

# Industrial Communication

Providing Interconnected Solutions for  
Enabling an Intelligent Planet



- Industrial Ethernet Switches
- Wireless Access Points
- Media Converters
- Serial Device Servers



**ADVANTECH**

*Enabling an Intelligent Planet*

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# About Advantech



## Advantech, Enabling an Intelligent Planet

Founded in 1983, Advantech is a leader in providing trusted innovative embedded and automation products and solutions. Advantech offers comprehensive system integration, hardware, software, customer-centric design services, and global logistics support; all backed by industry-leading front and back office e-business solutions. We cooperate closely with our partners to help provide complete solutions for a wide array of applications across a diverse range of industries. Advantech has always been an innovator in the development and manufacture of high-quality, high-performance computing platforms, and our mission is to empower these innovations by offering trustworthy products and services that enable an intelligent planet. With Advantech, there is no limit to the applications and innovations our products make possible

## Global Service Support

Advantech has over 12 regional hotlines and offices throughout 91 cities, in 20 countries, with nearly 6,000 employees to provide efficient, professional services for customer care, product selection, technical support, and order handling.

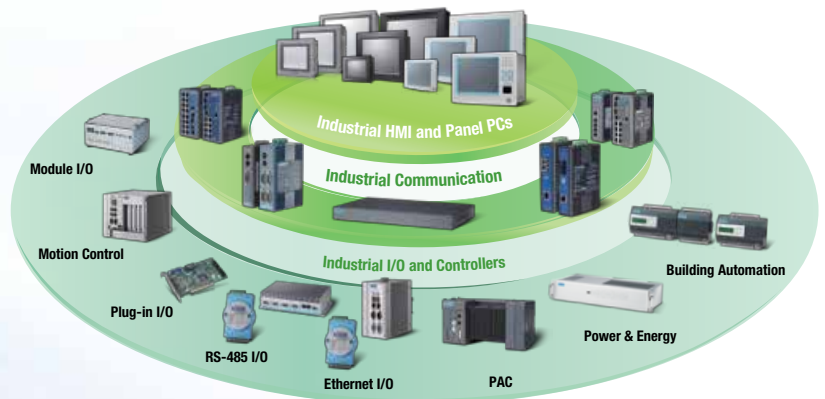
Through our call centers and online stores, customers worldwide enjoy the convenience of Advantech's multi-service channels to reduce business turnaround time. Together with the four customer service centers in Taiwan, China, Europe and the United States, our global service network offers an extensive spectrum of services that includes warehousing, logistics, peripheral certification, sourcing & purchasing, and RMA & value-added services, and technical support & training.



## Automation & Solutions

Enabling an Intelligent Planet

In our efforts to enable an Intelligent Planet, Advantech Automation & Solutions business provides a complete range of Automation Devices and Computing Platforms to fulfill different industrial and automation needs. We not only offer core system components for thousands of applications but also strive to provide total solutions for several key vertical sectors.

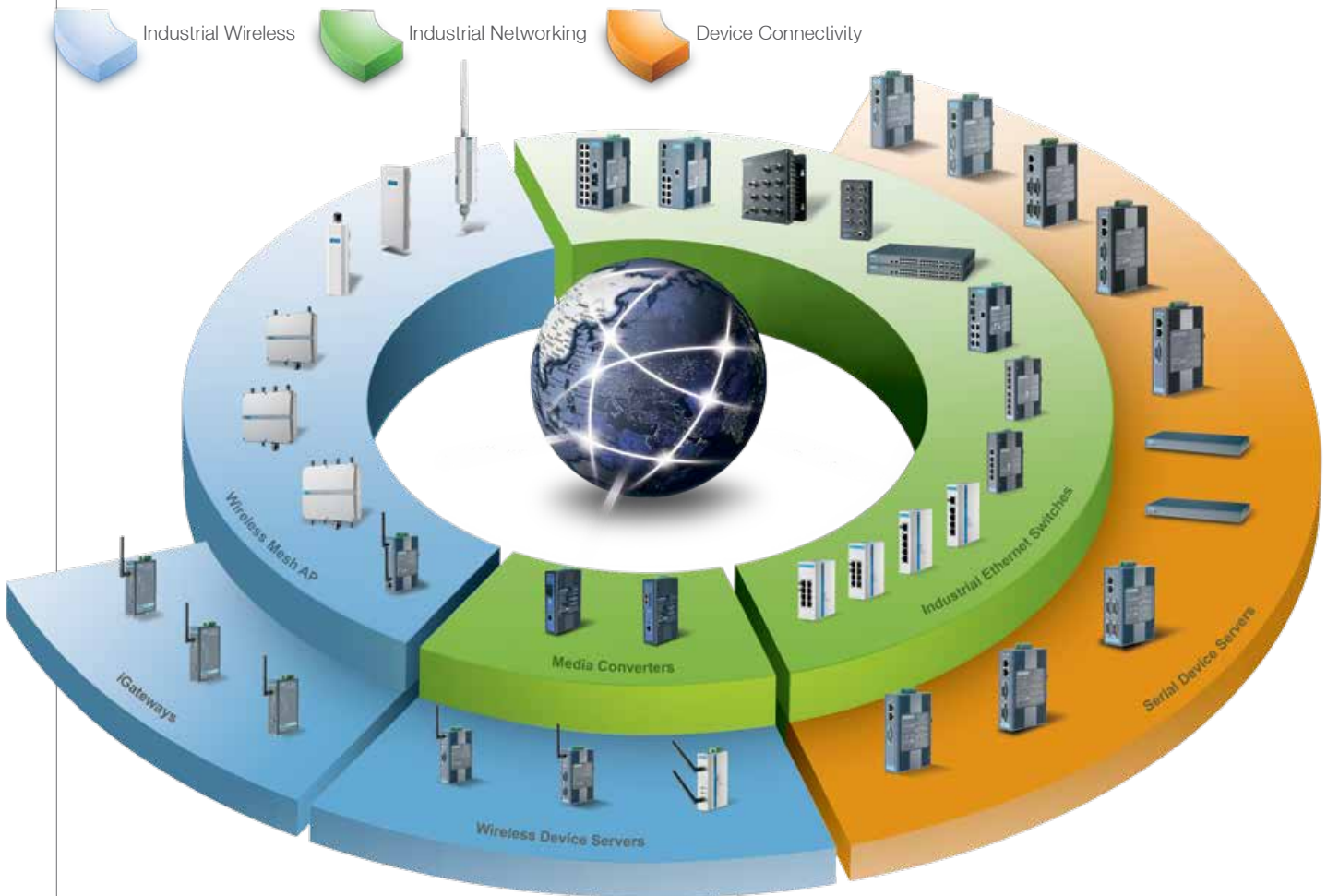


# About Industrial Communication

## Providing Interconnected Solutions for Advantech's Mission of "Enabling an Intelligent Planet"

### Advantech Industrial Communication (ICOM)

Advantech's Industrial Communication (ICOM) offers a comprehensive line of industrial communication solutions to meet the needs for mission critical applications. These products include: Industrial Ethernet Switches, Wireless Access Points, Media Converters, Serial Device Servers and Modbus Gateways. These products securely transmit critical and sensitive information, remotely monitor and control networked devices, and emphasize high communication capabilities for industrial applications, including railway, intelligent transportation, renewable energy, power automation, environmental & facility management, and Machine Automation. ICOM's goal is to provide interconnected solutions - Industrial Networking, Industrial Wireless, and Device Connectivity, to fulfill Advantech's mission of "Enabling an Intelligent Planet".



# ICOM Products & Solutions

## Industrial Ethernet Switches

Advantech provides Ethernet switches and media converters with a variety of features, from Fast Ethernet to Gigabit, from copper to fiber optic, and Power over Ethernet. Advantech's EKI-7000 series Managed Ethernet switches incorporate X-Ring Pro technology that offers the fastest redundant ring recovery time (<20ms) to secure data communication and reliability. Furthermore, the robust design, wide temperature, DIN-rail mounting, and +12~48 V<sub>DC</sub> redundant power inputs make EKI-2000/7000 series suitable for rugged industrial applications.

## Industrial Wireless

Advantech's industrial wireless solutions cover WLAN (wireless local area network) to cellular, which offer WLAN IEEE 802.11a/n, 802.11b/g/n, and 802.11a/b/g/n Access Point. Advantech's industrial wireless solutions offer superior data transmission throughout and connectivity. Advantech facilitates real-time access to people, application, and network resources anywhere anytime.

## Serial Device Servers

Advantech's Device Servers are easy to install and configure, support wired and wireless networking and provide various operation modes to satisfy rigorous industrial automation needs. EKI-1000 Serial Device Servers enable RS-232/422/485 serial devices to be dual-connected to Ethernet switches for unrivaled reliability. These Serial Device Servers provide various redundant configuration types and multi-access configurations for remotely controlling and monitoring serial devices via Ethernet. Furthermore, they fulfill various needs through rich operation modes, such as COM port redirection, and TCP & UDP server/client.

## Key Product Features and Industrial Grade Certifications

The ability to compete in the popular industrial market necessitates availability of products certified to comply with the EN50155 for railway onboard train applications, Class I, Division 2 for oil & gas applications, and IP67 rating & wide temperature operating range for harsh environments and UL508 safety for industrial control equipments. Advantech products offer these standard certified devices.



EN50155  
Railway Systems



Class I, Div. 2  
Oil & Gas Solutions



UL508 Safety  
Industrial Control  
Equipments



IP67 Rating  
Harsh Environments



Wide Temperature  
Harsh Environments



Energy  
Efficient Ethernet  
802.3az



X-Ring Pro Topology  
Redundant Ring



Loop Detection



PoE



PoE+



IPv6/IPv4  
Dual Stack



RVCOM

# Industrial Communication

## Simplify the Way You Connect

Advantech's Industrial Communication products draw on over 20 years of experience to provide reliable wired and wireless communication (3G, GPRS, and WLAN) for mission critical applications. These products include: Industrial Ethernet Switches, Industrial Wireless AP/CPE, Media Converters, Serial Device Servers, Cellular IP Gateways, and Modbus Gateways. They are also capable of securely transmitting critical and sensitive information, remotely monitoring and controlling networked devices and emphasizing high communication capabilities for industrial applications.



### Software

#### WebAccess/NMS

##### Network Management Software

- Cross Web Browsers Compatible
- Online Google map and offline OpenStreetMap support
- Support all Advantech Ethernet-based product
- Automatic generated topology
- 2 layer server design support scaling up to 4000 nodes
- PoE, ring, wireless, cellular connection indication



WebAccess/NMS



### Industrial Router

#### EKI-1334

##### Industrial UMTS/HSPA+ Cellular Router

- Universal five-band UMTS/HSPA+ 850/900/1800/1900/2100 MHz
- Universal quad-band GSM/GPRS 850/900/1800/1900 MHz
- Connect Ethernet and Serial Devices over VPN
- Dual WAN (Ethernet WAN and Cellular WAN) for redundancy



### Industrial Wireless AP/ Client



#### EKI-6340 Series

##### IEEE 802.11 a/ b/ g/ n Outdoor Single to Triple Radio Wi-Fi AP

- EMC Level 4
- C1D2 certified
- -40~75°C operating temperature range
- EN50155 compliant



#### EKI-6311GN

##### IEEE 802.11 b/ g/ n Wireless Access Point/ Client

- Embedded 8dBi directional antenna with external N-type connector for optional antenna
- High output power 26dBm
- Spanning Tree and IGMP snooping protocol support



#### EKI-6331AN

##### IEEE 802.11 a/ n Wireless Access Point/ Client

- MIMO 2 x 2 11n
- Embedded 16dBi dual-polarity directional antenna with external R-SMA connector for optional antenna
- High output power 24 dBm
- IGMP snooping protocol support

### WLAN Device Servers



#### EKI-1361/ 1362

##### 1/ 2-port RS232/ 422/ 485 to 802.11b/ g/ n WLAN Serial Device Servers

- Links any serial device to an IEEE 802.11b/ g/ n network
- Provides 1/2 x RS-232/ 422/ 485 port
- Secures data access with WEP, WPA, and WPA2
- Supports WLAN Ad-Hoc and Infrastructure modes



#### EKI-1351/ 1352

##### 1/ 2-port RS232/ 422/ 485 to 802.11b/ g WLAN Serial Device Servers

- Links any serial device to an IEEE 802.11b/ g network
- Provides 1/ 2 x RS-232/ 422/ 485 port
- Secures data access with WEP, WPA, and WPA2
- Supports WLAN Ad-Hoc and Infrastructure modes

### Cellular IP Gateways



#### EKI-1321/ 1322

##### 1/ 2-port RS-232/ 422/ 485 to GPRS IP Gateways

- Universal quad-band GSM/GPRS 850/ 900/ 1800/ 1900 MHz
- Dual SIM slots for connection redundancy
- Extra SD slot for data buffering and auto recovery
- Provides NAT and VPN

## Industrial Ethernet Managed Switches



NEW

### EKI-7710E-2C/ 2CI/ 7710G-2C/ 2CI

8FE / 8G +2G Port Gigabit Managed  
Redundant Industrial Switch

- SFP socket for Easy and Flexible Fiber Expansion
- Redundancy: X-Ring Pro (recovery time < 20 ms)
- IXM function enables fast deployment
- Security: 802.1x (Port-Based, MD5/TLS/TTLS/PEAP Encryption), RADIUS
- Management: SNMP v1/v2c/v3, WEB, Telnet, Standard MIB, Private MIB



### EKI-7659C

8+2G Combo Port Gigabit Managed  
Redundant Industrial Ethernet Switch

- 8 Fast Ethernet ports, plus 2 Gigabit combo ports
- SFP socket for Easy and Flexible Fiber Expansion
- Redundancy: X-Ring Pro (recovery time < 20ms)
- Dual 12 ~ 48 V<sub>DC</sub> power input and 1 relay output
- IPv6 support



NEW

EKI-9316/ 9312  
16/12 Port Full Gigabit  
Managed DIN Rail Switch

- All Gigabit connections support dual-ring protection and non-blocking traffic forwarding
- Redundancy: X-Ring+ (recovery time < 10ms)
- STP, RSTP, MSTP for better redundancy
- Dual power input, dual image for system reliability
- Operating temperature: -40 ~ 75° C

## Industrial PoE Switches



NEW

### EKI-7710E-2CP/ 2CPI/ 7710G-2CP/ 2CPI

8FE / 8G +2G Port Gigabit Managed  
Redundant Industrial PoE+ Switch

- SFP socket for Easy and Flexible Fiber Expansion
- Redundancy: X-Ring Pro (recovery time < 20 ms)
- IXM function enables fast deployment
- Security: 802.1x (Port-Based, MD5/TLS/TTLS/PEAP Encryption), RADIUS
- Management: SNMP v1/v2c/v3, WEB, Telnet, Standard MIB, Private MIB



### EKI-7659CPI

8+2G Port Gigabit Managed Industrial PoE  
Switch w/ Wide Temperature

- 8 Fast Ethernet ports with PoE injector function, plus 2 Gigabit Copper/ SFP combo ports
- IEEE802.3af compliant, provides 15.4Watts per port.
- Redundancy: X-Ring Pro (recovery time < 20ms)
- IPv6 support



