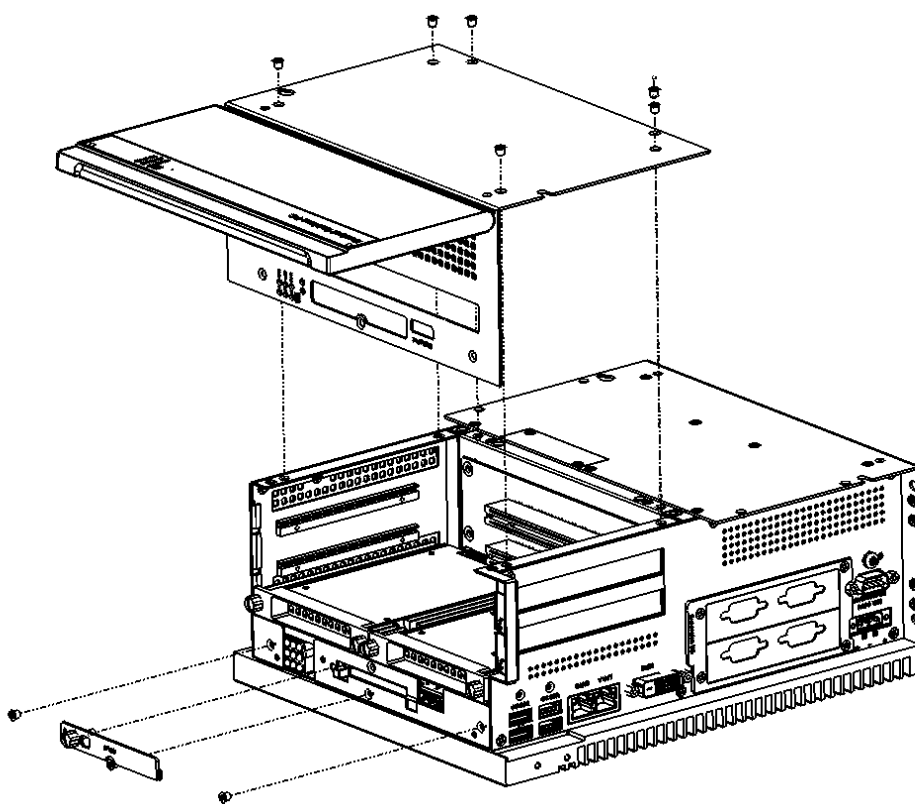


3.4 Installing an Interface card

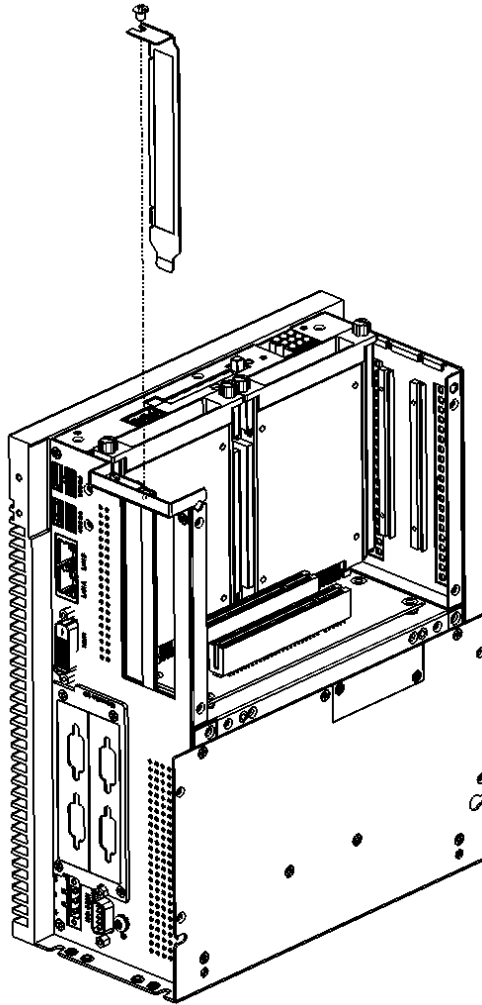
The UNO-3384G provides an optional backplanes to fulfill the extensive requirements of various projects. These backplanes provide PCIe4 and PCI slots to be compatible with different interface cards. Users can install interface cards based on their requirements.

Follow the exploded diagram to install an interface card.

