MC-1100 Series

Quad-core fanless DIN-rail automation computer

> **Intel Atom Quad-core E3845 processor**
> **Dual-storage (SD and CFast slots)**
> **Dual-independent displays (VGA + display port)**
> **Variety of interfaces: 2 serial ports, 4 Giga LAN, 4 DIs, 4 DOs, 2 USB2.0**
> **Mini-PCIe sockets for WiFi, 3G, LTE, GPS**
> **12 to 36 VDC, wide range isolated power**
> **-40 to 70°C system operating temperature range**
> **Moxa SmartRecovery utility to recover system from boot failure (W7E only)**
> **Marine-grade and Zone 2 compliance**

Overview

The Moxa MC-1100 series DIN-rail, fanless, x86 embedded computers are based on the Intel® Atom™ E3800 series processor, feature the most reliable I/O design to maximize connectivity, and support wireless modules (WiFi/3G/LTE), making them suitable for a diverse range of communication applications.
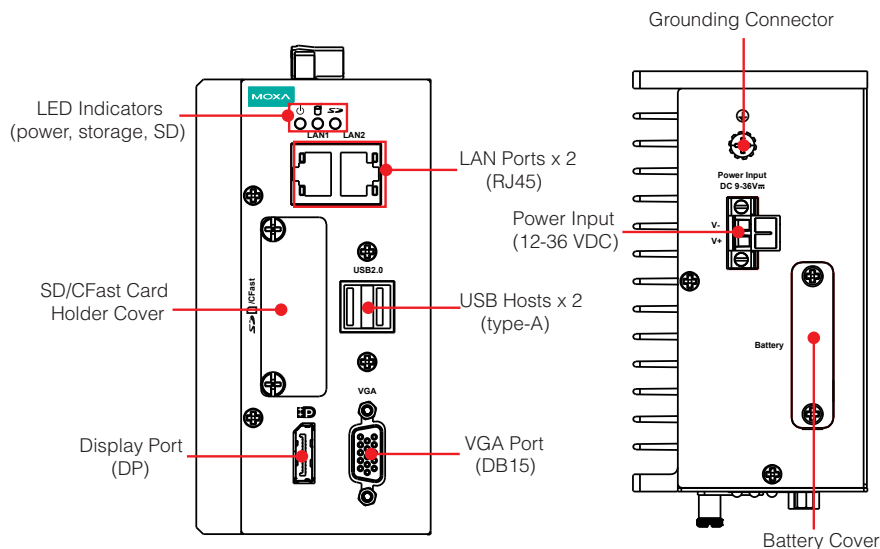
Powered by a wide operating temperature range (-40 to 70°C) and Safety/EMI/EMS compliances, the MC-1100 series is ideal for intelligent computing and communication solutions in critical

environments, including marine communication, oil & gas field site monitoring, and transportation.
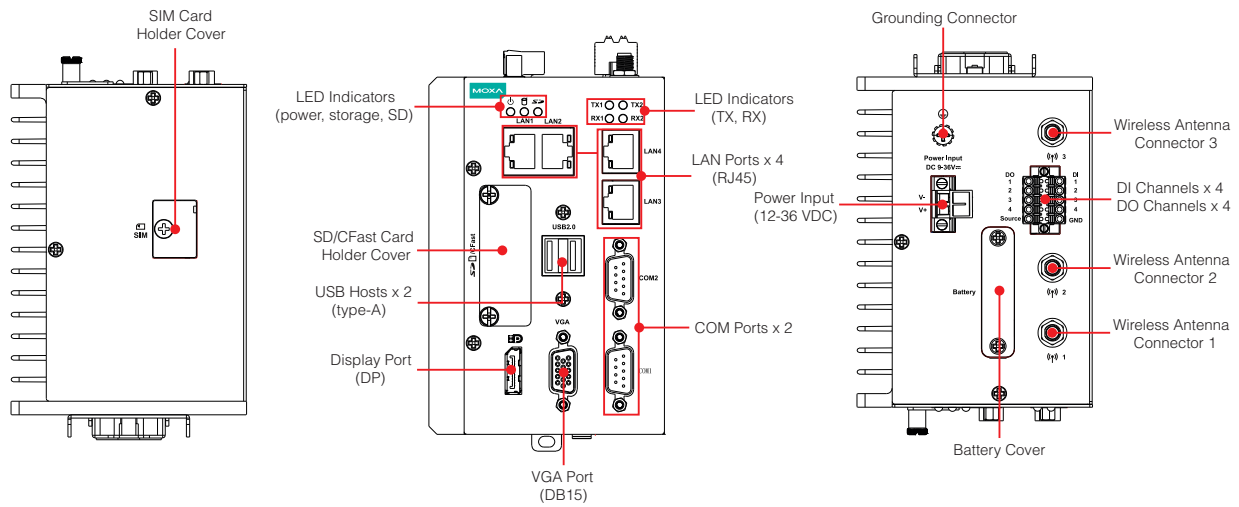
The MC-1100 series supports "Moxa Hardware Monitoring" for device I/O status monitoring and alerts, system temperature monitoring and alerts, and system power management. Monitoring system status closely makes it easier to recover from errors and provides the most reliable platform for your applications.

