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User Manual

UNO-2184G/2174G/ 2174GL

電腦

Automation Computers with Intel® Core™ i7 / Celeron® Processors, 4 x GbE, 2 x Mini-PCIe, DVI/DP/HDMI

ADVANTECH

Enabling an Intelligent Planet

限用物質含有情況標示聲明書
Declaration of the Present Condition of the Restricted Substances Marking

設備名稱：電腦 Equipment name		型號（型式）： Type designation (Type)		UNO-2174G/UNO-2184G（系列型號請參見次頁說明書）		
單元 Unit	限用物質及其化學符號 Restricted substances and their chemical symbols					
	鉛 Lead (Pb)	汞 Mercury (Hg)	鎘 Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr^{+6})	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominateddiphenyl ethers (PBDE)
電路板	—	○	○	○	○	○
內外殼（外殼、內部框架 … 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.

UNO-2174G-C54E
UNO2174G1301E-T
UNO2174GC541301E-T
UNO2174GC541401E-T
UNO2174GC541402E-T
UNO2174GC541403E-T
UNO2174GC541601E-T
UNO2174GC54E01E-ES

UNO-2174GL-C44E
UNO2174GL441301E-T
UNO2174GL1401E-T
UNO2174GLC44E-ES

UNO-2184G-D44E
UNO2184G1201E-T
UNO2184G1301E-T
UNO2184G1302E-T
UNO2184G1303E-T
UNO2184G1401E-T
UNO2184G1403E-T
UNO2184GD1501E-T
UNO2184GD441301E-T
UNO2184GD441401E-T
UNO2184GD441402E-T
UNO2184GD441403E-T
UNO2184GD441601E-T

UNO-2184G-D45E
UNO2184GD451401E-T
UNO2184GD451402E-T
UNO2184GD451601E-T

UNO-2184G-D64E
UNO2184GD641502E-T
UNO2184GD641503E-T
UNO2184GD641504E-T
UNO2184GD641601E-T

UNO-5080G-D54E
UNO-5080G-D55E

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For more information on this and other Advantech products, please visit our website at: http://www.advantech.com

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

http://www.advantech.com/support/

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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 of the 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

這是甲類測試產品，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的對策。

Technical Support and Assistance

1. Visit the Advantech web site, at 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.

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.

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. 12. 請勿讓任何液體流入通風口，以免引起火灾或短路。
13. 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° C （-4° F）或高於 60° C （140° F），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. 根據 IEC 704 - 1:1982 規定，操作員所在位置音量不可高於 70 分貝。
18. 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。

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 Daughterboard (Additional Purchase Required) 3
1.3.2 I/O Interfaces 3
1.3.3 Environment 3
1.4 Safety Precautions 4
1.5 Chassis Dimensions 4
Figure 1.1 UNO-2184G/2174G/2174GL Chassis Dimensions 4
1.6 Accessories 4

Chapter 2 Hardware Functionality 5

2.1 Introduction 6
Figure 2.1 Front Panel of UNO-2184G/2174G/2174GL 6
Figure 2.2 Rear Panel of UNO-2184G/2174G/2174GL 6
2.2 UNO-2184G/2174G/2174GL Interface (COM1~COM4) 6
2.2.1 RS-232/422/485 Interface (COM 1 ~ 2) 7
2.2.2 16C550 UARTs with 128-byte Standard 7
2.2.3 RS-422/485 Detection 7
2.2.4 Automatic Data Flow Control Function for RS-485 7
2.3 RS-232/422/485 Selection 7
2.4 LAN: Ethernet Connector 8
2.5 Power Connector 8
2.6 PS/2 Keyboard and Mouse Connector 8
2.7 USB Connector 9
2.8 DVI-I/Display Port/HDMI Display Connector 9
2.9 RTC Battery Specification 9
Figure 2.3 RTC Battery Location 9
2.10 Power Button/Power Management 9
2.11 Reset Button 10
2.12 HD Audio 10
2.13 PCI Express Mini Card Socket 10
2.14 Power eSATA 10

Chapter 3 Initial Setup 11

3.1 Inserting a CFast Card 12
3.2 Chassis Grounding 12
Figure 3.1 Chassis Grounding Connection 12
3.3 Connecting Power 12
3.4 Installing a Hard Disk 13
3.5 Installing a Wireless LAN Card and Antenna 14
3.6 BIOS Setup 15
3.7 AMT Configuration 16

Appendix A Syst. Settings & Pin Assignments ... 21

A.1 System I/O Address and Interrupt Assignment 22
Table A.1: Interrupt Assignments 22

A.2 Board Connectors and Jumpers 23
Figure A.1 Connector & Jumper Locations (Front) 23
Table A.2: Connectors and Jumpers 23
A.3 RS-232 Standard Serial Port 24
Table A.3: RS-232 Serial Port Pin Assignments 24
A.4 RS-232/422/485 Serial Port (COM1 ~ COM2) 24
Table A.4: RS-232/422/485 Serial Port Pin Assignments 24
A.5 Power Connector (PWR) 25
Table A.5: Power Connector Pin Assignments 25
A.6 PS/2 Keyboard and Mouse Connector 25
Table A.6: Keyboard and Mouse Connector Pin Assignments 25
A.7 USB Connector 26
Table A.7: USB 2.0 Connector Pin Assignments 26
Table A.8: USB 3.0 Connector Pin Assignments 26
A.8 HDMI Display Connector 27
Table A.9: HDMI Display Connector 27
A.9 DVI-I Connector 28
Table A.10:DVI-I Connector Pin Assignments 28
A.10 DisplayPort Display Connector 29
Table A.11:DisplayPort Adaptor Cable Pin Assignments 29
A.11 Clear CMOS (JP1) 30
Table A.12:JP2 Clear CMOS 30
A.12 System Power AT or ATX Selection (JP3) 30
Table A.13:AT/ATX Selection 30

Chapter 1

Overview

This chapter provides an overview of UNO-2184G/2174G/2174GL's specifications.
Sections Include:

- Introduction
- Hardware Specifications
- Safety Precautions
- Chassis Dimensions

1.1 Introduction

UNO-2184G/2174G/2174GL is an embedded Application Ready Platform (ARP) that can shorten your development time and offers rich networking interfaces to fulfill extensive needs in different projects. UNO-2184G/2174G/2174GL includes Intel's latest Core i7/Celeron technology and provides plenty of I/O interfaces, including up to 4 serial ports, 4 x GbE LAN, 6 x USB ports and Audio. UNO-2184G/2174G/2174GL supports three display types, DVI, DisplayPort and HDMI for various high resolution requirements.

UNO-2184G/2174G/2174GL can operate in wide temperatures (from -10 to 60°C). UNO-2184G/2174G/2174GL even adopts Intel Core i7/Celeron CPU with great computing power and come with up to 8G DDR3 RAM built-in for heavy programs.

UNO-2184G/2174G/2174GL provides great expansion, including 2 x Mini-PCIe and SIM card support. An additional daughterboard is also available for 2 x PCI-104 plug-in cards. With these expansions, UNO-2184G/2174G/2174GL has great expandability for WiFi, 3G, I/O expansion and fieldbus card.

OS and driver support includes Windows XP/7 WES-2009, WES7, and embedded Linux. Users can integrate applications easily in an application ready platform that provides versatile functions to fulfill diverse requirements.

