V3400 Series
Quick Installation Guide

Version 1.0, May 2025

Technical Support Contact Information
www.moxa.com/support

P/N: 1802340000001

Overview

The V3400 Series embedded computers are built around an Intel® Core™ i7/i3 high-performance processor and come with up to 64 GB RAM, one M.2 2280 M key slot, and two hot-swappable HDD/SSD (with locks) for storage expansion. The computers are compliant with EN 50155 and EN 50121-4 standards covering operating temperature, power input voltage, surge, ESD, and vibration, making them suitable for railway onboard and wayside applications.

For connecting with onboard and wayside systems and devices, the V3400 computers are equipped with a rich set of interfaces including 4 to 8 Gigabit Ethernet ports with one-pair LAN bypass function (V3408 models only) to ensure uninterrupted data transmission, 2 RS-232/422/485 serial ports, 2 DIs, 2 DOs, and 2 USB 3.0 ports. The built-in TPM 2.0 module ensures platform integrity and provides hardware-based security as well as protection from tampering.

V3400 computers support multiple wireless configurations. Their design supports two 5G modules in M.2 slots, one LTE or Wi-Fi 5 in an mPCIe slot, and one Wi-Fi 6 in an M.2 slot. An optimized mechanism and thermal design allow the V3400 to meet the EN 50155 OT4 (-40 to 70°C) requirement, even with two 5G modules and one Wi-Fi 6 module installed, making it well suited for practical applications in demanding onboard transportation environments.

The V3400 computers come with two 5G, one LTE and 6 SIM-card slots to help establish redundant 5G/LTE/Wi-Fi connections and 3 programmable LEDs that enable monitoring of the runtime status of software.

Package Checklist

Each basic system model package is shipped with the following items:

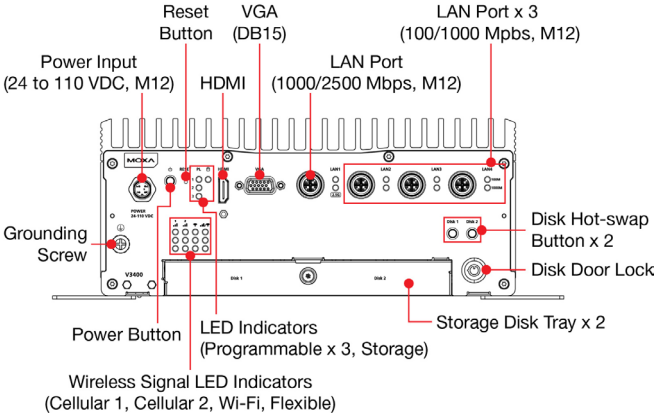
- V3400 Series computer
- Wall-mounting kit (with 8 screws)
- 2 SSD/HDD trays
- 16 screws for securing the SSD/HDD trays
- 2 keys for the disk door lock
- HDMI cable lock
- Quick installation guide (printed)
- Warranty card

NOTE Notify your sales representative if any of the above items are missing or damaged.

