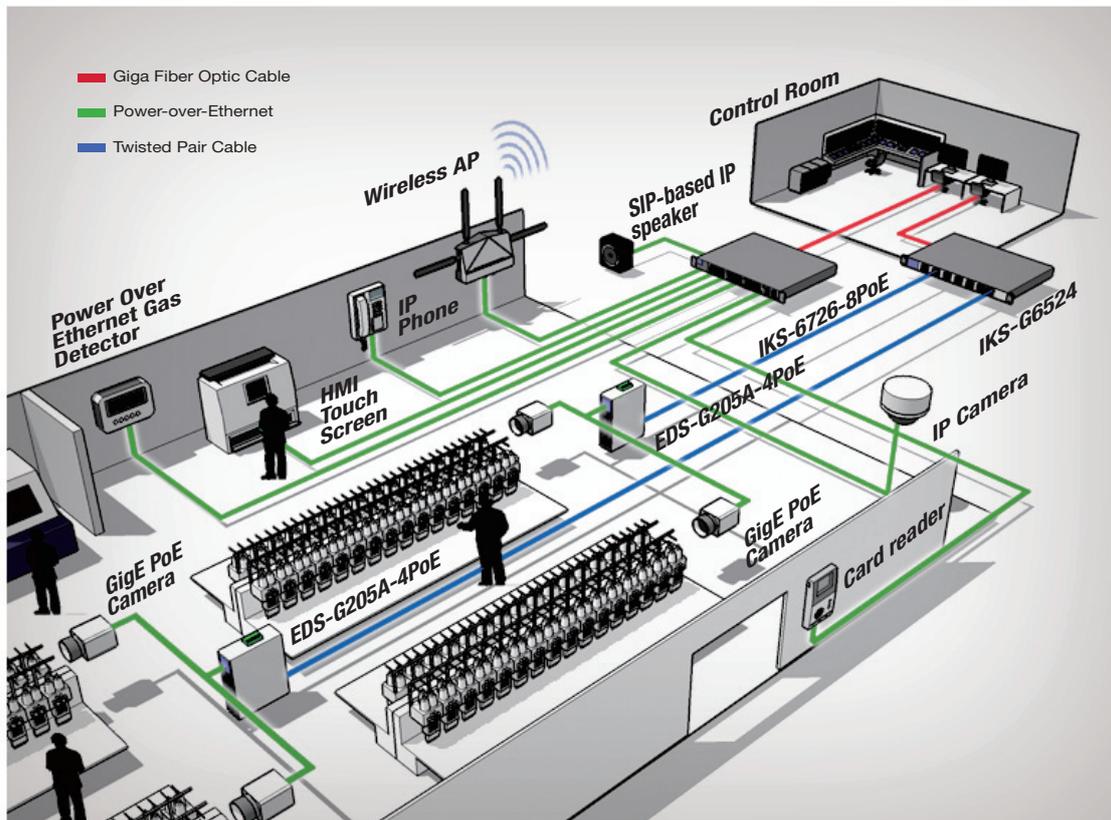# MOXA®

Industrial
PoE Solutions
Application Portfolio

Enpowered GigE Machine Vision Communication for Process Automation

In a factory automation system, the density of devices and their specific power requirements can create headaches for system builders and operators. Factory automation devices such as the GigE machine vision devices used in precision manufacturing also consume a great deal of bandwidth in order to capture high resolution images on the assembly line for human operators to monitor. Moxa's full Gigabit PoE+ switches and full Gigabit backbone switches ensure swift, reliable, and uninterrupted video streaming from the assembly line to the control room while still saving on cabling costs.

System Requirements

- Reduced cabling
- High reliability

- Long distance data transmissions
- High bandwidth available for machine vision

Moxa Solution

Moxa's EDS-G205A-4PoE PoE switch features full Gigabit communication and PoE+ high power output to meet the high bandwidth and power demands of assembly line devices such as GigE vision cameras. The 24/48 VDC power input range also makes easily adapts to fit factory power systems. The IKS-6726-8PoE PoE

managed switch provides Turbo Ring and Turbo Chain for network redundancy, as well as PoE support. Moxa's IKS-G6524 managed switch also provides full Gigabit capability and high performance to quickly transfer large amounts of video data through a reliable and dependable network.

Why Moxa

- 24/48 VDC power inputs
- Supports a total of 120 W by smart PoE power management
- Turbo Ring and Turbo Chain (recovery time < 20 ms), and RSTP/STP for network redundancy

- Modular design lets you choose from a variety of media combinations
- -40 to 75°C operating temperature range
- Supports Gigabit communication

Moxa Products

EDS-G205A-4PoE
5-port IEEE 802.3af/at PoE+ unmanaged full gigabit Ethernet switch

