

# V2201 Series

*Fanless, ultra-compact x86 IIoT embedded computers and gateways*



## Features and Benefits

- Intel Atom E3800 Series processor with three performance options
- Dual mini-PCIe sockets for wireless modules, supports Wi-Fi, 3G, LTE, and GPS<sup>1</sup>
- -40 to 85°C system operating temperature (-40 to 70°C with LTE module installed)<sup>1</sup>
- Variety of interfaces: 2 serial ports, 2 Ethernet LAN ports, 4 DIs, 4 DOs, SD, USB, HDMI, wireless
- EN 61000-6-2 and EN 61000-6-4 certification;<sup>2</sup> meets EMC standard for heavy industry
- Up to 5 Grms anti-vibration protection and 100 g/11 ms anti-shock protection
- Ready-to-run Debian 8, Windows Embedded Standard 7, and Windows 10 Embedded IoT Enterprise 2016 LTSC platforms
- Moxa Proactive Monitoring utility for system hardware health monitoring
- Moxa Smart Recovery utility to recover system from boot failure (W7E only)

## Certifications



## Introduction

The V2201 Series ultra-compact x86 embedded computer is based on the Intel® Atom™ E3800 Series processor, features the most reliable I/O design to maximize connectivity, and supports dual wireless modules, making it suitable for a diverse range of communication applications.<sup>1</sup> The computer's thermal design ensures reliable system operation in temperatures ranging from -40 to 85°C (-40 to 70°C with a special purpose Moxa wireless module installed). 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.

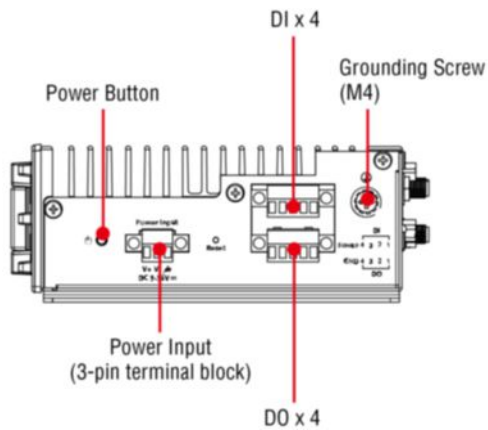
## Applications

- Remote Terminal Unit (RTU)
- Data acquisition
- M2M communication (smart gateway)
- Digital signage
- Factory automation
- In-vehicle monitor/data logger (transportation)
- Programmable router
- Energy usage optimization
- Predictive maintenance
- Asset management

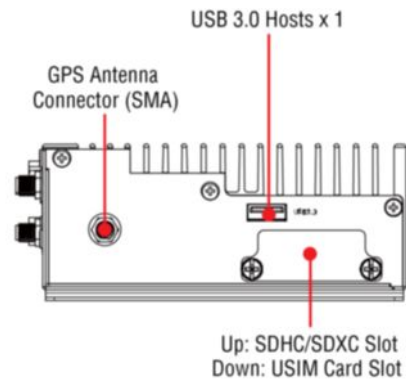
1. Wireless modules must be purchased separately.  
2. Passed with AC/DC adapter.

## Appearance

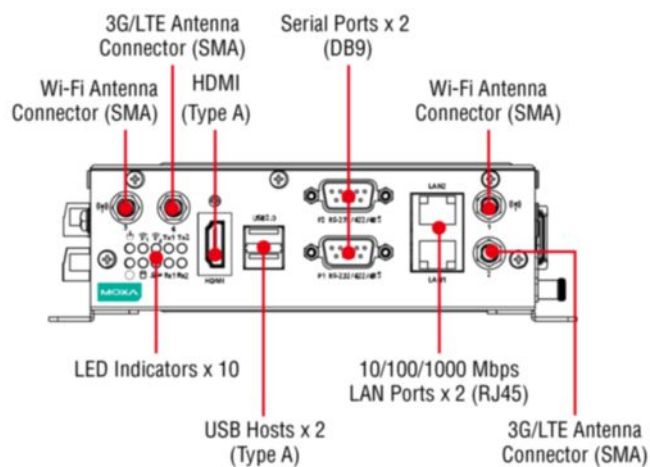
Left Side View



Right Side View



Front View



## Specifications

### Computer

CPU	V2201-E1 Series: Intel Atom Processor E3815 (Single core, 512 K cache, 1.46 GHz) V2201-E2 Series: Intel Atom Processor E3826 (Dual core, 1 M cache, 1.46 GHz) V2201-E4 Series: Intel Atom Processor E3845 (Quad core, 2 M cache, 1.91 GHz)
System Memory Pre-installed	4 GB DDR3L
System Memory Slot	SODIMM DDR3/DDR3L slot x 1
Supported OS	Linux Debian 8 (Linux kernel v4.1) Windows Embedded Standard 7 (WS7E) 32-bit Windows Embedded Standard 7 (WS7E) 64-bit
Storage Slot	mSATA slots x 1 SD 3.0 (SDHC/SDXC) socket x 1

### 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 2, type-A connectors
USB 3.0	USB 3.0 hosts x 1, type-A connectors
Digital Input	DIs x 4

