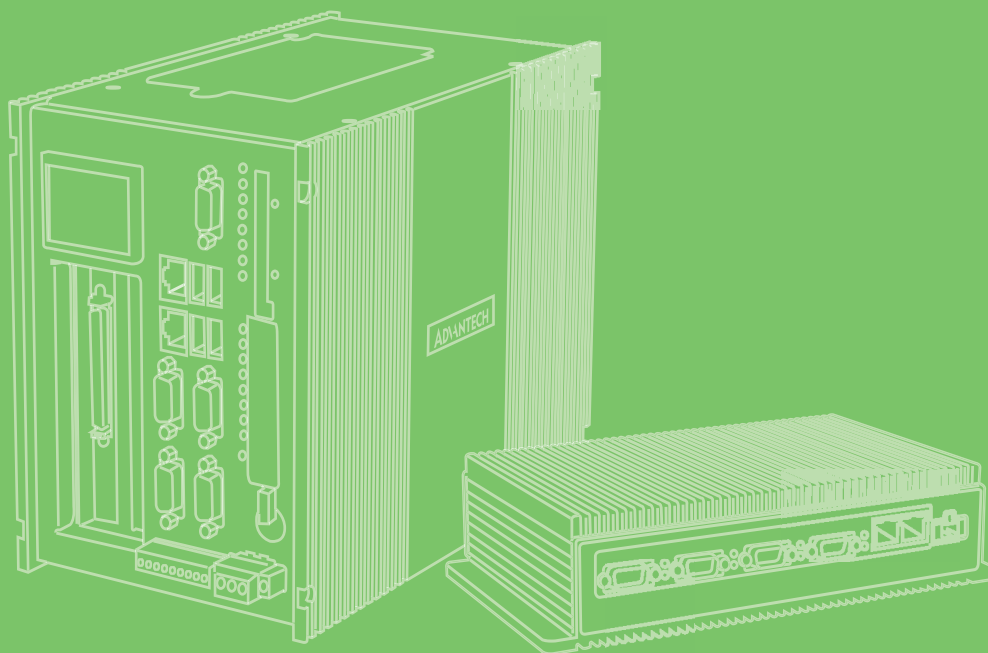# User Manual

UNO-3200G Series 電腦

Intel® 6th Gen. Core™ i
Processors Embedded
Automation PC, with 2 or 4 PCIe/
PCI Extension Slots

ADVANTECH

Enabling an Intelligent Planet

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For technical support and service, please visit our support website at:

http://support.advantech.com/

This manual applies to the below model which is abbreviated as UNO-3200G series products in this article.

*Model number:

UNO-3283G

UNO-3285G

UNO-3283G-674AE	UNO-3283G-654AE	UNO-3283G-634AE	UNO-3285G-674AE	UNO-3285G-654AE	UNO-3285G-634AE
UNO3283G674 1601E-T	UNO3283G654 1601E-T	UNO3283G634 1601E-T	UNO3285G674 1601E-T	UNO3285G65 41601E-T	UNO3285G634 1601E-T
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UNO3283G674 2004E-T	UNO3283G654 2004E-T	UNO3283G634 2004E-T	UNO3285G674 2004E-T	UNO3285G65 42004E-T	UNO3285G634 2004E-T

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 merchandize 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. By means of power cord connected to a socket-outlet with earthing connection.
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).
18. This product is intended to be supplied by an UL certified power supply or dc source suitable for use at Tma 45degree C min. and output is rated 12-36Vdc, 10-3.3A, if need further assistance, please contact Advantech for further information.

Caution: The earthing wire of the protective bonding conductor shall be green-and-yellow, 18AWG/0.75mm2 minimum.

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

安全指示

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，請確認拔除電源線。請勿使用液體或去污噴霧劑清洗設備。
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. 請勿在潮濕環境中試用設備。
6. 請在安裝前確保設備放置在可靠的平面上，意外摔落可能會導致設備損壞。
7. 設備機殼的開孔適用於空氣對，從而防止設備過熱。**請勿覆蓋開孔。**
8. 當您連接設備到電源插座前，請確認電源插座的電壓符合要求。
9. 請將電源線佈置在人們不易絆倒的位置，請勿在電源線上覆蓋任何雜物。
10. 請注意設備上所有的警告標示。
11. 如果長時間不使用設備，請拔除與電源插座的連結，避免設備被超標的電壓波動損壞。
12. 請勿讓任何液體流入通風口，以免引起火災或短路。
13. 請勿自行打開設備。為了確保您的安全，請透過經認證的工程師來打開設備。
14. 如遇下列情況，請由專業人員維修：

■　電源線或插頭損壞；

■　設備內部有液體流入；

■　設備曾暴露在過度潮濕環境中使用；

■　設備無法正常工作，或您無法透過用戶手冊來正常工作；

■　設備摔落或損壞；

■　設備有明顯外觀損；

15. 請勿將設備放置在超出建議溫度範圍的環境，即不要低於 - 20 ℃　（- 4 ℉）或高於 60 ℃　（140 ℉），否則可能會造成設備損壞。
16. 注意：若電池更換不正確，將有爆炸危險。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. 本產品於國內裝置使用時，其電源僅限使用機架電源模組所提供直流電源輸入，不得使用交流電源及附加其他電源轉換裝置提供電源，其電源輸入電壓及電流請依說明書規定使用。
18. 根據 IEC 704 - 1:1982 規定，操作員所在位置音量不可高於 70 分貝。
19. 限制區域：請勿將設備安裝於限制區域使用。
20. 免責聲明：請安全訓示符合 IEC 704 - 1 要求。研華公司對其內容之準確性不承擔任何法律責任。

RoHS Claim

設備名稱：電腦 Equipment name	型號（型式）：UNO-3283G、UNO-3285G（系列型號請參見手冊載明型號） Type designation (Type)					
單元 Unit	限用物質及其化學符號 Restricted substances and its chemical symbols					
	鉛 Lead (Pb)	汞 Mercury (Hg)	鎘 Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr^{+6})	多溴聯苯 Polybromina ted biphenyls (PBB)	多溴二苯醚 Polybrominate d diphenyl ethers (PBDE)
電路板	—	○	○	○	○	○
機殼 （外殼、支架 …等）	○	○	○	○	○	○
其它固定組件 （螺絲）	—	○	○	○	○	○
配件（線材）	—	○	○	○	○	○
記憶卡	—	○	○	○	○	○

備考 1. " 超出 0.1 wt %" 及 " 超出 0.01 wt %" 係指限用物質之百分比含量超出百分比含量基準值。
Note 1. "Exceeding 0.1 wt %" and "exceeding 0.01 wt %" indicate that the percentage content of the restricted substance exceeds the reference percentage value of presence condition.

備考 2. " ○ " 係指該項限用物質之百分比含量未超出百分比含量基準值。
Note 2. " ○ "indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.

備考 3. " — " 係指該項限用物質為排除項目。
Note 3. The " — " indicates that the restricted substance corresponds to the exemption.

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Chapter 1

Overview

This chapter provides an overview of UNO-3200G series' specifications.

Sections include:
- Introduction
- Hardware specification
- Safety precautions
- Chassis dimensions
- Accessories

1.1 Introduction

UNO-3200G models are high-performance automation computers configured with high-performance Intel Gen.6 Core i processors, which gives users maximum flexibility. They offer two displays, six USB 3.0 ports, two mPCIe sockets, and expansion via PCIe/PCI slots and iDoor expansion, iDoor technology supports automation feature extensions such as industry Fieldbus communication, POE, COM & Digital I/O. The UNO-3200G has a variety of convenient designs, captive thumb screws, dual hot-Swappable HDD/SSD slots, and exchangeable RTC battery that can facilitate maintenance work, and prevent unstable conditions like power drops.

1.2 Hardware Specifications

1.2.1 General

- **Certification:**
  - CE, FCC, UL, CCC, BSMI
- **Dimensions (W×D×H):**
  - UNO-3283G: 142 x 238 x 177 mm (5.6" x 9.3" x 6.9")
  - UNO-3285G: 182 x 238 x 177 mm (7.2" x 9.3" x 6.9")
- **Mounting:** Wall mount, Stand mount, Enclosure mount
- **Power Consumption:** 30 W (Typical, no card added)
- **Power Requirements:** 12Vdc-36Vdc, support AT/ATX power mode BIOS AT simulation mode (support system reboot automatically after power recovery)
- **Weight:** 4.5 kg
- **OS Support:** Windows7/8, WES7, Win10 Enterprise LTSB, AdvLinuxTu
- **System Design:** Fanless

