

# **VPort 464 Series Quick Installation Guide**

---

**Moxa Industrial Video Encoder**

**Version 3.0, January 2024**

**Technical Support Contact Information**  
**[www.moxa.com/support](http://www.moxa.com/support)**

**MOXA<sup>®</sup>**

© 2024 Moxa Inc. All rights reserved.

**P/N: 1802004640014**



## Overview

The VPort 464 is a 4-channel Industrial Video Encoder with H.264/MJPEG video compression. The H.264 algorithm provides the best video quality on the market today with lower bandwidth requirements than other video compression standards. In addition, to meet requirements for multiple video streams, the VPort 464 can provide up to 3 video streams simultaneously with H.264 and MJPEG compression. Users can use the video streams for different purposes, such as viewing, recording or analysis. Finally, the industrial-rugged design, with -40 to 75°C operating temperature, built-in fiber Ethernet ports, IP30 form factor protection, and industrial certifications, make the VPort 464 suitable for harsh environments.

## Package Checklist

The VPort 464 Series ships with the following items:

- VPort 464 Series Industrial Video Encoder
- Two 5-pin terminal blocks for 2 power inputs and 2 relay outputs
- 8-pin terminal block for 4 DIs (Digital Inputs)
- 5-pin terminal block for the RS-232/422/RS-485 PTZ control port
- Quick installation guide (printed)
- Warranty card

**NOTE** If any of these items are missing or damaged, please contact your customer service representative for assistance.

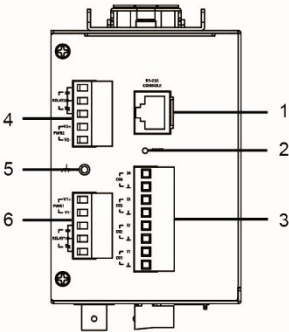
**NOTE** Check the model name on the VPort's side label to confirm the model name is correct for your order.

**NOTE** If you require any more information, please check Moxa's website.

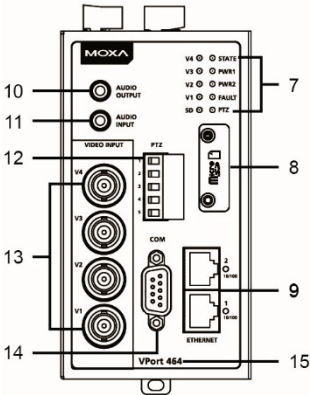
**NOTE** This product must be installed in compliance with your local laws and regulations.

# VPort 464 Panel Layout

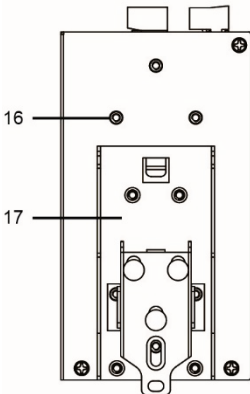
Top Panel View



Front Panel View



Rear Panel View



1. RS-232 console port
2. Hardware reset button
3. 8-pin terminal block for DI1, DI2, DI3, and DI4
4. 5-pin terminal block for, Relay 2, and power input 2 (PWR2)
5. Grounding screw
6. 5-pin terminal block for, Relay1, and power input 1 (PWR1)
7. LEDs for VIDEO, STATE, PWR, FAULT, PTZ and SD
8. MicroSD card (SDHC) slot
9. 2 RJ45 10/100 BaseTX Ethernet port with 10/100 Mbps LED
10. AUDIO OUTPUT port for external speaker
11. AUDIO INPUT port for mic-in and line-in connection
12. PTZ port with 5-pin terminal block for PTZ
13. 4 BNC connector for video input
14. RS-232/422/485 COM port with DB9 male connector for PTZ camera or serial device control
15. Model name
16. Screw hole for wall mounting kit
17. DIN-Rail mounting kit

## First-time Installation and Configuration

Before installing the VPort 464, check to make sure that all items in the package checklist are in the box. In addition, you will need access to a notebook computer or PC equipped with an Ethernet port.