1. Loosen the cover of the chassis.



2. Insert your PCI/PCIe card and secure it.



3. Replace the cover of the chassis.

3.5 Installing Power Cable

The UNO-3384G provides an internal backup power (24VDC output) on system board, External expansion cards or other devices that required additional power.

3.6 Mounting UNO-3300G Series

The UNO-3300G series have unique design in two mounting types, Book mounting & Wall mounting. For these two convenient mounting types, which are easier to installation without bracket.

Below separate figures shows the capability of mounting:

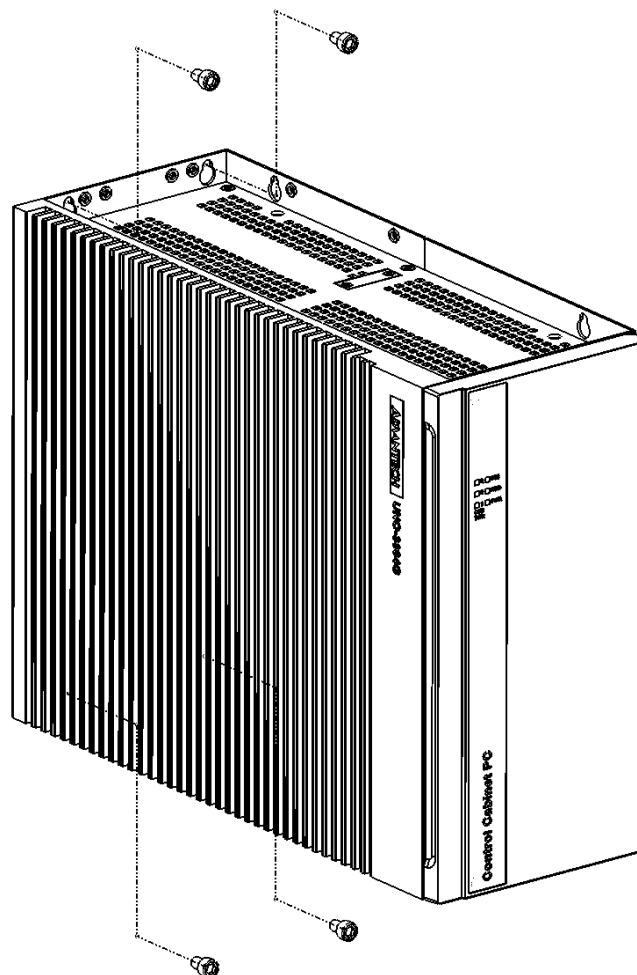


Figure 3.2 Book mount

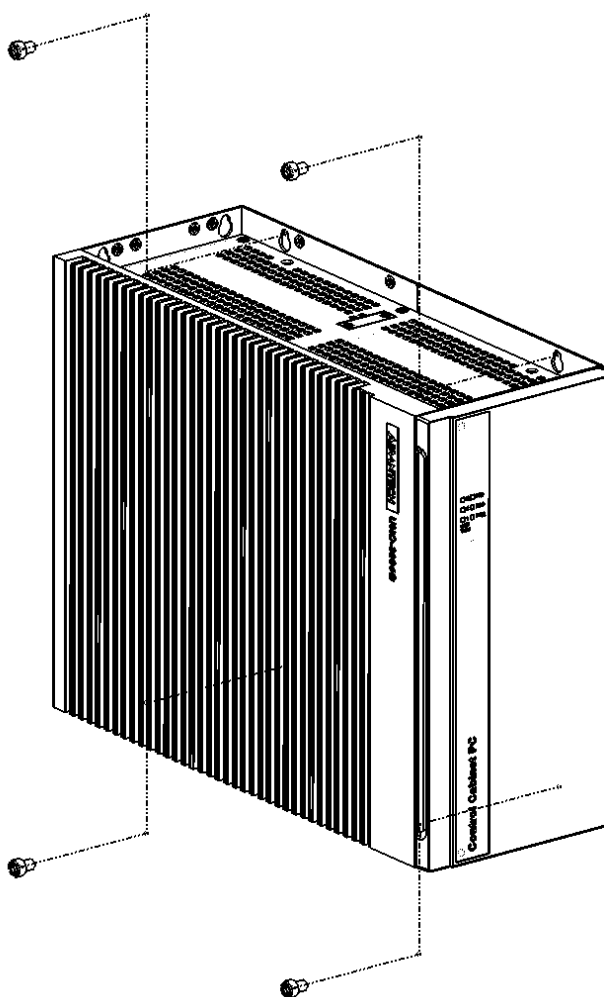


Figure 3.3 Wall mount

There is one specific application like as detachable PC, which allows quick assembly with display products.