1.2 Hardware Specifications

1.2.1 General

- **Certification:** CE, UL, CCC, FCC, C-Tick
- **Dimension (W x D x H):** 255 x 152 x 69 mm (10" x 6.0" x 2.7")
- **Enclosure:** Aluminum
- **Mounting:** DIN-rail, Wallmount, VESA
- **Power Consumption:** UNO-2174G/GL: 30 W/ 20 W (Typical)
  UNO-2184G: 40 W (Typical)
- **Power Requirements:** 9 ~ 36 VDC (e.g +24V @ 3A) (Min. 72W), AT/ATX
- **Weight:** 3.0 kg
- **OS Support:** Windows XP/7, WES7, WES-2009, Linux
- **System Design** Fanless with no internal cabling (except COM3/COM4)
- **Remote Management:** Built-in Advantech DiagAnywhere agent on WES2009 / WES7

1.3 System Hardware

- **CPU:** UNO-2174GL: Intel Celeron 807UE 1.0GHz
  UNO-2174G: Intel Celeron 847E 1.1GHz
  UNO-2184G: Intel Core i7-2655LE 2.2GHz/i7-3555LE 2.5GHz
- **Memory:** UNO-2174G/GL: 4 GB DDR3 SDRAM built-in
  UNO-2184G: 4 GB/8 GB DDR3 SDRAM built-in
- **Indicators:** LEDs for Power, battery, LAN (Active, Status) and Serial (Tx, Rx)
- **Keyboard/Mouse:** 1 x PS/2
- **PC/104 Slot:** 2 x PCI-104 slot, supports +5 & 3.3V power
- **Storage:**
  CF: 1 x CFast slot
  HDD: 1 x built-in 2.5" SATA HDD bracket (2 x HDD with RAID by project support)
- **Display:** 1 x DVI-I, 1 x HDMI, 1 x DP (2 x independent displays)
- **Audio:** Mic-in, Line-in, Line-out
- **Watchdog Timer:** NCT6776F, programmable 256 levels timer interval, from 1 to 255 sec
- **Mini PCIe Expansion:** 2 x Mini PCIe slots with 1 x SIM card

1.3.1 Daughterboard (Additional Purchase Required)

- **Expansion Slot:** PCI-104 support (+5 & 3.3V power)

1.3.2 I/O Interfaces

- **Serial Ports** 2 x RS-232, 2 x RS-232/422/485 with DB9 connectors; automatic RS-485 data flow control
- **Serial Port Speed:** RS-232: 50 ~ 115.2 kbps
  RS-422/485: 50 ~ 115.2 kbps (Max.)
- **LAN:** 4 x 10/100/1000Base-T RJ-45 ports
  Supports AMT (UNO-2184G only), wake on LAN and built in boot ROM in flash BIOS
- **USB Ports:** 6 x USB ports (only UNO-2184G-D64E supports 2 x USB3.0 ports)

1.3.3 Environment

- **Humidity:** 95% @ 40°„C (non-condensing)
- **Operating Temperature:** -10 ~ 60°C (14 ~ 140°F) @ 5 ~ 85% RH. (with air flow)
- **Safety Cert. Temperature:** -10 ~ 55°C (14 ~ 131°F)
- **Shock Protection:** IEC 60068-2-27
  CFast: 50 G @ wall mount, half sine, 11 ms
  HDD: 20 G @ wall mount, half sine, 11 ms
- **Vibration Protection:** IEC 60068-2-64 (Random 1 Oct./min, 1hr/axis.)
  CFast: 2 Grms @ 5 ~ 500 Hz,
  HDD: 1 Grms @ 5 ~ 500 Hz

1.4 Safety Precautions

The following sections provides information on 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-2184G/2174G/2174GL. 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

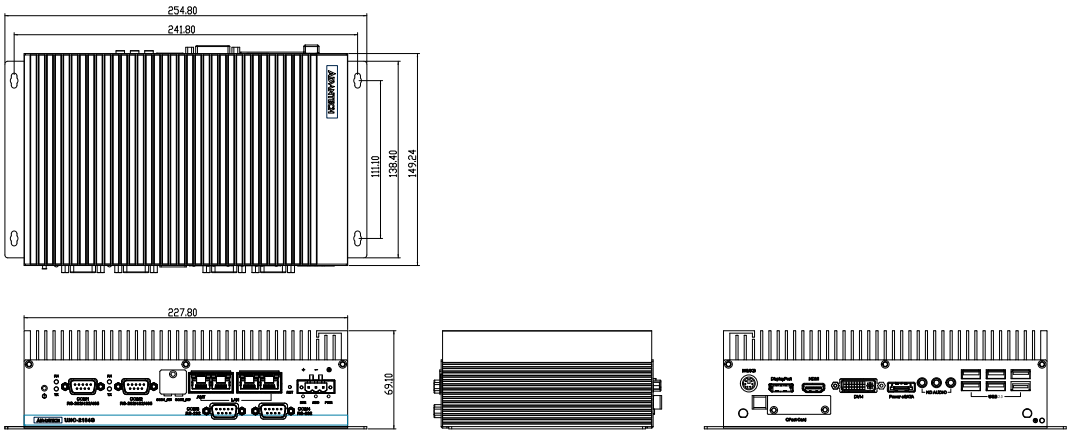


Figure 1.1 UNO-2184G/2174G/2174GL Chassis Dimensions

1.6 Accessories

Please refer below for the accessory list:

- 3-pin connector for power wiring (Advantech P/N: 1652003206)
- SATA signal cable (Advantech P/N: 1700013095)
- SATA power cable (Advantech P/N: 1700006492)
- 2 PCS jumper (Advantech P/N: 1653302122)
- Keyboard/Mouse Y cable (Advantech P/N: 1700060202)
- Driver DVD
- Warranty card

If anything is missing or damaged, contact your distributor or sales representative immediately.

Chapter 2

Hardware Functionality

This chapter shows how to setup the UNO-2184G/2174G/2174GL's hardware functions, including connecting peripherals, setting switches and indicators.

Sections Include:

- Peripherals
- RS-232 Interface
- RS-422/485 Interface
- LAN / Ethernet Connector
- Power Connector
- Power eSATA
- PS/2 Mouse and Keyboard Connector
- Audio Connector
- USB Connector
- DVI/DP/HDMI Display Connector
- Reset Button

2.1 Introduction

The following figures show the connectors on UNO-2184G/2174G/2174GL. The following sections give you information about each peripheral.

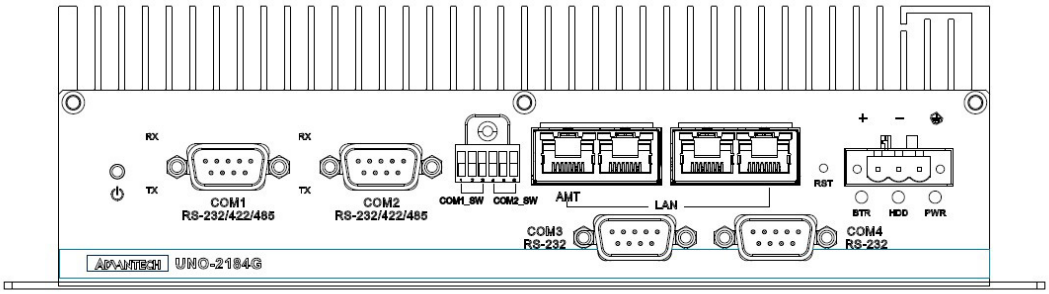


Figure 2.1 Front Panel of UNO-2184G/2174G/2174GL

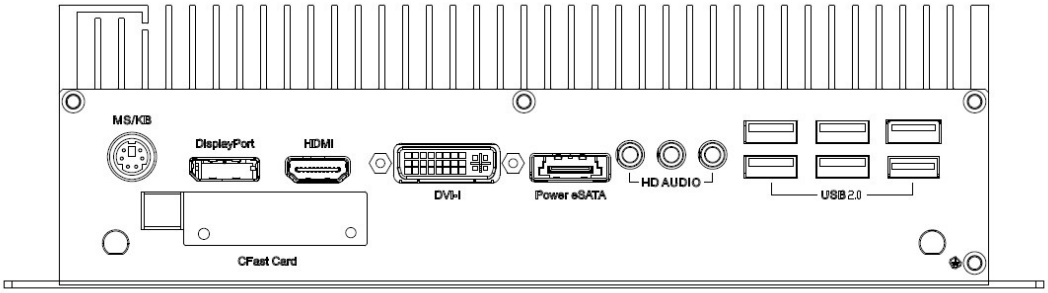


Figure 2.2 Rear Panel of UNO-2184G/2174G/2174GL

2.2 UNO-2184G/2174G/2174GL Interface (COM1~COM4)

UNO-2184G/2174G/2174GL offers 2 standard RS-232/422/485 and 2 RS-232 (with cable) serial communication inter-face ports: COM1 ~ COM4.

