Moxa VPort 354 Industrial Video Encoder User's Manual

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Moxa VPort 354 Industrial Video Encoder User's Manual

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Before getting started

Before using your VPort 354, please pay close attention to the following instructions:

❏ After opening the VPort 354 box, compare the contents of the box with the **Package Checklist in Chapter 1**. Notify your sales representative if any of the items are missing or damaged.

❏ To prevent damage or problems caused by improper use, read the **Quick Installation Guide** (the printed handbook included in the package) before assembling and operating the device and peripherals. You may also refer to **Chapter 1**, under **Product Description**, and all of **Chapter 2**, of this manual.

❏ The VPort 354 Video encoder has been designed for various environments and can be used to build various applications for general security or demonstration purposes. For standard applications, refer **Chapter 2, Getting Started**, and **Chapter 3, Accessing the VPort 354's Web-based Manager**.

Important Note

❏ Surveillance devices may be prohibited by law in your country. Since VPort is both a high performance surveillance system and networked video server, verify that the operations of such devices are legal in your locality before installing this unit for surveillance purposes.

Table of Contents

1

Introduction

The VPort 354 is a rugged networking video encoder designed for use in harsh environments. In addition to being able to handle basic video feeds, many advanced features are also included to set up surveillance or web multimedia applications. The VPort 354 is designed to provide stability, robustness, ease-of-use, and flexibility.

The following topics are covered in this chapter:

❏ **Overview**
❏ **Package Checklist**
❏ **Product Features**
❏ **Typical Application**
❏ **Panel Layout of the VPort 354**
❏ **Product Description**

Overview

The VPort 354 is a high performance, 4-channel industrial video encoder that provides up to 4 CIF full frame rate performance (NTSC: 704 x 480 @ 30 FPS and PAL: 704 x 576 @ 25 FPS) for each channel, and supports a dual MJPEG/MPEG4 algorithm, making it especially well-suited for use with distributed surveillance systems in critical industrial applications. Two-way audio is provided for the convenience of real-time communication between system administrators located at the central site, and engineers in the field.

The VPort 354 inherits the VPort 351's industrial features, but also supports DIN-Rail mounting, 12/24 VDC and 24 VAC redundant power inputs, -30 to 70°C operating temperature ("T" models only), and IP30 protection for industrial mission-critical applications. But most importantly, the VPort 354 meets critical hardware requirements for industrial safety and ruggedness, such as UL508, which is pertinent to TA, UA, and MA systems.

High Performance MJPEG/MPEG4 compression

Video input can be efficiently compressed into MJPEG/MPEG4 video stream packets in real time. This is done without sacrificing remote monitoring capability or storage. Five levels of compression quality and four different image resolutions are provided to provide greater versatility.

2-way audio supported for a complete surveillance solution

The VPort 354 supports both audio input and audio output for voice over IP communication between a field site and central site. The 2-way audio function not only saves time, but also saves the cost of needing to add additional communication devices (such as a phone).

Rugged design for industrial environments

The VPort 354 is an industrial video encoder designed for harsh industrial environments. With 12/24 VDC and 24 VAC redundant power inputs, IP30 protection, and DIN-Rail mounting, the VPort 354 meets the critical requirements of most industrial applications. Most importantly, the VPort 354-T can operate reliably in a -30 to 70°C temperature range, making it the first video encoder of its kind that can be used for extreme temperature, industrial-grade applications. The VPort 354-T is an optimal solution for outdoor environments. In addition, the VPort 354 has received important industrial and safety approvals, such as UL508, making the VPort 354 well suited for transportation, utility, and manufacturing systems.

2 Ethernet ports for cascade networking and port redundancy

The VPort 354 has two built-in 10/100 Mbps Ethernet ports for cascading multiple VPort 354 units. With the cascade feature, you'll need fewer switch ports, and the complexity of your cable layout is reduced. An Ethernet bypass function is also supported so the cascade network will keep working even if one of the VPort 354 units in the cascade chain goes offline. Port redundancy can be used to build a backup path for video transmission in case the primary path is unavailable.

SD Card for recording video locally when the network is dow

The VPort 354 is equipped with an SD card socket (SDHC, V2.0) for local storage purposes, which currently can support SD cards up to 32 GB. Enable local storage to record events that occur when the network is down and the video stream cannot be transmitted.

Modbus/TCP supported for convenient communication with SCADA/HMI

Most automation applications use SCADA/HMI systems to monitor and control field site devices and equipment. Many SCADA/HMI systems now require real-time video for remote monitoring. For this reason, the VPort 354 supports the Modbus/TCP protocol, which enables direct communication between the VPort and the SCADA/HMI system, allowing administrators to easily determine the status of their VPorts for maintenance purposes.

Supports serial-to-Ethernet communication for connecting a serial device

In addition to video cameras, surveillance systems also use other devices, such as sensors and card readers. The VPort 354 provides one serial-to-Ethernet RS-232/422/485 COM port for simple, low-cost installation of serial devices.

RTSP streaming for easy integration

RTSP (Real-time Streaming Protocol) is a client-server multimedia presentation control protocol, which enables the interoperability of video devices and software. Hardware or software that supports RTSP streaming can easily identify and decode the video stream without the hassle of codec installation. For example, users can view video images from the VPort 354 directly with Quick Time and VLC, both of which support RTSP streaming.

Multicast (IGMP) transmission for network efficiency

Transmitting digital video images via an IP network requires many times the bandwidth required for transmitting general data. For this reason, the efficiency of network bandwidth management is one of the most important factors that determine the performance of a video over IP surveillance system. The VPort 354 supports multicast transmission with the IGMP protocol, which can reduce the bandwidth requirements when multiple clients access the same video stream, and greatly increases the efficiency of network bandwidth management.

Easy web access using standard browsers

There is no need to install new software to access the video encoder, since the embedded web server allows users to use any popular web browser to access the video encoder from anywhere over the Internet. As long as you are connected to the network, you will be able to view the same images seen by your cameras.

Built-in 3 area-selectable Video Motion Detection (VMD)

External sensors are not required, since the video channel can be configured to detect motion in 3 areas, making it easy to set up a security system either in your office or in the field. And the customizable settings allow you to tune the system for both object size and sensitivity, making the video encoder adaptable to different environments.

Weekly schedule for automated surveillance

The user-defined time period will check security settings on a weekly basis, and send notifications or drive external devices, making the VPort 354 suitable for more versatile applications.

Flexible I/O control for external devices

4 opto-isolated sensor inputs and 2 relay outputs are provided to control external devices, giving system integrators the option of turning an analog system into an advanced security system.

SDK support for developers

The high-performance video encoder can be affordably integrated into many applicationsand the complete programming interface of the Moxa VPort SDK PLUS makes the developer's job easy and straightforward. To ask about SDK requirements, please contact a Moxa sales representative for details and an application form.

Package Checklist

The Moxa VPort 354 is shipped with the following items. If any of these items are missing or damaged, please contact your sales representative for assistance.

• VPort 354
• 10-pin terminal block for 1 power input and 4 digital inputs
• 8-pin terminal block for the other power input and 2 relay outputs
• 5-pin terminal block for RS-232/422/485 PTZ control port
• Quick Installation Guide
• Document & Software CD (includes User's Manual, Quick Installation Guide, Moxa IVN Solution Datasheet, and Utilities)
• Warranty statement

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

Product Features

High Performance Video/Audio Networking Solution

- Works with NTSC/PAL analog video cameras
- Supports MPEG4/MJPEG video compression technologies
- 4 BNC video inputs
- Video stream up to 120 frames/sec in 4CIF (704 x 480) resolution through a total of 4 channels
- Select from 4CIF, 2CIF, CIF, and QCIF resolutions.
- 1 audio input and 1 audio output for 2-way voice communication
- TCP, UDP, and HTTP network transmission modes
- Supports Modbus/TCP for easy communication with SCADA systems
- Standard RTSP (Real-time streaming protocol) for easy integration
- Supports multicast (IGMP) protocols for efficient network transmission;
- DDNS, UPnP and IP filtering supported
- Supports QoS (TOS) for priority transmission
- Supports SNMP V1/V2c/V3 for network management
- Built-in web server and RS-232 console for remote access and configuration
- Supports one SD card slot (SDHC inteface) for recording video on the SD card if the network is down.
- Two auto-sensing 10/100BaseT(X) Ethernet ports or 100BaseFX (SC connector) ports for cascade networking or port redundancy.
- Allows a maximum of 8 unicast and 4 multicast output video streams simultaneously.
- Supports CBR (constant bit rate) or VBR (variable bit rate) encoding
- Supports 1 RS-232/422/485 DB9 COM port for controlling a PTZ (PAN/TILT/ZOOM) motorized camera or serial device via a TCP/IP network
- Supports 1 RS-232/RS-422/RS-485 5-pin PTZ port for controlling a PTZ (PAN/TILT/ZOOM) motorized camera via a TCP/IP network

Rugged Industrial Design

- Two 12/24 VDC and 24 VAC redundant power inputs with LED indicators
- -30 to 70°C operating temperature for critical industrial environments ("-T"models)
- 35 mm DIN-Rail mounting or panel mounting installation (requires optional accessories)
- IP30 protection form factor
- CE and FCC certifications for industrial applications

### Intelligent Alarm Trigger

- Built-in Video Motion Detection (VMD)
- Equipped with 4 DIs and 2 relays (DO) for external sensors and alarms
- Snapshot images provided for pre, trigger, and post alarm
- Sequential snapshot images supported
- Messages with snapshot images can be sent via FTP or Email
- HTTP Action setting for alarm messages sent by HTTP event server
- Configure alarm activation schedule

Video Management and Control

- Moxa SoftNVR-IA IP Surveillance Software for viewing and recording
- Free Moxa VPORT SDK PLUS supported with flexible interface and sample code for customized applications or system integration

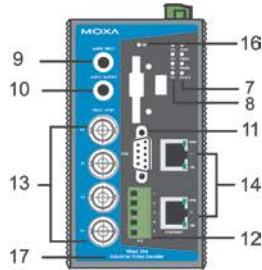| NOTE	If you are interested in Moxa's VPORT SDK PLUS, please go to Moxa's website www.moxa.com to download the package, or contact a Moxa sales representative for more information about this SDK

Typical Application
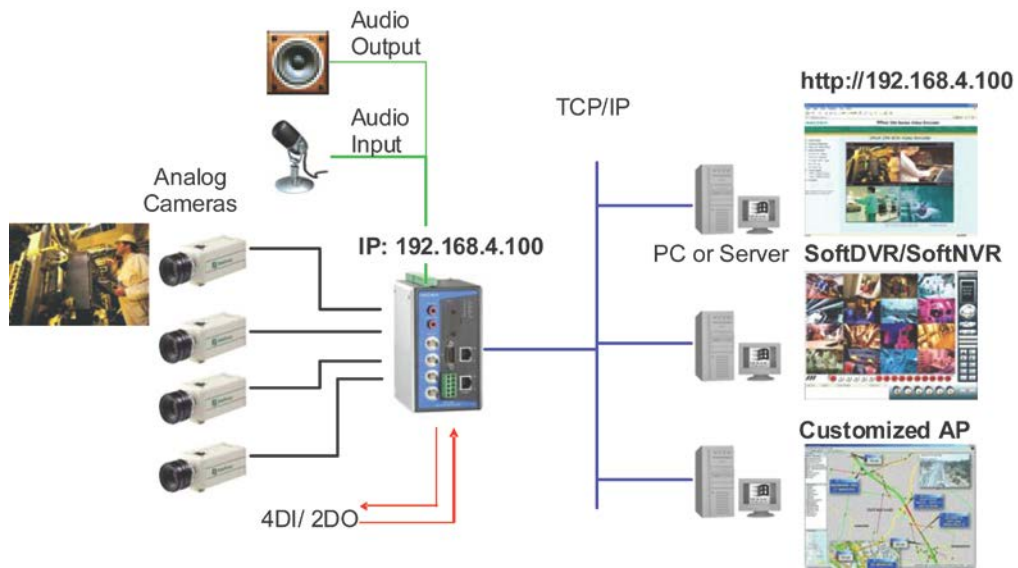
Panel Layout of the VPort 354
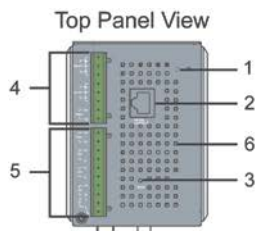
Top Panel View

VPort 354 Front Panel View

VPort 354-MM-SC Front Panel View
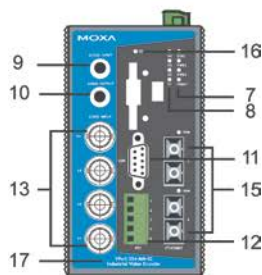
VPort 354-SS-SC Front Panel View
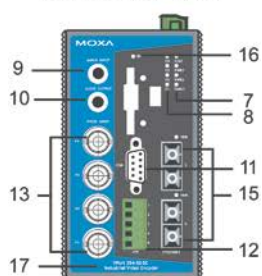
Rear Panel View
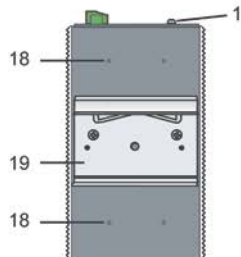
1. Grounding screw
2. RS-232 console port
3. Hardware reset button
4. 8-pin terminal block for Relay 1, Relay 2, and power input 2 (PWR2)
5. 10-pin terminal block for DI 1, DI 2, DI 3, DI 4, power input 1 (PWR1)
6. Heat dissipation vents
7. LEDs for STAT, PWR1, PWR2, FAULT
8. LEDs for V1, V2, V3, V4
9. AUDIO INPUT port for mic-in and line-in connection
10. AUDIO OUTPUT port for external speaker
11. RS-232/422/485 COM port with DB9 male connector for PTZ camera or serial device control
12. RS-232/422/485 PTZ port with 5-pin terminal block for PTZ camera control
13. 4 BNC connectors for video input
14. RJ45 10/100BaseTX Ethernet ports with 10 Mbps, 100 Mbps LEDs
15. 100BaseFX fiber optic ports with 100 Mbps LED
16. SD card slot with LED
17. Model name
18. Screw hole for wall mounting kit
19. DIN-Rail mounting kit

Product Description

BNC video input

The BNC video input is a 1Vpp, 75-ohm video port for connecting an external camera. To ensure that the correct video modulation type is detected, the cameras should be connected and powered on before the VPort is powered on.

NOTE Please use a standard CCTV cable (RG59U or above) to connect the video camera to the VPort's BNC connector.

RCA phone jacks for audio input/output

The VPort 354 has 2 RCA phone jacks for audio input and output on the front panel. One jack is for a MIC-in/Line-in audio input connection, which can be directly connected with a microphone or an audio source from an amplifier. The other jack is a Line-out audio output connection, which can be used to connect earphones or an amplifier.

LED indicators

The front panel of the VPort 354 contains several LED indicators. The function of each LED is described in the table below.

LED	Color	State	Description
STAT	RED	ON	Hardware initialization
		FLASHING	Software initialization
	GREEN	ON	System boot-up
		FLASHING	Firmware upgrade in process
PWR1	AMBER	On	Power is being supplied to power input PWR1
		Off	Power is **not** being supplied to power input PWR1
PWR2	AMBER	On	Power is being supplied to power input PWR2
		Off	Power is **not** being supplied to power input PWR2
FAULT	RED	On	Three conditions could cause this LED to light up: 1. One of the 2 power inputs is disconnected. 2. Video loss 3. Network disconnected Settings can be modified on the **System Configuration → Alarm → System Alarm** page.
		Off	Both power inputs are connected and working, or there is no video loss, or the network disconnected alarm is silent (if it is activated).
V1 V2 V3 V4	GREEN	On	Video signal has been detected
		Off	Video signal has not been detected

2 10/100 Mbps Ethernet ports or 2 100 Mbps fiber optic Ethernet ports

The VPort 354 series of video encoders come in three models: the VPort 354 has 2 RJ45 10/100M Ethernet ports (LEDs on the left corners of the ports indicate 10M or 100M), the VPort 354-SS-SC has 2 single mode fiber optic Ethernet ports, and the VPort 354-MM-SC has 2 multi mode fiber optic Ethernet ports. Choose the model that is most appropriate for your own application.

Cascade Chain

Port Redundancy
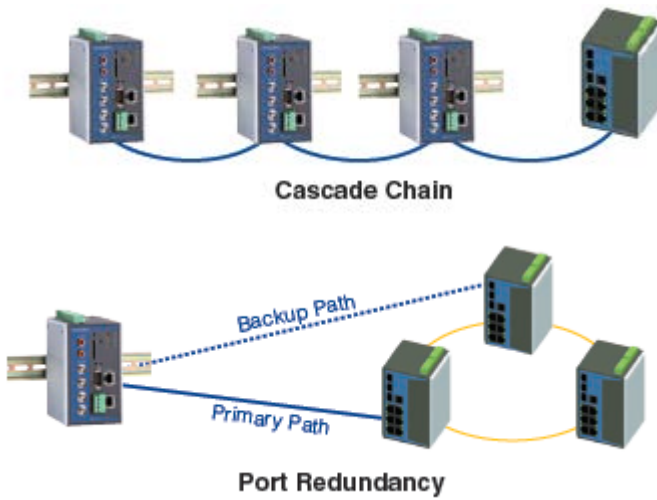
RS-232/RS-422/RS-485 PTZ port

The VPort 354 has 1 PTZ port for PTZ control. This PTZ port is an RS-232/RS-422/485 serial port with a 5 pin terminal block connector. The pin assignments are as follows:

PIN	RS-422/485		RS-232	
1	**GND**	Ground	**GND**	Ground
2	**R-**	Rx-	**---**	N/A
3	**R+**	Rx+	**RxD**	RxD
4	**T-/D-**	Tx-/ Data-	**---**	N/A
5	**T+/D+**	Tx+/ Data+	**TxD**	TxD

To enable PTZ control, users should configure the PTZ control protocol in the web console.

NOTE	The PTZ control protocol is not standardized. To use a particular PTZ control protocol, the video encoder must support the driver for that protocol. Currently, the VPort 351 supports PTZ control protocol drivers for:

1. Pelco D
2. Pelco P
3. Dynacolor DynaDome
4. Cohu

In addition, there is a "Transparent PTZ Control" option in the camera driver list, which is used to transmit the PTZ control signal through the TCP/IP network to the VPort D351 video decoder or PC (additional Real COM driver required), and the PTZ control panel or keyboard can directly control the PTZ camera or device. There is no need for a PTZ camera driver when using this setting.

To use a protocol that is not on the list, you will need to contact the manufacturer of the camera to get the PTZ control commands, and then use the VPort 354's custom camera function to program the PTZ control.

NOTE	The VPort 354 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.

RS-232/RS-422/RS-485 COM port

The VPort 354 has 1 COM port 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, control a serial device, or command a PTZ motorized camera. The pin assignments are as follows:

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	---	---	---

SD card slot for local storage capability

The front panel of Moxa's VPort 354 has an SD card slot that supports the SDHC interface. An SD card can be used for recording video if the network is down. Currently, the maximum SD capacity is 32GB, which is supported by the VPort 354. To plug in a SD card follow these simple steps.

STEP 1: Open the upper case of the SD card slot.
STEP 2: Plug the SD card into the slot. The SD LED indicator will flash red.
STEP 3: When the SD card is mounted successfully, the SD LED indicator will turn green after 2 to 3 seconds. If the SD card mount fails, then the SD LED indicator will continuously flash red. If this happens, repeat the above until the SD LED indicator light turns green.
STEP 4: Close the upper case and then go to the web-based manager to set up local storage functions.

NOTE The video being recorded in the SD card can be downloaded via FTP. Before playing the recorded video via a media player, the user needs to use Moxa Ethernet Switch and Video Server Configurator (edscfgui.exe) to transform the PES video format to AVI.

NOTE Sandisk Extreme III SD cards are recommended due to the read/write speed requirement

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## Redundant 12/24 VDC and 24 VAC power inputs

The VPort 354 has two power inputs to provide redundancy. Each power input supports both 12/24 VDC and 24 VAC power for greater versatility.

NOTE The supported power input specifications for the VPort 354 series are 12-32 VDC for a 12/24 VDC power input, or 18-30 VAC for a 24 VAC power input. This differs from the Moxa EDS switch's 12-45 VDC power input.

General I/O Terminal Blocks

An 8-pin terminal block and a 10-pin terminal block are located on the VPort 354's top panel. The terminal blocks provide 4 digital inputs (DI), 2 relay outputs (Relay), and 2 power inputs. The digital inputs and relay outputs are for linking to peripheral devices, such as sensors and alarms. These I/O connections can be employed when using the VPort 354 to create an intelligent alarm system for system operations (power failure, video loss, disconnected network) or triggered events (VMD).

Relay Output		Normal Open	Max. 1A, 24 VDC
		Common	Initial status is Normal Open
		Normal Close	
Digital Input		DI-	"High": +13V to +30V
	I1, I2	DI+	"Low": -30V to +3V

NOTE   Please refer to the VPort 354's Quick Installation Guide to learn how to wire the digital inputs and relay outputs.

RS-232 Console Port

The VPort 354 has one RS-232 (10-pin RJ45) console port located on the top panel. Use either an RJ45-to-DB9 cable or RJ45-to-DB25 cable to connect the VPort 354's console port to your PC's COM port. You may then use a console terminal program, such as Moxa PComm Terminal Emulator, to access the VPort 354's console configuration utility.

Reset Button

A recessed RESET button is provided for rebooting and restoring the system to the factory default settings. Use a pointed object, such as a straightened paper clip or toothpick, to press the reset button.

1. Reboot:

   To reboot the VPort 354, power it off and then power it back on again, or push the RESET button one time. The STAT LED will light in red as the POST (Power On Self Test) process runs. When the rebooting process is finished, the STAT LED will turn green.

2. Restore to Factory Settings:

   A recessed RESET button is provided for restoring the system to the factory default settings. When the system fails to install properly or malfunctions, use the RESET button located on the top panel of the VPort 354 to restore the factory defaults.

To do this, use a pointed object such as a straightened paper clip or toothpick to hold down the reset button, and then release the reset button when the STAT LED stops flashing in red. At this point, the POST process will run, and the VPort will reboot. The STAT LED will turn green when the VPort has finished rebooting.

2

Getting Started

This chapter includes information about how to install a VPort 354 video encoder.

The following topics are covered in this chapter:

❏ **Before Getting Started**

❏ **First-Time Installation and Configuration**

  ➢ RS-232 Console Configuration (115200, None, 8, 1, VT1 00)

❏ **Mounting the VPort 354 Dimension**

  ➢ DIN-Rail Mounting

  ➢ Wall Mounting

❏ **Wiring Requirements**

  ➢ Grounding the VPort 354

  ➢ Wiring the Redundant Power Inputs

  ➢ Wiring the Relay Output

  ➢ Wiring the Digital Inputs

  ➢ RS-232 Connection

  ➢ 10/100BaseT(X) Ethernet Port Connection

  ➢ 100BaseFX Ethernet Port Connection

  ➢ COM Port

  ➢ PTZ Port

Before Getting Started

In what follows, "user" refers to those who can access the video encoder, and "administrator" refers to the person who knows the root password that allows changes to the Video Encoder's configuration, in addition to providing general access. Administrators should read this part of the manual carefully, especially during installation.

⚠️ **ATTENTION**

The VPort 354 series are high-performance video encoders designed to perform without a cooling fan. Therefore, it is recommended that each VPort 354 be installed with at least a 5mm clearance on all surfaces to conduce heat-dissipation.

First-Time Installation and Configuration

Before installing the VPort 354, check to make sure that all the items on 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 354 can be powered by a 12 to 32 VDC DC power input, or a 18 to 30 VAC AC power input. Two power inputs are provided for redundancy. Users can check the LED status located in the front panel to see if the power inputs are connected appropriately. If one of the power inputs fails, the FAULT LED will light up in red if the power failure alarm is enabled.

NOTE   The VPort 354 series support power input specifications of 12-32 VDC for 12/24 VDC power input, or 18-30 VAC for 24 VAC power input (note that this is different from Moxa EDS switch's 12-45 VDC power input).

Step 2:   Connect the VPort 354 to a Network

The VPort 354 has 2 auto-sensing 10/100 Mbps RJ45 Ethernet ports, or 2 100 Mbps fiber optic ports (multi mode or single mode) for network connectivity. Both the RJ45 and fiber optic ports have separate LEDs for 10 Mbps and 100 Mbps connections.