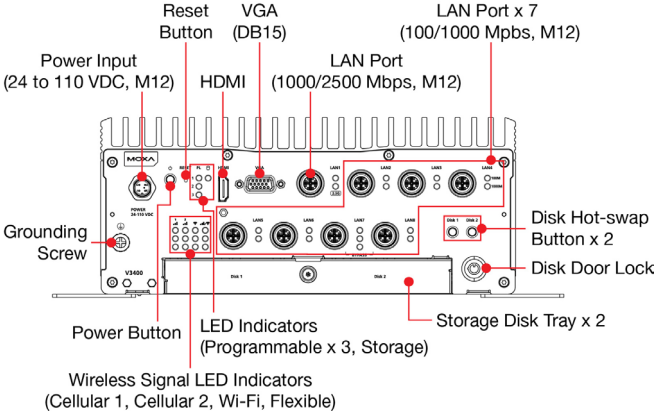
Panel Views

Front View

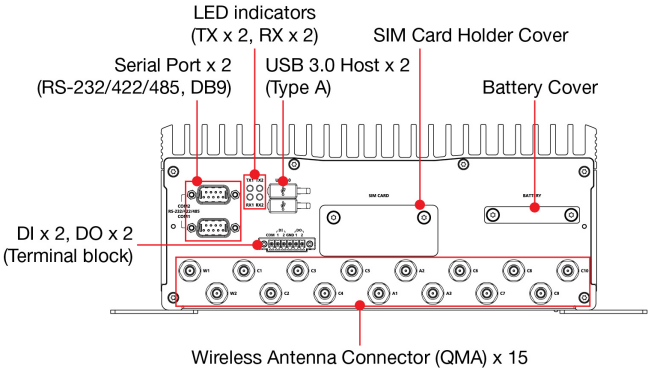
V3404-TL Models



V3408-TL Models



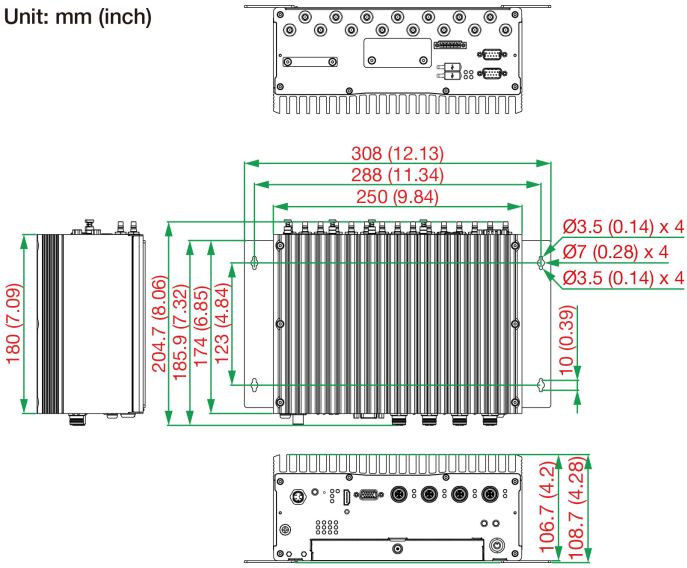
Rear View



Dimensions

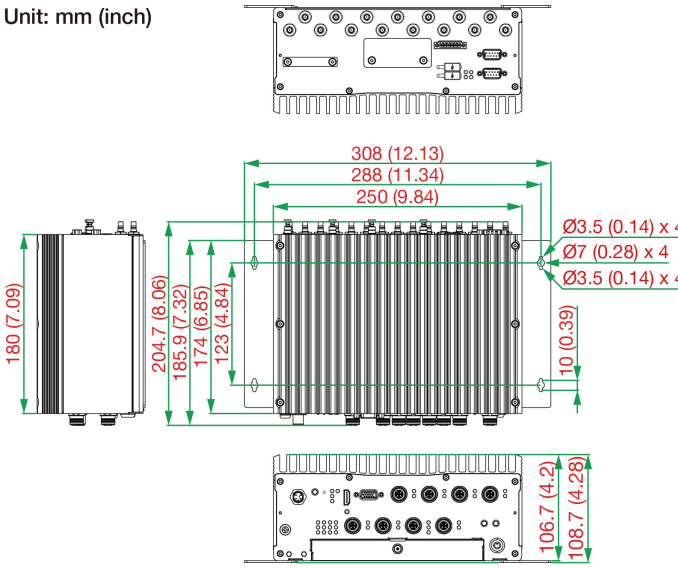
V3404-TL Models

Unit: mm (inch)



V3408-TL Models

Unit: mm (inch)



LED Indicators

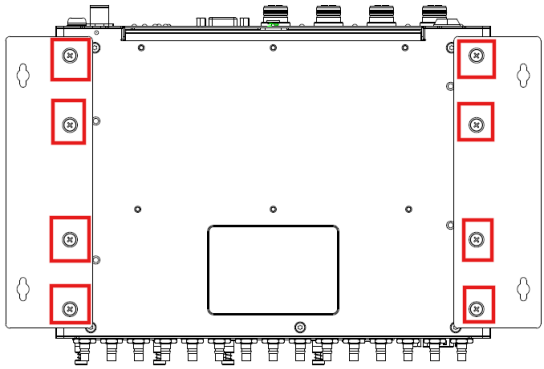
The following table describes the LED indicators located on the front and rear panels of the V3400 computer.

LED Name	Color	Status	Function
Power 	Green	Steady On	Power is on
		Off	No power input or other power-input error
LAN1 (1000/2500 Mbps)	Green	Steady On	1000 Mbps Ethernet link
		Blinking	Data transmission is in progress
	Yellow	Steady On	2500 Mbps Ethernet link
		Blinking	Data transmission is in progress
	Off		Data transmission at 100/10 Mbps or cable not connected
LAN2 to LAN8 (100/1000 Mbps) *V3404-TL Models: LAN2 to LAN4 V3408-TL Models: LAN2 to LAN8*	Green	Steady On	100 Mbps Ethernet link
		Blinking	Data transmission is in progress
	Yellow	Steady On	1000 Mbps Ethernet link
		Blinking	Data transmission is in progress
	Off		Data transmission at 10 Mbps or cable not connected
Serial Port 1/2 (TX1/2, RX1/2)	Green	Steady On	Tx: Serial port is transmitting data
	Yellow	Blinking	Rx: Serial port is receiving data
	Off		No operations