The IRQ and I/O address range of COM1 to COM4 are listed below:

COM1: 3F8h, IRQ4

COM2: 2F8h, IRQ3

COM3: 3E8h, IRQ10

COM4: 2E8h, IRQ10

The setting can be adjusted in the BIOS page. The driver will be installed automatically during OS installation

2.2.1 RS-232/422/485 Interface (COM 1 ~ 2)

The UNO-2184G/2174G/2174GL offers 2 RS-232/422/485 serial communication interface ports: COM1 and COM2. Please refer to Appendix A.4 for their pin assignments. The default setting of COM1 and COM2 are RS-422/485.

Note! *In S1 mode, COM 1 and COM 2 data re-transmission will not function properly and may include error signals after wake up.*

2.2.2 16C550 UARTs with 128-byte Standard

Advantech UNO-2184G/2174G/2174GL comes with OXuPCI952 UARTs containing 128 bytes FIFOs. These upgraded FIFOs greatly reduce CPU overhead and are an ideal choice for heavy multitasking environments.

2.2.3 RS-422/485 Detection

In RS-422/485 mode, UNO-2184G/2174G/2174GL automatically detects signals to match RS-422 or RS-485 networks (No jumper change required).

2.2.4 Automatic Data Flow Control Function for RS-485

In RS-485 mode, UNO-2184G/2174G/2174GL automatically detects the direction of incoming data and switches its transmission direction accordingly. No handshaking signal (e.g. RTS signal) is necessary. This lets users 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.

2.3 RS-232/422/485 Selection

COM1 and COM2 support a 9-wire RS-232/422/485 interface. The system detects RS-422 or RS-485 automatically for COM1 and COM2.

You can set the “Auto Flow Control” mode of RS-485 or “Master/Slave” mode of RS-422 by using the external switch for COM1 and COM2.

SW3			Note	Function
Pin1	Pin2	Pin3		
ON	ON	ON	Disable COM1	
ON	ON	OFF	COM1 RS232	RS232
ON	OFF	ON	COM1 RS485	RS485
ON	OFF	OFF	COM1 Slave Mode RS422 (Default)	RS422+RS485
OFF	ON	ON	COM1 RS485 with Termination	RS485
OFF	ON	OFF	COM1 Slave Mode RS422 with Termination	RS422+RS485
OFF	OFF	ON	COM1 Master Mode RS422	RS422
OFF	OFF	OFF	COM1 Master Mode RS422 With Termination	RS422

SW3			Note	Function
Pin4	Pin5	Pin6		
ON	ON	ON	Disable COM2	
ON	ON	OFF	COM2 RS232	RS232
ON	OFF	ON	COM2 RS485	RS485
ON	OFF	OFF	COM2 Slave Mode RS422 (Default)	RS422+RS485
OFF	ON	ON	COM2 RS485 with Termination	RS485
OFF	ON	OFF	COM2 Slave Mode RS422 with Termination	RS422+RS485
OFF	OFF	ON	COM2 Master Mode RS422	RS422
OFF	OFF	OFF	COM2 Master Mode RS422 with Termination	RS422

Note! *Please restart your system if you change any setting.*



2.4 LAN: Ethernet Connector

UNO-2184G/2174G/2174GL is equipped with 4 Gigabit LAN controllers. The controller chip used in both models are Intel 1 x 82579LM and 3 x 82574L Ethernet controllers that are fully compliant with IEEE 802.3u 10/100Base-T CSMA/CD standards and IEEE 802.3ab specifications for 1000Mbps Ethernet. The Ethernet port provides a standard RJ-45 jack on board and LED indicators on the front side to show Link (Green LED) and Active (Yellow LED) status.

Note! *UNO-2184G with 82579LM LAN chip can support AMT7.0.*



2.5 Power Connector

The UNO-2184G/2174G/2174GL comes with a Phoenix connector that carries 9~36 VDC external power input and features reversed wiring protection. It will not cause any damage to the system by reversed wiring of the ground line and power line. Please refer to Appendix A.6

2.6 PS/2 Keyboard and Mouse Connector

The UNO-2184G/2174G/2174GL provides a PS/2 keyboard and mouse connector. A 6-pin mini-DIN connector is located on the rear panel. The UNO-2184G/2174G/2174GL comes with an adapter to convert from the 6-pin mini-DIN connector to 2 6-pin mini-DIN connectors for PS/2 keyboard and PS/2 mouse connection.

2.7 USB Connector

The USB interface supports Plug & Play, which enables you to connect or disconnect a device whenever you want without turning off the computer. UNO-2184G/2174G/2174GL provides 6 connectors of USB inter-faces, which gives complete Plug & Play and hot swapping for up to 127 external devices. 2 of the 6 connectors are compatible with USB3.0 devices, although only with USB 2.0 speed (except UNO-2184G-D64E). The USB interface complies with USB EHCI, Rev. 2.0 and can be disabled in the system BIOS setup. Please refer to Appendix A.8 for its pin assignments.

2.8 DVI-I/DisplayPort/HDMI Display Connector

The UNO-2184G/2174G/2174GL provides a DVI-I/Display Port/HDMI controller for a high resolution interface. UNO-2184G/2174G/2174GL supports up to full HD resolution for 2 independent displays.

2.9 RTC Battery Specification

UNO-2184G/2174G/2174GL has RTC Battery to ensure the settings in BIOS and the system clock can be kept, even when power is disconnected for a short time.

- **Type:** BR2032 (Using CR2032 is NOT recommended)
- **Output Voltage:** 3 V_{DC}
- **Location:** BH1, please refer to below figure

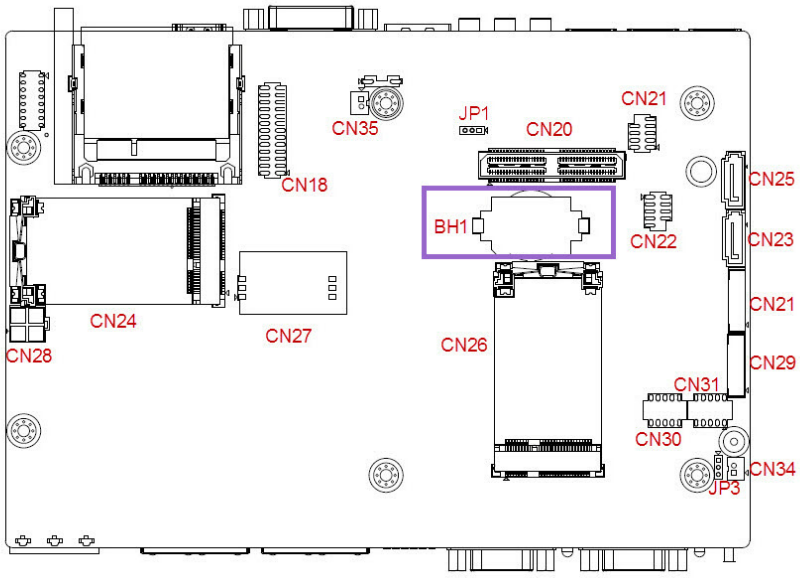


Figure 2.3 RTC Battery Location

2.10 Power Button/Power Management

Press the "PWR" button to power on or power off UNO-2184G/2174G/2174GL (ATX type). UNO-2184G/2174G/2174GL supports the ACPI (Advanced Configuration and Power Interface). Besides power on/off, it supports multiple suspend modes, such as Power on Suspend (S1), Suspend to RAM (S3), and Suspend to Disk (S4). In S3 and S4 suspend modes, the power consumption can be less than 2W, which meets Energy Star criteria.

2.11 Reset Button

Press the "Reset" button to activate the hardware reset function.

