

# VPort 2141 Video Encoder

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## User's Manual

[www.moxa.com/product](http://www.moxa.com/product)



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# VPort 2141 Video Encoder User's Manual

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This product might include unintentional technical or typographical errors. Changes are periodically made to the information herein to correct such errors, and these changes are incorporated into new editions of the publication.

# Before getting started

Before using your VPort 2141, please read the following information.

- ❑ After opening the VPort 2141 box, compare the contents of the box with the **Package Checklist in Chapter 1**. Notify your sales representative if any of the items is missing or damaged.
- ❑ To prevent damage or problems caused by improper usage, read the **Quick Installation Guide** (printed handbook included in the product package) or the **Product Description** section in **Chapter 1** and all of **Chapter 2**.
- ❑ If you experience a system error and the system does not recover easily, refer to **Chapter 7** (Troubleshooting) to learn how to restore factory default settings and reinstall the system.
- ❑ The VPort 2141 Video Encoder has been designed for various environments and can be used to build different applications for general security or demonstration purposes. For standard applications, refer to the **Accessing VPort 2141 Video Encoder for the First Time** section in **Chapter 2**. To make the best use of VPort, read the **URL Command for Advanced Functions** section in **Chapter 5** for ideas and review all of **Chapter 4** for detailed explanations of system configurations.

## Note

- ❑ Surveillance devices may be prohibited by law in your country. Since VPort is both a high performance surveillance system and networked video encoder, you must ensure that the operation of such devices is legal in your local area before installing this unit for surveillance purposes.
- ❑  **ATTENTION**  
Paragraphs preceded by the ATTENTION indicator must be fully understood and heeded. Ignoring these warnings could result in serious hazards.

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The VPort 2141 is a high-performance networked video encoder. In addition to providing basic video feeds, many advanced features are also supported to assist the user in setting up surveillance functions for online applications. The state-of-the-art design provides a good combination of stability, robustness, ease-of-use, and flexibility.

The following topics are covered in this chapter:

- ❑ **Overview**
- ❑ **Package Checklist**
- ❑ **Product Features**
- ❑ **Typical Applications**
- ❑ **Product Description**
  - Front Panel
  - Rear Panel

## Overview

The VPort 2141 video encoder is a high-performance networked video transmitter. Its powerful VLIW DSP core and fully optimized algorithm compresses and transmits high quality video in real-time over a standard TCP/IP network. In addition to providing basic video feeds, many advanced features are also supported to assist the user in setting up surveillance functions for online applications. The state-of-the-art design provides a good combination of stability, robustness, ease-of-use, and flexibility.

### **Real-time Motion—JPEG compression**

Video input can be compressed efficiently and quickly into packets of JPEG images. The optimized compression engine creates excellent images that do not require a lot of memory space. This is done without sacrificing remote monitoring capability or storage. Five levels of compression ratio and three different image resolutions are provided to provide more versatility.

### **Robust system operation**

The industrial, real-time operating system prevents hackers and viruses from wreaking havoc on both Windows and Linux systems, and the on-board watchdog improves reliability by continually monitoring the system's operation.

### **Easy web access with a standard browser**

Since the embedded web server allows users to access the VPort 2141 from anywhere over the Internet using any popular web browser, there is no need to install new software to access the VPort 2141. As long as you're connected to the network, you will be able to view the images recorded by your cameras.

### **User password protection**

User password protection is provided to prevent malicious intruders from accessing your system. Once the administrator password is configured, all users will need a password to access the VPort 2141.

### **Built-in VMD (Video Motion Detection)**

External sensors are not required, since the video channel can be configured to detect motion, making it easy to set up a security system in either your home or office. The customizable settings allow you to tune the system for both object size and sensitivity, making the VPort 2141 adaptable to different environments.

### **Weekly schedule for automated surveillance**

A user-defined surveillance schedule will repeat weekly to check security settings and send notifications or drive external devices, making it easy to install the VPort 2141 in SOHOs, retail shops, and home security systems.

### **Flexible I/O control for external devices**

One opto-isolated sensor input and one relay output are provided to control external devices, giving system integrators the option of turning an analog system into an advanced security system.

### **MOXA SoftDVR™ Lite IP Surveillance Software**

To extend the VPort 2141's capabilities, MOXA SoftDVR Lite IP Surveillance Software, which supports a maximum of 4 cameras in quad, is included free of charge, allowing users to turn their PC into a digital video recorder. Scheduling or one-click recording saves important images on your local hard disk, and the reliable motion detection and instant warning features make you ready for any situation. A quick and easy to use search and playback function lets you easily find the image you're looking for, so that you can inspect the images more carefully, and also save the output to an AVI file.

### **Remote system upgrade**

Users of the VPort 2141 will have round-the-clock access to the most up-to-date firmware on our website, with a free upgrade wizard included to facilitate firmware installation.



**Technical support for developers**

The high-performance, cost-effective VPort 2141 can be integrated into many applications, and the complete programming interface and standard JPEG format makes the developer's job easy and straightforward. VPort 2141 applications can be found on MOXA's website.

## Package Checklist

- 1 VPort 2141 Video Encoder
- Camera control cable
- 2 GPIO terminal connectors
- Power adaptor
- Quick Installation Guide
- Aluminum pieces and 8 screws
- Software CD

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

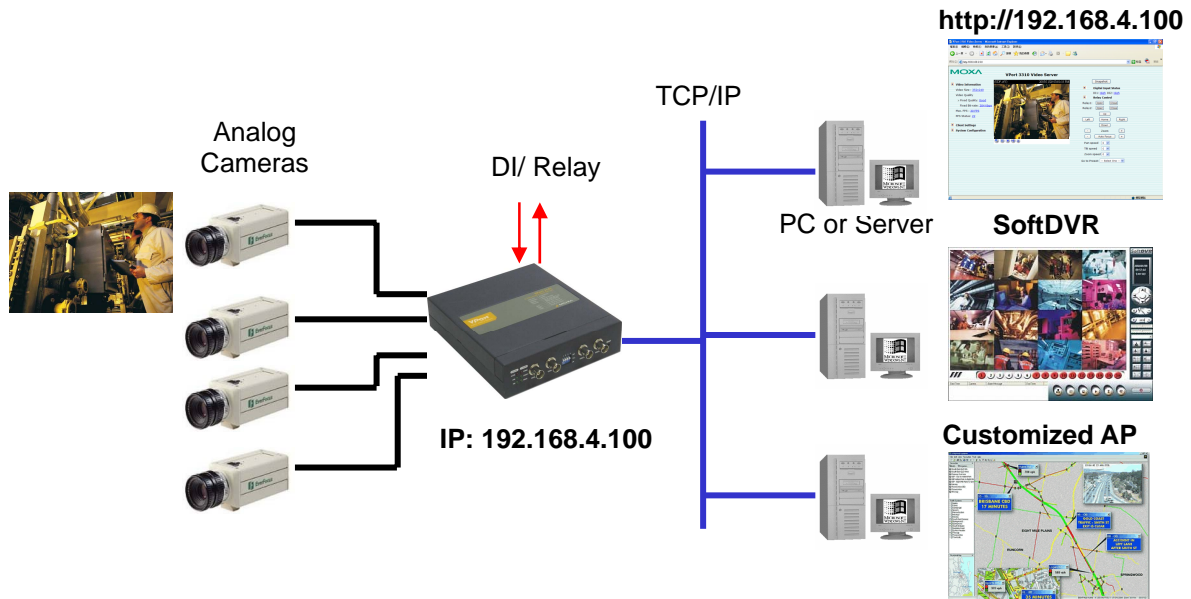
## Product Features

VPort 2141 video encoders have the following features:

- Connect analog CCTVs to TCP/IP networks
- 4-channel video input with 75 ohm impedance DIP switches
- MJPEG compression codec
- Pre/Post snapshot images—up to 15 images per channel
- 5 privacy mask functions supported
- Set 3 active areas for video motion detection
- 2 COM ports (1 RS-232 and 1 RS-485) for remote PTZ control
- PPPoE to link with xDSL for Internet access supported
- Built-in web server for easy configuration
- Adjustable network bandwidth
- Video stream up to 30/25 frames/sec at 352 x 240 resolution
- Quad display at up to 15 frames/sec
- 4 Digital Inputs and 4 Relay Outputs for sensors and alarms
- Automatic remote image retrieval and storage via e-mail, and FTP with event triggering
- Supports ActiveX Control SDK to enable easy development of Windows application software
- DDNS & UPnP supported

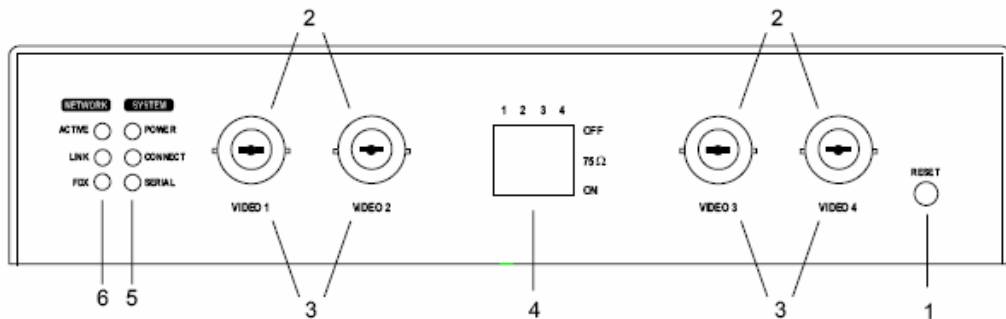
NOTE: *ActiveX Control SDK is supported with flexible interface and sample codes for third-party developers (please contact a MOXA sales representative if you require this SDK).*

## Typical Application



## Product Description

### Front Panel



#### 1: RESET button

The RESET button is located on the right side of the VPort 2141's front panel. The button can be used to perform two levels of system recovery. "Reset" will force the system to restart, and "Restore" will restore the factory default settings and then force the system to restart from the initial state. The "Restore" option is generally used to perform a complete system recovery.

#### RESET

Click on the "RESET" button once. The system will perform a system diagnosis. If the IP address is not fixed, you will need to use the VPort installation wizard to locate the VPort, and get a new IP address from the DHCP server. Note that you can achieve the same effect by disconnecting and then reconnecting the power supply.

**RESTORE**

If the system is responding or operating abnormally slowly, press and hold the “RESET” button firmly to load the factory default settings. System diagnosis will begin immediately, and the “SERIAL” LED will turn on after the system diagnosis finishes. Wait a little bit longer until the “SERIAL” LED turns off, and then release the “RESET” button. Note that you can achieve the same effect by clicking the “factory default” link on the configuration page.

**2: BNC video inputs**

You may attach 1, 2, 3, or 4 cameras to the VPort 2141. To ensure that the correct video modulation type is detected, cameras should be connected sequentially from “VIDEO 1” to “VIDEO 4” and powered on before the VPort is powered on.

**ATTENTION**

Although the analog cameras have 2 different standards, NTSC or PAL, all of the cameras connected to a VPort 2141 should use the same standard.

**3: Camera ID: VIDEO 1, VIDEO 2, VIDEO 3, VIDEO 4**

Cameras connected to the VPort 2141 are identified by the port number.

**4: 75 Ohm DIP Switch**

There are four 75-Ohm DIP switches numbered from “1” to “4” on the front panel. The switches are used to enable the 75-Ohm resistance video impedance. DIP switches should be turned to the “ON” position if cameras are connected to the video inputs, and a video loop is not being used. The switches should be turned to the “OFF” position for high impedance if a video loop is required.

**5: System LEDs: POWER, CONNECT, SERIAL**

Each time the VPort 2141 video encoder starts up, a Power-On-Self-Test (POST) will be performed to examine each hardware module. The VPort 2141 has 3 System LEDs:

- a. **POWER**: power indicator.
- b. **CONNECT**: checks to see if the VPort 2141 is alive.
- c. **SERIAL**: checks to see if the RS-232/485 COM ports are in use.

As soon as the administrator plugs in the power connector, both the CONNECT and SERIAL LED's will flash, one by one, until the diagnosis is finished. If the result is good, these 2 LEDs will turn off momentarily, and then follow the pattern shown in the table below. If any of the modules fails, refer to the **Power On Self Test in Chapter 7** for the error pattern, and then follow the troubleshooting procedures. If the system still does not operate normally, please contact your reseller for technical service.

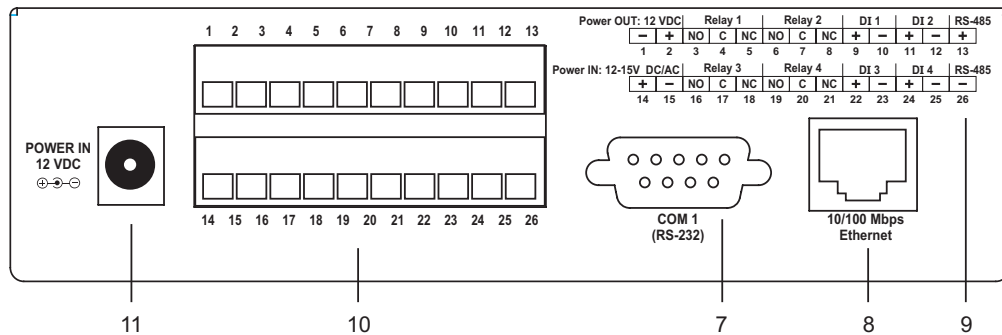
Mode	Condition	LED1 (POWER)	LED2 (CONNECT)	LED3 (SERIAL)
Ethernet Connection	Before installation	ON	OFF	OFF
	After installation	ON	Flash	OFF
	During camera control	ON	Flash	Flash

**6: Network LEDs: ACTIVE, LINK, FDX**

The VPort 2141 has 3 LEDs to show network status when using the 10/100 Mbps Ethernet connection:

Name	Description	Work Status
ACTIVE	Check if the network is alive	Flashing: Network alive OFF: Network not alive
LINK	Check the 10/ 100 Mbps Ethernet speed	ON: 100 Mbps OFF: 10 Mbps
FDX	Check if transmission is full or half duplex	ON: Full Duplex OFF: Half Duplex

**Rear Panel**



**7: COM1**

Use this RS-232 serial port to connect to an RS-232 PTZ camera.

**8: 10/100 Mbps Ethernet**

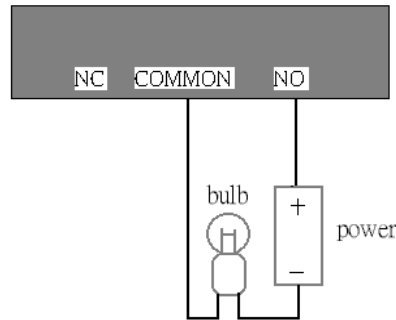
An RJ45 10/100 Mbps Ethernet connector can be connected to an Ethernet network with a UTP category 5 cable that is shorter than 100 meters (based on the usual Ethernet standard).

**9 & 10: General I/O terminal block**

The VPort 2141 provides a very flexible general I/O interface that can be used with security devices, such as sensors, alarms, lighting fixtures, and door locks. Two green connectors are included in the package to connect external devices. The general I/O terminal block has 26 pins for device control. These pins can be divided into three categories based on their function, including power source, RS-485, and digital input and output.

No.	Pin description		Regulation
1	Power Output	-	Power Output, Max. 500 mA at 12 VDC
2		+	
3	Relay Output 1	NO	Normal Open, Max. 1A, 24 VDC or 0.5A, 125 VAC
4		C	Common, Short with NC at initial state
5		NC	Normal Close, Max. 1A, 24 VDC or 0.5A, 125 VAC
6	Relay Output 2	NO	Normal Open, Max. 1A, 24 VDC or 0.5A, 125 VAC
7		C	Common, Short with NC at initial state
8		NC	Normal Close, Max. 1A, 24 VDC or 0.5A, 125 VAC
9	Digital Input 1	+	Max. 50 mA, 12 VDC
10		-	Ground
11	Digital Input 2	+	Max. 50 mA, 12 VDC
12		-	Ground
13	RS-485	+	RS-485, Data +
14	Power Input	+	External Power Input, Min. 1.5A, 12-15 VAC or VDC
15		-	
16	Relay Output 3	NO	Normal Open, Max. 1A, 24 VDC or 0.5A, 125 VAC
17		C	Common, Short with NC at initial state
18		NC	Normal Close, Max. 1A, 24 VDC or 0.5A, 125 VAC
19	Relay Output 4	NO	Normal Open, Max. 1A, 24 VDC or 0.5A, 125 VAC
20		C	Common, Short with NC at initial state
21		NC	Normal Close, Max. 1A, 24 VDC or 0.5A, 125 VAC
22	Digital Input 3	+	Max. 50 mA, 12 VDC
23		-	Ground
24	Digital Input 4	+	Max. 50 mA, 12 VDC
25		-	Ground
26	RS-485	-	RS-485, Data -

- a. **Power Source:** There are 2 ways to connect to the power source. You may use a power adaptor, or connect through pins 14 and 15 of the terminal block. This power source can be either AC or DC, and the output range should fall between 12V and 15V. Polarity does not matter if you use AC. The power output through pins 1 and 2 is fed from the power adaptor of the video encoder, or pins 14 and 15 if an external power source is attached. The current from external devices is limited to less than 500 mA.
- b. **RS-485:** If the device has an RS-485 interface (such as a PTZ camera control), wire the RS-485 Data+ (PIN 13) and Data- (PIN 26) control lines to the RS-485 "+" and "-" pins. If the distance from the controlled device is too long to allow transmit signals accurately, an external power source may be used to pull the RS-485 signal to the "high" status.
- c. **Digital Input/Relay Output:** The VPort 2141 video encoder provides 4 digital inputs and 4 relay outputs. The digital input's "+" pin and "-" pin can be connected to an external sensor to monitor the voltage. The relay output's "NO" pin (Normal Open), "NC" (Normal Close) pin, and "C" pin (Common) can be used to turn an external alarm on or off. When the system starts up, the "Common" pins of the two relay outputs will short the "NC" pin. A simple example is illustrated in the diagram below.



If DI1 is configured to “rising” status, so that Relay 1 is driven to “high” status (resulting in Relay1’s “Common” pin shorting the “NO” pin), the light bulb will light up when DI1’s signal will change from 0V to 12V.

### 12: POWER IN 12 VDC

Connect the power jack of the included 12 VDC power adaptor. Connecting the power adaptor should be the last step of installing the video encoder hardware. Administrators can feed an external power source through pins 11 and 12 of the GPIO terminal block to replace the power adaptor.



#### ATTENTION

The VPort 2141 video encoder’s power adaptor, and the external power supply (from pins 14 and 15 of the Terminal Block) cannot be used at the same time. Only one power source can be used to feed power to the VPort 2141. Improper usage could result in serious damage to your video encoder.

# 2

## Getting Started

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This chapter includes information about how to install a VPort 2141 video encoder.

The following topics are covered:

- ❑ **Before Getting Started**
- ❑ **Setting up an Ethernet Environment**
  - Cable Connection
  - Powering on the VPort 2141 Video Encoder
  - Assigning an IP Address to the VPort 2141 Video Encoder
  - Accessing the VPort 2141 Video Encoder for the First Time
- ❑ **Mounting the VPort 2141**
  - Panel Mounting
  - DIN-Rail Mounting

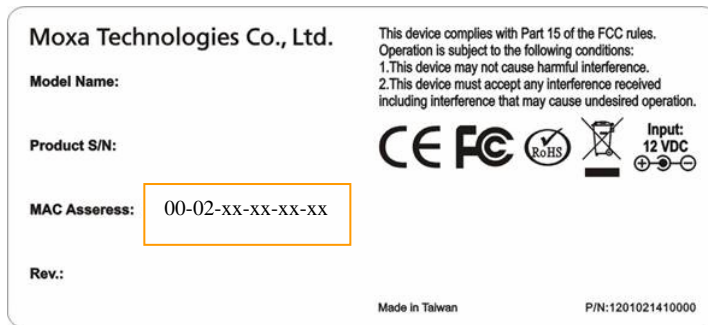
## Before Getting Started

To adapt easily to different environments, the VPort 2141 automatically detects the attached interfaces and configures itself appropriately. For this reason, users do not need to worry about whether the connected cameras are either NTSC or PAL, how to select between Ethernet and modem, and whether the Ethernet speed is 10 Mbps or 100 Mbps.