NEW

EKI-9316P/ 9312P  
16/12 Port Managed DIN  
Rail Switch with PoE/PoE+

- All Gigabit connections support dual ring protection
- Redundancy: X-Ring+ (recovery time < 10ms)
- IEEE 802.3at PoE+ to supply 30W power
- IEEE 802.3af/802.3at per port with system PoE power management
- Dual power input, dual image for system reliability
- Operating temperature: -40 ~ 75 °C

## Proview Series Ethernet Switch



NEW

### EKI-5728/ 5725/ 5528/ 5525

8-port/ 5-port Fast and Gigabit ProView  
Series Ethernet Switch

- Communicates with SCADA software via Modbus/TCP
- Communicates with NMS via SNMP
- Port-based QoS for deterministic data transmission
- eMark certified (EKI-5728)
- Loop detection

## Industrial Ethernet Unmanaged Switches



### EKI-2728/ 2725/ 2528/ 2525

8-port/ 5-port Fast and Gigabit  
Unmanaged Ethernet Switch

- Supports 10/100 Mbps Auto-Negotiation
- Provides broadcast storm protection
- compact size with DIN-rail/Wall mount
- Supports redundant 12 ~ 48 VDC power input and P-Fail relay

## Media Converters



### EKI-3541M/ 3541S

10/100T (X) to Multi-Mode/ Single-Mode  
SC Type Fiber Optic Industrial Media  
Converter

- Supports Link Fault Pass-through (LFP) function
- Supports full/half duplex flow control
- Supports MDI/MDI-X auto crossover
- Supports redundant 12-48 V<sub>DC</sub> dual power input
- Provides flexible mounting: DIN-rail and Wall mount

## Serial Device Server



### EKI-1521/ 1522/ 1524

1-port/ 2-port/ 4-port RS-232/ 422/ 485  
Serial Device Server

- 2 x 10/ 100 Mbps Ethernet ports for LAN redundancy
- Supports up to 921.6 kbps, and any baud rate setting
- Automatic RS-485 data flow control

## Modbus Gateways



### EKI-1221/ 1222/ 1224

1-port/ 2-port/ 4-port Modbus Gateway

- 2 x 10/ 100 Mbps Ethernet ports for LAN redundancy
- Supports up to 921.6 kbps, and any baud rate setting
- Automatic RS-485 data flow control



### EKI-1221D/ 1222D

1-port/ 2-port Modbus Gateway with Integrated  
Ethernet Cascading

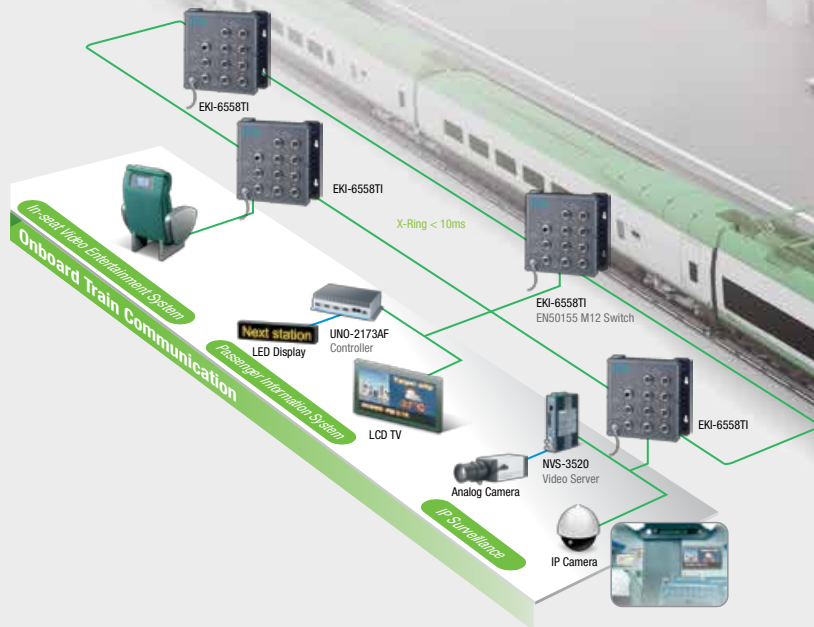
- 2 x 10/ 100 Mbps Ethernet ports for Daisy Chian connectivity
- Supports Ethernet auto-bypass function
- Auto searching Modbus slave ID over configuration utility

# Railway Systems

The rapid acceptance of Ethernet-based networking in railway infrastructures is providing many subtle benefits to traveler's worldwide. Industrial Ethernet backbones offer high bandwidth to enable many IP-based application. Advantech's industrial communication solutions provide three major aspects of applications for railway systems, including train station, onboard train and train-to-ground. The train station applications cover fire alarm systems (FAS), automatic fare collections (AFC) and passenger information systems (PIS). Onboard train applications cover passenger information systems (PIS), in-seat video entertainment systems(VES), and IP Surveillance. The train-to-ground application includes wayside control.

## Onboard Train Communication- Passenger Information, Video Entertainment, IP Surveillance

Advantech's EN50155 certified M12 Switch fulfills a wide range of applications in moving trains as it guarantees reliable performance under vibration and shock. For passenger information systems (PIS) this allows modules to connect with LCD and LED display boards which offer travel information, news and advertisements. For in-seat video entertainment systems (VES) this offers video monitors mounted on the back of every seat. And for IP surveillance this guarantees these devices can reliably connect with cameras for a variety of applications that provide increased safety and security.



### EKI-9312 / EKI-9316

12/16-Port Full Gigabit Managed Switch

- All Gigabit connections support dual-ring protection and non-blocking traffic forwarding
- Redundancy: X-Ring+ ( recovery time < 10ms) STP, RSTP, MSTP for better redundancy
- Dual power input, dual image for system reliability



### EKI-7559SI / EKI-7659CI

High Performance Managed Ethernet Switch with Wide Temperature

- Supports redundant X-Ring Pro (recovery time < 20ms)
- Control: VLAN/GVRP, QoS, IGMP Snooping/Query, LACP, Rate Limit
- Management: Web, Telnet, Serial Console, SNMP



### EKI-6500/EKI-9500 Series

EN50155 Compliant Ethernet Switch with M12 Connectors

- EN50155 certified for railway application requirements
- Ideal for PIS, IP surveillance, in-seat video entertainment systems



### EKI-9778

24GbE + 4 10GbE Port Managed Switch with Combo Port

- 24x GbE ports and 4x 10GbE (4x SFP+) ports
- 16x gigabit combo ports (1000BASE-T/TX or GbE SFP)
- Dual redundant power 110 ~ 220 VAC input
- Fanless design
- IEEE1588 PTPv2 with 1-step precision clock



## Fire Alarm System (FAS)

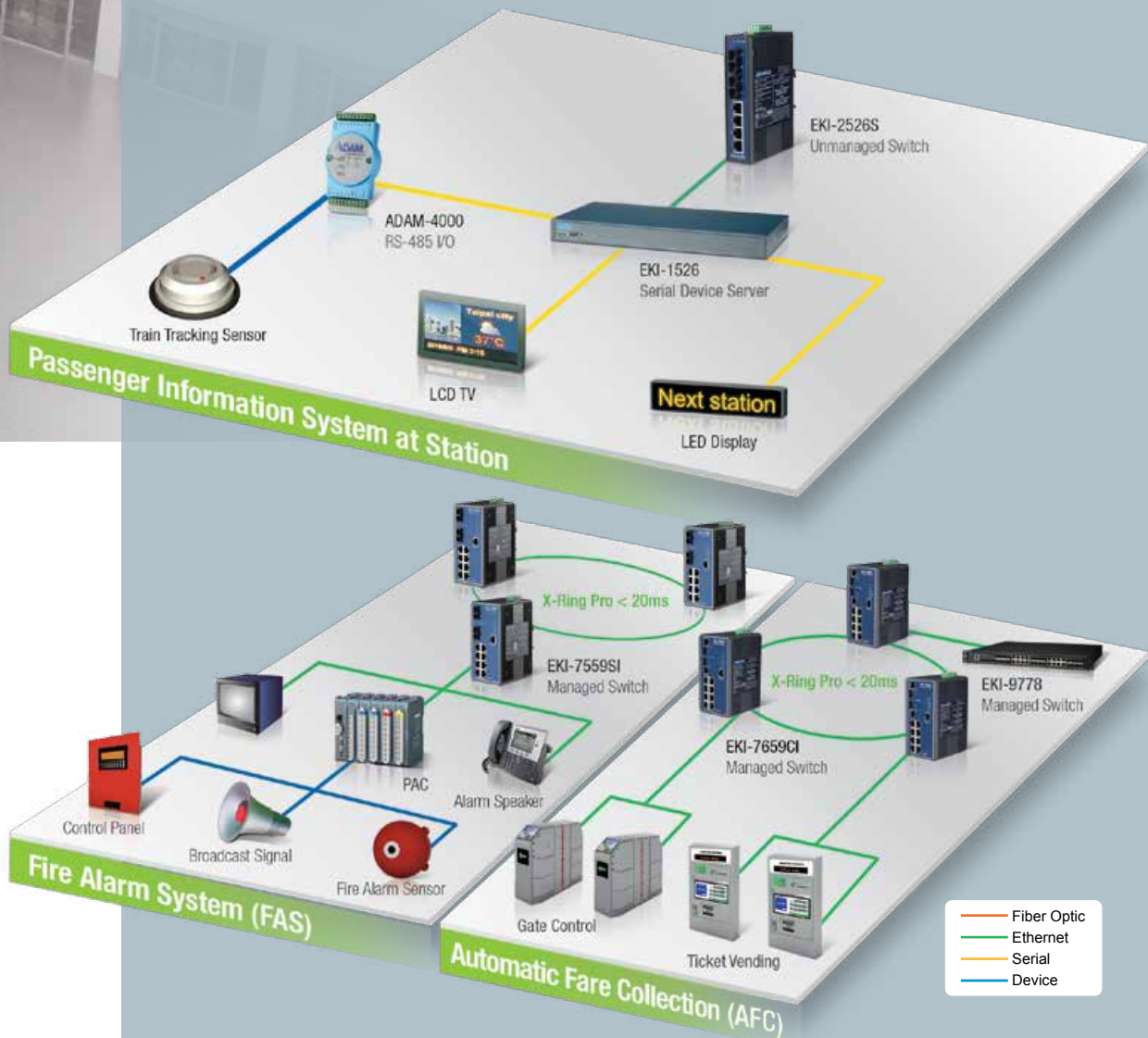
When a disaster happens, the FAS system will implement detection and send out commands to switch smoke control system and other fire equipment from normal operation mode to disaster relief operation mode; it will coordinate its sub systems, such as traffic control system, disaster relief system and safety system, to keep the loss to a minimum. The backbone network should use redundant fiber optic ring with maximum self-healing time of 10 ms.

## Automatic Fare Collection (AFC)

In modern railway stations, automatic fare collection (AFC) systems includes ticket vending machines (TVM), ticket checking machines (TCM), and gate control systems which require layer 2 and 3 switch that can ensure fast, reliable, safe, redundant network.

## Wayside Control

To control the trains from the wayside control cabinet, there are specific controllers, including CBI, TCC, RBC, and TSRS to ensure non-stop operation. Advantech industrial Ethernet switches form a dual fiber optic ring network, and each controller is connected simultaneously to these 2 fiber rings. With the Advantech X-Ring Pro technology which ensures that a backup circuit is established in just 20ms to compensate for errors such as broken links. This comprehensive redundancy concept offers maximum possible security.



# Intelligent Transportation Systems

Intelligent Transportation Systems (ITS) aim at providing communications and technology that allow safe, convenient, comfortable, efficient, and environmentally friendly travel for all commuters. Many cities worldwide are in the midst of improving their transportation system infrastructures, and Advantech is there to provide a helping hand, offering advanced product solutions for the freeway market segment, including freeway entrance controls, traffic information systems, tunnel monitoring systems, electronic toll systems, vehicle count & classification, and IP surveillance.

## Freeway Entrance Control System

When moving cars enter the freeway, a coil loop and VD card collects the info and the PAC controller controls the traffic signal system, reducing traffic congestion in rush hours. Advantech's Industrial Ethernet Media Converters are compact and robust devices designed to convert and transmit Gigabit Ethernet or Fast Ethernet networks into Gigabit or Ethernet fiber optic networks by transparently converting digital electric Ethernet signals to optical signals.

## Tunnel Monitoring System

This freeway tunnel monitoring system utilizes a distributed network control architecture to manage the system, including traffic guidance, CCTV, fire alarm, and ventilating systems while collecting several sensors, such as vehicle detectors, COVI, visibility, and wind sensors. The compact and high performance Ethernet switch provides a redundant network and connection.

## Real-time Traffic Information Display System

Advantech offers total solutions of Real-time Traffic Information Display System to accommodate difference ITS needs, such as Ethernet switches, serial device server, controller, data acquisition cards, and diversified communication cards. The system quickly and reliably sends traffic and weather information messages to an LED display.



### EKI-2541 / EKI-2741

#### Fast Ethernet and Gigabit Ethernet Media Converters

- EKI-2541 series 10/100TX to Single/Multi Mode SC Type Fiber Optic Industrial Media Converter
- EKI-2741 series 10/100/1000TX to Fiber Optic Gigabit Industrial Media Converter



### EKI-2000P / EKI-7000P

#### 5/6/8-port Industrial PoE Switches with Wide Temp.

- Reliable solutions for networking, IP Cameras and wireless AP
- Guarantees reliable PoE networks with advanced management functionalities
- Only 24V<sub>DC</sub> is required for PoE operation with 24/48 V<sub>DC</sub> models