1.3 System Hardware

- **CPU:**
  - UNO-3283G-674AE: Intel Core® i7-6822EQ (8M Cache, 2.0GHz)
  - UNO-3283G-654AE: Intel Core® i5-6442EQ (6M Cache, 1.9GHz)
  - UNO-3283G-634AE: Intel Core® i3-6102E (3M Cache, 1.9GHz)
  - UNO-3285G-674AE: Intel Core® i7-6822EQ (8M Cache, 2.0GHz)
  - UNO-3285G-654AE: Intel Core® i5-6442EQ (6M Cache, 1.9GHz)
  - UNO-3285G-634AE: Intel Core® i3-6102E (3M Cache, 1.9GHz)
- **Memory:** 8G DDR4 built-in
- **Indicators:** LEDs for Power, Battery, HDD, COM (Tx/Rx)
- **Storage:** 2 × 2.5" SATA HDD/SSD bays, support 9.5mm height & SATA Gen3.0, 1 x mSATA slot, 1 x CFast slot
- **Watchdog Timer:** 256 levels time interval, programmable from 0 to 255 sec
- **Expansion Slots:**
  - UNO-3283G: 2 Full-size mPCIe,
    1 x PCIex16, 1 x PCI (Optional by project: 2 x PCIex8 or 2 x PCI)
  - UNO-3285G: 2 Full-size mPCIe,
    2 x PCIex8, 2 x PCI (Optional by project: 4 x PCI)
- PCIE max speed is 5 GB; PCI max speed is 66MHz; system can provide typical 10W for each PCI/PCIE slot, Max 20W for single slot condition:

Model	Slot1 Power	Slot2 Power	Slot3 Power	Slot4 Power	Total Power Limitation
UNO-3283G	Typical 10W, Max 20W	Typical 10W, Max 20W	N/A	N/A	Max <40W (Note1)
UNO-3285G	Typical 10W, Max 20W	Typical 10W, Max 20W	Typical 10W, Max 20W	Typical 10W, Max 20W	Max <40W (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 40 Watt.*

1.3.1 I/O Interfaces

- **Serial Ports:** 2 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:** 6 x USB 3.0 Ports
- **Displays:** 1 x HDMI, supports 1920 x 1080 @ 24 Hz 24 bpp; 1 x DVI-I, supports 1920 x 1080 @ 60 Hz 24 bpp & 2 independent displays
- **Power Connector:** 1 x 3 pin, terminal block

1.3.2 Environment

- **Relative Humidity:** 95% @40°C (Non-condensing)
- **Operating Temperature:** -20 ~ 60°C (-4 ~ 140°F) @ 5 ~ 85% RH with 0.7m/s airflow (Safety certification: -20 ~ 45°C (-4 ~ 113°F))
- **Storage Temperature:** - 40 ~ 85°C (-104 ~ 185°F)
- **Shock Protection:**
  - IEC 60068-2-27
  - 50 G, half sine, 11 ms
- **Vibration Protection:**
  - IEC 60068-2-64 (Random 1 Oct./min, 1hr/axis.)
  - 1.5 Grms @ 5 ~ 500 Hz with HDD
  - 4Grms @ 5 ~ 500 Hz with SSD

1.3.3 Expansion Board (Optional)

- **UNO-3283G:**
  - 1x PCIex16, 1 x PCI slots
  - 2x PCIex8 slots
  - 2x PCI slots
- **UNO-3285G:**
  - 2x PCIex8, 2x PCI slots
  - 4x PCI slots.

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-3200G 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.*
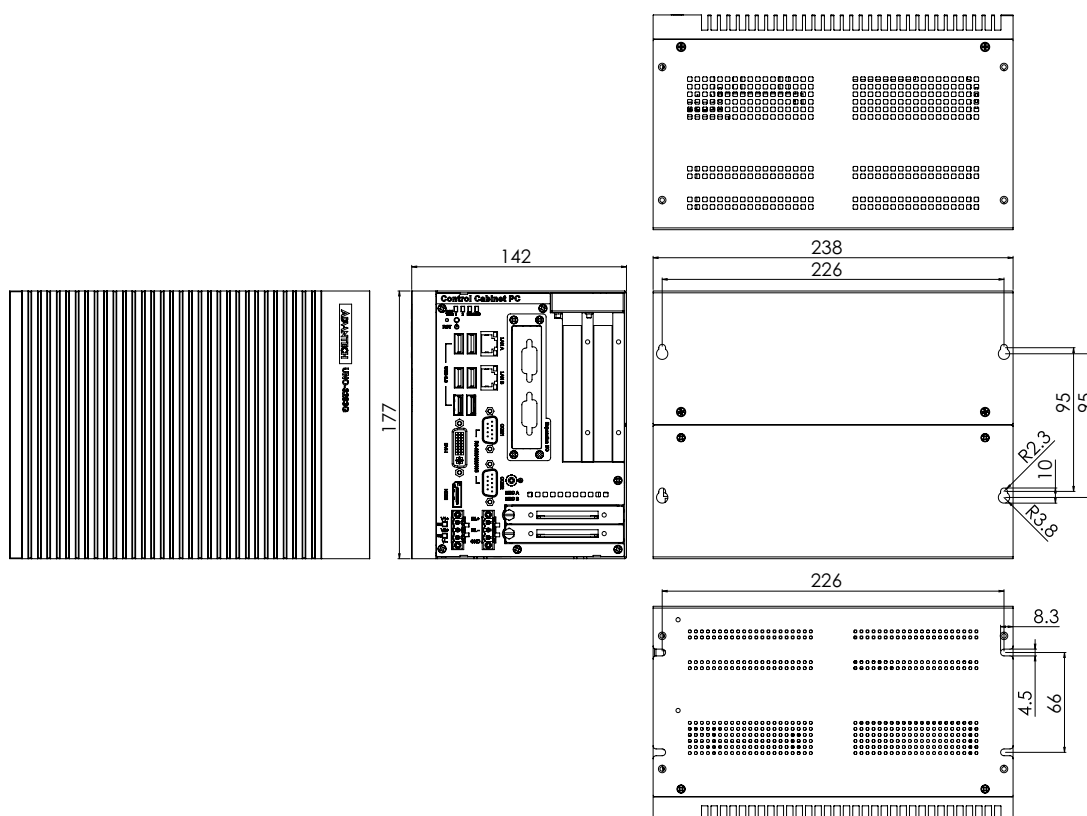
1.5 Chassis Dimensions

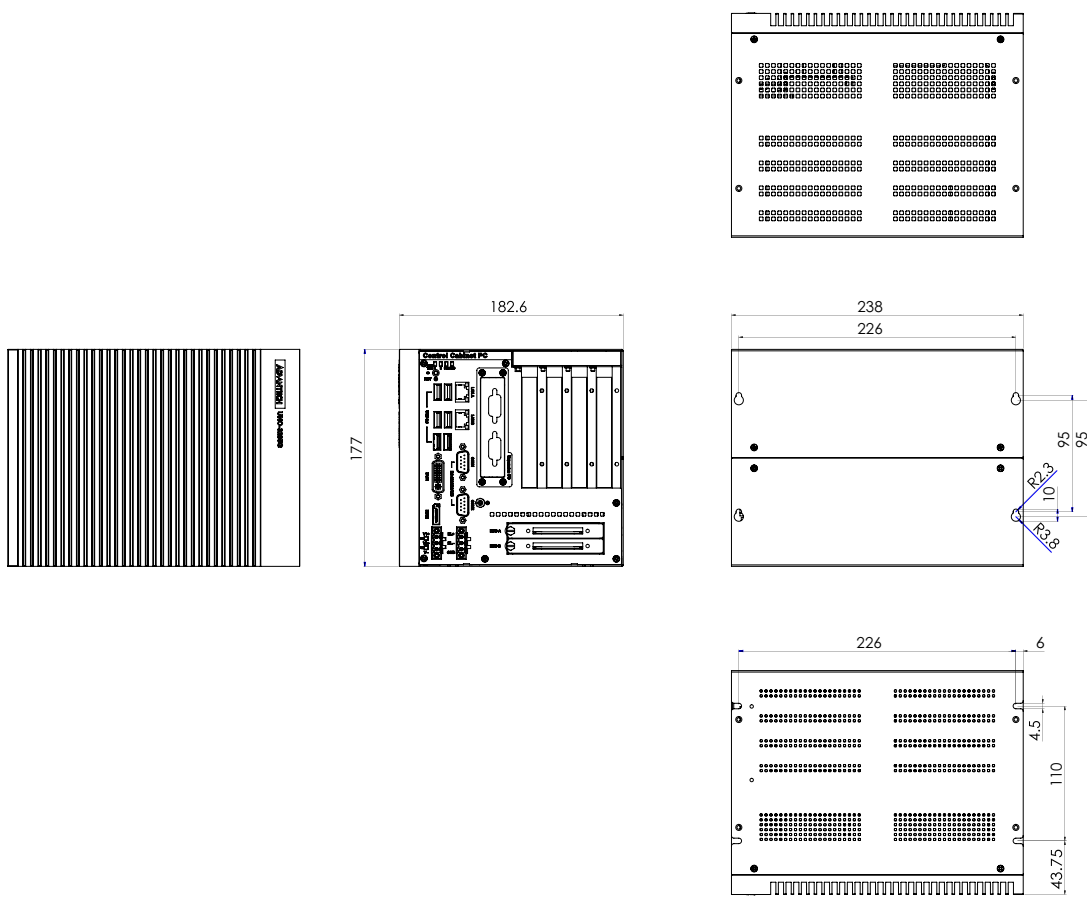**Figure 1.1 UNO-3283G Dimensions**

Figure 1.2 UNO-3285G Dimensions

1.6 Accessories

Please refer to the below accessories list for UNO-3200G series.