In what follows, “user” refers to those who can access the VPort 2141, and “administrator” refers to the person who knows the root password that allows changes to the VPort 2141’s configuration, in addition to providing general access. Administrators should read this part of the manual carefully, especially during installation.

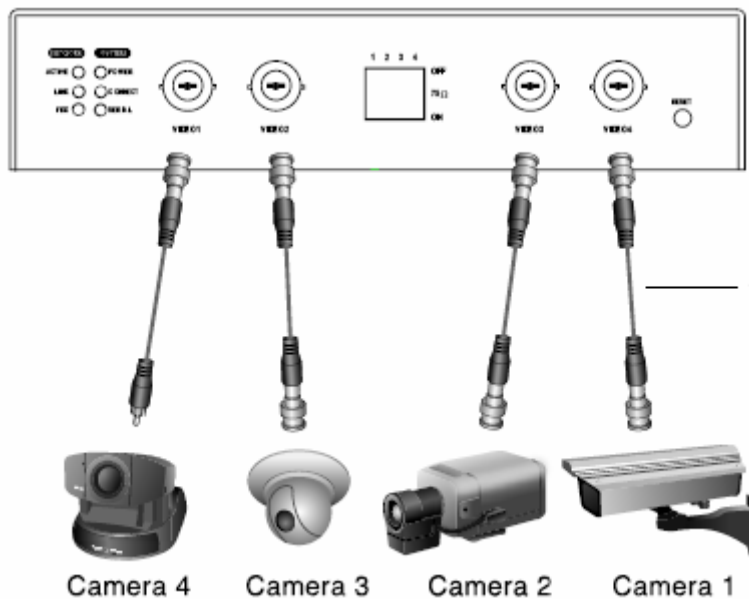
## Setting up an Ethernet Environment

Before installing multiple VPort 2141 video encoders at different locations, the administrator should record the MAC Address (located on the VPort’s label) for future use, and then shut down all peripheral devices prior to connecting the devices. The video BNC, Ethernet cable, and power adaptor are needed to take advantage of the basic viewing function provided by the VPort 2141.



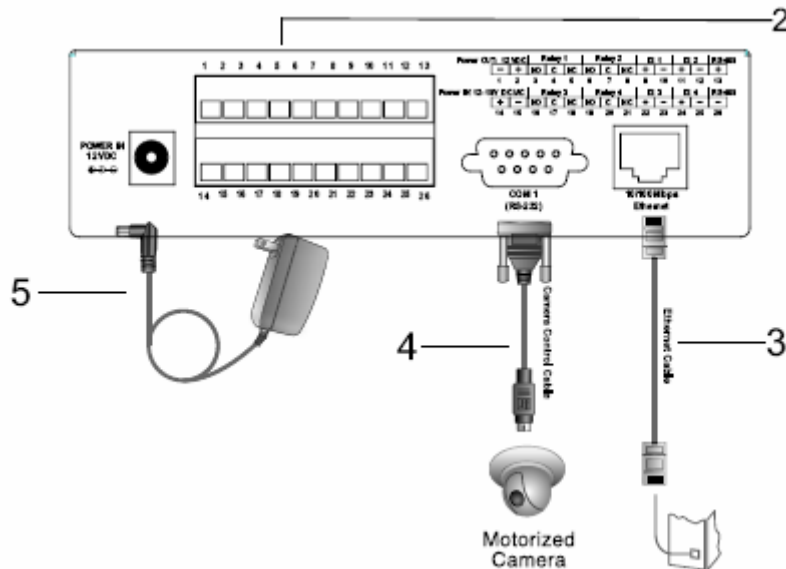
## Cable Connection

### Front Panel





Rear Panel



Perform the following steps before powering on the the VPort 2141 video encoder:

1. Connect your camera's video output to the BNC video input.
2. Connect I/O devices (such as sensors or alarms) to the VPort's GPIO terminal block.
3. Connect the hub or switch on the LAN to the VPort's 10/100 Mbps Ethernet port.
4. If you are using a PTZ camera, connect the VPort's COM port to your camera's COM port.

### Powering on the VPort 2141 Video Encoder

First, make sure that all cables are correctly and firmly connected, and then turn on the cameras, sensors, and alarm devices.

Next, power on the VPort 2141 by attaching the VPort 2141's power adaptor to an electrical outlet. After the POST (Power-On Self Test) is completed successfully, the VPort 2141 is ready to be configured. At this point, the network speed and video modulation type will be detected automatically.

### Assigning an IP Address to the VPort 2141 Video Encoder

1. The VPort Installation Wizard will automatically search for VPort products connected to the same LAN as your computer. You can also click the **Search** button on the VPort Installation Wizard window to initiate a new search. Note that the wizard searches by MAC address.
2. When the wizard finishes searching, the MAC address, IP address, Assigned (IP assigned status), Model, and Auto IP (indicates whether or not this VPort has an auto IP assigned function) of the VPort will be listed in the VPort Installation Wizard window.
3. Select the VPort by checking the box in front of the MAC address, and then click the "Link to selected device" button to open the VPort's web console with your web browser.



4. You can modify **Host Name**, **password**, and select **Date/Time Settings**. If you modify any of the settings, click **Next** to proceed.



- Use the window shown below to modify the **IP Address**, **Subnet mask**, IP address of the **Default router**, IP address of the **Primary DNS**, and IP address of the **Secondary DNS**. Click **Next** to proceed.



- At this point, the setup is complete. Click **Previous** to make additional changes to the settings, or click **Apply** to save the settings to the VPort.



NOTE	The IP assigned status will be listed as Yes if the VPort has been assigned an IP address. If the status is <b>No</b> , check to see if there is a problem with the DHCP network environment, or if the model you are using does not support the auto IP assigned function.
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## Accessing the VPort 2141 Video Encoder for the First Time

Once the installation is complete, administrators should follow the instructions described in the next chapter, **Accessing the VPort 2141 for the First Time**, to make necessary configurations.

## Mounting the VPort 2141

### Panel Mounting

Users can mount the VPort 2141 directly on the wall by using the 4 fixed aluminum pieces. First, attach these 4 fixed aluminum pieces to the VPort 2141 with the 8 screws included with the product. Next, use the 7 mm diameter screws to mount the VPort 2141 to the wall.

### DIN-Rail Mounting

MOXA provides a 35 mm DIN-Rail mounting option for use in industrial environments. The DK-35A DIN-Rail mounting kit can be ordered from MOXA.

# 3

## Accessing the VPort 2141 for the First Time

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This chapter includes information about how to access the VPort 2141 Video Encoder for the first time. The following topics are covered:

❑ **Accessing the VPort 2141 Video Encoder**

- Opening Your Browser
- Authentication
- Installing the Plug-in Application

❑ **Functions Featured on the Main Page**

- Image Mode and Text Mode
- Logo and Host Name
- Video Quality Selection
- Image Size Selection
- Camera View Selection
- System Configuration
- Taking Snapshots
- Relay Output Control
- Motorized (PTZ) Camera Control
- Custom Camera Commands

## Accessing the VPort 2141 Video Encoder

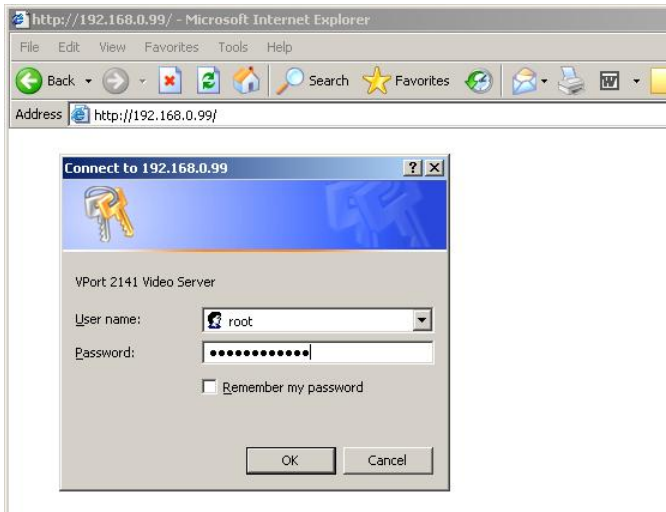
### Opening Your Browser

Open your browser, type the VPort's IP address in the **Address** box, and then press **Enter**.



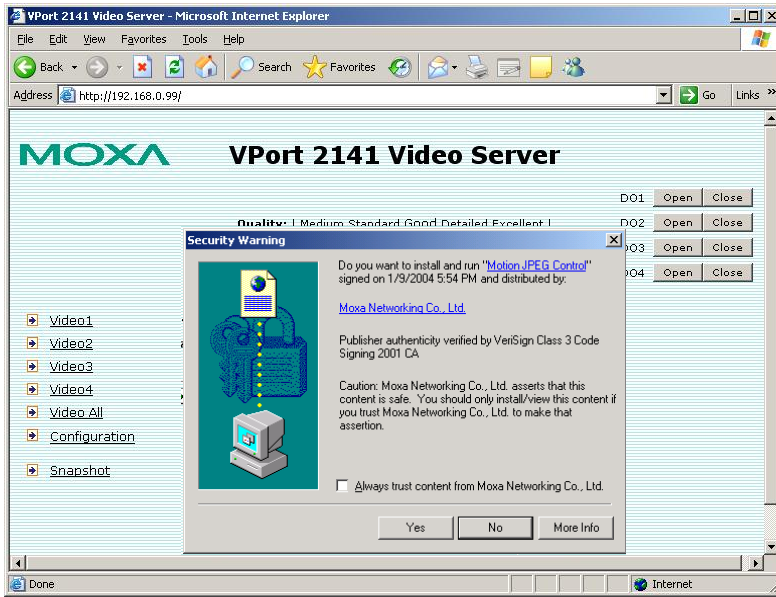
### Authentication

After opening your browser and typing the VPort's IP address, a login window will appear. Enter the **User Name** and **Password** and then click **OK**. When accessing the VPort for the first time, enter "root" as the username, and the "MAC address" (in capital letters) as the password. The MAC address is located on the VPort's label, and can also be found when running the VPort Installation Wizard. Primary users will be allowed to access the VPort as soon as the administrator finishes adding user profiles. After a successful authentication, the VPort's main page will be displayed.



### Installing the Plug-in Application

If you access the VPort for the first time via a browser that supports server push (e.g., Netscape), the video images will be displayed directly. If you are using Windows' Internet Explorer as your browser, you will be asked to install a new plug-in application provided by the VPort. This plug-in application has been registered for certification, and is used to display video images via Internet Explorer. Click on **Yes** to install the plug-in application. If your browser does not allow the user to install the plug-in, change the security option to a lower level, or contact your network supervisor for assistance.

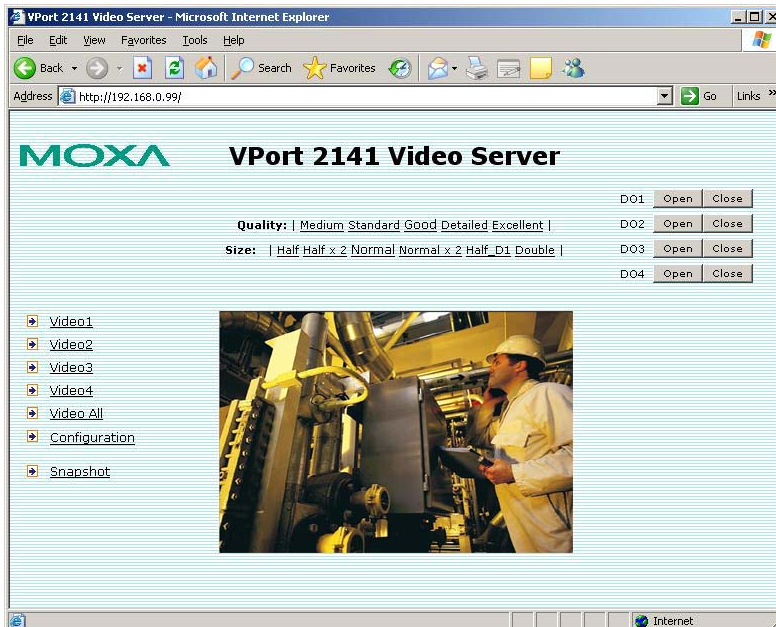


## Functions Featured on the Main Page

### Image Mode and Text Mode

Basic functions are displayed on the VPort's main page. By default, the main page opens in text mode, which is shown in the first figure below. The second figure shows image mode. Note that depending on the PTZ driver or the authorization of the user, the appearance of the main page could differ from what's shown in the figures.

#### Text Mode



**Image Mode**



**Logo and Host Name**

The default logo is MOXA's logo, and the host name is VPort 2141 Video Encoder. For customized usage, the administrator can change the layout of the homepage from the Homepage Layout page.

**Video Quality Selection**

There are 5 options for video quality: Medium, Standard, Good, Detailed, and Excellent. Different video quality selections result in different sized JPEG files. The table below shows possible file sizes based on the choice of video quality.

Video Quality	JPEG File Size
Medium	6.51 KB
Standard	6.69 KB
Good	9.29 KB
Detailed	14.28 KB
Excellent	24.24 KB

**Image Size Selection**

There are 5 options for selecting image sizes:

Video Size (unit: pixels)	NTSC	PAL
Half	176 × 112	176 × 144
Half × 2	352 × 240	352 × 288
Standard	352 × 240	352 × 288
Standard × 2	704 × 480	704 × 576
Double	704 × 480	704 × 576



**ATTENTION**

**Half × 2** consumes the same file size and bandwidth as **Half**, but has the same resolution as **Standard**. For this reason, the visual effect of **Half × 2** is worse than **Standard**. Likewise, **Standard × 2** consumes the same file size and bandwidth as **Standard**, but has the same resolution as **Double**. For this reason, the visual effect of **Standard × 2** is worse than **Double**.

## Camera View selection

A maximum of 4 cameras can be connected to the VPort 2141 at the same time. Users can view the image of each camera by selecting **Video 1**, **Video 2**, **Video 3**, or **Video 4**, or selecting **Video All** to view all images in Quad screen.

**ATTENTION**

In Quad viewing mode, in order to fit the monitor screen the maximum image size is only 352 x 240 (NTSC) or 352 x 288 (PAL) for each camera.

## System Configuration

When logged in as administrator, a button or text link will show up on the left side of the system configuration window on main page. For detailed system configuration instructions, refer to Chapter 4, **System Configuration**.

## Taking Snapshots

Users can take snapshot images for storing, printing, or editing by clicking the **Snapshot** button, and then saving the image by clicking the right mouse button.

## Relay Output Control

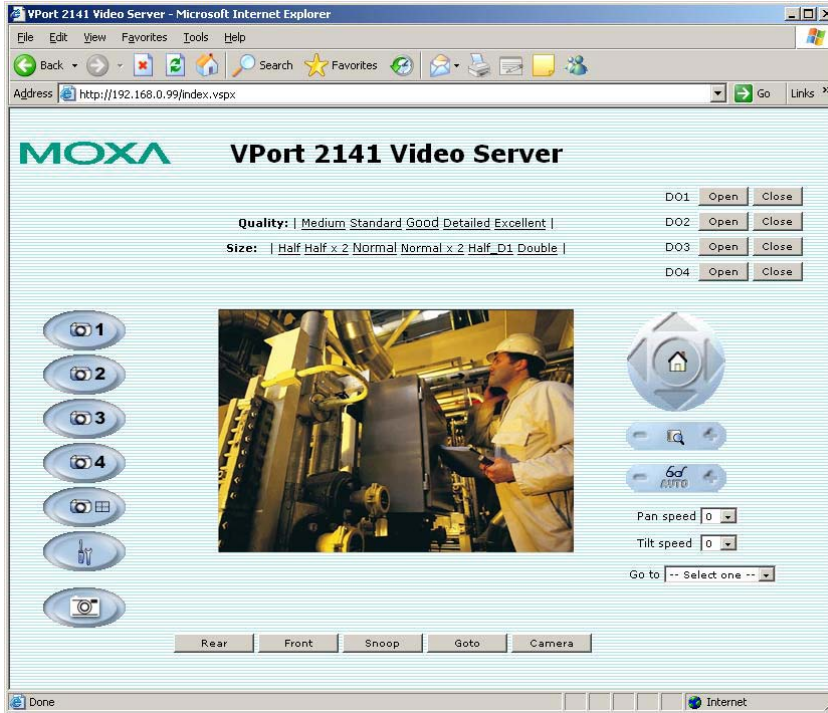
The VPort 2141 has 4 digital inputs and 4 relay outputs for external devices, such as sensors and alarms. If external devices are attached to the digital output, administrators or permitted users can click on **Open** to short the **Common** and **Normal Open** pins of the digital output, or click on **Close** to short the **Common** and **Normal Close** pins of the digital output.

## Motorized (PTZ) Camera Control

If a serial device, such as a motorized camera, is attached and correctly configured to the COM port, the control panel will appear on the permitted users' main page. The effective buttons 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. Apart from near and far control for focus, an AUTO button is provided for setting auto focus mode. To move the motorized camera more precisely, the speed control for pan and tilt allows users to fine tune the aiming position. 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 list. The list of preset locations is pre-defined by administrators. The detailed configurations are described in the related section in Chapter 4, **System Configuration**.

### Custom Camera Commands

In addition to the default pan, tilt, zoom, and focus controls, users can define up to five buttons for controlling attached motorized (PTZ) cameras. Custom commands are set up by administrators, and are used for functions such as activating or deactivating a camera's lens wiper. In general, administrators must refer to the camera's user's manual when defining custom commands.



## System Configuration

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After installing the hardware, the next task required is to configure the VPort 2141's settings. There are 3 configuration methods, based on the type of access: web browser, FTP, and Telnet.

This chapter includes the following sections:

### ❑ System Configuration by Web Browser

- System
- Security
- Network
- DDNS & UPnP
- Access List
- Video
- Camera Control
- Homepage Layout
- Application
- View Log File
- View Parameters
- Factory Default

### ❑ System Configuration by FTP

- CONFIG.INI

### ❑ System Configuration by Telnet

- Telnet Commands
- System Core Debugging
- Monitoring the Status of Digital Inputs
- Stopping Information Dumping
- Querying the Status of Digital Inputs
- Setting Digital Outputs
- Restoring Factory Default Settings
- System Reset

## System Configuration by Web Browser

System configuration can be done easily and remotely using Internet Explorer. In addition to classified categories of system configuration, two wizards are available to provide user-friendly instructions to facilitate the setup task. Alternatively, administrators can type the system configuration URL, **http://<IP address of Video Encoder>/setup/config.html**, to enter the configuration page directly. Administrators who want to set certain options through the URL should refer to the relevant section in Chapter 6, **URL Commands for Advanced Functions**.