### Step 1: Select the Power Source

The VPort 464 can be powered by a DC power input from 12 to 32 VDC, or an AC power input from 18 to 30 VAC. Two power inputs are provided for redundancy. Users can check the LED status located on the front panel to see if the power inputs are correctly connected. If one of the power inputs fails, the FAULT LED will light up red, providing the power failure alarm is enabled.

**NOTE** The VPort 464 Series supports power input specifications of 12-32 VDC, 1.00-0.3 A or 18-30 VAC, 50-60 Hz, 0.92-0.56 A.

### Step 2: Connect the VPort 464 to a Network

The VPort 464 has two auto-sensing 10/100 Mbps RJ45 Ethernet ports for network connectivity. Each has a LED indicator for indicating the 10/100 Mbps Ethernet connections.

**NOTE** These two Ethernet ports can be cascaded in daisy chain link, or connected to two different switch ports for Ethernet port redundancy. In addition, they also act as an Ethernet switch, which means one port could be reserved for original use, while the second port could be an extension port for another purpose such as linking to the other VPort.

### Step 3: Connect the VPort 464 to cameras and an audio source

The VPort 464 has 4 VIDEO INPUT ports, which allows the BNC connector (1.0 Vpp, 75Ω) and coaxial cable to connect video cameras to the VPort to input analog video signals.

The VPort 464 has one audio input and one audio output. A microphone (with built-in amplifier) or an amplifier can be plugged directly into the AUDIO INPUT port, and a speaker can be plugged into the AUDIO OUTPUT port.

**NOTE** Four VIDEO LEDs are located on the VPort 464 front panel to indicate the video signal transmission status for video input. Check the LED status to see if the video is working properly.



### ATTENTION

A ground loop isolator is recommended to be used between the camera and the VPort to avoid a sudden current, which is generated by the electric potential difference between these two device's ground power, to burn out the VPort's chips and boards.

#### Step 4: Connecting motorized PTZ cameras and serial devices

The VPort 464 has one COM PORT with a DB9 male connector, and the other is a PTZ PORT with 5-pin terminal block connector. Both ports can be used for connecting PTZ control cables for controlling PTZ cameras over the TCP/IP network.

In addition, the DB9 male COM PORT can also be used to connect general serial devices, such as card readers, for transmitting serial data over a TCP/IP network. This port can be used to connect serial devices to the VPort 464 instead of a video camera.

To enable PTZ control, users should configure the PTZ control protocol in the web-based manager.

**NOTE** The PTZ control protocol is not standardized. To use a particular PTZ control protocol, the video server must support the driver for that protocol. Currently, the VPort 464 supports PTZ control protocol drivers for:

1. Pelco D
2. Pelco P

If you need to use a protocol that is not on the list, contact the manufacturer of the camera to get the PTZ control commands, and then program its PTZ control using the VPort 464's **Custom Camera** function.

**NOTE** The VPort 464 comes with a PTZ driver upload function for implementing new PTZ drivers. Please contact a Moxa sales representative if you need assistance from Moxa's R&D department to create a new PTZ driver.

#### Step 5: Configure the VPort 464's IP address

After powering on the VPort 464, wait a few seconds for the POST (Power On Self Test) to run. The STATE LED turns green to indicate that the POST process has been completed. The IP address will be assigned when the 10/100 Mbps NETWORK LED blinks. The IP address assigned after the POST is completed depends on the network environment.


##### **Network Environment with DHCP Server**

In this case, the IP address of the VPort 464 is assigned by a DHCP Server. Use the DHCP Server's IP address table, or use the Moxa VPort utility to determine the IP address that was assigned by the DHCP Server.

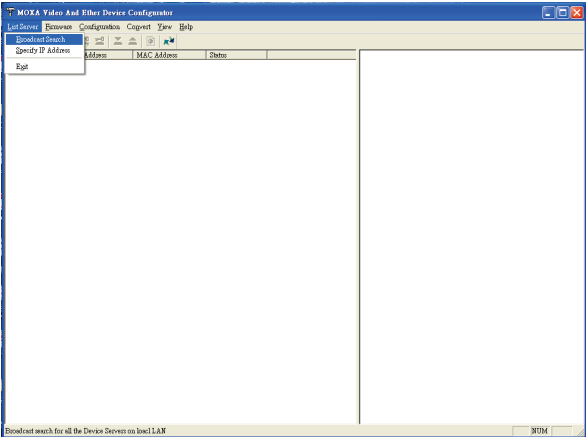
**NOTE** After powering on the VPort 464, wait a few seconds for the POST (Power On Self Test) to run. The IP address will be assigned when the 10/100 Mbps NETWORK LED blinks.