IKS-6726-8PoE
24+2G-port Gigabit modular rackmount PoE managed Ethernet switch

IKS-G6524
24G-port full Gigabit managed Ethernet switch

MOXA®

Wireless Video Surveillance Transmission for City Traffic

More and more high definition camera and wireless application are deployed in city surveillance in the interest of public safety, however, it takes a lot of bandwidth and power to support these cameras so they can continue to capture and transmit real-time high-resolution video over long distances to the control room. The enormous cabling cost of large-scale video surveillance systems are a fiscal challenge for any city government. Moxa's EDS-G205A 4PoE PoE switch reduces the power cords needed to deliver power to these edge devices. It also provides full Gigabit communication and PoE+ high power output. When added to a compact design and wide operating temperature, the EDS-G205A 4PoE has the tools to overcome harsh environments such as city intersections.
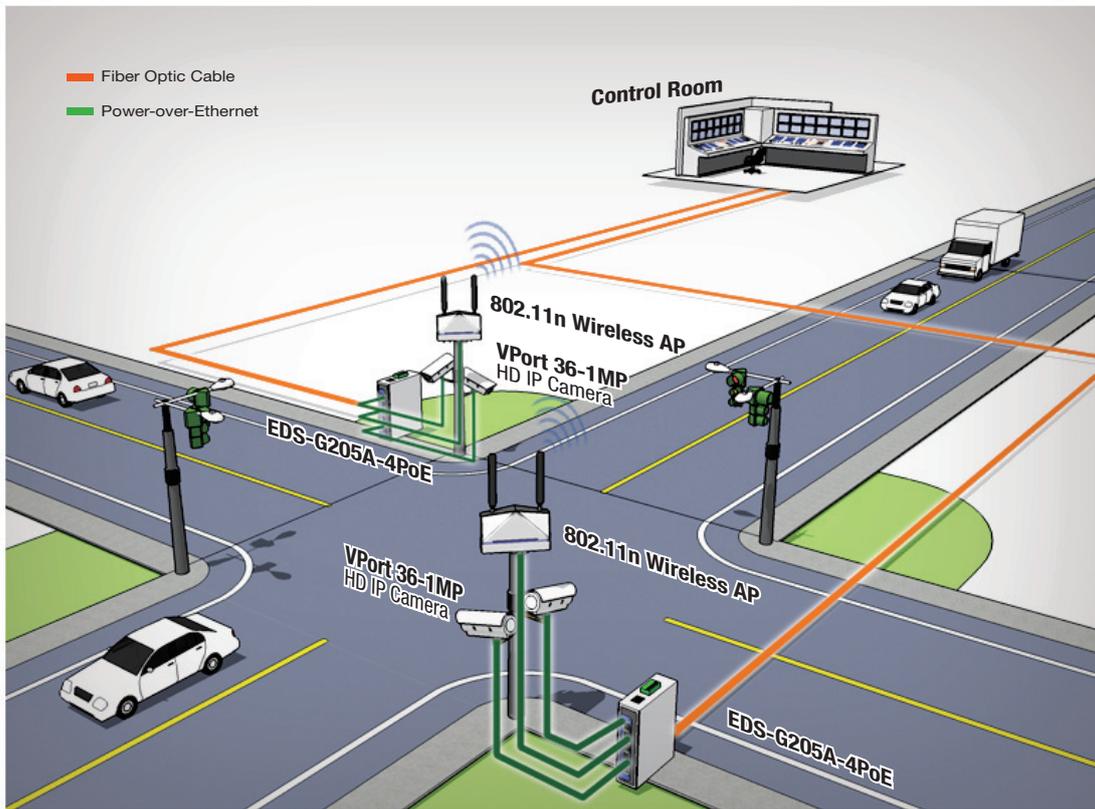
System Requirements

- Operations in wide temperature range
- Long distance transmissions
- Compact sized for road side cabinet installation
- Gigabit bandwidth consumption
- High power PoE+

Moxa Solution

Moxa's EDS-G205A-4PoE full Gigabit PoE+ Ethernet switch is the lynchpin of city surveillance communications. It provide full Gigabit communication and PoE+ higher power output, which is ideal for HD video surveillance and high broadband wireless applications such as 802.11n. Moxa's VPort 36 HD IP camera is the world's first

rugged IP camera that can operate in a -40 to 75°C temperature range without relying on a heater or fan. It combines HD resolution (1280 x 720), advanced IVA (Intelligent Video Analysis) technology, and de-mist technology to enhance surveillance system efficiency while delivering state-of-the art video quality.

Why Moxa

- -40 to 75oC wide operating temperature
- SFP fiber ports to allow long-distance transmissions (up to 120 km)
- DIN rail compact form factor to save space
- 5-port Gigabit communication
- 30w PoE+ output power

Moxa Products

EDS-G205A-4PoE

5-port IEEE 802.3af/at PoE+ unmanaged full gigabit Ethernet switch

VPort 36-1MP

Rugged HD day-and-night box type H.264 IP Camera

MOXA®

Reliable Network Communication between City Subway Stations

In a long-distance, well-established city subway station, station-to-station communications can be upgraded by using wireless broadband technology to reduce cabling costs. Moxa's EDS-G205A-4PoE PoE switch and IKS-G6524 deliver the Gigabit transmission and high power output for wireless applications, and compliance with the EN 50121-4 standard makes them ideal for delivering reliable data transmission to the control room in high EMC environments.
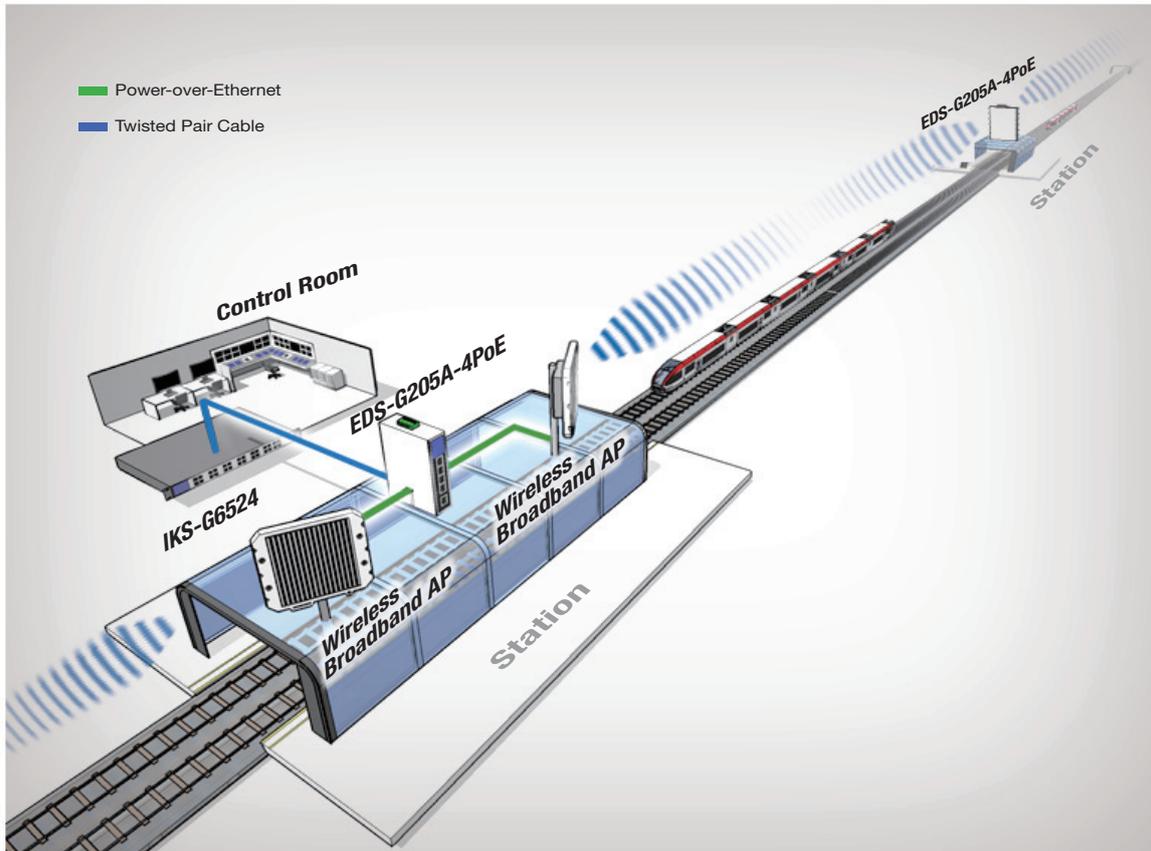
System Requirements

