VPort 36-1MP Series

Quick Installation Guide

Third Edition, October 2013

Overview

The VPort 36-1MP Series is the world's first rugged IP camera that can withstand environmental temperatures ranging from -40 to 75°C without a heater or fan. It is an industrial-grade, H.264 box-type IP camera that combines HD resolution (1280 x 720), advanced IVA (Intelligent Video Analysis) technology, and de-mist technology to enhance surveillance system efficiency while delivering state-of-the art video quality. Optional housing and PT scanner accessories are available for indoor and outdoor installation.

The VPort 36-1MP Series is designed to be compatible with C/CS mount lenses to meet any viewing angle and distance requirement. With a built-in removable IR-cut filter and automatic color mode switching, the VPort 36-1MP Series is suitable for day-and-night use. Highly-tuned ROI (Region of Interest), BLC (Black Level Control), and WDR (Wide Dynamic Range) functions enable the VPort 36-1MP Series to produce exceptionally clear images. The VPort 36-1MP Series can encode analog video into both H.264 and MJPEG video streams and can transmit up to 3 independent video streams (2 in H.264, and 1 in MJPEG) simultaneously. Advanced video encoding technology enables the camera to support up to 30 fps for each of the H.264 and MJPEG streams.

Package Checklist

Moxa's VPort 36-1MP Series is shipped with the following items. If any of these items is missing or damaged, please contact your customer service representative for assistance.

• 1 VPort 36-1MP series camera (one of models below)

Model Name	Description
VPort 36-1MP	VPort 36-1MP, POE, 0 to 60°C operating temperature
VPort 36-1MP-T	VPort 36-1MP, POE, -40 to 75°C operating temperature
VPort 36-1MP-IVA	VPort 36-1MP, POE, 0 to 60°C operating temperature, 1 IVA license
VPort 36-1MP-IVA-T	VPort 36-1MP, POE, -40 to 75°C operating temperature, 1 IVA license
VPort 36-1MP-DM	VPort 36-1MP, POE, 0 to 60°C operating temperature, de-mist function

• Screw handle accessory package

Inner hexagon screwdriver for tightening/ loosening lens holder	C/CS mount adapter ring	5-pin terminal block for DI and relay

3-pin terminal block for power input	2-pin terminal block for RS-485 DX+ and DX-	

- Quick installation guide
- Documentation & software CD (includes User's Manual, Quick Installation Guide, and VPort Utility)
- Warranty card

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

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

Features

Sensor: 1/2.7" HD progressive scan CMOS
Lens: C/CS mount lens (lens not included)
Auto Iris Type: DC drive
Illumination (low light sensitvity):
• Color: 0.2 lux at F1.2
• B/W: 0.05 lux at F1.2
Synchronization: Internal
Gamma Correction: 0.45 or 1.0 (default 0.45)
White Balance: ATW/AWB (range: 3200 to 10000°K)
Dynamic Range: Color: 100 dB; B/W: 110 dB
Auto Electronic Shutter: 1/30 to 1/25000 sec.
Electronic Shutter: 1/50, 1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000 sec.
S/N Ratio: 50 dB (Gamma, Aperture, AGC OFF; DNR ON)
ICR Control: Auto (light sensor control) or DI control
DNR: Built-in DNR
WDR: Level 1-8/Off
AGC Control: On/Off
Flickerless Control: On/Off
Auto Exposure: On/Off
Image Rotation: Flip, Mirror, and 180° rotation
Image Setting: Manual tuning for brightness, saturation, contrast, and sharpness
Video Compression: H.264 (ISO/IEC 14496-10) or MJPEG
Video Outputs: Ethernet
Video Streams: Up to 3 video streams (2 x H.264 and 1 x MJPEG)
• Stream 1: H.264, 1280 x 720 resolution (max.)
• Stream 2: H.264, 720 x 480 resolution (max.)
• Stream 3: MJPEG, 720 x 480 resolution (max.)
Note: Streams 2 and 3 must be at the same resolution
**Video Motion Detection:** 3 independently configurable motion areas
Scheduling: Daily repeat timing schedule
**Imaging:** JPEG snapshots for pre/trigger/post alarm images