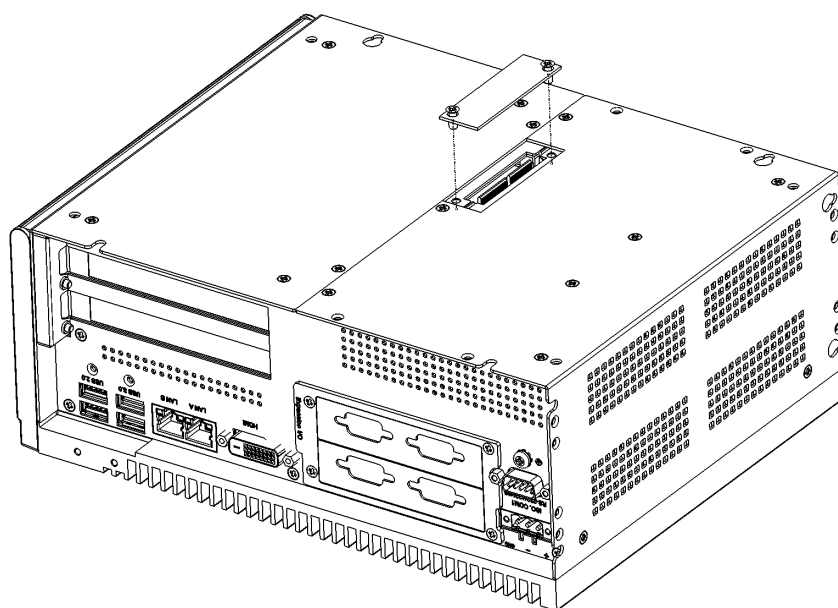


Figure 3.4 Detachable PC (Optional)_01

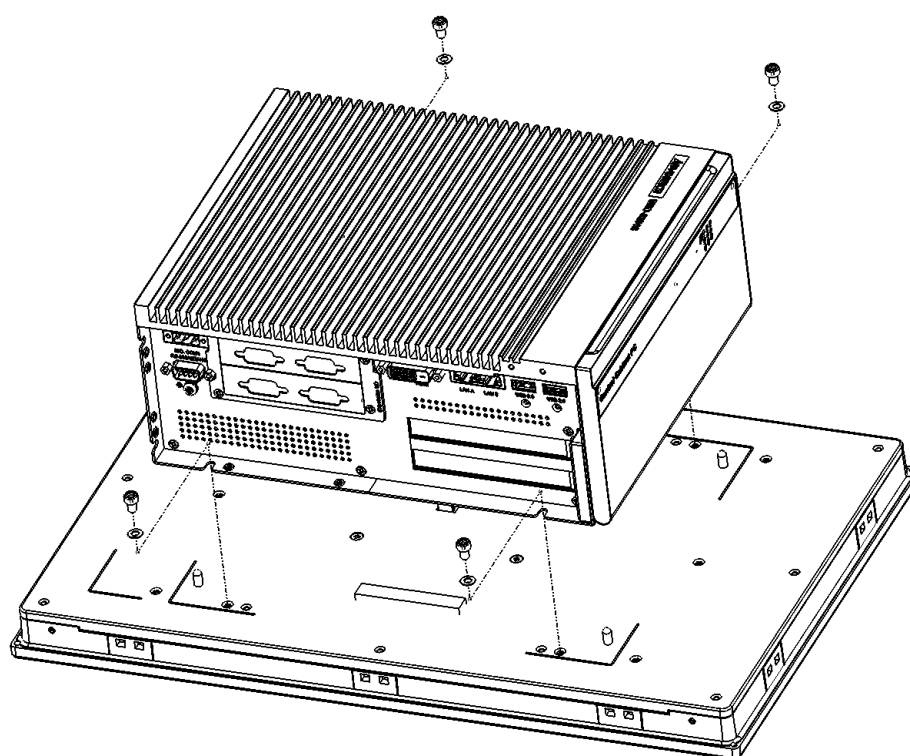


Figure 3.5 Detachable PC (Optional)_02

Appendix **A**

System Settings and Pin Assignments

A.1 System I/O Address and Interrupt Assignment

Table A.1: Interrupt Assignments

Interrupt#	Interrupt source
NMI	Parity error detected
IRQ0	System timer
IRQ1	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
IRQ2	Interrupt from controller 2 (cascade)
IRQ3	Available
IRQ4	Communications Port (COM)
IRQ5	Available
IRQ6	Available
IRQ7	EC Watch DOG
IRQ8	System CMOS/real time clock
IRQ9	Microsoft ACPI-Compliant System
IRQ10	Available
IRQ11	Available
IRQ12	PS/2 Compatible Mouse
IRQ13	Numeric data processor
IRQ14	Primary IDE
IRQ15	Secondary IDE

