

# MPC-2150/2190/2240/2260 Series

15/19/24/26-inch Fanless panel computers



- > 15/19/24/26-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
- > Multipower supplies (AC & DC)



## Introduction

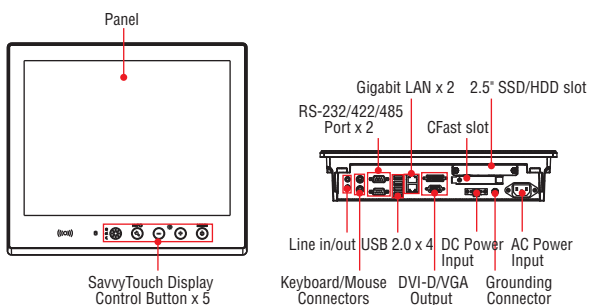
The MPC-2150/2190/2240/2260 series panel computers feature an Intel 3rd generation processor and 4 GB of system memory to deliver a reliable, high performance platform of wide versatility for use in industrial marine environments. With their RS-232/422/485 serial, NMEA 0183, and gigabit Ethernet LAN ports, the MPC-2260 series panel computers support a wide variety of serial and marine-specific interfaces as well as high speed IT communications, all with native network redundancy.

The MPC-2150/2190/2240/2260 series comes with a range of standard display enhancements useful in industrial environments (including 0 to 100% full range dimming, 178°/178° wide viewing angles, and optional optical bonding), as well as Moxa's innovative SavvyTouch display controls.

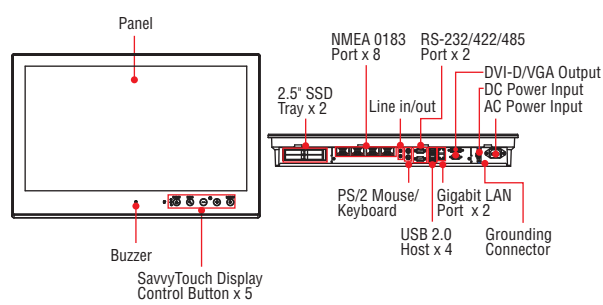
The MPC-2150/2190/2240/2260 panel computers are compliant with several industrial marine standards, including IEC 60945 4th, IEC 61174, DNV2.4, and IACS E10, verifying their resilient durability in marine operations. The MPC-2150/2190/2240/2260 are rugged, type approved, high performance, user-friendly panel computers perfect for ECDIS navigation systems and other marine IBS applications.

## Appearance

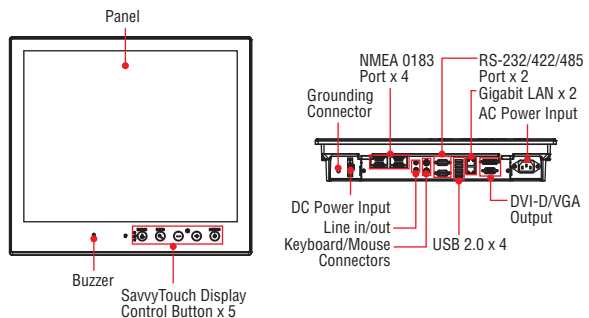
### MPC-2150



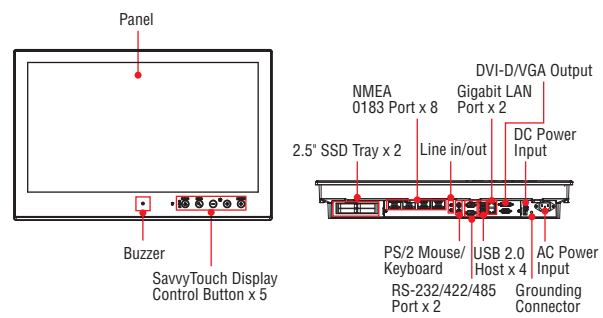
### MPC-2240



### MPC-2190



### MPC-2260



## Specifications

### Computer

**CPU:** Intel® Core™ i7-3517UE 1.7 GHz, or Intel® Celeron® 1047UE 1.4 GHz

**Supported OS:** Windows Embedded Standard 7 32/64-bit, Windows 7 Professional 32/64-bit (the OS is not pre-installed)

**System Chipset:** Intel HM65

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

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

#### Storage:

- MPC-2150: 1 2.5" HDD/SSD slot + 1 CFast slot (storage is not pre-installed)
- MPC-2190: 1 SATA-III interface: 6 Gbps
- MPC-2240/2260: 2 SATA-III interfaces: 6 Gbps, 2.5" removable storage trays

