V2201
Quick Installation Guide

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MOXA®

P/N: 1802022010010

Overview

The Moxa 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. The computer's thermal design ensures reliable system operation in temperatures ranging from -40 to 85°C, and wireless operation in temperatures ranging from -40 to 70°C with a special purpose Moxa wireless module installed. The V2201 series supports "Moxa Proactive Monitoring" for device I/O status monitoring and alerts, system temperature monitoring and alerts, and system power management. Closely monitoring the system status makes it easier to recover from errors and provides the most reliable platform for your applications.

Package Checklist

Before installing the V2201, verify that the package contains the following items:

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

NOTE: Please notify your sales representative if any of the above items are missing or damaged.
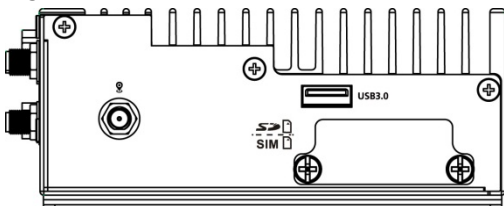
V2201 Panel Layout

The following figures show the panel layouts of the V2201-W series; for "non-W" series, the 5 antenna connectors will not be installed during production.
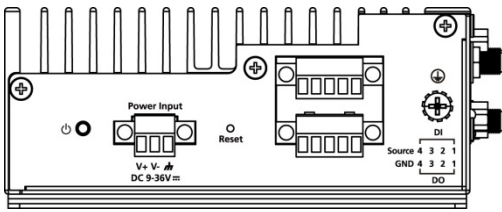
Rear View
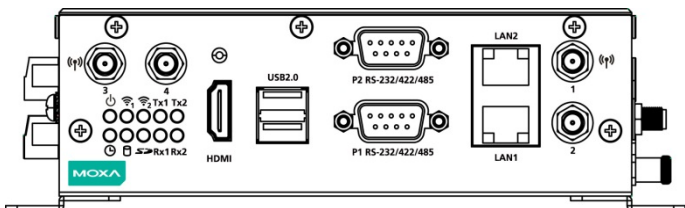
Right Side View

Left Side View

LED Indicators

The following table describes the LED indicators located on the front panel of the V2201.

LED Name	Status	Function
Power	Green	Power is on and computer is functioning normally.
	Off	Power is off
User Defined	Red	Event has occurred
	Off	No alert
mSATA	Yellow	Blinking: Data is being transmitted
	Off	Not connected / No data transmission
SD Card	Yellow	Blinking: Data is being transmitted
	Off	Not connected / No data transmission
Wireless 1	Green	Steady On: Link is On Blinking: Data is being transmitted
	Off	Not connected
Wireless 2	Green	Steady On: Link is On Blinking: Data is being transmitted
	Off	Not connected
LAN 1	Yellow	Steady On: 1000 Mbps Ethernet link Blinking: Data is being transmitted
	Green	Steady On: 100 Mbps Ethernet link Blinking: Data is being transmitted
	Off	10 Mbps Ethernet link or LAN is not connected
LAN 2	Yellow	Steady On: 1000 Mbps Ethernet link Blinking: Data is being transmitted
	Green	Steady On: 100 Mbps Ethernet link Blinking: Data is being transmitted
	Off	10 Mbps Ethernet link or LAN is not connected
Tx 1	Green	Blinking: Data is being transmitted
	Off	Not connected
Tx 2	Green	Blinking: Data is being transmitted
	Off	Not connected
Rx 1	Yellow	Blinking: Data is being transmitted
	Off	Not connected
Rx 2	Yellow	Blinking: Data is being transmitted
	Off	Not connected

NOTE The mini-PCIe card's LED behavior depends on the module

Installing the Wireless Modules

⚠️ **ATTENTION**

"-W" models (e.g., V2201-E2-W-T) will have a cellular card heat sink and 5 wireless SMA connectors installed during the production process.

The V2201 has two mini-PCIe sockets on the bottom panel. One socket supports USB signals only, using the MC9090, MC7354, or MC7354 mini-PCIe cards. Another socket supports standard USB + PCIe signals.