Digital Output	DOs x 4
Expansion Slots	mPCIe slot x 2
Video Output	HDMI x 1, HDMI connector (type A)
Wi-Fi Antenna Connector	RP-SMA x 2
Cellular Antenna Connector	SMA x 2
Number of SIMs	1
SIM Format	Mini
GPS Antenna Connector	SMA x 1

#### Digital Inputs

Isolation	3K VDC
Connector	Screw-fastened Euroblock terminal
Dry Contact	On: short to GND Off: open
I/O Mode	DI
Sensor Type	Dry contact Wet Contact (NPN or PNP)
Wet Contact (DI to COM)	On: 10 to 30 VDC Off: 0 to 3 VDC

#### Digital Outputs

Connector	Screw-fastened Euroblock terminal
Current Rating	200 mA per channel
I/O Type	Sink
Voltage	24 to 30 VDC

#### LED Indicators

System	Power x 1 Storage x 1 Programmable x 1
Wireless Signal Strength	Cellular/Wi-Fi x 2
LAN	1 per port (10/100/1000 Mbps)
Serial	2 per port (Tx, Rx)
System	SD slots x 1

#### Serial Interface

Baudrate	50 bps to 115.2 kbps
Flow Control	RTS/CTS, XON/XOFF, ADDC® (automatic data direction control) for RS-485, RTS Toggle (RS-232 only)
Isolation	N/A
Parity	None, Even, Odd, Space, Mark
Stop Bits	1, 1.5, 2

## Serial Signals

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

## Power Parameters

Input Voltage	9 to 36 VDC
Power Connector	Terminal block (for DC models)
Power Consumption (Max.)	2000 mA @ 9 VDC
Power Consumption	18 W (max.)

## Physical Characteristics

Housing	Aluminum
IP Rating	IP30
Dimensions (with ears)	178 x 52.5 x 120.2 mm (7.01 x 2.07 x 4.73 in)
Dimensions (without ears)	150 x 48.8 x 120.2 mm (5.91 x 1.92 x 4.73 in)
Weight	940 g (2.09 lb)
Installation	DIN-rail mounting, Wall mounting (with optional kit)

## Environmental Limits

Operating Temperature	E1/E2 models: -40 to 85°C (-40 to 185°F) E4 models: -40 to 70°C (-40 to 158°F)
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)

## Standards and Certifications

EMC	EN 55032/24, EN 61000-6-2/-6-4
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 PFMF
Safety	EN 60950-1, UL 508, UL 60950-1
Shock	IEC 60068-2-27
Vibration	IEC 60068-2-64

## Declaration

Green Product	RoHS, CRoHS, WEEE
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## MTBF

Time	408,275 hrs
Standards	Telcordia (Bellcore), GB

## Warranty

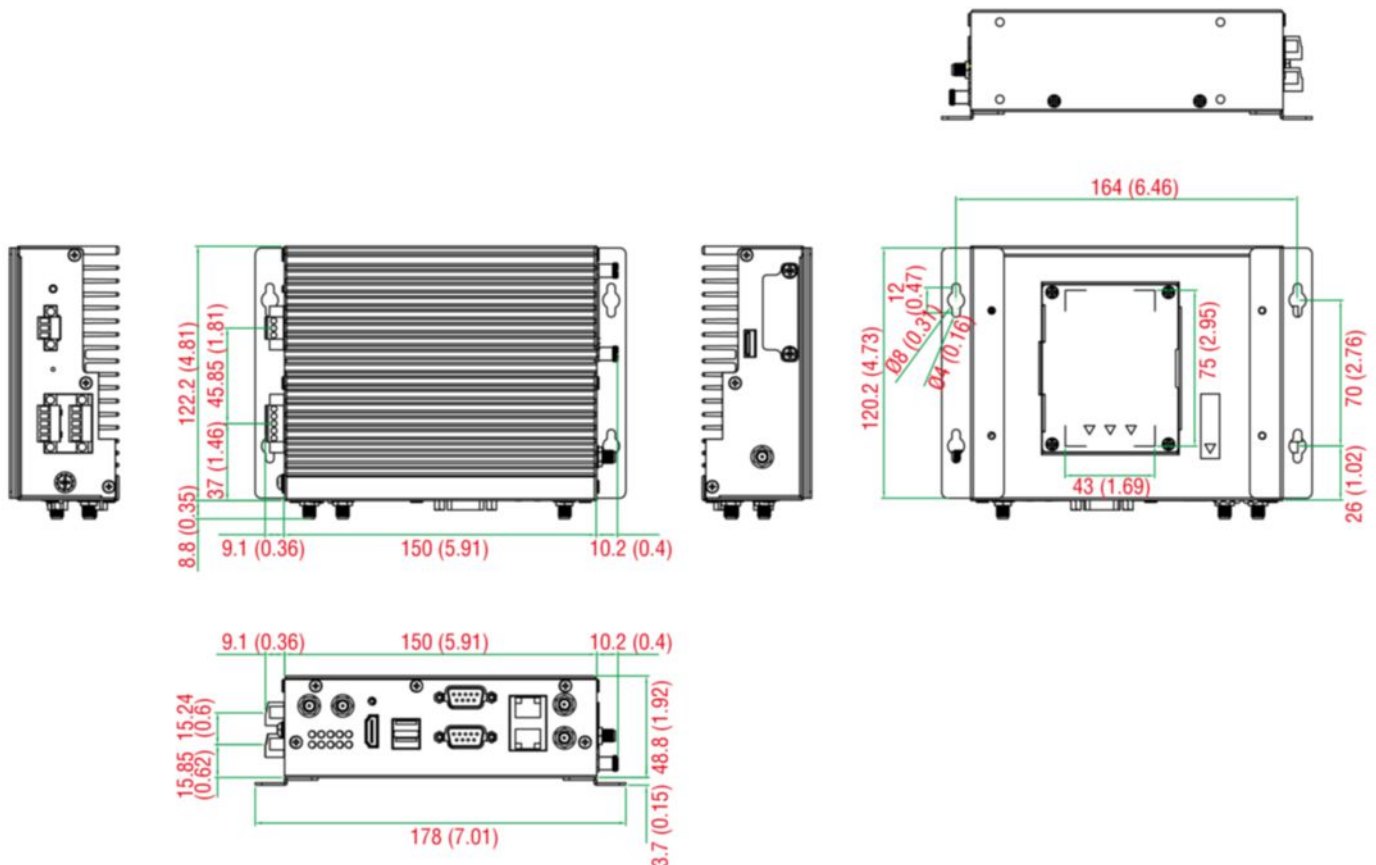
Warranty Period	3 years
Details	See <a href="http://www.moxa.com/warranty">www.moxa.com/warranty</a>