LED Name	Color	Status	Function
Storage 	Yellow	Blinking	Data is being accessed from either the M.2 key (PCIe [x4]) or the SATA drive
	Off		Data is not being accessed from the storage drives
Disk 1/2 Hot Swap 	Yellow	Steady On	SDD/HDD is mounted
		Blinking	System is doing a hot swap of the SDD/HDD (the LEDs will blink three times before turning off)
	Off		SDD/HDD is not mounted and can be safely removed.
BYPASS *V3408-TL models: LAN7 on I/O board*	Yellow	Steady On	LAN bypass mode is activated
	Off		No operations
Programmable LED 1/2/3 (On the main board)	Green		Programmable for application active normally, LEDs blinking, or frequency adjustment
	Off		No operations
Wireless Signal  *Cellular 1/2 (5G only), Wi-Fi, and flexible slots (cellular or Wi-Fi)*	Green	3 LEDs Steady On	Signal strength at 61% to 100%
		2 LEDs Steady On	Signal strength at 41% to 60%
		1 LED Steady On	Signal strength at 21% to 40%
		1 LED Blinking	Signal strength at 0% to 20%
	Off		Wireless module not connected

Mounting the V3400

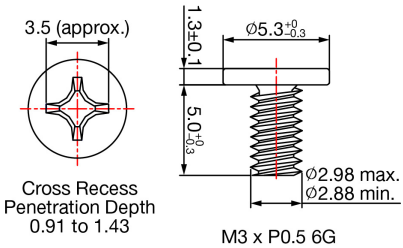
The V3400 computer comes with 2 wall-mounting brackets. Attach the brackets to the computer using 4 screws on each side. Ensure that the mounting brackets are attached to the V3400 computer in the direction shown in the following figure:



The 8 screws for the mounting brackets are included in the product package. They are standard FMS_M4x6 mm screws and require a torque of 5.5 kgf-cm.

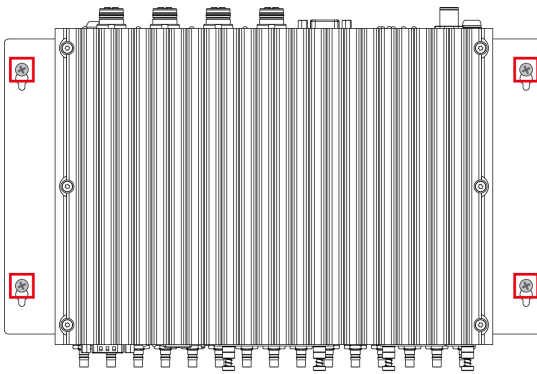
Refer to the following illustration for details:

Unit: mm



Use 2 screws (M3*5L standard is recommended) on each side to attach the V3400 to a wall or cabinet. These 4 screws are not included in the product package; they need to be purchased separately.

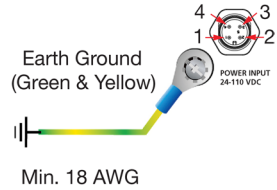
Ensure that the V3400 computer is installed in the direction shown in the following figure:



Connecting the Power

The V3400 computers are provided with M12 power input connectors on the front panel. Connect the power cord wires to the connectors and then tighten the connectors. Push the power button; the Power LED (on the power button) will light up to indicate that power is being supplied to the computer. It should take about 30 to 60 seconds for the operating system to complete the boot-up process.

Pin	Definition
1	V+
2	N.C.
3	V-
4	N.C.



The power input specification is given below:

- V3404-TL (4 LAN models): DC source with a power source rating of 24 V @ 3.1 A; 110 V @ 0.63 A
- V3408-TL (8 LAN models): DC source with a power source rating of 24 V @ 3.2 A; 110 V @ 0.65 A

Use a wire with minimum 18 AWG to connect the power.

For surge protection, connect the grounding connector located beside the power connector with the earth (ground) or a metal surface.

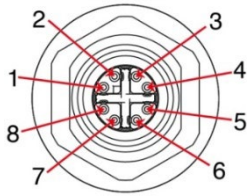
NOTE This computer is designed to be supplied by listed equipment (UL listed/IEC 60950-1/IEC 62368-1) rated 24 to 110 VDC, minimum 3.1 to 0.63 A (4 LAN models) or minimum 3.2 to 0.65 A (8 LAN models), and minimum Tma=70°C. If you need assistance with purchasing a power adapter, contact the Moxa technical support team.

