Enabling Connectivity for the Industrial Internet of Things

• Edge Connectivity • Industrial Computing • Network Infrastructure

MOXA®

Reliable Networks ▲ Sincere Service

Moxa: Your Trusted Partner in Automation

As the Industrial Internet of Things (IoT) interconnects our world faster than ever, we rely more than ever on network infrastructures. Since its establishment in 1987, Moxa has had a proven track record of providing customers with the most reliable networks for a variety of industrial applications.

With over 25 years of industry experience, Moxa has connected more than 40 million devices worldwide. These devices have delivered highly reliable communications between people, systems, and processes to achieve all forms of automation and collaboration.

Promise for the Future

Reliable Networks, Sincere Service continues to be Moxa's promise to enable connectivity for the Industrial IoT. Moxa stays ahead of the curve with innovative Ethernet-core technology and solutions to help customers tap into the potential of the Industrial IoT market.

Reliable Networks

Network reliability is the cornerstone of Moxa's commitment to deliver the best value to our customers and partners. Moxa's many solutions share a common set of robust features designed to provide maximum network uptime, especially in harsh environments. Our cutting-edge product portfolio comprises quality and innovative technology to ensure nonstop productivity, operational efficiency, and robust security for complex industrial communications and automation applications.

Sincere Service
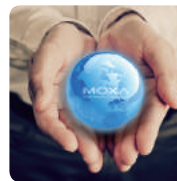
At Moxa, we listen carefully to learn more about our customers' expectations and needs before we develop a solution. With extensive experience and innovative technology, we provide premium customization, expert network consulting, and a broad range of technical support services. Through close collaboration with our worldwide partners, we help customers optimize their applications' performance, adapt to fast-changing technologies, and seize opportunities to achieve the best time-to-market results.

Product Offerings

Edge Connectivity

Moxa's edge connectivity products bridge various industrial devices to streamline the acquisition and transmission of data, voice, and video to backbone networks. Customers can enjoy seamless network integration for various cross-system collaborations.

- Serial connectivity
- Industrial Ethernet gateways
- RTU controllers and smart I/O devices
- Industrial IP cameras and video management software

Industrial Computing

Moxa provides RISC- and x86-based industrial computers to work in the most demanding conditions. The world's first wide-temperature-range 4G LTE computer is a perfect example of a device that delivers reliable 4G performance without requiring a fan or a heater.

- Mission-critical computers
- Displays and panel computers
- Compact and wireless computers
- Embedded CPU modules

Network Infrastructure

Moxa's network infrastructure solutions provide comprehensive building blocks to develop robust wired and wireless backbones for mission-critical applications with regard to device reliability, connection availability, cybersecurity, and easy management.

- Industrial Ethernet switches
- Industrial wireless AP/bridge/client and cellular routers
- Industrial secure routers
- Ethernet media converters
- Network management software

Get Connected to Success and Opportunity

Worldwide, Moxa's expert sales team is ready to provide the best quality, support, and services to assist you in all aspects of your projects—from concept to completion—to empower your network operations and applications.

Global Service Coverage

Customer-Oriented Service

Moxa has established a global service network to be closer to our customers to better understand their needs and respond faster to their requirements. Leveraging Moxa's industrial experiences and technological intelligence, our service team provides professional solutions and consulting services, backed by our extensive global resources and solution capabilities.

Extended Teamwork

Through our annual MTSC (Moxa Technical Support Certification) training, Moxa provides the most up-to-date solutions and technologies to our global partners to ensure the best service to customers. Integrating the strengths of our worldwide industry and technology partners, we deliver sincere service and an extended range of innovative solutions to customers.

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Headquarters
USA: Sales and Marketing Headquarters
Taiwan: Design and Engineering Headquarters

Total Quality Management

Our commitment to quality is at the heart of Moxa's promise of *Reliable Networks, Sincere Service.* Moxa employs a corporate-wide Total Quality Management System (TQMS) to achieve customer satisfaction and unbeatable results in the following categories:

▢ Robust Technology

At Moxa, quality starts with concepts that benefit our partners and customers. Moxa attracts a broad spectrum of talent and encourages new ideas to nurture innovation at every level. Following the well-defined New Product Development Process (NPDP), all of Moxa's products must undergo strict tests, verifications, and validations to achieve tangible quality-related benchmarks for various industrial applications.

▢ Project Life-Cycle Management

Moxa is IRIS-certified and implements a rigorous management process to ensure quality and optimal results for long-term projects. Specific RAMS and LCC management guidelines guarantee reliability, longevity, low life-cycle costs, and easy maintenance throughout a project's lifetime.

▢ Continuous Improvement

Moxa motivates each employee to work smarter and find ways for continuous improvement. Our Quality Improvement Team (QIT) and Eight Disciplines Problem-Solving (8D) methodology for solving problems and preventing crises promote continuous progress in the quality of our products, service, and technology, to ensure customer satisfaction.

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Branches
Americas: USA, Brazil
Asia: Taiwan, India, Russia, Korea
China: Beijing, Shanghai, Shenzhen
Europe: Germany, France, UK

Distributors in
70+
Countries
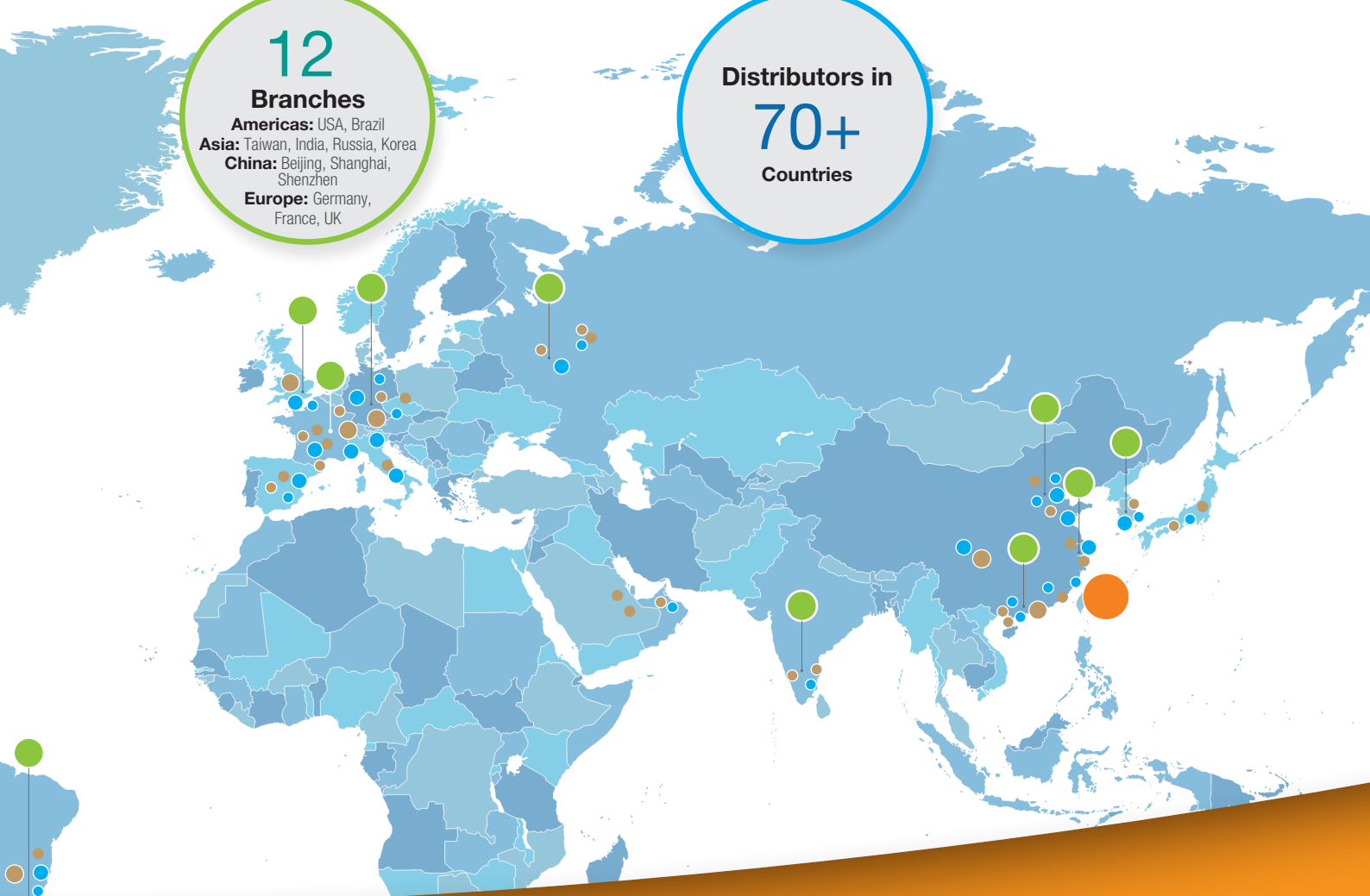
Technological Innovation

Moxa cultivates continuous technological innovation to meet the constantly changing requirements of industrial environments. To enable the most capable and reliable connectivity required for the Industrial IoT, Moxa strives to achieve application-driven innovations in the following aspects.

■ Performance
High-speed wired/wireless connectivity for future-proof networks

■ Reliability
Proven reliability for continuous productivity

■ Availability
Millisecond-level redundancy for nonstop operations

■ Security
Industrial cybersecurity for critical device protection and secure remote access

■ Manageability
Easy operations in deployment, monitoring, and diagnostics maintenance

■ Interoperability
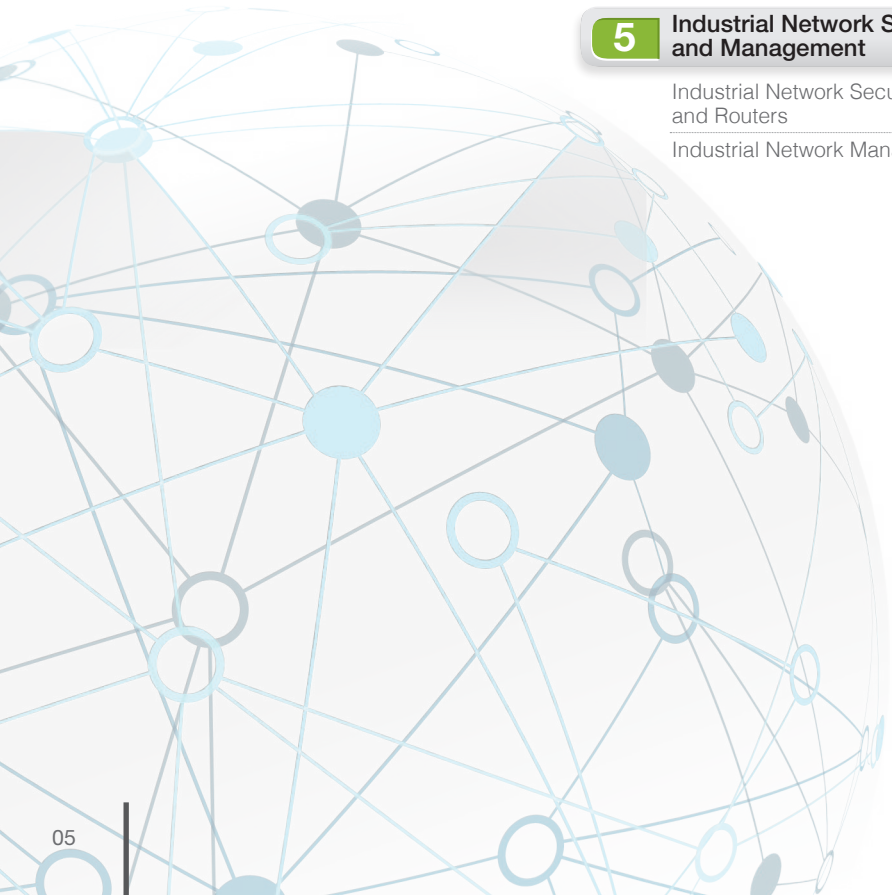Leading legacy and versatile fieldbus technologies for seamless automation communication

Device Connectivity

Remote Automation

IP Surveillance

Industrial Computing

Enabling Connectivity for the Industrial Internet of Things

Moxa's industrial network and automation solutions are ready to take connectivity to new frontiers. With a forecast of more than 50 billion devices connected worldwide by 2020, Moxa focuses on connectivity enablement to expand communication and collaboration between various devices, technologies, and people.

Edge Connectivity

Serial/Fieldbus Connectivity
Serial or fieldbus connectivity bridges legacy, fieldbus, and Ethernet devices to reap the benefits of legacy-to-IP communications and operational efficiency.

I/O Connectivity
Industrial I/Os and controllers enable faster data transfer and SCADA response, as well as programming-free logic control.

Video Connectivity
Extreme weather IP cameras activate 360-degree HD surveillance for extreme applications.

Smart Value for Your Applications

Through our fully converged communication solutions, Moxa helps customers build remote control and monitoring networks suited for highly automated industrial operations and demanding public-safety applications.

Powering Productivity

Our cutting-edge product portfolio delivers superior performance thanks to high bandwidth, reliability, availability, and interoperability in mixed-protocol and legacy environments.

• High-speed transmission
• Maximum uptime and availability
• Video always-on networking
• Reliable mobile communications
• Industry-proven reliability
• Legacy compatibility
• Protocol interoperability

Optimizing Operational Efficiency

Moxa's extensive software solutions are the key to operational efficiency, including intuitive management software for operations that are faster and less error-prone, as well as an API platform for faster development and ease-of-use.

• Faster deployment
• Visualized management
• Easier troubleshooting
• Preventive maintenance
• APIs for easy application deployment
• Seamless integration with SCADA systems

Strengthening Security

A convergence of cybersecurity and physical security systems forge a reinforced network to ensure the full protection of control systems and staff safety in industrial applications.

• Device security with authentication, integrity, and firewall protection
• Secure remote access with IPSec, L2TP, or OpenVPN encryption
• IEC 62443 standard compliance *(Available in Q4, 2016)*
• Industrial-grade IP surveillance systems

Factory Automation

Moxa's factory automation solutions are designed to drive productivity and cost reduction through network convergence from the edge to the core. The solutions deliver optimized process integration and automation-friendly management to improve throughput and performance.

Industrial Computing

Industrial Computers

Embedded computers enable seamless data aggregation, analytics, and reporting from the extreme edge to the cloud/core.

Network Infrastructure

Industrial Ethernet

Industrial Ethernet and WLAN solutions offer leading performance, availability, and reliability to achieve maximum uptime and efficiency for wired and wireless connectivity.

Industrial Wireless

Industrial Routers

Industrial secure and cellular routers enable asset protection and secure access across public networks.

Management

IA-friendly device management and network management address easy deployment, supervision, troubleshooting, and seamless collaboration with SCADA and third-party platforms.
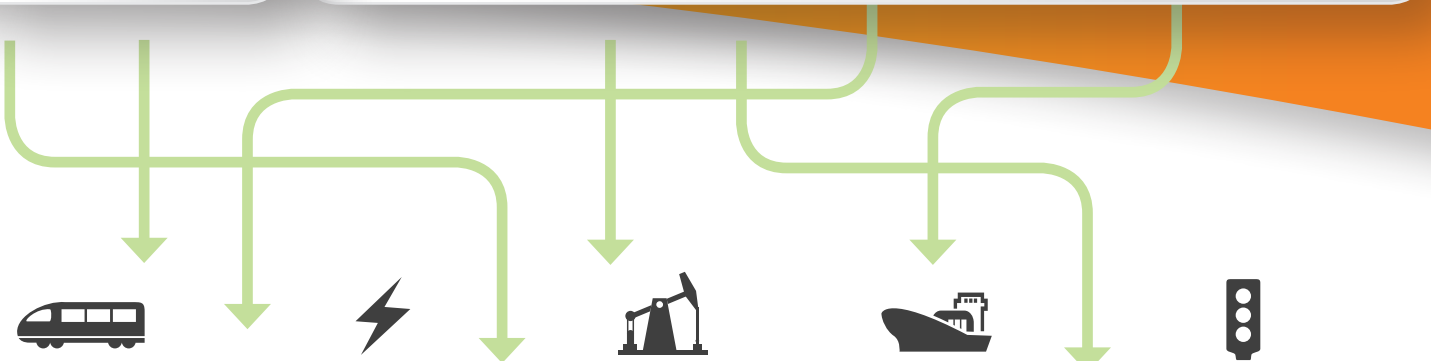
Railway Automation

Moxa's IRIS-certified railway solutions come with the top-notch service, quality, and commitment that industrial customers demand. Moxa's railway solutions deliver EN 50155-compliant control and communications between train, ground, and trackside to ensure safety and uninterrupted passenger services.

Power Automation

Moxa has delivered solutions in more than 300 successful substation networking and computing applications. Moxa's solutions ensure GOOSE compliance and zero-packet-loss performance in compliance with IEC 61850-3 and IEEE 1613 standards.

Oil and Gas Automation

Moxa's oil and gas automation solutions comply with UL Class 1 Division 2, ATEX Zone 2, and IECEx standards, allowing customers to achieve maximum uptime and improved productivity with our oil and gas networking, monitoring, and computing solution portfolio.

Marine Automation

Moxa's marine solutions, compliant with all major maritime certifications, offer a wide range of marine-grade industrial Ethernet and computer products that ensure long-lasting and reliable operations in the challenging environments experienced by ship, offshore oil and gas, and windmill applications.

Intelligent Transportation Systems

Moxa's ITS solutions combine high-bandwidth networks and HD IP video solutions to ensure fast information convergence and nonstop operational continuity, allowing traffic control managers to make decisions quickly in the event of road traffic emergencies.

Enhanced Efficiency, Productivity, and Competitiveness
Integrated IP Solutions for Smarter Railways
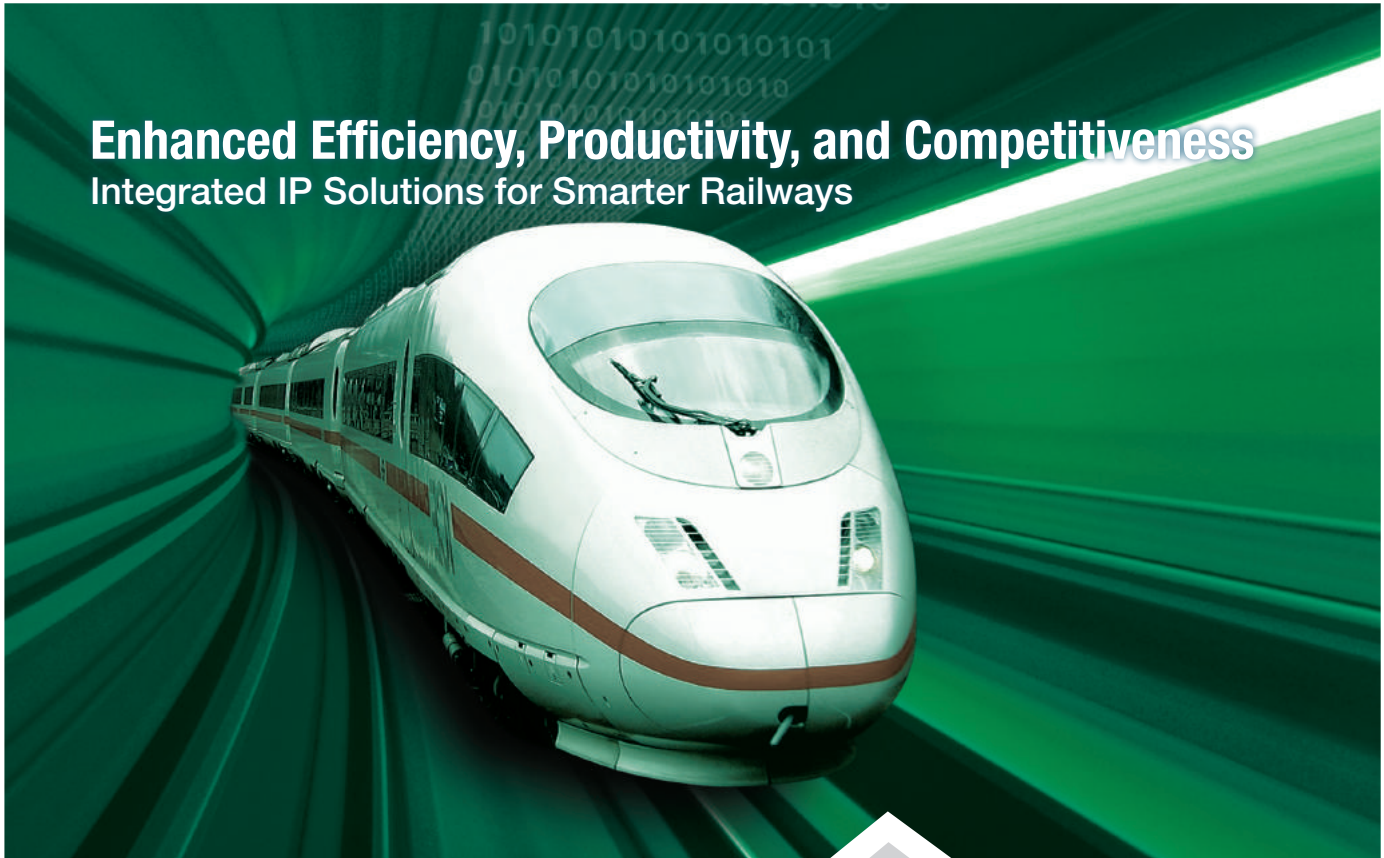
IRIS-Certified Rail Solutions
Verified for Maximum Quality

Moxa is an IRIS-certified global leader in a wide range of IP-based communications solutions. Now, Moxa is contributing its networking expertise to the railway industry through membership in IEC railway committees. Railway operators world-wide have discovered new operational efficiencies by deploying Moxa's unique time and cost-saving railway technologies. By designing for a long MTBF, owning all the core component IPs, and building long-term partnerships, Moxa helps railway integrators create sustainable solutions with low life-cycle costs for passenger comfort and railway operation networks.

Application Focus
- Passenger-oriented service (e.g., onboard Wi-Fi, passenger information systems)
- Railway CCTV
- CBTC (Communication-Based Train Control)
- Wayside data communications systems

Leading Technologies
- Turbo Ring and Turbo Chain: Advanced Ethernet redundancy solutions
- Turbo Roaming: Fast and secure train-to-ground wireless communications
- ACC: Intelligent wireless inter-carriage links
- FLI: Flexible, location-based, intelligent industrial-grade auto-configuration technology

Visit www.moxa.com/rail

ToughNet, EDS Series
Industrial Ethernet Switches
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TAP, AWK-RCC/RTG Series
Industrial Wireless AP/Bridge/Client
▶Page 8-4

NPort 5000AI-M12 Series
RS-232/422/485 Serial Device Servers
▶Page 10-18

TC-6000, V2000 Series
Industrial Embedded Computers
▶Page 22-4/22-11

VPort Series
Industrial IP Cameras
▶Page 19-19

ioPAC Series
Industrial RTU Controllers
▶Page 15-4

ioLogik E1500 Series
Remote I/Os
▶Page 17-17

Connect to the Smart Grid Today
End-to-End Networking and Computing Solutions for the Power Industry

Many Successful Deployments in Power Projects Worldwide

Create rock-solid and future-proof power networks by partnering with Moxa. Moxa is a Collective Member of CIGRE and has delivered solutions in over 500 successful substation transmission and distribution networking and computing applications around the world. Moxa is now the leading solar energy monitoring supplier in North America with many diverse projects in advanced metering infrastructures worldwide. You can rely on our expertise of more than 25 years in proven solutions in the following industry applications.

