Industrial Video Networking Solutions for IP Surveillance

- Unique industrial design with -40 to 75°C operating temperature and fiber connections
- Complete IP video networking products available
- Diverse industrial Ethernet switches for reliable redundant networks
- Advanced networking capability for easy transmission and integration
# Industrial Video Networking Solutions

## High Reliability and Integrated for IP Video Surveillance Systems

Performance and efficiency are two basic concerns of any modern IP video surveillance system. But mission-critical applications, such as remote monitoring in oil fields, intelligent transportation systems, and video surveillance for unmanned facilities, are often subject to harsh environments and demanding central management requirements. To ensure high reliability and integrated capability for such applications, Moxa has developed a full range of industrial video networking solutions that are ruggedly designed and highly integrated.

## Your Expert Source for Integrated Video Networking Solutions

Moxa’s industrial video networking solutions, including industrial video servers (encoder/decoder), outdoor IP cameras, network video recorder (NVR) and central management system (CMS), IP surveillance software, software development kits (SDK), and industrial Ethernet switches, provide mission-critical video surveillance applications with a one-stop source for integrated solutions.

### Industrial Video Servers

Video encoders and video decoders designed with rugged hardware protection are ideal for use in demanding industrial environments.

### Outdoor IP Cameras

IP66-rated housing, vandalism-proof protection, and high-quality day/night lenses make these cameras suitable for outdoor environments.

### Industrial Ethernet Switches

Layer 2 Ethernet switches, Layer 3 Ethernet switches, full Gigabit Ethernet switches, and PoE switches, offer the most rugged and flexible solution for building a highly reliable and redundant network backbone (recovery time < 20 ms).

### IP Surveillance Software

NVR software for video viewing, recording, and management; CMS software for managing multiple NVR software in the control center; and SDK for integrating video images into customized systems.

## Complete Video Networking Solutions

Moxa’s complete industrial video networking products are proven and tough solutions that can build a reliable surveillance system for challenging industrial applications requiring real-time remote management and high environmental resistance, such as the remote monitoring and control of field conditions and devices in facilities, transportation, SCADA/HMI process automation, and other rigorous industrial environments.

### Rugged to the Max

As a leading provider of industrial device networking solutions, Moxa has over 22 years of experience in developing rugged products that withstand the harsh conditions often encountered by mission-critical industrial applications. We use this expertise to provide our video networking solutions with the same hardened reliability that is characteristic of all our communication solutions. To guarantee system reliability and safety, many applications require products with special approvals and certifications, such as UL508 for industrial products; Class I, Div. 2/ATEX Zone 2 for explosion-proof equipment; and NEMA TS2 for intelligent transportation systems. Moxa’s industrial video networking solutions are all designed to meet these critical requirements:

- Wide operating temperature range of -40 to 75°C or -40 to 50°C
- Optional fiber-optic Ethernet support for long-haul transmission
- 12/24 VDC or 24 VAC redundant power inputs
- IP50/66-rated housing
- High MTBF (> 150,000 hrs)

### Proven Applications for Industrial Markets

Moxa’s complete industrial video networking products are proven and tough solutions that can build a reliable surveillance system for challenging industrial applications requiring real-time remote management and high environmental resistance, such as the remote monitoring and control of field conditions and devices in facilities, transportation, SCADA/HMI process automation, and other rigorous industrial environments.
Outdoor IP Cameras

An IP camera can generate compressed digital video images directly and transmit these images over an IP network. Users can view live images with a web browser, or with VPort management software installed on a remote computer.

Mosai’s vandal-resistant, fixed dome IP camera is designed for demanding surveillance applications. The IP camera features a See-and-night lens with up to 250 TVL and 1440 x 1080 resolution, a night vision range of up to 90m, and an 8-position PTZ control. It also offers a range of features including:

- Full motion, 1-channel MJPEG/MPEG4 industrial video encoder.
- Full motion, 4-channel MJPEG/MPEG4 industrial video encoder.
- Rugged industrial design with -40 to 75°C operating temperature range and fiber optic Ethernet port.
- Video stream up to 30 frames/sec at full D1 (720 x 480) resolution.
- PTZ control with 64 channels.
- SD card slot for local storage capability.
- SNMP for network management.