- 2 × 3-pin plug-in block for power wiring & relay control
- 1 × Warranty card
- 1 × UNO series driver &utility DVD-ROM
- 1 × DVI- VGA connector
- 2 x Wall mount kit
- 12 x M3*5L screws for fastening wall mount kit and HDD/SSD
- 4 x screws for fastening mPCIe modules
- English Quick Start Guide
- Simplified Chinese manual

Chapter 2

Hardware Functionality

This chapter shows how to setup UNO-3200G series' hardware functions, including connecting peripherals, setting switches and indicators.

Sections include:

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

2.1 Introduction

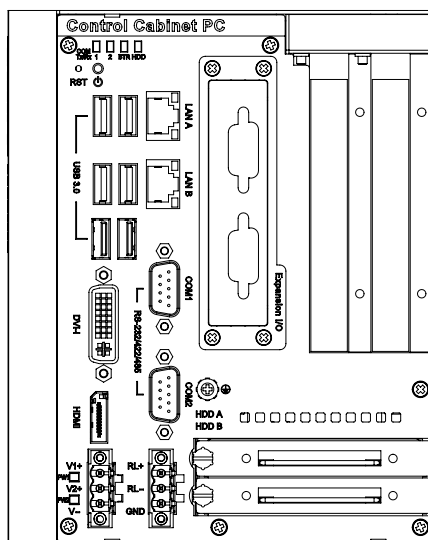The following figures show the interfaces of UNO-3200G and detailed information for each peripheral.
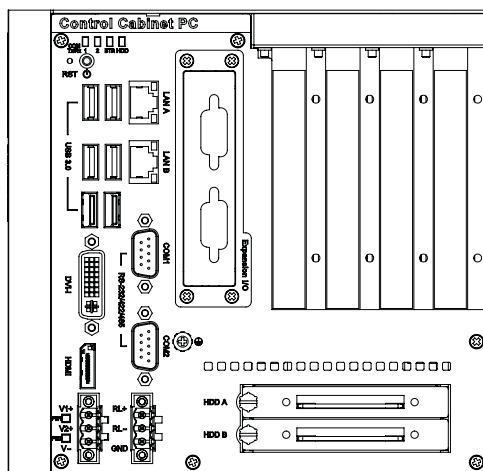

Figure 2.1 UNO-3283G Front View

Figure 2.2 UNO-3285G Front View

2.2 Serial Interface (COM1/COM2)

UNO-3283G/3285G series offer two standard RS-232/422/485 serial communication interface ports:

The IRQ and I/O address of serial ports are listed as below.
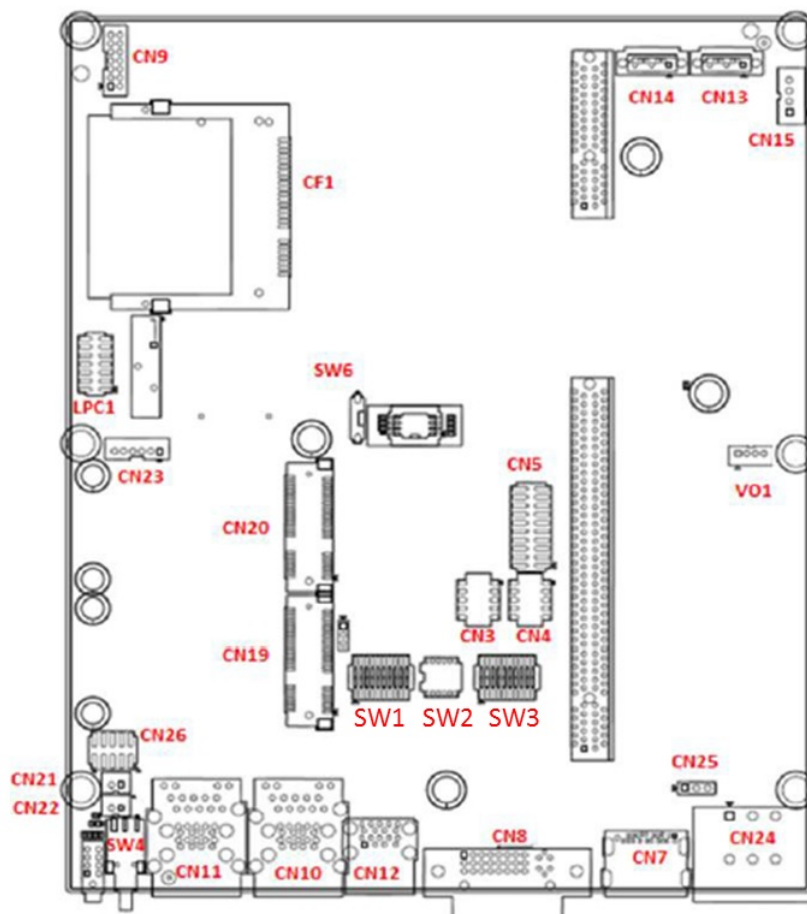
COM1 (Pin header CN3)

COM2 (Pin header CN4)

Figure 2.3 Serial Interface (COM1, COM2)

2.2.1 RS-232/422/485 Interface (COM1 & COM2)

UNO-3200G series offers two serial communication interface port.

- ■ SW1 for COM1(RS-232/422/485) switch
- ■ SW2 for RS485/422 receiver termination setting
- ■ SW3 for COM2(RS-232/422/485) switch

The COM ports default setting is RS422 slave mode. It can also be switched to RS232 mode manually.

In RS-422/485 mode, the UNO-3200G series automatically detects signals to match RS-422 or RS-485 networks.

In RS-485 mode, the UNO-3200G 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/SW3 according to the placement

- SW1: COM1 RS232/422/485 mode setting
  SW3: COM2 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 2.4 COM setting

- SW2: COM1 RS422 Rx termination (pin1-pin2)

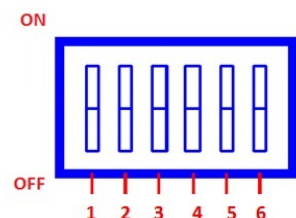| SW2	Descrtiption	On	Off
Bit 1	Termination resistor select for TX of RS422 Termination resistor select for RS485	Enable	Disable*
Bit 2	Termination resistor select for RX of RS422	Enable	Disable*

*Default setting

Figure 2.5 COM1 RS422 Rx termination (pin1-pin2)

■   SW2: COM2 RS422 Rx termination (pin3-pin4)

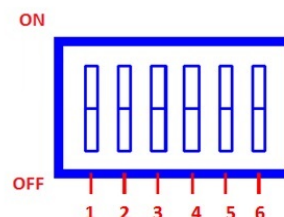| SW2	Descrtiption	On	Off
Bit 1	Termination resistor select for TX of RS422 Termination resistor select for RS485	Enable	Disable*
Bit 2	Termination resistor select for RX of RS422	Enable	Disable*

*Default setting

Figure 2.6 COM2 RS422 Rx termination (pin3-pin4)

2.3   LAN: Ethernet Connector

UNO-3200G series are equipped with two Gigabit LAN controller. 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 two 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

UNO-3200G series come with one Phoenix connectors that carries 12 ~ 36 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.

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 six USB connectors, which gives complete Plug & Play and hot swapping for up to 127 external devices. Six connectors are compatible with USB3.0 devices and also USB EHCI, Rev. 2.0 compliant. The USB interface can be disabled in the system BIOS setup.

