Moxa VPort 06-2 Series
Software User Manual

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www.moxa.com/products

Moxa VPort 06-2 Series Software User Manual

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Technical Support Contact Information

www.moxa.com/support

Before Getting Started

Before using your VPort IP camera, be sure to read the following instructions:

- ❒ To prevent damage or problems caused by improper use, read the **Quick Installation Guide** (the printed handbook included in the package) before assembling and operating the device and peripherals.

Important Note

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

Table of Contents

1. Introduction

This software user's manual is designed for the VPort IP camera's ONVIF Profile S firmware.

Overview

The ONVIF specification is an open standard protocol for communicating between IP-based security devices. An ONVIF profile is described by a fixed set of functionalities through a number of services that are provided by the ONVIF standard. ONVIF Profile S allows the ONVIF device and client to communicate information about the PTZ, audio and metadata streaming, and relay outputs.

VPort IP cameras with ONVIF Profile S compliance can work with most VMS software for building a complete IP surveillance system immediately, without needing to spend time integrating your hardware and software. ONVIF Profile S saves both time and resources when using VPort IP cameras with VMS software.

Version Information

The current version information is listed below:

- ONVIF test tool: 22.12

Patent: http://www.moxa.com/doc/operations/Moxa_Patent_Marking.pdf

2. Getting Started

This chapter includes information about how to get started with the VPort's software configuration.

Introduction

In what follows, "user" refers to those who can access the IP camera, and "administrator" refers to the person who knows the root password that allows changes to the IP camera's configuration and has the right to assign general access to other users. Administrators should read this part of the manual carefully, especially during installation.

Software Installation

Step 1: Configure the VPort's IP address

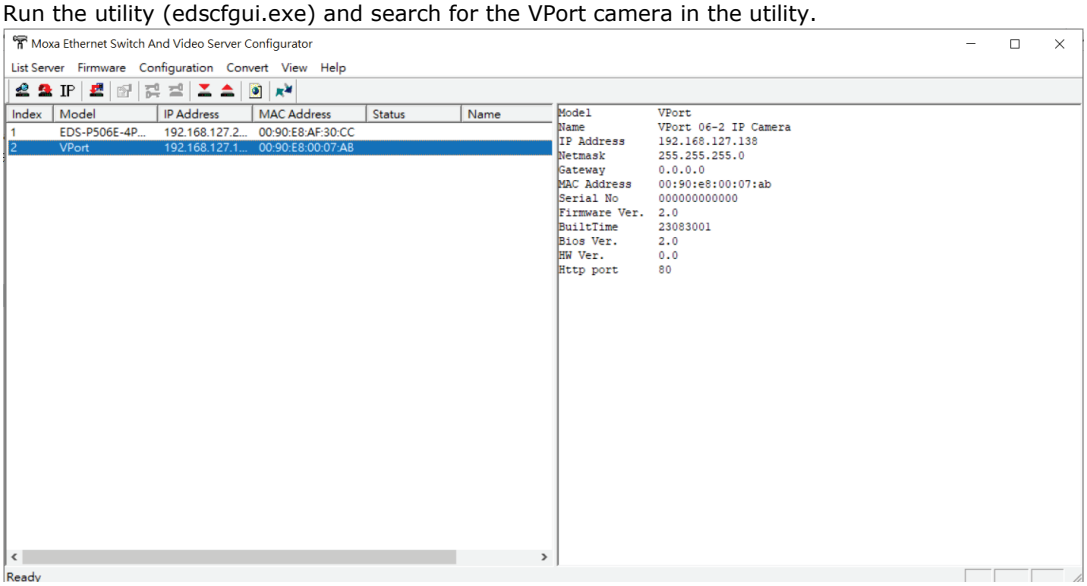
When the VPort is first powered on, the POST (Power On Self Test) will run for about 40 to 60 seconds. The network environment determines how the IP address is assigned.

Network environments with a DHCP server

For this network environment, the unit's IP address will be assigned by the network's DHCP server. Refer to the DHCP server's IP address table to determine the unit's assigned IP address. You may also use the MXconfig network configuration tool as described below:

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

1. Download the VPort and EtherDevice Configurator Utility from https://www.moxa.com
2. Run the utility (edscfgui.exe) and search for the VPort camera in the utility.



3. When the search has concluded, the Model Name, MAC address, IP address, serial port, and HTTP port of the VPort will be listed in the utility's window.
4. Double-click the selected VPort or use the IE web browser to access the VPort's web-based manager (web server).

Non-DHCP Server Network Environment

If your VPort is connected to a network that does not have a DHCP server, then you will need to configure the IP address manually. The default IP address of the VPort is 192.168.127.100 and the default subnet

mask is 255.255.255.0. Note that you may need to change your computer's IP address and subnet mask so that the computer is on the same subnet as the VPort.

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

If your VPort 06-2 Series is connected to a network that does not have a DHCP server, then you will need to configure the IP address manually. The default IP address of the VPort 06-2 Series is **192.168.127.100** and the default subnet mask is **255.255.255.0**. Note that you may need to change your computer's IP address and subnet mask so that the computer is on the same subnet as the VPort.

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

Step 2: Access the VPort 06-2 Series web-based manager

Type the VPort 06-2 IP address in the web browser's address field and press Enter.

Step 3: Install the ActiveX Control plug-in

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

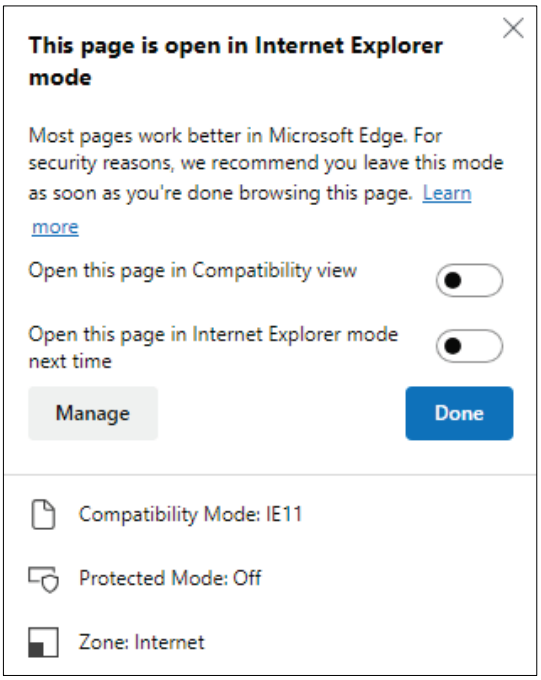
NOTE

For Windows XP SP2 or above operating systems, the ActiveX Control component will be blocked for system security reasons. In this case, the VPort's security warning message window may not appear. You should unlock the ActiveX control blocked function or disable the security configuration to enable the installation of the VPort's ActiveX Control component.

NOTE

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

For more details, refer to the IE mode instructions on the Microsoft website.

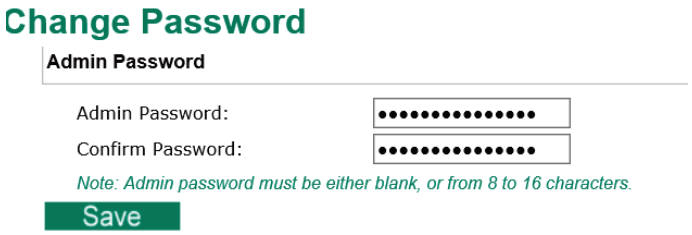


Step 4: Configure authentication for accessing the VPort's web-based manager.

When accessing the VPort's web-based manger, authentication is required. The default administrator account name is "admin" and the default password is "moxamoxa". After accessing the camera using the default admin password, you will need to change the password for security reasons. The default admin password (moxamoxa) can only be used once.

- For first-time web access, use the following login settings:
  - Account name: admin
  - Password: moxamoxa.
- You are required to change the password the first time you access the admin account.

If you log out and then log back in without changing the password, the Change Password dialog will open, and you will not be able to get past this dialog without changing the password.



NOTE

For network security reasons, do not lose the new admin password. If you lose the password, you will need to send the VPort back to Moxa for repair. ***Note that you will be assessed a repair charge for this service***.

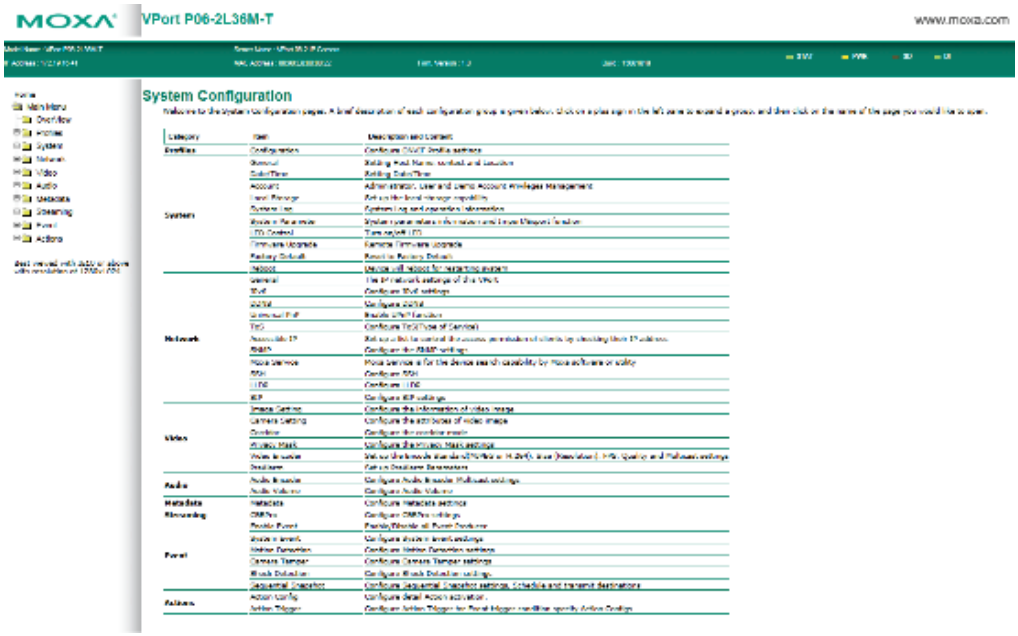
Step 5: Access the homepage of the VPort camera's web-based manager

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

1. Video Images
2. Video Information

Step 6: Access the VPort's system configuration

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



3. Accessing the VPort's Web-based Manager

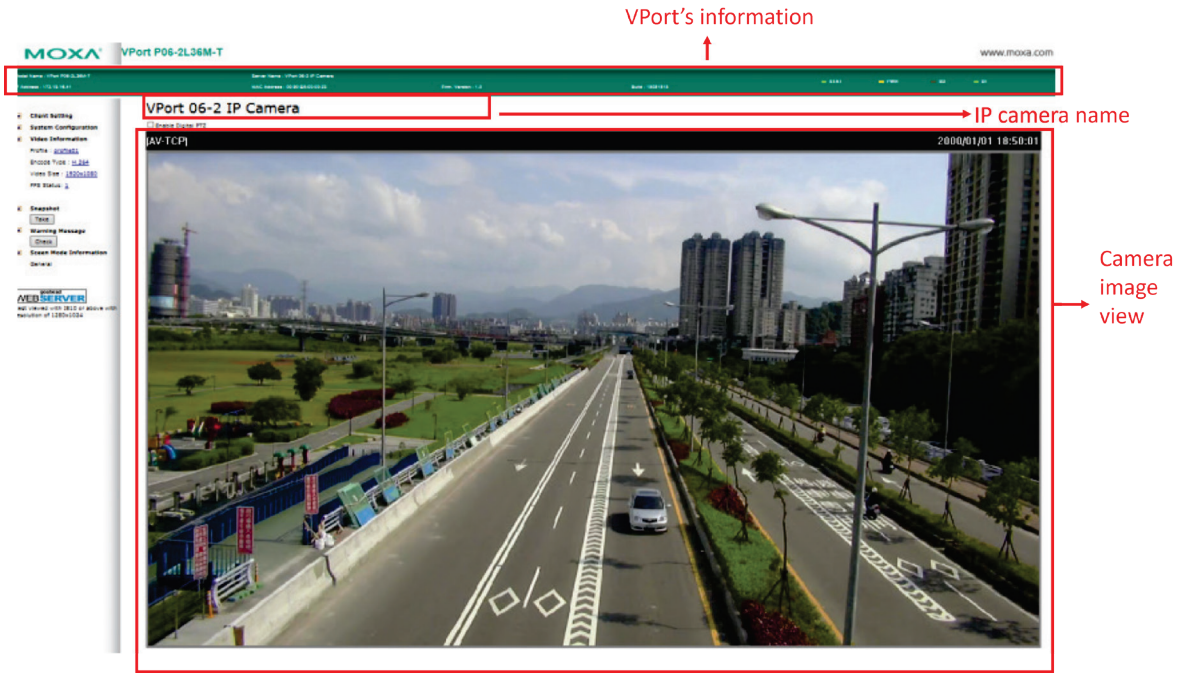
This chapter includes information about how to access the VPort IP camera for the first time.

Functions Featured on the VPort's Web Homepage

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

NOTE

The best screen resolution for viewing VPort's web homepage depends on the resolution of the camera image. For example, if the camera image can be viewed at resolutions up to HD (1280 x 720), the screen resolution should be 1280 x 1024. We strongly recommend using IE 9.0 (Microsoft Internet Explorer) or above to avoid incompatibility with the ActiveX Plug-in.



VPort's Information

This section shows the VPort's model name, server name, IP address, MAC address, and firmware version.

IP Camera Name

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

Camera Image View

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

Client Settings

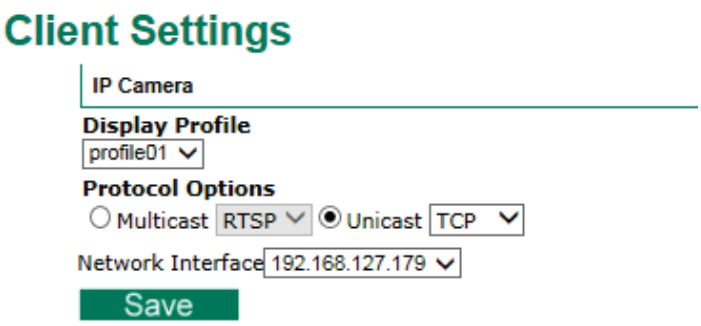
The following functions can be configured in **Client Settings**.

1. **Display profile:** Shows the profile currently being used. There are 3 default profiles: profile01, profile02, profile03. Each profile refers to one independent video stream with a unique codecs, resolution, frame rate (FPS), and video quality. If you need to, you can create additional profiles, but keep in mind that more profiles mean more video streams. Enabling too many video streams could reduce the frame rate and overall video performance of each stream. For configuring the profile, go to **System Configuration/profile**.
2. **Protocol Options:** Choose one of four protocols to optimize your usage—Multicast (RTSP or Push) or Unicast (UDP, TCP, HTTP).
   - Multicast Protocol can be used to send a single video stream to multiple clients. In this case, a lot of bandwidth can be saved since only one video stream is transmitted over the network. However, the network gateway (e.g., a switch) must support the multicast protocol (e.g., IGMP snooping). Otherwise, the multicast video transmission will not be successful.
     - **RTSP:** Enable the multicast video stream to be sent using RTSP control, which means the multicast video stream will be sent only if it receives the client's request.
     - **Push:** Enable the multicast video stream to be sent using Push control, which means that after this setting is selected, the multicast video stream will be sent continuously even without any client requests.
   - **Unicast Protocol** is used to send a single video stream to one client.
     - **UDP** can be used to produce audio and video streams that are more real-time. However, some packets may be lost due to network burst traffic, and images may become blurred.
     - **TCP** can be used to prevent packet loss, which results in a more accurate video display. The downside of using TCP is that the real-time delay is worse than with UDP protocol.
     - **HTTP** can be used to prevent being blocked by a router's firewall. The downside of using HTTP is that the real-time delay is worse than with UDP protocol.
   - **Network Interface** designates the connection interface for multicast video streams selection. The box lists the current NIC interfaces. Select which NIC interface will receive multicast streams.

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

NOTE

For multicast video stream settings, see **System Configuration → Network → Multicast**.

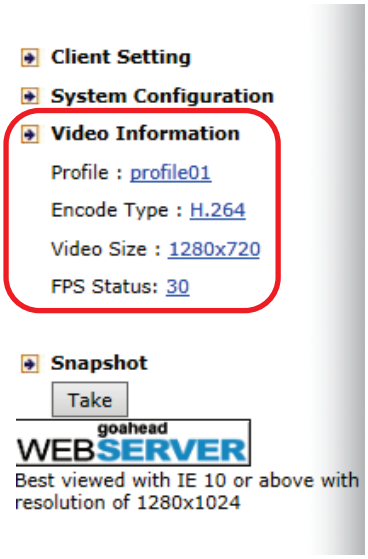


System Configuration

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

Video Information

You can easily monitor the current video performance by looking at the Video Information section on the left side of the homepage. The following properties are shown: Profile, Encoder type, Video Size, and FPS status. (Some models also include Display FPS and Process FPS. Display FPS means the FPS of live video displayed by computer, and Process FPS means the FPS provided by the camera). For multichannel encoders, you can select the target camera image to view the camera's video performance.



Snapshot

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

4. System Configuration

After installing the hardware, the next step is to configure the VPort's settings. You can do this with the web console.

