MPC-2240 Series

24-inch ECDIS color calibrated, fanless panel computers

> 24-inch panel computer
> Color calibrated for ECDIS compliance
> Fanless design
> SavvyTouch display controls
> 3rd Generation Intel® Core™ or Celeron® processor (Celeron® 1047UE, 1.40 GHz, and Intel® Core i7 2610UE 1.5 GHz)
> Built-in NMEA 0183 and software selectable RS-232/422/485 interfaces
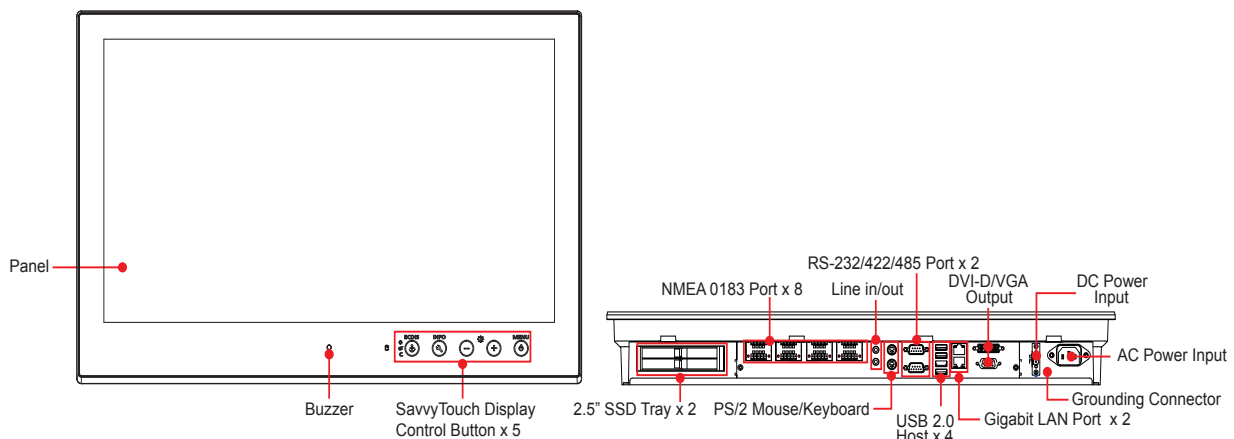> Dual AC/DC power supply units

Introduction

MPC-2240 series panel computers feature advanced Intel processors—3rd generation Ivy Bridge Core or Celeron—matched to 4 GB of system memory, delivering a reliable, high-performance platform of wide versatility for use in industrial marine environments. With its RS-232/422/485 serial, NMEA 0183, and Gigabit Ethernet LAN ports, the MPC- 2240 panel computer supports a wide variety of serial- and marine-specific interfaces alongside high speed IT communications, all with native network redundancy.

The MPC-2240 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, optional optical bonding, and/or multi-touch screen), as well as Moxa's innovative SavvyTouch display controls.

The MPC-2240 panel computers are compliant with several industrial marine standards, including IEC 60945 4th, IEC 61174, IEC 61162, DNV2.4, and IACS E10, verifying their resilient durability in marine operations. An optional IP65-rated unibody shell provides strong additional protection against the harsh conditions found in marine environments. The MPC-2240 delivers a rugged, type approved, high performance and user friendly panel computer perfect for ECDIS navigation systems and other marine IBS applications.