A.2 Board Connectors and Switches

There are several connectors and switches on the inside board. The following sections tell you how to configure the hardware setting. Figure A.01 & A.02 show the locations of the connectors and switches.

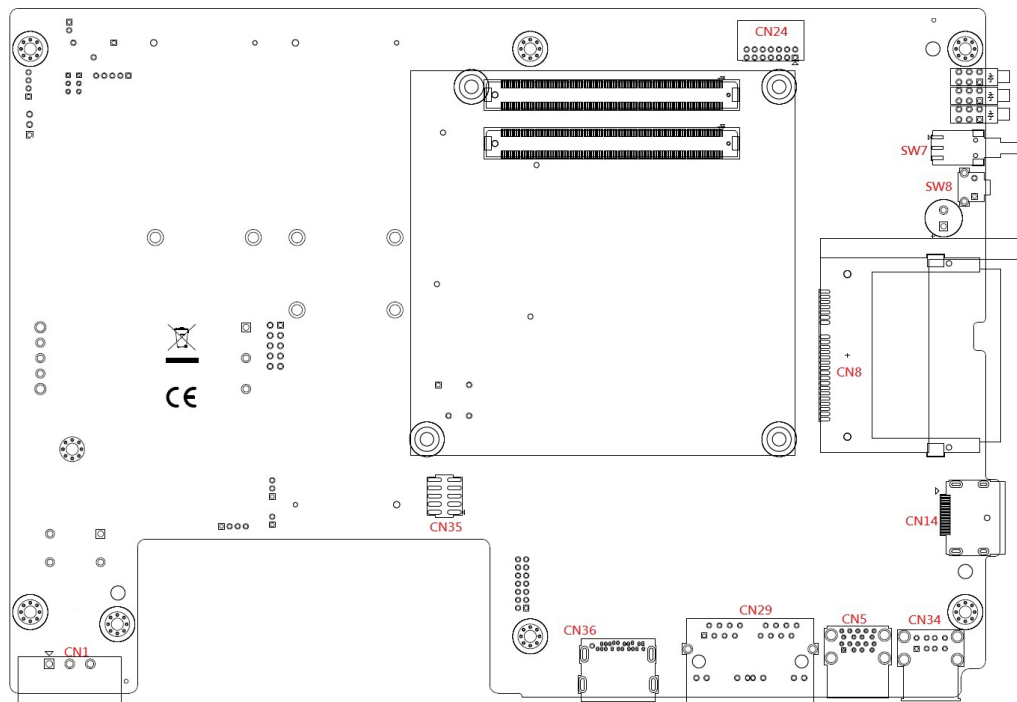


Figure A.1 Bottom view of System board

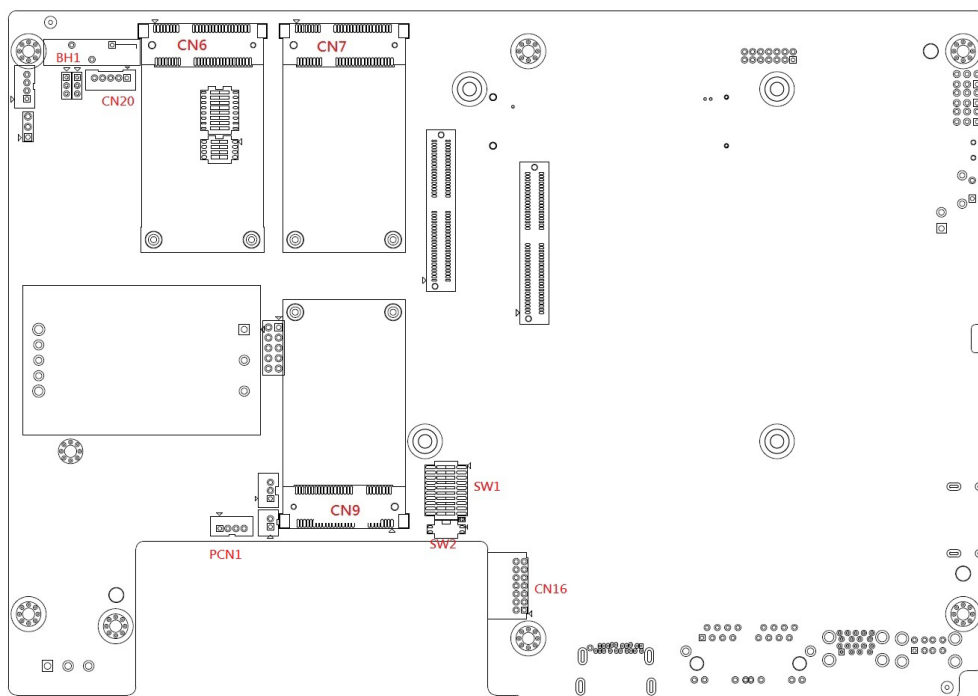


Figure A.2 Front view of Main/System board

A.3 Function of connectors & switches

The connectors and switches on the inside boards are defined as table A.2 & A.3.

Table A.2: Connectors on System board

Label	Function
SW7	Power Switch
SW8	Reset
CN16	Audio
CN20	Internal USB
CN29	LAN
PCN1	24V Power Output
CN5	External USB2.0+USB3.0
CN34	External USB2.0
CN36	HDMI
CN14	DP
CN8	CFAST
CN6	Mini PCIE
CN7	Mini PCIE

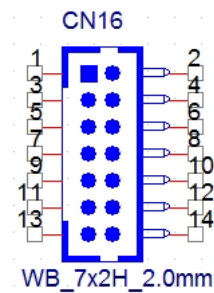
