

Embedded Automation Computers

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Embedded Automation Computer Overview

Introduction

Advantech's Embedded Automation Computers are designed to fulfill the needs of mission critical automation applications. Their embedded design, industrial automation features and advanced computer technology deliver robustness, reliability and flexibility to satisfy customers who are looking for a rugged & compact computing platform with an industrial design and built-in I/O for diverse automation applications.

Leveraging field-approved and worldwide accepted real-time OS technology, Advantech provides Windows CE, Windows XP Embedded and Embedded Linux ready solutions and supports several standard networking interfaces, such as Ethernet, RS-232/422/485, onboard I/O lines, CANbus and more. Because of their open architecture, great expansion capability and reliable fanless, cable-less and diskless design, Advantech's Embedded Automation Computers are ideal platforms to implement diverse custom applications in power and energy, transportation, machine automation, factory automation, building automation, facility monitoring system, and environment monitoring vertical markets.

Features

Fanless Design

Advantech's Embedded Automation Computers are robust computers without rotating parts, such as a CPU fan, system fan, power supply fan or HDD. This concept significantly increases reliability, extends MTTR, and extremely reduces maintenance efforts. Therefore, you don't need to worry about a CPU cooler or HDD failure issue anymore, even in dusty environments.

For applications that require mass storage, we also provide dual HDD with built-in RAID 1 feature that ensures data well kept once one of HDDs is failed during operation.

No Internal Cabling

Unlike general Box PC designs where cables are used for wiring between connectors and CPU boards, connectors on Advantech's Embedded Automation Computers are soldered directly on the PCB. Therefore, there is no internal cabling inside the chassis. This makes Advantech's Embedded Automation Computers much more reliable than general Box PC's in harsh environments.

Energy Star

Advantech's Embedded Automation Computers have been certified by Energy Star, recognizing their extreme low power consumption and high energy utilization. To build a low-carbon society everyone needs to do their best.

Industrial-grade Power Design

Advantech's Embedded Automation Computers are designed to accept wide DC power input (ex. 9 ~ 36 V_{DC}) in factory floors. In addition, they also feature power reversal protection that prevents system damage when power inputs are reversed.

Grounding Isolation Between Chassis and System

By adapting the feedback of industrial field site, Advantech's Embedded Automation Computers provide an isolated ground between the system and field. This feature can increase the stability to the entire system structure and is also important for constructing larger systems.

Industrial-grade RS-232/422/485 Design

Advantech's Embedded Automation Computers provide professional serial communication ports. They not only have patented RS-485 auto-flow control technology, but also have the enhanced drivers under the embedded Windows system which provides better capabilities than traditional drivers and support any -baud-rate function for the Oxford UARTs.

Wide Operating Temperature Range

This series supports wide operating temperature up to 75°C through selecting low-voltage CPU and industrial-grade components as well as associated thermal design that meets critical industrial-grade applications.

For the extremely low temperature environment, ex. -40°C, we can also offer the optional module to sense the temperature and control the system heating and booting sequence.

Non-volatile Memory

To keep critical data alive when system power is lost, Advantech's Embedded Automation Computers are equipped with onboard battery-backup memory. Onboard battery supplies power to keep memory operating all the time. In addition, we also provide the new FeRAM technology in a Mini PCIe card form factor. FeRAM have similar behavior of SRAM, but without the need a battery to keep the data, it can support up to 100 trillion read/writes times.

Hardware Switchable AT/ATX Power Mode

AT and ATX are two kinds of power management modes. AT features PC on/off capability, which can be controlled through an external power line. On the other hand, ATX features the capability of turning on/off PCs through Hardware/Software triggering signal, such as Wake on LAN. In Advantech's Embedded Automation Computers, these modes are hardware-based, which serves as a more reliable method.

Plug-and-Display VGA Port

The VGA port in Advantech's Embedded Automation Computers is designed to be ready for display anytime, even when the VGA monitor is not attached while booting up.

Wide Form Factor Selections to Fit Application Environments

These Embedded Automation Computers provide different form factors to fulfill the requirements and scenario of different automation applications. Simply classification: UNO-2000/2100 series are for MES (Manufacturing Execution System)/Thin Client Markets; UNO-1000/3000 series are for Machine Automation/ Facility Automation; UNO-4600 series are for Power and Energy Markets.

Mini PCIe Card Slot Enables Wireless and Fieldbus Communication

New Embedded Automation Computers are equipped with one or more Mini PCIe card slots, which can easily adopt the popular wireless modules, such as Wifi, mobile networking (GSM/GPRS/3G) and GPS modules. For industrial automation applications, this is also an easy and compact interface to integrate fieldbus cards.



Embedded OS Introduction and Driver Support

Supports Many Operating Systems

Advantech's Embedded Automation Computers not only support the popular Windows operating system, but also provide embedded operating system solutions offering a pre-configured image with optimized onboard device drivers. Advantech's Embedded Automation Computers provide the following most popular embedded operating systems:

- Windows CE 5.0
- Windows CE 6.0 R2
- Windows XP Embedded
- Windows Embedded Standard (WES)
- Advantech Embedded Linux

These operating systems fulfill the toughest requirements of complete functionality, high reliability, minimized cost and low power consumption. These Embedded Automation Computers quickly prove themselves to be application-ready platforms that save time and energy in launching projects.

Real-Time Windows CE Meets Time-critical Demands

Windows CE, published by Microsoft, is a robust, compact and highly efficient real-time operating system that quickly satisfies any customized high-performance embedded applications. It also provides enterprise-scale protection with demanding network security mechanisms, including Kerberos Security Protocol, Extensible Authentication Protocol, Secure Sockets Layer (SSL) and so on. Furthermore, Windows CE supports the latest stack network standard, IPv6 that provides more IP addresses than the previous standard, IPv4. Windows CE possesses robust core OS services and complete networking services to offer users an ideal embedded development platform.

WinCE Powered by Wonderware Offers Flexible HMI

WinCE 6.0 R2 version for the UNO series meets Wonderware's HMI Software's system requirement. With the HMI software support, these computers can work as HMI or control nodes. With the provided VESA mounting kit they 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.

WES Provides Applications Compatible to Windows XP

Windows Embedded Standard (WES) is a new name of WinXPe which is a componentized version of Windows XP Professional. It is based on Windows XP Professional binaries and features the latest multimedia (Windows Media Player 11, DirectX 9.0c), browsing (Internet Explorer 7.0) technologies, security, Remote Desktop Protocol 6.0 and File Based Write Filter (EBWF). You can seamlessly integrate specific applications into WES with minimum effort.

Open Source Embedded Linux Offers a Cost-effective Alternative

Embedded Linux is a famous, UNIX compatible, open source embedded operating system which ports the Linux kernel to a specific CPU and board installed into the embedded device. Advantech offers Embedded Linux installation CD for the UNO series products and supports Fedora Core 8 and RedHat 9.0 kernels. In the Embedded Linux, it features read-only file system, real-time kernel, on-line update, X Windows, browsing (Dillo), PDF viewer (XPDF), FTP (GFTP), IPv6 and software management (RedHat Package Manager) in 128MB image size.

Driver Packages Provided for QNX and Popular Linux Distributions

Customers can install QNX and standard Linux distributions on the UNO series Embedded Automation Computers and Advantech provides drivers for the following self-design hardware or IO:

- Serial COM ports with Oxford UART
- CAN port
- Watchdog Timer
- Battery-backup SRAM
- Digital IO ports

To follow the GNU's open source code policy, Advantech provides driver source codes for compiling and installing popular Linux distributions as well as QNX 6.3.2 and 6.4.1. Customers can easily get it in the companion DVD and on the web site.

Standard Windows Support up to Windows 7

Advantech's Embedded Automation Computers provide necessary drivers on the companion DVD for users to install popular Windows operating systems, such as Windows 2000, Windows XP Pro, even the latest Windows 7. For the self-design hardware or IO, Advantech provides the WDM (Windows Driver Model) drivers which is the standard driver architecture of Windows. WDM drivers would work on the other new Windows system as long as WDM is supported.

Software Drivers & Utilities

Advantech's Embedded Automation Computers provide more value to automation users. By accumulating years of field-experience and collecting customer's feedback, we had developed several convenient and high-efficient driver/utility which would highly facilitate users to manage the Embedded Automation Computers.

DiagAnywhere for Cluster Management

Users usually need to manage a cluster of the UNO series units on the field site. Advantech DiagAnywhere provides the following functions for users to manage them easily:

- Remote monitoring, control, shutdown and wakeup
- Screen capture and recording
- File transferring

Every UNO series' Windows-based embedded system, such as WinCE, WES and WinXPe comes bundled with DiagAnywhere. Users only need one client-end utility installed on the PC or laptop then they can do the remote monitor and diagnosis easily.

Non-volatile Memory, Useful Buffer for Controller Application

In some control applications, users need quick and reliable buffers for data transferring. The UNO series provide the non-volatile memory, such as battery-backup SRAM or the FeRAM. With the driver support, users can use memory easily just like a local drive. It can also be used as a quick buffer, not only with high read/write efficiency, but it also can reduce the accessing frequency of CompactFlash.

EBWF/FBWF Utility Protects the System

In the provided WES and WinXPe image of the UNO series, we provide a friendly utility which has clear interface to guide users active/inactive the EBWF (Enhanced Write Filter) and FBWF (File-Based Write Filter) functions step by step. EBWF and FBWF are the features provided by Microsoft. They are used to protect the WES or WinXPe from damage. While these functions are active, the specified drive or folder would never be written, and everything would be back to the original configuration after reboot. Empowered by the provided utility, users can utilize the EBWF/FBWF easily.

System Utilities for Status-Monitoring and Availability

Users in industrial fields usually need to monitor the system status. The UNO series provide the LMSensor driver/utility for users to monitor the system parameters, such like the Temperature of CPU/Board and Voltage of system power source. Also, we provide the WDT (Watchdog Timer) driver/utility to increase the availability of the system. WDT would reset the system or send alarm while the system is stuck on some accident events. For both functions, LMSensor and WDT, we also provide the APIs for users to integrate into their applications.

Enhanced COM Port Driver Meets the Industrial Requirements

In the WinCE of the UNO series, we developed enhanced COM port driver which is more time-efficient than standard driver. It can not only increase the communication efficiency but also reduce the CPU loading. In addition, the WDM driver of COM port with Oxford UART supports the function of any-baud-rate. This function is able to support any baud rate users want for specific applications and prevent data loss.

Driver/Utility Support for Fieldbus and Domain I/O

As a domain-focused automation computer provider, Advantech provides a series of value-added software to fulfill the demand of the fieldbus and domain I/O, including EtherCAT Master, CANOpen, Modbus OPC Server and IRIG-B.

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Fieldbus Master UNO Introduction

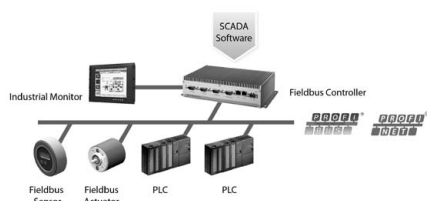
Overview

In a complex automation industrial system, fieldbus is a reliable and real time communication protocol designed to link with components, such as sensors, actuators, electric motors, switches, valves and contactors. As embedded automation computers, the UNO series, usually act as reliable data gateways, SCADA nodes or PC-base control nodes in industrial automation systems. However, in some scenarios, users may need real-time higher communication and reliability.

Target Applications

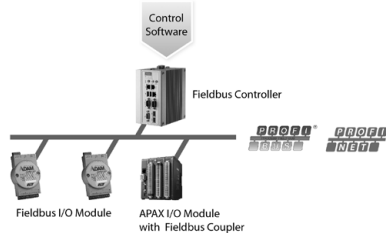
SCADA Node

Running SCADA software on the UNO series and collecting process data from industrial components through fieldbus.



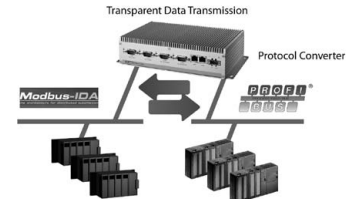
Control Node

Running Controller software on the UNO series to deliver the process action to lower level controllers or I/O devices.

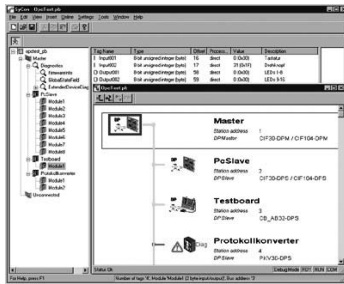


Protocol Converter

In between two or more fieldbus networks, the UNO series acts as a seamless translator for transparent data transmission.



Fieldbus Communication Technologies



The fieldbus master UNO series integrate Hilscher's NetX technology to build in the fieldbus protocol. Hilscher is a company with a field-proven record in industrial communications technology. With these intelligent solutions, the UNO series can manage the entire data transfer so that only useful data are passed on to user applications.

The UNO series support three types of popular fieldbus : PROFIBUS, PROFINET and EtherNet/IP. With these integrated solutions , it provides a powerful, easy to handle and reliable solution at a low-cost.

All protocols are configured using SyCon System Configurator. SyCon is a universal system configurator with a unified user desktop for all fieldbus. By using GSD, EDS or other device description files, graphical input of the individual bus participants, clearly structured menu guidance and automatic computations of the bus parameters; configuration is a very simple exercise. SyCon can be executed under Windows 95/98/ME and Windows NT/2000/ XP operating systems.

