

MC-4510-C23

**Industrial marine computer with Intel Core 2 Duo CPU,
2 optically-isolated serial ports, 2 gigabit Ethernet ports,
CompactFlash, dual displays, audio, 6 USB ports**



- > High performance Intel Core 2 Duo 2.26 GHz processor, 6 MB L2 cache
- > Built-in 2 GB DDR3 memory supporting up to 4 GB
- > Dual independent displays (DVI-D + VGA)
- > 2 Gigabit Ethernet ports for network redundancy
- > 2 optically isolated RS-232/422/485 serial ports
- > Onboard mini-PCIe slot reserved for future expansions and upgrades
- > 6 USB 2.0 ports for connecting peripheral devices
- > CompactFlash card socket and optional hard disk drive support for storage expansion
- > 1 g vibration and 15 g shock tolerance
- > Fanless design with compact size
- > Low power consumption
- > Modular design for integration with Moxa panels
- > Supports Windows 7, Windows XP SP3, and Windows XP Embedded



Overview

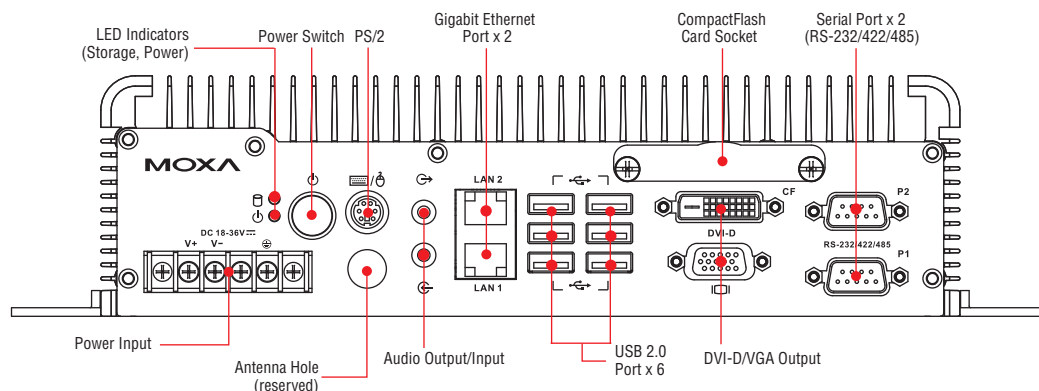
The MC-4510-C23 computer is based on the Intel Core 2 Duo mobile processor and comes with 2 optically isolated RS-232/422/485 serial ports, 2 Gigabit Ethernet ports, 6 USB 2.0 ports, and a CompactFlash socket, offering high performance and versatile peripherals for marine, railway, power, and other industrial applications.

The MC-4510-C23 tolerates constant vibration up to 1 g and up to 15 gees of shock, making it particularly well-suited for bridge systems in marine applications. In addition, the MC-4510-C23's compact size

and modular design ensures easy installation into any panel, while its low power consumption and carefully engineered durability features guarantee long, reliable service with minimal impact on other cabinet devices.

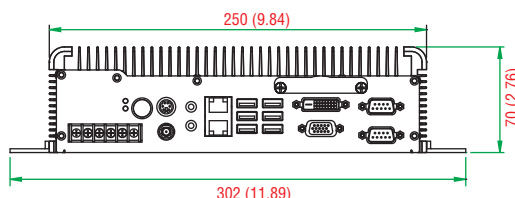
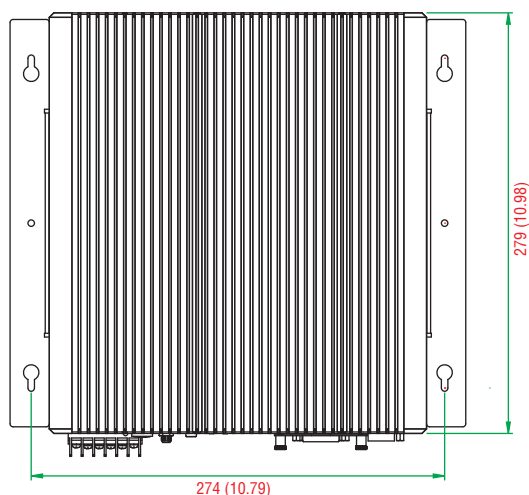
The MC-4510-C23 series is optimized for use with the Windows XP Embedded, Windows XP SP3, or Windows 7 operating systems, allowing users to choose the development environment most suitable for the application's needs.

Appearance



Dimensions

Unit: mm (inch)



Specifications

Computer

CPU: Intel Core 2 Duo SP9300 2.26 GHz, 6 MB for L2 cache
OS: Windows 7, Windows XP SP3, Windows XP Embedded (models with OS pre-installed available by request)
System Chipset: Intel GS45 + ICH9M
DRAM: 2 GB DDR3 SDRAM onboard (supports DDR3 up to 4 GB)
Expansion Bus: Mini-PCIe onboard
USB: 6 USB 2.0 ports

Storage

Storage Expansion: CompactFlash socket
HDD Support: 2 SATA ports for HDD expansion

Other Peripherals

Audio: 3.5 mm mini-jack, line in / line out

Display

Graphics Controller: GMA 4500MHD (Intel GS45 built-in)
Display Interface: 15-pin D-Sub connector x 1 (female), 25-pin DVI-D connector x 1 (female)

Ethernet Interface

LAN: 2 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)

Optical Isolation Protection: 2 kV

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 921.6 kbps (supports non-standard baudrates; see user's manual for details)

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

LEDs

System: Storage, Power

LAN: 10M/Link x 2, 100M/Link x 2 (on connector)

Physical Characteristics

Housing: Aluminum, sheet metal

Weight: 3.75 kg

Dimensions: 302 x 70 x 279 mm (11.98 x 2.76 x 10.98 in)

Mounting: Wall

Environmental Limits

Operating Temperature: -10 to 55°C (14 to 131°F)

Storage Temperature: -20 to 60°C (-4 to 140°F)

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

Anti-vibration:

- 0.7 g, sine wave, 2-100 Hz, 1 Oct./min., 1.5 hr per axis
- 1 G_{rms}, random wave, 3-100 Hz, 2.5 hr per axis
- 2.1 g, sine wave, 2-50 Hz, 1 Oct./min., 1.5 hr per axis

Anti-shock: 50 g @ IEC 60068-2-27, half sine wave, 11 ms

Power Requirements

Input Voltage: 18 to 36 VDC (3-pin terminal block)

Power Consumption: 48.6 W

- 1.35 A @ 36 VDC
- 1.96 A @ 24 VDC
- 2.61 A @ 18 VDC

Standards and Certifications

Safety: UL 60950-1, IEC 60945 4th. IACS-E10, CCC (GB4943, GB9254, GB17625.1)

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. IACS-E10

Green Product: RoHS, cRoHS, WEEE

Reliability

MTBF (mean time between failures): 175,865 hrs

Warranty

Warranty Period: 3 years

Details: See www.moxa.com/warranty

Ordering Information

Available Models

MC-4510-C23: Industrial computer with Intel Core 2 Duo 2.26 GHz, 2 optically-isolated serial ports, 2 Gigabit LANs, dual displays, CompactFlash, USB, audio

Package Checklist

- MC-4510-C23 embedded computer
- PS/2 to KB/MS Y-cable
- 2 sets of hard drive cables
- Documentation and software CD
- Quick installation guide (printed)
- Warranty card