Table A.3: Connectors on System board

Label	Function
CN9	mSATA
SW1	COM1 setting
SW8	Reset
CN1	Power input 18~36V
BH1	RTC battery input

A.4 Audio (Pin header)

Table A.4: CN16 Audio

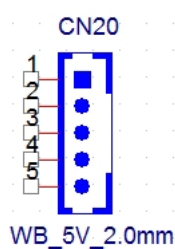
Part Number	1655004510-01
Footprint	WF_7x2P_79_BOX_RA_D
Description	
Pin	Pin Name
1	LOUTR
2	LOUTL
3	LOUT_JD
4	GND
5	LINR
6	LINL
7	LIN_JD
8	GND
9	MICR
10	MICL
11	MIC_JD
12	GND
13	GND
14	GND



A.5 Internal USB

Table A.5: CN20 Internal USB

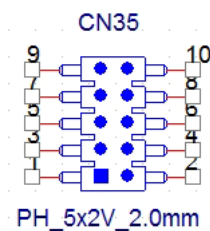
Part Number	1655305020-01
Footprint	WF_5P_79_BOX_D_721-81-05TW0
Description	WAFER BOX 5P 2.00mm 180D(M) DIP 721-81-05TW80
Pin	Pin Name
1	+5V
2	USB-
3	USB+
4	GND
5	GND



A.6 COM

Table A.6: CN35 COM1

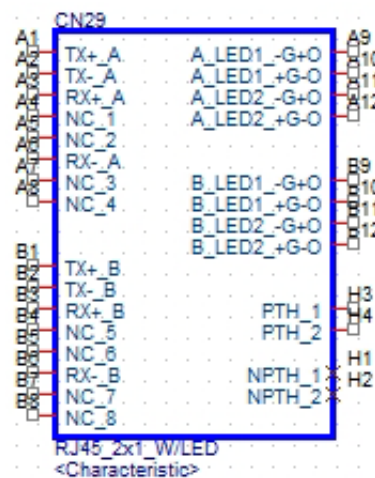
Pin	Pin Name
1	GND
2	RTS#
3	DSR#
4	DTR#_RX-
5	RI#
6	TXD_RX+
7	CTS#
8	RXD_DATA+
9	GND
10	DCD#_DATA-



