VPort P06HC-1MP-M12
Quick Installation Guide

Moxa IP Camera

Edition 2.0, February 2017

MOXA®

Overview

The VPort P06HC-1MP-M12 square-type IP cameras provide an HD (720P, 1280 x 720) video image, and feature 3 H.264/MJPEG video streams, giving them the versatility and ruggedness to excel in many different installations and environments for IP video surveillance applications. In addition, the cameras comply with a portion of EN 50155 specifications, covering operating temperature, power input voltage, surge, ESD, and vibration, making them suitable for a variety of industrial applications. The cameras feature a -25 to 55°C operating temperature, a rugged M12 Ethernet port, 1 built-in microphone, 1 digital input, PoE power inputs, IP66 rain and dust protection, and a selectable lens.

Package Checklist

Moxa's VPort P06HC-1MP-M12 is shipped with the following items. If any of these items are missing or damaged, please contact your customer service representative for assistance.

### 1 × VPort P06HC-1MP-M12 (lens included)

Standard Temperature Models	Lens
VPort P06HC-1MP-M12-CAM36	3.6 mm

Accessories Package

Torx screw driver for loosening the camera's front lens cover	Silica gel dessicant and hook fastener for absorbing the moisture inside the camera	2 L-type installation kits and 4 nylock screws for mounting the camera
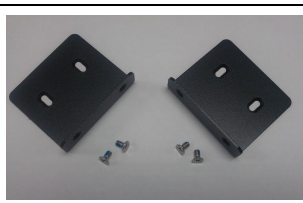
Sticker for Camera Mounting Positions
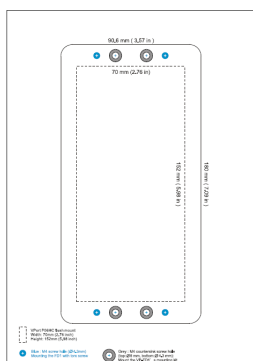
- Quick installation guide (printed)

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- Documentation and 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

- 1/2.7"HD progressive CMOS image sensor
- Video stream up to 30 frames/sec at WXGA (1280x800) resolution
- High image quality with WDR (wide dynamic range) and DNR (Digital Noise Reduction) supported
- Minimum illumination is up to 0.2 lux (color)
- Supports MJPEG and H.264 Dual Codecs
- Provides 3 video streams for H.264 and MJPEG simultaneously
- Supports video quality configuration with fixed bit rate (CBR) and fixed quality (VBR)
- Video latency under 200 ms
- DynaStream™ for network efficiency with dynamic frame rate change
- CBR Pro™ supported for high image quality in limited bandwidth transmissions
- WXGA/720P/SVGA/Full D1/4CIF/VGA/CIF/ QCIF resolution
- TCP, UDP, and HTTP network transmission modes
- Supports DHCP OPT66/67 for automatic configuration from a TFTP server, making it easy to batch configure several units
- Supports RTSP streaming
- Supports multicast (IGMP) video streaming
- Supports SNMP (V1/V2C/V3) for network system integration and management
- Supports QoS (ToS) for transmission priority
- Built-in web server for easy configuration
- Accessible IP filtering
- UPnP supported
- Complies with all EN 50155 mandatory test items*

*This product is suitable for rolling stock railway applications, as defined by the EN 50155 standard. For a more detailed statement, click here: www.moxa.com/doc/specs/EN_50155_Compliance.pdf

- 1 10/100BaseT(X) port with M12 D-code connector
- 1 built-in microphone for audio input
- 1 digital input with 5-pin M12 connector for external events
- IP66 rain and dust protection
- PoE (Power-over-Ethernet, IEEE 802.3af) supported
- -25 to 55°C (EN 50155, class T1) operating temperature for rolling stock environments
- CE, FCC, UL 60950-1
- Built-in tamper alarm and Video Motion Detection (VMD)
- Pre, Trigger, and post snapshot images supported
- Sequential snapshot images supported
- Supports SMTP and FTP for alarm message transmission
- Supports HTTP event server

- 5-year warranty

Product Description

<u>**Appearance**</u>

Removable lens cover
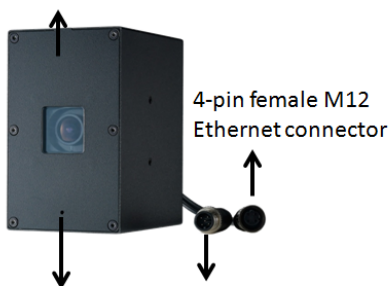
4-pin female M12
Ethernet connector

5-pin male M12 connector
for 1 digital input

Built-in
Microphone

- **4-pin female D-code M12 Ethernet connector:** Can be used for both the PoE power supply (Mode A) and Auto MDI/MDI-X Ethernet connection

PIN	TX
1	TD+
2	RD+
3	TD−
4	RD−

NOTE To connect the VPort P06HC-1MP-M12 to a network, use an Ethernet cable with D-code M12 connector and an M12 PoE switch or RJ45 PoE switch.