PROFIBUS Master

Slaves	Max. 125
Cyclic Data	Max. 7168 bytes
DPV1 Klass 1,2	Yes
Configuration Data	244 bytes/slave
Application-specific Parameters	237 bytes/slave

PROFINET I/O Controller

Cyclic Data	Max. 6144 bytes
Acyclic Data	Read/Write record, max. 4096 bytes/request
Functions	<ul style="list-style-type: none"> Alarm handling Context management over CLRPC DCP Max. 32 devices Minimum cycle time 1 ms Per device 1 puffer available for diagnostic data

EtherNet/IP Scanner/Master

Cyclic Data	Max. 11520 bytes
Unscheduled Data	Max. 504 bytes per telegram
Functions	<ul style="list-style-type: none"> Cyclic connection DHCP, BOOTP Max. 64 connections UCMM supported
Client Services	<ul style="list-style-type: none"> Get_Attribute_Single/All Set_Attribute_Single/All

Ordering Information

PROFINET:

- UNO-1172APN-A33E Intel Atom D510 1.66 GHz, 2 GB RAM DIN-rail PC w/ PROFINET
- UNO-2178APN-A33E Intel Atom D510 1.66 GHz, 2 GB RAM Automation PC w/ PROFINET
- UNO-2184GPN-D44E Intel Core i7-2655LE 2.2 GHz, 4 GB RAM Automation PC w/ PROFINET

PROFIBUS:

- UNO-1172APB-A33E Intel Atom D510 1.66 GHz, 2 GB RAM DIN-rail PC w/ PROFIBUS
- UNO-2178APB-A33E Intel Atom D510 1.66 GHz, 2 GB RAM Automation PC w/ PROFIBUS
- UNO-2184GPB-D44E Intel Core i7-2655LE 2.2 GHz, 4 GB RAM Automation PC w/ PROFIBUS

EtherNet/IP:

- UNO-1172AEI-A33E Intel Atom D510 1.66 GHz, 2 GB RAM DIN-rail PC w/ Ethernet/IP
- UNO-2178AEI-A33E Intel Atom D510 1.66 GHz, 2 GB RAM Automation PC w/ Ethernet/IP
- UNO-2184GEI-D44E Intel Core i7-2655LE 2.2 GHz, 4 GB RAM Automation PC w/ Ethernet/IP

Embedded Automation Computer Selection Guide

NEW



Model Name	UNO-1110/L/ST	UNO-1140/1140F	UNO-1150G/1150GE	UNO-1170A/1170AE	UNO-1172A/1172AE
CPU	TI Cortex A8 AM3505, 600 MHz	EVA-X4150 SoC 486SX grade, 150 MHz	AMD Geode LX800, 500 MHz	Intel Atom N270, 1.6 GHz	Intel Atom D510, 1.66 GHz
Onboard RAM	UNO-1110L: 128 MB DDR2 SDRAM UNO-1110ST: 256 MB DDR2 SDRAM	64 MB SDRAM	256 MB DDR SDRAM	1 GB DDR2 SDRAM	2 GB DDR2 SDRAM
Battery-Backup SRAM	-	-	-	512 KB	1 MB
Display	VGA (only UNO-1110/ST)	VGA	VGA	VGA	VGA
Audio	Line out (only UNO-1110ST)	-	Yes	Yes	Yes, 5.1 channel HD Audio
Serial Ports	UNO-1110L: 2 x RS-232/422/485 UNO-1110: 4 x RS-232/422/485, 1 x RS-485 UNO-1110ST: 4 x RS-232/422/485, 1 x RS-485, group isolation	UNO-1140: 4 x RS-232/485 UNO-1140F: 4 x isolated RS-232/485 4 x isolated RS-485	2 x RS-232 (one pin header reserved) 2 x RS-232/422/485	2 x RS-232 1 x RS-232/422/485	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 10/100Base-T	3 x 10/100/1000Base-T
USB Ports	UNO-1110L: One UNO-1110ST: Four	Two	Two	Four (One internal)	Four
PC Card Slots	-	-	-	-	-
Printer Ports	-	-	1 x LPT (pin header reserved for project)	-	-
PC/104 Expansion	-	(Project reserved PC/104)	2 x PCI-104 (UNO-1150GE)	2 x PC/104+ (UNO-1170AE)	2 x PC/104+ (UNO-1172AE)
PCIe/PCI Expansion	1 x Mini PCIe (w/ USB signal only)	-	1 x Mini PCI (UNO-1150GE)	1 x Mini PCI (UNO-1170AE)	1 x Mini PCIe (UNO-1172A)/ 1 x Mini PCIe + 1 x Mini PCI (UNO-1172AE)
Onboard I/O	UNO-1110L: N/A UNO-1110: 4-ch DI, 2-ch DO UNO-1110ST: 4-ch 1.5KV isolated DI, 2-ch 1.5KV isolated DO	-	-	-	2-ch DI, 6-ch DO
Watchdog Timer	Yes	Yes	Yes	Yes	Yes
CompactFlash Slots	-	One internal	One internal	One internal	One internal
2.5" HDD Expansion	-	-	1 x SATA (UNO-1150GE)	1 x SATA	1 x SATA
Operating Systems	Windows CE 6.0, Linux	UNO-1140: WinCE 5.0 & 6.0, Linux, DOS UNO-1140F: WinCE 5.0 & 6.0, Linux	Windows XP Embedded, Windows CE 5.0 & 6.0, Windows XP, Linux, QNX	Windows XP Embedded, Windows CE 5.0 & 6.0, Windows XP, Windows 7, Linux, QNX	Windows XP Embedded, Windows CE 5.0 & 6.0, Windows XP, Windows 7, Linux, QNX
Mounting	DIN-rail/Wall	DIN-rail/Wall	DIN-rail/Wall	DIN-rail/Wall	DIN-rail/Wall
Anti-Vibration	-	5 G w/CF	2 G w/CF, 1 G w/HDD	2 G w/CF, 1 G w/HDD	2 G w/CF, 1 G w/HDD
Anti-Shock	-	50 G w/CF	50 G w/CF, 20 G w/HDD	50 G w/CF, 20 G w/HDD	50 G w/CF, 20 G w/HDD
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	UNO-1110L: -10 ~ 70°C @ 5 ~ 85% RH UNO-1110ST: -40 ~ 80°C @ 5 ~ 85% RH	-20 ~ 75°C (-4 ~ 167°F)	-10 ~ 60°C (14 ~ 140°F)	-10 ~ 60°C (14 ~ 140°F)	-10 ~ 65°C (14 ~ 149°F)
Power Consumption Typical	Min. 8.5 W	10 W	15 W	24 W	24 W
Power Requirement	Min. 13 W	24 W, +24 V @ 1 A power input	24W, +24V @ 1 A power input	48 W, +24 V @ 2 A power input	48 W, +24V @ 2A power input
Dimensions (W x D x H)	48 x 127 x 152 mm (1.9" x 5" x 6")	71 x 139 x 152 mm (2.8" x 5.5" x 6")	71 x 139 x 152 mm (2.8" x 5.5" x 6")/ 96.5 x 139 x 152 mm (3.8" x 5.5" x 6")	85.5 x 139 x 152 mm (3.4" x 5.5" x 6")/ 111 x 139 x 152 mm (4.4" x 5.5" x 6")	85.5 x 139 x 152 mm (3.4" x 5.5" x 6")/ 111 x 139 x 152 mm (4.4" x 5.5" x 6")
Weight	0.45 kg	1.0 kg	1.6 kg / 2.0 kg	1.6 kg / 2.0 kg	1.6 kg / 2.0 kg
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* All power input ranges represent the minimum and maximum values recommended for these devices.

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Motion Control

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Hazardous Location

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Energy Automation

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Building Automation Systems

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Automation Software

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Automation Panel PCs

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Industrial Monitors

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Ethernet I/O

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DAQ Boards

Embedded Automation Computer Selection Guide



Model Name	UNO-2050G	UNO-2053GL	UNO-2059GL	UNO-2170	UNO-2171	UNO-2172
CPU	LX800, 500 MHz	LX800, 500 MHz	LX800, 500 MHz	Intel Celeron M, 600 MHz Intel Celeron M, 1.0 GHz	Intel Celeron M, 1.0 GHz Intel Pentium M, 1.4 GHz	Intel Celeron M, 1.5 GHz Intel Pentium M, 1.6 GHz
Onboard RAM	256 MB DDR SDRAM			256 MB/512 MB DDR SDRAM	512 MB/1 GB DDR SDRAM	1 GB DDR2 SDRAM
Battery-Backup SRAM	-			512 KB	512 KB	512 KB
Display	VGA					DVI-I
Audio	-	Yes	-	-	Yes	Yes
Serial Ports	2 x RS-232 2 x isolated RS-232/422/485	2 x RS-232	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	2 x RS-232 2 x RS-232/422/485
Ethernet Ports	2 x 10/100Base-T	2 x 10/100Base-T	1 x 10/100Base-T	2 x 10/100Base-T	2 x 10/100Base-T	2 x 10/100/ 1000Base-T
USB Ports	-	Two	Two	Two	Two	Two
PC Card Slots	-	-	-	One	-	-
Printer Ports	-	-	-	One	-	-
PC/104 Expansion	-	-	-	PC/104	PC/104+	PCI-104
PCIe/PCI Expansion	-	-	-	-	-	-
Onboard I/O	8-ch isolated DI 8-ch isolated DO	-	-	-	-	-
Watchdog Timer	Yes					Yes
CompactFlash Slots	One internal				Two internal	One internal
2.5" HDD Expansion	IDE (Optional)			1 x SATA	1 x IDE/SATA	1 x SATA
Operating Systems	Windows 2000/XP, WES-2009, CE 5.0 & 6.0, Linux, QNX					Windows 2000/XP/7, WES7, WES-2009, XPe, CE 5.0 & 6.0, Linux, QNX
Mounting	DIN-rail/Wall/VESA					
Anti-Vibration	2 G w/CF, 1 G w/HDD			2 G w/CF 0.5 G w/HDD	2 G w/CF, 1 G w/HDD	2 G w/CF, 1 G w/HDD
Anti-Shock	20 G w/CF @ DIN-rail 50 G w/CF @ Wall/Panel			50 G w/CF 20 G w/HDD	50 G w/CF 20 G w/HDD	50 G w/CF 20 G w/HDD
Power Input Range*	9 ~ 36 V _{DC}		10 ~ 48 V _{DC}	9 ~ 36 V _{DC}	10 ~ 53 V _{DC}	9 ~ 36 V _{DC}
Operating Temperature	-10 ~ 55°C (14 ~ 131°F)			-20 ~ 50°C (-4 ~ 122°F)	-20 ~ 65°C (-4 ~ 149°F)	-20 ~ 50°C (-4 ~ 122°F)
Power Consumption Typical	15 W			24 W	24 W	45 W
Power Requirement	24 W, +24 V @ 1 A power input			48W, +24V @ 2A power input	48 W, +24 V @ 2 A power input	48 W, +24 V @ 2 A power input
Dimensions (W x D x H)	188.8 x 106.5 x 35.5 mm (7.5" x 4.2" x 1.4")			255 x 152 x 50 mm (10" x 6.0" x 2.0")	255 x 152 x 59 mm (10" x 6.0" x 2.3")	255 x 152 x 69 mm (10" x 6.0" x 2.7")
Weight	0.8 kg			1.6 kg	2.4 kg	3.0 kg
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* All power input ranges represent the minimum and maximum values recommended for these devices.

Selection Guide

NEW



Model Name	UNO-2173A/AF	UNO-2174A/2178A	UNO-2176	UNO-2182	UNO-2174G/GL UNO-2184G
CPU	Intel Atom N270, 1.6 GHz	Intel Atom N450, 1.6 GHz Intel Atom D510, 1.66 GHz	Intel Celeron M, 1.0 GHz Intel Pentium M, 1.4 GHz	Intel Core 2 Duo, 1.5 GHz	UNO-2174G/GL: Intel Celeron 847/807UE, 1.1/1.0 GHz UNO-2184G: Intel Core i7-2655LE, 2.2 GHz
Onboard RAM	1 GB/2 GB DDR2 SDRAM	2 GB DDR2 SDRAM	512 MB DDR SDRAM	2 GB DDR2 SDRAM	4 GB/8 GB DDR3 SDRAM
Battery-Backup RAM	(1 MB reserved for project)	-	512 KB	512 KB	-
Display	VGA	VGA	VGA	DVI-I	DVI-I/HDMI/DP
Audio	UNO-2173A: N/A UNO-2173AF: Yes, 5.1 channel HD audio	Yes, 5.1 channel HD Audio	-	Yes	Yes, 5.1 channel HD Audio
Serial Ports	UNO-2173A: 2 x RS-232 UNO-2173AF: 2 x RS-232, 1 x RS-422/485	UNO-2174A: 2 x RS-232/485 UNO-2178A: 6 x RS-232/485 2 x RS-232/422/485	2 x RS-232 4 x isolated 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	UNO-2173A: 1 x 10/100/1000Base-T UNO-2173AF: 2 x 10/100/1000Base-T	2 x 10/100/1000Base-T	2 x 10/100Base-T	2 x 10/100/1000Base-T	4 x 10/100/1000Base-T
USB Ports	UNO-2173A : Two UNO-2173AF : Four	Six	Two	Two	Six
PC Card Slots	-	-	-	-	-
Printer Ports	(Pin-head reserved for project)	One (UNO-2174A)	-	-	-
PC/104 Expansion	-	PC/104+ PCI-104 (optional)	PC/104	PCI-104	PCI-104 (optional)
PCIe/PCI Expansion	1 x Mini PCIe	2 x Mini PCIe with 1 x SIM slot	-	-	2 x Mini PCIe with 1 x SIM slot
Onboard I/O	-	-	8-ch isolated DI 8-ch isolated DO	-	-
Watchdog Timer	Yes	Yes	Yes	Yes	Yes
CompactFlash Slots	One external	One external	One internal	One internal	One external
2.5" HDD Expansion	1 x SATA	1 x SATA	1 x IDE/SATA	1 x SATA	2 x SATA(optional)
Operating Systems	Windows 2000/XP, WES7, WES-2009, XPe, CE 5.0 & 6.0, Linux, QNX	Windows XP/7, WES7, WES-2009, CE 6.0, Linux, QNX	Windows 2000/XP, WES7, WES-2009, XPe, CE 5.0 & 6.0, Linux, QNX	Windows 2000/XP/7, WES7, WES-2009, XPe, CE 5.0 & 6.0, Linux, QNX	Windows XP/7, WES7, WES-2009, XPe, Linux, CE 6.0
Mounting	DIN-rail/Wall/VESA	DIN-rail/Wall/VESA	DIN-rail/Wall/VESA	DIN-rail/Wall/VESA	DIN-rail/Wall/VESA
Anti-Vibration	5 G w/CF, 1 G w/HDD	2 G w/CF, 1 G w/HDD	2 G w/CF, 1 G w/HDD	2 G w/CF, 1 G w/HDD	2 G w/CF, 1 G w/HDD
Anti-Shock	50 G w/CF 20 G w/HDD	50 G w/CF, 20 G w/HDD	50 G w/CF, 20 G w/HDD	50 G w/CF, 20 G w/HDD	50 G w/CF, 20 G w/HDD
Power Input Range*	9 ~ 36 V _{DC}	9 ~ 36 V _{DC}	9 ~ 36 V _{DC}		9 ~ 36 V _{DC}
Operating Temperature	-20 ~ 70°C (-4 ~ 158°F)	-10 ~ 70°C (14 ~ 158°F)	-20 ~ 65°C (-4 ~ 149°F)	-20 ~ 60°C (-4 ~ 140°F)	-10 ~ 60°C (14 ~ 140°F)
Power Consumption Typical	15 W	UNO-2174A: 12 W UNO-2178A: 16 W	24 W	35 W	UNO-2174G/GL: 30 W/ 20 W UNO-2184G: 40 W
Power Requirement	36 W, +24 V @ 1.5 A power input	36 W, +24 V @ 1.5 A power input	48 W, +24 V @ 2 A power input	48 W, +24 V @ 2 A power input	72 W, +24 V @ 3 A power input
Dimensions (W x D x H)	255 x 152 x 59 mm (10" x 6.0" x 2.3")	UNO-2174A: 255 x 152 x 50 mm (10" x 6.0" x 2.0") UNO-2178A: 255 x 152 x 59 mm (10" x 6.0" x 2.3")	255 x 152 x 59 mm (10" x 6.0" x 2.3")	255 x 152 x 69 mm (10" x 6.0" x 2.7")	255 x 152 x 69 mm (10" x 6.0" x 2.7")
Weight	2.5 kg	2.5 kg	2.4 kg	3.0 kg	3.0 kg
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* All power input ranges represent the minimum and maximum values recommended for these devices.