A.7 LAN1/LAN2

Table A.7: CN29 LAN1/LAN2

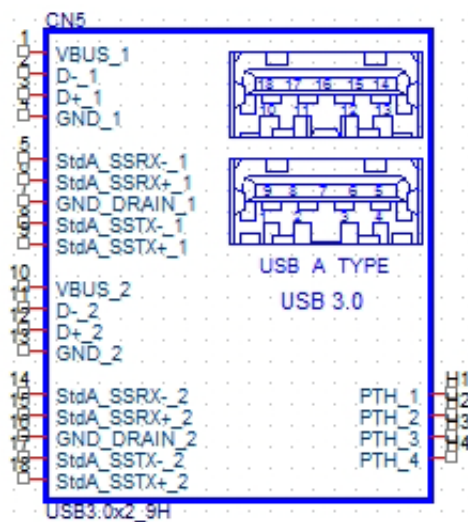
Part Number	1652005931-01
Footprint	RJ45_24P_RJ1402-88ND26R800
Description	PHONE JACK RJ45 24P 90D(F) 1.27mm DIP RJ1402-88N
Pin	Pin Name
A1	LAN1_MDI0+
A2	LAN1_MDI0-
A3	LAN1_MDI1+
A4	LAN1_MDI2+
A5	LAN1_MDI2-
A6	LAN1_MDI1-
A7	LAN1_MDI3+
A8	LAN1_MDI3-
A9	3.3V
A10	LAN1LED_ACT#
A11	LAN1LED_LINK100
A12	LAN1LED_LINK1000
B1	LAN2_MDI0+
B2	LAN2_MDI0-
B3	LAN2_MDI1+
B4	LAN2_MDI2+
B5	LAN2_MDI2-
B6	LAN2_MDI1-
B7	LAN2_MDI3+
B8	LAN2_MDI3-
B9	3.3V
B10	LAN2LED_ACT#
B11	LAN2LED_LINK100
B12	LAN2LED_LINK1000



A.8 External USB3.0

Table A.8: CN5 External USB3.0

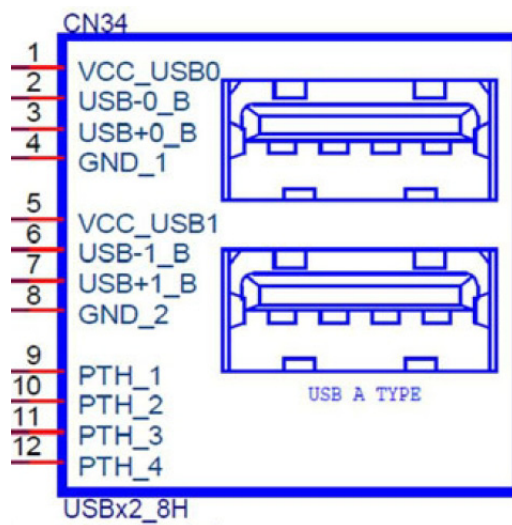
Part Number	1654010969-01
Footprint	USB_9x2P_UEA1112C-8HS6-4F
Description	
Pin	Pin Name
1	+5V
2	D-
3	D+
4	GND
5	SSRX-
6	SSRX+
7	GND
8	SSTX-
9	SSTX+
10	+5V
11	D-
12	D+
13	GND
14	SSRX2-
15	SSRX2+
16	GND
17	SSTX2-
18	SSTX2+



A.9 External USB2.0

Table A.9: CN34 External USB2.0

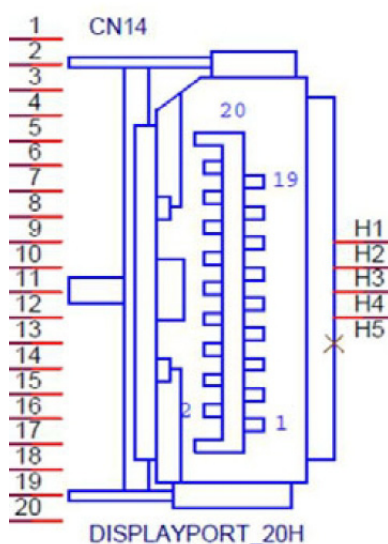
Part Number	1654009513
Footprint	USB_8P_UB1112C-8FDE-4F
Description	USB CONN. 8P 2.0mm 90D DIP UB1112C-8FDE-4F
Pin	Pin Name
1	+5V
2	D-
3	D+
4	GND
5	+5V
6	D2-
7	D2+
8	GND
9	GND
10	GND
11	GND
12	GND