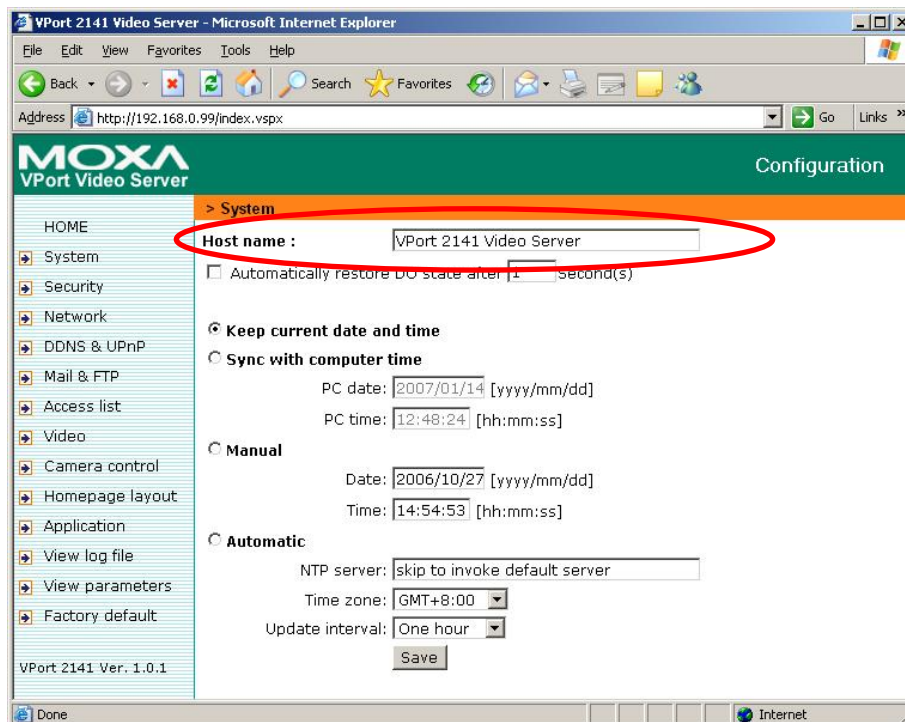
System configuration serves 5 purposes:

1. Since the VPort 2141 is a networked video encoder, administrators should at least configure **Security, Network, and Video**.
2. To support external serial port devices, configure **Camera Control** and then **Camera Setting** under **Video**.
3. To use the built-in security and web attraction features, configure **Application**.
4. Administrators can adjust the system date and time under **System**, or configure different homepage layouts by configuring **Homepage layout**.
5. The VPort 2141 also provides other system maintenance options, including **View log file, View parameters, and Factory default**.

## System

### Hostname

The host name will appear as the homepage title of the main page and over the video window on the main page. The maximum string length is 40 characters or 20 characters in double-byte-character systems, such as Chinese or Japanese systems.



### Automatically Restore DO state

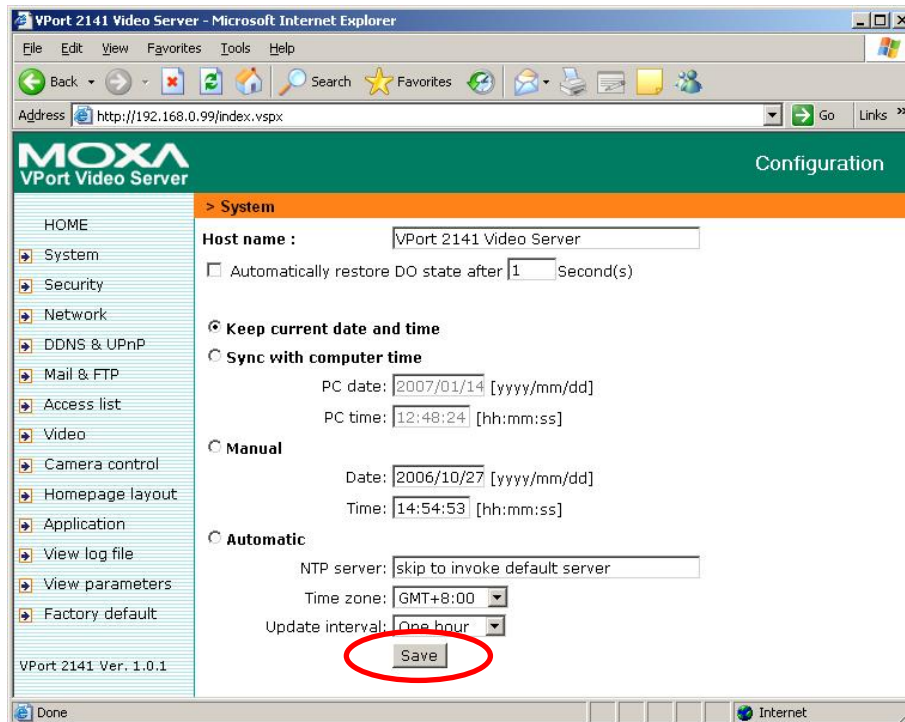
There is a **Automatically restore DO state after**  **seconds** setting below the Hostname, which is used to restore the relay output's status to the default once the relays are triggered. By using this function, the administrator does not need to close the alarms triggered from the DOs manually.

### Date and Time

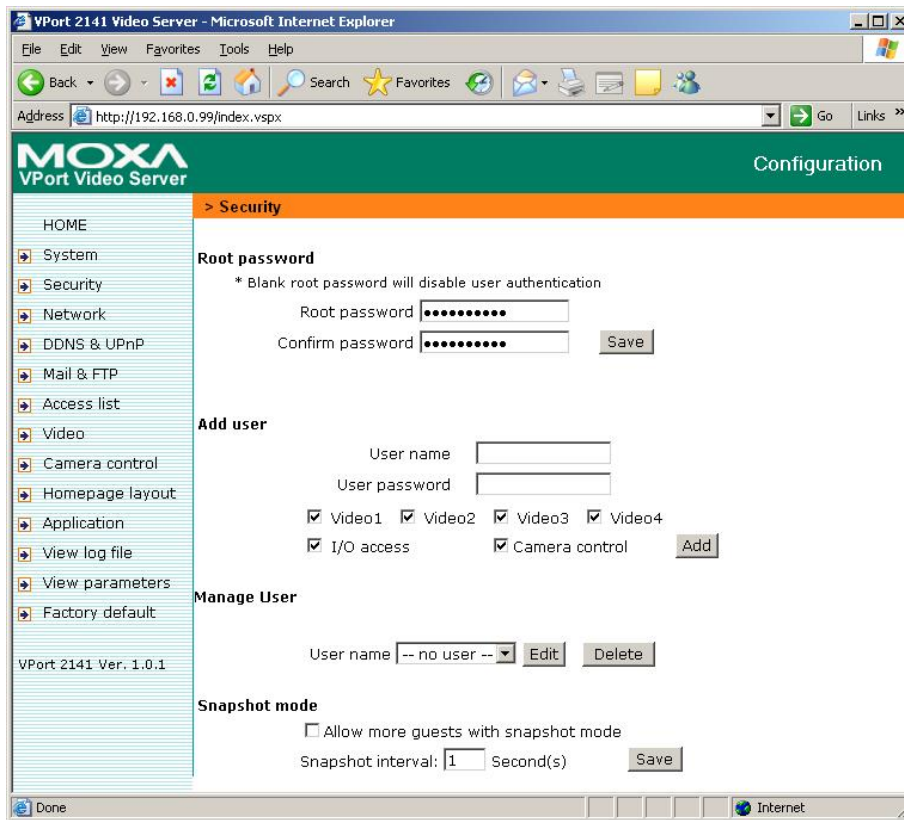
The default setting for Date and Time is **Keep current date and time**. You may also choose from one of the following date and time configuration options:

1. The easiest way to adjust the date and time is to make the VPort **Sync with computer time**.
2. Select the **Manual** option if you wish to set the date and time manually by entering new settings.
3. Select the **Automatic** option to make the VPort synchronize automatically with timeservers over the Internet every month. 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 as long as the DNS server is available. Do not forget to set the **Time zone** for local settings. Refer to Appendix G for your region's time zone.

Click on **Save** to validate the changes.



## Security



### Root password

To change the administrator's password, type the new password in both the **Root password** box and **Confirm password** box. The passwords you enter will be displayed in asterisks for security reasons. The maximum string length for a password is 16 characters. After clicking on **Save** to validate the new password, a window will open to ask the administrator for the new password to access the VPort.

### Adding users

To add a new user, type the new user's name in the **Username** box, the password in the **User password** box, and select the authorization level by checking **I/O access** or **Camera control**. Click on **Add** to insert the entry. The VPort 2141 has a total of 20 user accounts. Each user can be given independent access rights to the external I/O access and camera control.

### Managing users

If the access rights of some users need to be changed, find the user name from the drop down list and click on **Edit**. A new window will appear for administrators to change the password and select a different authorization. Administrators can also delete the selected user by clicking on **Delete**. A message window will open next to confirm.

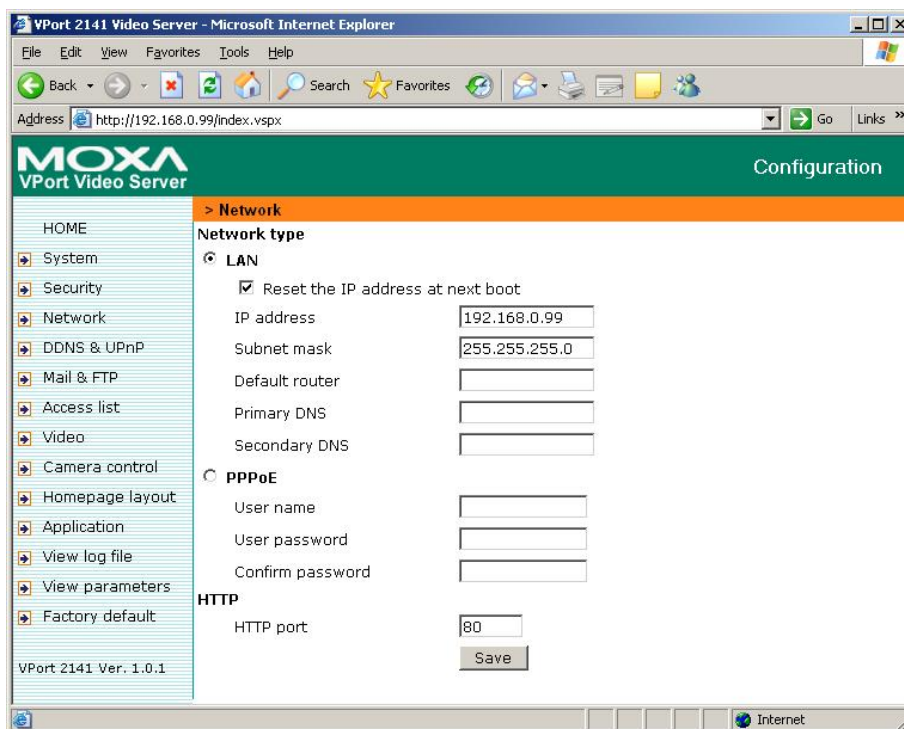
### Snapshot mode

A maximum of 20 users can view the VPort's images at the same time. Administrators can select the **Allow more guests with snapshot mode** option to enable the snapshot mode for more users. In this case, when the number of users exceeds 20, users will see the main page in snapshot mode

instead of seeing normal video images. Snapshot mode is very useful for web attraction. In this case, configure the **Snapshot interval** to achieve better performance. Increasing the time interval between snapshots allows more users to use snapshot mode.

Click on **Save** to validate changes.

## Network



In network settings, there are 2 modes for network connections. One is LAN, and the other is PPPoE for xDSL connections.

## LAN

### Reset IP address at next boot

To eliminate errors during installation, the VPort 2141 will be in installation mode whenever it starts up, unless **Reset IP address at next boot** is disabled.

1.  **Reset IP address at next boot**

In this case, the VPort 2141 will skip the installation on the next boot, which means the VPort will always use the current IP address even if the system is rebooted. To provide a stable connection using the VPort, administrators should enable this function to fix the VPort's IP address.

2.  **Reset IP address at next boot**

This is the default setting. In this case, the installation process will be performed again when the system reboots, which means that the VPort's IP address may be changed due to the renewing action of the DHCP server. Administrators may need to use the VPort installation Wizard to check the VPort's IP address again.

### Basic Network Settings

Administrators may need to modify the network settings to connect to an existing network, since the subnet mask in some broadband services may differ from the default value of 255.255.255.0, and service providers may assign more specific network settings. Administrators should change the configuration to the settings given by the service provider. The configuration may include **IP address, Subnet mask, Default router, Primary DNS server, and Secondary DNS server**. After changing network settings, be sure to uncheck the "Reset network at next boot option" to avoid the installation starting up again the next time the system restarts. Otherwise, existing network settings will be erased at the next start.

In addition, administrators can limit the bandwidth used by a VPort 2141 according to priority and importance of location. Limiting bandwidth is useful for balancing network utilization when multiple VPorts are installed on the same network. This method is more effective than just changing image quality, and is able to achieve better performance with adequate image size and quality.

### PPPoE

Some environments do not have a LAN and alternative solutions, such as an xDSL connection, are used to build a remote network. The VPort 2141 supports the PPPoE (PPP over Ethernet) function, which means that the VPort 2141 can dial up an ISP server by itself to ask the ISP server to assign an IP address.

#### Video Server WITHOUT PPPoE



In this case, a router with PPPoE is required to dial up to the ISP and the IP address must be fixed to retain the video server's network connection.

#### Video Server WITH PPPoE



The VPort 2141 with PPPoE function can dial up to an ISP automatically, and the IP address is not necessary to be fixed, since a startup log will be sent to the administrator by email or FTP (SMTP and FTP server must be setup) to notify the current IP address once it has been changed by the ISP server. This method is more cost-effective than applying for a fixed IP address.

### How to build the VPort 2141's PPPoE connection

- Step 1:** Choose PPPoE connection and configure the **User Name, User Password and Confirm Password** provided by the ISP for this service.
- Step 2:** Configure the SMTP and FTP server for setting up **Recipient's Email Address** or **FTP remote folder** to receive the startup log with assigned IP address if this xDSL connection is a non-fixed IP address.
- Step 3:** Change the LAN connection to an xDSL connection.
- Step 4:** Power on the VPort 2141 and then wait a few seconds for the VPort 2141 to build the xDSL connection.



**Step 5:** Check the email or FTP folder to get the IP address assigned to this xDSL connection by the ISP.

**NOTE** The DDNS function provides administrators with the ability to associate a fixed URL to the VPort 2141. Using a fixed URL eliminates the need of checking the IP address assigned by the ISP. Please refer to the DDNS function description to learn more about it.

## HTTP

For security or network integration, administrators can hide the server from the general HTTP port by changing the default HTTP port of 80 to a different port number. Administrators should have enough network knowledge to change the default port.

## Save the modification

After all necessary modifications are made, click on **Save** to store the modifications. A warning message will appear for confirmation. After clicking on **OK**, the VPort will automatically restart. If the **Reset network at next boot** option is checked, perform the software installation again. Otherwise, the VPort will boot up automatically using the new configuration settings.



## ATTENTION

If you make any changes to the settings on this web page, the system will restart to validate those changes. Be sure that every field is correctly typed before clicking on Save. If the VPort fails to respond due to incorrect settings, perform the restore procedure and then rerun the software installation.

## DDNS & UPnP

Two tools are available for administrators to link conveniently to the VPort 2141. The first tool is DDNS (Dynamic Domain Name System), a combination of DHCP, DNS, and client registration, all working together. 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 DDNS& UPnP configuration page. The VPort will be easier to access from various locations on the Internet. The second tool is UPnP (Universal Plug & Play), a networking architecture that provides compatibility between different types of 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 the VPort listed in the network devices table.

## Dynamic DNS

To enable the DDNS function, the administrator should first apply for a Hostname from the DDNS service providers' website. There are 5 providers listed in the VPort: DynDNS.org, TZO.com, dhs.org, safe100.net, and dyn-interfree.it. Refer to the providers' rules when enabling the function.

**Step 1:** Checkmark  **Enable DDNS.**

**Step 2:** Select the DDNS service **Provider** to which you applied.

**Step 3:** Key in the **Hostname** you applied for for linking to the VPort.

**Step 4:** Key in the **Username/E-mail** and **Password/Key** to enable the service from the DDNS service provider (based on the rules of DDNS websites).

**Step 5:** Click save to enable the DDNS configuration of the VPort

## Universal PnP

Checkmark the  **Enable UPnP** box, and then click save to enable the UPnP function. Users will be able to find and connect to the VPort directly from the operating system's network device. If the UPnP network component is installed in Windows XP, the hostname of the VPort will be shown with bracketed IP address in the Network neighbors, e.g., VPort 2141 (xxx.xxx.xxx.96). In other words, the hostname of the VPort is "VPort 2141," and the IP address of the video encoder is xxx.xxx.xxx.96, which depends on the last value of the IP address assigned to the video encoder.

## Mail &amp; FTP

The screenshot shows the configuration page for the VPort 2141 Video Server. The browser window is titled "VPort 2141 Video Server - Microsoft Internet Explorer" and the address bar shows "http://192.168.0.99/index.vspix". The page has a green header with the MOXA logo and "VPort Video Server" text, and a "Configuration" label on the right. A left-hand navigation menu lists various settings categories, with "Mail & FTP" selected. The main content area is divided into two sections: "SMTP" and "FTP".

**SMTP**

- 1st SMTP (mail) server
- 1st SMTP account name
- 1st SMTP password
- 1st Recipient email address
- 2nd SMTP (mail) server
- 2nd SMTP account name
- 2nd SMTP password
- 2nd Recipient email address
- Sender email address

**FTP**

- Local FTP server port: 21
- 1st FTP server
- 1st FTP server port: 21
- 1st FTP user name
- 1st FTP password
- 1st FTP remote folder
- 1st FTP passive mode
- 2nd FTP server
- 2nd FTP server port: 21
- 2nd FTP user name

**SMTP**

The VPort 2141 not only plays the role of server, but also actively connects to outside servers to send alarm messages or snapshots. If the administrator has set up some applications in either event mode or sequential mode, the VPort will send out snapshots once these conditions occur.

1. To activate the e-mail function, enter the correct settings for **1<sup>st</sup> SMTP (mail) server's domain name, account name/password, and Recipient email address**.
2. **SMTP (mail) server's domain name, account name/password, and Recipient email address** are provided for a backup connection when the primary SMTP server fails.
3. **Sender email address** is the address the email is returned to when the SMTP server rejects email due to failure. Some ISPs may reject the email if the address is invalid.

**ATTENTION**

If the settings are correct when the VPort starts up, it will send out a system log via e-mail instead of uploading the log via FTP. Note that if the **Sender email address** is not set, the e-mail system will not work properly.

## FTP

FTP can be used by the VPort 2141 to send out alarm messages and snapshots. To send the system log files described in the above paragraph by FTP, the SMTP server should be erased.