### EKI-1528 / EKI-1526

#### 8/16-port RS-232/422/485 Serial Device Servers

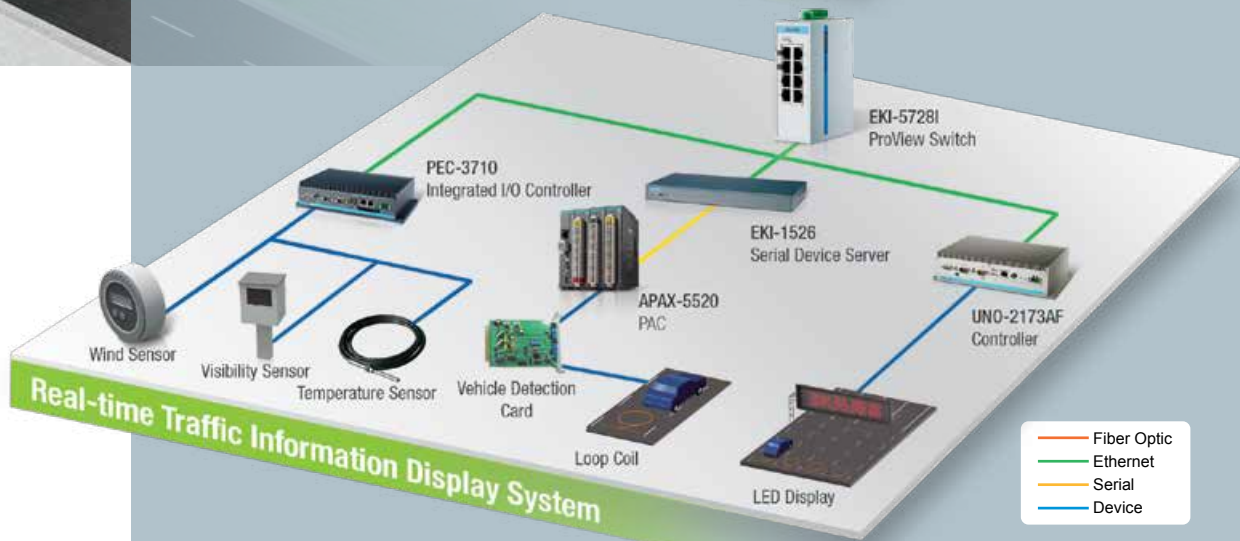
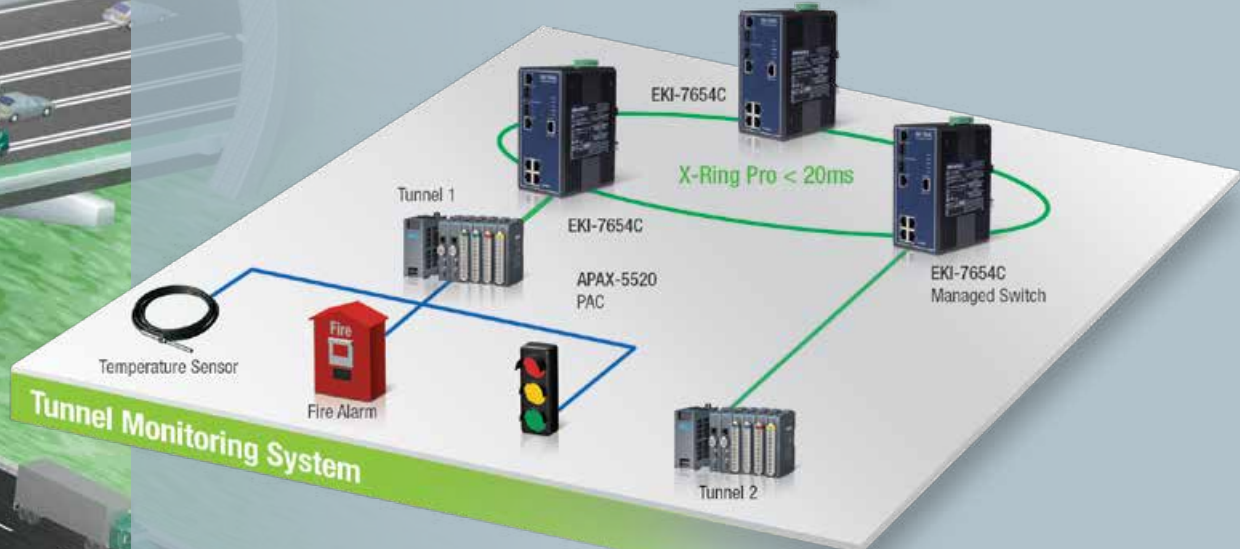
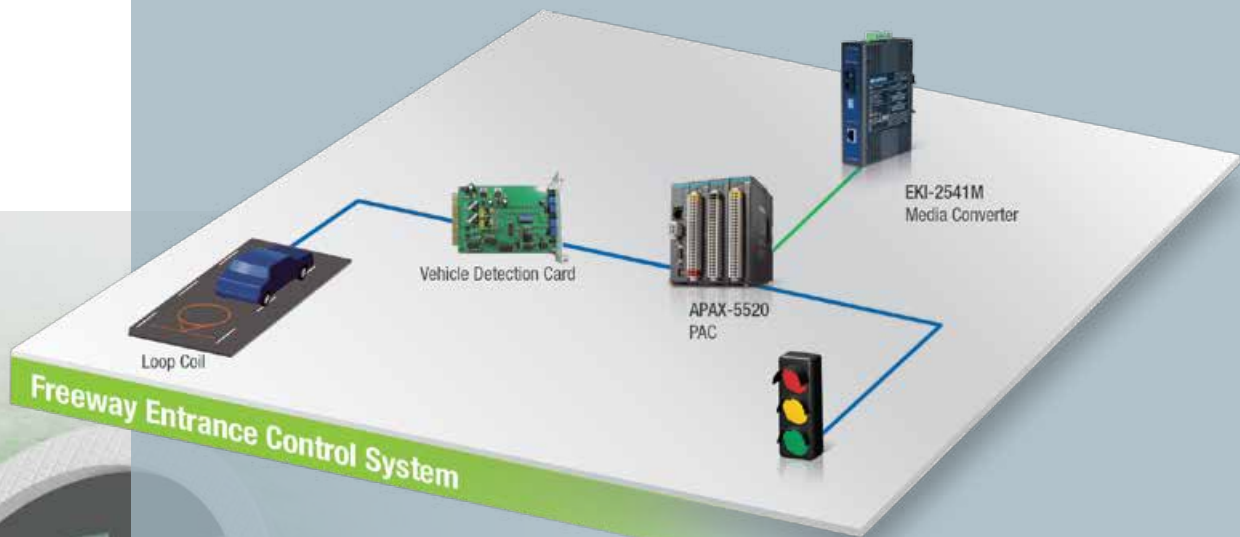
- Device can be dual-connected to Ethernet switches for unrivaled reliability
- Rich configuration methods including Window utilities, Telnet console and web browser
- Supports rich operation modes, such as COM port redirection, TCP & UDP server/client



### EKI-5725I / EKI-5728I

#### 5/8-port Gigabit ProView Series Ethernet Switch

- Communicates with SCADA software via Modbus/TCP
- Communicates with NMS via SNMP
- Port-based QoS for deterministic data transmission
- -40~75°C operating temperature range
- eMark certified (EKI-5728)
- Loop detection



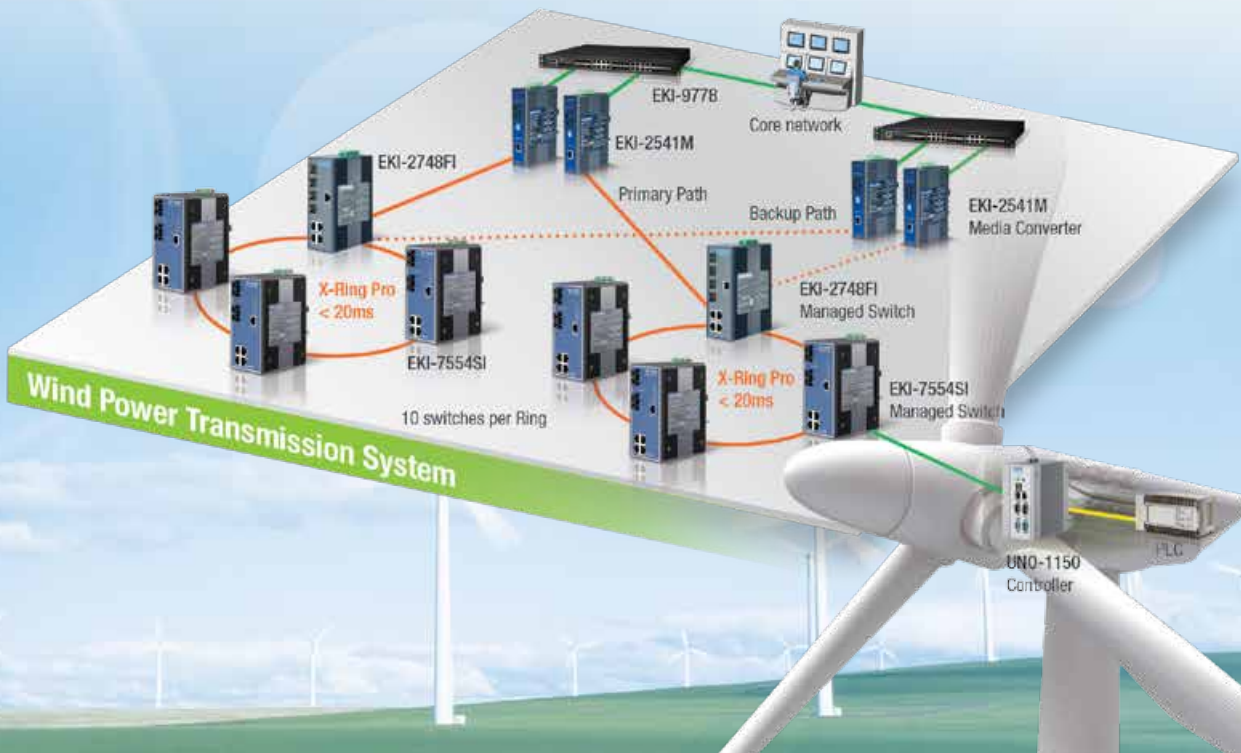
- Fiber Optic
- Ethernet
- Serial
- Device

# Renewable Energy Solutions

Renewable energy refers to energy that is generated from resources which are all naturally replenished. To put this in perspective, about 18% of global energy consumption came from renewables in 2010. Today's renewable energy solutions are focused in 4 areas: harnessing the power of the sun, the wind, moving water and plant materials. Advantech had successful cases in solar and wind power transmission & distribution systems that installed in harsh environments with dust, vibration, heat and electrical noise.

## Wind Power Transmission System

Wind power plants require a great number of information management systems and remote wind turbine monitoring systems. Wind power is often used in harsh environments with high day-night temperature difference and serious dust/sand storms. The rugged electronic-magnetic environment of the motor control system requires an industrial switch with excellent anti-electromagnetic-interference capability and long MTBF. In order to enhance communication reliability, the user has to set up a redundant ring with short failover time. When any error occurs in the communication network, the switch should smoothly switch to the redundant backup line. Fiber optic managed switch with wide temperature to construct a steady and reliable X-Ring Pro networking topology to ensure uninterrupted data transmission.



### EKI-9778

24GbE + 4 10GbE Port Managed Switch with Combo Port



- 24x GbE ports and 4x 10GbE (4x SFP+) ports
- 16x gigabit combo ports (1000BASE-T/TX or GbE SFP)
- Dual redundant power 110 ~ 220 VAC input
- Fanless design
- IEEE1588 PTPv2 with 1-step precision clock

### EKI-7554SI

4+2 SC Type Fiber Optic Managed Industrial Ethernet Switch with Wide Temp.



- 2 x SC-type fiber ports, plus 4 Fast Ethernet ports
- Redundancy: X-Ring Pro (high-speed recovery time<20ms), RSTP/STP (802.1w/1D)
- Management: Web, Telnet, Serial Console, SNMP
- Control: VLAN/GVRP, QoS, IGMP Snooping/Query, LACP, Rate Limit

### EKI-2748FI

4Gx+4SFP Managed Ethernet Switch with Wide Temperature



- Redundancy: Gigabit X-Ring Pro (ultra high-speed recovery time < 20ms), RSTP/STP (802.1w/1D)
- Management: Web, Telnet, Serial Console, SNMP v1/v2c/v3
- Control: VLAN/GVRP, QoS, IGMP Snooping/Query, LACP, Rate Limit

### EKI-1321 / EKI-1322

1/2-port RS-232/422/485 to GPRS/3G Serial Device Servers



- GPRS: Universal quad-band GSM/GPRS 850/900/1800/1900 MHz with 1 x Gigabits Ethernet port
- 3G: Tri-band UMTS/HSDPA 850/1900/2100 MHz with 1 x Gigabits Ethernet port
- Dual SIM card slot for Telecom redundancy
- Extra SD slot for data buffering

## Solar Power Transmission System

To try and harness this magnificent power, many countries have been investing in solar technologies for over 30 years. Today's solar power systems include reflectors, mirrors, heat insulating absorbers, motion control technology, and data transmission system. Advantech's industrial GPRS/3G Serial Device Servers are a perfect fit for wireless data transmission system due to their great performance, reliability and ruggedness. The GPRS/3G Serial Device Servers collect data from solar panel & inverter, pyranometer, and relative sensor. This information is transmitted through cellular data network to the telecom control center. Service providers and users are able to easily access real-time information anywhere anytime. The GPRS/3G Serial Device Servers provide dual SIM slots for telecom carrier redundancy and one SD slot for storage expansion.



# Environment and Facility Management Systems

Advantech has an excellent reputation for developing Environmental and Facility Management Systems (EMS). While Environmental Monitoring applications focus on air, water, river, dam, and electric applications. Facility Management targets factory and remote SCADA applications. Advantech's air quality monitoring systems, hazardous location monitoring systems, and waste water treatment management systems provide value-added systems and solutions, allowing users to monitor and operate processes anytime anywhere.

## Hazardous Location Monitoring System

In chemical and petrochemical plants with hazardous areas, rigorous security is required to protect operators and maintain equipment. Advantech's video server connect analog camera and integrate of real-time I/O and SCADA to provide information On-Screen which monitor hazardous locations with their corresponding temperature and pressure. The video server ensures excellent video quality with multiple compression formats and dual streaming. The VideoDAQ network video monitoring software can monitor up to 16 cameras. The Ethernet switch and device server are UL Class 1, Division 2 certified which is particularly designed for hazardous locations.



### EKI-7000 Series

#### High Performance Managed Ethernet Switches

- 4/7/8/16 port Ethernet switches with fiber optic connections
- Supports redundant X-Ring Pro (recovery time < 20ms)
- Control: VLAN/GVRP, QoS, IGMP Snooping/Query, LACP, Rate Limit
- Management: Web, Telnet, Serial Console, SNMP



### EKI-5525I / EKI-5528I

#### 5/8-port Fast ProView Series Ethernet Switch

- Communicates with SCADA software via Modbus/TCP
- Communicates with NMS via SNMP
- Port-based QoS for deterministic data transmission
- -40~75°C operating temperature range
- Loop detection



### EKI-1221D / EKI-1222D

#### 1/2-port Modbus Gateways with Integrated Ethernet Cascading

- Built-in Ethernet switches for cascading/daisy-chain connectivity that offers flexible cabling
- Supports auto-bypass to prevent accidental power failure if one of the Modbus Gateway's unexpectedly shuts down
- Provide windows utilities and web-based configuration