Step 3:   Connect the VPort 354 to a camera and an audio source

The VPort 354 has 4 VIDEO INPUT ports (V1, V2, V3, V4). Use the BNC connector (1.0 Vpp, 75Ω) and coaxial cable to connect video cameras to the VPort to input analog video signals.

The VPort 354 has 1 audio input and 1 audio output. A microphone 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 LEDs (V1, V2, V3, and V4) are located on the VPort 354's front panel to indicate the video signal transmission status for video inputs. 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 354. Possible electrical surges generated by the ground potential difference of these two devices may damage the VPort's chips/boards.


Step 4: Connecting motorized PTZ cameras and serial devices

The VPort 354 has 2 RS-232/422/485 ports. One is a COM PORT with a DB9 male connector, and the other is a PTZ PORT with a 5-pin terminal block connector. Both ports can be used for connecting PTZ control cables to control PTZ cameras over the TCP/IP network.

In addition, the COM PORT with the DB9 male connector 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 354 (however, the port cannot be used to connect video cameras).

To enable PTZ control, users should configure the PTZ control protocol in the web-based manager.
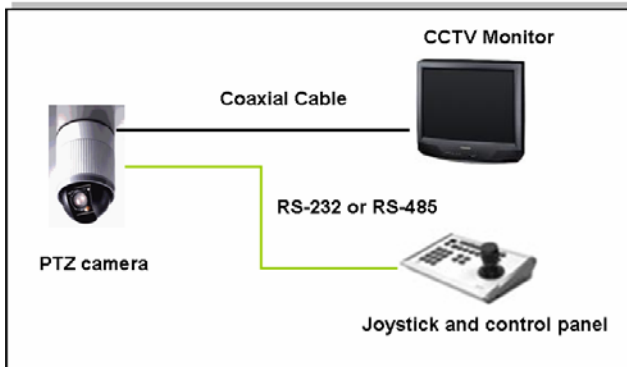
[D1]
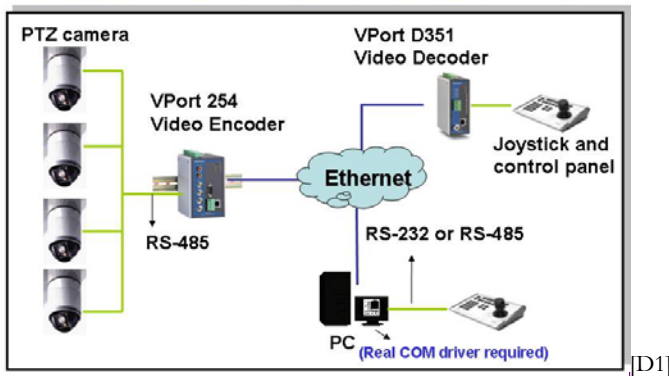
NOTE	The PTZ control protocol is not standardized. To use a particular PTZ control protocol, the video server must support the driver for that protocol. Currently, the VPort 354 supports PTZ control protocol drivers for:

1. Pelco D
2. Pelco P
3. DynaColor DynaDome
4. Cohu

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 354's **Custom Camera** function.

NOTE	The VPort 354 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.

NOTE	The "Transparent PTZ Control" function in the camera driver list is used to transmit the PTZ control signal over a TCP/IP network to the VPort D351 video decoder or PC (additional driver required). The PTZ control panel or keyboard can directly control the PTZ camera or device, eliminating the need for a PTZ camera driver and allowing the use of PTZ cameras with the VPort encoder.

Step 5: Configure the VPort 354's IP address

After powering on the VPort 354, wait a few seconds for the POST (Power On Self Test) to run. The STAT LED turns green to indicate that the POST process has completed. The IP address will be assigned when the 10 or 100 Mbps NETWORK LED blinks. The IP address assigned after the POST is completed depends on the network environment.

Network Environment with a DHCP Server

In this case, the IP address of the VPort 354 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 354, wait a few seconds for the POST (Power On Self Test) to run. The IP address will be assigned when the 10 or 100 Mbps NETWORK LED blinks.


Using the **Moxa Ethernet Switch And Video Server Configuration Utility (edscfgui.exe)**, as described below:

1. Run the **edscfgui.exe** program to search for the VPort and EDS switches. After the Utility window opens, you may also 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.
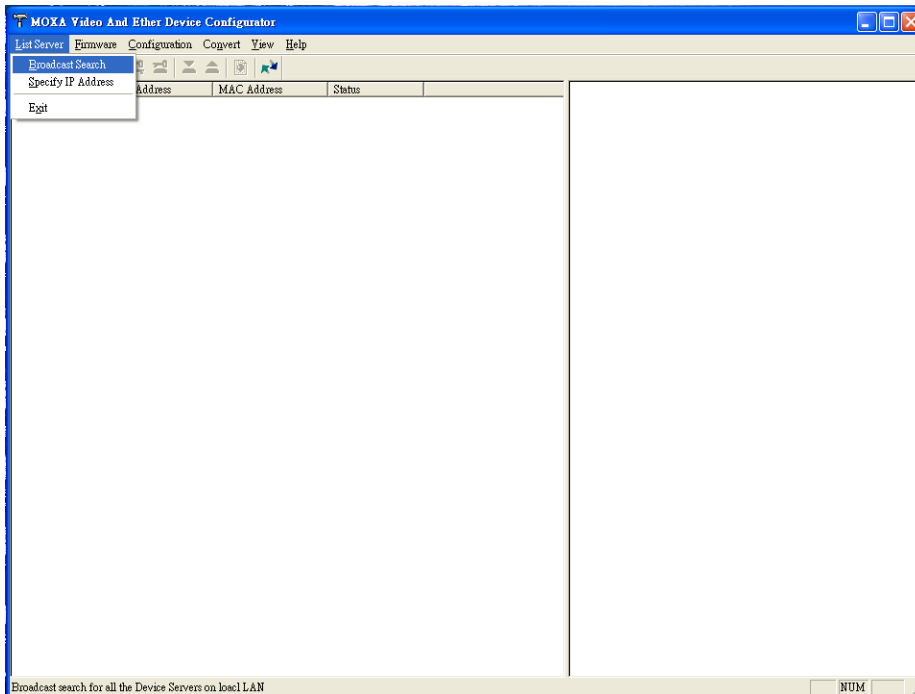

NOTE   You may download the **Moxa Ethernet Switch And Video Server Configuration Utility (edscfgui.exe)** software from Moxa's website at www.moxa.com.

---

2. 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 displayed.
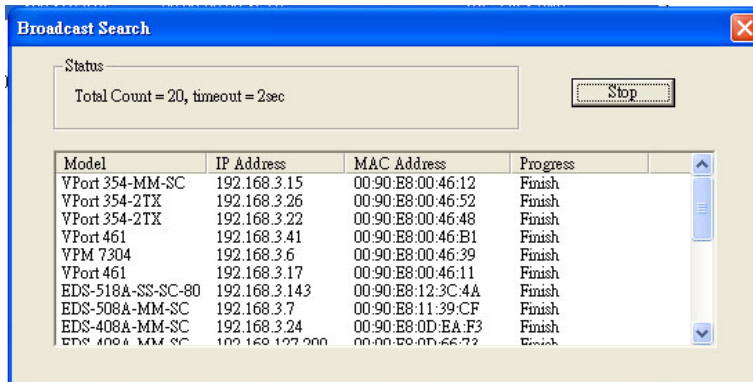
3. When the search has ended, the Model Name, MAC address, and IP address of the EDS Switch and the VPort will be listed in the Utility window.
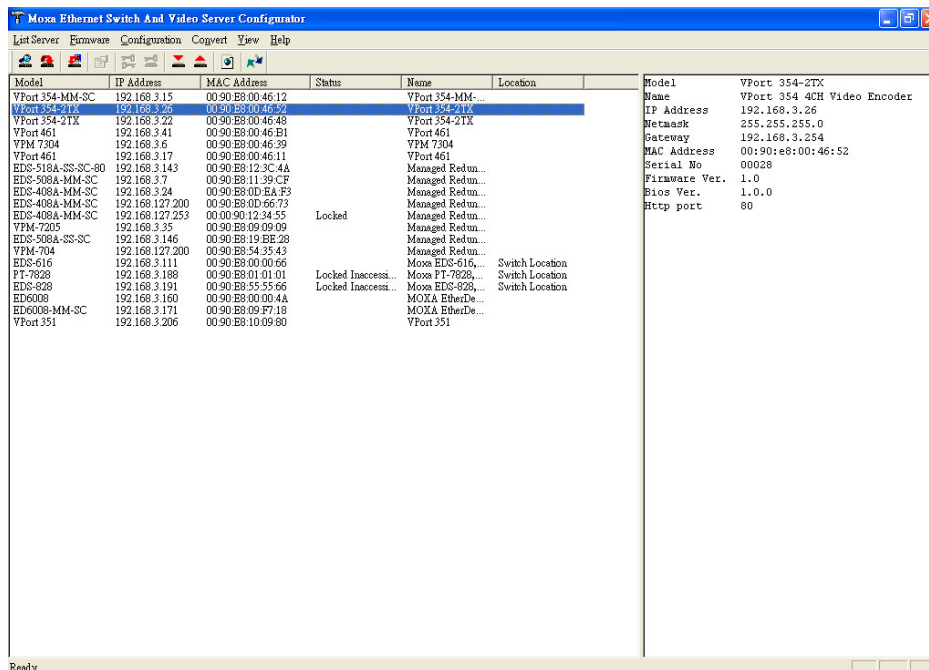
NOTE	**Broadcast Search** can only be used to search for devices on the same LAN domain. If your devices are located on a different LAN domain, use **Specify IP Address** to search for the device by inputting the IP address.
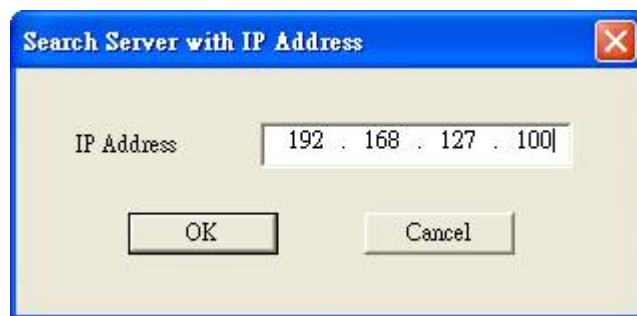
4. Double-click the selected VPort, or use Internet Explorer to access the VPort's web-based manager (web console).

Network Environment without a DHCP Server:

If your VPort 354 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 354 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. Check the **Use fixed IP address** box to ensure that the IP address you assign is not deleted each time the VPort is restarted.

Step 6:   Log into the ActiveX Control Plug-in

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

Step 7:   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 IE web browser for viewing video images.

NOTE   For Windows XP SP2 or above 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.

Step 8:   Accessing the homepage of the VPort 354's web-based manager

After installing the ActiveX Control component, the homepage of the VPort 354's web-based manager will appear. Check the following items to make sure the system was installed properly:

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

Step 9:   **Accessing the VPort's System Configuration**

Click on System Configuration to access the overview of the system or to change the settings. 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 on the software CD.
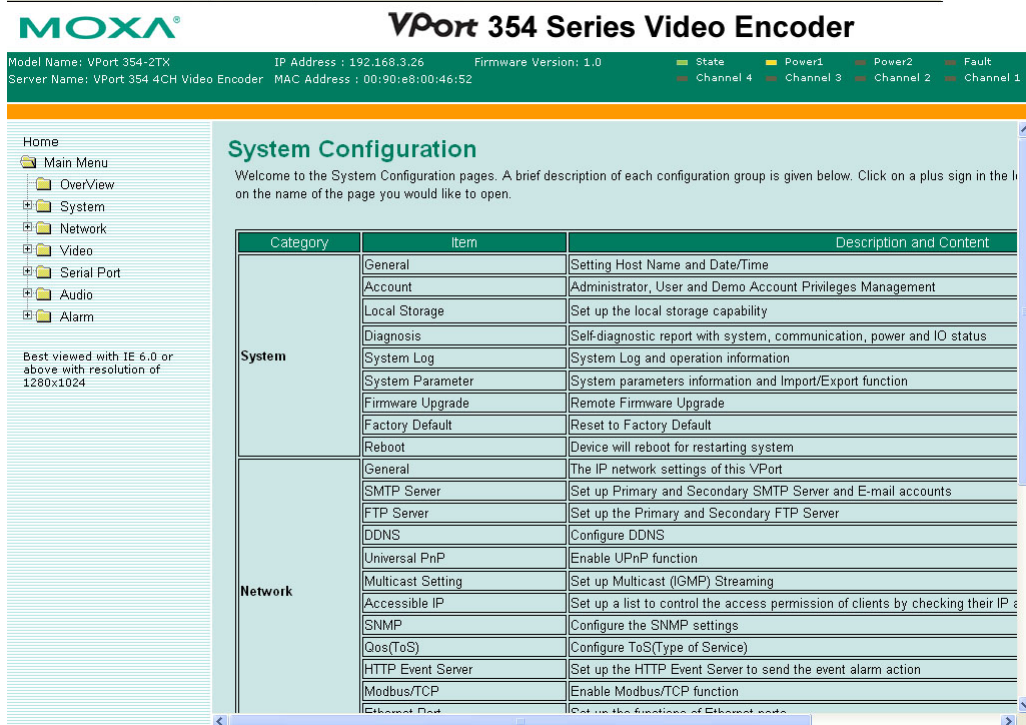
> **NOTE**   After accessing the VPort 354's web-based manager, administrators should access **System Configuration →**
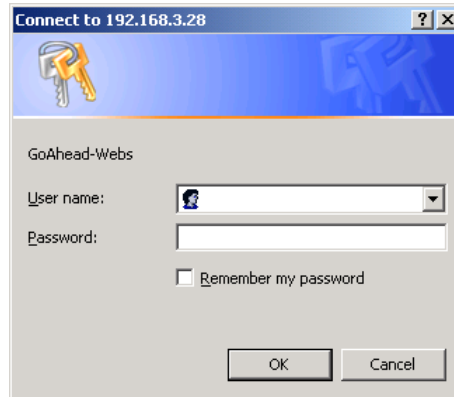> **System → Account** to set up the administrator's password and enable the authentication function. The
> administrator account name is **admin**.
>
> An authentication window will pop up requesting the account name and password each time the VPort 354 is
> accessed.

RS-232 Console Configuration (115200, None, 8, 1, VT1 00)

> **NOTE**   1. You **cannot** connect to the VPort 354 simultaneously by serial console and Telnet.
>
> 2. You **may** connect to the VPort 354 simultaneously by web browser and serial console, or by web browser
>   and Telnet. However, we strongly recommend that you use only one connection method at a time. This
>   allows you to maintain better control over your VPort 354's configuration.

You can access the RS-232 console by using a terminal emulator on your PC. We recommend that you use the
PComm Terminal Emulator, which is free and can be downloaded from Moxa's website. The following
instructions explain how to use PComm to access the RS-232 console.

1. Use an RJ45 to DB9-F (or RJ45 to DB25-F) cable to connect the VPort 354's RS-232 console port to a COM
    port on your PC.

2. From the Windows desktop, click **Start → Programs → PCommLite2.5 → Terminal Emulator**.
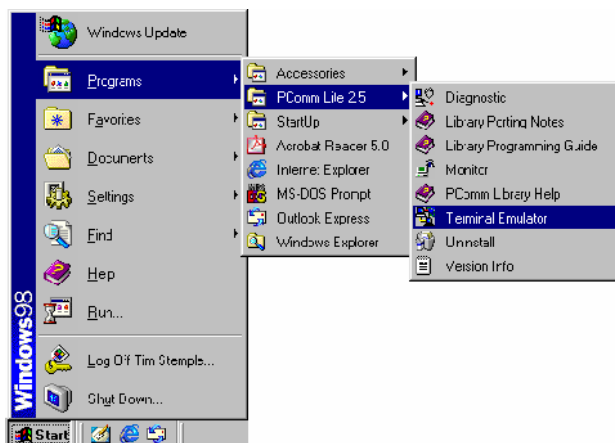
3. Select **Open** under **Port Manager** to open a new connection.
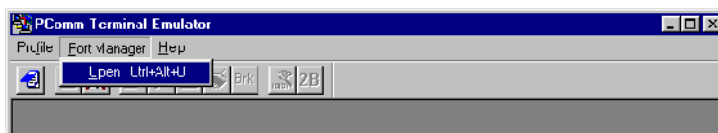
4. The **Communication Parameter** page of the **Property** window opens. Select the appropriate COM port for **Console Connection**, **115200** for **Baud Rate**, **8** for **Data Bits**, **None** for **Parity**, and **1** for **Stop Bits**.
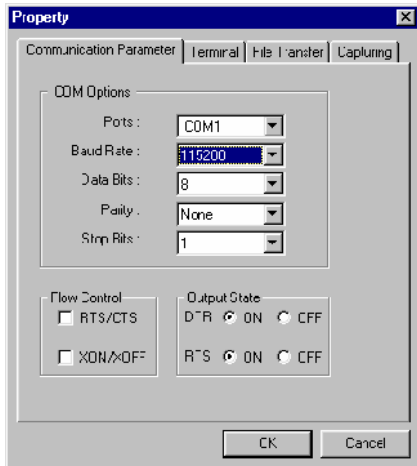
5. Click the **Terminal** tab, and select **VT100** for **Terminal Type**. Click **OK** to continue.
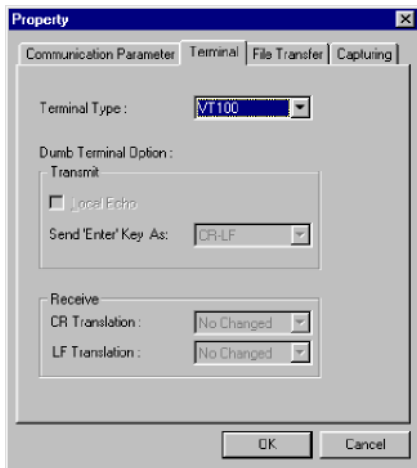
6. A blank screen will appear. Press Enter, after which a login message will appear. Only the administrator is allowed to use this console configuration. Use admin as the username and the associated admin password

as the password. Press Enter to continue.
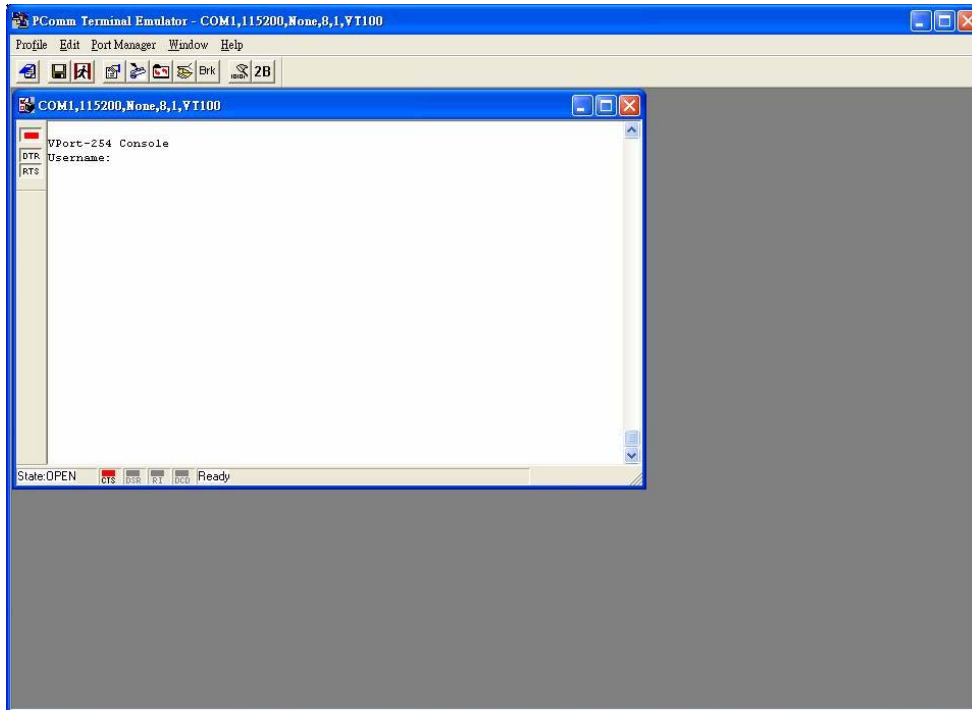
7. The RS-232 console's **Main Menu** will be displayed.

   (NOTE: To modify the appearance of the PComm Terminal Emulator window, select **Font…** under the **Edit** menu, and then choose the desired formatting options.)
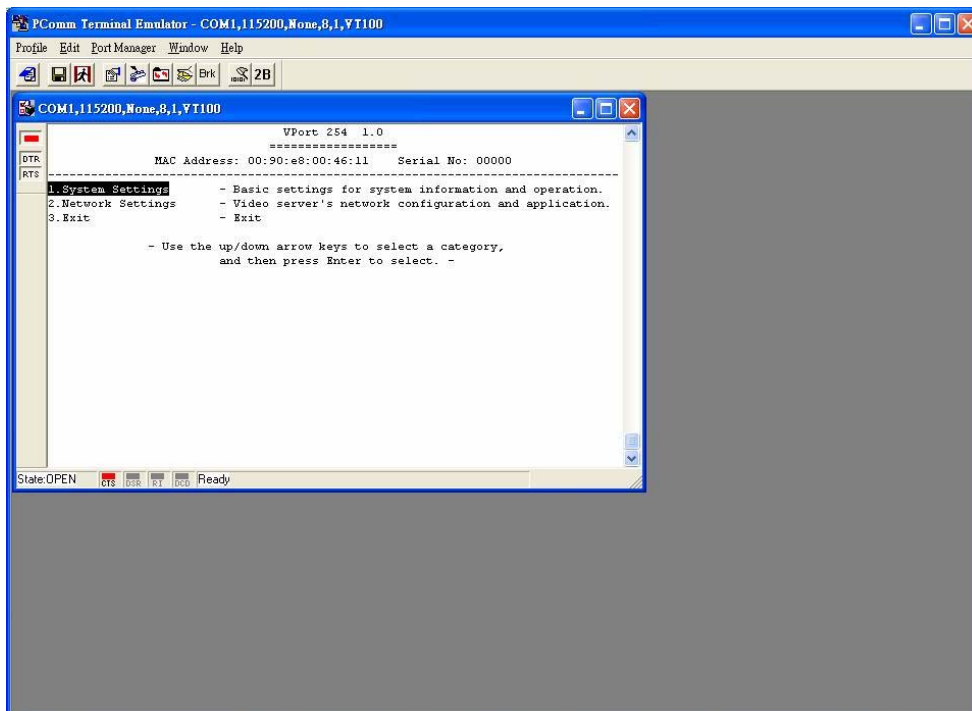
8. After entering the **Main Menu**, use the following keys to move the cursor, and to select options.

Key	Function
Up/Down/Left/Right arrows, or Tab	Move the onscreen cursor
Enter	Display & select options
Space	Toggle options
Esc	Previous Menu

NOTE	Many settings are related to video images, which cannot be shown on the RS-232 console. The VPort 354's RS-232 console only accesses the Basic System Settings and Network Settings. For more advanced configuration, please use the web console.