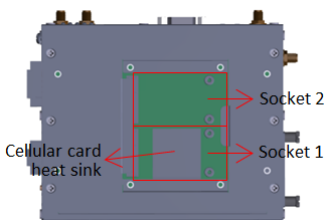**STEP1:** Loosen the four screws in the middle of the bottom panel and open the bottom cover.
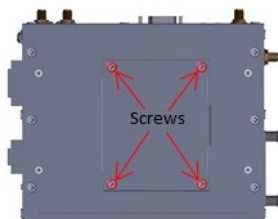
There are two mini-PCIe sockets:

Socket 1: USB signal, for 3G/LTE mini-PCIe card (Sierra Wireless MC9090, MC7304, or MC7354).

NOTE: The cellular card heat sink is installed in socket 1.

Socket 2: Standard USB + PCIe signals, for Wi-Fi mini-PCIe card (SparkLAN WPEA-252NI).

STEP 2: Insert the wireless module card at an angle.

STEP 3: Push the wireless module card down and fasten it with the 2 screws that were included with the product.
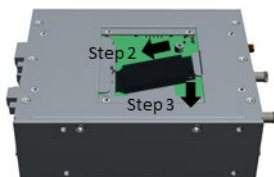
STEP 4: Connect the connectors with the corresponding wireless module cards.

5 connectors are attached to the mini-PCIe sockets:
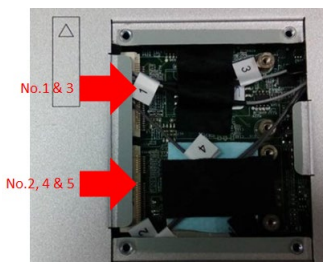
No. 1 & No. 3:
    Wi-Fi mini-PCIe card
No. 2 & No. 4:
    3G/LTE mini-PCIe card
No. 5: GPS

STEP 5: Replace the bottom cover.

STEP 6: You may also purchase external 3G, 4G, and Wi-Fi antennas from Moxa. Please contact a Moxa sales representative for information. After installing the wireless modules and wireless external antennas, the computer should appear as follows:

Installing the V2201

DIN-Rail Mounting

The DK-DC50131 die-cast metal kit must be bought separately. The kit enables easy and robust installation of the V2201. Use 4 screws to attach the DIN-rail mounting kit tightly to the side panel of the V2201.
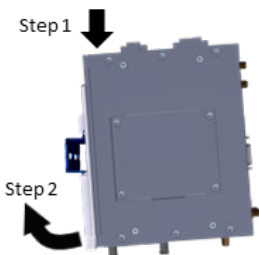
Installation:

STEP 1:
Insert the upper lip of the DIN-rail into the DIN-rail mounting kit.

STEP 2:
Press the V2201 towards the DIN-rail until it snaps into place.
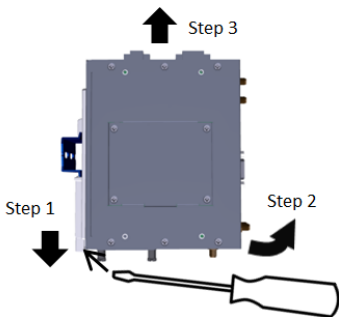

Removal:

STEP 1:
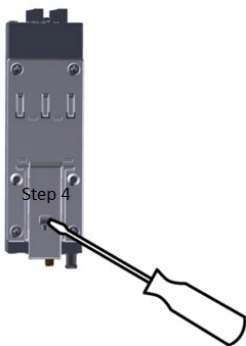Pull down the latch on the mounting kit with a screwdriver.

STEP 2 & 3:
Use a screwdriver to pry the V2201 slightly forward away from the DIN-rail, and then lift the V2201 upwards to remove it from the DIN-rail.