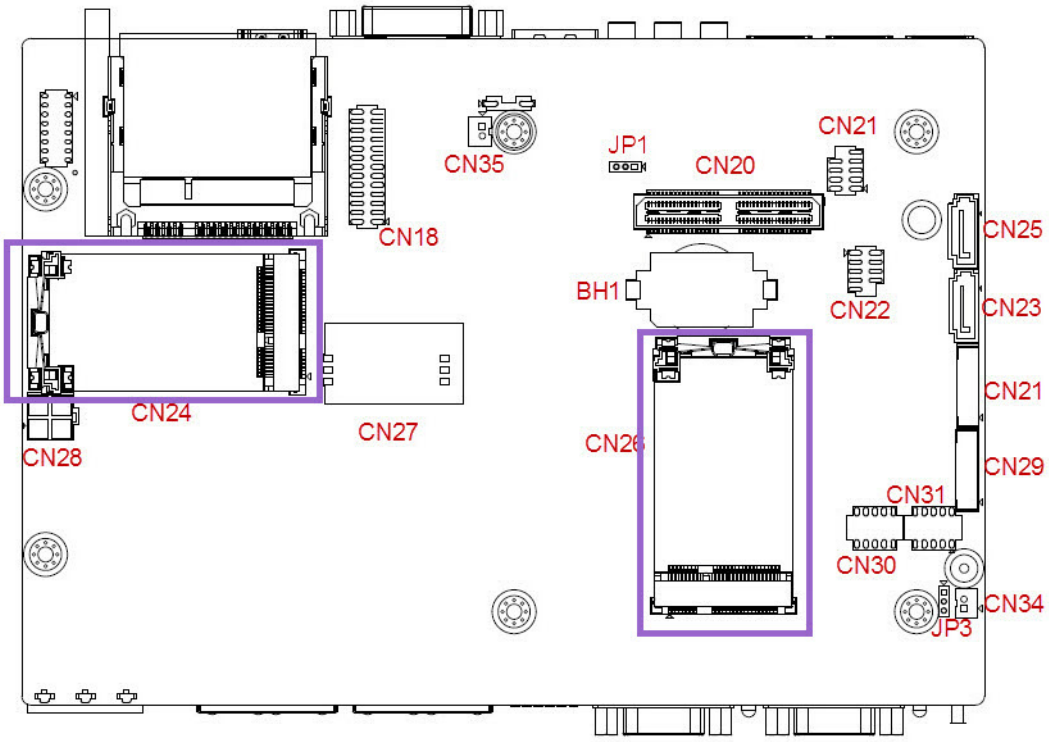
2.12 HD Audio

UNO-2184G/2174G/2174GL is equipped with ALC892-GR, which is a High Definition Audio Codec. UNO-2184G/2174G/2174GL provides 3 phone jack connectors for 5.1 channel output. Please configure the function through provided software utility.

2.13 PCI Express Mini Card Socket

UNO-2184G/2174G/2174GL supports 2 sockets for full size PCI Express mini cards. This interface is mainly target on the wireless application such as WLAN GPRS and 3G. User can install the card easily by the optional kit, please refer to Chapter 3.5 for the details.

An additional SIM card slot is used for 3G application. Please note you still require 3G Mini-PCIe module installed to be able to use 3G functions.



2.14 Power eSATA

UNO-2184G/2174G/2174GL support 1 x Power eSATA connector which is a combination connection for external storage devices. A single eSATAp, eSATA or USB device can be plugged into an eSATA port. The socket has keyed cutouts for both types of device to ensure that a connector can only be plugged in the right way round.

Chapter 3

Initial Setup

This chapter introduces how to initialize the UNO-2184G/2174G/2174GL.

Sections Include:

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

3.1 Inserting a CFast Card

1. Remove the power cord.
2. Unscrew the 2 screws of CFast cover in the front panel.
3. Plug a CFast card with your OS and application program into a CFast card slot on board.
4. Screw back the CFast cover to ensure IP40 protection.

Note! *The CFast is allocated as "the Secondary IDE Master" by default. Users can change it to "Primary IDE Master" in BIOS setting. Please enter BIOS and select "Integrated Peripherals > IDE Device Setup > IDE Configuration > Enhanced Mode"*

3.2 Chassis Grounding

UNO-2184G/2174G/2174GL provides good EMI protection and a stable grounding base. There is an easy-to-connect chassis grounding point to use.

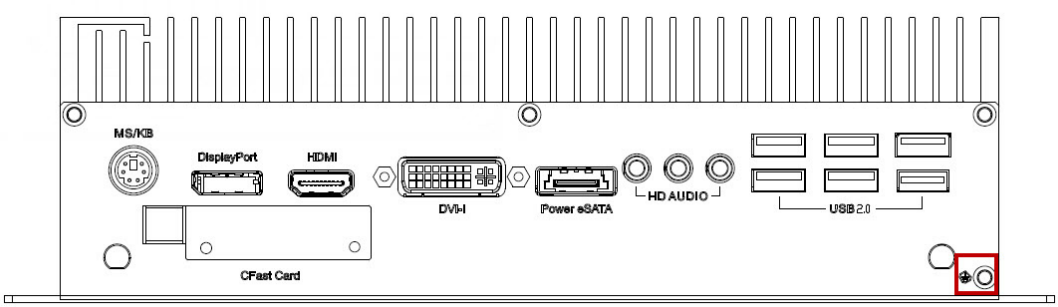


Figure 3.1 Chassis Grounding Connection

Please also note that system ground and chassis ground are separated in UNO-2184G/2174G/2174GL.

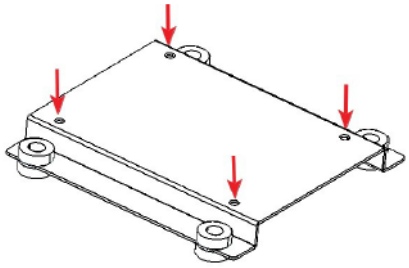
3.3 Connecting Power

This product is intended to be supplied by a Listed DC Power Source, rated 9-36Vdc, 5A minimum and Tma 60 degree C. If further assistance is needed, please contact Advantech for more information.

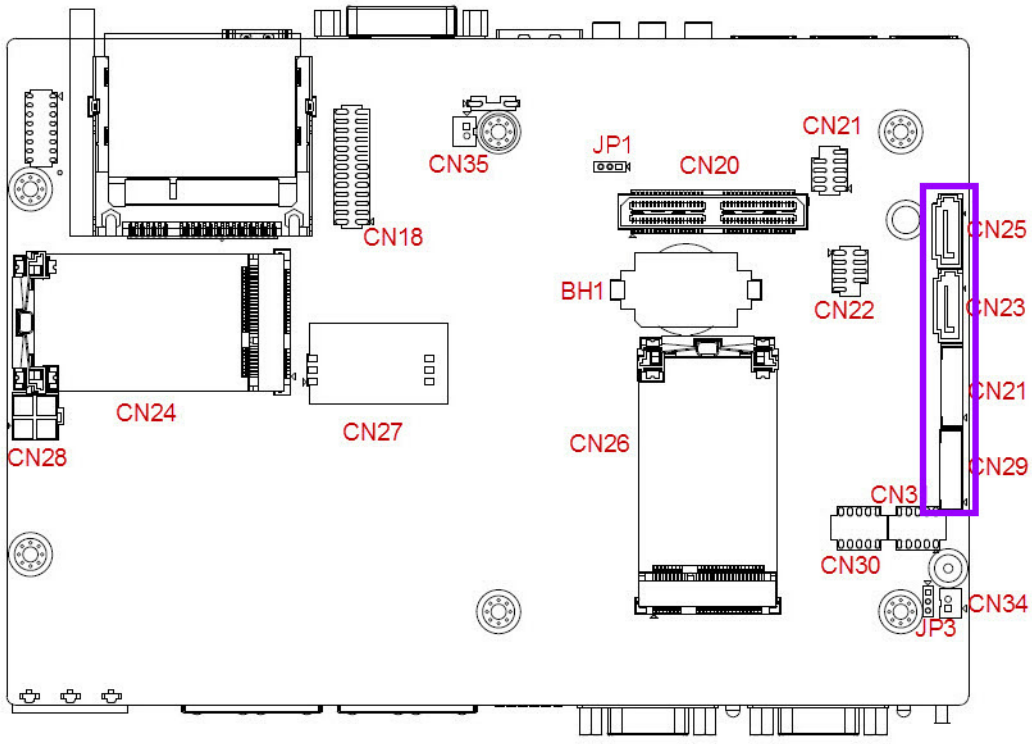
3.4 Installing a Hard Disk

The procedure for installing a hard disk into the UNO-2184G/2174G/2174GL is below. Please follow these steps carefully. Please note the system is not compatible with +12V HDD. Please use an HDD with lower power input.

