

# 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.

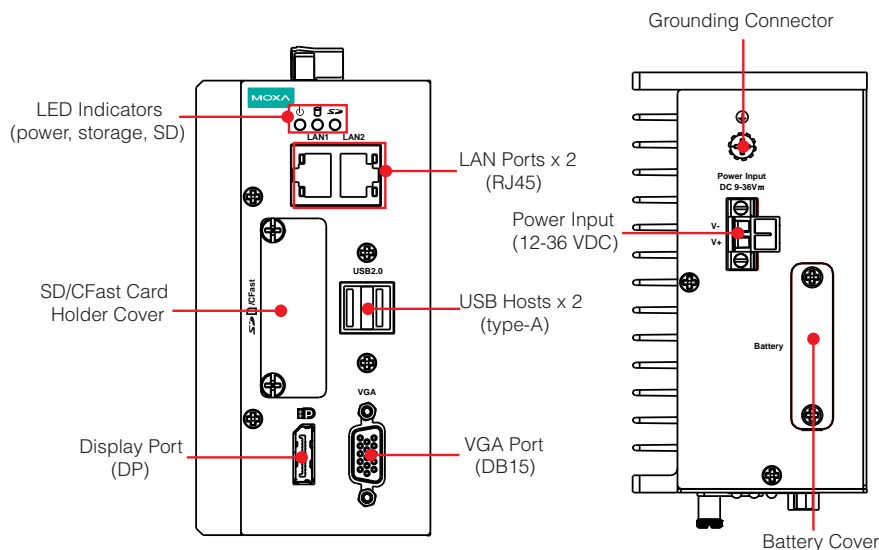
Powered by a wide operating temperature range (-40 to 70°C) and Safety/EMI/EMS compliances, the MC-1100 series is ideal for intelligent computing and communication solutions in critical

environments, including marine communication, oil & gas field site monitoring, and transportation.

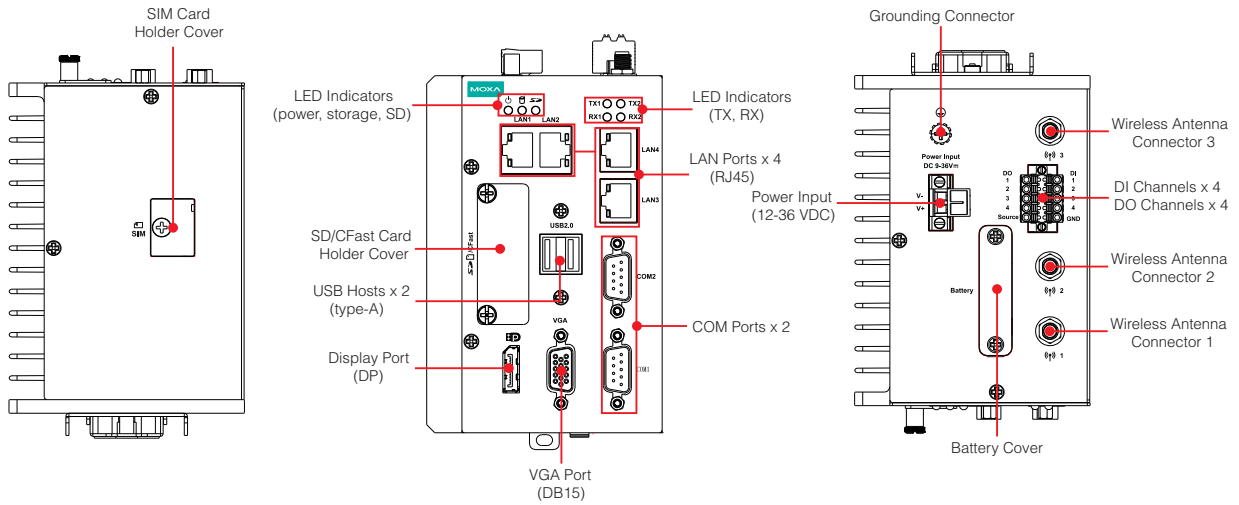
The MC-1100 series supports “Moxa Hardware Monitoring” for device I/O status monitoring and alerts, system temperature monitoring and alerts, and system power management. Monitoring system status closely makes it easier to recover from errors and provides the most reliable platform for your applications.