System Configuration by Web Console

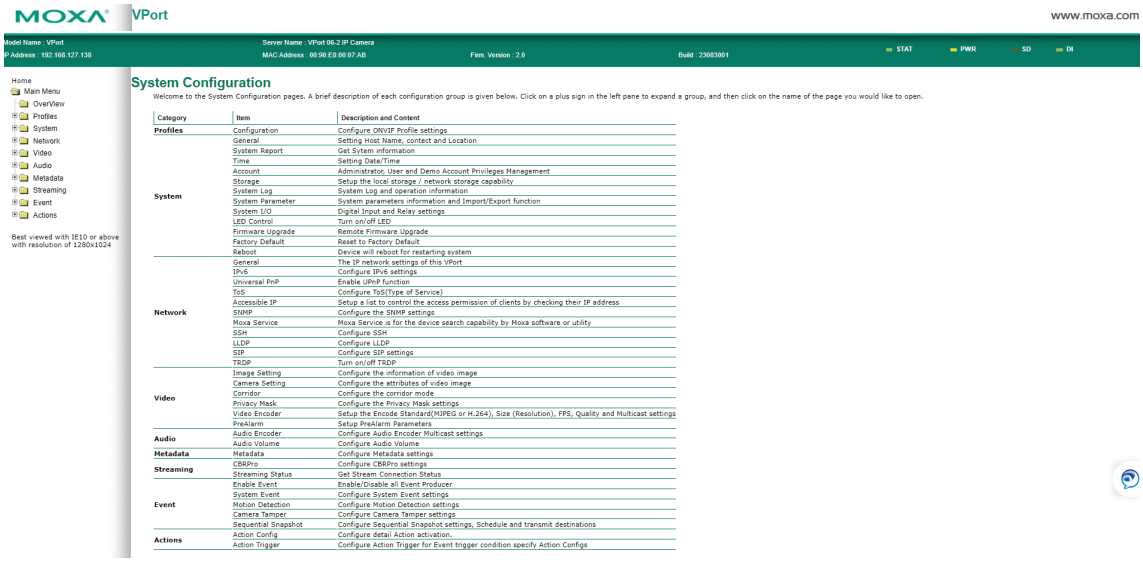
System configuration can be done remotely with Internet Explorer. To access the server, type the system configuration URL, **http://<IP address of Video Server>/overview.asp**, to open the configuration main page.

Each of the configuration categories—**Profiles, System, Network, Video, Audio, Metadata, Streaming, Event, Action**—are described below:

Category	Item	Description and Contents
Profiles	Configuration	Configure ONVIF Profile settings
System	General	Specify the server name, contact, and location
	System Report	Get system information
	Time	Configure the system date and time
	Accounts	Configure administrator, user, and demo account privileges management settings
	Storage	Set up local and network storage
	System Log	System log and operation information
	System Parameters	System parameter information and import/export functions
	System I/O	Configure digital input and relay settings
	LED Control	Turn on/off system LEDs
	Firmware Upgrade	Perform remote firmware upgrades
	Factory Default	Reset to factory default settings
	Reboot	Device will reboot to restart the system
Network	General	Configure the VPort's IP network settings
	IPv6	Configure IPv6 settings
	Universal PnP	Enable UPnP functionality
	ToS	Configure ToS (Type of Service) settings
	Accessible IP	Configure IP-based access control permissions for clients
	SNMP	Configure SNMP settings
	Moxa Service	Configure Moxa Service, which is used by Moxa software or tools to search for the VPort device
	SSH	Configure SSH
	LLDP	Configure LLDP
	SIP	Configure SIP settings
	TRDP	Turn on/off TRDP
Video	Image Settings	Configure video image settings
	Camera Settings	Configure the camera's attributes
	Corridor	Configure the corridor mode
	Privacy mask	Configure the privacy mask settings
	Video Encoder	Set up the encode standard (MJPEG or H.264), size (Resolution), FPS, quality, and multicast settings
	PreAlarm	Configure PreAlarm settings
Audio	Audio Encoder	Configure audio encoder multicast settings
	Audio Volume	Configure the audio volume
Metadata	Metadata	Configure the stream metadata
Streaming	CBRPro	Configure CBR Pro settings
	Streaming Status	Get the stream connection status
Event	Enable Event	Enable/disable events
	System Event	Configure system events

Category	Item	Description and Contents
	Motion Detection	Configure motion detection settings
	Camera Tamper	Configure camera tamper settings
	Sequential Snapshot	Configure sequential snapshot settings, schedules, and transmission destinations
Action	Action Config	Configure detailed action activation settings
	Action Trigger	Configure the action trigger for the event trigger conditions based on the specific action configuration chosen for this trigger.

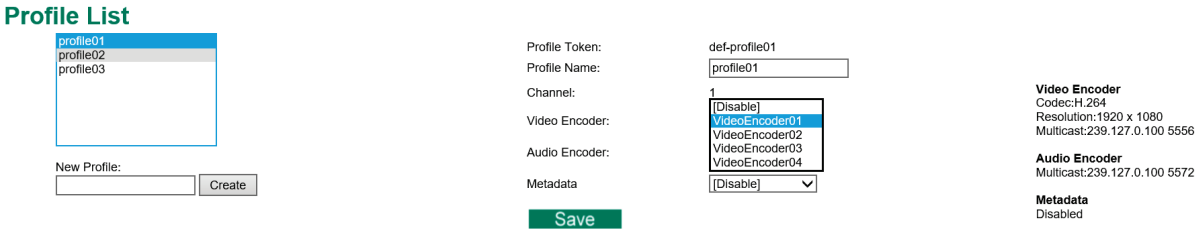
This table can also be found on the **System Configuration > Overview** webpage.



Profiles

In the ONVIF Profiles specifications, one video profile represents one video stream, which can have a unique codecs (H.264), resolution, FPS (frame rate), and video quality.

Configuration



Profile List

Setting	Description	Default
profile01 profile02 profile03	Chose the video profile. Profile information shown on this page includes Profile Token, Profile Name, Channel number, Video encoder, Audio Encoder	profile01

Profile Information

Setting	Description	Default
Profile Token*	Reply when queried by another device asks	<variable>
Profile Name	Configure the profile name, max. 40 bytes	profile01
Channel*	Current video channel of this ONVIF device	<variable>
Video Encoder	Select which video encoder this profile will use	VideoEncoder01
Audio Encoder	Select which audio encoder this profile will use	AudioEncoder01
Metadata	Enable or disable the metadata being used with the profiles	metadataCfg01

***This item cannot be edited.**

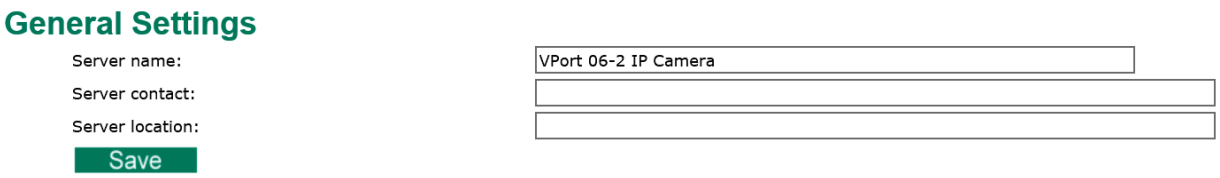
New Profile

You can create additional profiles if needed. Input the name of the new profile and then click **Create**. A maximum of 8 profiles can be created. When the new profile appears in the Profile List, select the new profile and then configure its video encoder and audio encoder to generate the video streams. Click **Save** to save the new profile. To remove a profile, select the profile you wish to remove, and then click **Remove**.

System

General Settings

On the **General Settings** page, administrators can set up the IP camera **Server name** and the **Date and Time**, which is included in the caption of all images.



Server name

Setting	Description	Default
Max. 40 characters	Use a different server name for each server to help identify your servers. The name appears on the web homepage.	VPort 06-2 IP camera

Server contact

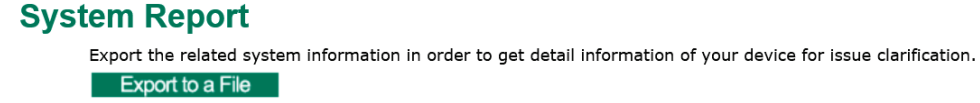
Setting	Description	Default
Max. 40 characters	Input the name of the operator who is responsible for this camera server	Blank

Server location

Setting	Description	Default
Max. 40 characters	Input the location of this camera server	Blank

System Report

Use the export function to export the VPort's system information for troubleshooting purposes.



Time

Time zone

Setting	Description	Default
Time Zone	Configure the time zone	GMT
Manual Time Zone (POSIX 1003.1):	Manually configure the specified time zone. To enable this configuration, select **manual setting** from the Time Zone drop-down box	Blank
Enable daylight saving time	Enable/disable daylight saving time (Only for Manual Time Zone settings)	Disable

Date and Time

Setting	Description	Default
Keep current date and time	Use the current date and time as the VPort's time setting	Keep current date and time
Sync with computer time	Synchronize the VPort's data and time setting with the local computer time	
Manual	Manually change the VPort's date and time setting	
Automatic	Use the NTP server to set the VPort's date and time setting	

NOTE

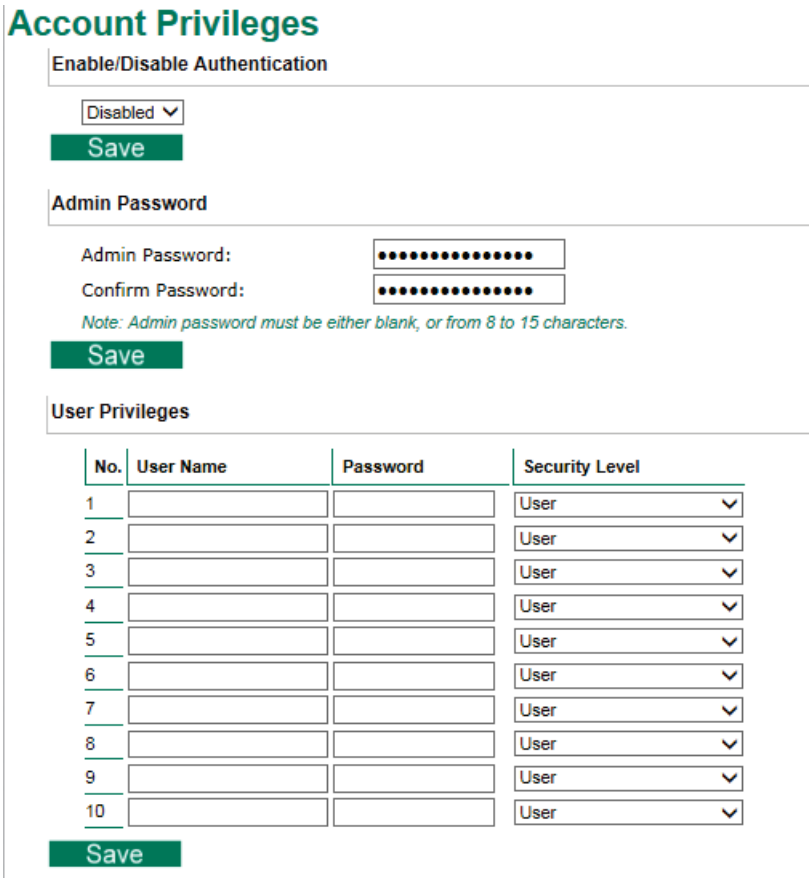
Select the **Automatic** option to force the VPort to synchronize automatically with timeservers over the Internet. However, synchronization may fail if the assigned **NTP server** cannot be reached, or the VPort is connected to a local network. Enter either the Domain name or IP address format of the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

You can configure two NTP servers as backups; the update interval can be configured from a minimum of 5 seconds up to one month.

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

Account

Different account privileges are available for different purposes.



Authentication Enable

Setting	Description	Default
Authentication Enable	Enable/disable the account protection of web-based manager access	disabled

Admin password

Setting	Description	Default
Admin Password (8 to 16 characters)	Input the administrator password.	moxamoxa
Confirm Password (8 to 16 characters)	If a new password is typed in the **Admin Password** box, you will need to retype the password in the **Confirm Password** box before updating the new password.	

NOTE

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

User's Privileges

Setting	Description	Default
User name	Type a specific user name for user authentication.	None
Password	Type a specific password for user authentication.	
Security Level	You may select from 4 ONVIF roles: Administrator, Operator, User, and Anonymous. **We do not recommend using the Anonymous role due to security issues.** Different roles have different privileges. Refer to ONVIF Specifications for the user's access policy.	User

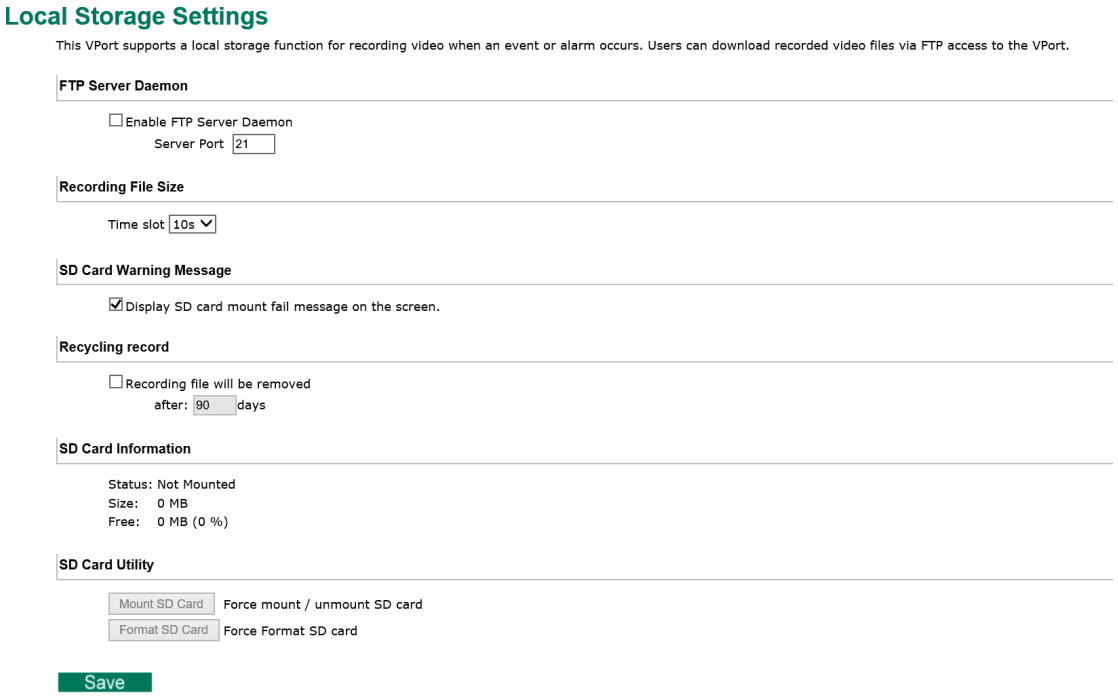
NOTE

The FPS of the video stream will be reduced as more and more users access the same VPort. Currently, the VPort camera is only allowed to send 10 unicast video streams. To avoid performance problems, limit the number of users who can simultaneously access a VPort camera.

Storage

Local Storage

This VPort supports an SD card (SDXC interface) for storing recorded videos when an event or alarm is triggered. The administrator can download these recorded videos via FTP, or directly copy the files from the SD card using a card reader.



FTP Daemon

Setting	Description	Default
Enable FTP Daemon	Enable or disable the FTP service to allow the administrator to download recorded video files.	Disable
Server Port	Specify the FTP server port number.	21

Recording File Size

Setting	Description	Default
Recording File Size	Set the length of each recording.	10s

SD Card Warning Message

Setting	Description	Default
SD Card Warning Message	Enable or disable SD card warning messages when no SD is installed or not installed properly.	Disable

Recycling Record

Setting	Description	Default
Recording file will be removed	Enable or disable record recycling. If enabled, recorded files will automatically be removed after the specified number of days.	Disable
Days	Set the interval for record recycling.	90

SD Card Information

Shows the SD card status information, including if mounted or not mounted, the total size, and free space.

SD Card Utility

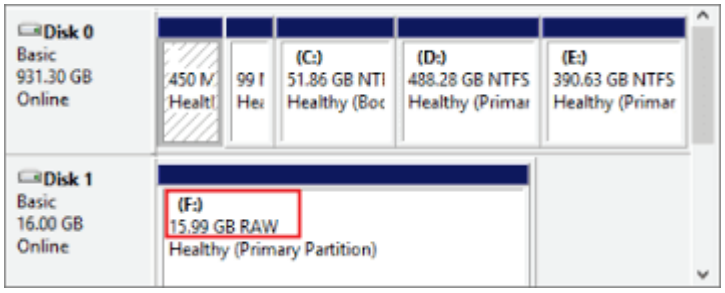
Setting	Description	Default
Mount SD card	Force-mount or dismount the SD card.	None
Format SD card	Format the SD card.	None

NOTE

The recorded videos are stored in the "/VPortfolder" folder in AVI format and can be played back with any AVI-compatible media player. The default length for each recorded video is 10 seconds.

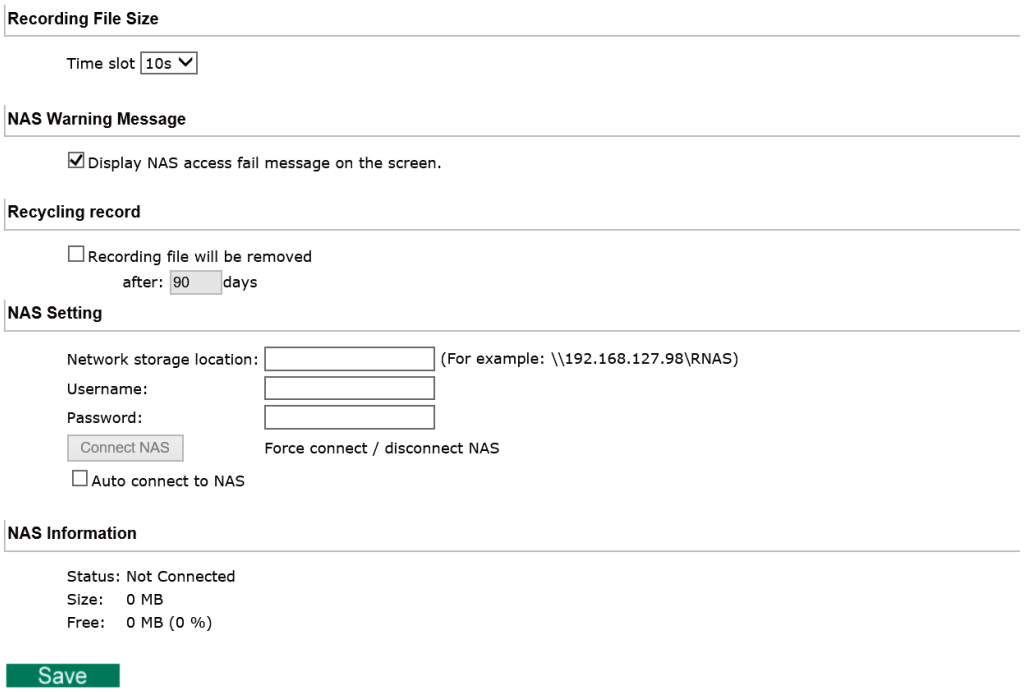
NOTE

To use a new SD card, please delete the disk area and recreate a new disk area with raw partition on the disk management of Windows's system or administrative tools. Then use VPort's disk format function for the disk format on this VPort webpage.



