A Leader and Partner in Automation Solutions

Moxa's commitment to execution, innovation, and collaboration with our partners has fueled our transformative journey to leadership as a solution provider and partner in automation.

MOXA
25
Creating Excellence Since 1987

Moxa: Your Trusted Partner in Automation

Founded in 1987, Moxa is now one of the leading manufacturers of industrial networking, computing, and automation solutions. Moxa provides thousands of hardware and software products and draws upon 25 years of accumulated expertise. Moxa's products reflect our constant zeal for improvement, keen eye for innovation, and respect for proven solutions and expertise. We harness these qualities to create solutions that deliver a competitive edge for our customers and partners in adapting to fast-changing network and market environments.

Moxa delivers network-centric automation solutions that integrate automation and IT systems into a single network platform that simplifies management, reduces costs, and achieves greater reliability and efficiency.

Mission and Vision

As a world-class leader and a trusted partner in industrial-grade device networking solutions for automation, Moxa proudly provides quality products and value-added service to establish win-win business relationships based on mutual trust and integrity. Moxa works closely with customers, channel-partners, and solution-partners to achieve and share success.

Delivering on Commitments

Moxa's talented design team, which is experienced in networking technology and solution development, offers quick, flexible, and comprehensive R&D service to meet customers' specific expectations and exacting requirements. Moxa collaborates closely with customers to drive advancements and achieve a faster time-to-market, and these partnerships keep Moxa in touch with emerging technologies and ensure that new developments and successes are shared with all of Moxa's partners.

Integrating Automation by Enabling Convergence

Industrial automation users have long anticipated the integration of computer, controller, I/O, video, and audio systems into a single easy-to-manage network. This vision of network-centric automation is possible today, thanks to Moxa's two decades of accumulated knowledge in industrial networking and wide selection of automation solutions that enable the convergence of I/O, audio, and video data over Ethernet networks. Improve the efficiency and reliability of your industrial process by transforming a hodgepodge of controller-centric operations into a single network-centric operation. Moxa provides communication interoperability across the full range of automation devices and modules to seamlessly integrate them with industrial Ethernet networks.

Wireless

Video

HMI

Industrial Ethernet

I/O

Controllers

Computers

Serial/
Fieldbus
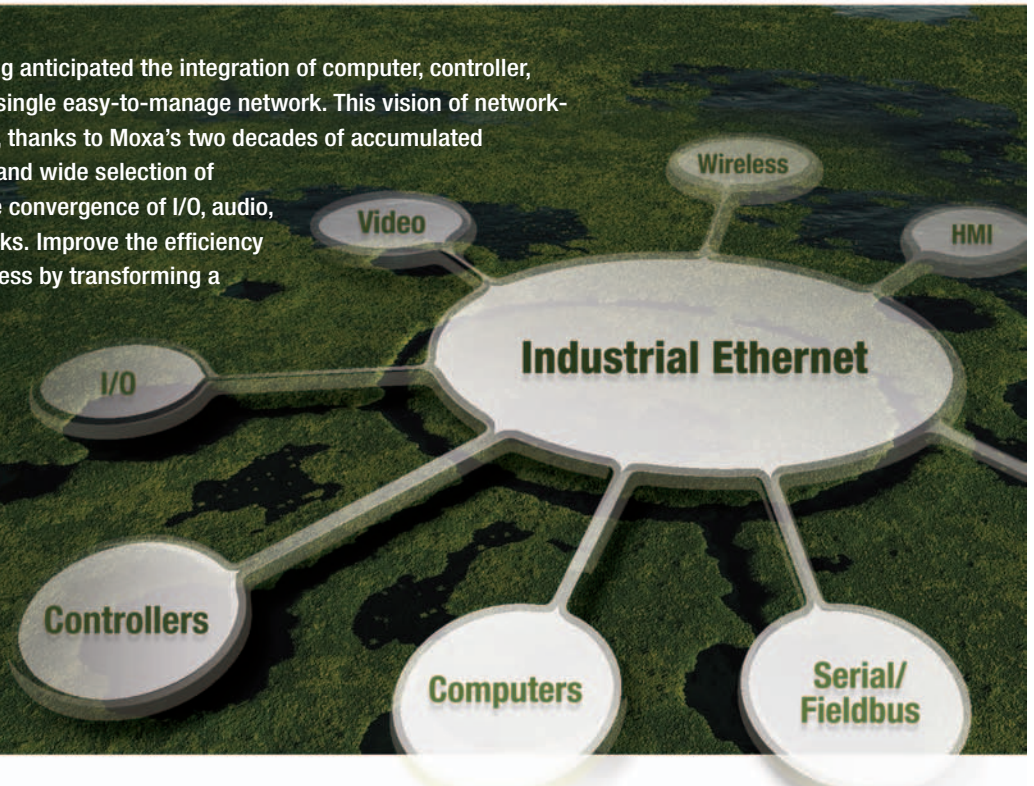
Industrial Networking Solutions

Moxa offers a wide array of device networking products that feature an open Ethernet infrastructure, industry-proven standards, extended temperature tolerance, environmental protection, and network redundancy to ensure network availability and reliability. Product lines range from edge-to-core industrial Ethernet switches, industrial wireless devices, serial cards, serial device servers, and embedded device servers, to USB and fieldbus components. All of our products are designed to stand up to harsh environments and are ideal for deploying mission critical applications in fields such as maritime, oil and gas, power and utilities, rail, and factory automation.

Industrial Computing Solutions

Moxa's industrial embedded solutions are used to construct powerful front-end controllers that can execute onsite data collection and control at widely distributed remote sites through industrial Ethernet or wireless backbones. All of the computers feature rugged reliability and fanless operations with a wide operating temperature range of -40 to 85°C. Our products feature a user-friendly environment that makes application development easy. Moxa provides prompt and extensive customization services in addition to a wide selection of ready-to-run products such as industrial computers, wireless computers, and wide temperature computers.

Remote Automation Solutions

Moxa's remote automation solutions empower control and monitoring systems in remote locations with the latest technology and industry expertise. Our product portfolio includes programmable RTU controllers, remote I/O devices, IP surveillance solutions, and easy-to-configure automation and video software. Both network and cellular communication interfaces are available to meet the needs of a variety of applications and to simplify long-range host-to-device communications around a standard industry protocol. Including Moxa's SCADA-compatible IP surveillance solutions that enable your network video monitoring system, Moxa's remote automation solutions enhance the safety and security of remote industrial facilities. With their robust, wide temperature design, all of the products can be used in harsh, industrial environments.

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Industrial Ethernet

Industrial Wireless

Device Connectivity

Remote Automation

IP Surveillance

Industrial Computing

Complete Automation Solutions

Moxa empowers integrated network-centric operations that are more efficient, reliable, and manageable than systems that use a patchwork collection of industrial devices and modules.

Vertical Solutions for Mission Critical Applications

Moxa provides solutions for vertical industrial markets tailored to meet industry-specific requirements and certifications, such as IEC 61850 certification for substation automation, NEMA TS2 for traffic control systems, EN 50155 and EN 50121 for railway applications, DNV, GL, LR, ABS, and NK for marine and offshore applications, Class I, Div 2/Zone 2 for hazardous locations, and more. We have led the way in overcoming the major challenges of developing vertical industrial solutions: interoperability, reliability, and environmental suitability. Moxa builds specific solutions consistent with industry-proven standards to operate reliably and consistently in the harshest of environments. With 25 years of combined expertise, Moxa is experienced in the integration of diverse automation infrastructures, protocols, and interfaces into one interoperable system.

Railway

🚆 EN 50155

🛤 EN 50121

Diverse Products for Complete Solutions

Moxa's diverse product line includes industrial Ethernet, serial connectivity/networking, industrial computing, and remote automation solutions. Moxa provides over a thousand different products in these four product groups to help you overcome any automation challenges. Select from Moxa's comprehensive portfolio of hardware and software solutions to find the product tailored to meet your needs. The breadth of this product line is bolstered by the depth of Moxa's technical expertise and accumulated technologies. Moxa combines these extensive products and services to provide a one-stop-shop for industrial automation solutions.

Fieldbus Solutions

Industrial Ethernet

Routers/ Switches

Industrial Wireless
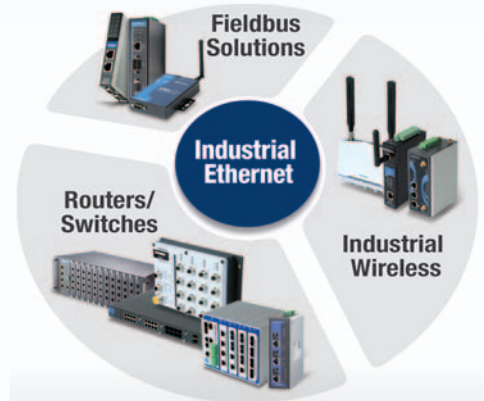
The Convergence of IT and Automation Technology

Moxa focuses on diversified information and communication technologies (ICT) that help customers build automation systems around a universal communication platform of off-the-shelf IT technology and open network communications. For ultimate efficiency, reliability, and interoperability, Moxa stresses seamlessly integrated network-centric solutions. Possible solution architectures can consist of any combination of advanced Ethernet switches, industrial embedded computers, gateways, IP surveillance products, and secure terminal servers. This versatile suite of devices enables us to bring the power and flexibility of information technology to the industrial automation world and transform the way you do business.

Industrial Ethernet

- Router, Switch, Firewall, VPN, NMS
- Wireless Ethernet, GPRS
- IP67, M12, PoE/PoE+
- Turbo Ring and Turbo Chain Redundancy, Turbo Roaming
- OPC, Industrial Ethernet Protocol Support

Turbo Ring   Turbo Chain   Turbo Roaming

Solutions

Moxa Certified Solutions

Maritime

Power
IEC 61850-3

Oil / Gas
c UL us LISTED Ex

GL OPERATING 24/7   DNV

Products

Serial, USB

RISC Computers

Remote I/O

Device Connectivity

Industrial Computing

Remote Automation

RS-232/422/485

x86 Computers

Video Networking

Serial-to-Ethernet

Wireless Computers

Automation Controllers

Technology

Device Connectivity

- Serial-to-Ethernet/Wifi/ZigBee
- Serial-to-USB
- Serial Boards
- Media Converters
- USB-IF and WHQL Certifications
- ProCOM, QuickLink, and SmartLink
- NetEZ™ Technology

ProCOM   NetEZ™   QuickLink SmartLink

Industrial Computing

- RISC/x86-based Platforms
- DIN-Rail/Rackmount/Wallmount Form Factors
- Wireless LAN and Cellular Computers
- Windows and Linux Embedded Software Platforms
- Marine Displays and Computers

RISCore

Remote Automation

- Rugged design
- Front-end intelligence for easy monitoring and control
- Ethernet & Cellular Communication
- IP Cameras, Industrial Video/Audio Servers
- Automation software package for faster SCADA communication and easy data collection and conversion

CLICK&GO LOGIC   Onvif   DynaStream

① Use customer feedback and input to inspire new product ideas.

New Product Development Process »

How innovation and quality are integrated into our development process.

Idea stage

Planning stage

At Moxa, we approach every new product as an opportunity to further refine our development process and ultimately deliver a better solution to you. ISO 9001:2008 and 14001:2004 certifications confirm our commitment to quality and the environment.
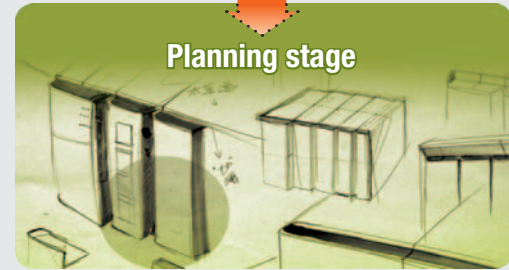
② Harness the creativity of the entire team to find innovative solutions.

The Moxa Process

Enhancing Customer Value with Every Step

Guiding Moxa's new product development process is an underlying commitment to deliver the best products possible to our customers. We consider excellence a moving target and are always adjusting our sights higher. To continually improve we constantly refine and evolve all of our processes to enhance value, verify reliability, and foster innovation.

Innovating to Maximize Customer Value

At Moxa, we foster constant innovation and creativity to fulfill our mission of finding new ways to simplify management, reduce costs, and increase reliability and efficiency of operations for our customers. To achieve this we devote nearly half of our manpower to R&D. Our in-house engineering team is dedicated to developing creative solutions that improve the capabilities of our products. Recent successes include power modules that can run on extremely low power for resource-scarce environments and elegant thermal solutions for fanless wide temperature operations.

At Moxa, we continually fine-tune and optimize our designs to achieve the perfect combination of cost-effectiveness and performance. We've long made it part of our culture to nurture the creativity and ambition that makes it possible to reduce costs without compromising on performance. In 1996, Moxa internally developed an ASIC chip for serial boards to eliminate the costs of outsourcing this key component. For our EDS-600 series of compact modular Ethernet switches, we improved on the efficiency of conventional case design by creating a heat-dissipating vented aluminum case. This allows us to deliver devices capable of operating in extreme temperatures at competitive prices.

Global Recognition »

Best Product Award, Control Engineering China Magazine
• ICS-G7852 industrial core switch (2011)

Engineer's Choice Award, Control Engineering Magazine
• EDR-G903 industrial Gigabit secure router (2011)
• ToughNet TN-5518 EN 50155 Ethernet switch (2010)
• W345 RISC-based wireless computer (2007)
• ioLogik E2210 Ethernet RTU controller (2006)

Embedded Award 2007, Embedded World Exhibition and Conference
• W315/325/345 wireless embedded computers (2007)

④ Test all functions in a simulated industrial networking environment.

⑤ Plan production and rigorously test product samples.

Service »»»

Testing

Pilot run

-40°C 75°C

Design stage

Mass production

Annual MTSC Training includes hands-on exercises.
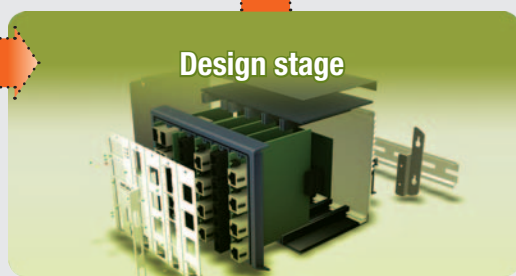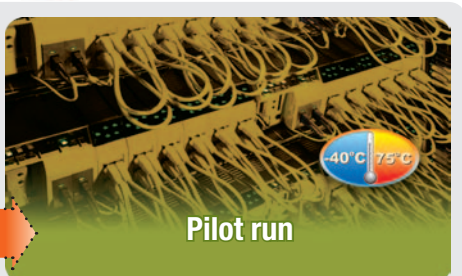
③ Explore all opportunities to improve existing solutions for greater efficiency and performance.

⑥ Every product is tracked, verified, and traced throughout production with a unique bar code identifier.

Engineers receive MTSCs for specific product lines.

A Meticulous Commitment to Product Quality

Moxa's commitment to quality products begins from the moment they are conceived. Our quality assurance teams contribute to the very earliest planning stages of our new product development 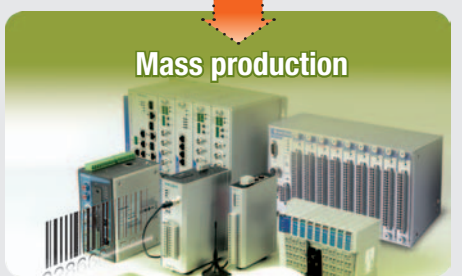process by setting the engineering, hardware, and software testing plan of all proposed functions. These solid, tangible benchmarks are verified during the development process with a rigorous testing regimen. For example, before the pilot run, all products must pass an integrated test stage that simulates a network environment and confirms the product can succeed in real world applications. All pilot run samples of wide-temperature models run for 48 hours with eight -40 to 75°C cycles.

A consistent manufacturing process ensures that the products that go out the door conform to the specified design. Even a product designed for perfect reliability can be crippled by shoddy manufacturing. Moxa uses a barcode system to increase production efficiency, reduce errors, and deliver products on time. Each individual product serial number can be traced from initial work order to shipping, and every step in between. This production system allows us to scan and confirm the product's conformity with specifications at any stage of production.

Moxa continues to elevate and refine quality and efficiency. In 2009, we implemented "Total Quality Management" (TQM) to further channel our drive to deliver high quality, cost efficient products to users in a timely way. As a result, the production lead time of incomplete products has been reduced from 7.3 days to 6 days, and product failure rate and cost were reduced by 24%. Ultimately, Moxa realizes that excellence in industrial technology is a moving target that constantly demands higher standards to achieve. We evolve and improve our processes to persist in reaching and surpassing that goal.

Prompt and Professional Technical Service

Moxa products are a complete package that encompasses more than just the solution itself. Most Moxa products carry a 5-year warranty, and with offices in Taiwan, the US, Europe, India, China, and Brazil, the sun never sets on Moxa's technical support network. Deployed all over the world, our technical support engineers form a global relay of on-call expertise so that your service needs can be fulfilled promptly and professionally.

Above this global service backbone, Moxa has nurtured a capable local repair network by partnering with distributors and certifying their engineers with the Moxa Technical Support Certification (MTSC) program. MTSC gives engineers the opportunity to gain hands-on experience servicing Moxa's products at three-day training programs, and then verifies their expertise with annual exams.

Trend 100 Products, SPS Magazine
• PT-7828 IEC 61850-3 rackmount Ethernet switch (2008/2009)

Product of the Year Finalist, Plant Engineering Magazine
• EDS-P308 industrial PoE switch (2007)

Good Design Award
• EDS-728 industrial Gigabit modular Ethernet switch (2008)

Red Dot Award
• EDS-619 compact modular Ethernet switch (2009)
• EDS-728 industrial Gigabit modular Ethernet switch (2008)

iF design
• VPort 16-M12 EN 50155 IP camera (2011)
• ToughNet TN-5518 EN 50155 Ethernet switch (2010)
• EDS-726 industrial Gigabit modular Ethernet switch (2006)

Connect to Moxa Anytime, Anywhere

Take advantage of Moxa's professionalism and 25 years of experience in industrial automation to empower your applications and business. Our global distribution network includes branch offices in China, the United States, Europe, India, and the Asia Pacific region. The Moxa.com site is an additional knowledge resource that can be accessed globally at any time.

Moxa Sales and Marketing Headquarters
Los Angeles, USA

Global Sales and Service Network ≫

Moxa has built a global network of professional sales staff to discover and fulfill customer needs. Our distributor network extends throughout the Americas, Europe, Asia Pacific, and China. For your convenience, Moxa's worldwide distribution and marketing network reaches more than 70 countries.

You can receive the highest level of support from our teams of specially trained and certified staff wherever you are in the world. Moxa's experienced and professional engineering team is ready to analyze your specific requirements and offer product and solution recommendations. Clients can also dictate detailed project specifications, testing requirements, and network architecture. In addition, all Moxa distributors are required to meet rigorous standards for quality, and technical proficiency.

www.moxa.com ≫
A Rich Knowledge Resource

Global Online Service

You can easily find the latest product information and news about Moxa at www.moxa.com. In addition to real-time information about Moxa's products, the site is a rich resource for acquiring knowledge, technical know-how, and new solution ideas. With decades of experience in networking and industrial automation, Moxa can assist you in selecting the perfect solution for your application. Register as a site member to gain access to our library of white papers and guidebooks.

In addition to information and resources, the www. moxa.com website is a quick and convenient way to reach our technical support engineers, who stand ready to respond to your inquiries within 24 hours. You may also find answers to your questions in our FAQ section or track product RMA status online. Information is also available in German, Chinese, French, and Japanese on the respective regional websites.

Moxa Russia
Moscow

Moxa Europe
Munich, Germany
St. Rémy lès Chevreuse Cedex, France

Moxa China
Shanghai, Beijing,
Shenzhen

**Moxa Design and
Engineering Headquarters**
Taipei, Taiwan

Moxa Brazil
São Paulo

Moxa India
Bangalore

Moxa Asia-Pacific
Taipei, Taiwan

■ Global Headquarters   ■ Regional Headquarters   ■ Distributors
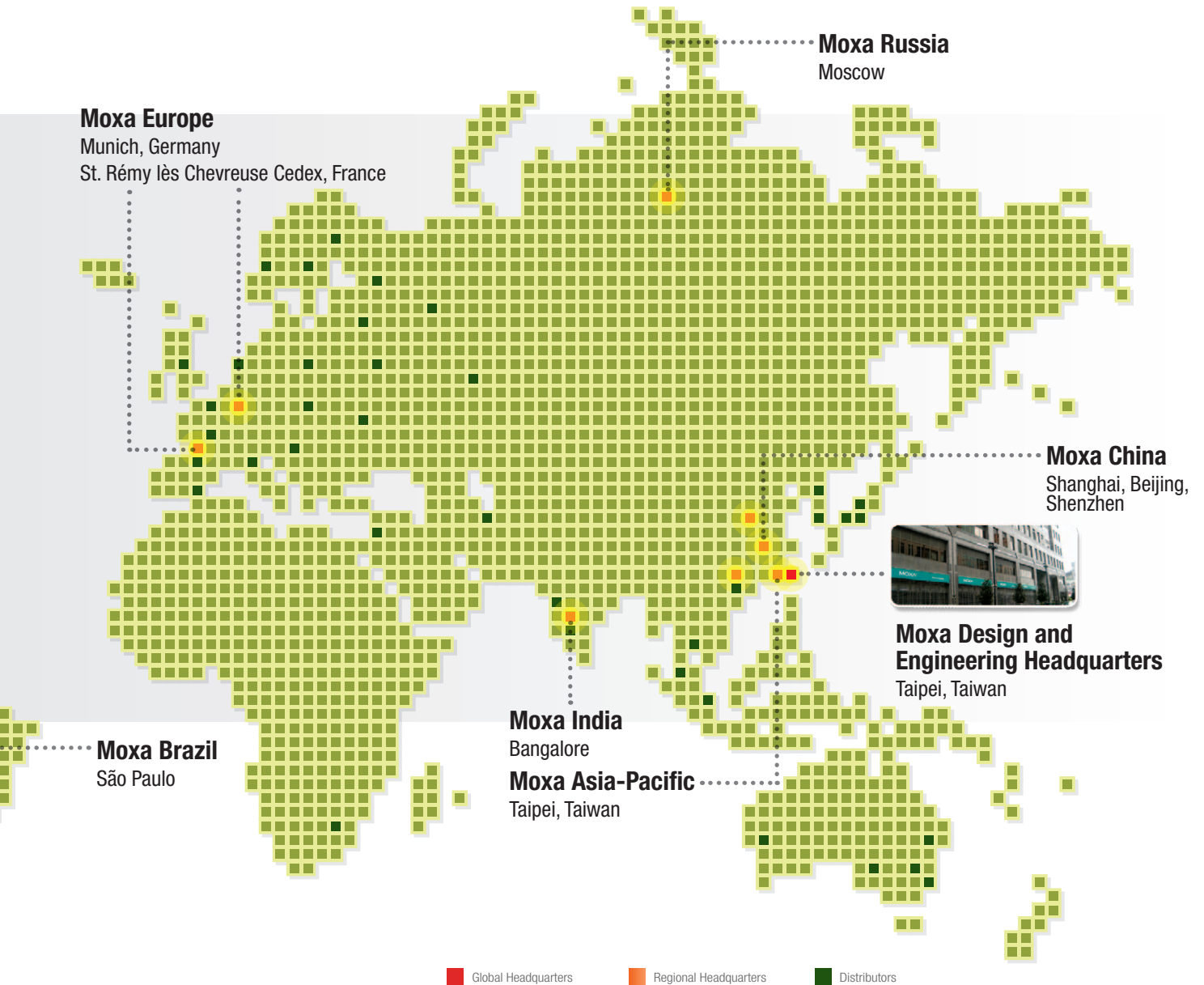
Moxa Online—The Fastest and Easiest Way to Evaluate Moxa Products

The Moxa Online service makes it possible for end users to acquire evaluation units of Moxa products in as little as 48 hours. The online ordering platform is designed for user-friendliness and easy navigation, so users can find the exact model they need and complete their purchase with a minimum of hassle. Since a broad selection of products is kept in stock, purchases can often be shipped out before the day is over. When it is time to make a larger purchase, friendly reps can guide you to an authorized Moxa distributor for special pricing and delivery arrangements.

Moxa Partner Zone—Exclusive News, Marketing Resources, and Sales Tools

Moxa's authorized distributors can access Partner Zone to get the latest marketing material, sales tools, and technical documents. Registered partners receive a monthly newsletter to stay current with product news. Moxa also provides integrated marketing programs and promotions to assist partners in promoting Moxa products and services.

Moxa Newsletters—Keep Your Industrial Automation Knowledge Base Up-to-date

Every month, Moxa Connection explores a new hot topic in industrial automation and networking. With Moxa Connection, you have access to insider industry know-how and can explore the optimal solutions for your specific problems. Moxa Spotlight showcases the latest Moxa products and their potential applications, so you never miss any of the exciting emerging technologies that are transforming industry. Join the over 70,000 industrial engineers who have already tapped this rich knowledge source and subscribe at www.moxa.com.

Substation Automation

**IEC 61850-3
IEEE 1613**

IEC 61850-certified Communication Networks for Substation Automation

A reliable and intelligent network is a key success factor for modern substations that transmit and distribute electric power over large areas. Since substations are often located in areas subjected to high electromagnetic interference and extreme temperature conditions, the substation infrastructure must be capable of providing EMC protection, network redundancy, high reliability, and flexible deployment options for future upgrades.

In addition to reliability, coordination between the many standards and proprietary protocols used in substations is also a major requirement in developing power automation systems. Since Ethernet technology is used to provide better extensibility and interoperability, adherence to IEC 61850 communication standards is required to achieve compatibility between different intelligent electronic devices (IEDs).

Facilitate Data Communication Between Legacy Devices Using Different Protocols

In front-end communication applications for power substations, the front-end processor requires many communication interfaces in order to act as a protocol gateway. Moxa's x86-based embedded computers feature multiple connection options for greater networking versatility.

Tailor-made Ethernet Switches for Substation Automation

Moxa's PowerTrans Ethernet switches are designed to withstand all of the EMI types covered by IEC 61850-3 without experiencing any communications loss. The product line has passed IEC 61850-3 and IEEE 1613 certification testing conducted by KEMA. The series also supports the latest version of IEEE 1588v2 technology to fulfill precise time synchronization requirements for protection and control applications.
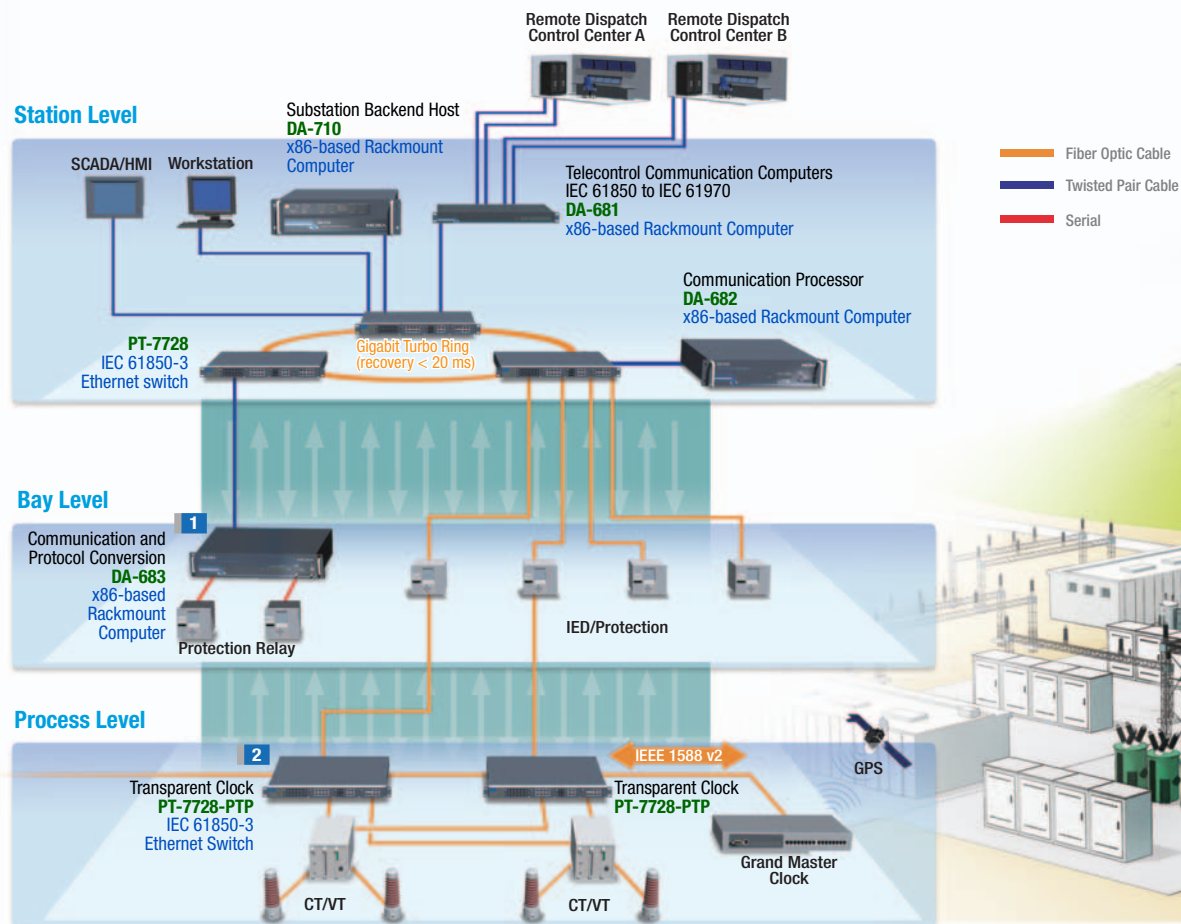
Confirmed Expertise and Trusted Partnership

- Over 300 successful substation deployments of IEC 61850 Ethernet switches and industrial embedded computers

- Satisfied customers: China State Grid, China Southern Power, Korea Southern Power, Efacec, Elkomtech

Utility-grade Design for Substation Environment

- IEC 61850/IEEE 1613 certified (KEMA tested)

- No-packet-loss Ethernet switches

- -40 to 85°C operating temp. (no fans)

- 20 ms network redundancy

- Cyber security

Key Products

1 DA-683 Series
x86-based rackmount embedded computers

- 2 PCI expansion slots for inserting expansion modules
- Intel Dual Core Atom D510 1.66GHz processor with 1 MB L2 cache
- IEC 61850-3/IEEE 1613 certified and IEEE 1588v2 supported

IEEE 1588 Nanosecond Accuracy · *IEC 61850-3 IEEE 1613*

2 PT-7728-PTP Series
IEC 61850-3 24+4G-port IEEE 1588v2 managed Ethernet switches

- No packet loss under harsh EMI stress
- Hardware based IEEE 1588v2 PTP supported
- Isolated redundant power inputs with universal 24/48 VDC or 110/220 VDC/VAC inputs

IEEE 1588 Nanosecond Accuracy · *IEC 61850-3 IEEE 1613*

PTC-101 Series
IEC 61850-3 Ethernet-to-fiber media converters

- 10/100BaseT(X) auto-negotiation and auto-MDI/MDI-X
- Link Fault Pass-Through (LFP)
- Power failure, port break alarm by relay output

IEC 61850-3 IEEE 1613
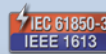
CN2600 Series
8/16-port RS-232/422/485 terminal servers with dual LAN redundancy

- Redundant COM function available when both LANs are active
- Dual-LAN cards with two independent MAC addresses and IP addresses
- Dual AC power inputs

MGate™ MB3170/MB3270
1 and 2-port advanced serial-to-Ethernet Modbus gateways

- Configuration is exceptionally easy
- Slave mode supports 16 TCP masters and up to 62 serial slaves at the same time
- Master mode supports 32 TCP slaves at the same time
- Emergency request tunnels ensure QoS control

Learn more about
substation automation solutions on Moxa's website:

Visit: www.moxa.com/Solutions/substation

Renewable Energy

A Complete Renewable Energy Solution

The move from traditional coal-fired and other fossil fuel plants to renewable energy sources is well underway and is expected to accelerate in the coming years. In particular, wind and solar power have been recognized for their potential as viable energy alternatives. Moxa's products have been used in a number of renewable energy applications around the world. Several typical renewable energy applications, such as wind farms, solar transportation grids, and solar tracking systems, are illustrated below.

Wind Power

Establishing reliable between wind turbine towers can be a major challenge since wind farms typically cover a vast area. Wind turbines are also prone to electrical interference, so it is critical to have strong anti-interference measures in place to prevent unstable transmissions and data loss. Therefore, the networking and remote monitoring devices employed by wind farms must be designed for ruggedness and for long distance transmission in harsh environments.

Industrial-grade Reliability for Harsh Environments

Wind power generation systems are installed in harsh environments that are subject to extreme temperatures, dust, and wind. System integrators can establish a highly reliable system by employing network devices that feature fanless design, high MTBF, wide operating temperature range, redundant power, and rugged housing protection. Moxa offers many such products for renewable energy applications, including industrial Ethernet switches, embedded computers, Ethernet remote I/O and device servers.

Long Distance Solutions

Optical fiber media is ideal for reliable communication over long distances and can help reduce installation and cabling costs.

Uninterrupted Redundant Networking

Network uptime is extremely critical to a wind farm. To ensure high network availability, Moxa's managed Ethernet switches support proprietary Turbo Ring and Turbo Chain redundant mechanisms that feature very fast network recovery times (within 20 ms), ensuring that your network runs nonstop. In particular, Turbo Chain is ideal for wind power applications that require multiple redundant connections. It is both highly flexible and endlessly expandable, which creates a cost-effective redundancy solution that saves both time and money.

Legend:
- Gigabit Fiber Optic Cable
- Fiber Optic Cable
- Twisted Pair Cable
- Serial
- I/O
- Coaxial Cable
- Power-over-Ethernet

Solar Power

Many communities are turning to solar power as a greener alternative energy source. In addition, solar power is also being used to operate traffic signals, roadside displays, and various peripheral transportation devices. In order to succeed, these solar-powered communities will need stable and reliable remote monitoring systems. Solar tracking systems can be used to maximize the amount of solar energy that can be absorbed from the Sun's rays. Embedded computers are ideal solutions to act as central controllers that map and track the Sun.

Low Power Consumption and Compact Form Factor for Easy Installation

By necessity, the devices employed in solar applications must consume as little power as possible. Moxa's RISC-based embedded computers have an energy-efficient design and compact form factor for easy installation and high cost-effectiveness.

Stable and Reliable Hardware and Software Computing Platform

Moxa's x86-based embedded computers are extremely stable and reliable and can be used as high performance solar tracking systems for mapping and tracking the Sun. In addition to the hardware required for data acquisition and front-end computing, Moxa offers the Rcore embedded platform for faster and easier programming.

- PLC
- Remote Monitor
- VPort 26 Video Encoder
- EDS-205A-M-SC Unmanaged Ethernet Switch
- EDS-408A Managed Ethernet Switch
- V2101 Atom 1.1 GHz Embedded Computer
- VGA or DVI-I Display
- ioLogik E1200H Ethernet Remote I/O
- Oil Temperature Sensor
- Gas Pressure Sensor
- Gas Leakage Sensor
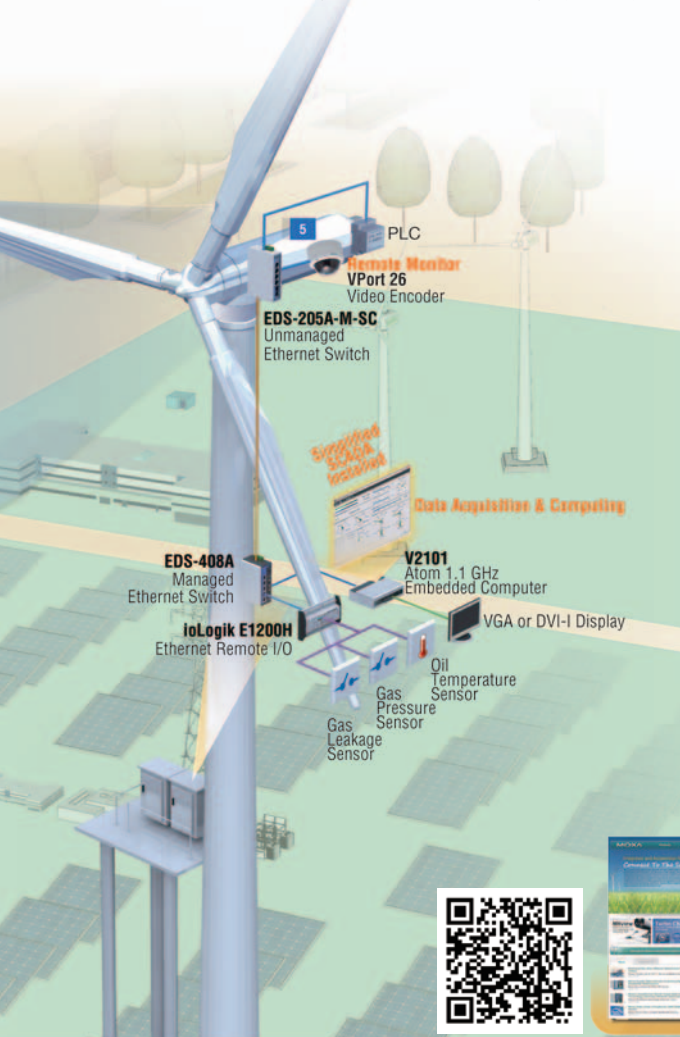
Key Products
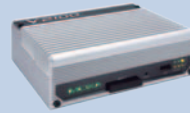
1 V2101 Series
x86-based communication embedded computers
- 2 software-selectable RS-232/422/485 serial ports
- Dual independent displays (VGA + LVDS) for field site monitoring
- 10/100/1000 Mbps LANs for network redundancy

2 EDS-408A Series
8-port industrial managed Ethernet switches with 3 fiber ports
- 3 fiber optic ports (single/multi-mode, SC/ST connectors)
- Turbo Ring and Turbo Chain (recovery time < 20 ms), and RSTP/STP for Ethernet redundancy
- -40 to 75°C operating temperature

3 IA3341 Series
RISC-based embedded computers
- 4 DIs, 4 DOs, 2 AIs, 2 thermocouple inputs for field site device connections
- Supports Modbus TCP library to retrieve AI and thermocouple
- Dual 10/100 Mbps Ethernet ports for network redundancy

4 OnCell G3150-HSPA
Industrial five-band IP gateway
- UMTS/HSPA+ and GSM/GPRS/EDGE compliant
- Connect both Ethernet and serial devices to cellular networks
- Centralize private IP management software with OnCell Central Manager

5 VPort 26
IP66 day-and-night vandal-proof fixed dome IP camera
- Optimal images with 3D DNR, D-WDR & De-mist functions
- Modbus/TCP for direct SCADA communication
- Fanless design with -40 to 50°C operation temperature

NPort® S8455 Series
Combo switch / serial device server
- Built-in 4-port RS-232/422/485 serial device server with 2 KV (DC) isolation protection
- Built-in 5-port managed Ethernet switch supporting Turbo Ring and RSTP/STP
- Surge protection for serial, power, and Ethernet lines

Learn more about renewable energy solutions on Moxa's website:
Visit: www.moxa.com/RenewableEnergy

Railway Automation

🚆 EN 50155   🛤 EN 50121

Proven Benefits of Migrating to IP Communications

Conventional train communication networks (TCN) have limited ability to support multiple services. To replace these inadequate technologies, train communication networks are now turning to IP-based Ethernet networks. System operators are beginning to recognize that IP technology offers a complete package that can meet escalating network demands, reduce operating costs, and deliver improved functionality.

Moxa's products are designed with efficient operation and high reliability in mind. All of these solutions comply with EN 50155 and EN 50121 standards and have delivered the following benefits to customers worldwide. An investment in a modern communications backbone with Moxa's railway solutions will reap dividends for years to come.

High-bandwidth Ethernet Train Backbone

Ethernet train networks make it possible to integrate multiple data applications into the same backbone, and are easily upgraded to 1 Gbps speed when needed for future applications. In addition, Gigabit-speed or IEEE 802.11n WLAN communications can transmit live video surveillance images in real time to optimize response time during emergencies.

Rugged Onboard and Remote Video Surveillance

Moxa develops products that are fully compliant with EN 50155 standards and use the very latest video, storage and communications technologies to ensure the reliable and secure recording of high resolution images in harsh rolling stock environments.

Constant Train-to-Ground Wireless Connectivity

Moxa's proven wireless LAN technologies ensure that signaling and control systems will run smoothly. Secure 50 ms Turbo Roaming and high 802.11n data throughput establish consistent communications for in-station services, CBTC (communications-based train control), ATC (automatic train control) systems, and inter-station connectivity.
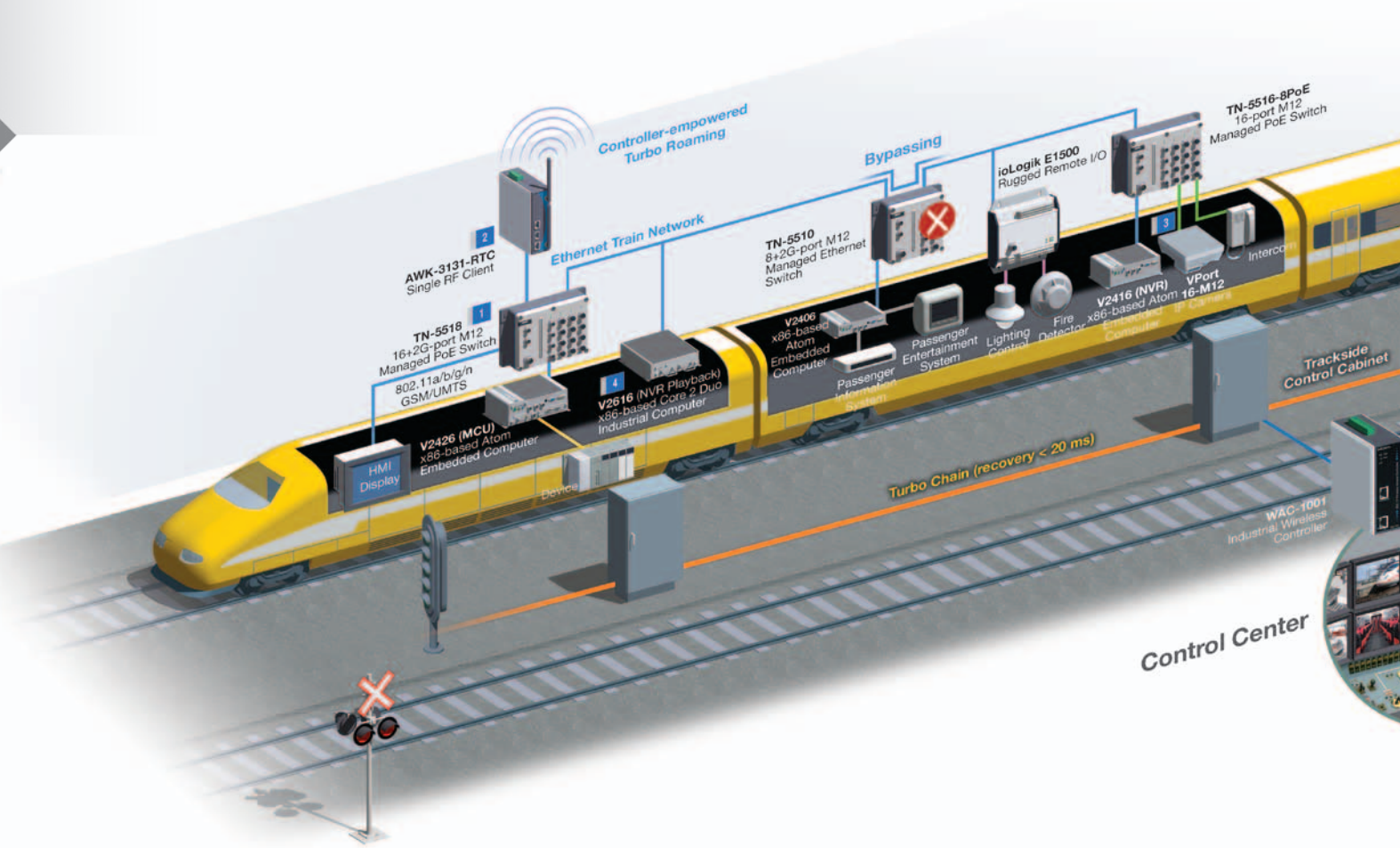
Real Time Monitoring and Reliable Connections for Wayside Networks

Signals, track circuits and switches are deployed near the tracks to control the train traffic. A reliable link is essential to railway signalling systems; any service interruptions can become serious maintenance and even safety issues. In addition, costly and complex multi-vendor deployment is another issue that confrots railway companies today. Moxa's wayside network solutions put you back in charge of your track control and signalling system. Use compact Turbo Chain switches and modular RTU controllers to efficiently control and monitor the condition of your track integrity and railway signalling system.

