



V2416 Quick Installation Guide

Second Edition, April 2014

Overview

The V2416 Series embedded computers are based on the Intel Atom N270 x86 processor and feature 4 RS-232/422/485 serial ports, dual LAN ports, and 3 USB 2.0 hosts. In addition, the V2416 computers provide VGA and DVI-I outputs and are EN 50155 certified to confirm their robustness for railway and industrial applications. 2 hot-swappable and removable storage trays are also provided for convenient, fast and easy storage expansion. The V2416 also features user-defined programmable LEDs and an associated API for storage management, supporting storage plug/unplug functionality, automatic storage removal, and storage status display. An API Library is included for easy development and storage capacity notification.

Package Checklist

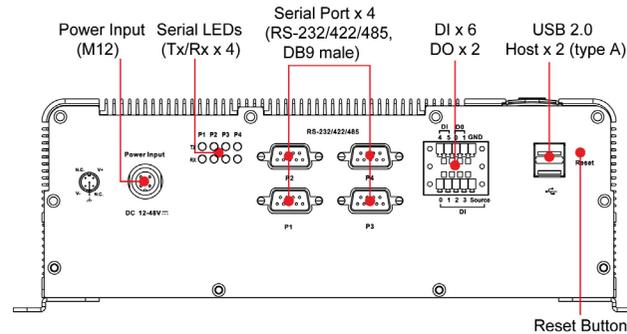
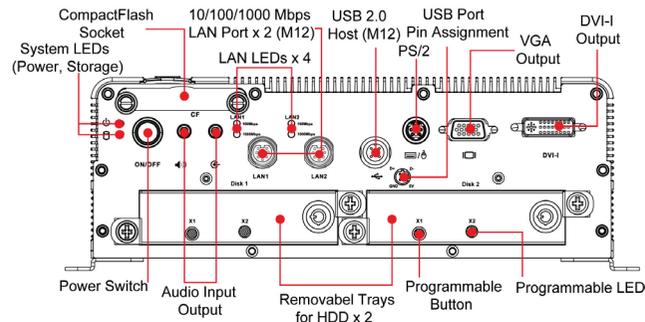
Before installing, verify that the package contains the following items:

- V2416 embedded computer.
- Wall mounting kit
- PS2 to KB/MS Y-type cable
- Documentation and Software CD or DVD
- Quick installation guide (printed)
- Product Warranty Statement (printed)

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

V2416 Panel Layout

V2416 Front & Rear Views



LED Indicators

The following table describes the LED indicators located on the front and rear panels of the V2416.

LED Name	LED Color	LED Function
Power	Green	Power is on and functioning normally
	Off	Power is off, or power error exists
Storage	Yellow	CF/HDD card is detected
	Off	CF/HDD card is not detected
LAN (1, 2)	Green	100 Mbps Ethernet mode
	Yellow	1000 Mbps Ethernet mode
	Off	10 Mbps or no activity
Tx (P1-P4)	Green	Serial ports P1-P4 transmitting data
	Off	Serial ports P1-P4 not transmitting data
Rx (P1-P4)	Yellow	Serial ports P1-P4 receiving data
	Off	Serial ports P1-P4 not receiving data
X2 (Disk 1, Disk 2)	Yellow	User-programmable
	Off	User-programmable

Installing the V2416

The V2416 can be DIN-rail mounted, wall mounted, and VESA mounted. Some mounting kits may need to be purchased separately. Refer to the Hardware User's Manual for detailed installation instructions.

Connector Description

Power Connector

Connect the 12 to 48 VDC power line with M12 connectors to the V2416 computer. If the power is supplied properly, the Power LED will light up. The OS is ready when the Ready LED glows a solid green.

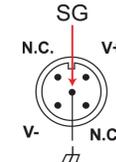
Grounding the V2416

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



ATTENTION

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



V2416

SG: The Shielded Ground (sometimes called Protected Ground) contact is the central pin of the power input connector. Connect the SG wire to an appropriate grounded metal surface.

VGA and DVI Outputs

The V2416 comes with a D-Sub 15-pin female connector for a VGA monitor; it also comes with a DVI-I connector for the DVI display. These output interfaces are all located on the front panel. Use the proper cable to connect.

