

EM-2260 Series

RISC-based embedded core module with 4 serial ports, 8 DI/DO, dual LANs, VGA, CompactFlash, PCMCIA, USB



- > Cirrus Logic EP9315 ARM9 CPU, 200 MHz
- > 128 MB RAM on-board, 32 MB flash disk
- > Graphical interface for external VGA output connection
- > 2 KV optically isolated RS-232/422/485 serial ports
- > Dual 10/100 Mbps Ethernet for network redundancy
- > 8 DI and 8 DO channels
- > Supports CompactFlash and USB 2.0 hosts
- > Ready-to-run WinCE 6.0 platform
- > Full-function development kit for quick evaluation and application development
- > -40 to 75°C wide temperature model available



Overview

The EM-2260 embedded module features 4 RS-232/422/485 serial ports, dual Ethernet ports, an EIDE interface for designing an external storage connection, such as a CompactFlash socket, and USB port signals. The module has a compact design that is easily integrated with a variety of industrial applications, including gas stations, vending machines, and ticketing machines, and offers a powerful serial communication capability for better system integration. Programmers will find the pre-installed, ready-to-run Windows CE 6.0 platform and full-function development kit a great benefit to developing software and building reliable communication bases for industrial automation applications.

The EM-2260 embedded module uses the Cirrus Logic EP9315 ARM9, 32-bit, 200 MHz RISC CPU. This powerful computing engine supports several useful communication functions, but will not generate a lot of 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 EM-2260.

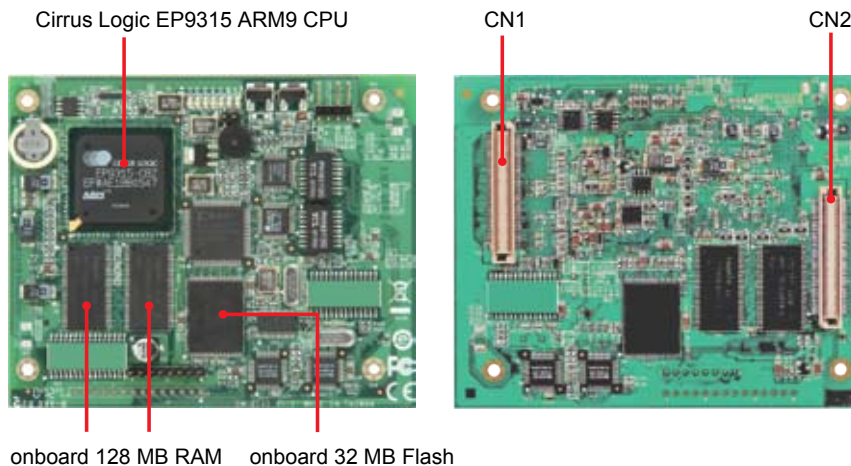
With its built-in VGA output interface, the EM-2260 is suitable for use with SCADA systems in industrial applications, such as manufacturing automation, production line process monitoring, and mining automation, that require VGA and HMI features.

The EM-2260 comes with Windows CE 6.0 preinstalled, and supports general Windows and .NET 2.0 computing environments. This means that programs developed for standard PC operating systems with tools such as Visual Studio 2005 can run on the EM-2260 with little or no porting effort.

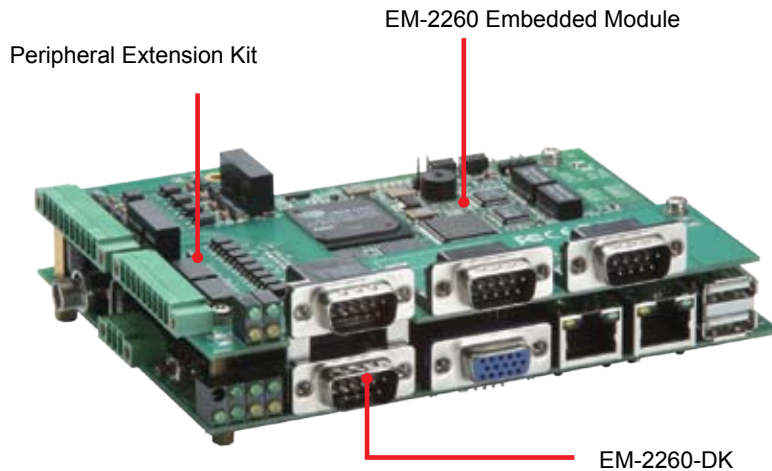
In addition to the standard model, the EM-2260 also comes in wide temperature models with an operating temperature range of -40 to 75°C, and are appropriate for harsh industrial automation environments.

The EM-2260 Development Kit provides users with a handy tool for first time evaluation to test the functionality of the embedded core module. It has several peripherals built-in, including RS-232/422/485 ports and digital input and output, making it suitable for developing a variety of industrial applications.