Appearance

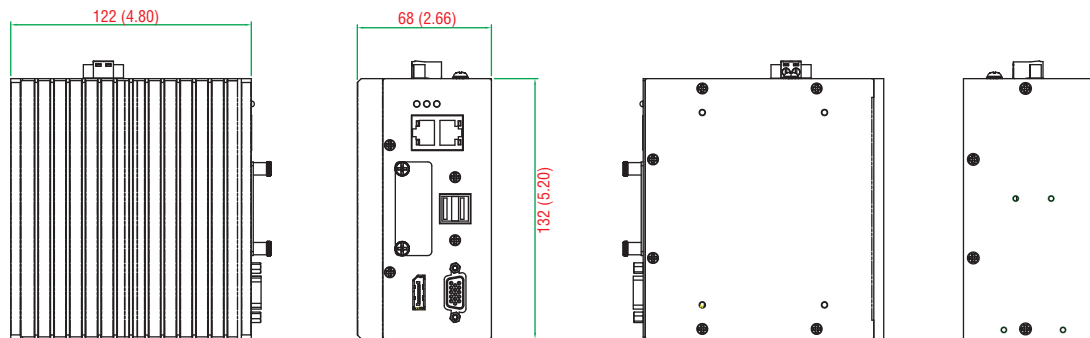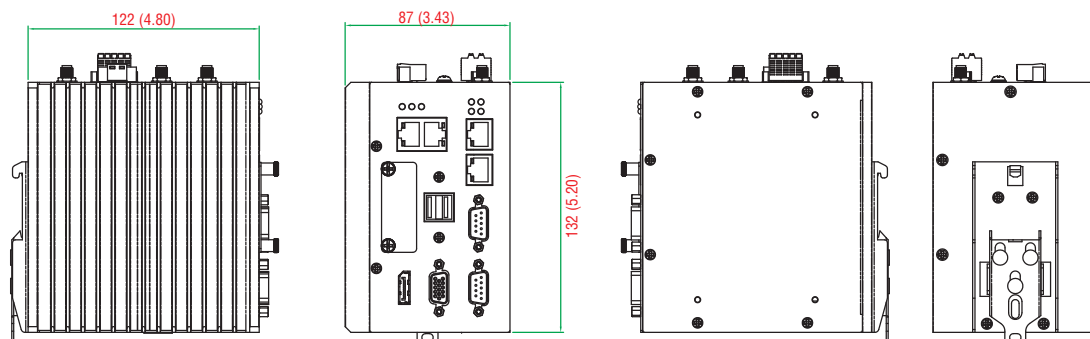### MC-1111

MC-1121

SIM Card Holder Cover

LED Indicators (power, storage, SD)

LED Indicators (TX, RX)

LAN Ports x 4 (RJ45)

SD/CFast Card Holder Cover

USB Hosts x 2 (type-A)

Display Port (DP)

VGA Port (DB15)

COM Ports x 2

Power Input (12-36 VDC)

Grounding Connector

Wireless Antenna Connector 3

DI Channels x 4
DO Channels x 4

Wireless Antenna Connector 2

Wireless Antenna Connector 1

Battery Cover

LAN1 LAN2 LAN4 LAN3

TX1 TX2 RX1 RX2

USB2.0

VGA

COM2

Power Input DC 9-36V⎓

V-
V+

DO
1
2
3
4
Source

DI
1
2
3
4
GND

Battery

Dimensions

Unit: mm (inch)

MC-1111

122 (4.80)

68 (2.66)

132 (5.20)

MC-1121

122 (4.80)

87 (3.43)

132 (5.20)

: Specifications

Computer

CPU:
- MC-1100-E4 Series: Intel® Atom™ processor E3845 (quad-core, 1M cache, 1.91 GHz)
- MC-1100-E2 Series: Intel® Atom™ processor E3826 (dual-core, 1M cache, 1.46 GHz)

System Memory: 1 DDR3L SO-DIMM slot, 2 GB pre-installed; support 2 GB, 4 GB, and 8 GB.

USB: USB 2.0 hosts x 2, Type A connectors

Storage:
- CFast: 1 CFast socket for OS storage; CFast supports 16 GB, 32 GB, 64 GB and 128 GB.
- SD: 1 SD 3.0 (SDHC/SDXC) socket for storage expansion; SD supports 16 GB, 32 GB, 64 GB, and 128 GB.

Operating System: Supports Windows 7 Embedded 32/64 bits and Linux Debian 8*

*The Linux Debian 8 model is still under development.

