

# MPC-2190 Series

19-inch ECDIS color calibrated, fanless panel computers



## Features and Benefits

- 19-inch panel computer
- Color calibrated for ECDIS compliance
- Third-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
- Multiple power supplies (AC & DC)

## Certifications



## Introduction

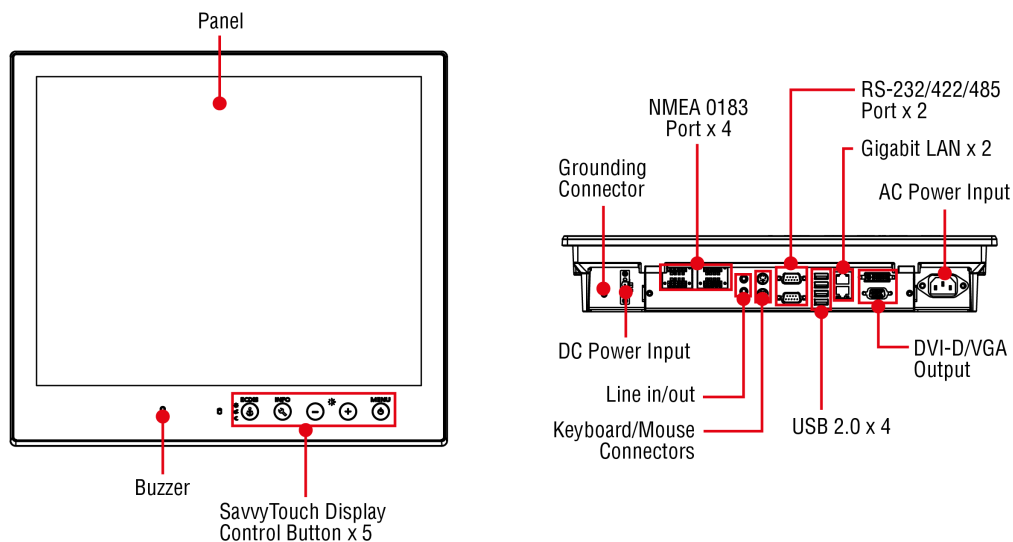
MPC-2190 panel computers feature an Intel 3rd generation processor matched to 4 GB of system memory, delivering a reliable, high-performance platform of wide versatility for use in industrial marine environments. With its two RS-232/422/485 serial ports, four NMEA 0183 ports, and two Gigabit Ethernet 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	MPC-2190Z-W7E/2190X/2190Z: Intel® Celeron® Processor 1047UE (2M Cache, 1.40 GHz) MPC-2197X/2197Z: Intel® Core™ i7-3555LE Processor (4M Cache, up to 3.20 GHz)
System Chipset	Mobile Intel® HM65 Express Chipset
Graphics Controller	Intel® HD Graphics 520 (integrated)
System Memory Pre-installed	4 GB DDR3/DDR3L
System Memory Slot	SODIMM DDR3/DDR3L slot x 1
Pre-installed OS	Windows Embedded Standard 7 (WS7P) 64-bit
Supported OS	Windows 7 Pro for Embedded Systems Windows Embedded Standard 7 (WS7P) 64-bit Windows 10 Pro 64-bit Windows 10 Embedded IOT Ent 2016 LTSB High End EPKEA Windows 10 Embedded IOT Ent 2016 LTSB Value EPKEA
Storage Slot	2.5-inch HDD/SSD slots x 2

### Computer Interface

Ethernet Ports	Auto-sensing 10/100/1000 Mbps ports (RJ45 connector) x 2
Serial Ports	RS-232/422/485 ports x 2, software selectable (DB9 male)
USB 2.0	USB 2.0 hosts x 4, type-A connectors
Audio Input/Output	Line in x 1, Line out x 1, 3.5 mm phone jack
PS/2	Keyboard PS/2 x 1, Mouse PS/2 x 1
Video Output	DVI-D x 1, 29-pin DVI-D connectors (female) VGA x 1, 15-pin D-sub connector (female)
NMEA Port	NMEA 0183 ports x 4 (terminal block)

### LED Indicators

System	Power x 1
LAN	2 per port (10/100/1000 Mbps)

### Display

Active Display Area	376.32 (H) x 301.06 (V) mm
Aspect Ratio	5:4
Contrast Ratio	2000:1
Light Intensity (Brightness)	300 cd/m <sup>2</sup>
Max. No. of Colors	16.7M (8-bit/color)
Panel Size	19-inch viewable image
Panel Type	MVA
Pixel Pitch (RGB)	0.294 (H) x 0.294 (V) mm
Pixels	1280 x 1024

Response Time	20 ms (gray to gray)
Viewing Angles	178°/178°
<b>Touch Function</b>	
Touch Type	MPC-2190Z/2197Z: Capacitive Touch (PCAP) MPC-2190X/2197X: None
Touch Support Points	MPC-2190Z/2197Z: 4 points
<b>Serial Interface</b>	
Baudrate	50 bps to 115.2 kbps
Data Bits	5, 6, 7, 8
Flow Control	RTS/CTS, XON/XOFF, ADDC® (automatic data direction control) for RS-485, RTS Toggle (RS-232 only)
Parity	None, Even, Odd, Space, Mark
Stop Bits	1, 1.5, 2
NMEA Interface	Serial Standards: NMEA 0183: RS-422 NMEA 2000: CAN bus (available on request) Baudrate: 4800 bps Data Bits: 8 Handshake: None Optical Isolation Protection: 3 kV Parity: None Serial Standards: NMEA 0183v2 (NMEA 2000 available on request) Stop Bits: 1, 1.5, 2 Voltage Differential: -6 V to +6 V (maximal differential level)
<b>Serial Signals</b>	
RS-232	TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
RS-422	Tx+, Tx-, Rx+, Rx-, GND
RS-485-2w	Data+, Data-, GND
RS-485-4w	Tx+, Tx-, Rx+, Rx-, GND
<b>Power Parameters</b>	
Input Voltage	100 to 240 VAC, 18 to 34 VDC
<b>Physical Characteristics</b>	
Housing	Metal
IP Rating	IP54, front IP20, rear
Dimensions	429 x 387 x 74.5 mm (16.89 x 15.24 x 2.93 in)
Weight	8,658 g (19.09 lb)
<b>Environmental Limits</b>	
Operating Temperature	-15 to 55°C (5 to 131°F)
Storage Temperature (package included)	-20 to 60°C (-4 to 140°F)
Ambient Relative Humidity	5 to 95% (non-condensing)