Appearance



EM-2260 Embedded Module



Hardware Specifications

Computer

- CPU:** Cirrus Logik EP9315 ARM9 CPU, 200 MHz
- OS (pre-installed):** Windows CE 6.0
- DRAM:** 128 MB onboard (optional 256 MB)
- Flash:** 32 MB
- Storage Expansion:** EIDE interface for connecting up to 2 external devices
- USB:** USB hosts x 3, compliant with USB 2.0 (OHCI)
- DI/DO:** DI x 8, DO x 8
- Reset Button:** Supports "Reset to Factory Default"

LAN Interface

- Ethernet:** Auto-sensing 10/100 Mbps x 2, RJ45 connectors
- Magnetic Isolation Protection:** 1.5 KV built-in

Serial Interface

- Number of Ports:** 4
- Serial Standards:** RS-232/422/485, software-selectable
- Console/Debugging Port:** RS-232 (TxD, RxD, GND), 4-pin 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 non-standard baudrates; see user's manual for details)

Serial Signals

- TTL:** TxD, RxD, DTR, DSR, RTS, CTS, DCD, GND
- 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:** 8
- Input Voltage:** 3.3V, CMOS level

Digital Output

- Output Channels:** 8
- Digital Output Levels:** 3.3V, CMOS level

Display

- Graphics Controller:** EP9315 internal graphics accelerator engine with TTL graphical signal support
- Display Memory:** Dynamic video memory (shares system memory)
- Graphics Resolution:** 1024 x 768, 8 bits

Physical Characteristics

- Weight:** 70 g
- Dimensions:** 106 x 87 mm (4.17 x 3.43 in)

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)
- Operating Humidity:** 5 to 95% RH
- Storage Temperature:**
Standard Models: -20 to 80°C (-4 to 176°F)
Wide Temp. Models: -40 to 85°C (-40 to 185°F)

Power Requirements

- Input Voltage:** Both 5 VDC and 3.3 VDC
- Power Consumption:** 5.4 watts

Regulatory Approvals

- EMC:** CE (Class A), FCC
- Directives:** RoHS, WEEE

Reliability

- Alert Tools:** Built-in buzzer and RTC (real-time clock)
- Automatic Reboot Trigger:** Built-in WDT (watchdog timer)

Warranty

- Warranty Period:** 5 years
- Details:** See www.moxa.com/warranty

Software Specifications

Windows Embedded CE 6.0

System Utilities: Windows command shell, telnet, ftp, web-based administration manager

File System: FAT (on-board flash)

Protocol Stack: TCP, UDP, IPv4, SNMP, ICMP, IGMP, ARP, HTTP, CHAP, PAP, SSL, DHCP, SNTP, Telnet, FTP, PPP

Supporting Services and Daemons:

Telnet Server: Allows remote administration through a standard Telnet client

FTP Server: Used for transferring files to and from remote computer systems over a network.

File Server: Microsoft® Windows® CE functionality enables clients to access files and other resources over the network.

Web Server (HTTPD): Includes ASP, ISAPI Secure Socket Layer support, SSL 2, SSL 3, and Transport Layer Security (TLS/SSL 3.1) public key-based protocols, and Web Administration ISAPI extensions.

Dial-up Networking Service: RAS client API and PPP, with support for Extensible Authentication Protocol (EAP) and RAS scripting.

Watchdog Service: CPU hardware function for resetting CPU in a user specified time interval. Activated by Moxa library function.

Application Development Environment:

Moxa WinCE 6.0 SDK

C Libraries and Run-times

Component Services (COM and DCOM)

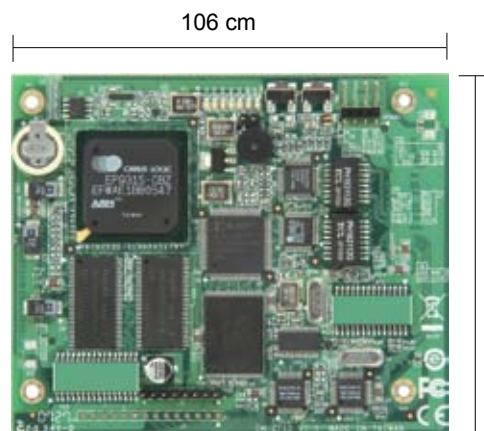
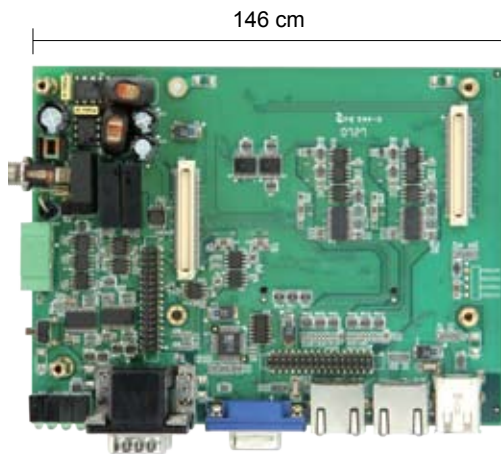
Microsoft® .NET Compact Framework 2.0 with SP2

XML, including DOM, XQL, XPATH, XSLT, SAX

SOAP Toolkit

Winsock 2.2

Dimensions



Ordering Information

Available Models

EM-2260-CE: RISC-based embedded core module with 4 serial ports, 8 DI and 8 DO channels, dual LANs, VGA, CompactFlash, PCMCIA, USB, WinCE 6.0 OS (standard operating temperature: -10 to 60°C)

EM-2260-T-CE: RISC-based embedded core module with 4 serial ports, 8 DI and 8 DO channels, dual LANs, VGA, CompactFlash, PCMCIA, USB, WinCE 6.0 OS (wide operating temperature: -40 to 75°C)

EM-2260-CE Development Kit: Includes the EM-2260-CE module and EM-2260-DK carrier board for testing and application development

Package Checklist (module)

- EM-2260-CE or EM-2260-T-CE embedded module
- Document and Software CD
- Quick Installation Guide (printed)
- Warranty Card

Package Checklist (Development Kit)

- EM-2260 embedded module
- EM-2260-DK, the carrier board for the EM-2260 module
- Universal power adaptor set
- Cross-over Ethernet cable
- Document and Software CD
- Quick Installation Guide (printed)
- Warranty Card