**BIOS:** 64 Mbit Flash BIOS with SPI, ACPI

**Graphics Controller:** Intel HM65 Express chipset built in

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

### Other Peripherals

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

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

### Display

**Panel Size:** 15/19/24/26-inch viewable image size

**Panel Type:** MVA

#### Aspect Ratio:

- MPC-2150/2190: 5:4
- MPC-2240: 16:9
- MPC-2260: 16:10

#### Pixels:

- MPC-2150: 1024 x 768 (XGA)
- MPC-2190: 1280 x 1024 (SXGA)
- MPC-2240: 1920 x 1080 (WSXGA+)
- MPC-2260: 1920 x 1200 (WUXGA)

#### Pixel Pitch (RGB):

- MPC-2150: 0.297 (H) x 0.297 (V) mm
- MPC-2190: 0.294 (H) x 0.294 (V) mm
- MPC-2240: 0.276 (H) x 0.276 (V) mm
- MPC-2260: 0.2865 (H) x 0.2865 (V) mm

#### Response Time:

- MPC-2150/2190: 20 ms (gray to gray)
- MPC-2240: 25 ms (gray to gray)
- MPC-2260: 15 ms (gray to gray)

#### Contrast Ratio:

- MPC-2150: 700:1
- MPC-2190: 2000:1
- MPC-2240: 5000:1
- MPC-2260: 1500:1

**Light Intensity:** 300 cd/m/m

#### Viewing Angles:

- MPC-2150: 160°/140°
- MPC-2190/2240: 178°/178°
- MPC-2260: 176°/176°

#### Active Display Area:

- MPC-2150: 304.128 (H) x 228.096 (V) mm
- MPC-2190: 376.32 (H) x 301.06 (V) mm
- MPC-2240: 531.36 (H) x 298.89 (V) mm
- MPC-2260: 550.08 (H) x 343.8 (V) mm

**Max. No. of Colors:** 16.7M (8 bit color)

#### Resolution:

- VGA: 640 x 480
- SVGA: 800 x 600
- XGA: 1024 x 768
- SXGA: 1280 x 1024 (MPC-2190/2240/2260 only)

- WSXGA+: 1920 x 1080 (MPC-2240/2260 only)

- WUXGA: 1920 x 1200 (MPC-2260 only)

### Ethernet Interface

**LAN:** Auto-sensing 10/100/1000 Mbps ports (RJ45) x 2

**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:

- MPC-2190: 4 NMEA 0183 ports
- MPC-2240/2260: 8 NMEA 0183 ports

**Base Serial Standard:** RS-422

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

**Voltage Differential:** -15 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

### Physical Characteristics

**Housing:** Aluminum sheet metal

#### Weight:

- MPC-2150: 6.5 kg (14.44 lb)
- MPC-2190: 7.8 kg (17.33 lb)
- MPC-2240: 12.4 kg (27.56 lb)
- MPC-2260: 16.6 kg (36.89 lb)

#### Dimensions:

- MPC-2150: 356 x 315 x 77.2 mm (14.02 x 12.40 x 3.04 in)
- MPC-2190: 429 x 387 x 74.5 mm (16.89 x 15.24 x 2.93 in)
- MPC-2240: 595 x 393 x 75 mm (23.44 x 15.48 x 2.95 in)
- MPC-2260: 621 x 444 x 90 mm (24.45 x 17.48 x 3.57 in)

**Mounting:** VESA (optional), panel (optional), desktop (optional)

**System Cooling:** Fanless thermal design

### Environmental Limits

#### Operating Temperature:

- MPC-2150: -40 to 70°C (-40 to 158°F)
- MPC-2190/2240/2260: -15 to 55°C (5 to 131°F)

#### Storage Temperature:

- MPC-2150: -40 to 70°C (-40 to 158°F)
- MPC-2190/2240/2260: -20 to 60°C (-4 to 140°F)

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

**Note:** For MPC-2260 models, if you expect the storage temperature to exceed 40°C, please ensure that the ambient relative humidity remains below 95%.