STEP 4:
Press the recessed button on the spring-loaded bracket to lock it into position until the next time you need to install the V2201 to a DIN-rail.
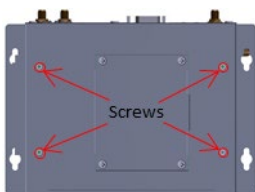
Step 4

Wall or Cabinet Mounting

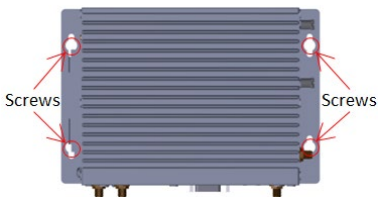The V2201 comes with two metal brackets for attaching it to a wall or the inside of a cabinet.

Step 1:
Use two screws for each bracket and attach the bracket to the rear of the V2201.

Screws

Step 2:
Use four screws per side to attach the V2201 to a wall or cabinet.

Screws   Screws

Connector Description

Power Connector

Connect the 9 to 36 VDC LPS or Class 2 power line to the V2201's terminal block. If the power is supplied properly, the Power LED will light up. The OS is ready when the Ready LED glows a solid green.

Grounding the V2201

Grounding and wire routing help limit the effects of noise due to electromagnetic interference (EMI). Run the ground connection from the grounding screw (M4) to the grounding surface prior to connecting the power.

Grounding Screw
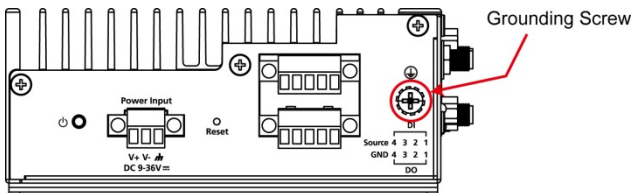
ATTENTION

This product is intended to be mounted to a well-grounded mounting surface, such as a metal panel.

Power Input

V+ V− ⏚
DC 9-36V⎓

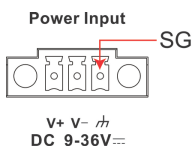**SG:** The Shielded Ground (sometimes called Protected Ground) contact is the right most of the 3-pin power terminal block connector when viewed from the angle shown here. Connect the SG wire to an appropriate grounded metal surface.

HDMI Outputs

The V2201 comes with a type A HDMI female connector on the front panel to connect an HDMI monitor.

The screw hole above the HDMI connector is used to attach a custom lock to the HDMI connector; a custom lock is needed since the shape of different HDMI connectors are not the same. Please contact a Moxa sales representative for details.

The lock appears as shown below:
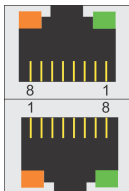

The lock should appear as follows after it is attached to the V2201:

Ethernet Ports

The 10/100/1000 Mbps Ethernet ports use RJ45 connectors.

Pin	10/100 Mbps	1000 Mbps
1	ETx+	TRD(0)+
2	ETx-	TRD(0)-
3	ERx+	TRD(1)+
4	–	TRD(2)+
5	---	TRD(2)-
6	ERx-	TRD(1)-
7	–	TRD(3)+
8	–	TRD(3)-

Serial Ports

The serial ports use DB9 connectors. Each port can be configured by software for RS-232, RS-422, or RS-485. The pin assignments for the ports are shown in the following table:

Pin	RS-232	RS-422	RS-485 (4-wire)	RS-485 (2-wire)
1	DCD	TxDA(-)	TxDA(-)	–
2	RxD	TxDB(+)	TxDB(+)	–
3	TxD	RxDB(+)	RxDB(+)	DataB(+)
4	DTR	RxDA(-)	RxDA(-)	DataA(-)
5	GND	GND	GND	GND
6	DSR	–	–	–
7	RTS	–	–	–
8	CTS	–	–	–
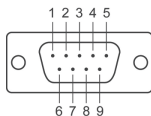
SD Slot

The V2201 has an SD slot for storage expansion. The SD slot allows users to plug in an SD 3.0 standard SD card. To install an SD card, gently remove the outer cover from the left, and then insert the SD card into the slot.