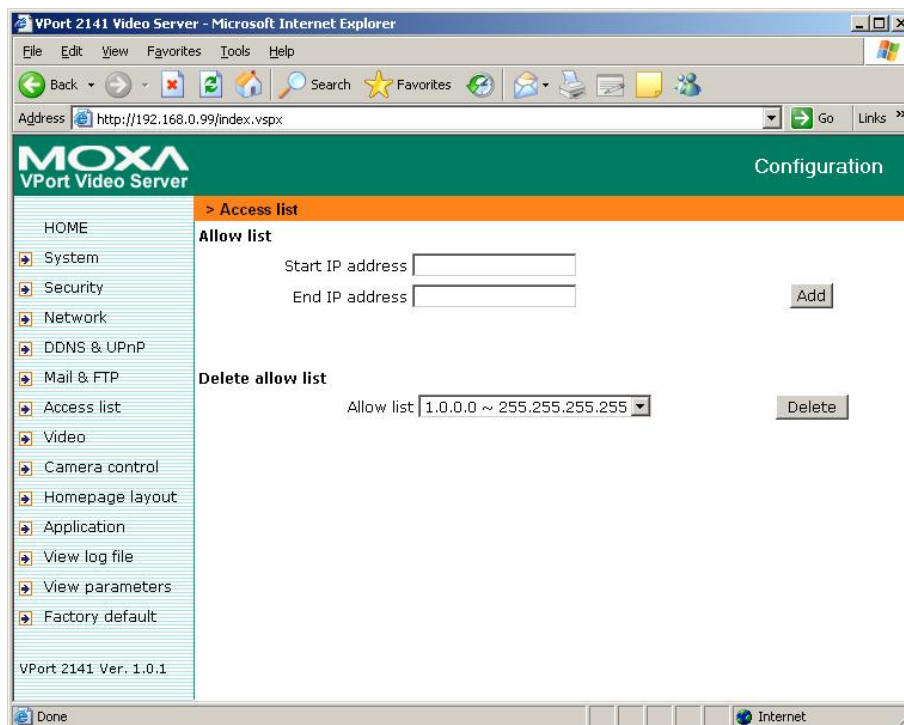
1. The **Local FTP server port** can be changed to a setting different from the default setting of 21. Administrators should have enough network knowledge to change the default port.
2. Administrators must enter the correct **1st FTP Server**, **1st FTP user name**, and **1st FTP password**.
3. **1st FTP remote folder** is the sub-folder in the remote FTP server.
4. If the remote FTP server's port is changed to a setting different from 21, be sure to set the real port to **1st FTP server port**.
5. If the local network is protected by a firewall to prevent it from initiating an FTP connection from the remote FTP server, you may be able to connect to the FTP server, but not be able to save a file to the server due to data channel connection failure. Check **1st FTP passive mode** for a passive transfer solution.
6. Another set of **2<sup>nd</sup> FTP** server settings is also provided for a backup connection.



### ATTENTION

With either e-mail or FTP, the primary server information should be entered first. If the primary server is not set, the related FTP or email will be cancelled. Note that it may take time to connect to the secondary server if the first server fails, and it may affect some applications when conditions occur too often.

## Access List



The Accessible List allows 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.

**Allow List**

The VPort can use the allow list to limit which clients can access the video stream. Administrators can add ten IP address ranges to forbid access to these clients.

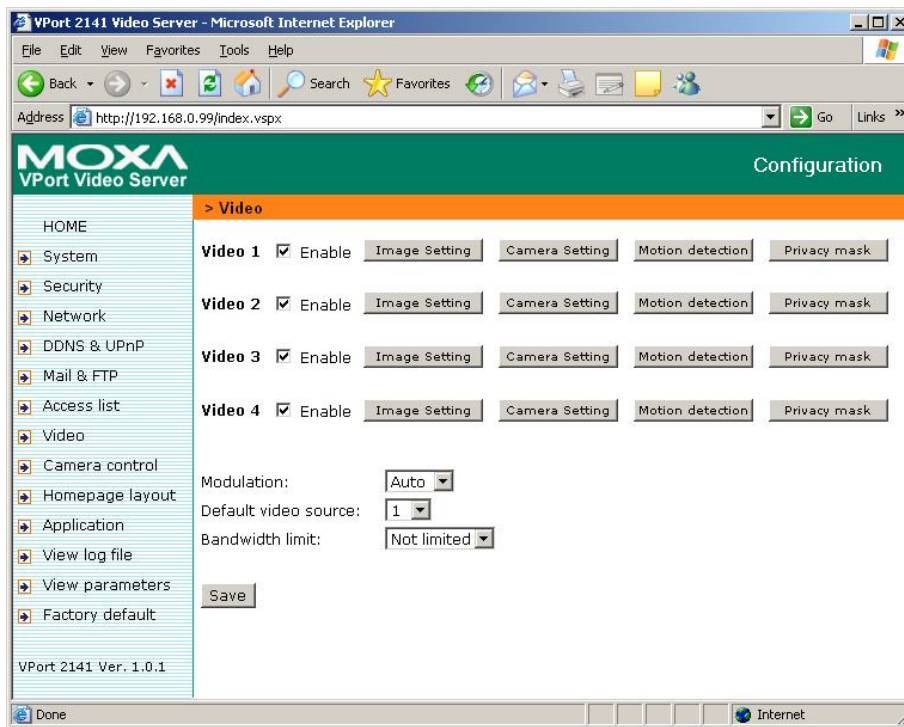
**Deleting the Allow List**

VPort also supports a deny list, with a maximum of 10 elements. The deny list is given a higher priority than the allow list. If a client is in both the deny list and allow list, the client will be not allowed to access video stream.

Refer to the following table for more configuration examples.

Allowable Hosts	Start IP Address	End IP Address
Any host	Blank	Blank
192.168.1.120	192.168.1.120	192.168.1.120
192.168.1.1 to 192.168.1.254	192.168.1.1	192.168.1.254
192.168.0.1 to 192.168.255.254	192.168.0.1	192.168.255.254

Video



On the **Video** page, checkmark the **Enable** box to allow the VPort 2141 to show the camera’s video images. The various settings are described in the following subsections.

## Image setting



### Time stamp

Checkmark the **Time stamp** checkbox to show a time stamp on the video images. The time stamp is captured from the VPort 2141's on-board real-time clock.

### Text on Image

Use this option to label all of the images. A maximum of 14 bytes (14 English characters) are allowed.

### Color, Default quality, Default size, Maximum frame rate

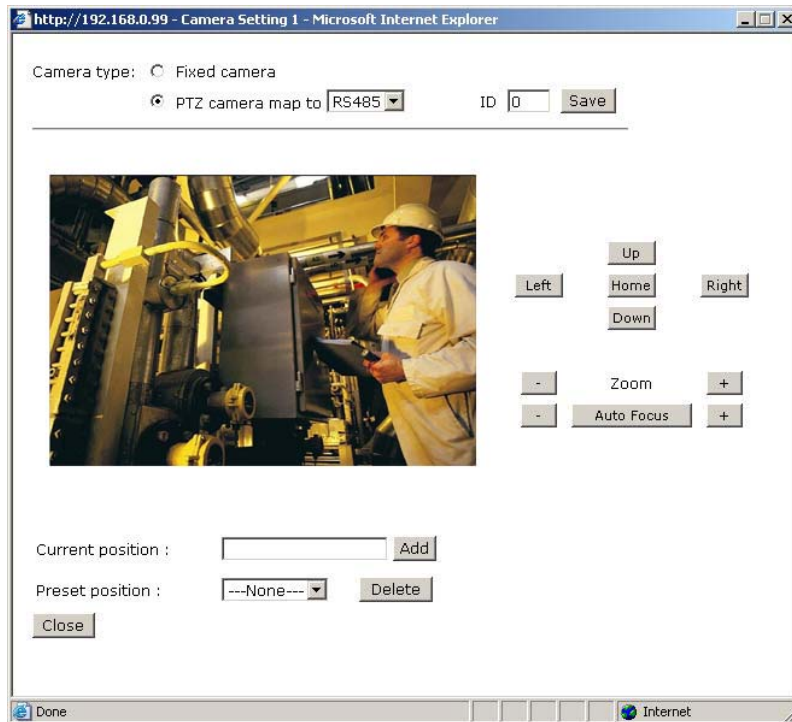
The **Color** setting depends on the connected camera. Use the "B/W" option to speed up the operation of the VPort. The **Default quality** option is the default quality when users first connect to the VPort. The **Default size** option is the default resolution of the video window when the user first connects to the VPort. The **Maximum Frame Rate** option is the default frame rate when the camera's images are displayed by the web server.

After inputting the above settings, click on **Save** to save the settings to the camera, or click on **Save All** to save settings to all 4 cameras.

### Brightness, Contrast, Saturation, and Hue

Each field has eleven levels, ranging from -5 to +5. After entering a value, you may click on **preview** to see if the settings are appropriate before clicking on **Save** or **Save All**. If the adjustment is not satisfactory, click on **Restore** to restore the original settings. After finishing the configuration, click on **Close** to close this window. If the configurations are changed without saving, they will only be lost when the system is restarted.

## Camera Setting



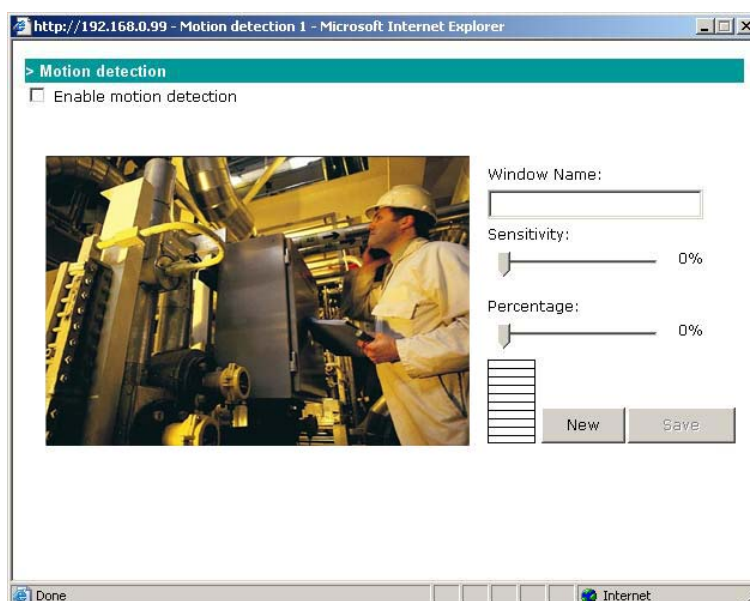
### Camera type

The default camera type for the VPort 2141 is **Fixed camera**, which means that it is a general camera without a motorized function. If you wish to select a PTZ camera, you also need to select the COM port that this PTZ camera is connected to, and the PTZ camera's ID to activate it. Click on **Save** to validate the camera type.

### Preset position setting of Motorized PTZ camera

Below the camera type setting is the image of the camera, the PAN/TILT/ZOOM/FOCUS control buttons, and the preset position settings. For motorized PTZ cameras, use the control buttons to adjust the positioning and focus of the camera. A maximum of 20 preset positions can be set up for each channel.

## Motion Detection



Three areas of the image can be configured for the VMD (video motion detection) function. The VMD alarm will only be triggered when the VMD conditions in these 3 specific areas are met. Each area can be fine tuned to fit the environment for different VMD conditions by setting the **Sensitivity** and image change **Percentage**.

1. **Sensitivity** sets the measurable difference between two sequential images to indicate motion.
2. **Percentage** sets the minimum size of the image whose motion will be detected (e.g., if Object size = 30%, then the system will only detect the motion of objects that occupy an area larger than 30% of the total monitored area; the motion of objects with size less than 30% of the monitored area will NOT be detected).

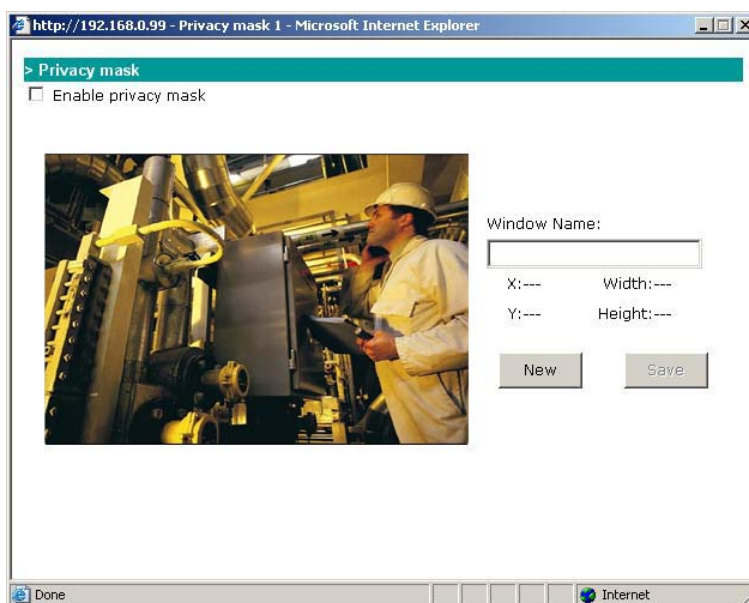
### How to Set up a VMD condition

- Step 1:** To enable VMD settings, checkmark the  **Enable Motion Detection** box.
- Step 2:** Click on the **New** button. A VMD window will pop up. Right click the title bar of this window to move the location of the VMD window, or drag the boarder to change the window size so that it fits the desired VMD area.
- Step 3:** Use **Window Name** to assign a name to this VMD window (refer to the **Trigger Condition** in the **Configuration/Application** page).
- Step 4:** Set up the **Sensitivity** and **Percentage** parameters by moving the percentage cursor.
- Step 5:** Click on the **Save** button to save the settings.
- Step 6:** To test the VMD condition, check the action of the graphics bar on the left side of the save button. Wave your hand in front of the camera, in the VMD area, and then note which color shows up in the graphics bar. Green means VMD is not triggered. Red means VMD is triggered.
- Step 7:** Users will see a red frame with the VMD window size in the homepage's image if the VMD is triggered.



**ATTENTION**

The motion detection function is dependent on the environment. When the settings are configured to be very sensitive to motion, some triggered events might be false alarms, since there could be small differences between sequential images of the same scene. In addition, the motion detection alarm could be triggered by the flashing of florescent lights, shifting of shadows due to changes in the lighting conditions, etc.

**Privacy Mask**

Five private mask areas can be set up for each camera. The areas appear as filled rectangles (with fill color set to black) to hide the privacy of objects in that region. A privacy mask window is set up in the same way as a motion detection window.

Before completing the Video configuration, you should check the **Modulation**, **Default Video Source**, and **Bandwidth Limit**, as described next.

**Modulation**

There are 3 types of **Modulation**. Administrators can set the auto-detected condition during initialization by selecting **Auto**, but can still set it manually by selecting **NTSC** or **PAL**. When you change the camera modulation, a warning message will pop up to inform you that the system will restart to validate the new modulation.

**ATTENTION**

In general, analog cameras support one of two different standards, NTSC or PAL. However, all of the cameras connected to the VPort 2141 video encoder should use the same standard.

**Default Video Source**

Administrators can set the default viewing mode for home page to camera 1, 2, 3, or 4, or show all images with quad mode.

## Bandwidth Limit

The bandwidth limit affects the transmission of video streams. Once a bandwidth limit is set, the video frame rate will change accordingly. Limiting the bandwidth is useful for balancing network utilization when multiple VPorts are installed on the same network. This method is more effective than just changing image quality, and is able to achieve better performance with adequate image size and quality.

## Save

After making all of the necessary modifications, click **Save** to store the modifications. If you have changed the modulation type, the VPort will restart automatically.

## Camera Control

The **Camera Control** page includes settings for PTZ driver, and various serial transmission settings.

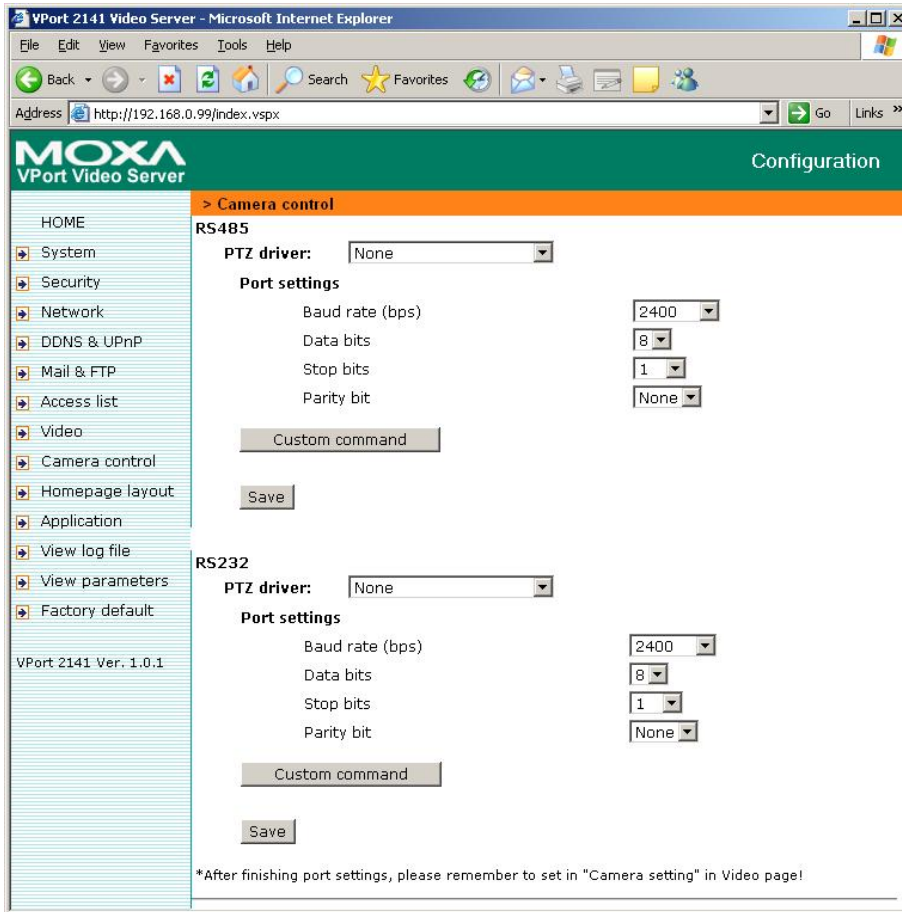
The VPort 2141 has 2 COM ports, COM 1 and COM 2, for connecting to external devices, such as a motorized PTZ (PAN, TILT, ZOOM) controller.

	Interface	Speed
COM 1	RS-232, male DB9	Max. 115.2 Kbps
COM 2	RS-485, Terminal block for Data+, Data-	Max. 115.2 Kbps

The COM port connection serves 2 purposes:

1. If the attached device is a PTZ camera, administrators must select the correct PTZ model under PTZ driver options, since each PTZ camera has its own protocols for the PTZ functions. Refer to Appendix B, **Settings for Supported PTZ Cameras**, to see which PTZ cameras are supported by the VPort 2141. If the attached PTZ camera is not supported by the VPort, select **Custom Camera** to enter the proprietary commands for pan, tilt, zoom, and focus control.
2. If the attached device is not a PTZ camera (e.g., a video multiplexer), select the **Generic CGI command** to control the device using CGI commands. For external device control, refer to Chapter 5, **Advanced Applications**, under the **URL Commands for DI/DO and Camera's Actions settings** section for more details.

The default setting is **None**, which means no serial device is connected to the COM port.



### PTZ Driver

Since each PTZ camera has its own protocols for the PTZ functions, select the correct PTZ model under PTZ driver options. If the attached PTZ camera is not supported by the VPort, select **Custom Camera** to enter the proprietary commands for pan, tilt, zoom, and focus control.



#### ATTENTION

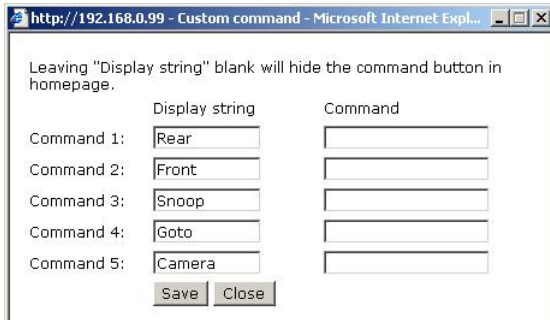
The VPort 2141 supports the following PTZ drivers and camera models:

1. Sony Visca
2. Cannon VCC1\VCC3\VCC4
3. Pelco D protocol
4. Samsung/ SmartDome
5. Dynacolor SmartDome/Dynadome
6. Liling PIH-7x00
7. Ernitec

### Port Settings

After selecting the correct PTZ driver or Generic CGI command option, configure Port settings, which includes **Baud rate**, **Data bits**, **Stop bits**, and **Parity bit**. If the attached device is a PTZ camera, refer to Appendix B, **Settings for Supported PTZ Cameras**, for default settings of the supported PTZ cameras.