Network Storage

Network Storage Settings



Recording File Size

Setting	Description	Default
Recording File Size	Set the length of each recording.	10s

NAS Warning Message

Setting	Description	Default
NAS Warning Message	Enable or disable warning messages when the NAS is not accessible.	Enable

SD Card Warning Message

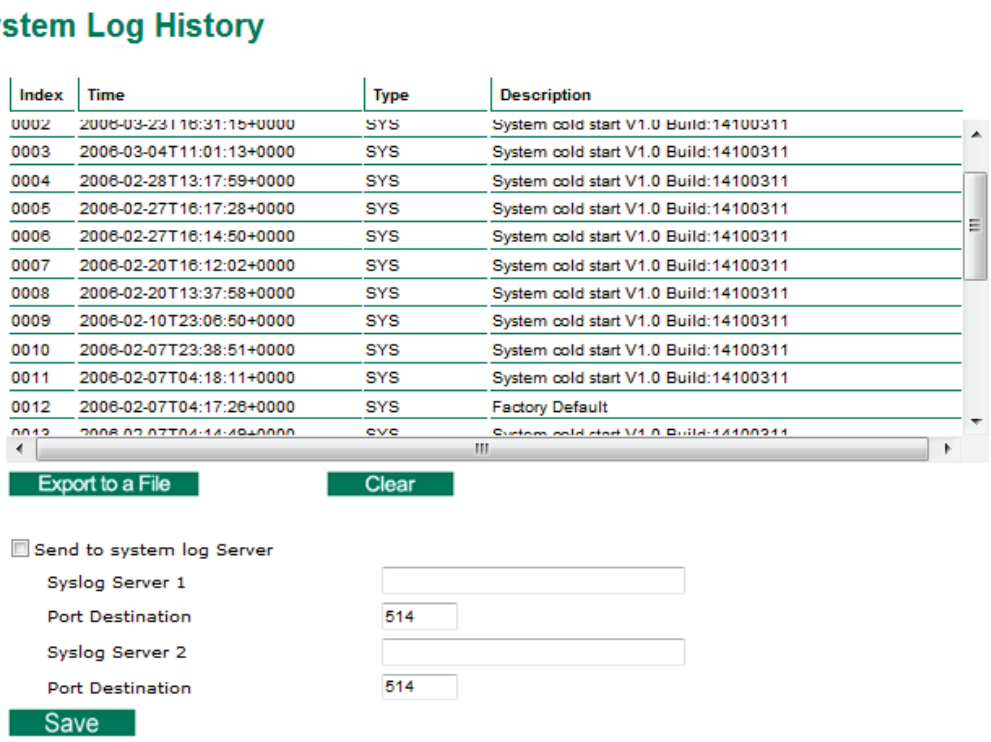
Setting	Description	Default
Recording file will be removed	Enable or disable record recycling. If enabled, recorded files will automatically be removed after the specified number of days.	Disable
Days	Set the interval for record recycling.	90

NAS Setting

Setting	Description	Default
Network storage location	Specify the IP address of the NAS.	Blank
Username	Enter the username to access the NAS.	Blank
Password	Enter the password to access the NAS.	Blank
Auto connect to NAS	Enable or disable automatic NAS connection. If enabled, the VPort will automatically connect to the NAS when it boots up.	Disable

System Log History

The system log contains useful information, including current system configuration and activity history with timestamps for tracking. Administrators can save this information in a file (system.log) by clicking the **Export to a File** button. In addition, the log can also be sent to a **Log Server** for backup. The administrator can configure "Syslog Server 1" and "Syslog Server 2" below the system log list.



Send to system log Server

Setting	Description	Default
Send to system log server	Enables sending the system log to the log sever	Disable
Syslog Sever 1	The address of the first system log server	Blank
Port Destination	The port number of the first system log server	514
Syslog Sever 2	The address of the second system log server	Blank
Port Destination	The port number of the second system log server	514

NOTE

A maximum of 500 lines is displayed in the log. Earlier log entries are stored in the VPort's database, which the administrator can export at any time.

System Parameters

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

NOTE

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

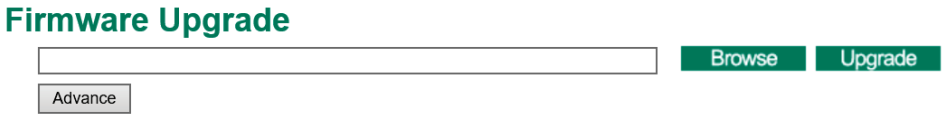
System I/O

This page shows the current status of the camera's digital input.

LED Control

From this page, users can enable or disable the physical LED on the device.

Firmware Upgrade



Take the following steps to upgrade the firmware:

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

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

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

Step 4: Once **Success .....Step 3/3 : System reboot** is displayed, wait 30 seconds for the VPort to reboot.

```
Firmware is upgrading, Please don't power off the device before the system reboot is completed!


Step 1/3 : Transmit Firmware File  ----> Success
Step 2/3 : Update Firmware File ----> Start


--Firmware Informaton-----
MagicCode : 8010
Total Files : 2
CheckSum : D7FEC84E
Total Length : 21106208
Version : 3.0.0
---------------
--File info -----------------
Filename:kernel
version:1.0.0
data size: 1821712
----------------
05% 10% 15% 20% 25% 30% 35% 40% 45% 50%
55% 60% 65% 70% 75% 80% 85% 90% 95% 100%
--File info -----------------
Filename:rootfs
version:3.0.0
data size: 19283968
----------------
05% 10% 15% 20% 25% 30% 35% 40% 45% 50%
55% 60% 65% 70% 75% 80% 85% 90% 95% 100%

Step 2/3 : Update Firmware File ----> Success
Step 3/3 : System reboot
```

NOTE

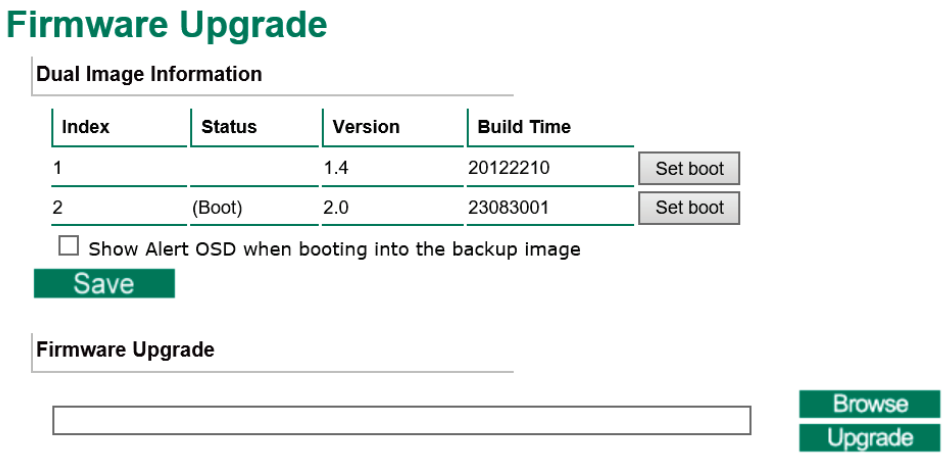
For the VPort, the firmware file extension should be **.rom**.

NOTE

Upgrading the firmware will not change most of the original settings.

Advance

The VPort camera supports dual firmware functionality for redundancy in the event of issues.



Step 1: Click the **Advance** button to access dual firmware settings.

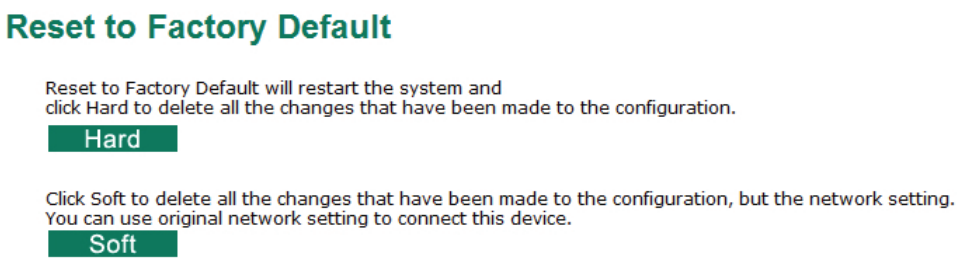
Step 2: Select the firmware versions and set the primary boot firmware by clicking **Set boot**. If the system fails to load the primary software, it will load the secondary firmware instead.

Step 3: (Optional) Check the **Show Alert OSD when booting into the backup image** box.

Step 4: Click **Save** to save your settings.

Reset to Factory Default

From the "Reset to Factory Default" page, choose **Hard** or **Soft** factory default to reset the VPort to its factory default settings.

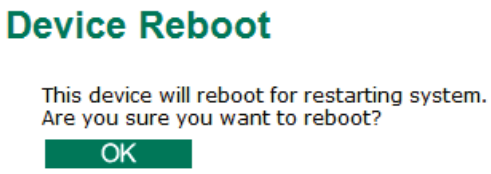


NOTE

Only some VPorts support the hardware reset button. Refer to your product's QIG for operation instructions.

Reboot

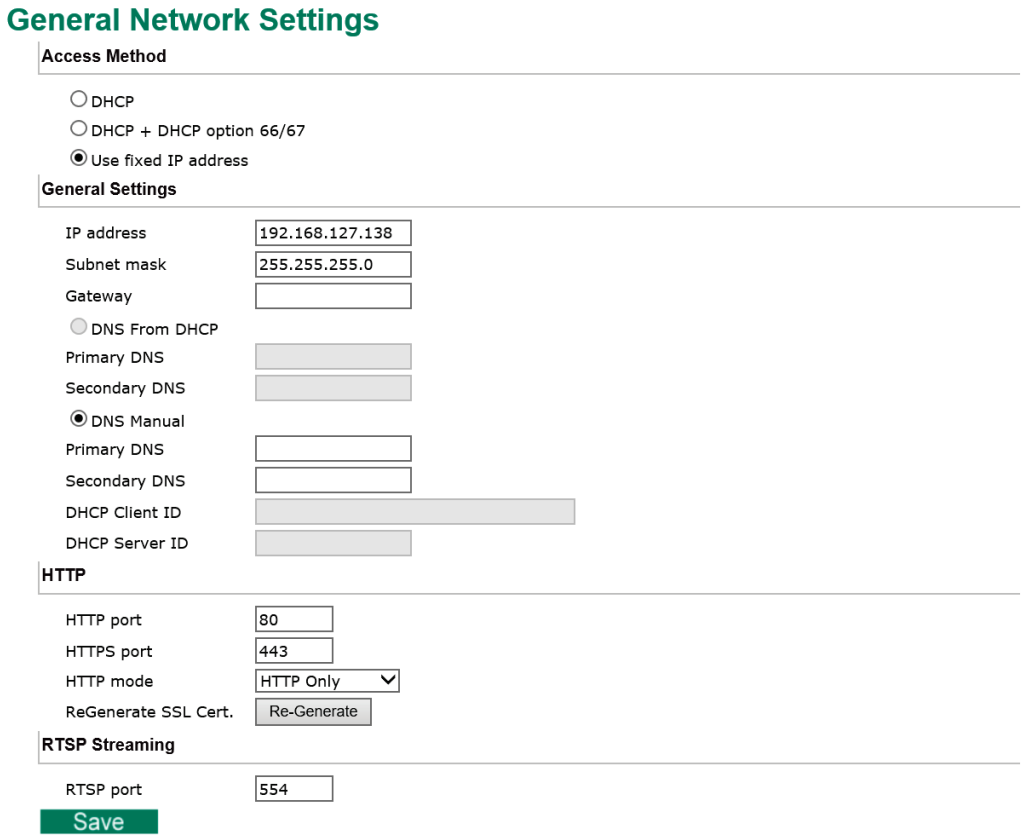
From the "Device Reboot" page, click **OK** (as shown in the following figure) to restart the VPort.



Network

General Network Settings

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



Access Method

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

Setting	Description	Default
DHCP	Get the IP address automatically from the DHCP server.	DHCP
DHCP + DHCP Option 66/67	Get the IP address automatically from the DHCP server, and download the configurations from the TFTP server with Opt 66/67 mechanism.	
Use fixed IP address	Use the IP address assigned by the administrator.	

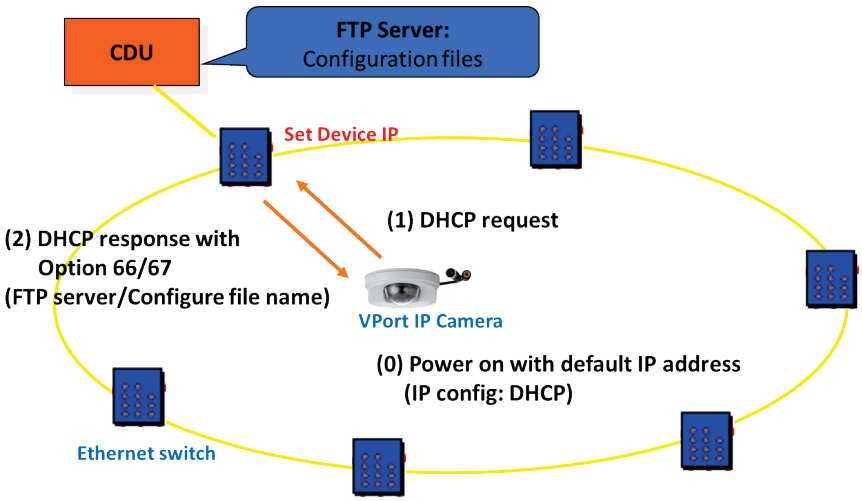
NOTE

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

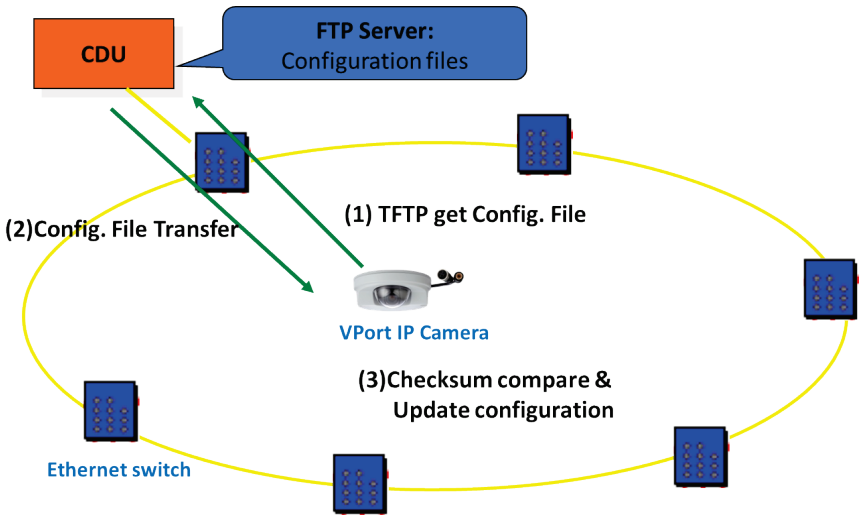
DHCP Option 66/67 for auto configuration

If you need to install a large number of devices, it can be extremely time consuming to configure each of the many devices one by one. DHCP Opt 66/67 provides a mechanism whereby configurations can be saved on a TFTP server, and then once a new device is installed, the configurations can be downloaded to this new device automatically. Follow the steps below to use the Opt 66/67 auto-configuration function. We use VPort 16-M12 to illustrate.

Step 1: When the VPort camera enables the auto-configuration function, it will ask for an IP address from the DHCP server, and the path of the TFTP server and configuration file.



Step 2: Once the VPort camera completes the IP settings, it will acquire the configuration file from the TFTP server, and then check if this configuration file is the right one or not.



NOTE

For the auto-configuration function to work, the system should

1. Have a DHCP Server that supports DHCP Opt 66/67 in the network switches and routers.
2. Have a TFTP server that supports the TFTP protocol.

General Settings

Setting	Description	Default
IP address	Variable IP assigned automatically by the DHCP server, or fixed IP assigned by the Administrator.	192.168.127.100
Subnet mask	Variable subnet mask assigned automatically by the DHCP server, or a fixed subnet mask assigned by the Administrator.	255.255.255.0
Gateway	Assigned automatically by the DHCP server, or assigned by the Administrator.	Blank
DNS from DHCP	The DNS server is assigned by DHCP server	Enable
Primary DNS	Enter the IP address of the DNS Server used by your network. After entering the DNS Server's IP address, you can input the VPort's url (e.g., www.VPort.company.com) in your browser's address field, instead of entering the IP address.	Obtained automatically from the DHCP server, or left blank in non-DHCP environments.
Secondary DNS	Enter the IP address of the DNS Server used by your network. The VPort will try to locate the secondary DNS Server if the primary DNS Server fails to connect.	Obtained automatically from the DHCP server, or left blank in non-DHCP environments.
DHCP Client ID	Configure the DHCP Client ID if it is required	Blank
DHCP Server ID	Configure the DHCP Server ID if it is required	Blank

HTTP

Setting	Description	Default
HTTP port (80, or 1024 to 65535)	HTTP port enables connecting the VPort to the web.	80
HTTPS port	HTTPS port enables HTTPS encryption	443
HTTP mode	Configure HTTP mode to HTTP only, or HTTP+HTTPS	HTTP only
Regenerate SSL Cert.	For HTTPS connections, it is required to import the self-signed SSL certification by clicking the **Re-Generate** button. For more details, please refer to the Security Hardening Guide in appendix D.	

