V2201-E1-T-W7E

Fanless, ultra-compact x86 IIoT embedded computer

> Intel® Atom™ Processor E3815 with 15-year CPU lifetime
> -40 to 85°C system operating temperature
> Variety of interfaces: 2 serial ports, 2 Ethernet LAN port, 4 DIs, 4 DOs, SD, USB, HDMI
> EN 61000-6-2 and EN 61000-6-4 certification*; meets EMC standard for heavy industry
> Up to 5 Grms anti-vibration and 100 g/11 ms anti-shock
> Ready-to-run Windows Embedded Standard 7 platforms
> Moxa Proactive Monitoring utility for system hardware health monitoring
> Moxa Smart Recovery utility to recover system from boot failure

*Passed with AC/DC adapter.

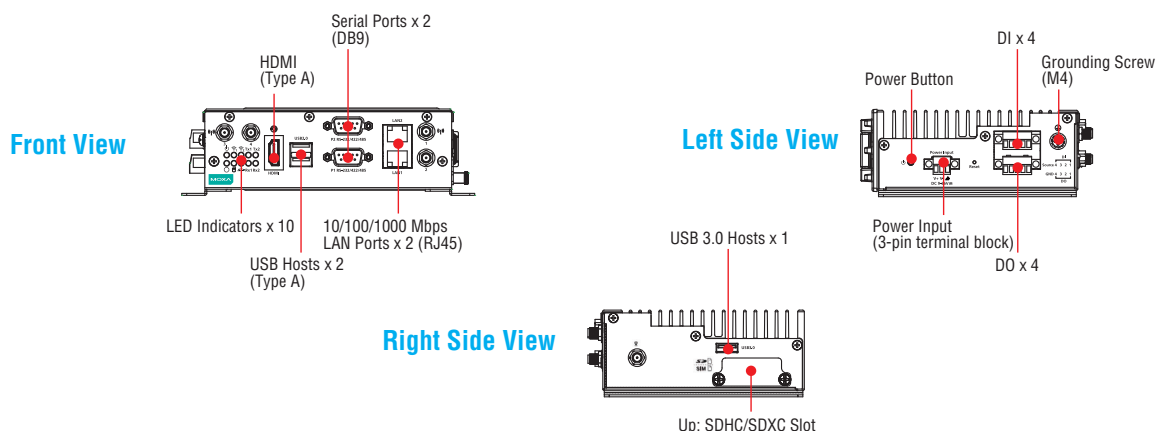Microsoft® Windows® Embedded   RoHS   c(UL)us LISTED   CE   FC

: Overview

The Moxa V2201 series ultra-compact x86 embedded computer is based on the Intel® Atom™ E3815 processor, features the most reliable I/O design to maximize connectivity, making it suitable for a diverse range of communication applications. The computer's thermal design ensures reliable system operation in temperatures ranging from -40 to 85°C. The V2201 series supports "Moxa Hardware Monitoring" for device I/O status monitoring and alerts, system temperature monitoring and alerts, and system power management. Monitoring system status closely makes it easier to recover from errors and provides the most reliable platform for your applications.

Applications:
• Remote Terminal Unit (RTU)
• Data acquisition
• Digital signage
• Factory automation
• In-vehicle monitor/data logger (transportation)
• Programmable router
• Energy usage optimization
• Predictive maintenance
• Asset management

: Appearance

Front View

Serial Ports x 2 (DB9)

HDMI (Type A)

LED Indicators x 10

USB Hosts x 2 (Type A)

10/100/1000 Mbps LAN Ports x 2 (RJ45)

Left Side View

DI x 4

Grounding Screw (M4)

Power Button

Power Input (3-pin terminal block)

DO x 4

Right Side View

USB 3.0 Hosts x 1

Up: SDHC/SDXC Slot

⠿ Hardware Specifications

Computer

CPU:
V2201-E1 Series: Intel® Atom™ Processor E3815 (Single Core, 512K Cache, 1.46 GHz)
OS: Windows Embedded Standard 7 64-bit
System Memory: 4 GB DDR3L pre-installed
USB: 1 bootable USB 3.0 port, 2 bootable USB 2.0 ports (type A)

Storage

mSATA: 8 GB MLC mSATA pre-installed with Windows Embedded Standard 7 64-bit
SD: 1 SD 3.0 (SDHC/SDXC) socket for storage expansion*
*W7E only supports SD 2.0

Audio

Output: Line-out interface (together with HDMI)

Display

Graphics Controller: Intel® HD (integrated)
Connector Type: 1 HDMI connector (type A)
Display Interface: Supports HDMI 1.4a, 1920 x 1080 pixels @ 60/24 Hz