Mounting the VPort 354 Dimension
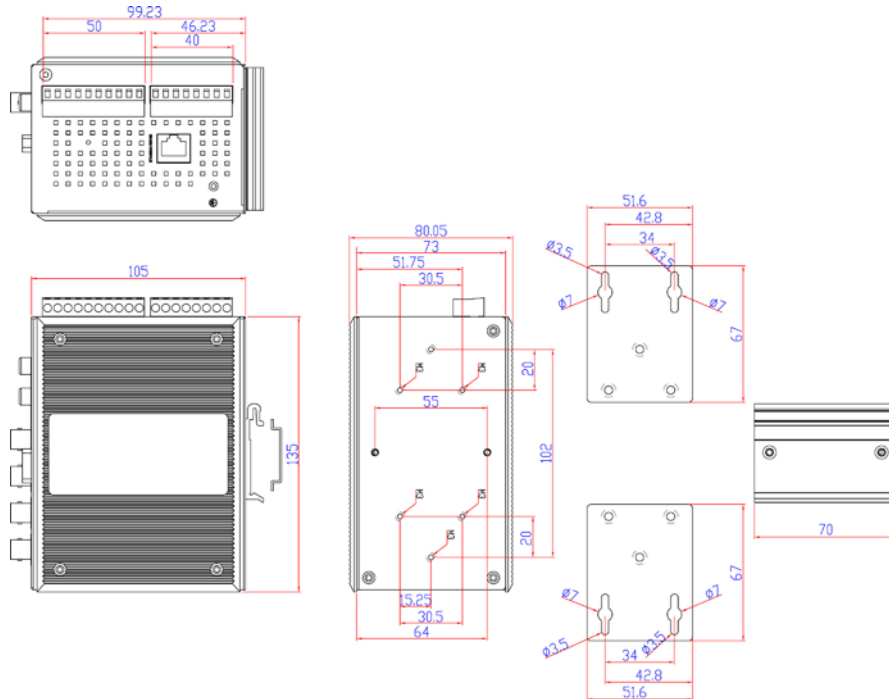
(Unit=mm)

DIN-Rail Mounting

The DIN-Rail attachment plate should already be attached to the back panel of the VPort 354 when you take it out of the box. If you need to reattach the plate, make sure the metal spring is situated towards the top, as shown in the figures below.

STEP 1:

Insert the top of the DIN-Rail into the slot just below the metal spring.
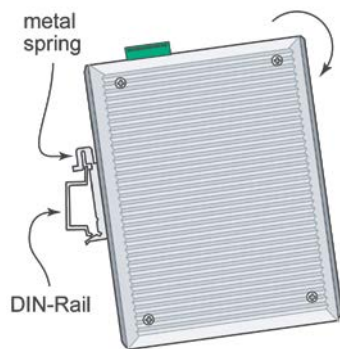
STEP 2:

The unit will snap into place as shown below.
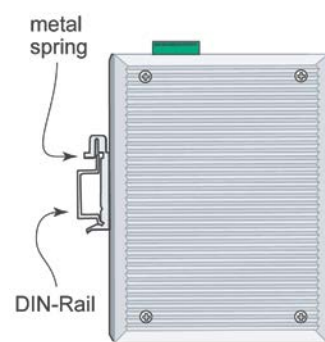
Reverse Steps 1 and 2 above to remove the VPort 354 from the DIN-Rail.

Wall Mounting

NOTE   Wall-mounting kit (WK-46) ordered separately

Follow the steps below to mount the VPort 354 on a wall or panel.

STEP 1:

Remove the DIN-Rail attachment plate from the VPort 354. Attach the two wall-mount plates as shown in the diagrams below.
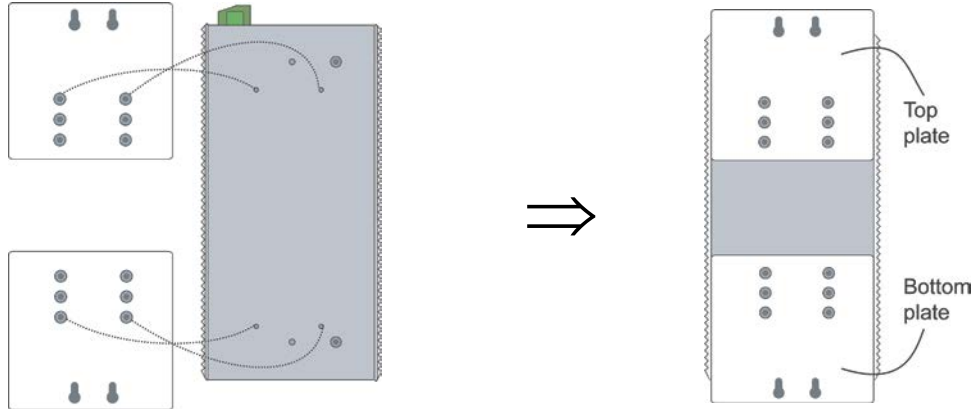
STEP 2:

4 screws are required. Use the VPort 354, with wall mount plates attached, as a guide to mark the correct locations of the 4 screws. The heads of the screws should be less than 6.0 mm in diameter, and the shafts should be less than 3.5 mm in diameter, as shown in the figure at the right.
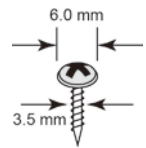
Do not screw the screws in all the way—leave a space of about 2 mm to allow room for sliding the wall mount panel between the wall and the screws.

NOTE   Before you mount the unit on the wall, make sure that the screws are the right size by testing them with the apertures on the mounting plates.

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 354 downwards, as indicated in the figure. Tighten the four screws for added stability.
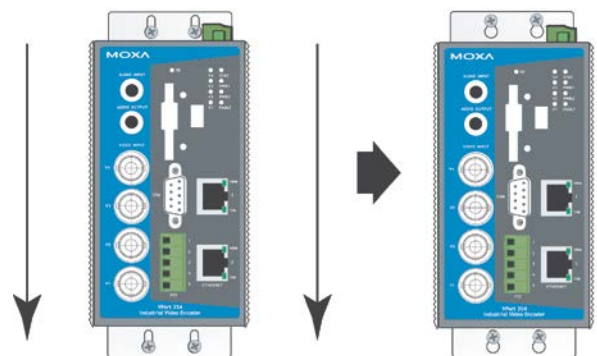
Wiring Requirements

> **ⓘ ATTENTION**
>
> Be sure to disconnect the power cord before installing and/or wiring your Moxa VPort 354.
>
> Calculate the maximum possible current in each power wire and common wire. Observe all electrical codes dictating the maximum current allowable 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:

- 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 separated.
- It is strongly advised that you label wiring to all devices in the system when necessary.

Grounding the VPort 354

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 354 has two sets of power inputs, power input 1 and power input 2, which are located on the 10-pin and 8-pin terminal block connectors. Top and front views of the terminal block connectors are shown here.
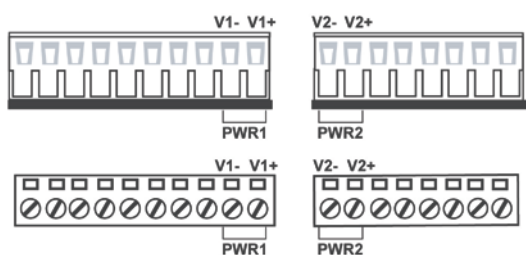
STEP 1: Insert the negative/positive DC or AC wires into the V-/V+ terminals.

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 354's top panel.

> **ⓘ ATTENTION**
>
> The power for this product is intended to be supplied by a Listed Power Unit, with output marked LPS, and rated to deliver 12 to 32 VDC at a maximum of 740 mA, or 18 to 30 VAC at a maximum of 890 mA.

> **⚠ ATTENTION**
>
> Before connecting the VPort to the AC/DC power inputs, make sure the DC power source voltage is stable.

Wiring the Relay Output
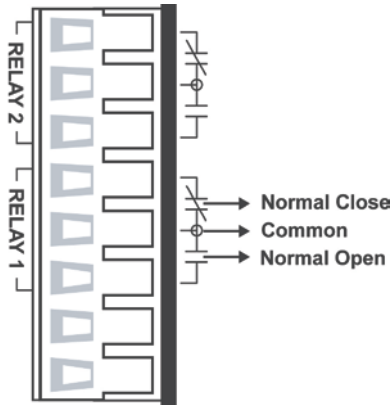
The VPort 354 has two sets of relay output, relay 1 and relay 2, which are located on the 8-pin terminal block connector. Each relay output consists of the 3 contacts of the terminal block on the VPort 354's top panel.

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
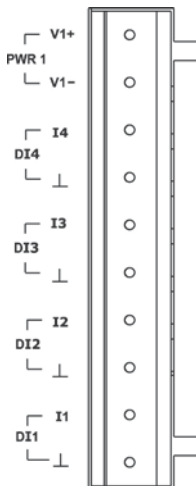
The VPort 354 has four sets of digital inputs, DI1, DI2, DI3 and DI4. Each DI consists of two contacts of the 10-pin terminal block connector on the VPort's top panel. Top and front views of one of the terminal block connectors are shown here.

STEP 1: Insert the negative (ground)/positive DI wires into the ⊥/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 354's top panel.

RS-232 Connection

The VPort 354 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 354'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 354'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	---
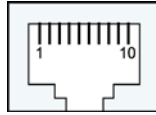
RJ45 (10-pin) to DB9 (F) Cable Wiring

Moxa EtherDevice Server			COM Port
RJ45 Connector	Cable Wiring		Female DB9 Connector
DCD	1 ——————— 1		DCD
DSR	2 ——————— 6		DTR
RTS	3 ——————— 7		CTS
GND	4/7 ——————— 5		GND
TxD	5 ——————— 3		RxD
RxD	6 ——————— 2		TxD
CTS	8 ——————— 8		RTS
DTR	9 ——————— 4		DSR
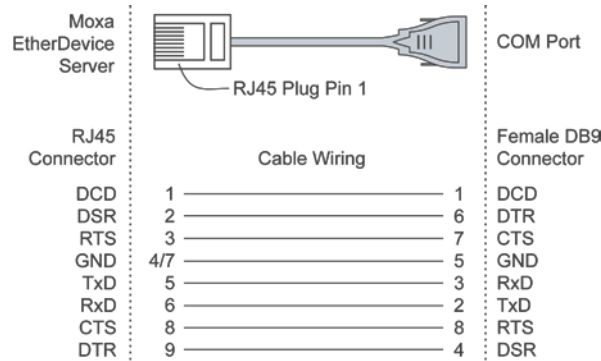
RJ45 (10-pin) to DB25 (F) Cable Wiring

Moxa EtherDevice Server			COM Port
RJ45 Connector	Cable Wiring		Female DB25 Connector
DCD	1 ——————— 8		DCD
DSR	2 ——————— 6		DTR
RTS	3 ——————— 4		CTS
GND	4/7 ——————— 7		GND
TxD	5 ——————— 2		RxD
RxD	6 ——————— 3		TxD
CTS	8 ——————— 5		RTS
DTR	9 ——————— 20		DSR
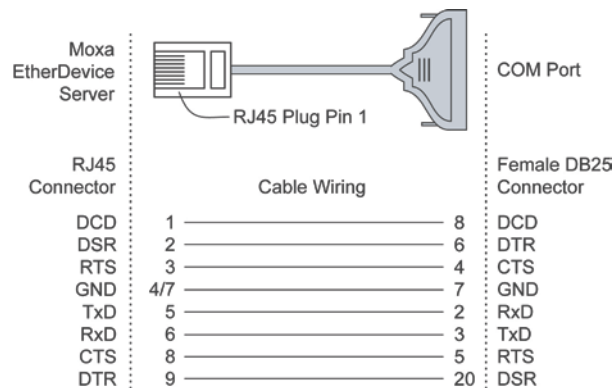
10/100BaseT(X) Ethernet Port Connection

The 10/100BaseT(X) port located on the VPort 354's front panel is used to connect to Ethernet-enabled devices.

The following table shows pinouts for both MDI (NIC-type) ports and MDI-X (HUB/Switch-type) ports. We also show cable wiring diagrams for straight-through and cross-over Ethernet cables.

(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
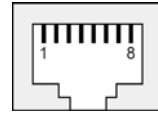
RJ45 (8-pin) to RJ45 (8-pin) Straight-Through Cable Wiring
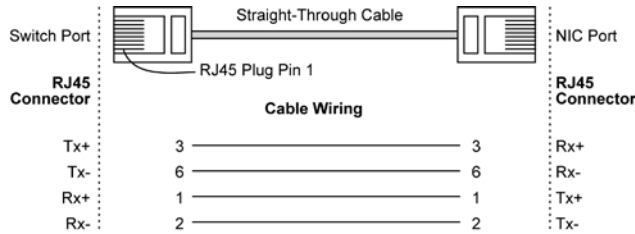
RJ45 (8-pin) to RJ45 (8-pin) Cross-Over Cable Wiring
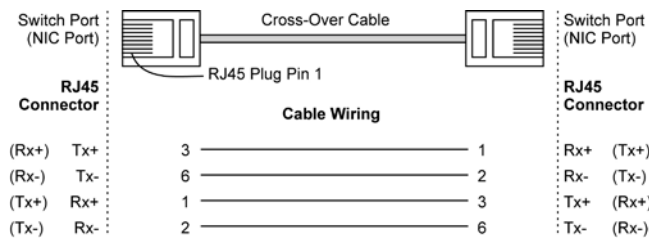
100BaseFX Ethernet Port Connection

The concept behind the SC port and cable is easy to understand. Since optical signals do not require a circuit to transmit data, one cable is used to transmit data and one cable is used to receive data, providing full-duplex transmission.

Remember to connect the Tx (transmit) port of device I to the Rx (receive) port of device II, and the Rx (receive) port of device I to the Tx (transmit) port of device II. If you make your own cable, we suggest labeling the two sides of the same line with the same letter (A-to-A and B-to-B, as shown below, or A1-to-A2 and B1-to-B2).

SC-Port Pinouts
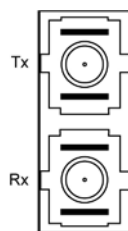
SC-Port to SC-Port Cable Wiring
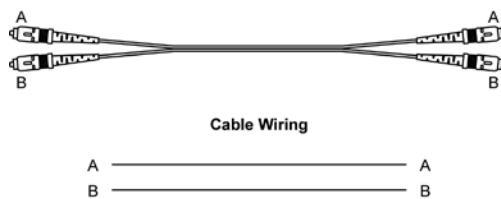
NOTE   The 2 Ethernet ports on the VPort 354's front panel can be used as cascade links or to provide port redundancy. When used as cascade links, you will need to calculate the number of video streams in order to optimize the transmission bandwidth. Calculating the number of video streams is simple using the following formula:

Number of video streams that can be transmitted in cascade link = 100 × 0.8 (20% for the buffer) ÷ bit rate of one video streams. Therefore, if the number of video streams that can be transmitted in the cascade link is 16, a total of 4 VPort 354 (16÷4) units can be cascaded.

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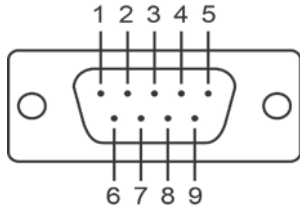
PIN	RS-232	RS-422 4-wire RS-485	2-wire RS-485
1	DCD	TxD-(A)	---
2	RxD	TxD+(B)	---
3	TxD	RxD+(B)	Data+(B)
4	DTR	RxD-(A)	Data-(A)
5	GND	GND	GND
6	DSR	---	---
7	RTS	---	---
8	CTS	---	---
9	---	---	---

PTZ Port

A PTZ port is located on the VPort 354's front panel. The port is used to connect to 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 the terminal block. The PTZ port pin assignments are shown in the following table.

Pin Assignment

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

SD Card Slot

The front panel of Moxa's VPort 354 has an SD card slot that supports the SDHC interface. An SD card can be used for recording video if the network is down.

SD card slot with upper case   **SD card slot without upper case**
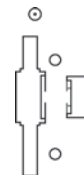
STEP 1: Open the upper case of the SD card slot.

STEP 2: Plug the SD card into the slot. The SD LED indicator will flash red.

STEP 3: When the SD card is mounted successfully, the SD LED indicator will turn green after 2 to 3 seconds. If the SD card mount fails, then the SD LED indicator will continuously flash red. If this happens, repeat the above until the SD LED indicator light turns green.

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

NOTE Currently, the SDHC interface can support an SD card with up to 32 GB of storage space.

NOTE Follow these steps to remove the SD card:

Step1: Open the upper case. The SD LED indicator will light up in solid red.

Step2: Wait a few seconds to allow the SD card to complete existing disk activity.

Step3: If the SD LED indicator light turns off, it means the unmounting of the SD card was successful, and you can take out the SD card. If the SD LED indicator flashes red, it means the unmounting of the SD card failed. At this point, you can remove the SD card, but you will need to reboot the VPort 354 to enable the SD card slot function for future SD cards.

3

Accessing the VPort 354's Web-based Manager

This chapter includes information about how to access the VPort 354 Video Encoder for the first time.

The following topics are covered in this chapter:

❒ **Functions Featured on the VPort's Web Homepage**

 ➤ VPort's Information

 ➤ Server Name

 ➤ Camera Image View

 ➤ Audio Control

 ➤ Client Settings

 ➤ System Configuration

 ➤ Video Information

 ➤ PTZ Control Panel

 ➤ PTZ (Motorized) Camera Control

 ➤ Custom PTZ Camera Commands

 ➤ Video Image Snapshots

 ➤ Relay Control

Functions Featured on the VPort's Web Homepage

The homepage of the VPort's web console shows information specific to that VPort, the camera image, and configurations for the client and server.

NOTE The VPort's web homepage is best viewed in 1280 x 1024 screen resolution. This is because the camera image can be viewed at a resolution up to Full D1 (NTSC: 720 x 480; 720 x 576). We strongly recommend using IE 6.0 (Microsoft Internet Explorer) or above to avoid incompatibility with the ActiveX Plug-in.

VPort's Information

This section shows the VPort's model name, server name, IP address, MAC address, firmware version, and the display status of the LEDs located on the VPort's front panel.

NOTE The VPort LEDs shown on the VPort's web homepage are updated every 10 seconds.

Server Name

A server name can be assigned to each server. Administrators can change the name in **System Configuration/System/General**. The maximum length of the sever name is 40 bytes.

Camera Image View

The assigned image description and system date/time will be displayed in the caption above the image window. You may disable the caption or change the location of the image information in **System Configuration/Video/Image Setting**. Note that if the VPort's motion detection function is active, some windows in the video picture might be framed in red.

Audio Control

The VPort 354 provides both audio input and audio output for voice over IP communication. Client users can directly enable and disable the audio input (a microphone, for example) by clicking the microphone button and the audio output (a speaker, for example) by clicking the speaker button from the VPort's web homepage. You may also use the **Client Setting** to disable the audio transmission.

Client Settings

Users can configure the following functions in **Client Settings**.

1. **Encoder standard:** Shows the encoding algorithm currently being used.
2. **Media Options:** Enable or disable the video or audio transmission.
3. **Protocol Options:** Choose one of four protocols to optimize your usage—Multicast (RTSP or Push) or Unicast (UDP, TCP, HTTP).

- **Multicast** protocol can be used to send a single video stream to multiple clients. In this case, a lot of bandwidth can be saved since only one video stream is transmitted over the network. However, the network gateway (e.g., a switch) must support the multicast protocol (e.g., IGMP snooping). Otherwise, the multicast video transmission will not be successful.
    - ➢ **RTSP:** Enable the multicast video stream to be sent in RTSP control, which means the multicast video stream will be sent only it receives the client's request.
    - ➢ **Push:** Enable the multicast video stream to be sent in Push control, which means that after this setting is selected the multicast video stream will be sent continuously even without any client request.
- Unicast protocol is used to send a single video stream to one client.
    - ➢ **UDP** can be used to produce audio and video streams that are more real-time. However, some packets may be lost due to network burst traffic, and images may become blurred.
    - ➢ **TCP** can be used to prevent packet loss, which results in a more accurate video display. The downside of using TCP is that the real-time delay is worse than with UDP protocol.
    - ➢ **HTTP** can be used to prevent being blocked by a router's firewall. The downside of using HTTP is that the real-time delay is worse than with UDP protocol.

Once the video encoder is connected successfully, Protocol Options will indicate the selected protocol. The selected protocol will be stored on the user's PC, and will be used for the next connection.

NOTE For multicast video stream settings, please refer to **System Configuration → Network → Multicast**.

[D2]
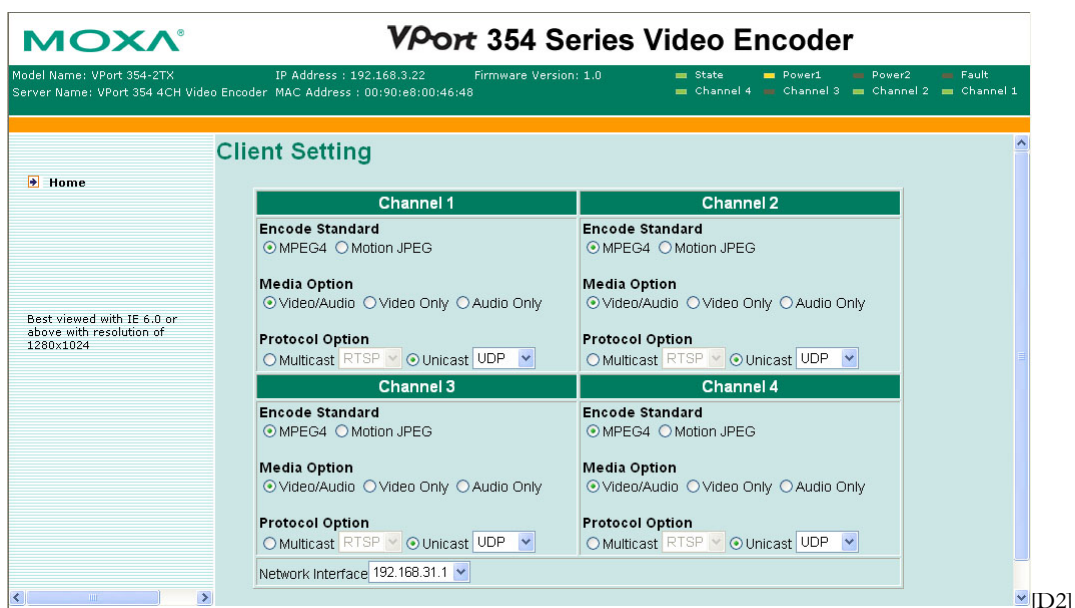
System Configuration

A button or text link on the left side of the system configuration window only appears on the administrator's main page. For detailed system configuration instructions, refer to Chapter 4, **System Configuration**.

Video Information

Users can easily monitor the current video performance by looking at the **Video Information** shown on the left side of the homepage. The following properties are shown: Video Size, Video Quality (Fixed bit rate or Fixed video quality), Max. FPS (frames per second), and (current) FPS Status. Users can select the target camera image to view each camera's video performance.

PTZ Control Panel

Users can click this link to pop up a new window for PTZ Control. To select a camera, click the target camera's image view.
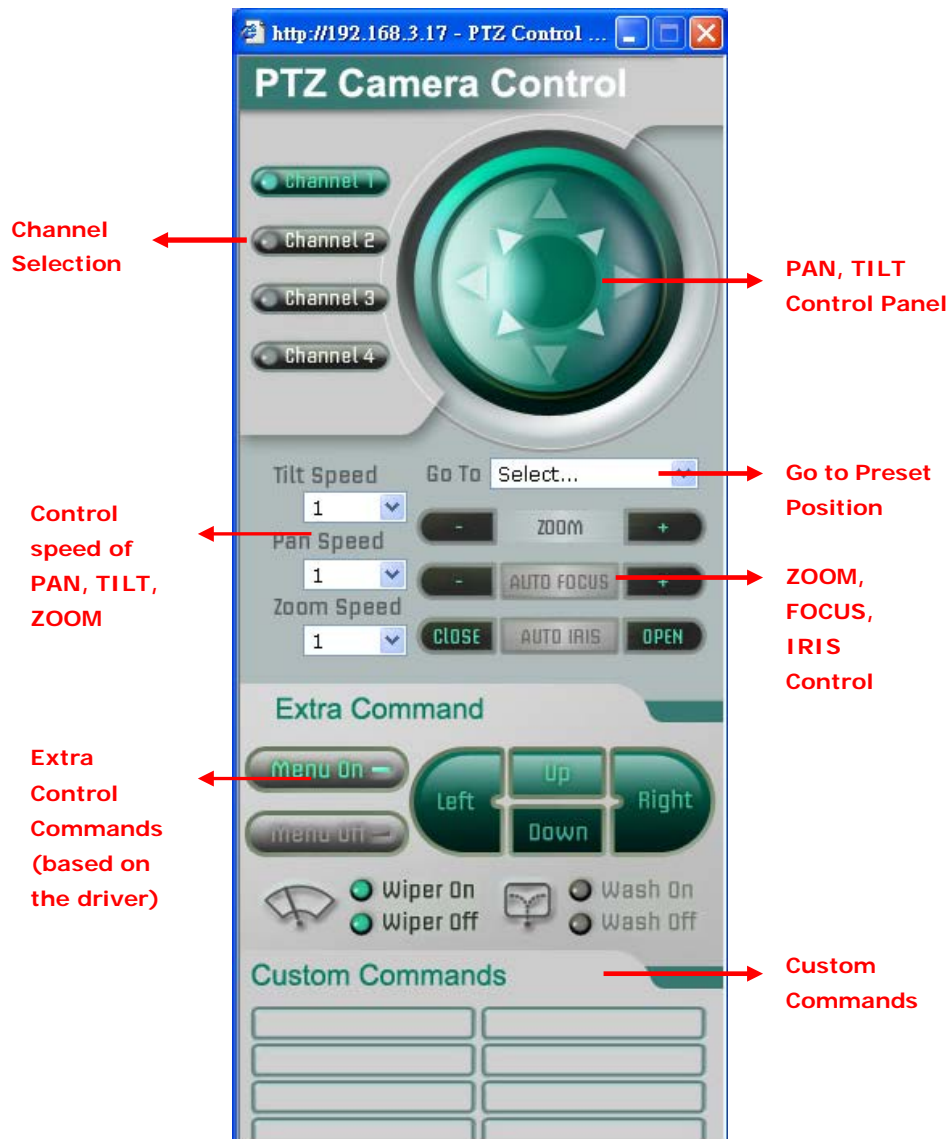
PTZ (Motorized) Camera Control

If a serial device, such as a motorized camera, is attached to the COM/PTZ port, the control panel will appear on the main page for users who have permission to operate the camera. Buttons that are active will change color when the cursor is passed over the button. Users can control the pan, tilt, zoom, and focus functions of motorized cameras. The home button is used to return the camera to the center position if the camera supports this command. In addition to near and far controls for focus settings, an auto focus mode is provided. To move the motorized camera more precisely, the speed control for pan and tilt allows users to fine tune the camera movement. Users can also click directly on any point in the image to force the motorized camera to focus on that point, or select a preset location from the drop-down menu. Administrators are able to add or modify the list of preset locations. Details are described in the relevant section in Chapter 4, **System Configuration**.