Application Focus
- Solar power
- Wind power
- IEC 61850 transmission and distribution substation
- Advanced metering infrastructure

Leading Technologies
- Industry's first IEC 61850 switch with MMS data modeling: SNMP/MMS management with integrated network monitoring solutions for power substation SCADA
- Industry's first integrated PRP/HSR redundancy box for zero recovery time
- Turbo Chain: Different redundant networks can be extended without any ring coupling effort
- Patented computing platform for heat dissipation with wide temperature tolerance
- ThingsPro: Asset management for solar energy monitoring

Visit www.moxa.com/SmartGrid

PT-7528 Series
IEC 61850 28-port IEEE 1613 Class 2 Managed Ethernet Switches
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PT-7728-PTP Series
IEC 61850 14-port IEEE 1588v2 Managed PRP/HSR Switches
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PT-G503-PHR-PTP Series
IEC 61850 3-port Full Gigabit Managed PRP/HSR Redundancy Boxes
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DA-820 Series
x86 IEC 61850-3 Certified i7 Rackmount Computers
▶Page 21-4

NPort S8000 Series
Combo Switches / Serial Device Servers
▶Page 10-14

UC-8100 Series
RISC Energy Monitoring Computers
▶Page 21-36

ioLogik E1200 Series
Compact Ethernet Remote I/O
▶Page 17-6

DCU-8620-T Series
Data Concentration Units
▶Available by request

Proven Solutions for the Harshest Oil & Gas Environments
Integrated Networking, Monitoring, and Computing Systems

Your Trusted Partner in Oil & Gas Automation

Moxa is a leading provider of industrial automation solutions and has proven experience in providing networking equipment and service suitable for the harshest oil & gas environments. Moxa's industrial-grade products and well respected technology enable efficient remote monitoring and easy asset management, delivering business value to customers all over the world. To assure the highest level of safety, the computing, networking, and automation products Moxa develops especially for use in oil & gas facilities meet important global certifications, including ATEX Zone 2, Class 1 Division 2, and IECEx.

Application Focus
- Offshore oil drilling control systems
- Onshore drilling / wellhead monitoring
- Pump stations and pipeline monitoring
- Oil refining and gas station operations

Leading Technologies
- Turbo Ring and Turbo Chain: Unrivaled network redundancy solutions with 20 ms recovery
- Dual-Radio and Turbo Roaming: Zero packet loss and millisecond-level wireless roaming
- ISA99/IEC 62443 compliant for industrial security: Layered cybersecurity solution with innovative PacketGuard™ for Modbus TCP deep packet inspection
- World-leading panel computer design: 1000-nit LCD, glove-friendly multi-touch, system bootup within 3 minutes, -40 to 70°C operating temperature without heater
- MXview, MXview ToGo, QuickLink, MX-AOPC UA Server: Efficient network management by smart visualization, automated configuration, and seamless integration with SCADA systems

Visit www.moxa.com/Solutions/Oil_and_gas

EDS/IKS/ICS Series
Edge-to-Core Ethernet Switches
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EDR Series
VPN/Firewall Secure Routers
▶Page 5-2

AWK Series
IEEE 802.11a/b/g/n Wireless AP/Bridge/Client
▶Page 6-6

MGate and NPort Series
Industrial Gateways and Device Servers
▶Page 4-5; 10-43

ICF Series
Industrial Serial/PROFIBUS-to Fiber Converters
▶Page 14-32

ioLogik 2500 Series and ioLogik E1200 Series
Smart Remote I/O and Ethernet Remote I/O
▶Page 16-4; 17-6

VPort Series
HD IP Cameras
▶Page 19-14

EXPC-1519 Series
Zone 2 Panel Computers
▶Page 25-12

Make Your Marine Vision a Reality
Set Sail with Moxa's Reliable Marine Solutions

Successful Deployment of Integrated Marine Bridge Solutions Worldwide

Moxa provides maritime professionals with industrial-grade marine computers, panel PCs, displays, and Ethernet switches that use leading technologies and reliable designs perfect for applications on docks, marine bridges, open decks, and in control rooms.

Moxa's marine solutions pass strict tests and follow critical industrial standards to ensure compliance with international marine standards, including DNV, ABS, GL, LR, IEC 60945, IEC 61174, IEC 61162, and IACS E10, making Moxa's marine solutions the best option for marine applications.

Application Focus
- Electronic Chart Display and Information System (ECDIS)
- Radar System
- Integrated Navigation System (INS)
- Integrated Platform Management System (IPMS)

Leading Technologies
- Advanced ECDIS color calibration technology: more consistent color rendering for a longer period of use
- Customer initiated smart OSD design: Off-Screen-Display control allows users to easily control the monitor in low light environments
- High performance computing power in a fanless design enhances computers' reliability and reduces customers' maintenance costs

Visit www.moxa.com/marine

MPC-2150/2190/2240/2260 Series
Marine Panel Computers
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MD-219/224/226 Series
Marine Displays
▶Page 24-3

MC-7200 Series
Marine ECDIS Computers
▶Page 23-3

MGate 5101-PBM-MN Series
PROFIBUS-to-Modbus TCP Gateways
▶Page 4-18

ioLogik E1200H Series
Ethernet Remote I/O
▶Page 17-13

EDS-408A Series
Managed Ethernet Switches
▶Page 1-46

GL OPERATING 24/7   Lloyd's Register   DNV   ABS

IACS - E10 Marine Computers   IEC 61162 Marine Computers   IEC 60945 Marine Computers   ClassNK

Maximize Your Factory Potential
With Reliability, Ease of Integration, and Global Support

Your Trusted Partner for Factory Automation

To help manufacturers maximize the benefits of integrating network and automation technology, Moxa has focused on the factory automation market for over 26 years. Moxa provides leading solutions for industrial communications, including wired and wireless infrastructures, industrial computing, remote monitoring, and video surveillance.

Application Focus
- SCADA
- Control system networks
- Wireless infrastructures and machine-to-machine communication
- Packaging equipment
- Cybersecurity
- Industrial video surveillance
- Material handling

Main Benefits

Reliability
- Industry leading communication redundancy for < 20 ms recovery time
- Unique thermal design that supports fanless wide temperature operation (-40 to 75°C)
- High level EMI/EMC shielding
- Redundant power supply with isolation protection
- Continual improvement of total quality management
- ISO 9001 quality management standard recognized

Ease of Integration
- User-friendly network and device management software
- Serial, Ethernet, I/O, and wireless solutions integrated into a single network
- Quick mass configuration tool for 90% time savings (with up to 100 switches)
- OPC server for cost-effective SCADA integration

Global Support
- Access to products and support in over 70 countries
- Customization service

VPort Series
Industrial IP Cameras
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EDS Series
Industrial Ethernet Switches
▶Page 1-27

MGate Series
Industrial Ethernet Gateways
▶Page 4-1

NPort Series
Serial-to-Ethernet Device Servers
▶Page 10-1

ioLogik 2500-WL1 Series
Smart Wireless I/O
▶Page 16-4

EDR-810 Series
Industrial 8+2G Multiport Secure Routers
▶Page 5-7

AWK-A Series
Industrial Wireless AP/Bridge/Client
▶Page 6-6

Integrated Network Solutions for Intelligent Transportation

Real-Time Convergence for Non-Stop Safety

Today more than ever before, roadway safety and efficiency depend on real-time information and communication. To increase traffic flow, reduce congestion, and improve incident response times, Moxa's industrial Ethernet solutions facilitate real-time convergence of various sensor data, voice, and video by providing high-speed throughputs and a wide range of network devices. All of these devices emphasize extreme reliability, smart redundancy, easy manageability, and a lower total cost of ownership.

Application Focus

- Advanced Transportation Management Systems
- Tunnels
- Intelligent E-Bus
- Electronic Toll Collection (ETC)

Leading Technologies

High Bandwidth

- 1GbE/10GbE switching and routing
- Up to 500 Mbps router throughput
- Up to 300 Mbps wireless transmission
- Up to 150 Mbps VPN traffic

Extreme Reliability

- Turbo Ring and Turbo Chain self-recovery (< 20 ms @ 250 switches)
- V-ON network redundancy under 50 ms for mission-critical IP surveillance
- Turbo Roaming with millisecond-level handoff times for seamless mobility

Efficient Management

- MXstudio network management suite for installation, operation, maintenance, and diagnostics
- OnCell Central Manager for remote cellular device management
- IP surveillance software solutions for easy SCADA surveillance

Visit www.moxa.com/ITS

ICS Series
Industrial 10GbE Ethernet Switches
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AWK-A Series
Industrial 802.11n AP/Bridge/Client
▶Page 6-6

EDS-G512E-8PoE
8-port PoE+ Full Gigabit Managed Switch
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VPort Series
Industrial HD IP Cameras
▶Page 19-7

IEX-408E-2VDSL2 Series
Copper Extender Switches
▶Page 3-26

NPort IA5000A Series
2-Port Industrial Serial Device Servers
▶Page 10-43

MXstudio
Industrial Network Management Suite
▶Page 5-11

IP Surveillance

IP Cameras

IP Cameras					
	VPort 66-2MP	VPort 56-2MP	VPort 36-2L	VPort 36-1MP Series	VPort 26A-1MP Series
Video Performance					
Resolution (max.)	1920 x 1080	1920 x 1080	1920 x 1080	1280 x 800	1280 x 800
FPS (max.)	60	30	30	30	30
Connections (max.)	5 unicast 50 multicast RTSP	10 unicast 50 mulitcast RTSP	5 unicast 50 multicast RTSP	5 unicast 50 mulitcast RTSP	5 unicast 50 mulitcast RTSP
Video Stream					
H.264	✓	✓	✓	✓	✓
MJPEG	✓	✓	✓	✓	✓
No. of Streams	3	3	4	3	3
DynaStream™	✓	✓	✓	✓	✓
CBR Pro™	✓	✓	✓	✓	✓
Image Stabilizer	✓	✓	✓	–	–
Camera					
Image Sensor	1/2.8" CMOS	1/2.8" CMOS	1/3" CMOS	1/2.7" CMOS	1/2.7" CMOS
Lens (mm)	4.3 to 94.6, 4.3 to 129	6.3 to 63, zoom lens	3 to 9, 10 to 23	C/CS-mount lenses	3 to 9, vari-focal lens
Day & Night	✓		✓	✓	✓
Minimum Illumination	0.4 Lux @ F1.6, color 0.03 Lux @ F1.6, B/W	2 Lux @ F1.8, Color 0.1 Lux @ F1.8, B/W	0.2 Lux @ F1.2, color 0.05 Lux @ F1.2, B/W	0.2 Lux @ F1.2, color 0.05 Lux @ F1.2, B/W	0.2 Lux @ F1.2, color 0.05 Lux @ F1.2, B/W
White Balance	ATW/AWB	ATW/AWB	ATW/AWB	ATW/AWB	ATW/AWB
Electronic Shutter (sec)	Auto (1/120 to 1/16000)	Auto (1/50 to 1/10000)	Auto (1/30 to 1/25000)	Auto (1/30 to 1/25000)	Auto (1/30 to 1/25000)
Sense up	✓	✓	✓	–	–
AGC Control	✓	✓	✓	✓	✓
Wide Dynamic Range	✓	–	✓	✓	✓
Back Light Compensation	✓	✓	✓	–	–
Auto Exposure	✓	✓	✓	✓	✓
Image Rotation (flip, mirror, 180° rotation)	✓	✓	✓	✓	✓
Digital Noise Reduction	✓	✓	✓	✓	✓
Network Connections					
10/100 Mbps, M12 Connector	–	–	–	–	–
10/100 Mbps, RJ45 Connector	1	1	1	1	1
100 Mbps Fiber Connector	–	1, single-model	1, single-model	–	–
Peripherals					
Audio	1 line-in, 1 line-out	1 line-in, 1 line-out	1 line-in, 1 line-out	–	1 line-in, 1 line-out
DI/Relay	1 DI, 1 relay	1 DI, 1 relay	1 DI, 1 relay	1 DI, 1 relay	1 DI, 1 relay
SD Slot	1, SDXC	1, SDHC/SDXC	1, SDXC	1, SDHC	1, SDHC
Network Management and Control					
Web Browser	✓	✓	✓	✓	✓
SNMP Protocols	v1/v2c/v3	v1/v2c/v3	v1/v2c/v3	v1/v2c/v3	v1/v2c/v3
RTSP (Real Time Streaming Protocol)	✓	✓	✓	✓	✓
Multicast (IGMP)	v3	v3	v3	v3	v3
QoS	✓	✓	✓	✓	✓
Automatic Configuration	–	–	–	DHCP Opt 66/67	–
Form Factor					
Protection Rating	IP66	IP30	IP30	IP30	IP66
Surface/Ceiling Mounting	✓	✓	✓	✓	✓
Flush Mounting	–	–	–	–	–
Outdoor Installation Accessory	✓	✓	✓	✓	✓
Power Requirements					
Power-over-Ethernet (PoE)	–	✓ (PoE+)	✓	✓	✓
12/24 VDC, 24 VAC	✓	✓	✓	✓	✓
Alarms					
VMD (Video Motion Detection)	✓	✓	✓	✓	✓
Alarm Snapshot Image	✓	✓	✓	✓	✓
Tamper Alarm	✓	✓	✓	✓	✓
Supported Operating Temperature Ranges					
Standard Models	-40 to 65°C (-40 to 149°F)	0 to 60°C (32 to 140°F)	-25 to 60°C (13 to 140°F)	0 to 60°C (32 to 140°F)	-40 to 50°C (-40 to 122°F)
Wide Temp. Models	–	-40 to 75°C (-40 to 167°F)	-40 to 75°C (-40 to 167°F)	-40 to 75°C (-40 to 167°F)	-40 to 75°C (-40 to 167°F)
Regulatory Approvals					
CE/FCC	✓	✓	✓	✓	✓
UL 60950-1	✓	✓	✓	✓	✓
EN 50155:2007	–	–	–	–	–
EN 50121-3-2	–	–	–	–	–
EN 50121-4	✓	✓	✓	✓	✓
NEMA TS2	✓	✓	✓	✓	–
Class 1 Division 2 / Atex Zone 2	–	–	–	✓	–
EN 62262	IK10	–	–	–	IK10
ONVIF	✓	✓	✓	✓	✓
Profile S	✓	✓	✓	✓	✓
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IP Cameras

	IP Cameras					
	VPort P16-1MP-M12	VPort P16-2MR Series	VPort P16-1MP-M12-IR	VPort 06-2 Series	VPort P06-1MP-M12 Series	VPort P06HC-1MP-M12 Series
Video Performance						
Resolution (max.)	1280 x 800	1920 x 1080	1280 x 800	1920 x 1080	1280 x 800	1280 x 800
FPS (max.)	30	30	30	30	30	30
Connections (max.)	5 unicast 50 mulitcast RTSP	5 unicast 50 multicast RTSP	5 unicast 50 multicast RTSP	5 unicast 50 multicast RTSP	3 unicast 5 mulitcast RTSP	5 unicast 50 mulitcast RTSP
Video Stream						
H.264	✓	✓	✓	✓	✓	✓
MJPEG	✓	✓	✓	✓	✓	✓
No. of Streams	3	4	3	4	3	3
DynaStream™	✓	✓	✓	✓	✓	✓
CBR Pro™	✓	✓	✓	✓	✓	✓
Image Stabilizer	–	–	–	–	–	–
Camera						
Image Sensor	1/2.7" CMOS	1/3" CMOS	1/2.7" CMOS	1/3" CMOS	1/2.7" CMOS	1/2.7" CMOS
Lens (mm)	3.6, 6.0	3.6, 4.2, 6.0, 8.0	3.6, 8.0	2.5, 3.6, 4.2, 6.0, 8.0	2.5, 3.6, 4.2, 6.0, 8.0	3.6
Day & Night	✓	✓	✓	–	–	–
Minimum Illumination	0.2 Lux @ F1.2, color 0.05 Lux @ F1.2, B/W	0.2 Lux @ F1.2, color 0.05 Lux @ F1.2, B/W	0.2 Lux @ F1.2, color 0.05 Lux @ F1.2, B/W	0.2 Lux @ F1.2, color	0.2 Lux @ F1.2, color	0.2 Lux @ F1.2, color
White Balance	ATW/AWB	ATW/AWB	ATW/AWB	ATW/AWB	ATW/AWB	ATW/AWB
Electronic Shutter (sec)	Auto (1/30 to 1/25000)	Auto (1/30 to 1/25000)	Auto (1/30 to 1/25000)	Auto (1/30 to 1/25000)	Auto (1/30 to 1/25000)	Auto (1/30 to 1/25000)
Sense up	–	✓	✓	✓	–	–
AGC Control	✓	✓	✓	✓	✓	✓
Wide Dynamic Range	✓	✓	✓	✓	✓	✓
Back Light Compensation	–	–	–	–	–	–
Auto Exposure	✓	✓	✓	✓	✓	✓
Image Rotation	Flip, mirror, 180° rotation	Flip, Mirror, 90°, 180°, 270° rotation	Flip, Mirror, 90°, 180°, 270° rotation	Flip, Mirror, 90°, 180°, 270° rotation	Flip, mirror, 180° rotation	Flip, mirror, 180° rotation
Digital noise reduction	✓	✓	✓	✓	✓	✓
Network Connections						
10/100 Mbps, M12 Connector	1	1	1	1	1	1
10/100 Mbps, RJ45 Connector	–	–	–	–	–	–
100 Mbps Fiber Connector	–	–	–	–	–	–
Peripherals						
Audio	–	1 built-in microphone	1 built-in microphone	1 line-in or mic-in	1 line-in or mic-in	1 mic-in
DI/Relay	–	1 DI	1 DI	1 DI	–	1 DI
SD Slot	–	✓	✓	✓	–	–
Network Management and Control						
Web Browser	✓	✓	✓	✓	✓	✓
SNMP Protocols	v1/v2c/v3	v1/v2c/v3	v1/v2c/v3	v1/v2c/v3	v1/v2c/v3	v1/v2c/v3
RTSP (Real Time Streaming Protocol)	✓	✓	✓	✓	✓	✓
Multicast (IGMP)	v3	v3	v3	v3	v3	v3
QoS	✓	✓	✓	✓	✓	✓
Automatic Configuration	DHCP Opt 66/67	DHCP Opt 66/67	DHCP Opt 66/67	DHCP Opt 66/67	DHCP Opt 66/67	DHCP Opt 66/67
Form Factor						
Protection Rating	IP66	IP66	IP66	IP66	IP66	IP66
Surface/Ceiling Mounting	✓	✓	✓	✓	✓	–
Flush Mounting	✓	✓	✓	✓	✓	✓
Outdoor Installation Accessory	–	–	–	–	–	–
Power Requirements						
Power-over-Ethernet (PoE)	✓	✓	✓	✓	✓	✓
12/24 VDC, 24 VAC	–	–	–	✓	–	–
Alarms						
VMD (Video Motion Detection)	✓	✓	✓	✓	✓	✓
Alarm Snapshot Image	✓	✓	✓	✓	✓	✓
Tamper Alarm	✓	✓	✓	✓	✓	✓
Supported Operating Temperature Ranges						
Standard Models	-25 to 55°C (-13 to 131°F)					
Wide Temp. Models	-40 to 70°C (-40 to 158°F)					–
Regulatory Approvals						
CE/FCC	✓	✓	✓	✓	✓	✓
UL 60950-1	✓	✓	✓	✓	✓	✓
EN 50155:2007	✓	✓	✓	✓	✓	✓
EN 50121-3-2	✓	✓	✓	✓	✓	✓
EN 50121-4	–	–	–	–	–	–
NEMA TS2	–	–	–	–	–	–
Class 1 Division 2 / Atex Zone 2	–	–	–	–	–	–
EN 62262	IK10	IK8	IK10	IK8	IK9	–
ONVIF	✓	✓	✓	✓	✓	✓
Profile S	✓	✓	✓	✓	✓	✓
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Industrial Video Encoders/Recorders

Industrial Video Encoders		
	VPort 461A	**VPort 364A**
Form Factor		
Protection Rating	IP30	IP30
DIN-Rail Mounting	✓	✓
Panel Mounting	w/ optional kit	w/ optional kit
Audio/Video Channels		
Video Inputs	1	4
Video Outputs	0	0
Audio Inputs	1	1
Audio Outputs	1	1
Video Stream		
H.264	✓	✓
MJPEG	✓	✓
MPEG4	–	–
No. of Streams	3	2
DynaStream	✓	✓
Video Performance		
Resolution (max.)	NTSC: 720 x 480 PAL: 720 x 576	NTSC: 720 x 480 PAL: 720 x 576
FPS (max.)	NTSC: 30 PAL: 25	NTSC: 30 PAL: 25
Quad View	30 FPS (max.)	30 FPS (max.)
Connections (Max.)	10 unitcast 50 mulitcast RTSP	8 unitcast 50 mulitcast RTSP
Multicast Push	✓	✓
Network Connections		
10/100BaseTX Ports	1	1
100BaseFX Ports (optional)	1	1
Peripherals		
PTZ Ports	1	1
COM Ports	1	–
RS-232 Console Ports	1	1
SDHC Slot	1, SDXC	–
Network Management and Control		
Web Browser	✓	✓
SNMP Protocols	v1/v2c/v3	v1/v2c/v3
RTSP (Real Time Streaming Protocol)	✓	✓
Modbus/TCP	✓	✓
Multicast (IGMP)	v3	v3
QoS	✓	✓
UPnP	✓	✓
DDNS	✓	✓
IP Filtering	✓	✓
Power Requirements		
Power Redundancy	✓	✓
Power Inputs	2	2
Alarms		
VMD (Video Motion Detection)	✓	✓
Digital Inputs	2	4
Relay (Digital) Outputs	2	2
Alarm Video Recording	✓	–
Alarm Snapshot Image	✓	✓
Supported Operating Temperature Ranges		
0 to 60°C (32 to 140°F)	–	✓
-25 to 60°C (-13 to 140°F)	✓	–
-40 to 75°C (-40 to 167°F)	✓	✓
Standards and Certifications		
CE/FCC	✓	✓
UL 60950-1	✓	✓
NEMA TS2	✓	–
ONVIF	✓	✓
Profile S	✓	–
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Industrial Video Recorders	
	MxNVR-RO-T
Form Factor	
Type of Product	Onboard NVR
Dimensions	287 x 290 x 101 mm
Panel Mounting	✓
Video Recording	
Video Inputs	IP Video via Ethernet
Capability	Recording: 900 FPS @ 1080P Live view: 120 FPS @ 1080P
Video Stream	H.264, MJPEG, MPEG4
Video File Format	MP4
Record Modes	Manual, Schedule, Event
Pre-Alarm Record	1 to 600 sec
Post-Alarm Record	1 to 600 sec
Search	
Search Mode	Camera, date/time, event
Playback	
Remote Playback	Through Configuration Tool
File Download	Through Configuration Tool
Popular Media Players	✓
Network Connections	
10/100/1000 Mbps M12 connector	1 (up to 1000 Mbps, M12 X-coded)
Storage	
SATA Interfaces	2
Peripherals	
Audio Ports	Line-in, line-out (M12)
COM Ports	2
USB Ports	2
Digital Inputs	6
Digital Outputs	2
Power Requirements	–
Power Inputs	1
Supported Operating Temperature Ranges	
Wide Temp. Model	-40 to 70°C (-40 to 167°C)
Regulatory Approvals	
CE/FCC	✓
UL 60950-1	✓
EN 50155:2007	✓
EN 50121-3-2	✓
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Introduction to Rugged IP Video Surveillance

Committed to the Reliability and Quality of Moxa's IP Cameras

Moxa has been a player in the industrial automation field for over 25 years, and one of the most important lessons we've learned during this time is how critical it is to provide reliable, high quality products to ensure safety. Our commitment to reliability and quality is built into our IP cameras, since we take strict measures at each phase of product development, from selecting materials to conducting a complete product inspection. Our IP cameras are designed to work reliably in harsh, industrial environments, where security and safety are top priorities. When accidents occur, operators need to react as quickly as possible to maximize safety and minimize damage.

At Moxa, we only make the highest quality, industrial-grade IP cameras that meet our customers' critical requirements for operating in harsh environments.