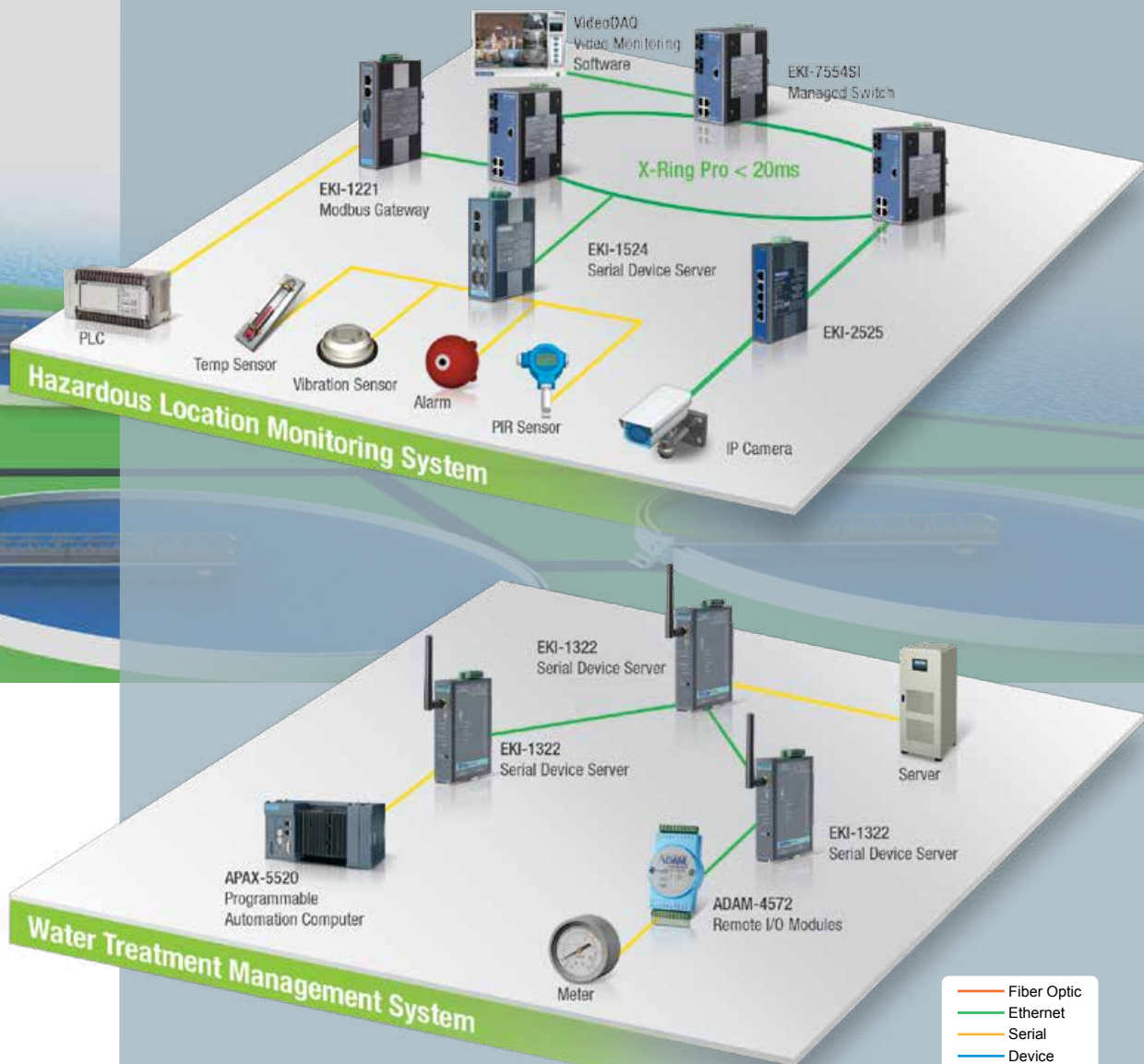
### EKI-1521 / EKI-1522 / EKI-1524

#### 1/2/4 port RS-232/422/485 Serial Device Servers

- Device can be dual-connected to Ethernet switches for unrivaled reliability
- Multiple configuration methods including Window utilities, Telnet console and web browser
- Supports multiple operation modes, such as COM port redirection, TCP & UDP server/client

## Water Treatment Management System

Proper water treatment is a very important endeavor for all industrial and public enterprises. Water treatment produces organic and mineral sludge from filtration and sedimentation. Therefore, it is important to centralize the measurement of water consumption, collect all the information on the status of the water, and remotely control the water flow level in each node (branch). Advantech offers complete water and waste water treatment monitoring and control systems for treating water to obtain very high quality water. The Modbus Gateway with Integrated Ethernet Switch offers daisy chain connectivity so it can minimize cabling efforts. Moreover, it supports Ethernet auto-bypass to prevent accidental power failure.

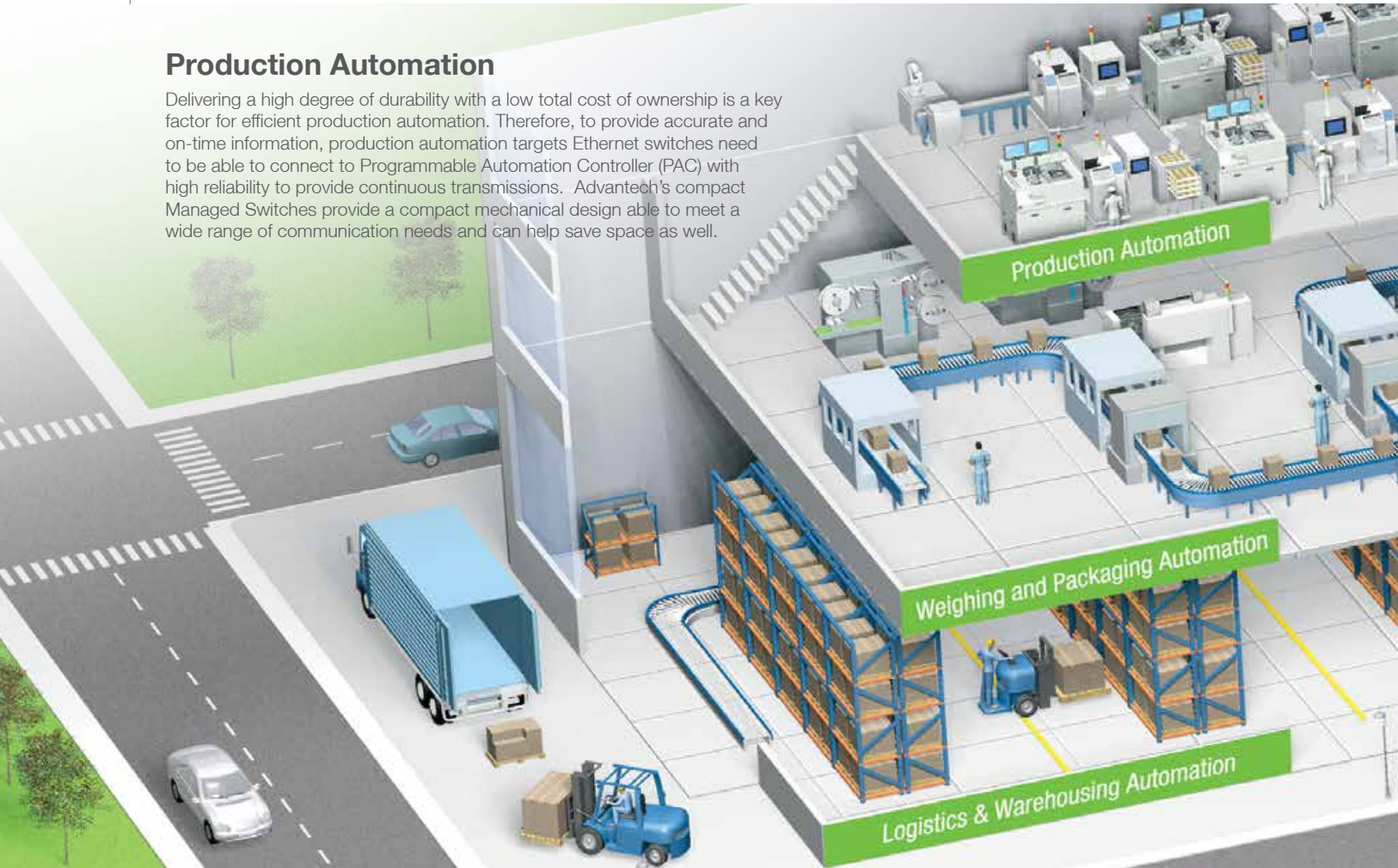


# Machine and Factory Automation Systems

Ethernet networking offers a reliable and open network infrastructure that allows the various systems used with today's machine & factory automation applications to communicate effectively, resulting in a highly synchronized operation. Advantech's Factory & Machine Automation target production automation, packaging automation, logistics & warehousing that require a compact, reliable, and robust network system. Advantech helps customers to achieve high scale volume production goals and raise their market competitiveness.

## Production Automation

Delivering a high degree of durability with a low total cost of ownership is a key factor for efficient production automation. Therefore, to provide accurate and on-time information, production automation targets Ethernet switches need to be able to connect to Programmable Automation Controller (PAC) with high reliability to provide continuous transmissions. Advantech's compact Managed Switches provide a compact mechanical design able to meet a wide range of communication needs and can help save space as well.



### EKI-2748CI / EKI-2748FI

6 Gx + 2 Combo Managed Ethernet Switch with Wide Temp.

- Compact and robust design to increase space-efficiency
- DMI (Digital Monitoring Interface) monitors parameter status of SFP modules
- Supports redundant X-Ring Pro (recovery time < 20ms)



### EKI-5725I / EKI-5728I

5/8-port Gigabit ProView Series Ethernet Switch

- Communicates with SCADA software via Modbus/TCP
- Communicates with NMS via SNMP
- Port-based QoS for deterministic data transmission
- -40~75°C operating temperature range
- Loop detection



### EKI-2548I

8Tx Managed Ethernet Switch with Wide Temp

- Compact and robust design to increase space-efficiency
- Features a DIP switch which instantly enables X-Ring Master
- UL Class 1, Division 2 certified for use in hazardous locations



### EKI-1351 / EKI-1352

1/2-port RS-232/422/485 to 802.11b/g WLAN Serial Device Server

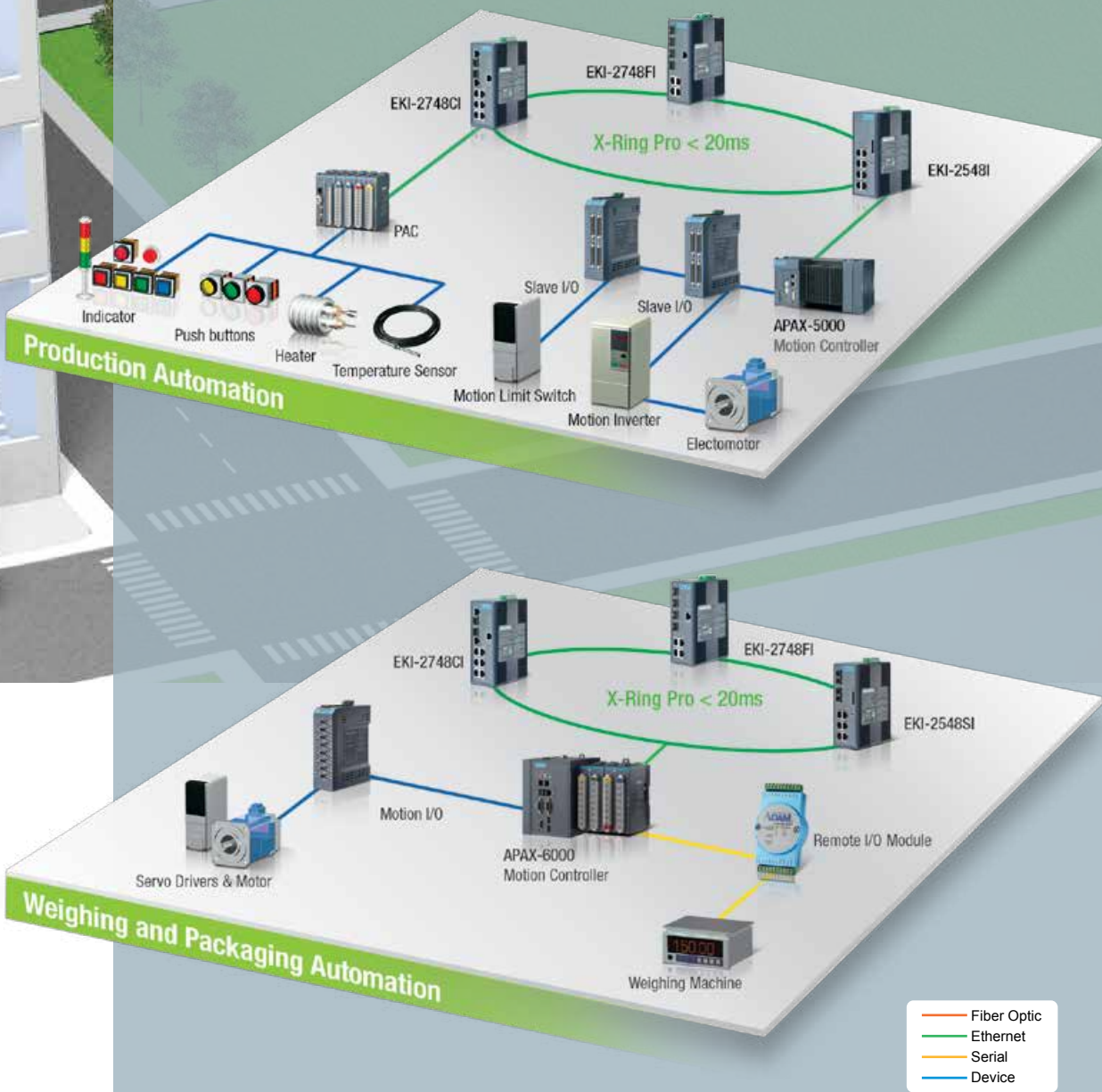
- Link any serial device to an IEEE 802.11 b/g network
- Supports WLAN Ad-Hoc and infrastructure modes
- Supports WEP, WPA, and WPA2 security mechanism





## Weighing and Packaging Automation

Automatic and highly accurate weighing & packaging machines are critical for many sectors, like pharmaceutical, medicine, food & beverage, jewelry, gold, silver, and more. After the weighing process, a conveyor system will transport the material to the packaging system. The Managed Switch was chosen to establish a redundant ring between the controllers and information layer. If one links fails, the Primary Ring Master automatically activates the backup path within 20ms.



# Industrial Ethernet Switches

Advantech provides Ethernet switches and media converters with a variety of features, from Fast Ethernet to Gigabit, from copper to fiber optic, and Power over Ethernet. Advantech's EKI-7000 series Managed Ethernet switches incorporate X-Ring Pro technology that offers the fastest redundant ring recovery time (<20ms) to secure data communication and reliability. Furthermore, the robust design, wide operating temperature range, DIN-rail mounting, and +12~48 VDC redundant power inputs make EKI-2000/7000/9000 series suitable for rugged industrial applications.



## EKI-9778 Rackmount Switch Rackmountable High Port Density Ethernet Switches

- 24x GbE ports and 4x 10GbE (4x SFP+) ports
- 16x gigabit combo ports (1000BASE-T/TX or GbE SFP)
- Dual redundant power 110 ~ 220 VAC input
- IEEE1588 PTPv2 with 1-step precision clock
- Fanless design



## EKI-9300 / EKI-7000 Series High Performance Managed Ethernet Switches

- 4/7/8/16-port Ethernet switches with fiber optic connections
- Supports redundant X-Ring Pro (recovery time < 20ms)
- Control: VLAN/GVRP, QoS, IGMP Snooping/Query, LACP, Rate Limit
- Management: Web, Telnet, Serial Console, SNMP



## EKI-6500 / EKI-9500 Series EN50155 Compliant Ethernet Switch with M12 Connectors

- EN50155 certified for railway application requirements
- Ideal for PIS, IP surveillance, in-seat video entertainment systems



### EKI-5000 ProView Series

#### ProView Series Industrial Gigabit/ Fast Ethernet Switches

- Communicates with SCADA software via Modbus/TCP
- Communicates with NMS via SNMP
- Port-based QoS for deterministic data transmission
- -40~75°C operating temperature range (EKI-5728I/ 5725I/ 5528I/ 5525I)
- eMark certified (EKI-5728)
- Loop detection



### EKI-3000 Series

#### Smart Industrial Gigabit/Fast Ethernet Switches

- Connects Gigabit Ethernet for highest performance
- Saves up to 60% power consumption for an eco-friendly solution
- Superior Self-Diagnosis minimizes network disruptions
- Port-based QoS prioritizes media traffic



### EKI-2000 Series

#### Industrial Ethernet Switches and Media Converters

- Fast Ethernet and Gigabit Unmanaged Ethernet Switches
- Cost-effective, compact size with wide operating temperature range
- Fast Ethernet and Gigabit Ethernet Media Converters

# X-Ring Pro Introduction & Applications

X-Ring Pro is the next generation of Advantech's X-Ring protocol, which supports an advanced ring topology and faster fail-over time

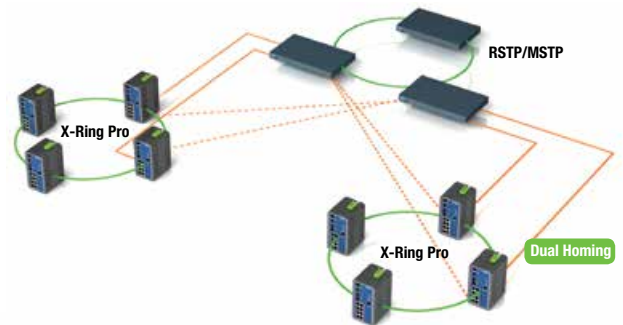
- Up to 250pcs Ethernet switches in a ring
- 20ms fail-over time for a 250-units ring
- More advanced topologies (Advanced Dual Homing, Multi-Couple Rings, Multiple Rings Aggregation )
- Backward compatible with X-Ring



## New Advanced Topologies

### Advanced Dual Homing

EKI managed switches support Dual Homing for connecting with another network which runs RSTP (Rapid Spanning Tree Protocol) or MSTP (Multiple Spanning Tree Protocol). Dual Homing means an EKI switch is connected to a network with two independent connecting paths. The standby path will be actuated when the primary path fails. Thus, users can connect 2 paths to the same switches, or switches on different levels of the network architecture. This is a convenient way for the network planner to expand the network without replacing existed devices.