NOTE   For some PTZ cameras, users can click on any position in the image to point the camera to that position. We currently support this functionality for Pelco-D, Pelco P and Dynacolor DynaDome PTZ drivers.

Custom PTZ Camera Commands

In addition to the default pan, tilt, zoom, and focus controls, an additional 10 buttons are available for custom commands to control the attached motorized (PTZ) cameras. Custom commands are set up by administrators, and are used for functions such as activating or deactivating the dome wiper. Refer to the attached motorized device's User's Manual to see which functions can be controlled with these additional buttons.

Video Image Snapshots

Users can take snapshot images for storing, printing, or editing by clicking the **Channel Snapshot** button. To save the image, right-click and select the **Save** option.

Relay Control

The VPort 354 has 2 relay outputs for external devices, such as alarms. Administrators and permitted users can click on **Open** to short the **Common** and **Normal Open** digital output pins, or click on **Close** to short the **Common** and **Normal Close** digital output pins.

4

System Configuration

After installing the hardware, the next step is to configure the VPort 354's settings. Users can configure by web console.

The following topics are covered in this chapter:

❑ **System Configuration by Web Console**

> ➢ System

> ➢ Network

> ➢ Video

> ➢ Serial Port

> ➢ Audio

> ➢ Alarm

System Configuration by Web Console

System configuration can be done remotely with Internet Explorer. To access the server, type the system configuration URL, **http://<IP address of Video Server>/setup/config.html**, to open the configuration main page.

There are six configuration categories: **System, Network, Video, Serial Port, Audio**, and **Alarm**. A description of each configuration item is shown in the table below:

Category	Item		Description and Contents
System	General		Set Host Name and Date/Time
	Accounts		Administrator, User, and Demo Account Privileges Management
	Local Storage		Configure the local storage settings
	Diagnosis		Self-diagnostic report with system, communication, power, and LED status
	System Log		System Log and operation information
	System Parameter		System parameter information and Import/Export functions
	Firmware Upgrade		Remote Firmware Upgrade
	Factory Default		Reset to Factory Default
	Reboot		Device will reboot for restarting system
Network	General		The IP network settings of this VPort
	SMTP Server		Set up Primary and Secondary SMTP Server and e-mail accounts
	FTP Server		Set up the Primary and Secondary FTP Server
	DDNS		Configure Dynamic DNS service
	Universal PnP		Enable UPnP function
	Multicast Setting		Set up Multicast (IGMP) Streaming
	Accessible IP		Set up a list to control the access permission of clients by IP address
	SNMP		Configure the SNMP settings
	QoS (ToS)		Configure ToS(Type of Service)
	HTTP Event Server		Set up the HTTP Event Server to send the event alarm action
	Modbus/ TCP		Enable Modbus/TCP function
	Ethernet Port		Configure the Ethernet ports
Video	Image Settings		Configure the attributes of the video image
	Camera Modulation		Select the camera's modulation (NTSC, PAL or AUTO)
	Video Performance		Configure the Size (Resolution), FPS, and Video Quality
	Camera Control		Set up the Camera's PTZ Control
Serial port	PTZ port		Configure the PTZ Port interface, control mode, and serial parameters.
	COM port		Configure the COM (DB9) Port interface, operation mode, and serial parameters.
Audio	Audio Settings		Set up the audio source
Alarm	System Alarm		Configure Power Failure and Network Connection Broken alarms
	Event Alarm	Basic	General event alarm settings
		Schedule	Set up the Alarm schedule
		Digital Input	Configure the Digital Input Alarm
		Video Loss	Configure the video loss alarm
		CGI Event	Set up the CGI event alarm
		Sequential Snapshot	Set up the Sequential Snapshot operation

This table can also be found on the **System Configuration → Overview webpage**.
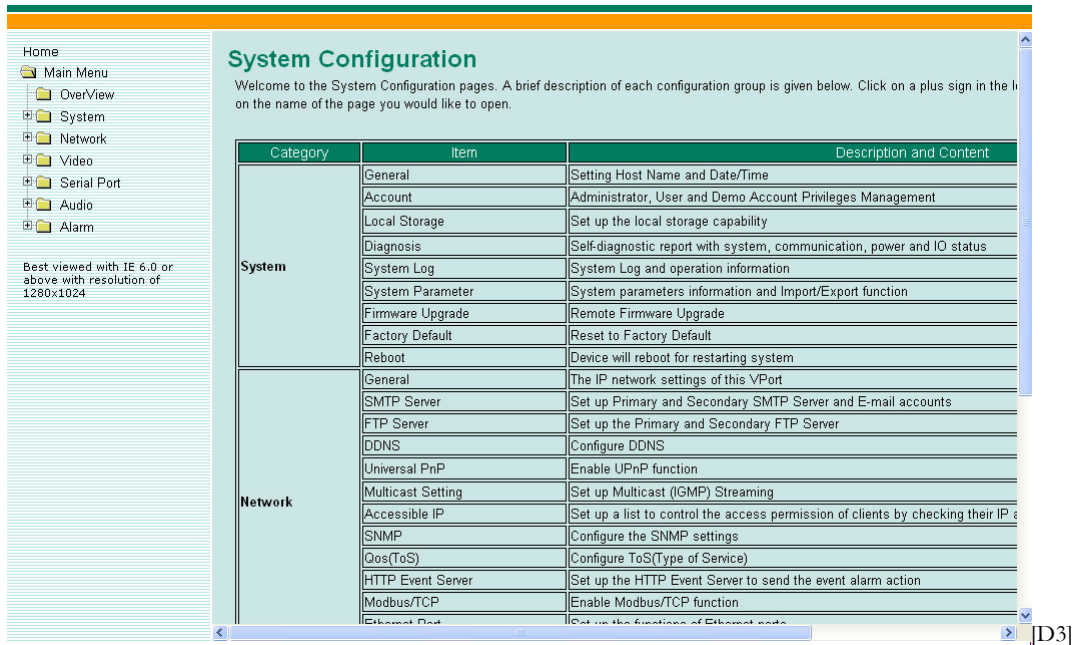
[D3]

System

General Settings

On the **General Settings** page, administrators can set up the video **Server name** and the **Date and Time**, which is displayed in the image's caption.
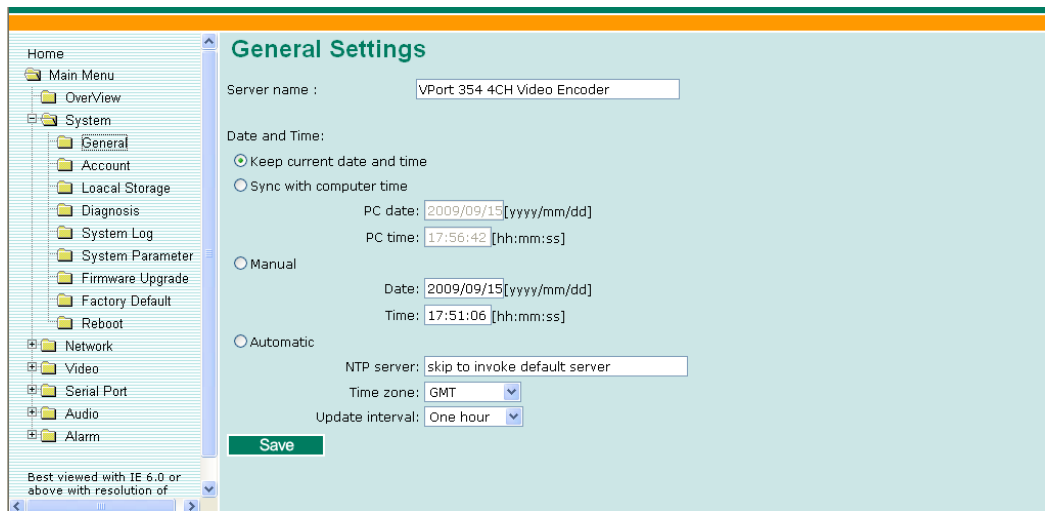
[D4]

Server name

Setting	Description	Default
Max. 40 characters	Use a different server name for each server to help identify the different servers. The name appears on the web homepage.	VPort 354 4CH Video Encoder

Date and Time

Setting	Description	Default
Keep current date and time	Use the current date and time as the VPort's time setting.	Keep current date and time
Sync with computer time	Synchronize VPort's data and time setting with the local computer time.	

Manual	Manually change VPort's date and time setting.	
Automatic	Use the NTP server for changing VPort's date and time setting in a given period.	

NOTE   Select the Automatic option to force the VPort to synchronize automatically with timeservers over the Internet. However, synchronization may fail if the assigned **NTP server** cannot be reached, or the VPort is connected to a local network. Leaving the **NTP server** blank will force the VPort to connect to default timeservers. Enter either the Domain name or IP address format of the timeserver if the DNS server is available.

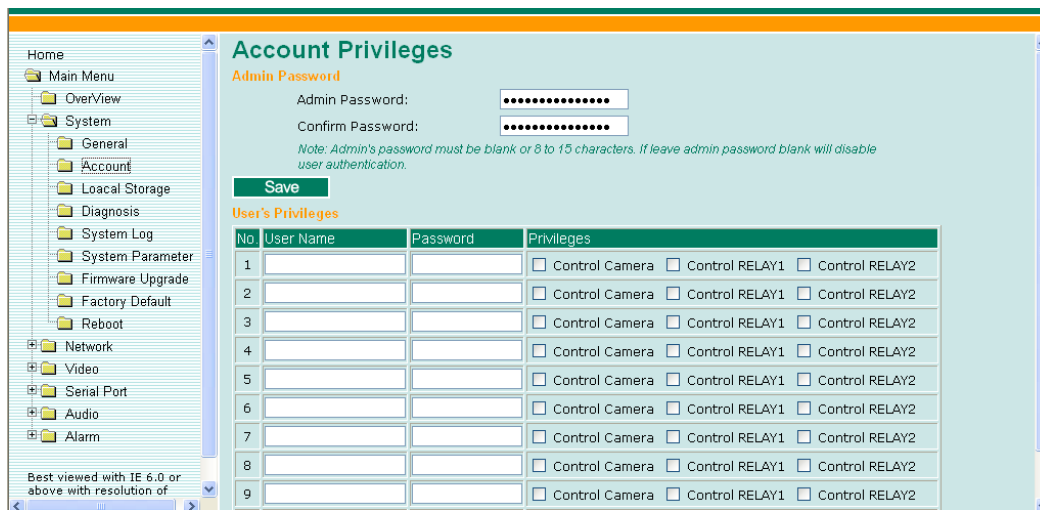Don't forget to set the **Time zone** for local settings. Refer to Appendix G for your region's time zone.

Account Privileges

Different account privileges are available for different purposes.

Admin password

Setting	Description	Default
Admin Password (max. 14 characters)	The administrator can type the new password in this box.	Default admin password is "admin"
Confirm Password (max. 14 characters)	If a new password is typed in the **Admin Password** box, you will need to retype the password in the **Confirm Password** box before updating the new password.	

NOTE   The default account name for administrator is admin; the administrator account name cannot be changed.

User's Privileges

VPort products provide 10 user accounts for accessing the VPort. Administrators can set up user's privileges in this section. Each user can be given independent access rights to the external I/O and camera control.

Setting	Description	Default
User Name	Type a specific user name for user authentication.	None
Password	Type a specific password for user authentication.	
Privilege	Check the function boxes to assign privileges for users in **Control Camera, Control Relay1,** and **Control Relay2**.	

| NOTE | The FPS of the video stream will be reduced as more and more users access the same VPort. Currently, the VPort 354 is only allowed to send 8 unicast video streams and 4 multicast video streams at the same time. Therefore, limit the number of users simultaneously accessing a VPort 354 to prevent performance problems. |

Local Storage

VPort 354 supports a SD card slot (SDHC interface) for recording the video when the network is down. And after the network is restored, the administrator can download these recorded videos via FTP, or directly copy the files in the SD card via a card reader device.
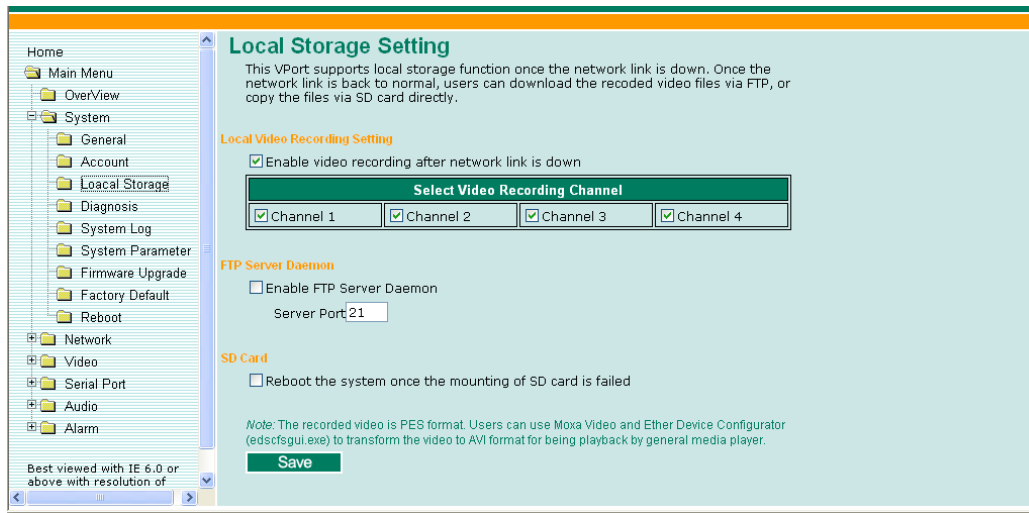
Local Video Recording Setting

Setting	Description	Default
Enable video recording after network link is down	Enable the video recording action once the network is down	Enabled
Select the video recording channel	Select the video channels for recording	Channel 1, 2, 3, 4

FTP Daemon

Setting	Description	Default
Enable FTP daemon	Enable the FTP service for downloading the recorded video files by the administrator	Enabled
Server Port	The FTP server port number	21

SD card

Setting	Description	Default
Reboot the system when the SD card fails to mount	This function can reboot the system when the SD card mount fails to re-detect the SD mount.	Enabled

| NOTE | Please refer to Chapter 1, "SD card slot for local storage capability" for directions on mounting the SD card properly and interpreting LED indicator behavior. |

| NOTE | Due to file system limitations, the maximum number of files is 16584. When the number of files in the SD card is up to 16584, or the free space is under 100MB, the system will start to delete the oldest files. |

System Diagnosis

VPort products have a self-diagnosis function to let the administrator get a quick view of the system and connection status. Administrators can save this diagnosis information in a file (diagnosis.log) by clicking the **Export to a File** button, or send the file via email by clicking the **Send a Report via Email** button.
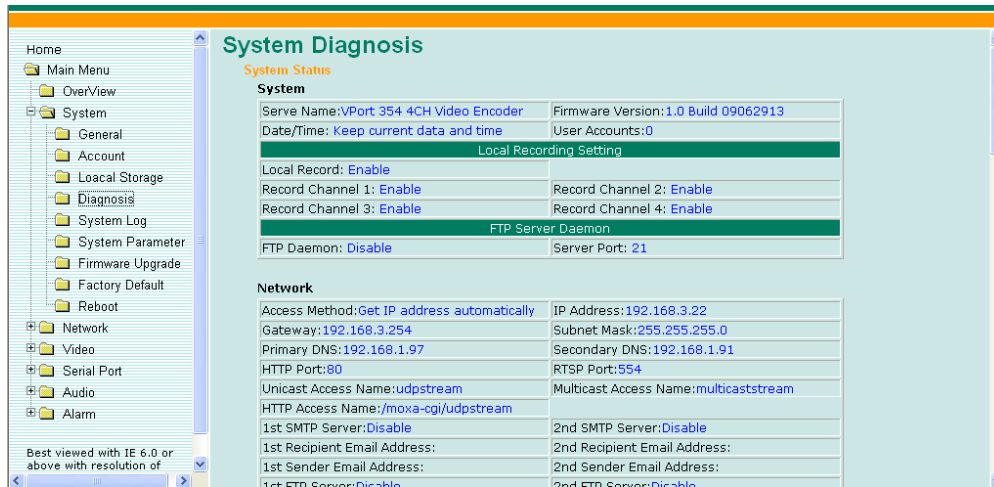
System Log History

The system log contains useful information, including current system configuration and activity history with timestamps for tracking. Administrators can save this information in a file (system.log) by clicking the **Export to a File** button, or send the file by email by clicking the **Send a Report via Email** button. In addition, the log can also be sent to a **Log Server** for backup. The administrator can set up the Syslog Server 1 and Syslog server 2 below the system log list.
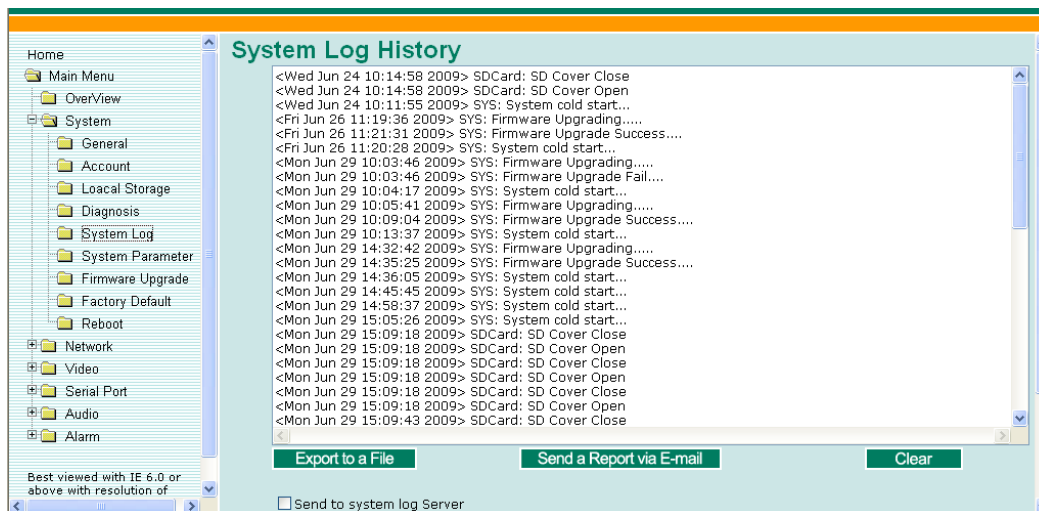
System Parameters

The **System Parameters** page allows you to view all system parameters, which are listed by category. The content is the same as the VPort's sys_config.ini file. Administrators can also save this information in a file (sys_config.ini) by clicking the **Export to a File** button, or import a file by clicking the **Browse** button to search for a sys_config.ini file and then clicking the **Import a System Parameter File** button to update the system configuration quickly.
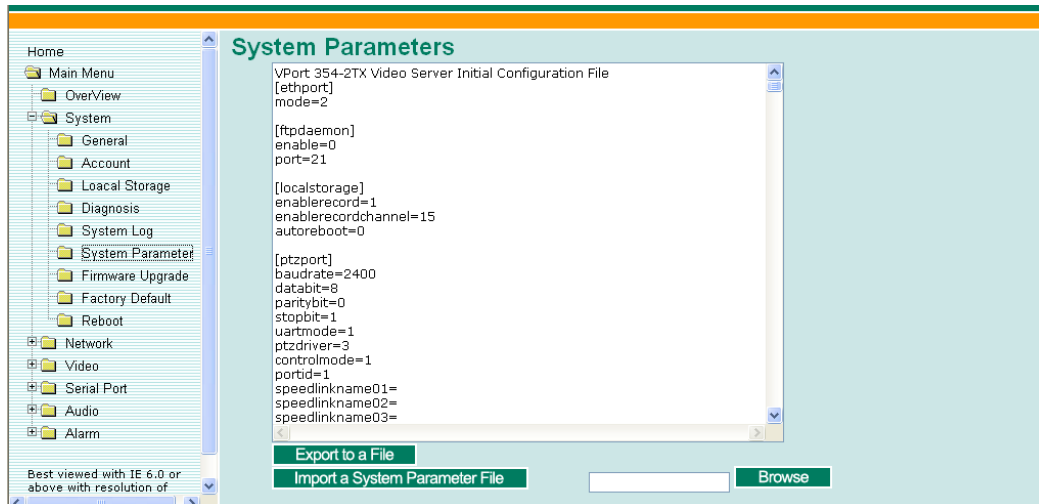

NOTE	The system parameter import/export functions allow the administrator to backup and restore system configurations. The Administrator can export this sys_config.ini file (in a special binary format) for backup, and import the sys_config.ini file to restore the system configurations of VPort video encoders. System configuration changes will take effect after the VPort is rebooted.

Firmware Upgrade
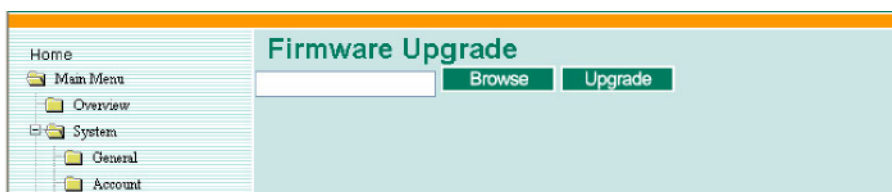
Take the following steps to upgrade the firmware:

Step 1:   Press the **Browse** button to select the firmware file.

NOTE	For the VPort 354, the firmware file extension should be .rom.

Step 2:   Click on the **Upgrade** button to upload the firmware to the VPort.

Step 3:   The system will start to run the firmware upgrade process.

Step 4:   Once **Firmware Update Success…..Reboot….** is displayed, please wait for few seconds for the VPort to reboot. The reboot process is finished once the **STAT** LED is lit continuously in green.

NOTE	Upgrading the firmware will not change the original settings.

Reset to Factory Default

From the "Reset to Factory Default" page, click on **OK** (as shown in the following figure) to reset the VPort to its factory default settings.
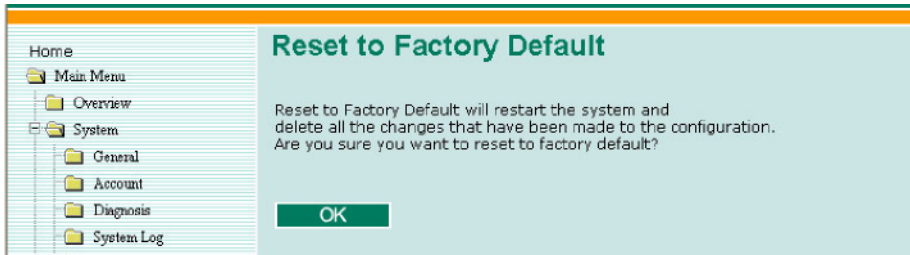
NOTE   All parameters will be reset to factory defaults when you use the **Factory Default** function. For this reason, if you want to keep a digital copy of the current configuration, remember to export the sys_config.ini file before using the Factory Default function.