⋮ Creating a Consistent Rugged Design

Moxa's entire IP camera line is produced with the same consistent rugged design and quality:

- We select only the highest quality, industrial-grade materials and components for our IP cameras
- Our expertise in thermal design ensures reliable operation in extreme temperatures, -40 to 75°C
- Our rugged cameras are water and dust-proof, vandal-resistant, and protect against shock and vibration

⋮ Designed for Optimal Image Quality

Regardless of the environment, Moxa's IP cameras produce the same high quality images with crystal clear details. Our cameras undergo several consecutive hours of testing in outdoor, onboard, and day-and-night conditions to simulate real-world environments:

- EN 50132-7 compliant image quality
- DNR, WDR, and BLC for image optimization
- Auto-iris lens and IR for day and night visibility

Day & Night Image Quality

⋮ Strict Industrial-Strength Testing

Moxa's IP cameras undergo strict industrial-strength testing to guarantee a rugged design and top quality:

- Key component cyclic burn-in test includes 20+ days of testing for the lens and 200+ hours of testing for the IP camera motor in a chamber at -45 to 85°C.
- 40+ hours of cyclic wide-temperature testing and burn-in
- Shock and vibration tests simulating rolling stock conditions that comply with IEC 61373*.
- Our cameras are IP66-rated and IK8/10-compliant (EN62262).

*Cyclic burn-in duration/temperature/shock/vibration/IK-rating varies, depending on the IP camera's specs and warranty. See product specs for details.

IP66 water-proof test   IK10 vandal resistant test

⋮ 100% Product and Quality Inspection

All Moxa IP cameras undergo strict inspections to ensure product quality:

- All camera functions are tested, including the light sensor, light and dark spots, and color calibration.
- Our cameras undergo chambered burn-in for 6 to 40 hours, at temperatures ranging from 60 to 75°C.
- After burn-in, all IP camera functionality is re-tested to ensure that the cameras are IP66 dust and water-proof.
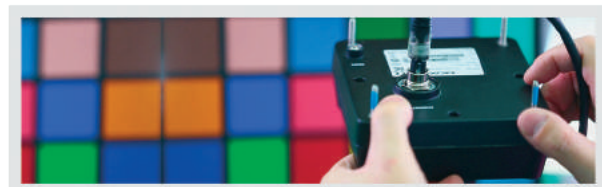
Color Calibration Test

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ONVIF Standard Supported

ONVIF is an open industry forum for the development of a global standard for the interface of IP-based physical security products. The ONVIF specification ensures interoperability between products, regardless of manufacturer. Moxa is an ONVIF user member, and

most VPort IP video products support ONVIF specifications for simpler and faster integration with ONVIF-compatible third-party software.

User-Friendly VPort SDK PLUS for Third Party Software Developers

VPort SDK PLUS is a user-friendly SDK (software development kit) that adds VPort video streams to any type of third-party software, such as NVR, VMS, and SCADA. For wide compatibility, the SDK supports three major technologies:

• **CGI commands:** These URL commands are used in HTML and web systems, which are very popular platforms for video surveillance software.

• **ActiveX Control SDK:** ActiveX Control is an OCX component that is used widely in platforms that support WIN32, IE Plug-in, and Visual Basic, and is also popular in automation system software, such as SCADA systems. Moxa ActiveX Control SDK PLUS is a user-friendly, customized tool for programmers that supports versatile parameters for customized viewing, recording, PTZ camera control, event triggering, and recorded video playback.

• **API SDK:** The API SDK, which includes a detailed C library, can be used to program customized solutions in a Visual C++ or C# environment. The API SDK includes a total of 4 DLL modules, and currently supports the WIN32, Linux, and WIN CE pocket 2003 platforms.
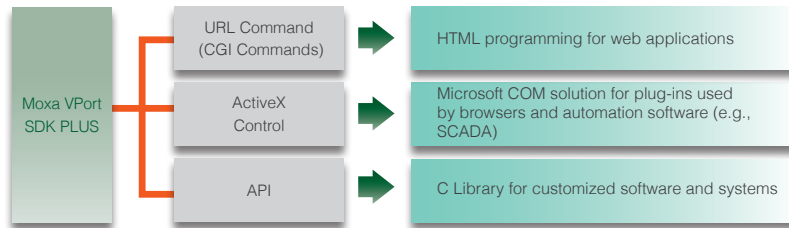
DynaStream™ for System and Network Efficiency

With hundreds of cameras in an integrated system with IP surveillance and other systems (such as SCADA), it is important to control the size of a video stream so that it does not flood over to the common shared network and consume too many system resources, which could disrupt critical system operation or data transmission. Moxa has developed a revolutionary DynaStream™ function, which can control the video frame rate, and has introduced it into all VPort series products automatically. Once an event is detected, such as a DI alarm, network traffic jam, etc., the system can automatically reduce all VPort video frame rates so that they will consume fewer resources and less bandwidth, or increase all VPort video frame rates to increase video performance. This is done with CGI commands, SNMP, or Modbus/TCP. This new tool is extremely flexible. Not only can it change system

resources and network bandwidth so that critical data systems can maintain Quality of Service (QoS), but it can also guarantee that system performance will not be impacted by video streams.
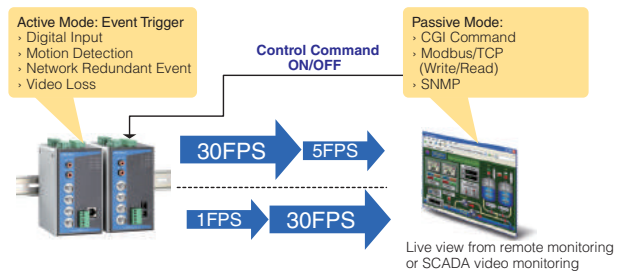
CBR Pro™ for Excellent Image Quality with Limited Bandwidth

CBR Pro™ is an advanced bit rate flow control technology that limits the transmission bit rate based on a user's network bandwidth. This function is designed to secure the video stream transmission to provide better image quality by eliminating the dropped packets

that occur when the peak bit rate exceeds the bit rate allowed by the network bandwidth.

• Eliminate image packet loss
• Increase network efficiency
• Available with all Moxa IP cameras
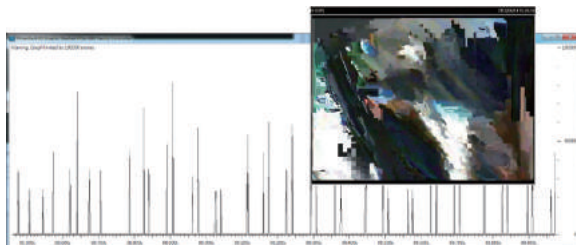
CBR only

CBR Pro™

VPort 66-2MP Series

1080P PTZ dome IP camera for outdoors

> -40 to 65°C operating temperature
> Maximum 1920x1080 resolution at 60 FPS (single stream)
> Supports 360° endless PAN and -6° to +96° TILT
> 22X/30X optical zoom, and 20X digital zoom
> DNR, BLC, and image stabilizer for superb image quality
> Built-in 4.3 to 94.6 mm (22X) or 4.3 to 129 mm (30X) focal length lens with ICR (IR-cut filter removable)
> Triple video streams with H.264 and MJPEG
> IP66 rain and dust protection and NEMA Type 4X form factor
> NEMA TS2 compliance and NTCIP 1205 support for ITS system
> Calibrate PTZ movement manually or by schedule
> Smart PTZ tracking (Pending)

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IP Surveillance > VPort 66-2MP Series

DynaStream   ONVIF

NEMA TS2   EN 50121   FC   CE   c(UL)us LISTED

Introduction

The VPort 66-2MP is an IK10, IP66-rated, PTZ speed dome IP camera for use in harsh, outdoor environments. With a 360° endless PAN, -6 to 96° TILT, 22X/30X optical zoom, 20X digital zoom, H.264/MJPEG triple video streams, and day-and-night camera lens, the VPort 66-2MP is especially well-suited for outdoor video surveillance

applications. In addition, the VPort 66-2MP supports NTCIP 1205, which is an ITS (intelligent transportation system) communication protocol standard. NTCIP support allows the user to control PTZ operation directly via the NTCIP-compliant control panel.

Specifications

Camera
Sensor: 1/2.8" HD progressive scan CMOS
Lens:
22X: f=4.3 mm (wide) to 94.6 mm (tele), F1.6 to F4.5
• Horizontal angle of view: 65.1° to 3.1°
• Vertical angle of view: 38.4° to 1.8°
30X: f=4.3 mm (wide) to 129.0 mm (tele), F1.6 to F4.7
• Horizontal angle of view: 65.1° to 2.3°
• Vertical angle of view: 38.4° to 1.4°
Minimum Illumination:
• Color: 0.4 lux, at F1.6 (Gain High, 50 IRE, 1/30 sec)
• B/W: 0.03 lux, at F1.6 (Gain High, 50 IRE, 1/30 sec)
Minimum Working Distance: 10 cm (wide), 120 cm (tele)
Day & Night: Auto/Color/BW; ICR control
Synchronization: Internal
White Balance: ATW/AWB
Electronic Shutter: Auto, Fixed (1/100 to 1/16000 sec)
S/N Ratio: Over 50 dB (AGC OFF; DNR on)
ICR Control: Auto
DNR: Built-in 2D/3D DNR (digital noise reduction)
Auto Focus: Continuous, one-shot
AGC (auto gain control): Off, Level 1 to 7
BLC (back light compensation): Off, Level 1 to 15
Sense Up: On/Off, maximum 128X
IRIS: Auto/Manual IRIS control, Electronic IRIS
Electronic Image Stabilizer: Low, Medium, High
WDR: 50 db

Flickerless Control: On/Off
Image Rotation: Flip, Mirror, and 180° rotation
Image Setting: Manual tuning with sharpness
Video
Video Compression: H.264 (ISO/IEC 14496-10) or MJPEG
Video Output: via Ethernet
Video Streams: 3 independent H.264 or MJPEG video streams
Video Resolution and FPS (frames per second):

	NTSC		PAL	
	Size	Max. FPS	Size	Max. FPS
QVGA	320 x 240	30	320 x 240	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
SXGA	1280 x 1024	30	1280 x 1024	25
Full HD	1920 x 1080	30	1920 x 1080	25

Note: Single video stream supports up to 60 FPS.

Video Viewing:
• DynaStream™ support for changing the video frame rate automatically
• Adjustable image size and quality
• Timestamp and text overlay
• Maximum of 5 simultaneous unicast connections, 50 multicast clients
• CBR Pro™ support for accurate streaming bit rate control

Audio
Audio Inputs: 1, line-in, with 2-pin terminal block connector
Audio Outputs: 1, line-out, with 2-pin terminal block connector
Audio Format: Mono, PCM (G.711); AAC

Network
Protocols: IPv4/v6,TCP, NTCIP 1205, UDP, HTTP, SMTP, FTP, Telnet, NTP, DNS, DHCP, TFTP, UPnP, RTP, RTSP, ICMP, IGMPv3, ARP, QoS, SNMPv1/v2c/v3, DDNS, Modbus/TCP, 802.1X, SSH/HTTPS, OPT66/67
Ethernet: 1 10/100BaseT(X) Ethernet port, RJ45 connector

Local Storage
SD Socket: Standard SD socket (SDHC)

GPIO
Digital Inputs: 1, max. 8 mA
• High: +13 to +30 V
• Low: -30 to +3 V
Relay Output: 1, max. 24 VDC @ 1 A

Power Requirements
Input Voltage: 24 VDC, 24 VAC
Input Current: 2.925 A @ 24 VDC; 4.94 A @ 24 VAC
Power Consumption:
• 27 watts when heater and fan are off
• 31 watts when fan is on and heater is off
• 71 watts when fan and heater are on

Physical Characteristics
Housing:
• IP66-rated rain and dust protection connector
• EN 62262 IK10 vandal-resistant support
• NEMA Type 4X
• Metal housing, PC dome cover
Weight: 5.15 kg (11.33 lb)
Installation: Outdoor mounting with optional accessories

Alarms
Video Motion Detection: Includes sensitivity tuning
Scheduling: Daily repeat timing schedule
Imaging: JPEG snapshots for pre/trigger/post alarm images
Custom Alarms: HTTP event servers and CGI events for setting customized alarm actions
Email/FTP Messaging: Automatic transfer of stored images via email or FTP with event-triggered actions
Pre-alarm Buffer: 35 MB for JPEG snapshot images

PAN/TILT/ZOOM
Pan Range: 360° endless, manual control speed from 0.15°/s to 120°/s
Tilt Range: -6° to + 96°, manual control speed from 0.15°/s to 120°/s
TILT Capability: 6° above the horizon
Optical Zoom: 22X, 30X
Digital Zoom: 20X
Preset Positions: 128 presets
• Preset moving speed: from 1°/s to 255°/s
• Alarm trigger moving speed: 360°/s
Functionality: Supports guard tours

Security
Password: User level password protection
Filtering: By IP address
Authentication: 802.1X
Encryption: HTTPS, SSH

Environmental Limits
Operating Temperature: -40 to 65°C (-40 to 149°F)
Storage Temperature: -40 to 85°C (-40 to 185°F)
Ambient Relative Humidity: 5 to 95% (non-condensing)
Vibration:
IEC 60068-2-6, 2 to 13.2 Hz: 2 mm (peak-peak); 13.2 to 100 Hz: 0.7g; 1.50 hrs/axis
IEC 60068-2-6, 3 to 9 Hz: 7 mm (peak-peak); 9 to 150 Hz: 1.0g; 1.86 hrs/axis
Shock: IEC 60068-2-27*, 20g/11ms
Altitude: 2000 m
Ingress Protection: IEC 60529, IP66
Salt Spray Test: ASTM-B117
This unit can pass the test criteria without being damaged, but if the camera is repositioned, PAN/TILT calibration needs to be redone.

Standards and Certifications
Safety: UL 60950-1
Rail Traffic: EN 50121-4
EMC: EN 55022/24
EMI: CISPR 22, FCC Part 15B 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: 4 kV; Signal: 4 kV
IEC 61000-4-6 CS: Signal: 2 kV
IEC 61000-4-8
Transportation: NEMA TS2 compliant

MTBF (mean time between failures)
Time: 525,491 hrs
Standard: Telcordia SR332

Warranty
Warranty Period: 3 years (limited warranty on moving parts; see Moxa's online warranty policy for details)
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
Browser: Internet Explorer 6.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 (latest version available on Moxa website).
Standard: ONVIF, Profile S

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IP Surveillance > VPort 66-2MP Series

Dimensions

Unit: mm (inch)

∅ 54.2 (2.13)

307.4 (12.1)
343.8 (13.53)

220 (8.66)
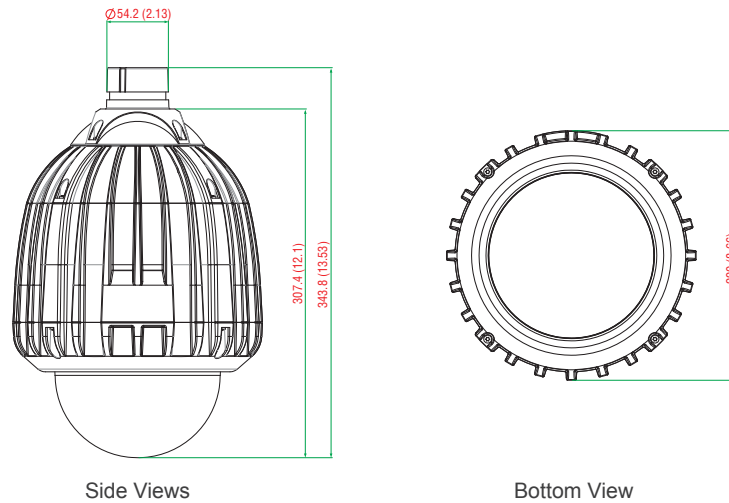
Side Views   Bottom View

: Ordering Information

Available Models

VPort 66-2MP-CAM22X: 1080P PTZ dome IP camera, 22X optical zoom, RJ45 Ethernet port, 24 VAC/ VDC, -40 to 65°C

VPort 66-2MP-CAM30X: 1080P PTZ dome IP camera, 30X optical zoom, RJ45 Ethernet port, 24 VAC/ VDC, -40 to 65°C

Optional Accessories (can be purchased separately)

VP-520LB: Wall-mounting kit, 204(W) x 284(H) x 255(D) mm

VP-520HB: Pendant-mounting kit, 284(L) x 204(W) x 149.5(H) mm

VP-510CPM: Pole-mounting kit for the VP-520LB, 275(W) x 91(H) x 182(D) mm

VP-SH1: Sunshield for the VPort 66-2MP, 236(Ø) x 180(H) mm

SoftNVR-IA: 64-channel IP surveillance software for industrial automation applications

DR-75-24/120-24: 75/120 W DIN rail 24 VDC power supplies

MDR-60-24: 60 W DIN rail 24 VDC power supplies, -20 to 70°C operating temperature

Package Checklist

- VPort 66-2MP series IP camera
- 3.5 mm jack to 2-pin terminal block connector
- L-type Torx screwdriver
- Dry pack and hook fastner
- Quick installation guide (printed)
- Documentation and software CD
- Warranty card

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IP Surveillance > VPort 66-2MP Series

▶ *Award-winning Product*

CONTROL ENGINEERING
2014
ENGINEERS' CHOICE AWARDS
WINNER

VPort 56-2MP Series

1080P, rugged, day-and-night zoom IP cameras

> -40 to 75°C operating temperature (fan not required)
> Maximum 1920x1080 resolution at 30 FPS
> 10x optical zoom and 16x digital zoom
> 3D DNR, BLC, and image stabilizer for superb image quality
> Triple video streams with H.264 and MJPEG
> Optional model with built-in single mode fiber
> Two-way and full duplex audio input/output
> DynaStream™ and CBR Pro™ support for network efficiency
> SD card interface for disconnection and event recording

DynaStream   ONVIF

c(UL)us LISTED   NEMA TS2   EN 50121   CE   FC

: Introduction

The VPort 56-2MP series includes the world's first rugged IP zoom cameras that can survive in extreme temperatures ranging from -40 to 75°C (T models), without a built-in or external fan. Models with a 0 to 60°C operating temperature range are also available. The VPort 56-2MP cameras are industrial-grade 1080P resolution (1920 x 1080) H.264 IP box cameras designed for mission critical environments.

With advanced optical technology featuring 10x optical and 16x digital zoom, the cameras greatly improve the efficiency of your surveillance work and ensure the best video quality. With optional housing and PT scanner accessories available, the VPort 56-2MP series is suitable for virtually any kind of indoor or outdoor installation.

: Specifications

Camera
Sensor: 1/2.5" HD progressive scan CMOS
Lens: 10X: f=6.3 mm (wide) to 63 mm (tele), F1.8 to F2.5
• Horizontal angle of view: 50.6° to 5.5°
• Vertical angle of view: 39.3° to 3.1°
• Diagonal angle of view: 57° to 26.2°
Illumination:
• Color: 2.0 lx (1/30 sec, 50 IRE, F1.8, Gain: High)
• B/W: 0.1 lx (1/30 sec, 50 IRE, F1.8, Gain: High)
Day & Night: Color/BW; ICR Control
Synchronization: Internal
White Balance: ATW/AWB
Electronic Shutter: Auto, Fixed (1/50 to 1/10000 sec)
S/N Ratio: More than 50 dB (AGC off)
ICR Control: Auto (light sensor control) or DI control
DNR: Built-in 3D DNR (digital noise reduction)
Auto Focus: Continuous
AGC (auto gain control): Off, Levels 1 to 7
BLC (back light compensation): Off, Levels 1 to 15
Sense Up: on/off, maximum 64X
IRIS: Auto/Manual IRIS control, Electronic IRIS
Electronic Image Stabilizer: Low, Medium, High
Flickerless Control: On/Off
Image Rotation: Flip, Mirror, and 180° rotation
Image Setting: Manually tune sharpness

Video
Video Compression: H.264 (ISO/IEC 14496-10) or MJPEG
Video Output: via Ethernet
Video Streams: 3 independent H.264 or MJPEG video streams

Video Resolution and FPS (frames per second):

	NTSC		PAL	
	Size	Max. FPS	Size	Max. FPS
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
Full HD	1920 x 1080	30	1920 x 1080	25

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

Video Viewing:
• DynaStream™ support for changing the video frame rate automatically
• CBR Pro™ support for accurate streaming bit rate control
• 8 privacy mask areas provided
• Adjustable image size and quality
• Timestamp and text overlay
• Maximum of 5 simultaneous unicast connections, 50 multicast clients
• ROI (Region of Interest) configuration for up to 3 areas

Audio
Audio Inputs: 1 Line-in with 3.5 mm phone jack
Audio Outputs: 1 Line-out with 3.5 mm phone jack
Audio Format: Mono, PCM (G.711)

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/HTTPS
Ethernet: 1 10/100BaseT(X) Ethernet port, RJ45 connector, or 1 100BaseFX, single mode

Serial Port
PTZ Ports: 1, RS-485, terminal block connector

Local Storage
SD Socket: Standard SD socket (SDHC, SDXC)
GPIO
Digital Inputs: 1, max. 8 mA
• High: +13 to +30 V
• Low: -30 to +3 V
Relay Output: 1, max. 24 VDC @ 1 A
LED Indicators
STAT: Indicates if the system is booted properly or not
Network: 10 Mbps or 100 Mbps
Power: Power on/off
Power Requirements
Input Voltage: 24V DC (12 to 24 VDC) / 24 VAC, and PoE+ (802.3at) redundant power design
Input Current: 12 to 24 VDC, 2.548 to 0.975 A, or 24 VAC, 21.97 W, or 48 VDC (PoE), 0.494 A
Power Consumption: 23 W (max.)
Physical Characteristics
Housing: Metal, IP30 protection
Dimensions: 90 x 60.92 x 216.1 mm (3.54 x 2.72 x 8.51 in)
Weight: 1.415 kg (3.2 lb)
Installation: Wall mounting, ceiling mounting, pole mounting, corner mounting
Note: Optional external housing and mounting accessories may be required.
Alarms
Intelligent Video: Camera tamper
Video Motion Detection: 3 independently configurable areas; includes sensitivity tuning
Scheduling: Daily repeat timing schedule
Imaging: JPEG snapshots for pre/trigger/post alarm images
Custom Alarms: HTTP event and CGI events for setting customized alarm actions
Email/FTP Messaging: Automatic transfer of stored images via email or FTP as event-triggered actions
Pre-alarm Buffer: 84 MB video buffer for JPEG snapshot images
PAN/TILT/ZOOM
Optical Zoom: 10X
Digital Zoom: 16X

Environmental Limits
Operating Temperature:
Standard Models: -25 to 60°C (-13 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)
Vibration:
IEC 60068-2-6, 2 to 13.2 Hz: 2 mm (peak-peak); 13.2 to 100 Hz: 0.7g; 1.50 hrs/axis
IEC 60068-2-6, 3 to 9 Hz: 7 mm (peak-peak); 9 to 150 Hz: 1.0g; 1.86 hrs/axis
Shock: IEC 60068-2-27, 20g/11ms
Altitude: 2000 m
Standards and Certifications
Safety: UL60950-1, EN 50121-4, NEMA TS2
Rail Traffic: EN 50121-4
EMC: EN 55022/24
EMI: CISPR 22, FCC Part 15B Class A
EMS:
IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV
IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m
IEC 61000-4-4 EFT: Power: 2 kV; Signal; 1 kV
IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV
IEC 61000-4-6 CS: 10 V
IEC 61000-4-8
MTBF (mean time between failures)
Time: 169,886 hours
Standard: Telcordia (Bellcore), GB 25°C
Warranty
Warranty Period: 3 years (limited warranty on moving parts; see Moxa's online warranty policy for details)
Details: See www.moxa.com/warranty
Software Development
VPort SDK PLUS: Includes CGI commands, ActiveX Control, and API library for customized applications or system integration for third-party developers (latest version available on Moxa website).
Standard: ONVIF Profile S

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IP Surveillance > VPort 56-2MP Series

Dimensions

Unit: mm (inch)

