Advantech's Embedded Automation Computers

Construct Automation Solutions with Trusted Domain-Focused Platforms

- Machine Automation
- Factory Automation
- Process Automation
- Power & Energy
- Oil & Gas Applications
- Water Treatment
- Environmental Monitoring
- Building Automation
- Intelligent Transportation

ADVANTECH

Enabling an Intelligent Planet

Designed to Meet Domain Needs, Engineered for Harsh Environments

Advantech's Embedded Automation Computers have been designed to fulfill the needs of mission-critical automation applications. Their embedded design, industrial features and advanced open computing technology with remote management capability deliver robustness, reliability and flexibility to satisfy customers who are looking for a rugged & compact automation platform with domain features and certifications for their target applications.

Open & Robust

Remote Management

Environmental Monitoring

Renewable Energy

Oil & Gas

Transportation

Water Treatment

Domain Focused

Building Automation

Machine Automation

Factory & Process Automation

Power & Energy

Advantech's Embedded Automation Computers Are Much More Than Just Fanless Box PCs

Domain Certification

Rich I/O and Expansion

Fanless and Cableless

Robust Design

Remote Management

Advantech's Embedded Automation Computer Product Lines

UNO-1000 Series
DIN-rail Automation Computers for Control Cabinets
DIN-rail Controller Platforms with Class I, Division 2 Certification

Advantech's UNO-1000 Series are compact and DIN-rail mounted fanless industrial automation computers. They feature a RISC-based processor with a wide operating temperature range (up to 75°C), and are suitable as communication controllers in protocol converter applications and in mission-critical environments.

UNO-2000/2100 Series
Compact Automation Computers
Scalable, Low Power Consuming Platforms to Deliver High-performance Computing and Communications

Advantech's UNO-2000/2100 series are fanless wallmounted industrial automation computers with dual sided rich I/Os. They feature a complete range of computing power for a wide array of applications. Different expansion capabilities such as PC/104+ and Mini PCIe slots also allow users to add third party I/O modules.

UNO-3000 Series
Wallmount Automation Computers with PCI/PCIe Expansion
Front Accessible, High-performance Platforms for Machine Automation Applications

Advantech's UNO-3000 series are fanless wallmounted front access industrial automation computers with PCI/PCIe expansion. They feature a wide range of computing power from Intel® Atom™ N270 to Intel® Core™ i7 2655LE processors. Their PCI/PCIe expansion capability allows users to add third party I/O modules for a variety of applications.

UNO-3200 Series
High-performance Automation Computers with PCI/PCIe Expansion
Powerful and Reliable Computing Engines for Critical and Demanding Applications

Advantech's UNO-3200 series are designed to provide computing power and high-speed I/O expansion for demanding applications such as machine controllers with vision & 3D, embedded servers etc. UNO-3200 series offer Intel® Core™2 Duo computing and DVI to handle vision processing and graphic display .

UNO-4600 Series
Substation Automation Computers
**Rackmount IEC 61850-3/ IEEE 1613 Compliant Platforms with Substation Domain I/O Support**

Advantech's UNO-4600 series are designed to work in the substation environment. The isolated I/O lines and isolated power circuitry enhance the anti-interference features. IRIG-B time-sync protocol and fiber optical LAN optional modules also provide the professional domain I/Os for substation applications.

Reliable Embedded Architecture

Advantech's fanless Embedded Automation Computers with no internal cabling are the best choice for automated applications in harsh working environments. Their embedded designs also include battery-backup SRAM to ensure data storage in case of power failure. Additionally they have been designed as energy saving products, which will save money while helping the planet. With complete Microsoft® Windows® Embedded Solutions, they are highly reliable for any mission-critical automation application.

Battery-backup SRAM

The onboard battery-backup SRAM saves runtime process data in the event of a power failure. The SRAM can also act as a data buffer that helps to reduce CF access time and extend CF lifetime.
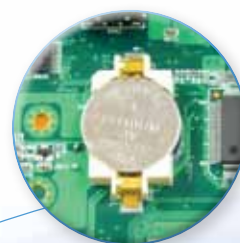
Fanless Design

Advantech's Embedded Automation Computers are robust computers without rotating parts such as CPU fans, system fans, power supply fans or HDD. The fanless design significantly increases reliability. extends MTTR, and reduces maintenance efforts. As a result, you don't need to worry about CPU coolers or HDD failures, even in dusty environments.

No Internal Cabling

Unlike generic Box PC designs which use cables for wiring between connectors and CPU boards, the connectors on the UNO series are soldered directly onto the PCB. Therefore, no internal cabling is inside the chassis, which makes Advantech's Embedded Automation Computers more reliable than traditional Box PCs in harsh environments.

Wide Temperature

Every Embedded Automation Computer is equipped with a tailor-made thermal design for its onboard CPU, RAM and ICs.

Wide Temp.

-20°C   70°C
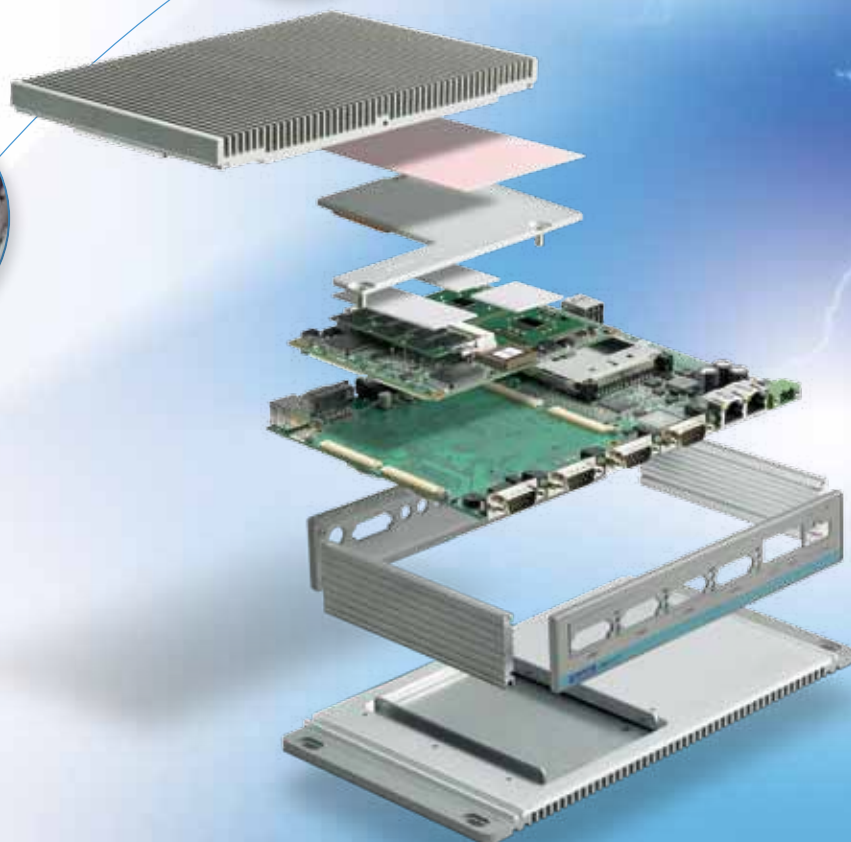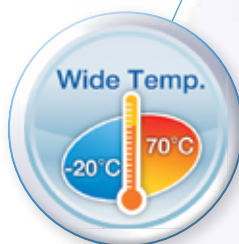
Robust and Reliable Design

With many years of field experience, we continue to improve our products to satisfy automation users' desires. In response to users' needs, Advantech's Embedded Automation Computers provide LAN redundancy teaming function, to prevent information transmission problems when Ethernet is not working. Their tailor-made thermal designs also allow them to operate under a wide temperature range. With IP40 Certification and proprietary enhanced serial communication drivers, Advantech's Embedded Automation Computers are designed to be robust, reliable and flexible in order to fulfill the needs of industrial automation users.

COM Driver Enhancement

Advantech's Embedded Automation Computers use their own advanced serial communication drivers, which are more time-efficient than standard drivers. The drivers also support any-baud-rate functions for any serial device with special baud rate.
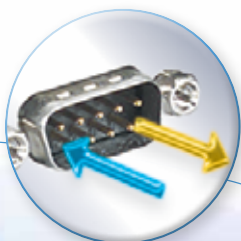
LAN Redundancy (Teaming)

Embedded Automation Computers support the teaming function. When Ethernet is not working, another port will immediately take over the transmission job.
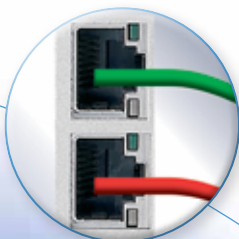
IP40 Ingress Protection

Embedded Automation Computers are IP40 certified. With ingress protection, users can use the computers in dusty environments without reliability concerns.
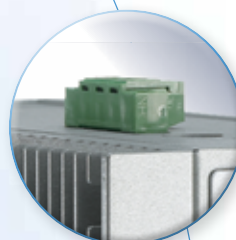
Patented Serial Communication

Supports not only RS-232/422/485 selection and RS-485 auto-flow control, but also supports many other robust features, such as isolation, EFT protection, and over-voltage protection.
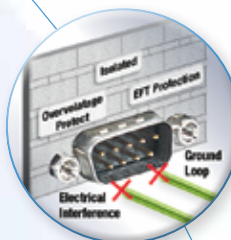
Industrial Power Design

9 ~ 36 V_{DC} Wide Power Input with reverse power polarity protection and ground isolation between chassis and system.

Value-Added Design for Automation Control

We not only make hardware more robust, but also provide value-added software to make it more intelligent.

Advantech DiagAnywhere Utility
Remote Management Software

- Monitoring & Control
- File Upload & Download
- Screen Snapshot
- Device Grouping
- Screen Recording

Control / Server

Internet / Intranet

Mobus/RTU OPC Server
Modus/TCP OPC Server

Built-in DiagAnywhere
Server

UNO-2059GL

UNO-1150G

APAX I/O Modules

ADAM I/O Modules

CANopen

Fieldbus Master Support

Fieldbus is an industrial network system for real-time distributed control. To be an embedded automation computer, this added value will open a door to the critical control applications. We support the following protocols:

CANopen

Modbus-IDA

EtherCAT

EtherNet/IP

PROFINET
INDUSTRIAL ETHERNET

PROFIBUS
PROCESS FIELD BUS

Software Solution Partners

SoftLogic Solution Powered by KW Software

Advantech's Programmable Automation Controller solution leverages KW Software's Multiprog and ProConOS as the single developing tool and SoftLogic control kernel.

Certified Platform by Wonderware

Wonderware software support allows automation computers to work as HMIs or control nodes. With the provided VESA mounting kit, these computers can be integrated with panel monitors, such as FPM series. With support for touchscreen controllers under WinCE, users can operate the systems through touch. Without the monitor, they can also be a control node for programmed control logic.

ACP ThinManager® Industrial Thin Client

ACP is experienced in the field of Thin Clients. Since 1999, ACP has been embedding its Thin Client technology into industrial computer products from Advantech, working to bring superior Thin Client devices. When combined with ACP's Thin Client management tool, each ACP Enabled Advantech Thin Client has performance and features unmatched by products from any other company.

Domain Certification

Advantech's Embedded Automation Computers are designed for domain certification in energy and hazardous locations. With certified designs and domain-specific I/O offering, it helps users to quickly construct robust solutions using Advantech's reliable components.

Class I, Division 2 Certified for Oil & Gas Applications

The UNO-1100H series are certified to be used in Class I Division 2 Groups A, B, C and D hazardous locations.
Ambient Temperature Range: 0 ~ 60°C
Temperature Code:

Model Name	Temperature Code
UNO-1140FH	T4A
UNO-1150GH/GHE	T3A
UNO-1172AH	T5

The UNO-1100H series have been classified using requirements contained in:

US: ANSI/ISA 12.12.01-2007

- Class I and II, Division 2 Hazardous (Classified) Locations
- Class III, Division 1 and 2 Hazardous (Classified) Locations

Canada: CSA C22.2 No. 213-M1987

- Class I, Division 2 Hazardous Locations

IEC 61850-3 Standard for Power Substation Applications

The UNO-4600 series are designed to be compliant with IEC 61850-3, which has been defined as an international hardware standard of communication network and system in power substations. In a modern power substation, this standard facilitates the management of a large number of devices and enables various devices to communicate with one another.