Ethernet Interface

LAN: Auto-sensing 10/100/1000 Mbps ports (RJ45) x 2
Isolation Protection: 1.5 kV

Serial Interface

Serial Standards: RS-232/422/485 software selectable ports (DB9 male) x 2

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
Baudrate: 50 bps to 115.2 kbps

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

Digital Input

Input Channels: DI x 4
Input Voltage: 0 to 30 VDC at 25 Hz
Digital Input Levels for Dry Contacts:
Logic level 0: Close to GND
Logic level 1: Open
Digital Input Levels for Wet Contacts:
Logic level 1: +3 V max.
Logic level 0: +10 V to +30 V (Source to DI)
Connector Type: 10-pin screw-fastened Euroblock terminal
Isolation: 3 kV optical isolation

Digital Output

Output Channels: DO x 4, sink type
Output Current: Max. 200 mA per channel
On-State Voltage: 24 VDC nominal, open collector to 30 VDC
Connector Type: 10-pin screw-fastened Euroblock terminal
Isolation: 3 kV optical isolation

LEDs

System: Power, user-defined
Storage: mSATA, SD
LAN: 2 LEDs per port (100/1000 Mbps)
Serial: 2 LEDs per port (Tx and Rx)
Wireless: Mini-PCIe 1, Mini-PCIe 2

Switches and Buttons

Power Switch: on/off (left-side panel)
Reset Button: For warm reboot (left-side panel)

Physical Characteristics

Housing: Aluminum
Weight: 940 g (2.09 lb)
Dimensions:
Without ears: 150 x 48.8 x 120.2 mm (5.91 x 1.92 x 4.73 in)
With ears: 178 x 52.5 x 120.2 mm (7.01 x 2.07 x 4.73 in)
Mounting: Wall, DIN-rail (optional)

Environmental Limits

Operating Temperature: -40 to 85°C (-40 to 185°F)
Ambient Relative Humidity: 5 to 95% (non-condensing)
Anti-Vibration: IEC 60068-2-64: 5 Grms, 5 Hz to 500 Hz, 1 hr/axis w/ mSATA, SD
Anti-Shock: IEC 60068-2-27: 100 g/11 ms ±X, ±Y, ±Z, 3 shocks each axis w/ mSATA, SD

Power Requirements

Input Voltage: 9 to 36 VDC (3-pin terminal block for V+, V-, SG)
Input Current: 2 A @ 9 VDC
Power Consumption: 18 W

Standards and Certifications

Safety: UL 60950-1, CSA C22.2 No. 60950-1-03 (60950-1-07), EN 60950-1, UL 508
EMC: EN 55032/24, EN 61000-6-2/6-4*
*Passed with AC/DC adapter.
EMI: CISPR 32, FCC Part 15B Class A
EMS:
IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV
IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m
IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV
IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV
IEC 61000-4-6 CS: 10 V
IEC 61000-4-8
Green Product: RoHS, CRoHS, WEEE

Reliability

Automatic Reboot Trigger: Software-programmable watchdog timer configurable from 1 to 255 seconds

MTBF (mean time between failures)

Time: 408,275 hrs
Standard: Telcordia (Bellcore) Standard TR/SR

Warranty

Warranty Period: 3 years
Details: See www.moxa.com/warranty
Note: These hardware specifications describe the embedded computer unit itself, but not its official accessories. In particular, the wide temperature specification does not apply to accessories such as power adapters and cables.

: Software Specifications

Windows Embedded Standard 7

Core OS:
- 64-bit support
- Remote Client
- Remote Procedure Call

Applications and Services Development:
- Remote Desktop Protocol 7.1
- COM OLE Application Support
- COM+ Application Support
- MSMQ

Internet Services:
- Internet Explorer 8.0
- IIS 7.0

Diagnostics:
- Common Diagnostic Tools
- Problem Reports and Solutions

Fonts: Western, Middle Eastern, South East Asian, and South Asian

Graphics and Multimedia:
- MPEG Layer-3 Audio Codecs (MP3)
- MPEG4 Decoders
- DirectX and Windows Device Experience

Management:
- Group Policy Management
- Windows Management Instrument (WMI)
- Windows Update

Networking:
- Extensible Authentication Protocol (EAP)
- Internet Authentication Service
- Telnet Server
- Bluetooth
- Domain Services

- Network Access Protection
- Network and Sharing Center
- Quality of Service
- Remote Access Service (RAS)
- Telephony API Client
- Windows Firewall
- Wireless Networking

Security:
- Credential Roaming Service
- Credentials and Certificate Management
- Windows Authorization Manager (AZMAN)
- Windows Security Center
- Active Directory Rights Management
- Security Base
- Encrypted File System (EFS)