- 1 Motion Control
- 2 Hazardous Location
- 3 Energy Automation
- 4 Building Automation Systems
- 5 Automation Software
- 6 Operator Panels
- 7 Automation Panel PCs
- 8 Industrial Monitors
- 9 Industrial Ethernet
- 10 Device Servers & Gateways
- 11 Serial Communication Cards
- 12 Embedded Auto. Computers
- 13 PACs
- 14 M2M I/O
- 15 Distributed Nano Controllers
- 16 RS-485 I/O
- 17 Ethernet I/O
- 18 DAQ Boards

Embedded Automation Computer Selection Guide



Model Name	UNO-3072L	UNO-3072/3074	UNO-3072LA	UNO-3072A/3074A	UNO-3082/3084	UNO-3272/3282
CPU	Intel Celeron M, 1.0/1.5 GHz	Intel Pentium M, 1.4/1.8 GHz	Intel Atom N270, 1.6 GHz	Intel Atom D510, 1.66 GHz	Intel Core 2 Duo L7500, 1.6 GHz	Intel Celeron M, 1.86 GHz Intel Core 2 Duo, 1.5 GHz
Onboard RAM	512 MB/1 GB SDRAM	1 GB DDR SDRAM	1 GB/2 GB DDR2 SDRAM	2 GB DDR2 SDRAM	2 GB/4 GB DDR2 SDRAM	1 GB DDR2 SDRAM
Battery-Backup RAM	-	512 KB	-	512 KB	512 KB	512 KB
Display	VGA	VGA	DVI-I	VGA	Dual DVI-I support up to 3 display	VGA+ DVI-D
Audio	-	-	Yes, 5.1 channel HD Audio line out	Yes, 5.1 channel HD Audio line out	Yes, 5.1 channel HD Audio line out	Line in/ Line out
Serial Ports	2 x RS-232 2 x RS-232/422/485	2 x RS-232 2 x RS-232/422/485	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 2 x RS-232/422/485
Ethernet Ports	2 x 10/100Base-T	2 x 10/100Base-T	2 x 10/100/1000 Base-T, support teaming function	2 x 10/100/1000 Base-T, support teaming function	2 x 10/100/1000 Base-T, support teaming function	2 x 10/100/1000 Base-T, support teaming function
USB Ports	Four	Four	Five (One internal), two extra on pin header	Five (One internal), two extra on pin header	Five (One internal), two extra on pin header	Five (One internal)
PC Card Slots	-	-	-	-	-	-
Printer Ports	-	-	(Pin-head reserved for project)	(Pin-head reserved for project)	(Pin-head reserved for project)	-
PC/104 Expansion	-	-	-	-	-	-
PCIe/PCI Expansion	2 x PCI	2 x PCI (UNO-3072)/ 4 x PCI (UNO-3074)	2 x PCI	2 x PCI (UNO-3072A)/ 4 x PCI (UNO-3074A)	2 x PCI (UNO-3082)/ 3 x PCI + 1 x PCIe (UNO-3084)	2 x PCI (UNO-3272)/ 1 x PCI + 1 x PCIe (UNO-3282)
Onboard I/O	4-ch isolated DI 4-ch isolated DO	4-ch isolated DI 4-ch isolated DO	-	4-ch isolated DI 4-ch isolated DO Dual type B IEEE 1394	4-ch isolated DI 4-ch isolated DO Dual type B IEEE 1394	-
Watchdog Timer	-	Yes	Yes	Yes	Yes	-
CompactFlash Slots	One internal	One internal One external	One internal One external	One internal One external	One internal One external	One internal One external
2.5" HDD Expansion	1 x IDE/SATA	1 x IDE/SATA	1 x SATA, 1 x eSATA	2 x SATA, support RAID 0/1, 1 x eSATA	2 x SATA, support RAID 0/1, 1 x eSATA	2 x SATA, support RAID 0/1
Operating Systems	Windows WES 2009, Windows CE 5.0 & 6.0 Windows 2000/XP, Linux	Windows WES 2009, Windows Vista/XP, Windows CE 5.0 & 6.0, Linux, QNX	Windows XP Embedded, WES Windows CE 6.0 Windows XP, Windows 7	WES, Windows XP Embedded, Windows Vista/XP, Windows 7, Windows CE 6.0, Linux	Windows XP Embedded, WES Windows CE 6.0 Windows XP, Windows 7	Windows XP Embedded, Windows 2000/XP/Vista, Linux, Windows 7
Mounting	Wall/Stand/Panel	Wall/Stand/Panel	Wall/Stand/Panel	Wall/Stand/Panel	Wall/Stand/Panel	Wall/Stand
Anti-Vibration	2 G w/CF, 1 G w/HDD	2 G w/CF, 1 G w/HDD	2 G w/CF, 1 G w/HDD	2 G w/CF, 1 G w/HDD	2 G w/CF, 1 G w/HDD	-
Anti-Shock	50 G w/CF, 20 G w/HDD	50 G w/CF, 20 G w/HDD	50 G w/CF 20 G w/HDD	50G w/CF 20G w/HDD	50 G w/CF 20 G w/HDD	50 G w/CF 20 G w/HDD
Power Input Range*	16 ~ 36 V _{DC}	16 ~ 36 V _{DC} (UNO-3072) 20 ~ 36 V _{DC} (UNO-3074)	9 ~ 36 V _{DC}	9 ~ 36 V _{DC}	9 ~ 36 V _{DC}	9 ~ 36 V _{DC}
Operating Temperature	-20 ~ 60°C (-4 ~ 140°F)	-20 ~ 55°C (-4 ~ 131°F)	-10 ~ 60°C (14 ~ 140°F)	-10 ~ 60°C (14 ~ 140°F)	-10 ~ 55°C (14 ~ 131°F)	UNO-3272: -20 ~ 50°C (-4 ~ 122°F) UNO-3282: -20 ~ 60°C (-4 ~ 140°F)
Power Consumption Typical	24 W	24 W	20 W	25 W	40 W	40 W
Power Requirement	48 W, +24 V @ 2 A power input	48 W, +24 V @ 2 A power input (UNO-3072) 96W, +24 V @ 4 A power input (UNO-3074)	48 W, +24 V @ 1.5 A power input	72 W, +24 V @ 3 A power input	96 W, +24 V @ 4 A power input	120 W +24 V @ 5 A power input
Dimensions (W x D x H)	140 x 237 x 179 mm (5.5" x 9.3" x 7.0")/ 153 x 237 x 179 mm (6.0" x 9.3" x 7.0")	UNO-3072: 140 x 237 x 179 mm (5.5" x 9.3" x 7.0") UNO-3074: 193 x 237 x 179 mm (7.6" x 9.3" x 7.0")	140 x 238 x 177 mm (5.5" x 9.3" x 7.0")	UNO-3072A: 140 x 238 x 177 mm (5.5" x 9.3" x 7.0") UNO-3074A: 181 x 238 x 177 mm (7.5" x 9.3" x 7.0")	UNO-3082: 157 x 238 x 177 mm (6.2" x 9.3" x 7.0") UNO 3084: 195 x 238 x 177mm (7.6" x 9.3" x 7.0")	200 x 240 x 130 mm (7.9" x 9.4" x 5.0")
Weight	4.2 kg / 6.0 kg	4.4 kg / 7.0 kg	4.5 kg	4.5 kg / 5.0 kg	4.5 kg / 5.0 kg	5.5 kg
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* All power input ranges represent the minimum and maximum values recommended for these devices.

UNO-1110/L/ST

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

NEW



CE FCC

Features

- TI Cortex A8 AM3505 600 MHz processor
- 128/256 MB DDR2 on board
- 4 x RS-232/422/485, 1 x RS-485 serial ports
- Dual 10/100 Mbps Ethernet
- 2 x SD card slots
- Windows® CE 6.0 Ready Platform and optional uClinux OS support
- Included Advantech DiagAnywhere for easy configuration
- DIN-rail and Wallmounting Options
- Onboard system & LED indicators
- Supports Microsoft .NET compact framework 3.5
- Fanless and no internal cabling design
- System/Field ground isolation

Introduction

Advantech's UNO-1110 series are RISC-grade embedded platforms that offer up to 2 LAN ports, 5 serial ports and 2 SD card slots. The UNO-1110 series also come with Windows CE 6.0/Linux OS, offering an integrated image. Additionally, the UNO-1110 series operate at temperatures between -40 ~ 80°C, and their small size and lightweight design allows it to be installed in tight industrial environments. With one Mini PCIe card slot support, it is very easy to expand the wireless communication capability of the UNO-1110 series. The UNO-1110 series are excellent communication gateways for converting communication protocols, I/O control, and data storage in the industrial field.

Specifications

General

- **Certification** CE, FCC Class A, UL, CCC
- **Dimension (W x H x D)** 48 x 152 x 127 mm (1.9" x 6.0" x 5")
- **Enclosure** Aluminium with solid mounting hardware
- **Mounting** DIN-rail, Wallmount
- **Industrial Grounding** Isolation between chassis and power ground
- **Power Consumption** 8.5 W (min.)
- **Power Input** 10 ~ 30 V_{DC} (13 W), AT, ground isolation
- **Weight** 0.45 kg
- **System Design** Fanless design with no internal cabling

System Hardware

- **CPU** TI Cortex A8 AM3505 600 MHz
- **Memory*** UNO-1110L: Onboard 128 MB DDR2
UNO-1110/ST: Onboard 256 MB DDR2
- **Display** DB15 VGA connector, up to 1024 x 768 (only for UNO-1110/ST)
- **Audio** Line out (only for UNO-1110ST)
- **Indicators** Power, Serial (Tx, Rx), SD
4 x DI/2 x DO (only UNO-1110/ST)
4 x programmable LED (only UNO-1110/ST)
- **Storage** 2 x SD card slots (one for boot and another for data storage)
- **Expansion** 1 x Mini PCIe card slot (Signal Protocol: USB Differential)
- **Other** Realtime clock, Watchdog timer
- **SIM** 1 x card slot (reserved for project and will only have 1 x SD card slot left)

*Note: up to 512MB DDR2 (reserved for project)

System Software

- **Operating System** WinCE 6.0/ Linux
- **Remote Management** Built-in Advantech DiagAnywhere agent on Windows

I/O Interface

- **Serial Ports** 1 x RS-485, 4 x RS-232/422/485 with DB9 connectors (for UNO-1110/ST)**
2 x RS-232/422/485 with DB9 connectors (for UNO-1110L)
Automatic RS-485 data flow control, DIP Switch configuration

**Note: group isolation

Serial Port Speed

RS-232: 300 ~ 115.2 kbps
RS-422/485: 300 ~ 115.2 kbps (Max)

LAN USB

2 x 10/100Base-T RJ-45 ports
1 x USB2.0 (for UNO-1110L)
4 x USB2.0 (for UNO-1110/ST)

Digital Input

4-ch., 1.5KV isolated dry contact, 0 ~ 50 V_{DC} input range (for UNO-1110ST)
4-ch., dry contact, 0 ~ 50 V_{DC} input range (for UNO-1110)

Digital Output

2-ch., 1.5KV isolated, 200 mA max/channel sink current, 5 ~ 40 V_{DC} output range (for UNO-1110ST)
2-ch., 200 mA max/channel sink current, 5 ~ 40 V_{DC} output range (for UNO-1110)

Environment

- **Ingress Protection** IP40
- **Operating Temperature** -10 ~ 70°C (14 ~ 158°F)
-40 ~ 80°C (-40 ~ 176°F) (only for UNO-1110ST)
- **Storage Temperature** -20 ~ 80°C (-4 ~ 176°F)
- **Operating Humidity** 20 ~ 95% (non-condensing)
- **Storage Humidity** 0 ~ 95% (non-condensing)
- **Shock Protection** IEC 60068-2-27
- **Vibration Protection** IEC 60068-2-64 (Random 1 Oct./min, 1hr/axis.)