1. Remove the power cord.
2. Unscrew the 6 screws from the bottom panel.
3. Install the HDD on the HDD bracket.



4. Connect the SATA signal cable to CN25 or CN23 and connect SATA power cable to CN21 or CN29, then connect the other side of the cable to the SATA hard disk.



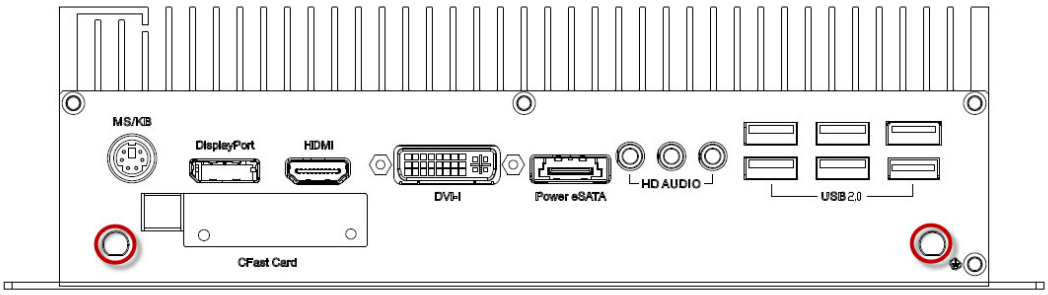
5. Screw back the bottom panel with the 6 screws.

Note! *UNO-2184G/2174G can support the RAID function (except UNO-2174GL). Please contact project support.*

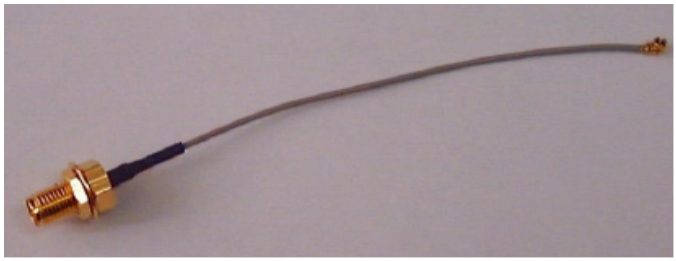
3.5 Installing a Wireless LAN Card and Antenna

Please contact Advantech to prepare the following optional kit:

Rear Panel for Antenna



- The internal cable: 1750006043 (15cm)



Wireless Module (PCI Express Mini Card)

- One of the suggested modules is the EWM-W138H01E, which is a verified Wireless IEEE 802.11b/g/n module

Antenna

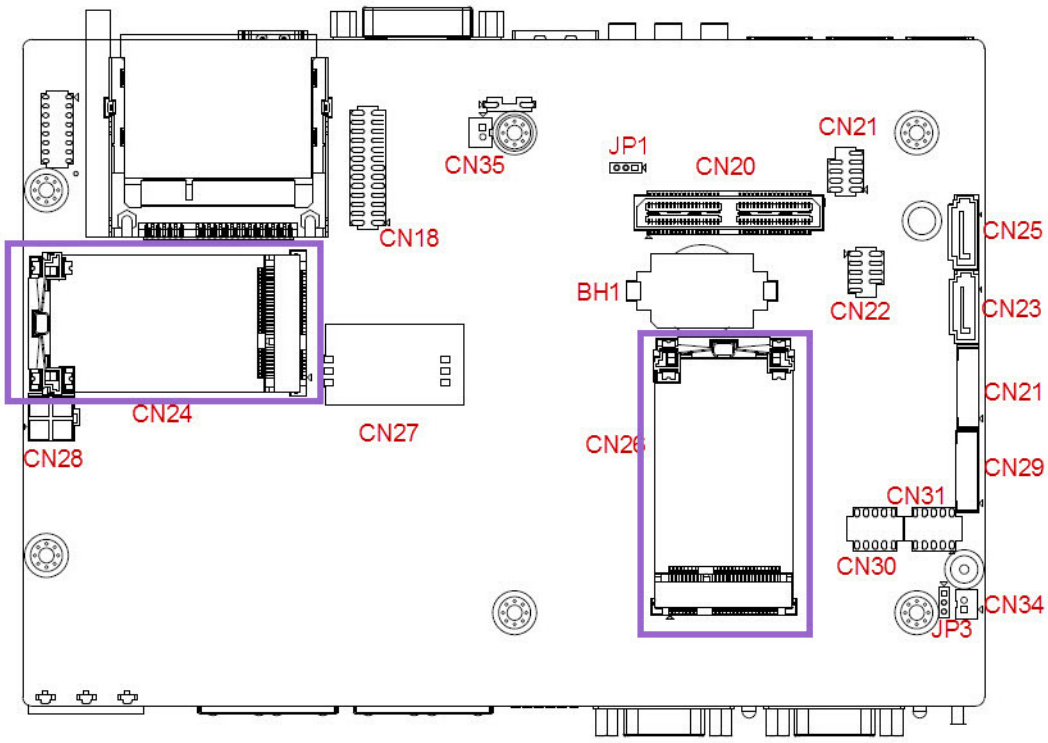
- Please select the necessary specification according to your application.
- One of the suggested antennas is 1750002842.



Then follow the steps below for installation:

1. Unscrew the bottom panel and open it.
2. Remove the hole(s) on the rear panel for antenna installation.
3. Install the internal cable 1750006043 (15cm) on the rear panel.

4. Plug the Wireless module onto the PCI Express mini card socket (CN24 or CN26)



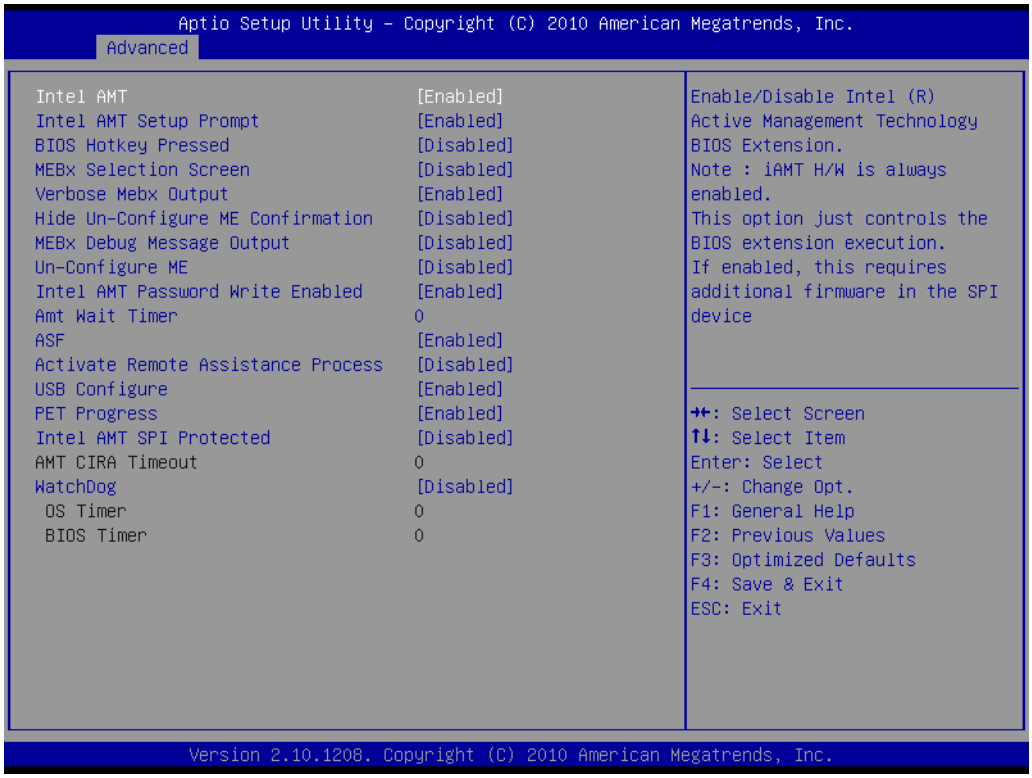
5. Connect the internal cable with the module.
6. Screw back the bottom panel.
7. Assemble the antenna on the SMA connector.