A.10 DISPLAYPORT

Table A.10: CN14 DISPLAYPORT

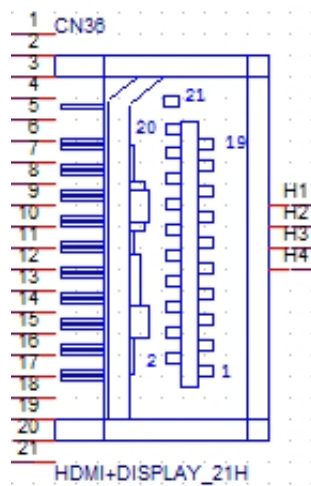
Part Number	1654010437
Footprint	DPCON_20P_3VD51203-H7JJ-7H
Description	Displayport Conn. 20P 0.5mm 90D(F) SMD 3VD51203-
Pin	Pin Name
1	D0+
2	GND
3	D0-
4	D1+
5	GND
6	D1-
7	D2+
8	GND
9	D2-
10	D3+
11	GND
12	D3-
13	CAD
14	config
15	AUX+
16	GND
17	AUX-
18	HPD
19	GND
20	+3.3V



A.11 HDMI

Table A.11: CN36 HDMI

Part Number	1654010203
Footprint	HDMICON_21P_845-002-217CRL
Description	HDMI+DISPLAY Conn. 20P 90D(M) DIP 845-002-217CRL
1	D2+
2	GND
3	D2-
4	D1+
5	GND
6	D1-
7	D0+
8	GND
9	D0-
10	CLK+
11	GND
12	CLK-
13	CEC
14	NC
15	SCL
16	SDA
17	GND
18	+5V
19	HPD
20	NC
21	NC



A.12 Power Connector (PWR)

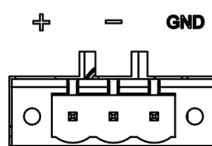


Table A.12: Power connector pin assignments

1	V+(24VDC in)
2	V-
3	Chassis GND

Table A.13: SW7 Power Switch

Part Number	1600000049
Footprint	SW-TP33WS83565
Description	RESET SW ES-26A-K-T/R-H SMD 4p
Pin	Pin Name
1	NC
2	GND
3	PSIN
4	NC
5	NC
6	NC
7	NC

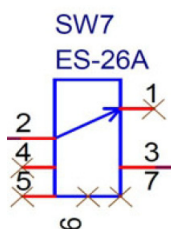


Table A.14: SW8 Reset

Part Number	1600002364
Footprint	SW_2P_6-4-2_D
Description	PUSH SW ELTSA-62N-H 2P DIP 13.0x3.85mm
Pin	Pin Name
1	GND
2	RESET#

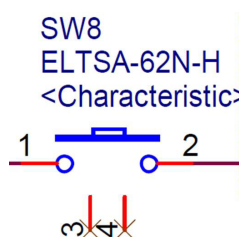


Table A.15: CN8 CFAST

Part Number	1653004849
Footprint	CFast_24P_N7G24
Description	CFAST 24P 1.27mm 90D(M) SMD N7G24-A0B2RA-10-0HT-
Pin	Pin Name
1	S1:GND
2	S2:SATA TX+
3	S3:SATA TX-
4	S4:GND
5	S5:SATA RX-
6	S6:SATA RX+
7	S7:GND
8	PC1:NC
9	PC2:GND
10	PC3:NC
11	PC4:NC
12	PC5:NC
13	PC6:NC
14	PC7:NC
15	PC8:PHYRDY
16	PC9:HDDA
17	PC10:NC
18	PC11:NC
19	PC12:NC
20	PC13:+3.3V
21	PC14:+3.3V
22	PC15:GND
23	PC16:GND
24	PC17:NC

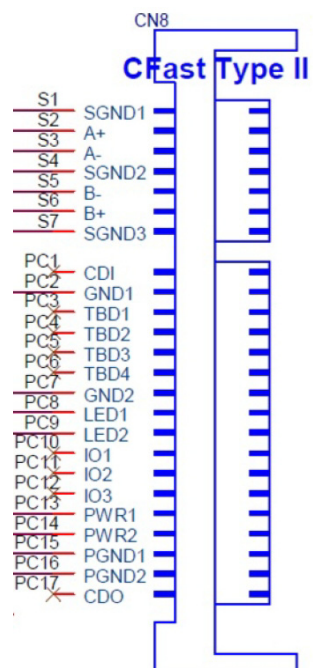
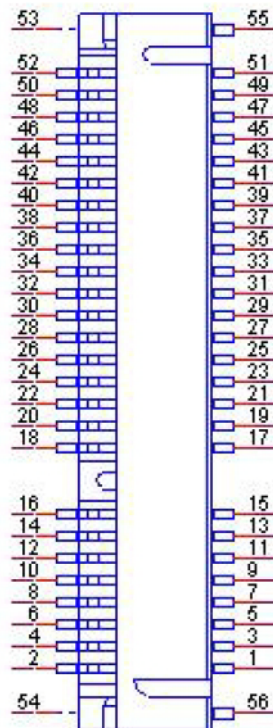