Fiber Optic Cable
Twisted Pair Cable
Power-over-Ethernet
I/O Signal
CAN
VGA/DVI

AWK-3131-RTG
Single RF AP

EDS-611
Ethernet
switch

ioPAC 8020
Modular RTU
Controller

Axle
Counter

ATP LEU

Charger
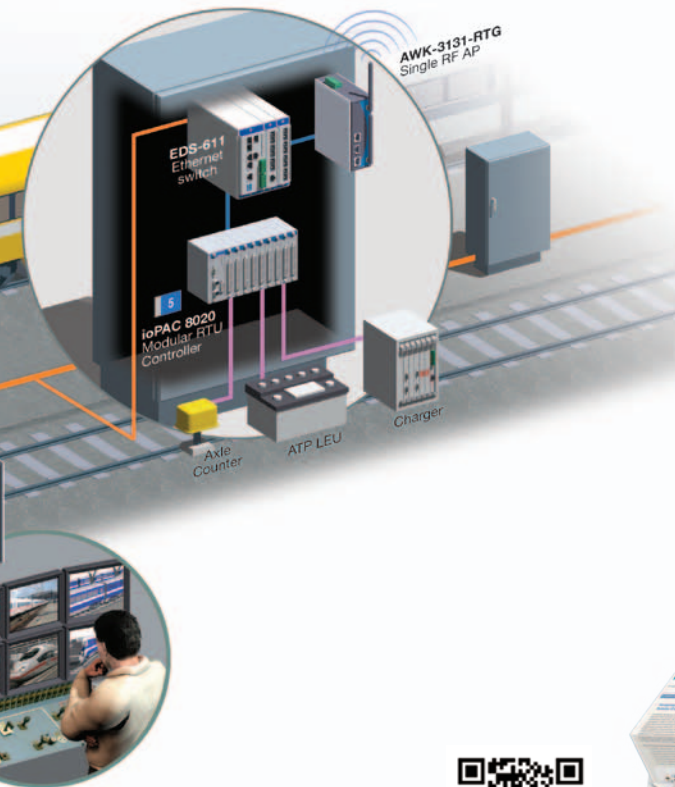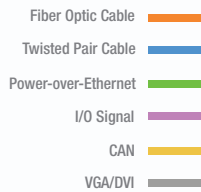
Key Products

1 TN-5508/5510/5516/5518 Series
8, 2G+8, 16, 2G+16-port M12 managed Ethernet switches

- Gigabit flexibility to future-proof your network PoE models available
- Wide power input range for universal applications
- High availability: ring and power redundancy, and bypass relay
- Easy IP configuration for hassle-free maintenance

EN 50155   EN 50121-4

2 AWK-RTC/RTG Series
Industrial IEEE 802.11a/b/g/n wireless AP/bridge/clients

- 50 ms Turbo Roaming (AWK-RTG series)
- IEEE802.11a/g and IEEE802.11n technology for reliable voice and video connectivity
- Dual RF design supports AP-client connection

EN 50155   EN 50121-4

3 VPort P06-1MP-M12 Series
EN 50155, HD video image, compact fixed dome IP camera

- EN 50155 compliance
- HD (1280x720) resolution up to 30 FPS
- High quality image with WDR, DNR and BLC
- Built-in 1 audio input

EN 50155

4 V2616 Series
x86-based Intel Core 2 Duo embedded computers

- 3 SATA-150 connectors for hard drive disk expansion (1 built-in and 2 removable storage trays for 2.5" SSDs or HDDs)
- 24 VDC M12 DC power with 1,500 VDC power isolation
- 2 GB M12 Ethernet ports, 3 USB 2.0, 6 DIs, 2 DOs,
- 2 RS-232/422/485 optical isolated serial ports

EN 50155   EN 50121-3

5 ioPAC 8000 Series
Modular RTU controllers

- Supports C/C++ programming languages
- 2-port Ethernet switch for daisy-chain topologies with by-pass function
- Modular I/O for versatility, flexibility, and scalability
- Rugged and compact design for harsh environments

EN 50155   EN 50121-3   EN 50121-4

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Visit: www.moxa.com/Rail

Intelligent Transportation System

NEMA TS2

Integrated Networking Solutions for Intelligent Transportation

A country's economic backbone is made up of its roads, tunnels, and bridges, and the ever-increasing numbers of vehicles that traverse them. As road authorities strive to support this constant growth of traffic most are painfully limited by today's economic climate, forcing them to compromise on road utility, safety, efficiency, and green design. Intelligent Transportation Solutions have arrived at the optimum time as the perfect measure to balance budgets and help clear congested roads. A road operator needs a trustworthy system that can provide real-time road data from among harsh road environments. To meet that demand, Moxa has proven experience in providing ultra-reliable networking devices that can effectively deliver the data needed to intelligently manage today's traffic needs.

Moxa's Industrial Networking Solutions for More Efficient Traffic Today

High Capacity Edge-to-Core Industrial Ethernet Infrastructure

An ATMS needs a multiple-layered network to manage the myriad nodes that deliver signaling, traffic, and road data to and from its centralized controllers. Moxa's industrial portfolio of edge-to-core Ethernet switches provides full Gigabit solutions in both fiber and copper, allowing operators to aggregate network devices onto full 10 Gigabit Ethernet with either 10/100 FE or 1 Gigabit Ethernet. All of Moxa's managed Ethernet switches support its duo of resilient and redundant network technologies, Turbo Ring and Turbo Chain, giving systems recovery times of < 20 ms. Moxa's switches also come with RSTP/STP and MSTP, for ensuring continued data transmission despite segment failures. In addition, Moxa's MXview network management software allows you to easily manage a network of up to 2000 nodes through a simple web browser, anytime, anywhere.

Compact Rugged IP Video Surveillance

Moxa's industrial IP video surveillance solutions, including H.264/MJPEG/MPEG4 video encoders and decoders, outdoor IP cameras, and IP surveillance software, monitor traffic online and capture images in real time over the network. Moxa's video servers come with a number of industrial features, including NEMA TS2 compliancy, a wide operating temperature range, redundant power inputs, and fiber-optic connections. In addition, a compact, high quality IP camera with PoE interface saves space and cost for both city and mobile surveillance.

Legend:
- 10G Ethernet
- Gigabit Fiber Optic Cable
- Twisted Pair Cable
- Power-over-Ethernet
- Serial
- I/O Signal
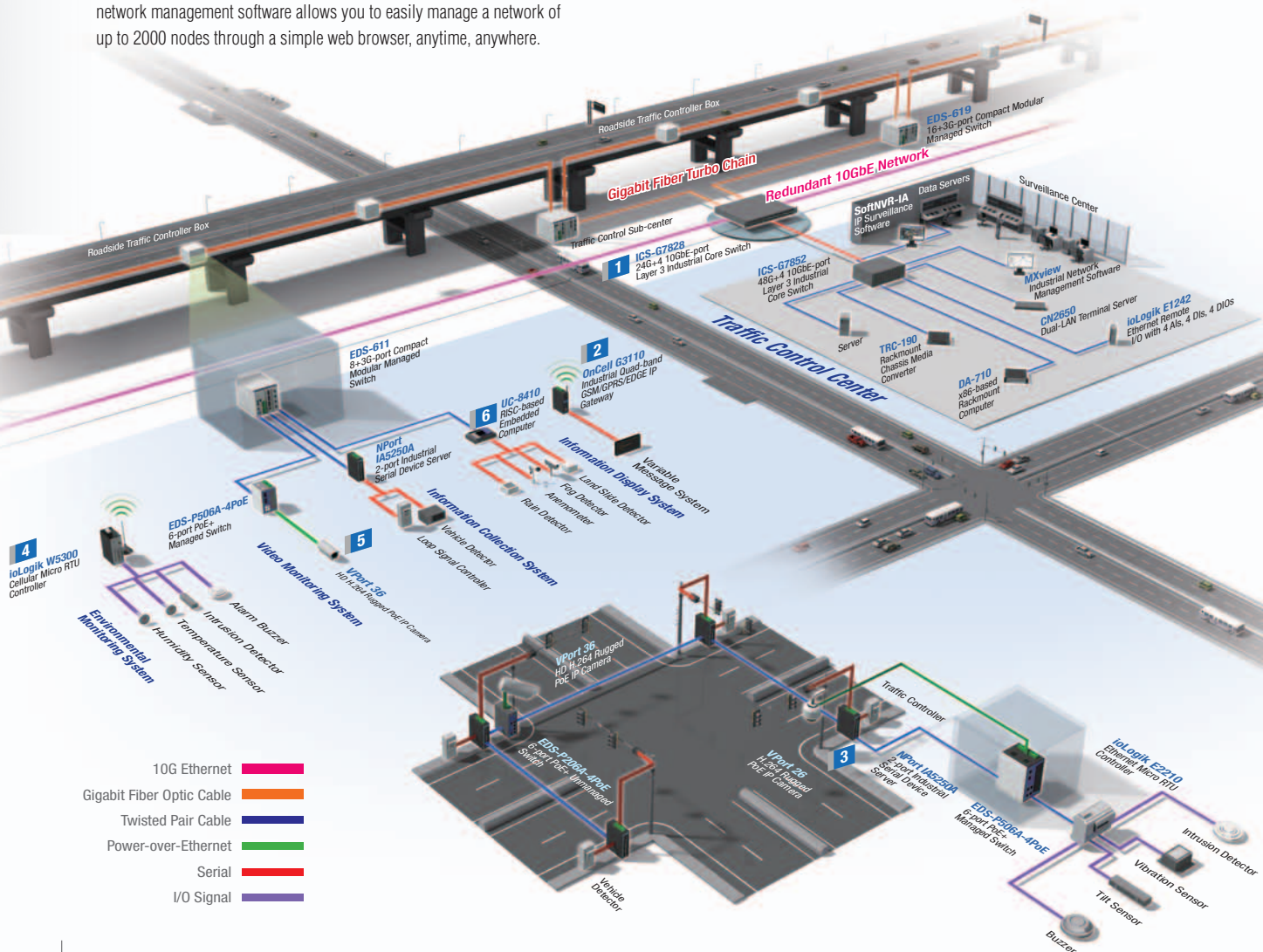
Accurate Data Acquisition, Computing, and Communications

- The NPort line of serial-to-Ethernet device servers provides an efficient way to easily manage and implement existing legacy devices like vehicle detectors and variable message systems over Ethernet-based networks. Wide-temperature models of NPort devices must pass a rigorous sequence of burn-in tests in conditions ranging from -40 to 75°C. Each features a low power consumption design, rugged electrical surge protection, and are designed for convenient deployment.

- Moxa's ready-to-run, fanless embedded computers are smart front-end control platforms with powerful programming capability dedicated to dynamic real-time computations and control. The computers are able to process large amounts of data to provide greater responsiveness and precise traffic information.

- Moxa's Ethernet Remote I/O have two Ethernet ports that can be daisy-chained together to provide a cost-effective remote I/O solution for monitoring the tunnel environments. For hard-to-wire locations, the cellular micro RTU controller is the best choice. Its 3-in-1 compact design that combines the functions of a cellular modem, I/O controller, and data logger in one box to reduce the total cost of system deployment and the amount of time wasted on debugging system problems.

Industrial-grade, Fanless Design

Reliability is built into all of Moxa's industrial-grade networking and computing solutions, which feature a fanless design, extended temperature options, better EMI/EMC resistance, high MTBF, and solid 3 or 5-year warranty. In addition, by meeting strict transportation ed enough to withstand harsh outdoor traffic environments.

Key Products

1 ICS-G7828 Series
24G+4 10GbE-port Layer 3 full Gigabit managed Ethernet switches
- Layer 3 routing interconnects multiple LAN segments
- 24 Gigabit Ethernet ports plus up to 4 10G Ethernet ports
- Up to 28 optical fiber connections (SFP slots)
- Turbo Ring, Turbo Chain, and RSTP/STP for network redundancy

2 OnCell G3110/G3150 Series
Industrial quad-band GSM/GPRS/EDGE IP gateways with VPN
- Connect Ethernet/serial devices over an integrated VPN
- Centralized private IP management software
- Redundant DC power inputs and DIN-Rail mounting

3 NPort IA5000A Series
1, 2, and 4-port serial device servers for industrial automation
- Enhanced surge protection for serial, LAN, and power 2 KV isolation for serial signals
- Rugged screw-type terminal blocks for power and serial connectors
- C1D2 and ATEX certified for harsh industrial environments
- Relay output or email alert notifications

4 ioLogik W5300 Series
Cellular micro RTU controllers
- Easily manage device over dynamic/private IP cellular network.
- Front-end intelligence with patented Click&Go control logic
- Smart alarm management with SMS, e-mail, SNMP Trap, TCP, UDP.

5 VPort 36-1MP Series
Rugged HD day-and-night box type H.264 IP camera
- World's first wide temperature IP camera (-40ºC to 75ºC)
- Built-in IVA function for more efficient surveillance
- HD (720P) resolution to see finest detail
- RJ45 PoE or optical fiber port for easiest installation

NEMA TS2

6 UC-8410
RISC-based industrial embedded computer
- Intel XScale IXP435 533 MHz processor
- Built-in PCI-104 bus for flexible expansion
- 8 RS-232/422/485 serial ports
- 4 digital input and 4 digital output channels
- 3 10/100 Mbps Ethernet ports

Learn more about
Intelligent Transportation System on Moxa's website:
Visit: www.moxa.com/IntelligentTransportationSystem

Underground Mining

Flexible and Reliable Communication for Safe Operation

In order to maintain smooth operations and safeguard miners, underground mining operations require efficient and reliable mine-wide communication systems. Traditional wired networks are poorly suited for reaching all the sideshafts of an intricate, multi-layered mine network. Wireless LANs offer a much greater range of functionality that allow miners to respond to and recover from emergencies more quickly than ever before, broadly increasing safety and efficiency. Compared to proprietary radio, WLANs now carry advantages in higher data throughput, more versatile topologies, and more cost-effective deployments via multi-vendor solutions, and with today's bandwidth advantages enable the full integration of video, voice, IT and automation systems into a single network, while leaving enough space on the side for future service expansions.

Seamless Redundant Roaming for Mining Track System

Moxa WLAN products are engineered to give exceptional wireless performance in underground networks. Moxa's patented Turbo Roaming™ allows seamless handoffs from one access point to another over wide-ranging areas. The AWK-5222 series features dual RF modules, giving the security of redundant wireless links, even alongside an additional special band and further preventing possible radio interference.

Advanced Wireless Bridging Facilitates Branch Mining Tunnel Extension

Given the mobile nature of mining applications, Moxa's wireless bridging technology offers an innovative master-slave mode for operation flexibility, particularly for monitoring branch tunnels. The AWK-5222 has two independent RF modules that allow the device to be designated as both the master device for another AWK-5222 client, as well as the slave device for a third AWK-5222 slave. This flexible design provides a quick, resilient solution when deploying wireless networks in extended branch tunnels.
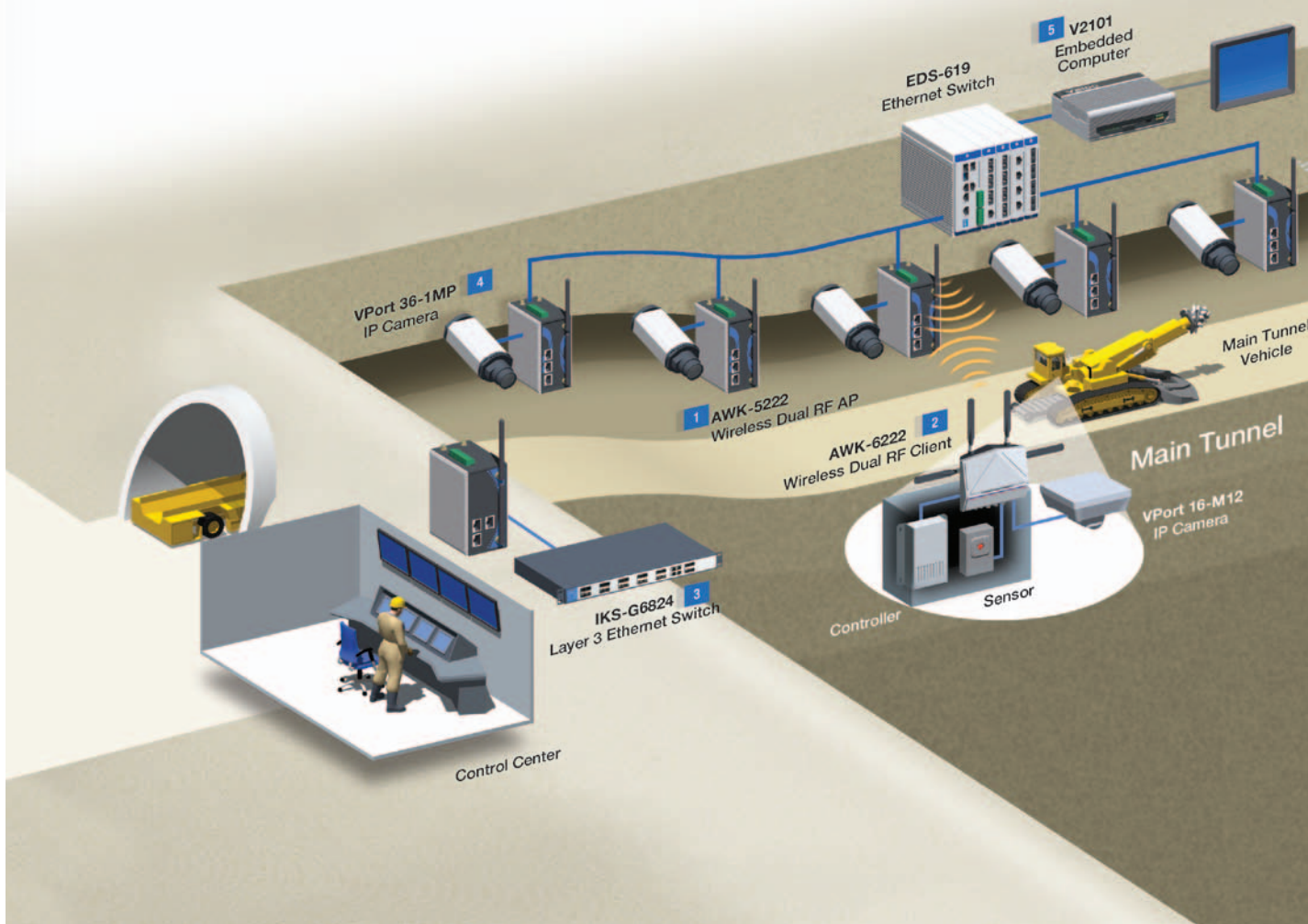
Durable Rugged Design for Harsh Environment

The key prerequisites for maximizing mining productivity are safety, reliability, availability of ores, and cost-effective mine administration. Moxa's industrial networking products are packed with features that guarantee absolutely reliable connections: they operate within extremes of -40 to 75°C temperatures, they are durably housed against blows and jolts, and engineered from the outset for redundant topologies.

— Twisted Pair Cable
— VGA/DVI

Wireless Bridge

AWK-5222 Wireless Dual RF AP

Branch Tunnel Vehicle

Branch Tunnel
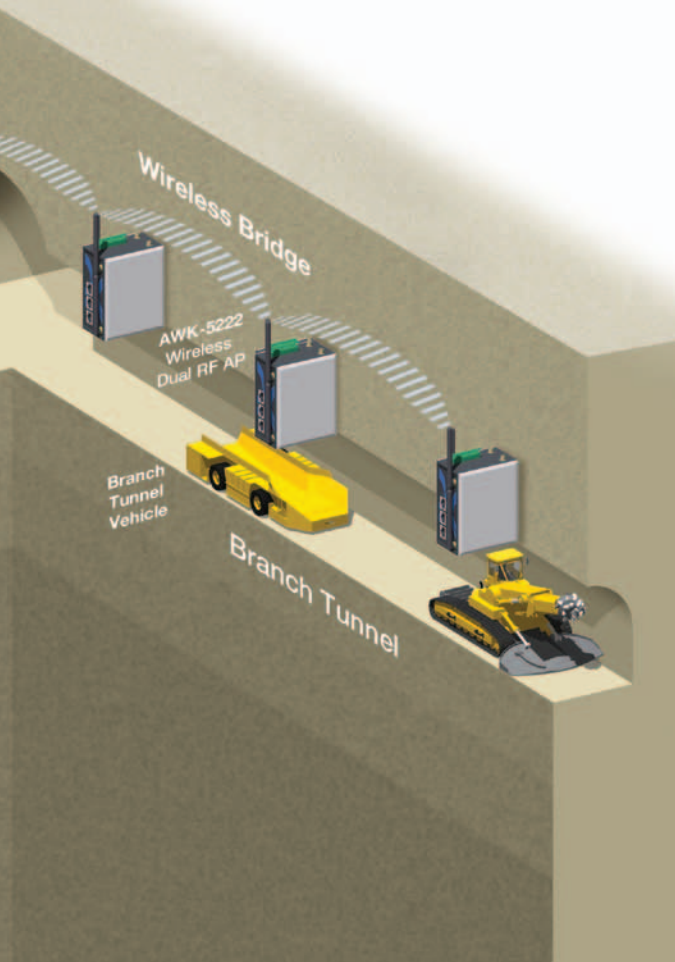
Key Products

1 AWK-5222 Series
Industrial IEEE 802.11a/b/g dual-RF wireless AP/bridge/client
- IEEE 802.11a/b/g compliant
- Dual-RF design: 2.4 GHz and/or 5 GHz RF bands
- Supports 100 ms redundant roaming
- -40 to 75°C operating temperature range (T models)

2 AWK-6222 Series
Industrial IEEE 802.11a/b/g IP68 wireless AP/bridge/client
- IEEE 802.11a/b/g/n compliant
- Supports 100 ms redundant roaming
- Rugged IP68-rated housing and -40 to 75°C operating temperature

3 IKS-G6824 Series
24G-port Layer 3 full Gigabit managed Ethernet switches
- Layer 3 routing interconnects multiple LAN segments
- Reliable and flexible redundant Ethernet network with 50 ms recovery time
- Easy network troubleshooting with MXview industrial network management software
- Up to 24 optical fiber connections

4 VPort 36-1MP Series
Rugged HD day-and-night box type H.264 IP camera
- Industrial design with -40 to 75°C operating temperature (heater/ cooling fan not required)
- 1/2.7" progressive scan CMOS camera with HD resolution (max. 1280 x 720)
- High quality video image with DNR, BLC, and WDR
- Optional de-mist function for enhanced images in rain, fog and hazy conditions
- Up to 3 independent video streams (2 for H.264 and 1 for MJPEG)
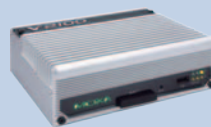
5 V2101
x86-based Atom 1.1 GHz embedded computer
- 2 software-selectable RS-232/422/485 serial ports
- Dual independent displays (VGA + LVDS) for field site monitoring
- 10/100/1000 Mbps LANs for network redundancy

Oil and Gas

Maximize Synergy between Industrial Automation and Ethernet Networks for the Oil and Gas Industry

Oil and gas play a critical role in serving the world's power needs, and the global economy relies heavily on efficiently utilizing and managing these natural resources. The construction of new platforms, rigs, and pipelines is accompanied by a growth in the number of factories and control centers for processing and managing the oil extraction. However, the oil and gas industry is deeply invested in traditional SCADA systems that can be inflexible and difficult to integrate because they are highly independent and have limited connectivity to other systems. This is a growing issue that must be overcome as these facilities grow more complex and the safety and reliability of operation grows in importance. Moxa offers a complete range of Ethernet products for oil and gas facilities to help achieve greater ease, safety, and cost-effectiveness in maintenance and operation.

Achieve Operational Excellence Through

Improved Flexibility

For SCADA systems, Ethernet significantly enhances the flexibility and availability of data and enhances integration capability with other networking devices, making it a highly cost-effective and efficient technology. Moxa enables these systems to make the most of Ethernet technology by offering a wide array of Ethernet products to integrate serial, LAN, and WLAN: edge-to-core industrial Ethernet switches, industrial wireless Ethernet devices, secure routers, IP cameras, Ethernet Remote I/O, serial-to-Ethernet device servers, and embedded PCs. A wide range of port configurations is also available, such as fiber, copper, SFP, and PoE and bandwidth options from 10/100 Mbps to 10 Gigabits.

Added Safety

Both on-site and off-site equipment must all be held to the highest standards of safety in the oil and gas industry. Devices must comply with various regulatory standards to ensure the appropriate resistance to corrosion and vibration as well as uninterrupted operation in hazardous environments. Moxa offers Ethernet products that comply with certifications especially developed for oil and gas facilities, such as DNV/ABS/LR/NK/GL, Class I, Div. 2, and ATEX Zone 2. Network and device security is also a safety issue, so many of Moxa's Ethernet products support security standards such as IEEE 802.1X, HTTPS, and SSL. Moxa also offers security routers with comprehensive firewall, VPN, and advanced routing functions.

Increased Redundancy and Availability

Unexpected system downtime and delays in response time can result in significant damage to oil and gas facilities, threatening assets and even lives. For this reason, it is highly important to keep the system functional at all times, even during an unforeseen event. Moxa's Ethernet switches and WLAN wireless products support various redundancy features to ensure maximum communication system availability and instantaneous response. With Turbo Ring and Turbo Chain (recovery time < 20 ms), and dual RF and Turbo Roaming redundant technologies, Moxa products ensure maximum uptime and guarantee near-real-time recovery for LAN and WLAN networks. Moxa's products also support power redundancy via dual VAC/VDC power inputs or PoE power sources.
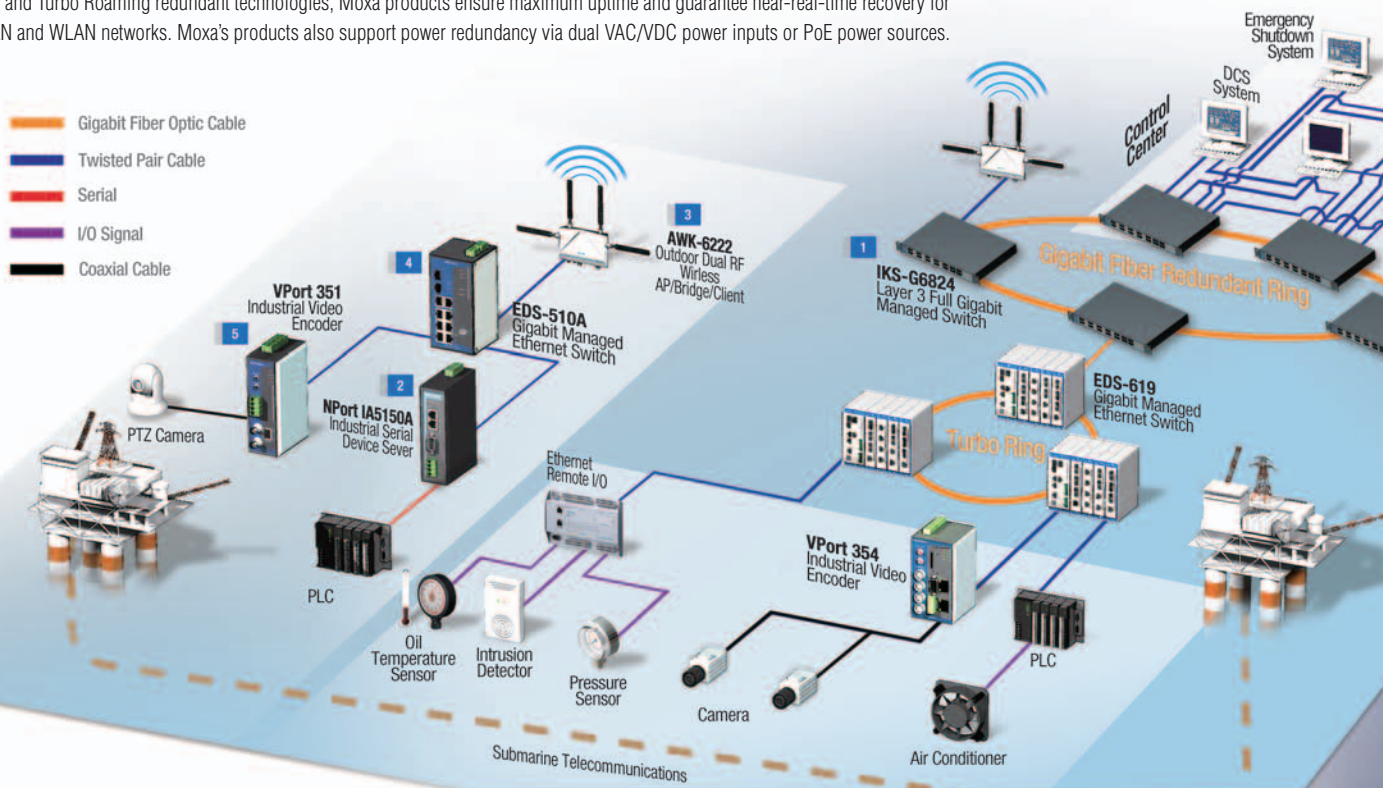
Enhanced Reliability

Off-shore oil drilling platforms, on-shore oil wells, and refineries must cope with moisture, salt, and airborne chemicals that can react with and damage the electronics on printed circuit boards. Conformal coating is a thin and even layer of non-conductive material applied over electronics. This protective coat protects against moisture contaminants and corrosion, and resists extreme temperatures, vibration, salt spray, and chemical vapors, ensuring a longer lifecycle. Moxa's Ethernet switches have an IP30 housing, robust metal casing, wide temperature tolerance, vibration proofing, and conformal coating for erosion resistance, making them suitable for use in tough industrial environments. They also have other heavy-duty networking features, including high MTBF and EMI noise immunity.

Easier Management

Modern industrial automation networks unify many different applications over an open industrial Ethernet network by using the TCP/IP protocol to simplify development and maintenance effort and easily integrate with the office network. The move to Ethernet has delivered tremendous benefits in efficiency and interoperability, but has also opened up industrial networks to communication from the outside world. Industrial network security requirements have evolved significantly in recent years and there is a growing recognition that industrial devices can be targets of sabotage. Any intrusion in the industrial control system can reduce production quality and even cause significant damage and safety risks. The use of security routers and network system with effective Layer 2 security features, such as TACACS+, IEEE 802.1X, SSH, HTTPS, and port security can greatly enhance the security and availability of the process control network infrastructure. This approach helps achieve safe and efficient production while protecting critical SCADA and DCS systems from unexpected external and internal cyber attacks and vulnerabilities.

Fire and Gas System

WAN

EDR-G903
Firewall/VPN
Secure Router

Key Products

1 IKS-G6824 Series
24G-port Layer 3 full Gigabit rackmount Ethernet switches

- Up to 24 optical fiber connections (SFP slots)
- Fanless, -40 to 75°C operating temperature range
- Turbo Ring, Turbo Chain, and RSTP/STP for network redundancy

2 NPort IA5150A, IA5250A, IA5450A
1, 2, and 4-port industrial serial device servers

- Enhanced surge protection for serial, Ethernet, and power lines
- 2 KV isolation for serial signals
- Low power consumption with built-in MiiNe CPU
- Class I Div. 2/ATEX Zone 2 and -40 to 75°C operating temperature

3 AWK-6222 Series
Industrial dual-RF wireless AP/bridge/client

- Higher security with WEP/WPA/WPA2/802.11X and powerful filter
- Class I Div. 2 certified for harsh industrial environments
- Redundant dual-RF design for rapid fail-over
- Wide operating temperature range and IP68-rated metal housing

4 EDS-510A Series
7+3G-port Gigabit managed Ethernet switches

- 2 Gigabit ports for redundant ring + 1 Gigabit port for uplink
- Gigabit fiber ports supporting Turbo Ring, Turbo Chain, and RSTP/STP
- Long-distance fiber transmission up to 100 km
- Class I Div. 2/ATEX Zone 2 and -40 to 75°C operating temperature range

5 VPort 351 Series
Full motion 1-channel MJPEG/MPEG4 industrial video encoders

- Industrial design with -40 to 75°C operating temperature and fiber optic Ethernet port
- Video stream up to 30 frames/sec at full D1 (720 x 480) resolution
- Pre/post-alarm video recording function for advanced surveillance

Water Distribution

Optimize Water Distribution Network

A water distribution system is the essential link between the water supply source and residential or industrial users. It is an elaborate conveyance system that pumps treated water through miles of water pipeline to the tap. Modern water distribution network face substantial maintenance and replacement costs. Today, there are significant challenges affecting water distribution network efficiency, such as security problems at pump and lift stations, and pipe damage. Moxa offers real-time and historical analysis solutions to monitor and manage water infrastructure. These invaluable systems help utility engineers ensure that water flows continuously and efficiently to residential and industrial users.

Advantages of Moxa's Remote Automation Solutions for Water Distribution Network

Historical Data Analysis to Improve Efficiency

Data logging capability is a key requirement for water pipeline monitoring utility operation staff can use Moxa's Click&Go™ control logic to control when to start and stop logging, and choose either FTP or e-mail attachments to upload log files. The historical logs can be viewed and transmitted in trend graph format through DA-center. DA-center is a historical analysis tool that seamlessly interacts with Active OPC server using the standard and open OPC protocol and works with any DBC-compliant IT database. Users can now log data from Active OPC to their database without any additional time wasted in developing a socket program. The historical information can be used by utility operation staff to optimize the current water distribution infrastructure in order to increase the efficiency and service life of the water pipeline.

Video on SCADA System for Enhanced Safety and Security

Moxa is a one-stop-shop for SCADA surveillance solutions, with a product portfolio that includes industrial IP video surveillance products, cellular RTU controllers, and industrial Gigabit/PoE Ethernet switches which make it easy to build a complete remote monitoring system that seamlessly integrates video, I/O events, and network information on the existing SCADA platform. With industrial standard protocol Modbus/TCP support and OPC communications, SCADA/HMI systems can add event-triggered IP video display and recording to monitor the status of the entire network. System operators can now substantially improve their remote on-site security and response time thanks to the addition of video data to the SCADA system.

Reliable and Flexible Ethernet Networks

Moxa's compact modular managed Ethernet switches provide multiple customizable copper and fiber port module combinations for a highly flexible package that has plenty of room for expansion. Multiple optical fiber connections, Gigabit uplink, and reliable Turbo Ring/ Turbo Chain network redundancy make these switches ideal for forming a trusted fiber Ethernet backbone for wide-area water and wastewater infrastructure. Wide temperature (-40 to 75ºC) models with high MTBF are available to deliver rugged network connectivity for use in outdoor environments. In addition, Moxa's high-performance industrial VPN secure routers build a trusted, reliable connection to protect remote networks or mission-critical industrial assets.
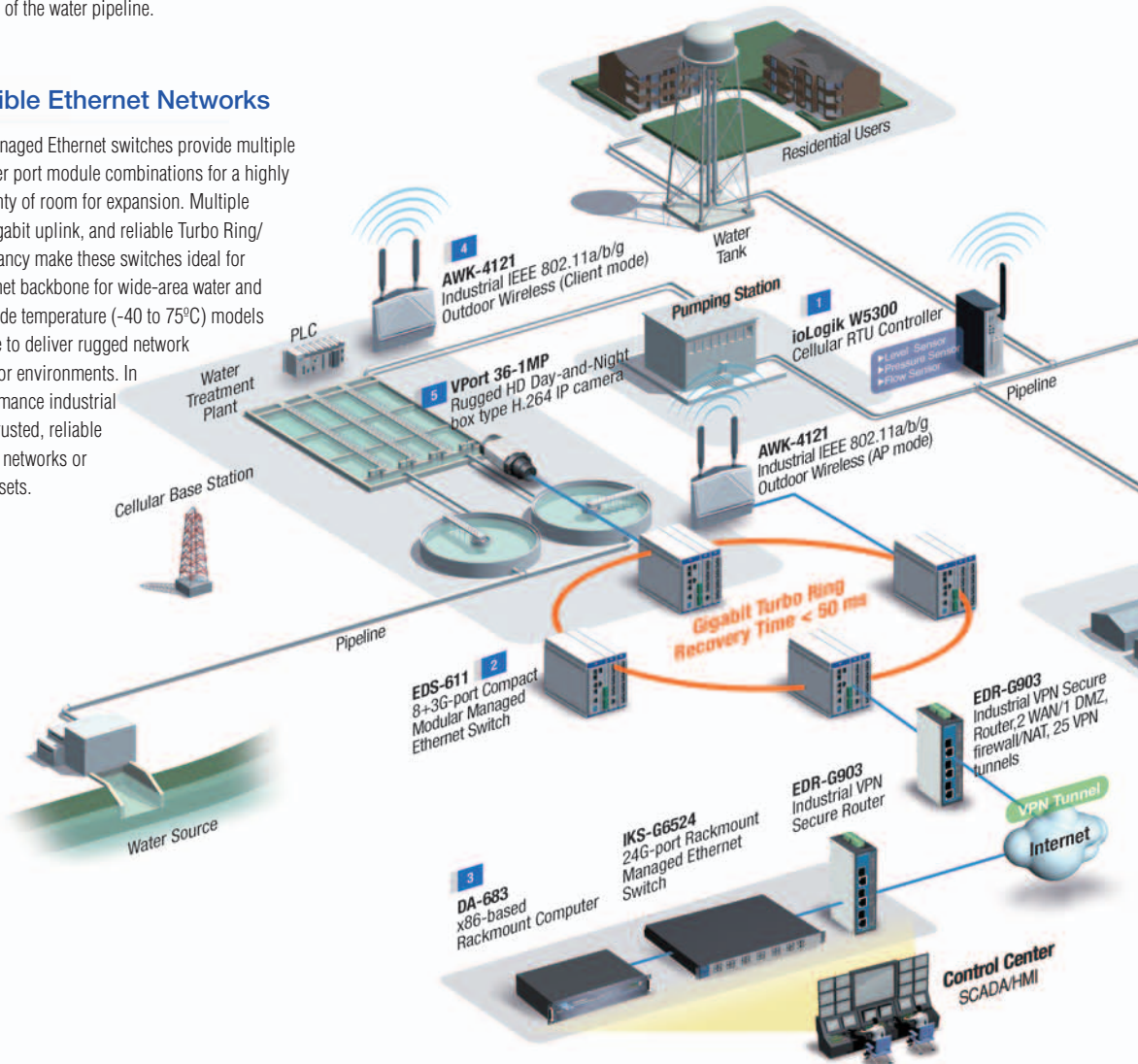
Waterproof Wireless for Wastewater Plant Remote Monitoring and Control

Water and wastewater treatment plants are now improving their network infrastructure with state-of-the-art wireless technology that is readily available and cost-effective to integrate in order to collect data from many locations throughout the plant. The AWK-4121 is housed in a tough IP68-rated metal casing and can be powered by PoE. No extra power cable or waterproof cabinet is needed, so deployment is simple and installation costs are kept low. A reliable wireless network can monitor storage tanks, well level and flow rate, and quickly open or close valves to meet sudden changes in demand. The system also makes it easier to store the results of sampling, schedules, and maintenance activities, and provides data for diagnostic reports that are essential to any water or wastewater treatment facility.

Timely Notifications to Reduce Downtime

Water distribution networks need timely notifications of any damage or problems at pump and lift stations. SCADA systems typically use polling systems, but Moxa's cellular RTU controllers support Active OPC server, which uses push technology to communicate when necessary. This event-driven push technology minimizes unnecessary data transmissions and provides instant I/O status reports. Moxa's cellular RTU controllers combine the functions of a cellular modem, I/O controller, and data logger in one compact package to reduce the total cost of system deployment and the amount of time wasted on debugging system problems.

Pumping Station

►Level Sensor
►Motor Control
►Pressure Sensor
►I/O expansion with
E1200 series

ioLogik E1200 Series
Ethernet Remote I/O

ioLogik W5300
Cellular RTU Controller

Cellular Base Station

Industrial Users
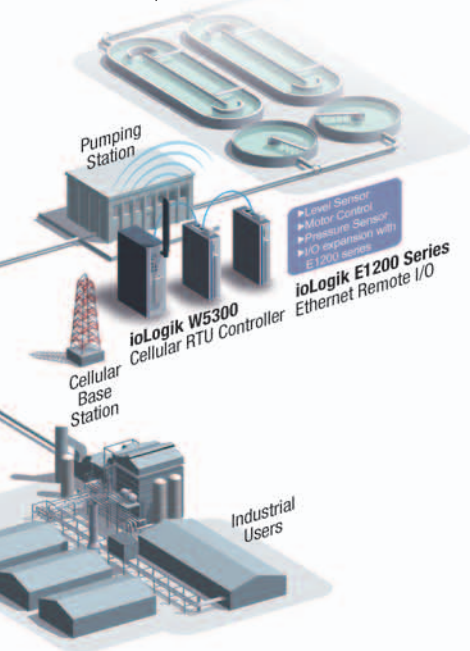
Gigabit Fiber Optic Cable
Twisted Pair Cable
I/O Signal

Key Products

1 ioLogik W5300 Series
Cellular micro RTU controller
- Easily managed over dynamic/private IP cellular network
- Active communication with patented Active OPC Server
- Front-end intelligence with patented Click&Go control logic
- Smart alarm management with SMS, e- mail, SNMP Trap, TCP and UDP

2 EDS-611 Series
8+3G-port compact modular managed Ethernet switch
- Modular form factor with rich selection of copper and fiber options for flexible cabling options
- Support Turbo Ring and Turbo Chain network redundancy and power redundancy
- Intelligent network management and security supports
- Modbus/TCP, QoS, IGMP Snooping, VLAN, and IEEE 802.1X

3 DA-683
x86-based rackmount embedded computer
- Modular design for system integration and flexibility
- High performance with low power consumption
- A powerful controller with multiple serial and LAN ports for legacy devices and network redundancy
- Execute and manage front-end tasks and remote monitoring

4 AWK-4121
Industrial IEEE 802.11a/b/g outdoor wireless AP/Bridge/Client
- IP68 rating to protect against water and dust in hazardous environments
- PoE-enabled powering to reduce cabling efforts
- High-level security with WPA/WPA2/802.11X
- User-friendly web-based management utility for easier configuration

5 VPort 36-1MP Series
Rugged HD day-and-night box type H.264 IP camera
- 1/2.7" progressive scan CMOS camera with HD resolution
- High quality video image with DNR, BLC, and WDR
- -40 to 75°C operation temperature; no heater or fan required

Maritime

Proven Marine-grade Computers, Switches, and IP Surveillance Products for Maritime Applications

Moxa's marine products give our maritime business partners the competitive edge to succeed in challenging conditions. Moxa's portfolio includes the latest and most up-to-date solutions tailored to the needs of our valued customers and partners. For example, our marine panel computers include features specifically for the latest marine applications. In addition, many of Moxa's industrial networking solutions, such as industrial Ethernet switches and industrial video encoders, are accredited by major maritime classification societies. Moxa's products are rugged and excel under extreme conditions such as the constant vibration, shock, and humidity found in harsh marine environments. Moxa's marine products: making your marine visions a reality.

Marine-grade Reliability for Harsh Environments

Marine applications usually require rugged and compact products that offer reliability under harsh environments. Moxa's marine computers, panel computers and industrial networking products are all designed with industrial-grade requirements, such as fanless design, longer MTBF, wide temperature range, redundant power and rugged housing protection, allowing users to build the reliable marine computing and networking solutions. In addition, many of Moxa's rugged solutions are DNV, GL, ABS, LR, and NK-rated products.