Ethernet Ports

The V3404-TL models have four or eight 1000 Mbps Ethernet ports with M12 connectors on the front panel.

Refer to the following table for the pin assignments:

Pin	Definition
1	DA+
2	DA-
3	DB+
4	DB-
5	DD+
6	DD-
7	DC-
8	DC+

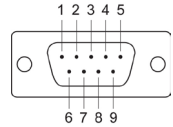


Serial Ports

The V3400 comes with 2 software-selectable RS-232/422/485 serial ports with DB9 male connectors on the rear panel.

Refer to the following table for the pin assignments:

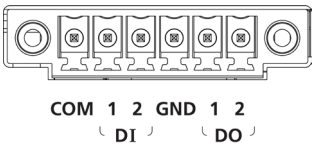
Pin	RS-232	RS-422	RS-485 (4-wire)	RS-485 (2-wire)
1	DCD	TxDA(-)	TxDA(-)	–
2	RxD	TxDB(+)	TxDB(+)	–
3	TxD	RxDB(+)	RxDB(+)	DataB(+)
4	DTR	RxDA(-)	RxDA(-)	DataA(-)
5	GND	GND	GND	GND
6	DSR	–	–	–
7	RTS	–	–	–
8	CTS	–	–	–



Digital Inputs/Digital Outputs

The V3400 comes with 2 digital inputs and 2 digital outputs in a terminal block.

Refer to the following figures for the pin definitions and the current ratings:



Digital Inputs

Dry Contact
Logic 0: Short to Ground
Logic 1: Open

Wet Contact
(COM to DI)
Logic 0: 10 to 30 VDC
Logic 1: 0 to 3 VDC

Digital Outputs

Current Rating:
200 mA per channel

Voltage:
24 to 30 VDC

For detailed wiring methods, refer to the *V3400 Hardware User's Manual*.

Connecting Displays

The V3400 has 1 VGA interface that comes with a D-Sub 15-pin female connector. In addition, an HDMI interface is provided on the front panel.

NOTE For highly reliable video streaming, use premium HDMI-certified cables.

USB Ports

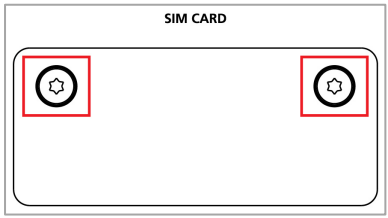
The V3400 comes with 2 USB 3.0 ports on the rear panel. The USB ports can be used to connect to peripherals, such as a keyboard or mouse, or to a flash drive for expanding the system's storage capacity.

Installing SIM Cards

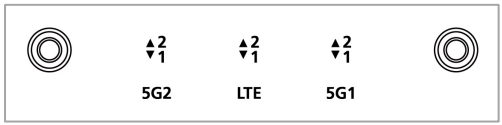
The V3400 Series comes with 6 SIM card slots on the rear panel of the computer.

To install a SIM card, do the following:

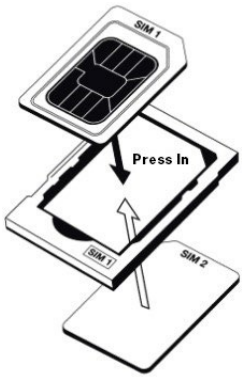
1. Unfasten the two screws on the SIM card slot cover to remove the cover.



2. Following the printed instructions on the back of the cover to push and release the SIM card tray in which you want to install the SIM card.

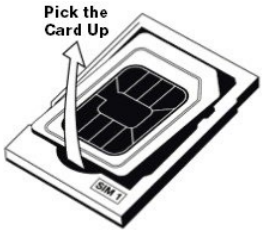


Place the SIM card in the correct direction on the tray and align it properly in place as indicated on the label.



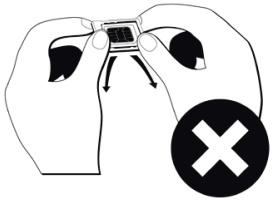
3. Insert the tray back into the slot.
   You will hear a click indicating the tray is locked into place.

To remove the SIM card, use the groove in the tray to carefully lift and remove the SIM card.



ATTENTION

Do not bend the SIM-card tray to remove the SIM card. Improper use may cause the tray to break.