Embedded Features:
- Enhanced Write Filter (EWF)
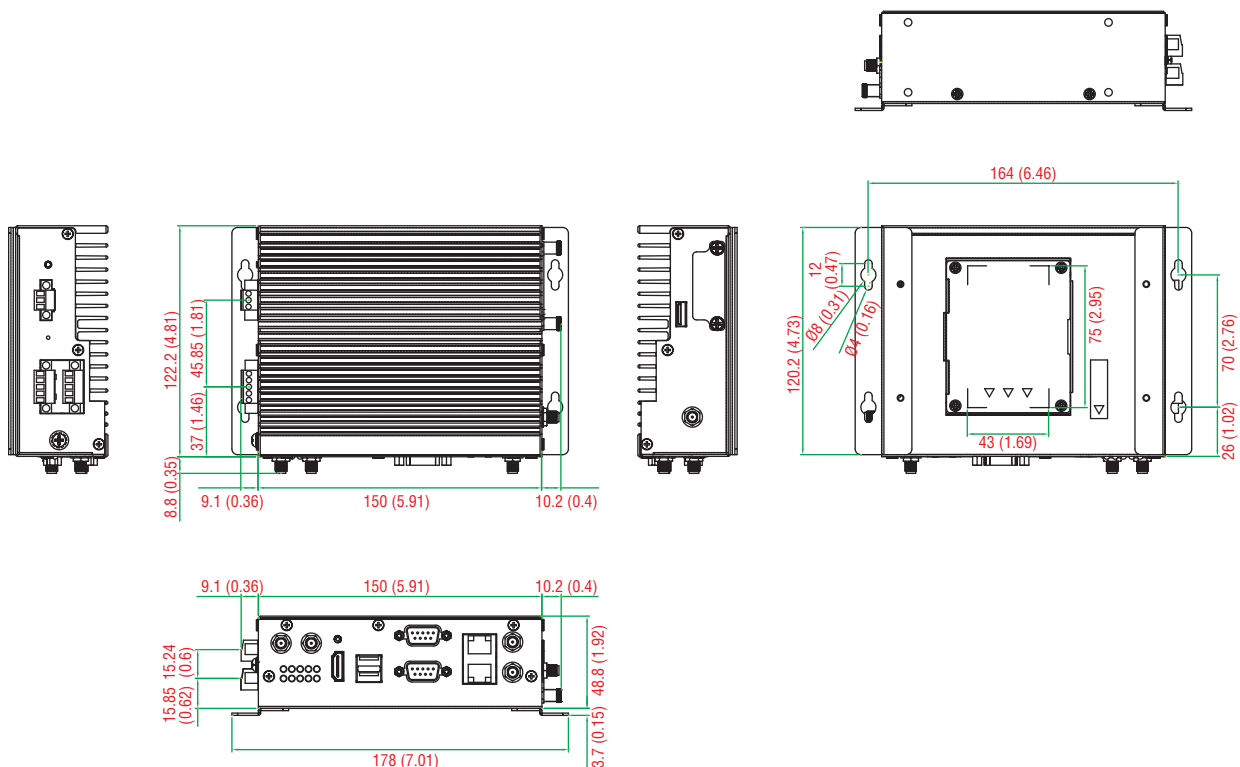- File-Based Write Filter (FBWF)
- Registry Filter
- WSDAPI for .NET

File Systems and Data Store:
- Windows Data Access Components
- Windows Backup and Restore

Maintenance: Moxa Proactive Monitoring and Moxa Smart Recovery

Dimensions

Unit: mm (inch)

MOXA®

⋮ Ordering Information

Pre-Configured Models																
	Must select for system to work															
Model Name	**CPU**	**RAM**	**mSATA**	**OS**	**SD**	**HDMI**	**LAN**	**Serial**	**DI/O**	**USB 3.0/2.0**	**USIM slot**	**Expansion Socket**	**Wireless Connector**	**LTE Heat Sink**	**Operating Temp.**	**LTE Operating Temp.**
V2201-E1-T-W7E	E3815	4 GB	8 GB	W7E	–	1	2	2	4/4	1/2	1	2	–	–	-40 to 85°C	–

Package Checklist

- V2201 embedded computer
- Terminal block to power jack converter
- Wall-mounting kit
- Documentation and software CD or DVD
- Quick installation guide (printed)
- Warranty card

⋮ Optional Accessories (can be purchased separately)

Type		Model Name	Description
Power			
	Adapter	PWR-24250-DT-S1	Power adapter, input voltage 90 to 264 VAC, output voltage of 24 V with 2.5 A DC load
	Power Cord	PWC-C7EU-2B-183	Power cord with 2-pin connector, Euro plug
Mounting Kit			
	DIN-Rail Mounting Kit	DK-DC50131	DIN-rail mounting kit x 1, screws x 6