MC-7200 Series

Optimized marine platform with diverse connectivity and expanded storage

- High performance platform with 3rd gen. Intel® Core™ i7 3555LE processor
- Rugged, fanless design optimized for harsh environments
- Scalable, modularized interfaces for marine solutions
- Four Ethernet LAN ports + SNMP delivers strong network availability and manageability
- Blistering graphics performance across as many as 3 independent displays

Overview

The MC-7200 marine computer is powered by the latest 3rd generation Intel® Core™ i7 3555LE processor to fuel high performance graphics alongside a full range of I/O connectivity that includes eight NMEA 0183 terminals, four serial ports, four gigabit Ethernet ports, six USB 2.0 ports, and two SuperSpeed USB 3.0 ports. The MC-7200 Series is designed to deliver unrivalled PC performance for a new generation of automated marine solutions.

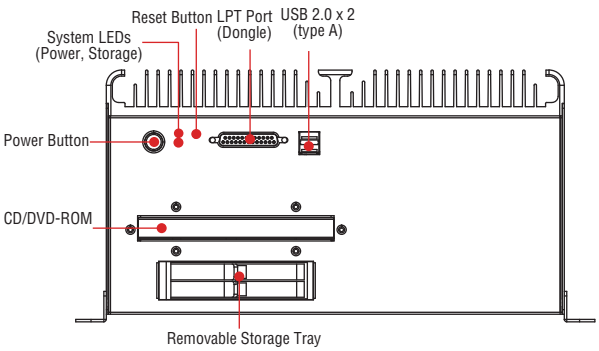
Designed for reliability, durability, and intensive computational and graphics performance, the marine-grade MC-7200 computer features a rugged shell and vibration tolerance up to 1G. This computer's compact size and low power consumption return a low heat profile that simplifies bridge and cabinet installations. To facilitate customization and expansion, MC-7200 series computers come with a single PCIe (x16) slot and two universal PCI slots, allowing users to easily install a wide variety of peripherals like radar, graphics, or PROFIBUS cards.

The MC-7200 series is optimized for use with the Windows XP Embedded, XP Professional, or Windows 7 operating systems, allowing users to choose the development environment most suitable for the application's needs.