2.6 Display Connector

UNO-3200G series provide a HDMI and DVI-I controller for a high resolution interface. It supports up to full HD resolution for up to three independent displays.
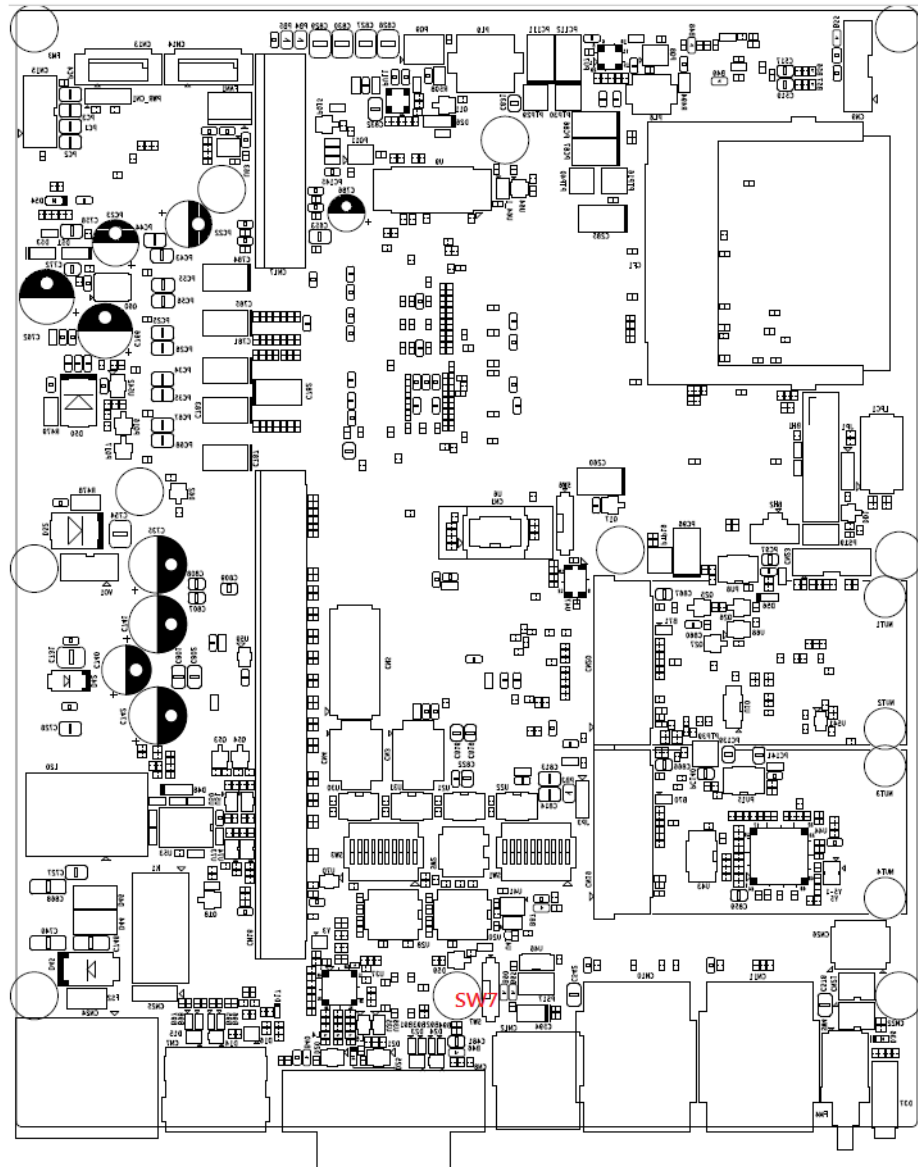
Note! *Independent design of VGA force function*

VGA force function Description:

The default setting for VGA force function is enabled. Most users have the VGA force function enabled because of using an AMT KVM application. If the user connects HDMI or DVI cable without a converter, UNO-328x can only be displayed the extended monitor.

VGA force function Analysis:

SW7 was the original design for the VGA force function when the product developed. When the switch position is on 1, VGA RGB MOS conducts and triggers a 75 ohm

terminal load. Then the terminal load would lead the EEID signal to force to output. This function is an independent design and doesn't affect other IO functions or IC circuits.

Solution

By default, the dummy VGA function is enabled. If you do not use it, please turn SW7 to the ON position to disable the dummy VGA function.

2.7 RTC Battery

The RTC Battery ensures the setting in BIOS and system clock can be kept, even when the power is off.

- Type: BR2032 (Using CR2032 is NOT recommended)
- Output Voltage: 3 VDC

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

Users can set AT/ATX mode in BIOS setup menu "Chipset\State After G3".
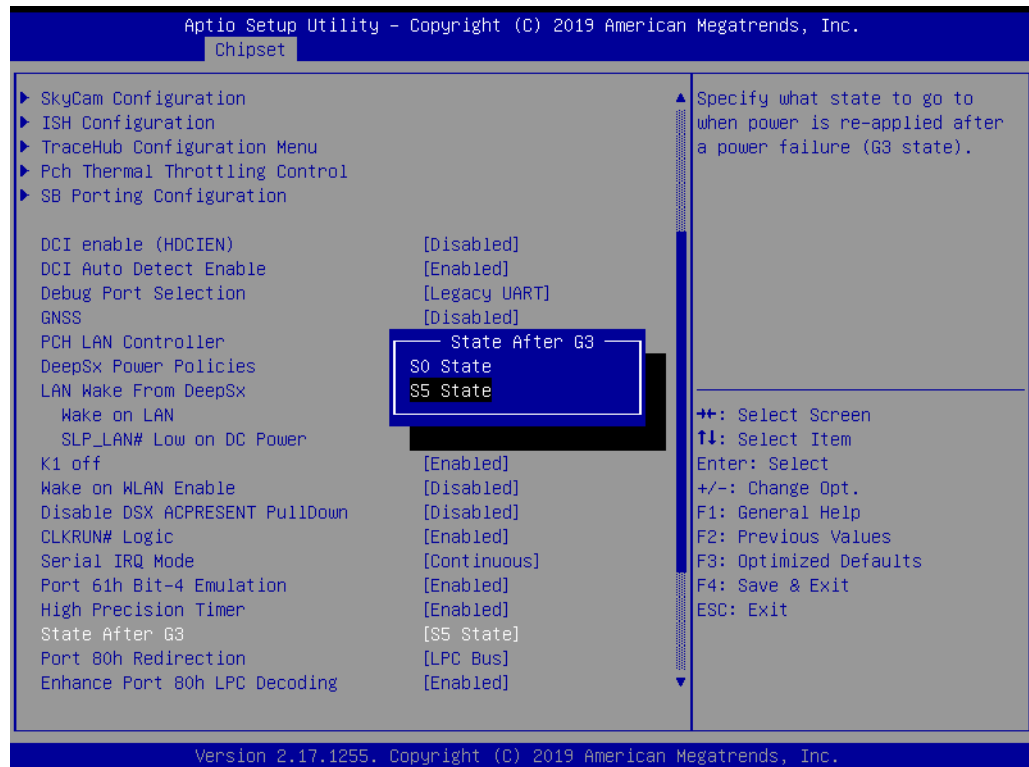
- [S0 State]: AT mode
- [S5 State]: ATX mode

```
          Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
          Chipset

  ▶ SkyCam Configuration                              ▲  Specify what state to go to
  ▶ ISH Configuration                                    when power is re-applied after
  ▶ TraceHub Configuration Menu                          a power failure (G3 state).
  ▶ Pch Thermal Throttling Control
  ▶ SB Porting Configuration

    DCI enable (HDCIEN)            [Disabled]
    DCI Auto Detect Enable         [Enabled]
    Debug Port Selection           [Legacy UART]
    GNSS                           [Disabled]
    PCH LAN Controller          ┌──── State After G3 ────┐
    DeepSx Power Policies        │ S0 State               │
    LAN Wake From DeepSx         │ S5 State               │
      Wake on LAN                └────────────────────────┘
      SLP_LAN# Low on DC Power                          →←: Select Screen
    K1 off                         [Enabled]            ↑↓: Select Item
    Wake on WLAN Enable            [Disabled]           Enter: Select
    Disable DSX ACPRESENT PullDown [Disabled]           +/-: Change Opt.
    CLKRUN# Logic                  [Enabled]            F1: General Help
    Serial IRQ Mode                [Continuous]         F2: Previous Values
    Port 61h Bit-4 Emulation       [Enabled]            F3: Optimized Defaults
    High Precision Timer           [Enabled]            F4: Save & Exit
    State After G3                 [S5 State]           ESC: Exit
    Port 80h Redirection           [LPC Bus]
    Enhance Port 80h LPC Decoding  [Enabled]         ▼

          Version 2.17.1255. Copyright (C) 2019 American Megatrends, Inc.
```

Figure 2.7 AT/ATX Adjustment

2.9 PCI Express Mini Card Socket

There are two sockets for full size PCI Express mini cards. The first interface (CN20) is the default defined for mSATA. The second (CN19) interface is mainly targeted to support iDoor technology/ modules for diversified applications such as isolated COM port, Profibus, WLAN GPRS, 3G, and mRAM. Users can install the card easily by using the optional kit.
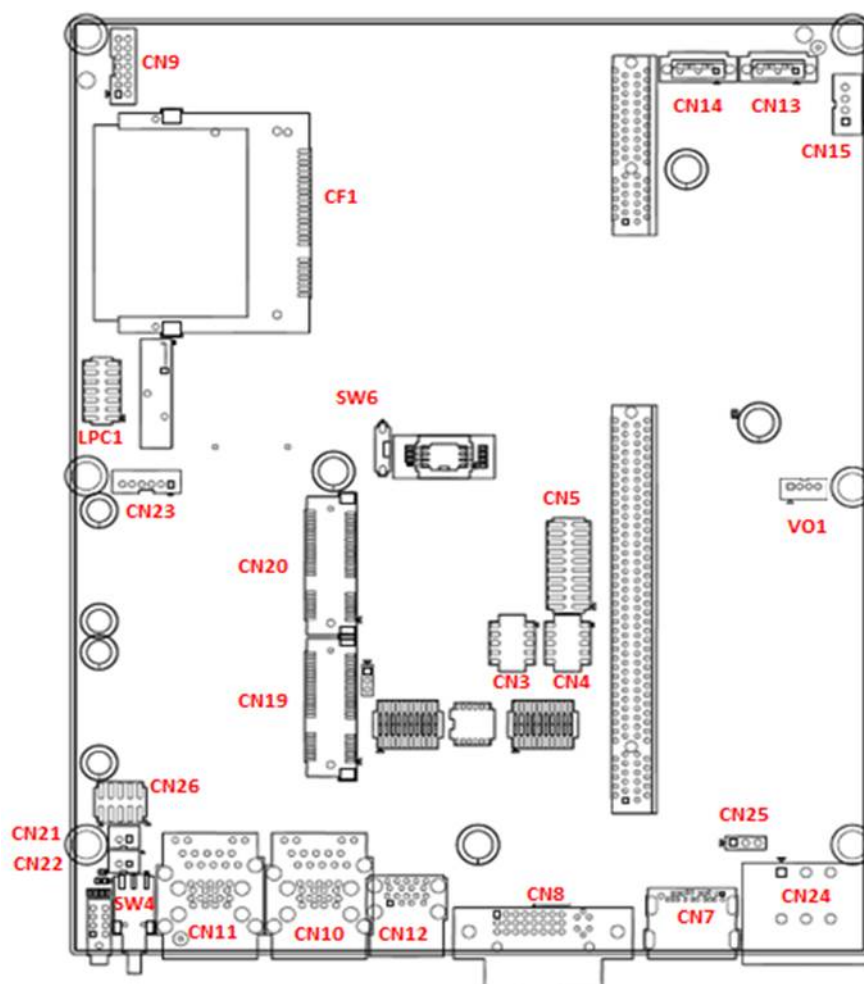