Table A.16: CN6/CN7 Mini PCIE

Part Number	1654006715
Footprint	MINIPCIE_FULL_HALF_STANDARD
Description	
Pin	Pin Name
1	WAKE#
2	+3.3VSB
3	NC
4	GND
5	NC
6	+1.5V
7	NC
8	UIM_PWR
9	GND
10	UIM_DATA
11	REFCLK-
12	UIM_CLK
13	REFCLK+
14	UIM_RESET
15	GND
16	UIM_VPP
17	NC
18	GND
19	NC
20	NC
21	GND
22	PERST#
23	PERn0
24	+3.3VSB
25	PERp0
26	GND
27	GND
28	+1.5V
29	GND
30	SMB_CLK
31	PETn0
32	SMB_DAT
33	PETp0
34	GND
35	GND
36	USB D-
37	GND
38	USB D+
39	+3.3VSB
40	GND
41	+3.3VSB
42	NC

Table A.16: CN6/CN7 Mini PCIE

43	GND
44	NC
45	NC
46	NC
47	NC
48	+1.5V
49	NC
50	GND
51	NC
52	+3.3VSB

**Table A.17: : CN9 mSATA**

Part Number	1654006715
Footprint	MINIPCIE_FULL_HALF_STANDARD
Description	
Pin	Pin Name
1	NC
2	+3.3VSB
3	NC
4	GND
5	NC
6	+1.5V
7	NC
8	NC
9	GND
10	NC

Table A.17: : CN9 mSATA

11	NC
12	NC
13	NC
14	NC
15	GND
16	NC
17	NC
18	GND
19	NC
20	NC
21	GND
22	NC
23	SATA_RX+
24	+3.3VSB
25	SATA_RX-
26	GND
27	GND
28	+1.5V
29	GND
30	SMB_CLK
31	SATA_TX-
32	SMB_DAT
33	SATA_TX+
34	GND
35	GND
36	NC
37	GND
38	NC
39	+3.3VSB
40	GND
41	+3.3VSB
42	NC
43	GND
44	NC
45	NC
46	NC
47	NC
48	+1.5V
49	NC
50	GND
51	NC
52	+3.3VSB

Note! *MINI1 (No Connection on pin 36/38)*



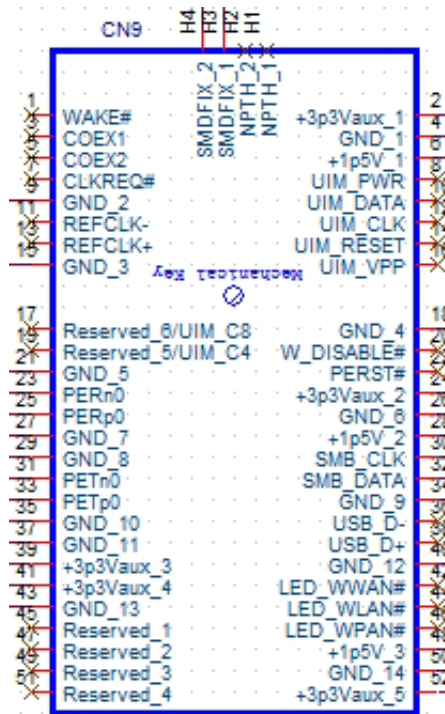
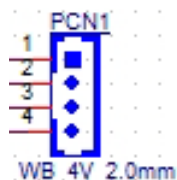


Table A.18: PCN1: reserve for power output, the voltage is same as power input (CN1)

Part Number	1655304020
Footprint	WF_4P_79_BOX_R1_D
Description	WAFER BOX 2.0mm 4P 180D(M) W/LOCK A2001WV2-4P
Pin	Pin Name
1	V I N
2	V I N
3	GND
4	GND

Note! This connector support max 2 A.



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