**IP Rating:**

- MPC-2150: Front: IP66, Rear: IP22
- MPC-2190/2240/2260: Front: IP54, Rear: IP22

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

**Anti-shock:**

- MPC-2150: 20 g rms, half sine wave under system operating, 11 ms duration, compliant with IEC 60068-2-27 standard

**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

**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](http://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.

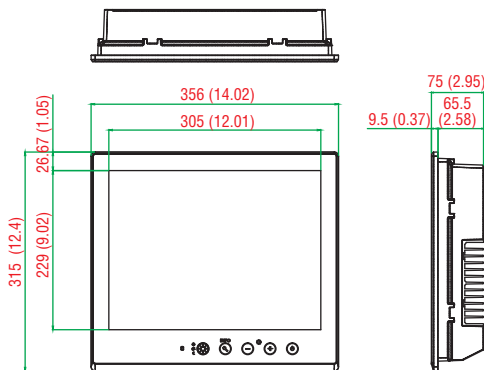
**Important Safety Precaution:**

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.

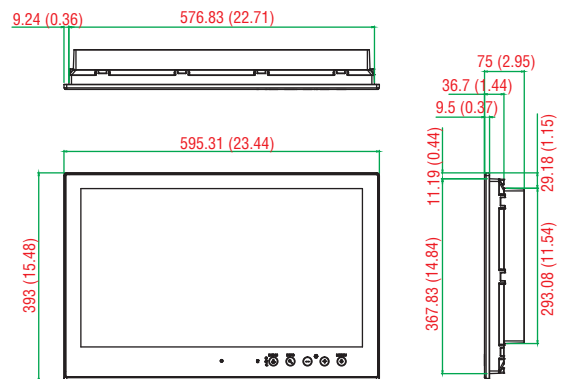
**Dimensions**

Unit: mm (inch)

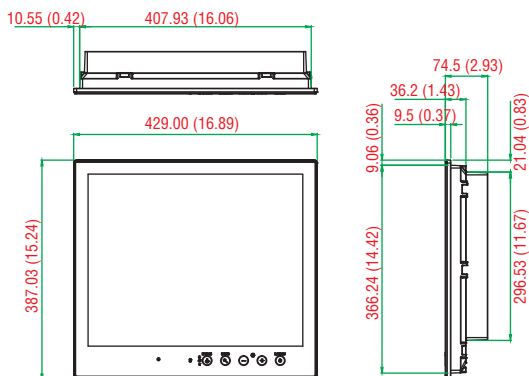
**MPC-2150**



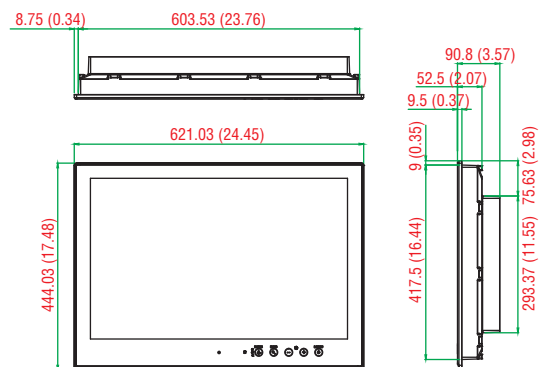
**MPC-2240**



**MPC-2190**



**MPC-2260**



## Ordering Information

### Available Models

**MPC-2240X:** 24-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, SSD trays, dual AC/DC power inputs, tape bonding

**MPC-2240Z:** 24-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, SSD trays, dual AC/DC power inputs, tape bonding, projected capacitive touch screen

**MPC-2247X:** 24-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, SSD trays, dual AC/DC power inputs, tape bonding

**MPC-2247Z:** 24-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, SSD trays, dual AC/DC power inputs, tape bonding, projected capacitive touch screen