## Package Contents

Device	1 x V2201 Series computer
Installation Kit	Wall-mounting kit (all models except V2201-E4-W-T-LX) DIN-rail mounting kit (V2201-E4-W-T-LX) 1 x wall-mounting kit
Cable	1 x terminal block to power jack converter
Documentation	1 x document and software CD 1 x quick installation guide 1 x warranty card

## Dimensions

Unit: mm (inch)



## Ordering Information

Model Name	CPU	Memory (Default)	mSATA (Default)	SD Card Slots	USIM Slot	Antenna Connectors	Operating Temp.
V2201-E1-T	Intel Atom® E3815	4 GB	8 GB	1 (Optional)	1	–	-40 to 85°C
V2201-E2-T	Intel Atom® E3826	4 GB	8 GB	1 (Optional)	1	–	-40 to 85°C
V2201-E4-T	Intel Atom® E3845	4 GB	8 GB	1 (Optional)	1	–	-40 to 70°C

Model Name	CPU	Memory (Default)	mSATA (Default)	SD Card Slots	USIM Slot	Antenna Connectors	Operating Temp.
V2201-E1-W-T	Intel Atom® E3815	4 GB	8 GB	1 (Optional)	1	5	-40 to 85°C
V2201-E2-W-T	Intel Atom® E3826	4 GB	8 GB	1 (Optional)	1	5	-40 to 85°C
V2201-E4-W-T	Intel Atom® E3845	4 GB	8 GB	1 (Optional)	1	5	-40 to 70°C
V2201-E1-T-LX	Intel Atom® E3815	2 GB	8 GB	1 (Optional)	1	–	-40 to 85°C
V2201-E1-T-W7E	Intel Atom® E3815	4 GB	8 GB	1 (Optional)	1	–	-40 to 85°C
V2201-E4-W-T-LX	Intel Atom® E3845	4 GB	32 GB	16 GB	1	5	-40 to 70°C

## Accessories (sold separately)

### Power Adapters

PWR-24270-DT-S1	Power adapter, input voltage 90 to 264 VAC, output voltage 24 V with 2.5 A DC load
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### Power Cords

PWC-C7AU-2B-183	Power cord with Australian (AU) plug, 2.5A/250V, 1.83 m
PWC-C7CN-2B-183	Power cord with two-prong China (CN) plug, 1.83 m
PWC-C7EU-2B-183	Power cord with Continental Europe (EU) plug, 2.5A/250V, 1.83 m
PWC-C7UK-2B-183	Power cord with United Kingdom (UK) plug, 2.5A/250V, 1.83 m
PWC-C7US-2B-183	Power cord with United States (US) plug, 10A/125V, 1.83 m

### DIN-Rail Mounting Kits

DK-DC50131-01	DIN-rail mounting kit, 6 screws
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### Antennas

ANT-GPS-OSM-05-3M	Active GPS antenna, 26 dBi, 1572 MHz, L1 band antenna for GPS
ANT-WCDMA-ASM-1.5	GSM/GPRS/EDGE/UMTS/HSPA, omni-directional rubber duck antenna, 1.5 dBi

### Antennas

ANT-WDB-ARM-02	2.4/5 GHz, omni-directional rubber duck antenna, 2 dBi, RP-SMA (male)
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### Wi-Fi Wireless Modules

V2201 Wi-Fi mini card	SparkLAN WPEA-252NI Wi-Fi mini card , 4 black screws
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