

IA260 Series

▶ Award-winning Product



RISC-embedded computers with 4 serial ports, dual LANs, VGA, DIOs, CompactFlash, USB



- > Cirrus Logic EP9315 ARM9 CPU, 200 MHz
- > 128 MB RAM on-board, 32 MB flash disk
- > 4 software-selectable RS-232/422/485 serial ports
- > VGA interface for field site monitoring
- > Dual 10/100 Mbps Ethernet for network redundancy
- > 8+8 DI/DO channels, up to 30 VDC
- > 12 to 48 VDC power input design
- > Supports CompactFlash and USB 2.0 hosts
- > Ready-to-run Linux or WinCE 6.0 platform
- > H-type heat dissipation design for system reliability
- > -40 to 75°C wide operating temperature model available



Overview

The IA260 embedded computers come with 4 RS-232/422/485 serial ports, dual Ethernet ports, 8 digital input channels, 8 digital output channels, a VGA output, 2 USB hosts, and a CompactFlash socket. The computers are housed in a compact, IP40 protected, industrial-strength aluminum case.

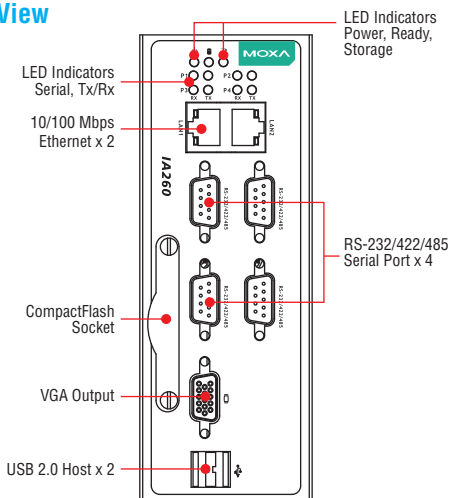
The IA260 computers use the Cirrus Logic EP9315 ARM9, 32-bit, 200 MHz RISC CPU. This powerful computing engine supports several useful communication functions, but will not generate too much heat. The built-in 32 MB NOR Flash ROM and 128 MB SDRAM give you enough memory to run your application software directly on the IA260.

The patented “H-Type” heat dissipation design can directly transmit heat from inside the housing to the outside, which makes the IA260 an ideal computing unit for applications that involve extremely high temperatures. With its built-in VGA output interface, the IA260 computers are suitable for use with SCADA systems in industrial applications, such as factory automation, production line process monitoring, and mining automation, that require VGA and HMI features.

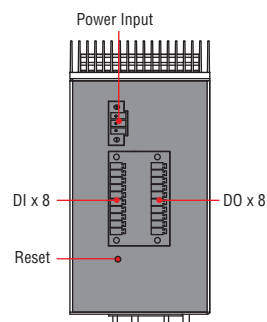
The IA260 computers support RS-232/422/485, digital I/O, and have dual LAN ports, making them ideal for communication platforms in industrial applications that require network redundancy. In addition to the standard model, a wide-temperature (-40 to 75°C) model is available for use in harsh industrial-automation environments.

Appearance

Front View



Top View



Hardware Specifications

Computer

CPU: Cirrus EP9315 ARM9 CPU, 200 MHz

USB: USB 2.0 hosts x 2, type A connector

DRAM: DDR2 SDRAM, 128 MB

Flash: NOR Flash, 32 MB

OS (pre-installed): Linux or Windows CE 6.0

Storage

Storage Expansion: CF card type I/II

Display

Graphics Controller: EP9315 internal graphics accelerator engine with TTL graphical signal support

Display Memory: Dynamic video memory (shares system memory)

Display Interface: CRT interface for VGA output, DB15 female connector

Resolution: 1024 x 768, 8 bits

Ethernet Interface

LAN: Auto-sensing 10/100 Mbps ports (RJ45) x 2

Magnetic Isolation Protection: 1.5 kV built-in

Serial Interface

Serial Standards: RS-232/422/485 ports, software-selectable (DB9 male) x 4

ESD Protection: 4 kV for all signals

Console Port: RS-232 (TxD, RxD, GND), 4-pin header output (115200, n, 8, 1)

Serial Communication Parameters

Data Bits: 5, 6, 7, 8

Stop Bits: 1, 1.5, 2

Parity: None, Even, Odd, Space, Mark

Flow Control: RTS/CTS, XON/XOFF, ADDC® (automatic data direction control) for RS-485