Reboot

From the "Device Reboot" page, click **OK** (as shown in the following figure) to restart the VPort's system.
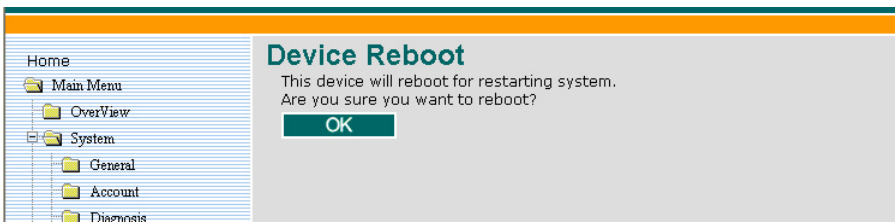
Network

General Network Settings

The **General Network Settings** page includes some basic but important network configurations that enable the VPort to be connected to a TCP/IP network.

Access Method

VPort products support the DHCP protocol, which means that the VPort can get its IP address from a DHCP server automatically when it is connected to a TCP/IP network. The Administrator should determine if it is more appropriate to use DHCP, or assign a fixed IP.

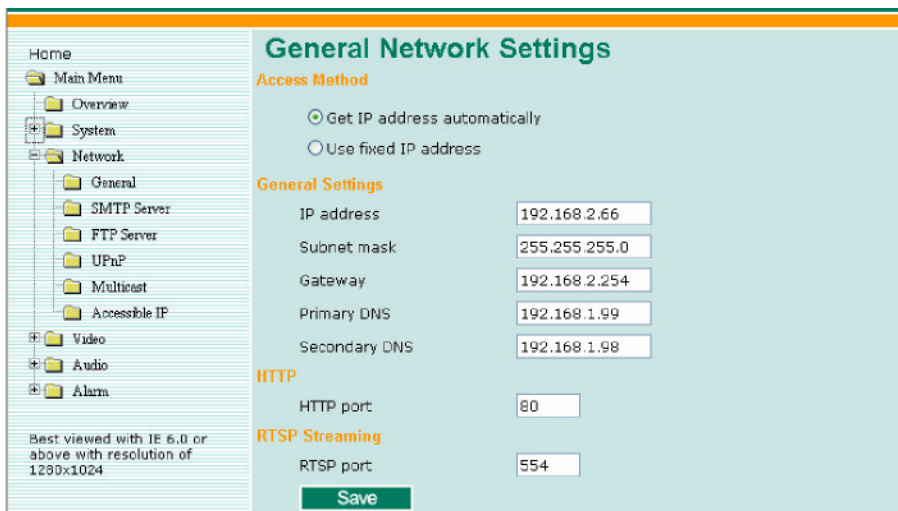| Setting	Description	Default
Get IP address automatically	Get the IP address automatically from the DHCP server.	Get IP address automatically
Use fixed IP address	Use the IP address assigned by the administrator.	

NOTE	We strongly recommend that the administrator assign a fixed IP address to the VPort, since all of the functions and applications provided by the VPort are active when the VPort is connected to the network. Use DHCP to determine if the VPort's IP address may change when then network environment changes, or the IP address is occupied by other clients.

General Settings

Setting	Description	Default
IP address	Variable IP assigned automatically by the DHCP server, or fixed IP assigned by the Administrator.	192.168.127.100
Subnet mask	Variable subnet mask assigned automatically by the DHCP server, or a fixed subnet mask assigned by the Administrator.	255.255.255.0
Gateway	Assigned automatically by the DHCP server, or assigned by the Administrator.	None
Primary DNS	Enter the IP address of the DNS Server used by your network. After entering the DNS Server's IP address, you can input the VPort's url (e.g., www.VPort.company.com) in your browser's address field, instead of entering the IP address.	Obtained automatically from the DHCP server, or left blank in non-DHCP environments.
Secondary DNS	Enter the IP address of the DNS Server used by your network. The VPort will try to locate the secondary DNS Server if the primary DNS Server fails to connect.	Obtained automatically from the DHCP server, or left blank in non-DHCP environments.

HTTP

Setting	Description	Default
HTTP Port (80, or 1024 to 65535)	HTTP port enables connecting the VPort to the web.	80

RTSP Streaming

The VPort 354 supports standard RTSP (Real Time Streaming Protocol) streaming, which means that all devices and software that support RTSP can directly acquire and view the video images sent from the VPort 354 without any proprietary codec or SDK installations. This makes network system integration much more convenient. For different connection types, the **access name** is different. For UDP and TCP streams, the access name is **udpStream**. For HTTP streams, the access name is **moxa-cgi/udpstream_ch<channel number>**. For multicast streams, the access name is **multicastStream_ch<channel number>**. You can access the media through the following URL: **rtsp://<IP address>:<RTSP port>/<Access name> for software that supports RTSP**.

Setting	Description	Default
RTSP Port	An RTSP port is similar to an HTTP port, which can enable the connection of video/audio streams by RTSP.	554

The Apple QuickTime media player is used here as an example of a RTSP streaming application:

Step 1: Open Apple QuickTime Player and select **File - Open URL in New Player**.

Step 2: When the following pop-up window appears, type the URL in the input box. E.g., type
rtsp://<VPort 354's IP address>[:<RTSP Port]/udpstream_ch<channel number>
rtsp://<VPort 354's IP address>[:<RTSP Port]/multicaststream_ch<channel number>
RTSP Port: 554 Is default, and then click on **OK** to connect to the VPort 354.
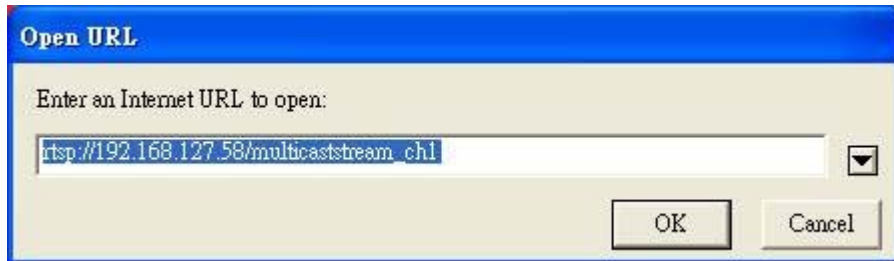
Step 3: Wait a few seconds for QuickTime Player to establish the connection.

Step 4: After the connection has been established, the VPort 354's video will appear in the QuickTime Player display window.

NOTE   The video performance of the VPort 354 may vary when using other media players. For example, you will notice a greater delay when viewing the VPort 354's video from the QuickTime player compared to viewing it directly from the VPort 354's built-in web server. In addition, viewing the VPort 354's video from the Quicktime player through a router or Internet gateway could result in a broken connection.

**NOTE**   For the time being, the VPort 354's RTSP video/audio stream can be identified and viewed by Apple QuickTime Ver. 6.5 and above, and the VLC media player. System integrators can use these 2 media players to view the VPort 354's video directly, without needing to use the VPort's SDK to create customized software.

NOTE   When using RTSP, the video stream format should be MPEG4. MJPEG does not support RTSP.

SMTP Server and Email Account Settings

The VPort not only plays the role of a server, but can also connect to outside servers to send alarm messages and snapshots. If the administrator has set up some applications in either system information or alarm, the VPort will send out messages or snapshots once these conditions occur.
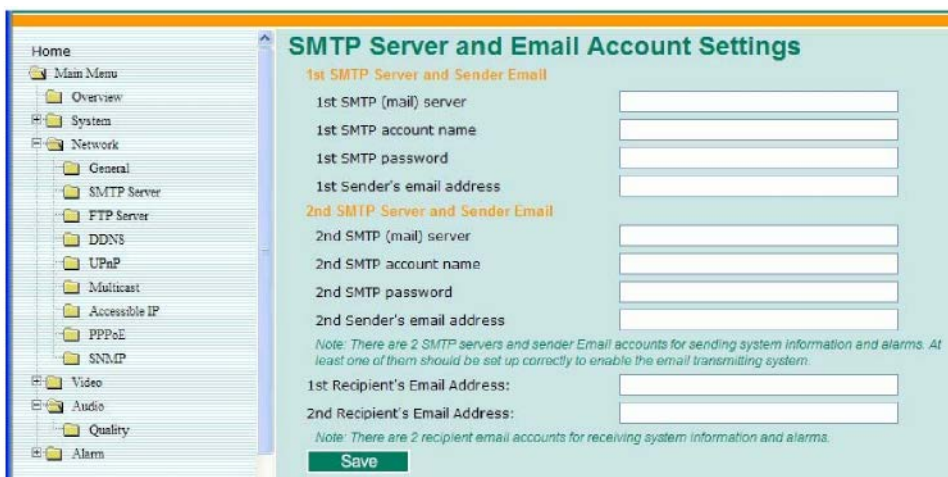
1st SMTP Server and Sender Email

Setting	Description	Default
1st SMTP (mail) server	SMTP Server's IP address or URL address.	None
1st SMTP account name	For security reasons, most SMTP servers require the account	None
1st SMTP password	name and password to be authenticated.	None
1st Sender's email address	For security reasons, SMTP servers must see the exact sender email address.	None

---

NOTE   Note that if the **Sender's email address** is not set, a warning message will pop up and the e-mail system will not be allowed to operate.


NOTE   The **2nd SMTP Server** and Sender Email are backups that are used if the 1st SMTP Server and Sender Email fail when connecting or sending email.

Two recipient email accounts are available for receiving emails sent by the VPort. For redundancy, both addresses receive the sent messages and alarm snapshots simultaneously.

Setting	Description	Default
1st Recipient's Email Address	Email address of the 1st recipient.	None
2nd Recipient's Email Address	Email address of the 2nd recipient.	None

FTP Server Settings

FTP is the other method available for the VPort to send alarm messages and snapshots.
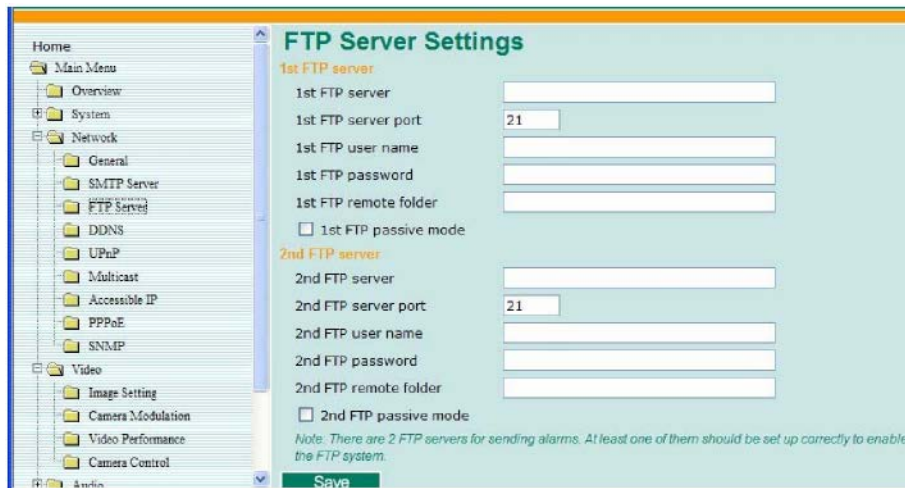
1st FTP Server

Setting	Description	Default
1st FTP server	FTP server's IP address or URL address.	None
1st FTP server port	FTP server's authentication.	None
1st FTP user name		None
1st FTP remote folder	FTP file storage folder on the remote FTP server.	None
1st FTP passive mode	Passive transfer solution for FTP transmission through a firewall.	Disabled

---

NOTE   The **2nd FTP Server** is a backup in case the 1st FTP Server fails to connect or has trouble sending files.

NOTE   Whenever the system reboots, a system log will be sent by email or FTP to show the login status of the VPort. The system log will be sent to the Sender email address if the SMTP server settings are correct. To send the system log via FTP, the SMTP server should be erased since the E-mail system is used by default to transmit the system log.

NOTE   For either e-mail or FTP, the information of the 1st server should be entered first. If the 1st server is not set, the related FTP or email will be cancelled. Note that it may take time to connect to the 2nd server after the first server fails, and this may affect some applications when adverse conditions occur too often.

Dynamic DNS

DDNS (Dynamic Domain Name System) is a combination of DHCP, DNS, and client registration. DDNS allows administrators to alias the VPort's dynamic IP address to a static hostname in any of the domains provided by the DDNS service providers listed on the VPort's Network/DDNS configuration page. DDNS makes it easier to access the VPort from various locations on the Internet.
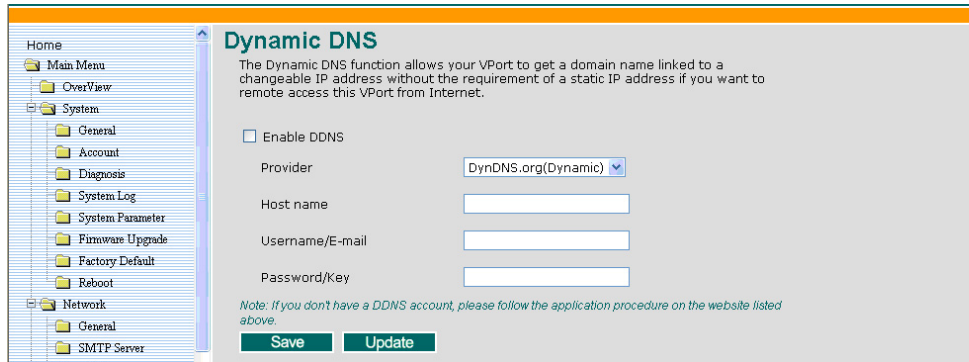
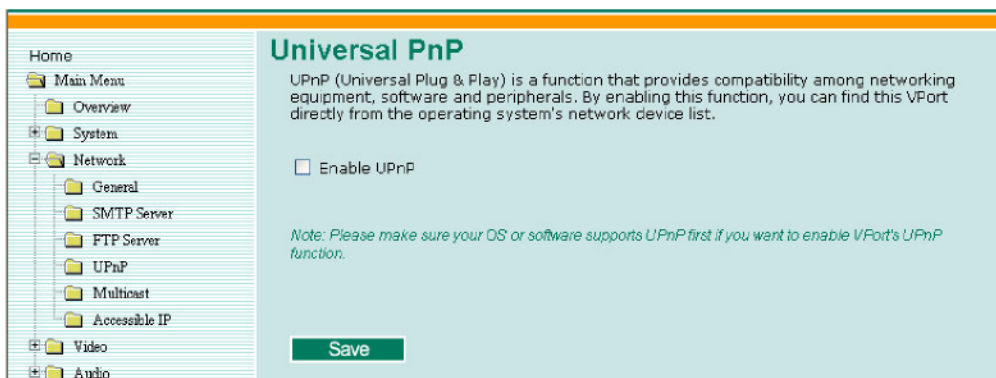| Setting	Description	Default
Enable DDNS	Enable or disable DDNS function.	Disabled
Provider	Select the DDNS service providers, including DynDNS.org (Dynamic), DynDNS.org (Custom), TZO.com, and dhs.org.	None
Host Name	The Host Name you use to link to the VPort.	None
Username/ E-mail	The Username/E-mail and Password/Key are used to enable	None
Password/ Key	the service from the DDNS service provider (based on the rules of DDNS websites).	None

---

NOTE   Dynamic DNS is a very useful tool for accessing a VPort over the Internet, especially for xDSL connections with a non-fixed IP address (DHCP). The administrator and users can simplify connecting to a VPort with a non-fixed IP address, by using the unique host name in the URL to establish a connection with the VPort.

NOTE   Different DDNS service providers have different application rules. Some applications are free of charge, but most require an application fee.

Universal PnP

UPnP (Universal Plug & Play) is a networking architecture that provides compatibility among the networking equipment, software, and peripherals of the 400+ vendors that are part of the Universal Plug and Play Forum. This means that they are listed in the network devices table for the operating system (such as Windows XP) supported by this function. Users can link to the VPort directly by clicking on the VPort listed in the network devices table.

Setting	Description	Default
Enable UPnP	Enable or disable the UPnP function.	Enabled

Multicast

The VPort 354 supports the advanced Multicast network protocol IGMP, which can greatly improve the efficiency of network traffic. In this section, we explain multicasts, multicast filtering, and how multicast can be implemented on your VPort.

What is Multicast?

A multicast is a packet that is intended for "one-to-many" and "many-to-many" communication. Users explicitly request to participate in the communication by joining an end-station to a specific multicast group. If the network is set up correctly, a multicast can only be sent to an end-station or a subset of end-stations on a LAN or VLAN that belongs to the relevant multicast group. Multicast group members can be distributed across multiple subnetworks. Therefore, multicast transmissions can occur within a campus LAN or over a WAN. In addition, networks that support IP multicast send only one copy of the desired information across the network. The packets are only replicated if they reach a network node that links to two or more members of the multicast network. Transmitting packets in this way makes more efficient use of network bandwidth. A multicast packet is identified by the presence of a multicast group address in the destination address field of the packet's IP header.
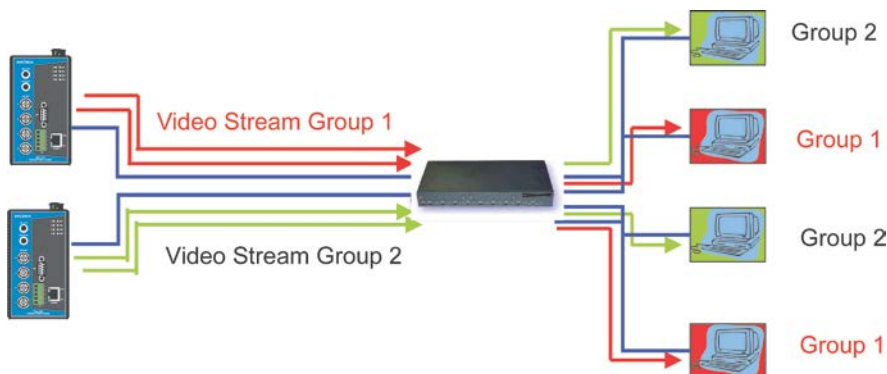
Benefits of Multicast

The benefits of using IP multicast are that it:

- Enables the simultaneous delivery of information to many receivers in the most efficient, logical way.
- Reduces the load on the source (for example, a server) because it does not need to produce multiple copies of the same data.
- Makes efficient use of network bandwidth and scales well as the number of participants or collaborators expands.
- Works with other IP protocols and services, such as Quality of Service (QoS).

There[D5] are situations where a multicast approach is more logical and efficient than a unicast approach. A typical use of multicasts is in video-conferencing, in which high volumes of traffic need to be sent to several end-stations simultaneously, but for which broadcasting that traffic to all end-stations would seriously reduce network performance. Several industrial automation protocols, such as Allen-Bradley, EtherNet/IP, Siemens Profibus, and Foundation Fieldbus HSE (High Speed Ethernet), use the multicast approach. These industrial Ethernet protocols use publisher/subscriber communications models by multicasting packets that could flood a network with heavy traffic. IGMP provides the ability to prune multicast traffic so that it travels only to those end destinations that require the traffic, thus reducing the amount of traffic on the Ethernet LAN.
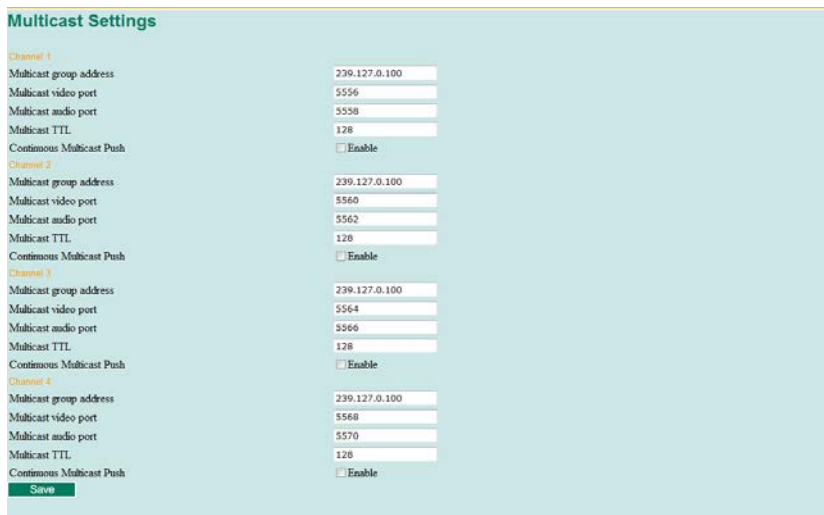
The network WITHOUT Multicast

The network WITH Multicast
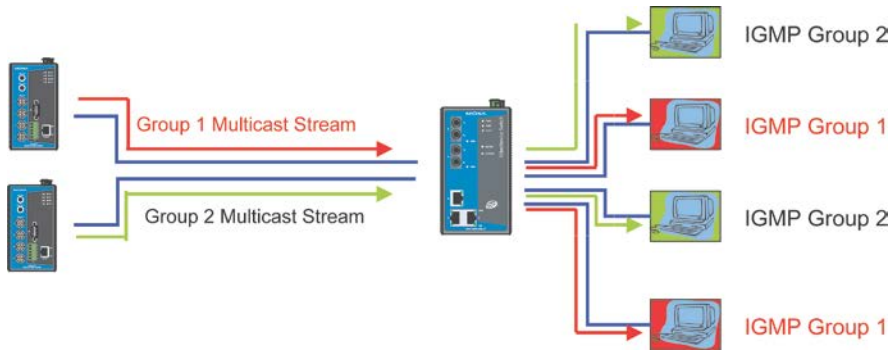
NOTE	The VPort 354 is the source that delivers the multicast video stream. To benefit from the Multicast protocol, the gateway or network switch should support the multicast filtering function (such as IGMP Snooping) so that the multicast stream is delivered correctly and precisely. To learn more about IGMP Snooping, refer to the Moxa EtherDeviceTM series Industrial Ethernet Switch user's manual.

Configuring Multicast Settings

Setting	Description	Default
Multicast group address	Multicast Group address for sending video stream.	239.128.0.100
Multicast video port	Video port number.	Channel 1: 5572 Channel 2: 5576 Channel 3: 5580 Channel 4: 5584
Multicast audio port	Audio port number.	Channel 1: 5574 Channel 2: 5578 Channel 3: 5582 Channel 4: 5586
Multicast TTL	Multicast-TTL (Time-to-live) threshold. There is a certain TTL threshold defined for each network interface or tunnel. A multicast packet's TTL must be larger than the defined TTL for that packet to be forwarded across that link.	128
Continuous Multicast Push	Enable PUSH control of the multicast video stream	Disabled

PES Header	PES Header includes some information related to I/O status, VMD, Power, Video, and Network. This information will help users monitor the VPort's status. This function is used to enable the PES Header to be attached to the multicast video stream.	Enabled

---

NOTE   Whenever you enable the VPort's IGMP Multicast stream, note the video/audio port number.