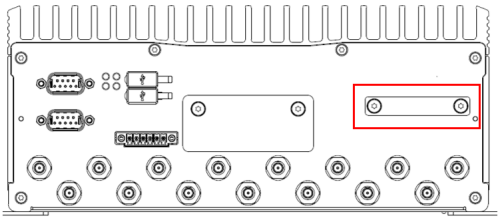


Replacing the Battery

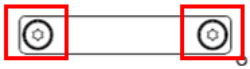
The V3400 comes with one slot for a battery installed with a lithium battery of type BR2032 and 3 V / 200 mAh specification.

To replace the battery, do the following:

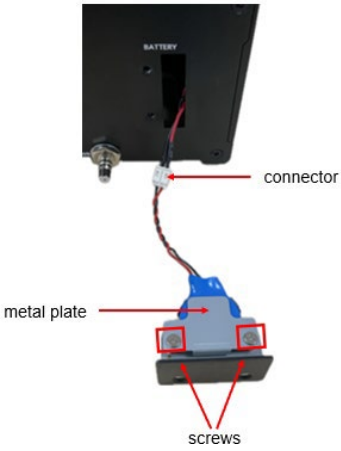
1. Locate the cover of the battery slot.
   The battery slot is located on the rear panel of the computer.



2. Unfasten the two screws on the battery slot cover.

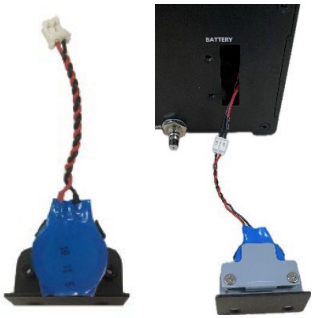


3. Remove the cover; the battery is attached to the cover as indicated.



4. Separate the connector and remove the two screws from the metal plate.

5. Replace the new battery in the battery holder, place the metal plate on the battery, and fasten the two screws tightly.



6. Reconnect the connector, place the battery holder into the slot, and secure the cover of the slot by fastening the two screws on the cover.

NOTE Be sure to use the correct type of battery. Incorrect batteries may cause system damage. Contact Moxa's technical support staff for assistance, if necessary.

CAUTION

Dispose of used batteries according to the instructions.

FCC Statement

CAUTION

Operation of transmitters in the 5.925 to 7.125 GHz band is prohibited for control of or communications with unmanned aircraft systems.

CE/UKCA Statement

ATTENTION

1. This device meets the EU requirements (2014/53/EU) on the limitation of exposure by way of health protection of the general public to electromagnetic fields.
2. The device complies with RF specifications when the device is used at least 20 cm away from your body.
3. Operating in the 5250 to 5725 MHz frequency range is not permitted when the device is installed in motor vehicles, trains, and aircraft.
4. The device is restricted to indoor use only for:
   5150 to 5350 MHz frequency range.
   5925 to 6425 MHz frequency range.
   5945 to 6425 MHz (countries that support Wi-Fi 6E)
5. **RF Exposure**
   - This device meets the EU requirements (2014/53/EU) on the limitation of exposure by way of health protection of the general public to electromagnetic fields.
   - The device complies with RF specifications when the device is used at least 20 cm away from your body.
6. **Wireless Operational Modes**

   Cellular

   Device With 5G Module
   - 5G NR(Sub 6G): n1, n3, n7, n8, n20, n28, n38, n40, n41, n75, n76, n77, n78
   - LTE: B1, B3, B7, B8, B20, B28, B32, B34, B38, B40, B41, B42, B43
   - WCDMA: B1, B8
   - TX Power: Follow 3GPP Standard
   - WCDMA 24dBm +1.7dB /-3.7dB ; LTE/5G bands 23dBm +/-2.7dB ; LTE/5G NR HPUE bands (for B41, n41, n77, n78) 26dBm +2/-3 dB
   - GNSS: GPS/ GLONASS /BeiDou/Galileo

   Device With 4G Module
   - LTE: B1, B3, B7, B8, B20, B28
   - WCDMA: B1, B8
   - GSM: GSM 900, GSM 1800
   - TX Power: Follow 3GPP Standard
   - WCDMA 24dBm +1.7dB /-3.7dB ; LTE bands 23dBm +/-2.7dB ; GSM 33dBm +/-2 Db
   - GNSS: GPS/GLONASS/BeiDou/Galileo

   WLAN
   - 2412 to 2472 MHz, 5180 to 5320 MHz, 5500 to 5700 MHz, and
     5955 to 6415 MHz (Wi-Fi 6E module supported)
   - TX Power: Follows ETSI standard
     2.4 GHz, 20 dBm; 5 GHz, 23 dBm; 6 GHz, 23 dBm