Innovative Redundant Technology Ensures High Network Availability

Moxa's managed Ethernet switches ensure uninterrupted system operations using reliable network redundancy technology: Turbo Ring and Turbo Chain (recovery time < 20 ms). Turbo Ring supports many ring architectures, such as ring coupling, dual homing, and dual ring, and Turbo Chain simplifies the creation of multiple complex redundant networks.
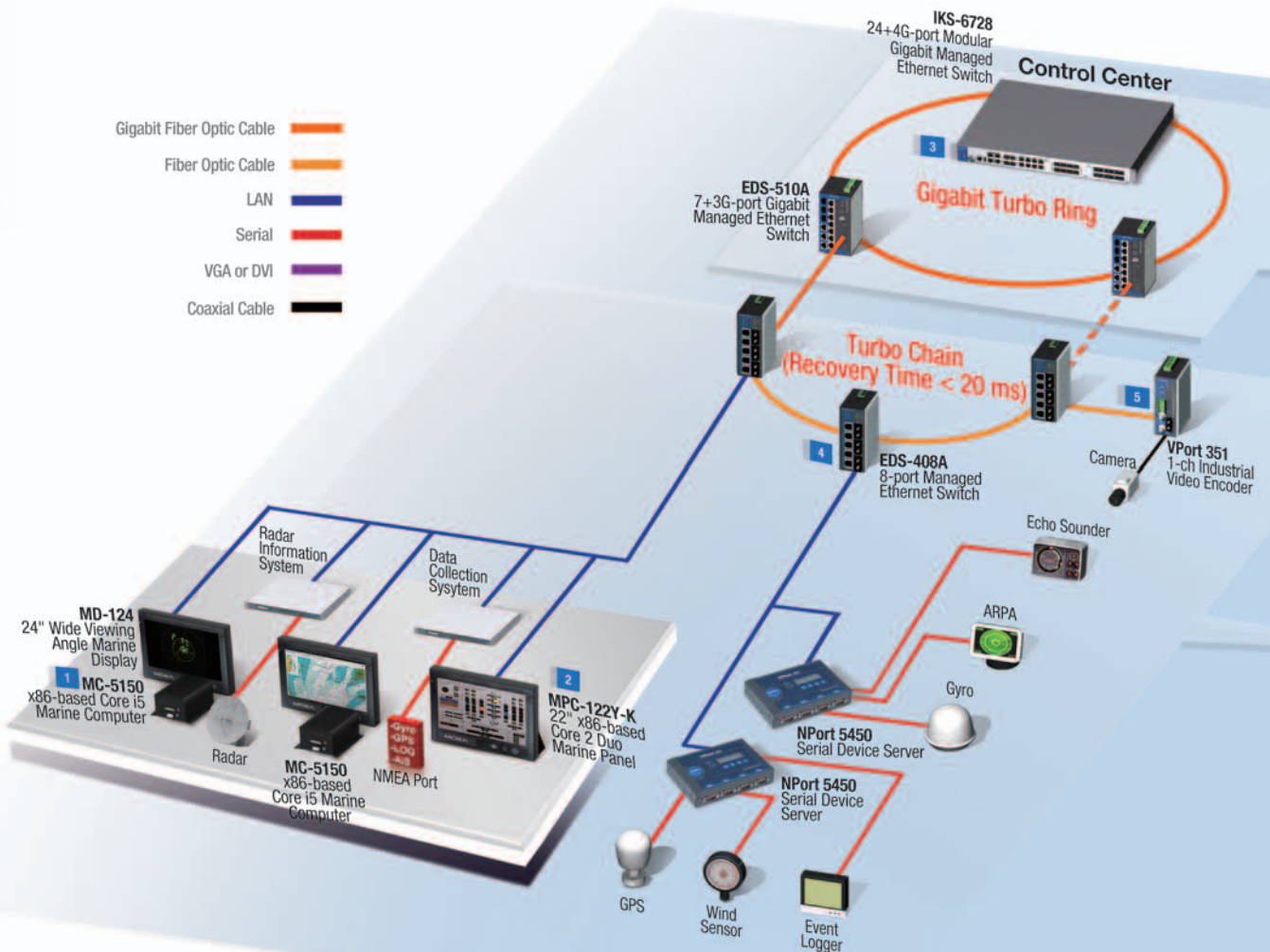
System Flexibility that Fulfills Your Needs

- Both DVI-D and VGA signal outputs available for dual independent displays
- Onboard mini-PCIe slot available for future expansions and upgrades
- Multiple USB 2.0 ports for connecting high-speed peripherals
- Modular design for easy integration with display panels; PC case is replaceable

Extreme Performance that Surpasses Existing Marine Requirements

- Extreme performance thanks to Intel Core 2 Duo 2.26 GHz processor, and 2 GB DDR3 memory, expandable to 4 GB for multi-tasking requirements.
- Features multiple Gigabit LANs for fast and powerful network redundancy
- Optically-isolated RS-232/422/485 serial ports for safe and stable system operations
- Unique HDD socket design provides ultimate anti-vibration and anti-shock protection
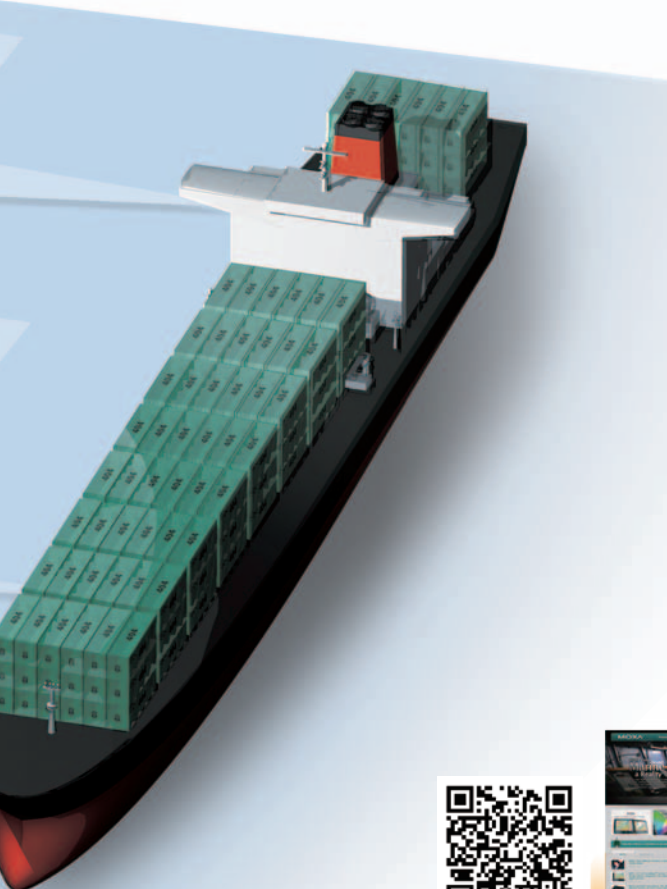
Key Products

1 MC-5150 Series
Marine computers
- High performance with Intel Core i5 520E 2.4 GHz processor
- Dual independent displays (VGA + DVI-D)
- Low power consumption

2 MPC-122-K Series
Marine panel computers
- 22" panel with 16:10 aspect ratio
- High performance with Intel Core 2 Duo 2.26 GHz processor
- Full-range dimming, optical bonding, and wide view angle

3 IKS-6728 Series
24+4G-port Gigabit modular managed Ethernet switches
- Turbo Ring and Turbo Chain (recovery time < 20 ms), and RSTP/STP for Ethernet redundancy
- TACACS+, SNMPv3, IEEE 802.1X, HTTPS, and SSH to enhance network security
- Isolated redundant power inputs with 24/48 VDC or 110/220 VAC power supply

4 EDS-408A Series
8-port industrial managed Ethernet switches
- Turbo Ring and Turbo Chain (recovery time < 20 ms), and RSTP/STP for Ethernet redundancy
- Network management with IGMP snooping, QoS, VLAN, Modbus/TCP, EtherNet/IP, and more
- -40 to 75°C operating temperature range

5 VPort 351 Series
1-channel MJPEG/MPEG4 Industrial Video Encoders
- Video stream up to 30 FPS at full D1 (720 x 480) resolution
- Industrial design with -40 to 75°C operating temperature and fiber optic Ethernet port
- High MTBF and fanless design

Learn more about marine solutions on Moxa's website:

Visit: www.moxa.com/Marine

Factory Automation

Overview

Moxa offers industrial Ethernet, device networking connectivity, I/O, video surveillance, wireless, and embedded computing solutions to help establish reliable, precise, and safe factory automation systems and networks.

Today, hundreds of factories all over the world are using Moxa's comprehensive industrial networking solutions to improve their productivity, efficiency, and cost-effectiveness, in applications such as building automation, process automation, logistics systems, communications infrastructure, and control centers.

Advantages of Moxa's Factory Automation Solutions

Building Automation Systems

Designed to safely and securely monitor and control the network of electronic devices in a building, Moxa's building automation system solutions deliver secure system performance and reduce maintenance requirements. Comprehensive building automation systems can be built to encompass IP surveillance video, SCADA/HMI systems, building access control, emergency alarms, meters, and mechanical systems.

Process Automation Systems

Manufacturers can achieve significant productivity gains by incorporating machinery and facility monitoring devices into a centralized control network. Moxa offers products that directly or wirelessly connect CNCs, robots, monitors, testing equipment, PLCs, pumps, sensors, and other devices to the management network.
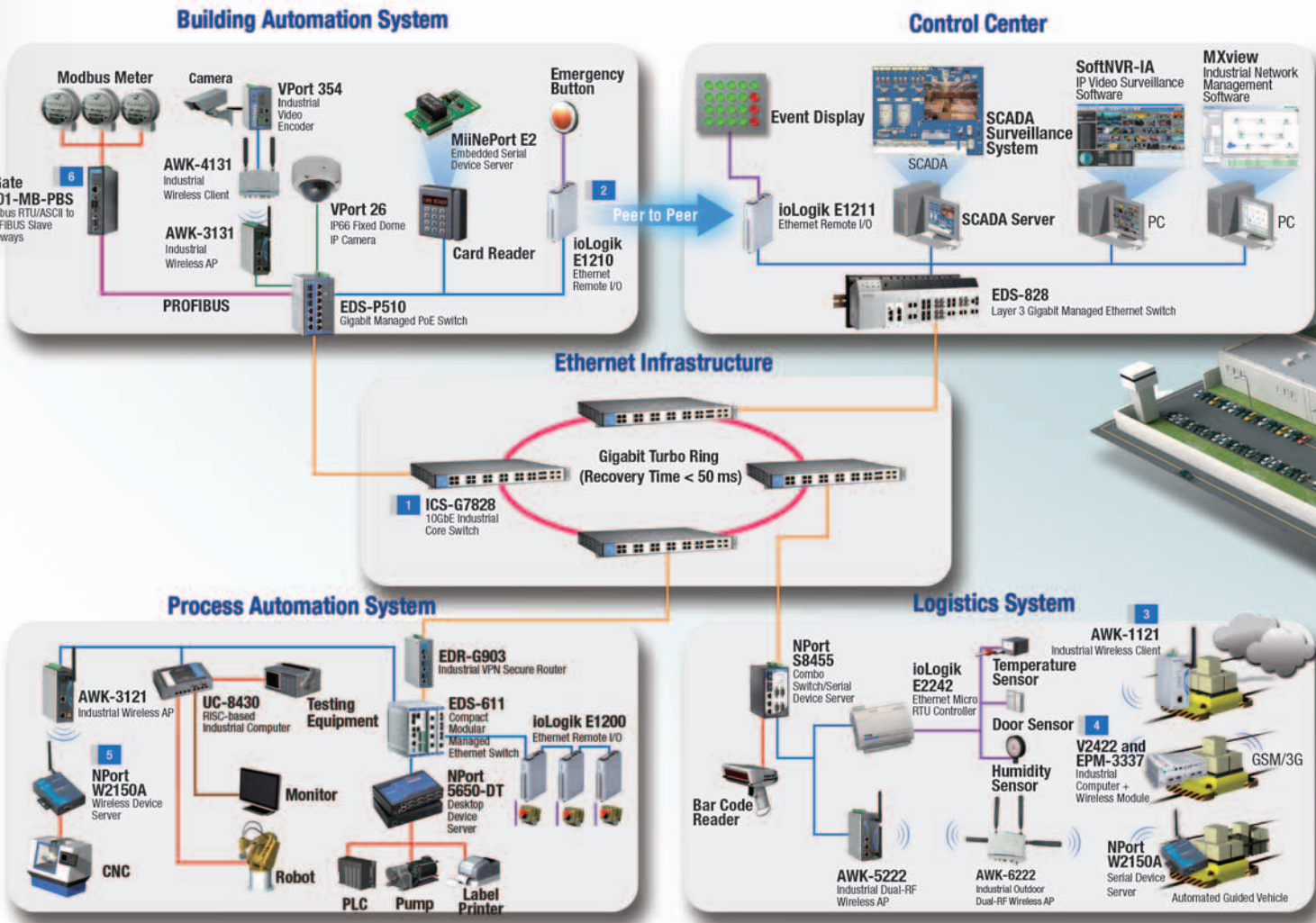
Logistics System

Effective logistics systems require a complicated integration of information, transportation, inventory, warehousing, materials handling, packaging, and security operations. The ultimate goal of any logistics system is to maximize time and place utility for processed goods. Make your logistics operation simpler, faster, and more reliable with Moxa's Gigabit Ethernet switches, RTU controllers, device servers, and wireless AP/bridge/clients that can be quickly deployed anywhere your system needs to go.

Control Center and Infrastructure

Industrial Ethernet solutions enjoy massive adoption within modern factory communication infrastructures because they offer superior redundancy, scalability and easy maintenance compared to other options. An Ethernet-based infrastructure can empower factory administrators at the control center to achieve remote mission requirements such as people and equipment safety monitoring, data acquisition, and process control. Moxa offers a deep selection of industrial Ethernet, remote I/O, and IP surveillance solutions with unique advantages for factory automation architects.
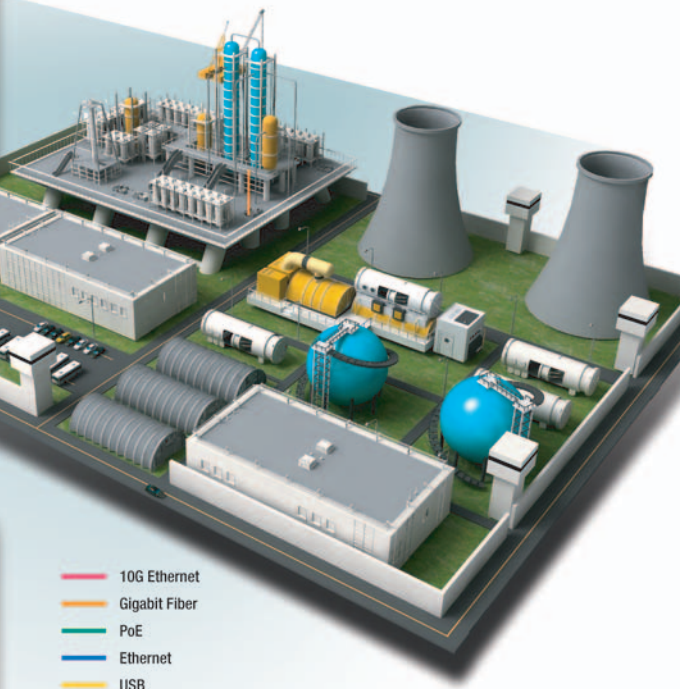
- 10G Ethernet
- Gigabit Fiber
- PoE
- Ethernet
- USB
- Coaxial Cable
- VGA
- I/O
- PROFIBUS
- Serial

Key Products

1 ICS-G7828 Series
24G+4 10GbE-port Layer 3 full Gigabit managed Ethernet switches

- Up to 4 10GbE ports and 28 optical fiber connections
- Fanless design supporting 0 to 60°C operation
- Turbo Ring, Turbo Chain, and RSTP/STP for network redundancy
- Isolated redundant power inputs with universal 110/220 VAC power supply range

2 ioLogik E1200 Series
Ethernet remote I/O

- Built-in 2-port Ethernet switch for daisy-chain topologies
- Supports Moxa's push-based Active OPC Server
- Peer-to-peer I/O signal mapping function
- Wide operating temperature (-40 to 75°C)

3 AWK-1121 Series
IEEE 802.11a/b/g wireless client

- Cost effective 802.11 a/b/g client solution
- Light and compact DIN-rail form factor
- Optimized for factory automation with PoE support
- Wide operating temperature (-40 to 75°C)
- 100 ms roaming

4 V2422 Series
x86 Intel Atom N270 1.6 GHz ready-to-run embedded computers

- DDR2 SODIMM socket-supporting DDR2 533 up to 2 GB (max.)
- 2 10/100/1000 Mbps Ethernet ports and 4 RS-232/422/485 serial ports, supporting non-standard baudrates
- 1 SATA-II connector for storage expansion
- Ready-to-run Embedded Linux, or Windows Embedded Standard 2009 platform

5 NPort® W2150A Series
1-port RS-232/422/485 IEEE 802.11a/b/g wireless device servers

- Link any serial device to an IEEE 802.11a/b/g network
- Secure data access with WEP, WPA, WPA2
- Fast automatic wireless roaming
- Off-line port buffering and serial data log

6 MGate™ 4101-MB-PBS Series
1-port Modbus RTU/ASCII to PROFIBUS slave gateways

- Protocol conversion between Modbus and PROFIBUS
- Windows utilities with innovative QuickLink function for automatic configuration
- Redundant dual DC power inputs and relay output supported

Centralize Your Distributed Industrial Networks

- Gigabit high-speed connections
- Intelligent Layer 3 network control
- Flexible multiple fiber connections
- Rugged industrial design

Up to 24 Gigabit Fiber Ports
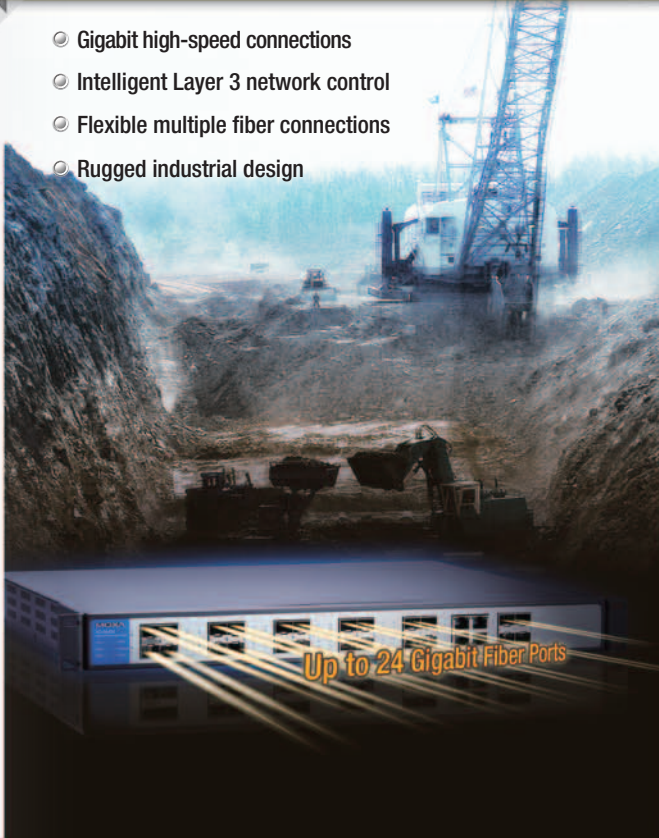
IKS-G6824 Series

24G-port Layer 3 full Gigabit managed Ethernet switches

- Layer 3 switching: Static routing, RIP V1/V2, OSPF, VRRP, DVMRP, PIM-DM
- 24 Gigabit Ethernet ports with up to 24 optical fiber connections (SFP slots)
- Turbo Ring and Turbo Chain, and RSTP/STP for network redundancy
- EtherNet/IP, Modbus/TCP, IEEE 1588 PTP V2, IGMP Snooping, VLAN, QoS, and more
- TACACS+, SNMPv3, IEEE 802.1X, HTTPS, and SSH to enhance network security
- Isolated redundant power inputs (110/220 VAC)
- Fanless design for durable operations
- -40 to 75°C extended operating temperature range
- Works with Moxa MXview industrial network management software for easy network monitoring and troubleshooting

Turbo Ring | Turbo Chain | -40°C 75°C | c UL us LISTED | EN 50121

Related Products

IKS-G6524 Series
24G-port full Gigabit managed Ethernet switches

IKS-6726/6728 Series
24+2G/24+4G-port modular managed Ethernet switches

Plug-n-Play PoE+ Solutions with Extreme Gigabit Performance

- High-bandwidth Gigabit for data communication
- High-power output for 802.3at PoE+
- High-flexibility 24/48 VDC redundant power inputs
- High protection with built-in broadcast storm protection
- High throughput with jumbo frames up to 9.6 KB
- High reliability with -40 to 75°C operating temperature

Gigabit 802.3af/at

EDS-G205A-4PoE Series

5-port IEEE 802.3af/at PoE+ Full Gigabit Unmanaged Ethernet Switches

- 4 PoE/PoE+ Gigabit Ethernet ports (Up to 30 watts per PoE port)
- Flexible and redundant 24/48 VDC power inputs
- Intelligent PoE standard detection/classification and over-current/short-circuit protection
- Built-in algorithm for broadcast storm protection
- SmartPoE LED indication for easy PoE installation and troubleshooting
- -40 to 75°C wide operating temperature range (T models)

c UL us LISTED | PoE Power over Ethernet

Related Products

EDS-P510 Series
7+3G-port Gigabit IEEE 802.3af PoE managed Ethernet switches

INJ-24 Series
Gigabit IEEE 802.3af/at PoE/PoE+ injectors

DIN-Rail IEC 61850-3 Ethernet Switches for Power Distribution Networks

- ⊙ IEC 61850-3 certified
- ⊙ Advanced redundancy
- ⊙ Multiple interfaces available

PT-508/510 Series

IEC 61850-3 8/10-port managed DIN-rail Ethernet switches

- IEC 61850-3 and IEEE 1613 compliant
- Compact size with -40 to 85°C operating temperature
- Isolated redundant power inputs of 24/48 VDC or 110/220 VDC/VAC
- Turbo Ring, Turbo Chain (recovery time < 20 ms), and RSTP/STP for network redundancy
- Multiple interfaces of SC, ST, MTRJ, LC connectors
- IP40 rating housing protection

Turbo Ring   *Turbo Chain*   *IEC 61850-3 Embedded Computer*   *MXview Network Management Software*

⬛ *Product Family*

PT-508 Series
IEC 61850-3 8-port managed DIN-rail Ethernet switches

PT-510 Series
IEC 61850-3 10-port managed DIN-rail Ethernet switches

Best Price/Performance Ratio for Industrial Wireless Clients

- ⊙ Cost effective solutions
- ⊙ Compact and lightweight housing
- ⊙ Ruggedly designed for rough environments
- ⊙ Client-based 100 ms handoffs

AWK-1121/1127 Series

Industrial IEEE 802.11a/b/g wireless clients

- IEEE 802.11a/b/g compliant
- Client-based 100 ms handoffs
- Redundant 24 VDC power inputs
- PoE 802.11af compliant (PoE model Only)
- Maximum security with WEP/WPA/WPA2/802.11X and powerful filters
- -40 to 75°C operating temperature range (T models)

Turbo Roaming   -40°C 75°C

⬛ *Target Applications*

Transportation Systems   Heavy Industry   Factory Automation

Networking+ In A Snap!
Multiply Your Device Value

Wireless Solutions   PoE Solutions   RJ45 Connector Solutions

SDK

Wireless

Thumb-sized

PoE

Innovative Ways to Bridge Fieldbus with Industrial Ethernet

Modbus-to-PROFIBUS Gateways
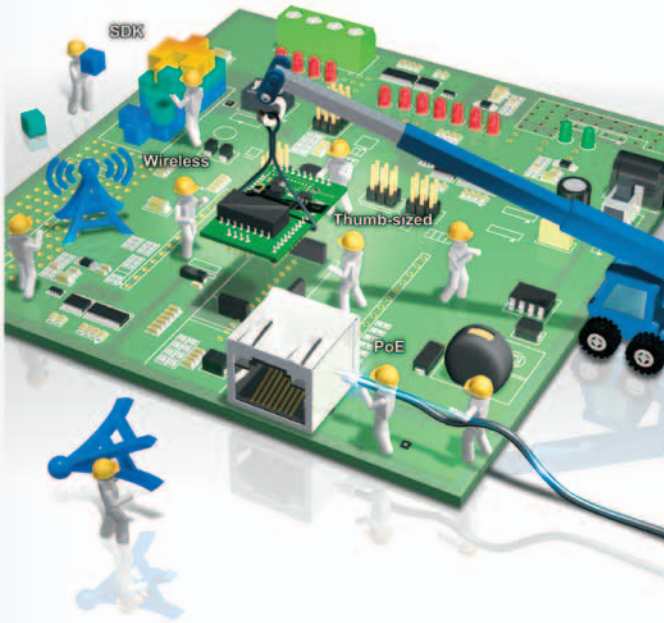
MiiNePort Series

MiiNePort E2 Series
Thumb-sized 10/100 Mbps embedded serial device servers

MiiNePort W1 Series
Wireless LAN embedded serial device servers

MiiNePort E3 Series
PoE pass-through 10/100 Mbps embedded serial device servers

MiiNePort E1/E2-SDK Series
Software development kits

Innovative NetEZ™ Technology

From development to application deployment, the NetEZ suite has a tool to make the job easier. NetEZ gives serial device manufacturers a set of powerful technologies for integrating Ethernet capability into serial devices.

NetEZ

Industrial Ethernet Gateways

MGate™ 4101-MB-PBS
1-port Modbus-to-PROFIBUS slave gateway

MGate™ MB3180/3280/3480
1,2, and 4-port standard Modbus gateways

MGate™ EIP3000 Series
1 and 2-port DF1-to-EtherNet/IP gateways

MGate™ MB3170/3270
1 and 2-port advanced serial-to-Ethernet Modbus gateways

Innovative QuickLink Technology

PROFIBUS PLC   Modbus PLC
AutoLearning   Automate Configuration
AutoMapping   Save Time
Modbus Meters

Rugged Modular RTU for Railway Condition Monitoring

- ◉ Anti-vibration and tough design
- ◉ Versatile I/O modules for great flexibility
- ◉ -40 to 75°C wide operating temperature range

ioPAC 8000 Series
Modular RTU Controllers

- Compliant with EN 50121-3-2, EN 50121-4 and relevant sections of EN 50155
- Supports C/C++ programming languages
- 2-port Ethernet switch for daisy-chain topologies with by-pass function
- Modular I/O for versatility, flexibility and scalability

-40°C 75°C   EN 50155   EN 50121

Application
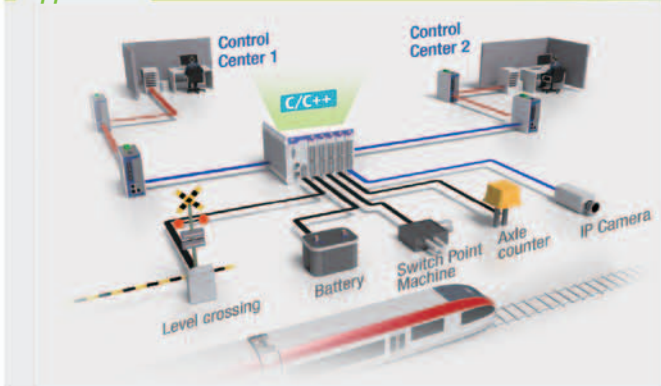
The World's First -40~75°C HD IP Camera

- ◉ HD 720P (1280 x 720) resolution real time video
- ◉ Triple H.264 and MJPEG video streams
- ◉ Industrial rugged design with industry certificates
- ◉ Complete optional accessory plan
- ◉ ONVIF compatible

VPort 36-1MP Series
Outstanding HD Video Quality with Industrial Grade Hardware Design

- Achieve -40 to 75°C operation temperature without fan or heater
- Triple independent video streams (2 for H.264, 1 for MJPEG)
- Advanced IVA function built-in for sophisticated application
- Advanced software feature include digital PTZ, ROI, and Dynastream
- Designed to comply Class 1 Div. 2, ATEX Zone 2, NEMA TS2, EN 50121-4 standard
- Lens, enclosure housing, PT scanner are available for order
- VPort SDK Plus provided free for system development

-40°C 75°C   Onvif   DynaStream   NEMA TS2   EN 50121

Related Products

VPort 26 Series

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

VPort 16-M12 Series

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

VPort P06-1MP-M12 Series

EN 50155, HD video image, compact fixed dome IP camera

ECDIS Computers Tailor-made for Marine Application

- Fanless design with low power consumption
- Marine-grade design for reliable operation
- Multiple display outputs

MC-5150 Series
x86-based Marine Computers

- High performance Intel® Core™ i5 520E processor, 3 MB L2 cache
- Dual independent displays (DVI-I + VGA)
- 12 NMEA ports (AC/DC models only)
- SATA storage slot for SSD
- 24 VDC or 100 to 240 VAC power input models available

Application
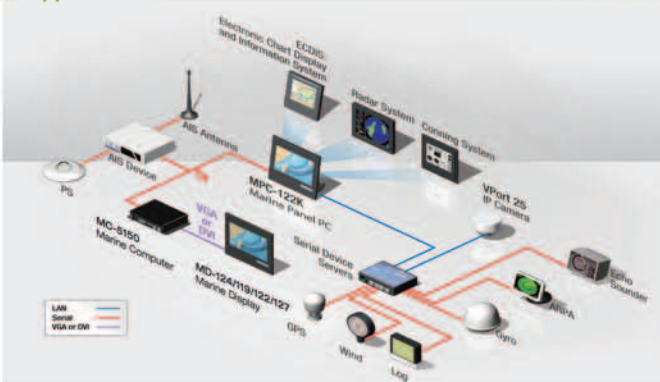
EN 50155-certified Computers for Reliable Railway Application

- High performance network video recorder for rolling stock applications
- EN 50155 certified for temperature ranges up to Class T1
- Supports RAID 1/0 functions for data reliability

V2616 Series
x86-based Railway Computers

- EN 50155 certified for railway applications
- IEC 61373 certified for shock and vibration resistance
- Two removable storage trays for 2.5" SSDs or HDDs
- Supports RAID 1/0 functions for data reliability

Product Family
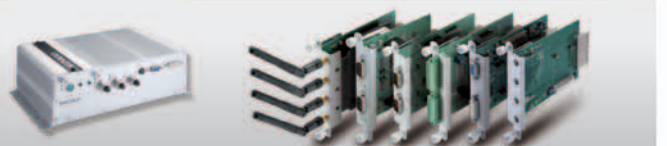
V2416
x86-based Railway Computer

- 2 removable, hot swappable trays for storage expansion
- Anti-vibration/shock design for stable and reliable operation
- Multiple interface connections

EPM-3032/3112/3337/3438/3552/DK01/DK02
V Series Expansion Modules

- PCI slots for interface expansion
- 2 isolated RS-232/422/485 ports with DB9 connectors
- 2 isolated CAN ports with DB9 connectors
- HSDPA, GPS, WLAN (11a/b/g/n)
- 8+8 DI/DO with 3 KV digital isolation protection, 2 KHz counter
- VGA or DVI-D display connector
- Mini PCI and Mini PCIe expansion modules
- 2-slot mini PCIe expansion module

Power Up With IEC 61850-3 and IEEE 1588 v2

- Powerful Intel Atom D510 CPU for complicated computing tasks

- Multiple interfaces for different industrial communications needs

- Ready-to-run Embedded Linux, or Windows Embedded platform

DA-683 Series

x86-based Rackmount Computers

- IEC 61850-3-certified for substation automation
- Modular design with great flexibility for system expansion
- IEEE 1588v2-compliant with reliable Precision Time System (PTS)
- Wide range power input
- Multiple storage sockets for storage expansion

Product Family

DA-681
1U Rackmount Power Computer

- IEC 61850-3 certified for substation automation
- 1U, 19-inch rackmount installation
- Dual power input models available

DA-682
2U Rackmount Power Computer

- 2 PCI expansion slots for system expansion
- 2U, 19-inch rackmount installation
- Wide range power input

DA-710
4U Rackmount Power Computer

- 4 PCI expansion slots for system expansion
- 4U, 19-inch rackmount installation
- Multiple sockets for storage expansions

Go Solar with Smart Ideas

- Multiple interfaces for different communications needs

- Supports Modbus TCP library to retrieve analog input and thermocouple data

- Ready-to-run Linux platform for easy development
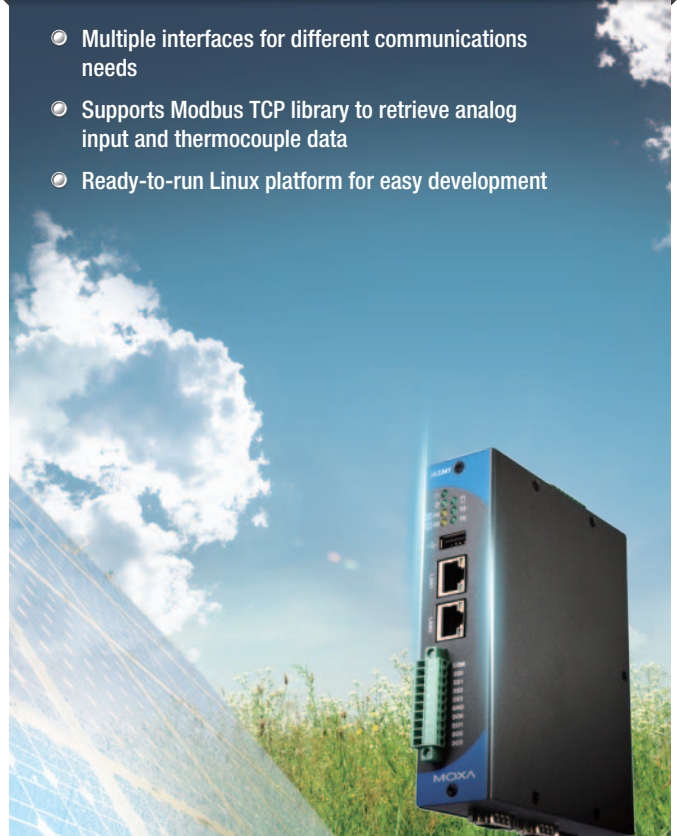
IA3341

RISC-based Industrial Embedded Computer

- Programmable computing platform with integrated communication I/Os
- Built-in Modbus TCP Library to streamline tine-consuming tasks
- Multiple I/O design for easy and quick system establishment
- Rugged design with longer MTBF

Application
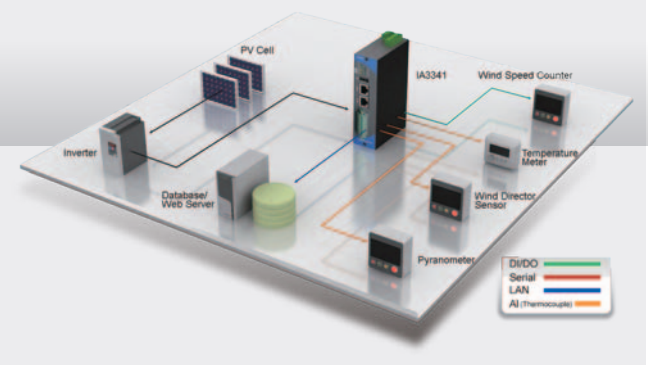
Rackmount Ethernet Switches

	Managed Rackmount Switches							
	ICS-G7852	ICS-G7850	ICS-G7848	ICS-G7752	ICS-G7750	ICS-G7748	ICS-G7828	ICS-G7826
Supported Modules								
Gigabit Ethernet Modules	✓	✓	✓	✓	✓	✓	–	–
Fast Ethernet Modules	–	–	–	–	–	–	–	–
SFP+ 10 Gigabit Ethernet Modules	✓	✓	–	✓	✓	–	✓	✓
SFP Gigabit Ethernet Modules	✓	✓	✓	✓	✓	✓	✓	✓
SFP Fast Ethernet Modules	✓	✓	✓	✓	✓	✓	✓	✓
Number of Ports								
Max. Number of Ports	52	50	48	52	50	48	28	26
10 Gigabit Ethernet	4	2	–	4	2	–	4	2
Gigabit Ethernet, 10/100/1000 Mbps	up to 48	up to 48	up to 48	up to 48	up to 48	up to 48	24	24
Fast Ethernet, 10/100 Mbps	–	–	–	–	–	–	–	–
Available Power Supplies								
24 VDC	–	–	–	–	–	–	–	–
24 VAC	–	–	–	–	–	–	–	–
48 VDC	–	–	–	–	–	–	–	–
12/24/48 VDC	–	–	–	–	–	–	–	–
85-264 VAC	✓	✓	✓	✓	✓	✓	✓	✓
88-300 VDC or 85-264 VAC, isolated	–	–	–	–	–	–	–	–
Installation Options								
DIN-Rail Mounting	–	–	–	–	–	–	–	–
Panel Mounting	–	–	–	–	–	–	–	–
Rack Mounting	✓	✓	✓	✓	✓	✓	✓	✓
Supported Operating Temperatures								
0 to 60°C	✓	✓	✓	✓	✓	✓	✓	✓
-40 to 75°C	–	–	–	–	–	–	–	–
Redundancy and Backup Options								
Turbo Ring (Recovery Time < 20 ms)	–	–	–	–	–	–	–	–
Turbo Chain (Recovery Time < 20 ms)	–	–	–	–	–	–	–	–
Turbo Ring (Recovery Time < 50 ms)	✓	✓	✓	✓	✓	✓	✓	✓
Turbo Chain (Recovery Time < 50 ms)	✓	✓	✓	✓	✓	✓	✓	✓
STP/RSTP	✓	✓	✓	✓	✓	✓	✓	✓
Automatic Backup Configurator (ABC-01)	✓	✓	✓	✓	✓	✓	✓	✓
Network Management and Control								
Layer 3 Switching	✓	✓	✓	–	–	–	✓	✓
Port Trunking	✓	✓	✓	✓	✓	✓	✓	✓
Modbus/TCP	✓	✓	✓	✓	✓	✓	✓	✓
IEEE 1588 PTP	✓	✓	✓	✓	✓	✓	✓	✓
SNMP/RMON	✓	✓	✓	✓	✓	✓	✓	✓
LLDP	✓	✓	✓	✓	✓	✓	✓	✓
DHCP Option 66/67/82	✓	✓	✓	✓	✓	✓	✓	✓
IGMP/GMRP	✓	✓	✓	✓	✓	✓	✓	✓
QoS	✓	✓	✓	✓	✓	✓	✓	✓
VLAN	✓	✓	✓	✓	✓	✓	✓	✓
IEEE 802.1X	✓	✓	✓	✓	✓	✓	✓	✓
Port Lock	✓	✓	✓	✓	✓	✓	✓	✓
IPv6	–	–	–	✓	✓	✓	–	–
Relay Warning	✓	✓	✓	✓	✓	✓	✓	✓
Standards and Certifications								
CE/FCC	✓	✓	✓	✓	✓	✓	✓	✓
UL 60950-1	✓	✓	✓	✓	✓	✓	✓	✓
UL 508	–	–	–	–	–	–	–	–
DNV/GL	–	–	–	–	–	–	–	–
ABS/LR/NK	–	–	–	–	–	–	–	–
NEMA TS2	–	–	–	–	–	–	–	–
EN 50121-4	✓	✓	✓	✓	✓	✓	✓	✓

Rackmount Ethernet Switches

	Managed Rackmount Switches						Unmanaged Rackmount Switches
	ICS-G7528	ICS-G7526	IKS-G6824	IKS-G6524	IKS-6728	IKS-6726	IKS-6324
Supported Modules							
Gigabit Ethernet Modules	–	–	–	–	–	–	✓
Fast Ethernet Modules	–	–	–	–	✓	✓	✓
SFP+ 10 Gigabit Ethernet Modules	✓	✓	–	–	–	–	–
SFP Gigabit Ethernet Modules	✓	✓	✓	✓	✓	✓	✓
SFP Fast Ethernet Modules	✓	✓	✓	✓	✓	✓	–
Number of Ports							
Max. Number of Ports	28	26	24	24	28	26	24
10 Gigabit Ethernet	4	2	–	–	–	–	–
Gigabit Ethernet, 10/100/1000 Mbps	24	24	24	24	4	2	up to 2
Fast Ethernet, 10/100 Mbps	–	–	–	–	up to 24	up to 24	24
Available Power Supplies							
24 VDC	–	–	–	–	✓	✓	–
24 VAC	–	–	–	–	–	–	–
48 VDC	–	–	–	–	✓	✓	–
12/24/48 VDC	–	–	–	–	–	–	✓
85-264 VAC	✓	✓	✓	✓	✓	✓	–
88-300 VDC or 85-264 VAC, isolated	–	–	–	–	–	–	✓
Installation Options							
DIN-Rail Mounting	–	–	–	–	–	–	–
Panel Mounting	–	–	–	–	–	–	–
Rack Mounting	✓	✓	✓	✓	✓	✓	✓
Supported Operating Temperatures							
0 to 60°C	✓	✓	✓	✓	–	–	–
-40 to 75°C	–	–	✓	✓	✓	✓	✓
Redundancy and Backup Options							
Turbo Ring (Recovery Time < 20 ms)	–	–	–	–	✓	✓	–
Turbo Chain (Recovery Time < 20 ms)	–	–	–	–	✓	✓	–
Turbo Ring (Recovery Time < 50 ms)	✓	✓	✓	✓	–	–	–
Turbo Chain (Recovery Time < 50 ms)	✓	✓	✓	✓	–	–	–
STP/RSTP	✓	✓	✓	✓	✓	✓	–
Automatic Backup Configurator (ABC-01)	✓	✓	✓	✓	✓	✓	–
Network Management and Control							
Layer 3 Switching	–	–	✓	–	–	–	–
Port Trunking	✓	✓	✓	✓	✓	✓	–
Modbus/TCP	✓	✓	✓	✓	✓	✓	–
IEEE 1588 PTP	✓	✓	✓	✓	✓	✓	–
SNMP/RMON	✓	✓	✓	✓	✓	✓	–
LLDP	✓	✓	✓	✓	✓	✓	–
DHCP Option 66/67/82	✓	✓	✓	✓	✓	✓	–
IGMP/GMRP	✓	✓	✓	✓	✓	✓	–
QoS	✓	✓	✓	✓	✓	✓	–
VLAN	✓	✓	✓	✓	✓	✓	–
IEEE 802.1X	✓	✓	✓	✓	✓	✓	–
Port Lock	✓	✓	✓	✓	✓	✓	–
IPv6	✓	✓	–	✓	✓	✓	–
Relay Warning	✓	✓	✓	✓	✓	✓	–
Standards and Certifications							
CE/FCC	✓	✓	✓	✓	✓	✓	✓
UL 60950-1	✓	✓	✓	✓	✓	✓	–
UL 508	–	–	–	–	–	–	–
DNV/GL	–	–	–	–	–	–	✓
ABS/LR/NK	–	–	–	–	–	–	✓
NEMA TS2	–	–	–	–	Pending	Pending	✓
EN 50121-4	✓	✓	✓	✓	✓	✓	✓

DIN-Rail Ethernet Switches

Managed DIN-Rail Switches							
	EDS-828	EDS-728	EDS-619	EDS-616	EDS-611	EDS-608	EDS-G509
Supported Modules							
Gigabit Ethernet Modules	✓	✓	–	–	–	–	–
Fast Ethernet Modules	✓	✓	✓	✓	✓	✓	–
SFP Gigabit Ethernet Modules	✓	✓	✓	–	✓	–	✓
SFP Fast Ethernet Modules	–	–	✓	–	✓	–	✓
Number of Ports							
Max. Number of Ports	28	28	19	16	11	8	9
Gigabit Ethernet, 10/100/1000 Mbps	up to 4	up to 4	3	–	3	–	9
Fast Ethernet, 10/100 Mbps	up to 24	up to 24	up to 16	up to 16	up to 8	up to 8	–
Available Power Supplies							
3.3 VDC	–	–	–	–	–	–	–
24 VDC	✓	✓	–	–	–	–	–
12/24/48 VDC	–	–	✓	✓	✓	✓	✓
Installation Options							
DIN-Rail Mounting	✓	✓	✓	✓	✓	✓	✓
Panel Mounting	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit
Rack Mounting	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit
Supported Operating Temperatures							
0 to 60°C	✓	✓	✓	✓	✓	✓	✓
-40 to 75°C	–	–	✓	✓	✓	✓	✓
Redundancy and Backup Options							
Turbo Ring (recovery time < 20 ms)	✓	✓	✓	✓	✓	✓	–
Turbo Chain (recovery time < 20 ms)	✓	✓	✓	✓	✓	✓	–
Turbo Ring (recovery time < 50 ms)	–	–	–	–	–	–	✓
Turbo Chain (recovery time < 50 ms)	–	–	–	–	–	–	✓
STP/RSTP	✓	✓	✓	✓	✓	✓	✓
Automatic Backup Configurator (ABC-01)	✓	✓	✓	✓	✓	✓	✓
Network Management and Control							
Layer 3 Switching	✓	–	–	–	–	–	–
Port Trunking	✓	✓	✓	✓	✓	✓	✓
Modbus/TCP	✓	✓	✓	✓	✓	✓	✓
IEEE 1588 PTP	✓	✓	✓	✓	✓	✓	✓
SNMP/RMON	✓	✓	✓	✓	✓	✓	✓
LLDP	✓	✓	✓	✓	✓	✓	✓
DHCP Option 66/67/82	✓	✓	✓	✓	✓	✓	✓
IGMP Snooping/GMRP	✓	✓	✓	✓	✓	✓	✓
QoS	✓	✓	✓	✓	✓	✓	✓
IEEE 802.1Q VLAN	✓	✓	✓	✓	✓	✓	✓
Port-based VLAN	–	–	✓	✓	✓	✓	✓
IEEE 802.1X	✓	✓	✓	✓	✓	✓	✓
Port Lock	✓	✓	✓	✓	✓	✓	✓
IPv6	–	✓	✓	✓	✓	✓	✓
Relay Warning	✓	✓	✓	✓	✓	✓	✓
Standards and Certifications							
CE/FCC	✓	✓	✓	✓	✓	✓	✓
UL 60950-1	✓	✓	–	–	–	–	–
UL 508	✓	✓	✓	✓	✓	✓	✓
UL/cUL Class I Div. 2	–	–	✓	✓	✓	✓	–
ATEX Zone 2	–	–	✓	✓	✓	✓	–
DNV/GL	✓	✓	✓	✓	✓	✓	✓
ABS/LR/NK	✓	✓	✓	✓	✓	✓	✓
NEMA TS2	–	–	✓	✓	✓	✓	–
EN 50121-4	–	–	✓	✓	✓	✓	✓