Reference	Function	Required for IEC 61850-3
IEC-61000-4-2	ESD	Contact 8KV; Air 15KV
IEC-61000-4-3	RS	35 V/m
IEC-61000-4-4	EFT	4KV
IEC-61000-4-5	Surge	5KV

Multiple Expansion Capabilities

Advantech's Embedded Automation Computers support versatile expansion interfaces for domain I/Os

UNO-1100 Series with
PC/104+ and Mini PCIe

UNO-4600 Series with
Domain I/O Expansions

UNO-3000 Series with
PCI/PCIe

UNO-2100 Series with
PC/104+ and Mini PCIe

UNO-1000 Series Introduction & Features

DIN-rail Automation Computers for Control Cabinets

- Fanless, and Moving Parts for Harsh Environments
- DIN-rail, Front I/O Accessible Design for Control Cabinets
- Battery-backup SRAM Saves Process Data in the Event of Power Failure
- Triple Ethernet Ports, PCI-104, PC/104+, and Mini PCIe Expansion
- A Wide Operating Temperature Range up to 75°C and Wide Power Input Range
- Designed to be Used in High Altitudes up to 13,200 Feet (4,000 Meters)

Class I, Division 2 Certification

Tested and designed for CID2 certification, providing safe and reliable operation in hazardous locations, such as liquefied natural gas, onshore drilling production, pipelines and refining applications.

System Diagnosis

Providing voltage, temperature and power status, LED indicators give warnings at field sites, and digital output enables remote notification and uploads information to diagnostic software (e.g. DiagAnywhere) for monitoring and controlling.

Designed for Control Cabinets

Compact size, DIN-rail mount and front-accessible I/Os for simplified installation and management in cabinets.

Battery-backup SRAM

The battery-backup SRAM saves runtime process data in the event of a power failure. The SRAM can act as a data buffer that helps to reduce CF access time and extend product lifetime.
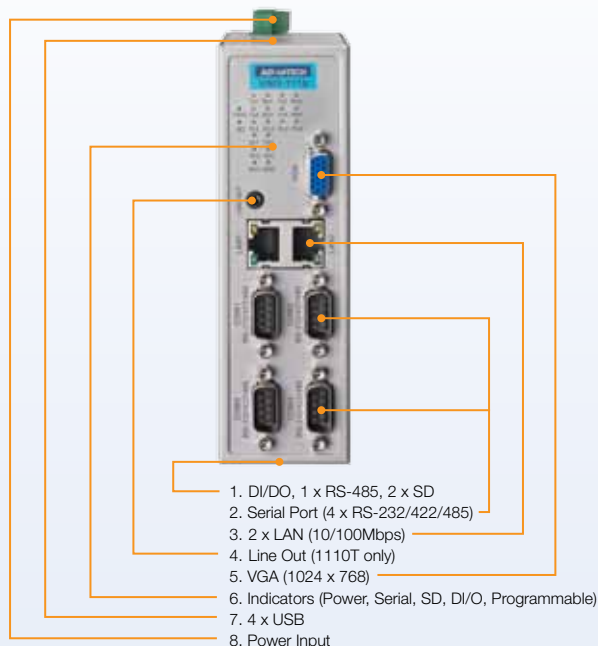
Flexible Expansion

With Mini PCIe, PCI-104 and PC/104+, it enables users to easily integrate wireless connections and Fieldbus I/O modules in a single package.

9

UNO-1110L/1110/1110T

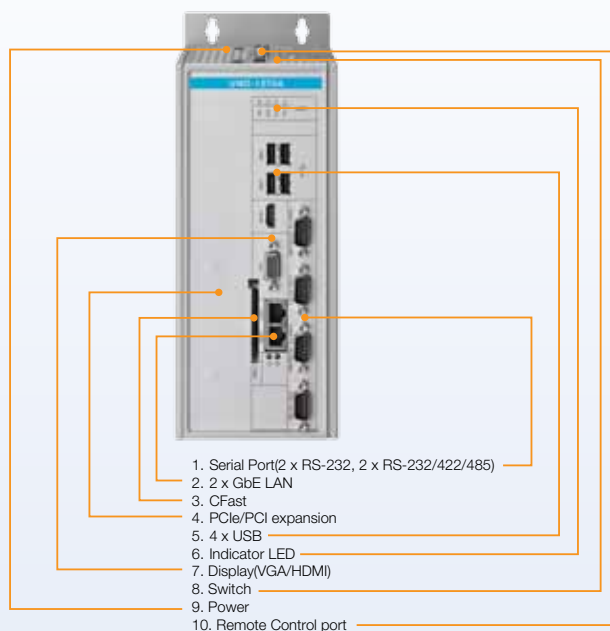**TI Cortex AM3505 DIN-rail PC with 2 x LAN, 5 x COM, 4 x USB, 1 x Mini PCIe**

`-10~70°C`

1. DI/DO, 1 x RS-485, 2 x SD
2. Serial Port (4 x RS-232/422/485)
3. 2 x LAN (10/100Mbps)
4. Line Out (1110T only)
5. VGA (1024 x 768)
6. Indicators (Power, Serial, SD, DI/O, Programmable)
7. 4 x USB
8. Power Input

UNO-1270A/1270AE

Automation Computers with 5 x COM, 2 x GbE LAN

`PCIe` `Mini PCIe` `-10~60°C`

1. Serial Port (2 x RS-232, 2 x RS-232/422/485)
2. 2 x GbE LAN
3. CFast
4. PCIe/PCI expansion
5. 4 x USB
6. Indicator LED
7. Display (VGA/HDMI)
8. Switch
9. Power
10. Remote Control port

UNO-1170A/1170AE

Intel Atom N270 Automation Computers with 3 x COM, 2 x LAN

`Backup SRAM` `PC/104+` `Mini PCI` `-10~60°C` **ENERGY STAR**

1. VGA
2. RS-232/422/485 x 1
3. RS-232 x 2
4. USB x 4 (internal USB x 1)
5. LAN x 2
6. Audio
7. KB/MS & Power Input
8. Mini PCI / PC/104+ expansion / 2.5" SATA HDD
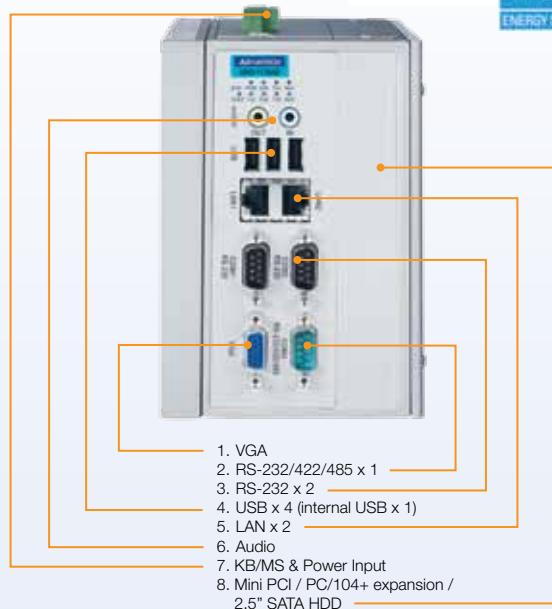
UNO-1172A/1172AE

Intel Atom D510 Automation Computers with System Diagnosis

`Backup SRAM` `PC/104+` `Mini PCI Mini PCIe` `-10~65°C` Class I,Div.2 **ENERGY STAR**

1. VGA
2. RS-232/422/485 x 2
3. USB x 4
4. GigaLAN x 3
5. HD Audio
6. KB/MS & Power Input
7. Mini PCI / Mini PCIe / PC/104+ expansion / 2.5" SATA HDD
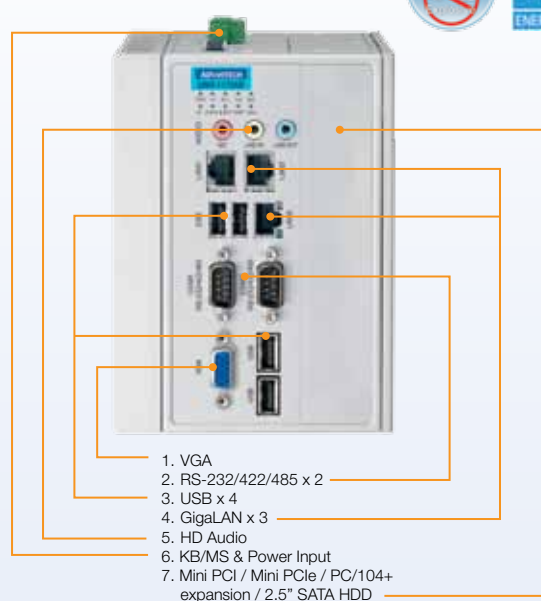
# SoftLogic Controller for Factory Automation

UNO-1172A/1172AE

SoftLogic Controllers Connecting a Variety of I/O Devices

- Provides local and remote diagnostic functions for better reliability
- Supports redundancy for fault tolerance via up to three Gigabit LAN ports
- Simplifies maintenance with compact size and front accessible design
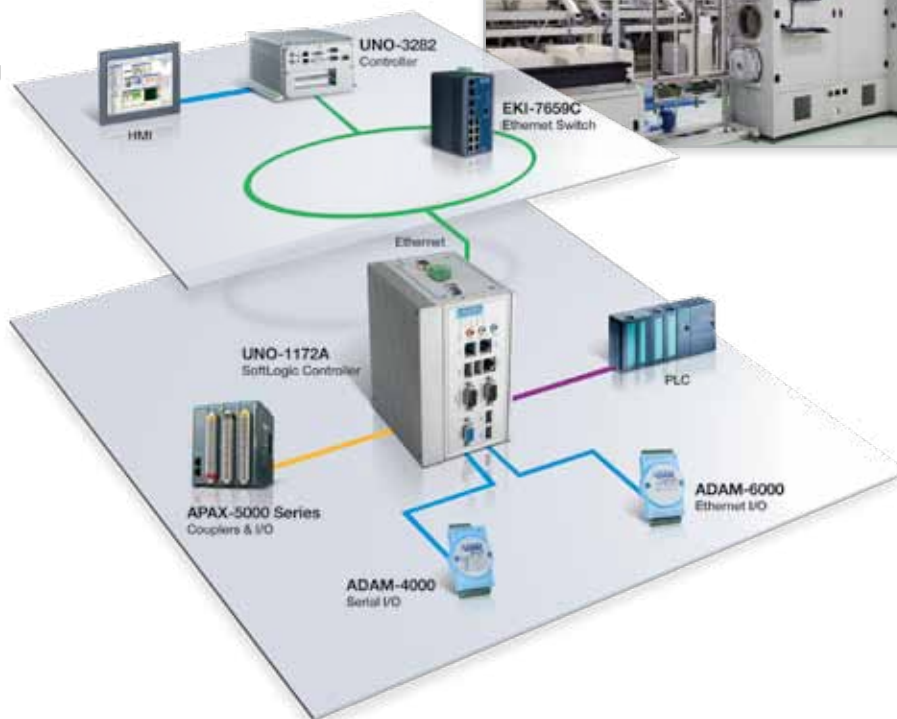
Class I, Division 2 Hazardous Location Monitoring System
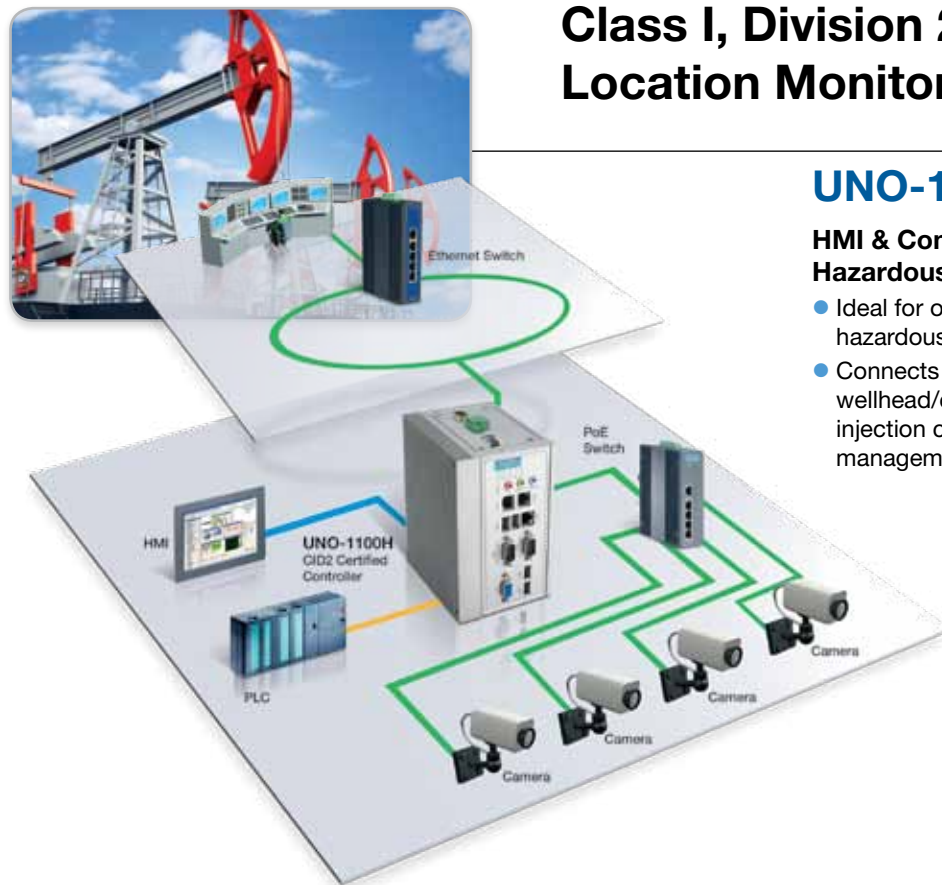
UNO-1100H series