Ordering Information

- **UNO-1110L-ACE** TI Cortex AM3505 600MHz DIN-rail PC w/ 128 MB DDR2, WinCE6.0
- **UNO-1110L-ALE** TI Cortex AM3505 600MHz DIN-rail PC w/ 128 MB DDR2, Linux
- **UNO-1110-ACE** TI Cortex AM3505 600MHz DIN-rail PC w/ 256 MB DDR2, WinCE6.0
- **UNO-1110-ALE** TI Cortex AM3505 600MHz DIN-rail PC w/ 256 MB DDR2, Linux
- **UNO-1110ST-ACE** TI Cortex AM3505 600MHz DIN-rail PC w/ 256 MB DDR2, WinCE6.0
- **UNO-1110ST-ALE** TI Cortex AM3505 600MHz DIN-rail PC w/ 256 MB DDR2, Linux
- **PCLS-DIAGAW10** Advantech Remote Monitoring & Diagnosis Utility

1

Motion Control

2

Hazardous Location

3

Energy Automation

4

Building Automation Systems

5

Automation Software

6

Operator Panels

7

Automation Panel PCs

8

Industrial Monitors

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Industrial Ethernet

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Device Servers & Gateways

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Serial Communication Cards

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Embedded Auto. Computers

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PACs

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M2M I/O

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Distributed Nano Controllers

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RS-485 I/O

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Ethernet I/O

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DAQ Boards

UNO-1150G/GE

AMD Geode™ LX800 DIN-rail PCs
with 2 x LAN, 3 x COM, PCI-104



Features

- Onboard AMD Geode LX800 500 MHz processor
- 2 x RS-232 (one pin header reserved) and 2 x RS-232/422/485 ports with automatic flow control
- 2 x 10/100Base-T RJ-45 ports
- 2 x USB, audio and internal CompactFlash®
- Compact size, small foot print, saves space and front accessible for easy wiring
- DIN-rail design for easy installation in field cabinet
- Wide operating temperature range
- Windows® CE 5.0/6.0, Windows XP Embedded, and Linux ready solution
- Onboard system & I/O LED indicators
- Fanless desing with no internal cabling
- Isolation between chassis and power ground

Introduction

UNO-1150G/GE are DIN-rail mounted PCs that provide several serial communication ports and Ethernet interfaces. Their compact size, small footprint and front-accessibility allow easy installation in field cabinets and help to save spaces. With rich OS and driver supports, such as Windows XP Embedded, WinCE 6.0 and embedded Linux, users can integrate applications easily with a platform that can provide versatile functions to fulfill diverse requirements.

Specifications

General

- **Certification** CE, FCC Class A, UL, CCC
- **Dimension (W x H x D)** UNO-1150G: 71 x 152 x 139 mm (2.8" x 6.0" x 5.5")
UNO-1150GE: 96.5 x 152 x 139 mm (3.8" x 6.0" x 5.5")
Aluminum + SECC
- **Enclosure** DIN-rail, Wallmount
- **Mounting** DIN-rail, Wallmount
- **Power Consumption** 15 W (Typical)
- **Power Requirement** 10 ~ 36 V_{DC} (e.g. +24 V @ 1 A) (Min. 24 W), AT
- **Weight** UNO-1150G: 1.6 kg
UNO-1150GE: 2.0 kg
- **OS Support** WES Windows XP Embedded, Windows 2000 & XP, Windows CE 5.0/6.0, Linux
- **System Design** Fanless with no internal cabling
- **Remote Management** Built-in Advantech DiagAnywhere agent on Windows CE / XPe

System Hardware

- **CPU** AMD Geode LX800 500 MHz
- **Memory** Onboard 256 MB DDR SDRAM
- **Indicators** LEDs for Power, IDE, LAN (Active, Status) and Serial (Tx, Rx)
Buzzer for Diagnosis (programmable)
- **Keyboard/Mouse** 1 x PS/2
- **Storage** SSD: 1 x internal type I/O CompactFlash® slot
HDD: 2.5" SATA HDD bracket (UNO-1150GE)
- **PC/104 Slot** 2 x PCI-104 slot, supports 3.3 V & +5 V
(Only for UNO-1150GE, one PCI-104 left while using HDD)
- **Mini PCI** 1 x Mini PCI (UNO-1150GE)
- **Display** DB15 VGA connector, supports up to 1024 x 768 @ 60 Hz
- **Audio** Line in, Line out
- **Watchdog Timer** Programmable 256 level timer interval, from 1 to 255 sec

I/O Interface

- **Serial Ports** 2 x RS-232 (one pin header reserved),
2 x RS-232/422/485 with DB9 connectors,
automatic RS-485 data flow control
RS-232/422/485 ports support hardware 128 byte FIFO
 - **Serial Port Speed** RS-232 port: 50 ~ 115.2 kbps
RS-232/422/485 port: RS-232, 300 ~ 115.2 kbps
RS-232/422/485 port: RS-422/485, 300 ~ 921.6 kbps (Max)
 - **LAN** 2 x 10/100Base-T RJ-45 ports
 - **USB** 2 x USB, OpenHCI, Rev. 2.0 compliant
 - **Printer Port*** 1 x Printer Port pin header
- *Note: This function is optional for project requirement.

Environment

- **Ingress Protection** IP40
- **Operating Temperature** (IEC 60068-2-2, 100% CPU/ I/O loading)
-10 ~ 60°C (14 ~ 140°F)
- **Storage Temperature** -20 ~ 80°C (-4 ~ 176°F)
- **Operating Humidity** 20 ~ 95% (non-condensing)
- **Storage Humidity** 0 ~ 95% (non-condensing)
- **Shock Protection** IEC 60068-2-27
CompactFlash®: 50 G @ wall mount, half sine, 11 ms
HDD: 20 G @ wall mount, half sine, 11 ms
(UNO-1150GE)
- **Vibration Protection** IEC 60068-2-64 (Random 1 Oct./min, 1hr/axis.)
CompactFlash®: 2 Grms @ 5 ~ 500 Hz
HDD: 1Grms@ 5 ~ 500 Hz (UNO-1150GE)

Ordering Information

- **UNO-1150G-G30E** AMD Geode LX800 500 MHz, 256 MB DIN-rail PC
- **UNO-1150GE-G30E** AMD Geode LX800 500 MHz, 256 MB DIN-rail PC w/PCI-104

Accessories

- **UNO-FPM11-BE** UNO-1100 Series VESA Mount kit
- **PCLS-DIAGAW10** Advantech Remote Monitoring & Diagnosis Utility

UNO-1170A/AE

**Intel® Atom™ N270 DIN-rail
PCs with 2 x LAN, 3 x COM,
4 x USB, PC/104+**



UNO-1170A

UNO-1170AE



Introduction

UNO-1170A/AE are DIN-rail PCs that provide several serial communication ports and Ethernet interfaces. With their compact size, small footprint, and front accessibility, the UNO-1170A/AE are convenient for wiring and easy to install in field cabinets. With rich OS and driver supports, such as Windows WES 2009, WinCE 6.0, and even embedded Linux, the UNO-1170A/AE are application-ready platforms that provide versatile functionality.

Specifications

General

- **Certification** CE, FCC Class A, UL, CCC
- **Dimension (W x H x D)** UNO-1170A: 85.5 x 152 x 139 mm (3.4" x 6.0" x 5.5")
UNO-1170AE: 111 x 152 x 139 mm (4.4" x 6.0" x 5.5")
- **Enclosure** Aluminum + SECC
- **Mounting** DIN-rail, Wallmount
- **Power Consumption** 24 W (Typical)
- **Power Requirement** 10 ~ 36 V_{DC} (e.g. +24 V @ 2 A) (Min. 48 W), AT
- **Weight** UNO-1170A: 1.6 kg
UNO-1170AE: 2.0 kg
- **OS Support** Windows WES 2009, Windows XP, Windows 7, Windows CE 5.0/6.0, Linux, QNX
- **System Design** Fanless with no internal cabling
- **Remote Management** Built-in Advantech DiagAnywhere agent on Windows CE / WES 2009

System Hardware

- **CPU** Intel Atom N270 1.6 GHz
- **Memory** 1 GB DDR2 SDRAM Built-in
- **Battery Backup SRAM** 512 KB
- **Indicators** LEDs for Power, IDE, LAN (Active, Status), Serial (Tx, Rx), Alarm for battery backup SRAM and diagnosis (programmable)
Buzzer for Diagnosis (programmable)
- **Keyboard/Mouse** 1 x PS/2
- **Storage** SSD: 1 x internal type I/II CompactFlash slot
HDD: one 2.5" SATA HDD bracket
- **PC/104 Slot** 1 x PC/104+ slot, supports up to 2 x PC/104+ cards (3.3V & 5V)
(Only for UNO-1170AE, one PC/104+ left while using HDD)
- **Mini PCI** 1 x Mini PCI (UNO-1170AE)
- **Display** DB15 VGA connector, 1600 x 1200 @ 85 Hz
- **Audio** Line in, Line out
- **Watchdog Timer** Programmable 256 level timer interval, from 1 to 255 sec

Features

- Onboard Intel Atom N270 1.6 GHz processor
- Onboard 512 KB battery-backup SRAM
- Onboard system & I/O LED indicators
- 2 x RS-232 and 1 x RS-232/422/485 ports with automatic flow control
- 2 x 10/100Base-T RJ-45 ports
- 3 x external USB and 1 x internal USB for dongle and flash drive
- PC/104+ expansion slots option
- DIN-rail design for easy installation in field cabinet
- Windows® CE 6.0, Windows WES 2009, and Linux ready solution
- Supports boot from LAN function
- Fanless design with no internal cabling
- Isolation between chassis and power ground

I/O Interface

- **Serial Ports** 2 x RS-232, 1 x RS-232/422/485 with DB9 connectors, automatic RS-485 data flow control
1 x pin header RS-232
- **Serial Port Speed** RS-232: 50 ~ 115.2 kbps
RS-422/485: 50 ~ 921.6 kbps (Max)
- **LAN** 2 x 10/100Base-T RJ-45 ports (Built-in boot ROM in flash BIOS)
- **USB** 4 x USB, EHCI, Rev. 2.0 compliant (1 is for USB dongle inside chassis)

Environment

- **Operating Temperature** (IEC 60068-2-2, 100% CPU/ I/O loading)
-10 ~ 60°C (14 ~ 140°F)
- **Storage Temperature** -20 ~ 80°C (-4 ~ 176°F)
- **Ingress Protection** IP40
- **Operating Humidity** 20 ~ 95% (non-condensing)
- **Storage Humidity** 0 ~ 95% (non-condensing)
- **Shock Protection** IEC 60068-2-27
CompactFlash: 50 G @ wall mount, half sine, 11 ms
HDD: 20 G @ wall mount, half sine, 11 ms (UNO-1170AE)
- **Vibration Protection** IEC 60068-2-64 (Random 1 Oct./min, 1hr/axis.)
CompactFlash®: 2 Grms @ 5 ~ 500 Hz,
HDD: 1 Grms @ 5 ~ 500 Hz (UNO-1170AE)

Ordering Information

- **UNO-1170A-A12E** Intel Atom N270 1.6 GHz, 1 GB RAM DIN-rail PC
- **UNO-1170AE-A12E** Intel Atom N270 1.6 GHz, 1 GB RAM, DIN-rail PC w/ PC/104+

Accessories

- **UNO-FPM11-BE** UNO-1100 series VESA mount kit
- **PCLS-DIAGAW10** Advantech Remote Monitoring & Diagnosis Utility

- 1 Motion Control
- 2 Hazardous Location
- 3 Energy Automation
- 4 Building Automation Systems
- 5 Automation Software
- 6 Operator Panels
- 7 Automation Panel PCs
- 8 Industrial Monitors
- 9 Industrial Ethernet
- 10 Device Servers & Gateways
- 11 Serial Communication Cards
- 12 Embedded Auto. Computers
- 13 PACs
- 14 M2M I/O
- 15 Distributed Nano Controllers
- 16 RS-485 I/O
- 17 Ethernet I/O
- 18 DAQ Boards

UNO-1172A/AE

Intel® Atom™ D510 DIN-rail PCs
with 3 x LAN, 2 x COM, VGA,
Mini PCIe, PC/104+



Features

- Onboard Intel Atom D510 1.66 GHz processor
- Onboard 1 MB battery-backup SRAM
- Onboard system & I/O LED indicators
- System diagnosis through LED and digital output, remote power control through digital input
- 2 x RS-232/422/485 ports with automatic flow control
- 3 x 10/100/1000Base-T RJ-45 ports with teaming function support
- 4 x external USB
- PC/104+ expansion slots option
- 1 x Mini PCIe slot for WLAN card and Fieldbus card
- Windows® 7, Windows CE, XP Embedded and Linux support
- Supports Boot from LAN function
- Fanless design with no internal cabling
- Isolation between chassis and power ground

Introduction

UNO-1172A/AE are Intel Atom DIN-rail PCs with innovative system diagnostic features. The system diagnosis and remote power control through digital input lines enable users to control and monitor system status remotely. They also provide alarm notices including over temperature, over voltage, battery power fail, power status on both system onboard LED and digital output. Three Gigabit Ethernet interfaces with teaming function support allow users to uplink two ports with data transmit fault tolerance and downlink one port to field devices. Their compact size, small foot print, front accessible I/Os allow convenient wiring and easy installation in field cabinets as well.