- High bandwidth transmission
- High power consumption
- High EMC protection

Moxa Solution

Moxa's EDS-G205A-4PoE full Gigabit PoE+ switch features full Gigabit communication and PoE+ high power output, which fulfills the high bandwidth and power demands of wireless broadband applications. It also supports the EN50121-4 standard and provides ruggedized hardware protection in a high EMC environment. Moxa's IKS-G6524 managed switch also provide full Gigabit capability and increases bandwidth to deliver high performance and the ability to quickly transfer large amounts of data through a reliable network.

Why Moxa

- 5-port Gigabit communication
- 30w PoE+ output power
- EN50121-4 compliant
- Turbo Ring and Turbo Chain (recovery time < 20 ms), and RSTP/STP for network redundancy

Moxa Products

EDS-G205A-4PoE

5-port IEEE 802.3af/at PoE+ unmanaged full gigabit Ethernet switch

IKS-G6524

24G-port full Gigabit managed Ethernet switch

MOXA®

IP Video Surveillance Infrastructure for Highway

As IP video surveillance coverage expands beyond urban centers, large-scale IP video systems have discovered the need to create network infrastructure along highways, a project that requires additional expertise. Furthermore the deployment of IP cameras in long distances creates high cabling costs. Moxa's EDS-P510 PoE switch features both PoE and Gigabit Ethernet capability to meet the high bandwidth requirements of transmitting large amounts of video data, and the VPort 26 IP camera provides high quality video images in any condition with an available demist function. The industrial grade design of both products allows them to excel in severe outdoor conditions.
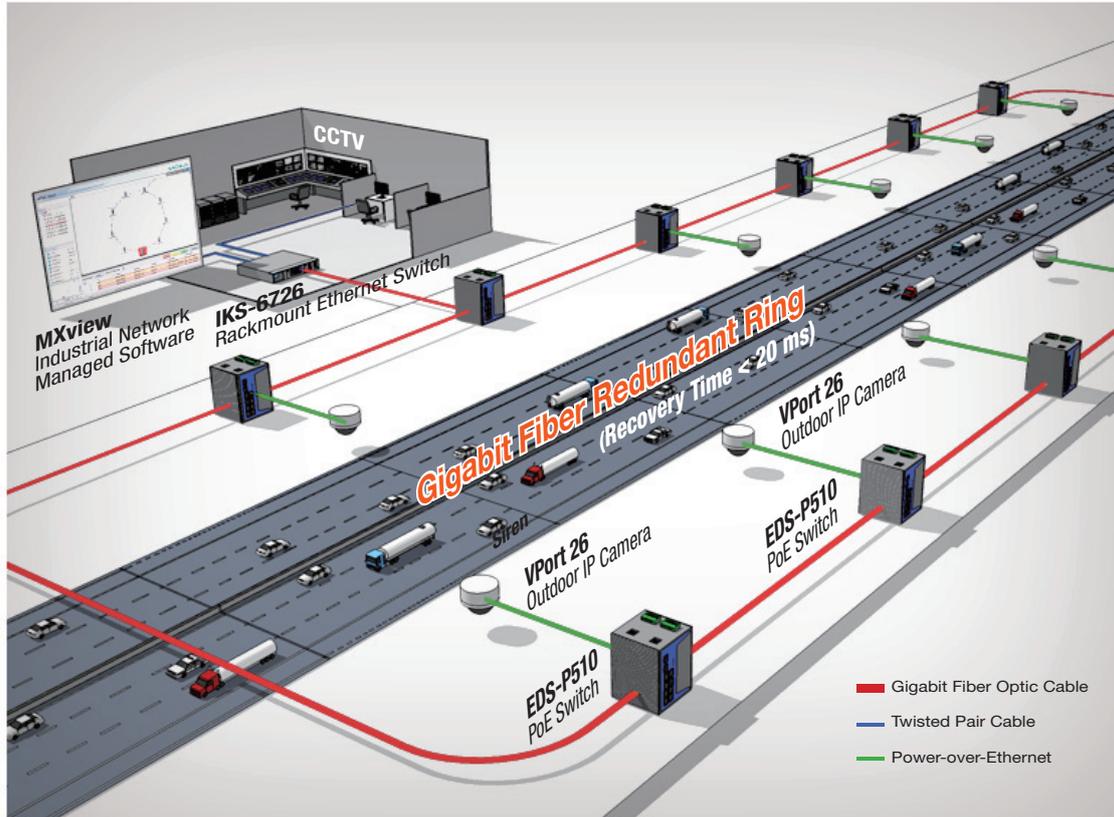
System Requirements

- Long-distance transmissions along highways
- Operations in harsh outdoor environments
- High bandwidth available for video transmissions
- Redundancy for continuous network uptime

Moxa Solution

Moxa's EDS-P510 PoE switch features PoE compliant Gigabit Ethernet ports, providing up to 15.4 watts of power per PoE port. It can also transmit data up to 80kms from the device to the control center with high EMC immunity. The EDS-P510 also supports Moxa Turbo Ring and Turbo Chain technologies, which ensures continuous video surveillance in the event of a network segment failure with

network recovery in less than 20ms. Moxa's VPort 26 IP camera features high image quality with IP66 rain and dust protection and built-in de-mist functionality, making it ideal for outdoor applications. Both devices support wide operating temperature range to perform reliability in roadside cabinets without air conditioning or heating.