Video Recording: Event recording stored on the SD card
Email/FTP Messaging: Automatic transfer of stored images via email or FTP when alerted
Custom Alarms: HTTP event servers for setting customized alarm actions
Pre-alarm Buffer: 24 MB video buffer for JPEG snapshot images
Advance Software Features:
• DynaStream™ for automatic adjustment of frame rate
• 3 privacy mask areas provided
• ROI (Region of Interest) configuration for up to 3 areas
Safety: UL 60950-1, EN 50121-4, NEMA TS2, Class 1 Division 2 (Pending), Atex Zone 2 (Pending)
EMI: FCC Part 15, CISPR (EN 55022) class A
EMS: EN 61000-4-2 (ESD), Level 3 EN 61000-4-3 (RS), Level 3 EN 61000-4-4 (EFT), Level 3 EN 61000-4-5 (Surge), Level 3 EN 61000-4-6 (CS), Level 3 EN 61000-4-8, EN 61000-4-11
Shock: IEC 60068-2-27
Freefall: IEC 60068-2-32
Vibration: IEC 60068-2-6
**Warranty:** 5 years

Product Description

Top View
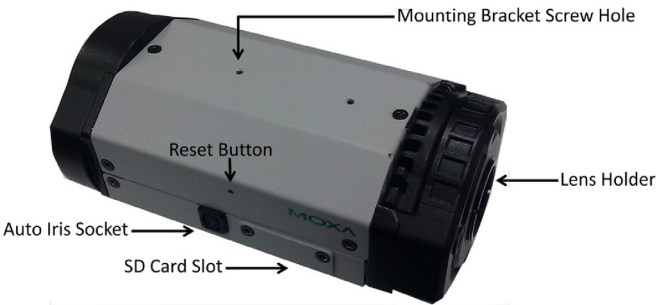
Bottom View
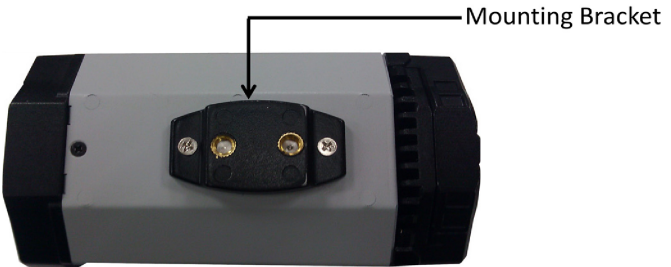
NOTE The product is shipped with the mounting bracket fastened to the bottom of the camera. However, the bracket can be removed and repositioned to the top of the camera, depending on your deployment requirements.

- Auto Iris Socket: Plug the auto-iris cable from camera lens into this socket to use the auto-iris function.
- Lens Holder: The lens holder is designed for CS mount lenses; a C/CS adaptor must be used to mount C lenses. For details, see the HW installation section of this manual.
- SD Card Slot: Remove the SD card slot cover and insert an SD card for disconnection/event local storage.
- Mounting Bracket Screw Holes: For fastening mounting brackets.
- Reset Button: Use a pointed object to push in the reset button to reboot. Push and hold the button until the system reboots to restore factory defaults.

Back Panel View
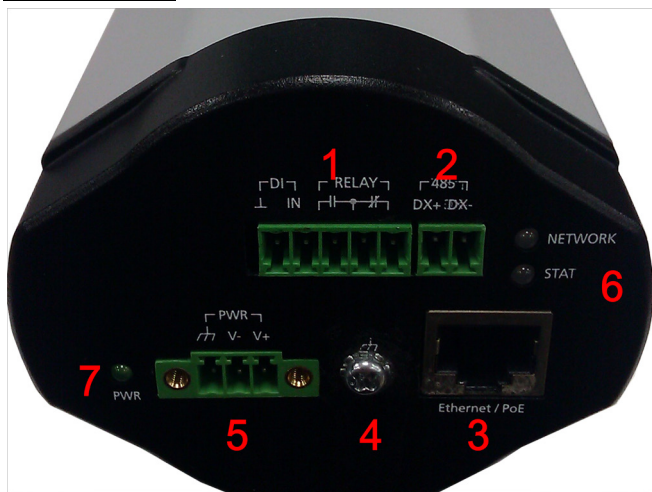
1. 5-pin terminal block for DI and relay connection
2. 2-pin terminal block for RS-485 pin connection
3. RJ45 port for PoE/non-PoE connection
4. Ground screw for connecting a grounding wire
5. 3-pin terminal block for power input
6. LED indicator to show network and system status. Green indicates normal operation.
7. LED indicator to show power status. Green indicates normal operation.
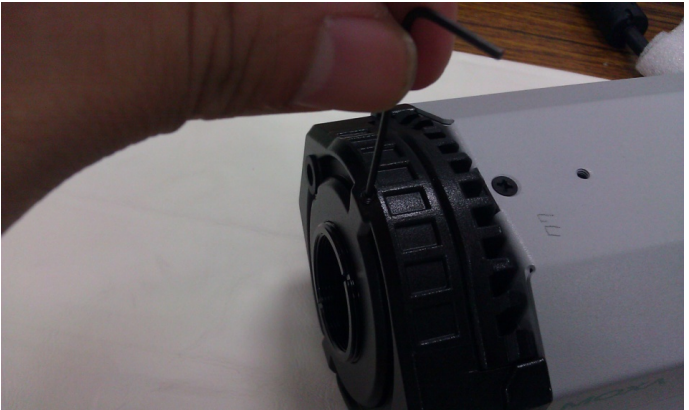
NOTE The VPort 36-1MP can be powered by a 12-32 VDC or 18-30 VAC power input, or Power over Ethernet (PoE, 802.3af). For power redundancy, use DC or AC power together with PoE.