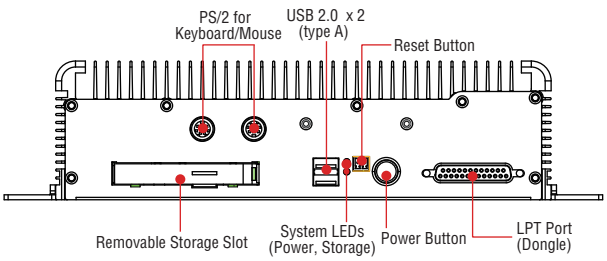
Appearance

Front View

MC-7270-MP

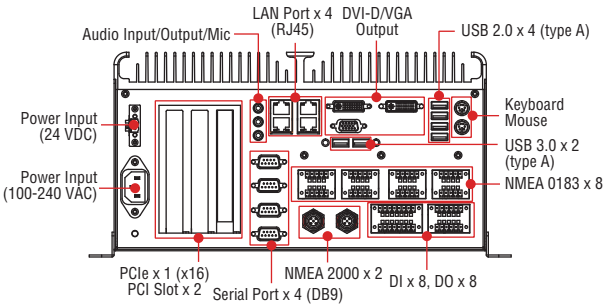


MC-7270-DC-CP

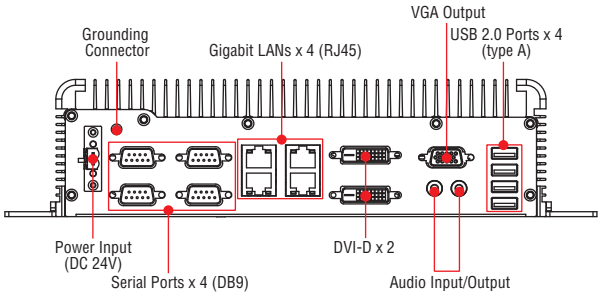


Rear View

MC-7270-MP



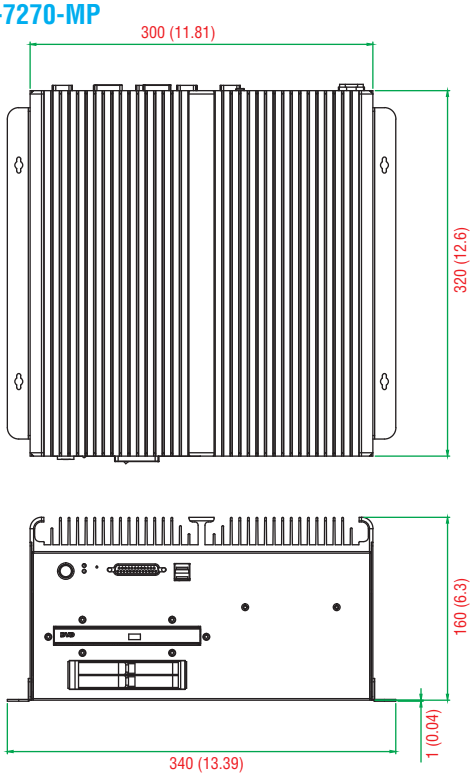
MC-7270-DC-CP



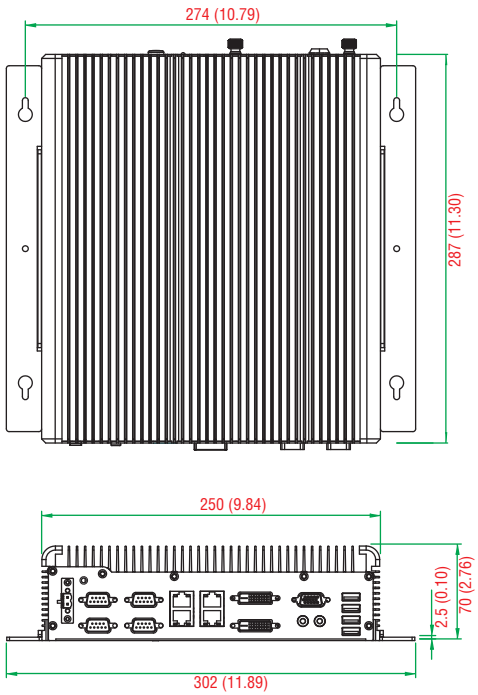
Dimensions

Unit: mm (inch)

MC-7270-MP



MC-7270-DC-CP



Specifications

Computer

CPU: Intel® Core™ i7-3555LE (BGA CPU package), quad core eight threaded 64 bit 2.1 GHz processor
OS: Windows 7, Windows XP SP3, Windows XP Embedded (must be installed by the user)
System Chipset: Intel® QM77 Express Chipset
System Memory: 16 GB capacity, 4 GB pre-installed: 1 slots of 4 GB DDR3 204 pin SO-DIMM SDRAM
Storage:
2 SATA 6 Gb/s ports for SSD/HDD
2 SATA 3 Gb/s ports for SSD/HDD (MC-7270-MP only)
USB:
MP model:
• 6 USB 2.0 ports (type A)
• 2 USB 3.0 ports (type A)
DC-CP model: 6 USB 2.0 ports (type A)

Other Peripherals

Audio: line in, line out, microphone; 3.5 mm mini-jack
KB/MS: 2 PS/2 interfaces supporting standard PS/2 keyboard and mouse
PCI Slots: 2 (MP model)
LPT Port: 1 (MP model)
PCIe x16 Slots: 1 (MP model)

Display

Display Interface:
• 1 VGA output: 15-pin D-Sub connector (female), max. resolution 2048 x 1536, 32-bit color at 75 Hz
• 2 DVI-D outputs: 29-pin DVI-D connectors (female), max. resolution 1920 x1200, 32-bit color at 60 Hz
Graphics Controller: Onboard Intel® HD 4000 graphics

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 software-selectable RS-232/422/485 ports (DB9 male)
• 2 RS-232 ports (DB9 male)
• 8 NMEA 0183 v2 terminals (3.81 mm Euroblock connector) (NMEA 2000 available on request)

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 230.4 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 (MC-7270-MP only)
Input Channels: 8 dry channels, with 4 grounds
Digital Input Levels for Dry Contacts:
• Logic level 0: Close to GND
• Logic level 1: Open
Connector Type: 2 screw-fastened 6-pin 3.81 mm Euroblock terminals
Isolation: ESD protection to DNV specifications

Relay Output (MC-7270-MP only)
Type: Form A (N.O.) power relay
Output Channels: 8 output channels
Contact Rating: 2A, 30Vdc /0.5A, 125Vac under resistor load
Initial Insulation Resistance: 1000M ohm(min.) @500VDC
Mechanical Endurance: 100,000 operations @2A, 30VDC resistive load
Electrical Endurance: 100,000,000 operations
Contact Resistance: Max. 50m ohm @6V, 0.1A
Connector Type: 2 screw-fastened 8-pin 3.81 mm Euroblock terminals
Isolation: Relay isolation; ESD protection to DNV specifications