Why Moxa

- SFP fiber port for up to 80 km data transmission
- Wide operating temperature range
- Three combo Gigabit Ethernet ports for large-volume data transmissions
- Supports IGMP for efficient video transmission
- Turbo Ring and Turbo Chain self-healing technology (recovery < 20 ms)
- Outdoor IP camera with PoE support for less wiring and easy installation
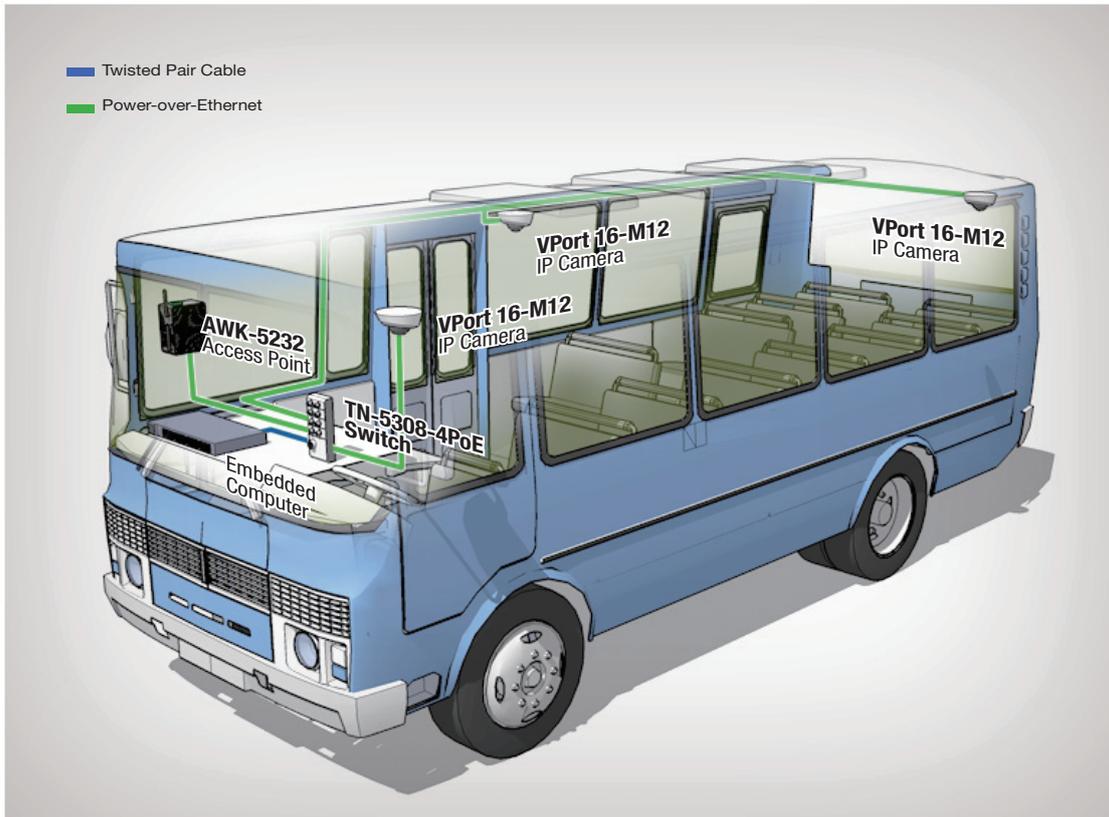
Moxa Products

EDS-P510

7+3G-port Gigabit PoE managed Ethernet switch

VPort 26

IP66 day-and-night vandal-proof fixed dome IP camera for outdoors

Improved Passenger Services for City Bus

A city's buses are a basic but important part of an urban area's efficiency and livability, and modern communications technology can dramatically improve this key service. Limited available power supply, vehicle movement, and mobile communications are three challenges that make it difficult to establish reliable vehicle information data links in dynamic, fast-moving road traffic. Thanks to Moxa's anti-vibration PoE technology and 802.11n wireless innovations, bus passengers now can enjoy the greater convenience and efficiency of real-time passenger information systems both on the bus and at any bus stop.

Twisted Pair Cable
Power-over-Ethernet

VPort 16-M12 IP Camera
VPort 16-M12 IP Camera
AWK-5232 Access Point
VPort 16-M12 IP Camera
TN-5308-4PoE Switch
Embedded Computer

▶ System Requirements

- Minimum installation effort and reduced cabling for maximum space efficiency
- Data transmissions on the move
- Rugged design and compact

▶ Moxa Solution

Aboard the bus, the on-vehicle network consists of TN-5308-4PoE unmanaged Ethernet switches that provide eight highly robust M12 Ethernet interfaces and four 15.4 watt power sources for other on-board devices, such as cameras and wireless APs. Moxa's

AWK-5232 wireless AP provides EN 50155 vibration resistance and 802.11n wireless transmissions of up to 300 Mbps of bandwidth to bus stops along the route to synchronize for better passenger information service.