Baudrate: 50 bps to 921.6 kbps (supports nonstandard baudrates; see user's manual for details)

Serial Signals

RS-232: TxD, RxD, DTR, DSR, RTS, CTS, DCD, GND

RS-422: TxD+, TxD-, RxD+, RxD-, GND

RS-485-4w: TxD+, TxD-, RxD+, RxD-, GND

RS-485-2w: Data+, Data-, GND

Digital Input

Input Channels: DI x 8

Input Voltage: 0 to 30 VDC

Digital Input Levels for Dry Contacts:

- Logic level 0: Close to GND
- Logic level 1: Open

Digital Input Levels for Wet Contacts:

- Logic level 0: +3 V max.
- Logic level 1: +10 V to +30 V (COM to DI)

Connector Type: 10-pin screw-fastened terminal block (8 points, COM, GND)

Isolation: 3 kV optical isolation

Digital Output

Output Channels: DO x 8, sink type

Output Current: Max. 200 mA per channel

On-State Voltage: 24 VDC nominal, open collector to 30 V

Connector Type: 9-pin screw-fastened terminal block

Isolation: 3 kV optical isolation

LEDs

System: Power, Ready, Storage

LAN: 10M/Link x 2, 100M/Link x 2 (on connector)

Serial: TxD x 4, RxD x 4

Switches and Buttons

Reset Button: Supports "Reset to Factory Default"

Physical Characteristics

Housing: Aluminum, industrial vertical form factor

Weight: 1 kg (2.22 lb)

Dimensions: 52 x 112.6 x 162 mm (2.05 x 4.43 x 6.38 in)

Mounting: DIN-rail, wall

Environmental Limits

Operating Temperature:

Standard Models: -10 to 60°C (14 to 140°F)

Wide Temp. Models: -40 to 75°C (-40 to 167°F)

Storage Temperature:

Standard Models: -20 to 80°C (-4 to 176°F)

Wide Temp. Models: -40 to 85°C (-40 to 185°F)

Ambient Relative Humidity: 5 to 95% (non-condensing)

Anti-Vibration: 2 Grms @ IEC-68-2-34, random wave, 5-500 Hz, 1 hr per axis

Anti-Shock: 20 g @ IEC-68-2-27, half sine wave, 11 ms

Power Requirements

Input Voltage: 12 to 48 VDC (3-pin terminal block)

Input Current:

With no load on USB ports:

- 240 mA @ 24 VDC
- 480 mA @ 12 VDC

With full load on USB ports:

- 450 mA @ 24 VDC
- 900 mA @ 12 VDC

Power Consumption:

With no load on USB ports: 5.8 W

With full load on USB ports: 11 W

Standards and Certifications

Safety: UL 60950-1, CSA C22.2 No. 60950-1-03, EN 60950-1, CCC (GB4943, GB9254, GB17625.1)

EMC: EN 55022 Class A, EN 61000-3-2 Class A, EN 61000-3-3, EN 55024, FCC Part 15 Subpart B Class A

EMS:

IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV

IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m

IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV

IEC 61000-4-5 Surge: Power: 1 kV; Signal: 1 kV

IEC 61000-4-6 CS: Signal: 3 V/m

IEC 61000-4-8 1 A/m

IEC 61000-4-11

Green Product: RoHS, CRoHS, WEEE

Reliability

Automatic Reboot Trigger: Built-in WDT (watchdog timer)

MTBF (mean time between failures)

Time: 145,328 hrs

Standard: Telcordia (Bellcore) Standard

Warranty

Warranty Period: 5 years

Details: See www.moxa.com/warranty

Note: The Hardware Specifications apply to the embedded computer unit itself, but not to accessories. In particular, the wide temperature specification does not apply to accessories such as the power adapter and cables.

Software Specifications

Linux

OS: Linux 2.6.23

Web Server (Apache): Allows you to create and manage web sites

Terminal Server (SSH): Provides secure encrypted communications between two untrusted hosts over an unsecured network

File System: JFFS2, NFS, Ext2, Ext3

Internet Protocol Suite: TCP, UDP, IPv4, SNMPv1, ICMP, ARP, HTTP, CHAP, PAP, DHCP, NTP, NFS, SMTP, Telnet, FTP, TFTP, PPP, PPPoE

Internet Security: OpenVPN, IPTables Firewall

Dial-up Networking: PPP Daemon (pppd) for Linux that uses the PPP protocol and allows Unix machines to connect to the Internet as PPP servers or clients, through dialup. The PPP Daemon Works with chat, dip, and dial programs among others, and supports the IP, TCP, UDP, and IPX for Linux (Novell) protocols.