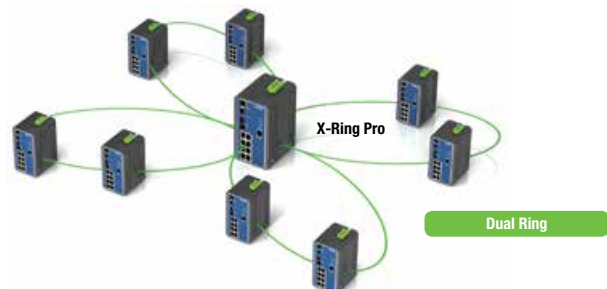
### Multi-Couple Rings

Multiple rings can be connected via 2 links, one is active and another one is standby one. This largely increases the ring communication redundancy.



### Dual Ring

Multiple rings can be aggregated by one central switch. This provides centralized management and saves costs.

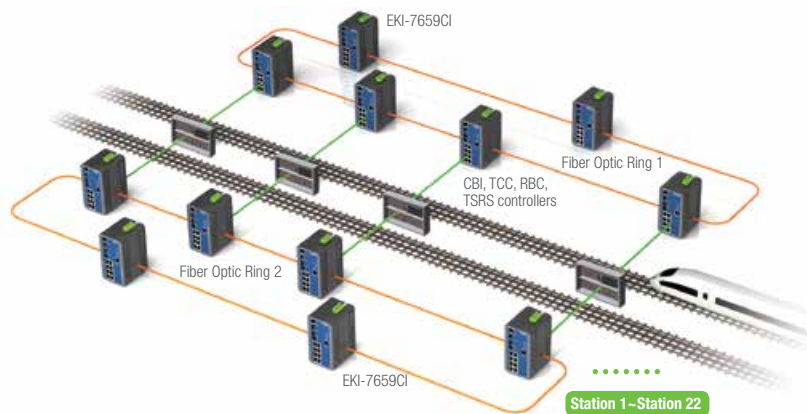




## Advantech X-Ring Pro Successful Cases

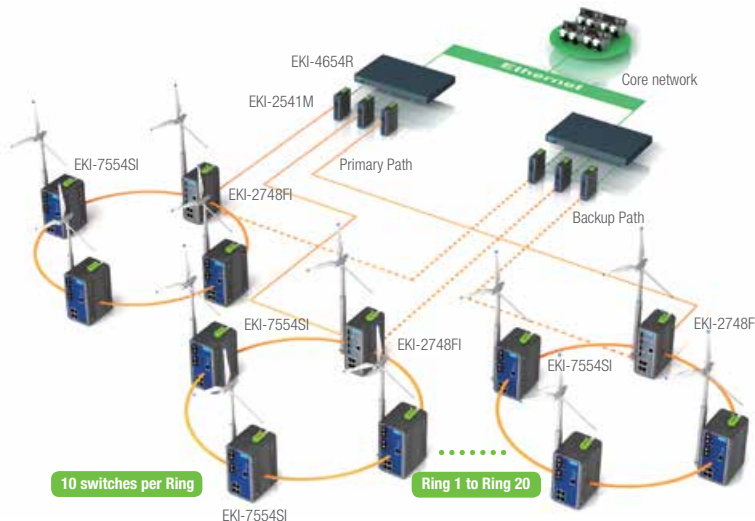
### Railway Wayside Control

A China High Speed Rail (HSR) operator built a 308.1 Km fiber optic network along the wayside of 22 stations. To control the trains from the wayside control cabinet, there are specific controllers, including CBI, TCC, RBC, and TSRS to ensure non-stop operation. Advantech industrial Ethernet switches form a dual fiber optic ring network, and each controller is connected simultaneously to these 2 fiber rings. With the Advantech X-Ring Pro technology which ensures that a backup circuit is established in just 20ms to compensate for errors such as broken links. This comprehensive redundancy concept offers maximum possible security.



### Wind Power

Wind power plants require a great number of information management systems and remote wind turbine monitoring systems. Wind power is often used in harsh environments with high day-night temperature difference and serious dust/sand storms. The rugged electronic-magnetic environment of the motor control system requires an industrial switch with excellent anti-electromagnetic-interference capability. In order to enhance communication reliability, the operator has to set up a redundant ring with short failover time. When any error occurs in the communication network, the switch should smoothly switch to the redundant backup line. Fiber optic managed switch with wide temperature to construct a steady and reliable X-Ring Pro networking topology to ensure uninterrupted data transmission.



# Industrial Wireless AP/ Client

Advantech industrial wireless solutions cover WLAN (wireless local area network) to cellular, which offer WLAN IEEE 802.11a/n, 802.11b/g/n, and 802.11a/b/g/n Access Point. Advantech's industrial wireless solutions offer superior data transmission throughput and connectivity. Advantech facilitates real-time access to people, applications, and network resources anywhere anytime.



## EKI-6331AN/EKI-6311GN IEEE 802.11n Wireless Access Points/Client

- EKI-6331AN 802.11a/n with MIMO 2x2 11n (up to 300Mbps wireless link)
- EKI-6311GN 802.11b/g/n with high speed data rates (up to 150 Mbps)
- IP55 waterproof certification, WEP/WPA/WPA2/ IEEE 802.1 x authentication support



## EKI-6340 Series IEEE 802.11 a/b/g/n Outdoor Single to Triple Radio Wi-Fi AP

- EMC Level 4
- C1D2 certified
- -40~75°C operating temperature range
- EN50155 compliant



## EKI-6351-A IEEE 802.11 a/b/g/n Wi-Fi AP

- EMC Level 4
- C1D2 certified
- -40~75°C operating temperature range
- EN50155 compliant

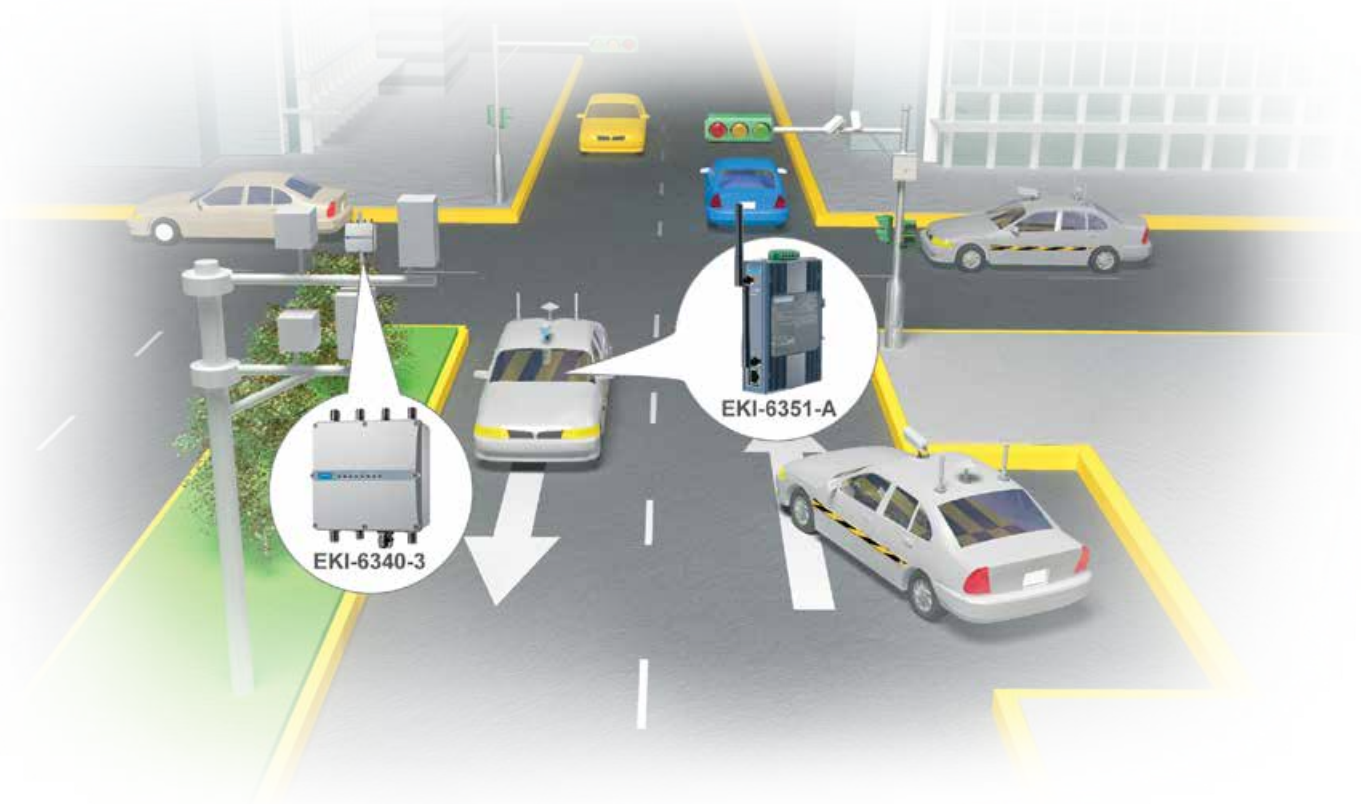
## Automated Guided Vehicle

Automated guided vehicle application include asset management, item locators & tracking, supply chains and inventories management system, allowing warehouse to move products faster while saving time and increasing productivity. Advantech's wireless device server and wireless Access Points provide real-time data transmission for automatic logistics & warehousing applications.



## Automated Driver's License Test

Industrial wireless can also be used in driver's license test. This system can transmit real time video, audio, and control data to the drivers control center to see if drivers followed or completed the appointed tasks and decide if they have passed the test.



# Industrial Wireless Technologies

Wireless communication provides an easier way to connect devices, particularly those in dispersed locations or harsh environments.

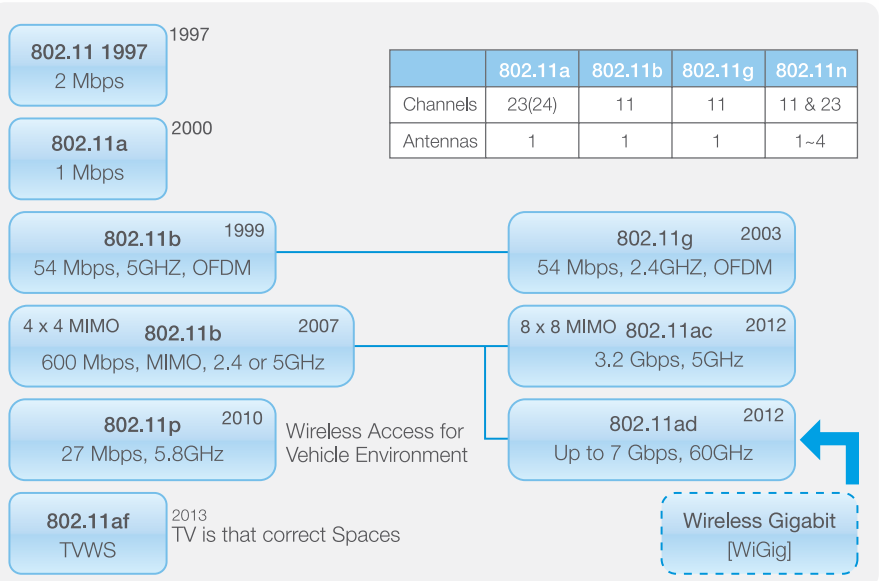
- 802.11 Standard Evolution
- Industrial Wi-Fi Mesh Network
- Wireless Architecture



## 802.11 Standard Evolution

The IEEE 802.11 standard specifies a way to use radio frequency (RF) technology to send Ethernet packets over the air. Wireless LAN is based on the IEEE 802.11 standard and referred to as Wi-Fi networks. The 802.11b standard, which operates in the 2.4 GHz frequency band at 11 Mbps, was the first commercially successful WLAN technology.

As wireless technology evolved, a higher transmission rate of 54 Mbps was achieved with 802.11g, which uses the 2.4 GHz band, and 802.11a, which uses the 5 GHz frequency band with same transmission rate of 54 Mbps. To extend the wireless communication distance and bandwidth, IEEE 802.11n has added more specification in the MIMO standard and dual-band support. The transmission rate of 802.11n is up to 600Mbps. 802.11n offers a suite of advanced new features that increase effective data throughput, extend wireless coverage, and create more reliable networks. Choosing the right WLAN technology is an important factor in determining the performance of your wireless network and overall return on investment.





## Industrial IEEE 802.11 Wireless

In the past, Wireless deployment has been limited by security requirements, the cost of deployment, inadequate management solutions, lack of standards, and availability of innovative solutions. Rapid advances in wireless local area network (WLAN) technology in recent years along with widespread adoption of the technology in the industrial and enterprise space have eliminated many of these roadblocks.. WLAN is not a wholesale replacement of broadband, but it is a fast and cost-efficient way to construct broadband transmissions backhaul. Wireless communication provides an easier way to connect devices, particularly those in dispersive locations or harsh environments. Today, a new wave of opportunity exists for industrial industries to improve margins through the use of wireless technology



## Wireless Architecture

### AP-CPE mode

EKI-6300 series products can perform as Access Point (AP) or Customer Premises Equipment (CPE). When it plays as AP, it connected to a wired network via the Ethernet port and accepted connections from wireless clients and passed data upwards to a network wirelessly. In CPE mode, it receives wireless signal over last mile application, helping WISPs deliver wireless broadband Internet service to residents and business customers. In CPE mode, it does not accept wireless association from wireless clients.



### WDS mode

A Wireless Distribution System (WDS) provides an easy way for APs to communicate wirelessly with each other. In this mode, it can support single or multiple WDS links and no wireless clients can associate with it.

### AP-Repeater mode

EKI-6300 series products can be used as a CPE to receive wireless signal over the last mile, helping WISPs deliver wireless broadband Internet service to new residential and business customers. And it can be used as an AP to accept wireless connections from client devices in this mode.