▶ Why Moxa

- Comprehensive one-stop shop for PoE communication solutions
- Reliable and secure wireless transmissions
- eMark compliance for moving vehicle, M12 connectors, and high MTBF

▶ Moxa Products

TN-5308-4PoE
EN 50155 8-port IEEE 802.3af PoE unmanaged Ethernet switch

AWK-5232
Industrial IEEE 802.11a/b/g/n Dual-RF Wireless AP/Bridge/Client

VPort 16-M12
EN 50155 compliant, high quality CCD image, compact IP camera

An Efficient and Reliable Network for Subway Transit Lines

Passenger demand for mass transit continues to rise, so more and more subway systems are constructing service lines. Subway transit data networks need to transmit a high volume of data to be transmitted with exacting precision and reliability, so Gigabit support and network redundancy are two essential requirements. Moxa's EDS-P506A-4PoE switch includes PoE and transmits data up to 40km with high EMI immunity, while the IKS-6726-8PoE switch features Gigabit Ethernet communication. Working with Moxa's IP camera and wireless AP, Moxa's network switches ensure efficient and reliable network performance from edge devices to control rooms.
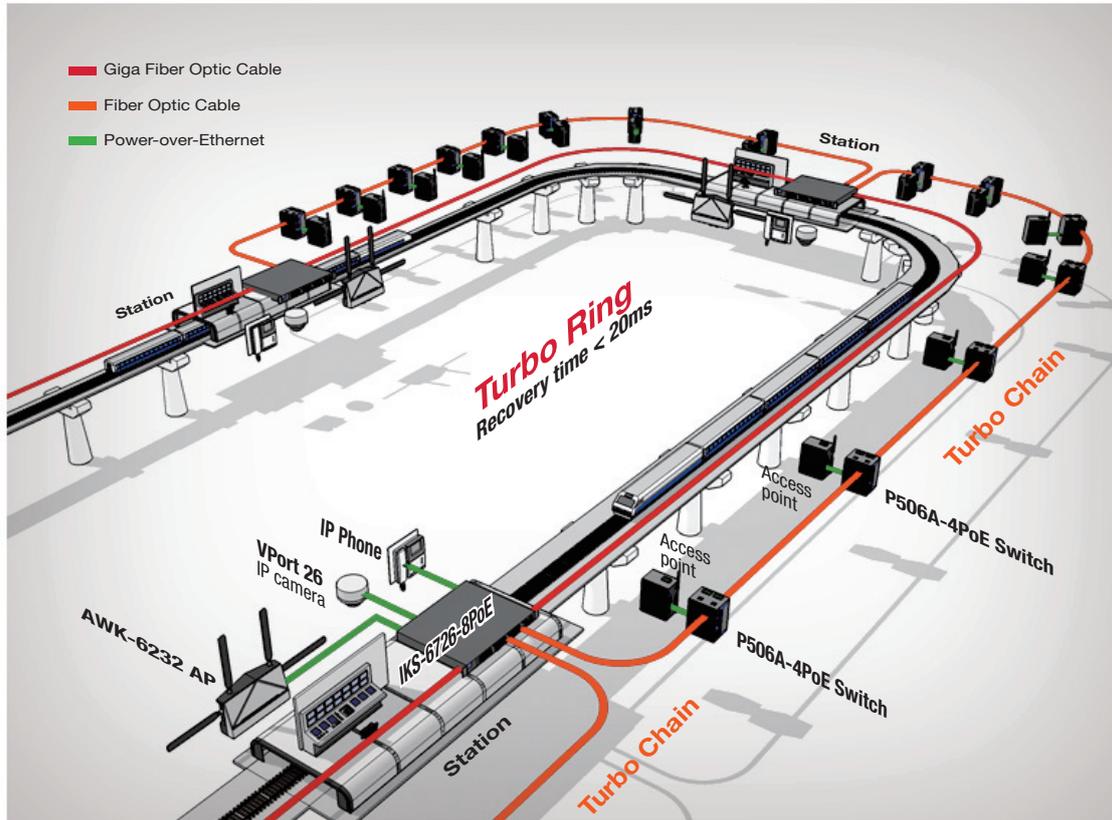
System Requirements

- Ground-to-train transmissions
- Redundancy for maximum network uptime
- Minimum interference between electric equipment

Moxa Solution

Moxa's EDS-P506A-4PoE switch is PoE compliant and can transmit data up to 40 km from the device to the control center with high EMI immunity. The IKS-6726-8PoE PoE managed switch provides Gigabit communication in addition to PoE capabilities. Both devices support Moxa Turbo Ring and Turbo Chain redundancy and enable a scalable and reliable backbone that includes Power-over-Ethernet support. Furthermore, Moxa's VPort 26 IP camera features high image quality and rugged construction that includes EMI/surge protection, while the AWK-6232 wireless AP features 802.11a/b/n compliance for faster data transmission speeds and wider coverage.

Why Moxa

- Rapid turbo roaming wireless communication (< 100 ms)
- Redundant Turbo Ring and Turbo Chain network topology (recovery time < 20 ms)
- High EMI immunity and MTBF
- -40 to 75°C operating temperature range
- EN50121-4 certified

Moxa Products

EDS-P506A-4PoE
5-port IEEE 802.3af/at PoE+ unmanaged full gigabit Ethernet switch