60.92 (2.72) · 90 (3.54) · 216.1 (8.51) · 1/4"-20UNC

Front View   Side Views   Rear View
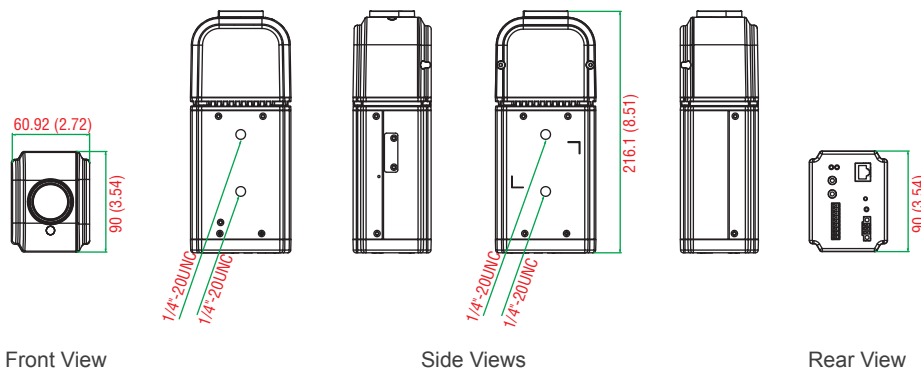
: **Ordering Information**

Available Models
VPort 56-2MP-CAM10X: Full HD zoom IP camera, RJ45 Ethernet port, 12/24 VDC or 24 VAC or PoE+, -25 to 60°C operating temperature
VPort 56-2MP-CAM10X-T: Full HD zoom IP camera, RJ45 Ethernet port, 12/24 VDC or 24 VAC or PoE+, -40 to 75°C operating temperature
VPort 56-2MP-CAM10X -S-SC: Full HD zoom IP camera, Single-mode fiber Ethernet port, 12/24 VDC or 24 VAC, -25 to 60°C operating temperature
VPort 56-2MP-CAM10X-S-SC-T: Full HD zoom IP camera, Single-mode fiber Ethernet port, 12/24 VDC or 24 VAC, -40 to 75°C operating temperature
Optional Accessories (can be purchased separately)
VP-CI701: IP68-rated outdoor housing, 406(L) x 109(H) x 145 (W) mm
VP-CI800: Wall-mounting bracket for outdoor housing, 213 (L) x 146 (H) x 80(W) mm
VP-CI815: Pole-mounting bracket for Ø70 to Ø230 mm pole
VP-CI820: Pole-mounting bracket for Ø360 mm pole
SoftNVR-IA: 64-channel IP surveillance software for industrial automation applications
DR-4524/75-24/120-24: 45/75/120 W DIN-rail 24 VDC power supplies
MDR-40-24/60-24: 40/60 W DIN rail 24 VDC power supplies, -20 to 70°C operating temperature

Package Checklist
• VPort 56-2MP series IP camera
• 9-pin terminal block for RS-485, DI/Relays
• 3-pin terminal block for power input
• Quick installation guide (printed)
• Documentation and software CD
• Warranty card

VPort 36-2L Series Preliminary

1080P, day-and-night, rugged box IP cameras

> Industrial design with -40 to 75°C operating temperature (heater or cooling fan not required)
> Maximum 1920 x 1080 resolution at 30 FPS
> Built-in P-IRIS zoom lens with 3x (3 to 9 mm) and 2x (10 to 23 mm) optical zoom
> Zoom and focus can be controlled remotely over an IP network
> Four video streams with H.264 and MJPEG
> SD card interface for disconnection and event recording
> 12/24 VDC, 24 VAC, or PoE redundant power inputs
> EN 50121-4, NEMA TS2 compliance

DynaStream   ONVIF

c(UL)us LISTED   NEMA TS2   EN 50121   CE   FC

Introduction

The VPort 36-2L rugged 1080P (1920 x 1080) box IP cameras are specially designed for mission-critical and extreme weather environments. The cameras have two kinds of built-in P-iris zoom lenses, 3 to 9 mm and 10 to 23 mm. They support remote zoom and focus control via an IP network, providing convenience and simplicity for camera operation, and feature a wide -40 to 75°C operating temperature range (-T models) and industrial-grade EMC (EMI/ Surge

Level 3) protection. The VPort 36-2L cameras are suitable for the kind of industrial and outdoor environments found with oil & gas, rail, and ITS applications. In addition, the VPort 36-2L supports a light sensor and ICR (IR-cut filter removable) for day & night viewing, advanced WDR (wide dynamic range), and DNR (digital noise reduction), allowing the VPort 36-2L to produce good quality images even in extreme sunlight conditions.

Specifications

Camera
Sensor: 1/3" progressive scan CMOS
Lens:
3X: f=3(wide) to 9 (tele) mm, F1.6 to F2.6
• Horizontal angle of view: 38.1° to 121.2°
• Vertical angle of view: 21.3° to 62.1°
• Diagonal angle of view: 43.8° to 148.4°
2X: f=10 (wide) to 23 (tele) mm, F1.2 to F2.3
• Horizontal angle of view: 14.8° to 33.7°
• Vertical angle of view: 8.3° to 18.3°
• Diagonal angle of view: 17.1° to 39.1°
Illumination (low light sensitvity):
Color: 0.2 Lux @ F1.2
B/W: 0.05 Lux @ F1.2
Day & Night: Auto/Color/BW; ICR Control
Synchronization: Internal
White Balance: ATW/AWB
Electronic Shutter: Auto, Fixed (1/30 to 1/25000 sec)
S/N Ratio: 50 dB (AGC, OFF; DNR ON)
ICR Control: Auto (light sensor control) or DI control
DNR: Built-in DNR (digital noise reduction)
AGC (auto gain control): 2X, 4X, 8X, 16X
IRIS: Auto, P-IRIS
WDR: On/Off, up to 100 dB
Flickerless Control: Automatic, 50 Hz,60 Hz modes
Auto Exposure: Level ±5
Image Rotation: Flip, Mirror, 90°, 270° and 180° rotation
Image Setting: Manual tuning with saturation, sharpness, and contrast
Video
Video Compression: H.264 (ISO/IEC 14496-10) or MJPEG
Video Outputs: Via Ethernet
Video Streams: 4, H.264, or MJPEG independent video streams

Video Resolution and FPS (frames per second):

	NTSC		PAL	
	Size	Max. FPS	Size	Max. FPS
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
SXGA	1280 x 1024	30	1280 x 1024	25
Full HD	1920 x 1080	30	1920 x 1080	25

Video Viewing:
• DynaStream™ support for changing the video frame rate automatically
• CBR Pro™ support for accurate streaming bit rate control
• 3 privacy mask areas provided
• Adjustable image size and quality
• Timestamp and text overlay
• Maximum of 5 simultaneous unicast connections, 50 multicast clients
Audio
Audio Inputs: 1, 3.5 mm phone jack
Audio Outputs: 1, 3.5 mm phone jack
Audio Format: Mono, PCM (G.711); AAC
Network
Protocols: IPv4/v6,TCP, UDP, HTTP, SMTP, FTP, NTP, DNS, DHCP, TFTP, UPnP, RTP, RTSP, ICMP, IGMPv3, ARP, QoS, SNMPv1/v2c/v3, DDNS, Modbus/TCP, 802.1X, SSH/HTTPS, OPT66/67
Ethernet: 1 10/100BaseT(X) Ethernet port, RJ45 connector
Serial Port
PTZ Ports: 1, RS-485, terminal block connector
PTZ Driver: Pelco D, Pelco P, custom camera

Local Storage
SD Socket: Standard SD socket (SDXC, SDHC)
GPIO
Digital Inputs: 1, max. 8 mA,
• High: +13 V to +30 V
• Low: -30 V to +3 V
Relay Output: 1, max. 24 VDC @ 1 A
LED Indicators
STAT: Indicates if the system is booted properly or not
Network: 10 Mbps or 100 Mbps
Power: Power on/off
Power Requirements
Input Voltage: 12/24 VDC, 24 VAC or Power-over-Ethernet redundant power design
Physical Characteristics
Housing: Metal, IP30 protection
Dimensions: 203 x 91 x 70 mm (8 x 3.6 x 2.8 in)
Installation: Wall mounting, pole mounting, corner mounting
Note: Optional external housing and mounting accessories may be required.
Alarms
Intelligent Video: Camera tamper
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/always recordings stored on the SD card
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: 24 MB video buffer for JPEG snapshot images
Security
Password: User level password protection
Filtering: By IP address
Authentication: 802.1X
Encryption: HTTPS, SSH
Environmental Limits
Operating Temperature:
Standard model: -25 to 60°C (-13 to 140°F)
Wide Temp. model: -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)
Vibration:
IEC 60068-2-6, 2 to 13.2 Hz: 2 mm (peak-peak); 13.2 to 100 Hz: 0.7g; 1.50 hrs/axis
IEC 60068-2-6, 3 to 9 Hz: 7 mm (peak-peak); 9 to 150 Hz: 1.0g; 1.86 hrs/axis
Shock: IEC 60068-2-27, 20g/11ms
Altitude: 2000 m
Standards and Certifications
Safety: UL 60950-1
Rail Traffic: EN 50121-4
EMC: EN 55022/24
EMI: CISPR 22, FCC Part 15B 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: Signal: 2 kV
IEC 61000-4-8
Traffic Control: NEMA TS2
Warranty
Warranty Period: 5 years (limited warranty on moving parts; see Moxa's online warranty policy for details)
Details: See 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

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IP Surveillance > VPort 36-2L Series

Dimensions

Unit: mm (inch)

90.00 (3.5)
0.90 (0.0)
70.00 (2.8)
199.75 (7.9)
51.00 (2.0)

⠿ Ordering Information

Model	Lens		Ethernet		Temperature	
	3 to 9 mm	10 to 23 mm	RJ45	Single-Mode Fiber	-25 to 60°C	-40 to 75°C
VPort 36-2L3X	✓	–	✓	–	✓	–
VPort 36-2L2X	–	✓	✓	–	✓	–
VPort 36-2L3X-T	✓	–	✓	–	–	✓
VPort 36-2L2X-T	–	✓	✓	–	–	✓

Optional Accessories (can be purchased separately)
VP-CI701: IP68 outdoor housing, 406(L) x 109(H) x 145(W) mm
VP-CI800: Wall-mounting bracket for an outdoor housing, 213(L) x 146(H) x 80(W) mm
VP-CI815: Pole-mounting bracket for a Ø70 to Ø230 mm pole
VP-CI820: Pole-mounting bracket for a Ø360 mm pole
SoftNVR-IA: 64-channel IP surveillance software for industrial automation applications
DR-4524/75-24/120-24: 45/75/120 W DIN-rail 24 VDC power supplies
MDR-40-24/60-24: 40/60 W DIN-rail 24 VDC power supplies, -20 to 70°C operating temperature

Package Checklist
• VPort 36-2L series IP camera
• Quick installation guide (printed)
• Documentation and software CD
• Warranty card

VPort 36-1MP Series

HD, rugged, day-and-night box type IP cameras

> Industrial design with -40 to 75°C operating temperature (heater or cooling fan not required)
> 1/2.7" progressive scan CMOS camera with HD resolution (max. 1280 x 720)
> DNR, WDR for superb image quality
> Triple video streams with H.264 and MJPEG
> Compatible with C/CS-mount lenses with built-in ICR support
> EN 50121-4 and NEMA TS2 compliant
> DynaStream™ support for maximum network efficiency
> Local storage capability with SD card slot

Note: Lens must be purchased separately.

DynaStream   ONVIF

Ex   cULus LISTED   NEMA TS2   EN 50121   CE   FC

: Introduction

Rugged Design

The VPort 36-1MP series includes the world's first rugged IP camera that can operate reliably in temperatures ranging from -40 to 75°C, without a heater or cooling fan.

Superb Video Quality

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 either day or night use. Highly-tuned ROI (Regions of Interest), and WDR (Wide Dynamic Range) functions enable the VPort 36-1MP series to produce exceptionally clear images.

Convenient Installation

The VPort 36-1MP series includes unique and competitive cameras with features such as high EMI/surge protection, optional IP68 housing for rain/dust protection, and -40 to 75°C operation without a heater or cooling fan. The cameras are available with PoE (Power over Ethernet, 802.3af) or wire power input supporting 12/24 VDC or 24 VAC.

High Video Performance and Network Security

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 cameras to support up to 30 FPS for each of the H.264 and MJPEG streams.

: Specifications

Camera
Sensor: 1/2.7" HD progressive scan CMOS
Lens: Designed for C/CS-mount lens (lens not included)
Illumination (low light sensitvity):
• Color: 0.2 lux at F1.2
• B/W: 0.05 lux at F1.2
Day & Night: Auto/Color/BW; ICR Control
Synchronization: Internal
White Balance: ATW/AWB
Electronic Shutter: Auto, Fixed (1/30 to 1/25000 sec)
Dynamic Range:
• Color: 100 dB
• B/W: 110 dB
S/N Ratio: 50 dB (AGC OFF; DNR ON)
ICR Control: Auto (light sensor control) or DI control
DNR: Built-in DNR (digital noise reduction)
AGC (auto gain control): 2X, 4X, 8X, 16X, 32X, 64X

IRIS: Auto, DC drive
WDR: Levels 1-8
• color: 100 dB
• B/W: 110 dB
Flickerless Control: Indoor/Outdoor mode
Auto Exposure: Level ±5
Image Rotation: Flip, Mirror, and 180° 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: Ethernet
Video Streams: 3, H.264, or MJPEG independent video streams

Video Resolution and FPS (frames per second):

	NTSC		PAL	
	Size	Max. FPS	Size	Max. FPS
QCIF	176 x 112	30	176 x 144	25
QVGA	320 x 240	30	320 x 240	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

Note: Mulitple streams may not support up to 30 FPS.

Video Viewing:
• DynaStream™ support for changing the video frame rate automatically
• 3 privacy mask areas provided
• Adjustable image size and quality
• Timestamp and text overlay
• Maximum of 5 simultaneous unicast connections, 50 multicast clients
• CBR Pro™ support for accurate streaming bit rate control

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/HTTPS
Ethernet: 1 10/100BaseT(X) Ethernet port, RJ45 connector

Serial Port
PTZ Ports: 1, RS-485, terminal block connector

Local Storage
SD Socket: Standard SD socket (SDHC)

GPIO
Digital Inputs: 1, max. 8 mA
High: +13 to +30 V; Low: -30 to +3 V
Relay Output: 1, max. 24 VDC @ 1 A

LED Indicators
STAT: Indicates if the system is booted properly or not
Network: 10 Mbps or 100 Mbps
Power: Power on/off

Power Requirements
Input Voltage: 24 VDC (12 to 24 VDC) / 24 VAC, and PoE (802.3af) redundant power design
Input Current: 12 to 24 VDC, 0.8 A or 24 VAC, 7.5 W or 48 VDC (PoE), 0.135 A

Physical Characteristics
Housing: Metal, IP30 protection
Dimensions:
81.76 x 69.65 x 147.6 mm (3.22 x 2.74 x 147.6 in)
Weight: 770 g (1.69 lb)
Installation: Wall mounting, pole mounting, corner mounting
Note: Optional external housing and mounting accessories may be required.

Alarms
Intelligent Video:
VPort 36-1MP: Camera tamper
VPort 36-1MP-IVA: Camera tamper, detection line/zone, missing object, abandoned object
Note: IVA functions are optional except for camera tamper.
Video Motion Detection: 3 independently configurable areas; includes sensitivity tuning
Scheduling: Daily repeat timing schedule
Imaging: JPEG snapshots for pre/trigger/post alarm images
Video Recording: Event recordings stored on the SD card

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: 24 MB video buffer for JPEG snapshot images

Security
Password: User level password protection
Filtering: By IP address
Authentication: 802.1X
Encryption: HTTPS, SSH

Environmental Limits
Operating Temperature:
Standard Models: -25 to 60°C (-13 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)
Vibration:
IEC 60068-2-6, 2 to 13.2 Hz: 2 mm (peak-peak); 13.2 to 100 Hz: 0.7g; 1.50 hrs/axis
IEC 60068-2-6, 3 to 9 Hz: 7 mm (peak-peak); 9 to 150 Hz: 1.0g; 1.86 hrs/axis
Shock: IEC 60068-2-27, 20g/11ms
Altitude: 2000 m

Standards and Certifications
Safety: UL 60950-1
Rail Traffic: EN50121-4
Note: Please check Moxa's website for the most up-to-date certification status.
EMC: EN 55022/24
EMI: CISPR 22, FCC Part 15B 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
Hazardous Location: UL/cUL Class I Division 2 Groups A/B/C/D, ATEX Zone 2 Ex nCnAnL IIC T4
Note: The VP-3113MPIR lens is Class I Div. 2 and ATEX Zone 2 certified.
Transportation: NEMA TS2

MTBF (mean time between failures)
Time: 541,826 hours
Standard: Telcordia SR332

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 9.x or above
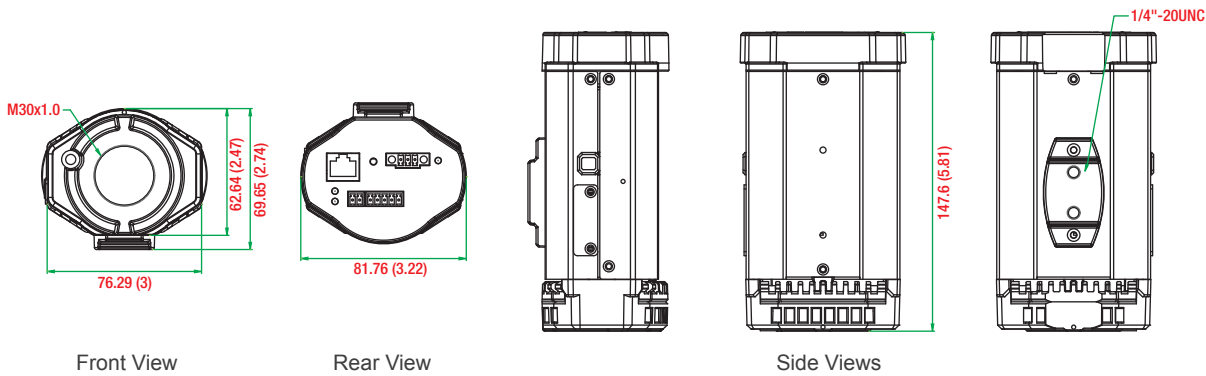**Multimedia:** DirectX 9.0c or above

Software Development
VPort SDK PLUS: Includes CGI commands, ActiveX Control, and API library for customized applications or system integration for third-party developers (latest version available on Moxa website).
Standard: ONVIF Profile S

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IP Surveillance ＞ VPort 36-1MP Series

Dimensions

Unit: mm (inch)

1/4"-20UNC

M30x1.0

62.64 (2.47)
69.65 (2.74)

147.6 (5.81)

76.29 (3)

81.76 (3.22)

Front View   Rear View   Side Views

⋮ Ordering Information

Available Models

VPort 36-1MP: H.264/MJPEG fixed box IP camera, 12/24 VDC or 24 VAC power input or Power-over-Ethernet, -25 to 60°C operating temperature

VPort 36-1MP-T: H.264/MJPEG fixed box IP camera, 12/24 VDC or 24 VAC power input or Power-over-Ethernet, -40 to 75°C operating temperature

VPort 36-1MP-IVA: H.264/MJPEG fixed box IP camera, 12/24 VDC or 24 VAC power input or Power-over-Ethernet, -25 to 60°C operating temperature, 1 IVA license

VPort 36-1MP-IVA-T: H.264/MJPEG fixed box IP camera, 12/24 VDC or 24 VAC power input or Power-over-Ethernet, -40 to 75°C operating temperature, 1 IVA license

Optional Accessories (can be purchased separately)

VP-CI701: IP68-rated outdoor housing, 406(L) x 109(H) x 145 (W) mm

VP-CI800: Wall-mounting bracket for outdoor housing, 213 (L) x 146 (H) x 80(W) mm

VP-CI815: Pole-mounting bracket for Ø70 to Ø230 mm pole

VP-CI820: Pole-mounting bracket for Ø360 mm pole

SoftNVR-IA: 64-channel IP surveillance software for industrial automation applications

DR-4524/75-24/120-24: 45/75/120 W DIN rail 24 VDC power supplies

MDR-40-24/60-24: 40/60 W DIN rail 24 VDC power supplies, -20 to 70°C operating temperature

Package Checklist

- VPort 36-1MP series IP camera
- Inner hexagon screwdriver
- C/CS-mount adapter ring
- 5-pin terminal block
- 3-pin terminal block
- 2-pin terminal block
- Quick installation guide (printed)
- Software and document CD
- Warranty card

3.1-8 mm F1.2 Day & Night Lens

Optional lens for the VPort 36-1MP series.

VP-3112MPIR

Mounting Type: CS mount
Iris: DC Auto Iris
Focus: Manual
Zoom: Manual
Dimensions: Ø37 x 48.2 x 55 mm
Weight: 59 g
Angle of View:

Angle of View	D	1/2.7 type (16:9)	123.1°- 48.3°	1/2.7 type (4:3)	123.1°- 48.3°
	H		105.4°- 42.2°		95.9°- 38.7°
	V		57.9°- 23.8°		71.0°- 29.1°

12.5-50 mm F1.4 Day & Night Lens

Optional lens for the VPort 36-1MP series.

VP-1214MPIR

Mounting Type: CS mount
Iris: DC Auto Iris
Focus: Manual
Zoom: Manual
Dimensions: Ø46 x 59.3 x 58.4 mm
Weight: 74 g
Angle of View:

Angle of View	D	1/2.7 type (16:9)	30.3° - 7.7°	1/2.7 type (4:3)	30.3° - 7.7°
	H		26.3° - 6.7°		24.0° - 6.2°
	V		14.5° - 3.8°		17.8° - 4.7°

3.1-8 mm F1.2 Day & Night Lens

Optional lens for the VPort 36-1MP series.

VP-3113MPIR

Mounting Type: CS mount
Focus: Manual
Zoom: Manual
Dimensions: Ø37 x 48.2 x 55 mm
Weight: 59 g
Hazardous Location: UL/cUL Class I Division 2 Groups A/B/C/D, ATEX Zone 2 Ex nC nA nL IIC T4
Angle of View:

Angle of View	D	1/2.7 type (16:9)	123.1°- 48.3°	1/2.7 type (4:3)	123.1°- 48.3°
	H		105.4°- 42.2°		95.9°- 38.7°
	V		57.9°- 23.8°		71.0°- 29.1°

VPort 26A-1MP Series

HD, IP66, vandal-proof, day and night, fixed dome IP cameras

> -40 to 50°C or -40 to 75°C (T model) operating temperature, without heater or fan

> 1/2.7" progressive scan camera with maximum 1280 x 800 resolution at up to 30 frames/second

> DNR and WDR for superb image quality

> Triple video streams with H.264 and MJPEG

> 3 to 9 mm day-and-night vari-focal lens with a built-in ICR (removable IR-cut filter ICR)

> DynaStream™ support for maximum network efficiency

> CBR Pro™ support for high image quality in limited bandwidth transmissions

> ONVIF support for standardization and interoperability

DynaStream ONVIF

EN 50121 cULus LISTED CE FC

Introduction

The VPort 26A-1MP is an IK10, IP66-rated, fixed dome HD IP camera for harsh, outdoor environments. With a maximum resolution of 1280 x 800, H.264/MJPEG triple video streams, and day-and-night camera lens, the VPort 26A-1MP is especially well-suited for outdoor video surveillance applications.

Specifications

Camera
Sensor: 1/2.7" HD progressive scan CMOS
Lens: 3X (controlled manually), f=3 mm (wide) to 9 mm (tele), F1.2 to F2.3
• Horizontal angle of view: 121.2° to 38.1°
• Vertical angle of view: 62.1° to 21.2°
• Diagonal: 148.4° to 48.8°
Camera Angle (controlled manually):
• Pan: ±175°, Tilt: 0 to 85°
• Rotation: Pan: ±180°
Minimum Illumination:
• Color: 0.2 lux at F1.2
• B/W: 0.05 lux at F1.2
Day & Night: Auto/Color/BW; ICR control
Synchronization: Internal
White Balance: ATW/AWB
Electronic Shutter: Fixed (1/30 to 1/25000 sec)
S/N Ratio: 50 dB (AGC OFF, DNR ON)
ICR Control: Auto (light sensor control) or DI control
DNR: Built-in DNR (digital noise reduction)
AGC (auto gain control): 2X, 4X, 8X, 16X, 32X, 64X
IRIS: Auto, DC drive
WDR: Levels 1-8
• color: 100 dB
• B/W: 110 dB
Auto Exposure: Level ±5
Image Rotation: Flip, Mirror, and 180° 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: 3, H.264, or MJPEG independent video streams

Video Resolution and FPS (frames per second):

	NTSC		PAL	
	Size	Max. FPS	Size	Max. FPS
QCIF	176 x 112	30	176 x 144	25
QVGA	320 x 240	30	320 x 240	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

Multiple streams may not support up to 30 FPS.