Specifications

General

- Certification** CE, FCC Class A, UL, CCC
- Dimension (W x H x D)** UNO-1172A: 85.5 x 152 x 139 mm (3.4" x 6.0" x 5.5")
UNO-1172AE: 111 x 152 x 139 mm (4.4" x 6.0" x 5.5")
- Enclosure** Aluminum + SECC
- Mounting** DIN-rail, Wallmount
- Power Consumption** 24 W (Typical)
- Power Requirement** 10 ~ 36 V_{DC} (e.g. +24 V @ 2 A) (Min. 48 W), AT/ATX power mode by Jumper selection and BIOS AT simulation (support system reboot automatically after power recovery)
- Weight** UNO-1172A: 1.6 kg
UNO-1172AE: 2.0 kg
- OS Support** WES Windows XP Embedded, Windows XP & Windows 7, Windows CE 5.0/6.0, Linux, QNX
- System Design** Fanless design with no internal cabling
- Remote Management** Built-in Advantech DiagAnywhere agent on Windows CE / XPe

System Hardware

- CPU** Intel Atom D510 1.66 GHz
- Memory** 2 GB DDR2 SDRAM built-in
- Battery Backup SRAM** 1 MB
- Indicators** System: LEDs for Power, CF, LAN (Active, Status), Serial (Tx, Rx), Diagnosis /Alarm: over system temperature, over voltage, alarm for battery backup SRAM, alarm for RTC battery, Programmable (while disable Serial Tx&Rx), Buzzer for Diagnosis (programmable)
- Keyboard/Mouse** 1 x PS/2
- Storage** SSD: 1 x internal type I/II CompactFlash slot
HDD: one 2.5" SATA HDD bracket
- PC/104 Slot** 2 x PC/104+ slot, supports 3.3 V & +5 V (Only for UNO-1172AE, one PC/104+ with HDD)
- Mini PCI** 1 x Mini PCI (UNO-1172AE)
- Display** DB15 VGA connector, 1600 x 1200 @ 85 Hz
- Audio** 5.1 channel HD Audio, Mic in, Line in, Line out
- Watchdog Timer** Programmable 7-tier event handler, from 1 to 255 seconds for each tier
- Mini PCIe** 1 x Mini PCIe

I/O Interface

- Serial Ports** 2 x RS-232/422/485 with DB9 connectors, automatic RS-485 data flow control
2 x RS-232 (Optional, pin header)
- Serial Port Speed** RS-232: 50 ~ 115.2 kbps
RS-422/485: 50 ~ 115.2 kbps (Max)
- LAN** 3 x 10/100/1000Base-T RJ-45 ports (supports Wake on LAN, built-in boot ROM)
- USB** 4 x USB, EHCI, Rev. 2.0 compliant
- Digital Input** 2-ch. wet/dry contact, 70 V_{DC} over-voltage protection, 0 ~ 50 V_{DC} input range and Interrupt handling
- Digital Output** 6-ch DO- 200 mA max/channel sink current
- Keep output status after system hot reset
- 5 ~ 40 V_{DC} output range and 10 kHz speed
- System Diagnoses** Remote monitoring: over system temperature, over voltage, battery power fail, power status
Remote control: Power On/Off, Reset

Environment

- Ingress Protection** IP40
- Operating Temperature** (IEC 60068-2-2, 100% CPU/ I/O loading)
-10 ~ 65°C (14~ 149°F)
- Storage Temperature** -20 ~ 80°C (-4 ~ 176°F)
- Operating Humidity** 20 ~ 95% (non-condensing)
- Storage Humidity** 0 ~ 95% (non-condensing)
- Shock Protection** IEC 60068-2-27
CompactFlash: 50 G @ wall mount, half sine, 11 ms
HDD: 20 G @ wall mount, half sine, 11 ms
IEC 60068-2-64 (Random 1 Oct./min, 1hr/axis.)
CompactFlash: 2 Grms @ 5 ~ 500 Hz,
HDD: 1 Grms @ 5 ~ 500 Hz
- Vibration Protection**

Ordering Information

- UNO-1172A-A33E** Intel Atom D510 1.66 GHz, 2 GB RAM DIN-rail PC
- UNO-1172AE-A33E** Intel Atom D510 1.66 GHz, 2 GB RAM DIN-rail PC w/ PC/104+

Accessories

- UNO-FPM11-BE** UNO-1100 Series VESA Mount Kit
- PCLS-DIAGAW10** Advantech Remote Monitoring & Diagnosis Utility

UNO-2173A/AF

Intel® Atom™ N270 Automation Computers with 2 x LAN, 3 x COM, Mini PCIe



Introduction

UNO-2173A/AF are Embedded Automation Computers equipped with Intel Atom N270 1.6 GHz CPUs, Gigabit Ethernet ports, rich I/O, and 1 x Mini PCIe socket. They also feature WLAN, 3G expansion and compatibility with Windows 7. Both products have Energy Star certification, IP40 anti-dust ingress protection and wide operating temperatures (-20 ~ 70°C), providing high performance and high versatility with low power consumption. The UNO-2173A/AF are economic new computing platforms for manufacturing executing systems, facility automation, in-vehicle, and industrial thin client applications.

Specifications

General

- **Certification** Energy Star, CE, FCC class A, UL, CCC
- **Dimension (W x D x H)** 255 x 152 x 59 mm (10" x 6.0" x 2.3")
- **Enclosure** Aluminum +SECC
- **Mounting** DIN-rail, Wallmount, VESA
- **Industrial Grounding** Isolation between chassis and power ground
- **Power Consumption** 15 W (Typical)
- **Power Requirements** 9 ~ 36 V_{DC} (e.g. +24 V @ 1.5 A) (Min. 36 W), ATX
- **Weight** 2.5 kg
- **OS Support** Windows WES 2009, Windows XP, Windows 7, Windows CE 5.0 & 6.0, Linux, QNX, WES7, Moblin
- **System Design** Fanless design with no internal cabling
- **Remote Management** Built-in Advantech DiagAnywhere agent on Windows CE / WES 2009 / WES 7

System Hardware

- **CPU** Intel Atom N270 1.6 GHz
- **Memory** 1 GB, 2 GB DDR2 SDRAM built-in
- **Indicators** LEDs for Power, CF, LAN (Active, Status), Serial (Tx, Rx)
- **Keyboard/Mouse** 1 x PS/2
- **Storage** CF: 1 x front-accessible type I/II CompactFlash® slot
HDD: 1 x built-in 2.5" SATA HDD/SSD bracket
DB15 VGA connector, 1600 x 1200 @ 85 Hz
LVDS with backlight control (UNO-2173AF)
- **Display** Programmable 256 levels timer interval, from 1 to 255 sec
- **Watchdog Timer** 1 x Mini PCIe
- **Expansion Slot**

I/O Interface

- **Serial Ports** UNO-2173A: 2 x RS-232
UNO-2173AF: 2 x RS-232, 1 x RS-422/485
- **Serial Port Speed** 50 ~ 115.2 kbps
- **LAN** 2 x 10/100/1000Base-T RJ-45 ports (Built-in boot ROM in flash BIOS) (One LAN port in UNO-2173A)
- **USB Ports** 4 x USB 2.0 (2 ports on UNO-2173A)
- **Audio** 5.1 channel HD audio (Only for UNO-2173AF)

Features

- Onboard Intel Atom N270 1.6 GHz processor
- 2 x 10/100/1000Base-T RJ-45 port
- 4 x USB 2.0 ports
- Windows® CE 5.0 & 6.0, Windows WES2009, WES7, and Linux ready solution
- Onboard system status LED indicators
- Front-accessible CF slot
- Supports Boot from LAN function
- 1 x Mini PCIe slot for WLAN card
- Fanless design with no internal cabling
- Isolation between chassis and power ground
- Supports wide operating temperatures from -20 ~ 70°C
- IP40 ingress protection
- Windows 7 and Moblin supported

Environment

- **Humidity** 95% @ 40°C (non-condensing)
- **Operating Temperature** IEC 60068-2-2 with 100% CPU/ I/O loading
-20 ~ 70°C (-4 ~ 158°F)
- **Ingress Protection** IP40
- **Shock Protection** IEC 60068-2-27
CompactFlash: 50 G @ wall mount, half sine, 11 ms
HDD: 20 G @ wall mount, half sine, 11 ms
IEC 60068-2-64 (Random 1 Oct./min, 1hr/axis.)
CompactFlash: 5 Grms @ 5 ~ 500 Hz,
HDD: 1 Grms @ 5 ~ 500 Hz
- **Vibration Protection**

Reserved Functions

- **Battery Backup SRAM*** 1 MB
 - **Printer Port*** 1 x printer port pin head
 - **USB*** 1 x internal pin head
- *Note: This function is optional for project request

Ordering Information

- **UNO-2173A-A12E** Intel Atom N270 1.6 GHz, 1 GB RAM Computer w/ front I/O
- **UNO-2173A-A13E** Intel Atom N270 1.6 GHz, 2 GB RAM Computer w/ front I/O
- **UNO-2173AF-A12E** Intel Atom N270 1.6 GHz, 1 GB RAM Computer
- **UNO-2173AF-A13E** Intel Atom N270 1.6 GHz, 2 GB RAM Computer

Accessories

- **UNO-FPM21-AE** UNO-2000 series VESA mount kit
- **968EMW0021** Mini PCIe card for WLAN
- **1960032715N040** Rear panel of UNO-2173A for Antenna
- **1960032715N020** Rear panel of UNO-2173AF for Antenna
- **1700001854** SMA/I-PEX cable 11CM
- **1750003222** 5dBi Dipole Antenna
- **PCLS-DIAGAW10** Advantech Remote Monitoring & Diagnosis Utility

- 1 Motion Control
- 2 Hazardous Location
- 3 Energy Automation
- 4 Building Automation Systems
- 5 Automation Software
- 6 Operator Panels
- 7 Automation Panel PCs
- 8 Industrial Monitors
- 9 Industrial Ethernet
- 10 Device Servers & Gateways
- 11 Serial Communication Cards
- 12 Embedded Auto. Computers
- 13 PACs
- 14 M2M I/O
- 15 Distributed Nano Controllers
- 16 RS-485 I/O
- 17 Ethernet I/O
- 18 DAO Boards

UNO-2174A/2178A

Intel® Atom™ N450/ D510
Automation Computers
with 6 x USB, 8 x COM,
2 x Mini PCIe



Introduction

UNO-2174A and UNO-2178A are Embedded Automation Computers equipped with Intel Atom N450/D510 CPUs, Gigabit Ethernet ports, rich I/O, and 2 x Mini PCIe socket. They also feature WLAN, 3G expansion and compatibility with Windows 7. Both products have Energy Star certification, IP40 anti-dust ingress protection and wide operating temperatures (-10 ~ 70°C), providing high performance and high versatility with low power consumption. The UNO-2174A and UNO-2178A are economic new computing platforms for manufacturing executing systems, facility automation, and industrial thin client applications. With an additional daughterboard, the UNO-2174A and UNO-2178A support 1 x PC/104+ and 1 x PCI-104 plug-in cards for further expansion.

Specifications

General

- **Certification** Energy Star, CE, FCC Class A, UL, CCC, C-Tick Class A, BSMI
- **Dimension (W x D x H)** UNO-2174A: 255 x 152 x 50 mm (10" x 6.0" x 2.0")
UNO-2178A: 255 x 152 x 59 mm (10" x 6.0" x 2.3")
- **Enclosure** Aluminum +SECC
- **Mounting** DIN-rail, Wallmount, VESA
- **Industrial Grounding** Isolation between chassis and power ground
- **Power Consumption** UNO-2174A: 12 W (Typical)
UNO-2178A: 16 W (Typical)
- **Power Requirements** 9 ~ 36 V_{DC} (e.g. +24 V @ 1.5 A) (Min. 36 W), ATX S3, S4
- **Weight** 2.5 kg
- **OS Support** Windows XP/7, WES7, WES-2009, CE 6.0, Linux, QNX
- **System Design** Fanless design with no internal cabling
- **Remote Management** Built-in Advantech DiagAnywhere agent on Windows CE, WES2009, WES7

System Hardware

- **CPU** UNO-2178A: Intel Atom D510 Dual Core 1.66 GHz
UNO-2174A: Intel Atom N450 1.6 GHz
- **Memory** 2 GB DDR2 SDRAM built-in
- **Indicators** LEDs for Power, CF, LAN (Active, Status), Serial (Tx, Rx)
- **Keyboard/Mouse** 1 x PS/2
- **Storage** CF: 1 x rear type I/II CompactFlash® slot
HDD: 1 x built-in 2.5" SATA HDD/SSD bracket (Not available when PCI-104 expansion is being used)
DB15 VGA connector, UNO-2174A supports up to 1400 x 1050, UNO-2178A supports up to 2048 x 1536
- **Display** Programmable 256 levels timer interval, from 1 to 255 sec
- **Watchdog Timer** 2 x Mini PCIe
- **Expansion** 1 x SIM card slot
- **Printer Port** 1 x Printer port (UNO-2174A)

Daughterboard (Additional purchase required)

- **Expansion Slot** PC/104+ and PCI-104 support (+5 & 3.3V power) (HDD slot is not available when PCI-104 slot is being used)
2 x Mini PCIe card slots and 1 x SIM card slot

Features

- Onboard Intel Atom N450/D510 processors
- 2 x 10/100/1000Base-T RJ-45 ports, 6 x USB 2.0 ports
- Windows® CE 6.0, WES 2009, WES 7 and Linux ready solution
- Onboard system status LED indicators
- Front-accessible CF slot
- Supports Boot from LAN function
- 2 x Mini PCIe slots with 1 x SIM slot support
- Fanless design with no internal cabling
- Isolation between chassis and power ground
- Supports wide operating temperatures from -10 ~ 70°C
- IP40 ingress protection
- Windows 7 32 & 64-bit supported
- Supports plug-in cards (1 x PCI-104 and 1 x PC/104+) with additional daughterboard expansion
- Supports 8 x COM ports (UNO-2178A)
- Supports arbitrary baud rates

I/O Interface

- **Serial Ports** UNO-2174A: 2 x RS-232/485 (COM1-2),
2 x RS-232/422/485 w/ 128kB FIFO (COM A-B)
UNO-2178A: 2 x RS-232/485 (COM1-2),
2 x RS-232/422/485 w/ 128kB FIFO (COM A-B),
4 x RS-232/485 from DB25 print port (COM3-6)
- **Serial Port Speed** 50-115.2 kbps (COM 1-6 in RS-232/485 mode)
50-115.2 kbps (COM A/B in RS-232 mode, 921.6kbps peak performance)
50-921.6 kbps (COM A/B in RS-422/485 mode)
- **LAN** 2 x 10/100/1000Base-T RJ-45 ports (Built-in boot ROM in flash BIOS)
- **USB Ports** 6 x USB 2.0
- **Audio** Line in, Line out, Mic in (5.1 channel HD audio)

Environment

- **Humidity** 95% @ 40°C (non-condensing)
- **Operating Temperature** IEC 60068-2-2 with 100% CPU/ I/O loading
-10 ~ 70°C (14 ~ 158°F)
- **Ingress Protection** IP40
- **Shock Protection** IEC 60068-2-27
CompactFlash: 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.)
CompactFlash: 2 Grms @ 5 ~ 500 Hz,
HDD: 1 Grms @ 5 ~ 500 Hz

Ordering Information

- **UNO-2174A-A23E** Intel Atom N450 1.6 GHz, 2 GB RAM Automation Computer
- **UNO-2178A-A33E** Intel Atom D510 1.66 GHz, 2 GB RAM Automation Computer

Accessories

- **UNO-FPM21-AE** UNO-2000 series VESA mount kit
- **968EMW0021** Mini PCIe card for WLAN
- **1700001854** SMA/I-PEX cable 11CM
- **1750003222** 5dBi Dipole Antenna
- **PCLS-DIAGAW10** Advantech Remote Monitoring & Diagnosis Utility
- **UNO-PCM23-AE** 1 x PCI-104 and 1 x PC/104+ Expansion board

UNO-2172/2182

Intel® Core™ 2 Duo/ Pentium® M/ Celeron® M Automation Computers with 2 x GbE, 4 x COM, DVI



UNO-2182

UNO-2172



Introduction

UNO-2172 and UNO-2182 are high-performance Pentium M/ Core 2 Duo grade controllers that support PCI-104 expansion, serial communication ports and several other networking interfaces. They support Windows WES2009 OS, which offers a pre-configured image with optimized onboard device drivers. Windows WES2009 delivers the power of the Windows operating system in componentized form. You can seamlessly integrate your applications into Windows WES2009 and speed up your system development with application-ready platforms that provide rich networking interfaces to fulfill diverse requirements.