USIM Slot

The V2201 has a USIM slot for 3G/LTE wireless Internet connections. To install a USIM card, gently remove the outer cover from the left, and then insert the USIM card into the slot.

USB Hosts

The V2201 has 1 USB 3.0 and 2 USB 2.0 Type A connectors. 2 USB 2.0 ports are located on the front panel, and 1 USB 3.0 port is on the right panel. The port supports keyboard and mouse, and can also be used to connect a FlashDisk for storing large amounts of data.

Audio Interface

The audio output of the V2201 is combined with the HDMI connector.

DI/DO

The V2201 comes with 4 digital inputs and 4 digital outputs on a 2x5 terminal block.
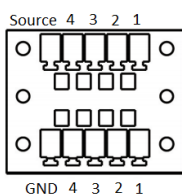
Reset Button

Press the "Reset Button" on the left side panel of the V2201 to reboot the system automatically.

Real-time Clock

The V2201's real-time clock is powered by a lithium battery. We strongly recommend that you do not replace the lithium battery without help from a qualified Moxa support engineer. If you need to change the battery, contact the Moxa RMA service team.

> ⚠️ **ATTENTION**
>
> There is a risk of explosion if the battery is replaced by an incorrect type of battery.

Powering on the V2201

To power on the V2201, connect the "terminal block to power jack converter" to the V2201's DC terminal block (located on the side panel), and then connect the 9 to 36 VDC power adapter. Press the Power Button to turn on the computer. Note that the Shielded Ground wire should be connected to the top pin of the terminal block. It takes about 30 seconds for the system to boot up. Once the system is ready, the Power LED will light up.

Connecting the V2201 to a PC

Power on the V2201 computer after connecting a monitor, keyboard, and mouse, and verifying that the power source is ready. Once the operating system boots up, the first step is to configure the Ethernet interface. The factory default settings for the V2201's LANs are show below (W7E uses DHCP).

	Default IP Address	Netmask
LAN 1	192.168.3.127	255.255.255.0
LAN 2	192.168.4.127	255.255.255.0

Configuring the Ethernet Interface

Linux users should follow these steps:

If you use the console cable to configure network settings for the first time, use the following commands to edit the interfaces file:

```
#ifdown –a
//Disable LAN1~LAN2 interface first, before you
reconfigure the LAN settings. LAN1 = eth0, LAN2 = eth1//
#vi /etc/network/interfaces
//check the LAN interface first//
```

After the boot setting of the LAN interface has been modified, use the following commands to immediately activate the LAN settings:

```
#sync; ifup –a
```

W7E users should follow these steps:

- **STEP 1:** Go to Start → Control Panel → Network and Internet → View network status and tasks → Change adapter setting.

- **STEP 2:** In the Local Area Connection Properties screen, click Internet Protocol (TCP/IP) and then select Properties. Select Internet Protocol Version 4, and then click Properties.

- **STEP 3:** Click OK after inputting the proper IP address and netmask.
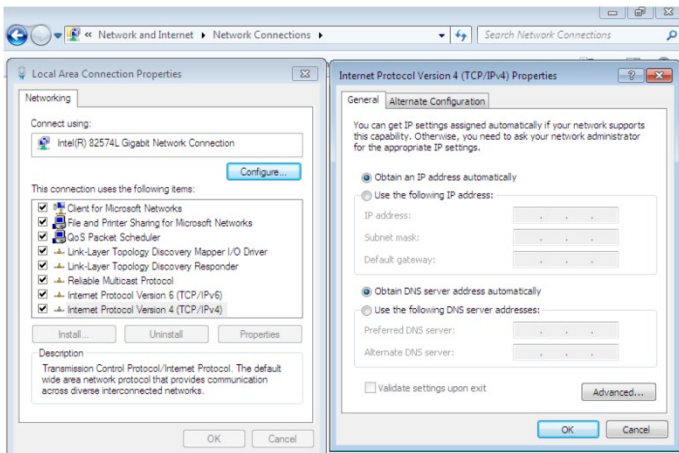
NOTE Refer to the V2201 user's manuals for other configuration information.