Other Peripherals

USB: 2 bootable USB 2.0 ports (type A)

Expansion Slots: 1 MiniPCIe socket; USB signal for wireless Wifi/3G/LTE modules

USIM Slots: 1

Display

Display Interface:
- VGA interface x 1: 15-pin D-Sub connector (female), with resolution up to 1920 x 1200 pixels at 75 Hz
- Display port interface x 1: Display port connector, with resolution up to 2560 x 1600 pixels at 60 Hz

Graphics Controller: Intel® HD Graphics 4000

Ethernet Interface

LAN: 4 auto-sensing 10/100/1000 Mbps ports (RJ45)

Magnetic Isolation Protection: 1.5 kV built in

Serial Interface

Serial Standards: 2 RS-232/422/485 ports, software-selectable (DB9 male)

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 115.2 kbps

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: DIs x 4, source-type

Input Voltage: 0 to 30 VDC at 25 Hz

Digital Input Levels for Dry Contacts:
- Logic level 0: Close to GND
- Logic level 1: Open

Digital Input Levels for Wet Contacts:
- Logic level 1: +3 V max
- Logic level 0: +10 V to +30 V (Source to DI)

Connector Type: 10-pin screw-fastened Euroblock terminal

Isolation: 3 kV optical isolation

Digital Output

Output Channels: DOs x 4, sink-type

Output Current: 200 mA (max.) per channel

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

Connector Type: 10-pin screw-fastened Euroblock terminal

Isolation: 3 kV optical isolation

LEDs

System: Power

Storage: CFast, SD

LAN: 2 LEDs per port (100/1000 Mbps)

Serial: 2 LEDs per port (Tx and Rx)

Physical Characteristics

Housing: Aluminum, sheet metal

Weight:
- MC-1111: 1.21 kg (2.69 lb)
- MC-1121: 09.7 g (2.16 lb)

Dimensions:
- MC-1111: 132 x 122 x 68 mm (5.20 x 4.81 x 2.68 in)
- MC-1121: 132 x 122 x 87 mm (5.20 x 4.81 x 3.43 in)

Mounting: DIN rail, wall (optional)

Environmental Limits

Operating Temperature: -40 to 70°C (-40 to 158°F)

Storage Temperature: -45 to 75°C (-49 to 167°F)

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

Anti-Vibration:
- 0.7 g @ DNV 2.4 (Class A), sine wave, 2-100 Hz, 1 Oct./min., 1.5 hr per axis
- 1 g @ DNV 2.4, random wave, 3-100 Hz, 2.5 hr per axis

Anti-Shock: 50g/11ms ±X, ±Y, ±Z, 3 shocks each axis w/ CFast, SD

Power Requirements

Input Voltage: 12/24 VDC typical (11.4 to 36 VDC tolerance, 2-pin terminal block)

Power Consumption: Less than 30 W

Standards and Certifications

Safety: UL 60950-1, CCC

Hazardous Environments: Class 1 Division 2*

EMC: EN 55022, EN 55024

EMI: CISPR 22, FCC Part 15B Class A

EMS:
IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV
IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m
IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV
IEC 61000-4-5 Surge: Signal: 2 kV
IEC 61000-4-6 CS: 10 V
IEC 61000-4-8

Marine Standards: IEC 60945

Marine Type Approval: DNV 2.4*

Green Product: RoHS, cRoHS, WEEE

*DNV 2.4 and UL Class 1 Division 2 are pending

Reliability

Automatic Reboot Trigger: Built-in watchdog timer (WDT), configurable for resets following 1-255 second hang intervals; software programmable

Warranty

Warranty Period: 3 years

Details: See www.moxa.com/warranty

Ordering Information

Available Models

MC-1111-E2-T: x86 embedded computer* with Intel Atom dual-core E3826 processor, 2 GB RAM, VGA, 2 USBs, 2 GigaLANs, 1 CFast socket, 1 SD slot, display port, 12 to 36 VDC power
MC-1111-E4-T: x86 embedded computer* with Intel Atom quad-core E3845 processor, 2 GB RAM, VGA, 2 USBs, 2 GigaLANs, 1 CFast socket, 1 SD slot, display port, 12 to 36 VDC power
MC-1121-E2-T: x86 embedded computer* with Intel Atom dual-core E3826 processor, 2 GB RAM, VGA, 2 USBs, 4 GigaLANs, 2 serial ports, 4 DIs, 4 DOs, 1 CFast socket, 1 SD slot, display port, 12 to 36 VDC power
MC-1121-E4-T: x86 embedded computer* with Intel Atom quad-core E3845 processor, 2 GB RAM, VGA, 2 USBs, 4 GigaLANs, 2 serial ports, 4 DIs, 4 DOs, 1 CFast socket, 1 SD slot, display port, 12 to 36 VDC power
*Note: The OS is not pre-installed in the computer.

Package Checklist

- MC-1100 embedded computer
- Terminal block to power jack converter
- Din-rail mounting kit
- Documentation and software CD or DVD
- Quick installation guide (printed)
- Warranty card

Optional Accessories

Type	Model Name	Description
Power Adapters		
Adapter	PWR-24250-DT-S1	Power adapter, input voltage 90 to 264 VAC, output voltage 24 V with 2.5 A DC load
Power Cord	PWC-C7US-2B-183	Power cord with 2-pin connector, USA plug
Power Cord	PWC-C7EU-2B-183	Power cord with 2-pin connector, Europe plug
Power Cord	PWC-C7UK-2B-183	Power cord with 2-pin connector, British plug
Power Cord	PWC-C7AU-2B-183	Power cord with 2-pin connector, Australia plug
Power Cord	PWC-C7CN-2B-183	Power cord with 2-pin connector, China plug