DIN-Rail Ethernet Switches

Managed DIN-Rail Switches							
	EDS-518A	EDS-510A	EDS-516A	EDS-508A	EDS-505A	EDS-408A	EDS-405A
Supported Modules							
Gigabit Ethernet Modules	–	–	–	–	–	–	–
Fast Ethernet Modules	–	–	–	–	–	–	–
SFP Gigabit Ethernet Modules	✓	✓	–	–	–	–	–
SFP Fast Ethernet Modules	–	–	–	–	–	–	–
Number of Ports							
Max. Number of Ports	18	10	16	8	5	8	5
Gigabit Ethernet, 10/100/1000 Mbps	2	3	–	–	–	–	–
Fast Ethernet, 10/100 Mbps	16	7	16	8	5	8	5
Available Power Supplies							
3.3 VDC	–	–	–	–	–	–	–
24 VDC	✓	✓	✓	✓	✓	✓	✓
12/24/48 VDC	–	–	–	–	–	–	–
Installation Options							
DIN-Rail Mounting	✓	✓	✓	✓	✓	✓	✓
Panel Mounting	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit
Rack Mounting	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit
Supported Operating Temperatures							
0 to 60°C	✓	✓	✓	✓	✓	✓	✓
-40 to 75°C	✓	✓	✓	✓	✓	✓	✓
Redundancy and Backup Options							
Turbo Ring (Recovery Time < 20 ms)	✓	✓	✓	✓	✓	✓	✓
Turbo Chain (Recovery Time < 20 ms)	✓	✓	✓	✓	✓	✓	✓
STP/RSTP	✓	✓	✓	✓	✓	✓	✓
Automatic Backup Configurator (ABC-01)	✓	✓	✓	✓	✓	✓	✓
Network Management and Control							
Layer 3 Switching	–	–	–	–	–	–	–
Port Trunking	✓	✓	✓	✓	✓	–	–
Modbus/TCP	✓	✓	✓	✓	✓	✓	✓
IEEE 1588 PTP	✓	✓	✓	✓	✓	–	–
SNMP/RMON	✓	✓	✓	✓	✓	✓	✓
LLDP	✓	✓	✓	✓	✓	✓	✓
DHCP Option 66/67/82	✓	✓	✓	✓	✓	✓	✓
IGMP Snooping/GMRP	✓	✓	✓	✓	✓	✓	✓
QoS	✓	✓	✓	✓	✓	✓	✓
IEEE 802.1Q VLAN	✓	✓	✓	✓	✓	✓	✓
Port-based VLAN	✓	✓	✓	✓	✓	✓	✓
IEEE 802.1X	✓	✓	✓	✓	✓	–	–
Port Lock	✓	✓	✓	✓	✓	–	–
IPv6	✓	✓	✓	✓	✓	✓	✓
Relay Warning	✓	✓	✓	✓	✓	✓	✓
Standards and Certifications							
CE/FCC	✓	✓	✓	✓	✓	✓	✓
UL 60950-1	✓	✓	✓	✓	✓	✓	✓
UL 508	✓	✓	✓	✓	✓	✓	✓
UL/cUL Class I, Div. 2	✓	✓	✓	✓	✓	✓	✓
ATEX Zone 2	✓	✓	✓	✓	✓	✓	✓
DNV/GL	✓	✓	✓	✓	✓	✓	✓
ABS/LR/NK	–	–	–	–	–	EDS-408A 3 Fiber series only	–
NEMA TS2	–	✓	–	–	–	✓	✓
EN 50121-4	–	–	–	–	–	✓	–

DIN-Rail Ethernet Switches

		EDS-G308	EDS-G205	EDS-316	EDS-309	EDS-308	EDS-305	EDS-208A	EDS-205A	EDS-208	EDS-205
Supported Modules											
SFP Gigabit Ethernet Modules		✓	–	–	–	–	–	–	–	–	–
SFP Fast Ethernet Modules		✓	–	–	–	–	–	–	–	–	–
Number of Ports											
Max. Number of Ports		8	5	16	9	8	5	8	5	8	5
Gigabit Ethernet, 10/100/1000 Mbps		8	5	–	–	–	–	–	–	–	–
Fast Ethernet, 10/100 Mbps		–	–	16	9	8	5	8	5	8	5
Available Power Supplies											
24 VDC		–	–	✓	✓	✓	✓	–	–	✓	✓
24 VAC		–	–	–	–	–	–	✓	✓	✓	✓
12/24/48 VDC		✓	✓	–	–	–	–	✓	✓	–	–
Installation Options											
DIN-Rail Mounting		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Panel Mounting		w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit	–	–
Rack Mounting		w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit
Supported Operating Temperatures											
0 to 60°C		✓	✓	✓	✓	✓	✓	–	–	–	–
-10 to 60°C		–	–	–	–	–	–	✓	✓	✓	✓
-40 to 75°C		✓	✓	✓	✓	✓	✓	✓	✓	–	–
Standards and Certifications											
CE/FCC		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
UL 60950-1		–	–	✓	✓	✓	✓	–	–	✓	–
UL 508		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
UL/cUL Class I, Div. 2		✓	✓	✓	✓	✓	✓	✓	✓	–	–
ATEX Zone 2		✓	✓	✓	✓	✓	✓	✓	✓	–	–
DNV/GL		✓	✓	✓	✓	✓	✓	✓	✓	–	–
ABS/LR/NK		✓	✓	–	–	–	–	✓	✓	–	–
NEMA TS2		–	–	–	–	–	–	✓	✓	–	–
EN 50121-4		–	–	–	–	–	–	✓	✓	–	–

PoE Switches

	Managed DIN-Rail PoE Switches		Unmanaged DIN-Rail PoE Switches		
	EDS-P510	EDS-P506A-4PoE	EDS-G205A-4PoE	EDS-P308	EDS-P206A-4PoE
Supported Modules					
Gigabit Ethernet Modules	–	–	–	–	–
Fast Ethernet Modules	–	–	–	–	–
SFP Gigabit Ethernet Modules	✓	–	✓	–	–
SFP Fast Ethernet Modules	✓	–	–	–	–
Number of Ports					
Max. Number of Ports	10	6	5	8	6
Gigabit Ethernet, 10/100/1000 Mbps	3	–	1	–	–
PoE, Gigabit Ethernet, 10/100/1000 Mbps	–	–	4 (PoE+)	–	–
Fast Ethernet, 10/100 Mbps	3	2	–	4	2
PoE, Fast Ethernet, 10/100 Mbps	4	4 (PoE+)	–	4	4 (PoE+)
Available Power Supplies					
24 VDC	–	✓	✓	–	✓
48 VDC	✓	✓	✓	✓	✓
12/24/48 VDC	–	–	–	–	–
88-300 VDC or 85-264 VAC, isolated	–	–	–	–	–
Installation Options					
DIN-Rail Mounting	✓	✓	✓	✓	✓
Panel Mounting	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit
Rack Mounting	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit
Supported Operating Temperatures					
0 to 60°C	✓	✓	✓	✓	✓
-40 to 75°C	✓	✓	✓	✓	✓
Redundancy and Backup Options					
Turbo Ring (Recovery Time < 20 ms)	✓	✓	–	–	–
Turbo Chain (Recovery Time < 20 ms)	✓	✓	–	–	–
STP/RSTP	✓	✓	–	–	–
Automatic Backup Configurator (ABC-01)	✓	✓	–	–	–
Network Management and Control					
Port Trunking	✓	✓	–	–	–
Modbus/TCP	✓	✓	–	–	–
IEEE 1588 PTP	✓	✓	–	–	–
SNMP/RMON	✓	✓	–	–	–
LLDP	✓	✓	–	–	–
DHCP Option 66/67/82	✓	✓	–	–	–
IGMP Snooping/GMRP	✓	✓	–	–	–
QoS	✓	✓	–	–	–
VLAN	✓	✓	–	–	–
IEEE 802.1X	✓	✓	–	–	–
Port Lock	✓	✓	–	–	–
IPv6	✓	✓	–	–	–
Relay Warning	✓	✓	–	–	–
Standards and Certifications					
CE/FCC	✓	✓	✓	✓	✓
UL 60950-1	–	–	–	–	–
UL 508	✓	✓	✓	✓	✓
UL/cUL Class I, Div. 2	–	–	–	–	–
ATEX Zone 2	–	–	–	–	–
DNV/GL	✓	–	–	✓	–
ABS/LR/NK	✓	–	–	✓	–
NEMA TS2	–	–	–	–	–
EN 50121-4	–	✓	✓	–	–

EN 50155 Ethernet Switches

	Managed Ethernet Switches			Unmanaged Ethernet Switches		
	Gigabit Ethernet Series	Fast Ethernet Series	Power-over-Ethernet Series	Fast Ethernet Series		Power-over-Ethernet Series
	TN-5510/5518 Series	TN-5508/5516 Series	TN-5508-4PoE/5516-8PoE Series	TN-5308 Series	TN-5305 Series	TN-5308-4PoE Series
Number of Ports						
Max. Number of Ports	10/18	8/16	8/16	8	5	8
Gigabit Ethernet, 10/100/1000 Mbps	2	–	–	–	–	–
Fast Ethernet, 10/100 Mbps	8/16	8/16	8 (4 PoE)/16 (8 PoE)	8	5	8 (4 PoE)
Power Supply						
12/24/36/48 VDC	✓	✓	–	✓	–	–
72/96/110 VDC	✓	✓	–	✓	–	–
80-300 VDC, 85-264 VAC	✓	✓	✓	–	–	–
24 VDC	–	–	✓	–	✓	–
48 VDC	–	–	✓	–	–	✓
24 VAC	–	–	–	–	✓	–
Installation Options						
DIN-Rail Mounting	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit
Panel Mounting	✓	✓	✓	✓	✓	✓
Operating Temperature						
0 to 60°C	✓	✓	✓	✓	✓	✓
-40 to 75°C	✓	✓	✓	✓	✓	✓
Redundancy and Backup Options						
Turbo Ring (Recovery Time < 20 ms)	✓	✓	✓	–	–	–
Turbo Chain (Recovery Time < 20 ms)	✓	✓	✓	–	–	–
STP/RSTP	✓	✓	✓	–	–	–
Bypass Relay	✓	–	–	–	–	–
Network Management and Control						
IPv6	✓	✓	✓	–	–	–
DHCP Option 66/67/82	✓	✓	✓	–	–	–
LLDP	✓	✓	✓	–	–	–
Modbus/TCP	✓	✓	✓	–	–	–
IGMP/GMRP	✓	✓	✓	–	–	–
Port Trunking	✓	✓	✓	–	–	–
IEEE 802.1X	✓	✓	✓	–	–	–
Port Lock	✓	✓	✓	–	–	–
SNMP/RMON	✓	✓	✓	–	–	–
VLAN	✓	✓	✓	–	–	–
QoS	✓	✓	✓	–	–	–
Relay Warning	✓	✓	✓	–	–	–
Standards and Certifications						
CE/FCC	✓	✓	✓	✓	✓	✓
UL 508	Pending	Pending	Pending	Pending	✓	Pending
Railway Applications: EN 50155 / EN 50121-4	✓ / ✓	✓ / ✓	✓ / ✓	✓ / ✓	✓ / Pending	✓ / ✓

IEC 61850-3 Ethernet Switches

Managed Ethernet Switches							

	PT-7728-PTP	PT-7828	PT-7728	PT-7528	PT-7710	PT-G7509	PT-508/510
Number of Ports							
Max. Number of Ports	28	28	28	28	10	9	8/10
Max. Number of Hardware PTP Ports	14	–	–	–	–	–	–
Gigabit Ethernet, 10/100/1000 Mbps	Up to 4	Up to 4	Up to 4	–	Up to 2	9	–
Fast Ethernet, 10/100 Mbps	Up to 28	Up to 28	Up to 28	Up to 28	Up to 10	9	8/10
Power Supply							
24 VDC, isolated	✓	✓	✓	✓	–	✓	✓
48 VDC, isolated	✓	✓	✓	✓	–	✓	✓
12/24/48 VDC	–	–	–	–	✓	–	–
88-300 VDC or 85-264 VAC, isolated	✓	✓	✓	✓	✓	✓	✓
Installation Options							
Rack Mounting	✓	✓	✓	✓	✓	✓	–
Panel Mounting	–	–	–	–	✓	–	w/ optional kit
DIN-Rail Mounting	–	–	–	–	–	–	✓
Operating Temperature							
-40 to 85°C	✓	✓	✓	✓	✓	✓	✓
Redundancy and Backup Options							
Turbo Ring (Recovery Time < 20 ms)	✓	✓	✓	✓	✓	✓	✓
Turbo Chain (Recovery Time < 20 ms)	✓	✓	✓	✓	✓	✓	✓
STP/RSTP	✓	✓	✓	✓	✓	✓	✓
Automatic Backup Configurator (ABC-01)	✓	✓	✓	✓	✓	✓	✓
Network Management and Control							
Layer 3 Switching	–	✓	–	–	–	–	–
IPv6	✓	–	✓	✓	✓	✓	✓
DHCP Option 66/67/82	✓	✓	✓	✓	✓	✓	✓
Hardware-based IEEE 1588 PTP V2	✓	–	–	–	–	–	–
LLDP	✓	✓	✓	✓	✓	✓	✓
Modbus/TCP	✓	✓	✓	✓	✓	✓	✓
IGMP/GMRP	✓	✓	✓	✓	✓	✓	✓
Port Trunking	✓	✓	✓	✓	✓	✓	✓
IEEE 802.1X	✓	✓	✓	✓	✓	✓	✓
Port Lock	✓	✓	✓	✓	✓	✓	✓
SNMP/RMON	✓	✓	✓	✓	✓	✓	✓
VLAN	✓	✓	✓	✓	✓	✓	✓
QoS	✓	✓	✓	✓	✓	✓	✓
Relay Warning	✓	✓	✓	✓	✓	✓	✓
Standards and Certifications							
CE/FCC	✓	✓	✓	✓	✓	✓	✓
UL/cUL 60950-1	Pending	✓	✓	✓	✓	✓	–
UL 508	–	–	–	–	–	–	Pending
IEC 61850-3 (Power Substation)	✓	✓	✓	✓	✓	✓	✓
IEEE 1613 (Power Substation)	✓	✓	✓	✓	✓	✓	✓
EN 50155/50121-4 (Railway Applications)	–	✓	✓	–	✓	–	–
NEMA TS2 (Traffic Control System)	–	✓	✓	–	✓	–	–

Industry-specific Ethernet Switches > IEC 61850-3 Ethernet Switches

Chassis Media Converters

	TRC-190-AC TRC-190-DC	CSM-200-1213 CSM-200-1214	CSM-200-1218
Optical Fiber Interface			
Fiber Connector	–	SC or ST	SC
Cable Requirements	–	Multi-mode: 50/125, 62.5/125, or 100/140 μm	Single-mode: 8.3/125, 8.7/125, 9/125, or 10/125 μm
Transmission Distance	–	5 km	40 km
Wavelength	–	1300 nm	1310 nm
Tx Output	–	-10 to -20 dBm	0 to -5 dBm
Rx Sensitivity	–	-32 dBm	-34 dBm
Point-to-Point Transmission	–	Point-to-Point Transmission: Half-duplex or full-duplex	Point-to-Point Transmission: Half-duplex or full-duplex
Fast Ethernet Interface			
Connector	–	RJ45	
Speed	–	10/100BaseT(X)	
Physical Characteristics			
Housing	SECC (1.2 mm)	–	
Dimensions (mm)	440 x 260 x 77 mm	86.8 x 136.5 x 21 mm	
Weight	5.2 kg (11.4 lbs), with one power module installed	CSM-200-1213: 115 g (0.25 lb) CSM-200-1214: 125 g (0.28 lb)	125 g (0.28 lb)
Number of Slots	19 slots in the front for slide-in modules, 2 slots in the back for power supply modules	–	
Environmental Limits			
Operating Temperature	0 to 60°C		
Operating Humidity	5 to 95% RH		
Storage Temperature	-20 to 75°C		
Power Requirements			
Input Voltage	AC model: Universal 100 to 240 VAC (47 to 63 Hz) DC model: 36 to 72 VDC	12 VDC	
Power Consumption	3.2 A @ 36 VDC (max. output)	180 mA @ 12 VDC	
Standards and Certifications			
Safety	UL 60950-1, EN 60950-1		
EMC	CE, FCC		
EMI	EN 55022 Class A, FCC Part 15 Subpart B Class A		
EMS	EN61000-4-2 (ESD) Level 4, EN61000-4-3 (RS) Level 2, EN61000-4-4 (EFT) Level 3, EN61000-4-5 (Surge) Level 3, EN61000-4-6 (CS) Level 2, EN61000-4-8 (PFMF) Level 3, EN61000-4-11 (DIPS)	EN61000-4-2 (ESD) Level 4, EN61000-4-3 (RS) Level 3, EN61000-4-4 (EFT) Level 3, EN61000-4-5 (Surge) Level 3, EN61000-4-6 (CS) Level 2, EN61000-4-8 (PFMF) Level 3, EN61000-4-11 (DIPS)	
Freefall	–	IEC 60068-2-32	
Reliability			
Warranty	5 years (see www.moxa.com/warranty)		

Ethernet-to-Fiber Media Converters

	IMC-101G Series	IMC-101 Series	IMC-P101 Series	PTC-101 Series (LV models)	PTC-101 Series (HV models)	IMC-21A Series	IMC-21 Series
IEEE Standards							
IEEE 802.3	✓	✓	✓	✓	✓	✓	✓
IEEE 802.3u	✓	✓	✓	✓	✓	✓	✓
IEEE 802.3ab	✓	–	–	–	–	–	–
IEEE 802.3z	✓	–	–	–	–	–	–
IEEE 802.3x	–	–	✓	✓	✓	✓	✓
IEEE 802.3af	–	–	✓	–	–	–	–
Interface							
RJ45 Ports	10/100/1000BaseT(X)	10/100BaseT(X)					
Fiber Modes	Multi-mode Fiber / Single-mode Fiber						
Fiber Ports	Optional 1000BaseSX/ LSX/LX/LH/LHX/ZX/ EZX (LC connector)	100BaseFX (SC or ST connectors)		100BaseFX (SC, ST, or LC connectors)		100BaseFX (SC or ST)	
LED Indicators	PWR1, PWR2, FAULT, 10/100M (TP port), 1000M (TP and Fiber port)	PWR1, PWR2, FAULT, 10/100M (TP port), 100M (Fiber port), FDX/COL (Fiber port)	PWR1, PWR2, Fiber Link/Act, PSE Indicator, 10/100M (TP port)	PWR1, PWR2, Fiber Link/Act, 10/100M (TP port)	PWR, Fiber Link/Act, 10/100M (TP port)	Power, 10/100M (TP port), 100M (fiber port), FDX/COL (fiber port)	
DIP Switches	Port break alarm, Fault Pass-Through, Fiber AN/Force	100BaseFX Full/Half duplex selection, Port break alarm	Auto Negotiation, Force TP Speed, Force TP Duplex, Link Fault Pass Through, Operating Mode, PSE, P.R.R. (PD Remote Reset)	Auto Negotiation, Force TP Speed, Force TP Duplex, Link Fault Pass Through, Operating Mode		TP port's 10/100M, Half/Full modes, and Force/ Auto modes, fiber connection's Full/Half mode, Link Fault Pass-Through (LFP)	
Alarm Contact	Relay output: 1 A @ 24 VDC					–	
Multi-mode Transmission Distance							
1000BaseSX	See SFP-1G series datasheet	–					
1000BaseLX	See SFP-1G series datasheet	–					
Single-mode Transmission Distance							
1000BaseLX	See SFP-1G series datasheet	–					
1000BaseLHX	See SFP-1G series datasheet	–					
1000BaseZX	See SFP-1G series datasheet	–					
Physical Characteristics							
Housing	Metal (IP30)						Plastic (IP30)
Dimensions (mm)	53.6 x 135 x 105	53.6 x 135 x 105	51.65 x 144.45 x 110.2	66.65 x 135.1 x 101.4	66.65 x 135.1 x 101.4	30 x125 x 79	25 x 109 x 97
Weight	630 g	630 g	525 g	690 g	690 g	170 g	125 g
Installation	DIN-Rail mounting, wall mounting (with optional kit)					DIN-Rail mounting	
Environmental Limits							
Operating Temperature	0 to 60°C for standard models, -40 to 75°C for wide-temperature models			-40 to 85°C		0 to 60°C for standard models, -40 to 75°C for wide-temperature models	-10 to 60°C
Operating Humidity	5 to 95% RH						
Storage Temperature	-40 to 85°C					-40 to 75°C	-40 to 70°C
Power Requirements							
Input Voltage	12 to 45 VDC redundant inputs		48 VDC (46 to 57 VDC), redundant inputs	20 VDC to 72 VDC	85 VAC to 264 VAC 88 VDC to 300 VDC	12 to 48 VDC	
Input Current	110 mA @ 24 VDC	160 mA @ 24 VDC	430 mA @ 48 VDC	170 mA @ 20 VDC	73 mA @ 85 VAC 47 mA @ 88 VDC	265 mA @ 12 VDC, 135 mA @ 24 VDC, 75 mA @ 48 VDC	150 mA @ 24 VDC
Connection	Removable terminal block						
Overload Current Protection	2.5 A	1.1 A	1.6 A	1.6 A	1.6 A	1.1 A	1.1 A
Reverse Polarity Protection	✓	✓	✓	✓	✓	✓	✓
PoE	–	–	PSE, provides up to 15.4 W for PD	–	–	–	–
Standards and Certifications							
Safety	UL 508	UL 508, UL 60950-1	UL 508	UL 60950-1	UL 60950-1	UL 60950-1	UL 508
EMI	FCC Part 15, CISPR (EN 55022) class A						
EMS	EN 61000-4-2 (ESD) Level 3, EN 61000-4-3 (RS) Level 3, EN 61000-4-4 (EFT) Level 3 EN 61000-4-5 (Surge) Level 2, EN 61000-4-6 (CS) Level 3, EN 61000-4-8, EN 61000-4-11		IEC 61000-4-2 (ESD) Level 4, IEC 61000-4-3 (RS) Level 3, IEC 61000-4-4 (EFT) Level 4, IEC 61000-4-5 (Surge) Level 3, IEC 61000-4-6 (CS) Level 3, IEC 61000-4-8 (PFMF) Level 1, IEC 61000-4-11	EN 61000-4-2 (ESD) Level 4, EN 61000-4-3 (RS) Level 3, EN 61000-4-4 (EFT) Level 4, EN 61000-4-5 (Surge) Level 4, EN 61000-4-6 (CS) Level 3, EN 61000-4-8 (PFMF) Level 5, EN 61000-4-11		EN 61000-4-2 (ESD) Level 3, EN 61000-4-3 (RS) Level 2, EN 61000-4-4 (EFT) Level 2, EN 61000-4-5 (Surge) Level 2, EN 61000-4-6 (CS) Level 2	EN 61000-4-2 (ESD) Level 3, EN 61000-4-3 (RS) Level 2, EN 61000-4-4 (EFT) Level 2, EN 61000-4-5 (Surge) Level 2, EN 61000-4-6 (CS) Level 2, EN 61000-4-8 (PFMF) Level 1
Hazardous Location	UL/cUL Class1, Division 2, Groups A, B, C, and D, ATEX Class1, Zone 2, Ex nC IIC		–	–	–	–	–
Power	–	–	–	IEC 61850-3, IEEE 1613	IEC 61850-3, IEEE 1613	–	–
Rail Traffc	–	–	–	EN 50155, EN 50121-4	EN 50155, EN 50121-4	–	–
Freefall	IEC 60068-2-32						
Shock	IEC 60068-2-27						
Vibration	IEC 60068-2-6						
Maritime	–	DNV, GL	–	–	–	–	–
MTBF	500,540 hrs	401,000 hrs	435,210 hrs	1,211,613 hrs	1,211,613 hrs	33,000 hrs	353,000 hrs
Reliability							
Warranty	5 years (see http://www.moxa.com/warranty)						

Ethernet Media Converters > *Ethernet-to-Fiber Media Converters*

Ethernet Fieldbus Gateways

	MGate MB3180	MGate MB3280	MGate MB3480	MGate MB3170 MGate MB3170-T MGate MB3170I MGate MB3170I-T	MGate MB3270 MGate MB3270-T MGate MB3270I MGate MB3270I-T	MGate EIP3170 MGate EIP3170-T MGate EIP3170I MGate EIP3170I-T	MGate EIP3270 MGate EIP3270-T MGate EIP3270I MGate EIP3270I-T
Ethernet Interface							
Number of Ports	1	1	1	2 (1 IP)	2 (1 IP)	2 (2 IPs)	2 (2 IPs)
Speed	10/100 Mbps	10/100 Mbps	10/100 Mbps	10/100 Mbps	10/100 Mbps	10/100 Mbps	10/100 Mbps
Connector	RJ45	RJ45	RJ45	RJ45	RJ45	RJ45	RJ45
Magnetic Isolation Protection	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV
Serial Interface							
Number of Ports	1	2	4	1	2	1	2
Serial Standards	RS-232/422/485	RS-232/422/485	RS-232/422/485	RS-232/422/485	RS-232/422/485	RS-232/422	RS-232/422
Connectors	DB9-M	DB9-M	DB9-M	RS-232: DB9-M; RS-422/485: Terminal Block	DB9-M	RS-232: DB9-M, RS-422: Terminal block	DB9-M
ESD Protection	15 KV	15 KV	15 KV	15 KV	15 KV	15 KV	15 KV
RS-485 Data Direction Control	ADDC®	ADDC®	ADDC®	ADDC®	ADDC®	ADDC®	ADDC®
Serial Communication Parameters	Data Bits: 7, 8; Stop Bits: 1, 2					Data Bits: 7, 8; Stop Bits: 1, 2	Data Bits: 7, 8; Stop Bits: 1, 2
Parity	None, Even, Odd, Space, Mark					None, Even, Odd, Space, Mark	None, Even, Odd, Space, Mark
Flow Control	RTS/CTS, DTR/DSR (RS-232 only)					RTS/CTS, DTR/DSR	RTS/CTS, DTR/DSR
Baudrate	50 bps to 921.6 Kbps					1200 bps to 921.6 Kbps	1200 bps to 921.6 Kbps
Isolation	–	–	–	I model only	I model only	I model only	I model only
Software							
Operation Modes	RTU Slave, RTU Master, ASCII Slave, ASCII Master					–	
Utilities	MGate Manager Suite for Windows 98/ME/NT/2000, Windows XP/2003/Vista/2008/7 x86/x64						
Smart Routing	✓	✓	✓	✓	✓	✓	✓
Serial Redirection	–	–	–	–	✓	–	✓
ProCOM	–	–	–	✓	✓	✓	✓
Priority Control	–	–	–	✓	✓	–	–
Ethernet Protocol	Modbus TCP					CIP (PCCC) on Ethernet/IP	CIP (PCCC) on Ethernet/IP
Serial Protocol	Modbus RTU/ASCII					DF1 Full-duplex	DF1 Full-duplex
Physical Characteristics							
Housing	Metal	Metal	Metal	Plastic	Plastic	Plastic	Plastic
Dimensions	22 x 52 x 80 mm	22 x 77 x 111 mm	35.5 x 103 x 158 mm	29 x 89.2 x 118.5 mm		29 x 89.2 x 118.5 mm	29 x 89.2 x 118.5 mm
Environmental Limits							
Operating Temperature	0 to 55°C	0 to 55°C	0 to 55°C	0 to 55°C or -40 to 75°C		0 to 55°C or -40 to 75°C	0 to 55°C or -40 to 75°C
Operating Humidity	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH
Storage Temperature	-20 to 70°C	-20 to 70°C	-20 to 70°C	-40 to 85°C	-40 to 85°C	-40 to 85°C	-40 to 85°C
Power Requirements							
Input Voltage	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC
Power Connector	Power jack	Power jack and terminal block		Terminal block	Terminal block	Terminal block	Terminal block
Standards and Certifications							
Safety	UL 60950-1, EN 60950-1						
Hazardous Location	–	–	–	UL/cUL Class I Division 2 Groups A/B/C/D, ATEX Zone 2			
EMC	CE, FCC						
EMI	EN 55022 Class A, FCC Part 15 Subpart B Class A						
EMS	EN 61000-4-2 (ESD): Level 2, EN 61000-4-3 (RS): Level 2, EN 61000-4-4 (EFT): Level 2, EN 61000-4-5 (Surge): Level 2, EN 61000-4-6 (CS): Level 2, EN 61000-4-8, EN 61000-4-11, EN 61000-4-12			EN 55024, EN 61000-4-2 (ESD) Level 3, EN 61000-4-3 (RS) Level 3, EN 61000-4-4 (EFT) Level 4, EN 61000-4-5 (Surge) Level 3, EN 61000-4-6 (CS) Level 3, EN 61000-4-8, EN 61000-4-11, EN 61000-4-12			
Marine	–	–	–	DNV		–	–
Shock	–	–	–	IEC 60068-2-27			
Freefall	–	–	–	IEC 60068-2-23			
Vibration	–	–	–	IEC 60068-2-6			
Reliability							
Warranty	5 years (see www.moxa.com/warranty)						

Ethernet Fieldbus Gateways

	MGate 4101-MB-PBS MGate 4101-MB-PBS-T	MGate 4101I-MB-PBS MGate 4101I-MB-PBS-T
PROFIBUS Interface		
Protocol	PROFIBUS DP-V0 Slave	
Number of Ports	1	
Data Rate	9600 to 12Mbps	
Connector	DB9-F	
Isolation Protection	Built-in (2KV)	
Modbus Interface		
Number of Ports	1	
Serial Standards	RS-232/422/485	
Connectors	DB9-M	
ESD Protection	15 KV	
RS-485 Data Direction Control	ADDC®	
Data Bits	7, 8	
Parity	None, Even, Odd, Space, Mark	
Flow Control	RTS/CTS, DTR/DSR (RS-232 only)	
Baudrate	50 bps to 921.6 Kbps	
Isolation Protection	–	✓
Software		
Utilities	MGate Manager	
Driver Support	Windows 98/ME/NT/2000, Windows XP/2003/Vista/2008/7 x86/x64	
QuickLink	✓	
Paging	✓	
Physical Characteristics		
Housing	Metal	
Dimensions	36 x 105 x 140 mm	
Environmental Limits		
Operating Temperature	0 to 60°C or -40 to 75°C	
Operating Humidity	5 to 95% RH	
Storage Temperature	-40 to 85°C	
Power Requirements		
Input Voltage	12 to 48 VDC	
Power Connector	Terminal block	
Standards and Certifications		
Safety	UL 60950-1, EN 60950-1	
EMC	CE, FCC	
EMI	EN 55022 Class A, FCC Part 15 Subpart B Class A	
EMS	EN 55024, EN 61000-4-2 (ESD) Level 3, EN 61000-4-3 (RS) Level 3, EN 61000-4-4 (EFT) Level 4, EN 61000-4-5 (Surge) Level 3, EN 61000-4-6 (CS) Level 3, EN 61000-4-8, EN 61000-4-11, EN 61000-4-12	
Shock	IEC 60068-2-27	
Freefall	IEC 60068-2-23	
Vibration	IEC 60068-2-6	
Reliability		
Warranty	5 years	

Smart M2M Gateways

	SMG-1100	SMG-6100
Computer		
CPU Speed	200 MHz	1 GHz
DRAM	32 MB	–
Flash	16 MB	–
LAN Interface		
10/100 Mbps Ethernet Ports	1	4
Magnetic Isolation Protection	1.5 KV	1.5 KV
100BaseFX Fiber Ports (multi-mode)	–	–
Cellular Interface		
Cellular Modes	GPRS/EDGE	–
Radio Frequency Bands	850/900/1800/1900 MHz	–
GPRS Class	12	–
EDGE Class	12	–
Coding Schemes	CS1 to CS4	–
Serial Interface		
RS-232/422/485 Ports	2 (DB9-M)	(Reserved)
ESD Protection	15 KV	–
Serial Communication Parameters	Data Bits: 7, 8; Stop Bits: 1, 2; Parity: None, Even, Odd, Space, Mark	–
Flow Control	RTS/CTS	–
Baudrate	300 bps to 921.6 Kbps (non-standard baudrates supported)	–
LEDs		
System	Ready	Power, Storage
LAN	10M, 100M	10M, 100M
Cellular	Cellular Enabled, Signal Strength	–
Serial	TxD, RxD	TxD, RxD
Physical Characteristics		
Housing	Aluminum (1 mm)	SECC sheet metal (1 mm)
Weight	1 kg	4.5 kg
Dimensions	44 x 119 x 40 mm	440 x 315 x 450 mm
Mounting	DIN-Rail, wall	Rack
Antenna Length	85 mm	–
Environmental Limits		
Operating Temperature	-10 to 60°C	
Operating Humidity	5 to 95% RH	
Storage Temperature	-20 to 80°C	
Anti Vibration/Shock	2 g's / 6 g's with DIN-Rail, 20 g's with wall mount	2 g's / 20 g's
Standards and Certifications		
Safety	UL 60950-1, CSA C22.2 No. 60950-1-03, EN 60950-1	UL 60950-1, CSA C22.2 No. 60950-1-03, EN 60950-1, CCC GB4943
EMC	CE, FCC	
EMI	EN 55022 Class A, FCC Part 15 Subpart B Class A	
EMS	EN 55024	
Radio	EN 301 489-1, EN 301 489-7, EN 301 511	–
Green Product	RoHS, CRoHS, WEEE	
Reliability		
Buzzer, RTC, WDT	✓	✓
Warranty	5 years (see www.moxa.com/warranty)	

Industrial Wireless AP/Bridge/Client Solutions

	Dual-RF Wireless AP/Bridge/Client				Single-RF Wireless AP/Bridge/Client				Single-RF Wireless Client	
	AWK-6232	AWK-5232	AWK-6222	AWK-5222	AWK-4131	AWK-3131	AWK-4121	AWK-3121	AWK-1127	AWK-1121
WLAN										
IEEE802.11 Standards	a/b/g/n		a/b/g		a/b/g/n		a/b/g			
Number of RF modules	2	2	2	2	1	1	1	1	1	1
Interfaces										
Number of Antenna Connectors	4	4	4	4	2	2	2	2	2	2
Antenna Connector Type*	N-type (female)	AWK-5232: RP-SMA (female) AWK-5232-M12: QMA (female)	N-type (female)	AWK-5222: RP-SMA (female) AWK-5222-M12: QMA (female)	N-type (female)	AWK-3131: RP-SMA (female) AWK-3131-M12: QMA (female)	N-type (female)	AWK-3121/3121-SSC: RP-SMA (female) AWK-3121-M12: QMA (female)	RP-SMA (female)	RP-SMA (female)
Total Number of LAN Ports	2	2	2	2	1	1	1	1	1	1
LAN Port Type	M12	AWK-5232: RJ45 AWK-5232-M12: M12	RJ45	AWK-5222: RJ45 AWK-5222-M12: M12	M12/ SFP (Combo)	AWK-3131: RJ45/ SFP (Combo) AWK-3131-M12: M12	RJ45	AWK-3121: RJ45 AWK-3121-SSC: SC AWK-3121-M12: M12	RJ45	RJ45
LAN Port Speed	10/100/1000BaseT(X)	10/100/1000BaseT(X)	10/100BaseT(X)	10/100BaseT(X)	10/100/1000BaseT(X) or 1000BaseSFP	AWK-3131: 10/100/1000BaseT(X) or 1000BaseSFP AWK-3131-M12: 10/100/1000BaseT(X)	10/100BaseT(X)	AWK-3121: 10/100BaseT(X) AWK-3121-SSC: 100BaseFX AWK-3121-M12: 10/100BaseT(X)	10/100BaseT(X)	10/100BaseT(X)
RS-232 Console Port	1, waterproof RJ45	1, RJ45	1, waterproof RJ45	1, RJ45	1, waterproof RJ45	1, RJ45	1, waterproof RJ45	1, RJ45	1, RJ45	1, RJ45
DB9 RS-232/422/485 Serial Port	-	-	-	-	-	-	-	-	1	-
DI/DO	✓	✓	✓	✓	✓	✓	✓	✓	-	-
DI/DO Connector Type	8-pin M12 (A-coding, male)	10-pin terminal block	8-pin M12 (A-coding, female)	10-pin terminal block	8-pin M12 (A-coding, male)	10-pin terminal block	8-pin M12 (A-coding, female)	10-pin terminal block	-	-
Housing Protection										
IP-rating	IP68	IP30	IP68	IP30	IP68	IP30	IP68	IP30	IP30	IP30
Installation Options										
DIN-Rail Mounting	✓ (optional)	✓	✓ (optional)	✓	✓ (optional)	✓	✓ (optional)	✓	✓	✓
Wall Mounting	✓	✓ (optional)	✓	✓ (optional)	✓	✓ (optional)	✓	✓ (optional)	✓ (optional)	✓ (optional)
Pole Mounting	✓ (optional)	-	✓ (optional)	-	✓ (optional)	-	✓ (optional)	-	-	-
Supported Operating Temperatures										
-25 to 60°C	-	✓	-	✓	-	✓	-	✓	-	-
0 to 60°C	-	-	-	-	-	-	-	-	✓	✓
-40 to 75°C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Power Requirements										
Input Voltage	12 to 48 VDC									
Connector	5-pin M12 (A-coding)	10-pin terminal block	5-pin M12 (A-coding)	10-pin terminal block	5-pin M12 (A-coding)	10-pin terminal block	5-pin M12 (A-coding)	10-pin terminal block	4-pin terminal block	4-pin terminal block
PoE Support	✓ (PoE+ only)	✓ (PoE+ only)	✓	✓	✓	✓	✓	✓	✓*	✓*
Reverse Polarity Protection	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Standards and Certifications										
Safety	UL 60950-1, EN 60950-1									
Hazardous Location	-	-	UL/cUL CI D2, ATEX Zone 2 (Pending)	-	-	-	UL/cUL CI D2, ATEX Zone 2 (Pending)	UL/cUL CI D2, ATEX Zone 2 (Pending)	-	-
EMC	EN 301 489-1/17, FCC Part 15 Subpart B, EN55022/55024	EN 301 489-1/17, FCC Part 15 Subpart B, EN55022/55024 IEC 61000-6-2/4	EN 301 489-1/17, FCC Part 15 Subpart B, EN55022/55024	EN 301 489-1/17, FCC Part 15 Subpart B, EN55022/55024 IEC 61000-6-2/4	EN 301 489-1/17, FCC Part 15 Subpart B, EN55022/55024					
Radio	EN 300 328, EN 301 893, DSPR (Japan)		EN 300 328, EN 301 893		EN 300 328, EN 301 893, DSPR (Japan)				EN 300 328, EN 301 893, DSPR (Japan)	
Rail Traffic	EN 50155 (Environmental), EN 50121-1/4 (Environmental)								-	-

* For PoE models only

Cellular Routers

	OnCell 5004-HSPA	OnCell 5104-HSPA	OnCell 5004	OnCell 5104
Cellular Interface				
Standards	GSM/GPRS/EDGE/UMTS/HSPA+		GSM/GPRS	
GSM/GPRS/EDGE band Options	850/900/1800/1900 MHz		850/900/1800/1900 MHz	
UMTS/HSDPA/HSPA+ band Options	800/850/AWS/1900/2100 MHz	–	–	
HSPA+ Data Rate	14.4 Mbps UL, 5.76 Mbps DL	–	–	
HSDPA Data Rate	3.6 Mbps UL, 386 Kbps DL	–	–	
EDGE Multi-slot	Class 12	Class 12	–	–
EDGE Terminal Device	Class B	Class B	–	–
GPRS Multi-slot	Class 12	Class 12	Class 10	Class 10
GPRS Terminal Device	Class B	Class B	Class B	Class B
GPRS Coding Schemes	CS1 to CS4	CS1 to CS4	CS1 to CS4	CS1 to CS4
Operator Network	✓	✓	–	–
WAN Interface				
Number of Ports	1	1	1	1
Ethernet	10/100M (RJ45)	10/100M (RJ45)	10/100M (RJ45)	10/100M (RJ45)
LAN Interface				
Number of Ports	4	4	4	4
Ethernet	10/100M (RJ45)	10/100M (RJ45)	10/100M (RJ45)	10/100M (RJ45)
SIM Interface				
Number of SIMs	2	2	2	2
SIM Control	3 V	3 V	3 V	3 V
I/O Interface				
Alarm Contacts	–	1	–	1
Digital Inputs	–	2	–	2
Software				
Network Protocols	UDP/TCP, SNTP, ICMP, DDNS, DHCP/BOOTP, PPPoE, PPP, DNS Relay, HTTPS, Telnet, IPSec			
Router/Firewall	NAT, port forwarding, routing			
Authentication	Local user-name and password			
Security	IP filtering			
Management Software				
OnCell Central	Centralized management solution for accessing private IPs from the internet			
Physical Characteristics				
Housing	Aluminum (IP30)	Aluminum (IP30)	Aluminum (IP30)	Aluminum (IP30)
Weight	505±5 g	645±5 g	505±5 g	645±5 g
Dimensions (mm)	158 x 103 x 34	160 x 50 x 103	158 x 103 x 34	160 x 50 x 103
Environmental Limits				
Operating Temperature	-30 to 55°C	Standard Models: -30 to 55°C Wide Temp. Models: -30 to 70°C	-30 to 55°C	-30 to 55°C
Operating Humidity	5 to 95%	5 to 95%	5 to 95%	5 to 95%
Storage Temperature	-40 to 75°C	-40 to 75°C	-40 to 75°C	-40 to 75°C
Power Requirements				
Input Voltage	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC
Power Cosumption	400 mA (Idle), 900 mA (max)	450 mA (Idle), 950 mA (max)	400 mA (Idle), 900 mA (max)	450 mA (Idle), 950 mA (max)
Connector Type	2-pin terminal block and 1 power jack	10-pin terminal block	2-pin terminal block and 1 power jack	10-pin terminal block
Standards and Certifications				
Safety	UL60950-1			
EMC	EN 55022 Class A, EN 55024, FCC Part 15, Subpart B Class A			
Radio Frequency	FCC Part 22H, FCC Part 24E, EN 301 489-1, EN 301 489-7, EN 301 511, EN 301 489-24		FCC Part 22H, FCC Part 24E, EN 301 489-1, EN 301 489-7, EN 301 511	
Reliability				
Warranty	5 years (See www.moxa.com/warrenty)			