Watchdog: Features a hardware function to trigger system reset in a user-specified time interval (Moxa API provided)

Application Development Software:

- Moxa API Library (Watchdog timer, Moxa serial I/O control, Moxa DI/DO API)
- GNU C/C++ cross-compiler
- GNU C library
- GDB source-level debugging server

Software Protection: Encryption tool for user executable files (based on patented Moxa technology)

Windows Embedded CE 6.0

OS: Windows Embedded CE 6.0

File System: FAT (for onboard flash memory)

Internet Protocol Suite: TCP, UDP, IPv4, SNMPv2, ICMP, IGMP, ARP, HTTP, CHAP, PAP, SSL, DHCP, SNT, SMTP, Telnet, FTP, PPP

Web Server (WinCE IIS): Supports ASP, ISAPI Secure Socket Layer (SSL 2/3) and Transport Layer Security (TLS/SSL 3.1) public key-based protocols, and Web Administration ISAPI Extensions

Dial-up Networking: Supports RAS client API and PPP, Extensible Authentication Protocol (EAP), and RAS scripting

File Server: Enables remote clients to access files and other resources over the network

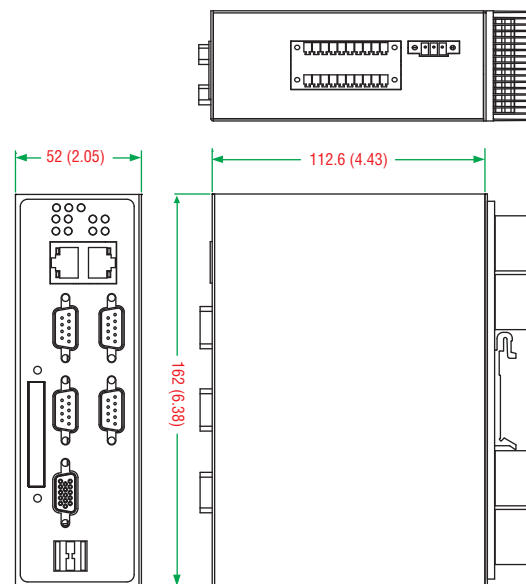
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Application Development Software:

- Moxa WinCE 6.0 SDK
- Moxa API Library
- C Libraries and Run-times
- Component Services (COM and DCOM)
- Microsoft® .NET Compact Framework 2.0
- XML, including DOM, XQL, XPATH, XSLT, SAX, SAX2
- SOAP Toolkit Client
- Winsock 2.2

Dimensions

Unit: mm (inch)



Ordering Information

Available Models

IA260-CE: RISC-based embedded computer with 4 serial ports, 8 DIs, 8 DOs, dual LANs, VGA, CompactFlash, USB, Win CE 6.0 OS, -10 to 60°C operating temperature

IA260-LX: RISC-based industrial embedded computer with 4 serial ports, 8 DIs, 8 DOs, dual LANs, VGA, CompactFlash, USB, Linux OS, -10 to 60°C operating temperature

IA260-T-CE: RISC-based embedded computer with 4 serial ports, 8 DIs, 8 DOs, dual LANs, VGA, CompactFlash, USB, Win CE 6.0 OS, -40 to 75°C operating temperature

IA260-T-LX: RISC-based industrial embedded computer with 4 serial ports, 8 DIs, 8 DOs, dual LANs, VGA, CompactFlash, USB, Linux OS, -40 to 75°C operating temperature

Package Checklist

- IA260 or IA260-T embedded computer
- Wall-mounting kit
- DIN-rail mounting kit
- Ethernet cable: RJ45-to-RJ45 cross-over cable, 100 cm
- CBL-RJ45F9-150: 8-pin RJ45-to-DB9 female console port cable, 150 cm
- CBL-RJ45M9-150: 8-pin RJ45-to-DB9 male serial port cable, 150 cm
- Universal power adapter
- Documentation and software CD
- Quick installation guide (printed)
- Warranty card