Accessible IP List

The VPort uses an IP address-based filtering method to control access to the VPort.
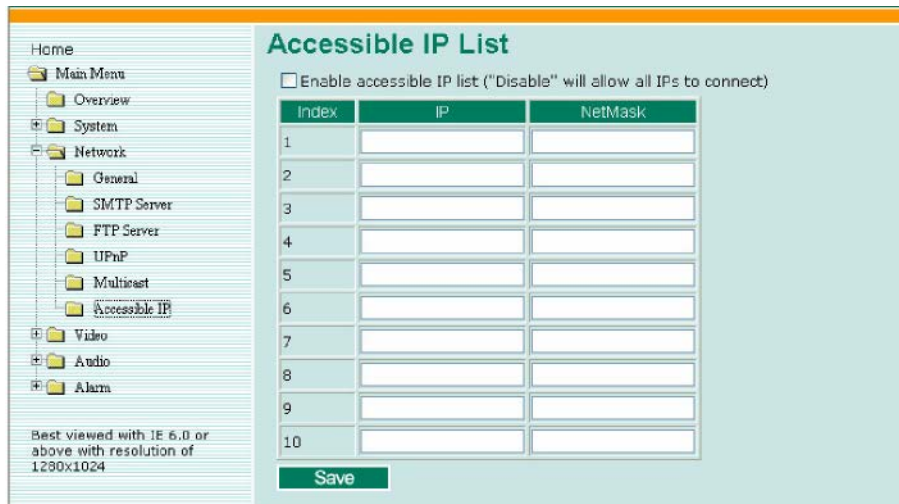
Accessible IP Settings allow you to add or remove "Legal" remote host IP addresses to prevent unauthorized access. Access to the VPort is controlled by IP address. That is, if a host's IP address is in the accessible IP table, then the host will be allowed access to the VPort. Administrators can allow one of the following cases by setting this parameter:

- Only one host with a specific IP address can access the VPort. Enter "IP address/255.255.255.255" (e.g., 192.168.1.1/255.255.255.255)
- Hosts on a specific subnet can access the VPort. Enter "IP address/255.255.255.0" (e.g., "192.168.1.0/255.255.255.0")
- Any host can access the VPort. Disable this function.

Refer to the following table for more configuration examples.

Allowable Hosts	Input Formats
Any host	Disabled
192.168.1.120	192.168.1.120/255.255.255.255
192.168.1.1 to 192.168.1.254	192.168.1.0/255.255.255.0
192.168.0.1 to 192.168.255.254	192.168.0.0/255.255.0.0
192.168.1.1 to 192.168.1.126	192.168.1.0/255.255.255.128
192.168.1.129 to 192.168.1.254	192.168.1.128/255.255.255.128

SNMP

The VPort 354 supports three SNMP protocols. The available protocols are SNMP V1, SNMP V2c, and SNMP V3. SNMP V1 and SNMP V2c use a community string match for authentication, which means that SNMP servers access all objects with read-only or read/write permissions using the community string public/private (default value). SNMP V3, which requires you to select an authentication level of MD5 or SHA, is the most secure protocol. You can also enable data encryption to enhance data security. SNMP security modes and security

levels supported by the VPort are shown in the following table. Select one of these options to communicate between the SNMP agent and manager.

Protocol Version	Security Mode	Authentication Type	Data Encryption	Method
SNMP V1, V2c	V1, V2c Read Community	Community string	No	Use a community string match for authentication
	V1, V2c Write/Read Community	Community string	No	Use a community string match for authentication
SNMP V3	No-Auth	No	No	Use account with admin or user to access objects
	MD5 or SHA	MD5 or SHA	No	Provides authentication based on HMAC-MD5, or HMAC-SHA algorithms. 8-character passwords are the minimum requirement for authentication.
	MD5 or SHA	MD5 or SHA	Data encryption key	Provides authentication based on HMAC-MD5 or HMAC-SHA algorithms, and data encryption key. 8-character passwords and a data encryption key are the minimum requirements for authentication and encryption.

Configuring SNMP Settings

The following figures indicate which SNMP parameters can be configured. A more detailed explanation of each parameter is given below the figure.
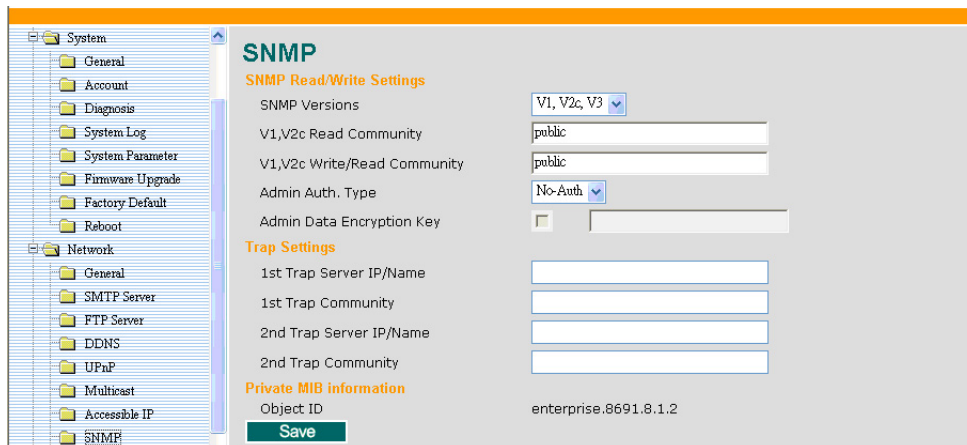
SNMP Read/ Write Settings

SNMP Versions

Setting	Description	Default
V1, V2c, V3	Select SNMP protocol versions V1, V2c, V3 to manage the switch	V1, V2c
V1, V2c	Select SNMP protocol versions V1, V2c to manage the switch	
V3 only	Select SNMP protocol versions V3 only to manage the switch	

V1, V2c Read Community

Setting	Description	Default
V1, V2c Read Community	Use a community string match for authentication, which means that the SNMP agent accesses all objects with read-only permissions using the community string public.	public (max. 30 characters)

V1, V2c Read/Write Community

Setting	Description	Default
V1, V2c Read/Write Community	Use a community string match for authentication, which means that the SNMP agent accesses all objects with read-only permissions using the community string public.	public (max. 30 characters)

For SNMP V3, there are two levels of privilege for different accounts to access the VPort. Admin privilege allows access and authorization to read and write MIB files. User privilege only allows reading the MIB file, but does not authorize writing to the file.

Root Auth. Type (For SNMP V1, V2c, V3 and V3 only)

Setting	Description	Default
No-Auth	Use admin. account to access objects. No authentication	No
MD5-Auth	Provide authentication based on the HMAC-MD5 algorithms. 8-character passwords are the minimum requirement for authentication.	No
SHA- Auth	Provide authentication based on the MAC-SHA algorithms. 8-character passwords are the minimum requirement for authentication.	No

Root Data Encryption Key (For SNMP V1, V2c, V3 and V3 only)

Setting	Description	Default
Enable	8-character data encryption key is the minimum requirement for data encryption. Maximum 30-character encryption key	No
Disable	No data encryption	No

User Auth. Type (For SNMP V1, V2c, V3 and V3 only)

Setting	Description	Default
No-Auth	Use account of admin or user to access objects. No authentication	No
MD5-Auth	Provide authentication based on the HMAC-MD5 algorithms. 8-character passwords are the minimum requirement for authentication.	No
SHA- Auth	Provide authentication based on the HMAC-SHA algorithms. 8-character passwords are the minimum requirement for authentication.	No

User Data Encryption Key (For SNMP V1, V2c, V3 and V3 only)

Setting	Description	Default
Enable	8-character data encryption key is the minimum requirement for data encryption. Maximum 30-character encryption key	No
Disable	No data encryption	No

Trap Settings

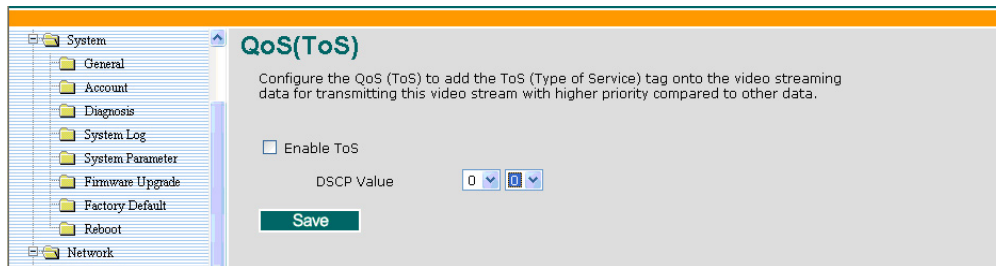| Setting	Description	Default
Trap Server IP/Name	Enter the IP address or name of the Trap Server used by your network.	No
Trap Community	Use a community string match for authentication; Maximum of 30 characters.	No

Private MIB information

The private SNMP Object ID of the VPort is the enterprise value: 8691.8.1.6. This number cannot be changed.

NOTE   The MIB file is MOXA-VPORT354-MIB.my. You can find it on the software CD or the download center of the Moxa website.

QoS (ToS)

Quality of Service (QoS) provides traffic prioritization capabilities to ensure that important data is delivered consistently and predictably. The VPort can inspect layer 3 ToS (Type of Service) information to provide a consistent classification of the entire network. The VPort's ToS capability improves your industrial network's performance and determinism for mission critical applications.
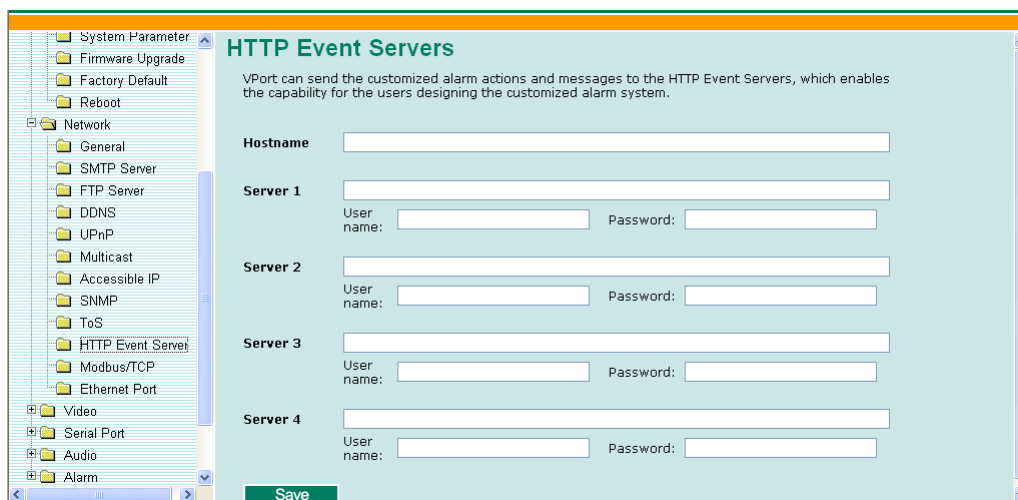

Setting	Description	Factory Default
Enable ToS	Enable the ToS for transmitting the video stream with the given priority	Disabled
DSCP Value	Set the mapping table with different ToS values	0, 0

NOTE   To configure the ToS values, map to the network environment settings for QoS priority service.

HTTP Event Server

The VPort can send the customized alarm actions and messages to the HTTP Event Servers, which allows users to design a customized alarm system.

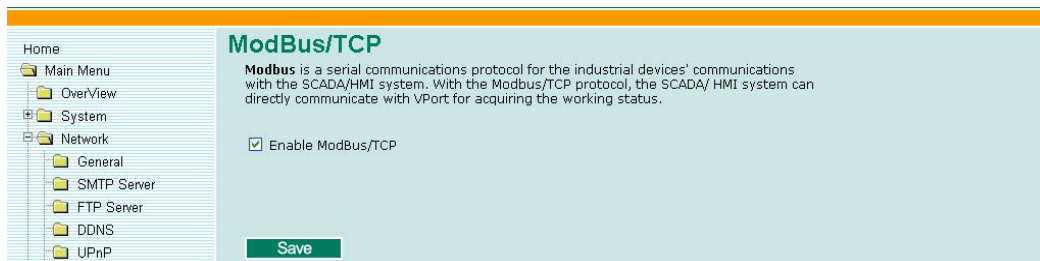| Setting	Description	Factory Default
Host Name	User-defined name for identification	None
Server 1, 2, 3, 4	The server's URL address with complete CGI commands Ex.	None

	http:// http event server:Port/CGI_Name	
User name	The account name for accessing the HTTP server	None
Password	The password for accessing the HTTP server	None

Once the Http Alarm is triggered, the VPort will send the following HTTP commands to the HTTP event servers.

```
GET CGI_Name?address=<Hostname or IP Address>&[Custom CGI] HTTP/1.0\r\n
User-Agent: VPort Encoder V1.1\r\n
[Authorization: Basic <Buse64(username:password)>\r\n]
Host: <HTTP Server IP Address>\r\n
Connection: Keep-Alive\r\n
\r\n
```

Modbus/TCP

Modbus is a serial communications protocol which is often used to connect a supervisory computer with a remote terminal unit (RTU) in supervisory control and data acquisition (SCADA) systems. To transmit Modbus over a TCP/IP network, a standard Modbus/TCP protocol is provided. With the support of the Modbus/TCP protocol, the SCADA/HMI system can directly communicate with the VPort to acquire its operational status.

Setting	Description	Factory Default
Enable Modbus/TCP	Enable the Modbus/TCP protocol	Enabled

NOTE For Modbus address table, please refer to the Modbus_Address_Define.pdf. You can find it on the software CD or the download center of the Moxa website.

Ethernet Port

The VPort support 2 Ethernet ports for cascade links and port redundancy.
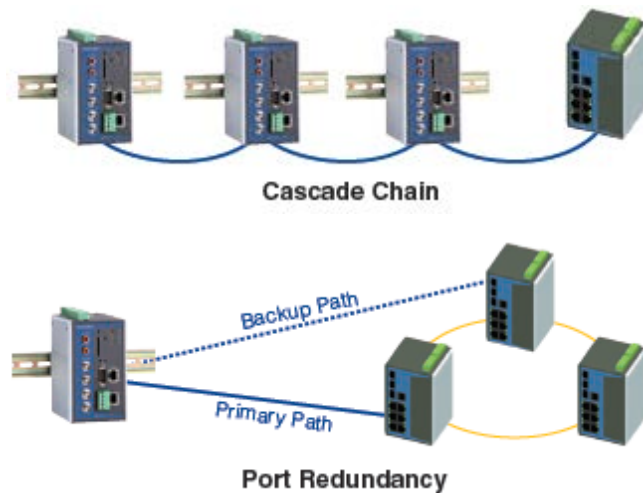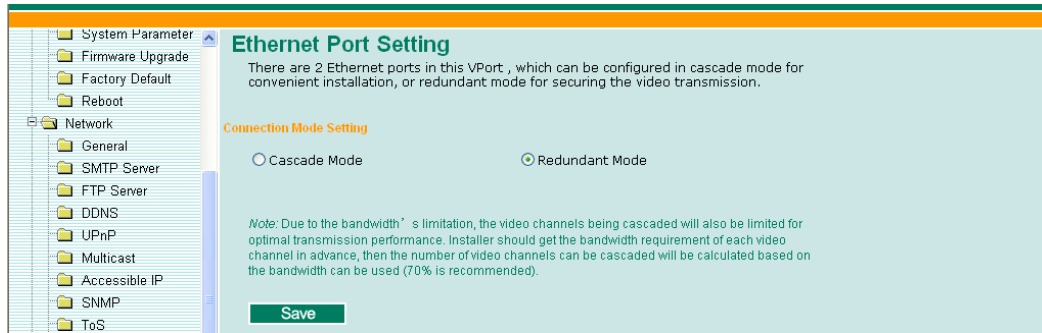
Cascade Chain

Port Redundancy

NOTE The 2 Ethernet ports on the VPort 354's front panel can be used as cascade links or to provide port redundancy. When used as cascade links, you will need to calculate the number of video streams in order to optimize the transmission bandwidth. Calculating the number of video streams is simple using the following formula:

Number of video streams that can be transmitted in cascade link = 100 × 0.8 (20% for the buffer) ÷ bit rate of one video streams Therefore, if the number of video streams that can be transmitted in the cascade link is 16, a total of 4 VPort 354 (16÷4) units are allowed to be cascaded.

Video

Image Settings
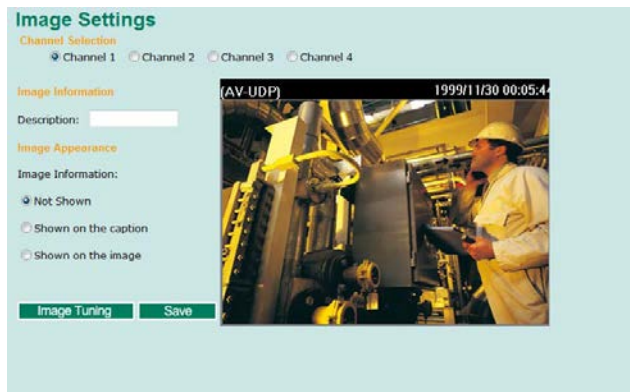
Image Information Setting

	Description	Default
Description (max. of 14 characters)	The customized description shown on the caption to identify this video camera.	None

Image Appearance Setting

	Description	Default
Image Information	To determine what style of image information is being shown. Includes **Not Shown and Show on the Caption**	Not Shown

Image Tuning

An Image Tuning button is available for the administrator to fine tune image attributes. After clicking this button, a configuration window will pop up. You may configure **Brightness, Contrast, Saturation**, and **Hue**.
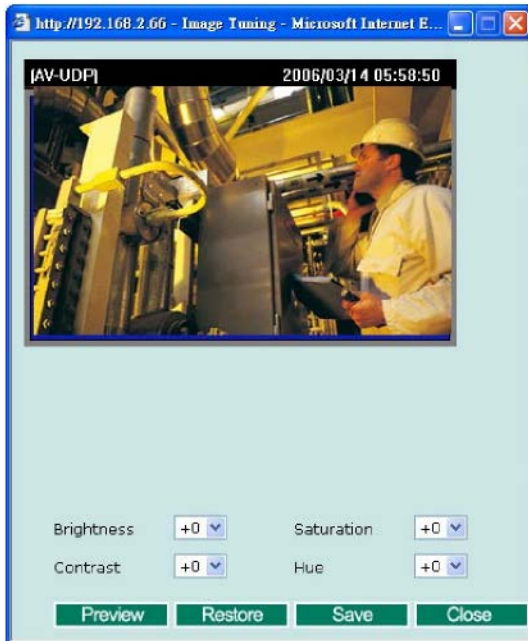
Camera Modulation

The VPort supports both NTSC and PAL camera modulations. The Administrator can use automatic sensing by selecting **NTSC** or **PAL**.

NOTE   Changing the modulation requires resetting the server to detect the camera. Please ensure that your configurations are saved before resetting the server.

Video Performance

The VPort 354 can send the MPEG4 and MJEPG video streams simultaneously. But both video streams are will have the same image resolution and frame rate. The administrator can set up the **Resolution, Max. Frame Rate**, **Video Quality**, and **Enable Snapshot** in this web page.
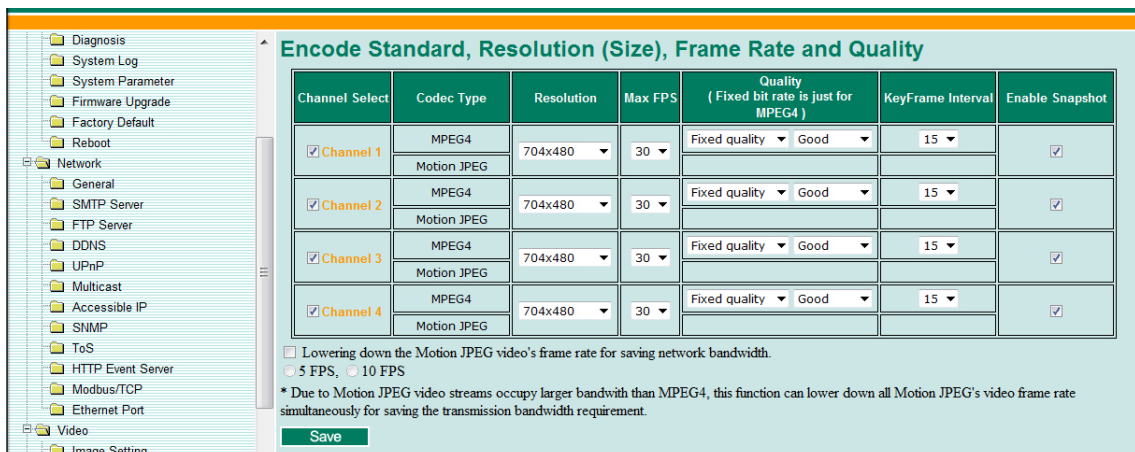
Channel Select

Setting	Description	Default
Enable or disable the video channel	The administrator can enable or disable the video channel to show or not show the video image.	Enabled

Resolution

The VPort 354 supports 5 different resolutions: 4CIF, 2CIF, CIF, 2/3 CIFand QCIF.

Setting	Description	Default
Select the image size	5 image resolutions (size) are provided. The administrator can choose each option with NTSC or PAL modulation.	704 x 480 in NTSC or 704 x 576 in PAL

Resolution	NTSC	PAL
4CIF	704 x 480	704 x 576
2CIF	640 x 240	640 x 288
CIF	352 x 240	352 x 288
2/3 CIF	224 x 160	224 x 192
QCIF	112 x 120	112 x 144

Max. FPS (Frame per second)

Setting	Description	Default
Maximum frame rate	The maximum frame rate is different to accommodate different modulations of video input. Administrators can also set up the maximum frame rate to optimize bandwidth use. NTSC: 1, 3, 5, 10, 15, 20, 25, 30 PAL: 1, 3, 5, 8, 12,16, 20, 25	30 for NTSC, 25 for PAL

NOTE   Frame rate (frames per second) is determined by the resolution, image data size (bit rate), and transmission traffic status. The Administrator and users can check the frame rate status in the **FPS Status** on the VPort's web homepage.

Video Quality Control

Video Quality Control is used to optimize the bandwidth of the MPEG4 video stream. There are 2 modes for video quality control.

Setting	Description	Default
Fixed bit rate (Only for MPEG4)	The administrator can fix the bandwidth to tune the video quality and FPS (frames per second) to the optimum combination. Options include 600Kbps, 1200Kbps, 1800Kbps, 2400Kbps, 30000Kbps, 36000Kbps, and 4200Kbps Different resolutions have different bandwidth parameters. The VPort will tune the video performance according to the bandwidth. A higher bandwidth means better quality and higher FPS.	4200Kbps in 4CIF resolution
Fixed Quality	The administrator can set the image quality to one of 5 standards: **Medium, Standard, Good, Detailed,** or **Excellent**. The VPort will tune the bandwidth and FPS automatically to the optimum combination.	Good

NOTE   The image quality, FPS, and bandwidth are influenced significantly by network throughput, system network bandwidth management, applications the VPort runs (such as VMD), how complicated the image is, and the performance of your PC or notebook when displaying images. The administrator should take into consideration all of these variables when designing the video over IP system, and when specifying the requirements for the video system.

Key Frame Interval

With MPEG4, the key frame plays an important role in deciding the video quality. The key frame interval indicates how many frames are required for the VPort to get a key frame. A smaller "key frame interval" means better video quality, but the bandwidth will be increased since the key frame image size is larger than other frames.

Setting	Description	Default
Key frame interval (Only for MPEG4)	Administrators can set up the key frame interval to determine the video quality. Options include 5, 15, 30, 60, 90	15

NOTE	A large "Key frame interval" can reduce the bit rate, but will cause the image to be corrupted longer if there is packet loss during transmission.

Enable Snapshot

Setting	Description	Default
Enable or disable the snapshot image	To get the snapshot image, the VPort needs to capture one image frame from the video stream, which may decrease the total FPS of the video stream. The administrator can decide if this snapshot function should be used.	Disabled
Lowering FPS of MJPEG to reduce bandwidth consumption	When a channel is selected, MPEG4 and MJPEG video streams are of identical resolution and FPS. MJPEG video streams require more bandwidth but user can enable this function to select either 5 FPS or 10 FPS MJPEG streams to reduce bandwidth consumption.	Disabled

Camera Control

The VPort supports PTZ (PAN/TILT/ZOOM) motorized camera control via an RS-232, RS-422, or RS-485 PTZ/COM port. Before setting up camera control, the administrator should first connect the PTZ camera to the VPort. (Please refer to Chapter 2 for the PTZ port's wiring specifications.)