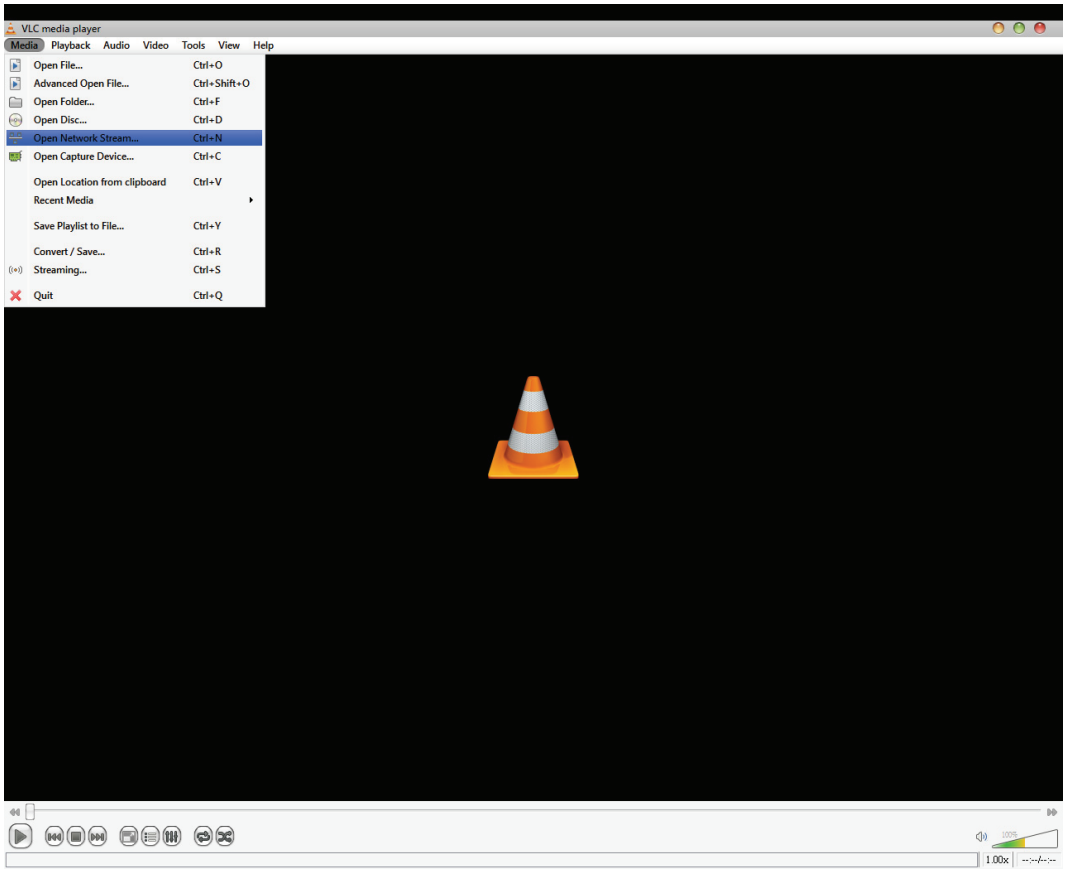
RTSP Streaming

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

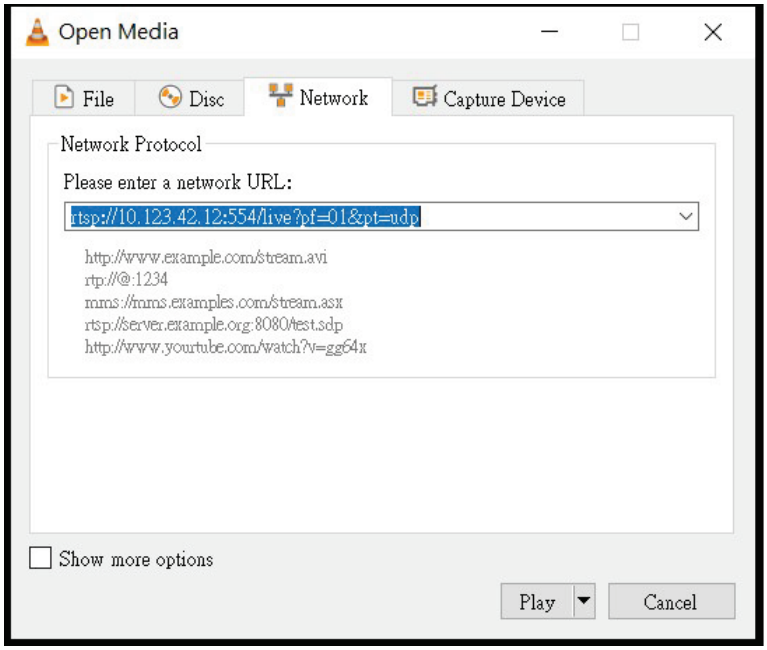
Setting	Description	Default
RTSP port	An RTSP port is similar to an HTTP port, which can enable the connection of video/audio streams by RTSP.	554

The VLC media player is used here as an example of an RTSP streaming application:

Step 1: Open VLC Player and select Media - Open network streaming



Step 2: When the following pop-up window appears, type the URL in the input box. E.g., type **rtsp://<VPort's IP address>[:<RTSP Port]/live?pf=<profile ID>&pt=udp**
rtsp://<VPort's IP address>[:<RTSP Port]/live?pf=<profile ID>&pt=multicast
RTSP Port: 554 (the default),
and then click **OK** to connect to the VPort.



Step 3: Wait a few seconds for VLC Player to establish the connection.

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

NOTE

The video performance of the VPort may vary depending on the media players or on network performance. For example, you will notice a greater delay when viewing the VPort's live stream from the VLC player compared to viewing it directly from the VPort's home webpage. Also, additional delays could happen if viewing the VPort's live stream from the VLC player over a router or Internet gateway.

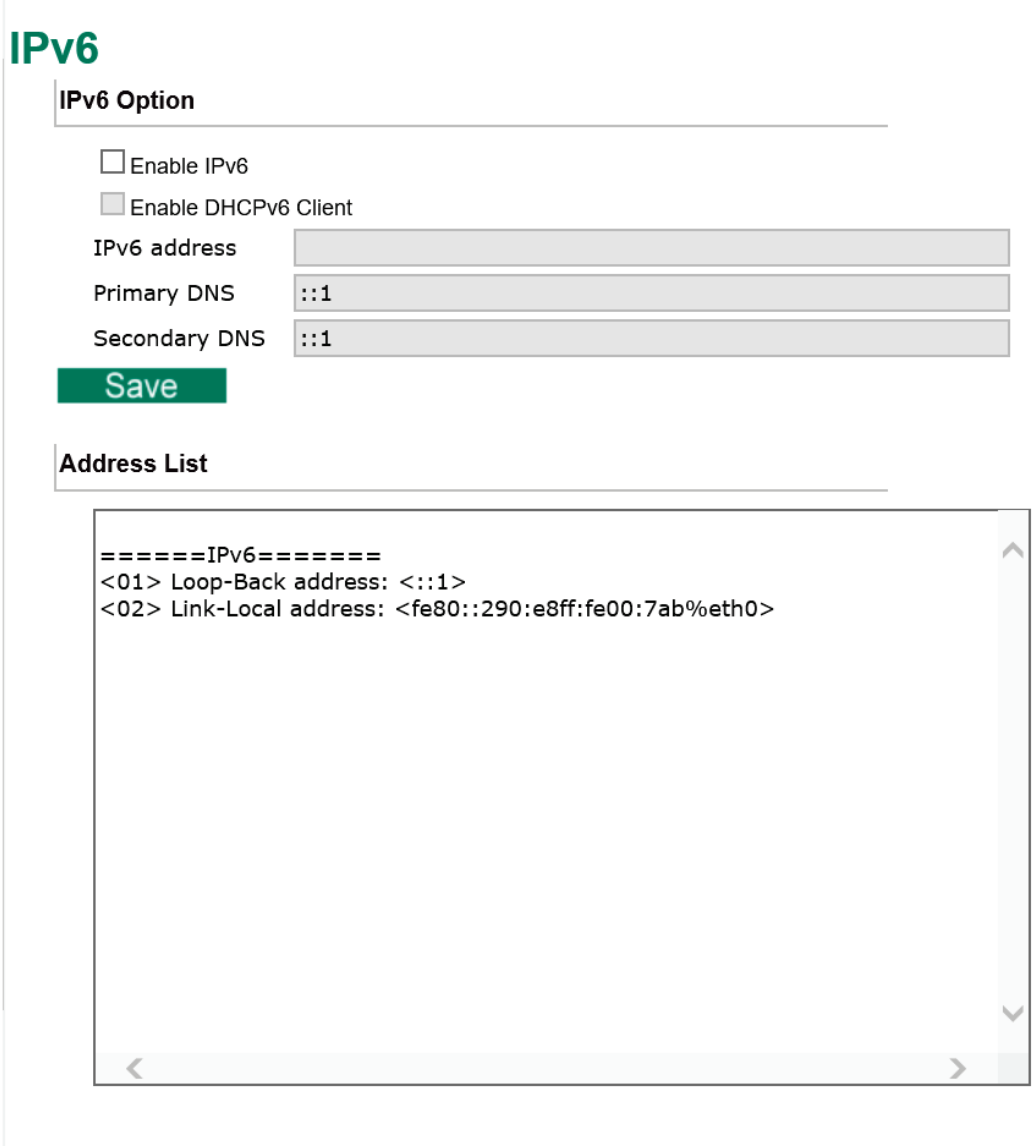
NOTE

VPort's RTSP video/audio stream can be identified and viewed by both Apple QuickTime V. 6.5 or above and VLC media player. System integrators can use these two media players to view the video directly without needing to use the VPort's SDK to create customized software.

NOTE

When using RTSP, the video stream format should be H.264. MJPEG does not support RTSP.

IPv6



IPv6 Option

Setting	Description	Factory Default
Enable IPv6	Enable or disable IPv6.	Disable
Enable DHCPv6 Client	Enable or disable the DHCPv6 Client. If enabled, the system will automatically get an IPv6 address from the DHCP server.	Disable
IPv6 Address	Show the IPv6 address assigned by the DHCP server.	Blank
Primary DNS	Show the primary DNS IPv6 address assigned by the DHCP server.	Blank
Secondary DNS	Show the secondary DNS IPv6 address assigned by the DHCP server.	Blank

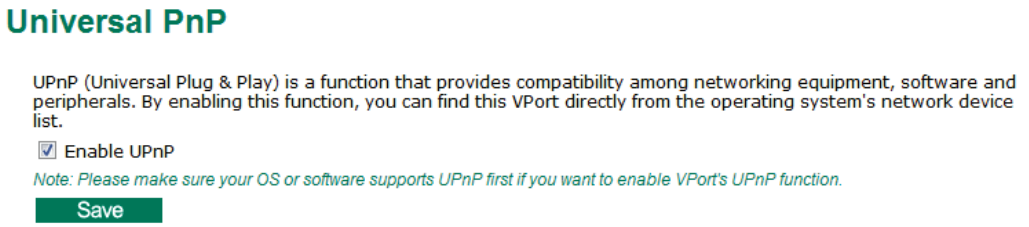
Address List

The IPv6 address list shows all IPv6 addresses relevant to the camera.

Universal PnP

UPnP (Universal Plug & Play) is a networking architecture that provides compatibility among the networking equipment, software, and peripherals of the 400+ vendors that are part of the Universal Plug and Play Forum. This means that they are listed in the network devices table for the operating system (such

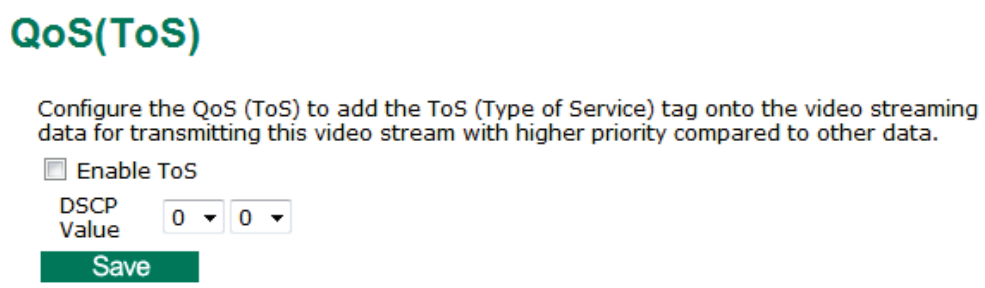
as Windows XP) supported by this function. Users can link to the VPort directly by clicking on the VPort listed in the network devices table.



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

ToS

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



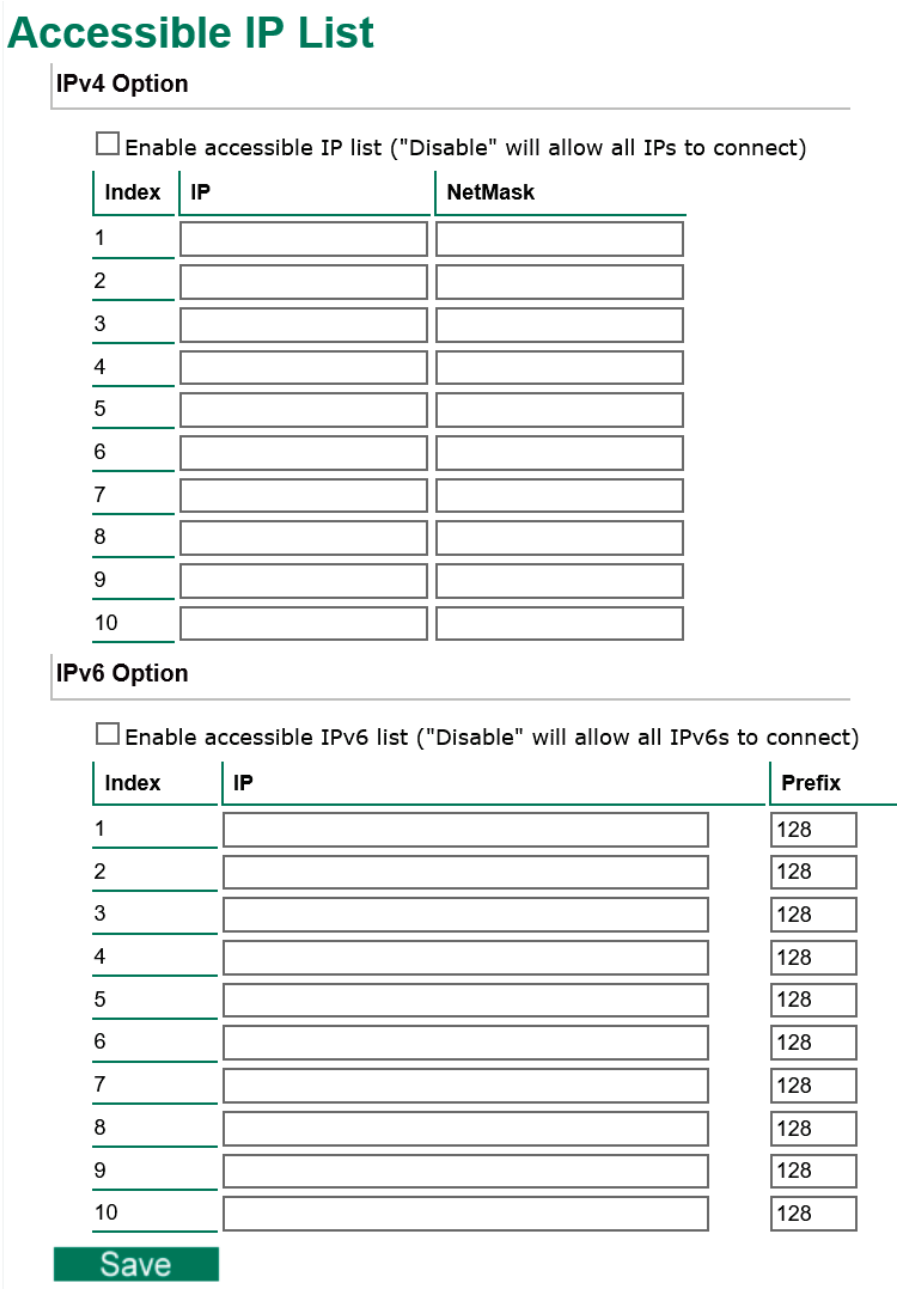
Setting	Description	Factory Default
Enable ToS	Enable ToS to transmit the video stream with the given priority.	Disable
DSCP Value	Configure the mapping table with different ToS values.	0, 0

NOTE

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

Accessible IP List

The VPort uses an IP address-based filtering method to control access to the VPort.



Accessible IP Settings allow you to add or remove "Legal" remote host IP addresses to prevent unauthorized access. Access to the VPort is controlled by IP address. That is, if a host's IP address is in the accessible IP table, then the host will be allowed access to the VPort. In particular, an **IP** together with a **NetMask** is used to specify a range of IP addresses. Here are some examples:

- Allow only one host with a specific "IP address" to access the VPort. For example,
  IP = 192.168.1.16 NetMask = 255.255.255.255
  will only allow the host with IP = 192.168.1.16 to access the VPort.
- Allow all hosts on a specific subnet to access the VPort. For example:
  IP = 192.168.1.0 NetMask = 255.255.255.0
  will allow all hosts with IP addresses of the form 192.168.1.xxx to access the VPort.
- Allow any host to access the VPort.
  Do not checkmark the "Enable accessible IP list" checkbox.

The following table gives additional IP/NetMask configuration examples.

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

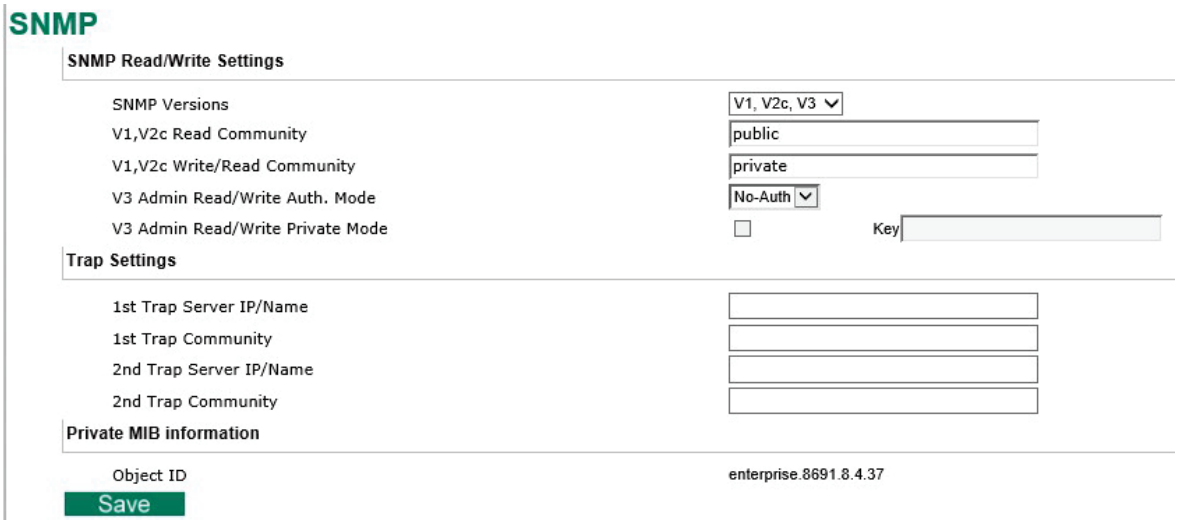
SNMP

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

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

Configuring SNMP Settings

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



SNMP Read/Write Settings

SNMP Versions

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

V1, V2c Read Community

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

V1, V2c Read/Write Community

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

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

V3 Admin Read Auth. mode

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

V3 Admin Read private mode

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

Trap Settings

Setting	Description	Default
1st and 2nd Trap Server IP/Name	Enter the IP address or name of the Trap Server used by your network.	No
1st and 2nd Trap Community	Use a community string match for authentication; Maximum of 30 characters.	No

Private MIB information

Different VPorts have different object IDs.