#### **Using the Moxa VPort and EtherDevice Configurator Utility (edscfgui.exe)**

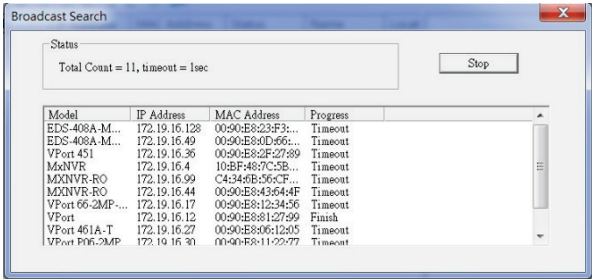
1. Run the **edscfgui.exe** program to search for the VPort and EDS switches. After the Utility window opens, select or click on Broadcast Search, which is located under the List Server menu, to

initiate a search (note that you can also click on the Broadcast Search  icon to initiate a search).

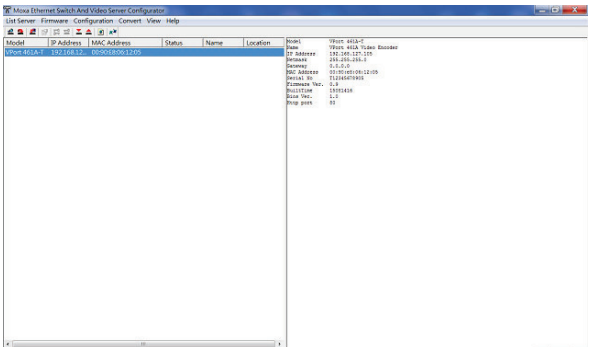
**NOTE** You may download the VPort and EtherDevice Configurator software from Moxa's website at [www.moxa.com](http://www.moxa.com).



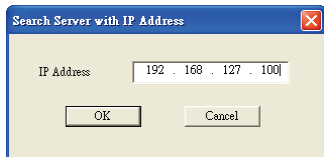
- The Broadcast Search window will show a list of all switches and VPorts located on the network. The progress of the search will also be indicated.



- When the search has ended, the Model Name, MAC address, and IP address of the EDS switches and VPorts will be listed in the Utility window.



**NOTE** Broadcast Search can only search for devices connected to the same LAN subnet as the VPort. If your devices are located on a different LAN subnet, use the "Specify IP Address" function to search for the device by keying in the IP address.



4. Double click the selected VPort, or use Internet Explorer to access the VPort's web-based manager (web console).

### **Network Environment without a DHCP Server**

If your VPort is connected to a network that does not have a DHCP server, then you will need to configure the IP address manually. The default IP address of the VPort 464 is **192.168.127.100** and the default subnet mask is 255.255.255.0. Note that you may need to change your computer's IP address and subnet mask so that the computer is on the same subnet as the VPort.

To change the IP address of the VPort manually, access the VPort's web server, and then navigate to the **System Configuration → Network → General** page to configure the IP address and other network settings. Select the **Use fixed IP** address checkbox to ensure that the IP address you assign is not deleted each time the VPort is restarted.

### **Step 6: Log on to the VPort 464 web-based manager**

Type the IP address in the web browser's address input box and then press enter.

### **Step 7: Log in to the VPort 464**

Type in the preset password and account name to log in

- Account: admin
- Password: moxamoxa



### **Step 8: The default password must be changed in accordance with Moxa's cybersecurity policy**

#### Change User Password

Password

Confirm

## Step 9: Install the ActiveX Control Plug-in

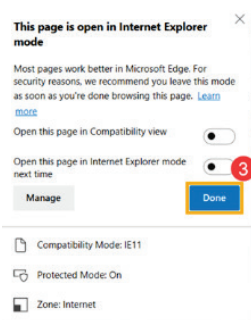
A security warning message will appear the first time you access the VPort's web-based manager. The message is related to installing the VPort ActiveX Control component to your PC or notebook. Click on Yes to install this plug-in to enable the ability to view video in the IE web browser.



