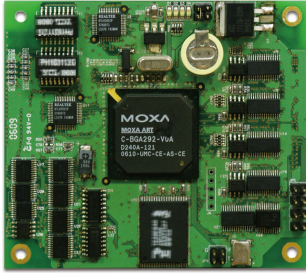# EM-1240 Series

*Arm-based industrial computer-on-module with 4 serial ports and 2 LAN ports*

## Features and Benefits

- MOXA ART Arm9 32-bit 192 MHz processor
- 16 MB RAM, 8 MB flash disk onboard
- 4 software-selectable RS-232/422/485 serial ports
- Dual 10/100 Mbps Ethernet ports for network redundancy
- SD signals supported for external SD slot connection
- Built-in RTC, buzzer
- 10 GPIOs reserved for system integration
- Ready-to-run µClinux kernel 2.6 platform
- Full-function development kit for quick evaluation and application development
- -40 to 75°C wide-temperature models available
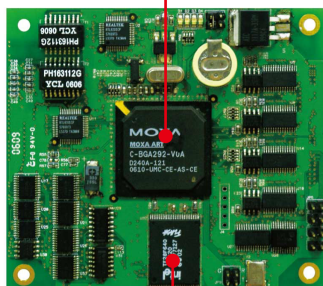
## Certifications

CE FC

## Introduction

The EM-1240 embedded module features 4 RS-232/422/485 serial ports, dual Ethernet ports, and an SD slot for external storage expansion. The modules have a compact design that can be easily integrated with industrial applications such as gas stations, vending machines, and ticketing machines, and offer a powerful serial communication capability for better system integration.

Programmers will find that the preinstalled, ready-to-run µClinux platform and the full-function development kit make it easy to develop software and build a reliable communication base for industrial automation applications. In addition, a wide-temperature model is also available to provide a reliable solution for harsh environments.
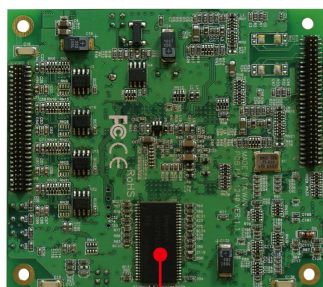
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## Appearance

### Top View

MOXA ART ARM9 32-bit
Communication Processor



Onboard Intel NOR Flash 8 MB

### Bottom View



onboard Flash 16 MB

### Development Kit



LAN Port 2
LAN Port 1
Power Input
Console Port
Serial Port 4
Serial Port 3
Serial Port 2
Serial Port 1
EM-1240
Embedded Module
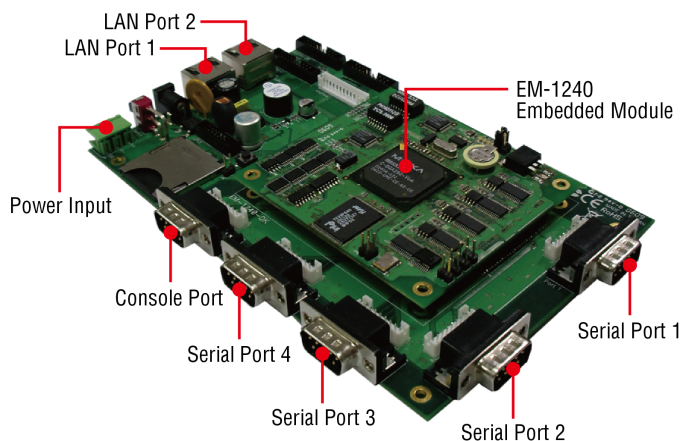
## Specifications

### Computer

| | |
|---|---|
| CPU | MOXA ART Arm9, 192 MHz |
| SDRAM | 16 MB |
| Flash | NOR Flash, 8 MB |
| Pre-installed OS | µCLinux |
| Storage Slot | SD slots x 1 |

### Ethernet Interface

| | |
|---|---|
| Ethernet Ports | Auto-sensing 10/100 Mbps ports (RJ45 connector) x 2 |
| Magnetic Isolation Protection | 1.5 kV (built-in) |

### LED Indicators

| | |
|---|---|
| System | System Ready x 1 |
| Serial | 2 per port (Tx, Rx) |

### Serial Interface

| | |
|---|---|
| Serial Ports | 4 x RS-232/422/485 |
| Console Port | 1 x 4-pin header to DB9 console port |

