

# VPort P16-2MR Series

**EN 50155 compliant, 1080P video image, infrared IP cameras**



- > Complies with all EN 50155 mandatory test items\* (T1 temperatures: -25 to 55°C; TX temperatures: -40 to 70°C)
- > 1/3" progressive scan camera with maximum 1920 x 1080 resolution at up to 30 FPS
- > Built-in IR illuminator and ICR (Infrared Cut-filter Removal) for day & night images
- > High quality video image with DNR and WDR
- > Up to 4 H.264 or MJPEG independent simultaneous video streams
- > DynaStream™ for optimized network efficiency
- > CBR Pro™ for high image quality in limited bandwidth transmissions
- > Supports SDXC (up to 1 TB SD card) for local storage
- > 1 built-in audio input or microphone
- > ONVIF conformity for standardization and interoperability

\*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](http://www.moxa.com/doc/specs/EN_50155_Compliance.pdf)



## Introduction

The rugged VPort P16-2MR cameras produce Full FHD (1920 x 1080) video images and feature an H.264/MJPEG IP camera dome, giving them the versatility and ruggedness needed for mobile IP video surveillance applications in a variety of different installations and

environments. In addition, the cameras feature EN 50155 compliance, vandal-proofing (EN 62262 IK8), a -25 to 55°C or -40 to 70°C (T models) operating temperature, a rugged M12 Ethernet port, PoE power input, a built-in microphone, a digital input, IP66 rain and dust protection, and an IR illuminator for day & night image capability.

## Specifications

### Camera

**Sensor:** 1/3" HD progressive scan CMOS

**Lens:** 3.6, 4.2, 6, 8 mm fixed focal lengths

**Angle of View:**

- 3.6 mm, F1.6: Diagonal 82°, Horizontal 70°, Vertical 40°
- 4.2 mm, F1.6: Diagonal 70°, Horizontal 60°, Vertical 34°
- 6.0 mm, F1.8: Diagonal 46°, Horizontal 41°, Vertical 23°
- 8.0 mm, F1.6: Diagonal 35°, Horizontal 31°, Vertical 18°

**Illumination (low light sensitivity):**

- Color: 0.2 Lux @ F1.2
- B/W: 0.05 Lux @ F1.2 (0 lux if IR illuminator is on)

**Camera Angle:** Pan 350°, Tilt 65° (controlled manually)

**ICR Control (for day & night):** Auto

**IR Illumination:** 3 IR LED illuminators, 5-meter (max.) effective distance; On/Off controlled manually (night mode) or by the light sensor.

**Synchronization:** Internal

**White Balance:** ATW/AWB

**Electronic Shutter:** Auto, Fixed (1/30 to 1/25000 sec)

**DNR:** Built-in

**WDR:** On/Off, up to 100 dB

**AGC (auto gain control):** 2X, 4X, 8X, 16X

**Flickerless Control:** Automatic, 50 Hz, 60 Hz

**Auto Exposure:** Level ±5

**Image Rotation:** Flip, Mirror, 90°, 180°, 270° rotation

**Image Setting:** Manual tuning with saturation, sharpness, and contrast

**Black Level Control:** High/Medium/Low

### Video

**Video Compression:** H.264 (ISO/IEC 14496-10) or MJPEG

**Video Output:** via Ethernet

**Video Streams:** 4

**Video Resolution and FPS (frames per second):**

	NTSC		PAL	
	Size	Max. FPS	Size	Max. FPS
QCIF	176 x 112	30	176 x 144	25
CIF	352 x 240	30	352 x 288	25
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
WXGA	1280 x 800	30	1280 x 800	25
Full FHD	1920 x 1080	30	1920 x 1080	30

### Video Viewing:

- CBR Pro™ for good image quality in limited bandwidth transmissions
- DynaStream™ support for automatic frame rate adjustment
- 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

### Audio

**Audio Inputs:** 1, built-in microphone

**Audio Format:** PCM (G.711), AAC

### Network

**Protocols:** TCP/IP, UDP, HTTP, SMTP, NTP, DNS, DHCP, UPnP, RTP, RTSP, ICMP, QoS, IGMPv3, SNMPv1/v2c/v3, DDNS, TFTP, ARP, DHCP, OPT66/67, IPv6, SIP

**Ethernet:** 1 10/100BaseT(X) isolated Ethernet port, 4-pin M12 Dcode female connector, with 20 cm cable

### Local Storage

**SD Socket:** Micro SD socket

**Interface:** SDXC (can support up to 1 TB)

## GPIO

**Digital Inputs:** 1, 5-pin M12 male connector with 20 cm cable

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

## Power Requirements

**Input:** Power-over-Ethernet (IEEE 802.3af)

**Power Consumption:** 12.5 W (max.)

## Physical Characteristics

**Housing:** Metal housing and dome cover with IP66 rain and dust protection

**Dimensions:** 125 x 125 x 120.7 mm (5.6 x 5.6 x 4.8 in)

**Weight:** 820 g (1.8 lb)

**Installation:** Surface (ceiling) mounting, flush (recessed) mounting

## Alarms

**Intelligent Video:** Camera tamper

**Video Motion Detection:** 3 independently configurable areas

**Shock:** G sensor for shock detection

**Scheduling:** Daily repeat timing schedule

**Imaging:** JPEG snapshots for pre/trigger/post alarm images

**Custom Alarms:** HTTP event servers for setting customized alarm actions

**Email/FTP Messaging:** Automatic transfer of stored images via email or FTP as event-triggered actions

**Pre-alarm Buffer:** 50 MB video buffer for JPEG snapshot images

## Security

**Password:** User level password protection

**Filtering:** By IP address

**Encryption:** HTTPS, SSH

## Environmental Limits

**Operating Temperature:**

Standard models: -25 to 55°C (-13 to 131°F)