**NOTE** For Windows 7 or later operating systems, the ActiveX Control component will be blocked for system security reasons. In this case, the VPort's security warning message window may not appear. Users should unblock the ActiveX control function or disable the security configuration to enable the installation of VPort's ActiveX Control component.

In addition, Microsoft has ended support for the Internet Explorer web browser. Please use the IE mode in Microsoft Edge web browser for this ActiveX control function.

**NOTE** For Microsoft Edge, please enable the IE mode. Once enabled, reload the VPort's web-based manager in Internet Explorer mode. A notification will appear to confirm the use of IE mode. Close this notification without modifying any setting and make sure the Compatibility Mode is IE11. For more details, refer to the IE mode instructions on the Microsoft website.





## Step 10: Accessing the homepage of the VPort 464's web-based manager

After installing the ActiveX Control component, the homepage of the VPort 464's web-based manager will appear. Check the following items to make sure the system was installed properly:

1. Video Images.
2. Audio Sound (make sure your PC's or notebook's sound is turned on).
3. Video Information.

## Step 11: Accessing the VPort's System Configuration

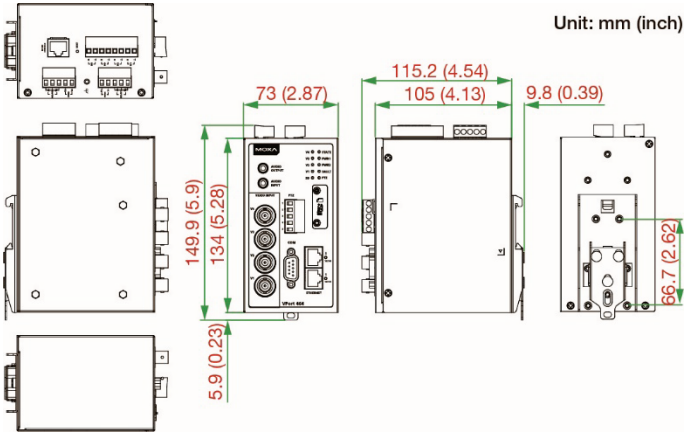
Click on System Configuration to access the overview of the system configuration to change the configuration. Model Name, Server Name, IP Address, MAC Address, Firmware Version, and LED Status appear in the green bar near the top of the page. Use this information to check the system information and installation.

For details of each configuration, check the User's Manual which can be downloaded from [www.moxa.com](http://www.moxa.com).

Category	Item	Description and Content
Profile	Configuration	Configure ONVIF profile settings
	General	Setting most Name, contact and Location
	Date/Time	Setting Date/Time
	Account	Administration, User and Demo Account Privileges Management
	Account Policy	Configure Account Login Duration, Password Complexity Setting
	Local Storage	Setup the local storage capability
	System Log	System Log and operation information
	System Parameter	System parameter's information and Import/Export function
	System I/O	Digital Input and Relay settings
	LED Control	Setup LED Options
System	Firmware Upgrade	Remote Firmware Upgrade
	Factory Default	Reset to Factory Default
	Reboot	Device will reboot for restarting system
	General	The IP network settings of this VPort
	IPSec	Configure IPsec settings
	Accessible IP	Setup a list to control the access permission of clients by checking their IP address
	RTSP	Configure RTSP
	HTTP	Configure HTTP
	ONVIF	Configure ONVIF
	uRTP	Enable uRTP function
Network	TvS	Configure TvS(Type of Service)
	IGMP	Configure the IGMP settings
	Multicast/IGMP	Enable Multicast/IGMP functions
	Moxa Service	Moxa search protocol
	802.1X	Configure 802.1X
	STP	Configure STP
	LLDP	Configure LLDP
	Ethernet Port	Setup the functions of Ethernet ports
	VideoSource Setting	Enable Dual View Function, Configure modulation
	Image Overlay	Configure the information of video image
Video	Device Tuning	Profile the attributes of video source

**NOTE** After accessing the VPort 464's web-based manager, administrators should access **System Configuration** → **System** → **Account** to set up the administrator's password and enable the authentication function. The administrator account name is admin. An authentication window will pop up requesting the account name and password each time the VPort 464 is accessed.