Video Viewing:
• DynaStream™ support for changing the video frame rate automatically
• 3 privacy mask areas provided
• Adjustable image size and quality
• Timestamp and text overlay
• Maximum of 5 simultaneous unicast connections, 50 multicast clients
• ROI (Region of Interest) configuration for up to 3 areas

Audio
Audio Inputs: 1 line-in with 2-pin terminal block connector
Audio Outputs: 1 line-out with 2-pin terminal block connector
Audio Format: Mono, PCM (G.711)

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/HTTPS
Ethernet: 1 10/100BaseT(X) Ethernet port, RJ45 connector

Local Storage
SD Socket: Standard SD slot (SDHC)

GPIO
Digital Inputs: 1, max. 8 mA
• High: +13 V to +30 V
• Low: -30 V to +3 V
Relay Outputs: 1, max. 24 VDC @ 1 A

LED Indicators
STAT: Indicates if the system is booted properly or not
Network: 10 Mbps or 100 Mbps
Power: Power on/off
DIP Switch: To turn the LED light on/off

Power Requirements
Input Voltage:
• VPort 26A-1MP: 12 to 24 VDC or 24 VAC
• VPort P26A-1MP: PoE, IEEE 802.3af
Input Current:
• VPort 26A-1MP: 12 to 24 VDC, 500 mA or 24 VAC, 5.5 W
• VPort P26A-1MP: 48 VDC, 180 mA
Power Consumption:
• VPort 26A-1MP: 5.5 W
• VPort P26A-1MP: 5.8 W

Physical Characteristics
Housing: Metal, IP66 rated for rain and dust protection
Vandal Resistance: EN 62262, IK10
Dimensions:
Diameter: 149 mm (5.86 in)
Height: 120 mm (4.72 in)
Weight: 1.39 kg (3.06 lb)
Installation: Surface mounting (standard), outdoor mounting with optional accessories

Alarms
Intelligent Video: Tamper alarm
Video Motion Detection: Includes sensitivity settings
Scheduling: Daily repeat timing schedule
Imaging: JPEG snapshots for pre/trigger/post alarm images
Custom Alarms: HTTP event servers and CGI events for setting customized alarm actions
Email/FTP Messaging: Automatic transfer of stored images via email or FTP as event-triggered actions
Pre-alarm Buffer: 24 MB video buffer for JPEG snapshot images

Security
Password: User level password protection
Filtering: By IP address
Authentication: 802.1X
Encryption: HTTPS, SSH

Environmental Limits
Operating Temperature:
Standard models: -40 to 50°C (-40 to 122°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)
Vibration:
IEC 60068-2-6, 2 to 13.2 Hz: 2 mm (peak-peak); 13.2 to 100 Hz: 0.7g; 1.50 hrs/axis
IEC 60068-2-6, 3 to 9 Hz: 7 mm (peak-peak); 9 to 150 Hz: 1.0g; 1.86 hrs/axis
Shock: IEC 60068-2-27, 20g/11ms
Altitude: Up to 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: EN50121-4: 2006 (VPort 26A-1MP series)
EMI: CISPR 22, FCC Part 15B 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

MTBF (mean time between failures)
Time: 201,721 hrs
Standard: Telcordia SR332

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 9.x or above
Multimedia: DirectX 9.0c or above
Note: These preliminary specifications are subject to change without notice. Please check our website or with a sales representative for the most up-to-date specifications.

Software Development
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 the SDK is available for download from Moxa's website).
Standard: ONVIF Profile S

Dimensions

Unit: mm (inch)

Top View   Side View
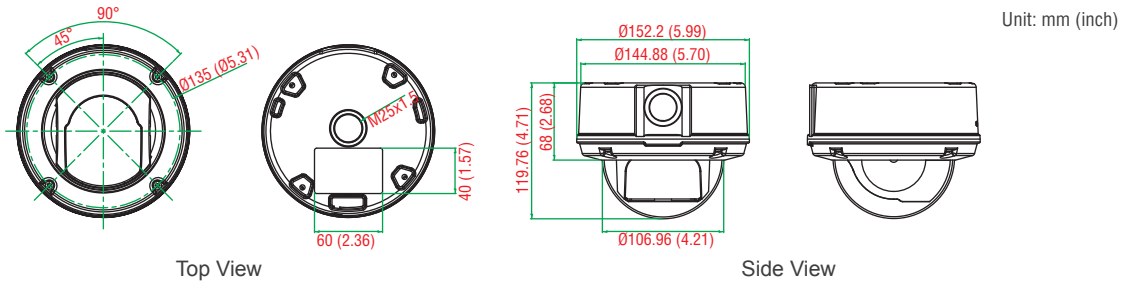
⋮ Ordering Information

Standard Temp. Models (RJ45: -40 to 50°C; M12: -25 to 55°C)	Wide Temp. Models (-40 to 75°C)	12/24 VDC, 24 VAC Power supply	PoE (802.3af) Power supply
VPort 26A-1MP	VPort 26A-1MP-T	✓	–
VPort P26A-1MP	VPort P26A-1MP-T	–	✓

Optional Accessories (can be purchased separately)
VP-MK2: Wall-mounting or pendant-mounting kit for the VPort 26 series
VP-520L: Wall-mounting kit (for fixed dome), 210(D) x 160(H) x 100(W) mm
VP-520HB: Pendant-mounting kit for mounting the VPort 26 on the ceiling
VP-CPM: Pole/corner-mounting kit for the VP-520L, 56.6(D) x 156.6(W) x 126(H) mm
DR-4524/75-24/120-24: 45/75/120 W DIN rail 24 VDC power supplies
MDR-40-24/60-24: 40/60 W DIN rail 24 VDC power supplies, -20 to 70°C operating temperature
SoftNVR-IA V3.0: 64-channel IP surveillance software for industrial automation applications

Package Checklist
• VPort 26A-1MP or VPort P26A-1MP IP camera
• Mounting sticker
• 4 self-tapping screws and anchors
• IP66 cable glands
• L-type Torx screwdriver
• Quick installation guide (printed)
• Documentation and software CD
• Warranty card

VPort P16-1MP-M12 Series

EN 50155 compliant, HD video image, rugged IP cameras

> Essential compliance with EN 50155* (T1 temperatures: -25 to 55°C; TX temperatures: -40 to 70°C), and compliant with EN 50121-3-2
> 1/2.7" progressive scan camera with maximum 1280 x 800 resolution at up to 30 frames per second
> Built-in light sensor for day & night images
> High quality video images with DNR and WDR
> Up to 3 H.264 or MJPEG independent video streams
> DynaStream™ supported for network efficiency
> CBR Pro™ supported for high image quality in limited bandwidth transmissions
> Supports DHCP Opt 66/67 for auto-configuration
> ONVIF supported for standardization and interoperability

*Moxa defines "essential compliance" to include those EN 50155 requirements that make products more suitable for rolling stock railway applications.

DynaStream ONVIF

c(UL)us LISTED   EN 50155 CE FC

: Introduction

The rugged VPort P16-1MP-M12 cameras provide an HD (720P, 1280 x 720) video image, and feature an H.264/MJPEG IP dome, giving them the versatility and ruggedness to excel in many different installations and environments for mobile IP video surveillance applications. In addition, the cameras are compliant with essential sections of EN 50155, covering operating temperature, power input voltage, surge, ESD, and vibration, as well as conformal coating and power insulation, making them suitable for a variety of industrial applications, and feature vandal-proofing (EN 62262 IK10), a -25 to 55°C or -40 to 70°C (T models) operating temperature, a rugged M12 Ethernet port, PoE power inputs, IP66 rain and dust protection, and day & night image capability.

: Specifications

Camera

Sensor: 1/2.7" HD progressive scan CMOS
Lens: 3.6, 8 mm fixed focal length
Angle of View:
• 3.6 mm, F1.6: Diagonal 120°, Horizontal 96°, Vertical 56°
• 8.0 mm, F1.8: Diagonal 48°, Horizontal 38°, Vertical 24°
Illumination (low light sensitvity):
• Color: 0.2 Lux @ F1.2
• B/W: 0.05 Lux @ F1.2
Camera Angle: Pan 350°, Tilt 80° (controlled manually)
ICR Control (for day & night): Auto
Synchronization: Internal
White Balance: ATW/AWC
Electronic Shutter: Auto, fixed (1/30 to 1/25000 sec)
S/N Ratio: 50 dB (Gamma, Aperture, AGC, OFF; DNR ON)
DNR: Built-in
WDR: Levels 1-8, up to 155 dB
AGC Control: 2X, 4X, 8X, 16X, 32X, 64X
Flickerless Control: Automatic/50 Hz/60 Hz
Auto Exposure: Level ±5
Image Rotation: Flip, Mirror, and 180° 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: 3 independent H.264 or MJPEG video streams
Video Resolution and FPS (frames per second):

	NTSC		PAL	
	Size	Max. FPS	Size	Max. FPS
QCIF	176 x 112	30	176 x 144	25
QVGA	320 x 240	30	320 x 240	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

Video Viewing:
• CBR Pro™ for good image quality in limited bandwidth transmissions
• DynaStream™ supported 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

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

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

Power Requirements

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

Power Consumption: 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

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: 12 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 (essential compliance*), EN 45545-2

EMI: FCC Part 15, CISPR (EN 55022) 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
*Moxa defines "essential compliance" to include those EN 50155 requirements that make products more suitable for rolling stock railway applications.

Shock: IEC 61373

Freefall: IEC 60068-2-32

Vibration: IEC 61373

Vandal Resistance: EN 62262, IK10 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: 1,602,553 hrs

Standard: Telcordia TR/SR

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
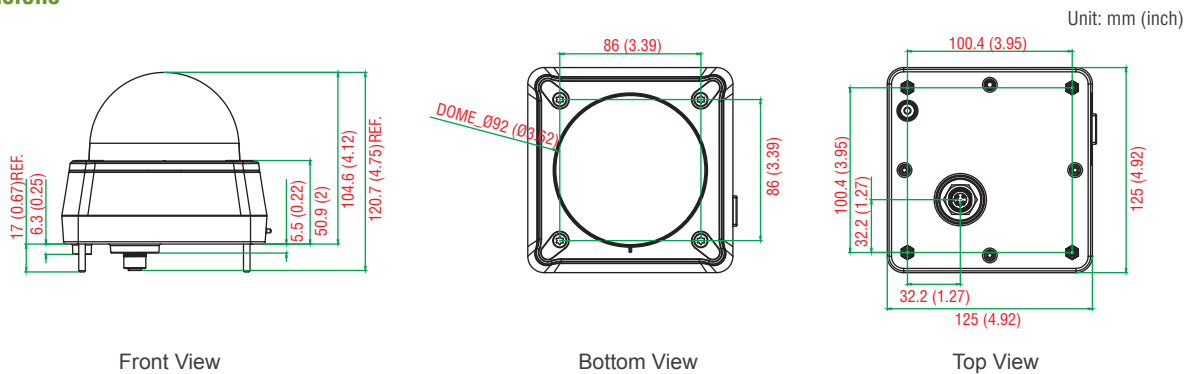
Browser: Internet Explorer 9.x or above

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 ProfileS

Dimensions

Unit: mm (inch)

Front View   Bottom View   Top View

Ordering Information

Model	Lens		Operating Temperature		Conformal Coating
PoE (802.3af)	3.6 mm	8.0 mm	-25 to 55°C	-40 to 70°C	
VPort P16-1MP-M12-CAM36	✓	–	✓	–	–
VPort P16-1MP-M12-CAM80	–	✓	✓	–	–
VPort P16-1MP-M12-CAM36-T	✓	–	–	✓	–
VPort P16-1MP-M12-CAM80-T	–	✓	–	✓	–
VPort P16-1MP-M12-CAM36-CT	✓	–	✓	–	✓
VPort P16-1MP-M12-CAM80-CT	–	✓	✓	–	✓
VPort P16-1MP-M12-CAM36-CT-T	✓	–	–	✓	✓
VPort P16-1MP-M12-CAM80-CT-T	–	✓	–	✓	✓

Package Checklist

- VPort P16-1MP-M12 IP camera
- L-type Torx screw driver
- 4 nuts and 4 washers
- 4 top cover screws for flush mounting
- Installation sticker
- Quick installation guide (printed)
- Documentation and software CD
- Warranty card

VPort P16-2MR Series   *Preliminary*

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

> Compliant with EN 50121-3-2 and essential sections* of EN 50155 (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 comformity for standardization and interoperability

*Moxa defines "essential compliance" to include those EN 50155 requirements that make products more suitable for rolling stock railway applications.

DynaStream   ONVIF

cULus LISTED   EN 50155   CE   FC

: 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 99°, Horizontal 70°, Vertical 39°
• 4.2 mm, F1.6: Diagonal 82°, Horizontal 62°, Vertical 34°
• 6.0 mm, F1.8: Diagonal 62°, Horizontal 43°, Vertical 24°
• 8.0 mm, F1.6: Diagonal 42°, Horizontal 33°, Vertical 17°
Illumination (low light sensitvity):
• 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 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 Outputs: 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
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 (essential compliance*)
*Moxa defines "essential compliance" to include those EN 50155 requirements that make products more suitable for rolling stock railway applications.
EMI: FCC Part 15, CISPR (EN 55022) 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

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
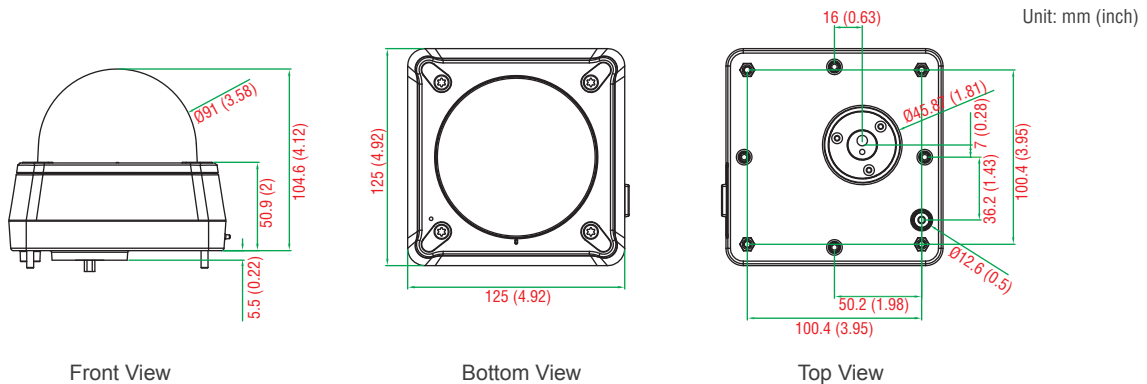**Multimedia:** DirectX 9.0c or above

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

Unit: mm (inch)

Front View   Bottom View   Top View

:: 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

VPort P16-1MP-M12-IR Series

EN 50155 compliant, HD video image, infrared IP cameras

> Compliant with EN 50121-3-2 and essential sections* of EN 50155 (T1 temperatures: -25 to 55°C; TX temperatures: -40 to 70°C)
> Maximum 1280 x 800 resolution at up to 30 frames/second
> Built-in IR illuminator and ICR (Infrared Cutfilter Removal) for day & night images
> Up to 3 H.264 or MJPEG independent video streams
> DynaStream™ support for maximum network efficiency
> CBR Pro™ support for high image quality in limited bandwidth transmissions

*Moxa defines "essential compliance" to include those EN 50155 requirements that make products more suitable for rolling stock railway applications.

DynaStream   ONVIF

cULus LISTED   EN 50155   CE   FC

Introduction

The rugged VPort P16-1MP-M12-IR cameras produce HD (720P, 1280 x 720) video images and feature an H.264/MJPEG IP 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 IK10), 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: 1/2.7" HD progressive scan CMOS
Lens: 3.6, 8 mm fixed focal length
Angle of View:
• 3.6 mm, F1.6: Diagonal 120°, Horizontal 96°, Vertical 56°
• 8.0 mm, F1.8: Diagonal 48°, Horizontal 38°, Vertical 24°
Illumination (low light sensitvity):
• 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, max. 5 meter 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)
S/N Ratio: 50 dB (Gamma, Aperture, AGC, OFF; DNR ON)
DNR: Built-in
WDR: Levels 1-8, up to 115 dB
AGC Control: 2X, 4X, 8X, 16X, 32X, 64X
Flickerless Control: Automatic / 50 Hz / 60 Hz
Auto Exposure: Level ±5
Image Rotation: Flip, Mirror, and 180° 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 Outputs: Via Ethernet
Video Streams: 3 independent H.264 or MJPEG video streams

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

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: Mono, PCM (G.711)

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

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: 8 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
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: 12 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. model: -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 (essential compliance*)
EMI: FCC Part 15, CISPR (EN 55022) 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
*Moxa defines "essential compliance" to include those EN 50155 requirements that make products more suitable for rolling stock railway applications.
Shock: IEC 61373
Freefall: IEC 60068-2-32
Vibration: IEC 61373
Vandal Resistance: EN 62262, IK10 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: 1052184 hrs
Standard: Telcordia TR/SR

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 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

Unit: mm (inch)

Front View   Bottom View   Top View
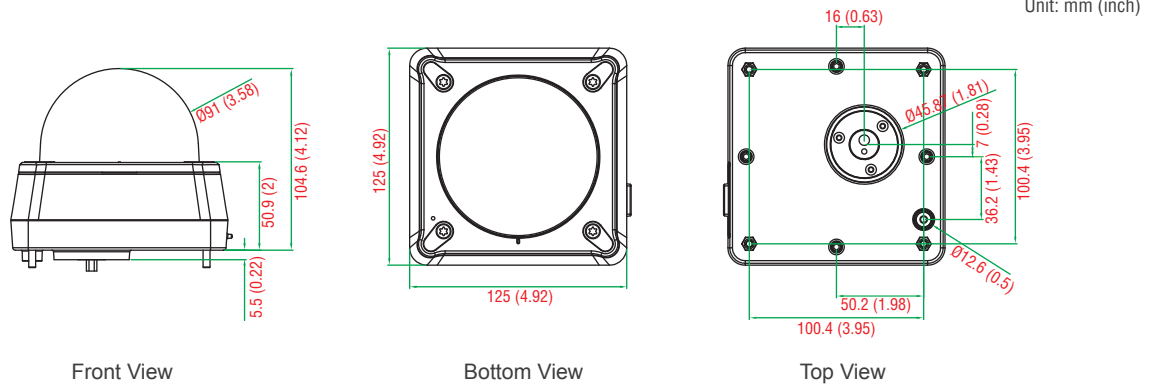
Ordering Information

Model	Lens		Temperature		Conformal Coating
PoE (802.3af)	3.6 mm	8.0 mm	-25 to 55°C	-40 to 70°C	
VPort P16-1MP-M12-IR-CAM36	✓	–	✓	–	–
VPort P16-1MP-M12-IR-CAM80	–	✓	✓	–	–
VPort P16-1MP-M12-IR-CAM36-CT	✓	–	✓	–	✓
VPort P16-1MP-M12-IR-CAM80-CT	–	✓	✓	–	✓
VPort P16-1MP-M12-IR-CAM36-T	✓	–	–	✓	–
VPort P16-1MP-M12-IR-CAM80-T	–	✓	–	✓	–
VPort P16-1MP-M12-IR-CAM36-CT-T	✓	–	–	✓	✓
VPort P16-1MP-M12-IR-CAM80-CT-T	–	✓	–	✓	✓

Package Checklist
• VPort P16-1MP-M12 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

VPort 06-2 Series

EN 50155 compliant, 1080P video image, compact IP cameras

> Compliant with EN 50121-3-2 and essential sections* of EN 50155 (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 frames/second
> High quality video image with DNR and WDR
> Up to 4 simultaneous H.264 or MJPEG independent video streams
> DynaStream™ support for optimized network efficiency
> CBR Pro™ support 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 comformity for standardization and interoperability

*Moxa defines "essential compliance" to include those EN 50155 requirements that make products more suitable for rolling stock railway applications.

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⁝ Introduction

The VPort 06-2 cameras are compact, 1080P (1920x1080), H.264/MJPEG dome IP cameras designed for mobile video surveillance applications. The cameras are compliant with EN 50121-3-2, EN 62262 IK8, essential sections of EN 50155, and support a -25 to 55°C or -40 to 70°C operating temperature range. With a rugged M12 Ethernet port, SDXC slot for SD cards 64 GB and larger, ONVIF Profile S standardization, built-in audio line port or microphone, PoE or 24 VDC power inputs, IP66 rain and dust protection, and the option of changing the lens, the VPort 06-2 cameras will perform reliably in a variety of extreme environmental conditions, making them suitable for a wide variety of mobile video surveillance applications.

⁝ Specifications

Camera
Sensor: 1/3" HD progressive scan CMOS
Lens: 2.5 mm, 3.6 mm, 4.2 mm, 6 mm, 8 mm fixed focal lengths
Angle of View:
• 2.5 mm, F1.6: Diagonal 120°, Horizontal 101°, Vertical 57°
• 3.6 mm, F1.6: Diagonal 99°, Horizontal 70°, Vertical 39°
• 4.2 mm, F1.6: Diagonal 82°, Horizontal 62°, Vertical 34°
• 6.0 mm, F1.8: Diagonal 62°, Horizontal 43°, Vertical 24°
• 8.0 mm, F1.6: Diagonal 42°, Horizontal 33°, Vertical 17°
Camera Angle:
• Pan: ±15°
• Tilt: 0 to 90° (3.6, 4.2, 6 mm lenses), 30 to 60° (2.5 mm lens)
Minimum Illumination: 0.2 Lux @ F=1.2
Synchronization: Internal
White Balance: ATW/AWB
Electronic Shutter: Auto, Fixed (1/30 to 1/25000 sec)
DNR: Built-in DNR
WDR: On/Off, up to 100 dB
AGC Control: 2X, 4X, 8X, 16X
Flickerless Control: Automatic, 50 Hz, 60 Hz modes
Auto Exposure: Level ±5
Image Rotation: Flip, Mirror, 90°, 180°, and 270° 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
Video Streams: Up to 4 independent video streams
Video Resolution and FPS (frames per second):

	NTSC		PAL	
	Size	Max. FPS	Size	Max. FPS
QCIF	176 x 112	30	176 x 144	25
QVGA	320 x 240	30	320 x 240	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
FHD	1920 x 1080	30	1920 x 1080	30

Video Viewing:
• DynaStream™ support for automatic frame rate adjustment
• CBR Pro™ for good image quality in limited bandwidth transmissions
• 3 privacy mask areas provided
• 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 line-in, or 1 built in to the microphone input
Audio Format: 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
Ethernet: 1 10/100BaseT(X) Ethernet port, 4-pin M12 D-coded female connector

Local Storage
SD Socket: Micro SD socket
Interface: SDXC

GPIO
Digital Inputs: 1, max. 8 mA; Low: +13 V to 30 V; High: -30 V to +3 V

Power Requirements
Input Voltage: VPort P06-2 (PoE model): PoE (IEEE 802.3af)
VPort 06-2 (DC model): 12 to 24 VDC with DB9 connector
Input Current: 0.38 to 0.86 A
Power Consumption:
VPort P06-2: 8.1 W (max.)
VPort 06-2: 9 W (max.)

Physical Characteristics
Housing: IP66 rain and dust protection, EN 62262 IK8 vandal proof metal housing
Dimensions: 110 x 115.5 x 61.8 mm (4.33 x 4.54 x 2.43 in)
Weight: 620 g (1.37 lb)
Installation: Surface or ceiling mounting
Note: Optional external housing and mounting accessories may be required.

Alarms
Intelligent Video: Camera tampering
Video Motion Detection: 3 independently configurable motion 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 (essential compliance*)
*Moxa defines "essential compliance" to include those EN 50155 requirements that make products more suitable for rolling stock railway applications.
EMC: EN 55022/24
EMI: FCC Part 15, CISPR (EN 55022) 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
Note: Please check Moxa's website for the most up-to-date certification status.