# Serial Device Servers

Advantech's Device Servers are easy to install and configure, support wired and wireless networking and provide various operation modes to satisfy rigorous industrial automation needs. These Serial Device Servers provide various redundant configuration types and multi-access configurations for remotely controlling and monitoring serial devices via Ethernet. Furthermore, they fulfill various needs through multiple operation modes, such as COM port redirection, and TCP & UDP server/client.

## GPRS IP Gateway



### EKI-1321/EKI-1322

#### 1/2-port RS-232/422/485 to GPRS IP Gateway

- Dual-SIM and data buffering ensures the reliable data transmission
- RVCOM and DDNS support to connect devices remotely like local serial port
- Standard OpenVPN support to ensure data security
- IPv6/IPv4 dual protocol stack support

## Serial Device Servers



### EKI-1521/EKI-1522/EKI-1524

#### Serial Device Servers

- 1/2/4-port RS-232/422/485 Serial Device Server
- Device can be dual-connected to Ethernet switches for unrivaled reliability
- Multiple configuration methods including Window utilities, Telnet console and web browser



### EKI-1528/EKI-1526

#### 8/16-port RS-232/422/485 Serial Device Servers

- Connect up to 8 or 16-port serial RS-232/422/485 devices directly to TCP/IP networks
- High speed baud rates from 50bps to 921.6Kbps ensure high volume transmission needs
- Supports VCOM, TCP Server, TCP Client, UDP and RFC2217 operating modes

## WLAN Serial Device Server



### EKI-1361/EKI-1362

1/2-port RS-232/422/485 to 802.11b/g/n WLAN Serial Device Server

- Links any serial device to an IEEE 802.11b/g/n network
- Provides 1/2 x RS-232/422/485 port
- Secures data access with WEP, WPA, and WPA2
- Supports WLAN Ad-Hoc and infrastructure modes
- MIMO 2 x 2 Technology



### EKI-1351/EKI-1352

1/2-port RS-232/422/485 to 802.11b/g WLAN Serial Device Servers

- Link any serial device to an IEEE 802.11 b/g network
- Supports wireless LAN Ad-Hoc and Infrastructure modes
- Supports WEP, WPA, and WPA2 security mechanism

## Modbus Gateways



### EKI-1221D/EKI-1222D

1/2-port Modbus Gateways with Integrated Ethernet Cascading

- Built-in Ethernet switches for cascading/daisy-chain connectivity that offers flexible cabling
- Supports auto-bypass to prevent accidental power failure if one of the Modbus Gateways unexpectedly shuts down
- Provides windows utilities and web-based configuration

# Device Server Technologies

The cutting edge technologies of Advantech's device servers assures reliable devices connectivity

- VCOM and RVCOM
- OpenVPN
- DDNS
- IPv6 & IPv4 Dual Stack



## Device Server Technologies

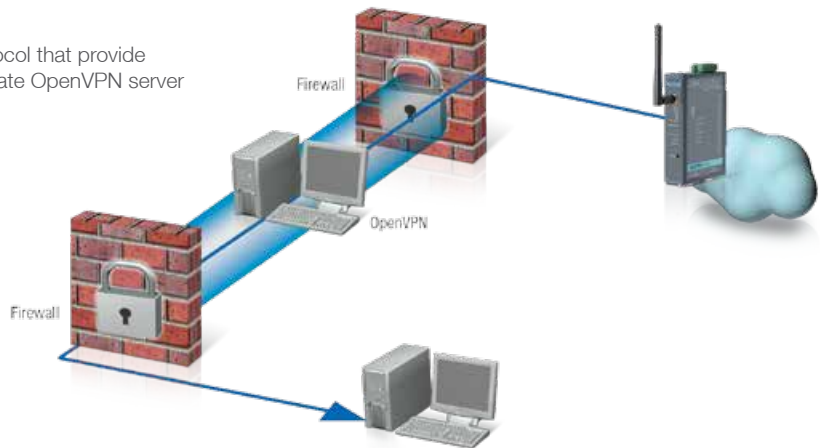
### RVCOM

iGateway series supports Advantech patented RVCOM function that allows user use the virtual com port as usual, even the device gets a private IP address.



### OpenVPN Support

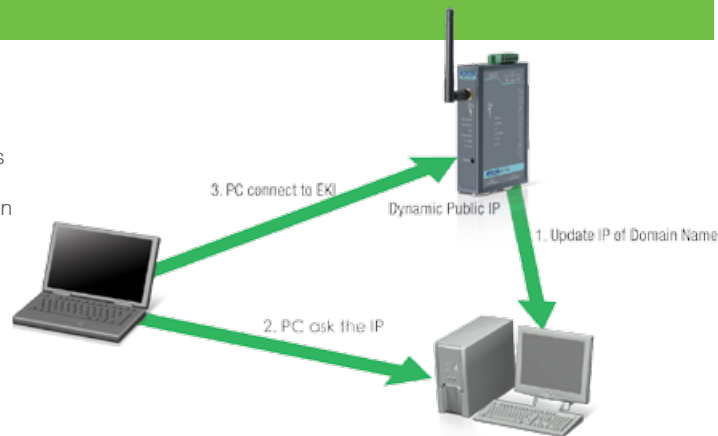
iGateway series supports standard OpenVPN protocol that provide trustable data communication. User can setup private OpenVPN server easily without extra software license fee.



## GPRS IP Gateway

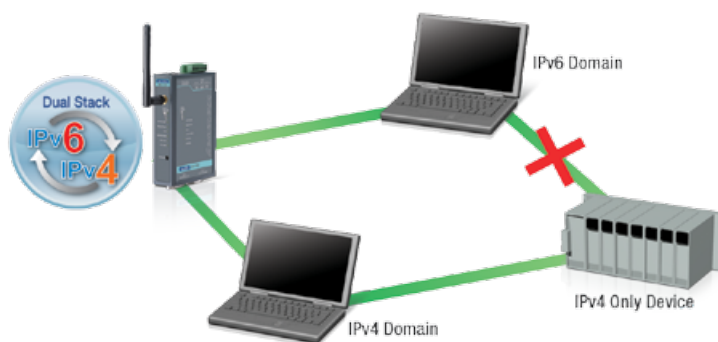
### DDNS Support

DDNS support helps user to locate the exactly current IP address of device easily. Device will automatically update current IP address to DDNS server. When use DDNS with VCOM or RVCOM, user doesn't need to do the lookup manually after setup. The connection will handle by VCOM or RVCOM automatically.



### IPv6 and IPv4 Dual Stack Support

IPv6 will get popular eventually. iGateway series supports IPv6 and IPv4 dual protocol stack that helps user to overcome the impact of Ethernet architecture transition smoothly and easily.



## iGateway Application for Solar Power

Advantech's GPRS/3G Serial Device Servers are a perfect fit for wireless data transmission systems due to their great performance, reliability and ruggedness. The GPRS/3G Serial Device Servers collect data from solar panels & inverters, pyranometers, and relative sensors. This information is transmitted through cellular data network to the telecom control center. Service providers and users are able to easily access real-time information anywhere, anytime. The GPRS/3G Serial Device Servers provide dual SIM slots for telecom carrier redundancy and one SD slot for serial data buffering.



# Industrial Ethernet Switches



## EN50155 Ethernet Switches



Model Name		EKI-6558TI	EKI-6559TMI	EKI-6528TI	EKI-6528TPI
Description		EN50155 IP67 8-port M12 Managed Ethernet Switch with Wide Temperature	EN50155 IP67 8-port M12 + 2-port Fiber Optic Managed Ethernet Switch with Wide Temperature	EN50155 8-port M12 Unmanaged Switch with Wide Temperature	EN50155 8-port PoE M12 Unmanaged Switch with Wide Temperature
Interface	Ports Number	8	10	8	8
	10/100Base-T (X)	8	8	8	8
	100BaseFX	-	2	-	-
	10/100/1000Base-T (X)	-	-	-	-
	1000Base-SX/LX/LHX/XD/ZX/EZX	-	-	-	-
	PoE (10/100 Mbps)	-	-	-	4
	PoE (10/100/1000 Mbps)	-	-	-	-
	DI/DO	-	-	-	-
Console	V	V	-	-	
Network Management	Redundancy	V	V	-	-
	Diagnostics	V	V	-	-
	VLAN	V	V	-	-
	Configuration	V	V	-	-
	SNMP	V	V	-	-
	Security	V	V	-	-
	Traffic Control	V	V	-	-
Power	2 x Unregulated 12 ~ 48 V <sub>DC</sub>	V	V	12 ~ 48 V <sub>DC</sub>	24 ~ 48 V <sub>DC</sub>
	2 x Unregulated 100 ~ 240 V <sub>DC</sub>	-	-	-	-
	2 x Unregulated 100 ~ 240 V <sub>AC</sub>	-	-	-	-
	Relay Output	V	V	-	-
Mechanism	DIN-rail Mount	-	-	V	V
	Wall Mount	V	V	V	V
	Rack Mount	-	-	-	-
	IP Level	IP67	IP67	IP40	IP40
Protection	ESD (Ethernet)	V	V	V	V
	Surge (EFT for power)	V	V	V	V
	Power Reverse	V	V	V	V
Operating Temperature	-10 ~ 60°C (14 ~ 140°F)	-	-	-	-
	-40 ~ 75°C (-40 ~ 158°F)	V	V	V	V
	-40 ~ 85°C (-40 ~ 185°F)	-	-	-	-
Certification	CE	V	V	V	V
	FCC	V	V	V	V
	UL/cUL 60950-1	-	-	V	V
	Class I, Division 2	-	-	-	-
	UL 508	V	V	-	-

## PoE Switches



Model Name		EKI-9316P/EKI-9312P	EKI-7659CPI	EKI-2726FHPI	EKI-2525P	EKI-2526PI
Description		16/12 Port Industrial-Class Managed DIN Rail Switch Full Gigabit Switch with PoE/PoE+	8+2G Port Gigabit Managed Redundant Industrial PoE Switch with Wide Temperature	4G+2 SFP W/ 4 IEEE 802.3 High Power PoE Industrial Wide Temperature Switch	5-port Industrial PoE Switch	6-port Industrial PoE Switch with Wide Temperature
Interface	Ports Number	16/12	10	6	5	6
	10/100Base-T (X)	-	-	-	1	2
	100BaseFX	-	-	-	-	-
	10/100/1000Base-T (X)	12/8	-	4	-	-
	1000Base-SX/LX/LHX/XD/ZX/EZX	4	2	2	-	-
	PoE (10/100 Mbps)	12/8	8	4 (PoE+, 30W)	4	4
	M12 Connector (10/100 Mbps)	-	-	-	-	-
	DI/DO	-	-	-	-	-
Network Management	Console	1	V	-	-	-
	Redundancy	v	V	-	-	-
	Diagnostics	v	V	-	-	-
	VLAN	v	V	-	-	-
	Configuration	v	V	-	-	-
	SNMP	v	V	-	-	-
	Security	v	V	-	-	-
	Traffic Control	v	V	-	-	-
Power	2 x Unregulated 48 V <sub>DC</sub>	48 V <sub>DC</sub>	48 V <sub>DC</sub>	48 V <sub>DC</sub>	48 V <sub>DC</sub>	48 V <sub>DC</sub>
	2x Unregulated 100 ~ 240 V <sub>DC</sub>	-	-	-	-	-
	2 x Unregulated 100 ~ 240 V <sub>AC</sub>	-	-	-	-	-
	Relay Output	-	V	V	V	V
Mechanism	DIN-rail Mount	v	V	V	V	V
	Wall Mount	v	V	V	V	V
	Rack Mount	-	-	-	-	-
	IP Level	IP30	IP30	IP30	IP30	IP30
Protection	ESD (Ethernet)	V	V	V	V	V
	Surge (EFT for power)	V	V	V	V	V
	Power Reverse	V	V	V	V	V
Operating Temperature	-10 ~ 60°C (14 ~ 140°F)	-	-	-	V	-
	-40 ~ 75°C (-40 ~ 167°F)	v	V	V	-	V
	-40 ~ 85°C (-40 ~ 185°F)	-	-	-	-	-
Certification	CE	v	V	V	V	V
	FCC	v	V	V	V	V
	UL/cUL 60950-1	-	V	-	V	V
	Class I, Division 2	v	-	-	-	-
	UL 508	-	-	V	-	-

# Industrial Ethernet Switches



## PoE Switches



Model Name		EKI-2525PA	EKI-2528PAI	EKI-2701HPI	EKI-2701PSI
Description		5-port Industrial PoE Switch with 24/48 V <sub>DC</sub> Power Input	8-port Industrial PoE Switch with 24/48 V <sub>DC</sub> Power Input and Wide Temperature	Industrial PoE+ Injector with Wide Temperature	Industrial PoE Splitter with Wide Temperature
Interface	Ports Number	5	8	2	2
	10/100Base-T (X)	1	4	-	-
	100BaseFX	-	-	-	-
	10/100/1000Base-T (X)	-	-	1	1
	1000Base-SX/LX/LHX/XD/ZX/EZX	-	-	-	-
	PoE (10/100 Mbps)	4	4	1 (10/100/1000 Mbps)	1 (10/100/1000 Mbps)
	M12 Connector (10/100 Mbps)	-	-	-	-
	DI/DO	-	-	-	-
Network Management	Redundancy	-	-	-	-
	Diagnostics	-	-	-	-
	VLAN	-	-	-	-
	Configuration	-	-	-	-
	SNMP	-	-	-	-
	Security	-	-	-	-
	Traffic Control	-	-	-	-
Power	2 x Unregulated	24/48 V <sub>DC</sub>	24/48 V <sub>DC</sub>	24/48 V <sub>DC</sub>	44~57 V <sub>DC</sub>
	2x Unregulated 100 ~ 240 V <sub>DC</sub>	-	-	-	-
	2 x Unregulated 100 ~ 240 V <sub>AC</sub>	-	-	-	-
	Relay Output	V	V	V	-
Mechanism	DIN-rail Mount	V	V	V	V
	Wall Mount	V	V	V	V
	Rack Mount	-	-	-	-
	IP Level	IP30	IP30	IP30	IP30
Protection	ESD (Ethernet)	V	V	V	V
	Surge (EFT for power)	V	V	V	V
	Power Reverse	V	V	V	V
Operating Temperature	-10 ~ 60°C (14 ~ 140°F)	V	-	-	-
	-40 ~ 75°C (-40 ~ 167°F)	-	V	V	V
	-40 ~ 85°C (-40 ~ 185°F)	-	-	-	-
Certification	CE	V	V	V	V
	FCC	V	V	V	V
	UL/cUL 60950-1	-	-	-	V
	Class I, Division 2	-	-	-	-
	UL 508	V	V	V	-