Rugged Industrial Features

- -40 to 75°C operating temperature range and fiber optic Ethernet port.
- 2 Ethernet ports for cascade or port redundancy (VPort 354).
- Choose either RJ45 or fiber optic Ethernet ports.
- 12/24 VDC or 24 VAC redundant power inputs.
- D-Rail mounting and panel mounting accessories available.
- IP30 protected enclosure.
- Industrial approval and certifications for EMI/ESD protection.

Industrial Video Servers

Video servers include video encoders and video decoders. A video encoder is used to digitize analog video signals, compress the digital video images, and then transmit these compressed images directly over an IP network. Users can view live images with a web browser, or with video management software installed on a remote computer. A video decoder is used to decompress the compressed digital video images, and then transfer these digital video images back to the analog video signals so legacy CCTV equipment, such as a monitor, can also use the analog video.

VPort 25 series

- IP66, day-and-night vandal-proof fixed dome IP camera for outdoors.
- -40 to 50°C operating temperature range; heater or fan not required.
- IP66-rated (EN60529) protection and strong aluminum case.
- Vandal-proof form factor to prevent damage from unexpected external forces.
- Power-over-Ethernet capability and direct-wired power supply for maximum installation flexibility and power redundancy.
- Versatile installation options for outdoor environments.

VPort 351 series

- Industrial design with -40 to 75°C operating temperature and fiber optic Ethernet port.
- Video stream up to 30 frames/sec at full D1 (720 x 480) resolution.
- Pre/post-alarm video recording function for advanced surveillance.
- 2-way (1 in, 1 out) audio supported.
- 2 D1, 2 relay outputs supported for sensors and alarms.
- SNMP for network management.
- Free VPort SDK PLUS and 4-channel video surveillance software.

VPort 25 series

- Industrial design with -40 to 75°C operating temperature and fiber optic Ethernet port.
- Video stream up to 30 frames/sec at full D1 (720 x 480) resolution.
- Pre/post-alarm video recording function for advanced surveillance.
- 2-way (1 in, 1 out) audio supported.
- 2 D1, 2 relay outputs supported for sensors and alarms.
- SNMP for network management.
- Free VPort SDK PLUS and 4-channel video surveillance software.

Rugged Industrial Features

- -40 to 75°C operating temperature range and fiber optic Ethernet port.
- Video stream up to 30 frames/sec at CIF (352 x 240) resolution for each channel.
- Modbus/TCP supported for easy communication with SCADA software.
- One RS-232/422/485 COM port for controlling external serial devices over Ethernet.
- 2-way (1 in, 1 out) audio supported.
- 4 D1, 2 relay outputs supported for sensors and alarms.
- SNMP for network management.
- Free VPort SDK PLUS and 4-channel video surveillance software.
Industrial Ethernet Switches

Modern video networking solutions need a high bandwidth Gigabit Ethernet network to transmit large amounts of video, voice, and data over the same network. A single Gigabit backbone for video applications provides significant improvements in convenience, flexibility, and scalability, while saving money at the same time. Moxa provides versatile industrial managed Ethernet switches to build a reliable Gigabit Ethernet infrastructure for mission-critical video surveillance applications. These Ethernet switches feature rugged hardware design, industrial ratings, Gigabit performance, fiber support, PoE capability, and the world’s leading redundant ring technology—Turbo Ring, which ensures nonstop network operation with a recovery time under 20 ms. With Moxa’s array of video and industrial Ethernet products, you are sure to find the perfect solution for your industrial video network.

Moxa’s VPort SDK PLUS, which includes CGI commands, ActiveX, and a C library, is available free of charge to system integrators and third-party software developers. Learning to use the Moxa VPort SDK PLUS is easy, and detailed documentation and sample codes are provided for quick reference.

IP Surveillance Software

User-friendly IP surveillance software allows users to view multiple video sources as well as to record and analyze the video data. With Moxa’s powerful IP surveillance software, you can construct a complete and versatile IP surveillance solution to suit the needs of your application.