PS/2 Port

The V2416 embedded computer comes with a PS/2 mini-DIN connector to connect to a PS/2 keyboard and PS/2 mouse. Use the Y-type cable to convert the mini-DIN connector into two 6-pin mini-DIN connectors to connect both a PS/2 keyboard and PS/2 mouse at the same time. You may also use the USB ports to connect your USB-based keyboard and mouse. Please note that without a Y-type cable, the PS/2 connector on the V2416 can only work with a PS/2 keyboard. A PS/2 mouse will not function when directly connected to the PS/2 connector on the V2416 embedded computer.

CompactFlash Slot

The V2416 has a CompactFlash slot located on the front panel for storage expansion. It supports CF Type-I/II with DMA mode. To install a CompactFlash card, remove the outer cover, and then insert the CF card in the socket. When finished, push the cover into the socket and fasten the screws.

USB Hosts

The V2416 has one USB port with a M12 connector on the front panel, and two USB ports with type A connectors on the rear panel. These USB ports can be used to connect flash disks for storing large amounts of data.

Ethernet Ports

Two 10/100/1000 Mbps Ethernet ports using M12 connectors are located on the front panel. See the following pin assignments.



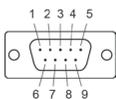
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	10/100 Mbps	1000 MBps
1	--	TRD3+
2	--	TRD4+
3	--	TRD4-
4	ERx-	TRD1-
5	ETx+	TRD2+
6	ERx+	TRD1+
7	--	TRD3-
8	ETx-	TRD2-

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	---	---	---

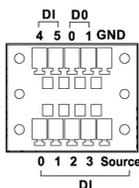


Audio Interface

The V2416 comes with an audio input and an audio output, allowing users to connect a speaker or an earphone.

DI/DO

The V2416 comes with a 6-ch digital input and 2-ch digital output in the terminal block connectors.



Hot-swappable and removable Storage Trays

The V2416 computers come with 2 removable slots for inserting additional storage media; it also supports hot swapping for convenient, fast, and easy storage expansion. The user-defined programmable LEDs and the associated API for storage management support storage plug/unplug functionality, automatic storage removal, and storage status display. Refer to the Hardware User's Manual for detailed storage installation.

Reset Button

Press the "Reset Button" on the rear panel of the V2416 to reboot the system automatically. The Ready LED will blink on and off for the first 5 seconds, and then maintain a steady glow once the system has rebooted.

Real-time Clock

The V2416'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 one of incorrect type.

Powering on the V2416

To power on the V2416, connect the power cable to the V2416's M12 power connector (located at the rear panel). Press the power button to turn on the computer. Note that the Shielded Ground wire should be connected to the central pin of the connector. It takes about 30 seconds for the system to boot up. Once the system is ready, the Power LED will light up.

Configuring the Ethernet Interface

Power on the V2416 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 V2416 LANs are show below. (Please note that the XPE and W7E models use DHCP settings.)

	Default IP Address	Netmask
LAN1	192.168.3.127	255.255.255.0
LAN2	192.168.4.127	255.255.255.0

Linux users should follow these steps:

If you are using the console cable for first-time configuration of the network settings, enter the following commands to edit the interfaces file:

```
#ifdown -a
//Disable LAN1/LAN2 interface first, before you
reconfigure the LAN settings. LAN 1 = eth0, LAN 2= eth1,
#vi /etc/network/interfaces
//check the LAN interface first//
```

After the boot settings of the LAN interface have been modified, use the following command to activate the LAN settings immediately:

```
#sync; ifup -a
```

XPE users should follow these steps:

1. Go to **Start → Network Connections**.
2. Right-click **Network Connections**, click **Properties**. Next, select **Internet Protocol (TCP/IP)**, and then click **Properties**.

3. Click **OK** after inputting the proper IP address and netmask.

W7E users should follow these steps:

1. Go to **Start → Control Panel → Network and Internet → View network status and tasks → Change adapter setting**.
2. In the screen of Local Area Connection Properties, click **Internet Protocol (TCP/IP)** and then select **Properties**. Select **Internet Protocol Version 4**, and then click **Properties**.
3. Click **OK** after inputting the proper IP address and netmask.

NOTE: Refer to the User's Manual for other configuration information.

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