Specifications

General

- **Certification** CE, FCC Class A, UL, CCC
- **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
- **Industrial Grounding** Isolation between chassis and power ground
- **Power Consumption** UNO-2182: 35 W (Typical)
UNO-2172: 45 W (Typical)
- **Power Requirements** 9 ~ 36 V_{DC} (e.g. +24V @ 2A) (Min. 48 W), ATX
- **Weight** 3.0 kg
- **OS Support** Windows 2000/XP, Win7, WES7, WES-2009, XPe, CE 5.0 & 6.0, Linux, QNX
- **System Design** Fanless with no internal cabling
- **Remote Management** Built-in Advantech DiagAnywhere agent on Windows CE / WES2009 / WES7

System Hardware

- **CPU** UNO-2182: Intel Core 2 Duo L7400 1.5 GHz
UNO-2172: Intel Pentium M 1.6 GHz, Celeron M 1.5 GHz
- **Memory** UNO-2182: 2 GB DDR2 SDRAM built-in
UNO-2172: 1 GB DDR2 SDRAM built-in
- **Indicators** LEDs for Power, IDE, Alarm for battery backup SRAM, LAN (Active, Status) and Serial (Tx, Rx)
- **Battery Backup SRAM** 512 KB
- **Keyboard/Mouse** 1 x PS/2
- **PC/104 Slot** PCI-104 slot, supports +5 & 3.3V power
- **Storage** CF: 1 x external type I/II CompactFlash® slot
HDD: Built-in one 2.5" SATA/IDE HDD bracket
- **Display** DVI-I supports DVI and VGA for dual display
- **Audio** Mic in, Line in, Line out
- **SATA** 1 x internal, 1 x external SATA 1.0
- **Watchdog Timer** Programmable 256 levels timer interval, from 1 to 255 sec

Features

- Onboard Intel Core 2 Duo 1.5 GHz (L7400)/ Pentium M 1.6 GHz/ Celeron M 1.5 GHz processors
- Onboard 512 KB battery-backup SRAM
- 2 x RS-232 and 2 x RS-232/422/485 ports with automatic flow control
- 2 x 10/100/1000Base-T Ethernet
- DVI-I supports dual display
- Audio with Mic in, Line in, Line out
- 2 x USB 2.0 ports
- PCI-104 expansion
- Windows® WES 2009, WES 7 ready solution
- Supports one SATA HDD and one external eSATA devices
- Onboard system status LED indicators
- Supports wake on LAN and boot from LAN function
- Fanless design with no internal cabling
- Isolation between chassis and power ground

I/O Interface

- **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 ~ 921.6 kbps (Max.)
- **LAN** 2 x 10/100/1000Base-T RJ-45 ports (supports wake on LAN and built-in boot ROM in flash BIOS)
- **USB Ports** 2 x USB, EHCI, Rev. 2.0 compliant

Environment

- **Humidity** 95% @ 40°C (non-condensing)
- **Operating Temperature** IEC 60068-2-2, 100% CPU/ I/O loading)
UNO-2182: -10 ~ 60°C (14 ~ 140°F) @ 5 ~ 85% RH.
UNO-2172: -20 ~ 50°C (-4 ~ 122°F) @ 5 ~ 85% RH.
IEC 60068-2-27
CompactFlash: 50 G @ wall mount, half sine, 11 ms
HDD: 20 G @ wall mount, half sine, 11 ms
IEC 60068-2-64 (Random 1 Oct./min, 1hr/axis.)
CompactFlash: 2 Grms @ 5 ~ 500 Hz,
HDD: 1 Grms @ 5 ~ 500 Hz
- **Shock Protection**
- **Vibration Protection**

Ordering Information

- **UNO-2172-C22BE** Intel Celeron M 1.5 GHz, 1 GB RAM Automation Computer
- **UNO-2172-P22BE** Intel Pentium M 1.6 GHz, 1 GB RAM Automation Computer
- **UNO-2182-D13BE** Intel Core 2 Duo 1.5 GHz, 2 GB RAM Automation Computer

Accessories

- **UNO-PCM22-AE** 2 x PC/104 expansion kit for UNO-2100 series
- **UNO-FPM21-AE** UNO-2000 series VESA mount kit
- **PCLS-DIAGAW10** Advantech Remote Monitoring & Diagnosis Utility

1
Motion Control

2
Hazardous Location

3
Energy Automation

4
Building Automation Systems

5
Automation Software

6
Operator Panels

7
Automation Panel PCs

8
Industrial Monitors

9
Industrial Ethernet

10
Device Servers & Gateways

11
Serial Communication Cards

12
Embedded Auto. Computers

13
PACs

14
M2M I/O

15
Distributed Nano Controllers

16
RS-485 I/O

17
Ethernet I/O

18
DAQ Boards

UNO-2174G/GL UNO-2184G

**Intel® Celeron® Automation Computers
with 4 x LAN, 2 x Mini PCIe, DVI/DP/HDMI**

**Intel® Core™ i7 Automation Computer
with 4 x LAN, 2 x Mini PCIe, DVI/DP/HDMI**

NEW



Features

- Onboard Intel Celeron 847/807UE/Core i7-2655LE, 1.1 GHz/1.0 GHz/2.2 GHz processors
- 2 x RS-232 and 2 x RS-232/422/485 ports with automatic flow control
- 4 x 10/100/1000Base-T Ethernet
- DVI-I, DP, HDMI support 2 x independent displays
- Audio with Mic in, Line in, Line out
- 6 x USB 2.0 ports
- Supports 1 x PCI-104 plug-in card with daughterboard expansion
- Windows® WES 2009, WES 7 ready solution
- External accessible CFast slot
- Onboard system status LED indicators
- Supports wake on LAN and boot from LAN function
- Supports PoE Module
- Isolation between chassis and power ground
- IP40 ingress protection

Introduction

UNO-2184G/2174G/GL are high-performance Intel 2nd generation Core i7-2655LE/847/807UE grade controllers that support PCI-104 with daughterboard expansion, 3 x display, 6 x USB, and 2 x Mini PCIe socket. They also feature WLAN, 3G expansion and compatibility with Windows 7. The 4 x Gigabit LANs on the UNO-2184G support teaming function with fault tolerance, link aggregation, and load balance features. The UNO-2184G also supports PoE module for vision inspection to fulfill any graphic application.

Specifications

General

- Certification** CE, UL, RoHS, CCC, CSA, FCC
- 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 V_{DC} (e.g. +24V @ 3A) (Min. 72W), AT/ATX
- Weight** 3.0 kg
- OS Support** Windows XP/7, WES7, WES-2009, Linux, CE 6.0
- System Design** Fanless with no internal cabling (except COM3/COM4)
- Remote Management** Built-in Advantech DiagAnywhere agent on WES2009 / WES7

System Hardware

- CPU** UNO-2174G/GL: Intel Celeron 847/807UE 1.1 GHz/1 GHz
UNO-2184G: Intel Core i7-2655LE 2.2 GHz
- 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** PCI-104 slot, supports +5 & 3.3V power
- Storage** CF: 1 x CFast slot
HDD: One 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** Programmable 256 levels timer interval, from 1 to 255 sec
- Mini PCIe Expansion** 2 x Mini PCIe slots with 1 x SIM card

Daughterboard (Additional purchase required)

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

PoE Module (for UNO-2184GP-D45E)

- LAN** 4 ports Intel Gigabit LAN
- Power Consumption** Supports Max 15.4 W each port, total should be less than 40 W
- Digital Input/Output** 16 x isolation DI + 16 x isolation DO

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 2.0 (2 x USB 3.0 connector)

Environment

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

Ordering Information

- UNO-2184G-D44E** Intel Core i7-2655LE 2.2 GHz, 4 GB RAM Automation Computer
- UNO-2184GP-D45E** Intel Core i7-2655LE 2.2 GHz Automation Computer w/ 4 Ports Gigabit PoE
- UNO-2184G-D45E** Intel Core i7-2655LE 2.2 GHz, 8 GB RAM Automation Computer
- UNO-2174G-C54E** Intel Celeron M 847 1.1 GHz, 4 GB RAM Automation Computer
- UNO-2174GL-C44E** Intel Celeron M 807UE 1.0 GHz, 4 GB RAM Automation Computer

Accessories

- UNO-FPM21-AE** UNO-2000 series VESA mount kit
- 968EMW0021** Mini PCIe card for WLAN
- 1700001854** SMA/I-PEX cable 11CM
- 1750003222** 5dBi Dipole Antenna
- PCLS-DIAGAW10** Advantech Remote Monitoring & Diagnosis Utility
- UNO-PCM24-AE** 2 x PCI-104 expansion board

UNO-3072LA

Intel® Atom™ N270 Automation Computer with 2 x PCI, 2 x GbE, DVI



Features

- Onboard Intel Atom N270 1.6 GHz processor
- 2 x RS-232/422/485 ports with automatic flow control
- 2 x 10/100/1000Base-T RJ-45 ports with teaming function support
- 2 x PCI slots for versatile applications
- Windows® WES 2009, WES 7 ready solution and Embedded Linux
- Onboard system & I/O LED indicators
- Supports wake on LAN and boot from LAN function
- Supports audio Line-out function
- Fanless design with no internal cables
- Isolation between chassis and power ground
- AT/ATX power mode by jumper selection
- Front-accessible I/O design
- Wide operating temperature from -10 ~ 60°C
- One internal USB for dongle and flash drive

Introduction

UNO-3072LA is an Atom-based Embedded Automation Computer with two PCI slots that provides excellent power consumption capabilities. The Gigabit LAN supports the teaming function with fault tolerance, link aggregation, and load balancing. Different from general industrial PCs, the UNO-3072LA is more compact and reliable with a fanless and cableless design. It is designed with an open platform which can fulfill any demanding requirement from the industrial field, and it is an ideal solution for industrial automation and control. The UNO-3072LA supports Windows XP Embedded OS, which offers a pre-configured image with optimized onboard device drivers. Windows XP Embedded delivers the power of Windows operating system in componentized form.

