

# MC-7270-MP-T

*x86 fanless, wide temperature industrial computer with 3rd Generation Intel® Core™ processor*



- > High performance Intel® Core™ i7 3555LE processor
- > Fanless design
- > Full marine I/O design
- > PCI/PCIe slot
- > 3 independent displays (DVI-D x 2 + VGA x1)
- > 2 USB 3.0 ports, 6 USB 2.0 ports
- > 2 SATA drive slots for greater storage capacity
- > Dual power: 100 to 240 VAC and 24 VDC
- > -40 to 70°C operating temperature range



## Overview

The MC-7270-MP-T marine computer is powered by the latest 3rd generation Intel® Core™ i7 3555LE processor, delivering a full range of I/O connectivity, including 8 NMEA 0183 ports, 4 serial ports, 4 Gigabit Ethernet ports, as well as 6 USB 2.0 and 3 SuperSpeed USB 3.0 ports. The MC-7270-MP-T is designed to provide outstanding PC performance, bringing a new level of flexibility and control to marine applications.

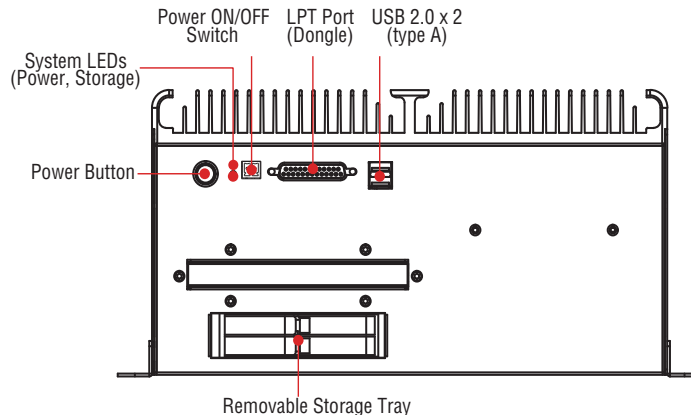
Designed with the highest quality and durability in mind, the marine-grade MC-7270-MP-T computer features a rugged chassis that can withstand vibrations up to 1G to provide the most reliable

operation for harsh environments and conditions. In addition, low power consumption delivers an optimal thermal solution and makes installation easy for bridge systems in marine applications. Another plus are the 1 PCIe (x16) slot and 2 universal PCI slots that allow users to easily install a variety of adapters, including radar cards, PROFIBUS cards, and VGA graphics cards, to fully satisfy all your marine network needs.

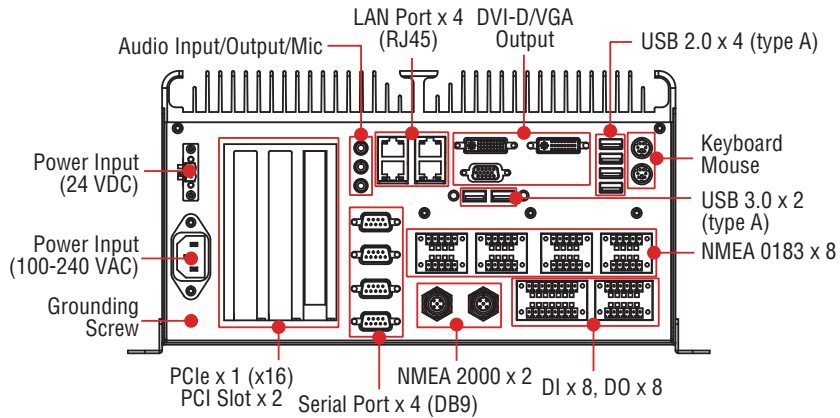
Users can easily install Windows XP Embedded, XP Professional, or Windows 7, to provide a flexible and friendly environment for system development and application implementation.

## Appearance

### Front View

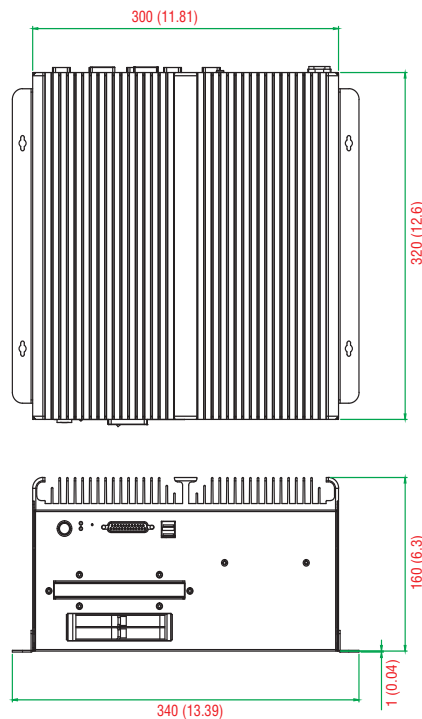


## Rear View



## Dimensions

Unit: mm (inch)