HMI & Communication Gateways in Hazardous Locations

- Ideal for oil & gas fields, mining and other hazardous locations
- Connects SCADA RTU network, including wellhead/compressor/pumping unit/gas lift/ injection control, together to realize centralized management in Distributed Control System (DCS)
  - Achieves video security and local trouble-shooting control console by combining CID2-certified grade IP camera, PoE switch and LCD screen

▬	Fiber Optics
▬	Ethernet
▬	Serial (RS-232/422/485)
▬	I/O, Device, VGA
▬	APAX Local Bus

UNO-1000 Series Selection Guide

Model Name	UNO-1110/L/T	UNO-1140/1140F	UNO-1150G/1150GE	UNO-1170A/1170AE	UNO-1172A/1172AE
CPU	TI AM3505 Cortex A8, 600MHz	EVA-X4150 486SX grade, 150 MHz	AMD LX800, 500 MHz	Intel Atom N270, 1.6 GHz	Intel Atom Dual Core D510, 1.66 GHz
Onboard RAM	256MB DDR2 SDRAM	64MB SDRAM	256MB DDR SDRAM	1GB DDR2 SDRAM	2GB DDR2 SDRAM
Battery-Backup SRAM	-	-	-	512 KB	1 MB
Display	VGA	VGA	VGA	VGA	VGA
Audio	Line out(UNO-1110T only)	-	Yes	Yes	5.1 channel HD Audio
Serial Ports	1 x RS-485 4 x RS-232/422/485	UNO-1140: 4 x RS-232/485 UNO-1140F: 4 x iso. RS-232/485, 4 x iso. RS-485	2 × RS-232 (one pin header reserved) 2 x RS-232/422/485	2 x RS-232 1 x RS-232/422/485 1 x RS-232 (pin header)	2 x RS-232/422/485 2 x RS-232 (pin header)
Ethernet Ports	2 x 10/100Base-T	1 x 10/100Base-T	2 x 10/100Base-T	2 x 10/100 Base-T	3 x 10/100/1000 Base-T
USB Ports	-	2	2	3 external, 1 internal	4
Onboard I/O	4-ch DI, 2-ch DO	-	-	-	8-ch DO
2.5 HDD	-	-	UNO-1150G: N/A UNO-1150GE: 1 x SATA	1 x SATA	1 x SATA
Expansion	1 x Mini PCIe	PC/104 (reserved)	UNO-1150G: N/A UNO-1150GE: 1 x PCI-104, 1 x Mini PCI	UNO-1170A: N/A UNO-1170AE: 2 x PC/104+, 1 x Mini PCI	UNO-1172A: 1 x Mini PCIe UNO-1172AE: 2 x PC/104+, 1 x Mini PCI, 1 x Mini PCIe
CompactFlash Slots	-	1 internal	1 internal	1 internal	1 internal
Power Input Range	10 ~ 30 V_{DC}	9 ~ 36 V_{DC}	10 ~ 36 V_{DC}	10 ~ 36 V_{DC}	10 ~ 36 V_{DC}
Operating Temperature	-10 ~ 70°C	-20 ~ 75°C	-10 ~ 60°C	-10 ~ 60°C	-10 ~ 65°C
Power Consumption	8.5 W	10 W	15 W	24 W	24 W
Dimension (W x D x H)	48 x 126 x 152 mm	71 x 139 x 152 mm	71 x 139 x 152 mm 96.5 x 139 x 152 mm	85.5 x 139 x 152 mm 111 x 139 x 152 mm	85.5 x 139 x 152 mm 111 x 139 x 152 mm
Class I, Division 2 Certification	-	UNO-1140FH	UNO-1150GH UNO-1150GHE	-	UNO-1172AH

Accessories

UNO-FPM11	DiagAnywhere
VESA mounting kit for UNO-1100 series	DiagAnywhere Remote Management and Control Utility

Ordering Information

UNO-1110-ACE	TI Cortex AM3505 600MHz, 256MB RAM, WinCE6.0	UNO-1150GE-G30E	AMD LX800 500 MHz, 256MB RAM w/ PCI-104
UNO-1110ALE	TI Cortex AM3505 600MHz, 256MB RAM, Linux	UNO-1170A-A12E	Intel Atom N270 1.6 GHz, 1G RAM
UNO-1140-V10E	EVA SoC, 64MB RAM, 4 x COM	UNO-1170AE-A12E	Intel Atom N270 1.6 GHz, 1G RAM w/ PC/104+
UNO-1140F-V10E	EVA SoC, 64MB RAM, 8 x Iso. COM	UNO-1172A-A33E	Intel Atom Dual Core D510 1.66 GHz, 2G RAM
UNO-1150G-G30E	AMD LX800 500 MHz, 256MB RAM	UNO-1172AE-A33E	Intel Atom Dual Core D510 1.66 GHz, 2G RAM w/ PC/104+

Accessories Ordering Information

UNO-FPM11-AE	VESA mounting kit for UNO-1100 series
PCLS-DIAGAW10	DiagAnywhere Remote Management and Control Utility

UNO-2000 Series Introduction & Features

Compact Automation Computers

- Compact and Small with DIN-rail, Wallmount, and VESA-mount Support
- Industrial Onboard Isolated RS-232/422/485 and Isolated I/Os
- Wide Power Input Range up to 48 V_{DC} with Reverse Protection
- Low Power Consumption

Compact Design

The compact UNO-2000 series are designed to save space in working areas.

Diverse Onboard I/O

From isolated digital I/O lines to RS-232/422/485, the UNO-2000 series are ideal solutions for gateway, protocol converter and data server applications.

Multiple Mounting Solutions

Support DIN-rail, wallmount and standard VESA mounting, which provides easy installation.

Low Power Consumption

Low power consumption with sufficient computing power.

UNO-2050G

UNO-2053GL

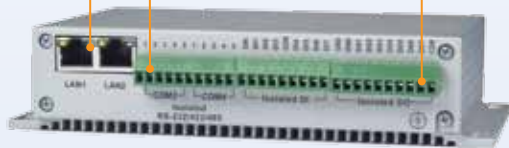### AMD GX3 Automation Computer with Isolated Digital I/O

Dual LAN **Isolated Serial** **-10~55°C**

1. RS-232 x 2
2. VGA
3. KB/MS
4. Isolated DI/O x 16
5. LAN x 2
6. Isolated RS-232/422/485 x 2

AMD GX3 Automation Computer with Dual LAN

Dual Serial **Audio** **-10~55°C**

1. VGA
2. KB/MS
3. RS-232 x 2
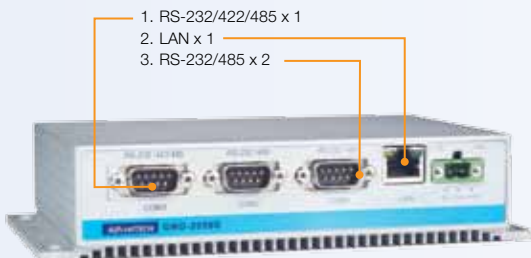4. USB x 2
5. LAN x 2
6. Audio

UNO-2059GL

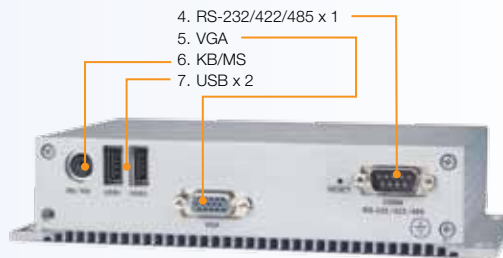### AMD GX3 Automation Computer with RS-232/422/485

Dual USB **LAN** **-10~55°C**

1. RS-232/422/485 x 1
2. LAN x 1
3. RS-232/485 x 2

4. RS-232/422/485 x 1
5. VGA
6. KB/MS
7. USB x 2

UNO-2100 Series Introduction & Features

High-performance Automation Computers with Versatile Expansion

- Provides Diverse Communication Interfaces
- Compact and Small Footprint with DIN-rail, Wallmount, and VESA-mount Support
- Industrial Onboard RS-232/422/485, Supports Any Baud Rate up to 921.6kbps
- Industrial Power Design with Grounding Isolation between Chassis and System
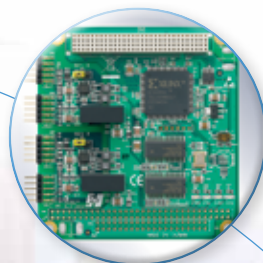
High Density Cableless I/Os

I/Os like COMs, USBs, LANs and other interfaces with shock resistance and optional isolation.

Expansion Capability

Expansion for communications, I/Os, and Fieldbus from different interfaces such as PC/104+, Mini PCIe, etc.

Trusted Industrial Design

Full range of serial ports, e.g. RS-485 with any baud rate, chassis grounding and wide power input.

Wide CPU Selection and Operating Temperature Range

Selections from Intel Atom to Core 2 Duo computing power for various applications and designed for harsh environments.
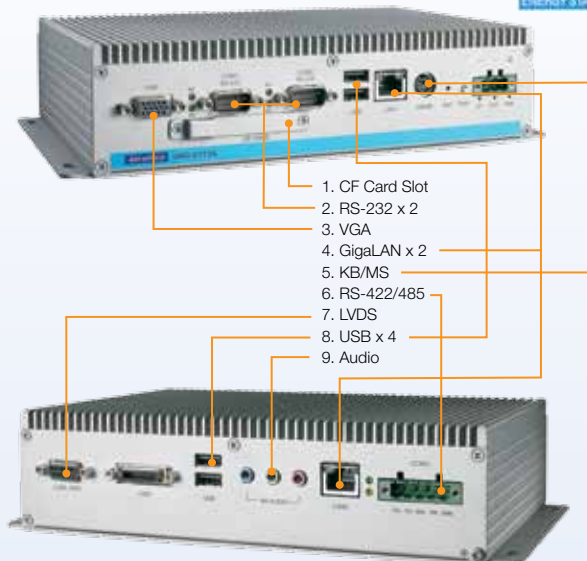
UNO-2173A/AF

Intel Atom N270 Automation Computers with 3 x COM, 2 x GbE
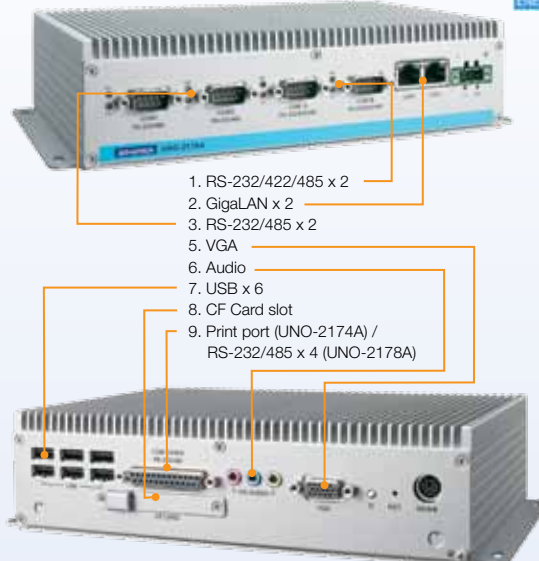
`Mini PCIe` `-20~70°C`

ENERGY STAR

1. CF Card Slot
2. RS-232 x 2
3. VGA
4. GigaLAN x 2
5. KB/MS
6. RS-422/485
7. LVDS
8. USB x 4
9. Audio

All of back I/Os are for UNO-2173AF only.