M12 male to M12 male cable	M12 PoE Switch (e.g., TN-5508-4PoE)
M12 male to RJ45 cable	RJ45 PoE switch (e.g., EDS-P510)

NOTE The power input rating of the VPort P06HC-1MP-M12 is 48 VDC, 0.13 A, with maximum power consumption approximately 6.3 W.

- **5-pin M12 male connector:** The VPort P06HC-1MP-M12 supports one digital input with 5-pin M12 male connector. This DI is used for connecting with external device for triggering an event or alarm.

- **Digital input:** Max. 8 mA,
  Low: +13 V to +30 V; High: -30 V to +3 V

Pin	Signal
1	I+
2	Not used
3	Ground
4	Not used
5	Not used

Configuration: 05 Pins
System: Connector(M)
Mating Cable :Socket (F)
Code : A-polarization

NOTE This digital input is for connecting with an external device, such as a button, for triggering an event and alarm. The VPort P06HC-1MP-M12 can send messages via an IP network to the management software at a remote site.

- **Built-in microphone:** The VPort P06HC-1MP-M12 is equipped with a built-in microphone to receive external sounds. The sound will be digitized and compressed as an audio stream for network transmission with the video stream.

NOTE The effective distance for the VPort P06HC-1MP-M12's built-in microphone is 100 cm.

- **Removable lens cover:** The VPort P06HC-1MP-M12 is designed with a removable cover for fine-tuning the lens angle manually. The user can remove this lens cover after loosening the 6 torx screws.

NOTE The VPort P06HC-1MP-M12's optical lens cover is coated with a high performance waterproof coating. Please use the scrubbing cloth to light clean the cover.

NOTE The color of the lens cover can be customized based on your installation environment. Please contact your Moxa sales representative for customization service.
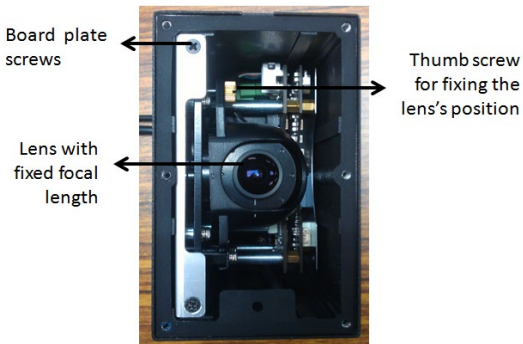
- **Thumb screw for fixing the lens's position:** To tune the lens's position, loosen the thumb screw, and then retighten it after the position tuning is done.
- **Lens with fixed focal length:** The VPort P06HC-1MP-M12 series supports a fixed focal-length lens. Choose the appropriate focal-length lens based on the viewing angle and object distance.
- **Board plate screws:** these 2 screws are for loosening the board plate, which can be pulled out for tuning the camera lens position.

Hardware Installation

> **NOTE** To flush mount the VPort P06HC with an intercom, use the VP-FD1 accessory (must be ordered separately) to install the camera. If you do not want to use the VP-FD1, refer to the dimensions on the installation sticker for customizing your own installation.
>
>
>
> ← using the VP-FD1 for installing with an intercom

VP-FD1

Front decorative plate with 4 M4 screws

Mounting kit for fixing VPort P06HC and front decorative plate
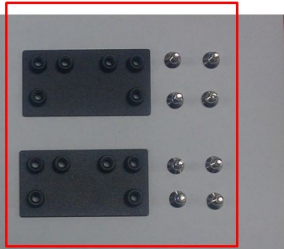
Step 1: Screw the 2 L-type installation plates onto the VPort P06HC.
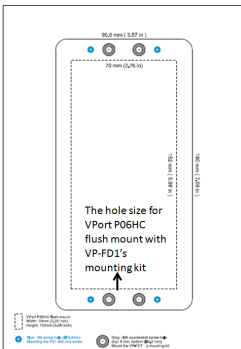
Vertical mountable

Horizontal mountable

Step 2: Use the installation sticker to drill the holes for flush-mounting the VPort P06HC with the VP-FD1.

M4 countersink screw hole

Step 3: Install the VP-FD1's mounting kit.

Screw 4 nylock M4 screws on the 4 countersunk screw holes with 2 VP-FD1's mounting kits.

Front view

Rear view

Step 5: Mount the VPort P06HC with the VP-FD1's mounting kit.

Step 6: Mount the VP-FD1's front decorative plate on the wall.