IKS-6726-8PoE
24+2G-port Gigabit modular rackmount PoE managed Ethernet switch

AWK-6232
Industrial IEEE 802.11a/b/g/n IP68 Dual-RF Wireless AP/Bridge/Client

VPort 26
IP66 day-and-night vandal-proof fixed dome IP camera for outdoors

MOXA®

Real-time Railroad Information for enhanced safety and service

A dependable railway information system is essential to delivering passenger safety and convenience in high volume railway transportation systems. The system is expected to inform passengers of any trip updates, and provide both ground staff and train crew with the latest operational status. Moxa's full spectrum of EN50155 compliant network products is fully compliant with rolling stock standards in providing wired and wireless communication in on-board and train-to-ground applications. In addition to EN50155 standard compliance, Moxa's compact PoE switches save customer workload and cost on electrical power cabling.
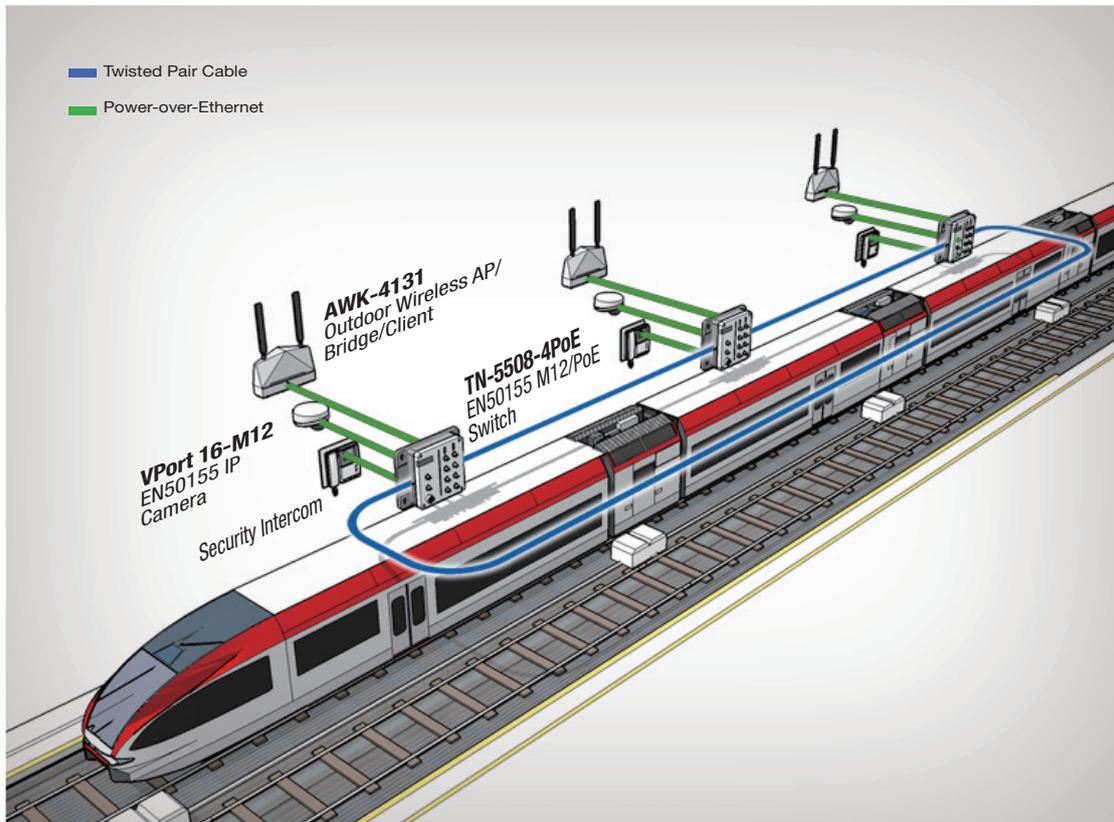
System Requirements

- Rugged design for rolling stock
- Network redundancy for maximum security
- Simplified cabling for space efficiency

Moxa Solution

Moxa's TN-5508-4PoE PoE managed switch is the cornerstone of onboard communications. The TN-5508-4PoE withstands rolling vibrations and shock, and uses 12/24/48 VDC power supply to support a variety of onboard devices such as CCTV cameras, intercom devices, and IP speakers. This PoE switch also supports 20

ms fast Ethernet recovery for non-stop operations. Moxa's AWK-4131 wireless access point creates train-to-ground wireless communication with sub 50ms roaming. Passengers remain fully informed in transit, and the railway staff can use weather updates and real-time information while rolling to ensure safe operations.

Why Moxa

- Built for rolling stock: EN50155/50121-4 and NEMA TS2 compliant, -40 to 75°C operating temperature range, and M12 connectors
- Innovative technologies: Turbo Ring, Turbo roaming, redundant dual-RF design, relay bypass
- PoE-enabled for delivering power and data via one Ethernet cable

Moxa Products

TN-5508-4PoE

EN 50155 8-port PoE managed Ethernet switch

AWK-4131

Industrial IEEE 802.11a/b/g/n IP68 Wireless AP/Bridge/Client

VPort 16-M12

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

Industrial Surveillance Network for Distributed Oil & Gas Wells

Oil and gas facilities need highly resilient surveillance security to ensure safety and non-stop operations in harsh environments. Moxa's industrial Ethernet solution is fully proven in extreme environments with UL60950-1 and UL508 compliance and a complete industrial-grade portfolio that includes IP66 weather-proof IP cameras, Gigabit transmissions, and safe PoE power sources. By leveraging Moxa's free VPort SDK, SCADA engineers can immediately capture pop-up surveillance video when any SCADA event occurs.
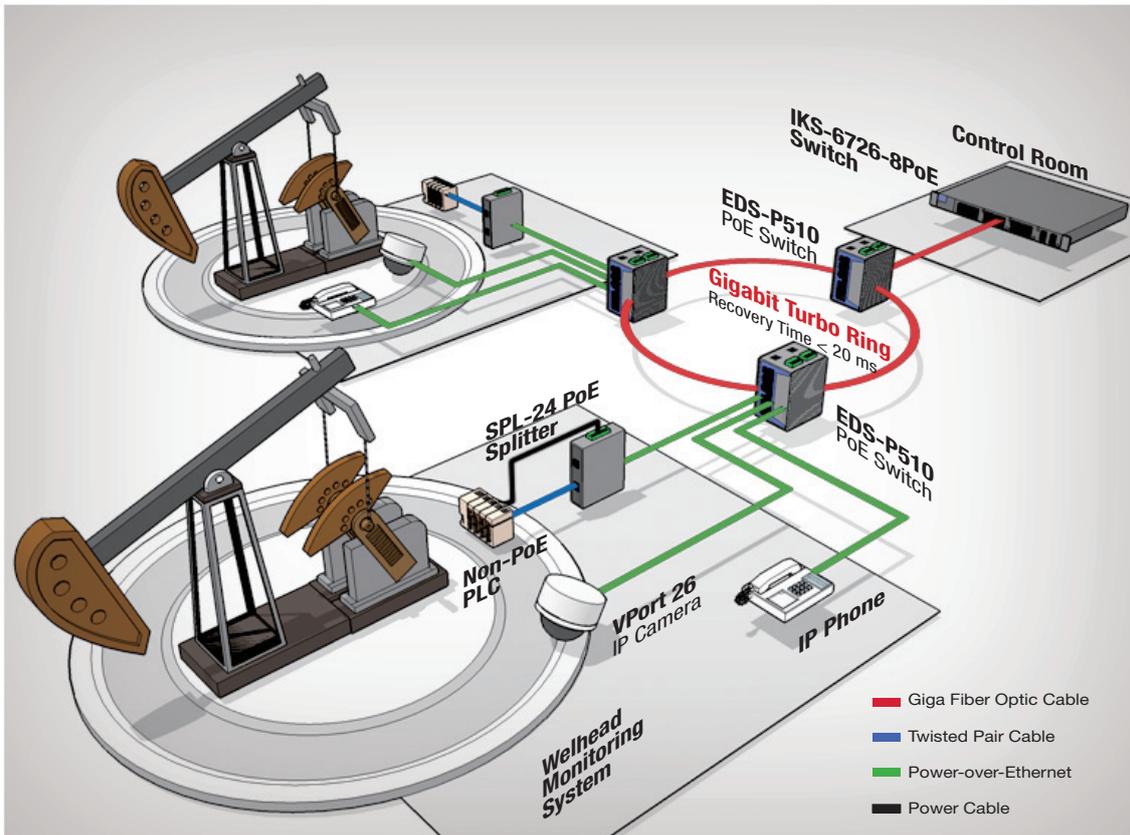
System Requirements