## Specifications

### Computer

**CPU:** Intel® Core™ i7-3555LE, dual core 64-bit 2.5 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, with 4 GB pre-installed (2 slots total, with a 4 GB DDR3/DDR3L-1600 204 pin SO-DIMM SDRAM pre-installed in 1 slot)

**USB:** USB 2.0 hosts x 6, USB 3.0 hosts x 2, Type A connectors

### Storage:

- 2 SATA III 6 Gbps ports for removable storage tray
- 2 SATA II 3 Gbps ports (internal, for installing optional hard disks)

### Other Peripherals

**Audio:** Line in x 1, Line out x 1, Microphone x 1

**KB/MS:** 2 PS/2 interfaces supporting standard PS/2 keyboard and mouse

**PCI Slots:** 2

**LPT Port:** 1

**PCIe x16 Slots:** 1

### Display

#### Display Interface:

- VGA Interface x 1: 15-pin D-Sub connector (female), with resolution up to 2048x1536 pixels with 32-bit color at 75 Hz
- DVI-D Interface x 2: 29-pin DVI-D connectors (female), with resolution up to 1920 x1200 pixels with 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 RS-232/422/485 ports, software-selectable (DB9 male)
- 2 RS-232 ports (DB9)
- 8 NMEA 0183 terminals (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 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

## NMEA Interface

**Serial Standards:** NMEA 0183v2 (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:** -6 V to +6 V (maximal differential level)

**Baudrate:** 4800 bps

**Data Bits:** 8

**Stop Bits:** 1, 1.5, 2

**Parity:** None

**Handshake:** None

## Digital Input

**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:** 6-pin Phoenix-compatible 3.81 mm screw terminal block x 2

**Isolation:** ESD protection to DNV specifications

## Relay Output

**Type:** Form A (N.O.) power relay

**Output Channels:** 8 output channels

**Contact Rating:** 2 A, 30 VDC / 0.5 A, 125 VAC under resistor load

**Initial Insulation Resistance:** 1000 Mohm (min.) @ 500 VDC

**Mechanical Endurance:** 100,000,000 operations @ 2 A, 30 VDC resistive load

**Electrical Endurance:** 100,000 operations

**Contact Resistance:** Max. 50 Mohm @ 6 V, 0.1 A

**Connector Type:** 8-pin Phoenix-compatible 3.81 mm screw terminal blocks x 2

**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:** 8 kg

**Dimensions:** 320 x 240 x 160 mm (12.6 x 13.39 x 6.3 in), with mounting ears

**Mounting:** Wall

## Environmental Limits

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

**Storage Temperature:** -50 to 80°C (-58 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 @ 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 32 VDC, 2-pin terminal block)
- AC: 100 to 240 VAC

**Power Consumption:** Less than 100 W, 2.5 A @ 24 VDC

## Standards and Certifications

**Safety:** UL 60950-1, CCC

**EMC:** EN 55022 Class B, EN 55024-4-2, EN 55024-4-3, EN 55024-4-4, FCC Part 15 Subpart B Class A

**Marine Standards:** IEC 60945 4th, IEC 61162, IEC 61174 (Pending)

**Marine Type Approval:** DNV 2.4, ABS (Pending)

**Green Product:** RoHS, cRoHS, WEEE

## 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

### Available Models

**MC-7270-MP-T:** x86-based industrial computer with 3rd gen. Intel® Core™ i7 3555LE processor, 4 serial ports, 8 NMEA 0183 ports, 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, and AC/DC power inputs

**MC-7230-MP-T:** x86-based industrial computer with 3rd gen. Intel® Core™ i3 3120ME processor, 4 serial ports, 8 NMEA 0183 ports, 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, and AC/DC power inputs

**MC-7210-MP-T:** x86-based industrial computer with 3rd gen. Intel® Celeron 1047 processor, 4 serial ports, 8 NMEA 0183 ports, 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, and AC/DC power inputs

**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

- 1 MC-7270-MP-T marine computer
- 2 removable storage protection keys
- Wall mounting kit, with 8 screws
- 1 2-pin terminal block for DC power input
- 1 2-pin terminal block for Power ON/OFF switch
- 2 6-pin digital input terminal blocks
- 2 8-pin digital output terminal blocks
- 8 5-pin terminal blocks for NMEA 0183 ports
- Documentation and driver CD
- Quick installation guide