Figure 2.8 PCIE mini card sockets placement

2.9.1 iDoor Expansion Slot

At the front side, there's a iDoor Expansion slot for users to install Mini-PCIe modules to extend extra I/O ports for specific applications like Isolation COM, Digital I/O, and CAN modules.

2.10 PCIe/PCI Slot

In order to fulfill customer's requirements, UNO-3200G series provide two or four PCIe/PCI slots. It can easily expand functionality via installing additional I/O cards, vision cards, etc.

Note!   *PCI/PCIe card supports wide temperature operation (at least -20~60°C).*

2.11 SATA HDD/SSD Drive

The UNO-3200G series product support two 2.5" SATA HDD/SSD bays with up to 6Gbps speed.

The UNO-3200G supports RAID0 and RAID1. The RAID function should be enabled in BIOS setup before you install an operating system into a RAID volume. Users can enable the RAID function in BIOS sub-menu "Advance\SATA Configuration".

Please follow the below steps to create a RAID volume.

1. Mount two SATA HDDs/SSDs 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".
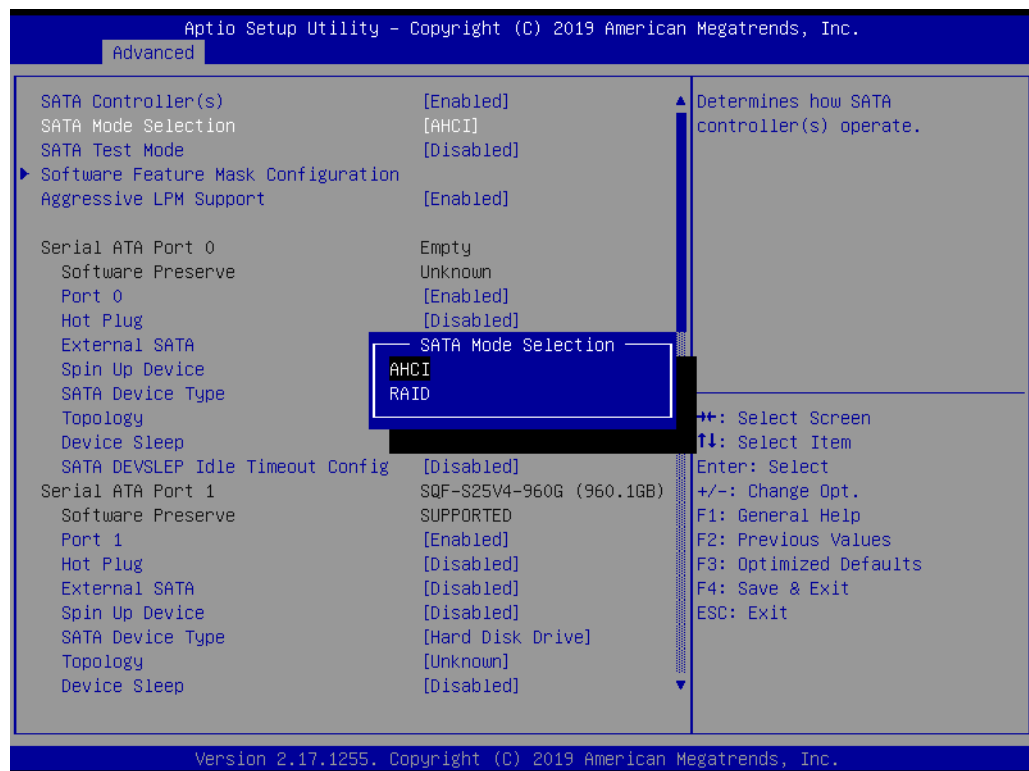
Figure 2.9 SATA Mode Selection

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.
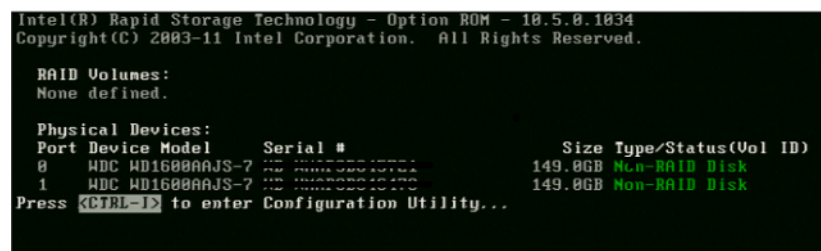
Figure 2.10 Detecting a RAID configuration

7.   Create a RAID volume in RAID configuration utility.

Figure 2.11 Creating a RAID Volume

8.   Follow standard procedures to install OS into a RAID volume.

Note!   *1.   The Maximum height of 2.5" HDD/SSD supported is 9.5 mm, and Maximum Power is 5V / 700mA per SATA port.*

2.   Hot-swappable function of HDD/SSD is in conflict with operation of RAID0.

2.12 Audio Jack

This product provides one Line-out port, one Line-in and one MIC (Pin Header, CN9)

2.13 LED Indicators

There are LEDs to indicate the status of the system.

■   PWR: Green means normal, orange is stand by.

■   HDD/SSD: Flashing green during data read & write.

■   RTC: Red means RTC voltage low.

■   COM1 & COM2(Tx/Rx): Flashing green means signals are being transmitted and received.

Chapter 3

Initial Setup

This chapter introduces how to initialize UNO-3200G series.

Sections include:

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

3.1 Connecting Power

Capacity of 12Vdc-36 VDC power source to UNO-3200G series product. The power source can be from either a power adapter or an in-house power source.
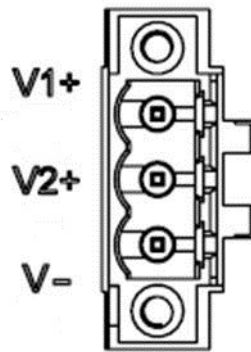
Figure 3.1 Power Connector

3.2 Inserting an iDoor Module

UNO-3200G series have one iDoor for various expansions. Follow the diagram to install iDoor modules into the system.

1. Remove the screws from the base plate and lift to remove.
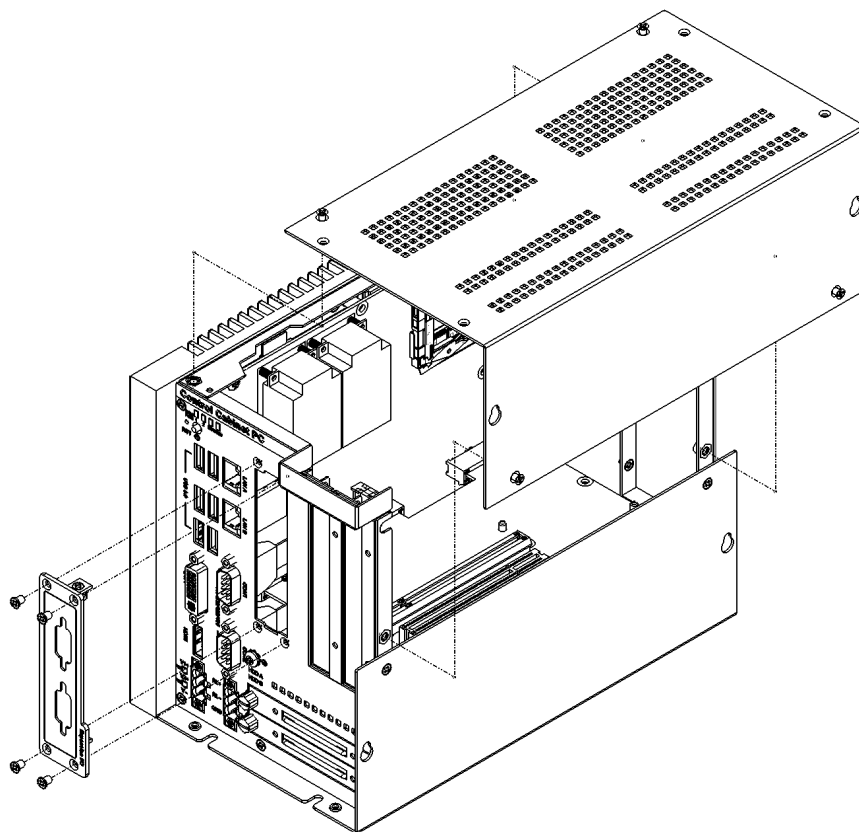
2. Insert & lock the mini-PCI card using screws.
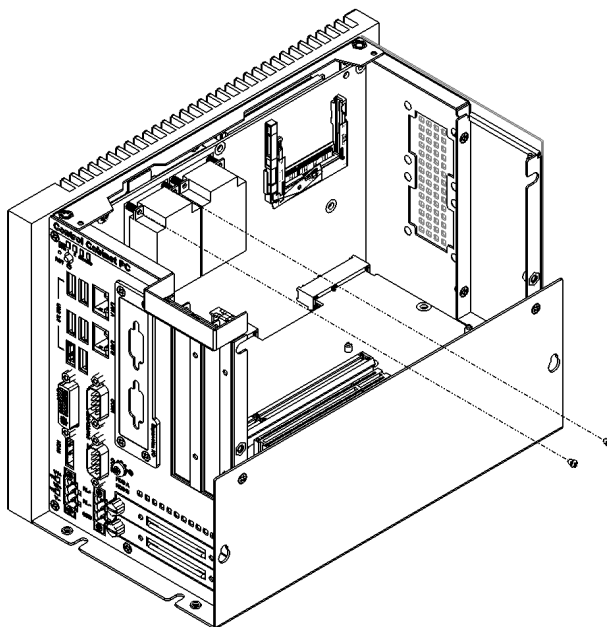
3. Replacing the blanking plate with the iDoor plate.