## Managed Ethernet Switches



Model Name		EKI-9778	EKI-9316/ EKI-9312	EKI-7758F	EKI-7659C/CI	EKI-7657C	EKI-7654C
Description		24GbE + 4 10GbE Port Managed Switch with Combo Port	16/12 Port Industrial-Class Managed DIN Rail Switch Full Gigabit Switch	4G+4SFP Gigabit Managed Redundant Switch	8+2G Combo Port Gigabit Managed Redundant Industrial Ethernet Switch	7+3G Combo Port Gigabit Managed Redundant Industrial Ethernet Switch with 2 x DI/O	4+2G Combo Port Gigabit Managed Redundant Industrial Ethernet Switch
Interface	Ports Number	28	16/12	8	10	10	6
	10/100Base-T (X)	-	-	-	8	7	4
	100BaseFX	-	-	-	-	-	-
	10/100/1000Base-T (X)	16 combo	12/8	4	2	3	2
	1000Base-SX/LX/LHX/XD/ ZX/EZX	8 & 16 combo	4	4	2	3	2
	10GBE SFP+	4	-	-	-	-	-
	PoE (10/100 Mbps)	-	-	-	-	-	-
	PoE (10/100/1000 Mbps)	-	-	-	-	-	-
	DI/DO	-	-	-	-	2	-
	Console	1	1	V	V	V	V
Network Management	Redundancy	v	v	V	V	V	V
	Diagnostics	v	v	V	V	V	V
	VLAN	v	v	V	V	V	V
	Configuration	v	v	V	V	V	V
	SNMP	v	v	V	V	V	V
	Security	v	v	V	V	V	V
	Traffic Control	v	v	V	V	V	V
	Power						
2 x Unregulated 12 ~ 48 V <sub>DC</sub>	-	24/48 V <sub>DC</sub>	V	V	V	V	
2 x Unregulated 100 ~ 240 V <sub>DC</sub>	-	-	-	-	-	-	
2 x Unregulated 100 ~ 240 V <sub>AC</sub>	V	-	-	-	-	-	
Relay Output	-	-	V	V	V	V	
Mechanism	DIN-rail Mount	-	v	V	V	V	V
	Wall Mount	-	v	V	V	V	V
	Rack Mount	V	-	-	-	-	-
	IP Level	IP30	IP30	IP30	IP30	IP30	IP30
Protection	ESD (Ethernet)	V	V	V	V	V	V
	Surge (EFT for power)	V	V	V	V	V	V
	Power Reverse	V	V	V	V	V	V
Operating Temperature	-10 ~ 60°C (14 ~ 140°F)	V	-	V	V	V	V
	-40 ~ 75°C (-40 ~ 158°F)	-	v	-	V (EKI-7659CI)	-	-
	-40 ~ 85°C (-40 ~ 185°F)	-	-	-	-	-	-
Certification	CE	V	v	V	V	V	V
	FCC	V	v	V	V	V	V
	UL/cUL 60950-1	Ongoing	-	V	V	V	V
	Class I, Division 2	-	v	V	-	V	-
	UL 508	-	-	-	-	-	-

# Industrial Ethernet Switches

## Managed Ethernet Switches



Model Name		EKI-7559SI/MI	EKI-7554SI/MI	EKI-2748FI/CI	EKI-2548I
Description		8+2 SC Type Fiber Optic Managed Redundant Industrial Ethernet Switch with Wide Temperature	4+2 SC Type Fiber Optic Managed Redundant Industrial Ethernet Switch with Wide Temperature	8Gx Managed Ethernet Switch with Wide Temperature	8Tx Managed Ethernet Switch with Wide Temperature
Interface	Ports Number	10	6	8	8
	10/100Base-T (X)	8	4	-	8
	100BaseFX	2	2	-	-
	10/100/1000Base-T (X)	-	-	4/6	-
	1000Base-SX/LX/LHX/XD/ZX/EZX	-	-	4/2	-
	PoE (10/100 Mbps)	-	-	-	-
	PoE (10/100/1000 Mbps)	-	-	-	-
	DI/DO	-	-	-	-
	Console	V	V	V	-
Network Management	Redundancy	V	V	V	V
	Diagnostics	V	V	V	V
	VLAN	V	V	V	V
	Configuration	V	V	V	V
	SNMP	V	V	V	V
	Security	V	V	V	V
	Traffic Control	V	V	V	V
Power	2 x Unregulated 12 ~ 48 V <sub>DC</sub>	V	V	V	V
	2 x Unregulated 100 ~ 240 V <sub>DC</sub>	-	-	-	-
	2 x Unregulated 100 ~ 240 V <sub>DC</sub>	-	-	-	-
	Relay Output	V	V	V	V
Mechanism	DIN-rail Mount	V	V	V	V
	Wall Mount	V	V	V	V
	Rack Mount	-	-	-	-
	IP Level	IP30	IP30	IP30	IP30
Protection	ESD (Ethernet)	V	V	V	V
	Surge (EFT for power)	V	V	V	V
	Power Reverse	V	V	V	V
Operating Temperature	-10 ~ 60°C (14 ~ 140°F)	-	-	-	-
	-40 ~ 75°C (-40 ~ 167°F)	V	V	V	V
	-40 ~ 85°C (-40 ~ 185°F)	-	-	-	-
Certification	CE	V	V	V	V
	FCC	V	V	V	V
	UL/cUL 60950-1	V	V	-	-
	Class I, Division 2	V	-	V	V
	UL 508	-	-	V	V

## ProView Ethernet Switches

## Unmanaged Ethernet Switches



Model Name		EKI-5725/ EKI-5728/I	EKI-5525/ EKI-5528/I	EKI-7626C/CI	EKI-7629C/CI	EKI-7526I	EKI-7529MI/ST
Description		5/8-port Gigabit Ethernet ProView Switch	5/8-port Fast Ethernet ProView Switch	16+2G Combo Port Gigabit Unmanaged Industrial Ethernet Switch	8+2G Combo Port Gigabit Unmanaged Industrial Ethernet Switch	16+2 SC Type Fiber Optic Unmanaged Industrial Ethernet Switch with Wide Temperature	8+2 Multi-mode Fiber Optic Unmanaged Industrial Ethernet Switch with Wide Temperature
Interface	Ports Number	5/8	5/8	18	10	16	10
	10/100Base-T (X)	-	5/8	16	8	16	8
	100BaseFX	-	-	-	-	-	2
	10/100/1000Base-T (X)	5/8	-	2	2	-	-
	1000Base-SX/LX/LHX/ XD/ZX/EZX	-	-	2	2	-	-
	PoE (10/100 Mbps)	-	-	-	-	-	-
	PoE (10/100/1000 Mbps)	-	-	-	-	-	-
	DI/DO	-	-	-	-	-	-
Console	-	-	-	-	-	-	
Network Management	Redundancy	-	-	-	-	-	-
	Diagnostics	-	-	-	-	-	-
	VLAN	-	-	-	-	-	-
	Configuration	V	V	-	-	-	-
	SNMP	V	V	-	-	-	-
	Security	-	-	-	-	-	-
	Traffic Control	-	-	-	-	-	-
Power	2 x Unregulated 12 ~ 48 V <sub>DC</sub>	12/48 V <sub>DC</sub>	12/48 V <sub>DC</sub>	V	V	V	V
	1 x Unregulated 100 ~ 240 V <sub>DC</sub>	-	-	-	-	-	-
	1 x Unregulated 100 ~ 240 V <sub>AC</sub>	-	-	-	-	-	-
	Relay Output	v	v	V	V	V	V
Mechanism	DIN-rail Mount	v	v	V	V	V	V
	Wall Mount	v	v	V	V	V	V
	Rack Mount	-	-	-	-	-	-
	IP Level	IP30	IP30	IP30	IP30	IP30	IP30
Protection	ESD (Ethernet)	V	V	V	V	V	V
	Surge (EFT for power)	V	V	V	V	V	V
	Power Reverse	V	V	V	V	V	V
Operating Temperature	-10 ~ 60°C (14 ~ 140°F)	V	V	V	V	-	-
	-40 ~ 75°C (-40 ~ 167°F)	V	V	V (EKI-7626CI)	V (EKI-7629CI)	V	V
	-40 ~ 85°C (-40 ~ 185°F)	-	-	-	-	-	-
Certification	CE	V	V	V	V	V	V
	FCC	V	V	V	V	V	V
	UL/cUL 60950-1	V	V	V	V	-	-
	Class I, Division 2	V	V	-	-	-	-
	ATEX	V	V	-	-	-	-
	UL 508	V	V	-	-	V	V

# Industrial Ethernet Switches

## Unmanaged Ethernet Switches



Model Name		EKI-2725 EKI-2728/I	EKI-3725/3728	EKI-2728MI	EKI-2525/I EKI-2528/I	EKI-2525M	EKI-2526M/S
Description		5/8-port Gigabit Unmanaged Industrial Ethernet Switch	5/8-port Gigabit Unmanaged Industrial Ethernet Switch	6Gx+2 Multi-mode Unmanaged Ethernet Switch with Wide Temperature	5/8-port Unmanaged Industrial Ethernet Switch	4+1 100FX Port Multi-mode Unmanaged Industrial Ethernet Switch	4+2 100FX Port Multi-mode/Single-mode Industrial Ethernet Switch
Interface	Ports Number	5/8	5/8	8	5/8	5	6
	10/100Base-T (X)	-	-	-	5/8	4	4
	100BaseFX	-	-	-	-	1	2
	10/100/1000Base-T (X)	5/8	5/8	6	-	-	-
	1000Base-SX/LX/LHX/XD/ZX/EZX	-	-	2	-	-	-
	PoE (10/100 Mbps)	-	-	-	-	-	-
	PoE (10/100/1000 Mbps)	-	-	-	-	-	-
	DI/DO	-	-	-	-	-	-
Console	-	-	-	-	-	-	
Network Management	Redundancy	-	-	-	-	-	-
	Diagnostics	-	-	-	-	-	-
	VLAN	-	-	-	-	-	-
	Configuration	-	-	-	-	-	-
	SNMP	-	-	-	-	-	-
	Security	-	-	-	-	-	-
	Traffic Control	-	-	-	-	-	-
Power	2 x Unregulated 12 ~ 48 V <sub>DC</sub>	V	V	V	V	V	V
	2 x Unregulated 100 ~ 240 V <sub>DC</sub>	-	-	-	-	-	-
	2 x Unregulated 100 ~ 240 V <sub>AC</sub>	-	-	-	-	-	-
	Relay Output	V	V	V	V	V	V
Mechanism	DIN-rail Mount	V	V	V	V	V	V
	Wall Mount	V	V	V	V	V	V
	Rack Mount	-	-	-	-	-	-
	IP Level	V	IP40	IP30	IP30	IP30	IP30
Protection	ESD (Ethernet)	V	V	V	V	V	V
	Surge (EFT for power)	V	V	V	V	V	V
	Power Reverse	V	V	V	V	V	V
Operating Temperature	-10 ~ 60°C (14 ~ 140°F)	V	V	-	V	V	V
	-40 ~ 75°C (-40 ~ 167°F)	V (EKI-2728I)	-	V	V (EKI-2525I/ EKI-2528I)	-	-
	-40 ~ 85°C (-40 ~ 185°F)	-	-	-	-	-	-
Certification	CE	V	V	V	V	V	V
	FCC	V	V	V	V	V	V
	UL/cUL 60950-1	V	V	-	V	V	V
	Class I, Division 2	- / V	-	V	V	V	V
	UL 508	-	-	V	-	-	-

## Media Converters



Model Name		EKI-2541M/S	EKI-3541M/S	EKI-2741F/SX/LX
Description		10/100TX to Multi-mode / Single-mode SC Type Fiber Optic Industrial Media Converters	10/100TX to Multi-mode / Single-mode SC Type Fiber Optic Industrial Media Converters	10/100/1000TX to Fiber Optic Gigabit Industrial Media Converters
Interface	Ports Number	2	2	2
	10/100Base-T (X)	1	1	-
	100BaseFX	1	1	-
	10/100/1000Base-T (X)	-	-	1
	1000Base-SX/LX/LHX/XD/ZX/EZX	-	-	1
	PoE (10/100 Mbps)	-	-	-
	PoE (10/100/1000 Mbps)	-	-	-
	DI/DO	-	-	-
Console	-	-	-	
Network Management	Redundancy	-	-	-
	Diagnostics	-	-	-
	VLAN	-	-	-
	Configuration	-	-	-
	SNMP	-	-	-
	Security	-	-	-
	Traffic Control	-	-	-
Power	2 x Unregulated 12 ~ 48 V <sub>DC</sub>	V	V	V
	2 x Unregulated 100 ~ 240 V <sub>DC</sub>	-	-	-
	2 x Unregulated 100 ~ 240 V <sub>AC</sub>	-	-	-
	Relay Output	V	V	V
Mechanism	DIN-rail Mount	V	V	V
	Wall Mount	V	V	V
	Rack Mount	-	-	-
	IP Level	IP30	IP40	IP30
Protection	ESD (Ethernet)	V	V	V
	Surge (EFT for power)	V	V	V
	Power Reverse	V	V	V
Operating Temperature	-10 ~ 60°C (14 ~ 140°F)	V	V	V
	-40 ~ 75°C (-40 ~ 167°F)	V (EKI-2541M/EKI-2541SI)	-	-
	-40 ~ 85°C (-40 ~ 185°F)	-	-	-
Certification	CE	V	V	V
	FCC	V	V	V
	UL/cUL 60950-1	V	V	V
	Class I, Division 2	V	-	V
	UL 508	-	-	-

# Industrial Wireless AP/Client

## Wireless Access Point/Client



Model Name		EKI-6311GN	EKI-6331AN	EKI-6340-1/2/3	EKI-6351-A
Description		IEEE 802.11 b/g/n Wi-Fi AP/Client	IEEE 802.11 a/n Wi-Fi AP/Client	IEEE 802.11 a/b/g/n Outdoor Multi-Radio Wi-Fi AP	IEEE 802.11 a/b/g/n Wi-Fi AP/Client
Interface	IEEE Standard	802.11b/g/n	802.11a/n	802.11 a/b/g/n	802.11 a/b/g/n
	100Base-TX	v	v	v	v
	1000Base-TX	-	-	v	v
Radio Number		1	1	1/2/3	1
RF	MIMO	1T1R	2T2R	2T2R	2T2R
	Transmit Output Power	*	*	*	*
	Receive Sensitivity	*	*	*	*
Operating Mode	Mesh	-	-	v	v
	Mobility/Roaming	v	v	v	v
	Multi-Hopping	v	v	v	v
	AP/CPE	v	v	v	v
Power	PoE	Passive 12 V	Passive 15 V	802.3at	802.3at
	Power Input Voltage	12 V <sub>DC</sub>	15 V <sub>DC</sub>	12 ~ 48 V <sub>DC</sub>	12 ~ 48 V <sub>DC</sub>
	Redundant DC Power Input	-	-	v	v
Mechanism	DIN-rail Mount	-	-	-	v
	Wall Mount	-	-	v	v
	VESA Mount	-	-	v	-
	Pole Mount	v	v	v	-
	IP Grade	IP55	IP55	IP67	IP30
Operating Temperature	-20 ~ 70°C (-4 ~ 158°F)	v	v	-	-
	-35 ~ 75°C (-31 ~ 167°F)	-	-	v	v
Certification	FCC	v	v	v	v
	CE	v	v	v	v
	EN50155	-	-	v	v

\*Note: Transmit Output Power & Receive Sensitivity are specified on data sheet.