3.6 BIOS Setup

Press "F2" in the boot-up screen to enter the BIOS setup utility. Please follow the instructions on the screen to do the necessary settings.

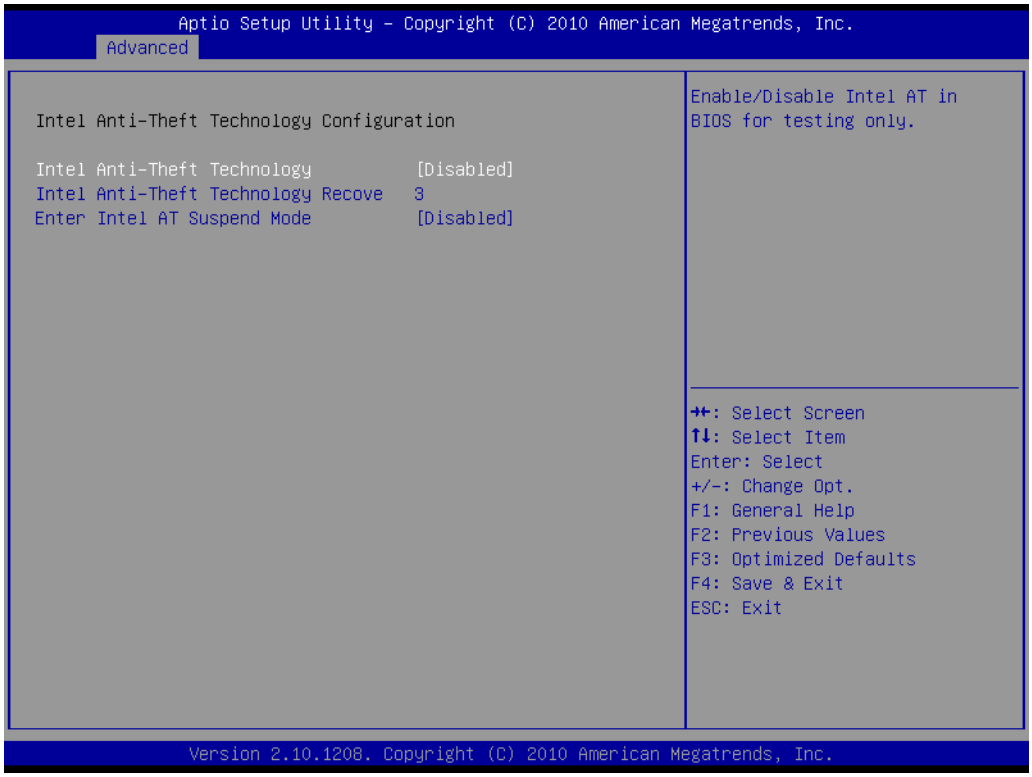
Please note that you can try to “Load Optimized Defaults” from the BIOS Setup manual if the UNO-2184G/2174G/2174GL does not work properly.

3.7 AMT Configuration

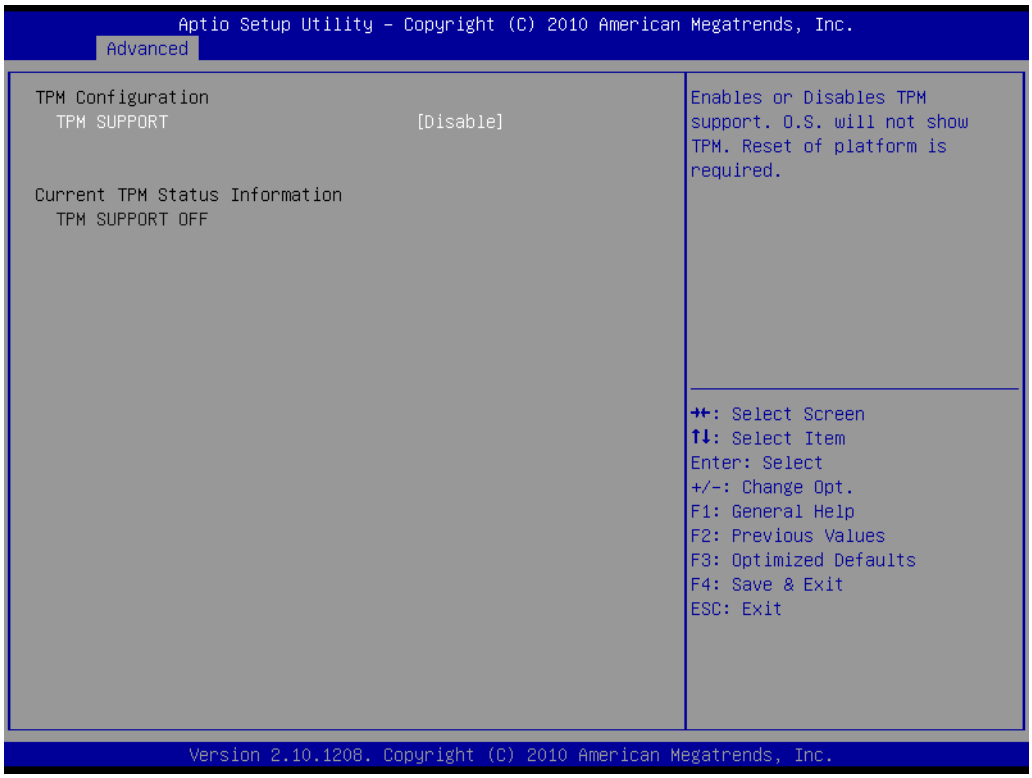


- **Intel AMT**
  This item allows users to enable or disable Intel AMT BIOS extension.
- **Intel AMT Setup Prompt**
  This item allows users to enable or disable Intel AMT Setup prompt.
- **BIOS Hotkey Pressed**
  This item allows users to enable or disable BIOS Hotkey pressed.
- **MEBx Selection Screen**
  This item allows users to enable or disable MEBx selection screen.
- **Verbose MEBx Output**
  This item allows users to enable or disable MEBx output.
- **Hide Un-Configuration ME Confirmation**
  This item allows users to hide un-configured ME without password confirmation prompt.
- **MEBx Debug Message Output**
  This item allows users to enable or disable MEBx debug messages.
- **Un-Configured ME**
  This item allows users to un-configure ME without a password.
- **Intel AMT Password Write Enabled**
  This item allows users to enable or disable Intel AMT password write.
- **Amt Wait Timer**
  Set timer to wait before sending ASF_GET_BOOT_OPTIONS.
- **Activated Remote Assistance Process**
  This item allows users to enable or disable Alert Specification Format.
- **USB Configure**
  This item allows users to enable or disable USB Configure Function.

- **PET Progress**
  This item allows users to enable or disable PET event progress to receive PET events or not.
- **Intel AMT SPI Protected**
  This item allows users to enable or disable Intel AMT SPI write protection.
- **AMT CIRA Timeout**
  OEM defined time out for MPS connection to be established.
- **Watchdog**
  This item allows users to enable or disable WatchDog Timer.
- **OS Timer**
  Sets OS Watchdog Timer.
- **BIOS Timer**
  Sets BIOS Watchdog Timer.

