EM-1220 Series

Arm-based 192 MHz industrial computer-on-module with 2 LAN ports and 2 serial ports

Features and Benefits

- MOXA ART Arm9 32-bit 192 MHz processor

- 16 MB RAM, 8 MB flash disk onboard

- 2 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-1220 embedded module features 2 RS-232/422/485 serial ports, dual Ethernet ports, and an SD slot for external storage expansion. The module has a compact design that can be easily integrated with industrial applications such as gas stations, vending machines, and ticketing machines, and offers 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.
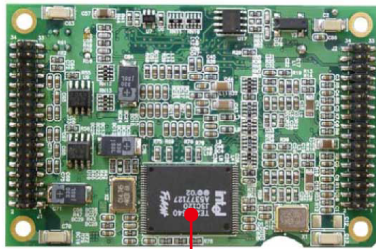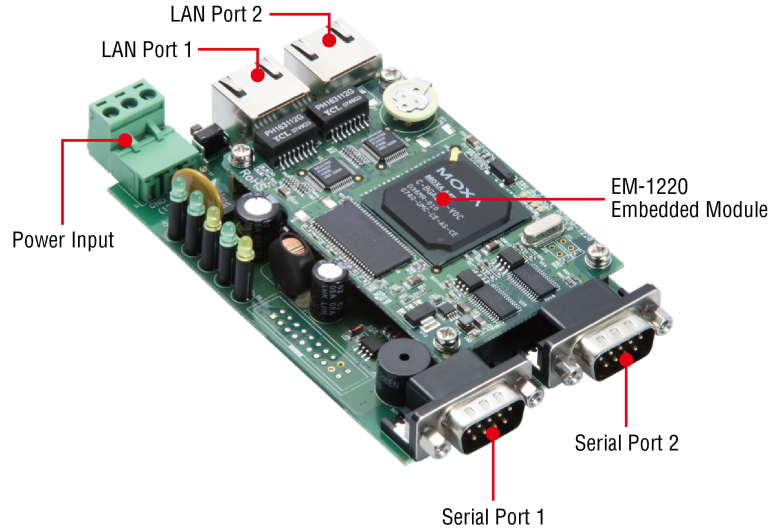
Appearance

Top View

MOXA ART ARM9 32-bit
Communication Processor

Onboard 16 MB RAM

Bottom View

Onboard Intel NOR
Flash 8 MB

Development Kit

LAN Port 2

LAN Port 1

Power Input

EM-1220
Embedded Module

Serial Port 2

Serial Port 1

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

MOXA
Reliable Networks ▲ Sincere Service

Serial 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, 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	3.3 VDC
Input Current	625 mA @ 3.3 VAC
Power Consumption	2.1 W

Reliability

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

Physical Characteristics

Dimensions	EM-1220 Module: 80 x 50 mm (3.15 x 1.97 in) EM-1220 Development Kit: 117 x 70 mm (4.61 x 2.76 in)
Weight	EM-1220 Module: 40 g (0.09 lb) EM-1220 Development Kit: 120 g (0.27 lb)

Environmental Limits

Operating Temperature	EM-1220-LX: -10 to 60°C (14 to 140°F) EM-1220-T-LX: -40 to 75°C (-40 to 167°F)
Storage Temperature (package included)	EM-1220-LX: -20 to 80°C (-4 to -176°F) EM-1220-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	405,735 hrs
Standards	Telcordia (Bellcore) Standard

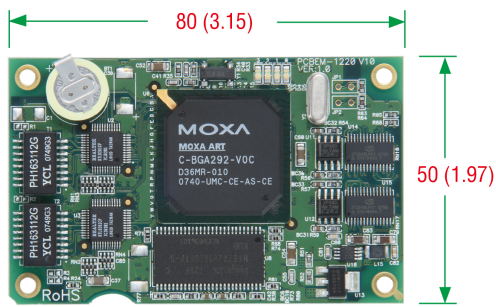## Warranty

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

Dimensions

EM-1220

Unit: mm (inch)

EM-1220-DK

Unit: mm (inch)
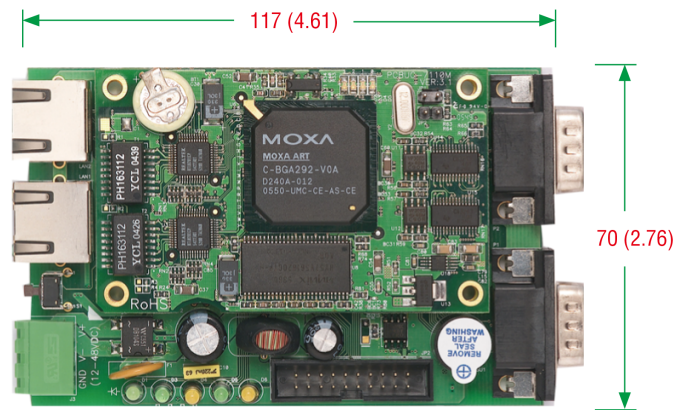
Ordering Information

Model Name	Description	Operating Temp.
EM-1220-LX	Arm-based embedded core module with 2 serial ports, dual LAN ports, SD slot, µClinux OS, -10 to 60°C operating temperature	-10 to 60°C
EM-1220-T-LX	Arm-based embedded core module with 2 serial ports, dual LAN ports, SD slot, µClinux OS, -40 to 75°C operating temperature	-40 to 75°C