In addition to video transmission and Ethernet products, Moxa provides video surveillance software solutions to manage your IP video surveillance systems. These solutions include NVR (network video recording) software that can support 4 to 64 channels, as well as CMS (central management system) software to manage multiple NVR systems. With these tools in hand, administrators can manage surveillance systems of any size.

SoftNVR

Expandable network video recording software for managing up to 64 video camera channels

- Multi-screen viewing format
- Dual monitor capability
- Video analytics and instant response
- Video quality enhancement tools
- Intelligent and convenient search for locating recorded video

SoftDVR Pro

Network video recording software for managing up to 16 video camera channels

- Multi-screen viewing format
- Event-driven recording
- Easy-to-use search and playback
- Store data to network hard disk
- Set schedule for recording and activating alarms
- Remote access by web browser

EDS-509 series
9G-port full Gigabit managed Ethernet switch

- 4 10/100/1000Base(T(X) ports plus 5 combo (10/100/1000BaseT(X) or 10/100Base/SFP slot) Gigabit ports
- Fiber optic options for extending distance and improving electrical noise immunity
- Turbo Ring (recovery time < 20 ms), RSTP/STP for Ethernet redundancy
- QoS, IGMP snooping/GMRP, VLAN, LACP, SNMPv1/v2c, RMON supported
- SNMPv3, HTTPS, SSH, IEEE 802.1X, and port security supported
- -40 to 75°C wide operating temperature range
- IPv6 Ready logo awarded (IPv6 Logo Committee certified)

EDS-510A series
7+3G-port Gigabit managed Ethernet switch

- 2 Gigabit Ethernet ports for redundant ring and 1 Gigabit Ethernet port for uplink solution
- Turbo Ring (recovery time < 20 ms), RSTP/STP for Ethernet redundancy
- QoS, IGMP snooping/GMRP, VLAN, LACP, SNMPv1/v2c, RMON supported
- IPv6 Ready logo awarded (IPv6 Logo Committee certified)

EDS-P510 series
7+3G-port Gigabit PoE managed Ethernet switch

- IPv6 Ready logo awarded (IPv6 Logo Committee certified)

IKS-6726 series
24+2G-port rackmount modular managed Ethernet switch

- Turbo Ring (recovery time < 20 ms), RSTP/STP for Ethernet redundancy
- Various media modules offered: RJ45, fiber, SFP ports
- Isolated redundant power inputs with universal 12/24/48 VDC or 110/220 VAC/VA power supplies
- -40 to 75°C wide operating temperature range
- Meets UL 60950-1, NEMA TS2, DIN/IEC, EN/IEC62345-1 and other certifications
- IPv6 Ready logo awarded (IPv6 Logo Committee certified)

VPort SDK PLUS

Most video surveillance systems require customized video management functions or integration with other applications (e.g., SCADA, access control systems, and fire alarm systems). For this reason, a user-friendly SDK (software development kit) is a good tool to have available for building customized video management systems. Moxa’s VPort SDK PLUS, which includes CGI commands, ActiveX, and a C library, is available free of charge to system integrators and third-party software developers. Learning to use the Moxa VPort SDK PLUS is easy, and detailed documentation and sample codes are provided for quick reference.

Product Showcase | 05-06

VPort SDK PLUS

URL Command
(CGI Commands)

ActiveX Control
API

C Library for customized software and systems

HTML programming for web applications

Microsoft COM solution for plug-in
in browsers and automation software (e.g., SCADA)
Remote Video Monitoring System for Unmanned Sites

Due to advancements in IP-based automation technology, more and more facilities, such as power substations and telecom equipment rooms, are adopting centralized remote monitoring systems to save manpower and resources. As a result, environmental monitoring applications are increasingly turning to rugged IP video surveillance systems to strengthen security, safety, and anti-intrusion protection for unmanned facilities. A real-time IP video surveillance system provides administrators with the following benefits:

- Remote monitoring of the operational state of field equipment and devices
- Remote monitoring that kicks into action when an alarm is triggered by an I/O device (such as door sensors, fire detectors, etc.)
- Record the actions when the field engineers are maintaining the field equipments and devices
- Video record in the event of a security breach or sabotage by unauthorized personnel