## Mounting Dimensions



## DIN-rail Mounting

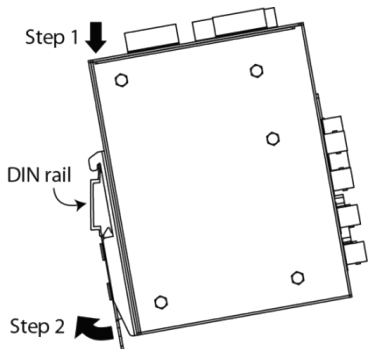
The aluminum DIN-Rail attachment plate should already be attached to the back panel of the VPort 464 when you take it out of the box. Mount the VPort 464 on a mounting rail, as shown in the figures below.

### Step 1:

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

### Step 2:

Press the VPort towards the DIN rail until it snaps into place.



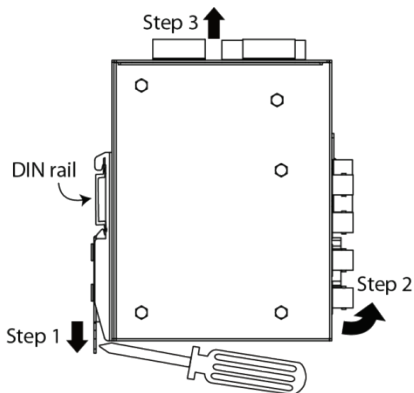
To remove the VPort 464 from the DIN-Rail, do the following:

### Step 1:

Pull down the latch on the mounting kit with a screwdriver.

### Step 2 & 3:

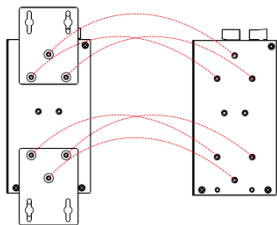
Slightly pull the VPort forward and lift to detach it from the DIN rail.



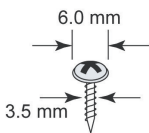
## Wall Mounting (optional)

For some applications, you will find it convenient to mount the VPort 464 on a wall, as illustrated below.

**Step 1:** Remove the aluminum DIN-Rail attachment plate from VPort 464, and then attach the wall mount plates using 6 screws (M3 type, 6 mm thread length), as shown in the diagrams below.



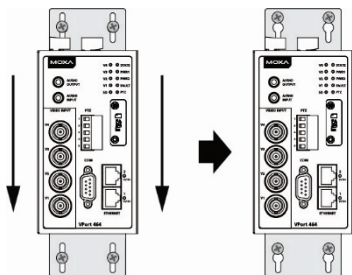
**Step 2:** Mounting VPort 464 on the wall requires 4 screws. Use the VPort 464, with wall mount plates attached, as a guide to mark the correct locations of the 4 screws. The heads of the screws should be 6.0 mm in diameter, and the shafts should be 3.5 mm in diameter, as shown in the figure on the right.



Do not screw the screws in all the way—leave a space of about 2 mm to allow room for sliding the wall mount panel between the wall and the screws.

**NOTE** Test the screw head and shank size by inserting the screw into one of the keyhole shaped apertures of the wall mounting plates, before it is screwed into the wall.

**Step 3:** Once the screws are fixed in the wall, insert the four screw heads through the large parts of the keyhole-shaped apertures, and then slide the VPort 464 downwards, as indicated below. Tighten the four screws for added stability.



## Wiring Requirements



### WARNING

#### Safety First!

Be sure to disconnect the power cord before installing and/or wiring your Moxa VPort 464.

Calculate the maximum possible current in each power wire and common wire. Observe all electrical codes dictating the maximum allowable current for each wire size.

If the current goes above the maximum ratings, the wiring could overheat, causing serious damage to your equipment.