Cellular IP Gateways

	OnCell G3110-HSPA	OnCell G3150-HSPA	OnCell G3110	OnCell G3150
Cellular Interface				
Standards	GSM/GPRS/EDGE/UMTS/HSPA+		GSM/GPRS/EDGE	
GSM/GPRS/EDGE band Options	850/900/1800/1900 MHz		850/900/1800/1900 MHz	
UMTS/HSDPA/HSPA+ band Options	800/850/AWS/1900/2100 MHz		–	–
HSPA+ Data Rate	14.4 Mbps UL, 5.76 Mbps DL		–	–
HSDPA Data Rate	3.6 Mbps UL, 386 Kbps DL		–	–
EDGE Multi-slot	Class 12	Class 12	Class 12	Class 12
EDGE Terminal Device	Class B	Class B	Class B	Class B
GPRS Multi-slot	Class 12	Class 12	Class 12	Class 12
GPRS Terminal Device	Class B	Class B	Class B	Class B
GPRS Coding Schemes	CS1 to CS4	CS1 to CS4	CS1 to CS4	CS1 to CS4
Operator Network	–	–	–	–
LAN Interface				
Number of Ports	1	1	1	1
Ethernet	10/100M (RJ45)	10/100M (RJ45)	10/100M (RJ45)	10/100M (RJ45)
SIM Interface				
Number of SIMs	1	1	1	1
SIM Control	3 V	3 V	3 V	3 V
Serial Interface				
Number of Ports	1	1	1	1
Serial Standards	RS-232	RS-232/422/485	RS-232	RS-232/422/485
Connector	DB9-M	DB9-M and TB	DB9-M	DB9-M and TB
Serial Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark			
Flow Control	RTS/CTS, XON/XOFF			
Baudrate	50 bps to 921.6 Kbps			
I/O Interface				
Alarm Contacts	1	1	1	1
Digital Inputs	2	2	2	2
Software				
Network Protocols	ICMP, TCP/IP, UDP, DHCP, Telnet, DNS, SNMP, HTTP, SMTP, HTTPS, SNTP, ARP, SSL, IPSec			
Router/Firewall	NAT, port forwarding			
Authentication	Local user-name and password			
Security	Accessible IP list			
Operation Modes	Real COM, Secure Real COM, TCP Server, Secure TCP Server, TCP Client, Secure TCP Client, UDP, RFC2217, Ethernet Modem, SMS Tunnel			
Utilities	Windows 2000/XP/2003/Vista/Server 2008, Windows XP/2003/Vista/Server 2008 x64 Edition			
Windows Real COM Drivers	Windows 2000/XP/2003/Vista/Server 2008, Windows XP/2003/Vista/Server 2008 x64 Edition			
Management Software				
OnCell Central	Centralized management solution for accessing private IPs from the Internet			
Physical Characterstics				
Housing	Aluminum (IP30)			
Weight	440±5 g			
Dimensions (mm)	28 x 126 x 93			
Environmental Limits				
Operating Temperature	Standard Models: -30 to 55°C Wide Temp. Models: -30 to 70°C	Standard Models: -30 to 55°C Wide Temp. Models: -30 to 70°C	Standard Models: -30 to 55°C Wide Temp. Models: -30 to 70°C	Standard Models: -30 to 55°C Wide Temp. Models: -30 to 70°C
Operating Humidity	5 to 95%			
Storage Temperature	-40 to 75°C			
Power Requirements				
Input Voltage	12 to 48 VDC			
Power Cosumption	400 mA (Idle), 900 mA (max)			
Connector Type	10-pin terminal block			
Standards and Certifications				
Safety	UL60950-1			
EMC	EN 55022 Class A, EN 55024, FCC Part 15 Subpart B Class A			
Radio Frequency	FCC Part 22H, FCC Part 24E, EN 301 489-1, EN 301 489-7, EN 301 489-24, EN 301 511			FCC Part 22H, FCC Part 24E, EN 301 489-1, EN 301 489-7, EN 301 511, PTCRB
Reliability				
Warranty	5 years (see www.moxa.com/warrenty)			

Cellular IP Gateways and Cellular Modems

	Cellular IP Gateways				Cellular Modems	
	OnCell G3111	OnCell G3151	OnCell G3211	OnCell G3251	OnCell G2111 OnCell G2111-T	OnCell G2151I
Cellular Interface						
Standards	GSM/GPRS	GSM/GPRS	GSM/GPRS	GSM/GPRS	GSM/GPRS	GSM/GPRS
GSM/GPRS Options	850/900/1800/1900 MHz					
GPRS Multi-slot Class	Class 10	Class 10	Class 10	Class 10	Class 10	Class 10
GPRS Terminal Device Class	Class B	Class B	Class B	Class B	Class B	Class B
GPRS Coding Schemes	CS1 to CS4	CS1 to CS4	CS1 to CS4	CS1 to CS4	CS1 to CS4	CS1 to CS4
LAN Interface						
Number of Ports	1	1	1	1	–	–
Ethernet	10/100 Mbps (RJ45)	10/100 Mbps (RJ45)	10/100 Mbps (RJ45)	10/100 Mbps (RJ45)	–	–
SIM Interface						
Number of SIMs	1	1	1	1	1	1
SIM Control	3 V	3 V	3 V	3 V	3 V	3 V
Serial Interface						
Number of Ports	1	1	2	2	1	1
Serial Standards	RS-232	RS-232/422/485	RS-232	RS-232/422/485	RS-232	RS-232/422/485
Connector	DB9-M	DB9-M	DB9-M	DB9-M	DB9-F	DB9-F and 5-pin TB
2.5 KV Optical Isolation	–	–	–	–	–	✓
Serial Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark				Data Bits: 7, 8; Stop Bits: 1, 2; Parity: None, Even, Odd, Space, Mark	
Flow Control	RTS/CTS, XON/XOFF				RTS/CTS	
Baudrate	50 bps to 921.6 Kbps				300 bps to 115.2 Kbps	
Software						
Network Protocols	ICMP, TCP/IP, UDP, DHCP, Telnet, DNS, SNMP, HTTP, HTTPS, SMTP, SNTP, ARP				–	–
Router/Firewall	NAT, port forwarding					
Authentication	Local user-name and password				–	–
Security	Accessible IP list				–	–
Operation Modes	Real COM, TCP Server, TCP Client, UDP, SMS Tunnel, Reverse Real COM				–	–
Configuration and Management Options	SNMP MIB-II, v3, DDNS, IP Report, Web/Telnet/Serial Console, Serial Logging				–	–
Utilities	Provided for Windows 2000/XP/2003/Vista/Server 2008, Windows XP/2003/Vista/Server 2008 x64				–	–
Windows Real COM Drivers	Windows 2000/XP/2003/Vista/Server 2008, Windows XP/2003/Vista/Server 2008 x64				–	–
Management Software						
OnCell Central	Centralized management solution for accessing private IPs from the Internet				–	–
Physical Characteristics						
Housing	Aluminum (IP30)				ABS + PC (IP30)	
Weight	165±5 g		185±5 g		150 ± 5 g	
Dimensions	111 x 77 x 26 mm				27 x 123 x 79 mm	
Environmental Limits						
Operating Temperature	-30 to 55°C				0 to 55°C or -30 to 75°C	0 to 55°C
Operating Humidity	5 to 95%					
Storage Temperature	-40 to 75°C					
Power Requirements						
Input Voltage	12 to 48 VDC					
Power Cosumption	350 mA (Idle), 900 mA (max)				100 mA (idle), 625 mA (max.)	
Connector Type	Power jack					
Standards and Certifications						
Safety	UL 60950-1					
EMC	EN 55022 Class A, EN 55024, FCC Part 15 Subpart B Class A					
Radio	EN 301 489-1, EN 301 489-7, EN 301 511	EN 301 489-1, EN 301 489-7, EN 301 512, PTCRB	EN 301 489-1, EN 301 489-7, EN 301 511		FCC Part 22H, FCC Part 24E, EN 301 489-1, EN 301 489-7, EN 301 511	
Reliability						
Warranty	5 years (see www.moxa.com/warranty)					

NPort® 6000 Terminal Servers

	NPort 6150	NPort 6250	NPort 6250-M-SC	NPort 6250-S-SC	NPort 6450	NPort 6610-8	NPort 6610-8-48V	NPort 6610-16	NPort 6610-16-48V
LAN Interface									
10/100BaseT(X) Ports	1 port (8-pin RJ45 connector)								
Magnetic Isolation Protection	1.5 KV								
100BaseFX Ports	–	–	1 (multi-mode)	1 (single-mode)	–	–	–	–	–
Expansion Modules									
10/100BaseT(X) (RJ45)	–	–	–	–	✓	✓	✓	✓	✓
Multi-mode Fiber (SC)	–	–	–	–	✓	✓	✓	✓	✓
Single-mode Fiber (SC)	–	–	–	–	✓	✓	✓	✓	✓
Modem	–	–	–	–	✓	✓	✓	✓	✓
Serial Interface									
RS-232 Ports	–	–	–	–	–	8	8	16	16
RS-232/422/485 Ports	1	2	2	2	4	–	–	–	–
Connectors	DB9 male	DB9 male	DB9 male	DB9 male	DB9 male	8-pin RJ45	8-pin RJ45	8-pin RJ45	8-pin RJ45
Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark								
Flow Control	RTS/CTS, DTR/DSR, XON/XOFF								
Baudrate	50 bps to 921.6 Kbps (supports non-standard baudrates)								
15 KV ESD Protection	✓	✓	✓	✓	✓	✓	✓	✓	✓
2 KV isolation protection	–	–	–	–	–	–	–	–	–
RS-485 Data Direction Control	ADDC	ADDC	ADDC	ADDC	ADDC	ADDC	ADDC	ADDC	ADDC
RS-232 Console Port	✓	✓	✓	✓	✓	✓	✓	✓	✓
Advanced Features									
Serial Data Log	64 KB	64 KB	64 KB	64 KB	64 KB	64 KB	64 KB	64 KB	64 KB
Offline Port Buffering	64 KB	64 KB	64 KB	64 KB	64 KB	64 KB	64 KB	64 KB	64 KB
SD Slot	–	✓	✓	✓	✓	✓	✓	✓	✓
Software									
Network Protocols	ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP V1/V2c/V3, DDNS, HTTP, SMTP, HTTPS, SSL, SSH, PPPoE, RFC2217, IPv6, IPv4, Turbo Ring, Turbo Ring 2								
Security Protocols	DES, 3DES, AES, SSH, SSL								
Configuration Options	Web Console, Telnet Console, Serial Console, Windows Search Utility								
Driver Support	Windows Real COM Drivers (for Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7 x86/x64, Windows Embedded CE 5.0/6.0, Windows XP Embedded), Linux Real TTY driver (for 2.4.x, 2.6.x, 3.0.x), Fixed TTY driver (for SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x)								
Management	SNMP MIB-II								
IP Routing	Static, RIP-I, RIP-II								
Standard Operation Modes	Real COM, TCP Server, TCP Client, UDP, Pair Connection, RFC2217, Terminal, Reverse Telnet, Ethernet Modem, Printer, PPP, Disabled								
Secure Operation Modes	Secure Real COM, Secure TCP Server, Secure TCP Client, Secure Pair Connection, SSH, Reverse SSH								
Terminal Sessions	8 sessions per port								
Physical Characteristics									
Housing	Metal								
Weight	700 g	730 g	730 g	730 g	1020 g	3460 g	3460 g	3580 g	3580 g
Dimensions (mm)	67 x 100.4 x 29	77 x 111 x 29	77 x 111 x 29	77 x 111 x 29	158 x 103 x 35	440 x 195 x 44	440 x 195 x 44	440 x 195 x 44	440 x 195 x 44
Environmental Limits									
Operating Temperature	0 to 55°C								
Storage Temperature	-40 to 75°C								
Ambient Relative Humidity	5 to 95% (non-condensing)								
Power Requirements									
Input Voltage	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC	100 to 240 VAC	±48 VDC	100 to 240 VAC	±48 VDC
Power Consumption	285 mA @ 12 V 150 mA @ 24 V	333 mA @ 12 V 173 mA @ 24 V	428 mA @ 12 V 219 mA @ 24 V	376 mA @ 12 V 193 mA @ 24 V	730 mA @ 12 V 330 mA @ 24 V	285 mA @ 100 V 190 mA @ 240 V	293 mA @ 48 V	285 mA @ 100 V 190 mA @ 240 V	293 mA @ 48 V
Standards and Certifications									
Safety	UL 60950-1, EN 60950-1								
EMC	CE (EN 55022 Class A, EN 55024), FCC Part 15 Subpart B Class A								
Reliability									
Buzzer, RTC, WDT	✓	✓	✓	✓	✓	✓	✓	✓	✓
MTBF	231,709 hrs	226,128 hrs	225,762 hrs	225,762 hrs	120,354 hrs	135,891 hrs	135,891 hrs	102,373 hrs	102,373 hrs
Warranty	5 years (see www.moxa.com/warranty)								

NPort® 6000 Terminal Servers
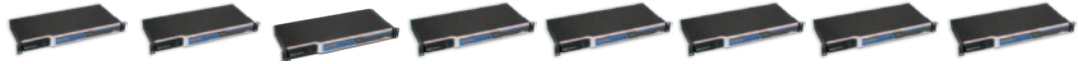
	NPort 6610-32	NPort 6610-32-48V	NPort 6650-8 NPort 6650-8-T	NPort 6650-8-48V	NPort 6650-16 NPort 6650-16-T	NPort 6650-16-48V	NPort 6650-32	NPort 6650-32-48V
LAN Interface								
10/100BaseT(X) Ports	1 port (8-pin RJ45 connector)							
Magnetic Isolation Protection	1.5 KV							
100BaseFX Ports	–							
Expansion Modules								
10/100BaseT(X) (RJ45)	✓	✓	✓	✓	✓	✓	✓	✓
Multi-mode Fiber (SC)	✓	✓	✓	✓	✓	✓	✓	✓
Single-mode Fiber (SC)	✓	✓	✓	✓	✓	✓	✓	✓
Modem	✓	✓	✓	✓	✓	✓	✓	✓
Serial Interface								
RS-232 Ports	32	32	–	–	–	–	–	–
RS-232/422/485 Ports	–	–	8	8	16	16	32	32
Connectors	8-pin RJ45							
Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark							
Flow Control	RTS/CTS, DTR/DSR, XON/XOFF							
Baudrate	50 bps to 921.6 Kbps (supports non-standard baudrates)							
15 KV ESD Protection	✓	✓	✓	✓	✓	✓	✓	✓
2 KV isolation protection	–	–	–	–	–	–	–	–
RS-485 Data Direction Control	ADDC	ADDC	ADDC	ADDC	ADDC	ADDC	ADDC	ADDC
RS-232 Console Port	✓	✓	✓	✓	✓	✓	✓	✓
Advanced Features								
Serial Data Log	64 KB	64 KB	64 KB	64 KB	64 KB	64 KB	64 KB	64 KB
Offline Port Buffering	64 KB	64 KB	64 KB	64 KB	64 KB	64 KB	64 KB	64 KB
SD Slot	✓	✓	✓	✓	✓	✓	✓	✓
Software								
Network Protocols	ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP V1/V2c/V3, DDNS, HTTP, SMTP, HTTPS, SSL, SSH, PPPoE, RFC2217, IPv6, IPv4, Turbo Ring, Turbo Ring 2							
Security Protocols	DES, 3DES, AES, SSH, SSL							
Configuration Options	Web Console, Telnet Console, Serial Console, Windows Search Utility							
Driver Support	Windows Real COM Drivers (for Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7 x86/x64, Windows Embedded CE 5.0/6.0, Windows XP Embedded), Linux Real TTY driver (for 2.4.x, 2.6.x, 3.0.x), Fixed TTY driver (for SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, \AIX 5.x)							
Management	SNMP MIB-II							
IP Routing	Static, RIP-I, RIP-II							
Standard Operation Modes	Real COM, TCP Server, TCP Client, UDP, Pair Connection, RFC2217, Terminal, Reverse Telnet, Ethernet Modem, Printer, PPP, Disabled							
Secure Operation Modes	Secure Real COM, Secure TCP Server, Secure TCP Client, Secure Pair Connection, SSH, Reverse SSH							
Terminal Sessions	8 sessions per port							
Physical Characteristics								
Housing	Metal							
Weight	3600 g	3600 g	3460 g	3460 g	3580 g	3580 g	3600 g	3600 g
Dimensions (mm)	440 x 195 x 44	440 x 195 x 44	440 x 195 x 44	440 x 195 x 44	440 x 195 x 44	440 x 195 x 44	440 x 195 x 44	440 x 195 x 44
Environmental Limits								
Operating Temperature — Standard Temperature	0 to 55°C							
Operating Temperature — Wide Temperature	–	–	-40 to 75°C	–	-40 to 75°C	–	–	–
Storage Temperature	-40 to 75°C							
Ambient Relative Humidity	5 to 95% (non-condensing)							
Power Requirements								
Input Voltage	100 to 240 VAC	±48 VDC	100 to 240 VAC	±48 VDC	100 to 240 VAC	±48 VDC	100 to 240 VAC	±48 VDC
Power Consumption	285 mA @ 100 V 190 mA @ 240 V	293 mA @ 48 V	285 mA @ 100 V 190 mA @ 240 V	293 mA @ 48 V	285 mA @ 100 V 190 mA @ 240 V	293 mA @ 48 V	285 mA @ 100 V 190 mA @ 240 V	293 mA @ 48 V
Standards and Certifications								
Safety	UL 60950-1, EN 60950-1							
EMC	CE (EN 55022 Class A, EN 55024), FCC Part 15 Subpart B Class A							
Reliability								
Buzzer, RTC, WDT	✓	✓	✓	✓	✓	✓	✓	✓
MTBF	68,707 hrs	68,707 hrs	135,370 hrs	135,370 hrs	101,783 hrs	101,783 hrs	68,177 hrs	68,177 hrs
Warranty	5 years (see www.moxa.com/warranty)							

CN2600 Terminal Servers
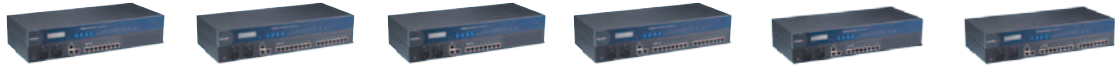
	CN2610-8	CN2610-16	CN2610-8-2AC	CN2610-16-2AC	CN2650-8	CN2650-16
LAN Interface						
10/100BaseT(X) Ports	2 ports (2 IPs, 8-pin RJ45 connectors)					
Magnetic Isolation Protection	1.5 KV					
Serial Interface						
RS-232 Ports	8	16	8	16	–	–
RS-232/422/485 Ports	–	–	–	–	8	16
Connectors	8-pin RJ45					
Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark					
Flow Control	RTS/CTS, DTR/DSR, XON/XOFF					
Baudrate	50 bps to 921.6 Kbps					
15 KV ESD Protection	✓	✓	✓	✓	✓	✓
2 KV isolation protection	–	–	–	–	–	–
RS-485 Data Direction Control	ADDC®	ADDC®	ADDC®	ADDC®	ADDC®	ADDC®
RS-232 Console Port	✓	✓	✓	✓	✓	✓
Advanced Features						
Serial Data Log	128 KB					
Offline Port Buffering	128 KB					
Software						
Network Protocols	ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP V1/V2c, HTTP, SMTP, ARP, PPPoE, DDNS		ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP V1/V2c/V3, HTTP, SMTP, ARP, PPPoE, DDNS		ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP V1/V2c, HTTP, SMTP, ARP, PPPoE, DDNS	
Security Protocols	RADIUS, HTTPS, SSH, PAP, CHAP					
Configuration Options	Web Console, Telnet Console, Serial Console, Windows Search Utility					
Driver Support	Windows Real COM Drivers (for Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7 x86/x64, Windows Embedded CE 5.0/6.0, Windows XP Embedded), Linux Real TTY driver (for 2.4.x, 2.6.x, 3.0.x), Fixed TTY driver (for SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x)					
Management	SNMP MIB-II					
IP Routing	Static, RIP-I, RIP-II					
Standard Operation Modes	Real COM, TCP Server, TCP Client, UDP, RFC2217, Terminal, Reverse Telnet, PPP, DRDAS, Redundant COM, Disabled					
Terminal Sessions	8 sessions per port					
Physical Characteristics						
Housing	Metal					
Weight	3525 g	3560 g	3760 g	3980 g	3740 g	3790 g
Dimensions (mm)	440 x 198 x 45.5					
Environmental Limits						
Operating Temperature	0 to 55°C					
Storage Temperature	-40 to 75°C					
Ambient Relative Humidity	5 to 95% (non-condensing)					
Power Requirements						
Dual Power Inputs for Redundancy	–	–	✓	✓	–	–
Input Voltage	100 to 240 VAC, 47 to 63 Hz					
Power Consumption	235 mA @ 100 VAC, 145 mA @ 240 V					
Standards and Certifications						
Safety	UL 60950-1, EN 60950-1					
EMC	CE (EN 55022 Class A, EN 55024), FCC Part 15 Subpart B Class A					
Reliability						
Buzzer, RTC, WDT	✓	✓	✓	✓	✓	✓
MTBF	99,302 hrs					
Warranty	5 years (see www.moxa.com/warranty)					

CN2600 Terminal Servers

	CN2650-8-2AC CN2650-8-2AC-T	CN2650-16-2AC CN2650-16-2AC-T	CN2650I-8	CN2650I-16	CN2650I-8-2AC	CN2650I-16-2AC
LAN Interface						
10/100BaseT(X) Ports	2 ports (2 IPs, 8-pin RJ45 connectors)					
Magnetic Isolation Protection	1.5 KV					
Serial Interface						
RS-232 Ports	–					
RS-232/422/485 Ports	8	16	8	16	8	16
Connectors	8-pin RJ45	8-pin RJ45	DB9 male	DB9 male	DB9 male	DB9 male
Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark					
Flow Control	RTS/CTS, DTR/DSR, XON/XOFF					
Baudrate	50 bps to 921.6 Kbps					
15 KV ESD Protection	✓	✓	✓	✓	✓	✓
2 KV isolation protection	–	–	✓	✓	✓	✓
RS-485 Data Direction Control	ADDC®	ADDC®	ADDC®	ADDC®	ADDC®	ADDC®
RS-232 Console Port	✓	✓	✓	✓	✓	✓
Advanced Features						
Serial Data Log	128 KB					
Offline Port Buffering	128 KB					
Software						
Network Protocols	ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP V1/V2c/V3, HTTP, SMTP, ARP, PPPoE, DDNS		ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP V1/V2, HTTP, SMTP, ARP, PPPoE, DDNS		ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP V1/V2c/V3, HTTP, SMTP, ARP, PPPoE, DDNS	
Security Protocols	RADIUS, HTTPS, SSH, PAP, CHAP					
Configuration Options	Web Console, Telnet Console, Serial Console, Windows Search Utility					
Driver Support	Windows Real COM Drivers (for Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7 x86/x64, Windows Embedded CE 5.0/6.0, Windows XP Embedded), Linux Real TTY driver (for 2.4.x, 2.6.x, 3.0.x), Fixed TTY driver (for SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x)					
Management	SNMP MIB-II					
IP Routing	Static, RIP-I, RIP-II					
Standard Operation Modes	Real COM, TCP Server, TCP Client, UDP, RFC2217, Terminal, Reverse Telnet, PPP, DRDAS, Redundant COM, Disabled					
Terminal Sessions	8 sessions per port					
Physical Characteristics						
Housing	Metal					
Weight	3900 g	3980 g	3666 g	3776 g	3932 g	4022 g
Dimensions (mm)	440 x 198 x 45.5					
Environmental Limits						
Operating Temperature — Standard Temperature	0 to 55°C					
Operating Temperature — Wide Temperature	-40 to 75°C	-40 to 75°C	–	–	–	–
Storage Temperature	-40 to 75°C					
Ambient Relative Humidity	5 to 95% (non-condensing)					
Power Requirements						
Dual Power Inputs for Redundancy	✓	✓	–	–	✓	✓
Input Voltage	100 to 240 VAC, 47 to 63 Hz					
Power Consumption	235 mA @ 100 VAC, 145 mA @ 240 VAC					
Standards and Certifications						
Safety	UL 60950-1, EN 60950-1					
EMC	CE (EN 55022 Class A, EN 55024), FCC Part 15 Subpart B Class A					
Reliability						
Buzzer, RTC, WDT	✓	✓	✓	✓	✓	✓
MTBF	99,302 hrs					
Warranty	5 years (see www.moxa.com/warranty)					

Combo Switch / Serial Device Servers

NPort S8000: Ethernet Switch Specifications

Ethernet Interface

Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) and 100Base FX IEEE 802.3x for Flow Control IEEE 802.1D for Spanning Tree Protocol IEEE 802.1w for Rapid STP IEEE 802.1Q for VLAN Tagging IEEE 802.1p for Class of Service IEEE 802.1X for Authentication IEEE 802.3ad for Port Trunk with LACP
Network Protocols	ICMP, IP, TCP, UDP, ARP, Telnet, DNS, HTTP, SMTP, SNTP, IGMPv1/v2 device, GVRP, SNMPv1/v2c/v3, DHCP Server/Client, DHCP Option 82, BootP, TFTP, SNTP, SMTP, RARP, GMRP, LACP, RMON
MIB	MIB-II, Ethernet-Like MIB, P-BRIDGE MIB, Q-BRIDGE MIB, Bridge MIB, RSTP MIB, RMON MIB Group 1, 2, 3, 9
Flow Control	IEEE 802.3x flow control, back pressure flow control interface

Switch Properties

Priority Queues	4
Max. Number of Available VLANs	64
VLAN ID Range	VID 1 to 4094
IGMP Groups	256

Switch Interface

Optical Fiber Interface	Multi-mode or Single-mode
RJ45 Ports	10/100BaseT(X) auto negotiation speed, F/H duplex mode, and auto MDI/MDI-X connection
DIP Switches	Turbo Ring, Master, Coupler, Reserve
Alarm Contact	2 relay outputs with current carrying capacity of 1A @ 24 VDC

NPort S8000: Device Server Specifications

Serial Interface

Number of Ports	4
Serial Standards	RS-232/422/485
Connectors	DB9 male
Serial Line Protection	15 KV ESD protection for all signals 2 KV isolation protection
RS-485 Data Direction Control	ADDC® (automatic data direction control)
Pull High/Low Resistor for RS-485	1 KΩ, 150 KΩ
Terminator for RS-485	55 Ω, 120 Ω
Console Port	Dedicated RS-232 console port (8-pin RJ45)

Serial Communication Parameters

Data Bits	5, 6, 7, 8
Stop Bits	1, 1.5, 2
Parity	None, Even, Odd, Space, Mark
Flow Control	RTS/CTS and XON/XOFF
Baudrate	50 bps to 921.6 Kbps

Serial Signals

RS-232	TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
RS-422	Tx+, Tx-, Rx+, Rx-, GND
RS-485-4w	Tx+, Tx-, Rx+, Rx-, GND
RS-485-2w	Data+, Data-, GND

Software

Configuration Options	Web Console, Telnet Console, Serial Console, Windows Search Utility
Windows Real COM Drivers	Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7 x86/x64, Windows Embedded CE 5.0/6.0, Windows XP Embedded
Fixed TTY Drivers	SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i
Linux Real TTY Drivers	2.4.x, 2.6.x, 3.0.x
Operation Modes	Real COM, TCP Server, TCP Client, UDP, RFC2217
Management	SNMP MIB-II
IP Routing	Static, RIP-I, RIP-II

Reliability

Alert Tools	Built-in buzzer and RTC (real-time clock)
Automatic Reboot Trigger	Built-in WDT (watchdog timer)

NPort S8000: General Specifications

Port Summary

Serial Ports	4 RS-232/422/485 ports
Ethernet Switch Ports	3 RJ45 copper ports, 2 multi-mode fiber ports
Console Ports	1 (8-pin RJ45 connector)
LED Indicators	PWR1, PWR2, READY, MASTER, COUPLER, LINK4, LINK5

Physical Characteristics

Housing	Metal
Weight	995 g
Dimensions	73.1 x 134 x 105 mm

Environmental Limits

Operating Temperature	Standard Temperature	0 to 60°C
	Wide Temperature	-40 to 75°C
Operating Humidity		5 to 95% (non-condensing)
Storage Temperature		-40 to 85°C

Power Requirements

Input Voltage	12 to 48 VDC
Power Consumption	935mA @ 12 V, 470 mA @ 24 V

Standards and Certifications

Safety	UL 508, UL 60950-1, EN 60950-1
EMC	CE, FCC
EMI	EN 55022 Class A, FCC Part 15 Subpart B Class A
EMS	IEC 61000-4-2, Level 4 (ESD) IEC 61000-4-4, Level 4 (EFT) IEC 61000-4-5 for serial port, Level 1 (Surge) IEC 61000-4-5 for Power Line, Level 3 (Surge) IEC 61000-4-5 for LAN port, Level 2 (Surge)

Reliability

Buzzer, RTC, WDT	✓
MTBF	200,951 hrs
Warranty	5 years (see www.moxa.com/warranty)

Serial-to-Ethernet Device Servers › Combo Switch / Serial Device Servers

General-purpose Device Servers

	NPort 5110A NPort 5110A-T	NPort 5130A NPort 5130A-T	NPort 5150A NPort 5150A-T	NPort P5150A	NPort 5110 NPort 5110-T	NPort 5130	NPort 5150	NPort DE-211	NPort DE-311
Ethernet Interface									
10BaseT Ports	–	–	–	–	–	–	–	1	–
10/100BaseT(X) Ports	1	1	1	1	1	1	1	–	1
Connector	RJ45	RJ45	RJ45	RJ45	RJ45	RJ45	RJ45	RJ45	RJ45
Magnetic Isolation Protection	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV
Serial Interface									
RS-232 Ports	1	–	–	–	1	–	–	–	–
RS-422/485 Ports	–	1	–	–	–	1	–	–	–
RS-232/422/485 Ports	–	–	1	1	–	–	1	1	1
Connector	DB9-M	DB9-M	DB9-M	DB9-M	DB9-M	DB9-M	DB9-M	DB25-F	DB9-F
15 KV ESD Protection	✓	✓	✓	✓	✓	✓	✓	✓	✓
Serial Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark								
Flow Control	RTS/CTS, XON/XOFF								
Baudrate	50 bps to 921.6 Kbps				110 bps to 230.4 Kbps	50 bps to 921.6 Kbps		150 bps to 230.4 Kbps	150 bps to 230.4 Kbps
Software									
Network Protocols	ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP V1, HTTP, SMTP, IGMP V1/2				ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP V1, HTTP, SMTP			DHCP, BOOTP, Telnet, TCP, UDP, IP, ICMP, ARP	
Web Console	✓	✓	✓	✓	✓	✓	✓	–	–
Serial Console	✓	–	✓	✓	✓	–	✓	✓	✓
Telnet Console	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows Utility	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows Real COM Drivers	Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7 x86/x64, Windows Embedded CE 5.0/6.0, Windows XP Embedded								
Fixed TTY Drivers	SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i								
Linux Real TTY Drivers	Linux 2.4.x, 2.6.x, 3.0.x								
Physical Characteristics									
Housing	Metal								
Weight	340 g			300 g	340 g			480 g	
Dimensions	52 x 80 x 22 mm			77 x 111 x 26	52 x 80 x 22 mm			67 x 100.4 x 22 mm	
Environmental Limits									
Operating Temparture — Standard Temperature	0 to 60°C				0 to 55°C				
Operating Temparture — Wide Temperature	-40 to 75°C			–	-40 to 75°C	–			
Operating Humidity	5 to 95% (non-condensing)								
Storage Temperature	-40 to 75°C								
Power Requirements									
Input Voltage	12 to 48 VDC							12 to 30 VDC	9 to 30 VDC
Power Consumption @ 12/24/48 VDC	82.5 mA / 47.3 mA / –	89.1 mA / 49.5 mA / –	92.4 mA / 52.8 mA / –	125 mA / 40 mA / 180 mA(PoE)	128.7 mA / 72 mA / –	200 mA / 106 mA / –	200 mA / 106 mA / –	180 mA / 100 mA / –	150 mA / –
Standards and Certifications									
Safety	UL 60950-1, EN 60950-1								
EMC	CE, FCC								
EMI	EN 55022 Class A, FCC Part 15 Subpart B Class A								
EMS	EN 55024								
Medical	–	–	–	–	–	–	–	–	EN 60601-1-2 Class B, EN 55011
Reliability									
Buzzer, RTC, WDT	WDT only								
MTBF	2,231,530 hrs	2,231,530 hrs	2,231,530 hrs	2,231,530 hrs	279,122 hrs	246,505 hrs	246,034 hrs	347,822 hrs	225,529 hrs
Warranty	5 years (see www.moxa.com/warranty)								

General-purpose Device Servers

	NPort 5210A NPort 5210A-T	NPort 5230A NPort 5230A-T	NPort 5250A NPort 5250A-T	NPort 5210 NPort 5210-T	NPort 5230 NPort 5230-T	NPort 5232 NPort 5232-T	NPort 5232I NPort 5232I-T
Ethernet Interface							
10/100BaseT(X) Ports	1	1	1	1	1	1	1
Connector	RJ45	RJ45	RJ45	RJ45	RJ45	RJ45	RJ45
Magnetic Isolation Protection	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV
Serial Interface							
RS-232 Ports	2	–	–	2	1	–	–
RS-422/485 Ports	–	2	–	–	1	2	2
RS-232/422/485 Ports	–	–	2	–	–	–	–
Connector	DB9-M	TB	DB9-M	RJ45	TB	TB	TB
15 KV ESD Protection	✓	✓	✓	✓	✓	✓	✓
2 KV Isolation Protection	–	–	–	–	–	–	✓
Serial Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark						
Flow Control	RTS/CTS, XON/XOFF						
Baudrate	50 bps to 921.6 Kbps			110 bps to 230.4 Kbps			
Software							
Network Protocols	ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP V1, HTTP, SMTP, IGMP V1/2						
Web Console	✓	✓	✓	✓	✓	✓	✓
Serial Console	✓	–	✓	✓	✓	–	–
Telnet Console	✓	✓	✓	✓	✓	✓	✓
Windows Utility	✓	✓	✓	✓	✓	✓	✓
Windows Real COM Drivers	Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7 x86/x64, Windows Embedded CE 5.0/6.0, Windows XP Embedded						
Fixed TTY Drivers	SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i						
Linux Real TTY Drivers	Linux 2.4.x, 2.6.x, 3.0.x						
Onsite Configuration							
Mini Screen with Push Buttons	–	–	–	–	–	–	–
Physical Characteristics							
Housing	Metal						
Weight	340 g				360 g		380 g
Dimensions	52 x 80 x 22 mm			67 x 100.4 x 22 mm			67 x 100.4 x 35 mm
Environmental Limits							
Operating Temparture — Standard Temperature	0 to 60°C			0 to 55°C			
Operating Temparture — Wide Temperature	-40 to 75°C						
Operating Humidity	5 to 95% (non-condensing)						
Storage Temperature	-40 to 85°C						
Power Requirements							
Input Voltage	12 to 48 VDC						
Power Consumption @ 12/24 VDC	119 mA / 65 mA	119 mA / 65 mA	119 mA / 65 mA	325 mA / 190 mA	325 mA / 190 mA	280 mA / 150 mA	509.4 mA / 200 mA
Standards and Certifications							
Safety	UL 60950-1, EN 60950-1						
EMC	CE, FCC						
EMI	EN 55022 Class A, FCC Part 15 Subpart B Class A						
EMS	EN 55024						
Power Line Protection	Level 2 Burst (EFT), EN 61000-4-4 (Surge) Level 3, EN 61000-4-5			–	–	–	–
Marine	–	–	–	DNV	DNV	DNV	DNV
Medical	–	–	–	EN 60601-1-2 Class B, EN 55011	–	–	–
Reliability							
Buzzer, RTC, WDT	✓						
MTBF	847,750 hrs	847,750 hrs	847,750 hrs	134,850 hrs	106,955 hrs	102,344 hrs	87,083 hrs
Warranty	5 years (see www.moxa.com/warranty)						

General-purpose Device Servers

	NPort 5410	NPort 5430	NPort 5430I	NPort 5450 NPort 5450-T	NPort 5450I NPort 5450I-T
Ethernet Interface					
10BaseT Ports	–	–	–	–	–
10/100BaseT(X) Ports	1	1	1	1	1
100BaseFX	–	–	–	–	–
Connector	RJ45	RJ45	RJ45	RJ45	RJ45
Magnetic Isolation Protection	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV
Serial Interface					
RS-232 Ports	4	–	–	–	–
RS-422/485 Ports	–	4	4	–	–
RS-232/422/485 Ports	–	–	–	4	4
Connector	DB9-M	TB	TB	DB9-M	DB9-M
15 KV ESD Protection	✓	✓	✓	✓	✓
2 KV Isolation Protection	–	–	✓	–	✓
Serial Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark				
Flow Control	RTS/CTS, XON/XOFF				
Baudrate	50 bps to 921.6 Kbps				
Software					
Network Protocols	ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP V1, HTTP, SMTP, SNTP, Rtelnet, ARP				
Web Console	✓	✓	✓	✓	✓
Serial Console	–	–	–	–	–
Telnet Console	✓	✓	✓	✓	✓
Windows Utility	✓	✓	✓	✓	✓
Windows Real COM Drivers	Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7 x86/x64, Windows Embedded CE 5.0/6.0, Windows XP Embedded				
Fixed TTY Drivers	SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i				
Linux Real TTY Drivers	Linux 2.4.x, 2.6.x, 3.0.x				
Onsite Configuration					
Mini Screen with Push Buttons	✓	✓	✓	✓	✓
Physical Characteristics					
Housing	Metal				
Weight	740 g	740 g	740 g	740 g	740 g
Dimensions	158 x 103 x 33 mm	158 x 103 x 33 mm	158 x 103 x 33 mm	158 x 103 x 33 mm	158 x 103 x 33 mm
Environmental Limits					
Operating Temparture	0 to 55°C			Standard temperature: 0 to 55°C Wide temperature: -40 to 75°C (without LCM)	
Operating Humidity	5 to 95% (non-condensing)			5 to 95% (non-condensing)	
Storage Temperature	-20 to 70°C			-40 to 75°C	
Power Requirements					
Input Voltage	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC
Power Consumption @ 12/24 VDC	350 mA / 190 mA	320 mA / 175 mA	530 mA / 280 mA	350 mA / 190 mA	554 mA / 294 mA
Standards and Certifications					
Safety	UL 60950-1, EN 60950-1				
EMC	CE, FCC				
EMI	EN 55022 Class A, FCC Part 15 Subpart B Class A				
EMS	EN 55024				
Marine	DNV (standard temp. models only)				
Medical	EN 60601-1-2 Class B, EN 55011 (NPort 5410, 5450, and 5450I only)				
Reliability					
Buzzer, RTC, WDT	✓				
MTBF	206,903 hrs				
Warranty	5 years (see www.moxa.com/warranty)				

General-purpose Device Servers
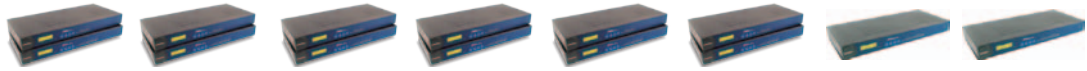
	NPort 5610-8	NPort 5610-8-48V	NPort 5630-8	NPort 5650-8 NPort 5650-8-T	NPort 5650-8-M-SC	NPort 5650-8-S-SC	NPort 5610-16	NPort 5610-16-48V
Ethernet Interface								
10BaseT Ports	–	–	–	–	–	–	–	–
10/100BaseT(X) Ports	1	1	1	1	–	–	1	1
100BaseFX Ports	–	–	–	–	1 (multi-mode)	1 (single-mode)	–	–
Connector	RJ45	RJ45	RJ45	RJ45	SC	SC	RJ45	RJ45
Magnetic Isolation Protection	1.5 KV	1.5 KV	1.5 KV	1.5 KV	–	–	1.5 KV	1.5 KV
Serial Interface								
RS-232 Ports	8	8	–	–	–	–	16	16
RS-422/485 Ports	–	–	8	–	–	–	–	–
RS-232/422/485 Ports	–	–	–	8	8	8	–	–
Connector	RJ45	RJ45	RJ45	RJ45	RJ45	RJ45	RJ45	RJ45
15 KV ESD Protection	✓	✓	✓	✓	✓	✓	✓	✓
2 KV Isolation Protection	–	–	–	–	–	–	–	–
Serial Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark							
Flow Control	RTS/CTS, XON/XOFF							
Baudrate	50 bps to 921.6 Kbps							
Software								
Network Protocols	ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP V1, HTTP, SMTP, SNTP, ARP, PPP, SLIP, RTelnet, RFC2217							
Web Console	✓	✓	✓	✓	✓	✓	✓	✓
Serial Console	–	–	–	–	–	–	–	–
Telnet Console	✓	✓	✓	✓	✓	✓	✓	✓
Windows Utility	✓	✓	✓	✓	✓	✓	✓	✓
Windows Real COM Drivers	Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7 x86/x64, Windows Embedded CE 5.0/6.0, Windows XP Embedded							
Fixed TTY Drivers	SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i							
Linux Real TTY Drivers	Linux 2.4.x, 2.6.x, 3.0.x							
Onsite Configuration								
Mini Screen with Push Buttons	✓	✓	✓	✓	✓	✓	✓	✓
Physical Characteristics								
Housing	Metal							
Weight	3340 g	3160 g	3380 g	3360 g	3380 g	3380 g	3420 g	3260 g
Dimensions	440 x 45 x 198 mm							
Environmental Limits								
Operating Temparture	0 to 55°C	0 to 55°C	0 to 55°C	0 to 55°C -40 to 75°C	0 to 55°C	0 to 55°C	0 to 55°C	0 to 55°C
Operating Humidity	5 to 95% (non-condensing)	5 to 95% (non-condensing)	5 to 95% (non-condensing)	5 to 95% (non-condensing)	5 to 95% (non-condensing)	5 to 95% (non-condensing)	5 to 95% (non-condensing)	5 to 95% (non-condensing)
Storage Temperature	-20 to 75°C	-20 to 75°C	-20 to 75°C	-40 to 75°C	-20 to 75°C	-20 to 75°C	-20 to 75°C	-20 to 75°C
Power Requirements								
Input Voltage	100 to 240 VAC, 47 to 63 hz	±48 VDC	100 to 240 VAC, 47 to 63 hz	100 to 240 VAC, 47 to 63 hz	100 to 240 VAC, 47 to 63 hz	100 to 240 VAC, 47 to 63 hz	100 to 240 VAC, 47 to 63 hz	±48 VDC
Power Consumption @ 12/24/48 VDC	– / – / 135 mA	– / – / 135 mA	–	–	–	–	–	– / – / 135 mA
Power Consumption @ 100/240 VAC	141/93 mA	–	152/98 mA	158/102 mA	174/113 mA	164/110 mA	141/93 mA	–
Standards and Certifications								
Safety	UL 60950-1, EN 60950-1							
EMC	CE, FCC							
EMI	EN 55022 Class A, FCC Part 15 Subpart B Class A							
EMS	EN 55024	EN 55024	EN 55024	EN 55024	EN 55024	EN 55024	EN 55024	EN 55024
Medical	EN 60601-1-2 Class B, EN 55011							
Reliability								
Buzzer, RTC, WDT	✓							
MTBF	97,294 hrs	96,758 hrs	118,405 hrs	117,584 hrs	116,914 hrs	116,914 hrs	94,928 hrs	94,417 hrs
Warranty	5 years (see www.moxa.com/warranty)							

General-purpose Device Servers

	NPort 5630-16	NPort 5650-16 NPort 5650-16-T	NPort 5650-16-M-SC	NPort 5650-16-S-SC	NPort 5610-8-DT	NPort 5610-8-DT-J	NPort 5650-8-DT	NPort 5650I-8-DT	NPort 5650-8-DT-J
Ethernet Interface									
10BaseT Ports	–	–	–	–	–	–	–	–	–
10/100BaseT(X) Ports	1	1	–	–	2 (1 IP)	2 (1 IP)	2 (1 IP)	2 (1 IP)	2 (1 IP)
100BaseFX Ports	–	–	1 (multi-mode)	1 (single-mode)	–	–	–	–	–
Connector	RJ45	RJ45	SC	SC	RJ45	RJ45	RJ45	RJ45	RJ45
Magnetic Isolation Protection	1.5 KV	1.5 KV	–	–	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV
Serial Interface									
RS-232 Ports	–	–	–	–	8	8	–	–	–
RS-422/485 Ports	16	–	–	–	–	–	–	–	–
RS-232/422/485 Ports	–	16	16	16	–	–	8	8	8
Connector	RJ45	RJ45	RJ45	RJ45	DB9-M	RJ45	DB9-M	DB9-M	RJ45
15 KV ESD Protection	✓	✓	✓	✓	✓	✓	✓	✓	✓
2 KV Isolation Protection	–	–	–	–	–	–	–	√	–
Serial Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark								
Flow Control	RTS/CTS, XON/XOFF								
Baudrate	50 bps to 921.6 Kbps								
Software									
Network Protocols	ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP V1, HTTP, SMTP, SNTP, ARP, PPP, SLIP, RTelnet, RFC2217				ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP V1, HTTP, SMTP, SNTP, RteInet, ARP, RFC2217				
Web Console	✓	✓	✓	✓	✓	✓	✓	✓	✓
Serial Console	–	–	–	–	✓	✓	✓	✓	✓
Telnet Console	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows Utility	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows Real COM Drivers	Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7 x86/x64, Windows Embedded CE 5.0/6.0, Windows XP Embedded								
Fixed TTY Drivers	SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i								
Linux Real TTY Drivers	Linux 2.4.x, 2.6.x, 3.0.x								
Onsite Configuration									
Mini Screen with Push Buttons	✓	✓	✓	✓	✓	✓	✓	✓	✓
Physical Characteristics									
Housing	Metal								
Weight	3400 g	3460 g	3440 g	3440 g	1760 g	1170 g	1770 g	1850 g	1710 g
Dimensions	440 x 45 x 198 mm				197 x 44 x 125 mm				
Environmental Limits									
Operating Temparture	0 to 55°C	0 to 55°C	0 to 55°C	0 to 55°C	0 to 55°C	0 to 55°C	0 to 55°C	0 to 55°C	0 to 55°C
Operating Humidity	5 to 95% (non-condensing)	5 to 95% (non-condensing)	5 to 95% (non-condensing)	5 to 95% (non-condensing)	5 to 95% (non-condensing)	5 to 95% (non-condensing)	5 to 95% (non-condensing)	5 to 95% (non-condensing)	5 to 95% (non-condensing)
Storage Temperature	-20 to 75°C	-20 to 75°C	-20 to 75°C	-20 to 75°C	-20 to 70°C	-20 to 70°C	-20 to 70°C	-20 to 70°C	-20 to 70°C
Power Requirements									
Input Voltage	100 to 240 VAC, 47 to 63 hz	100 to 240 VAC, 47 to 63 hz	100 to 240 VAC, 47 to 63 hz	100 to 240 VAC, 47 to 63 hz	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC
Power Consumption @ 12/24/48 VDC	–	–	–	–	611/300/140 mA	611/300/140 mA	615/300/156 mA	1066/510/200 mA	615/300/156 mA
Power Consumption @ 100/240 VAC	152/98 mA	158/102 mA	174/113 mA	164/110 mA	–	–	–	–	–
Standards and Certifications									
Safety	UL 60950-1, EN 60950-1								
EMC	CE, FCC								
EMI	EN 55022 Class A, FCC Part 15 Subpart B Class A								
EMS	EN 55024								
Medical	EN 60601-1-2 Class B, EN 55011				–	–	–	–	–
Reliability									
Buzzer, RTC, WDT	✓								
MTBF	91,483 hrs	104,767 hrs	87,528 hrs	87,528 hrs	163,356 hrs	163,356 hrs	163,356 hrs	163,356 hrs	163,356 hrs
Warranty	5 years (see www.moxa.com/warranty)								