MTBF (mean time between failures)
Time: 977,972 hrs
Standard: Telcordia TR/SR

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
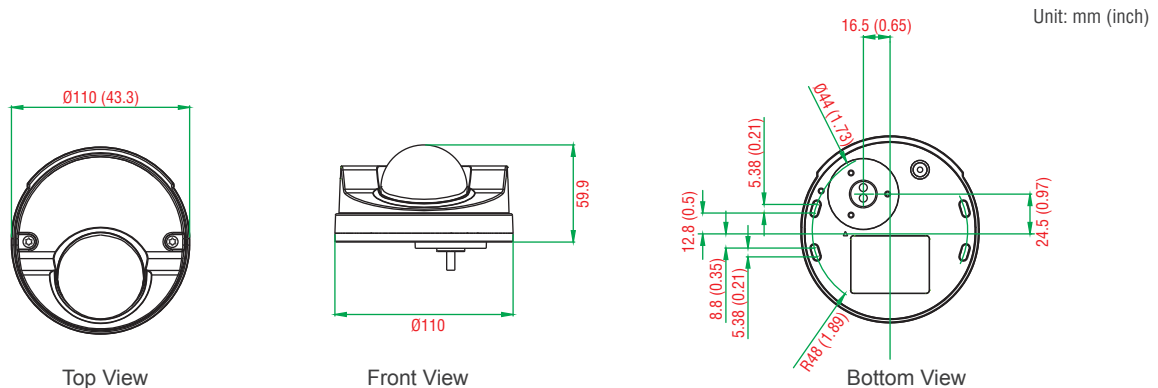**Browser:** Internet Explorer 9 or above
Multimedia: DirectX 9.0c or above

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 SDK version is available for download from Moxa's website).
Standard: ONVIF Profile S

Dimensions

Unit: mm (inch)

Ø110 (43.3)

59.9

Ø110

16.5 (0.65)

Ø44 (1.73)

5.38 (0.21)

12.8 (0.5)

8.8 (0.35)

5.38 (0.21)

R48 (1.89)

24.5 (0.97)

Top View   Front View   Bottom View

: Ordering Information

Model		Lens (mm)	Audio		Operating Temperature		Conformal Coating
PoE models	24 VDC models		Line-in	MIC	-25 to 55°C	-40 to 70°C	
VPort P06-2L25M	VPort 06-2L25M	2.5	✓	–	✓	–	–
VPort P06-2L36M	VPort 06-2L36M	3.6	✓	–	✓	–	–
VPort P06-2L42M	VPort 06-2L42M	4.2	✓	–	✓	–	–
VPort P06-2L60M	VPort 06-2L60M	6.0	✓	–	✓	–	–
VPort P06-2L80M	VPort 06-2L80M	8.0	✓	–	✓	–	–
VPort P06-2M25M	VPort 06-2M25M	2.5	–	✓	✓	–	–
VPort P06-2M36M	VPort 06-2M36M	3.6	–	✓	✓	–	–
VPort P06-2M42M	VPort 06-2M42M	4.2	–	✓	✓	–	–
VPort P06-2M60M	VPort 06-2M60M	6.0	–	✓	✓	–	–
VPort P06-2M80M	VPort 06-2M80M	8.0	–	✓	✓	–	–
VPort P06-2L25M-T	VPort 06-2L25M-T	2.5	✓	–	–	✓	–
VPort P06-2L36M-T	VPort 06-2L36M-T	3.6	✓	–	–	✓	–
VPort P06-2L42M-T	VPort 06-2L42M-T	4.2	✓	–	–	✓	–
VPort P06-2L60M-T	VPort 06-2L60M-T	6.0	✓	–	–	✓	–
VPort P06-2L80M-T	VPort 06-2L80M-T	8.0	✓	–	–	✓	–
VPort P06-2M25M-T	VPort 06-2M25M-T	2.5	–	✓	–	✓	–
VPort P06-2M36M-T	VPort 06-2M36M-T	3.6	–	✓	–	✓	–
VPort P06-2M42M-T	VPort 06-2M42M-T	4.2	–	✓	–	✓	–
VPort P06-2M60M-T	VPort 06-2M60M-T	6.0	–	✓	–	✓	–
VPort P06-2M80M-T	VPort 06-2M80M-T	8.0	–	✓	–	✓	–
VPort P06-2L25M-CT	VPort 06-2L25M-CT	2.5	✓	–	✓	–	✓
VPort P06-2L36M-CT	VPort 06-2L36M-CT	3.6	✓	–	✓	–	✓
VPort P06-2L42M-CT	VPort 06-2L42M-CT	4.2	✓	–	✓	–	✓
VPort P06-2L60M-CT	VPort 06-2L60M-CT	6.0	✓	–	✓	–	✓
VPort P06-2L80M-CT	VPort 06-2L80M-CT	8.0	✓	–	✓	–	✓
VPort P06-2M25M-CT	VPort 06-2M25M-CT	2.5	–	✓	✓	–	✓
VPort P06-2M36M-CT	VPort 06-2M36M-CT	3.6	–	✓	✓	–	✓
VPort P06-2M42M-CT	VPort 06-2M42M-CT	4.2	–	✓	✓	–	✓
VPort P06-2M60M-CT	VPort 06-2M60M-CT	6.0	–	✓	✓	–	✓
VPort P06-2M80M-CT	VPort 06-2M80M-CT	8.0	–	✓	✓	–	✓
VPort P06-2L25M-CT-T	VPort 06-2L25M-CT-T	2.5	✓	–	–	✓	✓
VPort P06-2L36M-CT-T	VPort 06-2L36M-CT-T	3.6	✓	–	–	✓	✓
VPort P06-2L42M-CT-T	VPort 06-2L42M-CT-T	4.2	✓	–	–	✓	✓
VPort P06-2L60M-CT-T	VPort 06-2L60M-CT-T	6.0	✓	–	–	✓	✓
VPort P06-2L80M-CT-T	VPort 06-2L80M-CT-T	8.0	✓	–	–	✓	✓
VPort P06-2M25M-CT-T	VPort 06-2M25M-CT-T	2.5	–	✓	–	✓	✓
VPort P06-2M36M-CT-T	VPort 06-2M36M-CT-T	3.6	–	✓	–	✓	✓
VPort P06-2M42M-CT-T	VPort 06-2M42M-CT-T	4.2	–	✓	–	✓	✓
VPort P06-2M60M-CT-T	VPort 06-2M60M-CT-T	6.0	–	✓	–	✓	✓
VPort P06-2M80M-CT-T	VPort 06-2M80M-CT-T	8.0	–	✓	–	✓	✓

Optional Accessories (can be purchased separately)
SoftNVR-IA V3.0: 64-channel IP surveillance software for industrial automation applications
VP-SCO2: Side-cable-out adapter for mounting the VPort 06-2 on a surface
VP-FP2: Fixed plate with threaded screw holes for mounting the VPort 06-2 directly over a ceiling aperature

Package Checklist

• VPort 06-2 series IP camera
• VP-DP01 (0.6 g dry packs x 2)
• L-type Torx screwdriver
• 4 indented hexagonal head tapping screws, nuts, gaskets, and spring washers
• Installation sticker
• Quick installation guide (printed)
• Documentation and software CD
• Warranty card

Side-cable-out adapter for surface mounting

VP-SCO2
Dimensions: Ø110 x 17 (H) mm
Material: Plastic
Operating temperature: -30 to 120°C
Weight: 60 g

Plate with threaded screw holes for ceiling mounting

VP-FP2
Dimensions: 110 (L) x 40 (W) mm
Material: Metal
Weight: 40 g

VPort P06-1MP-M12 Series

EN 50155 compliant, HD video image, compact IP cameras

> Compliant with EN 50121-3-2
> Essential compliance with EN 50155* (standard model supports T1 temperatures, -25 to 55°C; T model supports TX temperatures, -40 to 70°C)
> 1/2.7" progressive scan camera with maximum 1280 x 800 resolution at up to 30 frames/second
> High quality video image with DNR and WDR
> Up to 3 H.264 or MJPEG independent video streams
> DynaStream™ support for maximized network efficiency
> CBR Pro™ support for high image quality in limited bandwidth transmissions
> Supports DHCP Opt 66/67 for auto-configuration
> 1 built-in audio input or microphone
> ONVIF support for standardization and interoperability

*Moxa defines "essential compliance" to include those EN 50155 requirements that make products more suitable for rolling stock railway applications.

DynaStream **ONVIF**

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Introduction

The compact VPort P06-1MP-M12 cameras provide an HD (720P, 1280 x 720) video image, and feature an H.264/MJPEG IP dome, giving them the versatility and ruggedness to excel in many different installations and environments for mobile IP video surveillance applications. In addition, the cameras are compliant with essential sections of EN 50155, covering operating temperature, power input voltage, surge, ESD, and vibration, as well as conformal coating and power insulation, making them suitable for a variety of industrial applications. The cameras feature vandal-proofing (EN 62262 IK8), a -25 to 55°C or -40 to 70°C (T models) operating temperature range, a rugged M12 Ethernet port, 1 audio input, PoE power inputs, IP66 rain and dust protection, a dehumidifying membrane, and a selectable lens.

Specifications

Camera

Sensor: 1/2.7" HD progressive scan CMOS
Lens: 2.5, 3.6, 4.2, 6 mm fixed focal length
Angle of View:
• 2.5 mm F2.8: Diagonal 170°, Horizontal 130°, Vertical 98°
• 3.6 mm, F1.6: Diagonal 120°, Horizontal 96°, Vertical 56°
• 4.2 mm, F1.6: Diagonal 96°, Horizontal 81°, Vertical 47°
• 6.0 mm, F1.8: Diagonal 66°, Horizontal 51°, Vertical 38°
• 8.0 mm, F1.8: Diagonal 44, Horizontal 38, Vertical 24
Camera Angle:
• Pan: ±30°
• Tilt: 0-90° (3.6, 4.2, 6 mm lens), 30-60° (2.5 mm lens)
Minimum Illumination: 0.2 Lux @ F=1.2
Synchronization: Internal
White Balance: ATW/AWB
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 1-8, up to 115 dB
AGC Control: 2X, 4X, 8X, 16X, 32X, 64X
Flickerless Control: Automatic/50 Hz/60 Hz mode
Auto Exposure: Level ±5

Image Rotation: Flip, Mirror, and 180° 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: 3 independent H.264 or MJPEG video streams
Video Resolution and FPS (frames per second):

	NTSC		PAL	
	Size	Max. FPS	Size	Max. FPS
QCIF	176 x 112	30	176 x 144	25
QVGA	320 x 240	30	320 x 240	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

Video Viewing:
- DynaStream™ support for automatic frame rate adjustment
- CBR Pro™ for good image quality in limited bandwidth transmission
- 3 privacy mask areas configurable
- 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, Line-in, rugged RCA connector; or 1 bulit-in microphone input
Audio Format: Mono, PCM (G.711)

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
Ethernet: 1 10/100BaseT(X) isolated Ethernet port, 4-pin M12 D-coded female connector

Power Requirements
Input: Power-over-Ethernet (IEEE 802.3af)
Power Consumption: 6 W (max.)

Physical Characteristics
Housing: IP66 rain and dust protection, EN 62262 IK9 vandal-proof protection
Dimensions: Diameter: 110 mm (4.33 in); Height: 47 mm (1.85 in)
Weight: 310 g (0.68 lb)
Installation: Surface or ceiling mounting
Note: Optional external housing and mounting accessories may be required.

Alarms
Intelligent Video: Camera tamper
Video Motion Detection: 3 independently configurable motion areas
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

Security
Password: User level password protection
Filtering: By IP address
Encryption: HTTPS, SSH

Environmental Limits
Operating Temperature:
Standard model: -25 to 55°C (-13 to 131°F)
Wide Temp. model: -40 to 70°C (-40 to 158°F)
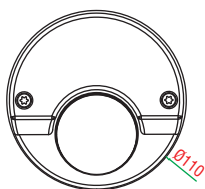**Storage Temperature:** -40 to 85°C (-40 to 185°F)
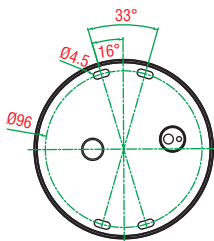**Ambient Relative Humidity:** 5 to 95% (non-condensing)
Altitude: 2000 m
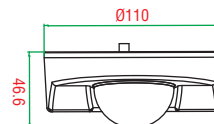Note: Please contact Moxa if you require products guaranteed to function properly at higher altitudes.

Standards and Certifications
Safety: UL 60950-1
Rail Traffic: EN 50155 (essential compliance*), EN 45545-2
*Moxa defines "essential compliance" to include those EN 50155 requirements that make products more suitable for rolling stock railway applications.
EMI: FCC Part 15, CISPR (EN 55022) 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, IK9 level
Fire Protection: EN 45545:2013

MTBF (mean time between failures)
Time: 1,944,687 hrs
Standard: Telcordia TR/SR

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 9.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

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IP Surveillance ➤ VPort P06-1MP-M12 Series

Dimensions

Unit: mm (inch)

33°
Ø4.5
16°
Ø96
Ø110
46.6
Ø110

Bottom View   Top View   Side View

: Ordering Information

| Standard Operating Temp. Models | Wide Operating Temp. Models | Lens Focal | Line-In/ |
-25 to 55°C	-40 to 70°C	Length	Microphone
VPort P06-1MP-M12-CAM25	VPort P06-1MP-M12-CAM25-T	2.5 mm	Line-in
VPort P06-1MP-M12-MIC-CAM25	VPort P06-1MP-M12-MIC-CAM25-T	2.5 mm	Microphone
VPort P06-1MP-M12-CAM36	VPort P06-1MP-M12-CAM36-T	3.6 mm	Line-in
VPort P06-1MP-M12-MIC-CAM36	VPort P06-1MP-M12-MIC-CAM36-T	3.6 mm	Microphone
VPort P06-1MP-M12-CAM42	VPort P06-1MP-M12-CAM42-T	4.2 mm	Line-in
VPort P06-1MP-M12-MIC-CAM42	VPort P06-1MP-M12-MIC-CAM42-T	4.2 mm	Microphone
VPort P06-1MP-M12-CAM60	VPort P06-1MP-M12-CAM60-T	6.0 mm	Line-in
VPort P06-1MP-M12-MIC-CAM60	VPort P06-1MP-M12-MIC-CAM60-T	6.0 mm	Microphone
VPort P06-1MP-M12-CAM80	VPort P06-1MP-M12-CAM80-T	8.0 mm	Line-in
VPort P06-1MP-M12-MIC-CAM80	VPort P06-1MP-M12-MIC-CAM80-T	8.0 mm	Microphone
VPort P06-1MP-M12-CAM25-CT	VPort P06-1MP-M12-CAM25-CT-T	2.5 mm	Line-in
VPort P06-1MP-M12-MIC-CAM25-CT	VPort P06-1MP-M12-MIC-CAM25-CT-T	2.5 mm	Microphone
VPort P06-1MP-M12-CAM36-CT	VPort P06-1MP-M12-CAM36-CT-T	3.6 mm	Line-in
VPort P06-1MP-M12-MIC-CAM36-CT	VPort P06-1MP-M12-MIC-CAM36-CT-T	3.6 mm	Microphone
VPort P06-1MP-M12-CAM42-CT	VPort P06-1MP-M12-CAM42-CT-T	4.2 mm	Line-in
VPort P06-1MP-M12-MIC-CAM42-CT	VPort P06-1MP-M12-MIC-CAM42-CT-T	4.2 mm	Microphone
VPort P06-1MP-M12-CAM60-CT	VPort P06-1MP-M12-CAM60-CT-T	6.0 mm	Line-in
VPort P06-1MP-M12-MIC-CAM60-CT	VPort P06-1MP-M12-MIC-CAM60-CT-T	6.0 mm	Microphone
VPort P06-1MP-M12-CAM80-CT	VPort P06-1MP-M12-CAM80-CT-T	8.0 mm	Line-in
VPort P06-1MP-M12-MIC-CAM80-CT	VPort P06-1MP-M12-MIC-CAM80-CT-T	8.0 mm	Microphone

Package Checklist

- VPort P06-1MP-M12 IP camera
- L-type Torx screwdriver
- 4 indented hexagon head tapping screws, nuts, gaskets and spring washers
- Installation sticker
- Quick installation guide (printed)
- Documentation and software CD
- Warranty card

Optional Accessories (can be purchased separately)

SoftNVR-IA: 64-channel IP surveillance software for industrial automation applications
VP-SCO1: Side-cable-out adapter for mounting the VPort P06-1MP-M12 on a surface
VP-FP1: Fixed plate with threaded screw holes for mounting the VPort P06-1MP-M12 directly over a ceiling aperature

Side-cable-out adapter for surface mounting

VP-SCO1
Dimensions: Ø110 x 17 (H) mm
Material: Plastic
Operating temperature: -30 to 120°C
Weight: 60 g

Plate with threaded screw holes for ceiling mounting

VP-FP1
Dimensions: 110 (L) x 40 (W) mm
Material: Metal
Weight: 40 g

VPort P06HC-1MP-M12 Series

HD video image, square-type IP cameras for mobile surveillance

with front decorative plate

> Compliant with EN 50121-3-2 and essential sections of EN 50155*
> -25 to 55°C operating temperature
> 1/2.7" progressive scan camera with maximum 1280 x 800 resolution at up to 30 frames/second
> Flush mounting for hiding inside a panel, such as a wall or ceiling
> Up to 3 H.264 or MJPEG independent video streams
> DynaStream™ support for maximized network efficiency
> CBR Pro™ support for high image quality in limited bandwidth transmissions
> Supports DHCP Opt 66/67 for auto-configuration
> 1 built-in microphone for audio input, and 1 digital input for external sensor
> ONVIF support for standardization and interoperability

*Moxa defines "essential compliance" to include those EN 50155 requirements that make products more suitable for rolling stock railway applications.

Introduction

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.

Specifications

Camera
Sensor: 1/2.7" HD progressive scan CMOS
Lens: 3.6 mm megapixel fixed focal length lens
Angle of View:
• 3.6 mm, F1.6: Diagonal 120°, Horizontal 96°, Vertical 56°
Synchronization: Internal
Minimum Illumination: 0.2 Lux @ F=1.2
White Balance: ATW/AWB
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 1-3, up to 115 dB
AGC Control: 2X, 4X, 8X, 16X
Flickerless Control: Automatic/50 Hz/60 Hz mode
Auto Exposure: Level ±5
Image Rotation: Flip, Mirror, and 180° rotation
Image Setting: Manual tuning with brightness and contrast

Video
Video Compression: H.264 (ISO/IEC 14496-10) or MJPEG
Video Output: Via Ethernet
Video Streams: 3 independent H.264 or MJPEG video streams
• Stream 1: H.264, 1280 x 800 resolution (max.)
• Stream 2: H.264, 720 x 576 resolution (max.)
• Stream 3: MJPEG, 720 x 576 resolution (max.)
Note: Streams 2 and 3 must be set to the same resolution

Video Resolution and FPS (frames per second):

	NTSC		PAL	
	Size	Max. FPS	Size	Max. FPS
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

Video Viewing:
• DynaStream™ support for automatic frame rate adjustment
• CBR Pro™ for good image quality in limited bandwidth transmission
• 3 privacy mask areas configurable
• 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/IP, UDP, HTTP, SMTP, NTP, DNS, DHCP, UPnP, RTP, RTSP, ICMP, QoS,IGMPv3, SNMPv1/v2c/v3, DDNS, TFTP, ARP, DHCP, OPT66/67

Ethernet: 1 10/100BaseT(X) isolated Ethernet port, 4-pin M12 D-coded female connector

GPIO

Digital Inputs: 1, max. 8 mA, isolated 5-pin M12 connector
High: +13 V to +30 V; Low: -30 V to +3 V

Power Requirements

Input: Power-over-Ethernet (IEEE 802.3af)
Power Consumption: 6 W (max.)

Physical Characteristics

Housing: IP66 metal housing with transparent cover
Dimensions: 109 x 68 x 90 mm (4.29 x 2.68 x 3.54 in)
Weight: 903 g (1.1 lb)
Installation: Flush mounting

Alarms

Intelligent Video: Camera tamper
Video Motion Detection: 3 independently configurable motion areas
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: 12 MB video buffer for JPEG snapshot images

Security

Password: User level password protection
Filtering: By IP address
Encryption: HTTPS, SSH

Environmental Limits

Operating Temperature: -25 to 55°C (-13 to 131°F)
Storage Temperature: -40 to 75°C (-40 to 167°F)
Ambient Relative Humidity: 5 to 95% (non-condensing)
Altitude: 2000 m
Conformal Coating: Available on request

Standards and Certifications

Safety: UL 60950-1
Rail Traffic: EN 50155 (essential compliance*), EN 45545-2
EMI: FCC Part 15, CISPR (EN 55022) 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
*Moxa defines "essential compliance" to include those EN 50155 requirements that make products more suitable for rolling stock railway applications.
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.

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 9.x or above
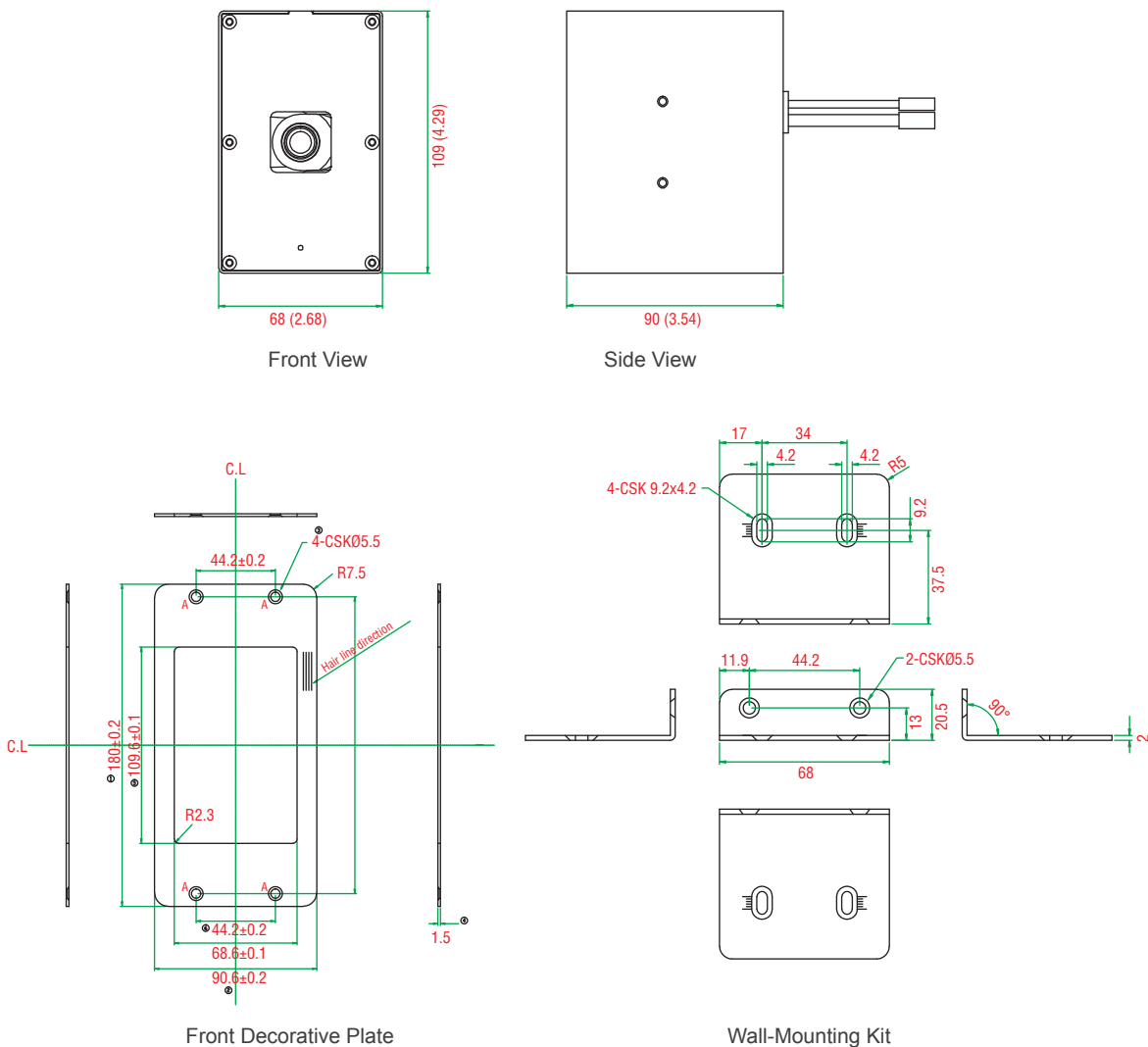**Multimedia:** DirectX 9.0c or above

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

Dimensions

Unit: mm (inch)

Front View

109 (4.29)
68 (2.68)

Side View

90 (3.54)

Front Decorative Plate

C.L
4-CSKØ5.5
44.2±0.2
R7.5
A   A
Hair line direction
C.L
180±0.2
109.6±0.1
R2.3
A   A
44.2±0.2
68.6±0.1
90.6±0.2
1.5

Wall-Mounting Kit

17   34
4.2   4.2
R5
4-CSK 9.2x4.2
9.2
37.5

11.9   44.2   2-CSKØ5.5
13   20.5
90°
68
2

⫶ Ordering Information

Available Models

VPort P06HC-1MP-M12-CAM36: EN 50155 compliant, HD, H.264/MJPEG square-type IP camera, 3.6 mm lens, M12 Ethernet connector, PoE, -25 to 55°C operating temperature
Note: Conformal coating available upon request

Optional Accessories (can be purchased separately)

SoftNVR-IA: 64-channel IP surveillance software for industrial automation applications
VP-FD1: Front decorative plate for the VPort P06HC

Package Checklist

- VPort P06HC-1MP-M12 IP camera
- L-type Torx screwdriver
- Dry pack
- Hook fasteners
- 2 L-type installation kits and 4 nylock screws
- Installation stick
- Quick installation guide (printed)
- Documentation and software CD
- Warranty card

VP-IR2

High power IR illuminator for industrial surveillance

> DSI technology
> More than 50% energy savings
> Flexible beam pattern
> Wide application range
> Active/Passive mode for ICR synchronization

Note: The VPort camera should use DC power to accept volt-free relay output from the VP-IR2 series.