Wide Temp. models: -40 to 70°C (-40 to 158°F)

**Storage Temperature:** -40 to 85°C (-40 to 185°F)

**Ambient Relative Humidity:** 5 to 95% (non-condensing)

**Altitude:** 2000 m

*Note: Please contact Moxa if you require products guaranteed to function properly at higher altitudes.*

## Standards and Certifications

**Safety:** UL 60950-1

**Rail Traffic:** EN 50155\*

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**EMI:** FCC Part 15, CISPR (EN 55032) 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

**Shock:** IEC 61373

**Freefall:** IEC 60068-2-32

**Vibration:** IEC 61373

**Vandal Resistance:** EN 62262, IK8 level

**Salt Spray Test:** ASTM B117

*Note: Please check Moxa's website for the most up-to-date certification status.*

**MTBF (mean time between failures)**

**Time:** 997,474 hrs

**Standard:** Telcordia TR/SR

## Warranty

**Warranty Period:** 5 years

**Details:** See [www.moxa.com/warranty](http://www.moxa.com/warranty)

## Minimum Viewing System Requirements

**CPU:** Pentium 4, 2.4 GHz

**Memory:** 512 MB of memory

**OS:** Windows XP with SP3 or above, Windows 7

**Browser:** Internet Explorer 8.x or above

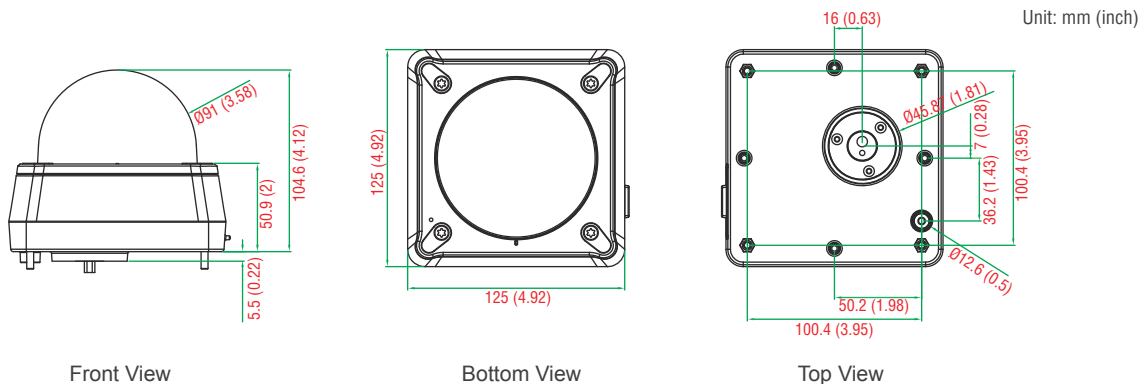
**Multimedia:** DirectX 9.0c or above

## Software Development

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

**Standard:** ONVIF Profile S

## Dimensions



## Ordering Information

Model	Lens (mm)				Operating Temp. Range		Conformal Coating
	3.6	4.2	6.0	8.0	-25 to 55°C	-40 to 70°C	
VPort P16-2MR36M	✓	-	-	-	✓	-	-
VPort P16-2MR42M	-	✓	-	-	✓	-	-
VPort P16-2MR60M	-	-	✓	-	✓	-	-
VPort P16-2MR80M	-	-	-	✓	✓	-	-
VPort P16-2MR36M-T	✓	-	-	-	-	✓	-
VPort P16-2MR42M-T	-	✓	-	-	-	✓	-
VPort P16-2MR60M-T	-	-	✓	-	-	✓	-
VPort P16-2MR80M-T	-	-	-	✓	-	✓	-
VPort P16-2MR36M-CT	✓	-	-	-	✓	-	✓
VPort P16-2MR42M-CT	-	✓	-	-	✓	-	✓
VPort P16-2MR60M-CT	-	-	✓	-	✓	-	✓
VPort P16-2MR80M-CT	-	-	-	✓	-	✓	✓
VPort P16-2MR36M-CT-T	✓	-	-	-	-	✓	✓
VPort P16-2MR42M-CT-T	-	✓	-	-	-	✓	✓
VPort P16-2MR60M-CT-T	-	-	✓	-	-	✓	✓
VPort P16-2MR80M-CT-T	-	-	-	✓	-	✓	✓

## Package Checklist

- VPort P16-2MR IP camera
- L-type Torx screwdriver
- 4 nuts and 4 washers
- 4 top cover screws for flush mounting
- Installation sticker
- Quick installation guide (printed)
- Documentation and software CD
- Warranty card