**MPC-2260X:** 26-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, SSD trays, dual AC/DC power inputs, tape bonding

**MPC-2267X:** 26-inch fanless panel computer with Intel Core i7 3517UE 1.7 GHz, NMEA 0183, RS-232/422/485 serial ports, gigabit LAN ports, USB 2.0 ports, SSD trays, dual AC/DC power inputs, tape bonding

**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

**MPC-2150X-T:** 15-inch fanless panel computer with Intel® Celeron® 1047UE 1.4 GHz processor, RS-232/422/485 serial ports, gigabit LAN ports, USB 2.0 ports, -40 to 70°C operating temperature, 2.5-inch SSD tray and CFast slot, dual AC/DC power inputs, tape bonding

**MPC-2150Z-T:** 15-inch fanless panel computer with Intel® Celeron® 1047UE 1.4 GHz processor, RS-232/422/485 serial ports, gigabit LAN ports, USB 2.0 ports, -40 to 70°C operating temperature, 2.5-inch SSD tray and CFast slot, dual AC/DC power inputs, tape bonding, projected capacitive touch screen

**MPC-2157X-T:** 15-inch fanless panel computer with Intel® Core™ i7 3517UE 1.7 GHz processor, RS-232/422/485 serial ports, gigabit LAN ports, USB 2.0 ports, -40 to 70°C operating temperature, 2.5-inch SSD tray and CFast slot, dual AC/DC power inputs, tape bonding

**MPC-2157Z-T:** 15-inch fanless panel computer with Intel® Core™ i7 3517UE 1.7 GHz processor, RS-232/422/485 serial ports, gigabit LAN ports, USB 2.0 ports, -40 to 70°C operating temperature, 2.5-inch SSD tray and CFast slot, 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:** 10A/125V North American (US) power cord, 183 cm

**PWC-C13EU-3B-183:** 10A/250V Continental European (EU) power cord, 183 cm

**PWC-C13UK-3B-183:** 10A/250V United Kingdom (UK) power cord, 183 cm

**PWC-C13AU-3B-183:** 10A/250V Australian (AU) power cord, 183 cm

**PWC-C13CN-3B-183:** 10A/250V China (CN) power cord, 183 cm

### Optional Mounting Kits (can be purchased separately)

**MPC-MD-2-15-PMTK:** 8 screws for panel mount

**MPC-MD-2-15-VESAMTK:** VESA-mounting bracket, 100 x 100 mm and 75 x 75 mm

### Optional Mounting/Bracket Kits (can be purchased separately)

**MPC-MD-2-24-PMTK:** Panel-mounting kit

**MPC-MD-2-24-VESAMTK:** VESA-mounting kit

**MPC-MD-2-24-26-DMTK w/o hinge:** Desktop-mounting kit without hinge

**MPC-MD-2-24-26-DMTK w/ hinge:** Desktop-mounting kit with hinge

**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

**MPC-MD-2-15-PMTK:** Panel-mounting kit with 8 screws

**MPC-MD-2-15-VESAMTK:** VESA-mounting bracket, 100 x 100 mm and 75 x 75 mm

### Package Checklist (MPC-2150)

- 1 MPC-2150 panel computer
- 1 2-pin terminal block for DC power input
- 2.5-inch SATA SSD/HDD installation kit
- Documentation and driver DVD
- Quick installation guide (printed)
- Warranty card

### Package Checklist (MPC-2190)

- 1 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

### Package Checklist (MPC-2240)

- 1 MPC-2240 panel computer
- 2 keys for locking removable storage trays
- 1 2-pin terminal block for DC power input
- 4 5-pin terminal blocks for NMEA 0183 v2 interfaces
- Documentation and driver DVD
- Quick installation guide (printed)
- Warranty card

### Package Checklist (MPC-2260)

- 1 MPC-2260 panel computer
- 2 keys for the locking removable storage trays
- 1 2-pin terminal block for DC power input
- 4 5-pin terminal blocks for NMEA 0183 v2 interfaces
- Documentation and driver DVD
- Quick installation guide (printed)
- Warranty card