### Serial Signals

| | |
|---|---|
| Data Bits | 5, 6, 7, 8 |
| Stop Bits | 1, 1.5, 2 |

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| Parity | None, Even, Odd, Space, Mark |
|---|---|
| Flow Control | RTS/CTS, XON/XOFF, ADDC® (automatic data direction control) for RS-485, RTS Toggle (RS-232 only) |
| Baudrate | 50 bps to 921.6 kbps |
| RS-232 | TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND |
| RS-422 | Tx+, Tx-, Rx+, Rx-, GND |
| RS-485-4w | Tx+, Tx-, Rx+, Rx-, GND |
| RS-485-2w | Data+, Data-, GND |

## Power Parameters

| Input Voltage | 5 VDC |
|---|---|
| Input Current | 500 mA @ 5 VAC |
| Power Consumption | 2.5 W |

## Reliability

| Alert Tools | Built-in buzzer and RTC (real-time clock) |
|---|---|
| Automatic Reboot Trigger | Built-in WDT |

## Physical Characteristics

| Dimensions | EM-1240 Module: 90 x 80 mm (3.54 x 3.15 in)<br>EM-1240 Development Kit: 117 x 115 mm (6.97 x 4.53 in) |
|---|---|
| Weight | EM-1240 Module: 50 g (0.11 lb)<br>EM-1240 Development Kit: 200 g (0.44 lb) |

## Environmental Limits

| Operating Temperature | EM-1240-LX: -10 to 60°C (14 to 140°F)<br>EM-1240-T-LX: -40 to 75°C (-40 to 167°F) |
|---|---|
| Storage Temperature (package included) | EM-1240-LX: -20 to 80°C (-4 to -176°F)<br>EM-1240-T-LX: -40 to 85°C (-40 to 185°F) |

## Standards and Certifications

| EMC | EN 55032/24, EN 61000-3-2 Class A, EN 61000-3-3, CISPR 32, FCC Part 15B Class A |
|---|---|
| Green Product | RoHS, CRoHS, WEEE |

## MTBF

| Time | 385,419 hrs |
|---|---|
| Standards | Telcordia (Bellcore) Standard |

## Warranty

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

## Dimensions

**EM-1240**

Unit: mm (inch)



90 (3.54)

70 (2.76)
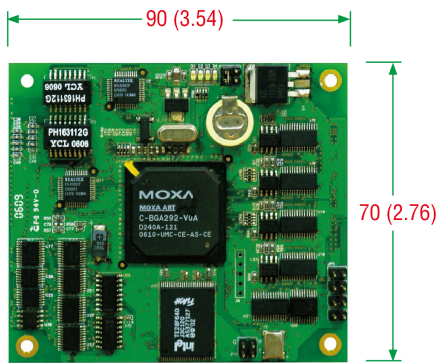
**EM-1240-DK**

Unit: mm (inch)



177 (6.97)

115 (4.53)
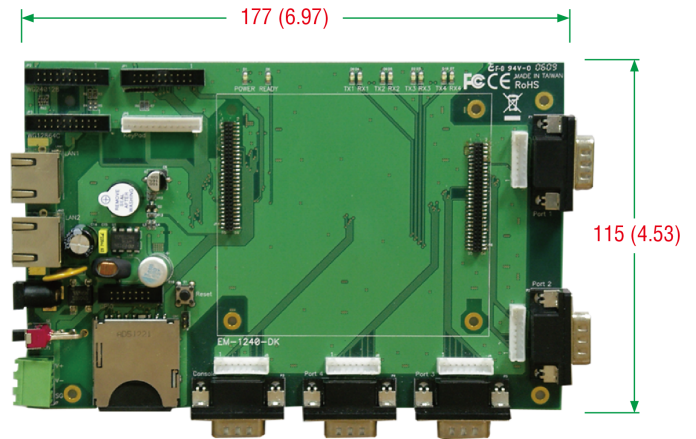
## Ordering Information

| Model Name | Description | Operating Temp. |
|---|---|---|
| EM-1240-LX | Arm-based embedded core module with 4 serial ports, dual LAN ports, SD slot, µClinux OS, -10 to 60°C operating temperature | -10 to 60°C |
| EM-1240-T-LX | Arm-based embedded core module with 4 serial ports, dual LAN ports, SD slot, µClinux OS, -40 to 75°C operating temperature | -40 to 75°C |

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