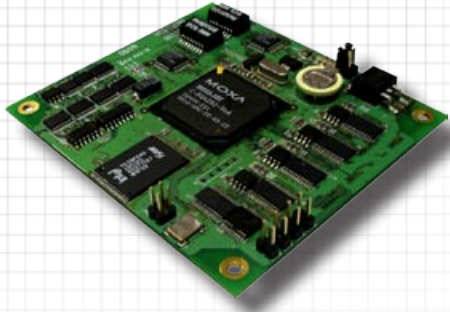


EM-1240

New!

RISC-based Ready-to-Run Embedded Core Module with 4 Serial Ports, Dual LANs, SD, μ CLinux



Features

- > MOXA ART ARM9 32-bit 192 MHz processor
- > 16 MB RAM and 8 MB Flash ROM integrated
- > 4 software-selectable RS-232/422/485 serial ports
- > Dual 10/100 Mbps Ethernet ports
- > RS-232 serial console port supports PPP
- > Ready-to-run μ CLinux Kernel 2.6.9 communication platform
- > SD signals supported for external SD socket connection
- > 10 GPIO reserved for system integration
- > Full-function development kit for quick evaluation and application development



Overview

The EM-1240 embedded module is designed for system integration and software development in industrial applications. This mini-size core module can be easily integrated into systems for implementation in related industrial applications, such as data acquisition and control systems.

The EM-1240 comes with a seamless μ CLinux operating

system that accelerates the development process, helping you reduce the time to market. You can build applications that have a powerful serial communication capability, but which are still small in size. The EM-1240 is well-suited for control systems that use a distributed, embedded architecture, such as the systems used by gas stations, vending machines, and ticketing machines.

Industrial-grade Module for Industrial Applications

The EM-1240 comes with four software-selectable RS-232/422/485 serial ports for attaching different types of industrial devices. In addition, the MOXA ART ARM9 32-bit 192 MHz processor promises a powerful performance for system operation. The two auto-sensing 10/100 Mbps Ethernet ports default to the higher 100M speed when available, and ensure network connectivity redundancy. In addition, the 10 GPIO pins provide ample design flexibility, giving you the freedom to develop the features your customers need. The SD socket also provides an efficient way for storage expansion. These features are better suited for today's equipment, and R&D engineers can spend less effort developing related software.

Short Time to Market

The ready-to-run μ CLinux operating system allows you to minimize your effort in system development, and get your product to market in no time.

Easy-to-Use Development Kit

The EM-1240 Development Kit can be ordered separately for evaluating the EM-1240 embedded module. It includes an EM-1240 embedded module, an EM-1240-DK carrier board, and the items needed for setting up a basic layout. The kit makes it easy for users to evaluate the functionality of the EM-1240. You can develop and integrate specific systems on the module in advance to make the EM-1240 embedded module completely compatible with industrial systems and applications.

Hardware Specifications

System

- CPU:** MOXA ART ARM9 32-bit 192 MHz processor
- DRAM:** 16 MB onboard (optional 32 MB)
- Flash:** 8 MB onboard (optional 16 MB)
- Storage Expansion:** SD signals for external Secure Digital (SD) socket connection
- Console Port:** RS-232 x 1, full signal, supports PPP
- Other:** RTC, buzzer, Watchdog Timer
- OS:** Built-in embedded µClinux Kernel 2.6.9

Network Communication

- LAN:** Auto-sensing 10/100 Mbps x 2
- Protection:** Built-in 1.5 KV magnetic isolation protection

Serial Communication

- Serial Port:** RS-232/422/485 x 4, software-selectable
- Protection:** Built-in 15 KV ESD protection for all signals
- Data bits:** 5, 6, 7, 8
- Stop bits:** 1, 1.5, 2
- Parity:** None, Even, Odd, Space, Mark
- Flow Control:** RTS/CTS, XON/XOFF, RS-485 ADDC™
- Speed:** 50 bps to 921.6 Kbps, supports Any Baudrate

Software Specifications

- Kernel Version:** µClinux Kernel 2.6.9
- Protocol Stack:** ARP, ICMP, IPV4, TCP, UDP, FTP, Telnet, SNMP V1/V2c, HTTP, CHAP, PAP, DHCP, NTP, NFS V2/V3, SMTP, Telnet, PPP, PPPoE
- File System:** JFFS2 for Kernel, Root File System (Read Only) and User Director (Read / Write)
- Msh:** Minix shell command
- pppd:** Dial in/out over serial port daemon, including PPPoE (Point-to-Point over Ethernet)
- Snmpd:** SNMP V1 Agent daemon
- Busybox:** Linux normal command utility
- Tinylogin:** login and user manager utility
- Telnetd:** Telnet server daemon
- Telnet:** Telnet client daemon
- Inetd:** TCP server manager program
- ftpd:** FTP server program
- ftp:** FTP client program
- Boa:** Web server daemon
- ntpd:** Network Time Protocol client utility
- Tool Chain:** (supports both Linux and Windows)
 Arm-elf-gcc: C/C++ PC Cross Compiler,
 µClibc: POSIX standard C library
- UC Finder:** UC's LAN IP broadcast searching utility for Windows and Linux

LEDs

- System:** Ready x 1
- LAN:** 10M/Link x 2, 100M/Link x 2
- Serial:** TxD x 4, RxD x 4

Power Requirements

- Power Input:** External 5 VDC through pin header

Mechanical

- Dimensions (W x L):**
 EM-1240: 90 x 80 mm
 EM-1240 Development Kit: 177 x 115 mm
- Weight:** EM-1240: 50 g, EM-1240-Development Kit: 200 g
- Module Interface:** Two 2 x 28 pin-headers;
 pitch: 1.27 x 1.27 mm

