

MPC-2190 Series

19-inch ECDIS color calibrated, fanless panel computers



- > 19-inch panel computer
- > Color calibrated for ECDIS compliance
- > 3rd Generation Intel® processor (Intel® Core i7 3517UE 1.7 GHz or Celeron® 1047UE, 1.40 GHz)
- > SavvyTouch display controls
- > Fanless system design
- > Built-in NMEA 0183 and 3-in-1 software selectable RS-232/422/485 interfaces
- > Multi-power supplies (AC & DC)



Introduction

MPC-2190 panel computers feature an Intel 3rd generation processor matched to 4 GB of system memory, delivering a reliable, high-performance platform of wide versatility for use in industrial marine environments. With its two RS-232/422/485 serial ports, four NMEA 0183 ports, and two Gigabit Ethernet LAN ports, the MPC-2190 panel computer supports a wide variety of serial and marine-specific interfaces as well as high speed IT communications, all with native network redundancy.

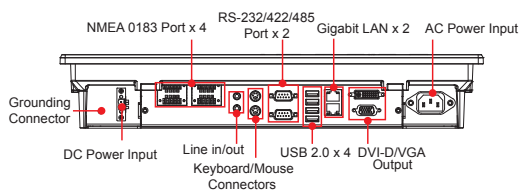
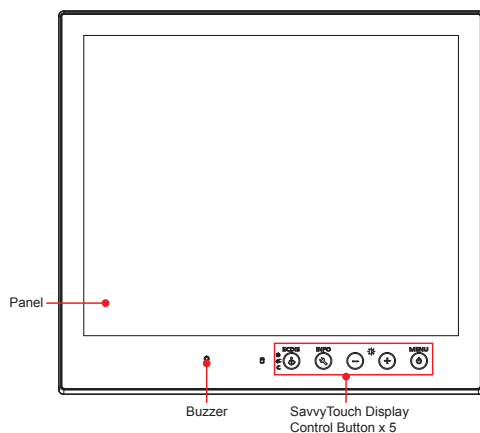
The MPC-2190 series comes with a range of standard display enhancements useful in industrial environments (including full range dimming, wide viewing angles, and optional optical bonding), as well as a few innovations especially deployed for maritime environments: user-friendly OSD controls, called SavvyTouch, featuring a proximity sensor for convenient adjustment in dark situations, immediate BIOS-level reports on hardware status (useful for determining why

a machine will not boot up), and a quick-switch ECDIS button (for color-calibrated ECDIS models only) that allows instant brightness adjustments to any of the three pre-set calibrations dictated by the ECDIS standard. In addition to all of this, the MPC-2190 series features a modular design that makes device integration into either new or existing industrial systems much simpler, reducing deployment costs and overall time-to-market.

The MPC-2190 panel computers are compliant with several industrial marine standards, including IEC 60945, IEC 61162, IEC 61174, DNV, and IACS E10, verifying their resilience for maritime operations. The IP54 (front panel) and IP22 (rear panel) rated unibody shell provides strong additional protection against the harsh conditions found in marine environments.

Color-calibrated ECDIS models are available upon request, providing an ideal HMI alternative for ECDIS charting and navigation stations.

Appearance



Specifications

Computer

CPU: Intel Core Processor i7-3517UE (1.7 GHz)

System Chipset: Intel HM65

System Memory: 8 GB capacity, 4 GB pre-installed: 1 slot of 4 GB DDR3-1600 204 pin SO-DIMM SDRAM

USB: USB 2.0 hosts x 4, type A connectors, supporting system boot up

Storage: 2 SATA-III connectors

BIOS: 64 Mbit Flash BIOS SPI type, ACPI function supported

Graphics Controller: Intel HM65 Express chipset built-in

Video Output: DVI-D x 1, VGA x 1 (female)

Other Peripherals

Audio: Line-in and line-out interface, with 3.5 mm mini jack

KB/MS: 2 PS/2 interface supporting standard PS/2 keyboard and mouse

Display

Panel Size: 19 inch wide viewable image size

Panel Type: MVA

Aspect Ratio: 5:4

Pixels: 1280 x 1024 (SXGA)

Response Time: 20 ms

Contrast Ratio: 2000:1

Light Intensity: 300 cd/m²

Viewing Angles: 178°/178°

Active Display Area: 376.32 (H) x 301.06 (V) mm

Max Colors: 16.7M (8 bits/color)

Display Interface: Dual channel LVDS

Resolution:

- VGA: 640 x 480
- SVGA: 800 x 600
- XGA: 1024 x 768
- SXGA: 1280 x 1024

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 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 (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

NMEA Interface

Serial Standards: 4 NMEA 0183 ports

Base Serial Standard: RS-422

Optical Isolation Protection: ±6kV contact discharge, ±8kV air discharge

Voltage Differential: -15 V to +15 V

Baudrate: 4800 bps

Data Bits: 8

Stop Bits: 1, 1.5, 2

Parity: None

Handshake: None

LEDs

System: Storage, Power

LAN: 100M/Link x 2, 1000M/Link x 2 (on connector)

Front Panel

LEDs: MENU, Brightness, INFO, ECDIS, Day/Dusk/Night, Storage

Smart OSD: Yes

Physical Characteristics

Housing: Aluminum sheet metal

Weight: 7.8 kg

Dimensions: 429 x 387 x 74.5 mm (16.89 x 15.24 x 2.93 in)

Mounting: VESA, panel, and desktop

System Cooling: Fanless thermal design

Environmental Limits

Operating Temperature: -15 to 55°C (5 to 131°F)

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

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

IP Rating:

- Front: IP 54
- Rear: IP 22

Anti-Vibration: 0.7 g @ DNV2.4 (Class A), sine wave, 2-100 Hz, 1 Oct./min., 1.5 hr per axis

Power Requirements

Input Voltage:

- 24 VDC, 6 A or (18 to 34 VDC, 8 A max.), screw-type terminal block
- 100 to 240 VAC, 50 to 60 Hz, 2 A, AC power inlet

Standards and Certifications

Safety: UL 60950-1, EN 60950-1, IEC 60950-1

EMC: EN 55022/24

EMI: CISPR 22, FCC Part 15B Class A

EMS:

IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV

IEC 61000-4-3 RS: 80 MHz to 1 GHz, 3 V/m

IEC 61000-4-4 EFT: Power 1 kV; Signal 0.5 kV

IEC 61000-4-5 Surge: Power 2 kV; Signal: 1 kV

IEC 61000-4-6 CS: Signal: 1 kV IEC 61000-4-8

Marine: IEC 60945 4th, IEC 61174, IEC 61162, DNV2.4, IACS E10

Green Product: RoHS, cRoHS, WEEE

Reliability

Automatic Reboot Trigger: Built-in WDT (watchdog timer) supporting 1-255 levels for time interval system reset, software programmable

Warranty

Warranty Period:

- Computer systems: 3 years
- LCD panels: 1 year

Details: See www.moxa.com/warranty

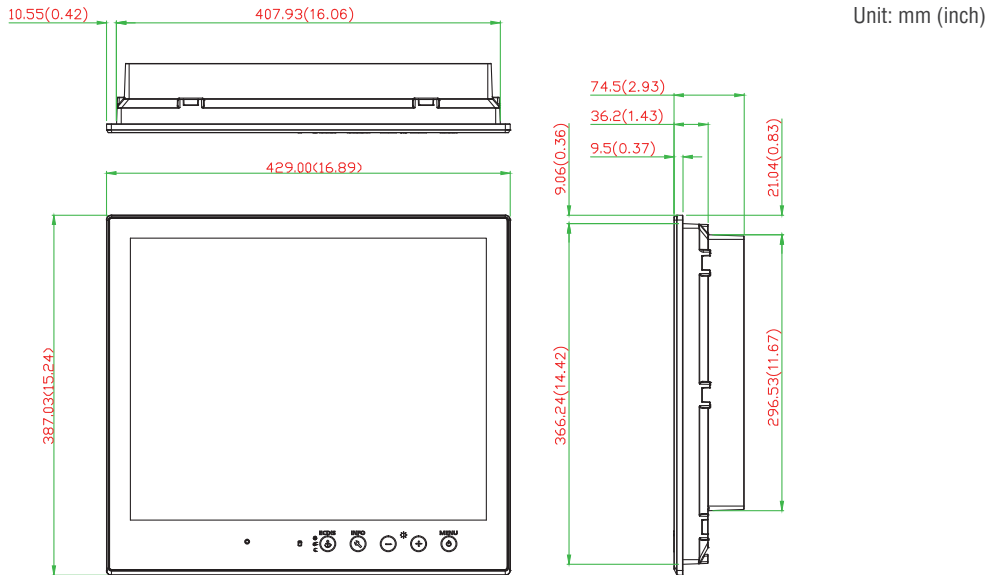
We recommend taking the following precautions to minimize heat build-up within the display:

- Position the display within $\pm 40^\circ$ of the vertical.
- Install an external fan to increase airflow upwards through the display if (a) the display is not positioned within $\pm 40^\circ$ of the vertical, (b) the ambient temperature exceeds 25°C , or (c) the display is used in a location with minimal ventilation.

Important Safety Precaution:

Even though the display is rated to operate within the IEC 60945 standard of -15 to 55°C for bridge applications, it is best to ensure that the ambient temperature does not exceed 25°C . Doing so will increase the life of your display and minimize service costs.

Dimensions



Ordering Information

Available Models

MPC-2190X: 19-inch fanless panel computer with Intel Celeron 1047UE 1.4 GHz processor, NMEA 0183, RS-232/422/485 serial ports, Gigabit LAN ports, USB 2.0 ports, dual AC/DC power inputs, tape bonding

MPC-2190Z: 19-inch fanless panel computer with Intel Celeron 1047UE 1.4 GHz processor, NMEA 0183, RS-232/422/485 serial ports, Gigabit LAN ports, USB 2.0 ports, dual AC/DC power inputs, tape bonding, projected capacitive touch screen

MPC-2197X: 19-inch fanless panel computer with Intel Core i7 3517UE 1.7 GHz processor, NMEA 0183, RS-232/422/485 serial ports, Gigabit LAN ports, USB 2.0 ports, dual AC/DC power inputs, tape bonding

MPC-2197Z: 19-inch fanless panel computer with Intel Core i7 3517UE 1.7 GHz processor, NMEA 0183, RS-232/422/485 serial ports, Gigabit LAN ports, USB 2.0 ports, dual AC/DC power inputs, tape bonding, projected capacitive touch screen

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

Optional Mounting/Bracket Kits (can be purchased separately)

MPC-MD-2-19-PMTK: Panel mounting kit

MPC-MD-2-19-VESAMTK: VESA mounting kit

MPC-MD-2-19-DMTK w/o hinge: Desktop mounting kit without hinge

MPC-MD-2-19-DMTK w/ hinge: Desktop mounting kit with angle adjustment hinge

Package Checklist

- MPC-2190 panel computer
- 2 keys for the locking removable storage trays
- 1 2-pin terminal block for DC power input
- 2 5-pin terminal blocks for NMEA 0183 v2 interfaces
- Hard disk installation kit
- Documentation and driver DVD
- Quick installation guide (printed)
- Warranty card