Hardware Installation

Step 1: Remove the lens cover.
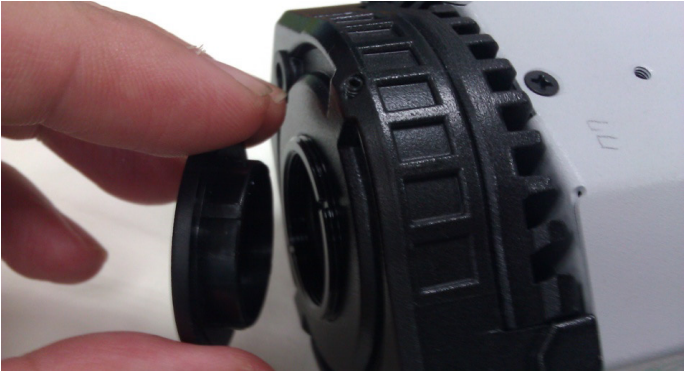
Step 2: Loosen the lens holder screw with the torx screwdriver.

Step 3: Remove the lens holder.

NOTE Be sure to loosen the screw affixing the lens holder in step 2 before trying to remove the lens holder. The lens holder may be too tight to loosen if the screw is not loosened first.

Step 4: Screw the lens holder to the lens you are going to use.

NOTE Be sure to screw the lens holder to the lens on the right side. The side of the lens holder with the groove should be facing the lens; the side without the groove should be facing outwards.

Step 5: Screw the lens and lens holder to the VPort 36-1MP.

NOTE We strongly suggest that you perform this step while viewing live video from the camera via a web browser for instant feedback on when to stop. Be sure not to tighten the screw all the way, or the lens holder may remain fixed to the camera when you remove the lens.

NOTE You can tighten the lens holder screw (see Step 2) to fix the position of the lens holder and lens.

NOTE You do not need to use the C/CS mount adaptor ring if you are using the VPort 36-1MP series with an optional lens purchased from Moxa. It is only required to mount the lens with the adaptor ring if you are using a C mount type lens.

Step 6: Power on your VPort 36-1MP.

NOTE The VPort 36-1MP can be powered by a 12-32 VDC or 18-30 VAC power input, or Power over Ethernet (PoE, 802.3af). For power redundancy, use DC or AC power together with PoE.

Software Installation

Step 1: Configure the VPort 36-1MP's IP address.

When the VPort 36-1MP is first powered on, the POST (Power On Self Test) will run for a few moments (about 30 seconds). The network environment determines how the IP address is assigned.
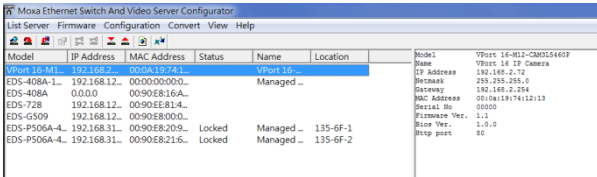
Network Environment with DHCP Server

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 Moxa VPort and EtherDevice Configurator Utility (edscfgui.exe), as described below:

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

Run the **edscfgui.exe** program to search for the VPort. After the utility's window opens, you may also click on the **Search** button 🔎 to initiate a search.