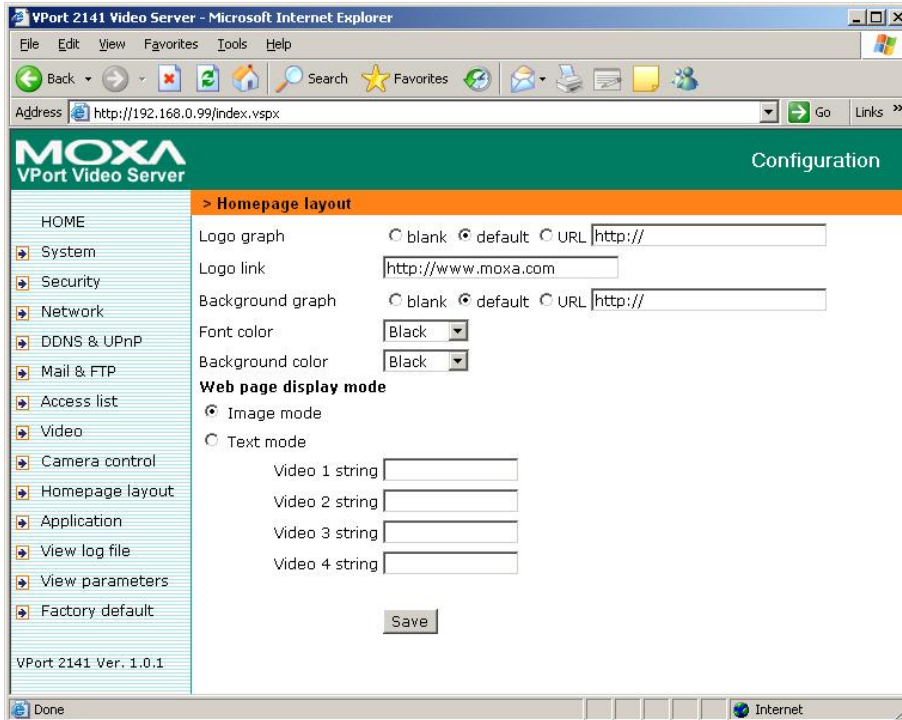
### Custom command



In addition to pan, tilt, zoom, and preset functions, the VPort 2141 also supports 5 custom commands. Click on **Custom Command** to configure, 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 send them out through the serial port. For instance, a text string of **8101ABCDEF** 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.

### Homepage Layout

The VPort 2141 allows administrators to customize the layout of the its homepage.



### Logo graph

1. Select the blank option to hide the logo figure, which appears in the upper-left corner of the homepage.
2. The “default” logo is the MOXA logo.
3. An external logo or image can be used by selecting the **URL** option, and typing the url for the image in the text input box.

### Logo link

Use the **Logo link** option to input the url that visitors are directed to when they click on the logo.

### Background graph

As with **Logo graph**, **Background graph** gives you the ability to customize the background as **blank**, **default**, or an external image by selecting the **URL** option, and typing the url for the image in the text input box.

### Font and Background color

The **Font color** and **Background color** can be chosen from sixteen custom colors.



#### ATTENTION

The **Background color** option is active only when **Background graph** is set as **blank**.

### Web page display mode

There are two homepage display modes. One is **Image mode**, which uses icons to link to the various functions; the other is **Text mode**, which uses mostly text to link to the various functions. You may change the string content manually.



#### ATTENTION

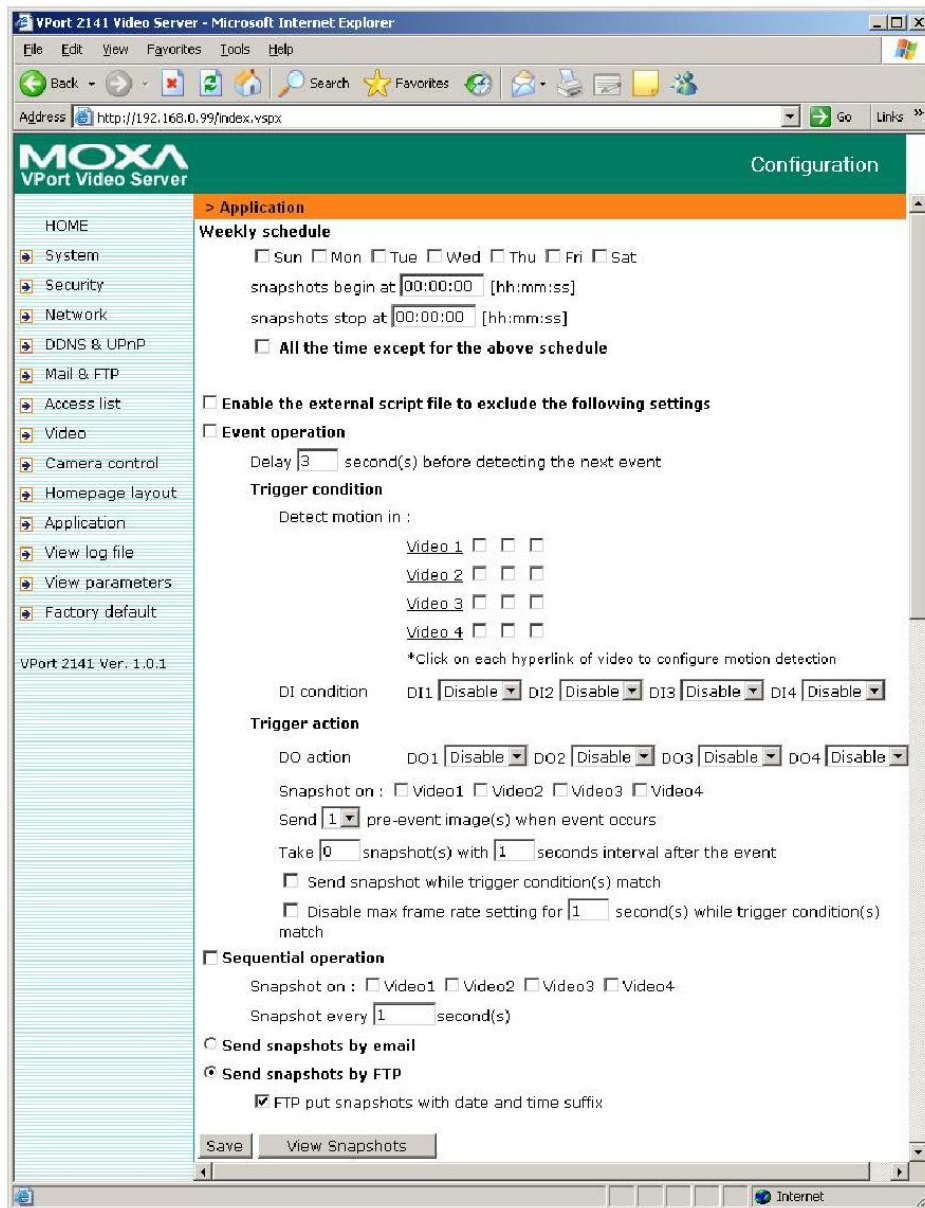
See the **Customize graphics in homepage** section from Chapter 5 to see how to replace the default images for the VPort's log, background, and buttons.

## Application

The VPort 2141 provides 4 major applications.

1. **Weekly schedule**: Set up the Application schedule by week.
2. **External script files**: For advanced applications, you can program command scripts that can be uploaded to the VPort 2141.
3. **Event operation**: Set trigger conditions by selecting **Motion Detected**, **DI Condition**, etc., and trigger actions by selecting **Trigger output alarm while input condition matched**, etc.
4. **Sequential mode**: Set the sequential snapshot mode to send snapshots by time interval.

You can use combinations of options from the application web page to perform various useful security applications.



Take the following steps to configure applications.

<p><b>Step 1:</b> Choose the operation period</p>	<p><b>Weekly schedule</b>  <input type="checkbox"/>Sun <input type="checkbox"/>Mon <input type="checkbox"/>Tue <input type="checkbox"/>Wed <input type="checkbox"/>Thu <input type="checkbox"/>Fri <input type="checkbox"/>Sat                  snapshot begin <input type="text" value="00:00:00"/> [hh:mm:ss]                  snapshot end <input type="text" value="00:00:00"/> [hh:mm:ss]  <input type="checkbox"/> <b>All the time except for the above schedule</b></p>	
<p><b>Step 2:</b> Choose the application</p>	<p><input type="checkbox"/> <b>Event operation</b></p>	<p><input type="checkbox"/> <b>Sequential mode</b></p>
<p><b>Step 3:</b> Set up the application's actions</p>	<p><b>Step 3-1:</b> Set up the Delay <input type="checkbox"/> seconds before detecting the next event</p> <hr/> <p><b>Step 3-2:</b> Set up the <b>Trigger Condition</b></p> <p>Motion detected in:  <u>Video 1:</u> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>  <u>Video 2:</u> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>  <u>Video 3:</u> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>  <u>Video 4:</u> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>DI Condition:                  DI 1: <input type="text" value="▼"/> (Disable, High, Low, Rising, Falling)                  DI 2: <input type="text" value="▼"/> (Disable, High, Low, Rising, Falling)                  DI 3: <input type="text" value="▼"/> (Disable, High, Low, Rising, Falling)                  DI 4: <input type="text" value="▼"/> (Disable, High, Low, Rising, Falling)</p>	
<p>Snapshot on :  <input type="checkbox"/>Video1 <input type="checkbox"/>Video2 <input type="checkbox"/>Video3 <input type="checkbox"/>Video4                  Snapshot every <input type="checkbox"/> seconds</p>		

	<p><b>Step 3-3: Set up the Trigger action</b></p> <p>DO1: <input type="button" value="▼"/> (Disable, Close, Open)</p> <p>DO2: <input type="button" value="▼"/> (Disable, Close, Open)</p> <p>DO3: <input type="button" value="▼"/> (Disable, Close, Open)</p> <p>DO4: <input type="button" value="▼"/> (Disable, Close, Open)</p> <p>Send Snapshot on</p> <p><input type="checkbox"/> Video 1 <input type="checkbox"/> Video 2 <input type="checkbox"/> Video 3 <input type="checkbox"/> Video 4</p> <p>Send <input type="button" value="▼"/> (0,1,2,3,4,5,6) pre-event image(s) when event occurs</p> <p>Take <input type="checkbox"/> snapshot(s) with <input type="checkbox"/> seconds interval after the event</p> <p><input type="checkbox"/> Send snapshot while trigger condition(s) match</p> <p><input type="checkbox"/> Disable max frame rate setting for <input type="checkbox"/> second(s) while trigger condition(s) match</p>	
<p><b>Step 4:</b></p> <p>Choose the snapshot images sending method if you choose the upload snapshot trigger action or sequential mode</p>	<p><input type="radio"/> Send snapshot by email</p> <p><input type="radio"/> Send snapshot by FTP</p> <p><input type="checkbox"/> FTP put snapshots with date and time suffix</p>	
<p><b>Step 5:</b></p> <p>Click <b>Save</b> to enable the applications</p>		

### Weekly schedule

The Weekly schedule is provided for daily security applications. Select any weekday from Monday to Friday with the daily schedule set from 08:00 am to 20:00 pm when no one is available to perform event checking. If the security system is installed in an office for which no one is present on nights or weekends, administrators can still set the time period as above, from 08:00 am to 20:00 pm, but remember to select **All the time except for the above schedule** to let the program run during nights and weekends.



**ATTENTION**

You must select **Weekly schedule** or **All the time except for the above schedule**. Otherwise, the applications described in the following sections will not work properly.



## Enable the external script file to exclude the following settings

You can write a script named **SCRIPT.TXT** to match the additional software according to the **Command Script for DI/DO and Camera's Actions Setting** section from Chapter 5. After uploading this script to the VPort via FTP, check the option **Enable the external script file to exclude the following settings**. Otherwise, the VPort will use the settings under **Enable the external script file to exclude the following settings** option.

## Event operation

Event operation is for setting security applications.

1. **Delay**  **seconds before detecting the next event:**

Use this option to set the time interval (in seconds, from 0 to 999) between each event's trigger action.

2. **Trigger Condition**

- a. **Detect motion in.** Check the Video 1, Video 2, Video 3, and Video 4 boxes to enable Video Motion Detection (VMD), which is set on the Video configuration web page (you may also click on the **each hyperlink of video to configure motion detection** link below to configure the appropriate parameters) as the trigger condition. There are 3 check boxes to the right of each video channel, which are for each camera's VMD area settings. The VMD Window's name will appear after the box is set up.
- b. **DI Condition.** The VPort 2141 supports 4 Digital Inputs. Each DI can be set to **High**, **Low**, **Rising**, or **Falling**. An edge trigger (e.g., Rising or Falling) is generally used to detect the signal from an external sensor.

3. **Trigger Action**

You can set 2 trigger actions that determine the reaction after an event occurs. The trigger actions are **relay output alarms** and **snapshot image**.

- a. **DO Action.** There are 4 DOs (Relay output) for connecting the alarms. You can set the trigger output alarm when the DI or Video Motion Detection conditions are met. The **Delay**  **second(s) after event** option will delay the time at which the device attached to the digital output responds.
- b. **Snapshot.** You can configure the snapshot action to occur when the DI or Video Motion Detection conditions are met. By checking the **Send snapshot while trigger condition(s) match**, this snapshot trigger action can be enabled. Three snapshots will be taken when an event occurs.
  - (1) **Pre-event snapshot:** The VPort 2141 can provide a maximum of 6 snapshot images before the event, which can be set up in **Send**  **pre-event image(s) when event occurs.**
  - (2) **Event-triggered snapshot:** Once an event occurs, the VPort 2141 will send a snapshot image at the moment the event is being triggered.
  - (3) **Post-event snapshot:** You can determine how many snapshot images will be sent from the VPort 2141 after the event has been triggered. This is done by configuring **Take**  **snapshot(s) with**  **seconds interval after the event.**
- c. **Send snapshot while trigger condition(s) match.** To activate the function of snapshot sent via E-mail or FTP server, this item should be checked.

## Sequential Mode

With this feature, the VPort 2141 can upload snapshots periodically to an external e-mail or FTP server as a live video source. Use the **Snapshot every**  **seconds** setting to set time interval between uploads. The interval can be set to as little as 1/10 sec to several hours. The external e-mail or FTP server must be set up in the network configuration page.

## Send Snapshot by Email or FTP

Snapshots taken by either event operation or sequential mode can be sent by **E-mail** or **FTP**, which are set on the **Mail & FTP** configuration page. If email is chosen, the snapshots of the video channel will be attached to the emails. If FTP is chosen, you can choose to add the date and time in the file name of the snapshots by checking **FTP put snapshots with date and time suffix**. If the snapshots are used as the live video source, the date and time suffix can be eliminated to update the same source file.



### ATTENTION

In Sequential mode, the VPort will send out snapshots according to interval and period settings. If snapshot files are intended for quick updates, it is better to skip the date and time suffix, in which case the file name will be video.jpg. If the snapshots are used for occasional monitoring, suffixing with date and time can help administrators easily classify the snapshots.



### ATTENTION

Compared to the FTP method, email will induce more delay, although email can notify users more promptly.

## View Snapshot

You can check the latest pre-event, the moment of the event, and post-event snapshots by clicking on the **View Snapshot** button.

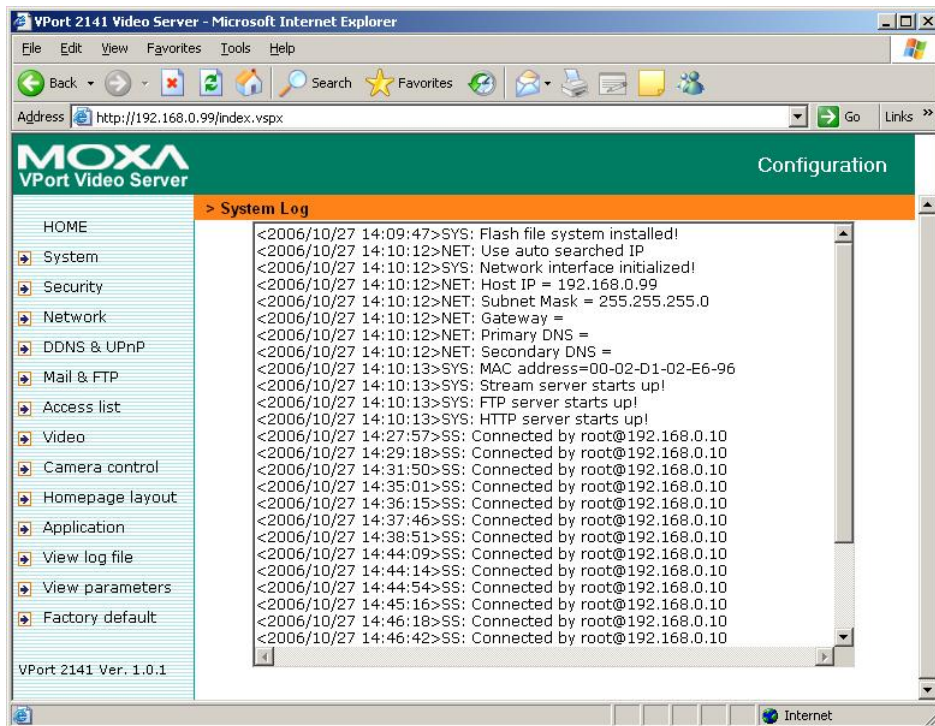


## Save

Click on **Save** to activate the applications when you finish updating the settings.

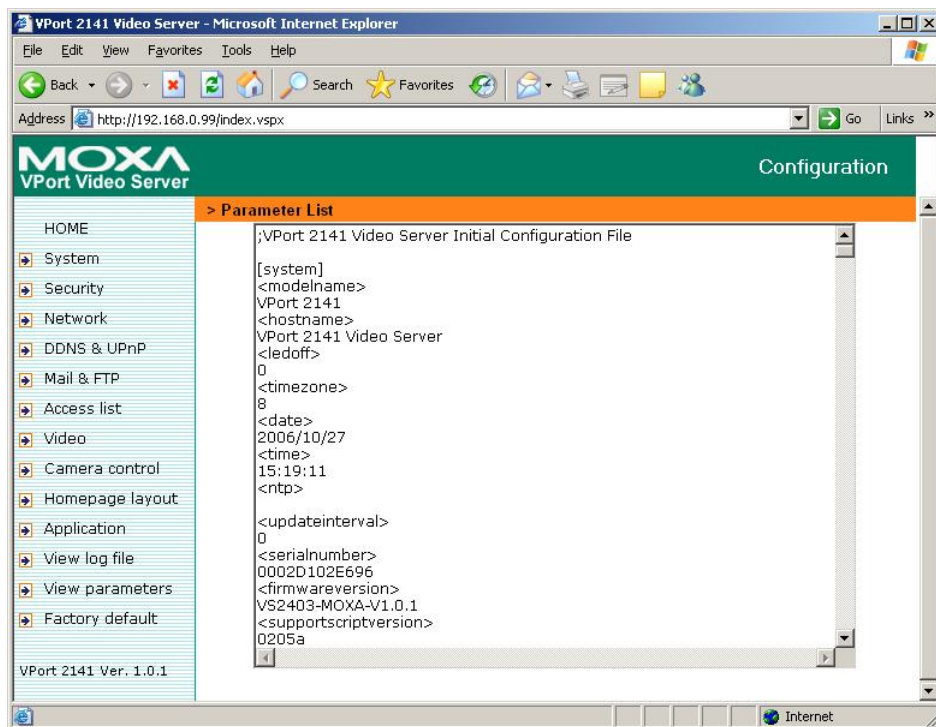
## View Log File

The system log contains useful information, including current system configuration and activity history with timestamp for tracking.