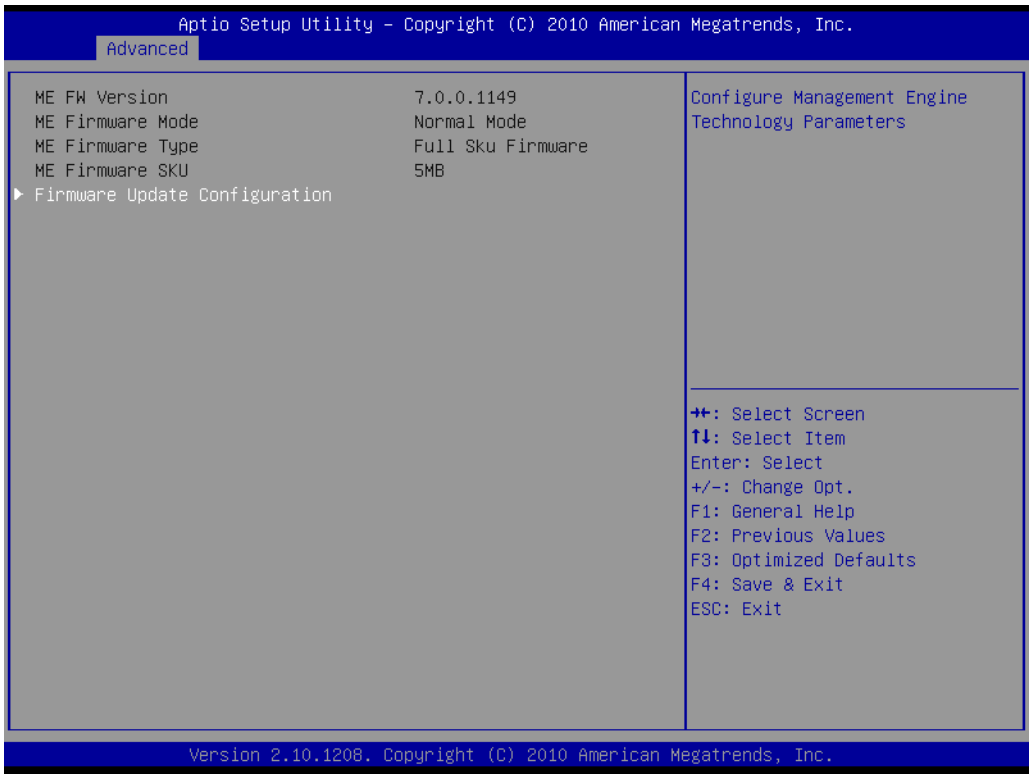


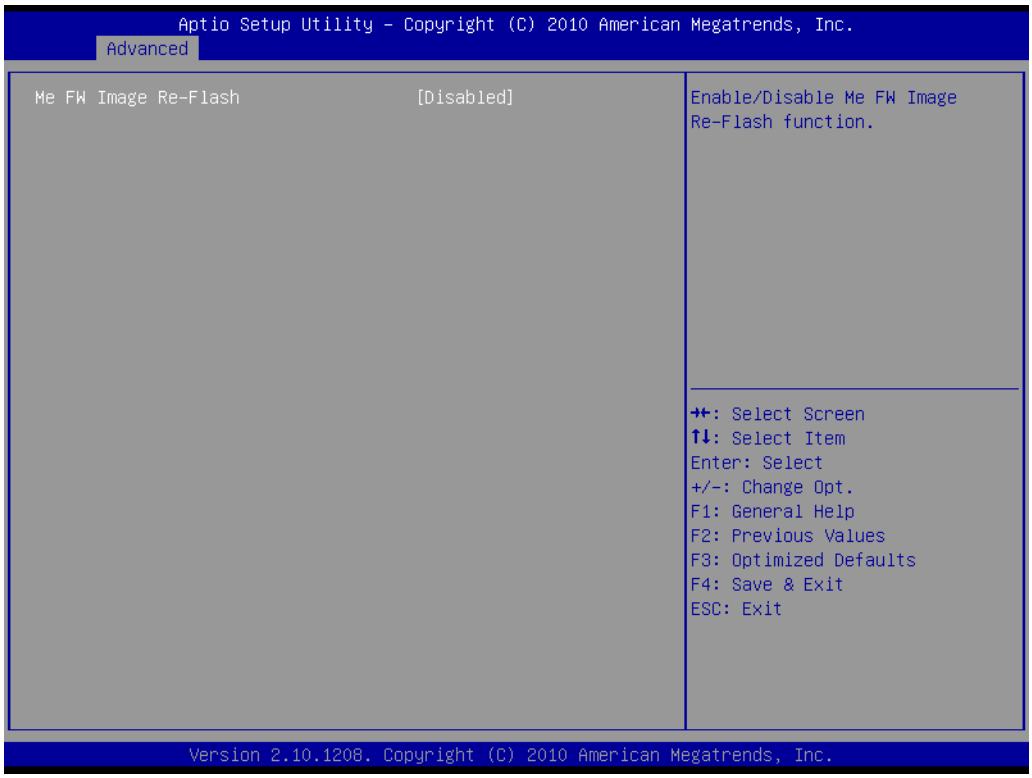
- **Intel Anti-Theft Technology**
  This item allows users to enable or disable Intel® Anti-Theft Technology (Intel AT), which helps stop laptop theft by making computers useless to thieves with immediate shut down.



- **TPM Support**

  This item allows users to enable or disable the Trusted Platform Module function.





- **ME FW Image Re-Flash**

  This item allows users to enable or disable Me FW image re-flash function.

Appendix A

Syst. Settings & Pin Assignments

A.1 System I/O Address and Interrupt Assignment

Table A.1: Interrupt Assignments

Interrupt No.	Interrupt Source
NMI	**Parity Error Detected**
IRQ 0	Interval Timer
IRQ 1	Keyboard
IRQ 2	Interrupt from Controller 2 (cascade)
IRQ 3	COM 2
IRQ 4	COM 1
IRQ 8	Real-Time Clock
IRQ 9	Microsoft ACPI-Compliant System
IRQ 10	COM 3~4
IRQ 11	SMBus
IRQ 16	LAN and Graphics
IRQ 17	LAN
IRQ 19	LAN, AMT and SATA
IRQ 20	LAN
IRQ 22	Audio
IRQ 23	USB

A.2 Board Connectors and Jumpers

There are several connectors and jumpers on the UNO-2184G/2174G/2174GL board. The following sections tell you how to configure the UNO-2184G/2174G/2174GL hardware setting. Figure A.1 shows the locations of UNO-2184G/2174G/2174GL's connectors and jumpers.

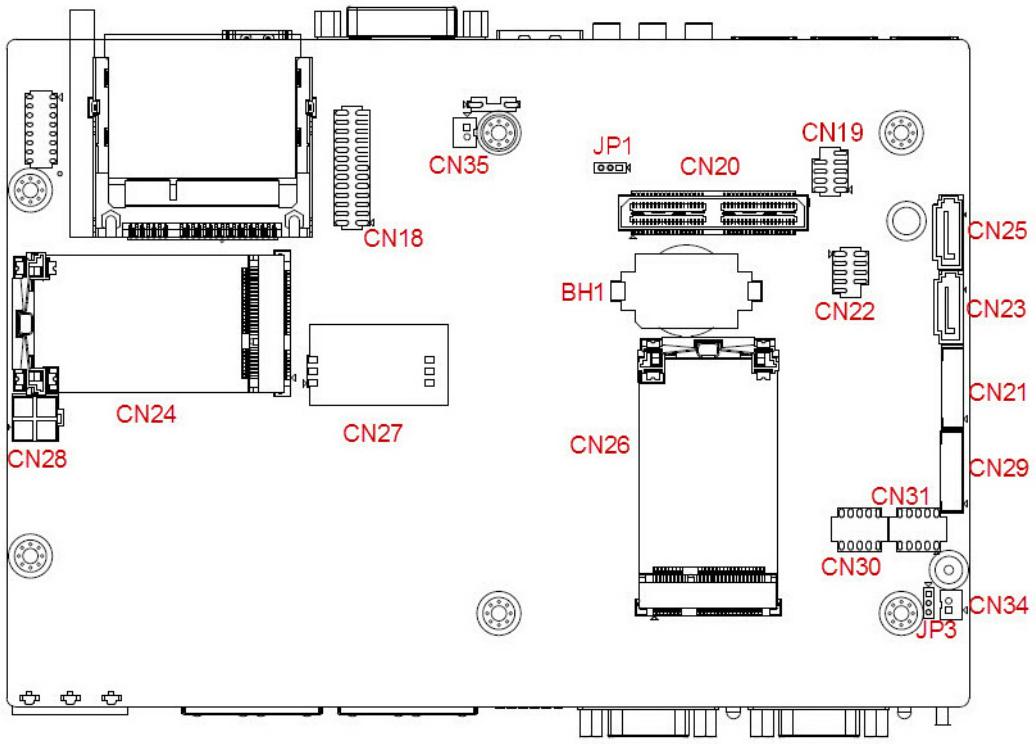


Figure A.1 Connector & Jumper Locations (front)