NOTE

The MIB file is MOXA-VPORTXX-MIB.mib (or.my). You can find it on the download center of the Moxa website.

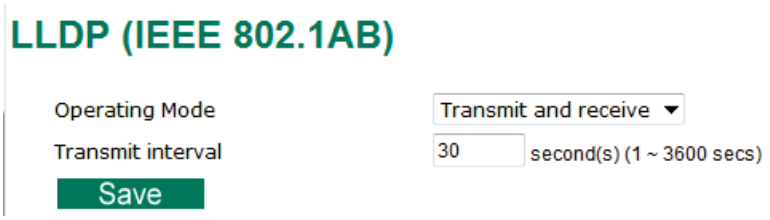
SSH

Use this function to enable/disable the SSH function.

LLDP

LLDP is an OSI Layer 2 protocol defined by IEEE 802.11AB. LLDP standardizes the self-identification advertisement method, and allows each networking device to periodically send its system and configuration information to its neighbors. Because of this, all LLDP devices are kept informed of each other's status and configuration, and with SNMP, this information can be transferred to Moxa's MXview for auto-topology and network visualization.

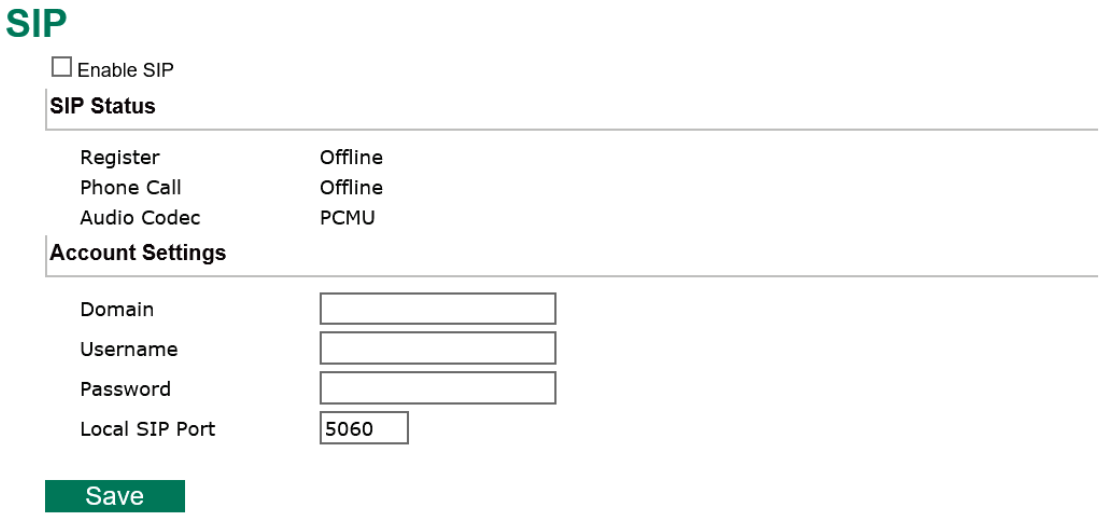
From the VPort's web interface, you can enable or disable LLDP, and set the LLDP transmit interval. In addition, you can view each VPort's neighbor-list, which is reported by its network neighbors.



Setting	Description	Default
Operation Mode	Choose the LLDP operation mode: Disabled, Transmit only, Receive only, or Transmit and receive.	Transmit and receive
Transmit interval	Sets the transmit interval of LLDP messages, in seconds.	30 seconds

SIP

You can connect to a SIP server to enable audio communication with the SIP server.



SIP

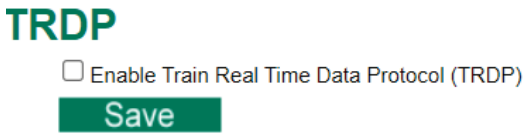
Setting	Description	Default
Enable SIP	Enable or disable SIP functionality.	Disable

Account Settings

Setting	Description	Default
Domain	Specify the domain name of the SIP client.	Blank
Username	Enter the username of the SIP client.	Blank
Password	Enter the password of the SIP client.	Blank
Local SIP Port	Specify the SIP port.	5060

TRDP

TRDP (Train Real-time Data Protocol) is a network protocol for IP-based communication in trains.



TRDP

Setting	Description	Default
Enable Train Real Data Protocol (TRDP)	Enable or disable TRDP.	Disable

Video

Image Settings

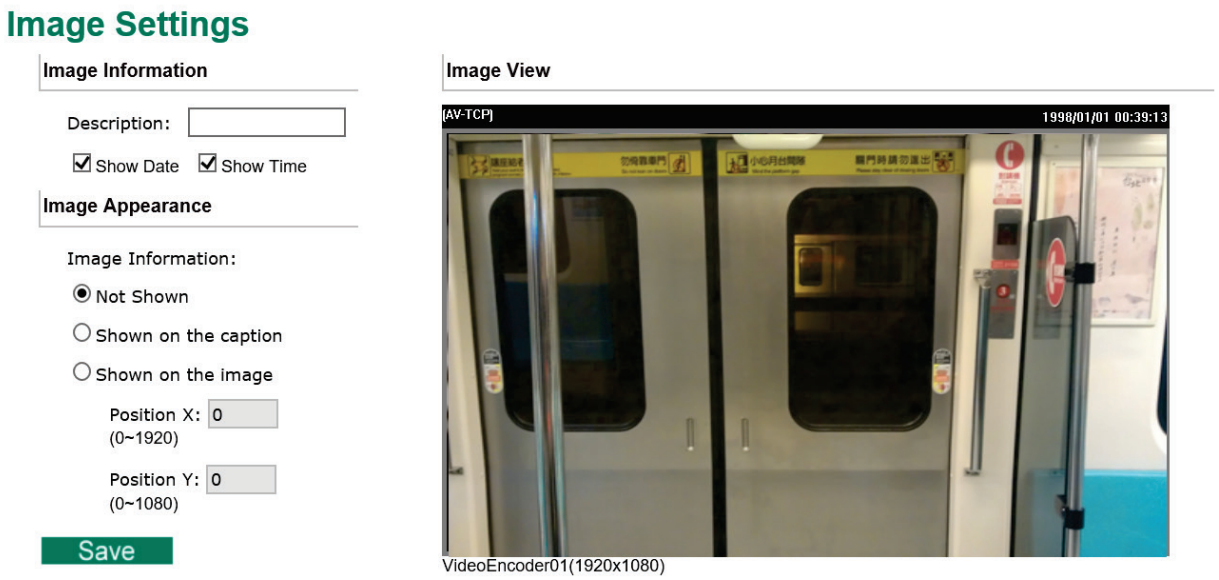


Image Information Setting

Setting	Description	Default
Description (max. of 15 characters)	The customized description shown on the caption to identify this video camera.	None

Image Appearance Setting

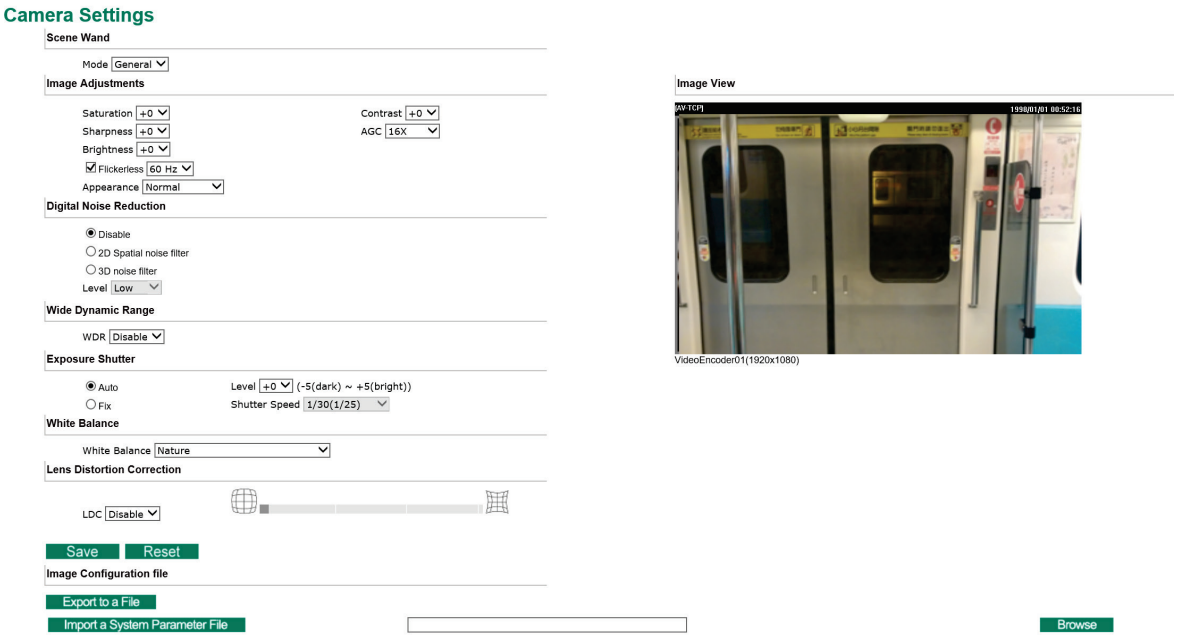
Setting	Description	Default
Image Information	Determines how image information is shown. Options are: Not Shown, Show on the Caption, and Show on image	Not Shown

Image Appearance Position

The position of the Image Appearance window can be changed by configuring Position X and Position Y. The arrangement of the position is based on the resolution of each model.

Camera Setting

Different environments require different camera settings to ensure acceptable image quality.



Scene Wand

Setting	Description	Default
General	Select the General of Scene Wand preset color mode. Scene Wand mode provides more options to adjust white balance.	General

Image Adjustments

Setting	Description	Default
Saturation	Select a value from -4 to +6.	0
Contrast & Sharpness	Select a value from -4 to +4	0
Auto Gain Control (AGC)	The AGC function produces clear images in low light conditions. The setting controls an amplifier that is used to boost the video signal when the light dims so to increase the camera's sensitivity. In some bright environments, the amplifier may be overloaded, which may distort the video signal.	16x
Brightness	Select a value from -4 to +4.	0
Flickerless	Adjust the sensor scan frequency to synchronize with the environmental lighting frequency.	60 Hz
Appearance	Normal: Normal view. Mirror: Image will be displayed as in a mirror. Flip: 180 degree rotation followed by mirrored display. 180° Rotation: Display image after a 180 degree rotation.	Normal

Digital Noise Reduction

Setting	Description	Default
Disable, 2D or 3D noise filter	Enable or disable the digital noise reduction function. If enabled, select the 2D or 3D noise filter mode.	Disable
Level	Choose the DNR level (Low, Middle, High).	Low

WDR

Setting	Description	Default
WDR	Configure the WDR mode from Level 1 to Level 8, or enable/ disable, depending on the VPort models\. A higher level causes a stronger WDR effect. Choose a higher WDR level when your camera is monitoring a scene with both bright and dark areas.	Disable

Exposure Shutter

Setting	Description	Default
Auto Level	Configure the exposure mode from -5 to +5. Higher levels cause a slower shutter speed (hence brighter images); lower levels do the opposite.	0
Fix	Set the shutter to a fixed speed of 1 to 1/25000 seconds.	1/30 (1/25)

White Balance

Setting	Description	Default
White balance	Choose a white balance mode. For most conditions, we suggest using Nature to allow the camera to automatically adjust the white balance. We suggest using AWB when your camera is monitoring a scene in which one color occupies most of the view. To use AWB, follow the steps below: **Step 1**: Move the camera to a white color, real-world environment with normal lighting. **Step 2**: Select **AWB** and then click **Save**. **Step 3**: Move the camera back to the location to be monitored.	Nature

Line Distortion Correction

The line distortion correction function helps straighten the edges of bent images made with low focal-length lenses.

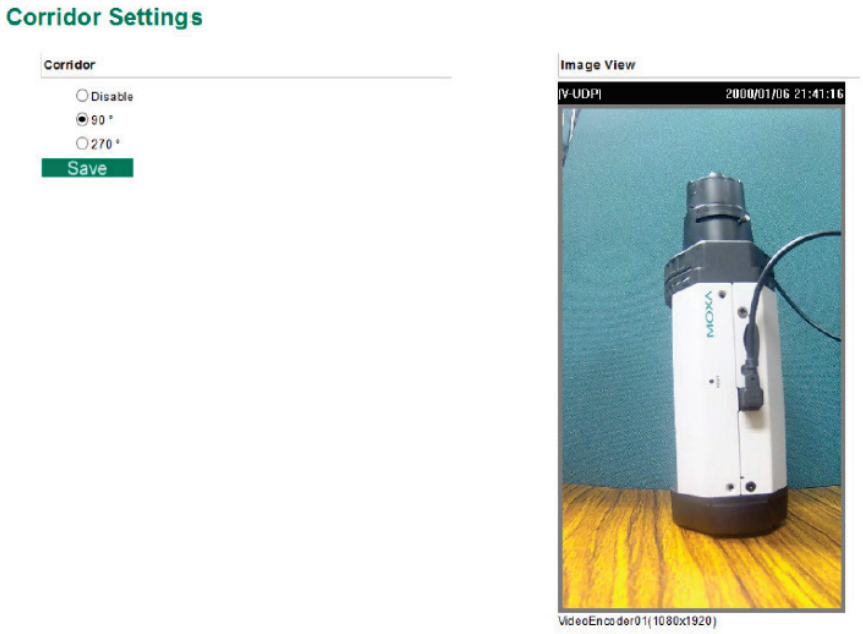
Setting	Description	Default
LDC	Enable or disable the line distortion correction function.	Disable
Tuning bar	Use the tuning bar to adjust the level of line distortion correction. The preview image in the Image View section shows the image with the selected level of line distortion correction applied. Use the **Save** and **Reset** buttons to save or reset the line distortion settings accordingly.	None

Image Configuration File

Click **Export** to export the image configuration to the local computer or use the **Import a System Parameter File** function to import a configuration file stored on the computer.

Corridor Settings

The corridor function is useful when recording areas that are more vertical than horizontal in nature, such as corridors or stairwells.

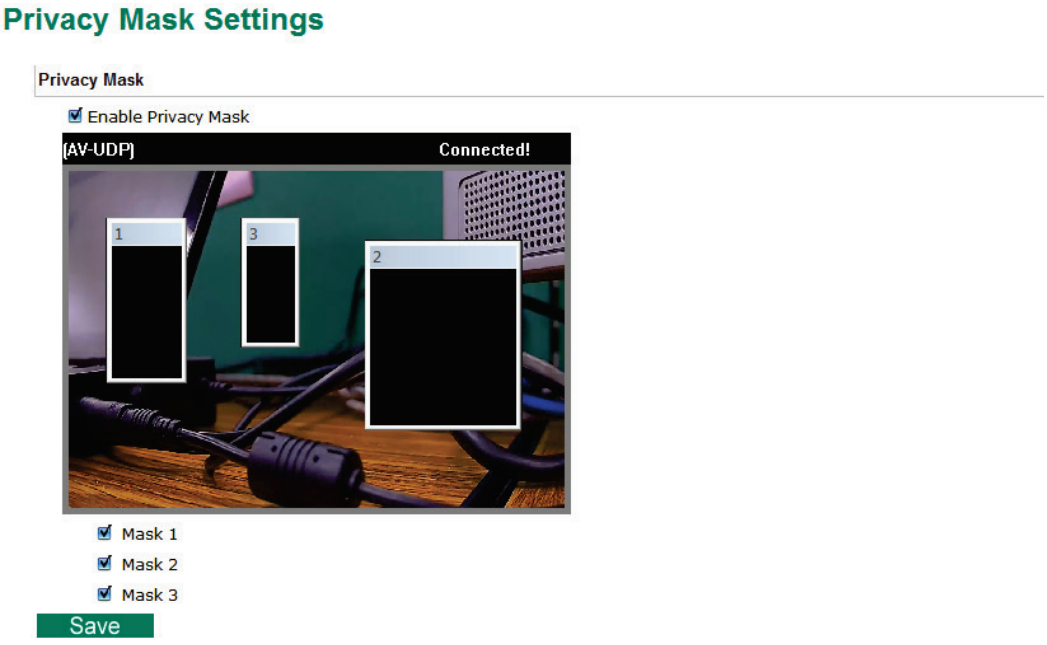


Corridor Settings

Setting	Description	Default
Disable, 90°, 270°	Enable or disable corridor mode. If enabled, choose the desired angle.	Disable

Privacy Mask

In some conditions, you may want to block part of the view so that your surveillance system won't display private information that would otherwise be visible; the information will be blocked when displaying live video and during video playback.