UNO-2174A/2178A

Intel Atom N450/D510 Automation Computers with 8 x COM, 2 x GbE

`PCI-104` `Mini PCIe` `PC/104+` `-10~70°C`
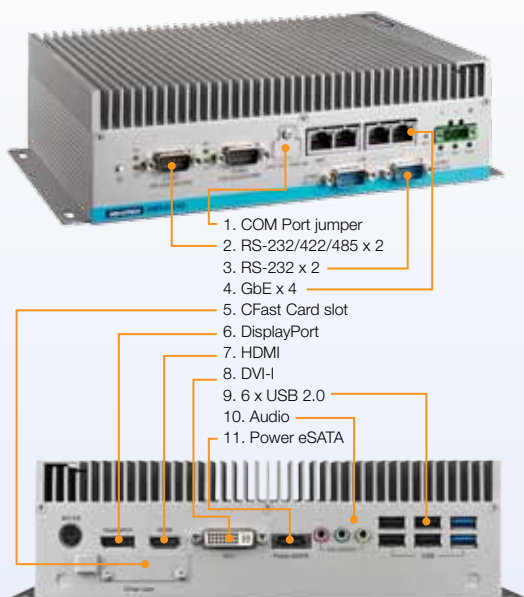
ENERGY STAR

1. RS-232/422/485 x 2
2. GigaLAN x 2
3. RS-232/485 x 2
4. (no text)
5. VGA
6. Audio
7. USB x 6
8. CF Card slot
9. Print port (UNO-2174A) / RS-232/485 x 4 (UNO-2178A)

UNO-2174G/GL

Intel Celeron 847/807UE Automation Computers with HDMI/DVI/DP, 2 x Mini PCIe

`Mini PCIe` `PCI-104` `-10~60°C`

1. COM Port jumper
2. RS-232/422/485 x 2
3. RS-232 x 2
4. GbE x 4
5. CFast Card slot
6. DisplayPort
7. HDMI
8. DVI-I
9. 6 x USB 2.0
10. Audio
11. Power eSATA

UNO-2184G

Intel Core i7-2655LE Automation Computer with 4 x COM, 4 x GbE

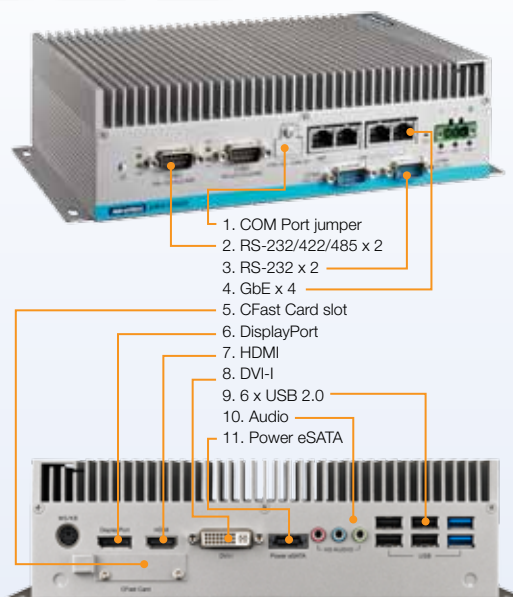`Mini PCIe` `PCI-104` `-10~60°C`

1. COM Port jumper
2. RS-232/422/485 x 2
3. RS-232 x 2
4. GbE x 4
5. CFast Card slot
6. DisplayPort
7. HDMI
8. DVI-I
9. 6 x USB 2.0
10. Audio
11. Power eSATA

Manufacturing Execution System for Production Automation

UNO-2173A

A Machine & Production Data Collector to Analyze and Report Data

- Front accessible I/Os for easy maintenance
- IP40 protection and a wide operating temperature range from -20 to 70°C
- Low power consumption and Energy Star certified
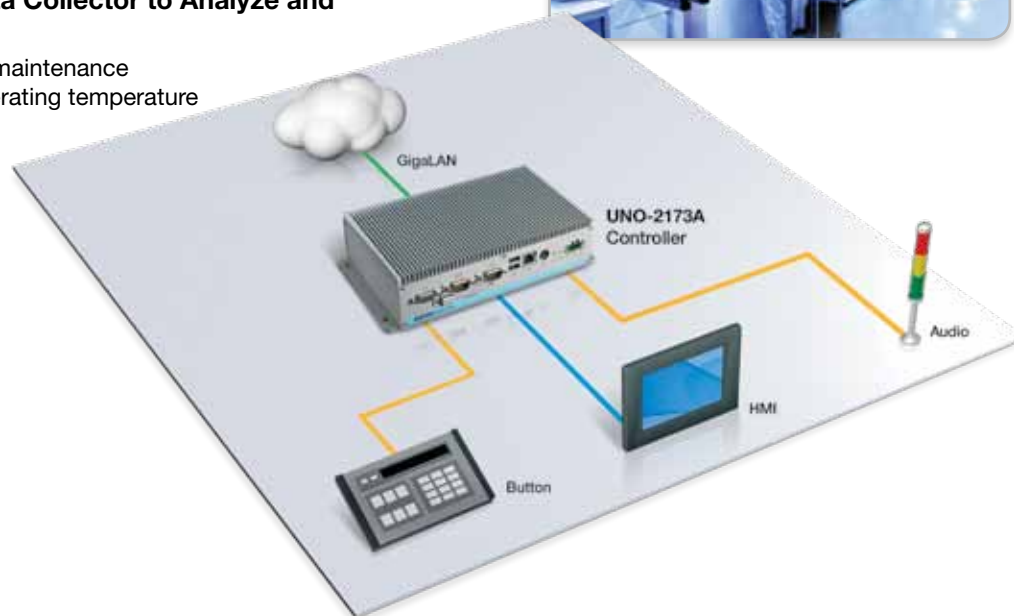
On-line Testing System in Factory Automation

UNO-2178A

Automatic Testing System Connecting to Diverse Devices and Sensors via Multiple COM Ports and Built-in PC/104 & PCI-104 DAQ Modules
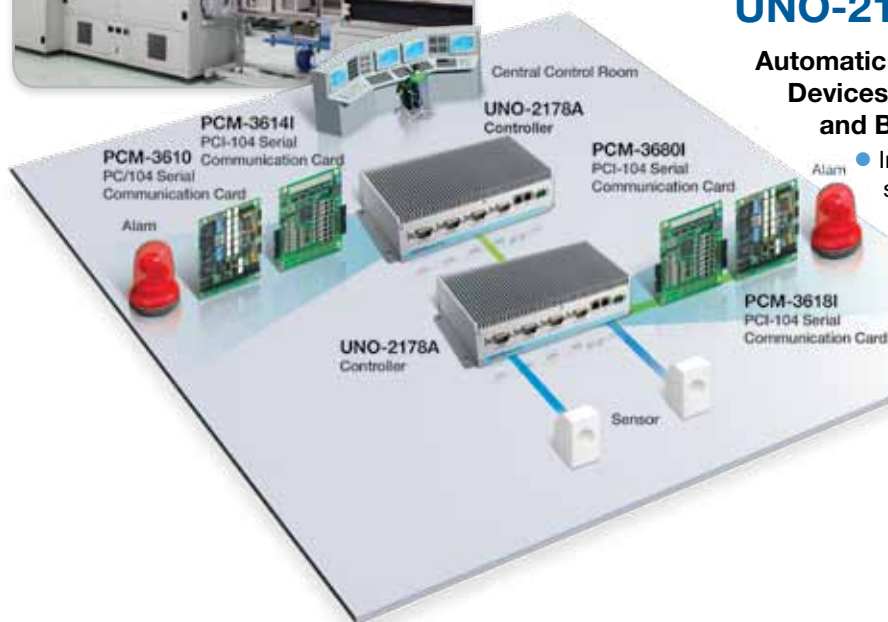
- Intel Atom Dual Core CPU for processing high sampling speed data
- Shock-proof and interference resistant
- IP40 anti-dust approved with a wide operating temperature range from -10 to 70°C
- PCI-104 expansion for DAQ I/O card (Additional expansion kit required)
- Connects up to 8 COM ports for serial devices

SCADA Server for Distributed Monitoring of Unmanned Stations

UNO-2174A

Remote SCADA Server Collecting Equipment Data on Remote Unmanned Stations and Reporting to Central Control Room over LAN/ Cellular Communication
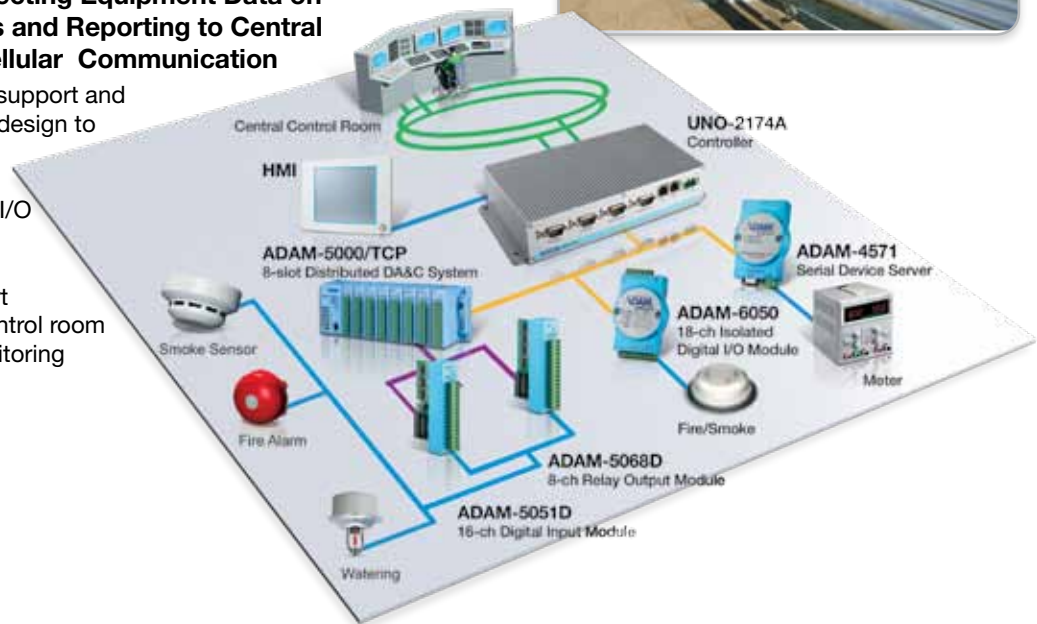
- Up to 70°C wide temperature support and reliable fanless and cableless design to significantly reduce maintenance effort
- Collects equipment data from I/O modules and PCLs from serial ports and Fieldbus
- Wi-Fi/ Cellular network support for connection with central control room
- DiagAnywhere for cluster monitoring management

Defect Inspection System on Production Line in Factory Automation

UNO-2184G

A Graphic Processing Controller to Implement Quality Checks on the Production Line