Specifications

General

- Certification** CE, FCC class A, UL, CCC
- Dimension (W x H x D)** 140 x 238 x 177 mm (5.5" x 9.3" x 7.0")
- Enclosure** Aluminum + SECC
- Mounting** Wallmount, Stand, Panel
- Industrial Grounding** Isolation between chassis and power ground
- Power Consumption** 20 W (Typical)
- Power Requirement** 9 ~ 36 V_{DC} (e.g. +24 V @ 2 A) (Min. 48W), ATX, AT/ATX power mode by Jumper selection and BIOS AT simulation (support system reboot automatically after power recovery)
- Weight** 4.5 kg
- OS Support** WES, Windows XP Embedded, Windows Vista/XP, Windows 7, Windows CE 6.0, Linux, QNX
- System Design** Fanless with no internal cabling
- Remote Management** Built-in Advantech DiagAnywhere agent on Windows CE/XPe

System Hardware

- CPU** Intel Atom N270 1.6 GHz
- Memory** 1 GB/2 GB DDRII SDRAM built-in
- Expansion Slots** 2 x PCI V2.2 slots (Note: The heat dissipation from the PCI cards may affect thermal performance)
- PCI Slot Power** 12 V @ 2A, -12V @ 0.5 A, +5 V @ 4 A, +3.3 V @ 4 A (total combined power consumption on the PCI slots should be less than 20W)
- Indicators** LEDs for Power, Standby, HDD, Rx/Tx for COM ports (can be used as programmable LED)
- Audio** AC 97, Line Out
- Storage**
 - CF: 1 x internal type I/ II CompactFlash slot
 - 1 x external type I/ II CompactFlash slot
 - HDD: Built-in one 2.5" SATA HDD/SSD bracket
 - 1x external SATA 2.0
- Display** Single DVI-I display (DVI-D + VGA independent)
- Watchdog Timer** Programmable 256 level timer interval, from 1~255 sec

I/O Interface

- Clock** Battery-backup RTC for time and date
- LAN** 2 x 10/100/1000Base-T RJ-45 ports (Intel 82574L, supports Wake on LAN, Teaming, built-in boot ROM, and IEEE1588 hardware support)
- Serial Ports** 2 x RS-232/422/485 with DB9 connectors, automatic RS-485 data flow control, 2 x RS-232 (optional)
- Serial Speed** RS-232 Speed: 50 bps ~ 115.2 kbps, RS-422/485 Speed: 300 bps ~ 921.6 kbps (Max)
- USB Ports** 5 x USB 2.0 (one internal), 2 x USB 2.0 pin header
- Optional I/O** PS/2 KB/MS, 2 x COM-232, 2 x USB 2.0, LPT

Environment

- Operating Temperature** (IEC 60068-2-2, 100% CPU/ I/O loading)
 - 10 ~ 60°C (14 ~ 140°F)
 - 20 ~ 70°C (-4~158°F) (Optional and no PCI card)
 - 40 ~ 80°C (-40 ~ 176°F)
- Storage Temperature** 95% @ 40°C (non-condensing)
- Humidity** IEC 60068-2-27
- Shock Protection** CompactFlash: 50 G @ wall mount, half sine, 11 ms
- Vibration Protection** HDD: 20 G @ wall mount, half sine, 11 ms
- IIEC 60068-2-64 (Random 1 Oct./min, 1hr/axis.)
- CompactFlash®: 2 Grms @ 5 ~ 500 Hz
- HDD: 1 Grms @ 5 ~ 500 Hz

Ordering Information

- UNO-3072LA-A12E** Intel Atom N270 1.6 GHz, 1 GB RAM Automation Computer
- UNO-3072LA-A13E** Intel Atom N270 1.6 GHz, 2 GB RAM Automation Computer

Accessories

- PCLS-DIAGAW10** Advantech Remote Monitoring & Diagnosis Utility
- 9663308401E** USB x 2 for UNO-3000 Series
- 9663308402E** LPT x 1 for UNO-3000 Series
- 9663308403E** RS232 COM port x 2 and PS2 x 1 for UNO-3000 Series

- 1 Motion Control
- 2 Hazardous Location
- 3 Energy Automation
- 4 Building Automation Systems
- 5 Automation Software
- 6 Operator Panels
- 7 Automation Panel PCs
- 8 Industrial Monitors
- 9 Industrial Ethernet
- 10 Device Servers & Gateways
- 11 Serial Communication Cards
- 12 Embedded Auto. Computers
- 13 PACs
- 14 M2M I/O
- 15 Distributed Nano Controllers
- 16 RS-485 I/O
- 17 Ethernet I/O
- 18 DAQ Boards

UNO-3072A UNO-3074A

**Intel® Atom™ D510 Automation Computer
with 2 x PCI, 2 x GbE, and FireWire**

**Intel® Atom™ D510 Automation Computer
with 4 x PCI, 2 x GbE, and FireWire**



Introduction

UNO-3072A and UNO-3074A are Dual Core Atom-based Embedded Automation Computers with up to four PCI slots that provide an excellent performance to power consumption ratio. They are also equipped with two IEEE 1394b bilingual interfaces which allow users to connect their own devices for machine vision. Critical data can be saved on the battery backup SRAM. They also support two HDD bays with RAID 0/1. The design with an open platform can fulfill demanding requirements from the industrial field, especially for machine vision or motion controllers.

Specifications

General

- **Certification** CE, FCC class A, UL, CCC
- **Dimension (W x H x D)**
 - UNO-3072A: 140 x 238 x 177 mm (5.5" x 9.3" x 7.0")
 - UNO-3074A: 181 x 238 x 177 mm (7.5" x 9.3" x 7.0")
- **Enclosure** Aluminum + SECC
- **Mounting** Wallmount, Stand, Panel
- **Industrial Grounding** Isolation between chassis and power ground
- **Power Consumption** 25 W (Typical, no add-on card)
- **Power Requirement** 9 ~ 36 V_{DC} (e.g. +24 V @ 3A), ATX, AT/ATX power Jumper selection and BIOS AT simulation (support system reboot automatically after power recovery)
- **Weight** UNO-3072A: 4.5 kg / UNO-3074A: 5.0 kg
- **OS Support** WES2009, Windows Vista/XP, Windows 7, Linux, QNX
- **System Design** Fanless with no internal cabling
- **Remote Management** Built-in Advantech DiagAnywhere agent on Windows CE/ WES2009

System Hardware

- **CPU** Intel Atom D510 1.66 GHz
- **Memory** 2 GB DDRII SDRAM built-in
- **Battery Backup SRAM** 512 KB
- **Expansion Slots**
 - UNO-3072A: 2 x PCI V2.2 slots
 - UNO-3074A: 4 x PCI V2.2 slots
- **PCI Slot Power**
 - 12 V @ 3 A, -12 V @ 0.8 A, +5 V @ 6 A, +3.3 V @ 6 A (total combined power consumption on the PCI slots should be less than 40W)
- **Indicators** LEDs for Power, Standby, HDD, SRAM battery, Rx/Tx for COM ports
- **Audio** AC 97, Line Out
- **Storage**
 - CF: 1 x internal type I/ II CompactFlash slot
 - 1 x external type I/ II CompactFlash slot
 - HDD: Two built-in 2.5" SATA HDD brackets with support for RAID 0 and RAID 1
 - One external SATA 2.0 (does not support hot swap)
- **Display** DB15 VGA connector, 1600 x 1200 @ 85 Hz
- **Watchdog Timer** Programmable 256 level timer interval, from 1~255 sec

I/O Interface

- **LAN** 2 x 10/100/1000Base-T RJ-45 ports (Intel 82574L, supports Wake on LAN, Teaming, built-in boot ROM, and IEEE1588 hardware support)
- **Serial Ports** 2 x RS-232/422/485 with DB9 connectors, automatic RS-485 data flow control, 2 x RS-232 (optional)

Features

- Onboard Intel Atom D510 1.66 GHz processor
- Dual IEEE-1394 for vision inspection devices
- AT/ATX power mode by jumper selection
- Onboard 512KB Battery- backup SRAM
- 2 x RS-232/422/485 ports with automatic flow control
- 2 x 10/100/1000Base-T RJ-45 ports with teaming function support
- Up to four PCI expansions
- 4-ch isolated DI, 4-ch isolated DO
- Dual SSD/HDD with onboard RAID 0/1 support
- Fanless design with no internal cables
- Isolation between chassis and power ground
- Front-accessible I/O design
- 1 x internal USB for dongle and flash drive

Serial Speed

RS-232 Speed: 50 bps ~ 115.2 kbps,
RS-422/485 Speed: 300 bps ~ 921.6 kbps (Max)
5 x USB 2.0 (one internal), 2 x USB 2.0 pin header
2 x type B (Bilingual)

USB Ports

IEEE 1394 (Firewire)

Optional I/O

Digital Input

Wet contact:
Dry contact:
isolation and ESD protect
Opto-Isolator Response:

Digital Output

4-ch. contact DIO ~ DI3
Logic 0: -3 ~ 3 V_{DC}; Logic 1: ±10 ~ 50 V_{DC}
Logic 0: open; Logic 1: close to GND
1500 V_{DC}, 50~70 V_{DC} over voltage protection
25µs - Interrupt capable channel: DIO ~ DI3
4 ch. DO0 ~ DO3
1,500 V_{DC} isolation, 200 mA max/channel sink current
Keeps output status after system hot reset
Open collector to 40V (200mA maximum sink current load) and 3 kHz speed

Timer/Counter

Counter Source

Pulse Output

Can be cascaded as one 32-bit counter/timer

Down counting, preset counting value

Timer Time Base

DI1 & DI3
DO2 & DO3
100 kHz, 10 kHz, 1 kHz, 100 Hz

Environment

Operating Temperature

(IEC 60068-2-2, 100% CPU/ I/O loading)
-10 ~ 60°C (14 ~ 140°F)

Storage Temperature

-20 ~ 80°C (-4 ~ 176°F)

Humidity

95% @ 40°C (non-condensing)

Shock Protection

IEC 60068-2-27
CompactFlash: 50 G @ wall mount, half sine, 11 ms
HDD: 20 G @ wall mount, half sine, 11 ms
IEC 60068-2-64 (Random 1 Oct./min, 1hr/axis.)
CompactFlash®: 2 Grms @ 5 ~ 500 Hz,
HDD: 1 Grms @ 5 ~ 500 Hz

Vibration Protection

Ordering Information

UNO-3072A-A33E

Intel Atom D510 1.66 GHz, 2 GB RAM Automation Computer w/ 2 x PCI

UNO-3074A-A33E

Intel Atom D510 1.66 GHz, 2 GB RAM Automation Computer w/ 4 x PCI

Accessories

PCLS-DIAGAW10

Advantech Remote Monitoring & Diagnosis Utility

1960048293N000

Top cover of UNO-3082 with venting hole

1960045707N010

Top cover of UNO-3084 with venting hole

9663308401E

USB x 2 for UNO 3000 Series

9663308402E

LPT x 1 for UNO 3000 Series

9663308403E

RS232 COM port x 2 and PS2 x 1 for UNO 3000 Series

UNO-3082 UNO-3084

Intel® Core™ 2 Duo Automation Computer
with Dual DVI, 2 x PCI and FireWire

Intel® Core™ 2 Duo Automation Computer
with Dual DVI, 1 x PCIe, 3 x PCI and FireWire



UNO-3082

UNO-3084



Introduction

UNO-3082 and UNO-3084 are high performance Core 2 Duo Embedded Automation Computers with up to four expansion slots for PCI express or PCI support. The Gigabit LAN on the UNO-3082/3084 supports Teaming function with fault tolerance, link aggregation, and load balance features. They are also equipped with two IEEE 1394b bilingual interfaces which allow users to connect their own devices for machine vision application. Critical data can be saved on the battery backup SRAM. They also support two HDD bays with RAID 0/1.

Specifications

General

- Certification** CE, FCC class A, UL, CCC
- Dimension (W x H x D)** UNO-3082: 157 x 238 x 177 mm (6.2" x 9.3" x 7.0")
UNO-3084: 195 x 238 x 177 mm (7.6" x 9.3" x 7.0")
- Enclosure** Aluminum + SECC
- Mounting** Wallmount, Stand, Panel
- Industrial Grounding** Isolation between chassis and power ground
- Power Consumption** 40 W (Typical, no add-on card)
- Power Requirement** 9 ~ 36 V_{DC} (e.g. +24 V @ 5 A), ATX, AT/ATX power Jumper selection and BIOS AT simulation (support system reboot automatically after power recovery)
UNO-3082: 4.5 kg / UNO-3084: 5.0 kg
- Weight** WES, Windows XP Embedded, Windows Vista/XP, Windows 7, Linux, QNX
- OS Support** Fanless with no internal cabling
- System Design** Built-in Advantech DiagAnywhere agent on Windows CE/XPe
- Remote Management**

System Hardware

- CPU** Intel Core 2 Duo L7500 1.6 GHz
- Memory** 2 GB/4 GB DDRII SDRAM built-in
- Battery Backup SRAM** 512 KB
- Expansion Slots** UNO-3082: 2 x PCI V2.2 slots
UNO-3084: 1 x PCIe plus 3 x PCI v2.2 slots
12 V @ 3 A, -12 V @ 0.8 A, +5 V @ 6 A, +3.3 V @ 6 A (total combined power consumption on the PCI slots should be less than 40W)
- PCI Slot Power** LEDs for Power, Standby, HDD, SRAM battery, Rx/Tx for COM ports
- Indicators** AC 97, Line Out
- Audio** CF: 1 x internal type I/II CompactFlash slot
1 x external type I/II CompactFlash slot
- Storage** HDD: Two built-in 2.5" SATA HDD brackets with support for RAID 0 and RAID 1
One external SATA 2.0 (does not support hot swap)
- Display** Dual DVI-D independent, or DVI-D + Dual VGA cloned displays
- Watchdog Timer** Programmable 256 level timer interval, from 1~255 sec

I/O Interface

- LAN** 2 x 10/100/1000Base-T RJ-45 ports (Intel 82574L, supports Wake on LAN, Teaming, built-in boot ROM, and IEEE1588 hardware support)
- Serial Ports** 2 x RS-232/422/485 with DB9 connectors, automatic RS-485 data flow control, 2 x RS-232 (optional)
- Serial Speed** RS-232 Speed: 50 bps ~ 115.2 kbps,
RS-422/485 Speed: 300 bps ~ 921.6 kbps (Max)

Features

- Onboard Intel Core 2 Duo L7500 1.6 GHz processor
- Dual DVI-I to support up to 3 displays
- Dual IEEE-1394 for vision inspection devices
- AT/ATX power mode by jumper selection
- Onboard 512KB Battery- backup SRAM
- 2 x RS-232/422/485 ports with automatic flow control
- 2 x 10/100/1000Base-T RJ-45 ports with teaming function support
- Up to three PCI and one PCIe expansion
- 4-ch isolated DI, 4-ch isolated DO
- Dual SSD/HDD with onboard RAID 0/1 support
- Fanless design with no internal cables
- Isolation between chassis and power ground
- Front-accessible I/O design
- 1 x internal USB for dongle and flash drive

- USB Ports** 5 x USB 2.0 (one internal), 2 x USB 2.0 pin header
- IEEE 1394 (Firewire)** 2 x type B (Bilingual)
- Optional I/O** PS/2 KB/MS, 2 x COM-232 (with packing), 2 x USB 2.0, LPT
- Digital Input** 4-ch. contact DI0 ~ DI3
Wet contact: Logic 0: -3 ~ 3 V_{DC}; Logic 1: ±10 ~ 50 V_{DC}
Dry contact: Logic 0: open; Logic 1: close to GND
1500 V_{DC}, 50~70 V_{DC} over voltage protection
25µs- Interrupt capable channel: DI0 ~ DI3
4 ch. DO0 ~ DO3
1,500 V_{DC} isolation, 200 mA max/channel sink current
Keeps output status after system hot reset
Open collector to 40V (200mA maximum sink current load) and 3 kHz speed
- Digital Output**