Privacy Mask

Setting	Description	Default
Enable Privacy Mask	Enable the privacy mask function	Off

Setting	Description	Default
Mask 1/2/3	Enable up to 3 different privacy mask areas. Once enabled, you can drag the masked areas to different parts of the camera scene.	Disable

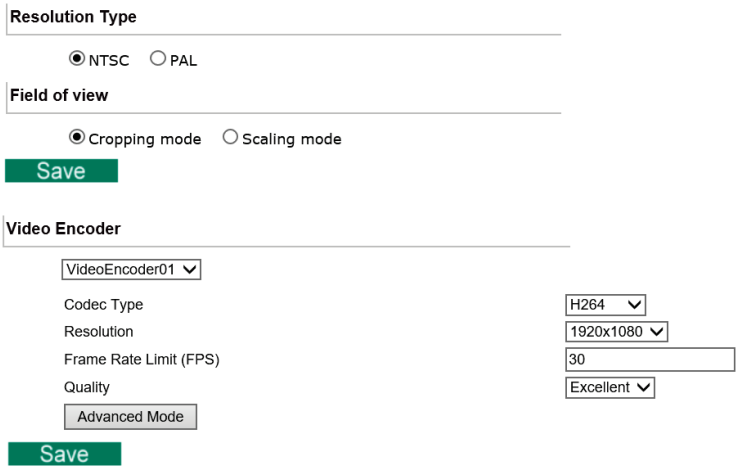
NOTE

There is no way to recover masked video. The masked areas are not displayed when viewing the video live, or during playback, so be sure to use this function carefully.

Video Encoder

The VPort supports up to three video encoders for generating video stream profiles. The video encoders can each be configured with different codecs (H.264 or MJPEG), resolution, FPS (frame rate), and video quality.

Encoder Settings



Resolution Type

Setting	Description	Default
NTSC or PAL	Choose NTSC or PAL resolution type for your system	NTSC

Field of view

Setting	Description	Default
Cropping mode or Scaling mode	Choose the cropping or scaling mode when modifying resolution. (Cropping mode will alter viewing angle and scaling mode will alter object ratio)	Cropping mode

Video Encoder

Setting	Description	Default
Videoencoder01 Videoencoder02 Videoencoder03 Videoencoder04	Choose the video encoder to configure.	Videoencoder01

Codec Type

This codec type shows the codec of each video stream.

Setting	Description	Default
Codec type	Configure the codec type of the video encoder: H.264, MJPEG	H.264

Resolution

Different VPort models support different resolutions. See each model's specifications for details.

Setting	Description	Default
Select the image size	Different image resolutions (size) are provided based on different VPort models. The administrator can choose each option with NTSC or PAL modulation.	1920 x 1080

Resolution	NTSC	PAL
Full HD	1920 x 1080	1920 x 1080
WXGA	1280 x 800	1280 x 800
HD 720P	1280 x 720	1280 x 720
SVGA	800 x 600	800 x 600
Full D1	720 x 480	720 x 576
4CIF	704 x 480	704 x 576
VGA	640 x 480	640 x 480
CIF	352 x 240	352 x 288
QVGA	320 x 240	320 x 240
QCIF	176 x 112	176 x 144

Max. FPS (Frame per second)

Setting	Description	Default
Frame Rate Limit (FPS)	Configure the maximum FPS (frames per second); up to 30	30

NOTE

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

NOTE

Enabling more video streams can lower the frame rate of each video stream.

Quality

Setting	Description	Default
Quality	The administrator can set the image quality to one of 5 standards: **Medium, Standard, Good, Detailed,** or **Excellent**. The VPort will tune the bandwidth and FPS automatically to the optimum combination.	Good

The video encoder setting supports an **Advanced Mode**. Click on the Advance Mode button to view the following configuration options.

Setting	Description	Default
Bitrate Limit (kBits) (only for H.264)	The administrator can fix the bandwidth to tune the video quality and FPS (frames per second) to the optimum combination. Different resolutions have different bandwidth parameters. The VPort will tune the video performance according to the bandwidth. A higher bandwidth means better quality and higher FPS.	5000
H.264 Key Frame Interval	Configure the key frame interval of the H.264 stream. A low number means higher video quality (due to more key frames), but more bandwidth will be consumed. If you have concerns about bandwidth, then select a higher number for key frame interval.	30

Multicast Setting

Setting	Description	Default
IP Address	The Multicast Group address for sending a video stream.	239.127.0.100
Port	The video port number.	Videoecnoder01: 5556 Videoencoder02: 5558 Videoencoder03: 5560 Videoencoder04: 5562
TTL	Multicast-TTL (Time-to-live) threshold. A certain TTL threshold is defined for each network interface or tunnel. A multicast packet's TTL must be larger than the defined TTL for that packet to be forwarded across that link.	128
Session Timeout (sec)	Timeout between the client and the stream.	60 (seconds)
Multicast Send Userdata	Configure the video stream with or without user data.	Enable
Auto Start	Enable/disable the Multicast stream push mode.	Disable

NOTE

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

PreAlarm

The PreAlarm function is used to configure the snapshot images of before an alarm or event is triggered.

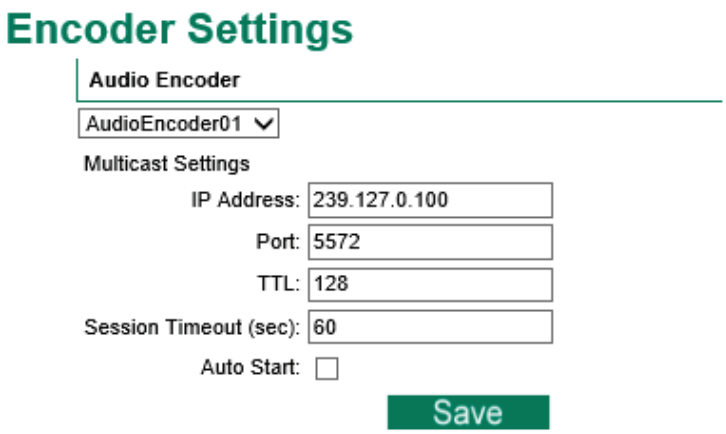
PreAlarm Settings

Setting	Description	Default
Enable PreAlarm	Enable or disable the Prealarm function.	Disable
Encoder (MJPEG) Name	Select which encoder will be used for prealarm.	VideoEncoder03
Port	Specify the network port for the prealarm encoder.	1128

Audio

The VPort 06-2 Series supports an audio input (line-in or microphone in). The audio streaming settings need to be configured for video or audio streams.

Encoder Settings



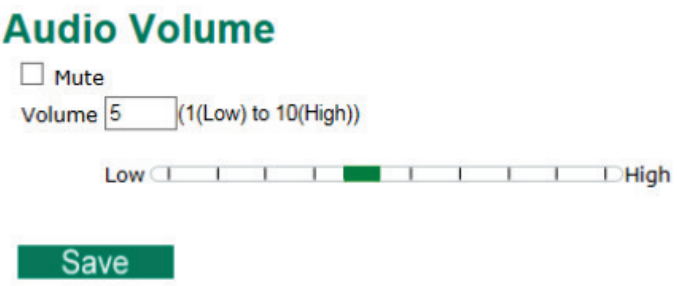
Audio Encoder

Setting	Description	Default
IP Address	Select the audio encoder. The VPort currently only supports one audio encoder.	Audioencoder01

Multicast setting

Setting	Description	Default
IP Address	Multicast Group address for sending audio streams.	239.127.0.100
Port	Audio port number.	Audioecnoder01: 5572
TTL	Multicast-TTL (Time-to-live) threshold. A certain TTL threshold is defined for each network interface or tunnel. A multicast packet's TTL must be larger than the defined TTL for that packet to be forwarded across that link.	128
Session Timeout (sec)	Timeout between the client and the stream.	60 (seconds)
Auto Start	Enable/disable the Multicast stream push mode.	Disable

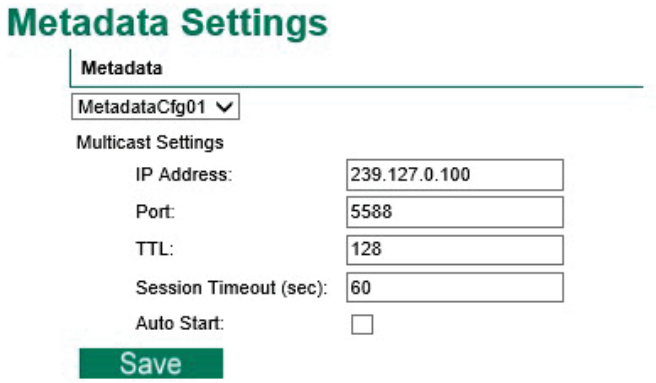
Audio Volume



Setting	Description	Default
Mute	Check to mute all audio.	Blank
Volume	Specify the audio volume (1 to 10).	5

Metadata

The metadata includes date, time, event, alarm, etc., and even some private information. The metadata can be sent with the video stream to provide the information to the system. If the video stream is in unicast mode, the metadata will be sent with the video stream. If the video stream is in multicast mode, then the following multicast settings are required.



Multicast setting

Setting	Description	Default
IP Address	Multicast Group address for sending the metadata.	239.127.0.100
Port	Metadata port number.	5588
TTL	Multicast-TTL (Time-to-live) threshold. A certain TTL threshold is defined for each network interface or tunnel. A multicast packet's TTL must be larger than the defined TTL for that packet to be forwarded across that link.	128
Session Timeout (sec)	Timeout between the client and the stream	60 (seconds)
Auto Start	Enable/disable the Multicast stream push mode	Disable

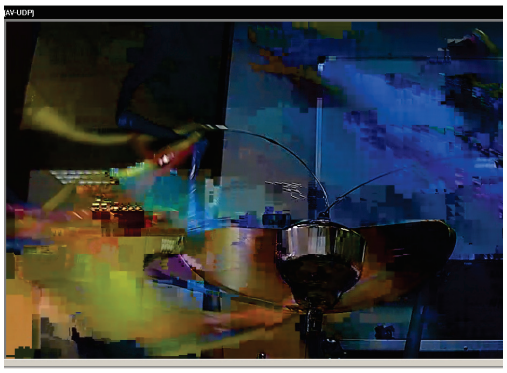
Streaming

CBR Pro

General CBR (constant bit rate) configuration limits throughput to 1 second, but since video streaming is designed to transmit immediately to shorten latency, network throughput may experience a burst in action during short time periods, in which case packet loss will occur if the network bandwidth buffer is not large enough. When packet loss occurs, images will show a mosaic effect. For this reason, the VPort supports an advanced CBR Pro™ function, which can enable the flow control of image packets to ensure no packet loss for limited bandwidth transmissions, such as on xDSL or wireless networks.

Image without packet loss

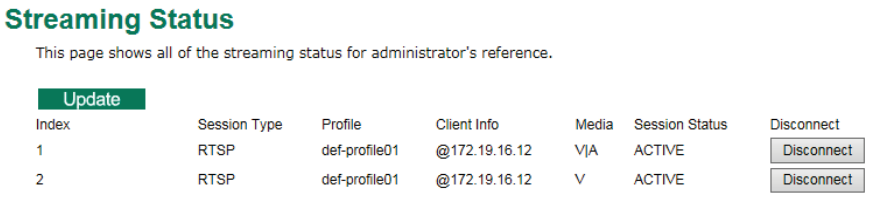
Image with packet loss



Setting	Description	Default
Limit the maximum throughput of each connection in [xxx] (4 to 5000) kbits within [xxx] (1 to 1000) milliseconds	Configure how much throughput is allowed on the network within the given number of milliseconds. For example, if the configuration is 20 kbits within 5 milliseconds, the video packet throughput will be limited to 20 kbits within 5 milliseconds.	20 kbits within 5 milliseconds

Streaming Status

This page shows the status of all connected media streams.



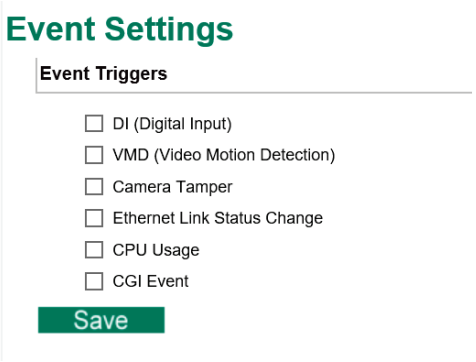
Setting	Description
Index	The index of the media stream.
Session Type	The video stream transmission method.
Profile	The profile being used.
Client Info	The address of the client.
Media	The type of media stream. V: video, A: Audio, V/A: Video and audio.
Session status	The current status of the media stream session.
Disconnect	Click to manually disconnect the stream.

Event

You can set up all of the events that you want to be detected by the camera; in fact, you may set an action once an event occurs.

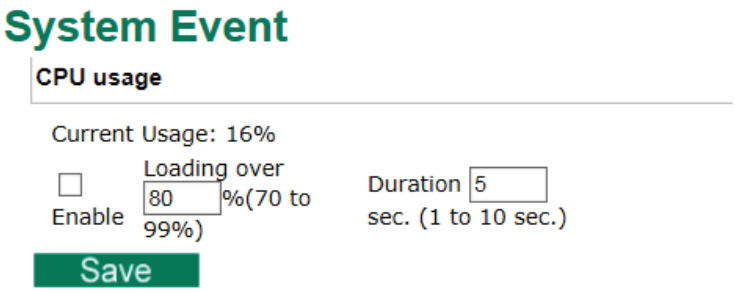
Enable Event

Checkmark those events you would like to enable. Events without a checkmark are disabled.



System Event

System events inform the user whenever a system-related event occurs.

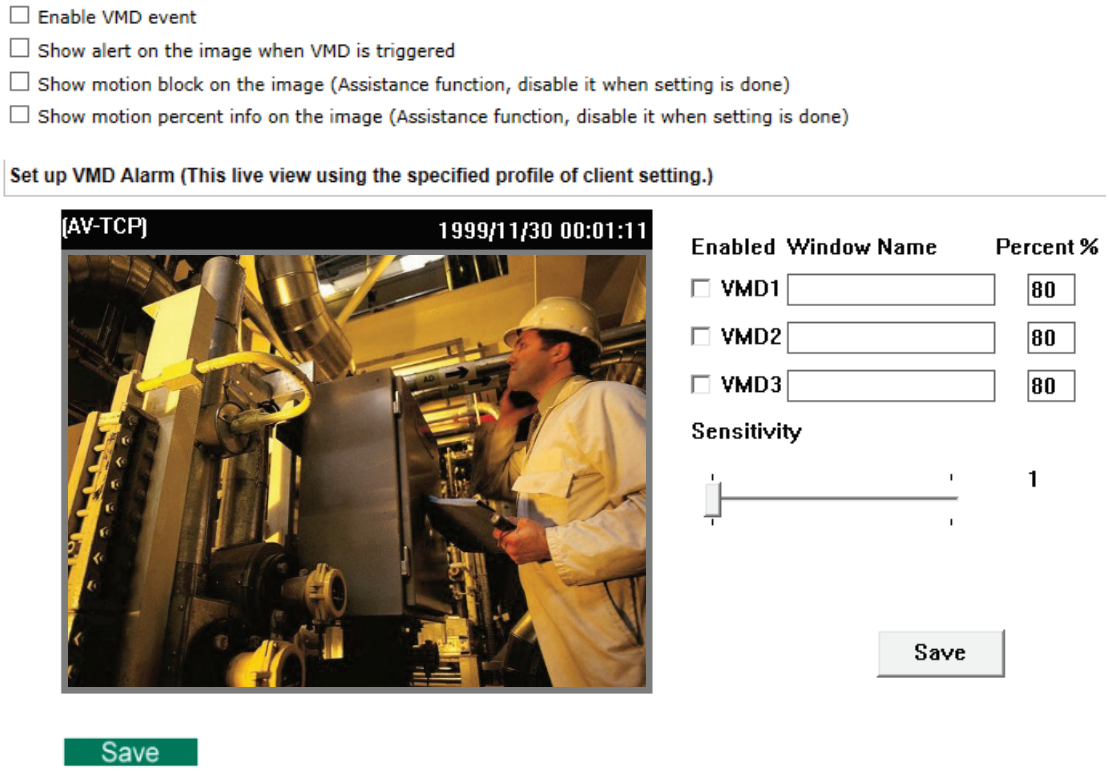


Setting	Description	Default
Enable	Enable or disable system events.	Disabled
Loading Over	Specify the threshold value for CPU usage events.	80
Duration	Specify how long (in seconds) CPU usage needs to exceed the set threshold before an event is triggered.	5

Video Motion Detection

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

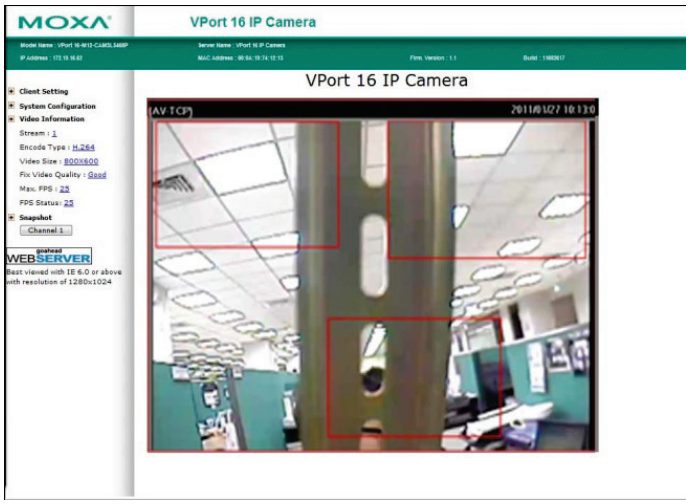
VMD (Video Motion Detection)



Setting	Description	Default
Enable VMD alarm	Enable or disable the Video Motion Detection alarm	Disabled
Show alert on the image when VMD is triggered	Enable or disable "show alert on the image…" When enabled, when a VMD alarm notification is received, a red square frame will be displayed on the video image.	Disabled
Show the motion block on the image (Assistance function, disable it when setting is done)	Enable this item for real-time motion detection, which is related to VMD sensitivity configuration.	Disabled
Show the motion percentage information on the image (Assistance function, disable it when setting is done.)	Enable this item to show the change in percentage of motion detection, which is related to the VMD's percentage configuration.	Disabled

NOTE

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



Setup a VMD Alarm

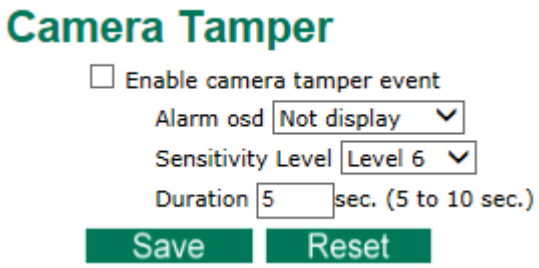
Setting	Description	Default
Enable	Enable or disable the VMD1, VMD2, or VMD3	Disable
Window	The name of each VMD window	Blank
Percent	The minimum percentage of change to an image that will trigger VMD. Decrease the percentage to make it easier to trigger VMD.	80
Sensitivity	The measurable difference between two sequential images for triggering VMD. Increase the sensitivity to make it easier for VMD to be triggered.	1

NOTE

After setting the VMD Alarm, click the Save button to save the changes.