Note! *For iDoor POE or USB3.0 module, UNO-3200G provides an internal backup power (VO1) on system board.*
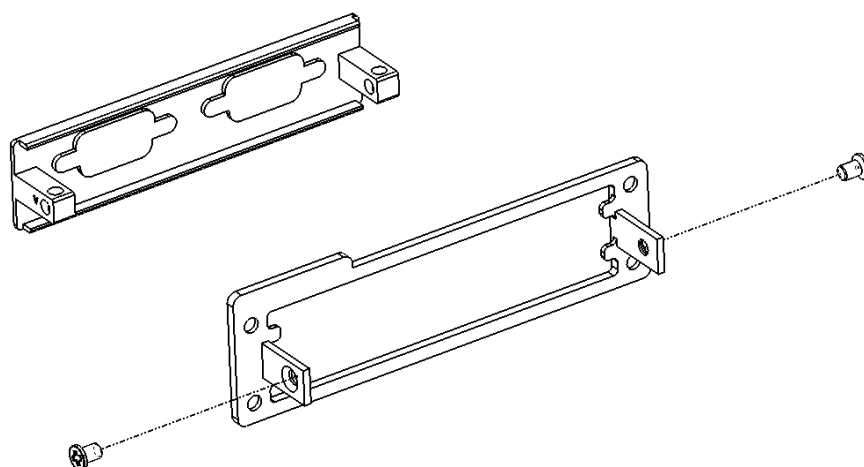
3.3 Installing a Hard Disk

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

1. Release thumb screw and pull out the HDD/SSD bracket.
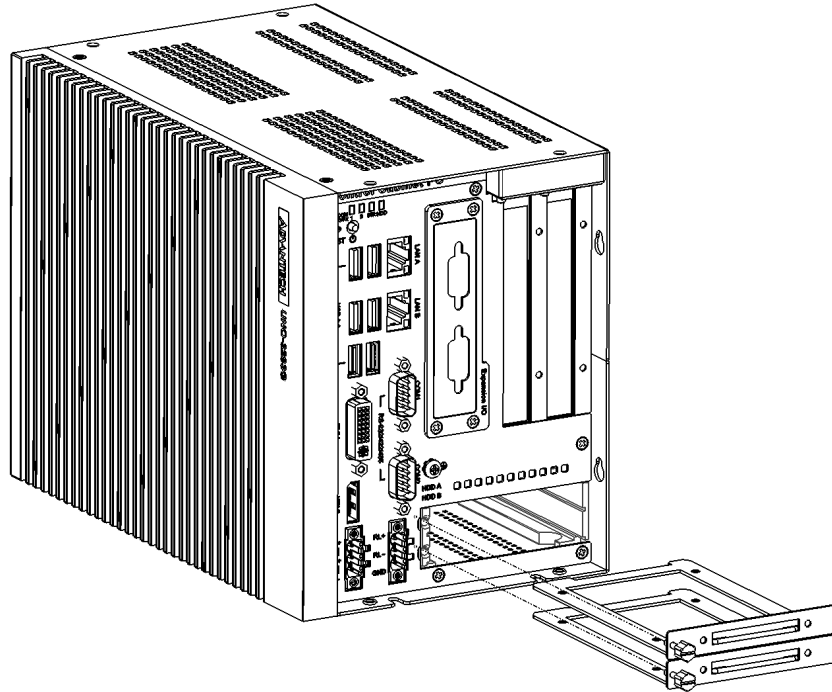
2. Screw the HDD/SSD to the bracket.
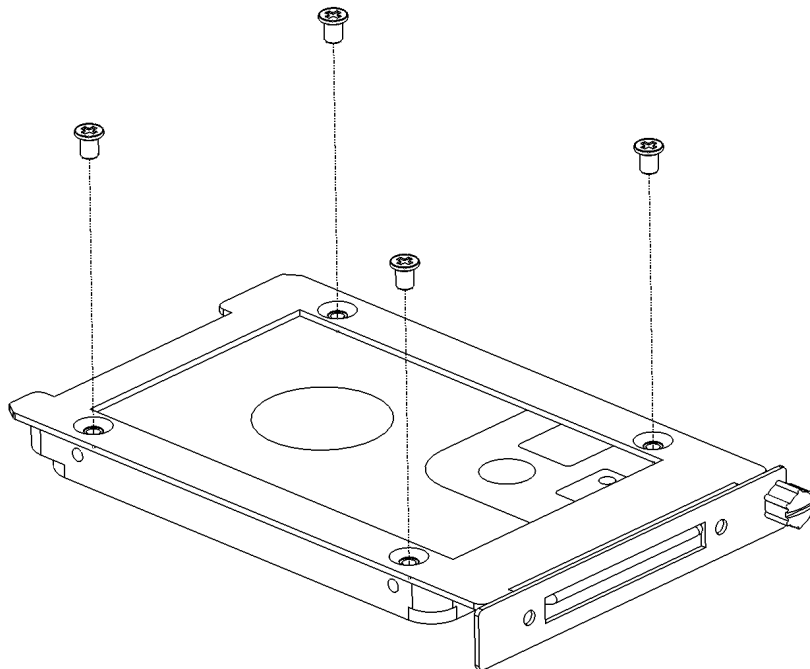
3. Put the bracket back & tighten the thumb screw.

Note! *Available 130 mm space upon HDD/SSD bracket.*

3.4 Installing an Interface Card or CFast Card

UNO-3200G provides optional backplanes to fulfill extensive requirements in various projects. These backplanes provide PCIe/PCI slots to be compatible with different interface cards. User can install interface cards based on their requirement. UNO-3200G also provides one internal CFast slot for extending storage.

Follow the exploded diagram to install an interface card or CFast card.

1. Loosen the cover of the chassis.
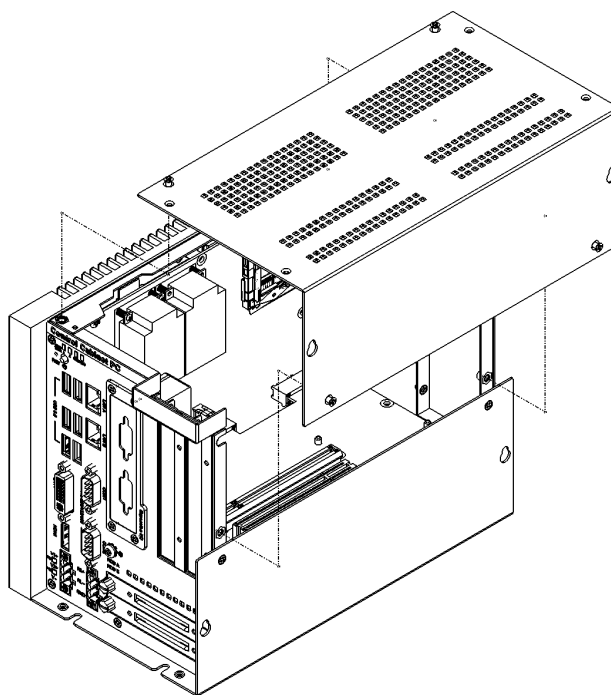
2. Insert your PCI/PCIe card or CFast card and secure it.