- Smooth video transmissions
- Rugged design for harsh outdoor environments
- Network redundancy
- Easy to maintain and manage

Moxa Solution

Moxa's surveillance network solution provides fully integrated functions and features for oil/gas well monitoring to guarantee non-stop video streaming connectivity and monitoring with maximum security, reliability and availability over the widely scattered oil and gas wells.

- Outdoor day/night H.264/MJPEG video capture by VPort 26 IP camera

- 24VDC non-PoE power source for non-PoE PLCs by SPL-24 PoE splitters
- Four-port PoE power sources for field devices (such as IP phone) by EDS-P510 PoE managed switches
- Gigabit backbone and long haul fiber uplink enabled by EDS-P510, which features three Gigabit RJ-45/SFP combo ports
- SCADA integrated surveillance in assistance with VPort SDK deployment

Why Moxa

- UL60950-1/UL508 safety standard compliance
- Gigabit and IGMP support to ensure high video transmission performance
- Wide operating temperature and fanless design
- Turbo Ring and Turbo Chain for millisecond-level network recovery
- PoE-enabled for delivering power and data via one Ethernet cable

Moxa Products

EDS-P510
7+3G-port PoE managed Ethernet switch (UL60950-1 certified)

SPL-24
IEEE 802.3af PoE splitter

IKS-6726-8PoE
24+2G-port modular rackmount PoE managed Ethernet switch

VPort 26
IP66 day-and-night vandal-proof fixed dome IP camera for outdoors

Surveillance for Power Substation Security

Power substations are vulnerable to attack, from either within the station or the surrounding neighborhood. To control unpredictable security threats, Moxa provides a full range of PoE switch solutions that deliver electrical power and data over a single cable to support IP surveillance systems, dramatically reducing the overall installation and maintenance cost for surveillance infrastructure.
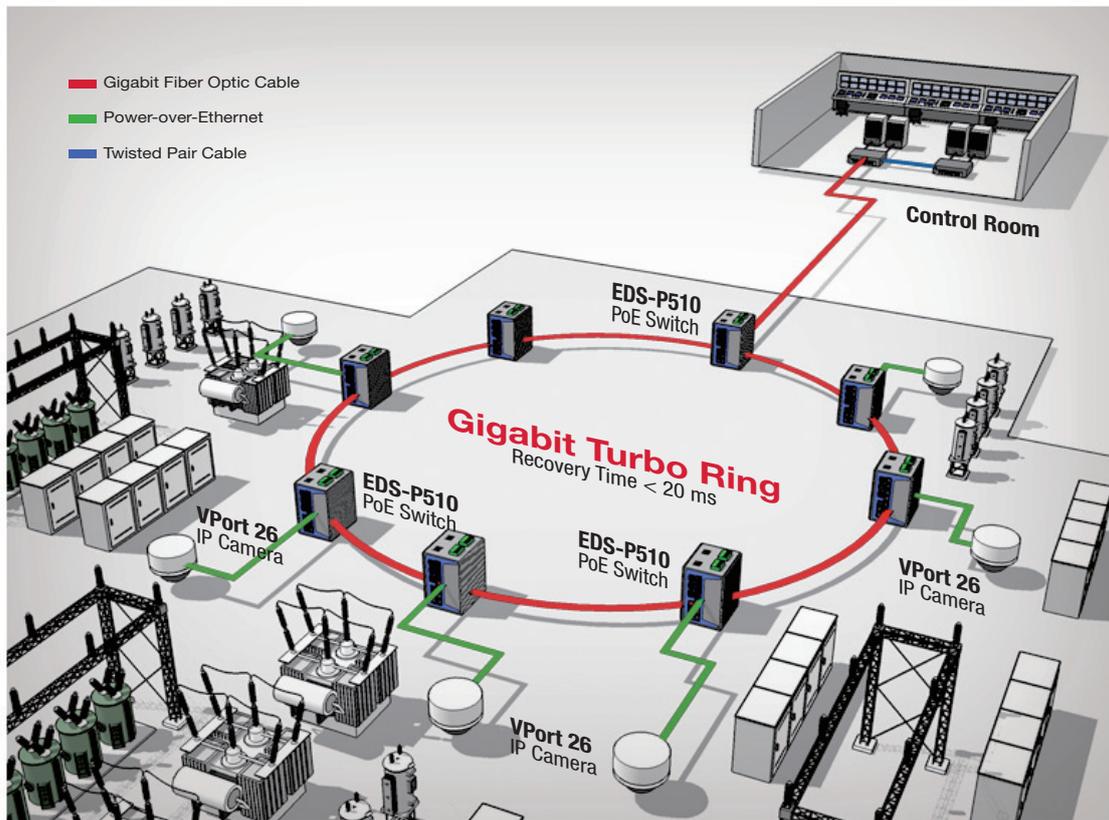
System Requirements

- Redundant network design for maximum network uptime
- High bandwidth for video transmissions
- Rugged design for reliable and stable operation

Moxa Solution

Moxa creates an enduring IP surveillance solution with the EDS-P510 PoE switch and the VPort 26 IP camera. The compact EDS-P510 PoE switch forms a cost-efficient network for an IP surveillance system with three ports of Gigabit SFP connectivity for the backbone and four PoE ports to connect and deliver power to IP cameras,

VoIP phones, and other IEE 802.3af compliant devices. The VPort 26 includes a 2.8 mm to 11m auto iris vari-focal lens and a removable IR cut filter for true day-and-night use. Protected in an IP-66-rated and vandal-proof housing, the VPort 26 is robust and weather resistant for critical outdoor video acquisition.