LEDs
System: Storage, Power
LAN: 100M/Link x 4, 1000M/Link x 4 (on connector)

Physical Characteristics
Housing: Aluminum, sheet metal
Weight:
• DC-CP Model: 3.75 kg
• MP Model: 8 kg
Dimensions:
• DC-CP Model: 150 x 160 x 80 mm (5.91 x 6.30 x 3.15 in)
• MP Model: 287 x 250 x 70 mm (11.30 x 9.84 x 2.76 in)
Mounting: Wall

Environmental Limits
Operating Temperature: -40 to 70°C (-40 to 131°F)
Storage Temperature: -50 to 80°C (-40 to 176°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^{rms} @ DNV 2.4, random wave, 3-100 Hz, 2.5 hr per axis
• 2.1 g @ DNV 2.4 (Class C), sine wave, 2-50 Hz, 1 Oct./min., 1.5 hr per axis

Power Requirements
Input Voltage:
• DC: 24 VDC (with tolerance from 18 to 30 VDC, 2-pin terminal block)
• AC: 100 to 240 VAC (MC-7270-MP only)
Power Consumption: Less than 100 W, 2.5 A @ 24 VDC

Storage
Storage Support:
• 2 SATA 6 Gb/s ports for SSD/HDD
• 2 SATA 3 Gb/s ports for SSD/HDD (MC-7270-MP only)

NMEA Interface (MC-7270-MP only)
Interfaces:
8 NMEA 0183 v2 terminals (NMEA 2000 available on request)
Base Serial Standard:
• NMEA 0183: RS-422
• NMEA 2000: CAN bus (Available on request)
Optical Isolation Protection: 3 KV
Voltage Differential: -15 V to +15 V
Baudrate: 4800 bps
Data Bits: 8
Stop Bits: 1, 1.5, 2
Parity: None
Handshake: None

Standards and Certifications
Safety: UL 60950-1, DNV 2.4 (Pending), IEC 60945 (4th) (Pending), IACS-E10 (Pending), CCC (GB4943, GB9254, GB17625.1) (Pending)
EMC: EN 55022 Class B, EN 55024-4-2, EN 55024-4-3, EN 55024-4-4, FCC Part 15 Subpart B Class B
Marine: IEC 60945 4th. (Pending), IACS-E10 (Pending)
Green Product: RoHS, cRoHS, WEEE

Reliability
MTBF (mean time between failures):
• Telcordia (Bellcore) Standard TR/SR: 269,934 hrs
• MIL-HDBK-217 FN2: 114,305 hrs

Warranty
Warranty Period: 3 years
Details: See www.moxa.com/warranty

Ordering Information

Available Models
MC-7270-MP: ECDIS computer with 3rd gen. Intel® Core™ i7 CPU processor, 4 serial ports, 8 NMEA 0183 terminals, 4 Gigabit Ethernet ports, 8 DIs, 8 DOs, 6 USB 2.0 ports, 2 USB 3.0 ports, 2 PCI slots, 1 PCIe x16 slot, VGA/DVI, TPM, and AC/DC power inputs
MC-7270-DC-CP: ECDIS computer with 3rd gen. Intel® Core™ i7 CPU processor, 4 serial ports, 4 Gigabit Ethernet ports, 6 USB 2.0 ports, VGA/DVI, TPM, and DC power input

Optional Accessories (can be purchased separately, for AC power input)
PWC-C13US-3B-183: Power cord with 3-pin connector, USA plug
PWC-C13EU-3B-183: Power cord with 3-pin connector, Euro plug
PWC-C13UK-3B-183: Power cord with 3-pin connector, British plug
PWC-C13AU-3B-183: Power cord with 3-pin connector, Australia plug
PWC-C13CN-3B-183: Power cord with 3-pin connector, China plug

Package Checklist
- MC-7200 computer
- 2 removable keys
- 8 screws for internal and removable drive trays
- Wall mounting kit
- 6 screws for wall mounting
- 1 terminal block for power input
- 4 terminal blocks for DI/DO channels (MP model)
- 8 terminal blocks for NMEA 0183 (MP model)
- Documentation and driver CD
- Quick installation guide (printed)
- Warranty card