Interface mode

Setting	Description	Default
Select the Control port	There are 2 serial ports on the VPort 354. One is the PTZ port, the other is the COM port. The administrator should decide which serial port is used for connecting this camera's PTZ control	PTZ port

Camera ID

Setting	Description	Default
Camera ID	Each PTZ camera has an ID to identify which PTZ camera is in the multi-drop connection. To connect to the PTZ camera, the VPort should first identify its ID.	1

Setting Up a Preset Position

Administrators can use the **Preset Position** function to set up the behavior of the PTZ camera in advance, and then users with camera control privilege can move the camera's lens to a preset position without the need to control the pan, tilt, and zoom buttons on the PTZ control panel.
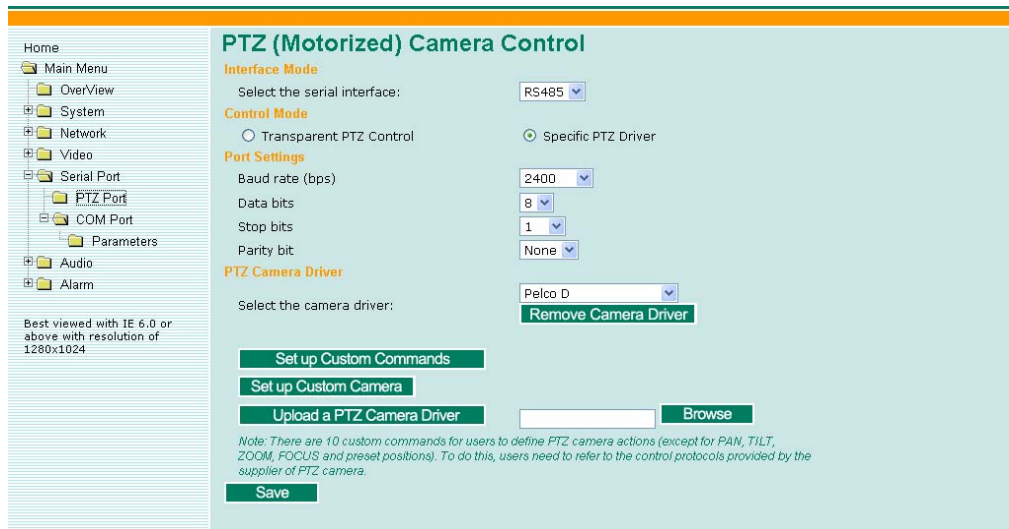
Setting	Description	Default
Position Alias	Customized name of the preset position	None
Preset Position	25 preset positions are available for the VPort.	01
Go to	The administrator can use "Go to" to select or test the preset position before the save.	Select
Last Position	This column shows the current preset position of this PTZ camera.	None
Set Home	This button can decide the Home position of PTZ control	N/A
ZOOM Auto Focus Auto IRIS	These buttons are to fine tune the PTZ camera's lens positions.	N/A
TILT SPEED PAN SPEED ZOOM SPEED	These items are used to change the speed of TILT, PAN and ZOOM.	1

Serial Port

The VPort 354 has 2 serial ports. One is the PTZ port and the other is the COM port. Both ports can be set for RS-232, RS-422, or RS-485. Refer to the Quick Installation Guide or Chapter 2 for the connector type and pin assignment.

PTZ port

This PTZ port is used to control a PTZ camera.

Interface mode

Setting	Description	Default
Select the serial interface	The PTZ port supports 3 serial interfaces, although only one interface can be used at a time. Depending on the interface used by the attached device, administrators must set the **Interface mode** to either RS-232, RS-422, or RS485.	RS485

Control mode

The VPort supports 2 PTZ control modes: "Transparent PTZ" control and "PTZ driver."

Transparent PTZ Control:

Select Transparent PTZ Control to control the PTZ camera with a legacy PTZ control panel or joystick connected to the CCTV system. The application is illustrated in the following figures.
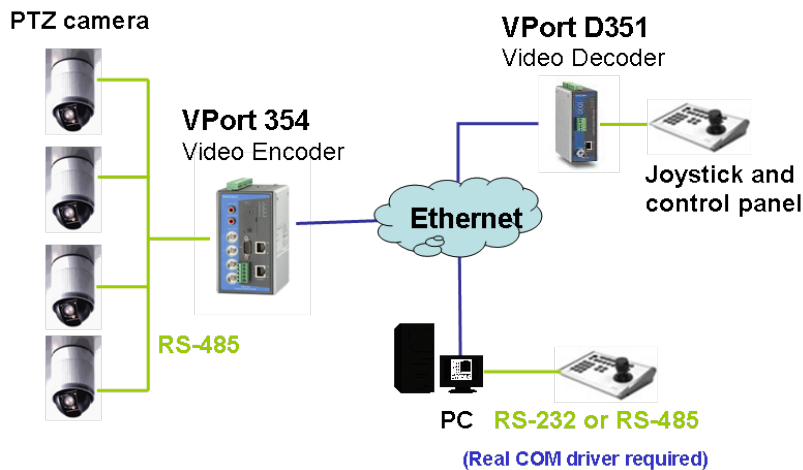
In Transparent PTZ Control mode, the serial data from the legacy PTZ control panel or joystick will be transformed into IP packets for transmission over a TCP/IP network, and once the VPort video encoder receives these IP packets, the PTZ control commands will be transformed back to serial data format for controlling the PTZ camera's action. You do not need to install a PTZ driver to control the PTZ camera's action, which means that a large variety of different PTZ cameras can be used with the VPort video encoders and their supported PTZ control panel or joystick.

NOTE	The legacy PTZ control panel or joystick should be connected to the VPort's PTZ port or the COM port of a PC. But, when it is connected to a PC's COM port, you will need to install a real COM driver on the PC and map the COM ports. For detailed information, refer to the VPort SDK PLUS-ActiveX Control SDK for the Real COM driver and COM port mapping function sample codes. You can download this SDK from Moxa's website (www.moxa.com).

Specific PTZ Driver:

Usually, a PTZ driver is required to control a PTZ camera over a TCP/IP network. This is because each PTZ camera supplier has their own proprietary PTZ control protocol. VPort video encoders support all popular PTZ drivers for controlling PTZ cameras.

Setting	Description	Default
Control Mode	Select the PTZ control mode in **Transparent PTZ Control** or **PTZ Driver**	PTZ driver

The configurations described below are only available in PTZ Driver mode.

Port Settings

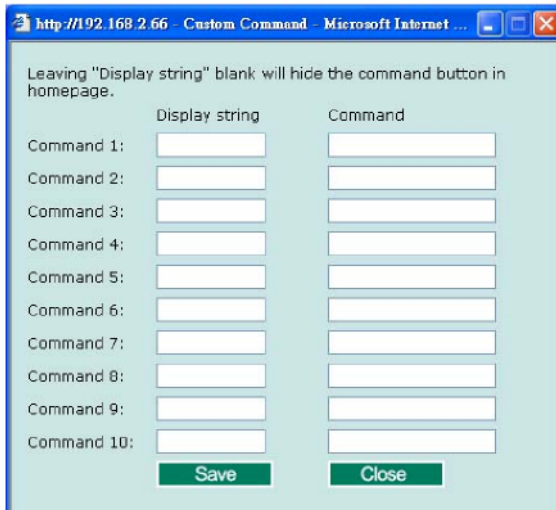| Setting	Description	Default
Baud rate (bps)	The baud rate specified by the PTZ camera's serial communication specs.	2400
Data bits		8
Stop bits	The parameters used to define the serial communication.	1
Parity bits		None

PTZ Camera Drivers

VPort products come with PTZ camera drivers for some of the popular PTZ cameras. Administrators can select the correct PTZ driver in the "Select the Camera Driver" menu. If the attached PTZ camera is not supported by the VPort, administrators can use the Custom Camera function to enter the proprietary commands for pan, tilt, zoom, and focus control.

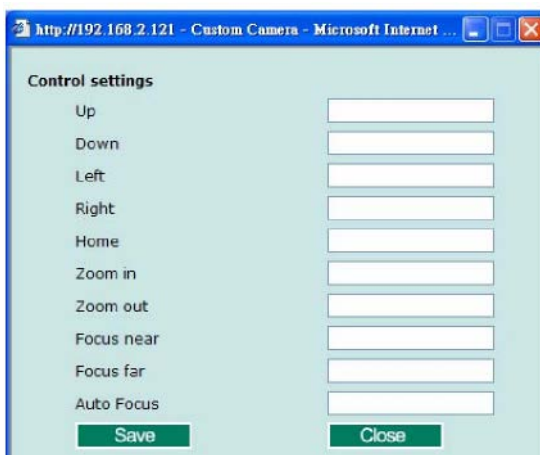| Setting	Description	Default
Select the camera driver	Use the built-in PTZ drivers, including 1. Custom Camera 2. Pelco D 3. Pelco P 4. Dynacolor DynaDome 5. Cohu	Pelco D

Set Up Custom Commands

VPort products provide 10 custom commands in addition to the general pan, tilt, zoom, and preset functions, which are also shown on the PTZ Control Panel. Administrators can click on **Setup Custom Commands** to configure the commands, and refer to the manual enclosed with the attached PTZ camera to set up frequently-used functions. The **Command** should be entered in ASCII format. The VPort will translate the commands into binary code and then send the data out through the serial port. For instance, the text string 81 01ABCDEF will be translated into five bytes of hexadecimal: 81, 01, AB, CD, and EF. The maximum length of a command string is 60, which is equivalent to 30 hexadecimal bytes. The **Display string** is for the text on the command buttons and should be less than 8 characters. If **Custom Camera** is selected, there will be more commands for PTZF that relate to custom camera.

Setting Up a Custom Camera

If the PTZ camera's driver is not in the list, the administrator can select the custom camera from the **Select Camera driver** menu to program the PTZ camera with ASCII code. A custom camera window will pop up when the **Setup Custom Camera** button is clicked. Input the ASCII code into this window. **Port Settings (Data bits, Stop bits, and Parity bits)** are for the serial communication parameters and **Control Settings** are for programming the **TILT (Move Up, Move Down), PAN (Move Left, Move right), HOME, ZOOM (Zoom in, Zoom out)** and **FOCUS (Focus near, Focus Far)** actions.

NOTE	The control protocols are available from the PTZ camera's supplier. You will need to get the protocols from the supplier before programming the PTZ camera.

Uploading a PTZ Camera Driver

In addition to the PTZ camera drivers and custom camera functions supported by the VPort, an alternative user-friendly **Upload a PTZ Camera Driver** function is available for implementing the PTZ camera control. Moxa will release new PTZ camera drivers to Moxa's website as they become available. Administrators can click on **Browse** to upload the new PTZ camera drivers to the VPort. In addition, the administrator can also remove the PTZ driver by selecting the PTZ driver and clicking the **Remove Camera Driver** button.

COM port

The COM port has 2 uses: PTZ control and serial device control.

NOTE	Currently, serial device control mode is not supported until firmware V2.0.

Interface mode

Setting	Description	Default
Select the serial interface	The COM port supports 3 serial interfaces, although only one interface can be used at a time. Depending on the interface used by the attached device, administrators must set the **Interface mode** to either RS-232, RS-422, or RS-485.	RS485

Function

This COM port supports 2 functions: **Serial Device Control** and **PTZ Camera Control**. Each function has different configurations.

- Serial Device Control: The VPort supports 3 operation modes when using serial device control mode over a TCP/IP network: **Real COM Mode, TCP Server Mode,** and **TCP Client Mode**.

  ➢ **Real COM Mode:** The VPort is equipped with COM drivers that work with Windows Vista/XP/2000 systems. The driver establishes a transparent connection between the host and serial device by mapping the IP:Port of the VPort's COM port to a local COM port on the host computer. The important point is that Real COM Mode allows users to continue using RS-232/422/485 serial communication software that was written for pure serial communication applications. The driver intercepts data sent to the host's COM port, packs it into a TCP/IP packet, and then redirects it through the host's Ethernet card. At the other end of the connection, the VPort's COM port accepts the Ethernet frame, unpacks the TCP/IP packet, and then transparently sends it to the appropriate serial device attached to the VPort's COM port.

  ➢ **TCP Server Mode:** In TCP Server mode, the VPort provides a unique IP:Port address on a TCP/IP network. The VPort waits passively to be contacted by the host computer, allowing the host computer to establish a connection with and get data from the serial device.

  ➢ **TCP Client Mode:** In TCP Client mode, the VPort can actively establish a TCP connection to a pre-defined host computer when serial data arrives. After the data has been transferred, the VPort can automatically disconnect from the host computer by using the TCP alive check time or Inactivity timeout settings.

NOTE	These VPort COM port operation modes only support one connection at the same time.

NOTE	For more information on serial-to-Ethernet communications, refer to Moxa's NPort Device Server products.

- PTZ Camera Control: This **PTZ Camera Control** function is the same as the PTZ port. Refer to the introduction to the configuration of the PTZ Port.

Function

Setting	Description	Default
Select the COM port function	Select the application purpose of this COM port: **Serial Device Control** or **PTZ Camera Control**	Serial Device Control

Port Settings (only available in Serial Device Control)

Setting	Description	Default
Operation Mode	Select the serial device control operation modes via the TCP/IP network: **Real COM Mode, TCP Server Mode, TCP Client Mode**	Real COM Mode
Inactivity time (Only available in TCP Server Mode, TCP Client Mode)	The VPort automatically closes the TCP connection if there is no serial data activity for the specified time (0 to 65535 milliseconds). Set the time interval to 0 to disable this feature.[D6] After the connection is closed, the VPort starts listening for another host's TCP connection.	0

Data Packing (only available in Serial Device Control)

Setting	Description	Default
Delimiter 1 Delimiter 2	Once the VPort receives both delimiters through its serial port, it immediately packs all data currently in its buffer and sends it to the VPort's Ethernet port. The value of the delimiter can be set from 00 to FF. In addition, both delimiters can be enabled or disabled.	Disabled
Force Transmit	This parameter defines the time interval during which the VPort fetches the serial data from its internal buffer. If data is incoming through the serial port, the VPort stores the data in the internal buffer. The VPort transmits data stored in the buffer via TCP/IP, but only if the internal buffer is full or if the force transmit time interval reaches the time specified under Force Transmit timeout. The time interval can be set between 0 and 65535 milliseconds. Set the time interval to 0 to disable force transmit timeout.	0

NOTE	Delimiter 2 is optional. If left blank, then Delimiter 1 alone trips clearing of the buffer. If the size of the serial data received is greater than 1 KB, the VPort will automatically pack the data and send it to the Ethernet. However, to use the delimiter function, you must at least enable Delimiter 1. If Delimiter 1 is left blank and Delimiter 2 is enabled, the delimiter function will not work properly.

TCP Server Mode (only available in Serial Device Control and TCP Server Mode)

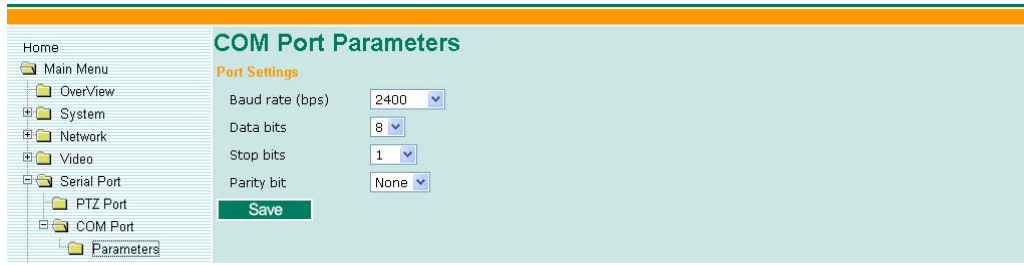| Setting	Description	Default
Local TCP port	The TCP port that the VPort uses to listen to connections, and that other devices must use to contact the VPort. The setting value should be between 1 and 65535.	4001

TCP Client Mode (only available in Serial Device Control and TCP Client Mode)

Setting	Description	Default
Destination IP address	Allows the VPort to connect actively to the remote host whose address is set by this parameter.	None
Designated Local port	TCP port number for the connection. It can also be enabled or disabled.	Disabled
TCP Connect On	**Startup:** A TCP connection will be established on startup, and will remain active indefinitely. **Any Character:** A TCP connection will be established when any character is received from the serial interface, and will remain active indefinitely.	Startup

NOTE	To avoid influencing the video performance, it is strongly recommended that the VPort's COM port should be used for simple serial control and data transmission, such as a card reader.

Parameters

Some COM port parameters need to be configured.


Port Settings

Setting	Description	Default
Baud rate (bps)	The baud rate specified by the PTZ camera's serial communication specs.	2400
Data bits	The parameters used to define the serial communication.	8
Stop bits		1
Parity bits		None

Audio

Audio Source

The VPort supports real-time and synchronous video/audio transmission. Administrators need to select the correct audio input type to avoid audio input distortion.

Setting	Description	Default
Audio Source	MIC-in (microphone) and Line-in (voice amplifier) options are available.	Line in
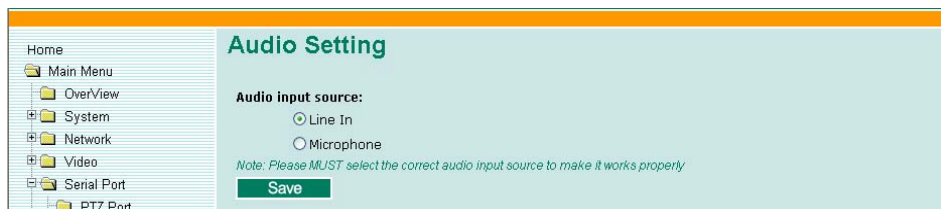
Alarm

System Alarm

In addition to the LED indicators, three kinds of system alarms are provided by the VPort 354 for notifying the system operations administrator.
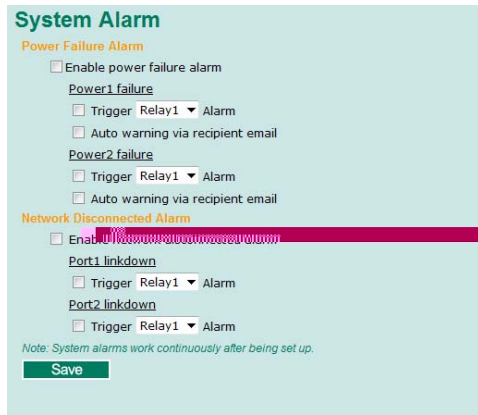
Alarm Type	Triggered Condition	Triggered Action
Power Failure	Power 1 failure	Relay
	Power 2 failure	Email
Network Disconnected	Network disconnected	Relay

Power Failure Alarm

Setting	Description	Default
Enable power failure alarm	Enable or disable power failure alarm.	Disabled

Power 1 Failure/Power 2 Failure

Setting	Description	Default
Trigger Relay alarm	Enable or disable the triggering of **Relay 1** or **Relay 2** alarms.	Disabled
Auto warning via recipient email	Enable or disable the action to send a warning message by recipient's email, which is set up on the **Network/SMTP Server** configuration page.	Disabled

Network Disconnected Alarm

Setting	Description	Default
Enable network disconnected alarm	Enable or disable network disconnected alarm.	Disabled
Trigger Relay alarm	Enable or disable the triggering of **Relay 1** or **Relay 2** alarms.	Disabled

| NOTE	Since several alarms can be set up to trigger the VPort's relays, the administrator should configure these alarms carefully in case a relay message is read incorrectly.

Event Alarm

Four kinds of event alarm are provided by the VPort for building an intelligent video surveillance system.

Alarm Type	Triggered Condition	Triggered Action
Video Motion Detection (VMD)	1. VMD 1 2. VMD 2 3. VMD 3	1. Relay 2. Email 3. FTP 4. HTTP Event Server
Digital Inputs	1. DI 1 2. DI 2	1. Relay 2. Email 3. FTP 4. HTTP Event Server
Video Loss	Video signal is lost	1. Relay 2. Email 3. HTTP Event Server
Sequential Snapshot	Enable sequential snapshot	1. Email 2. FTP

NOTE   Event alarms for VMD are supported firmware version V2.0 and later.

Basic
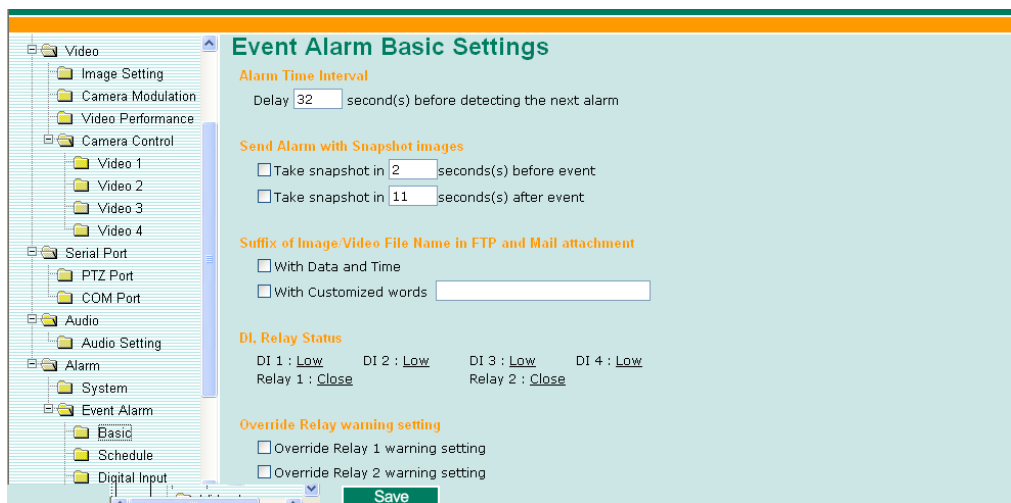
Alarm Time Interval

Setting	Description	Default
Delay second(s) before detecting the next alarm	Set the minimum time interval before another event alarm is triggered.	32 seconds (10 to 999 seconds)

NOTE   The delay before triggering the next alarm cannot be less than the time needed to take a snapshot after an event (post-event image).

Send Alarm with Snapshot images

Setting	Description	Default
Take snapshot	A snapshot image is taken this number of	2 seconds

seconds(s) before the event	seconds before the event alarm is triggered.	(from 1 to 6 seconds)
Take snapshot seconds(s) after the event	A snapshot image is taken this number of seconds after the event alarm is triggered.	11 seconds (from 1 to 999 seconds)

NOTE VPort products will take 3 JPEG snapshot images: VPRE.JPG (pre-event), VTRG.JPG (the moment of event) and VPOS.JPG (post-event) for the video channel when the trigger condition is met. The three snapshots can also be downloaded by Email and FTP.

Suffix of Image File Name in FTP and Mail attachment

The snapshot images can be sent either by email or FTP. Administrators can add a suffix to the filename of each JPEG snapshot image to make it easier to identify the files when using FTP to download the snapshots.

Setting	Description	Default
With Date and Time	Enable or disable adding the date and time to the filename.	Disabled
With Customized words	Enable or disable adding some additional custom text to the filename to identify the snapshot image.	Disabled

DI, Relay Status

Administrators can check the current DI and Relay status of the VPort in the "DI, Relay Status" section on the "Event Alarm Basic Settings" page. Two options are available to return the relay's status back to the system defaults. To enable the function, check the **Override Relay 1 warning** setting and **Override Relay 2 warning** setting boxes, and then click on **Save**.

NOTE The relays will not be triggered when the **Override Relay 1 warning setting** and **Override Relay 2 warning setting** boxes are checked. Un-check these 2 boxes to ensure that the relays will trigger.

Schedule

A schedule is provided to set event alarms for daily security applications.
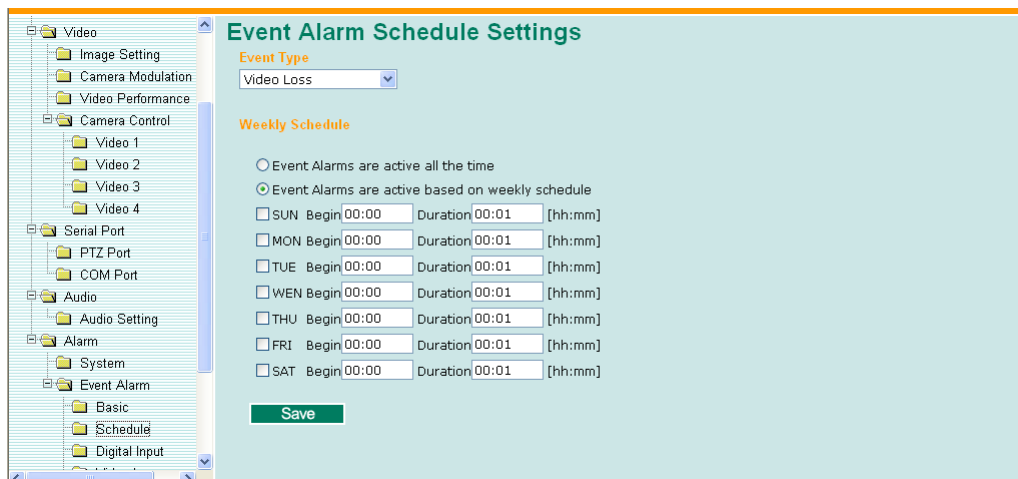
Event Type

Setting	Description	Default
Video Loss, Digital Input, CGI Event, and Sequential Snapshot	Set up the schedule of each kind of event type.	Video Loss

Weekly Schedule

Setting	Description	Default
Event Alarms are active all the time	Select the option "Event Alarms are active all the time"	Event Alarms are active based on a weekly schedule
Event Alarms are active based on a weekly schedule	Select to operate event alarms on a weekly schedule.	