: Introduction

The VP-IR2 series IR illuminator is designed specifically to work with Moxa VPort series IP cameras and PT scanners. The VP-IR2 features high power efficiency and a lower LED life cycle, and is suitable for all types of industrial surveillance applications. The VP-IR2 can be easily mounted on a VPort camera housing or IR bracket available for Moxa PT scanners.

: Specifications

Infrared Wavelength	850 nm
Angle	VP-IR22080: 20° VP-IR26080: 60°
IR Effective Range	VP-IR22080: 60 to 100 m VP-IR26080: 20 to 50 m
Active IR On/Off	Controlled by built-in photocell light sensor
Passive IR On/Off	Volt-free relay input
Operating Temperature	-30 to 60°C (-22 to 140°F)
Weatherproofing	IP66
ICR Switching	12 VDC power output
Power Consumption	10 W
Power Requirement	12 VDC

Dimensions

Unit: mm

42±0.2

90±0.2

134±0.3

115±0.2

97±0.3

73±0.2

Front View   Side View   Rear View
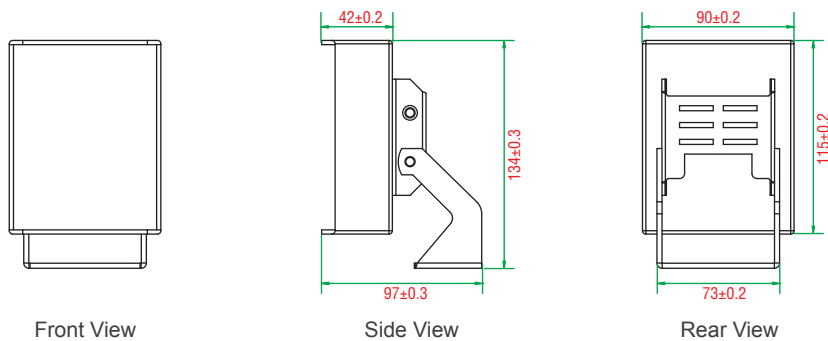
: Ordering Information

Available Models
VP-IR22080: Infrared LED illuminator, 20°, 850 nm, 12 VDC, illuminates up to 60 to 100 m
VP-IR26080: Infrared LED illuminator, 60°, 850 nm, 12 VDC, illuminates up to 20 to 50 m

Package Checklist
- IR illuminator
- Mounting screws
- Relay wire
- Quick installation guide

Camera Accessories

: Box Camera Accessories

IP68 Outdoor Housing

Protects cameras used in outdoor environments

VP-CI701
Construction: Die cast aluminum alloy
Dimensions (D x H x W):
406 x 109 x 171 mm (15.98 x 4.29 x 6.73 in)
View Window: Tempered glass
Housing Style: Clam shell
Latch: Dual-side screw-fastened
Weight: 2.2 kg (4.85 lb)

Wall-Mounting Bracket

For attaching the outdoor housing to a wall

VP-CI800
Construction: Die cast aluminum alloy
Dimensions (D x H x W):
213 x 148 x 80 mm (8.39 x 5.82 x 3.15 in)
Maximum Load: 20 kg (44.2 lb)
Weight: 690 g (1.52 lb)

Pole-Mounting Brackets

For attaching the wall-mounting bracket to a pole

VP-CI815
Construction: Die cast aluminum alloy
Dimensions (D x H x W; each part):
75 x 168.1 x 277.4 mm (2.95 x 6.61 x 10.91 in)
Maximum Load: 30 kg (66.14 lb)
Weight: 2.4 kg (5.29 lb)
Pole Diameter: Ø70 to Ø230 mm (Ø2.76 to Ø9.06 in)

VP-CI820
Construction: Die cast aluminum alloy
Dimensions (D x H x W):
175 x 339.4 x 443.3 mm (6.89 x 13.35 x 17.44 in)
Maximum Load: 30 kg (66.14 lb)
Weight: 3.48 kg (7.67 in)
Pole Diameter: Ø360 mm (Ø14.17 in)
Stainless Straps: 2

Indoor Bracket

For installing a box camera without an outdoor housing

VP-CI803
Construction: Die cast aluminum alloy
Dimensions (Ø x H): 45 x 115 mm (1.77 x 4.53 in)
Maximum Load: 3 kg (6.6 lb)
Weight: 70 g (1.54 lb)

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IP Surveillance > Camera Accessories

Camera Accessories

: Dome Camera Accessories

Wall/Pendant-Mounting Kit

For mounting the VPort 26A to a wall or pendant mount

VP-MK2
Construction: Die cast aluminum alloy
Dimensions (Ø x H):
160 x 69 mm (6.30 x 2.72 in)
Weight: 470 g (1.04 lb)

Wall-Mounting Kit

For mounting a fixed dome camera on the wall

VP-520L
Construction: Die cast aluminum alloy
Dimensions (D x H x W):
210 x 160 x 100 mm (8.27 x 6.30 x 3.94 in)
Weight: 840 g (1.85 lb)

Wall-Mounting Kit

For mounting a PTZ dome camera on the wall

VP-520LB
Construction: Die cast aluminum alloy
Dimensions (D x H x W):
255 x 284 x 204 mm (10.03 x 11.18 x 8.03 in)
Weight: 3.1 kg (6.83 lb)

Pendant-Mounting Kit

For mounting a dome camera on the ceiling

VP-520HB
Construction: Die cast aluminum alloy
Dimensions (D x H x W):
244 x 150 x 204 mm (9.61 x 5.91 x 8.03 in)
Straight tube: 300 mm (11.81 in)
Weight: 2.7 kg (5.96 lb)

Pole/Corner-Mounting Kit (for the VP-520L)

For mounting a dome camera on a pole or in a corner
(used with the VP-520L)

VP-CPM
Construction: Die cast aluminum alloy
Dimensions (D x H x W):
86.8 x 126 x 156.6 mm (3.42 x 4.96 x 6.16 in)
Weight: 440 g (0.97 lb)
Stainless Straps: 2

Pole-Mounting Kit (for the VP-520LB)

For mounting a dome camera on a pole (used with the VP-520LB)

VP-510CPM
Construction: Die cast aluminum alloy
Dimensions (D x H x W):
182 x 91 x 275 mm (7.17 x 3.58 x 10.79 in)
Weight: 500 g (1.1 lb)
Stainless Straps: 2

Sunshield (for the VPort 66-2MP)

For protecting the dome camera from direct sunlight

VP-SH1
Construction: Die cast aluminum alloy
Dimensions (Ø x H):
236 x 180 mm (9.29 x 7.09 in)
Weight: 500 g (1.1 lb)

Flush-Mounting Kit (for the VPort P16)

For flush mounting the VPort P16 camera on the ceiling

VP-FMK1
Construction: Die cast aluminum alloy
Dimensions (D x H x W):
129.4 x 52.4 x 194 mm (5.08 x 2.06 x 7.64 in)
Cover plate: Ø210 mm (Ø 8.27 in)
Weight: 410 g (0.9 lb)

VPort 461A Series

Superior video performance, 1-channel H.264/MJPEG industrial video encoders

> Supports up to 3 video streams simultaneously for H.264 and MJPEG
> Up to Full D1 resolution (720 x 480) @ 90 FPS for 3 video streams with legacy analog video images
> Video latency under 200 ms
> 2 Ethernet ports for cascade and Ethernet port redundancy
> Moxa DynaStream™ function support for network efficiency
> ONVIF support for standardization and interoperability
> Local storage capability with SD card slot
> Industrial design with -40 to 75°C operating temperature

DynaStream **Onvif**

Introduction

The VPort 461A 1-channel industrial video encoder with H.264 video compression algorithm provides the best video quality on the market, but with a smaller bandwidth requirement than other video compression standards. In addition, to meet various video stream requirements, the VPort 461A can provide up to 3 video streams simultaneously using H.264 and MJPEG compression formats. Video streams can be used for different purposes, such as viewing, recording, and analysis. In addition, the rugged industrial design,

which includes a -40 to 75°C operating temperature, IP30 protection, and industrial certifications, make the VPort 461A suitable for harsh environments.

The VPort 461A is equipped with Moxa's innovative DynaStream™ technology, which allows you to change the video frame rate automatically. With DynaStream™, you can control your network bandwidth budget and simplify network system management. The CBR Pro™ function guarantees the lowest packet loss for limited bandwidth transmissions to ensure that images will not exhibit the mosaic effect.

Specifications

Video
Video Compression: H.264 (MPEG4 part 10), MJPEG
Video Inputs: 1 (BNC connector)
Video Outputs: Over Ethernet
Video Streams: 3, H.264 or MJPEG video streams
NTSC/PAL: Auto-sensing or manual
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

Video Viewing:
• DynaStream™ support for changing the video frame rate automatically
• Adjustable image size and quality
• Timestamp and text overlay
• Maximum of 10 simultaneous unicast connections, 50 multicast clients
• CBR Pro™ support for accurate streaming bit rate control
• Image manipulation: 180° rotation
• Image tuning: control brightness, contrast, saturation

Audio
Audio Inputs: 1 Line-in or mic-in with 3.5 mm phone jack
Audio Outputs: 1 Line-out with 3.5 mm phone jack
Audio Format: Mono, PCM (G.711)

Network
Protocols: IPv4/v6, UDP, HTTP, SMTP, FTP, NTP, DNS, DHCP, UPnP, RTP, RTSP, ICMP, IGMPv3, QoS (ToS), SNMP V3, DDNS, Modbus/TCP, 802.1X, SSH/HTTPS
Ethernet: 2 10/100BaseT(X) Ethernet ports, RJ45 connector

Serial Port
PTZ Ports: 1 RS-232 or RS-422/485 port, terminal block connector, 115.2 kbps
COM Ports: 1 RS-232 or 485 port, DB9 male connector, 115.2 kbps
Console Port: 1 RS-232 port, RJ45 connector

Local Storage
SD Socket: Standard SD socket, V2.0 (SDHC)

GPIO
Digital Inputs: 2, max. 8 mA
High: +13 to +30 V; Low: -30 to +3 V
Relay Outputs: 2, max. 24 VDC @ 1 A

LED Indicators
STAT: Indicates if system is booted up properly or not
PWR1: Power 1
PWR2: Power 2
FAULT: Can be configured to correspond to system alarm, power failure, or disconnected network
VIDEO: Video input signal
PTZ: Indicates if PTZ or COM port data has been transmitted
SD: Indicates if SD card was mounted successfully

Power Requirements
Input Voltage: 12 to 32 VDC, or 18 to 30 VAC
Input Current: 0.85 A @ 12 VDC; 0.3 A @ 32 VDC; 0.85 A @ 18 VAC; 0.56 A @ 30 VAC

Physical Characteristics
Housing: Metal, IP30 protection
Dimensions: 46 x 134 x 105 mm (1.81 x 5.31 x 4.13 in)
Weight: 710 g (1.57 lb), including DIN-rail mounting kit
Installation: DIN-rail mounting (standard), wall mounting (optional)

Alarms
Intelligent Video: Camera tampering
Video Motion Detection: Includes sensitivity tuning
Scheduling: Daily repeat timing schedule
Imaging: JPEG snapshots for pre/trigger/post alarm images

Custom Alarms: HTTP event servers and CGI events for setting customized alarm actions
Email/FTP Messaging: Automatic transfer of stored images via email or FTP with event-triggered actions
Pre-alarm Buffer: 50 MB for JPEG snapshot images

PAN/TILT/ZOOM
PTZ Camera Control: Via PTZ port or COM port
PTZ Control Functions: PAN, TILT, ZOOM, FOCUS, moving speed, preset position (max. 128 positions)
PTZ Function Updates: Driver upload supported
Supported Device Protocols: Pelco D, Pelco P, Custom Camera

Security
Password: User level password protection
Filtering: By IP address
Authentication: 802.1X
Encryption: HTTPS, SSH

Environmental Limits
Operating Temperature:
Standard Models: -25 to 60°C (-13 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)
Vibration:
IEC 60068-2-6, 2 to 13.2 Hz: 2 mm (peak-peak); 13.2 to 100 Hz: 0.7g; 1.50 hrs/axis
IEC 60068-2-6, 3 to 9 Hz: 7 mm (peak-peak); 9 to 150 Hz: 1.0g; 1.86 hrs/axis
Shock: IEC 60068-2-27, 20g/11ms
Altitude: 2000 m
Ingress Protection: IEC 60529, IP30

Standards and Certifications
Safety: UL 60950-1
EMC: EN 55022/24
EMI: CISPR 22, FCC Part 15B Class A
EMS:
IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV
IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m
IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV
IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV
IEC 61000-4-6 CS: 10 V
IEC 61000-4-8
IEC 61000-4-11
Transportation: NEMA TS2

MTBF (mean time between failures)
Time: 647,088 hrs
Standard: Telcordia SR332

Warranty
Warranty Period: 5 years
Details: See www.moxa.com/warranty

Minimum Viewing System Requirements
CPU: Pentium 4, 2.4 GHz or above
Memory: 512 MB memory or above
OS: Windows XP/2000 with SP4 or above, Windows Vista, Windows 7
Browser: Internet Explorer 9.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

Unit: mm (inch)

Side View   Front View   Rear View   Top/Bottom Views

Ordering Information

Available Models
VPort 461A: 1-channel H.264/MJPEG industrial video encoder with 2 10/100BaseT(X) ports, -25 to 60°C operating temperature
VPort 461A-T: 1-channel H.264/MJPEG industrial video encoder with 2 10/100BaseT(X) ports, -40 to 75°C operating temperature

Optional Accessories (can be purchased separately)
SoftNVR-IA: 64-channel IP surveillance software for industrial automation applications
DR-4524/75-24/120-24: 45/75/120 W DIN-rail 24 VDC power supplies
DR-4524: 45W/2A, 24 VDC power supply, with universal 85 to 264 VAC input
DR-75-24: 75W/3.2A, 24 VDC power supply, with universal 85 to 264 VAC input
DR-120-24: 120W/5A, 24 VDC power supply, with 88 to 132 VAC/176 to 264 VAC input by switch
MDR-40-24/60-24: 40/60 W DIN-rail 24 VDC power supplies, -20 to 70°C operating temperature
MDR-40-24: 40W/1.7A DIN-rail 24 VDC power supply with universal 85 to 264 VAC input, -20 to 70°C operating temperature
MDR-60-24: 60W/2.5A DIN-rail 24 VDC power supply with universal 85 to 264 VAC input, -20 to 70°C operating temperature
WK-46: Wall-mounting kit
RK-4U: 19-inch rackmount set

Package Checklist
- VPort 461A video encoder
- 6-pin terminal block for 1 power input and 2 digital inputs
- 8-pin terminal block for the other power input and 2 relay outputs
- 5-pin terminal block for the RS-232/422/RS-485 PTZ control port
- Documentation and software CD
- Quick installation guide (printed)
- Warranty card

VPort 364A Series

Superior video performance, 4-channel H.264/MJPEG industrial video encoders

> Dual simultaneous H.264 and MJPEG video streams
> Video latency under 200 ms
> Moxa DynaStream™ function support for network efficiency
> ONVIF support for standardization and interoperability
> 802.1X and SSL/SSH for advanced network security
> Industrial design with -40 to 75°C operating temperature
> VPort SDK PLUS provided free

DynaStream

Introduction

The VPort 364A 4-channel industrial video encoder with H.264 video compression algorithm provides the best video quality on the market, but with a smaller bandwidth requirement than other video compression standards. In addition, to meet various video stream requirements, the VPort 364A supports dual video streams using H.264 and MJPEG compression formats. The two video streams can be used for different purposes, such as viewing, recording, and analysis. In addition, the rugged industrial design, which includes a -40 to 75°C operating temperature range, IP30 form factor protection, and industrial certifications, make the VPort 364A highly suitable for use in harsh environments.

Specifications

Video
Video Compression: H.264 (MPEG4 part 10, AVC) or MJPEG
Video Inputs: 4, BNC connector (1.0 Vpp, 75 ohm)
Video Streams: Dual streams (one for H.264, the other for MJPEG)
NTSC/PAL: Manual
Video Viewing:
• DynaStream™ support for changing the video frame rate automatically
• Adjustable image size and quality
• Timestamp and text overlay
Video Resolution and FPS (frames per second) in single video stream:

	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

Audio
Audio Inputs: 1, Line-in or mic-in with RCA connector
Audio Outputs: 1, Line-out with RCA connector
Audio Format: Mono, PCM
Network
Protocols: TCP, UDP, HTTP, SMTP, FTP, NTP, DNS, DHCP, UPnP, RTP, RTSP, ICMP, IGMPv3, QoS, SNMPv1/v2c/v3, DDNS, Modbus/TCP
Ethernet: 1 10/100BaseT(X) auto negotiating RJ45 port, or 1 100BaseFX fiber port (single/multi-mode, SC connector)
Serial Port
PTZ Ports: 1, RS-232/422/485 port (5-pin terminal block connector), max. speed of 115.2 Kbps

Console Port: 1, RS-232 RJ45 port
GPIO
Digital Inputs: 4, max. 8 mA
High: +13 V to +30 V; Low: -30 V to +3 V
Relay Outputs: 2, max. 24 VDC @ 1 A
LED Indicators
STAT: System status
PWR1: Power 1
PWR2: Power 2
FAULT: Can be configured to correspond to system alarm, power failure, or disconnected network
V1, V2, V3, V4: Video input signal activity for channels 1 to 4
Power Requirements
Input Voltage: 2 redundant power inputs, 12 to 32 VDC or 18 to 30 VAC, terminal block connector
Input Current: 12 to 32 VDC, 0.7 A (max.) or 18 to 30 VAC, 0.68 A (max.)
Power Consumption: 7.5 W (max.)
Physical Characteristics
Housing: Metal, IP30 protection
Dimensions: 80.2 x 135 x 105 mm (3.16 x 5.31 x 4.13 in)
Weight: 1.13 kg (2.49 lb)
Installation: DIN-rail mounting (standard), wall mounting (optional)
Alarms
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 and CGI events for setting customized alarm actions
Email/FTP Messaging: Automatic transfer of stored images via email or FTP with event-triggered actions
Pre-alarm Buffer: 24 MB per channel for JPEG snapshot images

PAN/TILT/ZOOM

PTZ Camera Control: Via RS-232/422/485 PTZ port
PTZ Control Functions: PAN, TILT, ZOOM, FOCUS, moving speed, preset position (max. 25 positions), and 24 custom commands
PTZ Function Updates: Driver upload supported
Supported Device Protocols: Pelco D, Pelco P, Dynacolor DynaDome, Cohu, Custom Camera
Transparent PTZ Control: Control PTZ cameras with legacy PTZ control panel or keyboard connected to a PC or VPort decoder

Security

Password: User level password protection
Filtering: By IP address

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)
Vibration:
IEC 60068-2-6, 2 to 13.2 Hz: 2 mm (peak-peak); 13.2 to 100 Hz: 0.7g;
    1.50 hrs/axis
IEC 60068-2-6, 3 to 9 Hz: 7 mm (peak-peak); 9 to 150 Hz: 1.0g;
    1.86 hrs/axis
Shock: IEC 60068-2-27, 20g/11ms
Altitude: 2000 m
Ingress Protection: IEC 60529, IP30

Standards and Certifications

Safety: UL 60950-1
EMI: CISPR 22, FCC Part 15B Class A
EMS:
EC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV
IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m
IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV
IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV
IEC 61000-4-6 CS: 10 V
IEC 61000-4-8

MTBF (mean time between failures)

Time: 465,000 hrs
Standard: Telcordia SR332

Warranty

Warranty Period: 5 years
Details: See www.moxa.com/warranty

Minimum Viewing System Requirements

CPU: Pentium 4, 2.4 GHz or above
Memory: 512 MB memory or above
OS: Windows XP/2000 with SP4 or above, Windows Vista, Windows 7
Browser: Internet Explorer 9.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

Dimensions

Unit: mm (inch)

Front Views   Side View   Rear View   Top View

: Ordering Information

Available Models		Port Interface		
Standard Temp. Range **(0 to 60°C)**	**Wide Temp. Range** **(-40 to 75°C)**	**10/100/1000 BaseT(X)**	**Multi-mode, SC Connector**	**Single-mode, SC Connector**
VPort 364A	VPort 364A-T	1	–	–
VPort 364A-M-SC	VPort 364A-M-SC-T	–	1	–
VPort 364A-S-SC	VPort 364A-S-SC-T	–	–	1

Optional Accessories (can be purchased separately)

SoftNVR-IA: 64-channel IP surveillance software for industrial automation applications
DR-4524: 45W/2A, 24 VDC power supply, with universal 85 to 264 VAC input
DR-75-24: 75W/3.2A, 24 VDC power supply, with universal 85 to 264 VAC input
DR-120-24: 120W/5A, 24 VDC power supply, with 88 to 132 VAC/176 to 264 VAC input by switch
MDR-40-24: 40W/1.7A DIN-rail 24 VDC power supply with universal 85 to 264 VAC input, -20 to 70°C operating temperature
MDR-60-24: 60W/2.5A DIN-rail 24 VDC power supply with universal 85 to 264 VAC input, -20 to 70°C operating temperature
WK-46: Wall-mounting kit
RK-4U: 19-inch rackmount set

Package Checklist

- VPort 364A video encoder
- 2 5-pin terminal blocks for 2 power inputs and 2 relay outputs
- 1 8-pin terminal block for 4 DIs
- 1 5-pin terminal block for the RS-232/422/485 PTZ control port
- Quick installation guide (printed)
- Documentation and software CD
- Warranty card

MXNVR-RO-T

Preliminary

Industrial network video recorder for harsh environments

> Compliant with EN 50121-3-2 and essential sections* of EN 50155
> -40 to 70°C (TX temperature) operating temperature range, without a fan
> Record 1080P (1920 x 1080) images at up to 900 FPS
> Live view of 1080P (1920 x 1080) images at up to 120 FPS
> Multi-channel live view in 1/4 layout
> Redundant video recording
> Two built-in hot-swappable storage trays for 2.5" SSDs or HDDs
> ONVIF support for standardization and interoperability

*Moxa defines "essential compliance" to include those EN 50155 requirements that make products more suitable for rolling stock railway applications.

c(UL)us LISTED   EN 50155   CE   FC

Introduction

The MXNVR-RO-T is an onboard NVR (network video recorder) specially designed for live viewing and recording video on trains. It is compliant with essential sections of EN 50155 (performance, TX temperature, shock vibration, and EN 50121-3-2 EMC), which allows the onboard CCTV system to keep operating in critical onboard environments (requires solid-state disks that supports -40 to 70°C operating temperatures). The MXNVR-RO-T can record 1080P (1920 x 1080) images at up to 900 FPS, and supports live view of 1080P images at up to 120 FPS. The user interface is compatible with a touch panel, and is designed for use by train engineers and operators.