When the search has been completed, the Model Name, MAC address, IP address, serial port, and HTTP port of the VPort will be listed in the utility's window.

You can 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 Environments

If your VPort 36-1MP 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 36-1MP is 192.168.127.100 and the default subnet mask is 255.255.255.0. Note that you may need to change your computer's IP address and subnet mask so that the computer is on the same subnet as the VPort.

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

Step 2: Access the VPort 36-1MP's web-based manager

Type the IP address in the web browser's address input box and then 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 AcitveX Control component on your PC or notebook. Click **Yes** to install this plug-in to enable the IE web browser for viewing video images.

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

Step 4: Access the homepage of the VPort 36-1MP's web-based manager.

After installing the ActiveX Control component, the homepage of the VPort 36-1MP'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 5: Access the VPort's system configuration.

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

For configuration details, check the User's Manual on the software CD.
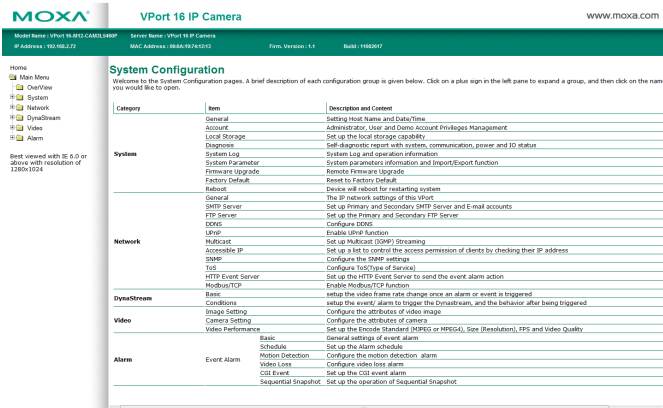
Wiring Requirements

⚠️	**Safety First!**
	• Be sure to disconnect the power cord before installing and/or wiring your Moxa VPort 36-1MP.
	• Calculate the maximum possible current in each power wire and common wire, and observe all electrical codes dictating the maximum current allowable for each wire size.
	• If the current exceeds the maximum ratings, the wiring could overheat, resulting in serious damage to your equipment.

You should also pay attention to the following:

- Use separate paths to route wiring for power and devices. If power wiring and device wiring paths must cross, make sure the wires are perpendicular at the intersection point.
- You can use the type of signal transmitted through a wire to determine which wires should be kept separate. The rule of thumb is that wiring that shares similar electrical characteristics can be bundled together.
- Keep input wiring and output wiring separated.
- We strongly advise labeling the wiring to all devices in the system.

Specifications

Camera	
Sensor	1/2.7" HD progressive scan CMOS
Lens	C/CS mount lens
Auto Iris Type	DC drive (lens not included with product)
Illumination	Color: 0.2 lux at F1.2
	B/W: 0.05 lux at F1.2
Synchronization	Internal
White Balance	ATW/AWB (range: 3200 to 10000 ºK)
Wide Dynamic Range	Color: 100 dB
	B/W: 110 dB
Electronic Shutter	AES: 1/30 to 1/25,000 sec
	Fixed: 1/50, 1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000 sec
Gamma Correction	0.45 or 1.0 (default is 0.45)
S/N Ratio	50 dB (Gamma, Aperture, AGC OFF, DNR ON)
ICR control	Auto (light sensor control) or DI control
DNR	Built-in
WDR	On/Off
AGC Control	On/Off
Flickerless Control	On/Off
Backlight Compensation	On/Off
Auto Exposure	On/Off
Image Rotation	Flip, Mirror, and 180° rotation
Image Setting	Manual tuning of brightness, saturation, contrast, and sharpness

Video	
Video Compression	H.264 (ISO/IEC 14496-10) or MJPEG
Video Output	Via Ethernet
Video Streams	Maximum of 3 video streams (2x H.264 and 1x MJPEG) Stream 1: H.264, max. resolution 1280x720 Stream 2: H.264, max. resolution 720x480 Stream 3: MJPEG, max. resolution 720x480 *Note: Streams 2 and 3 must be the same resolution.*

Video Resolution and FPS		NTSC		PAL	
		Size	Max. FPS	Size	Max. FPS
	QCIF	176 x 120	30	176 x 144	25
	CIF	352 x 240	30	352 x 288	25
	VGA	640 x 480	30	640 x 480	25
	4CIF	704 x 480	30	704 x 576	25
	Full D1	720 x 480	30	720 x 576	25
	SVGA	800 x 600	30	800 x 600	25
	HD	1280 x 720	30	1280 x 720	25

Up to 30/25 FPS for each of 3 independent streams at max. resolution.