General-purpose Device Servers

	NPort 5610-8-DTL NPort 5610-8-DTL-T	NPort 5650-8-DTL NPort 5650-8-DTL-T	NPort 5650I-8-DTL NPort 5650I-8-DTL-T
Ethernet Interface			
10BaseT Ports	–	–	–
10/100BaseT(X) Ports	1	1	1
100BaseFX Ports	–	–	–
Connector	RJ45	RJ45	RJ45
Magnetic Isolation Protection	1.5 KV	1.5 KV	1.5 KV
Serial Interface			
RS-232 Ports	8	–	–
RS-422/485 Ports	–	–	–
RS-232/422/485 Ports	–	8	8
Connector	DB9-M	DB9-M	DB9-M
15 KV ESD Protection	✓	✓	✓
2 KV Isolation Protection	–	–	✓
Serial Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark		
Flow Control	RTS/CTS, XON/XOFF		
Baudrate	50 bps to 921.6 Kbps		
Software			
Network Protocols	ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP V1, HTTP, SMTP		
Web Console	✓	✓	✓
Serial Console	✓	✓	✓
Telnet Console	✓	✓	✓
Windows Utility	✓	✓	✓
Windows Real COM Drivers	Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7 x86/x64, Windows Embedded CE 5.0/6.0, Windows XP Embedded		
Fixed TTY Drivers	SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i		
Linux Real TTY Drivers	Linux 2.4.x, 2.6.x, 3.0.x		
Physical Characteristics			
Housing	Metal		
Weight	1760 g	1770 g	1850 g
Dimensions	197 x 44 x 125 mm		
Environmental Limits			
Operating Temparture — Standard Temperature	0 to 60°C		
Operating Temparture — Wide Temperature	-40 to 75°C		
Operating Humidity	5 to 95% (non-condensing)		
Storage Temperature	-40 to 75°C		
Power Requirements			
Input Voltage	12 to 48 VDC		
Power Consumption @ 12/24 VDC	340 mA / 180 mA	470 mA / 250 mA	740 mA / 370 mA
Standards and Certifications			
Safety	UL 60950-1, EN 60950-1		
EMC	CE, FCC		
EMI	EN 55022 Class A, FCC Part 15 Subpart B Class A		
EMS	EN 55024		
Reliability			
Buzzer, RTC, WDT	✓		
MTBF	163,356 hrs		
Warranty	5 years (see wwwmoxacom/warranty)		

Industrial-grade Device Servers

	NPort IA5150A NPort IA5150A-T	NPort IA5150AI NPort IA5150AI-T	NPort IA5250A NPort IA5250A-T	NPort IA5250AI NPort IA5250AI-T	NPort IA5450A NPort IA5450A-T	NPort IA5450AI NPort IA5450AI-T
Ethernet Interface						
10/100BaseT(X) Ports	2 (1 IP)	2 (1 IP)	2 (1 IP)	2 (1 IP)	2 (1 IP)	2 (1 IP)
Connector	RJ45	RJ45	RJ45	RJ45	RJ45	RJ45
Magnetic Isolation Protection	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV
Serial Interface						
RS-232/422/485 Ports	1	1	2	2	4	4
Connector	DB9-M/TB	DB9-M/TB	DB9-M	DB9-M	DB9-M	DB9-M
15 KV ESD Protection	✓	✓	✓	✓	✓	✓
2 KV Isolation Protection	–	✓	–	✓	–	✓
Serial Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark					
Flow Control	RTS/CTS, XON/XOFF					
Baudrate	50 bps to 921.6 Kbps					
Software						
Network Protocols	ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, Rtelnet, DNS, SNMP V1, HTTP, SMTP, SNTP, IGMP					
Configuration Options	Web Console, Serial Console, Telnet Console, Windows Utility					
Windows Real COM Drivers	Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7 x86/x64, Windows Embedded CE 5.0/6.0, Windows XP Embedded					
Fixed TTY Drivers	SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i					
Linux Real TTY Drivers	Linux 2.4.x, 2.6.x, 3.0.x					
Physical Characteristics						
Housing	Metal					
Weight	475 g	475 g	485 g	485 g	560 g	560 g
Dimensions	36 x 105 x 140 mm	36 x 105 x 140 mm	36 x 105 x 140 mm	36 x 105 x 140 mm	45.8 x 134 x 105 mm	45.8 x 134 x 105 mm
Environmental Limits						
Operating Temparture — Standard Temperature	0 to 60°C					
Operating Temparture — Wide Temperature	-40 to 75°C					
Operating Humidity	5 to 95% (non-condensing)					
Storage Temperature	-40 to 75°C					
Power Requirements						
Input Voltage	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC
Power Consumption @ 12/24 VDC	220 mA / 110 mA	225 mA / 130 mA	250 mA / 125 mA	290 mA / 150 mA	374 mA / 184 mA	512 mA / 242 mA
Standards and Certifications						
Safety	UL 508					
Hazardous Location	UL/cUL Class I Division 2 Groups A/B/C/D, ATEX Class I Zone 2					
EMC	CE, FCC					
EMI	EN 55022 Class A, FCC Part 15 Subpart B Class A					
EMS	EN 55024, EN 61000-4-2 (ESD) Level 3, EN 61000-4-3 (RS) Level 3, EN 61000-4-4 (EFT) Level 4, EN 61000-4-5 (Surge) Level 3, EN 61000-4-6 (CS) Level 3, EN 61000-4-8, EN 61000-4-11					
Shock	IEC 60068-2-27					
Freefall	IEC 60068-2-32					
Vibration	IEC 60068-2-6					
Reliability						
Buzzer, RTC, WDT	✓					
MTBF	262,805 hrs	262,805 hrs	262,805 hrs	262,805 hrs	262,805 hrs	262,805 hrs
Warranty	5 years (see www.moxa.com/warranty)					

Industrial-grade Device Servers

	NPort IA5150 NPort IA5150-T	NPort IA5150I NPort IA5150I-T	NPort IA5150-M-SC NPort IA5150-M-SC-T	NPort IA5150I-M-SC NPort IA5150I-M-SC-T	NPort IA5150-S-SC NPort IA5150-S-SC-T	NPort IA5150I-S-SC NPort IA5150I-S-SC-T	NPort IA5250 NPort IA5250-T
Ethernet Interface							
10/100BaseT(X) Ports	2 (1 IP)	2 (1 IP)	–	–	–	–	2 (1 IP)
100BaseFX Ports	–	–	1 (multi-mode)	1 (multi-mode)	1 (single-mode)	1 (single-mode)	–
Connector	RJ45	RJ45	SC	SC	SC	SC	RJ45
Magnetic Isolation Protection	1.5 KV	1.5 KV	–	–	–	–	1.5 KV
Serial Interface							
RS-232/422/485 Ports	1	1	1	1	1	1	2
Connector	DB9-M/TB	DB9-M/TB	DB9-M/TB	DB9-M/TB	DB9-M/TB	DB9-M/TB	DB9-M
15 KV ESD Protection	✓	✓	✓	✓	✓	✓	✓
2 KV Isolation Protection	–	✓	–	✓	–	✓	–
Serial Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark						
Flow Control	RTS/CTS, XON/XOFF						
Baudrate	110 bps to 230.4 Kbps						
Software							
Network Protocols	ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, Rtelnet, DNS, SNMP V1, HTTP, SMTP, SNTP						
Configuration Options	Web Console, Serial Console, Telnet Console, Windows Utility						
Windows Real COM Drivers	Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7 x86/x64, Windows Embedded CE 5.0/6.0, Windows XP Embedded						
Fixed TTY Drivers	SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i						
Linux Real TTY Drivers	Linux 2.4.x, 2.6.x, 3.0.x						
Physical Characteristics							
Housing	Plastic (IP30)						
Weight	360 g						
Dimensions	29 x 89.2 x 118.5 mm						
Environmental Limits							
Operating Temparture — Standard Temperature	0 to 55°C						
Operating Temparture — Wide Temperature	-40 to 75°C						
Operating Humidity	5 to 95% (non-condensing)						
Storage Temperature	-40 to 85°C						
Power Requirements							
Input Voltage	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC
Power Consumption	360 mA @ 12 V, 195 mA @ 24 V	420 mA @ 12 V, 215 mA @ 24 V	500 mA @ 12 V, 250 mA @ 24 V	510 mA @ 12 V, 260 mA @ 24 V	470 mA @ 12 V, 210 mA @ 24 V	490 mA @ 12 V, 250 mA @ 24 V	440 mA @ 12 V, 200 mA @ 24 V
Standards and Certifications							
Safety	UL 508, UL 60950-1, EN 60950-1						
Hazardous Location	UL/cUL Class I Division 2 Groups A/B/C/D, ATEX Zone 2						
EMC	CE, FCC						
EMI	EN 55022 Class A, FCC Part 15 Subpart B Class A						
EMS	EN 55024, EN 61000-4-2 (ESD) Level 3, EN 61000-4-3 (RS) Level 3, EN 61000-4-4 (EFT) Level 4, EN 61000-4-5 (Surge) Level 3, EN 61000-4-6 (CS) Level 3, EN 61000-4-8, EN 61000-4-11						
Marine	DNV						
Shock	IEC 60068-2-27						
Freefal	IEC 60068-2-32						
Vibration	IEC 60068-2-6						
Reliability							
Buzzer, RTC, WDT	✓						
MTBF	183,747 hrs	195,614 hrs	183,747 hrs	195,614 hrs	183,747 hrs	195,614 hrs	194,765 hrs
Warranty	5 years (see www.moxa.com/warranty)						

Wireless Device Servers

	NPort® W2150A NPort® W2150A-T	NPort® W2250A NPort® W2250A-T
WLAN Interface		
IEEE 802.11a/g/b	✓	
Radio Frequency Type	DSSS/OFDM	
WEP	✓	
WPA, WPA2, 802.11i	✓	
Encryption	128-bit TKIP/AES-CCMP EAP-TLS, PEAP/GTC, PEAP/MD5, PEAP/MSCHAPV2, EAP-TTLS/PAP, EAP-TTLS/CHAP, EAP-TTLS/MSCHAP, EAP-TTLS/MSCHAPV2, EAP-TTLS/EAP-MSCHAPV2, EAP-TTLS/EAP-GTC, EAP-TTLS/EAP-MD5, LEAP	
Max. Transmission Rate	54 Mbps	
Max. Transmission Distance	100 m	
LAN Interface		
Ethernet Ports	1 x 10/100 Mbps (RJ45)	
1.5 KV Magnetic Isolation Protection	✓	
Serial Interface		
Number of Ports	1	2
Serial Standards	RS-232/422/485	
Connector	DB9-M	
Serial Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark	
Flow Control	RTS/CTS, XON/XOFF	
Baudrate	50 bps to 921.6 Kbps	
Serial Data Log	64 KB	
Software		
Network Protocols	ICMP, IP, TCP, UDP, DHCP, Telnet, DNS, SNMP V1/V2c/V3, HTTP, SMTP, SNTP, SSH, HTTPS	
Configuration Options	Web Console, Serial Console, Telnet Console, Windows Utility	
Management	SNMP MIB-II	
Secure Configuration Options	HTTPS, SSH	
Utilities	NPort Search Utility and NPort Windows Driver Manager	
Windows Real COM Drivers	Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7/8 x86/x64, Embedded CE 5.0/6.0, XP Embedded, 2012 x64,	
Fixed TTY Drivers	SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i	
Linux Real TTY Drivers	2.4.x, 2.6.x, 3.x	
Physical Characteristics		
Housing	Aluminum	
Weight (Product only)	173 g	177 g
Weight (Packaged)	547 g	557 g
Dimensions	77 x 111 x 26 mm	
Environmental Limits		
Operating Temperature — Standard Temperature	0 to 55°C	
Operating Temperature — Wide Temperature	-40 to 75°C	
Operating Humidity	5 to 95% (non-condensing)	
Storage Temperature	-40 to 85°C	
Power Requirements		
Input Voltage	12 to 48 VDC	
Power Consumption	179mA @ 12VDC	200mA @ 12VDC
Standards and Certifications		
Safety	UL 60950-1, EN 60950-1	
EMC	CE, FCC	
EMI	FCC Part 15 (Subpart B Class A, Subpart C, Subpart E), VCCI	
EMS	EN 55022 Class A	
Radio	CE (ETSI EN 301 893, ETSI EN 300 328), ARIB RCR STD-33, ARIB STD-66	
Reliability		
Warranty	5 years (see www.moxa.com/warranty)	

ZigBee Device Servers

	NPort® Z2150 NPort® Z2150-T	NPort® Z3150 NPort® Z3150-T
ZigBee Interface		
RF Standard	802.15.4	
Frequency Band	2.4 GHz	
RF Data Rate	250 Kbps	
Encryption	128-bit AES	
Network Topology	Star, Mesh, Cluster tree	
Transmission Distance	100 m	
Ethernet Interface (NPort Z3150 only)		
Ethernet Ports	–	1 x 10/100 Mbps (RJ45)
1.5 KV Magnetic Isolation Protection	–	✓
Serial Interface		
Number of Ports	1	
Serial Standards	RS-232/422/485	
Connector	DB9-M	
Serial Communication Parameters	Data Bits: 8; Stop Bits: 1, 2; Parity: None, Even, Odd	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 2; Parity: None, Even, Odd, Space, Mark
Flow Control	RTS/CTS	RTS/CTS, XON/XOFF
Baudrate	50 bps to 230.4 Kbps	50 bps to 921.6 Kbps
Software		
Configuration	ZigBee Configuration Utility	Web Console
Management	–	SNMP v1
Secure Configuration Options	–	HTTPS, SSH
Utilities	ZigBee Configuration Utility	NPort Search Utility and NPort Windows Driver Manager
Windows Real COM Drivers	–	Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7/8 x86/x64, Embedded CE 5.0/6.0, XP Embedded, x64, Windows 2012 x64
Fixed TTY Drivers	–	–
Linux Real TTY Drivers	–	–
Physical Characteristics		
Housing	Aluminum	
Weight	340 g	780 g
Dimensions	52 x 80 x 22 mm	77 x 111 x 26 mm
Environmental Limits		
Operating Temperature	Standard Temperature: 0 to 55°C	
	Wide Temperature: -40 to 75°C	
Operating Humidity	5 to 95% (non-condensing)	
Storage Temperature	-40 to 85°C	
Power Requirements		
Input Voltage	12 to 48 VDC	
Power Consumption	45 mA @ 12 VDC	120 mA @ 12 VDC
Standards and Certifications		
Safety	UL 60950-1, EN 60950-1	
EMC	CE, FCC	
EMI	FCC Part 15 (Subpart B Class A, Subpart C, Subpart E), VCCI	
EMS	EN 55022 Class A	
Radio	CE (ETSI EN 301 893, ETSI EN 300 328), ARIB RCR STD-33, ARIB STD-66	
Reliability		
Warranty	5 years (see www.moxa.com/warranty)	

Embedded Device Servers

	MiiNePort E2/E2-T MiiNePort E2-H/E2-H-T	MiiNePort E3/E3-T MiiNePort E3-H/E3-H-T	NE-4110S	NE-4110A	NE-4120S	NE-4120A	NE-4100T	MiiNePort W1/W1-T
Form Factor								
Type	Drop-in module	Pin header module					Drop-in module	
Dimensions	29 x 17 x 12.6 mm	35 x 52.5 x 18 mm	57 × 40 mm	57 × 40 mm	57 × 40 mm	57 × 40 mm	45 × 36 mm	44.4 × 44.4 x 9.7 mm
Ethernet Interface								
10/100BaseT(X) Ports	1	1	1	1	1	1	1	1
Connector	4-pin pin header	RJ45	RJ45	RJ45	5-pin pin header		26-pin dual-in-line	–
Magnetic Isolation Protection	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	–
WLAN Interface								
Standard Compliance	–	–	–	–	–	–	–	IEEE 802.11b/g
Radio Frequency Type	–	–	–	–	–	–	–	DSSS, CCK, OFDM
Wireless Security	–	–	–	–	–	–	–	AES, WEP, WPA, WPA2, PSK, 802.11i
Network Modes	–	–	–	–	–	–	–	Infrastructure mode (b/g), Ad-Hoc mode (b/g)
Serial Interface								
TTL Ports	1 (data port)		1 (console port)				2 (1 data port, 1 console port)	1 (data port)
RS-232 Ports	–	–	1 (data port)	–	1 (data port)	–	–	–
RS-422/485 Ports	–	–	–	1 (data port)	–	1 (data port)	–	–
Serial Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark							Data Bits: 7, 8; Stop Bits: 1, 2; Parity: None, Even, Odd
Flow Control	RTS/CTS, DTR/DSR, XON/XOFF		RTS/CTS, XON/XOFF					
Baudrate	"MiiNePort E2: 50 bps to 230.4 Kbps (non-standard baudrates supported) MiiNePort E2-H: 50 bps to 921.6 Kbps (non-standard baudrates supported)"	"MiiNePort E3: 50 bps to 230.4 Kbps (non-standard baudrates supported) MiiNePort E3-H: 50 bps to 921.6 Kbps (non-standard baudrates supported)"	110 bps to 230.4 Kbps					50 bps to 921.6 Kbps
Programmable GPIO Pins	4							–
Software								
Network Protocols	ICMP, ARP, IP, TCP, UDP, DHCP, HTTP, SNMP V1, SMTP, TFTP, Auto IP, Telnet, BOOTP		ICMP, ARP, IP, TCP, UDP, DHCP, Telnet, HTTP, SNMP V1/V2c, SMTP					ICMP, IP, TCP, UDP, DHCP, Telnet, DNS, SNMP V1/V2c/V3, HTTP, SMTP, SNTP, SSH, HTTPS
Configuration Options	Web/Serial/Telnet Console, Windows Search Utility							
Serial Command Mode	✓	✓	✓	✓	✓	✓	✓	✓
Windows Real COM Drivers	Windows 98/ME/NT/2000, Windows XP/2003/Vista/2008/7/8 x86/x64, 2012 x64, Embedded CE 5.0/6.0, XP Embedded							
Fixed TTY Drivers	SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x							
Linux Real TTY Drivers	Linux kernel 2.4.x, 2.6.x, 3.x							
Operation Modes	TCP Server, TCP Client, UDP, Real COM, Ethernet Modem, RFC2217		Real COM, TCP Server, TCP Client, UDP					Real COM, TCP Server, TCP Client, UDP, RFC2217
NetEZ Technology	EZPower, EZPage, SCM, AutoCFG, MCSC	EZPower, EZPage, SCM, AutoCFG	–	–	–	–	–	SCM
Environmental Limits								
Operating Temparture / Standard Temperature	0 to 55°C							
Operating Temparture / Wide Temperature	-40 to 85°C		-40 to 75°C					
Operating Humidity	5 to 95% (non-condensing)							
Storage Temperature	-40 to 60°C (Package included)							
Power Requirements								
Input Voltage	3.3 to 5 VDC (±5%)		5 VDC (±5%)	5 VDC (±5%)	5 VDC (±5%)	5 VDC (±5%)	5 VDC (±5%)	3.3 VDC (±5%)
Power Consumption	140 mA @ 3.3 VDC, 92 mA @ 5 VDC input max.	157 mA @ 3.3 VDC, 119 mA @ 5 VDC input max.	290 mA @ 5 VDC max.					360 mA @ 3.3 VDC input max.
Standards and Certifications								
Safety	–							UL 60950-1, EN 60950-1
EMC	CE, FCC							CE, FCC, EN 301 489-1/17
EMI	EN 55022 Class B, FCC Part 15 Subpart B Class B		EN 55022 Class B, FCC Part 15 Subpart B Class A					EN 55022 Class A, FCC Part 15 Subpart B Class A
EMS	EN 55024, EN 61000-4-2 (ESD), EN 61000-4-3 (RS), EN 61000-4-4 (EFT), EN 61000-4-5 (Surge), EN 61000-4-6 (CS), EN 61000-4-8, EN 61000-4-11							
Radio	–	–	–	–	–	–	–	EN 300 328, EN 301 893, DSPR (Japan)
Shock	IEC-68-2-27	IEC-68-2-27	–	–	–	–	–	IEC-68-2-27
Freefall	IEC-68-2-34, IEC-68-2-32	IEC-68-2-34, IEC-68-2-32	–	–	–	–	–	IEC-68-2-34, IEC-68-2-32
Vibration	IEC-68-2-6	IEC-68-2-6	–	–	–	–	–	IEC-68-2-6
Green Product	RoHS, CRoHS, WEEE							
Reliability								
Watchdog Timer	✓	✓	✓	✓	✓	✓	✓	✓
MTBF	5,696,350 hrs	3,608,031 hrs	290,276 hrs	289,573 hrs	289,573 hrs	289,573 hrs	288,173 hrs	638,566 hrs
Warranty	5 years (see www.moxa.com/warranty)							

Embedded Device Servers Software Development Kit

	MiiNePort E2-SDK
Software	
OS	eCos
Software Development Tool	MiiNePort-IDE
Search/Upload Firmware Utility	Windows Search Utility
Wizard	Project/SNMP/CLI(Telnet)/SCM/User Configuration
Windows Real COM Drivers	Windows 98/ME/NT/2000, Windows XP/2003/Vista/2008/7/8 x86/x64, 2012 x64, Embedded CE 5.0/6.0, XP Embedded
Fixed TTY Drivers	SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x
Linux Real TTY Drivers	Linux kernel 2.4.x, 2.6.x, 3.x
Operation Modes	Real COM, Ethernet Modem
Serial/Ethernet Testing Tool	PComm Lite
Serial to Ethernet Sample Source Code	1. TCP Server Echo 2. TCP Server to Serial (single connection) 3. TCP Server to Serial (multiple connections) 4. TCP Client Echo 5. TCP Client to Serial (startup) 6. TCP Client to Serial (any character) 7. TCP Client to Serial (designated destination TCP/IP port from serial) 8. UDP echo 9. UDP to serial
Reliability	
Warranty	5 years (see www.moxa.com/warranty)

PCI Express Serial Boards

	C320Turbo/PCIEL	CP-118EL-A	CP-168EL-A	CP-114EL	CP-114EL-I	CP-104EL-A	CP-102E	CP-102EL	CP-132EL	CP-132EL-I
Hardware										
Comm. Controller	16C550C compatible									
Bus	PCI Express x1									
Connector	DB25 female	VHDCI 68		DB44 female			DB9 male	DB25 female		
Serial Interface										
RS-232 Ports	32	–	8	–	–	4	2	2	–	–
RS-422 Ports	32	–	–	–	–	–	–	–	–	–
RS-422/485 Ports	–	–	–	–	–	–	–	–	2	2
RS-232/422/485 Ports	–	8	–	4	4	–	–	–	–	–
Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark									
Flow Control	RTS/CTS, XON/XOFF								XON/XOFF	
Baudrate	50 bps to 460.8 Kbps	50 bps to 921.6 Kbps								
ESD Protection	–	15 KV	15 KV	15 KV	15 KV	15 KV	15 KV	15 KV	15 KV	15 KV
Optical Isolation	–	–	–	–	2 KV	–	–	–	–	2 KV
Driver Support										
Windows 9X/ME/NT	–	–	–	–	–	–	–	–	–	–
Windows 2000	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows XP/2003/Vista x86/x64	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows 2008 x86/x64	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows 7 x86/x64	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows CE 5.0	–	–	–	–	–	✓	–	–	–	–
Windows CE 6.0	–	–	–	–	–	–	–	–	–	–
Windows XP Embedded	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
DOS	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
Linux 2.4.x, 2.6.x	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
FreeBSD 4/5	–	✓	✓	–	–	✓	–	–	–	–
QNX 4	–	–	–	–	–	–	–	–	–	–
QNX 6	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
SCO Open Server 5/6	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
UnixWare 7	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
Environmental Limits										
Dimensions (mm)	67 x 135	64.4 x 132	62.7 x 102	67.2 x 136.9	67.2 x 136.9	62.7 x 100	85.0 x 100	67.2 x 102	67.2 x 102	67.2 x 104
Operating Temperature	0 to 55°C									
Storage Temperature	-20 to 85°C									
Ambient Relative Humidity	5 to 95% RH (non-condensing)									
Standards and Certifications										
FCC Part 15 Subpart B Class	A	B	B	B	B	B	B	B	B	B
EN 55022	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EN 55024	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EN 61000-3-2	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
EN 61000-3-3	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
EN 61000-6-2	–	–	–	–	–	✓	–	–	–	–
EN 61000-6-4	–	–	–	–	–	✓	–	–	–	–
IEC 61000-4-2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IEC 61000-4-3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IEC 61000-4-4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IEC 61000-4-5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IEC 61000-4-6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IEC 61000-4-8	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IEC 61000-4-11 (DIPS)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Reliability										
Warranty	5 years (see www.moxa.com/warranty)									

Universal PCI Serial Boards

	C320Turbo/PCI	C218Turbo/PCI	CP-118U CP-118U-T	CP-138U CP-138U-T	CP-118U-I CP-118U-I-T	CP-138U-I CP-138U-I-T	CP-168U CP-168U-T	CP-114UL CP-114UL-T	CP-114UL-I CP-114UL-I-T	CP-104UL CP-104UL-T
Hardware										
Comm. Controller	MU860 (16C550C compatible)									
Bus	32-bit Universal PCI									
Connector	DB25 female	DB62 female			DB78 female		DB62 female	DB44 female		
Serial Interface										
RS-232 Ports	32	8	–	–	–	–	8	–	–	4
RS-422 Ports	–	–	–	–	–	–	–	–	–	–
RS-422/485 Ports	–	–	–	8	–	8	–	–	–	–
RS-232/422/485 Ports	–	–	8	–	8	–	–	4	4	–
Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark									
Flow Control	–	–	RTS/CTS, XON/XOFF				RTS/CTS, XON/XOFF			
Baudrate	50 bps to 460.8 Kbps	50 bps to 921.6 Kbps								
ESD Protection	–	Optional	15 KV	15 KV	15 KV	15 KV	15 KV	15 KV	15 KV	15 KV
Optical Isolation	–	Optional	–	–	2 KV	2 KV	Optional	–	2 KV	–
Driver Support										
Windows 9X/ME/NT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows 2000	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows XP/2003/Vista x86/x64	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows 2008 x86/x64	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows 7 x86/x64	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows CE 5.0	–	–	✓	✓	✓	✓	✓	✓	✓	✓
Windows CE 6.0	–	–	✓	✓	✓	✓	✓	✓	✓	✓
Windows XP Embedded	–	–	✓	✓	✓	✓	✓	✓	✓	✓
DOS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Linux 2.4.x, 2.6.x	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
FreeBSD 4/5	–	–	✓	✓	✓	✓	✓	✓	✓	✓
QNX 4	✓	✓	–	–	–	–	–	–	–	–
QNX 6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SCO Open Server 5/6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
UnixWare 7	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Environmental Limits										
Dimensions (mm)	90 x 120	105 x 180	82 x 135	82 x 135	105 x 133	105 x 133	82 x 120	64.4 x 120	64.4 x 120	64.4 x 120
Operating Temperature — Standard Temperature	0 to 55°C		0 to 55°C							
Operating Temperature — Wide Temperature	–		-40 to 85°C							
Storage Temperature	-20 to 85°C		-40 to 85°C							
Ambient Relative Humidity	5 to 95% (non-condensing)		5 to 95% (non-condensing)							
Standards and Certifications										
FCC Part 15 Subpart B Class	A	A	B	B	B	B	B	B	B	B
EN 55022	✓	–	✓	✓	✓	✓	✓	✓	✓	✓
EN 55024	–	–	✓	✓	✓	✓	✓	✓	✓	✓
EN 61000-3-2	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
EN 61000-3-3	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
EN 61000-4-2	✓	✓	–	–	–	–	–	–	–	–
EN 61000-4-3	✓	✓	–	–	–	–	–	–	–	–
EN 61000-4-4	✓	✓	–	–	–	–	–	–	–	–
EN 61000-4-5	–	✓	–	–	–	–	–	–	–	–
EN 61000-4-6	–	✓	–	–	–	–	–	–	–	–
EN 61000-4-11 (DIPS)	–	✓	–	–	–	–	–	–	–	–
EN 61000-6-1	–	✓	–	–	–	–	–	–	–	–
EN 61000-6-3	–	✓	–	–	–	–	–	–	–	–
IEC 61000-4-2	–	–	✓	✓	✓	✓	✓	✓	✓	✓
IEC 61000-4-3	–	–	✓	✓	✓	✓	✓	✓	✓	✓
IEC 61000-4-4	–	–	✓	✓	✓	✓	✓	✓	✓	✓
IEC 61000-4-5	–	–	✓	✓	✓	✓	✓	✓	✓	✓
IEC 61000-4-6	–	–	✓	✓	✓	✓	✓	✓	✓	✓
IEC 61000-4-8	–	–	✓	✓	✓	✓	✓	✓	✓	✓
IEC 61000-4-11 (DIPS)	–	–	✓	✓	✓	✓	✓	✓	✓	✓
Reliability										
Warranty	5 years (see www.moxa.com/warranty)									

Multiport Serial Boards > Universal PCI Serial Boards

Universal PCI Serial Boards
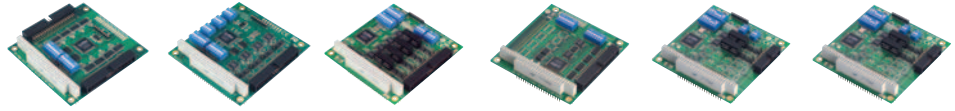
	CP-104JU CP-104JU-T	CP-134U CP-134U-T	CP-134U-I CP-134U-I-T	CP-112UL CP-112UL-T	CP-112UL-I CP-112UL-I-T	CP-102U CP-102U-T	CP-102UL CP-102UL-T	CP-132UL CP-132UL-T	CP-132UL-I CP-132UL-I-T	POS-104UL POS-104UL-T
Hardware										
Comm. Controller	MU860 (16C550C compatible)									
Bus	32-bit Universal PCI									
Connector	RJ45 x 4	DB44 female		DB25 female		DB9 male x 2	DB25 female			DB44 female
Serial Interface										
RS-232 Ports	4	–	–	–	–	2	2	–	–	4
RS-422 Ports	–	–	–	–	–	–	–	–	–	–
RS-422/485 Ports	–	4	4	–	–	–	–	2	2	–
RS-232/422/485 Ports	–	–	–	2	2	–	–	–	–	–
Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark									
Flow Control	RTS/CTS, XON/XOFF								XON/XOFF	RTS/CTS, XON/XOFF
Baudrate	50 bps to 921.6 Kbps									
ESD Protection	15 KV	15 KV	15 KV	15 KV	15 KV	15 KV	15 KV	15 KV	15 KV	15 KV
Optical Isolation	–	–	2 KV	–	2 KV	–	–	–	2 KV	–
Driver Support										
Windows 9X/ME/NT	✓	✓	✓	–	–	✓	✓	✓	✓	✓
Windows 2000	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows XP/2003/Vista x86/x64	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows 2008 x86/x64	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows 7 x86/x64	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows CE 5.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows CE 6.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows XP Embedded	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
DOS	✓	✓	✓	–	–	✓	✓	✓	✓	✓
Linux 2.4.x, 2.6.x	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
FreeBSD 4/5	✓	✓	✓	–	–	✓	✓	✓	✓	✓
QNX 4	–	–	–	–	–	–	–	–	–	–
QNX 6	✓	✓	✓	–	–	✓	✓	✓	✓	✓
SCO Open Server 5/6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
UnixWare 7	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Environmental Limits										
Dimensions (mm)	83 x 120	82.5 x 120	115 x 120	–	–	80 x 120	64.5 x 120	64.5 x 120	64.5 x 120	64.4 x 120
Operating Temperature — Standard Temperature	0 to 55°C									
Operating Temperature — Wide Temperature	-40 to 85°C									
Storage Temperature	-40 to 85°C									
Ambient Relative Humidity	5 to 95% (non-condensing)									
Standards and Certifications										
FCC Part 15 Subpart B Class	B	B	B	B	B	B	B	B	B	B
EN 55022	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EN 55024	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
EN 61000-3-2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EN 61000-3-3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EN 61000-6-2	–	–	–	–	–	–	–	–	–	✓
EN 61000-6-4	–	–	–	–	–	–	–	–	–	✓
IEC 61000-4-2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IEC 61000-4-3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IEC 61000-4-4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IEC 61000-4-5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IEC 61000-4-6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IEC 61000-4-8	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IEC 61000-4-11 (DIPS)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Reliability										
Warranty	5 years (see www.moxa.com/warranty)									

ISA Serial Boards

	C168H/C168HS	C104H/C104HS	CI-134/CI-134I/CI-134IS	CI-132/CI-132I/CI-132IS
Hardware				
Comm. Controller				
Bus				
Connector		DB37 female	DB37 female	DB9 male x 2
Serial Interface				
RS-232 Ports	8	4	–	–
RS-422 Ports	–	–	–	–
RS-422/485 Ports	–	–	4	2
RS-232/422/485 Ports	–	–	–	–
Communication Parameters			Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark	
Flow Control	–	–	–	–
Baudrate			50 bps to 921.6 Kbps	
ESD Protection	– / 25 KV	– / 25 KV	– / – / 25 KV	– / – / 25 KV
Optical Isolation	Optional	–	– / 2 KV / 2 KV	– / 2 KV / 2 KV
Driver Support				
Windows 9X/ME/NT	✓	✓	✓	✓
Windows 2000	✓	✓	✓	✓
Windows XP/2003/Vista x86/x64	✓	✓	✓	✓
Windows 2008 x86/x64	✓	✓	✓	✓
Windows 7 x86/x64	✓	✓	✓	✓
Windows CE 5.0	–	–	–	–
Windows CE 6.0	–	–	–	–
Windows XP Embedded	✓	✓	✓	✓
DOS	✓	✓	✓	✓
Linux 2.4.x, 2.6.x	✓	✓	✓	✓
FreeBSD 4/5	✓	✓	✓	✓
QNX 4	✓	✓	✓	✓
QNX 6	✓	✓	✓	✓
SCO Open Server 5/6	✓	✓	✓	✓
UnixWare 7	✓	✓	✓	✓
Environmental Limits				
Dimensions (mm)	93 x 157	83 x 157	85 x 160	75 x 157
Operating Temperature				
Storage Temperature				
Ambient Relative Humidity				
Standards and Certifications				
FCC Part 15 Subpart B Class	A	A	B	B
EN 55022	✓	✓	✓	✓
EN 61000-3-2	–	–	–	–
EN 61000-3-3	–	–	–	–
EN 61000-4-2	✓	✓	✓	✓
EN 61000-4-3	✓	✓	✓	✓
EN 61000-4-4	✓	✓	✓	✓
EN 61000-4-5	–	–	–	–
EN 61000-4-6	–	–	–	–
EN 61000-4-11 (DIPS)	–	–	–	–
EN 61000-6-1	–	–	–	–
EN 61000-6-3	–	–	–	–
Reliability				
Warranty				

Multiport Serial Boards > ISA Serial Boards

PC/104 Modules

	CA-108 CA-108-T	CA-114 CA-114-T	CA-134I CA-134I-T	CA-104 CA-104-T	CA-132 CA-132-T	CA-132I CA-132I-T
Hardware						
Comm. Controller	MU860 (16C550C compatible)					
Bus	PC/104 bus					
Box Header Connector	40-pin				20-pin	
Serial Interface						
RS-232 Ports	8	–	–	4	–	–
RS-422 Ports	–	–	–	–	–	–
RS-422/485 Ports	–	–	4	–	2	2
RS-232/422/485 Ports	–	4	–	–	–	–
Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark					
Flow Control	–	–	–	–	–	–
Baudrate	50 bps to 921.6 Kbps					
ESD Protection	15 KV	15 KV	15 KV	15 KV	15 KV	15 KV
Optical Isolation	–	–	2 KV	–	–	2 KV
Driver Support						
Windows 9X/ME/NT	✓	✓	✓	✓	✓	✓
Windows 2000	✓	✓	✓	✓	✓	✓
Windows XP/2003/Vista x86/x64	✓	✓	✓	✓	✓	✓
Windows 2008 x86/x64	–	–	–	–	–	–
Windows CE 5.0	✓	✓	✓	✓	✓	✓
Windows CE 6.0	✓	✓	✓	✓	✓	✓
Windows XP Embedded	✓	✓	✓	✓	✓	✓
DOS	✓	✓	✓	✓	✓	✓
Linux 2.4.x, 2.6.x	✓	✓	✓	✓	✓	✓
FreeBSD 4/5	–	–	–	–	–	–
QNX 4	✓	✓	✓	✓	✓	✓
QNX 6	✓	✓	✓	✓	✓	✓
SCO Open Server 5/6	–	–	–	–	–	–
UnixWare 7	–	–	–	–	–	–
Environmental Limits						
Dimensions (mm)	90 x 96					
Operating Temperature — Standard Temperature	0 to 55°C					
Operating Temperature — Wide Temperature	-40 to 85°C					
Storage Temperature	-40 to 85°C					
Ambient Relative Humidity	5 to 95% (non-condensing)					
Standards and Certifications						
FCC Part 15 Subpart B Class	A	A	A	A	A	A
EN 55022	✓	✓	✓	✓	✓	✓
EN 55024	✓	✓	✓	✓	✓	✓
EN 61000-3-2	✓	✓	✓	✓	✓	✓
EN 61000-3-3	✓	✓	✓	✓	✓	✓
IEC 61000-6-2	✓	✓	✓	✓	✓	✓
IEC 61000-6-4	✓	✓	✓	✓	✓	✓
IEC 61000-4-2	✓	✓	✓	✓	✓	✓
IEC 61000-4-3	✓	✓	✓	✓	✓	✓
IEC 61000-4-4	✓	✓	✓	✓	✓	✓
IEC 61000-4-5	✓	✓	✓	✓	✓	✓
IEC 61000-4-6	✓	✓	✓	✓	✓	✓
IEC 61000-4-8	✓	✓	✓	✓	✓	✓
IEC 61000-4-11 (DIPS)	✓	✓	✓	✓	✓	✓
Reliability						
Warranty	5 years (see www.moxa.com/warranty)					

PC/104-Plus Modules

	CB-108 CB-108-T	CB-114 CB-114-T	CB-134I CB-134I-T
Hardware			
Comm. Controller	MU860 (16C550C compatible)		
Bus	PC/104-Plus bus		
Box Header Connector	40-pin	40-pin	40-pin
Serial Interface			
RS-232 Ports	8	–	–
RS-422 Ports	–	–	–
RS-422/485 Ports	–	–	4
RS-232/422/485 Ports	–	4	–
Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark		
Flow Control	–	–	–
Baudrate	50 bps to 921.6 Kbps		
ESD Protection	15 KV	15 KV	15 KV
Optical Isolation	–	–	2 KV
Driver Support			
Windows 9X/ME/NT	–	–	–
Windows 2000	✓	✓	✓
Windows XP/2003/Vista x86/x64	✓	✓	✓
Windows 2008 x86/x64	✓	✓	✓
Windows 7 x86/x64	✓	✓	✓
Windows CE 5.0	✓	✓	✓
Windows CE 6.0	✓	✓	✓
Windows XP Embedded	✓	✓	✓
DOS	✓	✓	✓
Linux 2.4.x, 2.6.x	✓	✓	✓
FreeBSD 4/5	–	–	–
QNX 4	–	–	–
QNX 6	✓	✓	✓
SCO Open Server 5/6	–	–	–
UnixWare 7	–	–	–
Environmental Limits			
Dimensions (mm)	90 x 96		
Operating Temperature — Standard Temperature	0 to 55°C		
Operating Temperature — Wide Temperature	-40 to 85°C		
Storage Temperature	-40 to 85°C		
Ambient Relative Humidity	5 to 95% (non-condensing)		
Standards and Certifications			
FCC Part 15 Subpart B Class	A	A	A
EN 55022	✓	✓	✓
EN 55024	✓	✓	✓
EN 61000-3-2	✓	✓	✓
EN 61000-3-3	✓	✓	✓
IEC 61000-6-2	✓	✓	✓
IEC 61000-6-4	✓	✓	✓
IEC 61000-4-2	✓	✓	✓
IEC 61000-4-3	✓	✓	✓
IEC 61000-4-4	✓	✓	✓
IEC 61000-4-5	✓	✓	✓
IEC 61000-4-6	✓	✓	✓
IEC 61000-4-8	✓	✓	✓
IEC 61000-4-11 (DIPS)	✓	✓	✓
Reliability			
Warranty	5 years (see www.moxa.com/warranty)		

CAN Interface Boards/Modules

		CP-602U-I CP-602U-I-T	CP-602E-I CP-602E-I-T	CB-602I CB-602I-T
Hardware				
CAN Controller		NXP SJA1000		
CAN Transceiver		PCA82C251		
Bus		32-bit Universal PCI	PCI Express x1	PC/104-Plus bus
Connectors		DB9 male x 2	DB9 male	20-pin
CAN Interface				
CAN Specification		CAN 2.0 A/B		
Signal Support		CAN _H, CAN_L, GND		
Ports		2		
Transfer Rate		1 Mbps		
Max Number of Boards per PC		4		
Optical Isolation		2 KV		
Termination Resistors		120 ohm (selected by jumper)		
Driver Support				
Windows 2000		✓	✓	✓
Windows XP/2003/Vista x86/x64		✓	✓	✓
Windows 2008 x86/x64		✓	✓	✓
Windows 7 x86/x64		✓	✓	✓
Visual Basic Library		✓	✓	✓
C/C++ Library		✓	✓	✓
Environmental Limits				
Dimensions (mm)		120 x 80	120 x 80	90 x 96
Operating Temperature	Standard Temperature	0 to 55°C		
	Wide Temperature	-40 to 85°C		
Storage Temperature		-40 to 85°C		
Ambient Relative Humidity		5 to 95% (non-condensing)		
Standards and Certifications				
FCC Part 15 Subpart B Class		B	B	B
EN 61000-3-2		✓	✓	–
EN 61000-3-3		✓	✓	✓
IEC 61000-4-2		✓	✓	✓
IEC 61000-4-3		✓	✓	✓
EC 61000-4-4		✓	✓	✓
IEC 61000-4-5		✓	✓	✓
IEC 61000-4-6		✓	✓	✓
IEC 61000-4-8		✓	✓	✓
IEC 61000-4-11 (DIPS)		✓	✓	✓
Reliability				
Warranty		5 years (see www.moxa.com/warranty)		