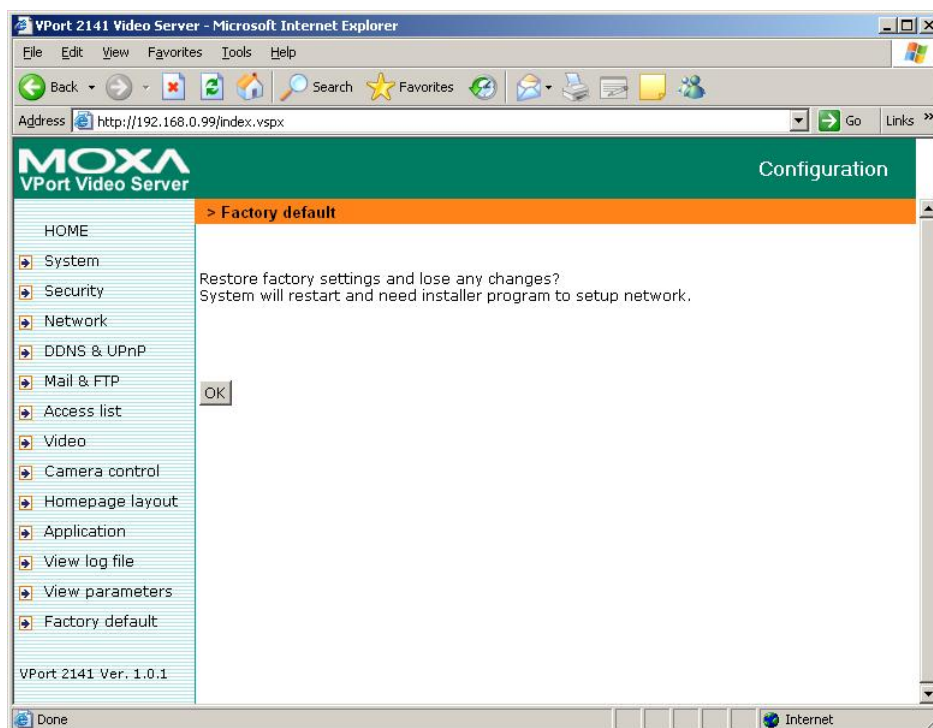
## View parameters

Clicking on **View parameters** allows you to view all system parameters, which are listed by category. The content is the same as in the VPort 2141's CONFIG.INI file.



## Factory Default

This **Factory default** function is used to restore the VPort 2141 to its factory default settings. This means that any changes that were made previously will be lost. After clicking **OK**, the system will restart. Note that it will take some time for the restore action to finish, and you will need to run the software installation program to set up the network.



## System Configuration by FTP

### CONFIG.INI

FTP can be used to configure the VPort 2141 much more quickly than configuring from a web browser, particularly when configuring multiple VPort 2141 units. To configure a VPort 2141 by FTP, first download the parameter file (CONFIG.INI), customize each field, and then upload the file to the VPort 2141 to install the new settings. To log into the FTP daemon, enter “root” as the user name, and enter the password that you use when connecting to the Web server. The VPort 2141’s MAC address (no dashes, all letters upper case) is the password for initial access.

The CONFIG.INI file has multiple categories. The category names in square brackets should be in upper case. The item names in angle braces should be in lower case. Some items related to disable/enable should use the keywords “YES” or “NO”. The number zero (0) entry in <user name> and <user password> is for administrators, i.e. “root”. The VPort 2141 will restart automatically as soon as the file is uploaded and accepted. If you want to cancel the reboot procedure after transferring the CONFIG.INI file by FTP, then set the first item, <reset system>, to NO. However, it will only take effect once, and show YES in the download config.ini file the next time.

A sample CONFIG.INI file is shown in the table below. The text in *italics* describes the characteristics of the field, and the ***bold italic characters*** are the options for the field.

The following table is an example, with all parameters listed in **General command URL format**.

```
;VPort 2141 Video Server Initial Configuration File

[system]
<modelname>
VPort 2141
<hostname>
VPort 2141 Video Server
<ledoff>
0
<timezone>
8
<date>
2005/04/01
<time>
16:28:59
<ntp>

<updateinterval>
0
<serialnumber>
0002D10093E3
<firmwareversion>
VS2403-MOXA-V1.0.1
<supportscriptversion>
0205a
<scriptversion>
0205a
<language>
en
<webpageversion>
VS2403-MOXA-0100b
<di1>
L
<di2>
L
<di3>
L
<di4>
L
<resetdo>
0
<delayresetdo>
1
<ptzenabled>
0
<viewmode>
0

[security]
<usercount>
1
```

<username>
(0)root
(1)
(2)
(3)
(4)
(5)
(6)
(7)
(8)
(9)
(10)
(11)
(12)
(13)
(14)
(15)
(16)
(17)
(18)
(19)
(20)
<userpass>
(0) 0002D10093E3
(1)
(2)
(3)
(4)
(5)
(6)
(7)
(8)
(9)
(10)
(11)
(12)
(13)
(14)
(15)
(16)
(17)
(18)
(19)
(20)
<userattr>
(0)video1 video2 video3 video4 camctrl dido conf
(1)
(2)
(3)
(4)

(5)
(6)
(7)
(8)
(9)
(10)
(11)
(12)
(13)
(14)
(15)
(16)
(17)
(18)
(19)
(20)

## System Configuration by Telnet

### Telnet Commands

The VPort 2141 has a Telnet daemon that allows administrators to access some seldom used functions. You will be prompted for a password if you use any general terminal program to connect to the VPort 2141. The Username is not requested since only administrators can access the Telnet daemon. The password is the same as that used for web access. After logging in, type "help" for the command list. If "debug" or "dinote" is not executed, Telnet will disconnect automatically after being idle for 1 minute.

### System Core Debugging

General activities are recorded into SYSTEM.LOG continuously, but information about abnormal status is not recorded. Administrators can type the "debug" command to examine in-depth core debugging information. This causes the VPort 2141 to start dumping the detailed debugging information while the system is running. This is useful for examining if any errors have occurred when the system operates abnormally. The stored information will be cleared automatically after the dump. The VPort 2141 will continue to dump new messages unless the connection is broken. If Telnet is not connected, messages will be stored until administrators re-login.

### Monitoring the Status of Digital Inputs

Typing "dinote" will cause the VPort 2141 to send the current status of all digital inputs. After that, the VPort 2141 will continuously monitor the DI status and send messages only when the state has changed. For example, after typing "dinote" the terminal will display:

```
DI1=L  
DI2=L  
DI3=L  
DI4=L
```

and after DI2 changes to H, the terminal will display

```
DI2=H
```



## Stopping Information Dumping

Typing "stop" will halt the dumping of debug information and the digital input status.

## Querying the Status of Digital Inputs

Typing "diquery" will display the status of all digital inputs once.

## Setting Digital Outputs

To set digital output 1 to connect NO with COMMON, type "do1=o".

To set digital output 1 to connect NC with COMMON, type "do1=c".

To set digital output 2 to connect NO with COMMON, type "do2=o".

To set digital output 2 to connect NC with COMMON, type "do2=c".

## Restoring Factory Default Settings

Typing "clear" will cause the VPort 2141 to restore factory settings, but not restart. To validate the new settings, type "reset" to cause the system to restart.

## System Reset

Typing "reset" will cause the VPort 2141 to perform a software reset.

## Advanced Applications

---

This chapter will introduce more advanced applications.

The following topics are covered in this chapter:

- ❑ **Capturing Up-to-date Still Images**
  - Getting snapshots by URL
  - Getting snapshots by FTP
- ❑ **Embedding Video in the Homepage**
- ❑ **Downloading Event-triggered Snapshots**
  - Getting triggered snapshots by URL
  - Getting triggered snapshots by FTP
- ❑ **Uploading Snapshots Periodically**
  - Uploading snapshots to an external FTP server
  - Sending snapshots to an external SMTP (email) server
- ❑ **Customizing Homepage Graphics**
- ❑ **Command Script for DI/DO & Camera's Actions Setting**
  - Command Format
  - Parameter Explanations
  - Practical Examples
- ❑ **URL Commands for DI/DO & Camera's Actions Setting**
  - Querying the status of digital inputs
  - Driving digital outputs
  - Moving motorized cameras in PTZ directions
  - Recalling camera position
  - Transparent Remote Serial Driver
- ❑ **URL Commands for System Maintenance**
  - Downloading the System Log by FTP
  - Restart the System by URL
  - Restoring Factory Default Settings by URL

## Capturing Up-to-date Still Images

### Getting snapshots by URL

Administrators and users can use a specific URL to capture the current still image.

Video Channel	URL
Video 1	http://<IP of Video Encoder>/cgi-bin/video1.jpg[?<param>=<value>]
Video 2	http://<IP of Video Encoder>/cgi-bin/video2.jpg[?<param>=<value>]
Video 3	http://<IP of Video Encoder>/cgi-bin/video3.jpg[?<param>=<value>]
Video 4	http://<IP of Video Encoder>/cgi-bin/video4.jpg[?<param>=<value>]
Quad of all	http://<IP of Video Encoder>/cgi-bin/videoall.jpg[?<param>=<value>]

#### Additional Parameters:

param	Value	Description
Quality	1	Medium
	2	Standard
	3	Good
	4	Detailed
	5	Excellent
Size	1	Half
	2	Standard
	3	Double
	6	Half D1

### Getting snapshots by FTP

Administrators and users can log in to the VPort 2141 FTP daemon to download the refreshed JPEG image. The user name and password are the same as for web access. The zero file size in the file directory means it is captured by request.

Video Channel	File Name
Video 1	Video1.jpg
Video 2	Video2.jpg
Video 3	Video3.jpg
Video 4	Video4.jpg
Quad of all	Videoall.jpg

## Embedding Video in the Homepage

When embedding video in the homepage, in addition to indicating the URL, some scripts should be added to download plug-ins used to view video images. The following example simply displays title text and a real-time video window in Internet Explorer or Netscape. The user name and password should be configured in advance. Those who are familiar with HTML can easily add more components or rewrite the code to create a more vivid and useful homepage.

```
<html>
<head><title>Video Encoder Sample Page</title></head>
<body>
<h2>Video Encoder Sample Page</h2>
<script language="JavaScript">
```

```

<!--
if ((navigator.appName == "Microsoft Internet Explorer")&&(navigator.platform != "MacPPC"))
{
    document.write("<OBJECT ID=\"MjpegControl\" WIDTH=352 HEIGHT=240");
    document.write(" CLASSID=\"CLSID:EAA105FE-7BBD-4196-8B96-D46743894195 \" ");
    document.write("CODEBASE=\"http://username:password@192.168.0.201/plugin
/mjpegcontrol.cab#version=2,0,0,6\">");
    document.write("<PARAM NAME=\"VSize\" VALUE=\"2\">");
    document.write("<PARAM NAME=\"Url\" VALUE=\"http://username:password@
192.168.0.201/cgi-bin/video.jpg");
    document.write("?cam=1&quality=3&size=2\">");
    document.write("</OBJECT>");
} else {
document.write("<img width=352 height=240");
document.write("src=\"http://192.168.0.201/cgi-bin/video.jpg?cam=1&quality=3&size=2\">");
}
//-->
</script>
</body>
</html>

```

## Downloading Event-triggered Snapshots

There are 12 video image files for the video channel of three stages: pre-alarm, the moment when triggered, and post-alarm. Only the snapshots captured by the last event are preserved. Administrators and users can use FTP or URL to get the saved snapshots. They can also be browsed from the application page under system configuration.

### Getting triggered snapshots by URL

/cgi-bin/ imagebuf.cgi? [?<param>=<value>]

param	value	Description
cam	1	Video 1
	2	Video 2
	3	Video 3
	4	Video 4
bufcnt	-7	snapshot before event (oldest)
	-6	snapshot before event
	-5	snapshot before event
	-4	snapshot before event
	-3	snapshot before event
	-2	snapshot before event
	-1	snapshot before event
	0	snapshot upon event

	1	snapshot after event
	2	snapshot after event
	3	snapshot after event
	4	snapshot after event
	5	snapshot after event
	6	snapshot after event
	7	snapshot after event (latest)

## Getting triggered snapshots by FTP

Channel Name	Folder Name
Video 1	snapshot1
Video 2	snapshot2
Video 3	snapshot3
Video 4	snapshot4

File name	Value	Description
pre07.jpg	-7	snapshot before event (oldest)
pre06.jpg	-6	snapshot before event
pre05.jpg	-5	snapshot before event
pre04.jpg	-4	snapshot before event
pre03.jpg	-3	snapshot before event
pre02.jpg	-2	snapshot before event
pre01.jpg	-1	snapshot before event
trg.jpg	0	snapshot upon event
pos01.jpg	1	snapshot after event
pos02.jpg	2	snapshot after event
pos03.jpg	3	snapshot after event
pos04.jpg	4	snapshot after event
pos05.jpg	5	snapshot after event
pos06.jpg	6	snapshot after event
pos07.jpg	7	snapshot after event (latest)

## Uploading Snapshots Periodically

### Uploading snapshots to an external FTP server

In sequential mode, the VPort 2141 will send out snapshots according to interval and period settings. If snapshot files are intended for quick updates, it is better to skip the date and time suffix. The file name will then be video1.jpg, video2.jpg, video3.jpg, and video4.jpg for four channels. If the snapshots are used for occasional monitoring, using the date and time to suffix the file name can help administrators classify them easily.

### Sending snapshots to an external SMTP (email) server

Compared with the FTP method, email will induce more delay. But the email can notify users for prompt action.

## Customizing Homepage Graphics

While in text mode, a small icon named BTN\_TEXT.GIF preceding each link can be changed by administrators. While in image mode, the default method will use the image stored in the Flash memory. The table below shows the referenced file name and size limitation of each stored image. Administrators may customize preferred images under the size limit, and then put the image to the specific name by FTP. Administrators can download the original images before uploading for backup.

Object	File name	Maximum size
Logo	logo.gif	Logo and background share 8K bytes
Background	back.gif	Logo and background share 8K bytes
Link icon	btn_text.gif	2K bytes
Camera 1 button	btn_cam1.gif	5K bytes
Camera 2 button	btn_cam2.gif	5K bytes
Camera 3 button	btn_cam3.gif	5K bytes
Camera 4 button	btn_cam4.gif	5K bytes
Camera All button	btn_cama.gif	5K bytes
Configuration	btn_conf1.gif	5K bytes



### ATTENTION

Do not try to upload images for which the file size is larger than that shown in the above table, since doing so could cause the system to operate in an unstable manner.

FTP usage is illustrated below.

```

C:\>ftp 192.168.0.254
Connected to 192.168.0.254.
220 VisualServer FTP server ready.
User (192.168.0.254:(none))> root
331 Password required.
Password:
230 User name accepted.
ftp> put myphoto.gif logo.gif
200 PORT command OK.
150 ready to take file.
226 closing.
ftp: 3916 bytes sent in 0.008Seconds 3916000.00Kbytes/sec.
ftp> bye
221 Goodbye.

C:\>
    
```

## Command Script for DI/DO & Camera's Actions Setting

In addition to an application wizard, the VPort 2141 provides a more professional command script for advanced applications. The command script will be executed exclusively using the settings on the Application page of the system configuration, except for the weekly schedule. To build an advanced application, follow the steps shown below:

**Step 1:** Use any text editor to edit the appropriate command script according to the command format. The script size cannot exceed 500 bytes.

**Step 2:** Save the script as a file named **SCRIPT.TXT**.

**Step 3:** Use FTP with administrator's privilege to upload the script file.

**Step 4:** Enter the Application page in the system configuration to define the time period in **Weekly Schedule**. If it is required to run any time, keep the original settings but check the option **All the time except for the above schedule**.

**Step 5:** Check the option **Enable the external script file to exclude the following settings** to activate the command script.

## Command Format

[Event][“Operator”Event].....=[Action][+Action].....;

### Event

[“Digital Input Number”“Digital Input State”]  
 [“M” “Channel Number...”]  
 [“Channel Number”“Video Input State”]

### Operator

“+”: (OR)  
 “\*”: (AND)

### Action

[“Delay Time”“Digital Output Number”“Digital Output State”]  
 [“V”“Channel Number”“P”“Preset Location Number”]  
 [“W”{“IP”：“Port”}{“Message”}]  
 [“U”“Method”]  
 [“S”“Channel Number...”]  
 [“N”{“filename”}];

## Parameter Explanations

Note that in the previous section, items in brackets show the options available for that item. An explanation of each parameter is given below:

“Digital input number”: 1 to 4  
 “Digital input state”: H (high), L (low), / (low to high), \ (high to low)  
 “M”: motion detection event.  
 “Channel Number”: A, B, C, D for channel 1, 2, 3, 4  
 “Video input state”: / (signal from loss to presence), \ (signal from presence to loss), X (as long as signal loss)  
 “Delay time”: seconds of delay for the following actions after events happen  
 “Digital output number”: 1 or 2  
 “Digital output state”: C (NC), O (NO)  
 “V”: set video channel to go to preset location  
 “P”: set preset location number to go to preset location  
 “W”: send warning to server  
 “IP”: server IP  
 “Port”: server port  
 “Message”: text to be sent to the server  
 “U”: upload snapshots

“Method”:	‘F’ is by FTP, ‘M’ is by e-mail
“S”:	take snapshot on channels
“N”:	define the format of the filename
“;”:	end of line
The filename format is,	
%a	image characterization (pre, trg, pos)
%c	video channel number
%y	year
%M	month
%d	day
%h	hour
%m	minute
%s	second
%t	tenth second

## Practical Examples

Command line	Description
MAB=1C;	When any motion is detected on channel 1 or 2, “Normal Close” of relay output 1 will short with “Common”.
IH*2\=(5)1O;	When DI1 high accompanied with DI2 transient from high to low, “Normal Open” of relay output 1 will short with COMMON in 5 seconds.
B\C\D=W{192.168.0.1:6000}{no signal!};	If there is no signal on channel 2 or 3 or 4, a message “no signal!” will be sent to port 6000 of 192.168.0.1 once.
2H=VAP15;	When sensor input 2 is high, drive the camera mapped to video 1 to go to preset location 15.
MCD=UF+SABCD+N{video%c%a@%y%M%d%h%m%s};	If any motion is detected on channel 3 or 4, upload snapshots taken on channel 1, 2, 3 and 4. If an event triggered at 19:05:30 2002/10/15, the snapshot files will be named as, video1pre@20021015190530.jpg, video2pre@20021015190530.jpg video3pre@20021015190530.jpg, video4pre@20021015190530.jpg video1trg@20021015190530.jpg, video2trg@20021015190530.jpg video3trg@20021015190530.jpg, video4trg@20021015190530.jpg video1pos@20021015190531.jpg, video2pos@20021015190531.jpg video3pos@20021015190531.jpg, video4pos@20021015190531.jpg



### ATTENTION

The script file is limited to a maximum of 500 characters. The actual performance will depend on the complexity of the command script.



## URL Commands for DI/DO & Camera's Actions Setting

### Querying the status of digital inputs

```
/cgi-bin/getdi.cgi
```

The VPort 2141 will return the status of four digital inputs in one line.