NOTE   The applications described in the following sections will only work properly if either **Event Alarms are active all the time** or **Event Alarms are active based on weekly schedule** is Selected.

Setting	Description	Default
□Sun □Mon □Tue □Wed □Thu □Fri □Sat	Select the weekday for scheduling event alarms.	None
Begin 00:00	Set the start time of the event alarm.	00:00
Duration 00:00	Set the duration for the event alarm to be active.	00:00

NOTE   Administrators can use the following steps to set up an event schedule:
1. Select Event Type
2. Enable "Event Alarms are active based on weekly schedule"
3. Select the weekday
4. Set the start time
5. Set the duration this event will be active.
6. Save

Video Motion Detection

Video Motion Detection (VMD) is an intelligent event alarm for video surveillance network systems. With the 3 area-selectable VMDs and sensitivity/percentage tuning, administrators can easily set up the VMD alarm to be active 24 hours a day, 7 days a week.

Setting	Description	Default
Enable VMD alarm	Enable or disable the Video Motion Detection alarm	Disabled
Show alert on the image when VMD is triggered	Enable or disable to show the alert, which is a red squre frame, on the video image for the VMD alarm notificaiton	Disabled
Chennel Selection	Select the Channel 1, 2, 3 or 4 to setup the VMD alarm	Channel 1

NOTE   Once the Show alert on the image when VMD is triggered is enabled, the red frames that appear on the homepage image indicate the size of the VMD window set up by the administrator

Setup a VMD Alarm

Setting	Description	Default
Enable	Enable or disable the VMD1, 2, and 3	Disabled
Window	The name of each VMD window	None
Percent	The minimum size of the image change to trigger the VMD. Set a smaller percentage to make it easier to trigger the VMD.	80
Sensitive	The measurable difference between two sequential images to trigger VMD. Set a larger sensitivity to make it easier for the VMD to be triggered.	1

NOTE   Once completing the configuration of Setup a VMD Alarm, please click the Save button under the Sensitive.

Trigger Conditions and Actions

Administrators can set up triggers for each VMD, including **Trigger Relay1 alarm, Trigger Relay2 alarm, Send snapshot image via E-mail, Send snapshot image via FTP**, and **Send Message via HTTP Event servers**.

Setting	Description	Default
Trigger Relay1 alarm	Once this DI is triggered, the Relay1 alarm will be activated	Disabled
Trigger Relay1 alarm	Once this DI is triggered, the Relay1 alarm will be activated	Disabled
Send snapshot image via E-mail	Once this DI is triggered, the VPort will send the snapshot images set in the **Event Alarm/Basic** page to the E-mail addresses, which are set in the **Network/ SMTP Server** page.	Disabled
Send snapshot image via FTP	Once this DI is triggered, the VPort will send the snapshot images set in the **Event Alarm/Basic** page to the FTP server, which are set in the **Network/ FTP Server** page.	Disabled
Send message via HTTP Event Servers	Once this DI is triggered, the VPort will send the message set in **HTTP Action Setting** to the HTTP event servers, which are set in the **Network/ HTTP Event Server** page.	Disabled

HTTP Action Setting

Setting	Description	Default
Server 1, 2, 3, 4	Select the HTTP event server for sending the HTTP action	Disabled
Blank column	Administrators can customize the message sent to the HTTP event sever in this column	None

Digital Input

Two digital inputs are provided by the VPort for linking with alarm detection devices, such as sensors.

Setting	Description	Default
Enable digital input alarm	Enable or disable the digital input alarm.	Disabled

Trigger Conditions

Setting	Description	Default
High	The DI is always in the "High" state after an alarm is detected.	Disabled
Low	The DI is always in the "Low" state after an alarm is detected.	Enabled
Rising	The DI works from state "Low" to state "High" and then back to state "Low" when an alarm is detected.	Disabled
Falling	The DI works from state "High" to state "Low" and then back to state "High" when an alarm is detected.	Disabled

NOTE Please refer to Chapter 1 to see the DI specifications.

Trigger Actions

Setting	Description	Default
Trigger Relay1 alarm	Once this DI is triggered, the Relay1 alarm will be activated	Disabled
Trigger Relay1 alarm	Once this DI is triggered, the Relay1 alarm will be activated	Disabled
Send snapshot image via E-mail	Once this DI is triggered, the VPort will send the snapshot images set in the **Event Alarm/Basic** page to the E-mail addresses, which are set in the **Network/ SMTP Server** page.	Disabled
Send snapshot image via FTP	Once this DI is triggered, the VPort will send the snapshot images set in the **Event Alarm/Basic** page to the FTP server, which are set in the **Network/ FTP Server** page.	Disabled
Send message via HTTP Event Servers	Once this DI is triggered, the VPort will send the message set in **HTTP Action Setting** to the HTTP event servers, which are set in the **Network/ HTTP Event Server** page.	Disabled

HTTP Action Setting

Setting	Description	Default
Server 1, 2, 3, 4	Select the HTTP event server for sending the HTTP action	Disabled
Blank column	Administrators can customize the message sent to the HTTP event sever in this column	Blank

Snapshot Image

Setting	Description	Default
Channel 1, 2, 3, 4	Select the snapshot image from channel 1, 2, 3, or 4	Disabled

Video Loss

The Video Loss event means that the VPort cannot detect the analog video signal.

Video Loss

☐ Enable video loss alarm

Video Loss Trigger Actions

Channel	Trigger Action	HTTP Action Setting
Channel 1	☐ Trigger Relay1 alarm ☐ Trigger Relay2 alarm ☐ Send snapshot image via E-mail ☐ Send snapshot image via FTP ☐ Send message via HTTP Event Servers	☐ Server1 ☐ Server2 ☐ Server3 ☐ Server4
Channel 2	☐ Trigger Relay1 alarm ☐ Trigger Relay2 alarm ☐ Send snapshot image via E-mail ☐ Send snapshot image via FTP ☐ Send message via HTTP Event Servers	☐ Server1 ☐ Server2 ☐ Server3 ☐ Server4
Channel 3	☐ Trigger Relay1 alarm ☐ Trigger Relay2 alarm ☐ Send snapshot image via E-mail ☐ Send snapshot image via FTP ☐ Send message via HTTP Event Servers	☐ Server1 ☐ Server2 ☐ Server3 ☐ Server4
Channel 4	☐ Trigger Relay1 alarm ☐ Trigger Relay2 alarm ☐ Send snapshot image via E-mail ☐ Send snapshot image via FTP ☐ Send message via HTTP Event Servers	☐ Server1 ☐ Server2 ☐ Server3 ☐ Server4

Note: HTTP Action Setting allows the VPort sending the customized alarm messages to the HTTP Event Server when the event is triggered. Please refer to URL syntax being defined in RFC 1738 and the customer-defined commands for writing this setting with 100 characters.

Save

Video Loss Trigger Actions

Setting	Description	Default
Enable video loss alarm	Enable or disable video loss alarm.	Disabled
Channel	Select the Channel 1, 2, 3, 4	Disabled
Trigger Relay1 alarm	Once the Video Loss alarm is triggered, the Relay1 alarm will be activated	Disabled
Trigger Relay2 alarm	Once the Video Loss alarm is triggered, the Relay2 alarm will be activated	Disabled
Send snapshot image via FTP	Once the Video Loss alarm is triggered, the VPort will send the snapshot images set in the **Event Alarm/Basic** page to the FTP server, which are set in the **Network/ FTP Server** page.	Disabled
Send message via HTTP Event Servers	Once the Video Loss alarm is triggered, the VPort will send the message set in the **HTTP Action Setting** to the HTTP event servers, which are set in the **Network/ HTTP Event Server** page.	Disabled

HTTP Action Setting

Setting	Description	Default
Server 1, 2, 3, 4	Select the HTTP event server for sending the HTTP action	Disabled
Blank column	Administrators can customize the message sent to the HTTP event sever in this column	Blank

CGI Event

The VPort can accept 5 CGI commands, which are sent from external devices, such as ioLogik series Ethernet I/O, to be the event alarms.

NOTE	The VPort only can accept the CGI commands that follow the VPort's CGI commands format.

CGI Event Trigger Actions

Setting	Description	Default
Enable CGI Event alarm	Enable or disable CGI Event alarm.	Disabled
Event	Select the Event 1, 2, 3, 4, 5	Disabled
Trigger Relay1 alarm	Once this CGI Event is triggered, the Relay1 alarm will be activated	Disabled
Trigger Relay2 alarm	Once this CGI Event is triggered, the Relay2 alarm will be activated	Disabled
Send snapshot image via FTP	Once this CGI Event is triggered, the VPort will send the snapshot images set in the **Event Alarm/Basic** page to the FTP server, which are set in the **Network/ FTP Server** page.	Disabled
Send message via HTTP Event Servers	Once this CGI Event is triggered, the VPort will send the message set in the **HTTP Action Setting** to the HTTP event servers, which are set in the **Network/ HTTP Event Server** page.	Disabled

HTTP Action Setting

Setting	Description	Default
Server 1, 2, 3, 4	Select the HTTP event server for sending the HTTP action	Disabled
Blank column	Administrators can customize the message sent to the HTTP event sever in this column	Blank

Snapshot Image

Setting	Description	Default
Channel 1, 2, 3, 4	Select the snapshot image from channel 1, 2, 3, or 4	Disabled

Alarm/Event Alarm/Sequential Snapshot

With this feature, the VPort can upload snapshots periodically to an external E-mail or FTP server as a live video source. Use the Send sequential snapshot image every seconds option to set the time interval. The interval can be set to any number between 1 and 9999 seconds.

Setting	Description	Default
Enable Sequential Snapshots	Enable or disable the Sequential Snapshots.	Disabled
Send sequential snapshot image every seconds	Set the time interval of each snapshot image.	30 seconds (from 1 second to 30 seconds)
Send Snapshot image via E-mail	Choose how to send the snapshot images.	Send Snapshot image via Email
Send Snapshot image via FTP		

Sequential Snapshots

Channel Select	Send Interval(Sec.)	Send Method
☐ Channel 1	Send sequential snapshot image every 30 [1~30] second(s)	⦿ Send snapshot image via E-mail ○ Send snapshot image via FTP
☐ Channel 2	Send sequential snapshot image every 30 [1~30] second(s)	⦿ Send snapshot image via E-mail ○ Send snapshot image via FTP
☐ Channel 3	Send sequential snapshot image every 30 [1~30] second(s)	⦿ Send snapshot image via E-mail ○ Send snapshot image via FTP
☐ Channel 4	Send sequential snapshot image every 30 [1~30] second(s)	⦿ Send snapshot image via E-mail ○ Send snapshot image via FTP

Save

Sidebar navigation:

Home
- Main Menu
  - OverView
  - System
  - Network
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  - Serial Port
    - PTZ Port
      - COM Port
        - Parameters
  - Audio
    - Audio Setting
  - Alarm
    - System
    - Event Alarm
      - Basic
      - Sequential Snaps

Best viewed with IE 6.0 or

A

Frequently Asked Questions

Q: What if I forget my password?

A: Every access to the video encoder needs authentication, unless the admin password is set up as blank. If you are one of the managed users, you will need to ask the administrator for the password. If you are the administrator, there is no way to recover the admin password. The only way to regain access to video encoder is to utilize the **RESET** button on the top panel to restore the factory settings (see Chapter 1 for details).

Q: Why can't I see video from the video encoder after it has been authenticated?

A: There are many possible scenarios:

1. If you have just installed the video encoder and are unable to see the video, check the video modulation on the **System Configuration\Video\Camera Modulation** page.

2. If the video encoder is installed correctly and you are accessing the video encoder for the first time using Internet Explorer, adjust the security level of Internet Explorer to allow installation of plug-ins.

3. If the problem still exists, the number of users accessing the video encoder at the same time may exceed the maximum that the system allows.

Q: What is the plug-in for?

A: The plug-in provided by video encoder is used to display motion pictures. The plug-in is needed because Internet Explorer does not support streaming technology. If your system does not allow installation of plug-in software, the security level of the web browser may need to be lowered. It is recommended that you consult the network supervisor in your office before adjusting the security level.

Q: Why is the timestamp different from the system time of my PC or notebook?

A: The timestamp is based on the system time of the video encoder. It is maintained by an internal real-time clock, and automatically synchronizes with the time server if the video encoder is connected to the Internet and the function is enabled. Differences of several hours may result from the time zone setting.

Q: Why doesn't the image refresh regularly?

A: This may be due to the time it takes to store recorded video and snapshots into memory, or the time it takes to send the images to the SMTP and FTP server when events occur.

Q: How many users are allowed to access the video encoder at the same time?

A: Basically, there is no limitation. However the video quality also depends on the network. To achieve the best effect, the VPort 354 video encoder will allow 8 video streams for udp/tcp/http connections, and 4 multicast video streams. We recommend using an additional web server that retrieves images from the video encoder periodically if you need to host a large number of users.

Q: What is the video encoder's video rate?

A: The MPEG4 codec can process 30 frames per second internally. However the total performance is subject to many variables, as listed below:

- Network throughput.
- Bandwidth share.
- Number of users.

More complicated objects result in larger image files.

The speed of the PC or notebook that is responsible for displaying images.

In general, the transfer rate for a general local network environment can achieve over 800 kilobytes per second and approximately 10 to 20 pictures of a normal environment per second.

Q: How can I keep the video encoder as private as possible?

A: The video encoder is designed for surveillance purposes and has many flexible interfaces. The user authentication and special confirmation when installing can keep the video encoder from unauthorized access. You may also change the HTTP port to a non-public number. Check the system log to examine any abnormal activities and trace the origins.

Q: I have a PTZ camera that is not on the supported list. How can I control it?

A: The video encoder provides a custom camera command interface to control cameras that are not supported. The details are described in this manual. Be sure that the PTZ port settings are applied to the camera specifications. The general PTZ command is composed of one start command and one stop command. When editing both commands in the edit box of the configuration page, use comma(s) to separate commands. Each comma represents 200 milliseconds. In addition, the VPort has a PTZ driver upload function. Users can also seek help from Moxa to create a new PTZ driver.

Q: How fast will the video encoder check the status of digital inputs?

A: The video encoder will check the input status in less than half a second.

Q: Why can't I access the video encoder when I set up some options in the application?

A: When the video encoder is triggered by events, video and snapshots will take more time to write to memory. If the events occur too often, the system will always be busy storing video and images. We recommend using sequential mode or an external recorder program to record motion pictures if the event is frequent. If you prefer to retrieve images by FTP, the value could be smaller since an FTP server responds more quickly than a web server. Once the system is too busy to configure, use the restore factory default and reset button to save the system.

Q: The image is not clear enough. Is anything broken?

A: The lens can be focused by rotating the outer ring. Rotate it clockwise or counter-clockwise to focus near or far.

B

Settings of Supported PTZ Cameras

Since the COM port settings can be adjusted to other than the default settings, check the correct default settings for the attached camera.

Camera model	Baud rate	Data bits	Stop bit	Parity bit
Pelco P, D protocol	2400	8	1	None
DynaDome/DynaDome	9600	8	1	None

C

Time Zone Table

The hour offsets for different time zones are shown below. You will need this information when setting the time zone in automatic date/time synchronization. GMT stands for Greenwich Mean Time, which is the global time that all time zones are measured from.

(GMT-12:00)	International Date Line West
(GMT-11:00)	Midway Island, Samoa
(GMT-10:00)	Hawaii
(GMT-09:00)	Alaska
(GMT-08:00)	Pacific Time (US & Canada), Tijuana
(GMT-07:00)	Arizona
(GMT-07:00)	Chihuahua, La Paz, Mazatlan
(GMT-07:00)	Mountain Time (US & Canada)
(GMT-06:00)	Central America
(GMT-06:00)	Central Time (US & Canada)
(GMT-06:00)	Guadalajara, Mexico City, Monterrey
(GMT-06:00)	Saskatchewan
(GMT-05:00)	Bogota, Lima, Quito
(GMT-05:00)	Eastern Time (US & Canada)
(GMT-05:00)	Indiana (East)
(GMT-04:00)	Atlantic Time (Canada)
(GMT-04:00)	Caracas, La Paz
(GMT-04:00)	Santiago
(GMT-03:30)	Newfoundland
(GMT-03:00)	Brasilia
(GMT-03:00)	Buenos Aires, Georgetown
(GMT-03:00)	Greenland
(GMT-02:00)	Mid-Atlantic
(GMT-01:00)	Azores
(GMT-01:00)	Cape Verde Is.
(GMT)	Casablanca, Monrovia
(GMT)	Greenwich Mean Time: Dublin, Edinburgh, Lisbon, London
(GMT+01:00)	Amsterdam, Berlin, Bern, Stockholm, Vienna
(GMT+01:00)	Belgrade, Bratislava, Budapest, Ljubljana, Prague (GMT+01 :00) Brussels, Copenhagen, Madrid, Paris
(GMT+01:00)	Sarajevo, Skopje, Warsaw, Zagreb
(GMT+01:00)	West Central Africa
(GMT+02:00)	Athens, Istanbul, Minsk
(GMT+02:00)	Bucharest
(GMT+02:00)	Cairo
(GMT+02:00)	Harare, Pretoria
(GMT+02:00)	Helsinki, Kyiv, Riga, Sofia, Tallinn, Vilnius
(GMT+02:00)	Jerusalem
(GMT+03:00)	Baghdad
(GMT+03:00)	Kuwait, Riyadh
(GMT+03:00)	Moscow, St. Petersburg, Volgograd

(GMT+03:00)	Nairobi
(GMT+03:30)	Tehran
(GMT+04:00)	Abu Dhabi, Muscat (GMT+04:00) Baku, Tbilisi, Yerevan (GMT+04:30) Kabul
(GMT+05:00)	Ekaterinburg
(GMT+05:00)	Islamabad, Karachi, Tashkent (GMT+05:30) Chennai, Kolkata, Mumbai, New Delhi
(GMT+05:45)	Kathmandu
(GMT+06:00)	Almaty, Novosibirsk (GMT+06:00) Astana, Dhaka
(GMT+06:00)	Sri Jayawardenepura (GMT+06:30) Rangoon
(GMT+07:00)	Bangkok, Hanoi, Jakarta (GMT+07:00) Krasnoyarsk
(GMT+08:00)	Beijing, Chongqing, Hongkong, Urumqi
(GMT+08:00)	Taipei
(GMT+08:00)	Irkutsk, Ulaan Bataar (GMT+08:00) Kuala Lumpur, Singapore (GMT+08:00) Perth
(GMT+09:00)	Osaka, Sapporo, Tokyo (GMT+09:00) Seoul
(GMT+09:00)	Yakutsk
(GMT+09:30)	Adelaide
(GMT+09:30)	Darwin
(GMT+10:00)	Brisbane
(GMT+10:00)	Canberra, Melbourne, Sydney
(GMT+10:00)	Guam, Port Moresby (GMT+10:00) Hobart
(GMT+10:00)	Vladivostok
(GMT+11:00)	Magadan, Solomon Is., New Caledonia
(GMT+12:00)	Auckland, Wellington (GMT+ 12:00) Fiji, Kamchatka, Marshall Is.
(GMT+13:00)	Nuku'alofa

Technical Specifications

Video

Video Compression: MJPEG or MPEG4 (ISO/IEC 14496-2)

Video Inputs: 4, BNC connector (1.0 Vpp, 75 ohm)

Video Outputs: Via Ethernet port

Video Streams: Dual streams (one for MJPEG, the other for MPEG4) at the same video resolution (note that MJPEG only has one quality setting)

NTSC/PAL: Manual

Video Resolution and FPS (frames per second):

	NTSC		PAL	
	Size	Max. FPS	Size	Max. FPS
QCIF	176 x 112	30	176 x 144	25
CIF	352 x 240	30	352 x 288	25
2CIF	704 x 240	30	704 x 288	25
4CIF	704 x 480	30	704 x 576	25

Video Viewing:

• Adjustable image size and quality

• Timestamp and text overlay

Audio

Audio Inputs: 1 Line-in or MIC-in with RCA connector

Audio Outputs: 1 Line-out with RCA connector

Audio Format: Mono, PCM

Network

Protocols: TCP, UDP, HTTP, SMTP, FTP, Telnet, NTP, DNS, DHCP, UPnP, RTP, RTSP, ICMP, IGMPv3, QoS, SNMPv1/v2c/v3, DDNS, Modbus/TCP

Ethernet: 2 10/100BaseT(X) auto negotiating RJ45 ports, or 2 100BaseFX fiber ports (single/multi-mode, SC connector)

Serial Port

PTZ Ports: 1, RS-232/422/485 port (terminal block connector), max. speed of 115.2 Kbps

COM Ports: 1, RS-232/422/485 (DB9 female connector), max. speed of 115.2 Kbps

Console Port: 1 RS-232 RJ45 port

GPIO

Digital Inputs: 4, max. 8 mA

Low: +13 to +30 V; High: -30 to +3 V

Relay Outputs: 2, max. 24 VDC @ 1 A

LED Indicators

PWR1: Power 1

PWR2: Power 2

FAULT: Can be configured to correspond to system alarm, power failure, or disconnected network

V1, V2, V3, V4: Video input signal activity

Local Storage

SD Socket: Standard SD socket, SDHC, with SD LED indicator

Power Requirements

Input Voltage: 2 12/24 VDC or 24 VAC inputs for redundancy
Power Consumption: Approx. 12 W

Physical Characteristics

Housing: Metal, IP30 protection
Dimensions: 80.2 x 135 x 105 mm (3.16 x 5.31 x 4.13 in)
Weight: 1200 g (2.64 oz)
Installation: DIN-Rail mounting, wall mounting (with optional kit)

Alarms

Video Motion Detection: Includes sensitivity tuning
Video Loss: Video loss alarm
Scheduling: Daily repeat timing schedule
Imaging: JPEG snapshots for pre/trigger/post alarm images
Email/FTP Messaging: Automatic transfer of stored images via email or FTP with event-triggered actions
Custom Alarms: HTTP event servers and CGI events for setting customized alarm actions

PAN/TILT/ZOOM

PTZ Camera Control: Via RS-232/422/485 PTZ port or COM port
PTZ Control Functions: PAN, TILT, ZOOM, FOCUS, moving speed, preset position (max. 25 positions), and 10 custom commands
PTZ Function Updates: Driver upload supported
Supported Device Protocols: Pelco D, Pelco P, Dynacolor DynaDome, Cohu, Custom Camera
Transparent PTZ Control: Control PTZ cameras with legacy PTZ control panel or keyboard connected to a PC or VPort decoder

Security

Password: User level password protection
Filtering: By IP address

Environmental Limits

Operating Temperature:
Standard Models: 0 to 60°C (32 to 140°F)
Wide Temp. Models: -30 to 70°C (-22 to 158°F)
Storage Temperature: -40 to 85°C (-40 to 185°F)
Ambient Relative Humidity: 5 to 95% (non-condensing)

Standards and Certifications

EMI: FCC Part 15 Subpart B Class A, EN 55022 Class A
EMS:
EN 61000-4-2 (ESD) Level 3,
EN 61000-4-3 (RS) Level 3,
EN 61000-4-4 (EFT) Level 3,
EN 61000-4-5 (Surge) Level 3,
EN 61000-4-6 (CS) Level 2,
EN 61000-4-8,
EN 61000-4-11
Shock: IEC 60068-2-27
Freefall: IEC 60068-2-32
Vibration: IEC 60068-2-6
Note: Please check Moxa's website for the most up-to-date certification status.

MTBF (mean time between failures)

Time: 271,000 hrs
Database: Telcordia (Bellcore), GB 25°C

Warranty

Warranty Period: 5 years
Details: See www.moxa.com/warranty

Software Development Kit

VPort SDK PLUS: Includes CGI commands, ActiveX Control, and API library for customized applications or system integration for third-party developers (the latest version of SDK is vailable for download from Moxa's website).