Camera Tamper

Use the VPort's camera tamper function to detect malicious behavior done to the camera, such as spray painting, view blocking, angle adjustment, etc. This page allows you to configure the parameters and alarm condition/action of the camera tamper alarm.



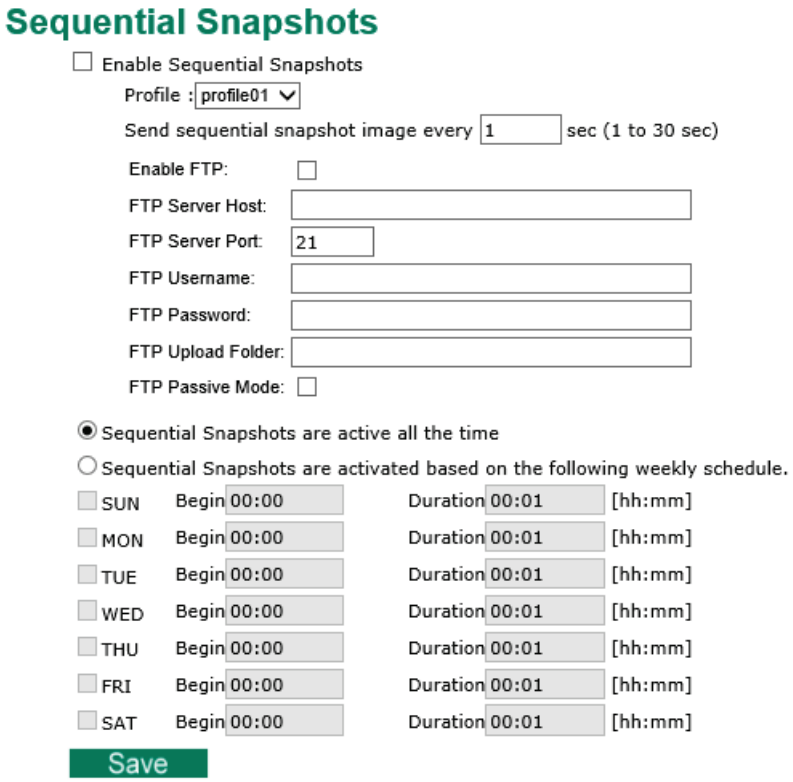
Setting	Description	Default
Enable camera tamper event	Enable or disable the digital input alarm	Disable
Alarm osd	Determines whether or not the camera will display an onscreen warning square when the camera tamper alarm is triggered	Not display

Trigger Conditions

Setting	Description	Default
Sensitivity Level	Adjust the sensitivity level of tamper detection (level 10 is the most sensitive level)	Level 5

Setting	Description	Default
Duration	How long should the camera tamper behavior persist before the alarm is triggered.	5 sec.

Sequential Snapshot



With this feature, the VPort can upload snapshots periodically to an external E-mail or FTP server as a live video source.

Setting	Description	Default
Enable Sequential Snapshots	Enable or disable Sequential Snapshot.	Disable
Profile	Select which video profile will take snapshot images.	Profile01
Send sequential snapshot image every [xxx] sec (1 to 30 sec)	The time interval between successive snapshot images.	1 second (from 1 second to 30 seconds)

FTP

Setting	Description	Default
Enable FTP	Enable the FTP system to save snapshot images remotely.	Disable
FTP Server Host	FTP server's IP address or URL address.	None
FTP Server Port	FTP server's authentication.	21
FTP Username		None
FTP Password		None
FTP Upload Folder	FTP file storage folder on the remote FTP server.	None
FTP Passive Mode	Passive transfer solution for FTP transmission through a firewall.	Disable

Weekly Schedule

Setting	Description	Default
Sequential Snapshot is active all the time	The Sequential Snapshot function is always active.	

Setting	Description	Default
Sequential Snapshot are activated based on the following weekly schedule	The Sequential Snapshot is activated based on the configured weekly schedule.	Sequential Snapshot are active all the time
SUN, MON, TUE, WED, THU, FRI, SAT	Select which days of the week to schedule event alarms.	None
Begin 00:00	Set the start time of the event alarm.	00:00
Duration 00:00	Set how long the event alarm will be active.	00:01

Actions

Action Config

To set up an event alarm, the corresponding action needs to be configured first.

Step 1: Click the "Create New Config" button.

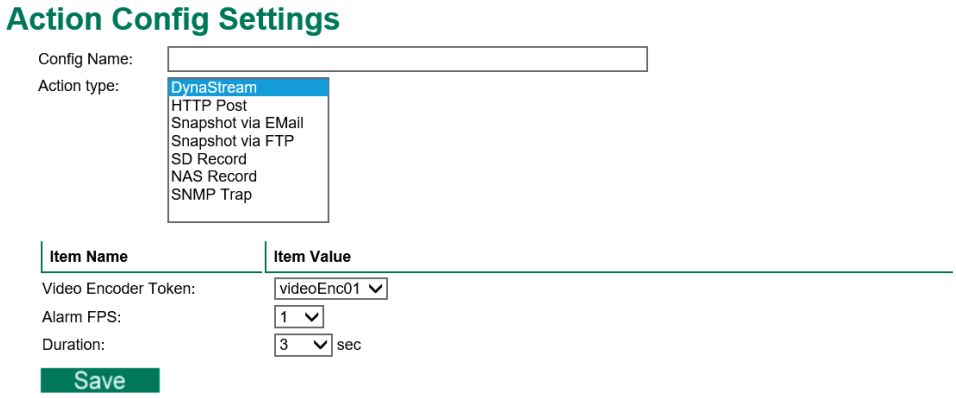
Step 2: Create the new action.

Setting	Description	Default
Config Name	Configure the name of the new action	None
Action type	Select the Action type: DynaStream, HTTP Post, Snapshot via Email, Snapshot via FTP, SD Record, NAS Record, SNMP Trap	DynaStream

Different actions have different configuration items.

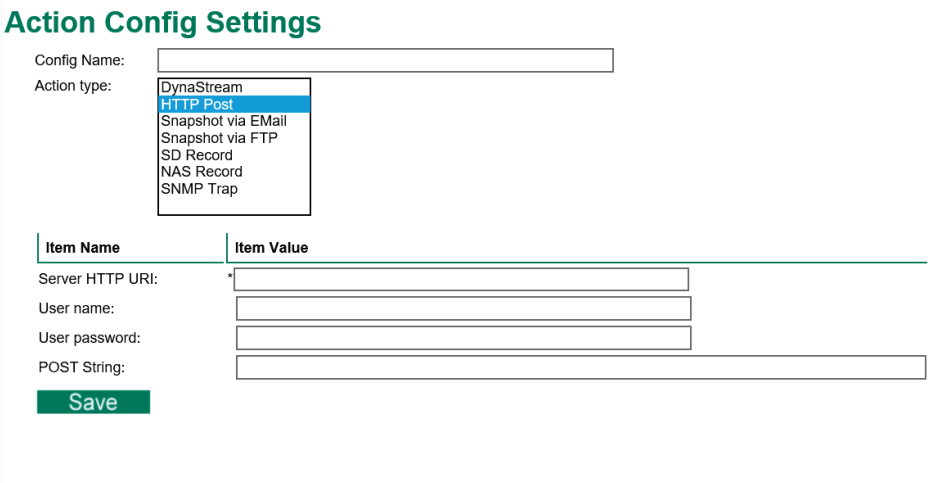
DynaStream

DynaStream™ is a unique and innovative function that allows for adaptive frame rates in response to events on the network, such as event triggers and system commands. When network traffic becomes congested, DynaStream™ allows VPort products to respond to CGI, SNMP, and video loss triggers, and automatically decreases the frame rates to reduce bandwidth consumption. This reserves bandwidth for the system to maintain Quality of Service (QoS) and guarantees that the system performance will not be impacted by video traffic. For example, the frame rate can be set to low during regular streaming to reduce bandwidth usage and automatically switch to a high frame rate during triggered events to ensure quick transmission of critical video data or video streams, or to provide detailed visual images for problem analysis.



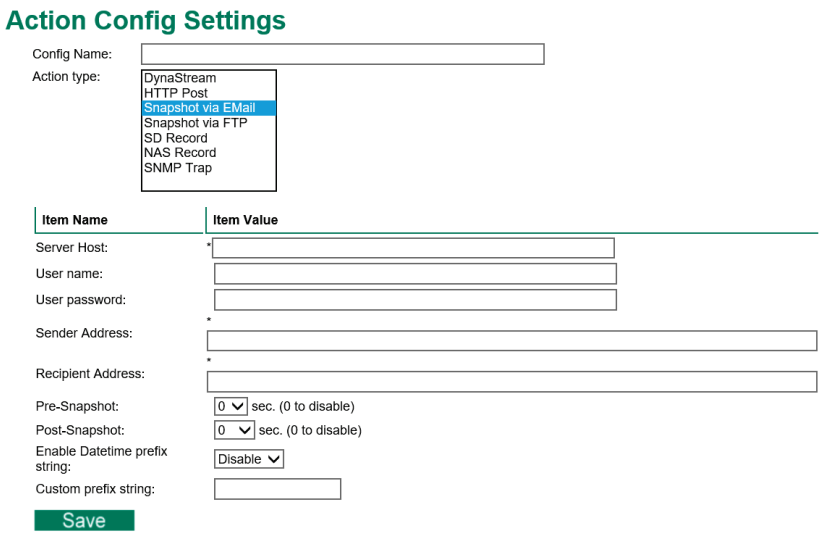
Settings	Description	Default
Video Encoder Token	Select the video encoder.	videoEnc01
Alarm FPS	Configure what the frame rate will be set to when the event is triggered.	1
Duration	Configure how long DynaStream will be active.	3 seconds

HTTP Post



Settings	Description	Default
Server HTTP URL	URL of the HTTP server.	None
User name	Authentication information for the HTTP server.	None
User password		
POST String	Configure the string that will be posted.	None

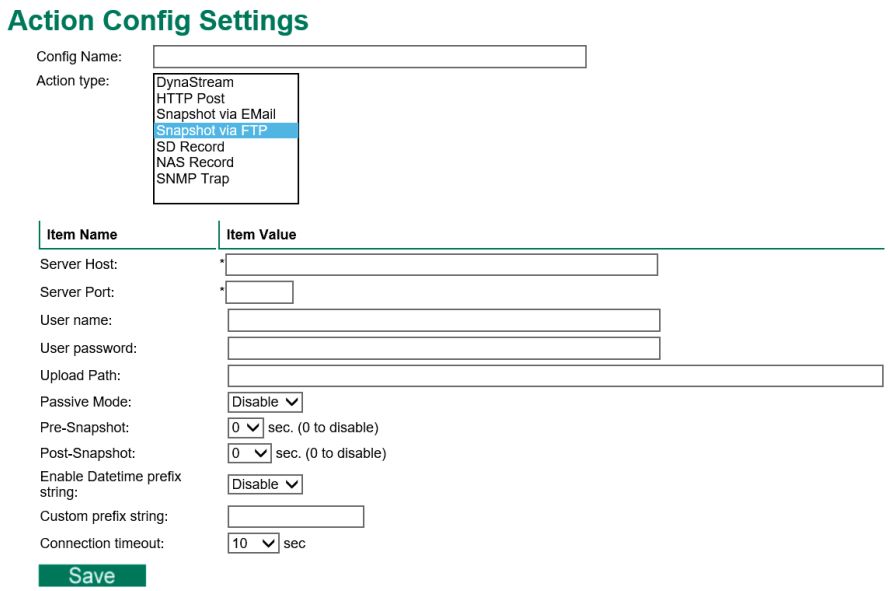
Snapshot via Email



Setting	Description	Default
Server host	SMTP server's IP address or URL address.	None
User name	For security reasons, most SMTP servers require the account name and password to be authenticated.	None
User password		
Sender's address	For security reasons, SMTP servers must see the exact sender email address.	None
Recipient's address	For security reasons, SMTP servers must see the exact recipient's email address.	None

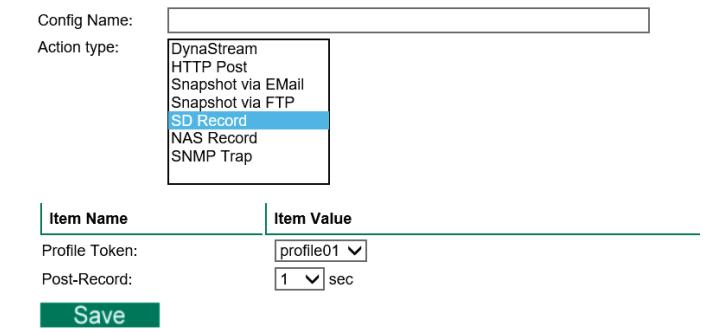
Setting	Description	Default
Pre-Snapshot sec (0: disabled)	= 0: A pre-snapshot image will not be generated. > 0: The image this many seconds before the event will be used as the pre-snapshot image.	0
Post-Snapshot sec (0: disabled)	= 0: A post-snapshot image will not be generated. > 0: The image this many seconds after the event will be used as the post-snapshot image.	0
Enable Date and time prefix string	Add the date & time to the filename of snapshot images.	Disable
Customer prefix string	The file names of snapshot images will be prefixed with this string.	None

Snapshot via FTP



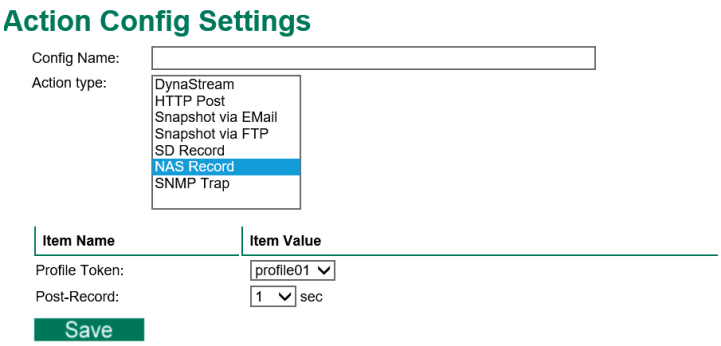
Setting	Description	Default
Server Host	FTP server's IP address or URL address.	None
Server Port	FTP server's authentication information.	21
User name		None
User password		None
Upload Path	FTP file storage folder on the remote FTP server.	None
Passive Mode	Passive transfer solution for FTP transmission through a firewall.	Disable
Pre-Snapshot [xxx] sec (0 to disable)	= 0: A pre-snapshot image will not be generated. > 0: The image this many seconds before the event will be used as the pre-snapshot image.	0
Post-Snapshot [xxx] sec (0 to disable)	= 0: A post-snapshot image will not be generated. > 0: The image this many seconds after the event will be used as the post-snapshot image.	0
Enable Datetime prefix string	Add the date & time to the file name of snapshot image.	Disable
Customer prefix string	The file names of snapshot images will be prefixed with this string.	None

SD Record



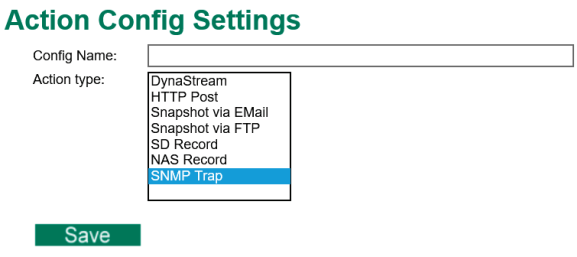
Setting	Description	Default
Profile Token	Select the profile being recorded on the SD card.	Profile01
POST-record sec	Configure the time (1 to 60 seconds) for recording the video on the SD card after the event.	1

NAS Record



Setting	Description	Default
Profile Token	Select the profile being recorded on the NAS server.	Profile01
POST-record sec	Configure the time (1 to 60 seconds) for recording the video on the SD card after the event.	1

SNMP Trap



Setting	Description	Default
Config Name	Enter a name for this SNMP trap action.	Blank
Action Enabled	Enable or disable the SNMP trap action.	Enabled

Action Trigger

After the action type is configured, users can configure how to trigger the action.

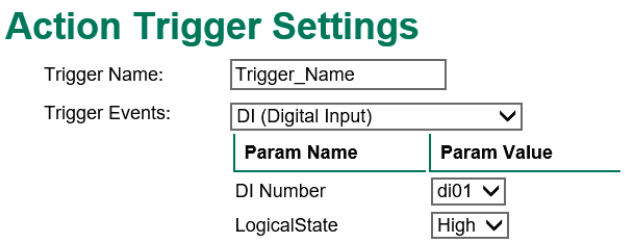
Step 1: Click the "Create New Trigger" button.

Step 2: Create the new trigger.

Setting	Description	Default
Trigger Name	Enter a new for the trigger.	None
Trigger Events	Select the event type: Digital input, VMD, Camera, Tamper, Ethernet Link Status Change, CPU, CGI Event	Active Relay

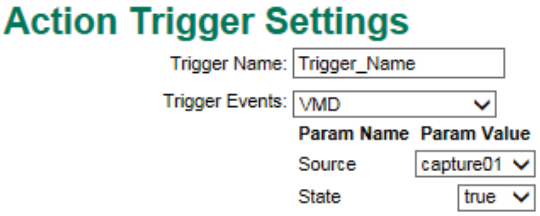
Different triggers have different configuration items.