USB-to-Serial Converters

	UPort® 1110	UPort® 1130 UPort® 1130I	UPort® 1150	UPort® 1150I	UPort® 1250	UPort® 1250I	UPort® 1410	UPort® 1450	UPort® 1450I
USB Interface									
Compliance	USB 1.1/2.0 compliant								
Connector	USB type A			USB type B					
Speed	12 Mbps (Full-Speed USB)				480 Mbps (Hi-Speed USB) and 12 Mbps (Full-Speed USB)				
Serial Interface									
Number of Ports	1 x RS-232	1 x RS-422/485	1 x RS-232/422/485		2 x RS-232/422/485		4 x RS-232	4 x RS-232/422/485	
Connector	DB9 male								
Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark								
Flow Control	Flow Control: RTS/CTS, XON/XOFF								
FIFO	64 bytes				128 bytes				
Baudrate	50 bps to 921.6 Kbps								
Embedded ESD Protection	15 KV								
Optical Isolation	–	2 KV (UPort 1130I)	–	2 KV	–	2 KV	–	–	2 KV
Driver Support									
Windows 98/ME	✓	✓	✓	✓	–	–	–	–	–
Windows 2000	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows XP/2003 x86/x64	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows Vista x86/x64	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows 2008 x86/x64	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows 7 x86/x64	✓	✓	✓	✓	✓	✓	✓	✓	✓
WinCE 5.0/6.0	✓	✓	✓	✓	✓	✓	✓	✓	✓
Linux 2.4.x	✓	✓	✓	✓	✓	✓	✓	✓	✓
Linux 2.6.x	✓	✓	✓	✓	✓	✓	✓	✓	✓
Linux 3.0.x	✓	✓	✓	✓	✓	✓	✓	✓	✓
Physical Characteristics									
Housing	ABS + PC			SECC sheet metal (1 mm)					
Product Weight	65 g			75 g	180 g		720 g		
Packaged Weight	200 g			370 g	370 g	680 g	1320 g		
Dimensions (mm)	38.4 x 60 x 20			52 x 80 x 22	77 x 26 x 111		204 x 30 x 125		
Environmental Limits									
Operating Temperature	0 to 55°C								
Operating Humidity	5 to 95% (non-condensing)								
Storage Temperature	-20 to 70°C								
Standards and Certifications									
Safety	–	–	–	UL 60950-1	UL 60950-1				
EMI	EN 55022 Class B, EN 61000-3-2, EN 61000-3-3, FCC Part 15 Subpart B Class B				EN 55022 Class A, EN 61000-3-2, EN 61000-3-3, FCC Part 15 Subpart B Class A				
EMS	EN 55024, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC-61000-4-6, IEC 61000-4-8, IEC-61000-4-11				EN 55024, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, IEC 61000-4-8, IEC 61000-4-11				
Green Product	RoHS, CRoHS, WEEE				RoHS, CRoHS, WEEE				
Power Requirements									
Power Consumption	30 mA @ 5 VDC	60 mA @ 5 VDC	77 mA @ 5 VDC	260 mA @ 5 VDC	360 mA @ 5 VDC	200 mA @ 12 VDC	385 mA @ 5 VDC	300 mA @ 12 VDC	360 mA @ 12 VDC
Reliability									
Warranty	5 years (see www.moxa.com/warranty)								

USB-to-Serial Converters

	UPort® 1610-8	UPort® 1650-8	UPort® 1610-16	UPort® 1650-16	UPort® 2210	UPort® 2410
USB Interface						
Compliance	USB 1.1/2.0 compliant					
Connector	USB type B					
Speed	480 Mbps (Hi-Speed USB) and 12 Mbps (Full-Speed USB)					
Serial Interface						
Number of Ports	8 x RS-232	8 x RS-232/422/485	16 x RS-232	16 x RS-232/422/485	2 x RS-232	4 x RS-232
Connector	DB9 male					
Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark					
Flow Control	RTS/CTS, XON/XOFF					
FIFO	128 bytes				16 bytes	
Baudrate	50 bps to 921.6 Kbps					
Embedded ESD Protection	15 KV					
Driver Support						
Windows 98/ME	–	–	–	–	–	–
Windows 2000	✓	✓	✓	✓	✓	✓
Windows XP/2003 x86/x64	✓	✓	✓	✓	✓	✓
Windows Vista x86/x64	✓	✓	✓	✓	✓	✓
Windows 2008 x86/x64	✓	✓	✓	✓	✓	✓
Windows 7 x86/x64	✓	✓	✓	✓	✓	✓
WinCE 5.0/6.0	✓	✓	✓	✓	–	–
Linux 2.4.x	✓	✓	✓	✓	–	–
Linux 2.6.x	✓	✓	✓	✓	✓	✓
Linux 3.0.x	✓	✓	✓	✓	✓	✓
Physical Characteristics						
Housing	SECC sheet metal (1 mm)				Polycarbonate (PC)	
Product Weight	835 g		2475 g		120 g	210 g
Packaged Weight	1440 g		3440 g		325 g	455 g
Dimensions (mm)	204 x 44 x 125		440 x 45.5 x 198.1		70 x 35 x 120	80 x 35 x 185
Environmental Limits						
Operating Temperature	0 to 55°C					
Operating Humidity	5 to 95% (non-condensing)					
Storage Temperature	-20 to 70°C					
Standards and Certifications						
Safety	UL 60950-1					
EMI	EN 55022 Class A, EN 61000-3-2, EN 61000-3-3, FCC Part 15 Subpart B Class A				EN 55022 Class B, EN 61000-3-2, EN 61000-3-3, FCC Part 15 Subpart B Class B	
EMS	EN 55024, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11				EN 55024, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC-61000-4-6, IEC 61000-4-8, IEC-61000-4-11	
Green Product	RoHS, CRoHS, WEEE					
Power Requirements						
Power Consumption	230 mA @ 12 VDC	340 mA @ 12 VDC	130 mA @ 100 VAC	150 mA @ 100 VAC	140 mA @ 5 VDC	240 mA @ 5 VDC
Reliabilty						
Warranty	5 years (see www.moxa.com/warranty)					

USB Hubs

	UPort® 404	UPort® 407	UPort® 404-T	UPort® 407-T	UPort® 204	UPort® 207
USB Interface						
Compliance	USB 1.1/2.0 compliant					
Upstream USB Ports	1 (Type B)					
Downstream USB Ports	4 (Type A)	7 (Type A)	4 (Type A)	7 (Type A)	4 (Type A)	7 (Type A)
Speed	480 Mbps (Hi-Speed USB) and 12 Mbps (Full-Speed USB)					
Supply Current	500 mA max. per channel					
Physical Characteristics						
Housing	Aluminum				Polycarbonate (PC)	
Dimensions (mm)	80 x 35 x 130	100 x 35 x 192	80 x 35 x 130	100 x 35 x 192	80 x 35 x 130	100 x 35 x 195
Environmental Limits						
Operating Temperature	0 to 60°C	0 to 60°C	-40 to 85°C	-40 to 85°C	0 to 60°C	0 to 60°C
Operating Humidity	5 to 95% (non-condensing)	5 to 95% (non-condensing)	5 to 95% (non-condensing)	5 to 95% (non-condensing)	5 to 95% (non-condensing)	5 to 95% (non-condensing)
Storage Temperature	-20 to 75°C	-20 to 75°C	-40 to 85°C	-40 to 85°C	-20 to 75°C	-20 to 75°C
Standards and Certifications						
Safety	UL 508, LVD					
EMI	EN 61000-3-2, EN 61000-3-3, EN 61000-6-2, EN 61000-6-4, FCC Part 15 Subpart B Class A					
EMS	EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11					
Green Product	RoHS, CRoHS, WEEE					
Power Requirements						
Power Consumption	1300 mA @ 12 VDC	2300 mA @ 12 VDC	1300 mA @ 12 VDC	2300 mA @ 12 VDC	1210 mA@ 12 VDC	2170 mA @ 12 VDC
Reliabilty						
Warranty	5 years (see www.moxa.com/warranty)					

Industrial USB > USB Hubs

Chassis Media Converters

	TRC-190-AC TRC-190-DC	TCF-142-M-SC-RM TCF-142-M-ST-RM	TCF-142-S-SC-RM TCF-142-S-ST-RM
Optical Fiber Side			
Fiber Connector	–	SC or ST	
Cables Requirements	–	50/125, 62.5/125, or 100/140 µm	8.3/125, 8.7/125, 9/125, or 10/125 µm
Transmission Distance	–	5 km	40 km
Wavelength	–	850 nm	1310 nm
Tx Output	–	> -5 dBm	
Rx Sensitivity	–	-20 dBm	-25 dBm
Point-to-Point Transmission	–	Point-to-Point Transmission: Half-duplex or full-duplex	
RS-232/422/485 Side			
Connector	–	DB9	
RS-232 Signals	–	TxD, RxD, GND	
RS-422 Signals	–	TxD+, TxD-, RxD+, RxD-, GND	
RS-485-4w Signals	–	TxD+, TxD-, RxD+, RxD-, GND	
RS-485-2w Signals	–	Data+, Data-, GND	
Baudrate	–	50 bps to 921.6 Kbps	
ESD Protection	–	15 KV	
Physical Characteristics			
Housing	SECC (1.2 mm)	–	
Dimensions (mm)	440 x 260 x 77 mm	86.8 x 136.5 x 21 mm	
Weight	5.2 kg (11.4 lbs), with one power module installed	–	
Number of Slots	19 slots in the front for slide-in modules, 2 slots in the back for power supply modules	–	
Environmental Limits			
Operating Temperature	0 to 60°C		
Operating Humidity	5 to 95% RH		
Storage Temperature	-20 to 75°C		
Power Requirements			
Input Voltage	100 to 240 VAC or 36 to 72 VDC	12 VDC	
Power Consumption	3.2 A @ 36 VDC (max. output)	150 mA @ 12 V	
Standards and Certifications			
Safety	UL 60950-1, EN 60950-1		
EMC	CE, FCC		
EMI	EN 55022 Class A, FCC Part 15 Subpart B Class A		
EMS	EN 61000-4-2 (ESD) Level 3, EN 61000-4-3 (RS) Level 2, EN 61000-4-4 (EFT) Level 2, EN 61000-4-5 (Surge) Level 2, EN 61000-4-6 (CS) Level 2, EN 61000-4-8 (PFMF) Level 3, EN 61000-4-11 (DIPS)		
Freefall	–	IEC 60068-2-32	
Green Product	RoHS, CRoHS, WEEE		
Reliability			
Warranty	5 years (see www.moxa.com/warranty)		

Serial-to-Fiber Media Converters

	ICF-1150-M-SC/ST ICF-1150-M-SC/ST-T	ICF-1150I-M-SC/ST ICF-1150I-M-SC/ST-T	ICF-1150-S-SC/ST ICF-1150-S-SC/ST-T	ICF-1150I-S-SC/ST ICF-1150I-S-SC/ST-T	TCF-142-M-SC/ST TCF-142-M-SC/ST-T	TCF-142-S-SC/ST TCF-142-S-SC/ST-T	TCF-90-M/S
Optical Fiber Side							
Fiber Connector	SC or ST						ST
Cables Requirements	Single-mode: 8.3/125, 8.7/125, 9/125, or 10/125 μm Multi-mode: 50/125, 62.5/125, or 100/140 μm						
Transmission Distance	Single-mode: 40 km Multi-mode: 5 km						
Wavelength	Single-mode: 1310 nm Multi-mode: 850 nm						
Tx Output	Single-mode: > -5 dBm Multi-mode: > -5 dBm						
Rx Sensitivity	Single-mode: -25 dBm Multi-mode: -20 dBm						
Point-to-Point Transmission	Half-duplex or full-duplex						–
Multi-drop Transmission	Half-duplex, fiber ring						–
RS-232 Side							
Connector	DB9 female				Terminal block		DB9 female
Signals	Tx, Rx, GND						TxD, RxD, GND (Loop-back wiring: RTS to CTS, DTR to DSR and DCD)
Baudrate	50 bps to 921.6 Kbps						300 bps to 115.2 Kbps
RS-232/422/485 Side							
Connector	Terminal Block						–
RS-232 Signals	TxD, RxD, GND						
RS-422 Signals	TxD+, TxD-, RxD+, RxD-, GND						–
RS-485-4w Signals	TxD+, TxD-, RxD+, RxD-, GND						–
RS-485-2w Signals	Data+, Data-, GND						–
Baudrate	50 bps to 921.6 Kbps						–
ESD Protection	15 KV for all signals						–
Isolation	–	2 KV	–	2 KV	–	–	–
Physical Characteristics							
Housing	Metal						ABS + PC
Dimensions (mm)	30.3 x 70 x 115 mm				67 x 100 x 22 mm		42 x 80 x 22 mm
Environmental Limits							
Operating Temperature	0 to 60°C or -40 to 85°C (for T models)						0 to 60°C
Operating Humidity	5 to 95% RH						5 to 95% RH
Storage Temperature	-40 to 85°C						-20 to 75°C
Power Requirements							
Source of Input Power	–	–	–	–	–	–	RS-232 port (TxD, RTS, DTR) or power input jack
Input Voltage	12 to 48 VDC						
Power Consumption	127 mA @ 12 V	163 mA @ 12 V	127 mA @ 12 V	163 mA @ 12 V	140 mA @ 12 V		20 mA @ 5 V
Voltage Reversal Protection	Protects against V+/V- reversal						–
Over Current Protection	1.1 A				1.1 A		–
Standards and Certifications							
Safety	UL 508				UL 60950-1		UL 60950-1
Hazardous Location	Hazardous Location: UL/cUL Class I Division 2 Groups A/B/C/D, ATEX Zone 2 EEx nC IIC				–	–	–
EMC	CE, FCC						
EMI	EN 55022 Class B, FCC Part 15 Subpart B Class B						FCC Part 15 Subpart B Class B
EMS	EN 61000-4-2 (ESD) Level 4, EN 61000-4-3 (RS) Level 2, EN 61000-4-4 (EFT) Level 4, EN 61000-4-5 (Surge) Level 3, EN 61000-4-6 (CS) Level 2, EN 61000-4-8 (PFMF) Level 3				EN 61000-4-2 (ESD) Level 3, EN 61000-4-3 (RS) Level 2, EN 61000-4-4 (EFT) Level 2, EN 61000-4-5 (Surge) Level 2, EN 61000-4-6 (CS) Level 2, EN 61000-4-8 (SFMF) Level 1		IEC 61000-4-2 (ESD) Level 2, IEC 61000-4-3 (RS) Level 2, IEC 61000-4-4 (EFT) Level 2, IEC 61000-4-5 (Surge) Level 3, IEC 61000-4-6 (CS) Level 2, IEC 61000-4-8 (SFMF) Level 1
Freefall	IEC 60068-2-32				–	–	–
Green Product	RoHS, CRoHS, WEEE				RoHS, CRoHS, WEEE		RoHS, CRoHS, WEEE
Reliability							
Warranty	5 years (see www.moxa.com/warranty)						

Serial Converters and Repeaters

	TCC-100 TCC-100-T	TCC-100I TCC-100I-T	TCC-80	TCC-80I	TCC-120	TCC-120I	TCC-82
RS-232 Side							
Connector	DB9 female		DB9 female		–	–	DB9 male/female
Signals	TxD, RxD, RTS, CTS, GND (Loop-back wiring: DTR to DSR and DCD)		TxD, RxD, GND (Loop-back wiring: RTS to CTS, DTR to DSR and DCD)		–	–	TxD, RxD, RTS, CTS, GND (Loop-back wiring: DTR to DSR and DCD)
RS-422/485 Side							
Connector	Terminal Block		Terminal Block or DB9 male		Terminal block on both ends		–
Signals	(interface selected by DIP switch) RS-422: TxD+, TxD-, RxD+, RxD-, GND RS-485-4w: TxD+, TxD-, RxD+, RxD-, GND RS-485-2w: Data+, Data-, GND		(interface selected by DIP switch) RS-422: TxD+, TxD-, RxD+, RxD-, GND RS-485-4w: TxD+, TxD-, RxD+, RxD-, GND RS-485-2w: Data+, Data-, GND		(interface selected by DIP switch) RS-422: TxD+, TxD-, RxD+, RxD-, GND RS-485-4w: TxD+, TxD-, RxD+, RxD-, GND RS-485-2w: Data+, Data-, GND		–
RS-485 Data Direction Control	ADDC®		ADDC®		ADDC®		–
Serial Communication							
Baudrate	50 bps to 921.6 Kbps		50 bps to 115.2 Kbps		50 bps to 921.6 Kbps		50 bps to 115.2 Kbps
Pull High Resistance	1K/150K ohm		1K ohm	4.7K ohm	1K/150K ohm		–
Pull Low Resistance							
ESD Protection	15 KV	15 KV	15 KV	15 KV	15 KV	15 KV	15 KV
Optical Isolation	–	2 KV	–	2.5 KV	–	2 KV	4 KV
Physical Characteristics							
Housing	Metal		ABS + PC		Metal		ABS
Dimensions (mm)	67 x 100.4 x 22 mm		42 x 80 x 22 mm		67 x 100.4 x 22 mm		42 x 80 x 23.6 mm
Weight	148 ± 5 g		50 ± 5 g		148 ± 5 g		60 ± 5 g
Environmental Limits							
Operating Temperature	-20 to 60°C, or -40 to 85°C		0 to 60°C		-20 to 60°C		0 to 60°C
Operating Humidity	5 to 95% RH		5 to 95% RH		5 to 95% RH		5 to 95% RH
Storage Temperature	-40 to 85°C		-20 to 75°C		-20 to 75°C		-20 to 75°C
Power Requirements							
Source of Input Power	Power input jack		RS-232 port (TxD, RTS, DTR) or power input jack		Power input jack		RS-232 port (TxD, RTS, DTR) or power input jack
Input Voltage	12 to 48 VDC		5 to 12 VDC		12 to 48 VDC		5 to 12 VDC
Power Consumption	85 mA @ 12 V	150 mA @ 12 V	10 mA @ 5 V	20 mA @ 5 V	65 mA @ 12 V	180 mA @ 12 V	20 mA @ 5 V
Voltage Reversal Protection	Protects against V+/V- reversal		–	–	Protects against V+/V- reversal		–
Over Current Protection	✓	✓	–	–	✓	✓	–
Standards and Certifications							
Safety	UL 60950-1						
EMC	CE, FCC						
EMI	FCC Part 15 Subpart B Class B						
EMS	IEC 61000-4-2 (ESD) Level 2, IEC 61000-4-3 (RS) Level 2, IEC 61000-4-4 (EFT) Level 2, IEC 61000-4-5 (Surge) Level 2, IEC 61000-4-6 (CS) Level 2, IEC 61000-4-8 (SFMF) Level 1		EN 61000-4-2 (ESD) Level 2, EN 61000-4-3 (RS) Level 2, EN 61000-4-4 (EFT) Level 2, EN 61000-4-5 (Surge) Level 3, EN 61000-4-6 (CS) Level 2, EN 61000-4-8 (RFMF) Level 1				
Green Product	RoHS, CRoHS, WEEE						
Reliability							
Warranty	5 years (see www.moxa.com/warranty)						

CAN-to-Fiber, PROFIBUS-to-Fiber Converters

		ICF-1170I-M-ST ICF-1170I-M-ST-T	ICF-1180I-M-ST/ST-T ICF-1180I-S-ST/ST-T
Optical Fiber Side			
Fiber Connector		ST	
Cables Requirements		Multi-mode: 50/125, 62.5/125, or 100/140 μm	
Transmission Distance		Up to 2 km	Multi-mode: 4km Single-mode: 45km
Wavelength		Multi-mode: 850 nm	Multi-mode: 820 nm Single-mode: 1310 nm
Tx Output		Multi-mode: > -5 dBm	Multi-mode: > -14 dBm Single-mode: > -7 dBm
Rx Sensitivity		Multi-mode: -20 dBm	Multi-mode: -28 dBm Single-mode: -29 dBm
Fieldbus Interface			
Connector		3-pin removable screw terminal	DB9 female
Specification		CAN 2.0 A and 2.0B (ISO 11898-2)	PROFIBUS DP (IEC 61158-2)
Signal Support		CAN _H, CAN_L, CAN_GND	PROFIBUS D+, PROFIBUS D-, RTS, Signal common, 5V
Optical Isolation		2 KV	
Transfer rate		Up to 1 Mbps	Up to 12Mbps
Termination Resistors		120 ohms (selected by DIP switch)	
Physical Characteristics			
Housing		Metal	
Dimensions (mm)		30.3 x 115 x 70 mm (11.9 x 45.3 x 27.6 in)	
Environmental Limits			
Operating Temperature	Standard Temperature	0 to 60°C	
	Wide Temperature	-40 to 85°C	-40 to 75°C
Operating Humidity		5 to 95% RH	
Storage Temperature		-40 to 85°C	-40 to 75°C
Power Requirements			
Input Voltage		12 to 48 VDC dual power inputs for redundant power	
Power Consumption		221 mA @ 12 V	216 mA @ 12 V
Voltage Reversal Protection		Protects against V+/V- reversal	
Over Current Protection		1.1 A (protects against two signals shorted together)	
Standards and Certifications			
Safety		UL 508, EN 60950-1	UL 508, EN 60950-1
EMC		CE, FCC	
EMI		EN 55022 Class A, FCC Part 15 Subpart B Class A	EN 55022 Class A, FCC Part 15 Subpart B Class A
EMS		EN 61000-4-2 (ESD) Level 4, EN 61000-4-3 (RS) Level 2, EN 61000-4-4 (EFT) Level 4, EN 61000-4-5 (Surge) Level 3, EN 61000-4-6 (CS) Level 2, EN 61000-4-8 (PFMF) Level 3	EN 61000-4-2 (ESD) Level 3, EN 61000-4-3 (RS) Level 3, EN 61000-4-4 (EFT) Level 3, EN 61000-4-5 (Surge) Level 3, EN 61000-4-6 (CS) Level 3
Freefall		IEC 60068-2-32	IEC 60068-2-32
Green Product		RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE
Reliability			
Warranty		5 years (see www.moxa.com/warranty)	

Modular and Cellular RTU Controllers

	ioPAC 8020-5-C-T	ioPAC 8020-9-C-T	ioLogik W5312	ioLogik W5340
Inputs/Outputs				
Digital Inputs	–	–	8	–
Digital Outputs	–	–	8	–
Relay Outputs	–	–	–	2
DI/DO Configurable	–	–	4	8
Analog Inputs	–	–	–	4
Cellular				
GSM/GPRS/EDGE	–	–	✓	✓
Ethernet				
Ports (Connector)	2 (M12 or RJ45)		1 (RJ45)	
Speed	10/100 Mbps		10/100 Mbps	
Switch (Daisy Chain)	✓	✓	–	–
Protocols	–		Modbus/TCP, TCP/IP, UDP, DHCP, Bootp, SNMP, SNTP, SMTP	
Serial				
Ports (Connector)	1 (DB9 male)		1 (DB9 male or terminal block)	
Interface	RS-232/422/485		RS-232/422/485	
Protocols	–		Modbus/RTU	
Physical Characteristics				
I/O Module Slots	5	9	–	–
Environmental Limits				
Standard Operating Temp.	-40 to 75°C		-10 to 55°C	
Wide Operating Temp.	-40 to 75°C		-30 to 70°C	
Storage Temp.	-40 to 85°C		-40 to 85°C	
Ambient Relative Humidity	5 to 95% RH (non-condensing)		5 to 95% RH (non-condensing)	
Software				
Programmability	C/C++		Click&Go	
Active OPC Server	✓	✓	✓	✓
DA-Center	✓	✓	✓	✓
MXIO	–	–	✓	✓
Configuration Utility	✓	✓	✓	✓
Standards and Certifications				
Safety	UL 508			
EMI	FCC Part 15, Subpart B, Class A; EN 61000-3-2; EN 61000-3-3; EN 61000-6-4 or EN 55022			
EMS	EN 55024; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-4-8; EN 61000-4-11; EN 61000-6-2			
Shock	IEC 60068-2-27			
Freefall	IEC 60068-2-32			
Vibration	IEC 60068-2-6			
Rail Traffic	EN 50155; EN 50121-3-2; EN 50121-4		–	–
Reliability				
Warranty	5 years	5 years	5 years	2 years*

*Because of the limited lifetime of power relays, products use that component are covered by a 2-year warranty.

Modules for Modular RTU Controllers

	Digital Input		Digital Output	Analog Input		Ethernet Switch
	RM-1050-T	RM-1602-T	RM-2600-T	RM-3802-T	RM-3810-T	KM-2430-T
Module Properties						
Channels/Ports (Connector)	10 (terminal block)	16 (terminal block)	16 (terminal block)	8 (terminal block)	8 (terminal block)	4 (M12)
Mode/Speed	110 VDC	24 VDC	24 VDC	4-20 mA	0-10 VDC	10/100 Mbps
Type	isolated	sink/source	sink	–	–	unmanaged
Environmental Limits						
Operating Temperature	-40 to 75°C					
Storage Temperature	-40 to 85°C					
Ambient Relative Humidity	5 to 95% RH (non-condensing)					
Reliability						
Warranty	5 years (see www.moxa.com/warranty)					

Ethernet RTU Controllers

	ioLogik E2210	ioLogik E2212	ioLogik E2214	ioLogik E2240	ioLogik E2242	ioLogik E2260	ioLogik E2262
Inputs/Outputs							
Digital Inputs	12	8	6	–	–	–	–
Digital Outputs	8	8	–	–	–	4	4
Relay Outputs	–	–	6	–	–	–	–
DI/DO Configurable	–	4	–	–	12	–	–
Analog Inputs	–	–	–	8	4	–	–
Analog Outputs	–	–	–	2	–	–	–
RTD Inputs	–	–	–	–	–	6	–
Thermocouple Inputs	–	–	–	–	–	–	8
Ethernet							
Ports (connector type)	1 (RJ45)						
Speed	10/100 Mbps						
Protocols	Modbus/TCP, TCP/IP, UDP, DHCP, Bootp, SNMP, HTTP, CGI, SNTP, SMTP						
Serial							
Ports (connector type)	1 (terminal block)						
Interface	RS-485						
Protocols	Modbus/RTU						
Environmental Limits							
Standard Operating Temp.	-10 to 60°C						
Storage Temperature	-40 to 85°C						
Ambient Relative Humidity	5 to 95% RH (non-condensing)						
Software							
Programmability	Click&Go	Click&Go	Click&Go	Click&Go	Click&Go	Click&Go	Click&Go
Active OPC Server	✓	✓	✓	✓	✓	✓	✓
DA-Center	✓	✓	✓	✓	✓	✓	✓
MXIO	✓	✓	✓	✓	✓	✓	✓
ioAdmin	✓	✓	✓	✓	✓	✓	✓
Standards and Certifications							
Safety	UL 508						
EMI	FCC Part 15, Subpart B, Class A; EN 61000-3-2; EN 61000-3-3; EN 61000-6-4						
EMS	EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-4-8; EN 61000-4-11; EN 61000-6-2						
Shock	IEC 60068-2-27						
Freefall	IEC 60068-2-32						
Vibration	IEC 60068-2-6						
Reliability							
Warranty	5 years	5 years	2 years*	5 years	5 years	5 years	5 years

*Because of the limited lifetime of power relays, products use that component are covered by a 2-year warranty.

RTU Model Naming Rule

RTU Family	A	B	C	D	E
ioPAC 8020-A-B-C-E	5 (5 slots) 9 (9 slots)	RJ45 (RJ45 Ethernet connectors) M12 (M12 Ethernet connectors)	C (C/C++ programmable)		T (Wide Temp.)
ioLogik W53AB-C-D-E ioLogik E22AB-E	1 (Digital I/O) 4 (Analog I/O) 6 (Temperature Input)	Serial Number	None (GSM/GPRS/EDGE) HSDPA (UMTS/HSDPA)	None (Click&Go version) C (C/C++ programmable)	None (Standard) T (Wide Temp.)

RTU Module Family	A	B	CD	E
RM-ABCD-E	1 (Digital Input) 2 (Digital Output) 3 (Analog Input) 4 (Analog Output) 6 (Temperature Input) 7 (Power Input)	0 (10 Channels) 2 (2 channels) 4 (4 Channels) 6 (16 Channels) 8 (8 Channels)	Serial Number	T (Wide Temp.)

Rugged Ethernet Remote I/O

	ioLogik E1510-M12-T	ioLogik E1512-M12-T
Input/Output		
Digital Inputs	12	4
Configurable DI/DOs	–	4
Analog Inputs	–	–
RTD Inputs	–	–
Ethernet		
Ports (Connector)	1 (M12)	
Speed	10/100 Mbps	
Switch (Daisy Chain)	–	–
Protocols	Modbus/TCP, TCP/IP, UDP, DHCP, Bootp, HTTP	
Environmental Limits		
Operating Temperature	-40 to 85°C	
Storage Temperature	-40 to 85 °C	
Operating Humidity	5 to 95% RH (non-condensing)	
Software		
Active OPC Server	✓	✓
DA-Center	✓	✓
ioSearch	✓	✓
MXIO	✓	✓
Standards and Certifications		
Safety	UL 508	
EMI	FCC Part 15, Subpart B, Class A; EN 55022; EN 61000-3-2; EN 61000-3-3	
EMS	EN 55024; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-4-8; EN 61000-4-11	
Shock	IEC 60068-2-27	
Freefall	IEC 60068-2-32	
Vibration	IEC 60068-2-6	
Rail Traffic	EN 50155; EN 50121-3-2; EN 50121-4	
Hazardous Locations	–	–
Marine Communications	–	–
Reliability		
Warranty	5 years	5 years

Ethernet Remote I/O

	ioLogik E1210	ioLogik E1211	ioLogik E1212	ioLogik E1214	ioLogik E1240	ioLogik E1241	ioLogik E1242	ioLogik E1260	ioLogik E1262
Input/Output									
Digital Inputs	16	–	8	6	–	–	4	–	–
Digital Outputs	–	16	–	–	–	–	–	–	–
Relay Outputs	–	–	–	6	–	–	–	–	–
Configurable DI/DOs	–	–	8	–	–	–	4	–	–
Analog Inputs	–	–	–	–	8	–	4	–	–
Analog Outputs	–	–	–	–	–	4	–	–	–
RTD Inputs	–	–	–	–	–	–	–	6	–
Thermocouple Inputs	–	–	–	–	–	–	–	–	8
Ethernet									
Ports (Connector)	2 (RJ45)								
Speed	10/100 Mbps								
Switch (Daisy Chain)	✓	✓	✓	✓	✓	✓	✓	✓	✓
Protocols	Modbus/TCP, TCP/IP, UDP, DHCP, Bootp, HTTP								
Environmental Limits									
Standard Models	-10 to 60°C								
Wide Temp. Models	-40 to 75°C								
Storage Temperature	-40 to 85 °C								
Operating Humidity	5 to 95% RH (non-condensing)								
Software									
Active OPC Server	✓	✓	✓	✓	✓	✓	✓	✓	✓
DA-Center	✓	✓	✓	✓	✓	✓	✓	✓	✓
ioSearch	✓	✓	✓	✓	✓	✓	✓	✓	✓
MXIO	✓	✓	✓	✓	✓	✓	✓	✓	✓
Peer-to-peer	✓	✓	✓	✓	✓	✓	✓	–	–
Standards and Certifications									
Safety	UL 508								
EMI	FCC Part 15, Subpart B, Class A; EN 55022; EN 61000-3-2; EN 61000-3-3								
EMS	EN 55024; EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-4-8; EN 61000-4-11								
Shock	IEC 60068-2-27								
Freefall	IEC 60068-2-32								
Vibration	IEC 60068-2-6								
Reliability									
Warranty	5 years	5 years	5 years	2 years*	5 years	5 years	5 years	5 years	5 years

*Because of the limited lifetime of power relays, products that use this component are covered by a 2-year warranty.

I/O Model Naming Rule

Remote I/O Family	A	B	C
ioLogik E42AB-C ioLogik R21AB-C ioLogik E12AB-C ioLogik E12ABH-C ioLogik E15AB-C	0 (No I/O) 1 (Digital I/O) 4 (Analog I/O) 6 (Special I/O)	Serial Number	None (Standard) T (Wide Temp.)
NA-40AB	1 (Ethernet Port) 2 (Serial Port)	Serial Number	–

I/O Module Family	A	B	CD
M-ABCD	1 (Digital Input) 2 (Digital Output) 3 (Analog Input) 4 (Analog Output) 6 (Temperature Input) 7 (System module)	0 (0 Channels) 2 (2 Channels) 4 (4 Channels) 6 (16 Channels) 8 (8 Channels)	Serial Number

Modular and Serial Remote I/O

	Modular Remote I/O				Serial Remote I/O	
	NA-4010	NA-4020	NA-4021	ioLogik E4200	ioLogik R2110	ioLogik R2140
Inputs/Outputs						
Digital Inputs	–	–	–	–	12	–
Digital Outputs	–	–	–	–	8	–
Analog Inputs	–	–	–	–	–	8
Analog Outputs	–	–	–	–	–	2
Ethernet						
Ports (connector)	1 (RJ45)	–	–	2 (RJ45)	–	–
Speed	10/100 Mbps	–	–	10/100 Mbps	–	–
Protocols	Modbus/TCP, Bootp, HTTP	–	–	Modbus/TCP, TCP/IP, UDP, DHCP, Bootp, SNMP, HTTP, SNTP	–	–
Serial						
Ports (connector)	–	1 (terminal block)	1 (DB9 female)	1 (DB9 male)	1 (terminal block)	1 (terminal block)
Interface	–	RS-485	RS-232	RS-232	RS-485	RS-485
Protocols	–	Modbus/RTU, Modbus/ASCII		Modbus/RTU	Modbus/RTU	Modbus/RTU
Physical Characteristics						
I/O Module Slots	32	32	32	16	–	–
Environmental Limits						
Operating Temperature	-10 to 60°C					
Storage Temperature	-40 to 85°C					
Ambient Relative Humidity	5 to 95% RH (non-condensing)					
Software						
Click&Go	–	–	–	✓	–	–
Active OPC Server	–	–	–	✓	–	–
DA-Center	–	–	–	✓	–	–
MXIO	✓	✓	✓	✓	✓	✓
ioAdmin	✓	✓	✓	–	✓	✓
Modular ioAdmin	–	–	–	✓	–	–
Standards and Certifications						
Safety	UL 508					
EMI	FCC Part 15, Subpart B, Class A; EN 61000-3-2; EN 61000-3-3; EN 61000-6-4					
EMS	EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-4-8; EN 61000-4-11; EN 61000-6-2					
Shock	IEC 60068-2-27					
Freefall	IEC 60068-2-32					
Vibration	IEC 60068-2-6					
Reliability						
Warranty	2 years	2 years	2 years	2 years	5 years	5 years

Digital I/O Modules

	M-1450	M-1451	M-1600	M-1601	M-1800	M-1801	M-2450	M-2600	M-2601	M-2800	M-2801
Inputs/Outputs											
Digital Inputs	4 (110 VAC)	4 (220 VAC)	16 (Sink)	16 (Source)	8 (Sink)	8 (Source)	–	–	–	–	–
Digital Outputs	–	–	–	–	–	–	–	16 (Sink)	16 (Source)	8 (Sink)	8 (Source)
Relay Outputs	–	–	–	–	–	–	4	–	–	–	–
Warranty	2 years (see www.moxa.com/warranty)										

Analog I/O Modules

	M-3802	M-3810	M-4402	M-4410	M-6200	M-6201
Inputs/Outputs						
Analog Inputs	8 (4-20 mA)	8 (0-10 V)	–	–	–	–
Analog Outputs	–	–	4 (4-20 mA)	4 (0-10 V)	–	–
RTD Inputs	–	–	–	–	2	–
Thermocouple Inputs	–	–	–	–	–	2
Warranty	2 years (see www.moxa.com/warranty)					

Power Modules

	M-7001	M-7002	M-7804	M-7805
Power				
VDC	21	5/24/48	0	24
VAC	–	110/220		
Purpose	System	Field	Field	Field
Warranty	2 years (see www.moxa.com/warranty)			

IP Cameras

IP Cameras	VPort 36-1MP Series	VPort 26A Series	VPort 16-M12 Series	VPort P06-1MP-M12 Series
Form Factor				
Protection Rating	IP30	IP66	IP66	IP66
Surface/Ceiling Mounting	✓	✓	✓	✓
Flush Mount	–	–	✓	–
Outdoor Installation Accessory	✓	✓	–	–
Camera				
Image Sensor	1/2.7" CMOS	1/2.7" CMOS	1/3" CCD	1/2.7" CMOS
Modulation	NTSC/PAL	NTSC/PAL	NTSC/PAL	NTSC/PAL
Lens (mm)	C/CS mount lenses	3 to 9 mm vari-focal lens	3.0, 3.6, 6.0, 8.0, 16	3.6, 4.2, 6.0
ICR (IR Cut Filiter Removable)	✓	✓	–	–
Minimum Illumination	0.2 Lux @ F1.2, color 0.05 Lux @ F1.2, B/W	0.2 Lux @ F1.2, color 0.05 Lux @ F1.2, B/W	0.02 Lux @ F2.0, color	0.2 Lux @ F1.2, color
White Balance	ATW/AWB	ATW/AWB	ATW/AWC	ATW/AWB
Electronic Shutter	Auto (1/30 to 1/25000 sec)	Auto (1/30 to 1/25000 sec)	Auto (NTSC: 1/60 to 1/120,000 sec PAL:1/50 to 1/120,000 sec)	Auto (1/30 to 1/25000 sec)
Slow Shutter	–	–	✓	–
AGC Control	✓	✓	✓	✓
Wide Dynamic Range	✓	✓	–	–
Flickerless Control	✓	✓	✓	✓
Auto Exposure	✓	✓	✓	✓
Image Rotation (Flip, mirror, and 180° rotation)	✓	✓	✓	✓
Digital noise reduction	✓	✓	✓	✓
Video Stream				
H.264	✓	✓	✓	✓
MJPEG	✓	✓	✓	✓
No. of Streams	3	3	3	3
DynaStream	✓	✓	✓	✓
Video Performance				
Max. Resolution	1280 x 800	1280 x 800	800 x 600	1280 x 800
Max. FPS	NTSC: 30 PAL: 25	NTSC: 30 PAL: 25	NTSC: 30 PAL: 25	NTSC: 30 PAL: 25
Connections (Max.)	5 unicast 50 mulitcast RTSP	5 unicast 50 mulitcast RTSP	10 unicast 50 mulitcast RTSP	5 unicast 50 mulitcast RTSP
Multicast Push	✓	✓	✓	✓
Network Connections				
10/100 Mbps, M12 Connector	–	–	1	1
10/100 Mbps, RJ45 Connector	1	1	–	–
Peripherals				
SDHC Slots	1	1	1	–
Network Management and Control				
Web Browser	✓	✓	✓	✓
SNMP Protocols	v1/v2c/v3	v1/v2c/v3	v1/v2c/v3	v1/v2c/v3
RTSP (Real Time Streaming Protocol)	✓	✓	✓	✓
Multicast (IGMP)	v3	v3	v3	v3
QoS	✓	✓	✓	✓
Automatic Configuration	–	–	DHCP Opt 66/67	DHCP Opt 66/67
Power Requirements				
Power-over-Ethernet (PoE)	✓	✓	✓	✓
12/24 VDC, 24 VAC	✓	✓	–	–
Alarms				
VMD (Video Motion Detection)	✓	✓	✓	✓
Alarm Snapshot Image	✓	✓	✓	✓
Tamper Alarm	✓	✓	–	✓
Supported Operating Temperature Ranges				
0 to 60°C	✓	–	–	–
-25 to 55°C	–	–	✓	✓
-40 to 50°C	–	✓	–	–
-40 to 75°C	✓	✓	–	✓
Standards and Certifications				
CE/FCC	✓	✓	✓	✓
UL 60950-1	✓	✓	✓	✓
EN 50155:2007	–	–	✓	✓
EN 50121-3-2	–	–	✓	✓
EN 50121-4	✓	✓	–	–
EN 62262	–	IK10	IK10 (dome model)	IK9
ONVIF	✓	✓	✓	✓

Industrial Video Encoders

Industrial Video Encoders						
	VPort 364A	VPort 354	VPort 254	VPort 461	VPort 451	VPort 351
Form Factor						
Protection Rating	IP30	IP30	IP30	IP30	IP30	IP30
DIN-Rail Mounting	✓	✓	✓	✓	✓	✓
Panel Mounting	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit	w/ optional kit
Audio/Video Channels						
Video Inputs	4	4	4	1	1	1
Video Outputs	0	0	0	0	0	1
Audio Inputs	1	1	1	1	1	1
Audio Outputs	1	1	1	1	1	1
Video Stream						
H.264	✓	–	–	✓	–	–
MJPEG	✓	✓	✓	✓	✓	✓
MPEG4	–	✓	✓	–	✓	✓
No. of Streams	2	2	1	3	3	1
DynaStream	✓	–	–	✓	–	–
Video Performance						
Max. Resolution	NTSC: 720 x 480 PAL: 720 x 576	NTSC: 704 x 480 PAL: 704 x 576	NTSC: 720 x 480 PAL: 720 x 576	NTSC: 720 x 480 PAL: 720 x 576	NTSC: 720 x 480 PAL: 720 x 576	NTSC: 720 x 480 PAL: 720 x 576
Max. FPS	NTSC: 30 PAL: 25	NTSC: 30 PAL: 25	NTSC: 30 (at CIF) PAL: 25 (at CIF)	NTSC: 30 PAL: 25	NTSC: 30 PAL: 25	NTSC: 30 PAL: 25
Quad View	30 FPS (max.)	30 FPS (max.)	30 FPS (max.)	–	–	–
Connections (Max.)	8 unitcast 50 mulitcast RTSP	8 unitcast 50 mulitcast RTSP	8 unitcast 12 mulitcast RTSP	10 unitcast 50 mulitcast RTSP	10 unitcast 50 mulitcast RTSP	10 unicast 20 mulitcast RTSP
Multicast Push	✓	✓	✓	✓	✓	–
Network Connections						
10/100BaseT(X) Ports	1	2	1	2	2	1
100BaseFX Ports (optional)	1	2	1	–	–	1
Peripherals						
PTZ Ports	1	1	1	1	1	1
COM Ports	–	1	1	1	1	–
RS-232 Console Ports	1	1	1	1	1	1
SDHC Slot	–	1	–	1	1	–
Network Management and Control						
Web Browser	✓	✓	✓	✓	✓	✓
SNMP Protocols	v1/v2c/v3	v1/v2c/v3	v1/v2c/v3	v1/v2c/v3	v1/v2c/v3	v1/v2c/v3
RTSP (Real Time Streaming Protocol)	✓	✓	✓	✓	✓	✓
Modbus/TCP	✓	✓	✓	✓	✓	–
Multicast (IGMP)	v3	v3	v3	v3	v3	v3
QoS	✓	✓	✓	✓	✓	✓
UPnP	✓	✓	✓	✓	✓	✓
DDNS	✓	✓	✓	✓	✓	✓
IP Filtering	✓	✓	✓	✓	✓	✓
Power Requirements						
Power Redundancy	✓	✓	✓	✓	✓	✓
Power Inputs	2	2	2	2	2	2
Alarms						
VMD (Video Motion Detection)	✓	✓	–	✓	✓	✓
Digital Inputs	4	4	4	2	2	2
Relay (Digital) Outputs	2	2	2	2	2	2
Alarm Video Recording	–	–	–	–	–	✓
Alarm Snapshot Image	✓	✓	✓	✓	✓	✓
Supported Operating Temperature Ranges						
0 to 60°C	✓	✓	✓	✓	✓	✓
-30 to 70°C	–	✓	–	–	–	–
-40 to 75°C	✓	–	✓	✓	✓	✓
Standards and Certifications						
CE/FCC	✓	✓	✓	✓	✓	✓
UL 508 / UL 60950-1	✓	✓	✓	✓	✓	✓
Class I Div. 2	–	–	–	–	–	UL/cUL Class I Division 2 Groups A/B/C/D
DNV	–	–	–	–	–	✓
ONVIF	✓	–	–	✓	–	–

Industrial Video Decoders/Recorders

Industrial Video Decoders		
	VPort D351	VPort D361
Form Factor		
Protection Rating	IP30	IP30
DIN-Rail Mounting	✓	✓
Panel Mounting	w/ optional kit	w/ optional kit
Audio/Video Channels		
Video Inputs	0	0
Video Outputs	1	1
Audio Inputs	1	1
Audio Outputs	1	1
Video Stream		
H.264	–	✓
MJPEG	✓	✓
MPEG4	✓	–
Network Connections		
10/100BaseT(X) Ports	1	1
Peripherals		
PTZ Ports	1	1
RS-232 Console Ports	1	1
Network Management and Control		
Web Browser	✓	✓
SNMP Protocols	v1/v2c/v3	v1/v2c/v3
RTSP (Real Time Streaming Protocol)	✓	✓
Modbus/TCP	–	✓
UPnP	✓	✓
DDNS	✓	✓
IP Filtering	✓	✓
Power Requirements		
Power Redundancy	✓	–
Power Inputs	2	1
Power Outputs	0	0
Alarms		
Digital Inputs	2	2
Relay (Digital) Outputs	2	2
Supported Operating Temperature Ranges		
0 to 60°C	✓	✓
-40 to 75°C	–	✓
Standards and Certifications		
CE/FCC	✓	✓
UL 508	✓	–
UL 60950-1	–	✓