Video Viewing	• DynaStream™ supported for changing the video frame rate automatically • 3 privacy mask areas provided • Adjustable image size and quality • Timestamp and text overlay • Maximum of 10 simultaneous unicast connections • ROI (Region of Interest) configuration for up to 3 areas
PTZ	Digital PTZ
Network	
Protocols	TCP, UDP, HTTP, SMTP, FTP, Telnet, NTP, DNS, DHCP, UPnP, RTP, RTSP, ICMP, IGMPv3, QoS, SNMPv1/v2c/v3, DDNS, Modbus/TCP, 802.1X, SSH/SSL
Ethernet	1 10/100BaseT(X) Ethernet port, RJ45 connector
Standard	OnVIF
Local Storage	
SD socket	Standard SD socket (SDHC)
GPIO	
Digital input	1, max. 8mA Low: +13V to +30V High: -30 to +3V
Relay output	1, max. 24 VDC @ 1 A
Serial Interface	
RS-485	1 full-duplex RS-485 port
LED Indicators	
STAT	Indicates if the system booted properly or not
Network	10 Mbps or 100 Mbps
Power	Power on/off
Power	
Input	12 VDC, 24 VDC, 24 VAC or Power over Ethernet (PoE, 802.3af)

Physical Characteristics	
Housing	Metal housing, IP30 rated
Dimensions	78 x 65 x 150 mm
Installation	Wall mounting, ceiling mounting, pole mounting, corner mounting (You may need to purchase external housing and/or mounting accessories separately.)
Security	
Password	User level password protection
Filtering	By IP address
Authentication	802.1X
Encryption	SSL/SSH
Alarm	
Intelligent video	Camera tampering, virtual fence, object counting, alert zone, missing object, loitering object (except for camera tamper, IVA functions are optional)
Video Motion Detection	3 independently configurable motion areas
Scheduling	Daily repeat timing schedule
Imaging	JPEG snapshots for pre/trigger/post alarm images
Email/FTP messaging	Automatic transfer of stored images via email or FTP as event-triggered actions
Custom Alarms	HTTP event servers and CGI events for setting customized alarm actions
Pre-alarm Buffer	24 MB video buffer for JPEG snapshot images
Environmental Limits	
Operating Temperature	Standard Models: 0 to 60°C (32 to 140°F) Wide Temp. Models: -40 to 75°C (-40 to 167°F)
Storage Temperature	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)
Regulatory Approvals	
Safety	UL 60950-1 EN 50121-4 NEMA TS2 Class 1 Division 2 (Pending) Atex Zone 2 (Pending)
EMI	FCC Part 15, CISPR (EN 55022) class A
EMS	EN 61000-4-2 (ESD), Level 3 EN 61000-4-3 (RS), Level 3 EN 61000-4-4 (EFT), Level 3 EN 61000-4-5 (Surge), Level 3 EN 61000-4-6 (CS), Level 3 EN 61000-4-8, EN 61000-4-11
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
Warranty	
Warranty period	5 years
Details	See www.moxa.com/warranty

Minimum Viewing System Requirements	
CPU: Pentium 4, 2.4 GHz	
Memory: 512 MB of memory	
OS: Windows XP/2000 with SP4 or above, Windows Vista, Windows 7	
Browser: Internet Explorer 6.x or above	
Multimedia: DirectX 9.0c or above	
Software Utility	
VPort SDK PLUS	Includes CGI commands, ActiveX Control, and API library for customized applications or system integration for third third-party developers (the latest version of SDK is available for download from Moxa's website).
Accessories	
Enclosure	VP-CI701 (IP68 Indoor/Outdoor Housing)
Brackets	VP-CI800 (Wall Mount Bracket)
	VP-CI815 (Pole Mount Bracket)
Lens	VP-3112MPIR (3.1 to 8 mm, F1.2, Day&Night)
	VP-1214MPIR (12.5 to 50 mm, F1.4 Day&Night)