- High computing power for graphic processing
- Dual Gigabit LAN to connect to industrial IP cameras
- Built-in PCI-104 I/O modules for quality defect event trigger and handling
- Dual displays to monitor different data for its collection and interpretation
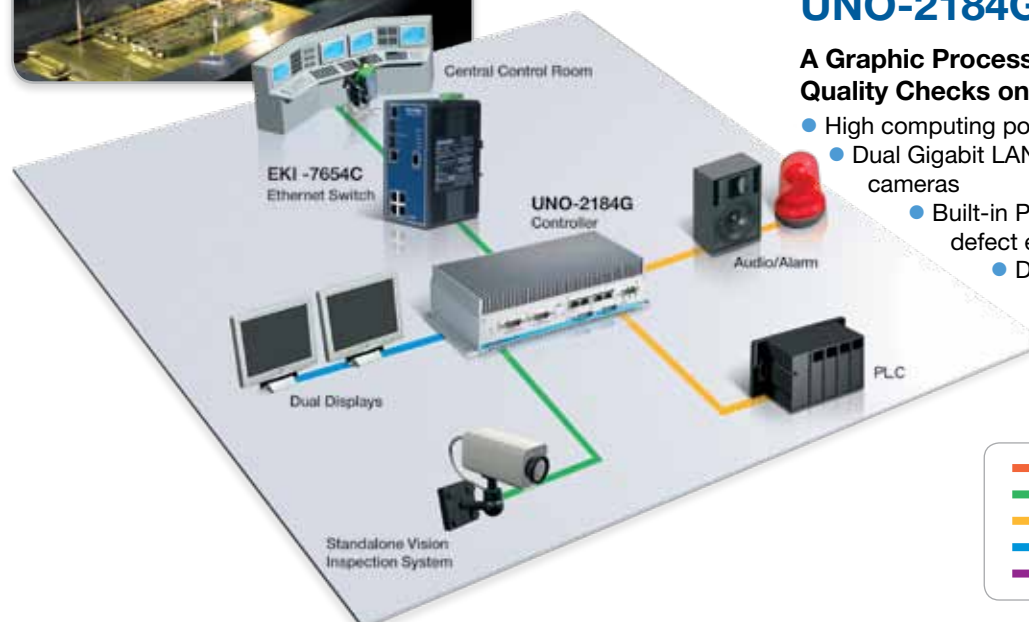
▬▬▬	Fiber Optics
▬▬▬	Ethernet
▬▬▬	Serial (RS-232/422/485)
▬▬▬	I/O, Device, VGA
▬▬▬	APAX Local Bus

UNO-2000/2100 Series Selection Guide

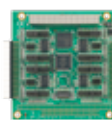| Model Name	UNO-2050G/2053GL/2059GL	UNO-2170	UNO-2172	UNO-2173A/AF
CPU	AMD LX800, 500 MHz	Intel Celeron M, 600 MHz Intel Celeron M, 1.0 GHz	Intel Celeron M, 1.5 GHz Intel Pentium M, 1.0 GHz	Intel Atom N270, 1.6 GHz
Onboard RAM	256M DDR SRAM	256M/512M DDR SRAM	1G DDR2 SRAM	1G/2G DDR2 SRAM
Battery-Backup SRAM	-	512 KB	512 KB	1 MB (reserved)
Display	VGA	VGA	DVI-I	VGA
Audio	Yes (UNO-2053GL)	-	Yes	5.1 Channel HD (UNO-2173AF)
Serial Ports	UNO-2050G: 2 x iso. RS-232/422/485 UNO-2053GL: 2 x RS-232 UNO-2059GL: 2 x RS-232/485, 2 x RS-232/422/485	2 x RS-232 2 x RS-232/422/485	2 x RS-232 2 x RS-232/422/485	UNO-2173A: 2 x RS-232 UNO-2173AF: 2 x RS-232, 1 x RS-422/485
Ethernet Ports	UNO-2059GL: 1 x 10/100Base-T UNO-2050G/2053GL: 2 x 10/100Base-T	2 x 10/100Base-T	2 x 10/100/1000Base-T	UNO-2173A: 1 x 10/100/1000Base-T UNO-2173AF: 2 x 10/100/1000Base-T
USB Ports	UNO-2053GL/2059GL: 2 external	2 external	2 external	UNO-2173A: 2 external UNO-2173AF: 4 external
PC Card Slots	-	1	-	-
Onboard I/O	UNO-2050G: 8-ch iso. DI, 8-ch iso. DO	-	-	-
2.5 HDD	-	1 x SATA	1 x SATA/IDE	1 x SATA
Expansion	-	PC/104	PCI-104	1 x Mini PCIe
CompactFlash Slots	1 internal	1 internal	1 internal	1 external
Power Input Range	UNO-2050G/2053GL: 9 ~ 36 V_{DC} UNO-2059GL: 10 ~ 48 V_{DC}	9 ~ 36 V_{DC}	9 ~ 36 V_{DC}	9 ~ 36 V_{DC}
Operating Temperature	-10 ~ 55°C	-20 ~ 50°C	-20 ~ 50°C	-20 ~ 70°C
Power Consumption	15 W	24 W	45 W	15 W
Dimension (W x D x H)	188.8 x 106.5 x 35.5 mm	255 x 152 x 50 mm	255 x 152 x 69 mm	255 x 152 x 59 mm

Accessories

UNO-DIN21	UNO-FPM21	UNO-HD20	UNO-PCM21	UNO-PCM22	UNO-PCM23	UNO-PCM24	DiagAnywhere
DIN-rail mounting kit for UNO-2100 series	VESA mounting kit for UNO-2000 series	HDD expansion kit for UNO-2000 series	2 x PC/104 expansion kit for UNO-2170	2 x PC/104 expansion kit for UNO-2100 series	1 x PCI-104, 1 x PC/104+ expansion kit for UNO-2174A/2178A	2 x PCI-104 expansion kit for UNO-2184G/2174G/2174GL	DiagAnywhere Remote Management and Control Utility

Accessories Ordering Information

UNO-DIN21-BE	DIN-rail mounting kit for UNO-2100 series
UNO-FPM21-AE	VESA mounting kit for UNO-2000 series
UNO-HD20-AE	HDD expansion kit for UNO-2000 series
UNO-PCM21-AE	2 x PC/104 expansion kit for UNO-2170
UNO-PCM22-AE	2 x PC/104 expansion kit for UNO-2100 series
UNO-PCM23-AE	1 x PCI-104, 1 x PC/104+ expansion kit for UNO-2174A/2178A
UNO-PCM24-AE	2 x PCI-104 expansion kit for UNO-2184G/2174G/GL
UNO-2184HD-AE	RAID accessory kit for UNO-2184G/2174G
PCLS-DIAGAW10	DiagAnywhere Remote Management and Control Utility

NEW NEW

Model Name	UNO-2174A/2178A	UNO-2182	UNO-2174G/GL	UNO-2184G
CPU	UNO-2174A: Intel Atom N450, 1.66 GHz UNO-2178A: Intel Atom Dual Core D510, 1.6 GHz	Intel Core 2 Duo L7400, 1.5 GHz	Intel Celeron 847/807 UE, 1.1/1.0 GHz	Intel Core i7-2655LE, 2.2 GHz
Onboard RAM	2G DDR2 SRAM	2G DDR2 SRAM	4G DDR3 SDRAM	4G/8G DDR3 SDRAM
Battery-Backup SRAM	1 MB (reserved)	512 KB	-	-
Display	VGA	DVI-I	DVI/HDMI/DP	DVI/HDMI/DP
Audio	5.1 Channel HD	Yes	5.1 Channel HD	5.1 Channel HD
Serial Ports	UNO-2174A: 2 x RS-232/485, 2 x RS-232/422/485 UNO-2178A: 6 x RS-232/485, 2 x RS-232/422/485	2 x RS-232 2 x RS-232/422/485	2 x RS-232 2 x RS-232/422/485	2 x RS-232 2 x RS-232/422/485
Ethernet Ports	2 x 10/100/1000Base-T	2 x 10/100/1000Base-T	4 x 10/100/1000Base-T	4 x 10/100/1000Base-T
USB Ports	6 external	2 external	6 external	6 external
PC Card Slots	-	1	-	-
Onboard I/O	-	-	-	-
2.5 HDD	1 x SATA	1 x SATA/IDE	2 x SATA (optional)	2 x SATA (optional)
Expansion	2 x Mini PCIe with SIM card slot support, 1 x PCI-104, 1 x PC/104+ (expansion board required)	PCI-104	2 x Mini PCIe with SIM card slot 2 x PCI-104 (optional)	2 x Mini PCIe with SIM card slot 2 x PCI-104 (optional)
CompactFlash Slots	1 external	1 internal	1 external	1 external
Power Input Range	9 ~ 36 V$_{DC}$	9 ~ 36 V$_{DC}$	9 ~ 36 V$_{DC}$	9 ~ 36 V$_{DC}$
Operating Temperature	-10 ~ 70°C	-20 ~ 60°C	-10 ~ 60°C	-10 ~ 60°C
Power Consumption	16 W	35 W	30 W/20 W	40 W
Dimension (W x D x H)	255 x 152 x 59 mm	255 x 152 x 69 mm	255 x 152 x 69 mm	255 x 152 x 69 mm

Recommended Serial Communication Cards

PCM-3610	PCM-3614I	PCM-3618I	PCM-3680I
2 port RS-232/422/485 PC/104 Module with Isolation Protection	4-port RS-232/422/485 PCI-104 Module	8-port RS-232/422/485 PCI-104 Module	2 port CAN-bus PCI-104 Module with Isolation Protection

Ordering Information

UNO-2050G-G30E	AMD LX800 500 MHz, 256MB RAM	UNO-2173AF-A12E	Intel Atom N270 1.6 GHz, 1G RAM
UNO-2053GL-G30E	AMD LX800 500 MHz, 256MB RAM	UNO-2173AF-A13E	Intel Atom N270 1.6 GHz, 2G RAM
UNO-2059GL-G30E	AMD LX800 500 MHz, 256MB RAM	UNO-2174A-A23E	Intel Atom N450 1.6 GHz, 2G RAM
UNO-2170-C00BE	Intel Celeron M 600 MHz, 256MB RAM	UNO-2174G-C54E	Intel Celeron 847 1.1 GHz, 4 GB RAM
UNO-2171-P12CE	Intel Pentium M 1.4 GHz, 1G RAM	UNO-2174GL-C44E	Intel Celeron 807UE 1.0 GHz, 4 GB RAM
UNO-2172-C22BE	Intel Celeron M 1.5 GHz, 1G RAM	UNO-2178A-A33E	Intel Atom Dual Core D510 1.66 GHz, 2G RAM
UNO-2172-P22BE	Intel Pentium M 1.6 GHz, 1G RAM	UNO-2182-D13BE	Intel Core 2 Duo 1.5 GHz, 2G RAM
UNO-2173A-A12E	Intel Atom N270 1.6 GHz, 1G RAM w/ front I/O	UNO-2184G-D44E	Intel Core i7-2655LE 2.2 GHz, 4 GB RAM
UNO-2173A-A13E	Intel Atom N270 1.6 GHz, 2G RAM w/ front I/O	UNO-2184G-D45E	Intel Core i7-2655LE 2.2 GHz, 8 GB RAM

UNO-3000 Series Introduction and Features

Wallmount Automation Computers with PCI/PCIe Expansion

- Wide Computing Power from Intel® Atom™ N270 1.6GHz to Core™ 2 Duo L7500 1.6GHz CPU
- Front I/O Design for Easy Cabling and Maintenance
- Dual SATA HDDs with RAID 0/1 and Network Teaming to Provide Transmission Redundancy
- Dual DVI-I Support for up to Three Displays
- PCI/PCIe Expansion with Card Retainer

RAID 0/1 Support

With an additional RAID controller or optional onboard RAID functionality, data can be completely backed using the RAID 1 mirror function.
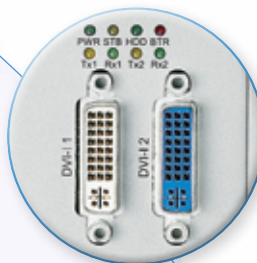
Front Accessible Design

To help wiring and setup, all I/O lines are located on the front panel of the UNO-3000 series. Easy installation of additional PCI boards and storage devices with a removable top cover.
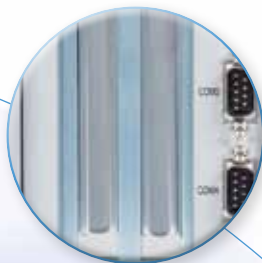
Triple Displays

Triple screens benefit large machinery operations with operators on opposite sides.