**Application Requirements**

- IP video surveillance system for remote and central management
- Fiber communication for long-haul transmission and electromagnetic interference immunity
- Products with a rugged design for use in critical substation environments
- Products must have a high MTBF for longer system reliability
- User-friendly IP surveillance software for video viewing and recording
- SNMP or Modbus/TCP supported for easy communication with SCADA software

**Why Moxa?**

- Video encoders with built-in fiber Ethernet ports save the cost of an Ethernet-to-fiber media converter
- Real-time video streams up to 30/25 FPS at full D1 (720x480/576) resolution
- Products have a rugged design with redundant dual VAC/VDC power inputs, -40 to 75°C operating temperature, IP30 form factor, DIN-Rail mounting, fanless operation, and industrial regulatory approvals
- MTBF over 150,000 hours and 5-year warranty
- User-friendly IP surveillance software with up to 64 channels
- SNMP and Modbus/TCP protocol supported for SCADA system interoperability
- Free software development kit (SDK) for customized system integration

**Featured Products**

- **VPort 351/254**
  - 1- or 4-channel MJPEG/MPEG4 industrial video encoders
- **SoftNVR**
  - Expandable, 64-channel IP surveillance software
- **IKS-6726**
  - 24/22G-port rackmount Gigabit modular managed Ethernet switches
- **SCADA/WS**
  - Interactive, Web-based, and SCADA/HMI
- **VPort 351/254**
  - 1- or 4-channel MJPEG/MPEG4 industrial video encoders
- **IKS-6726**
  - 24G-port, 48-channel managed Gigabit Ethernet switches
- **VPort 254/354**
  - 4-channel Industrial Video Encoder

**Integrated Video Networking Solutions for Intelligent Transportation Systems**

Advanced traffic management systems (ATMS) and advanced traffic information systems (ATIS) are the most important and highly invested applications in modern intelligent transportation systems. In both systems, video networking plays an important role in providing administrators in remote traffic control centers with real-time video updates of traffic conditions over Ethernet networks to analyze complicated traffic patterns and make snap decisions. With the large amount of video, voice, and data that must be transmitted and integrated into a traffic management system, an integrated video network with Gigabit bandwidth and redundant technology is a requisite for continuous monitoring and fast response.

**Application Requirements**

- High-performance IP video networking for remote and central management
- Redundant technology to guarantee continuous traffic monitoring
- Real-time video images for instant traffic updates
- Advanced network protocols supported for efficient network management
- Long-haul transmission to span large transportation networks
- Rugged industrial products to withstand extreme weather conditions outdoors or in roadside cabinets
- User-friendly software development kit (SDK) to integrate video and traffic control systems

**Why Moxa?**

- Complete industrial video networking solutions, including industrial Ethernet infrastructure solutions and video networking products
- Various Gigabit and PoE managed switches equipped with super fast redundant ring and a recovery time under 20 ms for reliable IT
g- Video encoders with up to 30/25 frames per second at full D1 (720x480/576) resolution
- Multicast (IGMP) and QoS support for optimizing video transmissions
- SNMPv1/v2/v3 support for easy network management
- Product models with built-in fiber Ethernet ports for long distance transmission
- Industrial rugged design with redundant 12/24 VDC and 24 VAC power inputs, -40 to 75°C operating temperature, IP30/66 form factor, DIN-Rail mounting, and fanless operation
- Meets critical industrial ratings, such as NEMA T52 and UL608
- High MTBF and 5-year warranty guaranteed
- Free SDK for system integration, including CGI commands, ActiveX control, and API library

**Featured Products**

- **VPort 351/354**
  - 1- or 4-channel MJPEG/MPEG4 industrial video encoders
- **VPort D351**
  - 1-channel MJPEG/MPEG4 industrial video decoder
- **VPort 25**
  - IP66 vandal-proof fixed dome IP camera for outdoors
- **EDS-P510**
  - 7-35 port Gigabit PoE managed Ethernet switches

**Applications**

- Traffic Monitoring
- Road Network Management
- Public Transportation
- Rail Transportation
- Airports
- Waterways
- Construction Sites
- Commercial and Industrial Facilities