Environmental

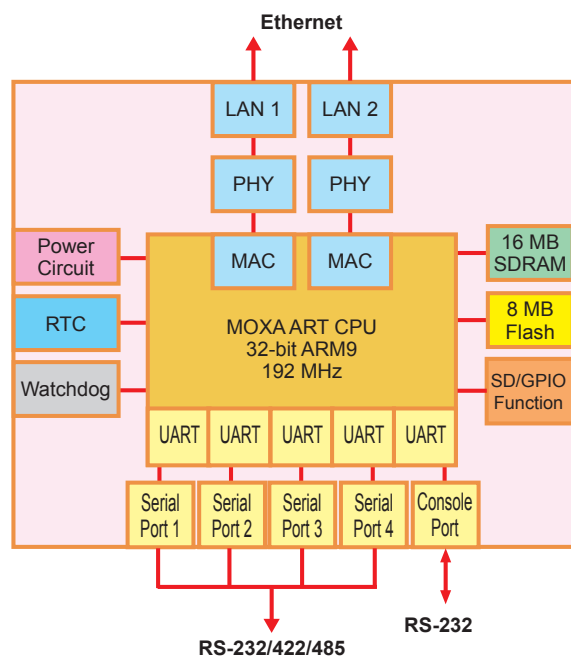
- Operating Temperature:** -10 to 60°C (14 to 140°F),
 5 to 95% RH
- Storage Temperature:** -20 to 80°C (-4 to 176°F), 5 to 95% RH

Regulatory Approvals

- EMC:** FCC Part 15, CISPR 22 Class A
 CE Class A: EN55022 Class A, EN61000-3-2 Class A,
 EN61000-3-3, EN55024

- Warranty:** 5 years

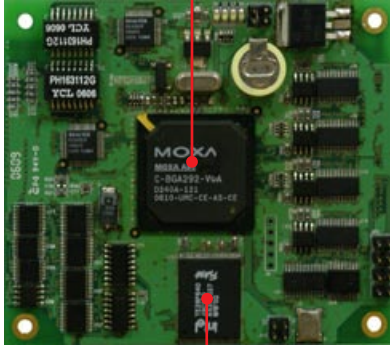
H/W Block Diagram



EM-1240 Appearance

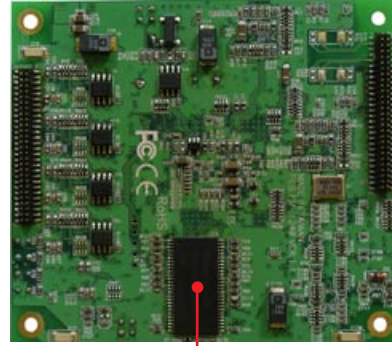
Top View

MOXA ART ARM9 32-bit
Communication Processor



onboard Intel NOR Flash 8 MB

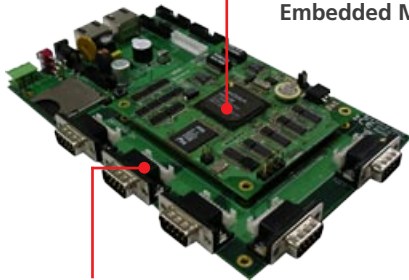
Bottom View



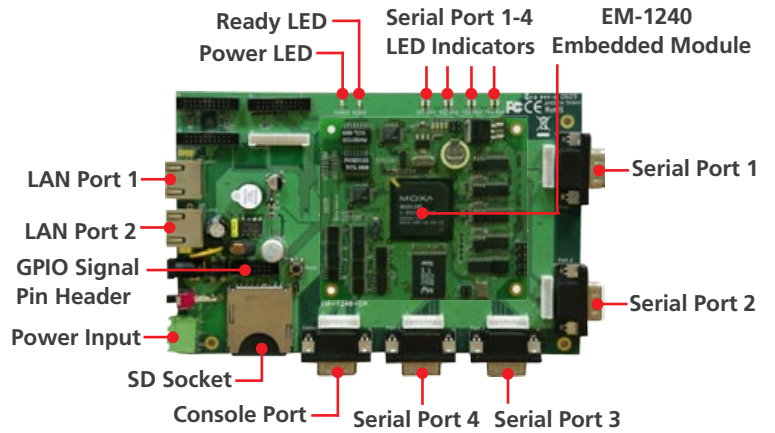
onboard 16 MB RAM

EM-1240 Development Kit Appearance

EM-1240
Embedded Module

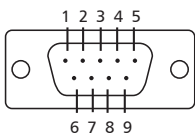


EM-1240-DK



Pin Assignment

Male DB9



PIN	RS-232	RS-422	RS-485 (4-wire)	RS-485 (2-wire)
1	DCD	TxD(-)	TxD(-)	---
2	RxD	TxDB(+)	TxDB(+)	---
3	TxD	RxDB(+)	RxDB(+)	DataB(+)
4	DTR	RxD(-)	RxD(-)	DataA(-)
5	GND	GND	GND	GND
6	DSR	---	---	---
7	RTS	---	---	---
8	CTS	---	---	---

Items included with the EM-1240 Development Kit

- EM-1240 Embedded Module
- EM-1240-DK, the carrier board for the EM-1240 Development Kit
- Quick Installation Guide
- Document & Software CD
- Cross-over Ethernet cable
- Female DB9 to Terminal Block converter
- Terminal Block (300V, 15A)
- Universal Power Adaptor Set
- Warranty Statement

Ordering Information

EM-1240-LX **New!**

RISC-based Ready-to-Run Embedded Core Module with 4 Serial Ports, Dual LANs, SD, µClinux OS

EM-1240-LX Development Kit **New!**

EM-1240-LX Development Kit