LAN Redundancy (Teaming)

The UNO-3000 series support Ethernet teaming. When one Ethernet is not working, another port will immediately take over the transmission job. It also includes a load balancing feature that allows the workload to be evenly distributed across two networks.
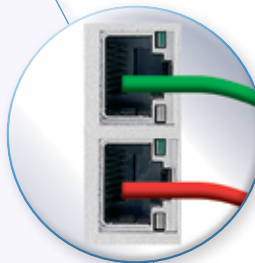
Onboard IEEE-1394b Ports for Machine Vision Applications

The UNO-3000 series are equipped with IEEE-1394b and Gigabit LAN onboard, which allow machine vision application users to directly attach their machine vision cameras without purchasing additional interfaces.
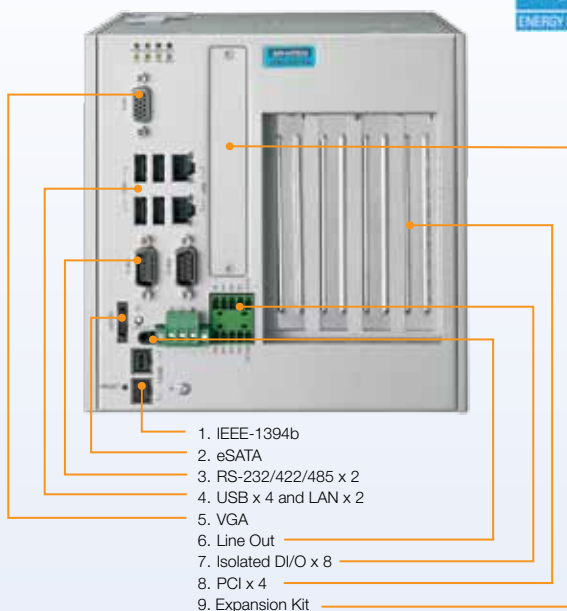
UNO-3072A/3074A

Intel Atom D510 Automation Computers
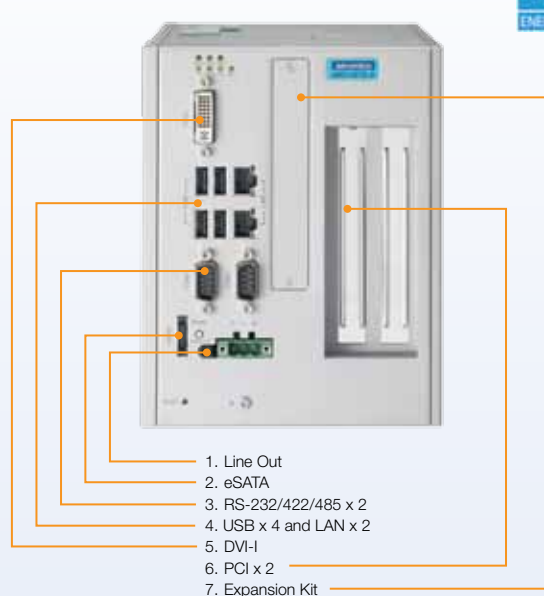with 2/4 x PCI

Dual GbE LAN | IEEE 1394b | -10~60°C

ENERGY STAR

1. IEEE-1394b
2. eSATA
3. RS-232/422/485 x 2
4. USB x 4 and LAN x 2
5. VGA
6. Line Out
7. Isolated DI/O x 8
8. PCI x 4
9. Expansion Kit

UNO-3072LA

Intel Atom N270 Automation Computer
with 2 x PCI

Dual GbE LAN | Dual Displays | -10~60°C

ENERGY STAR

1. Line Out
2. eSATA
3. RS-232/422/485 x 2
4. USB x 4 and LAN x 2
5. DVI-I
6. PCI x 2
7. Expansion Kit

UNO-3082

Intel Core 2 Duo Automation Computer
with 2 x PCI

Triple Displays | IEEE 1394b | Isolated DI/O | -10~55°C

1. IEEE-1394b
2. Line Out
3. eSATA
4. RS-232/422/485 x 2
5. USB x 4 and LAN x 2
6. DVI-I x 2
7. Isolated DI/O x 8
8. PCI x 2
9. Expansion Kit
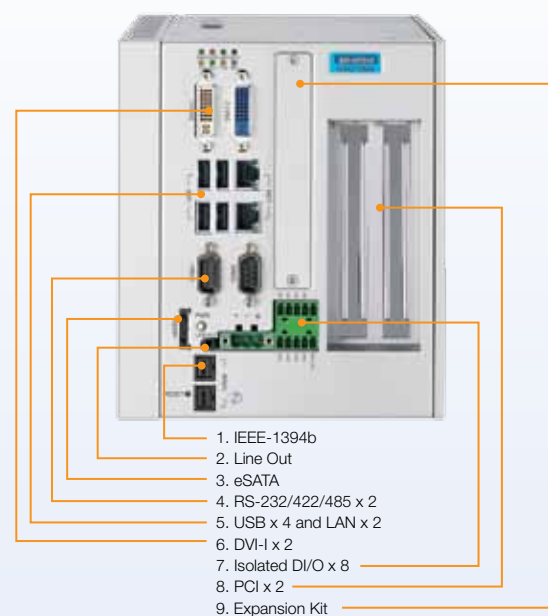
UNO-3084

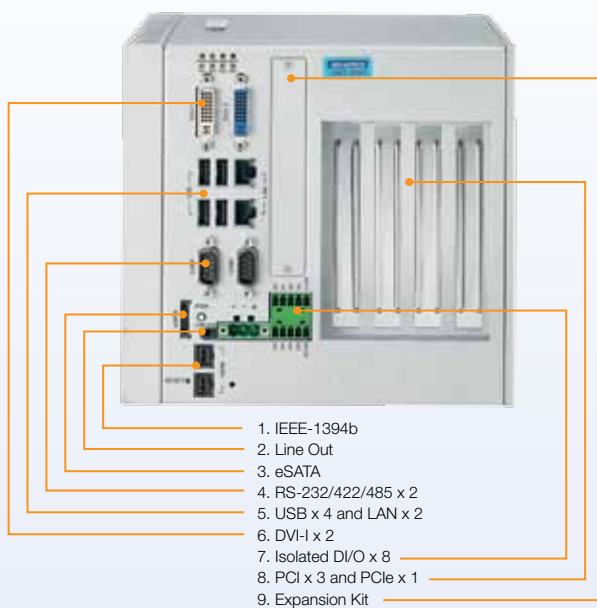Intel Core 2 Duo Automation Computer
with 3 x PCI and 1 x PCIe

Triple Displays | IEEE 1394b | Isolated DI/O | -10~55°C

1. IEEE-1394b
2. Line Out
3. eSATA
4. RS-232/422/485 x 2
5. USB x 4 and LAN x 2
6. DVI-I x 2
7. Isolated DI/O x 8
8. PCI x 3 and PCIe x 1
9. Expansion Kit

UNO-3200 Series Introduction & Features

High-performance Automation Computers with PCI/PCIe Expansion

- Superior Thermal Design Maintains System Temperature even during Full CPU & I/O Loads
- Dual DVI/VGA Displays, Dual Teaming-Capable Gigabit Ethernet Ports
- Battery-backup SRAM Saves Process Data in the Event of Power Failure
- Dual SATA HDDs with RAID 0/1 Support and Dual CF Slots
- PCI/PCIe Expansion with Card Retainer

Ruggedized Design

No cabling or moving parts are present, guaranteeing system resilience in harsh environments.

LED Indicators for System & I/O Status

There are 16 LED system indicators and four programmable LEDs in the front panel. They are designed to help users to get system profile information at a glance and trigger user-defined alarm messages via programmable LEDs.
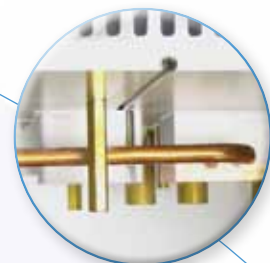
UNO-3272/3282

Intel Core 2 Duo/ Celeron M Automation Computers with 2 x PCI/ 1 x PCI and 1 x PCIe

`Dual GbE` `-20~60°C`

1. External CF
2. RS-232 x 2
3. USB x 4
4. LAN 1~2 LINK/ACT LEDs
5. COM 1~4 Tx / Rx LEDs
6. Programmable LED x 4

1. PCI/PCIe or PCI x 2
2. GigaLAN x 2
3. Audio
4. KB/MS
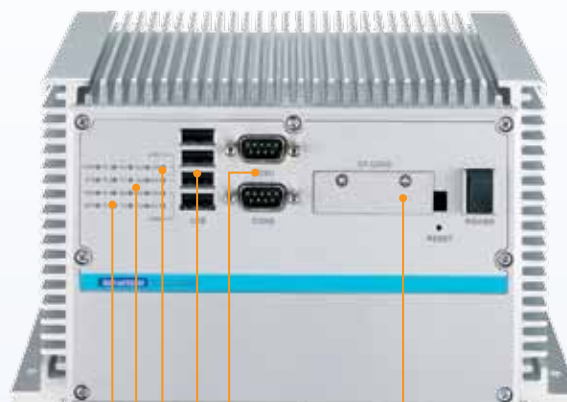5. DVI-D/VGA
6. RS-232/422/485 x 2

Superior Thermal Design

The UNO-3200 series' superior thermal design combines industrial-grade heat sinks and heat pipes to efficiently manage the system temperature.
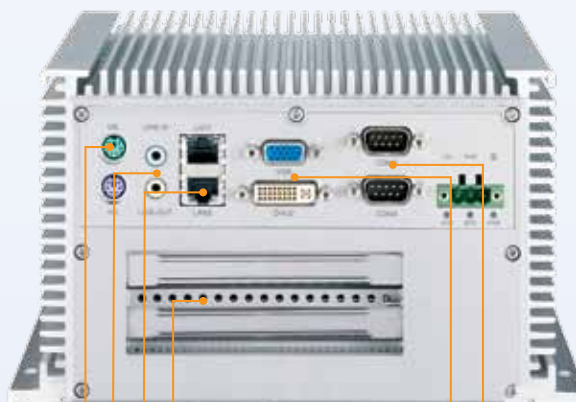
RAID 0/1 Support

With an additional RAID controller or optional onboard RAID functionality, data can be completely backed up using the RAID 1 mirror function.

PCI Express and PCI Expansion

Next-generation PCI Express allows users to install high-speed I/Os & control boards. The UNO-3200 series offer both PCI and PCIe expansions.
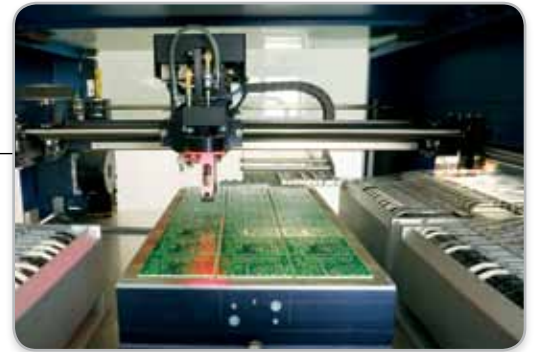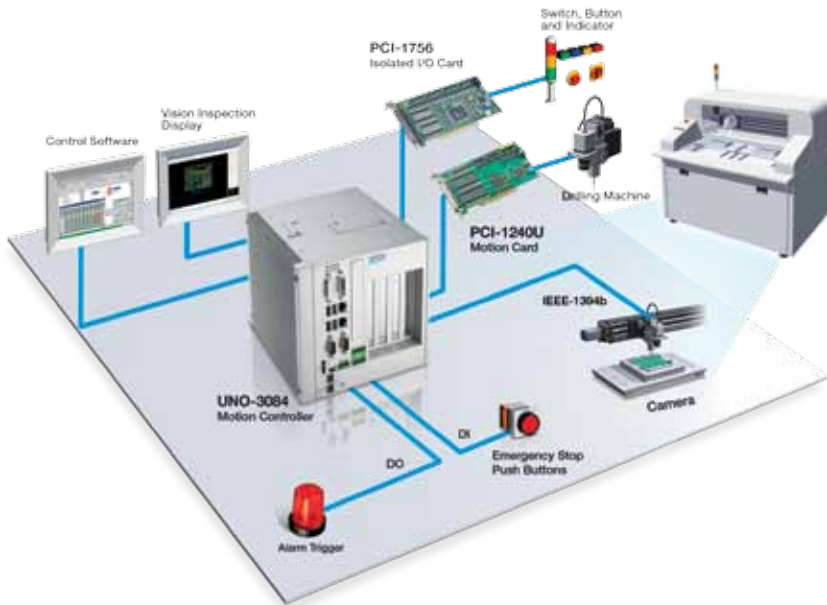
Motion Vision Controller in PCB Inspection Machines