**Benefits**

- Real-time video images for instant traffic updates
- Redundant technology to guarantee continuous traffic monitoring
- Advanced network protocols supported for efficient network management
- High MTBF and 5-year warranty guaranteed
- Free SDK for system integration, including CGI commands, ActiveX control, and API library

**For More Information**

Visit www.moxa.com for more information and to contact the Moxa office nearest you.
Rugged IP Video Surveillance for Mission-critical Oil Well Monitoring System

Oil and gas installations are usually spread across vast distances in a severe desert climate. A rugged IP surveillance monitoring system that overcomes harsh environmental conditions is ideal to monitor the daily operation of field controllers, such as RTUs, PLCs, and remote I/O devices, for collecting critical data and images from remote oil well sites. Video cameras are crucial to monitoring onsite conditions in real time, improving security, and preventing accidents from happening. In addition, establishing a Gigabit bandwidth network is essential to achieving real-time, high-speed monitoring and surveillance in real time, improving security, and preventing accidents from happening. In addition, establishing a Gigabit bandwidth network is essential to achieving real-time, high-speed monitoring and surveillance in real time, improving security, and preventing accidents from happening.

Application Requirements

- Integrated and distributed surveillance system with networking capability and long-distance transmission over large distances
- High-performance Gigabit redundant network for real-time data and video transmissions and monitoring
- Rugged industrial-grade devices that are capable of operating well under extreme temperatures
- Certified explosion-proof and dust-ignition-proof devices for hazardous locations
- High MTBF for maximum reliability, quality, and availability in industrial applications

Why Moxa?

- Complete, one-stop industrial video networking solutions that satisfy IP surveillance needs for mission-critical applications
- Real-time video streams with full D1 (720x480/576) resolution up to 30/25 frames per second
- Versatile L2, L3, and PoE Gigabit Ethernet switches for a highly reliable network infrastructure
- Turbo Ring media redundancy with fast recovery time under 20 ms at 250 Ethernet switches
- Industrial-grade solutions with -40 to 75°C operating temperatures, redundant power inputs, and fiber support
- Fully certified with Class I, Div. 2/ATEX Zone 2 certification and UL508 for hazardous oil and gas installations
- Superior quality products with higher MTBF and 5-year warranty
- User-friendly IP surveillance software and free SDK for system integration with remote SCADA or DCS

Featured Products

- VPort 351 1-channel MJPEG/MPEG4 industrial video encoders
- EDS-510A 7+30-port Gigabit managed Ethernet switches

Moxa offers a comprehensive range of industrial video networking solutions that cover all aspects of industrial environments, ensuring the highest availability and flexibility for any mission-critical industrial automation and surveillance application. Moxa’s comprehensive product line offers a variety of industrial-grade devices that are capable of operating well under extreme temperatures, redundant power inputs, and fiber support. Moxa offers a solid 5-year warranty across its entire range of products.

- Widest Selection for All Your IP Surveillance Needs
- 22 Years of Experience in Industrial Communication
- Industrial Robust Design and Reliability
- 5-year Warranty and Proven Quality
- Global Scope, Local Services

Moxa offers a comprehensive range of industrial video networking solutions that cover all aspects of industrial environments, ensuring the highest availability and flexibility for any mission-critical industrial automation and surveillance application. Moxa’s comprehensive product line offers a variety of industrial-grade devices that are capable of operating well under extreme temperatures, redundant power inputs, and fiber support. Moxa offers a solid 5-year warranty across its entire range of products.
Industrial Video Networking Solutions

Moxa offers a full range of industrial IP video networking solutions, including industrial video encoders, video decoders, outdoor IP cameras, user-friendly IP surveillance software, and industrial Ethernet switches for mission-critical industrial applications such as unmanned facilities, intelligent transportation systems, oil wells, and mining environments. Rugged design, extended operating temperature range of -40 to 75°C, fiber supports, IP30/66 protection, redundant power inputs, and industrial approvals allow these products to ensure network transmission efficiency and reliability. With years of experience in industrial networking, Moxa’s industrial video networking products provide a complete, one-stop solution to fulfill your current and future high-speed IP surveillance needs.