CFast slot
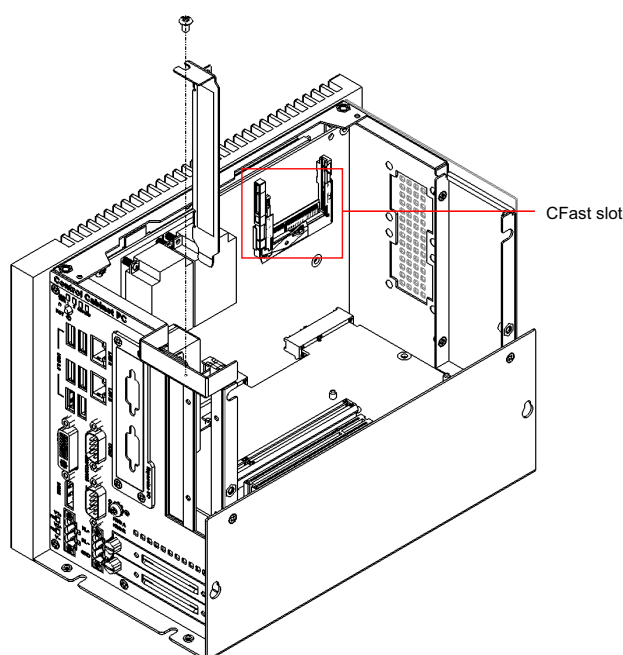
3. Assemble the cover of the chassis.

3.5 Mounting UNO-3200G Series

UNO-3200G series have unique designs in three mounting types, wall mount, stand mount, and enclosure mount. Please use M3 x 5L screws to fasten the wall mount kit on UNO-3283G. Screws for fastening UNO-3283G on wall or desk should not be larger than 4mm. Screw head diameter should be larger than 6mm and less than 7mm.

Warning! *Other mounting directions are not allowed.*
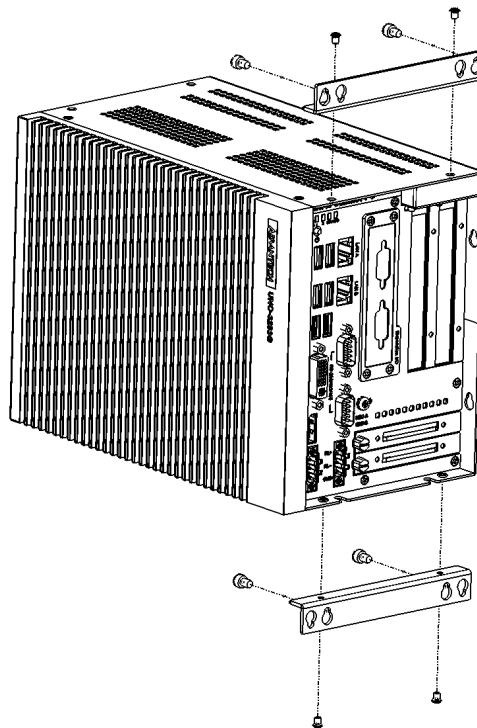
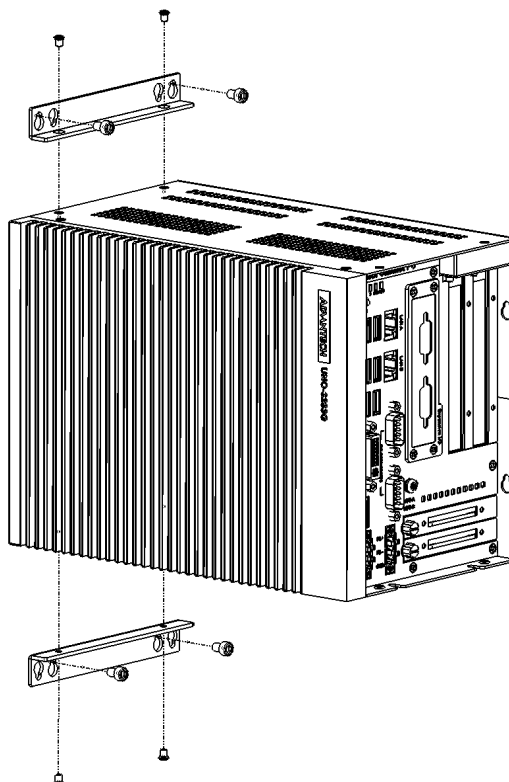Below figures show mounting steps:
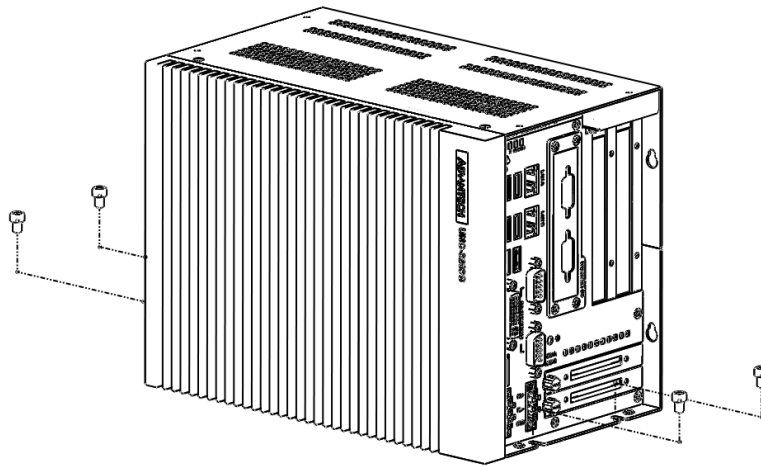
Figure 3.2 Stand Mount

Figure 3.3 Enclosure Mount
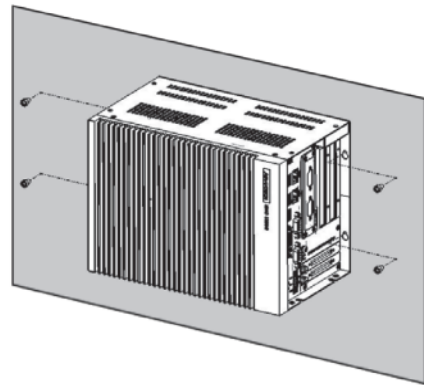
Figure 3.4 Wall Mount (01)
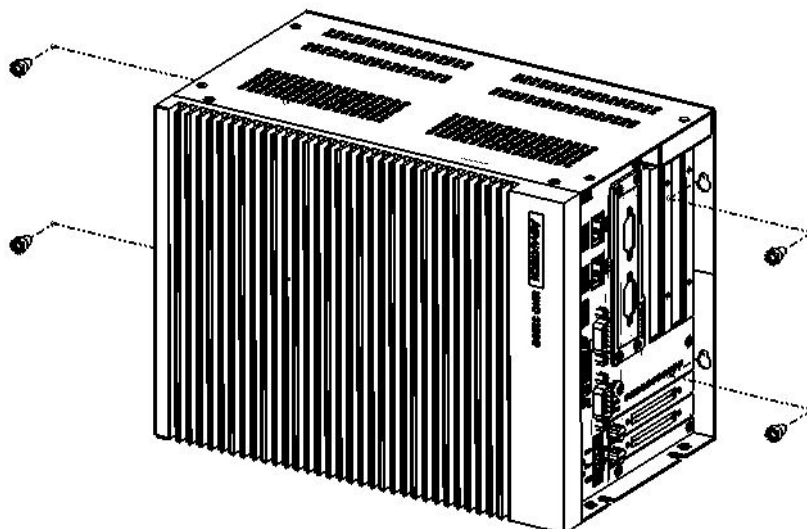
Figure 3.5 Wall Mount (02)

For safety, install following below suggestion. Also, note that the equipment is intended only for use only in a Restricted Access Area.
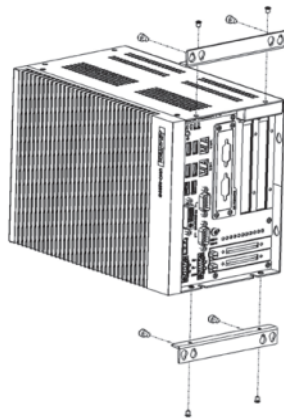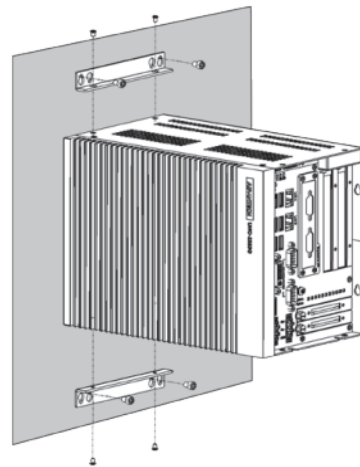
Stand mount
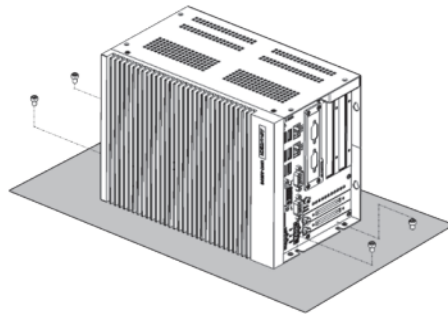
Wall mount