## Accessories



Advantech P/N	ANT-1208-G2E	ANT-2209-G2E	ANT-2216-G2E	ANT-3215-G2E	ANT-1208-G5E	ANT-2218-G5E	ANT-3213-G5E
Frequency Range	2.4-2.5G	2.4-2.5G	2.4-2.5G	2.3-2.7G	4.9-5.35G	4.9-5.9G	4.9-5.9G
Antenna Type	Omni	Patch	Patch	Sector	Omni	Patch	Sector
Antenna Gain	8 dBi	9.5 dBi	16 dBi	15 dBi	8 dBi	18 dBi	13.5 dBi
Description	8 dBi 2.4G Omni Antenna	9.5 dBi 2.4G Patch Antenna	16 dBi 2.4G Patch Antenna	15 dBi 2.4G Sector Antenna	8dBi 5G Omni Antenna	18 dBi 5G Patch Antenna	13.5 dBi 5G Sector Antenna
Impedance	50 Ohm	50 Ohm	50 Ohm	50 Ohm	50 Ohm	50 Ohm	50 Ohm
Polarization	Linear, vertical	Linear, vertical	Linear, vertical	Linear, vertical	Linear, vertical	Linear, vertical	Linear, vertical
HPBW/Vertical	360/15	50/50	25/25	90/8	360/12	23/19	120/6
V.S.W.R.	2.0:1 (Max.)	1.5:1 (Max.)	1.5:1 (Max.)	2.0:1 (Max.)	2.0:1 (Max.)	2.0:1 (Max.)	2.0:1 (Max.)
Power Handling	20 W (cw)	20 W (cw)	20 W (cw)	50 W (cw)	20 W (cw)	5 W (cw)	10 W (cw)
Connector	N-Jack	N-Jack	N-Jack	N-Jack	N-Jack	N-Jack	N-Jack
Operating temp.	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C
IP rating	IP55	N/A	IP57	IP55	IP55	IP55	IP55
Weight	0.34 kg	0.14 kg	1.5 kg	1 kg	0.28 kg	0.825 kg	0.55 kg



Advantech P/N	ANT-1205D-G25E	ANT-1210D-G25E	ANT-2215D-G25E	ANT-3215D-G25E	ANT-2216M-G2E	ANT-2216M-G5E	ANT-3214M-G2E	ANT-3215M-G5E
Frequency Range	2.4-5G; 5.1-5.9G	2.4-5G; 5.1-5.9G	2.4-5G; 5.1-5.9G	2.4-5G; 4.9-5.9G	2.3-2.7GHz	5.1-5.9G	2.4-2.5G	5.1-5.9G
Antenna Type	Omni	Omni	Patch	Sector	Patch	Patch	Sector	Sector
Antenna Gain	4/7 dBi	8/10 dBi	13.5/15.5 dBi	12/15 dBi	16 dBi	16 dBi	14 dBi	15 dBi
Description	4/7dBi Dual-Band Omni Antenna	8/10dBi Dual-Band Omni Antenna	13.5/15.5dBi Dual-Band Patch Antenna	12/15dBi Dual-Band Sector Antenna	16dBi 2.4G MIMO Patch Antenna	16dBi 5G MIMO Patch Antenna	14dBi 2.4G MIMO Sector Antenna	15dBi 5G MIMO Sector Antenna
Impedance	50 Ohm	50 Ohm	50 Ohm	50 Ohm	50 Ohm	50 Ohm	50 Ohm	50 Ohm
Polarization	Linear, vertical	Linear, vertical	Linear, vertical	Linear, vertical	Linear, vertical/horizontal	Linear, vertical	Linear, vertical	Linear, vertical
HPBW/Vertical	360/30	360/13	30/30	70/18	25/25	19/21	90/13	90/8
V.S.W.R.	2.0:1 (Max.)	2.0:1 (Max.)	2.0:1 (Max.)	2.0:1 (Max.)	2.0:1 (Max.)	2.0:1 (Max.)	2.0:1 (Max.)	2.0:1 (Max.)
Power Handling	2 W (cw)	5 W (cw)	10 W (cw)	10 W (cw)	6 W (cw)	6 W (cw)	10 W (cw)	6 W (cw)
Connector	N-Plug	N-Jack	N-Jack	N-Jack	N-Jack	N-Jack	N-Jack	N-Jack
Operating temp.	-40°C to +70°C	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C
IP rating	N/A	IP67	IP55	IP55	IP67	IP55	IP55	IP55
Weight	0.07 kg	0.394 kg	0.4 kg	0.462 kg	1.1 kg	0.8 kg	0.8 kg	1.4 kg

# Industrial Wireless AP/Client

## Accessories



Advantech P/N	ANT-5115-AE	ANT-5130-AE	ANT-5210-AE	ANT-5230-AE	ANT-5260-AE	ANT-5290-AE
Description	1.5M N-Plug to SMA-Plug cable	3M N-Plug to SMA-Plug cable	1M N-Plug to N-Plug cable	3M N-Plug to N-Plug cable	6M N-Plug to N-Plug cable	9M N-Plug to N-Plug cable
Cable Type	ULA-168	ULA-168	ULA400	ULA400	ULA400	ULA400
VSWR	1.5 : 1 Max.@ DC ~ 3.0 GHz 2.0 : 1 Max.@ 3.0 ~ 6.0 GHz	1.5 : 1 Max.@ DC ~ 3.0 GHz 2.0 : 1 Max.@ 3.0 ~ 6.0 GHz	1.5 : 1 Max.@ DC ~ 6.0 GHz	1.5 : 1 Max.@ DC ~ 6.0 GHz	1.5 : 1 Max.@ DC ~ 6.0 GHz	1.5 : 1 Max.@ DC ~ 6.0 GHz
Insertion loss	2.0 dB Max.@ DC ~ 3.0 GHz 2.5 dB Max.@ 3.0 ~ 6.0 GHz	3.5 dB Max.@ DC ~ 3.0 GHz 4 dB Max.@ 3.0 ~ 6.0 GHz	0.7 dB Max.@ DC ~ 3 GHz 1.0 dB Max.@ 3 ~ 6.0 GHz	1.1 dB Max.@ DC ~ 3 GHz 1.6 dB Max.@ 3 ~ 6.0 GHz	1.8 dB Max.@ DC ~ 3 GHz 2.7 dB Max.@ 3 ~ 6.0 GHz	3.0 dB (Max.) @ DC ~ 3 GHz 4.0 dB (Max.) @ 3 ~ 6 GHz
Connector Type	N-plug to RP SMA-plug	N-plug to RP SMA-plug	N-plug to N-plug	N-plug to N-plug	N-plug to N-plug	N-plug to N-plug
Cable Length	1.5M	3M	1M	3M	6M	9M



Advantech P/N	ANT-5501-AE	ANT-5502-AE	ANT-5601-AE
Description	1KV Surge Arrester N-Jack to N-Jack	1KV Surge Arrester N-Plug to N-Jack	Bulkhead adapter N-Jack to N-Jack
Surge Protection	1KV	1KV	N/A
VSWR	1.25: 1 Max @ DC ~ 4GHz 1.45: 1 Max @ 4 ~ 6GHz	1.3: 1 Max @ DC ~ 4GHz 1.5: 1 Max @ 4 ~ 6GHz	1.2: 1 Max @ DC ~ 3GHz 1.4: 1 Max @ 3 ~ 6GHz
Insertion loss	0.8 dB	0.8 dB	N/A
Connector Type	N Jack to N Jack	N plug to N Jack	N-jack to N-jack



# Serial Device Servers

## Cellular IP Gateways (iGateways)

NEW



NEW



Model Name	EKI-1321	EKI-1322
Product Description	1-port RS-232/422/485 to GPRS IP Gateway	2-port RS-232/422/485 to GPRS IP Gateway
Cellular Interface	GSM/GPRS	GSM/GPRS
Quad-band Options	850/900/1800/1900 MHz	850/900/1800/1900 MHz
Antenna Connector Type	SMA female	SMA female
No. of Antenna connector	1	1
No. of Serial Ports	1	2
No. of Ethernet Ports	1	1
Ethernet Interface	10/100 Mbps	10/100 Mbps
Baud Rate	50 bps ~ 921.6 kbps, any baud rate setting	50 bps ~ 921.6 kbps, any baud rate setting
Operation Mode / Software Feature	VCOM, RVCOM, TCP Server/Client, UDP Server/Client, SMS Tunnel	VCOM, RVCOM, TCP Server/Client, UDP Server/Client, SMS Tunnel
Utility	Windows 2000/XP/Vista/7/8, Web Console	Windows 2000/XP/Vista/7/8, Web Console

## Wireless Serial Device Servers

NEW



NEW



Model Name	EKI-1361	EKI-1362	EKI-1351	EKI-1352
Product Description	1-port RS-232/422/485 to 802.11b/g/n WLAN Serial Device Server	2-port RS-232/422/485 to 802.11b/g/n WLAN Serial Device Server	1-port RS-232/422/485 to 802.11b/g WLAN Serial Device Server	2-port RS-232/422/485 to 802.11b/g WLAN Serial Device Server
No. of Ethernet Port	1	1	-	-
No. of Serial Port	1	2	1	2
Ethernet Interface	10/100/1000 Mbps	10/100/1000 Mbps	-	-
WLAN	802.11b/g/n	802.11b/g/n	802.11b/g	802.11b/g
Antenna Connector Type	RP-SMA (female)	RP-SMA (female)	RP-SMA (female)	RP-SMA (female)
No. of Antenna connector	2	2	1	1
Serial Type	RS-232/422/485			
Connector	Ethernet	RJ45	RJ45	-
	Serial	DB9 Male	DB9 Male	DB9 Male
Baud Rate	50 bps ~ 921.6 kbps, any baud rate setting			
Operating Mode	VCOM, TCP Server/Client, UDP Server/Client, AT Command			
Driver	32-bit/64-bit Windows 2000/XP/Vista/7/8, Windows Server 2003/2008, Windows CE 5.0, and Linux			
Certification	CE, FCC, KCC, TELEC		Class I Division 2 Groups ABCD T4, UL/cUL 60950-1, FCC, CE	

# Serial Device Servers

## Dual Ethernet Serial Device Servers



Model Name	EKI-1521	EKI-1522	EKI-1524	EKI-1528	EKI-1526
Product Description	1-port RS-232/422/485 Serial Device Server	2-port RS-232/422/485 Serial Device Server	4-port RS-232/422/485 Serial Device Server	8-port RS-232/422/485 Serial Device Server	16-port RS-232/422/485 Serial Device Server
No. of Ethernet Port	2	2	2	2	2
No. of Serial Port	1	2	4	8	16
Ethernet Interface	10/100 Mbps	10/100 Mbps	10/100 Mbps	10/100 Mbps	10/100 Mbps
Serial Type	RS-232/422/485	RS-232/422/485	RS-232/422/485	RS-232/422/485	RS-232/422/485
Connector	Ethernet: RJ45 Serial: DB9 Male	Ethernet: RJ45 Serial: DB9 Male	Ethernet: RJ45 Serial: DB9 Male	Ethernet: RJ45 Serial: RJ45	Ethernet: RJ45 Serial: RJ45
Baud Rate	50 bps ~ 921.6 kbps, any baud rate setting				
Operating Mode	VCOM, TCP Server/Client, UDP Server/Client, AT Command, and RFC2217				
Driver	32-bit/64-bit Windows 2000/XP/Vista/7/8, Windows Server 2003/2008, Windows CE 5.0, and Linux				
Certification	Class I Division 2 Groups ABCD T4, UL/cUL 60950-1, FCC, CE			FCC, CE	

## Single Ethernet Serial Device Server



Model Name	ADAM-4571	ADAM-4571L	ADAM-4570	ADAM-4570L
Product Description	1-port RS-232/422/485 Serial Device Server	1-port RS-232 Serial Device Server	2-port RS-232/422/485 Serial Device Server	2-port RS-232 Serial Device Server
No. of Ethernet Port	1	1	1	1
No. of Serial Port	1	1	2	2
Ethernet Interface	10/100 Mbps	10/100 Mbps	10/100 Mbps	10/100 Mbps
Serial Type	RS-232/422/485	RS-232	RS-232/422/485	RS-232
Connector	Ethernet: RJ45 Serial: DB9 Male	Ethernet: RJ45 Serial: DB9 Male	Ethernet: RJ45 Serial: RJ48	Ethernet: RJ45 Serial: RJ48
Baud Rate	50 bps ~ 921.6 kbps, any baud rate setting			
Operating Mode	VCOM, TCP Server/Client, UDP Server/Client, AT Command			
Driver	32-bit/64-bit Windows 2000/XP/Vista/7/8, Windows Server 2003/2008, Windows CE 5.0, and Linux			
Certification	FCC, CE			

## Modbus Gateways



Model Name	EKI-1221	EKI-1222	EKI-1224	EKI-1221D	EKI-1222D	ADAM-4572
Product Description	1-port Modbus Gateway	2-port Modbus Gateway	4-port Modbus Gateway	1-port Modbus Gateway with Integrated Cascading Ethernet	2-port Modbus Gateway with Integrated Cascading Ethernet	1-port Modbus Gateway
No. of Ethernet Ports	2	2	2	2	2	1
No. of Serial Ports	1	2	4	1	2	1
Ethernet Interface	10/100 Mbps					
Serial Type	RS-232/422/485, software selectable					
Connector Type	DB9 Male					Screw Terminal
Ethernet Feature	Dual Ethernet Redundancy			Daisy-Chain Connectivity		-
Configuration	Windows Configuration Utility, Web-Browser Console					Windows Utility
Operating Mode	Modbus RTU Master, Modbus RTU Slave, Modbus ASCII Master, and Modbus ASCII Slave modes					
Baud Rate	50 bps ~ 921.6 kbps					
Certification	Class I Division 2 Groups ABCD T4, FCC, CE					FCC, CE

# Serial Device Servers

## Serial to USB Converters



Model Name		ADAM-4561	ADAM-4562	USB-4604B	USB-4604BM
Product Description		1-port Isolated USB to RS-232/422/485 Converter	1-port Isolated USB to RS-232 Converter	4-port RS-232 to USB Converter with ESD Surge Protection	4-port RS-232/422/485 to USB Converter with ESD Surge Protection
Interface		USB 1.1	USB 1.1	USB 1.1/2.0	USB 1.1/2.0
Serial Port		1	1	4	4
Baud Rate		50 ~ 115.2 kbps	75 ~ 115.2 kbps	50 ~ 921.6 kbps	50 ~ 921.6 kbps
Serial Type		RS-232/422/485	RS-232	RS-232	RS-232/422/485
Connector	USB	Type B	Type B	Type B	Type B
	Serial	Screw Terminal	DB9	DB9	DB9
Protection	Isolation	3,000 V <sub>DC</sub> (RS-232/422/485)	2,500 V <sub>DC</sub>	-	-
	Surge	-	-	2,500 V <sub>DC</sub>	2,500 V <sub>DC</sub>
Driver		Windows 2000/XP	Windows 2000/XP	Windows 2000/XP/Vista/7, CE5.0/6.0, Linux	Windows 2000/XP/Vista/7, CE5.0/6.0, Linux

## Accessories



Model Name		OPT1-DB9	OPT1A	OPT1D	OPT1I	OPT1J
Length		-	1 m	30 cm	1 m	30 cm
Communication Interfaces	Connector Type	DB9 Female	RJ48	RJ48	RJ45	RJ45
	Qty	1	1	1	1	1
	Connector Type	Terminal	DB9 Male	DB9 Male	DB9 Male	DB9 Male
	Qty	1	1	1	1	1
Where Used		EKI-1000 Series, ADAM-4570 Series	ADAM-4570, ADAM-4570L	ADAM-4570, ADAM-4570L	EKI-1526, EKI-1528	EKI-1526, EKI-1528