### Appearance

#### MC-1111



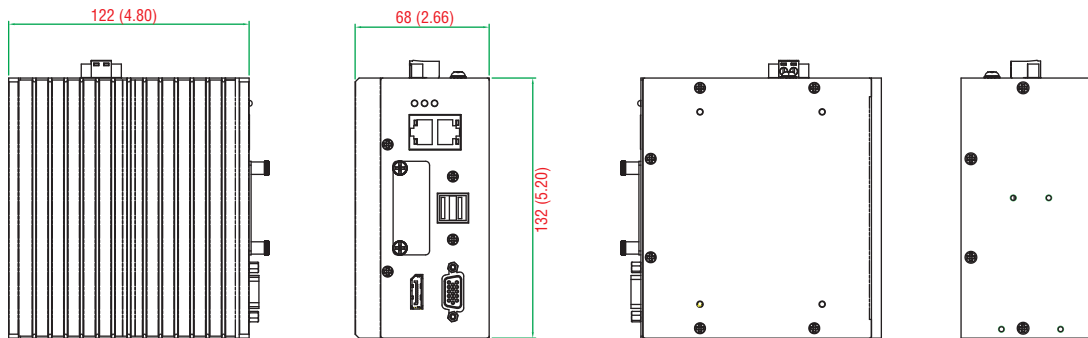
### MC-1121



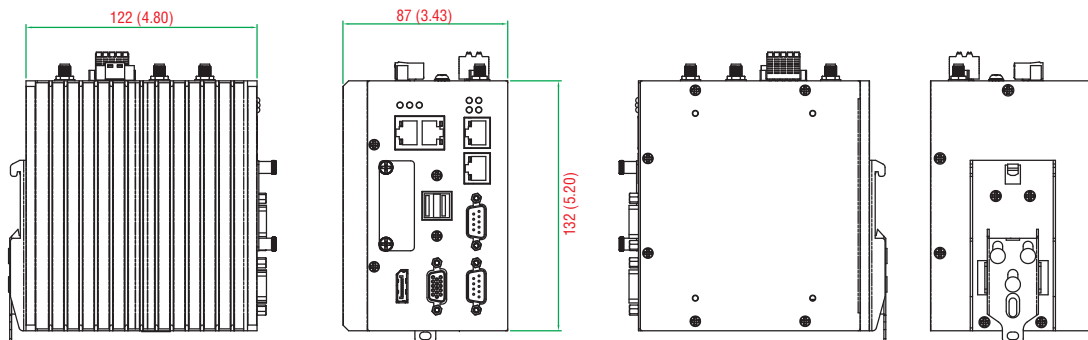
### Dimensions

#### MC-1111

Unit: mm (inch)



#### MC-1121



## 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:** DI x 4  
**Input Voltage:**  
 Logic 0: 0 to 0.8 V  
 Logic 1: 2.0 to 5.5 V  
**Over-Current Limit:** -24 mA

### Digital Output

**Output Channels:** DO x 4  
**Output Current:** 24 mA  
**Output Voltage:**  
 Logic 0: 0 to 0.55 V  
 Logic 1: 2.5 to 3.3 V

### 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: 1.45 kg (3.20 lb)  
 • MC-1121: 1.75 g (3.86 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](http://www.moxa.com/warranty)

## Ordering Information

Model Name	CPU	RAM (CTO*)	CFast (CTO*)	SD (CTO*)	OS (CTO*)	VGA	DP	LAN	Serial	DI/DO	USB 2.0	USIM slot	Expansion slot
MC-1111-E2-T	E3826	Default 2 GB	Default N/A	Default N/A	Default N/A	1	1	2	-	-	2	-	-
MC-1111-E4-T	E3845	4 or 8 GB	(16, 32, 64, or 128 GB optional)	(16, 32, 64, or 128 GB optional)	(W7E or Debian 8 optional)	1	1	2	-	-	2	-	-
MC-1121-E2-T	E3826	optional)	32 GB		64-bit W7E	1	1	4	2	4/4	2	1	1
MC-1121-E4-T	E3845	1				1	4	2	4/4	2	1	1	
MC-1121-E4-T-W7E	E3845					1	1	4	2	4/4	2	1	1

### 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
<b>Wireless Accessories</b>		
	Cellular Package	CELLULAR-LTE-EU(LE910)
		Includes: <ul style="list-style-type: none"> <li>• 1 LTE module</li> <li>• 1 antennas with cable and connector</li> <li>• 2 black screws</li> </ul> Note: LTE regions: Asia, Europe, Australia, New Zealand (compatible with LTE/EU, HSPA+, GPRS/GSM, and GPS). LTE: 800 (B20) / 1800 (B3) / 2600 (B7). UMTS/HSPA+: 900, 2100. GNSS (GPS+Glonass).
	WiFi Package	Wi-Fi-BGN(252NI)
		1 Wi-Fi module 2 antennas with cable and connector 2 black screws
	LTE-EU Antenna	ANT-LTE-ASM-02
		LTE-EU external antenna with SMA connectors x 1
	LTE-US External Antenna	ANT-LTEUS-ASM-01
		LTE-US external antenna with SMA connectors x 1
	Wi-Fi Antenna	ANT-WDB-ARM-02
		2.4/5.5 GHz 2 dBi dual-band antenna, RP-SMA (male) connector
<b>Power Adapters</b>		
	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