(DI) Digital Input



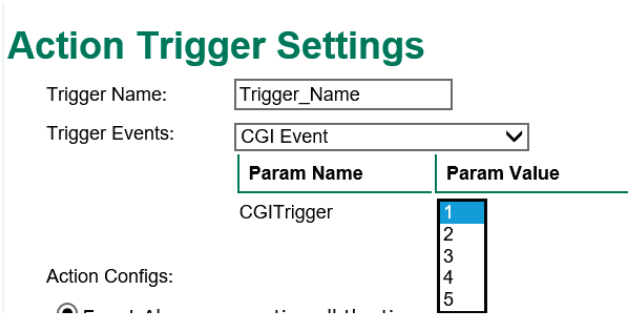
Settings	Description	Default
DI Number	Select the digital input.	DI01
Logical State	Select the DI status: High or Low.	High

VMD



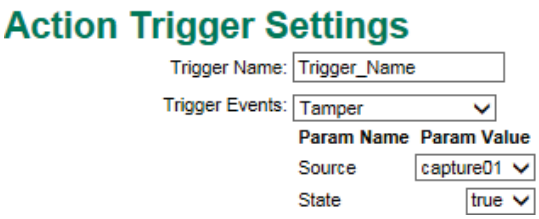
Settings	Description	Default
Source	Select the video source. Currently, VPort IP cameras only have one video source.	capture01
State	Enable (true) or disable (false) the VMD trigger	true

CGI Event



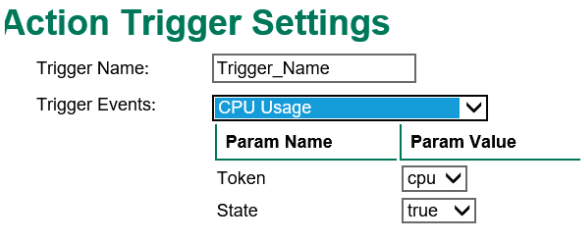
Settings	Description	Default
CGITrigger	Select from 5 CGI triggers.	1

Tamper



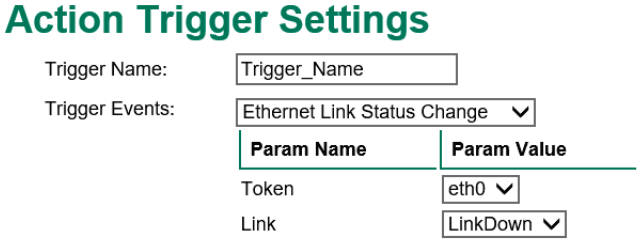
Settings	Description	Default
Source	Select the video source. Currently, VPort IP cameras only have one video source.	capture01
State	Enable (true) or disable (false) the Tamper trigger	true

CPU Usage



Settings	Description	Default
Token	Select the CPU.	CPU
State	Select the CPU state: true or false.	True

Ethernet Link Status Change

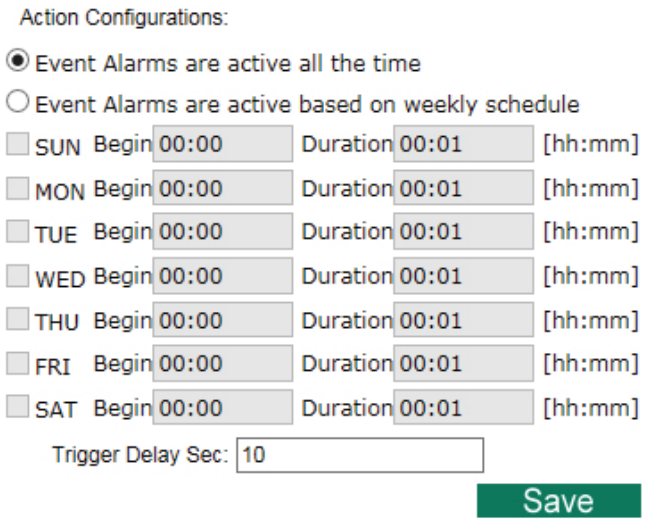


Settings	Description	Default
Token	Select the Ethernet port number. Some VPort models have 2 Ethernet ports.	eth0
Link	Configure the trigger to LinkDown or LinkUp	LinkDown

NOTE

When the Ethernet link is down, you will not be able to access the VPort via the IP network. In this case, the local relay output will be active, and video can be recorded on the VPort's SD card.

Step 3: Configure the schedule of the trigger actions.



Setting	Description	Default
Event Alarms are active all the time	The trigger action configurations are always active.	Event Alarms are active all the time
Event Alarms are active based on weekly schedule	The trigger action configurations are activated based on the configured weekly schedule	
☐SUN ☐MON ☐TUE ☐WED ☐THU ☐FRI ☐SAT	Select which days of the week to schedule event alarms.	None
Begin 00:00	Set the start time of the event alarm.	00:00
Duration 00:00	Set how long the event alarm will be active.	00:01
Trigger Delay Sec	The amount of time the system will wait before acting on the next trigger.	10 seconds

A. Frequently Asked Questions

Q: What if I forget my password?

A: Unless the authentication is disabled, you will need to log in every time you access the VPort IP camera. If you are not the administrator, you will need to ask the administrator to create a new account for you. If you are the administrator, there is no way to recover the admin password. The only way to regain access to the IP camera is to use the **RESET** button to restore the camera to its factory default settings. The reset button is located on the electronic board. Contact a Moxa technical service engineer if you need help using the reset button.

Q: Why can't I see video from the IP camera after logging in?

A: There are several possible reasons:
(a) If the IP camera is installed correctly and you are accessing the IP camera for the first time using Internet Explorer, adjust the security level of Internet Explorer to allow installation of plug-ins.
(b) If the problem still exists, the number of users accessing the IP camera at the same time may exceed the maximum that the system allows.
(c) If the video is still not displayed, try resetting the camera to its factory default settings to see if that solves the problem.

Q: What is the plug-in for?

A: The plug-in provided by the IP camera is used to display videos. The plug-in is needed because Internet Explorer does not support streaming technology. If your system does not allow installation of plug-in software, the security level of the web browser may need to be lowered. We recommend consulting the network supervisor in your office before adjusting the security level of your browser.

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 IP camera. It is maintained by an internal real-time clock, and automatically synchronizes with the time server if the VPort is connected to the Internet and the function is enabled. If the time zone is changed, subsequent timestamps could be several hours earlier or later than timestamps that were already generated.

Q: How many users are allowed to access the IP camera at the same time?

A: Basically, there is no limitation. However the video quality also depends on the network. To achieve the best effect, the VPort IP camera will allow 10 video streams for udp/tcp/http connections. We recommend using an additional web server that retrieves images from the IP camera periodically if you need to host a large number of users.

Q: What is the IP camera's video rate?

A: The codec can process 30 frames per second internally. However, the actual performance is affected by many factors, as listed below:
1. Network throughput
2. Bandwidth share
3. Number of users
4. More complicated objects result in larger image files
5. The speed of the PC or notebook that is responsible for displaying images

Q: How can I keep the IP camera as private as possible?

A: The IP camera is designed for surveillance purposes and has many flexible interfaces. Enabling user authentication during installation can prevent the VPort from being accessed by people without authorization. You may also change the HTTP port to a non-public number. Check the system log to analyze any abnormal activities and trace the origin of the activity.

Q: Why can't I access the IP camera after activating certain configuration options?

A: When the IP camera is triggered by events, video and snapshots will take more time to write to memory. If the events occur too often, the system will always be busy storing video and images. We recommend using sequential mode or an external recorder program to record video if the event you're monitoring occurs frequently. If you prefer to retrieve images by FTP, the time could be smaller since an FTP server responds more quickly than a web server. When the system is "too busy to configure" (i.e., it hangs), use the restore factory default and reset button to restart the system.

B. Time Zone Table

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

(GMT-12:00)	International Date Line West
(GMT-11:00)	Midway Island, Samoa
(GMT-10:00)	Hawaii
(GMT-09:00)	Alaska
(GMT-08:00)	Pacific Time (US & Canada), Tijuana
(GMT-07:00)	Arizona
(GMT-07:00)	Chihuahua, La Paz, Mazatlan
(GMT-07:00)	Mountain Time (US & Canada)
(GMT-06:00)	Central America
(GMT-06:00)	Central Time (US & Canada)
(GMT-06:00)	Guadalajara, Mexico City, Monterrey
(GMT-06:00)	Saskatchewan
(GMT-05:00)	Bogota, Lima, Quito
(GMT-05:00)	Eastern Time (US & Canada)
(GMT-05:00)	Indiana (East)
(GMT-04:00)	Atlantic Time (Canada)
(GMT-04:00)	Caracas, La Paz
(GMT-04:00)	Santiago
(GMT-03:30)	Newfoundland
(GMT-03:00)	Brasilia
(GMT-03:00)	Buenos Aires, Georgetown
(GMT-03:00)	Greenland
(GMT-02:00)	Mid-Atlantic
(GMT-01:00)	Azores
(GMT-01:00)	Cape Verde Is.
(GMT)	Casablanca, Monrovia
(GMT)	Greenwich Mean Time: Dublin, Edinburgh, Lisbon, London
(GMT+01:00)	Amsterdam, Berlin, Bern, Stockholm, Vienna
(GMT+01:00)	Belgrade, Bratislava, Budapest, Ljubljana, Prague (GMT+01 :00) Brussels, Copenhagen, Madrid, Paris
(GMT+01:00)	Sarajevo, Skopje, Warsaw, Zagreb
(GMT+01:00)	West Central Africa
(GMT+02:00)	Athens, Istanbul, Minsk
(GMT+02:00)	Bucharest
(GMT+02:00)	Cairo
(GMT+02:00)	Harare, Pretoria
(GMT+02:00)	Helsinki, Kyiv, Riga, Sofia, Tallinn, Vilnius
(GMT+02:00)	Jerusalem
(GMT+03:00)	Baghdad
(GMT+03:00)	Kuwait, Riyadh
(GMT+03:00)	Moscow, St. Petersburg, Volgograd
(GMT+03:00)	Nairobi
(GMT+03:30)	Tehran
(GMT+04:00)	Abu Dhabi, Muscat (GMT+04:00) Baku, Tbilisi, Yerevan (GMT+04:30) Kabul
(GMT+05:00)	Ekaterinburg
(GMT+05:00)	Islamabad, Karachi, Tashkent (GMT+05:30) Chennai, Kolkata, Mumbai, New Delhi
(GMT+05:45)	Kathmandu
(GMT+06:00)	Almaty, Novosibirsk (GMT+06:00) Astana, Dhaka
(GMT+06:00)	Sri Jayawardenepura (GMT+06:30) Rangoon

(GMT+07:00)	Bangkok, Hanoi, Jakarta (GMT+07:00) Krasnoyarsk
(GMT+08:00)	Beijing, Chongqing, Hong Kong, 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

C. System Log

VPort 06-2 System Log List

Category	
Log Type	Log description
Cold Start	
SYS	System cold start <VPort's firmware version>
Reboot	
SYS	Reboot
RTSP	
RTSP	Connecting from remote Address <Client's IP address>
RTSP over HTTP	
RTSPGet	Connecting from remote Address <Client's IP address>
RTSPSet	Connecting from remote Address <Client's IP address>
FTP	
FTP	Connect to Server <FTP IP address: FTP port> Failed
FTP	Send Alarm Snapshot to <FTP IP address: FTP port> timeout
FTP	Login <FTP IP address: FTP port> with <account name> Failed
FTP	Set Binary Mode Failed
FTP	Change Folder Failed
FTP	Send Alarm Snapshot Image [snapshot_xxxxxxxx_xxxxxx_seq_chx.jpg] Failed
FTP	Send Alarm Snapshot Image [snapshot_xxxxxxxx_xxxxxx_seq_chx.jpg] Success
Snapshot	
FAILED	Sequential Snapshot Frame Size Overflow <snapshot image size>
FAILED	Snapshot Frame Size Overflow <snapshot image size>

NOTE

The maximum size of the snapshot image is 150 KB.

FACTORY Button	
SYS	Factory default through factory default button
FAILED	Factory default through factory default button Failed
Auto Config	
AutoCfg	DHCP Request Failed
AutoCfg	DHCP Server no support Auto Config
AutoCfg	TFTP Server connect Failed
AutoCfg	Config. File no exist
AutoCfg	Config. File mismatch
AutoCfg	Auto Config. Ok

Event	
EVENT	Tamper[1] Deactived (YYYY-MM-DDTHH:MM:SS+0000) Tamper[1] Actived (YYYY-MM-DDTHH:MM:SS+0000)
EVENT	VMD[1] Deactived (YYYY-MM-DDTHH:MM:SS+0000) VMD[1] Actived (YYYY-MM-DDTHH:MM:SS+0000)
EVENT	CGIEvent[1] Deactived (YYYY-MM-DDTHH:MM:SS+0000) CGIEvent[1] Actived (YYYY-MM-DDTHH:MM:SS+0000)
EVENT	Action execute [vport:<Action type>] <Action config name>

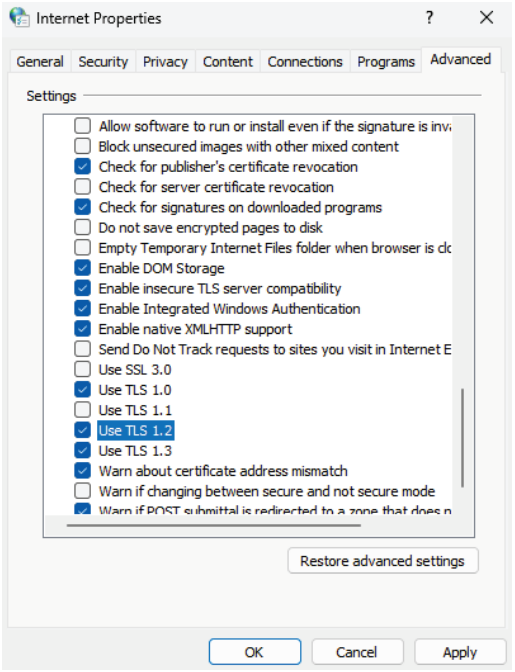
NOTE

Action type: Dynastream, HTTP Post and snapshotFTP.

D. Security Hardening Guide

HTTPS and SSL Certificates

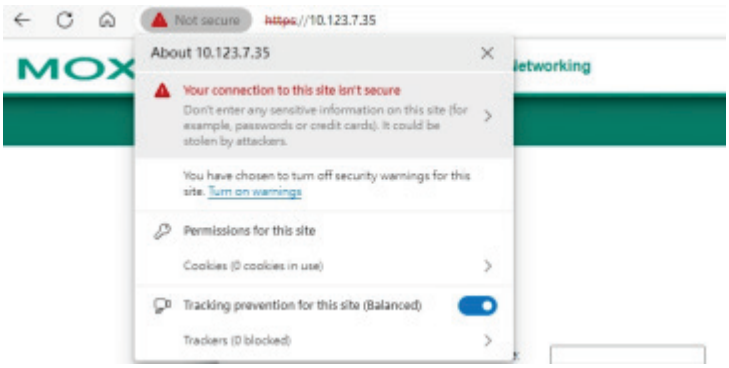
HTTPS is an encrypted communication channel. As TLS v1.1 and earlier versions have severe vulnerabilities that can be easily compromised, the VPort Series uses TLS v1.2 for HTTPS connections to ensure data transmissions are secured, as long as TLS v1.2 is enabled for your browser.



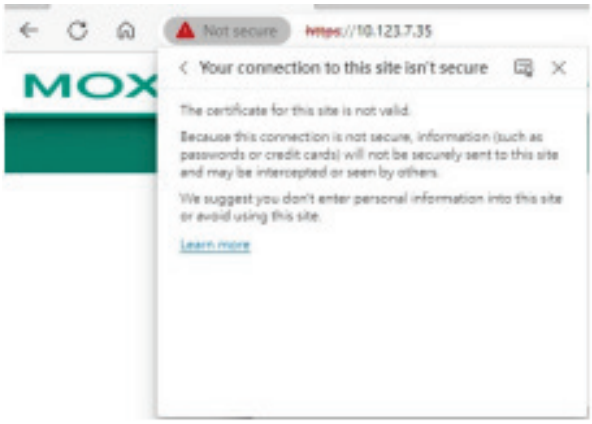
Using HTTPS without the proper certificates will prompt a security warning. To prevent these warnings, you will need to import the self-signed certificate from the VPort IP camera Series. Follow the steps below to export the VPort's certificate and import it to the host's web browser:

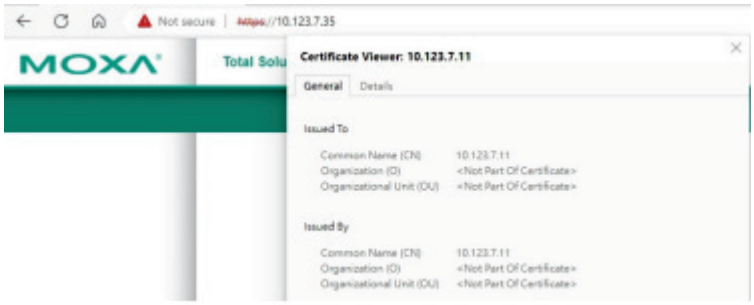
Step 1: Open a supported browser and enter *https://[VPort's IP address]* in the address field to access the web console of the VPort IP camera.

Step 2: You may notice a **Not secure** icon in front of the IP address. Click this icon to open a prompt with several options. Click the **Your connection to this site isn't secure** option.

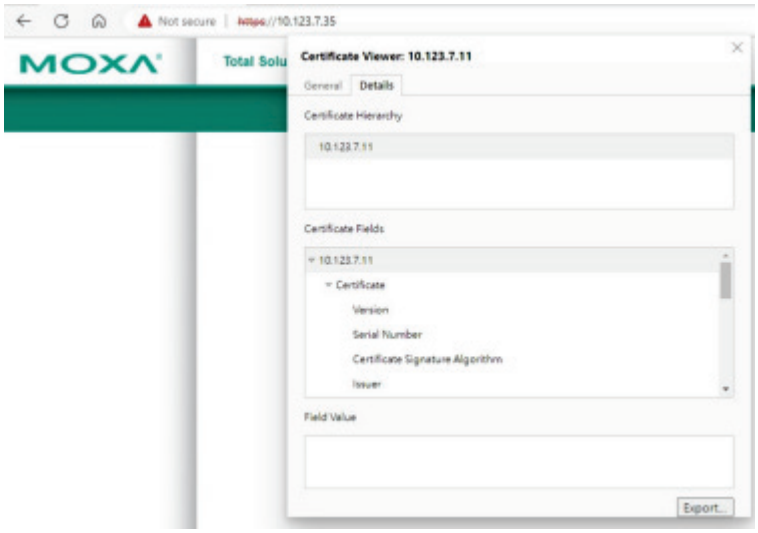


Step 3: Click **Learn more** to show more information about the self-signed certificate of the VPort IP camera.





Step 4: In this window, go to the **Details** tab and click **Export** to export the VPort's self-signed certificate.



Step 4: Import the VPort's self-signed certificate into your browser. Next time you access the VPort's web interface, the security warning will no longer appear.