Timer/Counter

- Counter Source** DI1 & DI3
- Pulse Output** DO2 & DO3
- Can be cascaded as one 32-bit counter/timer**
- Down counting, preset counting value**
- Timer Time Base** 100 kHz, 10 kHz, 1 kHz, 100 Hz

Environment

- Operating Temperature** (IEC 60068-2-2, 100% CPU/ I/O loading)
-10 ~ 55°C (14 ~ 131°F)
- Storage Temperature** -20 ~ 80°C (-4 ~ 176°F)
- Humidity** 95% @ 40°C (non-condensing)
- Shock Protection** IEC 60068-2-27
CompactFlash: 50 G @ wall mount, half sine, 11 ms
HDD: 20 G @ wall mount, half sine, 11 ms
IEC 60068-2-64 (Random 1 Oct./min, 1hr/axis.)
CompactFlash®: 2 Grms @ 5 ~ 500 Hz,
HDD: 1 Grms @ 5 ~ 500 Hz
- Vibration Protection**

Ordering Information

- UNO-3082-D23E** Intel Core 2 Duo, 2 G RAM, 2 x PCI Automation Computer
- UNO-3084-D23E** Intel Core 2 Duo, 2 G RAM, 3 x PCI+/ 1 x PCIe Automation Computer
- UNO-3082-D24E** Intel Core 2 Duo, 4 G RAM, 2 x PCI Automation Computer
- UNO-3084-D24E** Intel Core 2 Duo, 4 G RAM, 3 x PCI+/ 1 x PCIe Automation Computer

Accessories

- PCLS-DIAGAW10** Advantech Remote Monitoring & Diagnosis Utility
- 1960048293N000** Top cover of UNO-3082 with venting hole
- 1960045707N010** Top cover of UNO-3084 with venting hole
- 9663308401E** USB x 2 for UNO-3000 Series
- 9663308402E** LPT x 1 for UNO-3000 Series
- 9663308403E** RS232 COM port x 2 and PS2 x 1 for UNO-3000 Series

1

Motion Control

2

Hazardous Location

3

Energy Automation

4

Building Automation Systems

5

Automation Software

6

Operator Panels

7

Automation Panel PCs

8

Industrial Monitors

9

Industrial Ethernet

10

Device Servers & Gateways

11

Serial Communication Cards

12

Embedded Auto. Computers

13

PACs

14

M2M I/O

15

Distributed Nano Controllers

16

RS-485 I/O

17

Ethernet I/O

18

DAQ Boards

UNO-3272/3282

Intel® Core™ 2 Duo / Celeron® M
Automation Computers with
PCI/PCIe, 2 x GbE, 4 x COM, DVI



Features

- Onboard Intel Core 2 Duo 1.5 GHz/Celeron M 1.86 GHz processors
- Dual SSD/HDD with on-board RAID 0/1 support
- Onboard 512 KB Battery-backup SRAM
- Optimized thermal design to support -20~60°C operating temperature in full CPU and I/O loads
- 2 x RS-232 and 2 x RS-232/422/485 ports with automatic flow control
- 2 x 10/100/1000Base-T Ethernet ports with teaming function
- 1 x PCIe plus 1 x PCI or 2 x PCI expansion slots for versatile applications
- Both DVI-D and VGA displays to support dual display output
- Onboard system & I/O LED indicators with programmable feature
- Fanless design with no internal cabling
- Isolation between chassis and power ground
- 1 x internal USB for dongle and flash drive

Introduction

UNO-3272 and UNO-3282 are high-performance Embedded Automation Computers with rich I/Os and PCI/PCIe expansion slots. They feature a rugged design with Gigabit LAN and battery backup SRAM. Different from general industrial PCs, the UNO-3272 and UNO-3282 are more compact and reliable with a fanless, cableless and diskless design. They are open platforms which can fulfill any demanding requirement from the industrial field, and ideal solutions for industrial automation and control. The UNO-3272 and UNO-3282 provide embedded operating system with a pre-configured image that has optimized onboard device drivers, and supports Windows XP Embedded to fulfill the toughest requirements for complete functionality and high reliability.

Specifications

General

- Certification** CE, FCC class A, UL, CCC
- Dimension (W x D x H)** 200 x 240 x 130 mm (7.9" x 9.4" x 5.0")
- Enclosure** Aluminum
- Mounting** Wallmount, Desktop
- Power Consumption** 40 W (Typical, L7400, no add-on card)
- Power Requirements** 9 ~ 36 V_{DC} (e.g. +24 V @ 5 A), ATX
- Weight** 5.5 kg
- OS Support** WES, Windows XP Embedded, Windows 2000/XP/ Vista/ Windows 7, Windows CE 6.0
- System Design** Fanless with no internal cabling
- Remote Management** Built-in Advantech DiagAnywhere agent on Windows CE/ XPe

System Hardware

- CPU** Intel Core 2 Duo L7400 1.5 GHz, Celeron M 440 1.86 GHz
- Memory** 1 GB DDR2 SDRAM built-in
- Battery Backup SRAM** 512 KB (UNO-3282)
- Indicators** LED for Power, Power Standby, HDD LED; 4 COM ports Tx/Rx, 2 LAN ports Tx/Rx, 4 user define LED and alarm for BatteryBackup
- Keyboard/Mouse** 2 x PS/2 connector for Keyboard & Mouse
- Audio** Line in, Line out
- Expansion Slots** 1 x PCIe + 1 x PCI riser board installed, 2 x PCI v2.2 riser replaceable in accessory (UNO-3282)
2 x PCI V2.2 riser board included (UNO-3272)
(Note: The heat dissipation in the PCI cards may affect thermal performance)
- PCI/PCIe Slot Power** PCI: 12 V @ 2.5 A, -12 V @ 0.8 A, +5 V @ 4 A, +3.3 V @ 3 A
PCIe: 12 V @ 2.5 A, +3.3 V @ 3 A
(total combined power consumption on the PCI slots should be less than 20W)
- Storage**
 - SSD** 1 x Internal, 1 x External CompactFlash® slot (UNO-3282)
 - HDD** 1 x External type I/II CompactFlash slot (UNO-3272)
Two built-in 2.5" SATA HDD brackets support RAID 0/1

- Display** Supports up to 1600 x 1200 @ 85 Hz
VGA + DVI-D, support dual display
- Watchdog Timer** Programmable 256 levels timer interval, from 1 to 255 sec

Communication

- LAN** 2 x 10/100/1000Base-T RJ-45 ports (Intel 82573L chip, supports teaming, Wake On LAN function and built-in boot ROM in flash BIOS)
- 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: 50bps ~ 115.2 kbps
RS-422/485: 50bps ~ 921.6 kbps (Max)
- USB** 5 x USB, USB EHCI, Rev. 2.0 compliant (1 is for USB dongle and USB flash inside chassis, UNO-3282 only)

Environment

- Humidity** 95% @ 40°C (non-condensing)
- Operating Temperature (With CF Card)** UNO-3282-D12E: -20 ~ 60°C (-4 ~ 140°F)
UNO-3272-C32E: -20 ~ 50°C (-4 ~ 122°F)
- Storage Temperature** -20 ~ 80°C (-4 ~ 176°F)
- Shock Protection** IEC 68 2-27
CompactFlash: 50 G @ wall mount, half sine, 11 ms
HDD: 20 G @ wall mount, half sine, 11 ms
IEC 68 2-64 (Random 1 Oct./min, 1hr/axis)
CompactFlash: 5 Grms @ 5 ~ 500 Hz
HDD: 1 Grms @ 5 ~ 500 Hz
- Vibration Protection**

Ordering Information

- UNO-3272-C32E** Intel Celeron M 1.86 GHz, 1 GB RAM Automation Computer
- UNO-3282-D12E** Intel Core 2 Duo 1.5 GHz, 1 GB RAM Automation Computer

Accessories

- PCLS-DIAGAW10** Advantech Remote Monitoring & Diagnosis Utility

Accessories

UNO-1000 Series Accessories



UNO-FPM11

UNO-1100 Series VESA Mounting Kit

Features

- Dimensions: 270 x 162 x 11 mm (W x H x D) (Only extension kit)
- Supports VESA 75 and 100 monitor

Supported Models

- UNO: All UNO-1100 series
- FPM: All FPM 12", 15", 17", 19" models

Ordering Information

- UNO-FPM11-BE

UNO-2000/2100 Series Accessories



UNO-DIN21

UNO-2100 Series DIN-rail Kit

Features

- Supports DIN-rail mounting (EN50022, 35 x 7.5 mm)

Supported Models

- All UNO-2100 series

Ordering Information

- UNO-DIN21-BE



UNO-FPM21

UNO-2000 Series VESA Mounting Kit

Features

- Dimensions: 270 x 162 x 11 mm (W x H x D) (Only extension kit)
- Supports VESA 75 and 100 monitor

Supported Models

- UNO: All UNO-2000 and 2100 series
- FPM: All FPM 12", 15", 17", 19" models

Ordering Information

- UNO-FPM21-AE



UNO-HD20

UNO-2000 HDD Expansion Kit

Features

- Dimensions: 188.8 x 106.5 x 21.0 mm (W x D x H) (Only extension kit)

Supported Models

- All UNO-2000 series

Ordering Information

- UNO-HD20-AE



UNO-PCM21

2 x PC/104 Expansion Kit for UNO-2170

Features

- Dimensions: 228 x 32 x 152 mm (W x H x D) (Only extension kit)
- Supports two PC/104 modules

Supported Models

- UNO-2170

Ordering Information

- UNO-PCM21-AE



UNO-PCM22

2 x PC/104 Expansion Kit for UNO-2100 Series

Features

- Dimensions: 228 x 32 x 152 mm (W x H x D) (Only extension kit)
- Supports two PC/104 modules

Supported Models

- UNO-2171, UNO-2172, UNO-2176, UNO-2182

Ordering Information

- UNO-PCM22-AE



UNO-PCM23

1 x PCI-104, 1 x PC/104+ Expansion Kit for UNO-2174A/2178A

Features

- Dimensions: 228 x 32 x 148 mm (W x H x D) (Only extension kit)
- Supports one PC/104+ and one PCI-104 modules

Supported Models

- UNO-2174A, UNO-2178A

Ordering Information

- UNO-PCM23-AE

1
Motion Control

2
Hazardous Location

3
Energy Automation

4
Building Automation Systems

5
Automation Software

6
Operator Panels

7
Automation Panel PCs

8
Industrial Monitors

9
Industrial Ethernet

10
Device Servers & Gateways

11
Serial Communication Cards

12
Embedded Auto. Computers

13
PACs

14
M2M I/O

15
Distributed Nano Controllers

16
RS-485 I/O

17
Ethernet I/O

18
DAQ Boards

UNO-3000 Series Accessories



UNO-PM70 Panel Mounting Kit for UNO-3000 Series

Supported Models

- UNO-3072L, UNO-3072, UNO-3074

Ordering Information

- UNO-PM70-AE



UNO-SM70 Stand Mounting Kit for UNO-3000 Series

Supported Models

- UNO-3072L, UNO-3072, UNO-3074

Ordering Information

- UNO-SM70-AE



UNO-WM72/WM74 Wall Mounting Kit for UNO-3072/L and UNO-3074

Supported Models

- UNO-3072/3072L (UNO-WM 72)
- UNO-3074 (UNO-WM74)

Ordering Information

- UNO-WM72-AE
- UNO-WM74-AE

Note: For UNO-3072L-C22BE and UNO-3074-P32CE wall mount requirements, please use the UNO-PM70-AE mounted on the back as a Wall Mounting kit.



UNO-PM80 Panel Mounting Kit for UNO-3082/3084

Supported Models

- UNO-3072LA, UNO-3072A, UNO-3074A, UNO-3082, UNO-3084

Ordering Information

- UNO-PM80-AE



UNO-SM80 Stand Mounting Kit for UNO-3082/3084

Supported Models

- UNO-3072LA, UNO-3072A, UNO-3074A, UNO-3082, UNO-3084

Ordering Information

- UNO-SM80-AE



UNO-WM80 Wall Mounting Kit for UNO-3082/3084/3072LA

Supported Models

- UNO-3072LA, UNO-3072A, UNO-3074A, UNO-3082, UNO-3084

Ordering Information

- UNO-WM80-AE



Expansion Kit USB x 2 for UNO-3000 Series

Supported Models

- UNO-3072LA, UNO-3072A, UNO-3074A, UNO-3082, UNO-3084

Ordering Information

- 9663308401E



Expansion Kit LPT x 1 for UNO-3000 Series

Supported Models

- UNO-3072LA, UNO-3072A, UNO-3074A, UNO-3082, UNO-3084

Ordering Information

- 9663308402E



Expansion Kit RS232 COM port x 2 and PS2 x 1 for UNO-3000 Series

Supported Models

- UNO-3072LA, UNO-3072A, UNO-3074A, UNO-3082, UNO-3084

Ordering Information

- 9663308403E

Power Adapter and Power Cord Solutions

Industrial Grade Power Adapter (Note: Only for UNO-1000/2000 series)



Features

- Input voltage: 90 ~ 264 V_{AC}, 47 ~ 63 Hz
- Output Voltage: 24 V_{DC}
- Operating Temperature: -20 ~ 70°C

Ordering Information

- 1702002600 Power cable US Plug 1.8 M
- 1702031801 Power cable UK Plug 1.8 M
- 1702002605 Power cable EU Plug 1.8 M
- 1702031836 Power cable China/Australia Plug 1.8 M
- 1757002321 63W AC to DC UNO series power adapter

Commercial Grade Power Adapter

Features

- Input voltage: 100 ~ 240 V_{AC}, 50 ~ 60 Hz
- Output Voltage: 19 V_{DC}
- Operating Temperature: 0 ~ 40°C

Ordering Information

- 1700001524 Power cable 3-pin US type 1.8 M
- 170203180A Power cable 3-pin UK type 1.8 M
- 170203183C Power cable 3-pin EU type 1.8 M
- 1757002682 65W AC to DC power adapter
- 1757002161 150W AC to DC power adapter
- PWR-244-AE 96W AC to DC power adapter