You should also pay attention to the following items:

- Use separate paths to route wiring for power and devices. If power wiring and device wiring paths must cross, make sure the wires are perpendicular at the intersection point.  
**NOTE:** Do not run signal or communications wiring and power wiring in the same wire conduit. To avoid interference, wires with different signal characteristics should be routed separately.
- You can use the type of signal transmitted through a wire to determine which wires should be kept separate. The rule of thumb is that wiring that shares similar electrical characteristics can be bundled together.
- Keep input wiring and output wiring separate.
- It is strongly advised that you label wiring to all devices in the system.

## Grounding the Moxa VPort 464

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 devices.



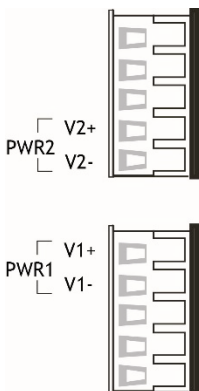
### ATTENTION

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

## Wiring the Redundant Power Inputs

The VPort 464 has two sets of power input, power input 1 and power input 2, which are located on the two 5-pin terminal block connectors. Top and front views of the terminal block connectors are shown here.

The power input terminal block should be installed using 12-28 AWG wires. The wiring for the power input terminal block must be installed by a skilled person. Wire type: Cu, TQ Lb In.: 4.5



**STEP 1:** Insert the negative/positive DC or AC wires into the V-/V+ terminals.

**STEP 2:** To keep the DC or AC wires from pulling loose, use a small flat-blade screwdriver to tighten the wire-clamp screws on the front of the terminal block connector.

**STEP 3:** Insert the plastic terminal block connector prongs into the terminal block receptor, which is located on the VPort 464's top panel.



### ATTENTION

Based on the product specification provided by the manufacturer, this unit is intended to be supplied by an UL Listed power supply suitable for use at 75°C whose output meets SELV and LPS, and is rated 12 to 32 VDC, 1 to 0.3 A or 18 to 30 VAC, 50-60 Hz, 0.92 to 0.56 A.

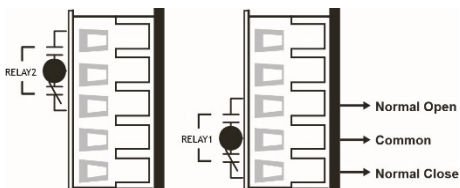


### ATTENTION

Before connecting the VPort to the AC/DC power inputs, make sure the DC power source voltage is stable. If using a Class I adapter, the power cord must be connected to a socket-outlet with an earthing connection.

## Wiring the Relay Output

The VPort 464 has two sets of relay output, relay 1 and relay 2, which are located on the two 5-pin terminal block connectors. Each relay output consists of the 3 contacts of the terminal block on the VPort 464's top panel. The relay output can be set up for:



1. System alarm: Power failure, Video loss and Network disconnected.
2. Event alarm: VMD (Video Motion Detection) and Digital Inputs.

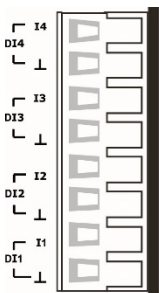


### ATTENTION

The current and power capacity of the relay output is a maximum of 24 VDC @ 1A. You should be careful not to exceed this power specification.

## Wiring the Digital Inputs

VPort 464 has four sets of digital input, DI1, DI2, DI3 and DI4. Each DI consists of two contacts of the 8-pin terminal block connector on VPort's top panel. The top view of one of the terminal block connectors is shown here.



**STEP 1:** Insert the negative (ground)/positive DI wires into the  $\perp$ /I1 terminals.

**STEP 2:** To keep the DI wires from pulling loose, use a small flat-blade screwdriver to tighten the wire-clamp screws on the front of the terminal block connector.

**STEP 3:** Insert the plastic terminal block connector prongs into the terminal block receptor, which is located on the VPort 464's top panel.

## Communication Connections

VPort 464 models have one RJ45 console port (RS-232 interface), and 2 10/100BaseT(X) Ethernet ports.

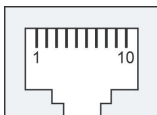
## RS-232 Console Port Connection

The VPort 464 has one RS-232 (10-pin RJ45) console port, located on the top panel. Use either an RJ45-to-DB9 or RJ45-to-DB25 cable (see the cable following wiring diagrams) to connect the VPort 464's console port to your PC's COM port.

