VPort 16-M12 Series

EN 50155 compliant, high quality CCD image, compact IP cameras

- Compliant with EN 50121-3-2 and essential sections of EN 50155
- 1/3" CCD camera with maximum resolution of 800 x 600
- Up to 3 independent video streams (2 H.264/1 MJPEG)
- Built-in 3D-deinterlace for progressive video image
- IP66 rain and dust protection with dehumidifying membrane
- -25 to 55°C operating temperature, no heater or fan
- Vandal-proof with IEC 62262, Class IK10 (Dome model) housing
- Supports DHCP Opt 66/67 for auto-configuration
- DynaStream™ supported for network efficiency
- Built-in SDHC slot for local storage
- ONVIF supported for standardization and interoperability

Introduction

Rugged Design
The VPort 16-M12 is a compact, fixed-IP camera with EN 50155:2007 compliance that is specially designed for rolling stock CCTV applications. In addition to the -25 to 55°C operating temperature, IP66 rain and dust protection, anti-vibration M12 Ethernet connector, Power-over-Ethernet (PoE), and metal housing with glass lens cover, the VPort 16-M12 also has a built-in dehumidifying membrane for dissipating moisture trapped inside the camera and keeping other moisture out. This innovative design greatly reduces the impact of moisture on the lens. The VPort 16-M12 is compliant with the essential sections of EN 50155, covering operating temperature, power input voltage, surge, ESD, and vibration.

Good Video Quality
To provide good video quality, the VPort 16-M12 adopts the 1/3-inch CCD image sensor and advanced 3D-deinterlacing hardware enhancement, making it suitable for most lighting conditions. A maximum of 2 H.264 and 1 MJPEG video streams are provided by the VPort 16-M12. In addition, Moxa’s DynaStream™ function allows you to change the video frame rate automatically, which can help you control your network bandwidth budget and ease network system management. The VPort 16-M12 also has a built-in SDHC slot for installing an SD card to provide up to 32 GB of local storage.

Convenient Installation
The VPort 16-M12 supports both surface mounting and embedded mounting, and for different viewing angles and distance requirements, 5 lens types with focal length from 3 mm to 16 mm are provided. Moreover, the camera head can be calibrated according to the scale on the camera and can be rotated 360° horizontally and 90° vertically, and DHCP opt 66/67 is also supported for automatic configuration, making mass installation a much easier task.

Specifications

Camera
- Sensor: 1/3" CCD
- Lens: 3, 3.6, 6, 8, and 16 mm fixed focal length
- Angle of View (Diagonal):
  - 3.0 mm / F2.0: 120°
  - 3.6 mm / F2.0: 92°
  - 6.0 mm / F1.8: 53°
  - 8.0 mm / F2.0: 40°
  - 16 mm / F2.5: 19°
- Modulation: NTSC or PAL
- Camera Angle: Pan 360°, Tilt 90° (controlled manually)
- Illumination (low light sensitivity): 0.02 Lux at F2.0, color
- Synchronization: Internal
- White Balance: ATW/AWC
- Auto Electronic Shutter:
  - NTSC: 1/60 to 1/120,000 sec.
  - PAL: 1/50 to 1/120,000 sec.
- S/N Ratio: 50 dB (MIN) / 58 dB (TYP) (Gamma, Aperture, AGC, OFF)
- AGC Control: On/Off
- Flickerless Control: On/Off
- Backlight Compensation: On/Off
- Auto Exposure: On/Off
- Image Rotation: Flip, Mirror, and 180° rotation

Video
- Video Compression: H.264 (ISO/IEC 14496-10) or MJPEG
- Video Outputs: Via Ethernet
- Video Streams: Maximum of 3 video streams (2 H.264/1 MJPEG)
- Video Resolution and FPS (frames per second):

<table>
<thead>
<tr>
<th>Size</th>
<th>NTSC</th>
<th>PAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>QCIF</td>
<td>176 x 112</td>
<td>176 x 144</td>
</tr>
<tr>
<td>CIF</td>
<td>352 x 240</td>
<td>352 x 288</td>
</tr>
<tr>
<td>VGA</td>
<td>640 x 480</td>
<td>640 x 480</td>
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<tr>
<td>4CIF</td>
<td>704 x 480</td>
<td>704 x 576</td>
</tr>
<tr>
<td>Full D1</td>
<td>720 x 480</td>
<td>720 x 576</td>
</tr>
<tr>
<td>SVGA</td>
<td>800 x 600</td>
<td>800 x 600</td>
</tr>
</tbody>
</table>

Video Viewing:
- DynaStream™ supported for changing the video frame rate automatically
- Adjustable image size and quality
- Timestamp and text overlay
- Maximum of 10 simultaneous unicast connections
Network
Ethernet: 1 10/100BaseT(X) Ethernet port, 4-pin M12 D-code connector

Local Storage
SD Socket: Standard SD socket (SDHC)

Power Requirements
Input: Power-over-Ethernet (IEEE 802.3af)
Power Consumption: 6.5 W

Physical Characteristics
Housing: Metal and glass, optional PC dome cover, IP66-rated
Dehumidifying Membrane: GORE protective vent
Dimensions:
- Standard model: 125 x 125 x 109.1 mm (5.6 x 5.6 x 4.3 in)
- Dome model: 125 x 125 x 120.7 mm (5.6 x 5.6 x 4.8 in)
Installation: Surface (ceiling) or flush (recessed) mounting

Security
Password: User level password protection
Filtering: By IP address

Alarms
Intelligent Video: Tamper alarm
Video Motion Detection: Includes sensitivity tuning
Video Loss: Video loss alarm
Scheduling: Daily repeat timing schedule
Imaging: JPEG snapshots for pre/trigger/post alarm images
Custom Alarms: HTTP event servers for setting customized alarm actions
Pre-alarm Buffer: 9 MB video buffer for JPEG snapshot images
Local Video Recording: Triggered by the alarm within the given time period

Environmental Limits
Operating Temperature: -25 to 55°C (-13 to 131°F)
Storage Temperature: -40 to 85°C (-40 to 185°F)

Conformal Coating: Available on request

Standards and Certifications
Safety: UL 60950-1
EMI: FCC Part 15 Subpart B Class A, 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
Rolling Stock: EN 50155:2007 compliance (shock, vibration, temperature, EMC)
Shock: IEC 61373
Freefall: IEC 60068-2-32
Vibration: IEC 61373
Vandal resistance: EN 62262, IK10 level (dome cover model)

Software Development Kit
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).

Minimum Viewing System Requirements
CPU: Pentium 4, 2.4 GHz
Memory: 512 MB of memory
OS: Windows XP/2000 with SP4 or above
Browser: Internet Explorer 6.x or above
Multimedia: DirectX 9.0c or above

Ordering Information

Package Checklist
- VPort 16-M12 IP camera
- L-type Torx screw driver
- 4 nuts and 4 washers
- 4 top cover screws for flush mount
- Installation stick
- Quick installation guide (printed)
- Documentation and software CD
- Warranty card

Notes: Conformal coating is available on request.