UNO-3084

Machine Vision in PCB Optical Inspection

- Onboard IEEE-1394b/ GbE to attach cameras for machine vision inspection
- Triple displays for inspection software, running status and inspection images
- Intel Power Core 2 Duo computing engine for intense visualization tasks
- PCI/PCIe slots for I/Os and motion cards

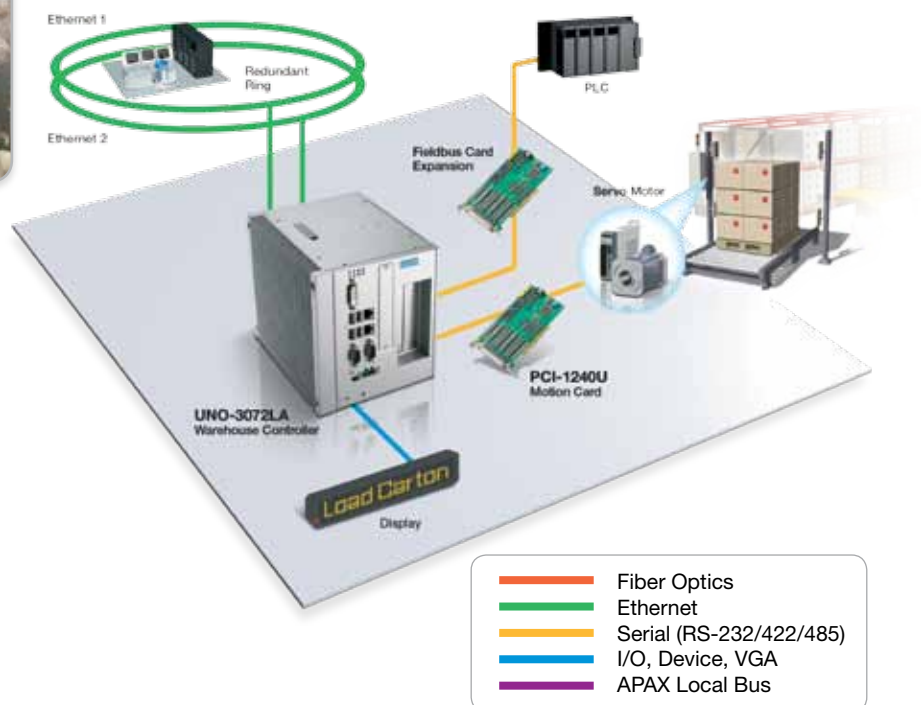# Dispatch System in Warehouse Automation

UNO-3072LA

Logistic Handling System

- 2 PCI slots for motion card to Servo motor and Fieldbus card expansion
- RS-485 COM port for LED display for inventory status
- Teaming function to ensure central control network

▬	Fiber Optics
▬	Ethernet
▬	Serial (RS-232/422/485)
▬	I/O, Device, VGA
▬	APAX Local Bus

UNO-3000/3200 Series Selection Guide

Model Name	UNO-3072LA	UNO-3072A/3074A	UNO-3083G/3073G/GL UNO-3085G/3075G/GL	UNO-3082	UNO-3084	UNO-3282
CPU	Intel Atom N270, 1.6 GHz	Intel Atom Dual Core D510, 1.66 GHz	Intel Celeron 847/807UE/ Core i7-2655LE, 1.1 GHz/1.0 GHz/2.2 GHz	Intel Core 2 Duo L7500, 1.6 GHz	Intel Core 2 Duo L7500, 1.6 GHz	Intel Celeron M, 1.86 GHZ Intel Core 2 Duo, 1.5 GHz
Onboard RAM	1G/2G DDR2 SRAM	2G DDR2 SRAM	4G/ 8G DDR3 SRAM	2G/4G DDR2 SRAM	2G/4G DDR2 SRAM	1G DDR2 SRAM
Battery-Backup SRAM	-	512 KB	-	512 KB	512 KB	512 KB
Display	DVI-I	VGA	DVI-I/HDMI/DP	2 x DVI-I up to 3 displays	2 x DVI-I up to 3 displays	VGA + DVI-D
Audio	5.1 channel HD Line out	5.1 channel HD Line out	5.1 channel HD Mic in, Line out	5.1 channel HD Line out	5.1 channel HD Line out	5.1 channel HD Line out
Serial Ports	2 x RS-232 (pin header) 2 x RS-232/422/485	2 x RS-232 (pin header) 2 x RS-232/422/485	2 x RS-232 (pin header) 2 x RS-232/422/485	2 x RS-232 (pin header) 2 x RS-232/422/485	2 x RS-232 (pin header) 2 x RS-232/422/485	2 x RS-232 2 x RS-232/422/485
Ethernet Ports	2 x 10/100/1000Base-T	2 x 10/100/1000Base-T	2 x 10/100/1000Base-T	2 x 10/100/1000Base-T	2 x 10/100/1000Base-T	2 x 10/100/1000Base-T
USB Ports	4 external, 1 internal, 2 x pin headers	4 external, 1 internal 2 x pin headers	8 external, 1 internal	4 external, 1 internal 2 x pin headers	4 external, 1 internal 2 x pin headers	4 external, 1 internal
Onboard I/O	-	4-ch iso. DI/DO 2 x type B IEEE 1394	-	4-ch iso. DI/DO 2 x type B IEEE 1394	4-ch iso. DI/DO 2 x type B IEEE 1394	-
2.5 HDD	1 x SATA, 1 x eSATA	2 x SATA (RAID 0/1) 1 x eSATA	2 x SATA (RAID 0/1)	2 x SATA (RAID 0/1) 1 x eSATA	2 x SATA (RAID 0/1) 1 x eSATA	2 x SATA (RAID 0/1)
Expansion	2 x PCI	2 x PCI	PClex16 + 2 x PCI PClex16 + 4 x PCI	2 x PCI	3 x PCI 1 x PCIe	1 x PCI 1x PCIe / 2 x PCI
CompactFlash Slots	1 internal, 1 external	1 internal, 1 external	1 internal, 1 external	1 internal, 1 external	1 internal, 1 external	1 internal, 1 external
Power Input Range	9 ~ 36 VDC	9 ~ 36 VDC	9 ~ 36 VDC	9 ~ 36 VDC	9 ~ 36 VDC	9 ~ 36 VDC
Operating Temperature	-10 ~ 60°C	-10 ~ 60°C	-10 ~ 60°C	-10 ~ 55°C	-10 ~ 55°C	-20 ~ 60°C
Power Consumption	20 W	25 W	UNO-3073GL/3075GL: 20W UNO-3073G/3075G: 30W UNO-3083G/3085G: 40W	40 W	40 W	40 W
Dimension (W x D x H)	140 x 238 x 177 mm	140 x 238 x 177 mm	UNO-3083G/3073G/GL: 148 x 238 x 177 mm UNO-3085G/3075G/GL: 193 x 238 x 177 mm	157 x 238 x 177 mm	195 x 238 x 177 mm	200 x 240 x 130 mm

Accessories

UNO-PM70	UNO-SM70	UNO-WM72	UNO-WM74	UNO-PM80	UNO-SM80	UNO-WM80	DiagAnywhere
Panel mounting kit for UNO-3000 series	Stand mounting kit for UNO-3000 series	Wallmounting kit for UNO-3072/3072L	Wallmounting kit for UNO-3074	Panel mounting kit for UNO-3082/3084	Stand mounting kit for UNO-3082/3084	Wallmounting kit for UNO-3082/3084/3072LA	DiagAnywhere Remote Management and Control Utility

Ordering information

UNO-3072LA-A12E	Intel Atom N270 1.6 GHz, 1G RAM
UNO-3072LA-A13E	Intel Atom N270 1.6 GHz, 2G RAM
UNO-3072A-A33E	Intel Atom Dual Core D510 1.66 GHz, 2G RAM
UNO-3074A-A33E	Intel Atom Dual Core D510 1.66 GHz, 2G RAM
UNO-3082-D23E	Intel Core 2 Duo 1.6 GHz, 2G RAM
UNO-3082-D24E	Intel Core 2 Duo 1.6 GHz, 4G RAM
UNO-3084-D23E	Intel Core 2 Duo 1.6 GHz, 2G RAM
UNO-3084-D24E	Intel Core 2 Duo 1.6 GHz, 4G RAM
UNO-3272-C32E	Intel Celeron M 1.86 GHz, 1G RAM
UNO-3282-D12E	Intel Core 2 Duo 1.5 GHz, 1G RAM

Accessories Ordering information

UNO-PM70-AE	Panel mounting kit for UNO-3000 series
UNO-SM70-AE	Stand mounting kit for UNO-3000 series
UNO-WM72-AE	Wallmounting kit for UNO-3072/3072L
UNO-WM74-AE	Wallmounting kit for UNO-3074
UNO-WM80-AE	Wallmounting kit for UNO-3082/3084/3072LA
UNO-PM80-AE	Panel mounting kit for UNO-3082/3084
UNO-SM80-AE	Stand mounting kit for UNO-3082/3084
PCLS-DIAGAW10	DiagAnywhere Remote Management and Control Utility
9663308401E	USB x 2 for UNO-3000 series
9663308402E	LPT x 1 for UNO-3000 series
9663308403E	RS-232 COM port x 2 and PS2 x 1 for UNO-3000 series

UNO-4600 Series Introduction & Features

Substation Automation Computers

- IEC 61850-3 and IEEE 1613 Standards for Smart Grid Applications
- Compact 2U Rackmount Form Factor to Fit Substation Environments
- Advanced Monitoring and Alarm Features to Ensure Best System Stability
- 3 Expansion Slots for Adding Domain I/Os
- Dual power supplier for system power backup

Substation Domain I/O Modules

The UNO-4600 series are equipped with channel-to-channel isolated COM ports and 3 expansion slots for domain I/O modules, such as IRIG-B and Fiber Optic.

-20~70°C Wide Operating Temperature Range

Every Embedded Automation Computer is equipped with a tailor-made thermal design for its onboard CPU and RAM. To guarantee its best quality, every Embedded Automation Computer is also required to go through a complete thermal test procedure.

Advanced Monitoring and Alarm Function

The UNO-4673A/4683 provide the multi-tier watchdog timer and DO trigger by events. Also, Advantech DiagAnywhere utility enables remote management and diagnosis.

IEC 61850-3 and IEEE 1613 Compliant

The UNO-4600 series have robust design on power circuitry, I/O lines, etc., to protect the system from electromagnetic interference in critical substation environments.
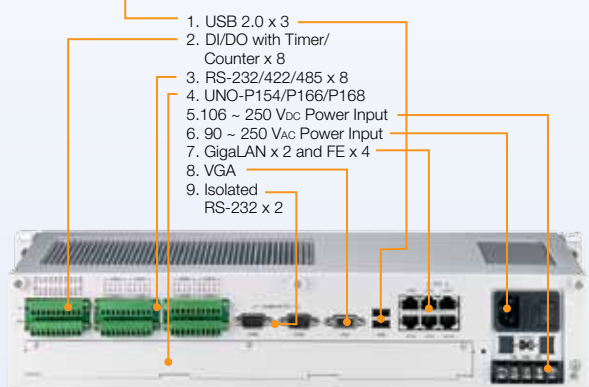
UNO-4672

Intel Celeron M/ Pentium M Automation Computer with 10 x COM, 6 x LAN
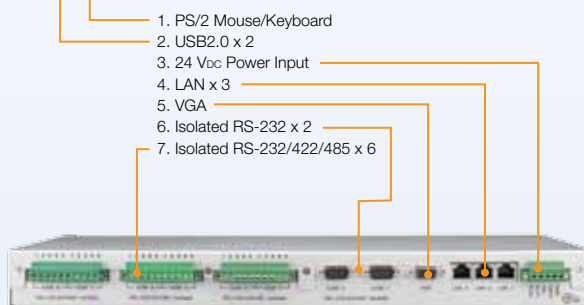
PC/104+　　Isolated DI/O　　-20~65°C

1. USB 2.0 x 3
2. DI/DO with Timer/ Counter x 8
3. RS-232/422/485 x 8
4. UNO-P154/P166/P168
5. 106 ~ 250 V_{DC} Power Input
6. 90 ~ 250 V_{AC} Power Input
7. GigaLAN x 2 and FE x 4
8. VGA
9. Isolated RS-232 x 2