## Standards and Certifications

EMC	EN 55032/24
EMI	CISPR 32, 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: 10 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: 10 V
Environmental Testing	IEC 60068-2-1, DNVGL-CG-0339 IEC 60068-2-2, DNVGL-CG-0339 IEC 60068-2-2, IEC 60945 IEC 60068-2-30, IEC 60945
Maritime	ABS, CCS, DNV-GL
Safety	EN 60950-1, IEC 60950-1, UL 60950-1
Vibration	IEC 60068-2-6, IEC 60945 IEC 60068-2-64, DNVGL-CG-0339

## Declaration

Green Product	RoHS, CRoHS, WEEE
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## Warranty

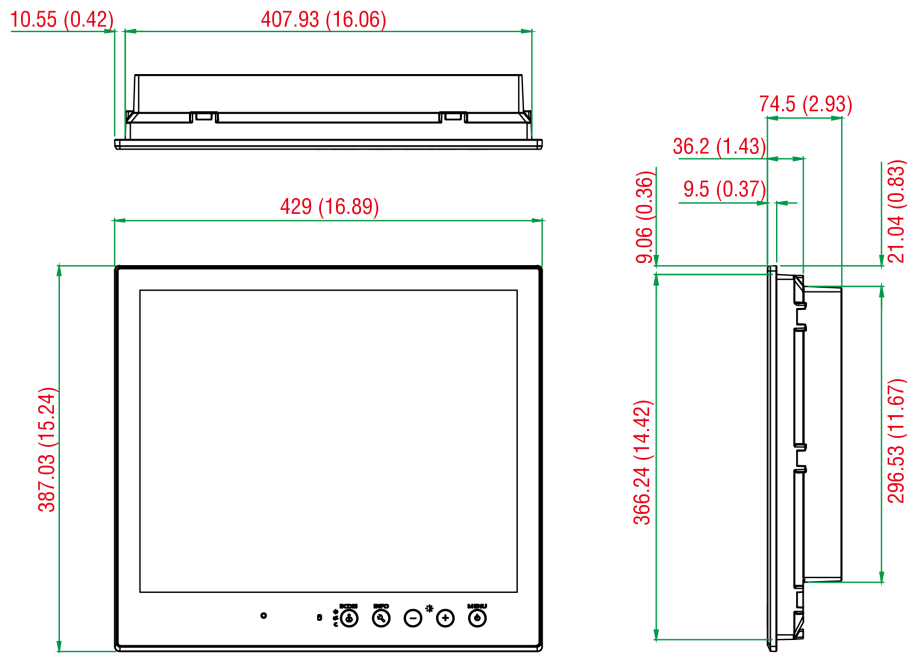
Warranty Period	LCD: 1 year System: 3 years
Details	See <a href="http://www.moxa.com/warranty">www.moxa.com/warranty</a>

## Package Contents

Device	1 x MPC-2190 Series computer
Installation Kit	1 x terminal block, 2-pin
Documentation	1 x document and software CD 1 x quick installation guide 1 x warranty card

## Dimensions

Unit: mm (inch)



## Ordering Information

Model Name	Panel	CPU	RAM	OS	LAN	Serial	NMEA 0183	Video Outputs	Line in/out	Power Input
MPC-2190Z-W7E	19" (5:4) 1,000 nits	Celeron 1047UE	4 GB	W7E OS 64 GB SSD	2	2	4	1 x VGA 1 x DVI-D	1	24 VDC 100-240 VAC
MPC-2190Z	19" (5:4) 1,000 nits	Celeron 1047UE	4 GB	-	2	2	4	1 x VGA 1 x DVI-D	1	24 VDC 100-240 VAC
MPC-2190X	19" (5:4) 1,000 nits	Celeron 1047UE	4 GB	-	2	2	4	1 x VGA 1 x DVI-D	1	24 VDC 100-240 VAC
MPC-2197Z	19" (5:4) 1,000 nits	i7-3517UE	4 GB	-	2	2	4	1 x VGA 1 x DVI-D	1	24 VDC 100-240 VAC
MPC-2197X	19" (5:4) 1,000 nits	i7-3517UE	4 GB	-	2	2	4	1 x VGA 1 x DVI-D	1	24 VDC 100-240 VAC

## Accessories (sold separately)

### Desktop Mounting Kits

MPC-MD-2-19-DMTK w/ hinge	Desktop-mounting kit for 19-inch panels
MPC-MD-2-19-DMTK w/o hinge	Desktop-mounting kit for 19-inch panels, (no hinge)

### Panel Mounting Kits

MPC-MD-2-19-PMTK	19-inch panel-mounting kit, 10 mounting clamps
MPC-MD-2-19-RMTK	Rubber gasket for 19-inch panels

### VESA Mounting Kits

MPC-MD-2-19-VESAMTK	VESA kit for 19-inch panels (can be used with 100 x 100 mm or 280 x 150 mm VESA mounts)
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