### Driving digital outputs

```
/cgi-bin/setdo.cgi?do1=<state>
```

<number>     **1, 2, 3, 4** for DO1, DO2, DO3 and DO4

<state>:       **C, O** denoting Normal Close or Normal Open respectively.

### Moving motorized cameras in PTZ directions

```
/cgi-bin/control.cgi?<param>=<value>&<param>=<value>.....
```

Param	Value	Description
cam	1	Video 1
	2	Video 2
	3	Video 3
	4	Video 4
move	up	Tilt up
	down	Tilt down
	left	Pan left
	right	Pan right
	home	Return to home position
zoom	wide	Zoom in
	tele	Zoom out
focus	near	Focus near
	far	Focus far
	auto	Automatic focus
panspeed	-5 to 5	
tiltspeed	-5 to 5	

### Recalling camera position

```
/cgi-bin/recall.cgi?cam=<n>&recall=<position>
```

<n>:           video channel from 1 to 4

<position>:   the text string of a location that is preset in system configuration.

Refer to **Camera preset configuration URL** for preset function.

### Transparent Remote Serial Driver

The VPort 2141 provides highly customized control support for third-party serial interface devices (other than PTZ cameras). This means that in addition to setting up a custom camera with PAN/ TILT/ ZOOM/ FOCUS commands, users may utilize this mode and introduce a customized homepage to transmit arbitrary user-defined commands from the user side to the VPort 2141. The third-party device connected to the serial port of the VPort 2141 will receive the same command sent by the originator. The user only needs to attach the command in ASCII format after the special URL. The VPort 2141 will parse the commands and translate into binary code to send out.

**Send command to device attached to COM1**

</cgi-bin/senddata.cgi?com=1&data=123456,ABCDEF&flush=yes&wait=1000&read=6>

This hyperlink will inform the VPort 2141 to send out binary format commands to COM1 with "0x12, 0x34, 0x56" followed by "0xAB, 0xCD, 0xEF". Each comma separates the commands by 200 milliseconds. "flush=yes" means the receive data buffer of the COM port must be cleared before it is read. Then read 6 bytes after waiting for 1000 milliseconds. The read data can be up to 128 bytes and will return as ASCII coded hexadecimal value, e.g., 0x41, 0x42, 0x43 read from COM port will show in the returned homepage as 414243 instead of ABC.

**Send command to device attached to COM2**

</cgi-bin/senddata.cgi?com=2&data=123456,...,ABCDEF>

This hyperlink will inform the VPort 2141 to send a binary format command to COM2 with "0x12, 0x34, 0x56" followed by "0xAB, 0xCD, 0xEF" after 600 milliseconds.

## URL Commands for System Maintenance

### Downloading the System Log by FTP

In addition to viewing the system log from the web page, administrators can download the system log file, SYSTEM.LOG, via FTP. To log into the FTP daemon, enter "root" as the user name and the administrator password used for Web access.

### Restarting the System by URL

</cgi-bin/reset.cgi>

The above command restarts the VPort 2141 without warning.

### Restoring Factory Default Settings by URL

</cgi-bin/restore.cgi>

The VPort 2141 will automatically restart after restoring factory default configurations.

# 6

## Upgrading System Firmware

---

The latest firmware for the VPort 2141 can be downloaded from the Support & Service section of MOXA's website. Only administrators can upgrade the system firmware.

The following topics are covered in this chapter:

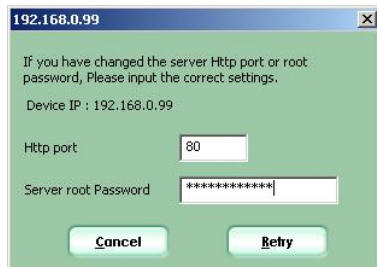
- Using the VPort Installation Wizard to Upgrade Firmware**
- Using FTP to Upgrade Firmware**

## Using the VPort Installation Wizard to Upgrade Firmware

1. Open the VPort Installation Wizard, checkmark the box next to the server whose firmware you wish to upgrade, and then click the **Upgrade** button.

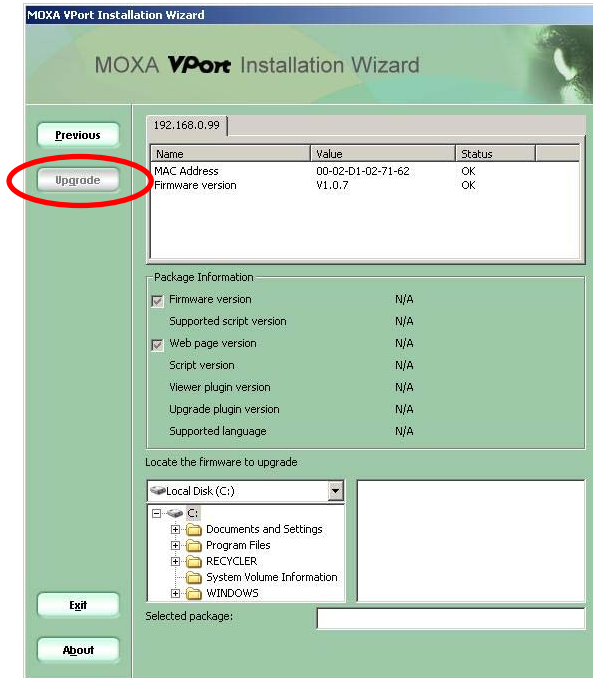


2. Type in the http port number of the video server whose firmware you wish to upgrade, type the administrator password in the space provided, and then click **Retry**.



NOTE: If the password is wrong, a message window will appear asking you to check the FTP port and password again.

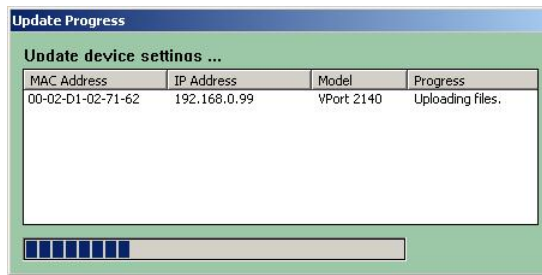
- The program will detect the Video Server. Note that the **Upgrade** button is grayed out. Use the **Locate the firmware to upgrade** navigation tool in the bottom third of the window to locate the firmware file.



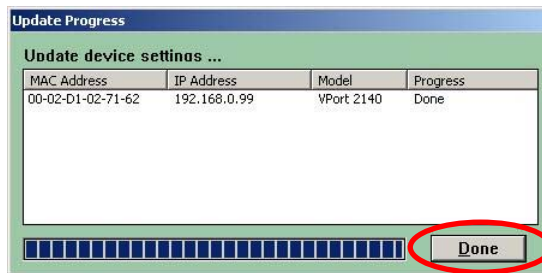
- Click on the firmware file name to select it, and then click on the **Upgrade** button in the upper left corner of the window.



5. Wait a few seconds for the upgrade process to finish.



6. When the upgrade process has finished, click **Done** to close the **Update Progress** window.

**ATTENTION**

Do not turn off the power supply of the VPort 2140 video server while the VPort Installation Wizard is upgrading the firmware. Doing so will cause the firmware upgrade to fail, and you will need to return the video server to Moxa for repair.

# 7

## Troubleshooting

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This chapter describes some problems that might occur during installation or operation, and provides basic solutions to those problems.

The following topics are covered in this chapter:

- Power On Self Test (POST)**
- Frequently Asked Questions**

## Power On Self Test (POST)

After the power has been turned on, the VPort 2141 will perform a self-diagnostic to detect any hardware defects. The **CONNECT** (LED 2) and **SERIAL** (LED 3) LEDs will blink during the POST, and will keep blinking until the POST completes successfully, or a fatal error is detected. If either status LED indicator is dim to start off with, the LED may be broken.

When certain fatal errors occur, LED2 and LED3 blink in a particular way to indicate the type of failure, as described in the following table.

LED pattern after POST	Failed function	Troubleshooting
LED2 off, LED3 off	Ethernet network	<ol style="list-style-type: none"> <li>1. Check the LINK LED of the attached port on the Ethernet switch or hub. If it is dim, the Ethernet cable may be loose or shorted.</li> <li>2. If the cable is OK, the Ethernet controller is broken. Ask your reseller for technical service.</li> </ol>
LED2 blinks one time and LED3 blinks 4 times	Ethernet network	The Ethernet controller is broken. Ask your reseller for technical service.
LED2 blinks one time and LED3 blinks 3 times	System	The PCI interface cannot work. Ask your reseller for technical service.



### ATTENTION

To reduce system failure caused by operation error, always read the related sections in this user's manual to prevent unexpected errors caused by "wild-guess configuration."

## Frequently Asked Questions

Q: Why can't I connect to the VPort after rebooting?

A: The VPort Installation Wizard can find VPorts connected to the same LAN as the computer running the Wizard. If the VPort's IP address does not belong to the same LAN as the PC, or is set to PPPoE, the Installation Wizard will not be able to locate the VPort.

Q: What should I do if I forget my password?

A: You must log in every time you access the VPort 2141. If you are not a permitted user, you may view the images or control the camera as long as the demo account is opened. The demo account user may use the username "demo", which does not require a password, to access limited features. If you are one of the managed users, you must ask the administrator for the password the first time. If you are the administrator, there is no way to recover the root password. The only way to regain access to the VPort 2141 is to restore the factory settings and reinstall the VPort.



Q: Why can't I watch video from the VPort 2141 after it is authenticated?

A: There are several scenarios that could cause this problem:

1. If you have just installed the VPort 2141, and are unable to watch the video, check if the video input is enabled, and check the video modulation on the Configuration page.
2. If the VPort 2141 is installed correctly and you are accessing the VPort 2141 for the first time using Internet Explorer, adjust the security level of Internet Explorer to allow installation of the plug-in.
3. If the problem still exists after making the adjustment, the current number of users could be greater than what the system allows.
4. If you are using a demo account, the administrator may have hid the video from public view.

Q: How can I use a url instead of IP address to connect to the VPort 2141?

A: To allow users to connect to the VPort 2141 through an easily memorized name, administrators must first configure the network's domain name server. Here is an example: the administrator installs the VPort 2141 with a reserved IP address and assigns it a name on the domain name service, then users can connect to the VPort 2141 by typing the web address instead of an IP address. If there is a DHCP service on the network, the IP address must be excluded in the DHCP service to prevent an IP conflict.

Q: What is the plug-in for?

A: The plug-in provided by the VPort 2141 is used to display motion pictures on versions of Internet Explorer that do not support server push technology. If your system does not allow installation of any 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 to adjust 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 VPort 2141. It is maintained by an internal real-time clock, and automatically synchronizes with the time server if the VPort 2141 is connected to the Internet and the function is enabled. Differences of several hours may result from the time zone setting.

Q: Why does the image not refresh regularly?

A: In a modem environment, this is because the bandwidth of PPP connections is much lower than for Ethernet. If the difference of the timestamp is not stable, use the modem property on the control panel to adjust the UART FIFO to a lower level for both receiving and transmitting. In an Ethernet environment, it may be due to the time taken for storing snapshots into memory when events occur.

Q: How many users are allowed to watch the VPort 2141 at the same time?

A: To achieve the best effect, the VPort 2141 will allow a maximum of twenty users to connect at the same time. Excess users can get an auto-refreshed still image on the homepage instead. It is recommended to build another web server to host a large quantity of users by retrieving images from the VPort 2141 periodically.

Q: What video rate does the VPort 2141 support?

A: The JPEG codec can process 30 frames per second internally. However, the overall performance is subject to many different factors, such as:

1. network throughput
2. bandwidth share
3. number of users
4. number of video inputs accessed at one time
5. viewing complicated objects results in a larger image file

6. the level of your PC or notebook that is responsible for displaying images

In general, the transfer rate on a general local network environment can achieve over 200 Kbps, or approximately 10 to 20 pictures per second in a normal environment. The general frame size is illustrated in the following table for your reference.

Quality setting	Size of each frame	Bandwidth demand for 30 fps
Medium	6.51 KB	1562 Kbps
Standard	6.69 KB	1606 Kbps
Good	9.29 KB	2230 Kbps
Detailed	14.28 KB	3427 Kbps
Excellent	24.24 KB	5818 Kbps

Q: How can I keep the VPort 2141 as private as possible?

A: The VPort 2141 is designed for surveillance purposes and has many flexible interfaces. The user authentication and special confirmation during installation can keep the VPort 2141 from unauthorized access. You may also change the HTTP port to a non-public number. You can check the system log to examine any abnormal activities and trace the origins.

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

A: The VPort 2141 provides a custom camera command interface to control cameras that are not supported. The details are described in this manual. Be sure that the COM port settings are applied to the camera specifications. The camera control cable included is shown in the package contents. Prepare your own cable if necessary. 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. If the user has some serial control device other than the PTZ camera, the special URL is provided to send the desired commands. For quick access, integrate the URL to another homepage on your own web server.

Q: Why can I see image files when I use dir in FTP even if the alarm is not triggered?

A: Every time the VPort 2141 starts, it will capture the images as vpre.jpg. If there are previously saved image files that are not retrieved, the VPort 2141 will keep them until they are accessed.

Q: How will the stored images be processed if the VPort 2141 loses power?

A: If a user has defined the snapshot interval, the VPort 2141 will capture images periodically at the pre-alarm stage. Once the pre-defined condition is matched, the pre-alarm images will be kept and the current images will be saved. The subsequent images will be stored at the post-alarm stage. Users may retrieve these files either by downloading by FTP, or by directing the VPort 2141 to send the files by e-mail. This means that after monitoring conditions are met, the VPort 2141 will keep these image files until user retrieval, even if power is lost.

Q: If I set the VPort 2141 to send e-mails of images whenever the conditions are met, will my e-mail account overflow?

A: It is recommended to use a transient state instead of steady state. For instance, use 'Input is Rising' and 'Input is Falling' rather than 'Input is High' and 'Input is Low' to let the condition be triggered only when state is changing.

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

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

# A

## URL Commands for VPort 2141

---

The VPort 2141 can be easily integrated with existing websites or web control applications using convenient URLs. This section lists the commands in URL format corresponding to the basic functions of the VPort 2141. Some RFC standards related to HTML may be a good reference for implementation of the customized homepage.

### Page URL

The configuration page has a frame layout that includes an option list frame and an option page frame. Except for the configuration page, the Reference URLs shown below link just to the option page frame. Some pages, such as image quality settings and preset settings, open in a new browser window. These URLs can be accessed only by administrators.

Homepage name	Reference URL
configuration page	/setup/config.html
system option	/setup/system.vspix
security option	/setup/security.vspix
network option	/setup/network.vspix
DDNS and UPnP option	/setup/ddnsupnp.vspix
mail and FTP option	/setup/mailftp.vspix
access list option	/setup/accesslist.vspix
video option	/setup/video.vspix
image quality option	/setup/imageset.vspix
camera setting option	/setup/camerasetting.vspix
motion detection setting	/setup/motion.vspix
privacy mask setting	/setup/privatemak.vspix
camera control option	/setup/serial.vspix
custom command setting for RS485	/setup/cuscom.vspix
custom command setting for RS232	/setup/cuscom2.vspix
homepage layout option	/setup/layout.vspix
application option	/setup/app.vspix
system log	/setup/logfile.vspix

## System Resource URL

Some images are used on the homepage when the homepage layout is in image mode. Administrators may use the following links to show the images saved on the VPort 2141 on another page. To change the logo or the background images referenced by the URL, refer to the homepage layout section under configuration.

Resource name	Reference URL
system logo image	/logo.gif
background image	/back.gif
button image for camera 1	/btn_cam1.gif
button image for camera 2	/btn_cam2.gif
button image for camera 3	/btn_cam3.gif
button image for camera 4	/btn_cam4.gif
button image for quad screen	/btn_cama.gif
button image for configuration	/btn_conf.gif
icon image for link indicator	/btn_text.gif

## General CGI URL syntax and parameters

CGI parameters are written in lower-case and as one word without any underscores or other separators. When the CGI request includes internal server parameters, the internal parameters must be written exactly as they are named in the server or video server. The CGIs are organized in function related directories under the cgi-bin directory. The file extension of the CGI is required.

### Syntax:

```
http://<servername>/cgi-bin/<subdir>[/<subdir>...]/<cgi>.<ext>
[?<parameter>=<value>[&<parameter>=<value>...]]
```

## Get server parameter values

**Note:** This request require administrator access

**Method:** GET/POST

### Syntax:

```
http://<servername>/cgi-bin/admin/getparam.cgi?[<parameter>]
[&<parameter>...]
```

where the <parameter> should be <group>[\_<name>] or <group>[.<name>] If you do not specify the any parameters, all the parameters on the server will be returned. If you specify only <group>, the parameters of related group will be returned.

When query parameter values, the current parameter value are returned. Successful control requests returns paramter pairs as follows.

**Return:**

```
HTTP/1.0 200 OK\r\n
Content-Type: text/html\r\n
Context-Length: <length>\r\n
\r\n
<parameter pair>
```

where <parameter pair> is  
 <parameter>=<value>\r\n  
 <length> is the actual length of content.

**Example: request IP address and it's response**

```
Request:
http://192.168.0.123/cgi-bin/admin/getparam.cgi?network_ipaddress

Response:
HTTP/1.0 200 OK\r\n
Content-Type: text/html\r\n
Context-Length: 33\r\n
\r\n
network.ipaddress=192.168.0.123\r\n
```

**Set server parameter values**

**Note:** This request requires administrator access

**Method:** GET/POST

**Syntax:**

```
http://<servername>/cgi-bin/admin/setparam.cgi? [nosync=<value>&]<parameter>=<value>
[&<parameter>=<value>...][&return=<return page>]
```

parameter	value	description
nosync	0, 1	Specifies that there should be no sync (write) of the corresponding configuration file on flash. If parameter is omitted, a sync write will occur.  <i>(note: this parameter must be put at begin of parameter list)</i>
<group>_<name>	value to assigned	Assign <value> to the parameter <group>_<name>..
return	<return page>	Redirect to the page <return page> after the parameter is assigned. The <return page> can be a full URL path or relative path according the the current path. If you omit this parameter, it will redirect to an empty page.  <i>(note: The return page can be a general HTML file(.htm, .html) or a Vivotek server script executable (.vsp) file. It can not be a CGI command. It can not have any extra parameters. This parameter must be put at end of parameter list)</i>

**Return:**

```
HTTP/1.0 200 OK\r\n
Content-Type: text/html\r\n
Context-Length: <length>\r\n
\r\n
<parameter pair>
```

where <parameter pair> is

```
<parameter>=<value>\r\n
```

**[<parameter pair>]**

Only the parameters that you have set and are readable will be returned.