> **NOTE** The type and color of VP-FD1 can be customized by request. Please contact a Moxa sales representative for this customization service.

Software Installation

Step 1: Configure the VPort P06HC-1MP-M12's IP address.
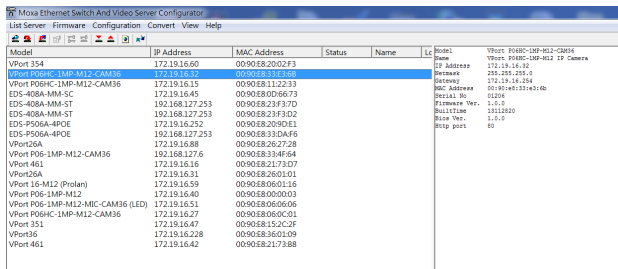
When the VPort P06HC-1MP-M12 is first powered on, the POST (Power On Self Test) will run for a few moments (about 30 seconds). The network environment determines how the IP address is assigned.

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)

1. 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.

2. 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.

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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 Environment

If your VPort 16-M12 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 16-M12 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 *Use fixed IP address* to ensure that the IP address you assign is not deleted each time the VPort is restarted.

Step 2: Accessing the VPort P06HC-1MP-M12'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 later operating systems, the ActiveX Control component will be blocked for system security reasons. In this case, the VPort's security warning message window may not appear. You 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 P06HC-1MP-M12's web-based manager.

After installing the ActiveX Control component, the homepage of the VPort P06HC-1MP-M12's web-based manager will appear. Check the following items to make sure the system was installed properly:

1. Video Images
2. Video Information
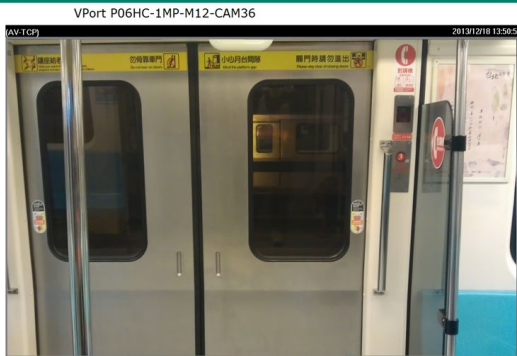
Step 5: Access the VPort's system configuration.

Click on **System Configuration** to access the overview of the system configuration to change the configuration. **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 details of each configuration, check the user's manual on the software CD.

Wiring Requirements

> ⚠ **ATTENTION**
>
> **Safety First!**
>
> Be sure to disconnect the power cord before installing and/or wiring your Moxa VPort P06HC-1MP-M12. Calculate the maximum possible current in each power wire and common wire. Observe all electrical codes dictating the maximum current allowable for each wire size. If the current goes above the maximum ratings, the wiring could overheat, causing serious damage to your equipment.

You should also pay attention to the following:

- Use separate paths to route wiring for power and devices. If power wiring and device wiring paths must cross, make sure the wires are perpendicular at the intersection point.
- 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 wiring to all devices in the system.

Dimensions (mm)
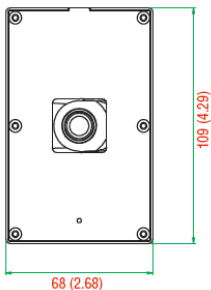
Front View
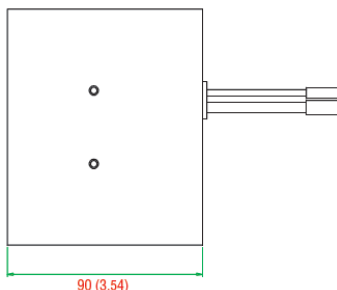
Bottom View
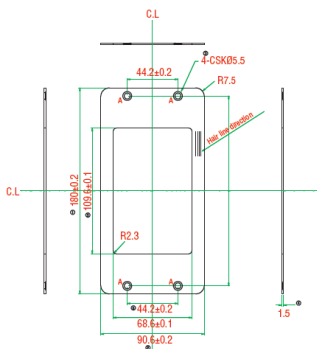
VP-FD1
(front decorative plate)
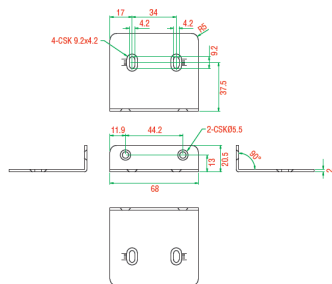
VPort P06HC's L-type mounting kit

Specifications

Camera	
Sensor	1/2.7" HD progressive scan CMOS
Lens	3.6 mm fixed focal length
Angle of view	3.6 mm, F1.6: Diagonal 125°, Horizontal 104°, Vertical 54°
Illumination (Low light sensitivity)	0.2 Lux at F=1.2, color
Synchronization	Internal
White Balance	ATW/AWB (range: 3200 to 10000°K)
Electronic Shutter	Auto, 1/30 to 1/25000 sec.