UNO-4678

Intel Celeron M Automation Computer with 8 x COM, 3 x LAN

1U Rack　　10~55°C

1. PS/2 Mouse/Keyboard
2. USB2.0 x 2
3. 24 V_{DC} Power Input
4. LAN x 3
5. VGA
6. Isolated RS-232 x 2
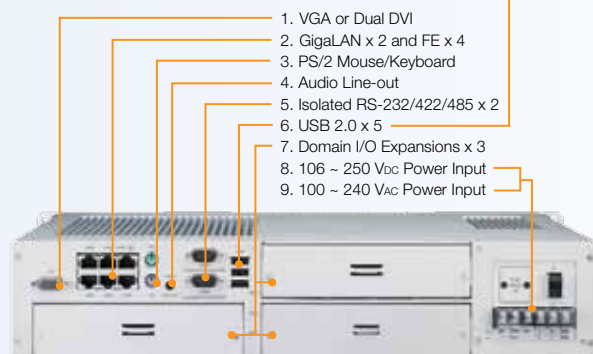7. Isolated RS-232/422/485 x 6

UNO-4673A/UNO-4683

Intel Atom D510/ Core i7 Automation Computers with Domain I/O Expansions
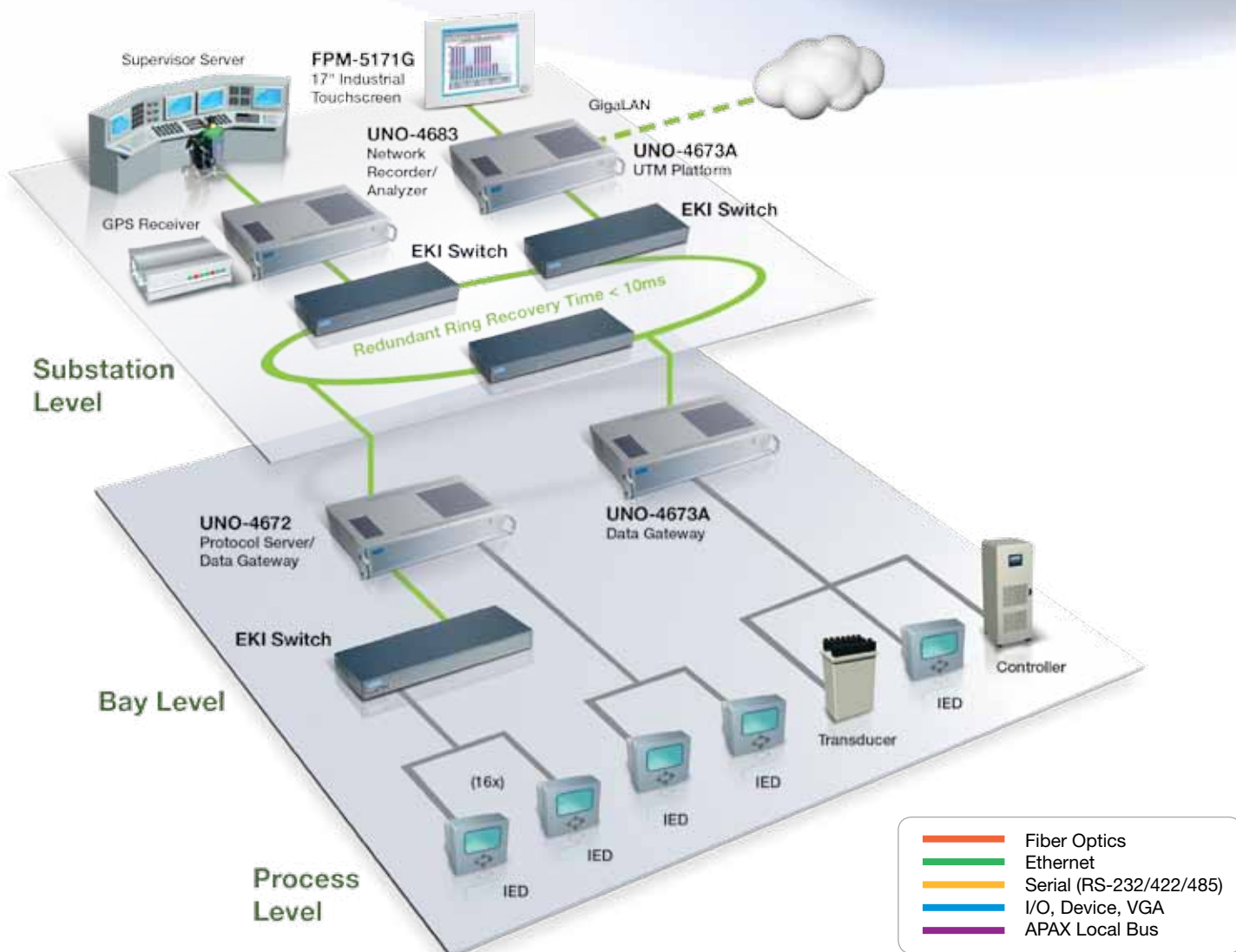
Dual GbE　　Quad FE　　-20~70°C

IEC61850

1. VGA or Dual DVI
2. GigaLAN x 2 and FE x 4
3. PS/2 Mouse/Keyboard
4. Audio Line-out
5. Isolated RS-232/422/485 x 2
6. USB 2.0 x 5
7. Domain I/O Expansions x 3
8. 106 ~ 250 V_{DC} Power Input
9. 100 ~ 240 V_{AC} Power Input

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Certified Automation Computers in Modern Substations of Smart Grids

Certified Platforms with Domain I/Os to Fulfill Communication Gateway, Network Recorder Analyzer, and Unified Threat Management System in Substations

- Advanced robust design on power circuitry and I/O lines to protect the system from electromagnetic interference
- Provides versatile domain I/O modules, such as isolated COM ports, IRIG-B and Fiber Optic to fulfill the I/O requirements of different application scenarios
- Fiber Optic module for Unified Threat Management (UTM) System
- Smart LAN module implemented by high-speed I/O technology to record and analyze IEC 61850 network packets

Supervisor Server

FPM-5171G
17" Industrial
Touchscreen

GigaLAN

UNO-4683
Network
Recorder/
Analyzer

UNO-4673A
UTM Platform

EKI Switch

GPS Receiver

EKI Switch

Redundant Ring Recovery Time < 10ms

Substation Level

UNO-4672
Protocol Server/
Data Gateway

UNO-4673A
Data Gateway

EKI Switch

Controller

IED

Transducer

IED

Bay Level

(16x)

IED

IED

IED

Process Level

IED

▬▬▬	Fiber Optics
▬▬▬	Ethernet
▬▬▬	Serial (RS-232/422/485)
▬▬▬	I/O, Device, VGA
▬▬▬	APAX Local Bus

UNO-4600 Series Selection Guide

NEW

Model Name	UNO-4671A	UNO-4672	UNO-4673A / UNO-4683	UNO-4678
CPU	Intel Atom Dual Core D510, 1.66 GHz	Intel Celeron M, 1.0 GHz Intel Pentium M, 1.4 GHz	Intel Atom Dual Core D510, 1.67 GHz Intel Core i7 620LE, 2.0 GHz	Intel Celeron M, 1.0 GHz
Onboard RAM	2 GB DDR2 SDRAM	1G DDR SRAM	2G DDR2/4G DDR3 SRAM	512MB/1G DDR SRAM
Battery-Backup SRAM	-	512 KB	1 MB	512 KB
Display	VGA	VGA	VGA/ DVI-I + DVI-D	VGA
Serial Ports	2 x iso. RS-232, 4 x iso. RS-422/485 4 x iso. RS-485	2 x iso. RS-232 8 x iso. RS-232/422/485	2 x iso. RS-232/422/485	8 x iso. RS-232/422/485
Ethernet Ports	6 x 10/100Base-T	2 x 10/100/1000Base-T 4 x 10/100Base-T	2 x 10/100/1000Base-T 4 x 10/100Base-T	3 x 10/100Base-T
USB Ports	3 external, 1 internal	3 external, 1 internal	5 external, 1 internal	2 external
Onboard I/O	-	8-ch iso. DI 8-ch iso. DO	-	-
2.5 HDD	1 x SATA	1 x SATA	1 x SATA	2 x IDE
Expansion	PCI-104	PC/104+	3 x expansion slots Optional for PCI, PCI-104, Mini PCI, Mini PCIe	PC/104
CompactFlash Slots	1 internal	2 internal	1 internal	1 internal
Power Input Range	100 ~ 240 V$_{AC}$ 100 ~ 240 V$_{DC}$	90 ~ 250 V$_{AC}$ (47~400 Hz) 106 ~ 250 V$_{DC}$	106 ~ 250 V$_{AC}$ (47~63Hz) 100 ~ 240 V$_{DC}$	9 ~ 36 V$_{DC}$
Operating Temperature	-20 ~ 60°C	-20 ~ 65°C	-20 ~ 70°C	-10 ~ 55°C
IEC-61000-4-2: ESD	Contact 8KV Air 15KV	Contact 8KV Air 15KV	Contact 8KV Air 15KV	Contact 4KV Air 8KV
IEC-61000-4-3: RS	30 V/m	35 V/m	35 V/m	10 V/m
IEC-61000-4-4: EFT	4KV	4KV	4KV	2KV
IEC-61000-4-5: Surge	4KV	5KV	5KV	5KV
Power Consumption	30 W	45 W	45 W	24 W
Dimension (W x D x H)	440 x 220 x 88 mm	440 x 220 x 88 mm	440 x 280 x 88 mm	440 x 220 x 44 mm

Ordering information	
UNO-4671A-A33E	Intel Atom Dual Core D510 1.66 GHz, 2G DDR2 RAM
UNO-4672-C12E	Intel Celeron M 1.0 GHz, 1G DDR RAM
UNO-4672-P12E	Intel Pentium M 1.4 GHz, 1G DDR RAM
UNO-4678-C11E	Intel Celeron M 1.0 GHz, 512MB DDR RAM
UNO-4678-C12E	Intel Celeron M 1.0 GHz, 1G DDR RAM
UNO-4673A-A33E	Intel Atom Dual Core D510 1.66 GHz, 2G DDR2 RAM
UNO-4683-D34E	Intel Core i7 2.0 GHz, 4G DDR3 RAM

Accessory Ordering Information	
UNO-P154-AE	2-port Fiber Optic LAN, 4-port Fiber Optic Smart LAN card, 1-port IRIG-B
UNO-P166-AE	6-port RS-232/422/485 w/ Iso. and EFT, 1-port IRIG-B
UNO-P168-AE	8-port RS-232/422/485 w/ Iso. and EFT
UNOP-1000I-AE	Expansion card for standard PCI and Mini PCI card
UNOP-1000J-AE	Expansion card for standard PCI-104 and Mini PCIe card
UNOP-1514C-AE	4-port Fiber Optic LAN card
UNOP-1618D-AE	8-port RS-232/422/485 w/EFT protection
UNOP-1628D-AE	8-port RS-232/422/485 w/Iso and EFT
UNOP-1624D-AE	4-port RS-232/422/485 w/Iso and EFT, 1-port IRIG-B

Domain I/O Modules for UNO-4672

UNO-P154	UNO-P166	UNO-P168
• 2 x LAN 100Base-FX • 4 x Smart LAN 100Base-FX (SC type Multi-mode)	• 6 x Iso. RS-232/422/485 • IRIG-B,TTL w/ BNC connector • IRIG-B,RS-485w/ DB9 • PCI-104	• 8 x Iso. RS-232/422/485 • LED indicators • PCI-104

Domain I/O Modules for UNO-4673A & UNO-4683

UNOP-1000I	UNOP-1514C	UNOP-1624D	UNOP-1618D/ UNOP-1628D
• PCI slot (PCI 2.2) • Mini PCI card slot **UNOP-1000J** • PCI-104 • Mini PCIe card slot	• LAN 100Base-FX • Distance : Up to 2 km • IEEE 802.3, 802.3u, 802.3x • Wavelength : 1310 nm • 4 x SC type Multi-mode Fiber	• 4 x COM (DB9) • Selectable RS-232-/422/485 • Isolation 2000V$_{DC}$ • EFT protection 2000V$_{DC}$ • Automatic RS-485 Data Flow Control • IRIG-B via RS-485, TTL, Fiber, BNC	• 8 x COM (DB9) • Selectable RS-232/422/485 • Isolation 2500V$_{DC}$ (UNOP-1628D only) • EFT protection 2500V$_{DC}$ • Automatic RS-485 Data Flow Control

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