Specifications

Recording
Recoding Capability: Record 1080P (1920 x 1080) images at up to 900 FPS
Record Modes: Continuous, Schedule, Event
Stream Types: Video, Audio, Video/Audio
Video Input: IP video via Ethernet
Video Codecs: H.264, MPEG4, MJPEG
Audio Input/Output: 1 line-in, 1 line-out, M12 connector
Audio Format: PCM (G.711), AAC
Event Record: Triggered by CGI/DI digital input, motion detection, or time period
Pre/Post Record: 1 to 600 seconds (can be exported as a single video file)
Recycling Record: Enable/ Disable

Local Live View
Display Capability: Display 1080P (1920 x 1080) images at up to 120 FPS
Display Mode: 1/4 multi-channel layout
Display Sequence: Based on a multi-channel layout
Monitor Interfaces: 2, 1 VGA DB15 female connector, 1 DVI-D connector
Snapshot Images: Save snapshot images to JPEG/PNG format

Searching and Exporting
Search Modes: Camera, date/time, event
Exporting: Export (download) recorded video files remotely by file or time period
Exporting File Formats: MP4
Authentication: Export recoded video files with watermark

Playback
Method: Export (download) video files for playback
Playback Modes: Continuous, timeline
Playback Operation: Play, Pause, Stop, Fast Forward, Fast Rewind

Storage
Disk Interface: 2 hot-swappable 2.5" SATAII sockets
Note: Storage disks are not included. Users will need to purchase 2.5" hard disks or SSDs (solid state disks) from a hard disk vendor.

Display Interface
VGA Interface: DB15 female connector, 2048 x 1536 resolution (max.)
DVI Interface: DVI-D connector (Chrontel CH7307 SDVO to DVI transmitter), 1920 x 1200 resolution (max.)

Network
Ethernet: 2 auto-sensing 10/100/1000 Mbps ports (M12 X-coded)
Network Configuration: IP address, subnet mask, gateway, DNS servers

Digital Input
Input Channels: 6, source type
Input Voltage: 0 to 30 VDC at 25 Hz
Digital Input Levels for Dry Contacts:
• Logic level 0: Close to GND
• Logic level 1: Open
Digital Input Levels for Wet Contacts:
• Logic level 0: +3 V max.
• Logic level 1: +10 V to +30 V (Source to DI)
Isolation Protection: 3 kV

Digital Output

Output Channels: 2, sink type
Output Current: 200 mA (max.) per channel
On-State Voltage: 24 VDC nominal, open collector to 30 VDC
Connector Type: 10-pin screw-fastened terminal block (6 DI points, 2 DO points, DI Source, GND)
Isolation: 3 kV optical isolation

LED Indicators

System: Power x 1, Storage x 1
LAN: 100M/Link x 2, 1000M/Link x 2
Serial: TX x 2, RX x 2

Power Requirements

Input Voltage: 24 to 110 VDC, M12 connector
Input Current: 2.5 A @ 24 VDC to 0.55 A @ 110 VDC (without SSD/HDD attached)
Power Consumption: 60 W (without SSD/HDD attached)

Physical Characteristics

Housing: Aluminum
Dimensions: 287 x 290 x 101 mm (11.29 x 11.41 x 3.97 in)
Weight: 5 kg (11.02 lb)
Installation: Wall mounting (standard)

Environmental Limits

Operating Temperature: -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)

Standards and Certifications

Safety: UL 60950-1, CSA C22.2 No. 60950-1-07, EN 60950-1
Rail Traffic: EN 50155 (essential compliance*), EN 50121-3-2, EN 50121-4, IEC 61373
*Moxa defines "essential compliance" to include those EN 50155 requirements that make products more suitable for rolling stock railway applications.
EMC: EN 55022/24
EMI: CISPR 22, FCC Part 15B 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
Green Product: RoHS, CRoHS, WEEE

MTBF (mean time between failures)

Time: 261,297 hrs
Standard: Telcordia SR332

Warranty

Warranty Period: 3 years
Details: See www.moxa.com/warranty

Minimum Viewing System Requirements

Note: These specifications describe the network video recorder itself, but not its official accessories. In particular, the wide temperature range supported by this product does not apply to accessories such as power adapters and cables.

Dimensions

Unit: mm (inch)

8 (0.31)
274 (10.79)
44.4 (1.75)   198 (7.80)
250 (9.84)
100.7 (3.96)
290 (11.42)
286.8 (11.29)
REF. 325.38 (12.81)
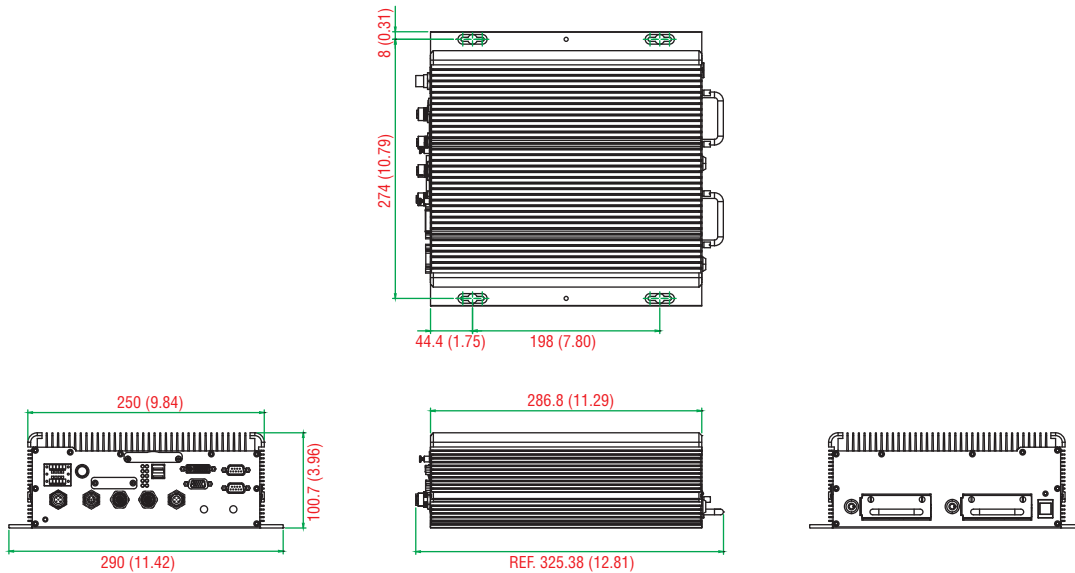
: Ordering Information

Available Models

MXNVR-RO-T: Onboard NVR, x86 embedded computer with Intel Core i7-3517UE, VGA, DVI, 2 LANs, 2 serial ports, 6 DIs, 2 DOs, 3 USB 2.0 ports, 24 to 110 VDC power, Windows Embedded Standard 7, -40 to 70°C operating temperature (EN 50155 Class TX)

Package Checklist

- MXNVR-RO-T NVR
- 2 storage tray keys
- Power cable (CBL-M12FF5PPJ21-BK-15-IP68)
- 2 5-pin terminal blocks
- Documentation and software CD
- Quick installation guide (printed)
- Warranty card

Optional Accessories (can be purchased separately)

Type	Model	Description
Ethernet		
Cable & Connector	CBL-M12XMM8PRJ45-BK-100-IP67	1-meter X-coded M12-to-RJ45 Cat-5E UTP gigabit Ethernet cable, 8-pin male M12 connector, IP67-rated
Connector	M12X-8PMM-IP67	Field-installable X-coded screw-fastened gigabit Ethernet connector, 8-pin male M12 connector, IP67-rated
Power		
Connector	M12A-5P-IP68	Field-installable A-coded screw-fastened power connector, 5-pin female M12 connector, IP68-rated
Power Adapter	PWR-24250-DT-S1	Input: 100 to 240 VAC, 50 to 60 Hz, 1.5 A Output: 24 VDC, 2.5 A, 60 W, for testing and system development in the office under ambient temperature conditions
Power Cord	PWC-C7US-2B-183	Power cord with 2-pin connector, US plug
Power Cord	PWC-C7EU-2B-183	Power cord with 2-pin connector, EU plug
Power Cord	PWC-C7UK-2B-183	Power cord with 2-pin connector, UK plug
Power Cord	PWC-C7AU-2B-183	Power cord with 2-pin connector, AU plug
Power Cord	PWC-C7CN-2B-183	Power cord with 2-pin connector, CN plug
Audio		
Connector	M12A-8PMM-IP67	Field-installable A-coded 8-pin male screw-fastened M12 connector, IP67-rated
USB		
Connector	M12A-5PMM-IP68	D-coded screw-fastened USB connector, 5-pin male M12 connector, IP68-rated

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IP Surveillance > MXNVR-RO-T

SoftNVR-IA

64-channel IP video surveillance software designed for industrial automation systems

> Up to 64 channels in one system
> Built-in OPC server for easy communication with automation systems
> Live view with H.264, MPEG4, and MJPEG, from VPort products
> Dual-monitor display capability
> i-frame (key frame) decode only to save system resources for higher priority tasks
> Video recording with manual, event-triggered, and scheduled recording
> Playback system with event and time-based search functionality
> Supports remote live view and remote playback via web access
> Video watermark verification and fail-over system design

⋮ Introduction

The SoftNVR-IA 64-channel IP surveillance software is designed for use with industrial applications. One of the key features of SoftNVR-IA is a built-in OPC server, which can communicate directly with industrial automation systems (SCADA, HMI, etc.). To enhance system intelligence, video recording and alarms can be triggered by events such as Digital Input and Video Loss that are supported by SoftNVR-IA, as well as events in automation systems. Most importantly, SoftNVR-IA gives industrial system integrators unlimited capability for integrating IP surveillance systems with automation systems.

OPC Communication

• Can receive event tags sent from the automation system to trigger video recording and other actions
• Can send event tags to the automation system with system information and the status of each channel

Live View

• Supports 1, 4, 6, 9, 10, 13, 16, 25, 32, 64 live display
• Supports MJPEG, MPEG4, and H.264 video streams (for VPort products only)
• Supports up to 64 channels in the camera list
• Easy-to-use with drag and drop video display selection
• Can provide snapshot images in JPEG format
• Supports image tuning, including brightness, saturation, contrast, and hue
• Supports 2-way audio for voice communication between field sites and the control center
• Supports dual monitor and full screen display
• Supports display screen rotation
• Supports the PTZ control panel defined in VPort products
• Supports PTZ patrol
• Supports i-frame (key frame) decode only, which lowers displayed frame rate immediately to save system resources for other higher priority tasks

Dual monitor display

Video Recording

• Video recording can be triggered manually or by event
• Video files are in AVI format, and can be played back on all popular media players
• The storage hard disk can be selected from network hard drives
• Supports the FIFO recycle function for long time video recording
• Can configure the number of days recorded video files will be stored
• Supports pre-event video recording for up to 30 seconds

Playback & Search

- Can play back up to 4 recorded videos simultaneously
- Supports timeline selection when in video playback mode
- Supports stop, speed up, slow down, rewind frame-by-frame, and forward frame-by-frame
- Search video records by camera, time, or event
- Can take snapshot images when in video playback mode

Schedule

- Can set up a weekday schedule
- Schedule settings can be based on camera and event
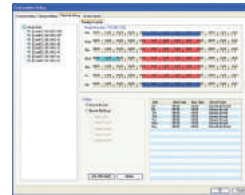
e-Map

- Can load BMP emap for easy camera location identification
- Maximum of 32 emaps can be listed
- Supports video image popups when hovering over camera icon
- Select 3 camera icon types and up to 8 lens directions
- Access live display by double clicking camera icon
- Camera icon can be configured to flash when alarm event occurs

Alarm Events

- Alarm events: Digital Input and Video Loss
- Can accept events from the automation system via OPC communication
- Alarm triggered actions: popup display, go preset, play sound, trigger DO (relay)
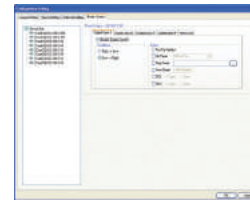
Remote Access

- Remote live view via web access
- Remote playback of recorded video via web access
- Capable of searching a specified recorded video by event, time, and camera
- Remote control of PTZ camera

System

- Automatically search or manually detect the IP address of a video device on the LAN
- Can configure the server name
- Can configure multiple email addresses for receiving alarm messages

- Folder and file names of snapshot images can be customized
- Up to 4 groups and 32 user privileges for different operational purposes
- Supports English, Traditional Chinese, and Simplified Chinese

---
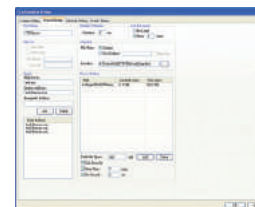
⁞ Recommended System Requirements

- Intel Core i7-2600 CPU @ 3.40 GHz (4 CPUs) or above
- 4 GB RAM or above

- Windows XP with SP3, Windows 7
- Motherboard: Intel chipset recommended
- Display card: ATI Radeon 9200, nVIDIA GeForce GT220, or above (dual monitors require 2 outputs); 1 GB DDR3 recommended

⁞ Ordering Information

Available Models

SoftNVR-IA: 64-channel IP video surveillance software for industrial automation systems

Package Checklist

- SoftNVR-IA CD (includes the SoftNVR-IA software and related documents)
- Key Pro (plugs into the USB port)
- Quick installation guide (printed)

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IP Surveillance > SoftNVR-IA

VPort SDK PLUS

User-friendly software development kits for third-party developers to customize IP video management systems

: Introduction

Moxa IVN (Industrial Video Networking) solutions, which include VPort series IP video products and IP surveillance software solutions, are future-proof, ready-to-use IP video solutions for video surveillance applications. With the growing popularity of IP networks, more and more users need to integrate their video management system with other monitoring and control systems (e.g., SCADA or HMI) to get

the benefits of centralization and inter-operation. To assist third-party developers with this intergration, we are providing Moxa VPort SDK PLUS, which supports VPort series video server and IP cameras, for building customized video management systems and for integrating VPort series products into comprehensive monitoring and control systems.

URL (CGI) Commands

URL commands are easy-to-use CGI commands used with HTML programming for web systems. Users can acquire video images and control VPort series products from their own customized web pages

by embedding these CGI commands into the HTML source code. All of the URL commands are listed in the VPort user's manual, or a CGI command manual.

ActiveX Control SDK PLUS

ActiveX Control is an OCX component that uses Microsoft COM (Component Object Model) technology to enable software components to communicate. ActiveX Control is used widely with platforms that support WIN32, IE Plug-in, and Visual Basic, and is also popular in automation system software, such as SCADA systems. Moxa ActiveX Control SDK PLUS is a user-friendly, customized tool for programmers that supports versatile parameters for customized viewing, recording, PTZ camera control, event triggering, and recorded video playback. Moxa ActiveX Control SDK PLUS is provided free of charge, and supports VB, VC, and C# developing environments, as well as plug-ins for web applications and automation tools (e.g., SCADA software). Third-party developers who want to use ActiveX SDK can download it from Moxa's website.

ActiveX Work Process
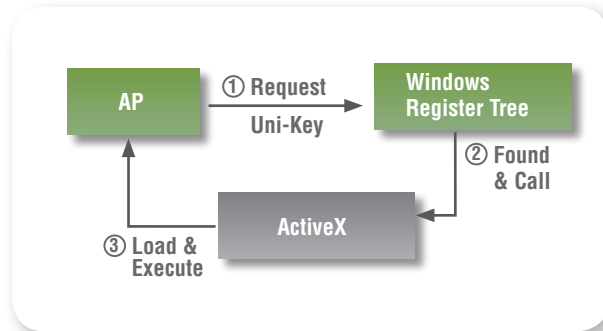
API SDK PLUS

For some video management applications, ActiveX Control SDK PLUS may not provide users with enough functionality. In this case, API SDK PLUS, which includes a detailed C library, can be used to program customized solutions in a Visual C++ or C# environment. API SDK PLUS includes a total of 4 DLL modules, and currently supports the WIN32, Linux, and WIN CE pocket 2003 platforms. API SDK PLUS

is provided free of charge. However, since API SDK PLUS uses proprietary technology and the programmer must be an experienced, professional C programmer, we are not releasing API SDK PLUS for general use. Third-party developers who would like to use API SDK PLUS should request support on Moxa's website to apply for a free copy. Some verification is required.

API Module Structure
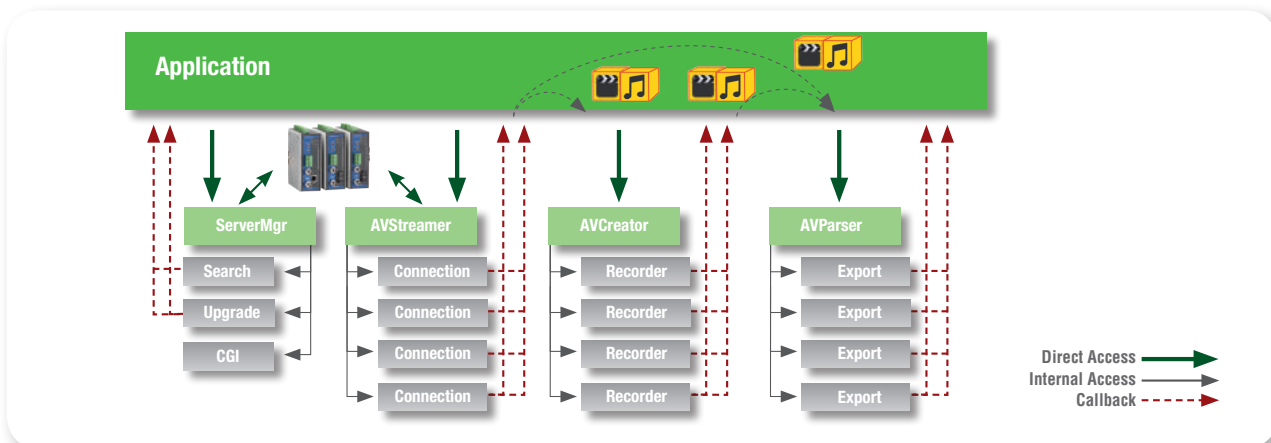
VPort Video Gadget

Coding-free programming method specially designed for SCADA systems

: Introduction

Embedding video into a SCADA system has always been a big hassle for system integrators, since they needed to invest the time and effort to study the IP video device's ActiveX SDK (software development kit), and then struggle to write bug-free code. In order to reduce the amount of programming effort required, Moxa has created a coding-free programming tool, called VPort Video Gadget, which is included with VPort ActiveX SDK PLUS. VPort Video Gadget has the potential to save system engineers an enormous amount of programming time and effort.

About VPort Video Gadget

VPort Video Gadget is basically a collection of pre-programmed function objects for embedding video into a SCADA system. Functions include connecting/disconnecting the VPort, displaying a video, closing a video, controlling PTZ, enabling/disabling audio, and taking snapshot images. There is no need for the system engineer to spend time writing the code, which is a huge benefit since it can save a lot of time and engineering resources.

For videos recorded with Moxa SoftNVR-IA or MxNVR-IA, VPort video gadget provides a remote playback function object for playing recorded videos on a SCADA HMI. The SCADA system integrator can easily design the search and playback of recorded videos using this remote playback function.

Using VPort Video Gadget

Only a few steps are required to use VPort Video Gadget:

• Drag & drop the selected function object
• Input the required parameters into the appropriate columns
• Save, and the function programming task is done
• Supports Citect, InTouch, and Cimplicity third-party SCADA systems
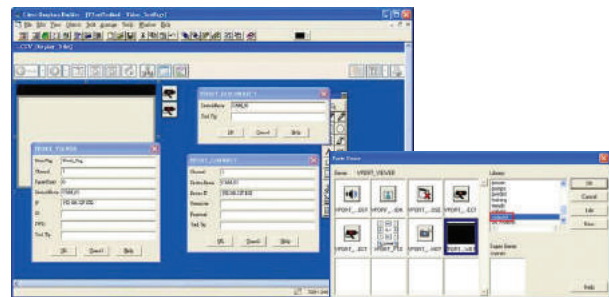
Note: The precise way to use VPort Video Gadget may be different for different SCADA systems. However, regardless of which SCADA system you use, VPort Video Gadget is 100% coding-free.

A Great Tool for Automation Systems

Obviously, the key benefit provided by VPort Video Gadget is to greatly reduce the amount of programming effort required to integrate IP video into SCADA software. But more than that, with VPort Video Gadget your IP video system will no longer be separate from your automation system. Instead, it will just be one more element of the automation system, on the same par as I/O sensor alarms, motors, and other items.

To get VPort Video Gadget, download Moxa VPort ActiveX SDK PLUS from the download center on Moxa's website.

Your Trusted Partner in Automation

Moxa is a leading provider of edge connectivity, industrial computing, and network infrastructure solutions for enabling connectivity for the Industrial Internet of Things. With over 25 years of industry experience, Moxa has connected more than 40 million devices worldwide and has a distribution and service network that reaches customers in more than 70 countries. Moxa delivers lasting business value by empowering industry with reliable networks and sincere service for industrial communications infrastructures.

Moxa Sales and Marketing Headquarters

Moxa Corporate Plaza
601 Valencia Ave., Suite 200
Brea, CA 92823, U.S.A.
Toll Free: 1-888-669-2872
Tel: +1-714-528-6777
Fax: +1-714-528-6778
usa@moxa.com

Moxa Design and Engineering Headquarters

Fl. 4, No. 135, Lane 235, Baoqiao Rd.
Xindian Dist., New Taipei City,
Taiwan, R.O.C.
Tel: +886-2-8919-1230
Fax: +886-2-8919-1231

The Americas
Moxa Americas
Toll Free: 1-888-MOXA-USA
Tel: +1-714-528-6777
Fax: +1-714-528-6778
usa@moxa.com

Moxa Brazil
Tel: +55-11-2495-3555
Fax: +55-11-2495-6555
brazil@moxa.com

Europe
Moxa Germany
Tel: +49-89-37003-99-0
Fax: +49-89-37003-99-99
europe@moxa.com

Moxa France
Tel: +33-1-30-85-41-80
Fax: +33-1-30-47-35-91
france@moxa.com

Moxa UK
Tel: +44-1844-355-601
Fax: +44-1844-353-553
uk@moxa.com

Asia-Pacific
Moxa Asia-Pacific and Taiwan
Tel: +886-2-8919-1230
Fax: +886-2-8919-1231
asia@moxa.com
japan@moxa.com
taiwan@moxa.com

Moxa India
Tel: +91-80-4172-9088
Fax: +91-80-4132-1045
india@moxa.com

Moxa Russia
Tel: +7-495-287-0929
Fax: +7-495-269-0929
russia@moxa.com

Moxa Korea
Tel: +82-31-625-4048
Fax: +82-31-609-7996
korea@moxa.com

China
Moxa Shanghai
Tel: +86-21-5258-9955
Fax: +86-21-5258-5505
china@moxa.com

Moxa Beijing
Tel: +86-10-5976-6123/24/25/26
Fax: +86-10-5976-6122
china@moxa.com

Moxa Shenzhen
Tel: +86-755-8368-4084/94
Fax: +86-755-8368-4148
china@moxa.com

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