**Example: Set the IP address of server to 192.168.0.123**

Request:

```
http://myserver/cgi-bin/admin/setparam.cgi?Network\_IPAddress=192.168.0.123
```

Response:

```
HTTP/1.0 200 OK\r\n
Content-Type: text/html\r\n
Context-Length: 33\r\n
\r\n
network.ipaddress=192.168.0.123\r\n
```

**Available parameters on the server**

**NOTE:** The bold characters in the table are the default value of each parameter.

**Group: System**

NAME	VALUE	DESCRIPTION
hostname (r/w)	<text string shorter than 40 characters>	host name of server <b>&lt;&lt;Wireless&gt;Video Server&lt;with Pan/Tilt/&lt;Zoom&gt;&gt;&gt;</b>
ledoff (r/w)	<b>0</b> 1	Do not turn off the led indicator Turn off the led indicator
date (r/w)	<b>&lt;yyyy/mm/dd&gt;</b> <keep> <auto>	year, month and date separated by slash. keep date unchanged Using NTP to sync date/time automatically
time (r/w)	<b>&lt;hh:mm:ss&gt;</b> <keep> <auto>	hour, minute and second separated by colon. keep date unchanged Using NTP to sync date/time automatically
ntp (r/w)	<domain name or IP address>	NTP server <b>&lt;skip to invoke default server&gt;</b>
timezone (r/w)	-12 ~ 12	time zone, 8 means GMT +8:00 <b>&lt;8&gt;</b>
updateinterval (r/w)	0 ~ 2592000	0 to Disable automatic time adjustment, otherwise, it means the seconds between NTP automatic update interval. <b>&lt;0&gt;</b>
serialnumber (r)	<mac address>	12 characters mac address without hyphen connected
firmwareversion (r)	<text string shorter than 39 characters>	The version of firmware, including model, company, and version number

restore (w)	0	Restore the system parameters to default value.
	Positive integer	Restore the system parameters to default value and restart the server after <value> seconds.
reset (w)	0 ~ 65535	Restart the server after <value> seconds.
	-1	Not restart the server.
do<1~4> (w)	<state>	H – NC connected with COMMON L – NO connected with COMMON
di<1~4> (r)	<state>	H – NC connected with COMMON L – NO connected with COMMON
supportscriptversion (r)	<text string shorter than 10 characters>	The version of supported script/webpage
scriptversion	<text string shorter than 10 characters >	The maximum version of currently installed script/webpage
language	<text string shorter than 16 characters>	The webpage language
webpageversion	<text string shorter than 39 characters>	The version of webpage
enableir(r/w)	0	Turn on the IR control
	1	Turn off the IR control
ptzenabled (r)	32-bit integer	Indicate the operations of server supported

**Group: Security**

NAME	VALUE	DESCRIPTION
username_<1~20> (r/w)	<text string shorter than 16 characters>	change user name. <blank>
userpass_<0~20> (r/w)	<text string shorter than 14 characters>	change user's password. The UserPass_0 is root's password. <blank>
userattr_<1~20> (r/w)	[dido][talk][listen][camctrl][conf]	change user's privilege. The privilege can be the combination of dido – Permit I/O access talk – Permit to talk to server listen – Permit to listen from server camctrl – Permit to do server control conf – Permit to change server's configuration <blank>
usercount (r)	1 ~ 21	The current account number on the server including root.<1>

**Group: Network**

NAME	VALUE	DESCRIPTION
resetip (r/w)(restart)	1	enable to get ipaddress, subnet, router, dns1, dns2 from DHCP server at next reboot
	0	Using preset ipaddress, subnet, router, dns1, dns2
ipaddress (r/w) (restart)	<IP address>	IP address of server <192.168.0.99>

subnet (r/w) (restart)	<IP address>	subnet mask <255.255.255.0>
router (r/w) (restart)	<IP address>	default gateway <blank>
dns1 (r/w) (restart)	<IP address>	primary DNS server <blank>
dns2 (r/w) (restart)	<IP address>	secondary DNS server <blank>
httpport (r/w) (restart)	<positive number less than 65535>	HTTP port <80>
networktype (r/w) (restart)	0	LAN
	1	PPPoE
pppoeuser (r/w) (restart)	<text string shorter than 63 characters>	User name of PPPoE
pppoePASS (r/w) (restart)	<text string shorter than 63 characters>	Password of PPPoE
smtp1 (r/w)	<domain name or IP address, string shorter than 40 characters>	primary SMTP server <blank>
mailto1 (r/w)	<string shorter than 80 characters>	mail recipient address <blank>
mailuser1 (r/w)	<text string shorter than 63 characters>	User name of primary smtp server <blank>
mailpass1 (r/w)	<text string shorter than 15 characters>	Password of primary smtp server <blank>
smtp2 (r/w)	<domain name or IP address, string shorter than 40 characters>	secondary SMTP server <blank>
mailto2 (r/w)	<text string shorter than 80 characters>	mail recipient address <blank>
mailuser2 (r/w)	<text string shorter than 63 characters>	User name of secondary smtp server <blank>
mailpass2 (r/w)	<text string shorter than 15 characters>	Password of secondary smtp server <blank>
returnemail (r/w)	<text string shorter than 80 characters>	return email address <blank>
localftpport (r/w)	<positive number less than 65535>	FTP port <21>
ftp1 (r/w)	<domain name or IP address, string shorter than 40 characters >	primary FTP server <blank>
ftpport1 (r/w)	<positive number less than 65535>	primary FTP port <21>
ftpuser1 (r/w)	<text string shorter than 63 characters>	user name for primary FTP server <blank>
ftppass1 (r/w)	<text string shorter than 15 characters>	password for primary FTP server <blank>
ftpfolder1 (r/w)	<text string shorter than 40 characters>	upload folder in primary FTP server <blank>
ftppasvmodel (r/w)	1	Enable passive mode of primary FTP server
	0	Disable passive mode of primary FTP server



ftp2 (r/w)	<domain name or IP address, string shorter than 40 characters >	secondary FTP server
ftpport2 (r/w)	<positive number less than 65535>	secondary FTP port <21>
ftpuser2 (r/w)	<text string shorter than 63 characters>	user name for secondary FTP server <blank>
ftppass2 (r/w)	<text string shorter than 15 characters>	password for secondary FTP server <blank>
ftpfolder2 (r/w)	<text string shorter than 40 characters>	upload folder in secondary FTP server <blank>
ftppassvmode2 (r/w)	1	Enable passive mode of primary FTP server
	0	Disable passive mode of primary FTP server

**Group: DDNS**

NAME	VALUE	DESCRIPTION
enable (r/w)	0, 1	Enable or disable the dynamic dns. <0>
provider (r/w)	1 ~ 4	dyndns.org (dynamic) dyndns.org (custom) tzo.com dhs.org <1>
hostname (r/w)	Text string shorter than 127 characters.	Your dynamic hostname. <blank>
usernameemail (r/w)	Text string shorter than 63 characters.	Your user or email to login ddns service provider <blank>
passwordkey (r/w)	Text string shorter than 20 characters.	Your password or key to login ddns service provider <blank>
update (w)	0, 1	Update the above ddns settings to take effect

**Group: UPNP**

NAME	VALUE	DESCRIPTION
enable (r/w)	0, 1	Enable or disable the UPNP service. <1>

**Group: IPFilter**

NAME	VALUE	DESCRIPTION
allowstart_<0-9> (r/w)	1.0.0.0 to 255.255.255.255	Allowed starting RTSP connection IP address <1.0.0.0>
allowend_<0-9> (r/w)	1.0.0.0 to 255.255.255.255	Allowed ending RTSP connection IP address <255.255.255.255>
denystart_<0-9> (r/w)	1.0.0.0 to 255.255.255.255	Denied starting RTSP connection IP address <blank>
denyend_<0-9> (r/w)	1.0.0.0 to 255.255.255.255	Denied ending RTSP connection IP address <blank>

**Group: Video**

NAME	VALUE	DESCRIPTION
enable (r/w)	0, 1	Enable or disable the channel. <1>
text (r/w)	<text string shorter than 14 characters>	enclosed caption <blank>
Codectype (r)	1	MJPEG
defaultsource (r/w)	<b>0</b>	Video 1
	1	Video 2
	2	Video 3
	3	Video 4
	4	Video all
Size (r/w)	1	half
	2	half x 2
	<b>3</b>	normal
	4	normal x 2
	5	double
	6	half D1
color (r/w)	0	monochrome
	<b>1</b>	color
quant (r/w)	1	lowest quality of video
	2	lower quality of video
	<b>3</b>	normal quality of video
	4	higher quality of video
	5	highest quality of video
bitrate (r/w)	64000	set bit rate to 64K bps
	128000	set bit rate to 128K bps
	256000	set bit rate to 256K bps
	<b>384000</b>	set bit rate to 384K bps
	512000	set bit rate to 512K bps
	768000	set bit rate to 768K bps
	1000000	set bit rate to 1000K bps
	1200000	set bit rate to 1200K bps
maxframe (r/w)	1	set maximum frame rate to 1 fps
	2	set maximum frame rate to 2 fps
	3	set maximum frame rate to 3 fps
	5	set maximum frame rate to 5 fps
	10	set maximum frame rate to 10 fps
	15	set maximum frame rate to 15 fps
	20	set maximum frame rate to 20 fps
	<b>25</b>	set maximum frame rate to 25 fps

	<b>30 (for NTSC only)</b>	set maximum frame rate to 30 fps
modulation (r/w)	0	NTSC
	1	PAL
	<b>2</b>	AUTO
actualmodulation (r)	0	NTSC
	1	PAL
flip (r/w)	1	flip image
	<b>0</b>	normal image
mirror (r/w)	1	mirror image
	<b>0</b>	normal image
imprinttimestamp (r/w)	1	Overlay time stamp on video
	<b>0</b>	Do not overlay time stamp on video

**Group: Image**

NAME	VALUE	DESCRIPTION
brightness (r/w)	<-5 to 5>	Adjust brightness of image according to mode settings. < <b>0</b> >
saturation (r/w)	<-5 to 5>	Adjust saturation of image according to mode settings. < <b>0</b> >
contrast (r/w)	<-5 to 5>	Adjust contrast of image according to mode settings. < <b>0</b> >
hue (r/w)	<-5 to 5>	Adjust hue of image according to mode settings. < <b>0</b> >
mode (w)	Preview	Apply the parameter of image but not save
	Restore	Restore the last saved image parameters
	Save	Directly save the adjust image parameters

**Group: Motion1~4**

NAME	VALUE	DESCRIPTION
enabled (r/w)	<b>0</b>	disable motion detection
	1	enable motion detection
winenabled_<1-3> (r/w)	<b>0</b>	disable motion window
	1	enable motion window
winname_<1-3> (r/w)	<text string shorter than 14 characters >	name of motion window < <b>blank</b> >
winleft_<1-3> (r/w)	0 to 352 for CCD 0 to 320 for CMOS	Left coordinate of window position. < <b>0</b> >
wintop_<1-3> (r/w)	0 to 288 for PAL 0 to 240 for NTSC & CMOS	Top coordinate of window position. < <b>0</b> >
winwidth_<1-3> (r/w)	0 to 352 for CCD 0 to 320 for CMOS	Width of motion detection window. < <b>0</b> >

winheight_<1-3> (r/w)	0 to 288 for PAL 0 to 240 for NTSC & CMOS	Height of motion detection window. <0>
winobjsize_<1-3> (r/w)	0 to 100	Percent of motion detection window <0>
winsensitivity_<1-3> (r/w)	0 to 100	Sensitivity of motion detection window <0>
update (w)	1	Update the above motion detection settings to take effect

**Group: Mask1~4**

NAME	VALUE	DESCRIPTION
enabled (r/w)	0	disable privacy mask
	1	enable privacy mask
winenabled_<1~3> (r/w)	0	disable privacy mask window
	1	enable privacy mask window
winname_<1~3> (r/w)	<text string shorter than 14 characters >	name of privacy mask window <blank>
winleft_<1~3> (r/w)	0 to 352 for CCD 0 to 320 for CMOS	Left coordinate of window position. <0>
wintop_<1~3> (r/w)	0 to 288 for PAL 0 to 240 for NTSC & CMOS	Top coordinate of window position. <0>
winwidth_<1~3> (r/w)	0 to 352 for CCD 0 to 320 for CMOS	Width of privacy mask window. <0>
winheight_<1~3> (r/w)	0 to 288 for PAL 0 to 240 for NTSC & CMOS	Height of privacy mask window. <0>
update (w)	1	Update the above privacy mask settings to take effect

**Group: CAMCTRL1~4**

NAME	VALUE	DESCRIPTION
panspeed (r/w)	-5 to 5	Pan speed <0>
tiltspeed (r/w)	-5 to 5	Tilt speed <0>
autospeed (r/w)	-5 to 5	Auto pan speed <0>
axisx (r)	-104 to 104	X coordinate of server position <0>
axisy (r)	-15 to 28	Y coordinate of server position <0>
dwelling (r/w)	0 to 9999	Time to dwelling when patrol <1>
presetname_<0~9> (r/w)	Text string shorter than 40 characters.	The name of preset location <blank>
presetpan_<0~9> (r/w)	-104 to 104	The pan coordinate of preset location. <0>
presettilt_<0~9>	-15 to 28	The tilt coordinate of preset location.

(r/w)		<0>
patrolname_<0~19> (r/w)	Text string shorter than 40 characters.	The name of patrol location <blank>

**Group: Layout**

NAME	VALUE	DESCRIPTION
layouttype	1	Image mode
	2	Text mode
fontcolor	0-15	Font color <1>
backgroundcolor	0-15	Link color <0>
logotype	1	Blank
	2	Default
	3	URL
backgroundtype	1	Blank
	2	Default
	3	URL
logosource	Text string shorter than 80 characters.	The location of logo graph
backgroundsource	Text string shorter than 80 characters.	The location of background graph
logolink	Text string shorter than 80 characters.	The web site link for logo
videolinkname	Text string shorter than 16 characters.	The name of video link

**Group: App**

NAME	VALUE	DESCRIPTION
scriptname (r/w)	<text string shorter than 255 characters>	File name of script <script.vssx>
enablescript (r/w)	0	Disable script
	1	Enable script

**Group: Feature**

NAME	VALUE	DESCRIPTION
event (r/w)	0	
	1	support motion detection/dido/video loss information in video bitstream

# B

## Settings of Supported PTZ Cameras

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

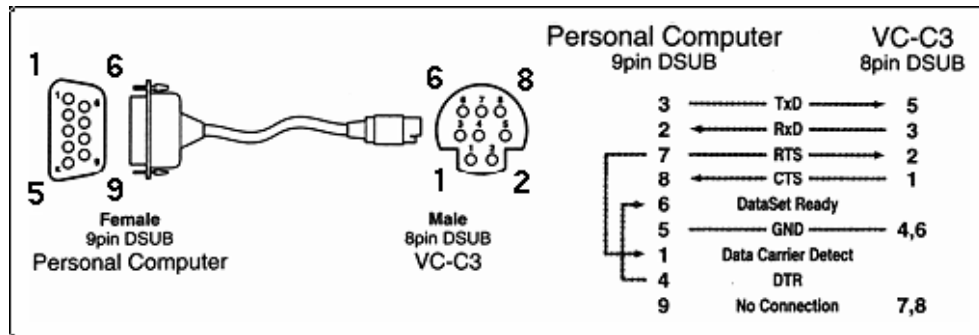
Camera model	Baud rate	Data bits	Stop bit	Parity bit
Sony VISCA	9600	8	1	None
Canon VC-C1	9600	8	2	None
Canon VC-C3	9600	8	2	None
Canon VC-C4	9600	8	1	None
Pelco D protocol	2400	8	1	None
DynaDome/SmartDOME	9600	8	1	None
Ernitec	9600	8	1	None
Lilin	9600	8	1	None

# C

## Camera Control Cable

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The included cable can be used to control motorized cameras of desktop types from Sony and Canon. The pin assignment is illustrated in the following chart. To control cameras of another brand, check the user's manual of the motorized camera to see if the pin assignment of the control cable is appropriate.



# D

## Time Zone Table

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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

<p><b>System</b> CPU: Trimedia PNX1302 RAM: 32MB SDRAM ROM: 4MB FLASH ROM</p> <p><b>Networking</b> Adjustable bandwidth limit</p> <p><b>Protocols</b> TCP/IP, HTTP, SMTP, FTP, Telnet, NTP, DNS, DDNS, DHCP, UPnP and PPPoE</p> <p><b>Ethernet</b> 10BaseT Ethernet or 100BaseT Fast Ethernet auto negotiation</p> <p><b>Video Algorithms Supported</b> MJPEG</p> <p><b>Video Inputs and Outputs</b> 4 BNC video inputs with 75<math>\Omega</math> terminal switch NTSC/PAL auto-sensing</p> <p><b>Features</b> Adjustable image size and quality B/W or color control Quad screen display Timestamp and text overlay 5 privacy masks for each camera Three configurable motion detection windows</p> <p><b>Resolution</b> NTSC Up to 30 frames at 176x112 Up to 30 frames at 352x240 Up to 10 frames at 704x480 or quad PAL Up to 25 frames at 176x144 Up to 25 frames at 352x288 Up to 10 frames at 704x576</p>	<p><b>LED Indicators</b> <u>NETWORK:</u> ACTIVE, LINK, FDX (full duplex) <u>SYSTEM:</u> POWER, CONNECT, SERIAL</p> <p><b>Dimensions</b> 146.2 x 163.2 x 40 mm (W x D x H)</p> <p><b>Weight</b> Net. 820g</p> <p><b>Power</b> Consumption: near 8W Input: 100-240VAC, 50/60Hz, 0.4A Output: 12VDC, 1.5A External Power Supply: 12VDC, min. 15W</p> <p><b>Operating Environment</b> Operating Temperature: 0 to 65°C/ 32 to 149°F Storage Temperature: -40 to 70°C/ -14 to 158°F Humidity: 95%RH</p> <p><b>Alarm Features</b> 4-channel motion detection with object size and sensitivity Daily repeat timing schedule Pre/trrigger/post alarm Automatic transfer of stored images via email or FTP with event-triggered actions</p> <p><b>PAN/TILT/ZOOM</b> Multiple PTZ camera control through RS-232 or RS-485 Supported devices and protocols: Sony VISCA protocol, Canon VC-C1, VC-C3, VC-C4, Dynacolor SmartDOME, Samsung SmartDome, Pelco D-protocol, Lilin Speeddome, Ernitec Speeddome CGI command serial driver is supported</p> <p><b>Viewing System Requirement</b></p>
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<p>Up to 15 frames for Quad</p> <p><b>Serial Port</b> <u>COM1</u> DB9 RS-232 or RS-485 Terminal block (PTZ camera control) max.115.2Kbps</p> <p><u>COM2</u> RS-485 (PTZ camera control)</p> <p><b>General I/O</b> 4 Digital inputs (max. 12VDC 50 mA) 4 Relay outputs (max. 24 VDC 1A, 125 VAC 0.5A)</p>	<p>Internet Explorer 5.x or above, Netscape Navigator 4.x or above</p> <p><b>Bundled Free Software</b> SoftDVR Lite IP Surveillance software for viewing and recording</p>
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# F

## Service Information

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This appendix shows you how to contact MOXA for information about this and other products, and how to report problems.

In this appendix, we cover the following topics.

- MOXA Internet Services**
- Problem Report Form**
- Product Return Procedure**

## MOXA Internet Services

Customer satisfaction is our number one concern, and to ensure that customers receive the full benefit of our products, MOXA Internet Services has been set up to provide technical support, driver updates, product information, and user's manual updates.

The following services are provided

E-mail for technical support.....[support@moxanet.com](mailto:support@moxanet.com)

World Wide Web (WWW) Site for product information:

.....<http://www.moxa.com>

# Problem Report Form

## MOXA VPort 2141

<b>Customer name:</b>	
<b>Company:</b>	
<b>Tel:</b>	<b>Fax:</b>
<b>Email:</b>	<b>Date:</b>

- 1. MOXA Product:  VPort 2141
- 2. Serial Number: \_\_\_\_\_

**Problem Description:** Please describe the symptoms of the problem as clearly as possible, including any error messages you see. A clearly written description of the problem will allow us to reproduce the symptoms, and expedite the repair of your product.

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## Product Return Procedure

For product repair, exchange, or refund, the customer must:

- ◆ Provide evidence of original purchase.
- ◆ Obtain a Product Return Agreement (PRA) from the sales representative or dealer.
- ◆ Fill out the Problem Report Form (PRF). Include as much detail as possible for a shorter product repair time.
- ◆ Carefully pack the product in an anti-static package, and send it, pre-paid, to the dealer. The PRA should be visible on the outside of the package, and include a description of the problem, along with the return address and telephone number of a technical contact.