Appearance

Panel

Buzzer
SavvyTouch Display Control Button x 5

NMEA 0183 Port x 8
RS-232/422/485 Port x 2
Line in/out
DVI-D/VGA Output
DC Power Input

2.5" SSD Tray x 2
PS/2 Mouse/Keyboard
USB 2.0 Host x 4
Gigabit LAN Port x 2
Grounding Connector
AC Power Input

: Specifications

Computer
CPU: Intel Celeron® Processor 1047UE (2M Cache, 1.40GHz), TDP 17 watts (standard)
OS: Windows 7 Professional, Windows Embedded Standard 7, Windows XP Embedded, Windows XP SP3
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: 4 bootable USB 2.0 hosts, type A connectors
Storage: 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 Output: 2 outputs: 1 DVI-D, 1 VGA (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: 24" viewable image size
Panel Type: MVA
Aspect Ratio: 16:9
Pixels: 1920 x 1080 (WSXGA+)
Pixel Pitch (RGB): 0.276 (H) x 0.276 (V) mm
Response Time: 25 ms (gray to gray)
Contrast Ratio: 5000:1
Light Intensity: 300 cd/m^2
Viewing Angles: 178°/178°
Active Display Area: 531.36 (H) x 298.89 (V) mm
Max Colors: 16.7M (8 bit color)
Resolution:
• VGA: 640 x 480
• SVGA: 800 x 600
• XGA: 1024 x 768
• SXGA: 1280 x 1024
• WSXGA+: 1920 x 1080 (benchmarked setting)

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 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

NMEA Interface
Serial Standards: 8 NMEA 0183 ports
Base Serial Standard: RS-422
Optical Isolation Protection: ±6 kV contact discharge, ±8 kV 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: Storage
SavvyTouch Display Control Buttons: ECDIS, INFO, Brightness (+, -), Power

Physical Characteristics
Housing: Aluminum sheet metal
Weight: 12.4 kg
Dimensions: 595 x 393 x 75 mm (23.44 x 15.48 x 2.95 in)
Mounting: Flush mounting

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: IP22 (IP65 models available on request)
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:
• 24 VDC (18 to 36 VDC), screw-type terminal block
• 100 to 240 VAC, AC power inlet
Power Consumption: 40 to 75 W

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: IEC 60945 4th, IEC 61174, IEC 61162, DNV2.4, IACS E10
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
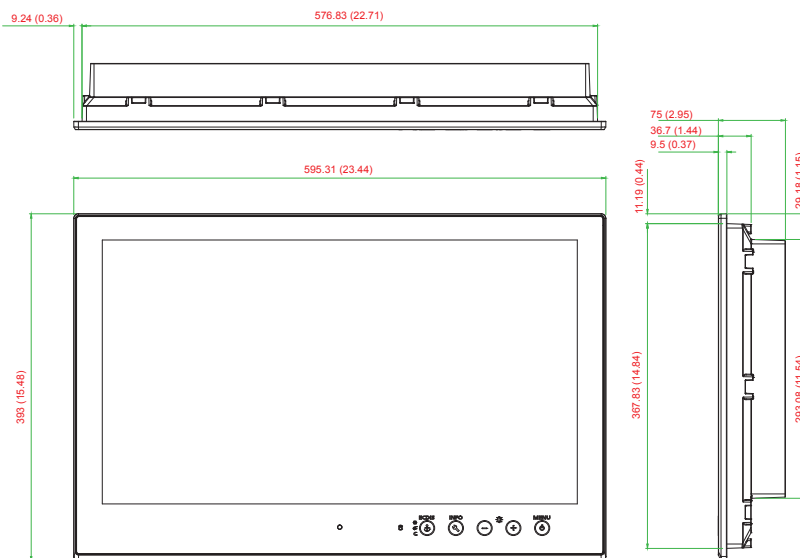**Warranty Period:** 1 year
Details: See www.moxa.com/warranty

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

- Position the display within ±40° of the vertical.
- Install an external fan to increase airflow upwards through the display if (a) the display is not positioned within ±40° 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)

9.24 (0.36)   576.83 (22.71)

595.31 (23.44)

393 (15.48)

75 (2.95)
36.7 (1.44)
9.5 (0.37)
11.19 (0.44)
29.18 (1.15)
367.83 (14.84)
293.08 (11.54)

: 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 2610UE 1.5 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

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, Australian plug
PWC-C13CN-3B-183: Power cord with 3-pin connector, Chinese plug

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 angle adjustment hinge

Package Checklist
- 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