You may then use a console terminal program, such as the Moxa PComm Terminal Emulator, to access the VPort 464's console configuration utility.

### RJ45 (10-pin) Console Port Pinouts

Pin	Description
1	-
2	DSR
3	-
4	GND
5	TxD
6	RxD
7	GND
8	-
9	DTR
10	-



## 10/100BaseT(X) Ethernet Port Connection

The 10/100BaseT(X) port located on the VPort 464's front panel is used to connect to Ethernet-enabled devices.

Pinouts for both MDI (NIC-type) ports and MDI-X (HUB/Switch-type) ports are illustrated below, along with cable wiring diagrams for straight-through and cross-over Ethernet cables.

The 10/100BaseT(X) port of the VPort 464 is an MDI port, which means that you should use a cross-over Ethernet cable to connect to the MDI NIC port, and a straight-through Ethernet cable to connect to the MDI-X HUB/Switch port.

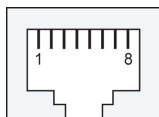
### MDI Port Pinouts

Pin	Signal
1	Tx+
2	Tx-
3	Rx+
6	Rx-

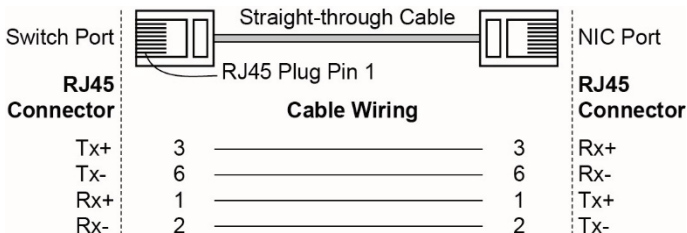
### MDI-X Port Pinouts

Pin	Signal
1	Rx+
2	Rx-
3	Tx+
6	Tx-

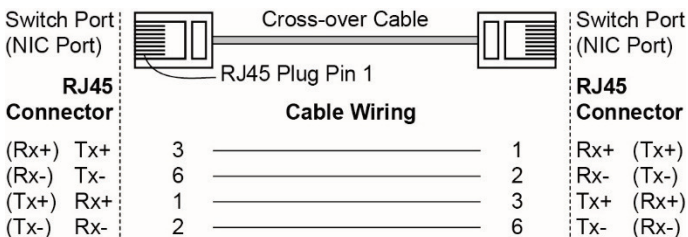
### 8-pin RJ45



## RJ45 (8-pin) to RJ45 (8-pin) Straight-through Cable Wiring



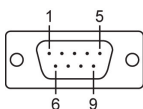
## RJ45 (8-pin) to RJ45 (8-pin) Cross-over Cable Wiring



## COM Port

A COM PORT is located on the front panel for connecting a PTZ motorized camera or serial device. The COM port transmits RS-232 or RS-422/485 signals over the TCP/IP network. Users can use this COM port (DB9 male connector) to monitor data or control a serial device, or for the control of a PTZ motorized camera.

### RS-232/422/485 (Male DB9) Pinouts



PIN	RS-232	RS-422 4-wire RS-485	2-wire RS-485
1	DCD	TxD-(A)	-
2	RXD	TxD+(B)	-
3	TXD	RxD+(B)	Data+(B)
4	DTR	RxD-(A)	Data-(A)
5	GND	GND	GND
6	DSR	-	-
7	RTS	-	-
8	CTS	-	-
9	-	-	-

**NOTE** This COM port is mainly for the serial-to-Ethernet connectivity. It supports TCP Server and TCP Client modes (after the V1.1 firmware version is released).

## PTZ port

A PTZ port is located on the VPort 464's front panel. The port is used to connect a PTZ motorized camera or device so that the camera or device can be controlled from the VPort over the IP network. The PTZ port supports RS-232 or RS-422/485 signals through a terminal block. The PTZ port pin assignments are shown in the following table.