Table A.2: Connectors and Jumpers

Label	Function
CN26 CN32	PCI Express Mini Card Socket
CN23 CN25	SATA Signal Connector
CN21 CN29	SATA Power Connector
JP1	Clear CMOS
BH1	Battery for RTC
CN29	Connector for PCI-104 Expansion Board
JP3	System Power AT or ATX Selection
CN27	SIM Card
CN28	PoE Power
CN31	COM3
CN30	COM4
CN19	USB
CN18	LPT

A.3 RS-232 Standard Serial Port

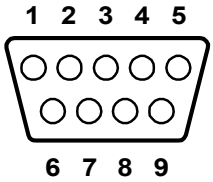


Table A.3: RS-232 Serial Port Pin Assignments	
Pin	**Pin Name**
1	DCD
2	RxD
3	TxD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI

A.4 RS-232/422/485 Serial Port (COM1 ~ COM2)

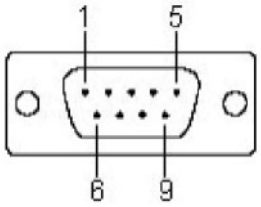


Table A.4: RS-232/422/485 Serial Port Pin Assignments			
Pin	**RS-232**	**RS-422**	**RS-485**
1	DCD	TX-	Data-
2	RxD	TX+	Data+
3	TxD	RX+	NC
4	DTR	RX-	NC
5	GND	GND	GND
6	DSR	NC	NC
7	RTS	NC	NC
8	CTS	NC	NC
9	RI	NC	NC

A.5 Power Connector (PWR)

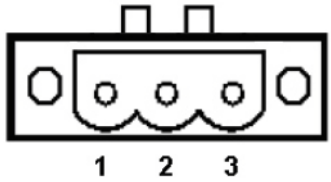


Table A.5: Power Connector Pin Assignments	
Pin	
1	V+ (9~36VDC)
2	V-
3	Field Ground

A.6 PS/2 Keyboard and Mouse Connector

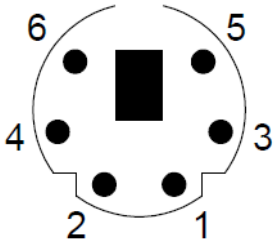


Table A.6: Keyboard and Mouse Connector Pin Assignments	
Pin	**Signal Name**
1	KB DATA
2	MS DATA
3	GND
4	VCC
5	KB Clock
6	MS Clock

A.7 USB Connector

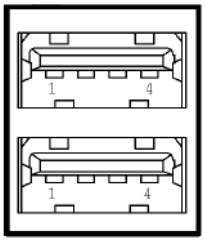


Table A.7: USB 2.0 Connector Pin Assignments

Pin	Signal Name	Cable Color
1	VCC	Red
2	DATA-	White
3	DATA+	Green
4	GND	Black

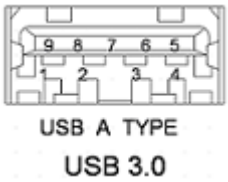


Table A.8: USB 3.0 Connector Pin Assignments

Pin	Signal Name	Description
1	VBUS	Power
2	D-	USB2.0 Differential Pair
3	D+	
4	GND	Ground for Power Return
5	StdA_SSRX-	SuperSpeed Receiver Differential Pair
6	StdA_SSRX+	
7	GND_DRIAN	Ground for Signal Return
8	StdA_SSTX-	SuperSpeed Transmitter Differential Pair
9	StdA_SSTX+	

A.8 HDMI Display Connector

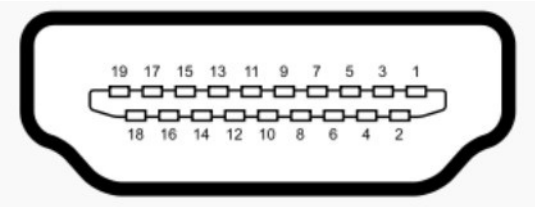


Table A.9: HDMI Display Connector

Pin	Signal	Pin	Signal
1	TMDS Data2+	2	TMDS Data2 Shield
3	TMDS Data2-	4	TMDS Data1+
5	TMDS Data1 Shield	6	TMDS Data1-
7	TMDS Data0+	8	TMDS Data0 Shield
9	TMDS Data0-	10	TMDS Clock+
11	TMDS Clock Shield	12	TMDS Clock-
13	CEC	14	Reserved
15	SCL	16	SDA
17	DDC/CEC/HEC Ground	18	+5 V Power (max 50 mA)
19	Hot Plug Detect		

A.9 DVI-I Connector

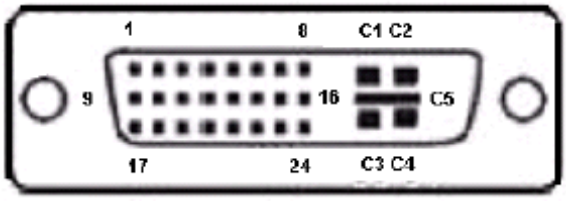


Table A.10: DVI-I Connector Pin Assignment

Pin	Signal Name
1	TMDS_C2#
2	TMDS_C2
3	GND
4	CRT_DDC_CLK
5	CRT_DDC_DATA
6	MDVI_CLK
7	MDVI_DATA
8	VGAVSY
9	TMDS_C1#
10	TMDS_C1
11	GND
12	-
13	-
14	VCC_DVI
15	VGA Detect
16	HP_DET
17	TMDS_C0#
18	TMDS_C0
19	GND
20	-
21	-
22	GND
23	TMDS_CK#
24	TMDS_CK
C1	VGAR
C2	VGAG
C3	VGAB
C4	VGAHSY
C5	GND

A.10 DisplayPort Display Connector

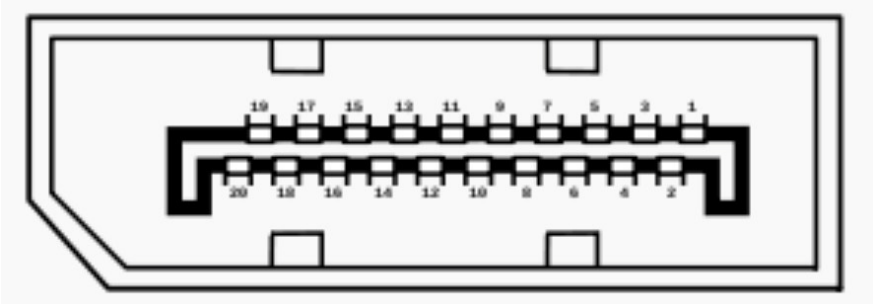


Table A.11: DisplayPort Adaptor Cable Pin Assignment

Pin	Signal Name
1	ML_Lane 0 (p)
2	GND
3	ML_Lane 0 (n)
4	ML_Lane 1 (p)
5	GND
6	ML_Lane 1 (n)
7	ML_Lane 2 (p)
8	GND
9	ML_Lane 2 (n)
10	ML_Lane 3 (p)
11	GND
12	ML_Lane 3 (n)
13	CONFIG1
14	CONFIG2
15	AUX CH (p)
16	GND
17	AUX CH (n)
18	Hot Plug
19	Return
20	DP_PWR

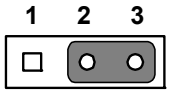
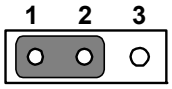
A.11 Clear CMOS (JP1)

This jumper is used to erase CMOS data and reset system BIOS information.

Follow the procedures below to clear the CMOS.

1. Turn off the system.
2. Close jumper JP2 (2-3) to clear CMOS
3. Remove jumper JP2 (1-2)
4. Turn on the system. The CMOS is now cleared.
5. Turn on the system. The BIOS is reset to its default setting.

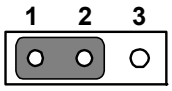
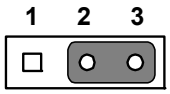
Table A.12: JP2 Clear CMOS

Configuration	Function
	Clear CMOS
	Normal (Default)

A.12 System Power AT or ATX Selection (JP3)

UNO-2184G/2174G/2174GL can set AT or ATX power mode in the BIOS or hardware jumper settings.

Table A.13: AT/ATX Selection

Configuration	Function
	AT mode
	ATX mode (default)

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