S/N Ratio	50 dB (Gamma, Aperture, AGC, OFF; DNR ON)
DNR	Built-in DNR
WDR	Level 1 to 8
AGC Control	2X, 4X, 8X, 16X
Flickerless Control	Automatic/ 50Hz/60Hz mode
Black level control	High/Medium/Low
Auto Exposure	Level ±5
Image Rotation	Flip, Mirror, and 180° rotation
Image Setting	Manual tuning with saturation, sharpness, and contrast
Video	
Video Compression	H.264 (ISO/IEC 14496-10) or MJPEG
Video Output	Via Ethernet port
Video Streams	Maximum of 3 video streams (2 H.264 and 1 MJPEG) • Stream 1: H.264, 1280 x 800 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 set to the same resolution

Video Resolution and FPS (Frame per second):

	NTSC		PAL	
	Size	**Max. FPS**	**Size**	**Max. FPS**
QCIF (cropping)	176 x 112	30	176 x 144	25
CIF(cropping)	352 x 240	30	352 x 288	25
VGA(cropping)	640 x 480	30	640 x 480	25
4CIF(cropping)	704 x 480	30	704 x 576	25
Full D1(cropping)	720 x 480	30	720 x 576	25
SVGA(cropping)	800 x 600	30	800 x 600	25
HD(cropping)	1280x720	30	1280x720	25
WXGA	1280x800	30	1280x800	25

Note: Except for 1280x800, the other resolutions are cropped images.

Video Viewing	• DynaStream™ supported for automatic frame rate adjustment • CBR Pro™ for good image quality in limited bandwidth transmission • 3 configurable privacy mask areas • Adjustable image size and quality • Timestamp and text overlay • OSD (On screen Display) position adjustable • Maximum of 5 simultaneous unicast connections • Digital PTZ with 4x zoom
Audio	
Audio inputs	1, built-in microphone
Audio format	Mono, PCM (G.711)
Network	
Protocols	TCP, UDP, HTTP, SMTP, FTP, Telnet, NTP, DNS, DHCP, UPnP, RTP, RTSP, ICMP, QoS, SNMPv1/v2c/v3, DDNS, TFTP, OPT 66/67
Ethernet	1 10/100BaseT(X) Ethernet port, 4-pin M12 D-code female connector

GPIO	
Digital Input	1, max. 8 mA
	Low: +13 V to +30 V; High: -30 V to +3 V
Power Requirements	
Input	Power-over-Ethernet (IEEE 802.3af)
Consumption	Maximum 6.3W
Physical Characteristics	
Housing	IP66 rain and dust protection, metal housing with transparent cover
Dimensions	109 x 68 x 90 mm (4.29 x 2.68 x 3.54 in)
Installation	Flush mounting
Environmental Limits	
Operating Temperature	-25 to 55°C (-13 to 131°F)
Storage Temperature	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)
Conformal Coating	Available on request
Regulatory Approvals	
Safety	UL 60950-1
EMI	FCC Part 15, CISPR 32 class A
EMS	IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV
	IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m
	IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV
	IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV
	IEC 61000-4-6 CS: 10 V
	IEC 61000-4-8
Rail Traffic	EN 50155*, EN 45545-2
*This product is suitable for rolling stock railway applications, as defined by the EN 50155 standard. For a more detailed statement, click here: www.moxa.com/doc/specs/EN_50155_Compliance.pdf	
Shock	IEC 61373
Freefall	IEC 60068-2-32
Vibration	IEC 61373
Note: Please check Moxa's website for the most up-to-date certification status.	
MTBF (mean time between failures)	
Time	1,275,915 hours
Standard	Telcordia, Ground Benign 25°C
Warranty	
Warranty Period	5 years
Details	See www.moxa.com/warranty
Alarm Features	

- Intelligent Video: Camera tamper (Pending)
- 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 for setting customized alarm actions
- Pre-alarm Buffer: 12 MB video buffer for JPEG snapshot images

Security	
• Password: User level password protection	
• Filtering: By IP address	
• Encryption: HTTPS, SSH	
Minimum Viewing System Requirements	
• Pentium 4, 2.4 GHz	
• 512 MB of memory	
• Windows XP with SP3 and above, Windows 7	
• Internet Explorer 9.x or above	
• DirectX 9.0c or above	
Software Development Kit	
VPort SDK PLUS	Includes CGI commands, ActiveX Control, and API library for customized applications or system integration for third-party developer
Standard	ONVIF