PIN	RS-422/485	RS-232
1	GND	GND
2	R-	-
3	R+	RxD
4	T-\D-	-
5	T+\D+	TxD

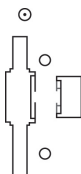


## MicroSD Card Slot

The front panel of Moxa's VPort 464 has a MicroSD card slot that supports the SDHC interface. A MicroSD card can be used for recording video if the network is down.



MicroSD card slot  
with upper case



MicroSD card slot  
without upper case

**STEP 1:** Open the upper case of the MicroSD card slot.

**STEP 2:** Plug the MicroSD card into the slot. Then the MicroSD LED indicator will flash green.

**STEP 3:** When the MicroSD card is mounted successfully, the MicroSD LED indicator will turn green after 2 to 3 seconds. If the MicroSD card mount fails, the MicroSD LED indicator will be off. If this happens, repeat the steps above until the MicroSD LED indicator turns green.

**STEP 4:** Close the upper case and then go to the web-based manager to set up local storage functions.

**NOTE** Follow these steps to remove the MicroSD card:

**STEP 1:** Open the upper case.

**STEP 2:** Wait a few seconds to allow the MicroSD card to complete existing file storage activity.

**STEP 3:** If the MicroSD LED indicator is green, it means the unmounting of the MicroSD card was successful, and you can take out the MicroSD card. If the MicroSD LED indicator is off, it means the unmounting of the MicroSD card failed. At this point, you can take out the MicroSD card, but you will need to reboot the VPort 464 to enable the MicroSD card slot function for future MicroSD cards.

## LED Indicators

The front panel of Moxa's VPort 464 contains several LED indicators. The function of each LED is described in the table below.


LED	Color	State	Description
<b>STATE</b>	Green/ Red	Steady Red	Hardware initialization stage.
		Flashing Red	Software initialization stage.
		Steady Green	System is powered on and ready to run.
		Flashing Green	Firmware is being upgraded.
<b>PWR1</b>	AMBER	On	Power is being supplied through power input PWR1.
		Off	Power is <b>not</b> being supplied through power input PWR1.
<b>PWR2</b>	AMBER	On	Power is being supplied through power input PWR2.
		Off	Power is <b>not</b> being supplied through power input PWR2.
<b>FAULT</b>	RED	On	One of the following 3 conditions is met: <ul style="list-style-type: none"> <li>• One of the 2 power inputs is disconnected.</li> <li>• Video loss.</li> <li>• Network disconnected.</li> </ul> Users can configure these alarm settings on the system alarm page of system configuration.
		Off	Both power inputs are connected and are working properly, or the alarm is activated, there is no video loss and the network is connected.
<b>V1, V2, V3, V4,</b>	GREEN	On	Video signal is detected.
		Off	Video signal is not detected.
<b>PTZ</b>	GREEN	On	Serial data in COM port or PTZ port is transmitting.
		Off	No serial data is transmitting.
<b>SD</b>	GREEN	On	SD card is mounted correctly and is ready to use.
		Off	No MicroSD card in the slot or error while mounting the MicroSD card.

## Hardware Reset

A recessed RESET button is provided for restoring the system to the factory default settings. When the system fails to install properly, or operates abnormally, use the RESET button located on the top panel of the VPort 464 to restore the factory defaults.

To do this, use a pointed object such as a straightened paper clip or a toothpick, to depress the reset button continuously for about 90 seconds. Release the reset button when the STATE LED has finished the following sequence twice: light-on → light-off → solid-red → red-flash → light-off. At this point, the POST process will run, and the VPort will reboot. The STATE LED will turn to green when the VPort has finished rebooting.

**NOTE** This device complies with part 15 of the FCC Rules. The operation of the device is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

- NOTE**
- 
- This equipment is intended for use in locations with restricted access such as computer rooms. Access to the equipment should be restricted to SERVICE PERSONS or USERS who are trained and authorized to use this equipment. Furthermore, access to the equipment should be restricted by the use of a key, or a user identification system. Only authorized, well-trained professionals should be given access to the restricted area where the equipment is in operation.
  - External metal parts are HOT!! Personnel who have access to this equipment should be made aware of the hot surface of the equipment. They must not touch the metal chassis of the equipment without proper protection.