Why Moxa

- Leverage existing network infrastructure and reduce installation effort and costs
- Turbo Ring with a recovery time under 20ms
- High bandwidth for video transmissions
- Fiber-optic Gigabit capability allow long distance transmission
- -40 to 75°C operating temperature range
- Fanless design and PoE power source adds operational safety and efficiency

Moxa Products

EDS-P510

7+3G-port PoE managed Ethernet switch (UL60950-1 certified)

VPort 26

IP66 day-and-night vandal-proof fixed dome IP camera for outdoors

Small and Smart PoE Solution for WiMAX Base Stations

Moxa's EDS-G205A-4PoE switches are smart network devices ideal for WiMAX base stations that need high power inputs and broadband connectivity. In order to deliver a high volume of voice, video, and data traffic 24/7, WiMAX base stations need support from highly efficient infrastructure such as the EDS-G205A-4PoE switch, which provides 5 ports for Gigabit connections and four ports of 30 watts of power in outdoor urban environments.
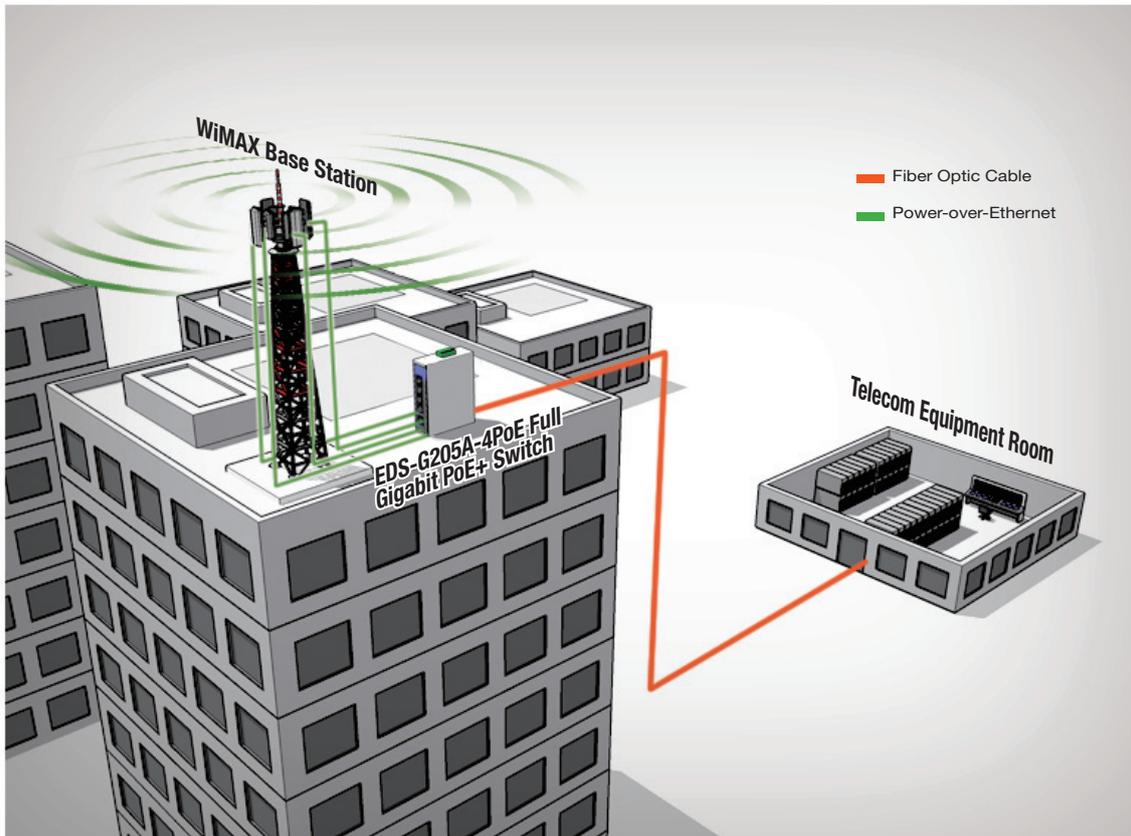
System Requirements

- High bandwidth consumption
- Power availability and high power supply
- Operations in harsh outdoor environments
- Long distance transmissions between the field site and control room
- Remote network traffic management

Moxa Solution

The EDS-G205A-4PoE switch is an economical solution that provides power and full Gigabit bandwidth connectivity between the WiMAX tower and the telecom equipment room. The EDS-G205A-4PoE inherits the industrial reliability of all Moxa EDS switches, excelling in extreme temperature ranges between -40 to 75°C and accepting flexible 24/48 VDC redundant power input. This combined Gigabit and PoE solution centralizes the power supply and delivers power to four units of IEEE 802.3af/at WiMAX devices over fiber optic cables up to 120km long, eliminating the need for additional power wiring. The compact, efficient device is a small, smart, and sustainable solution for WiMAX applications.

Why Moxa

- 5-port Gigabit communication
- Four IEEE 802.3at/af compliant PoE ports (up to 30 watts per port)
- -40 to 75°C wide operating temperature range
- SFP Fiber ports to allow long-distance transmissions (up to 120 km)

Moxa Products

EDS-G205A-4PoE
5-port IEEE 802.3af/at PoE+ unmanaged full gigabit Ethernet switch

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