Enclosure Mount

Wall mount

*Mounting kit included in default package

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	Communications Port (COM2)
IRQ4	Communications Port (COM1)
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.1 shows the locations of the connectors and switches.
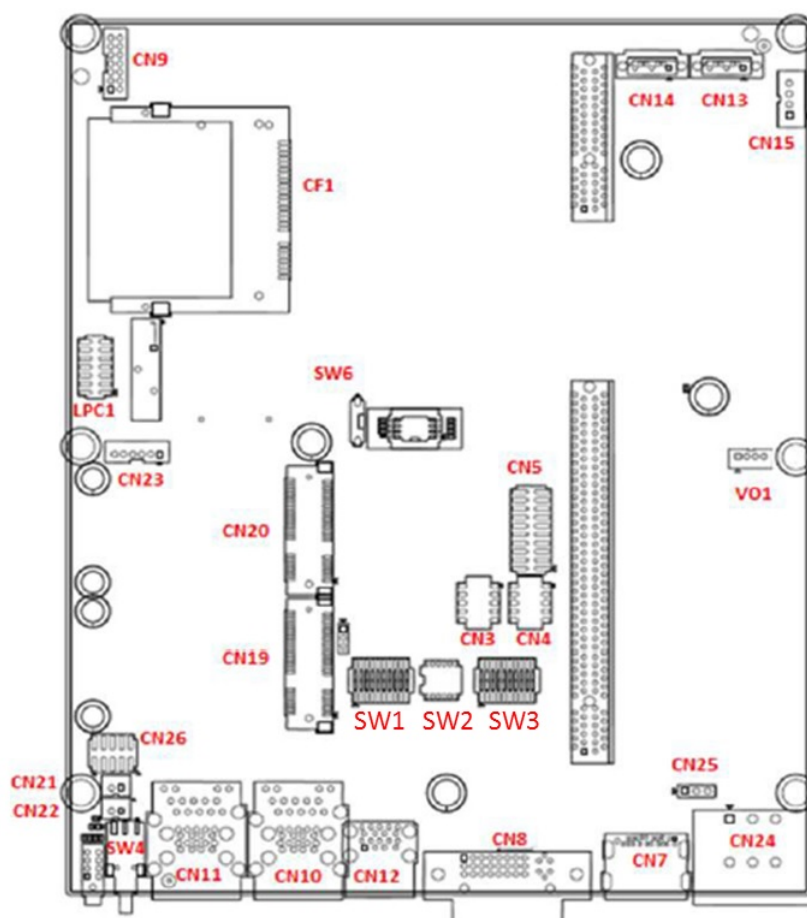

Figure A.1 Bottom view of System Board

A.3 Function of connectors & switches

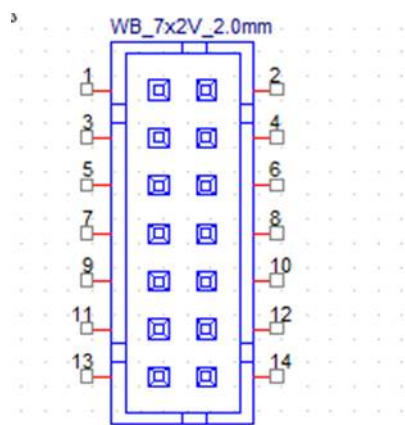The connectors and switches on the inside boards are defined as table A.2.

Table A.2: Connectors on System board	
Label	**Function**
SW1	COM1 setting
SW2	RS-422/485 receiver termination
SW3	COM2 setting
SW4	Power Switch
SW5	Reset
SW7	VGA Switch
CN7	HDMI
CN8	DVI
CN9	Audio
CN10	LAN & 2 x External USB3.0
CN11	LAN & 2 x External USB3.0
CN12	External USB3.0 x 2
CN19	Mini PCIE
CN20	Mini PCIE or mSATA
CN24	Power input & Relay

A.4 Audio (Pin header)

Table A.3: CN9 Audio	
Pin	**Pin Name**
1	LOUTR
2	LOUTL
3	LOUT_JD
4	GND
5	LINR
6	LINL
7	LIN_JD
8	GND
9	MIC1R
10	MIC1L
11	MIC1_JD
12	GND
13	GND
14	GND

A.5 COM1/COM2

Connector	Function		
Pin	**RS232**	**RS422**	**RS485**
1	DCD	422_TXD-	485_Data-
2	RXD	422_TXD+	485_Data+
3	TXD	422_RXD+	
4	DTR	422_RXD-	
5	GND	GND	
6	DSR		
7	RTS		
8	CTS		
9	RIC		

Table A.4: COM POER Pin Definition

A.6 COM3/COM4

Pin	Pin Name
1	DCD
2	RxD
3	TxD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI
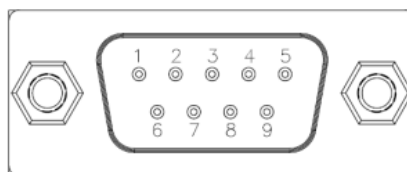
Table A.5: RS-232 Serial Port Pin Assignments
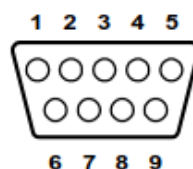
A.7 Power Connector (PWR)

Table A.6: Power connector pin assignments	
1	V1+
2	V2+
3	V-
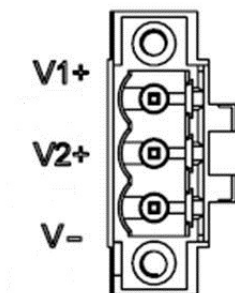
A.8 Relay Connector (PWR)

Table A.7: Relay Connector (PWR)	
RL +	Relay Normal Open
RL -	Relay COM
GND	Case Ground
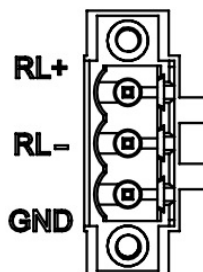
A.9 SW4 Power Switch

Table A.8: SW4 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
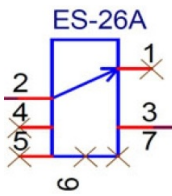
A.10 CN19/CN20 Mini PCIE

Pin	Pin Name
Table A.9: CN19/CN20 Mini PCIE	
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	PU3.3_AUX
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
43	GND

Table A.9: CN19/CN20 Mini PCIE	
44	NC
45	NC
46	NC
47	NC
48	+1.5V
49	NC
50	GND
51	NC
52	+3.3VSB
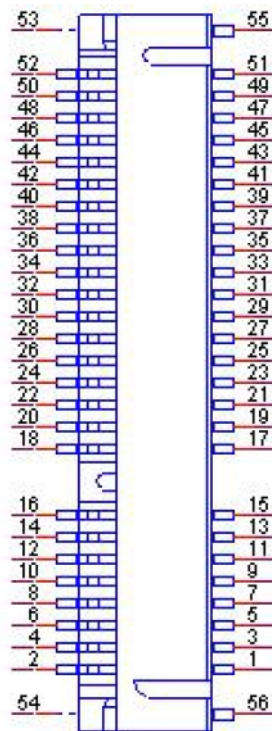
A.11 CN20 mSATA

Table A.10: CN20 mSATA	
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	PU3.3_AUX
21	GND
22	PERST#
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	USB D-
37	GND
38	USB D+
39	+3.3VSB
40	GND
41	+3.3VSB
42	NC
43	GND

Table A.10: CN20 mSATA

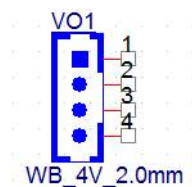| 44	NC
45	NC
46	NC
47	NC
48	+1.5V
49	NC
50	GND
51	NC
52	+3.3VSB
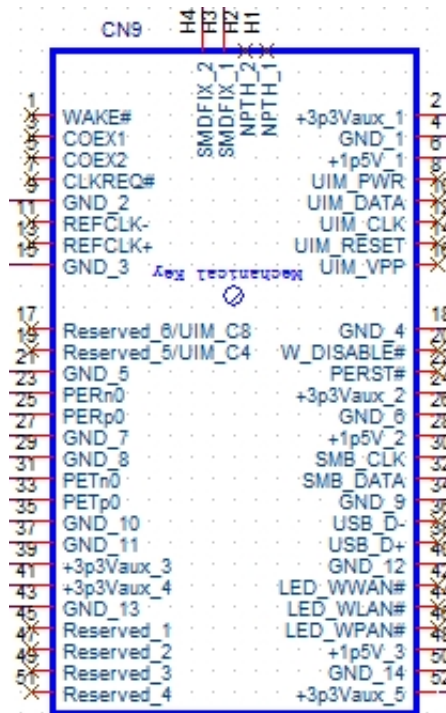
A.12 VO1 reserve for power output, the voltage is same as power input

Table A.11: VO1 reserve for power output, the voltage is same as power input	
Pin	Pin Name
1	VIN
2	VIN
3	GND
4	GND

Note!   *This connector support max 2 A.*

A.13 CN1 Internal 12V power for PCI/PCIe

This connector support 12V(3A).

Table A.12: CN1 Internal 12V power for PCI/PCIe	
Pin	Name
1	GND
2	GND
3	12V
4	12V

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