Industrial Video Recorders		
	MxNVR-MO4	MxNVR-IA8
Type of Product	Network Video Recorder	Network Video Recorder
Form Factor		
Size (W x H x D)	92.8 x 135 x 150.4 mm	440 x 44 x 325 mm
Mounting	Panel / DIN-Rail mounting	Rack mounting
Video Recording		
Video Inputs	4, via BNC connector	8, via Ethernet
Capability	- Up to 120 FPS at 720 x 480 video resolutions - Up to 100 FPS at 720 x 576 video resolutions	- Up to 240 FPS at 720 x 480 video resolutions - Up to 200 FPS at 720 x 576 video resolutions
Video Stream	H.264, MJPEG	H.264, MJPEG, MPEG4
Video File Format	AVI	AVI
Record Mode	Manual, Schedule, and Event	Manual, Schedule, and Event
Pre-alarm Record	N/A	Up to 30 sec
Post-alarm Record	Based on setting	Up to 60 sec
Search		
Search Mode	N/A	camera, date/time, event
Playback		
Remote Playback	Client software	Web browser, client software
File Download	FTP	FTP
Polular Media Player	✓	✓
Network Connections		
10/100/1000Mbps, RJ45 Connector	–	1
10/100Mbps, M12 Connector	1	–
Storage		
SATA Interface	1	2
Network Management and Control		
Web Browser	✓	✓
SNMP Protocols	✓	v1/v2c/v3
RTSP (Real Time Streaming Protocol)	✓	✓
Modbus/TCP	✓	✓
Multicast (IGMP)	v3	v3
QoS	✓	✓
UPnP	✓	✓
DDNS	✓	✓
IP Filtering	✓	✓
802.1X	✓	✓
Connections	Up to 8	Up to 10
Peripherals		
Audio Ports	2 inputs	1 input
COM Ports	1 (console)	2
USB Ports	0	1
Digital Inputs	4	6
Digital Outputs	1	2
Power Requirements		
Power Inputs	1	1
Supported Operating Temperature Ranges		
0 to 60°C	✓	✓
-40 to 75°C	✓	✓
Standard and Certifications		
CE/FCC	✓	✓
UL 60950-1	✓	✓
EN 50155:2007	✓	–
EN 50121-3-2	✓	–
ONVIF	✓	–

Substation Computers

	DA-685	DA-710-XPE DA-710-LX	DA-681-I-SP-XPE DA-681-I-SP-LX	DA-681-I-DP-XPE DA-681-I-DP-LX	DA-681-I-DPP-T-XPE DA-681-I-DPP-T-LX	DA-682-XPE DA-682-LX	DA-683-SP-XPE DA-683-SP-LX	DA-683-DPP-T-XPE DA-683-DPP-T-LX
Computer								
CPU Speed	1.66 GHz	2 GHz	1 GHz	1 GHz	1 GHz	1 GHz	1.66 GHz	1.66 GHz
OS (pre-installed)	–	WinXP Emb. or Linux	WinXP Emb. or Linux	WinXP Emb. or Linux	WinXP Emb. or Linux	WinXP Emb. or Linux	WinXP Emb. or Linux	WinXP Emb. or Linux
DRAM	–	–	–	–	–	–	–	–
FSB	667 MHz	533 MHz	400 MHz	400 MHz	400 MHz	400 MHz	667 MHz	667 MHz
Flash	–	–	–	–	–	–	–	–
System Memory	1 GB (2 GB max.)	1 GB (2 GB max.)	512 MB (1 GB max.)	512 MB (1 GB max.)	512 MB (1 GB max.)	512 MB (1 GB max.)	1 GB (2 GB max.)	1 GB (2 GB max.)
PCMCIA	–	–	–	–	–	–	–	–
Expansion Bus	–	4 slots	–	–	–	2 slots	2 slots	2 slots
USB Ports	2 (USB 2.0)	4 (USB 2.0)	2 (USB 2.0)	2 (USB 2.0)	2 (USB 2.0)	4 (USB 2.0)	4 (USB 2.0)	4 (USB 2.0)
Digital I/O	4 DIs, 4 DOs	4 DIs, 4 DOs	–	–	–	–	4 DIs, 4 DOs	4 DIs, 4 DOs
Storage								
Built-in	2 GB (DOM)	2 GB	2 GB	2 GB	2 GB	1 GB	2 GB (DOM)	2 GB (DOM)
CompactFlash Socket	✓	✓	✓	✓	✓	✓	✓	✓
HDD Support	✓	✓	✓	✓	✓	✓	✓	✓
Other Peripherals								
KB/MS	✓	✓	✓	✓	✓	✓	✓	✓
Display								
Graphics Controller	✓	✓	✓	✓	✓	✓	✓	✓
LAN Interface								
10/100 Mbps Ethernet Ports	–	–	6	6	6	–	–	–
10/100/1000 Mbps Ethernet Ports	6	4	–	–	–	4	6	6
Magnetic Isolation Protection	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV
Serial Interface								
RS-232 Ports	2	2 (DB9-M)	4 (DB9-M)	4 (DB9-M)	4 (DB9-M)	–	2	2
RS-485 Ports	6	–	8 (TB)	8 (TB)	8 (TB)	–	–	–
RS-232/422/485 Ports	–	–	–	–	–	–	–	–
ESD Protection	–	4 KV	15 KV	15 KV	15 KV	–	–	–
Digital Isolation	–	–	2 KV	2 KV	2 KV	–	–	–
Console Port	–	–	–	–	–	–	–	–
Serial Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark							
Flow Control	RTS/CTS, XON/XOFF	RTS/CTS, XON/XOFF	RTS/CTS, XON/XOFF	RTS/CTS, XON/XOFF	RTS/CTS, XON/XOFF	–	RTS/CTS, XON/XOFF	RTS/CTS, XON/XOFF
Baudrate	50 bps to 115.2 Kbps	50 bps to 115.2 Kbps	50 bps to 115.2 Kbps	50 bps to 115.2 Kbps	50 bps to 115.2 Kbps	–	50 bps to 115.2 Kbps	50 bps to 115.2 Kbps
LEDs								
System	Power, Storage, Power Failure	Power, Storage, Power Failure	Power, Storage, Power Failure	Power, Storage, Power Failure	Power, Storage, Power Failure	–	Power, Storage, Power Failure	Power, Storage, Power Failure
LAN	100M, 1000M	100M, 1000M	10M, 100M	10M, 100M	10M, 100M	100M, 1000M	100M, 1000M	100M, 1000M
Serial	TX, RX	TX, RX (for 4 modules), Programmable	TX, RX	TX, RX	TX, RX	TX, RX	TX, RX	Tx, Rx
Physical Characteristics								
Housing	SECC sheet metal (1 mm)						SECC sheet metal (1 mm)	SECC sheet metal (1 mm)
Weight	4 kg	14 kg	4.5 kg	4.5 kg	4.5 kg	7 kg	4 kg	4 kg
Dimensions	315 x 440 x 90 mm	400 x 480 x 180 mm	440 x 315 x 45 mm			440 x 315 x 90 mm	440 x 315 x 90 mm	
Mounting	Standard 19-in rackmount	Standard 19-in rackmount	Standard 19-in rackmount	Standard 19-in rackmount	Standard 19-in rackmount	Standard 19-in rackmount	Standard 19-in rackmount	Standard 19-in rackmount
Environmental Limits								
Operating Temperature	-10 to 60°C	-10 to 50°C	0 to 60°C	0 to 60°C	-40 to 75°C	-10 to 60°C	-10 to 60°C	-40 to 75°C
Storage Temperature	-20 to 80°C	-20 to 80°C	-20 to 75°C	-20 to 75°C	-40 to 85°C	-20 to 80°C	-20 to 80°C	-40 to 85°C
Ambient Relative Humidity	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH
Regulatory Approvals								
EMC	FCC, CE (Class A)	EN 55022 Class A, EN 61000-3-2, EN 61000-3-3, EN 55024, FCC Part 15 Subpart B Class A	EN 55022, EN 61000-3-2, EN 61000-3-3, EN 55024, FCC Part 15 Subpart B Class A, IEC 61850-3 (DPP-T models only)			EN 61000-6-4, EN 61000-3-2, EN 61000-3-3, EN 55024, FCC Part 15 Subpart B Class A	CE (EN 55022, EN 61000-3-2, EN 61000-3-3, EN 55024), FCC (Part 15 Subpart B, CISPR 22 Class), CCC (GB9254, GB 17625.1), IEC 61850-3 (DPP-T models only)	
Safety	LVD, UL, cUL, CCC	UL 60950-1, CSA C22.2 No. 60950-1-07, CCC (GB4943, GB9254, GB17625.1)	UL 60950-1, CSA C22.2 No. 60950-1-03, EN 60950-1, CCC (GB4943, GB9254, GB17625.1)			UL 60950-1, CSA C22.2 No. 60950-1-03, EN 60950-1, CCC (GB4943, GB9254, GB17625.1)	UL/cUL (UL 60950-1, CSA C22.2 No. 60950-1-03), LVD (EN 60950-1), CCC (GB4943)	
Green Product	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE
Reliability								
Buzzer, RTC, WDT	✓	✓	✓	✓	✓	✓	✓	✓
Warranty	3 years (see www.moxa.com/warranty)							

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Substation Computers

	DA-660-8-LX	DA-660-8-CE	DA-660-16-LX	DA-660-16-CE	DA-661-16-LX	DA-661-16-CE	DA-662-16-LX	DA-662-16-CE	DA-662-I-16-LX	DA-662-I-16-CE
Computer										
CPU Speed	266 MHz	266 MHz	266 MHz	266 MHz	533 MHz	533 MHz	533 MHz	533 MHz	533 MHz	533 MHz
OS (pre-installed)	Emb. Linux	WinCE 5.0	Emb. Linux	WinCE 5.0	Emb. Linux	WinCE 5.0	Emb. Linux	WinCE 5.0	Emb. Linux	WinCE 5.0
DRAM	128 MB	128 MB	128 MB	128 MB	128 MB	128 MB	128 MB	128 MB	128 MB	128 MB
FSB	–	–	–	–	–	–	–	–	–	–
Flash	32 MB	32 MB	32 MB	32 MB	32 MB	32 MB	32 MB	32 MB	32 MB	32 MB
System Memory	–	–	–	–	–	–	–	–	–	–
PCMCIA	–	–	–	–	✓	✓	✓	✓	✓	✓
Expansion Bus	–	–	–	–	–	–	–	–	–	–
USB Ports	–	–	–	–	2	2	2	2	2	2
Storage										
Built-in	–	–	–	–	–	–	–	–	–	–
CompactFlash Socket	–	–	–	–	✓	✓	✓	✓	✓	✓
HDD Support	–	–	–	–	–	–	–	–	–	–
Other Peripherals										
KB/MS	–	–	–	–	–	–	–	–	–	–
Display										
Graphics Controller	–	–	–	–	–	–	–	–	–	–
Mini Screen with Push Buttons	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
LAN Interface										
10/100 Mbps Ethernet Ports	2	2	2	2	2	2	4	4	4	4
Magnetic Isolation Protection	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV
Digital Isolation Protection	–	–	–	–	–	–	–	–	2 KV	2 KV
Serial Interface										
RS-232/422/485 Ports	8 (RJ45)	8 (RJ45)	16 (RJ45)	16 (RJ45)	16 (RJ45)	16 (RJ45)	16 (RJ45)	16 (RJ45)	16 (RJ45)	16 (RJ45)
ESD Protection	15 KV	15 KV	15 KV	15 KV	15 KV	15 KV	15 KV	15 KV	15 KV	15 KV
Digital Isolation	–	–	–	–	–	–	–	–	2 KV	2 KV
Console Port	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Serial Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark									
Flow Control	RTS/CTS, XON/XOFF, ADDC®									
Baudrate	50 bps to 921.6 Kbps (non-standard baudrates supported; see user's manual for details)									
LEDs										
System	OS Ready	OS Ready	OS Ready	OS Ready	OS Ready	OS Ready	OS Ready	OS Ready	OS Ready	OS Ready
LAN	10M, 100M	10M, 100M	10M, 100M	10M, 100M	10M, 100M	10M, 100M	10M, 100M	10M, 100M	10M, 100M	10M, 100M
Serial	TxD, RxD	TxD, RxD	TxD, RxD	TxD, RxD	TxD, RxD	TxD, RxD	TxD, RxD	TxD, RxD	TxD, RxD	TxD, RxD
Physical Characteristics										
Housing	SECC sheet metal (1 mm)									
Weight	2.6 kg	2.6 kg	2.6 kg	2.6 kg	2.6 kg	2.6 kg	2.6 kg	2.6 kg	2.94 kg	2.94 kg
Dimensions	440 x 45 x 198 mm								440 x 45 x 228 mm	
Mounting	Standard 19-inch rackmount									
Environmental Limits										
Operating Temperature	-10 to 60°C	-10 to 60°C	-10 to 60°C	-10 to 60°C	-10 to 60°C	-10 to 60°C	-10 to 60°C	-10 to 60°C	-10 to 60°C	-10 to 60°C
Storage Temperature	-20 to 80°C	-20 to 80°C	-20 to 80°C	-20 to 80°C	-20 to 80°C	-20 to 80°C	-20 to 80°C	-20 to 80°C	-20 to 80°C	-20 to 80°C
Ambient Relative Humidity	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH
Regulatory Approvals										
EMC	CE (EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024), FCC (Part 15 Subpart B, CISPR 22 Class A)									
Safety	UL/cUL (UL60950-1, CSA C22.2 No. 60950-1-03), TÜV (EN60950-1)									
Green Product	RoHS, CRoHS, WEEE									
Reliability										
Buzzer, RTC, WDT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Warranty	5 years (see www.moxa.com/warranty)									

Industrial Computing > Substation Computers

Railway Computers

	TC-6110-W7E TC-6110-T-W73	TC-6110-CT-W7E TC-6110-CT-T-W73	V2616-XPE V2616-LX	V2406-24I-XPE, V2406-24I-T-XPE V2406-24I-LX, V2406-24I-T-LX	V2406-XPE, V2406-T-XPE V2406-LX, V2406-T-LX	V2416-XPE, V2416-T-XPE V2416-LX, V2416-T-LX	V2426-XPE V2426-LX	UC-8481-LX UC-8481-T-LX
Computer								
CPU Speed	1.8 GHz	1.8 GHz	2.26 GHz	1.6 GHz	1.6 GHz	1.6 GHz	1.6 GHz	533 MHz
OS (pre-installed)	Win7 Emb.	Win7 Emb.	WinXP Emb. or Linux	WinXP Emb. or Linux	WinXP Emb. or Linux	WinXP Emb. or Linux	Windows Embedded Standard 2009	Linux
FSB				533 MHz	533 MHz	533 MHz	533 MHz	512 MB
Flash	–	–	–	–	–	–	–	32 MB (OS); 512 MB (data)
System Memory	2 GB (4 GB max.)	2 GB (4 GB max.)	2 GB (4 GB max.)	1 GB (2 GB max.)	1 GB (2 GB max.)	1 GB (2 GB max.)	1 GB (2 GB max.)	–
USB Ports	3 (USB 2.0)	3 (USB 2.0)	3 (USB 2.0)	3 (USB 2.0)	3 (USB 2.0)	3 (USB 2.0)	3 (USB 2.0)	2 (USB 2.0)
Digital I/O	–	–	6 DIs, 2 DOs	6 DIs, 2 DOs	6 DIs, 2 DOs	6 DIs, 2 DOs	6 DIs, 2 DOs	4 DIs, 4 DOs
Storage								
Built-in	4 GB (DOM)	4 GB (DOM)	2 GB (CF)	2 GB (DOM)	2 GB (DOM)	2 GB (DOM)	2 GB (DOM)	–
CompactFlash Socket	–	–	2 GB	✓	✓	✓	✓	✓
SD Slot	–	–	–	–	–	–	–	–
HDD Support	✓	✓	✓	✓	✓	✓	✓	–
Other Peripherals								
KB/MS	–	–	✓	✓	✓	✓	✓	–
Audio	✓	✓	✓	✓	✓	✓	✓	–
Display								
Graphics Controller	✓	✓	✓	✓	✓	✓	✓	–
VGA Output	✓	✓	✓	✓	✓	✓	✓	–
DVI Output	–	–	✓	✓	✓	✓	✓	–
LVDS Output	–	–	–	–	–	–	–	–
LAN Interface								
10/100/1000 Mbps Ethernet Ports	2	2	2	2	2	2	2	8 (RJ45)
Magnetic Isolation Protection	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV
Serial Interface								
RS-232 Ports	1 (DB9)	1 (DB9)	–	–	–	–	–	–
RS-485 Ports	–	–	–	–	–	–	–	–
RS-232/422/485 Ports	–	–	2 (DB9-M)	4 (DB9-M)	4 (DB9-M)	4 (DB9-M)	4 (DB9-M)	4 (DB9-M)
ESD Protection	4 KV	4 KV	4 KV	4 KV	4 KV	4 KV	4 KV	4 KV
Serial Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark							
Flow Control	RTS/CTS, XON/XOFF	RTS/CTS, XON/XOFF	RTS/CTS, XON/XOFF	RTS/CTS, XON/XOFF	RTS/CTS, XON/XOFF	RTS/CTS, XON/XOFF	RTS/CTS, XON/XOFF	RTS/CTS, XON/XOFF
Baudrate	50 bps to 115.2 Kbps	50 bps to 115.2 Kbps	50 bps to 115.2 Kbps	50 bps to 115.2 Kbps	50 bps to 115.2 Kbps	50 bps to 115.2 Kbps	50 bps to 115.2 Kbps	50 bps to 115.2 Kbps
LEDs								
System	Storage, Power	Storage, Power	Storage, Power	Storage, Power	Storage, Power	Storage, Power	Storage, Power	Storage, Power
LAN	100M, 1000M	100M, 1000M	100M, 1000M	10M, 100M	10M, 100M	100M, 1000M	10M, 100M	10M, 100M
Serial	Tx, Rx	Tx, Rx	Tx, Rx	Tx, Rx	Tx, Rx	Tx, Rx	Tx, Rx	Tx, Rx
Physical Characteristics								
Housing	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum
Weight	5 kg	5 kg	5 kg	4 kg	2 kg	4 kg	4 kg	1.8 kg
Dimensions	287 x 250 x 101 mm	287 x 250 x 101 mm	287 x 250 x 101 mm	250 x 98 x 154 mm	250 x 57 x 154 mm	250 x 86 x 154	250 x 86 x 154	200 x 57 x 120
Mounting	Wallmount	Wallmount	Wallmount	Wallmount	Wallmount	Wallmount	Wallmount	Wallmount
Environmental Limits								
Operating Temperature	-25 to 55°C or -40 to 70°C	-25 to 55°C or -40 to 70°C	-25 to 55°C	-25 to 60°C or -40 to 70°C	-25 to 60°C or -40 to 70°C	-25 to 60°C or -40 to 70°C	-25 to 60°C or -40 to 70°C	-25 to 55°C or -40 to 70°C
Storage Temperature	-40 to 85°C	-40 to 85°C	-30 to 60°C	-40 to 85°C	-40 to 85°C	-40 to 85°C	-40 to 85°C	-25 to 75°C or -40 to 80°C
Ambient Relative Humidity	5 to 95%	5 to 95%	5 to 95%	5 to 95%	5 to 95%	5 to 95%	5 to 95%	5 to 95%
Anti Vibration/Shock	EN 50155 standard	EN 50155 standard	EN 50155 standard	EN 50155 standard	EN 50155 standard	EN 50155 standard	EN 50155 standard	EN 50155 standard
Regulatory Approvals								
EMC	EN 55022 Class A, EN 61000-3-2 Class D, EN 61000-3-3, EN 55024, FCC Part 15 Subpart B Class A, EN 50155, EN 50121-2-3, EN 50121-4, IEC 61373							
Safety	UL 60950-1, CSA C22.2 No. 60950-1-07, EN 60950-1							
Green Product	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE
Reliability								
Buzzer, RTC, WDT	✓	✓	✓	✓	✓	✓	✓	✓
Warranty	3 years (see www.moxa.com/warranty)							

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Marine Displays Computers

	MD-124X/Y/Z	MC-5150-DC-CP	MC-5150-AC/DC	MC-5157-AC/DC	MC-4510-C23	MPC-122-K
Computer						
CPU Speed	–	2.4 GHz	2.4 GHz	2.4 GHz	2.26 GHz	2.26 GHz
OS (pre-installed)	–	–	–	–	–	–
FSB	–	1066 MHz	1066 MHz	1066 MHz	1066 MHz	1066 MHz
Flash	–	–	–	–	–	–
System Memory	–	2 GB (4 GB max.)	2 GB (4 GB max.)	2 GB (4 GB max.)	2 GB (2 GB max.)	2 GB (4 GB max.)
USB Ports	–	6 (USB 2.0)	6 (USB 2.0)	6 (USB 2.0)	6 (USB 2.0)	7 (USB 2.0)
Digital I/O	–	–	–	–	–	–
Storage						
Built-in	–	✓	✓	✓	–	–
CompactFlash Socket	–	–	–	–	✓	✓
SD Slot	–	–	–	–	–	–
HDD Support	–	✓	✓	✓	✓	✓
Other Peripherals						
KB/MS	–	–	–	–	–	–
Audio	✓	✓	✓	✓	✓	✓
PCI Slot	–	–	–	2	–	–
Display						
Graphics Controller	✓	✓	✓	✓	✓	✓
VGA Output	✓	✓	✓	✓	✓	✓
DVI Output	✓				✓	✓
Display Characteristics						
Panel Size	24" wide-screen	–	–	–	–	22" wide-screen
Aspect Ratio	16:09	–	–	–	–	16:10
Pixels	1920 x 1080	–	–	–	–	1680 x 1050
Response Time	25 ms	–	–	–	–	8 ms (gray to gray)
Contrast Ratio	5000:1	–	–	–	–	1000:1
Viewing Angles	178/178	–	–	–	–	178/178
Max Colors	16.7 M (8 bits/color)	–	–	–	–	16.7M (8-bit/color)
Optical Bonding	Y model	–	–	–	–	✓
Touch	✓	–	–	–	–	–
LAN Interface						
10/100/1000 Mbps Ethernet Ports	–	2	2	2	2	2
Magnetic Isolation Protection	–	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV
Serial Interface						
RS-232 Ports	1 (DB9)	2 (DB9-M)	2 (DB9-M)	2 (DB9-M)	–	–
RS-485	–	–	–	–	–	–
RS-232/422/485 Ports	–	2 (DB9-M)	2 (DB9-M)	2 (DB9-M)	2 (DB9-M)	2 (DB9-M)
NMEA Ports	–	–	12 (terminal block)	12 (terminal block)	–	–
ESD Protection	–	4 KV	4 KV	4 KV	4 KV	4 KV
Serial Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark					
Flow Control	RTS/CTS, XON/XOFF					
Baudrate	50 bps to 115.2 Kbps	50 bps to 115.2 Kbps	50 bps to 115.2 Kbps	50 bps to 115.2 Kbps	50 bps to 115.2 Kbps	50 bps to 115.2 Kbps
LEDs						
System	–	Storage, Power	Storage, Power	Storage, Power	Storage, Power	Storage, Power
LAN	–	100M, 1000M	100M, 1000M	100M, 1000M	100M, 1000M	100M, 1000M
Serial	–	Tx, Rx	Tx, Rx	Tx, Rx	Tx, Rx	Tx, Rx
Physical Characteristics						
Housing	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum
Weight	10.5 kg	3.75 kg	6.85 kg	7.85 kg	3.75 kg	15 kg
Dimensions	380 x 590 x 90 mm	287 x 250 x 70 mm	287 x 250 x 140 mm	320 x 300 x 171 mm	302 x 70 x 279 mm	124 x 560 x 420 mm
Mounting	Flush	Wall	Wall	Wall	Wall	Flush
Environmental Limits						
Operating Temperature	-15 to 55°C	-15 to 55°C	-15 to 55°C	-15 to 55°C	-15 to 55°C	-15 to 55°C
Storage Temperature	-20 to 60°C	-20 to 60°C	-20 to 60°C	-20 to 60°C	-20 to 60°C	-20 to 60°C
Ambient Relative Humidity	5 to 95%	5 to 95%	5 to 95%	5 to 95%	5 to 95%	5 to 95%
Anti Vibration/Shock	IEC 60945, DNV 2.4, Class A/Class C	0.7 g @ DNV 2.4 (Class A), sine wave, 2-100 Hz, 1 Oct./min., 1.5 hr per axis, 1 grms @ DNV 2.4, random wave, 3-100 Hz, 2.5 hr per axis, 2.1 g @ DNV 2.4 (Class C), sine wave, 2-50 Hz, 1 Oct./min., 1.5 hr per axis, 50 g @ IEC 60068-2-27, half sine wave, 11 ms				
Regulatory Approvals						
EMC	EN 55022 Class B, EN 55024-4-2, EN 55024-4-3, EN 55024-4-4, FCC Part 15 Subpart B Class A, IEC 60945 4th. (Pending), DNV (Pending), IACS-E10 (Pending)	EN 55022 Class B, EN 55024-4-2, EN 55024-4-3, EN 55024-4-4, FCC Part 15 Subpart B Class B			EN 55022 Class B, EN 55024-4-2, EN 55024-4-3, EN 55024-4-4, FCC Part 15 Subpart B Class B	EN 55022 Class B, EN 55024-4-2, EN 55024-4-3, EN 55024-4-4, FCC Part 15 Subpart B Class A
Safety	UL/cUL, CCC	UL 60950-1, DNV 2.4 (Pending), IEC 60945 (4th) (Pending), IACS-E10 (Pending) EMC: EN 55022 Class			UL 60950-1, IEC 60945 4th. IACS-E10, CCC (GB4943, GB9254, GB17625.1)	IEC 60945 4th. (Pending), DNV (Pending), IACS-E10 (Pending)
Green Product	RoHS, cRoHS, WEEE	RoHS, cRoHS, WEEE	RoHS, cRoHS, WEEE	RoHS, cRoHS, WEEE	RoHS, cRoHS, WEEE	RoHS, cRoHS, WEEE
Reliability						
Buzzer, RTC, WDT	✓	✓	✓	✓	✓	✓
Warranty	By request	3 years	3 years	3 years	3 years	1 year

Industrial Computing > Marine Displays Computers

Wallmount Computers

	V2101-T-CE	V2101-T-XPE	V2101-T-LX	V2401-CE	V2401-XPE	V2401-LX	V2402-CE	V2402-XPE	V2402-LX	V2422-LX V2422-XPE	V468-XPE
Computer											
CPU Speed	1.1 GHz	1.1 GHz	1.1 GHz	1.6 GHz	1.6 GHz	1.6 GHz	1.6 GHz	1.6 GHz	1.6 GHz	1.6 GHz	500 MHz
OS (pre-installed)	WinCE 6.0	Windows Embedded Standard 2009	Linux	WinCE 6.0	Window Embedded Standard 2009	Linux	WinCE 6.0	Windows Embedded Standard 2009	Linux	WinXPE Emb. or Linux	WinXP Emb.
SRAM	–	–	–	–	–	–	–	–	–	–	256 KB
FSB	400 MHz	400 MHz	400 MHz	533 MHz	533 MHz	533 MHz	533 MHz	533 MHz	533 MHz	533 MHz	400 MHz
System Memory	1 GB (2 GB max.)	1 GB (2 GB max.)	1 GB (2 GB max.)	1 GB (2 GB max.)	1 GB (2 GB max.)	1 GB (2 GB max.)	1 GB (2 GB max.)	1 GB (2 GB max.)	1 GB (2 GB max.)	1 GB (2 GB max.)	512 MB (1 GB max.)
Expansion Bus	–	–	–	–	–	–	–	–	–	–	PC/104-Plus onboard
USB Ports	4 (USB 2.0)	4 (USB 2.0)	4 (USB 2.0)	6 (USB 2.0)	6 (USB 2.0)	6 (USB 2.0)	6 (USB 2.0)	6 (USB 2.0)	6 (USB 2.0)	6 (USB 2.0)	4 (USB 2.0)
Digital I/O	3 DIs, 3 DOs	3 DIs, 3 DOs	3 DIs, 3 DOs	4 DIs, 4 DOs	4 DIs, 4 DOs	4 DIs, 4 DOs	4 DIs, 4 DOs	4 DIs, 4 DOs	4 DIs, 4 DOs	4 DIs, 4 DOs	8 DIs, 8 DOs
Storage											
Built-in	2 GB	2 GB	2 GB	2 GB (DOM)	2 GB (DOM)	2 GB (DOM)	2 GB (DOM)	2 GB (DOM)	2 GB (DOM)	2 GB (DOM)	1 GB
CompactFlash Socket	✓ (for storing OS)	✓ (for storing OS)	✓ (for storing OS)	✓	✓	✓	✓	✓	✓	✓	✓
SD Slot	✓	✓	–	–	–	–	–	–	–	–	–
HDD Support	–	–	–	✓	✓	✓	✓	✓	✓	✓	–
Other Peripherals											
KB/MS	–	–	–	1 PS/2 interface supporting standard PS/2 keyboard and mouse through Y-type cable							
Audio	AC97 audio, with line-in/out interface			HD audio, with line-in/out interface							AC97 audio, with line-out interface
Display											
Graphics Controller	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
VGA Output	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–
DVI Output	–	–	–	✓	✓	✓	✓	✓	✓	✓	–
LVDS Output	✓	✓	✓	✓	✓	✓	–	–	–	–	–
LAN Interface											
10/100/1000 Mbps Ethernet Ports	2	2	2	2	2	2	2	2	2	2	4
Magnetic Isolation Protection	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV
Serial Interface											
RS-232 Ports	–	–	–	8 (68-pin VHDC)	8 (68-pin VHDC)	8 (68-pin VHDC)	–	–	–	–	2 (DB9-M)
RS-485	–	–	–	–	–	–	–	–	–	–	–
RS-232/422/485 Ports	2 (DB9-M)	2 (DB9-M)	2 (DB9-M)	4 (DB9-M)	4 (DB9-M)	4 (DB9-M)	4 (DB9-M)	4 (DB9-M)	4 (DB9-M)	4 (DB9-M)	2 (DB9-M)
ESD Protection	2 KV	2 KV	2 KV	4 KV	4 KV	4 KV	4 KV	4 KV	4 KV	4 KV	15 KV
Serial Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark										
Flow Control	RTS/CTS, XON/XOFF			RTS/CTS, XON/XOFF, ADDC®							
Baudrate	50 bps to 115.2 Kbps			50 bps to 921.6 Kbps (non-standard baudrates supported)							
LEDs											
System	Power, Storage										
LAN	100M, 1000M	100M, 1000M	100M, 1000M	100M, 1000M	100M, 1000M	100M, 1000M	100M, 1000M	100M, 1000M	100M, 1000M	100M, 1000M	10M, 100M
Serial	Tx, Rx	Tx, Rx	Tx, Rx	Tx, Rx	Tx, Rx	Tx, Rx	Tx, Rx	Tx, Rx	Tx, Rx	Tx, Rx	
Physical Characteristics											
Housing	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum
Weight	940 g	940 g	940 g	2.1 kg	2.1 kg	2.1 kg	2 kg	2 kg	2 kg	2 kg	1.32 kg
Dimensions	150 x 49 x 125 mm			250 x 57 x 152 mm						154 x 250 x 86	223 x 121 x 57 mm
Mounting	DIN-Rail, wall, VESA									Wall	DIN-Rail, wall
Environmental Limits											
Operating Temperature	-40 to 85°C			-10 to 60°C							
Storage Temperature	-40 to 85°C									-20 to 80°C	-20 to 80°C or -40 to 85°C
Ambient Relative Humidity	5 to 95% RH										
Anti Vibration/Shock	2g/20g			5g/50g							
Regulatory Approvals											
EMC	CE (EN55022 Class A, EN61000-3-2 Class D, EN61000-3-3, EN55024), FCC (Part 15 Subpart B, CISPR 22 Class A), CCC (GB9254, GB 17625.1)									EN 55022 Class A, EN 61000-3-2 Class D, EN 61000-3-3, EN 55024, FCC Part 15 Subpart B Class A, e-Mark (e4)	CE (EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024), FCC (Part 15 Subpart B, CISPR 22 Class A), CCC (GB9254, GB 17625.1)
Safety	UL/cUL (UL508, UL609500-1, CSA C22.2 No. 60950-1-03), LVD, CCC (GB4943)									UL 508, UL 60950-1, CSA C22.2 No. 60950-1-07, EN 60950-1, CCC (GB9254, GB17625.1)	UL/cUL (UL60950-1, CSA C22.2 No. 60950-1-03), LVD, CCC (GB4943)
Green Product	RoHS, cROHS, WEEE	RoHS, cROHS, WEEE								EN 55022 Class A, EN 61000-3-2 Class D, EN 61000-3-3, EN 55024, FCC Part 15 Subpart B Class A	RoHS, CRoHS, WEEE
Reliability											
Buzzer, RTC, WDT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Warranty	3 years (see www.moxa.com/warranty)										

Wallmount Computers

	UC-8410-LX UC-8410-T-LX	UC-8410-CE UC-8410-T-CE	UC-8416-LX UC-8416-T-LX	UC-8416-CE UC-8416-T-CE	UC-8418-LX UC-8418-T-LX	UC-8418-CE UC-8418-T-CE	UC-8430-LX UC-8430-T-LX	UC-8430-CE UC-8430-T-CE
Computer								
CPU Speed	533 MHz	533 MHz	533 MHz	533 MHz	533 MHz	533 MHz	533 MHz	533 MHz
OS (pre-installed)	Linux	Windows CE 6.0	Linux	Windows CE 6.0	Linux	Windows CE 6.0	Linux	Windows CE 6.0
DRAM	256 MB	256 MB	256 MB	256 MB	256 MB	256 MB	256 MB	256 MB
SRAM	256 KB	256 KB	256 KB	256 KB	256 KB	256 KB	256 KB	256 KB
FSB	–	–	–	–	–	–	–	–
Flash	16 MB (OS); 32 MB (data)	16 MB (OS); 32 MB (data)	16 MB (OS); 32 MB (data)	16 MB (OS); 32 MB (data)	16 MB (OS); 32 MB (data)	16 MB (OS); 32 MB (data)	32 MB (OS); 32 MB (data)	32 MB (OS); 32 MB (data)
System Memory	–	–	–	–	–	–	–	–
PCMCIA	–	–	–	–	–	–	–	–
Expansion Bus	–	–	–	–	–	–	–	–
USB Ports	2 (USB 2.0)	2 (USB 2.0)	2 (USB 2.0)	2 (USB 2.0)	2 (USB 2.0)	2 (USB 2.0)	6 (USB 2.0)	6 (USB 2.0)
Digital I/O	4 DIs, 4 DOs	4 DIs, 4 DOs	4 DIs, 4 DOs	4 DIs, 4 DOs	12 DIs, 12 DOs	12 DIs, 12 DOs	4 DIs, 4 DOs	4 DIs, 4 DOs
Storage								
Built-in	–	–	–	–	–	–	–	–
CompactFlash Socket	✓	✓	✓	✓	✓	✓	✓	✓
SD Slot	–	–	–	–	–	–	–	–
Display								
Mini Screen with Push Buttons	–	–	–	–	–	–	–	–
LAN Interface								
10/100 Mbps Ethernet Ports	3	3	3	3	3	3	3	3
Switch Ports	–	–	8	8	–	–	–	–
Magnetic Isolation Protection	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV
Serial Interface								
RS-232/422/485 Ports	8 (RJ45)	8 (RJ45)	8 (RJ45)	8 (RJ45)	8 (RJ45)	8 (RJ45)	8 (RJ45)	8 (RJ45)
ESD Protection	15 KV	15 KV	15 KV	15 KV	15 KV	15 KV	15 KV	15 KV
Console Port	✓	✓	✓	✓	✓	✓	✓	✓
Serial Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark							
Flow Control	RTS/CTS, XON/XOFF, ADDC®							
Baudrate	50 bps to 921.6 Kbps (non-standard baudrates supported)							
CANbus	–	–	–	–	2 (DB9-M)	2 (DB9-M)	–	–
LEDs								
System	Power, Ready, Storage, Battery							
LAN	10M, 100M							
Serial	TxD, RxD							
Physical Characteristics								
Housing	SECC sheet metal (1 mm)							
Weight	850 g	850 g	930 g	930 g	1 kg	1 kg	1 kg	1 kg
Dimensions	200 x 37 x 120 mm	200 x 37 x 120 mm	200 x 56 x 120 mm					
Mounting	DIN-Rail, wall							
Environmental Limits								
Operating Temperature	-10 to 60°C or -40 to 75°C							
Storage Temperature	-20 to 80°C or -40 to 85°C							
Ambient Relative Humidity	5 to 95% RH							
Anti Vibration/Shock	1g/5g	1g/5g	1g/5g	1g/5g	1g/5g	1g/5g	1g/5g	1g/5g
Regulatory Approvals								
EMC	CE (EN55022 Class B, EN55024-4-2, EN55024-4-3, EN55024-4-4), FCC (Part 15 Subpart B, Class B)							
Safety	UL/cUL (UL60950-1), CCC, LVD							
Green Product	RoHS, CRoHS, WEEE							
Reliability								
Buzzer, RTC, WDT	✓	✓	✓	✓	✓	✓	✓	✓
Warranty	5 years (see www.moxa.com/warranty)							

Wallmount Computers

	UC-7410-LX Plus	UC-7122-CE UC-7122-T-CE	UC-7124-CE UC-7124-T-CE	UC-7110-LX UC-7110-T-LX	UC-7112-LX	UC-7112-LX Plus	UC-7101-LX UC-7101-T-LX
Computer							
CPU Speed	533 MHz	200 MHz	200 MHz	192 MHz	192 MHz	192 MHz	192 MHz
OS (pre-installed)	Embedded Linux	Windows CE 5.0	Windows CE 5.0	µClinux	Linux	Linux	µClinux
DRAM	128 MB	32 MB	32 MB	16 MB	16 MB	32 MB	16 MB
SRAM	–	–	–	–	–	–	–
FSB	–	–	–	–	–	–	–
Flash	32 MB	16 MB	16 MB	8 MB	8 MB	16 MB	8 MB
System Memory	–	–	–	–	–	–	–
PCMCIA	✓	–	–	–	–	–	–
Expansion Bus	–	–	–	–	–	–	–
USB Ports	1 (USB 1.1)	–	–	–	–	–	–
Digital I/O	–	–	–	–	–	–	–
Storage							
Built-in	–	–	–	–	–	–	–
CompactFlash Socket	–	–	–	–	–	–	–
SD Slot	–	✓	✓	–	✓	✓	✓
Display							
Graphics Controller	–	–	–	–	–	–	–
Mini Screen with Push Buttons	✓	–	–	–	–	–	–
LAN Interface							
10/100 Mbps Ethernet Ports	2	2	2	2	2	2	1
Magnetic Isolation Protection	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV
Serial Interface							
RS-232/422/485 Ports	8 (RJ45)	2 (DB9-M)	4 (RJ45)	2 (DB9-M)	2 (DB9-M)	2 (DB9-M)	2 (DB9-M)
ESD Protection	15 KV	15 KV	15 KV	15 KV	15 KV	15 KV	15 KV
Optical Isolation	–	–	–	–	–	–	–
Console Port	✓	✓	✓	✓	✓	✓	✓
Serial Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark						
Flow Control	RTS/CTS, XON/XOFF, ADDC®						
Baudrate	50 bps to 921.6 Kbps (non-standard baudrates supported; see user's manual for details)						
CANbus	–	–	–	–	–	–	–
LEDs							
System	OS Ready	Ready, SD		Ready			Ready, SD
LAN	10M, 100M	10M, 100M	10M, 100M	10M, 100M	10M, 100M	10M, 100M	10M, 100M
Serial	TxD, RxD	TxD, RxD	TxD, RxD	TxD, RxD	TxD, RxD	TxD, RxD	TxD, RxD
Physical Characteristics							
Housing	SECC sheet metal (1 mm)	Aluminum (1 mm)					
Weight	875 g	190 g	200 g	190 g	190 g	190 g	130 g
Dimensions	197 x 44 x 125 mm	77 x 111 x 26 mm					67 x 22 x 100.4 mm
Mounting	DIN-Rail, wall	DIN-Rail, wall					DIN-Rail, wall
Environmental Limits							
Operating Temperature	-10 to 60°C	-10 to 60°C or -40 to 75°C					
Storage Temperature	-20 to 80°C	-20 to 80°C		-20 to 80°C or -40 to 85°C			
Ambient Relative Humidity	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH
Anti Vibration/Shock	1g/5g	–	–	–	–	–	–
Regulatory Approvals							
EMC	CE (EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024), FCC (Part 15 Subpart B, CISPR 22 Class A)						
Safety	UL/cUL (UL60950-1, CSA C22.2 No. 60950-1-03), TÜV (EN60950-1)	LVD (EN60950-1), UL/cUL (UL60950-1, CSA C22.2 No. 60950-1-03)		UL/cUL (UL60950-1, CSA C22.2 No. 60950-1-03), TÜV (EN60950-1)			LVD (EN60950-1), UL/cUL (UL60950, CAN/CSA-C22.2 No. 60950-00)
Green Product	RoHS, CRoHS, WEEE						
Reliability							
Buzzer, RTC, WDT	✓	✓	✓	✓	✓	✓	✓
Warranty	5 years (see www.moxa.com/warranty)						

DIN-rail Computers

	IA3341-LX	IA260-LX IA260-T-LX	IA260-CE IA260-T-CE	IA261-I-LX IA261-I-T-LX	IA261-I-CE IA261-I-T-CE	IA262-I-LX IA262-I-T-LX	IA262-I-CE IA262-I-T-CE	IA240-LX IA240-T-LX	IA241-LX IA241-T-LX
Computer									
CPU Speed	192 MHz	200 MHz	200 MHz	200 MHz	200 MHz	200 MHz	200 MHz	192 MHz	192 MHz
OS (pre-installed)	Linux	Linux	WinCE 6.0	Linux	WinCE 6.0	Linux	WinCE 6.0	Embedded Linux	
DRAM	64 MB	128 MB (256 MB max.)						64 MB	64 MB
Flash	16 MB	32 MB (64 MB max.)		32 MB	32 MB	32 MB	32 MB	32 MB	32 MB
PCMCIA	–	–	–	–	–	–	–	–	✓
USB Ports	1 (USB 2.0)	2 (USB 2.0)	2 (USB 2.0)	2 (USB 2.0)	2 (USB 2.0)	2 (USB 2.0)	2 (USB 2.0)	1 (USB 2.0)	1 (USB 2.0)
Digital I/O	4 DIs, 4 Dos	8 DIs, 8 DOs	8 DIs, 8 DOs	8 DIs, 8 DOs	8 DIs, 8 DOs	8 DIs, 8 DOs	8 DIs, 8 DOs	4 DIs, 4 DOs	4 DIs, 4 DOs
AI/Thermocouples	2/2	–	–	–	–	–	–	–	–
Storage									
CompactFlash Socket	–	✓	✓	✓	✓	✓	✓	–	–
SD Slot	✓	–	–	–	–	–	–	✓	✓
Display									
Graphics Controller	–	✓	✓	✓	✓	✓	✓	–	–
LAN Interface									
10/100 Mbps Ethernet Ports	2	2	2	2	2	2	2	2	2
Magnetic Isolation Protection	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV
Serial Interface									
RS-232/422/485 Ports	2 (DB9-M)	4 (DB9-M)	4 (DB9-M)	4 (DB9-M)	4 (DB9-M)	2 (DB9-M)	2 (DB9-M)	4 (RJ45)	4 (RJ45)
ESD Protection	4 KV	4 KV	4 KV	15 KV	15 KV	15 KV	15 KV	15 KV	15 KV
Digital Isolation	–	–	–	2 KV	2 KV	2 KV	2 KV	–	–
Console Port	✓	✓	✓	✓	✓	✓	✓	✓	✓
Serial Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark								
Flow Control	RTS/CTS, XON/XOFF, ADDC®								
Baudrate	50 bps to 921.6 Kbps (non-standard baudrates supported)								
CANbus	–	–	–	–	–	2 (DB9-M)	2 (DB9-M)	–	–
LEDs									
System	Power, Ready, Storage								
LAN	10M, 100M	10M, 100M	10M, 100M	10M, 100M	10M, 100M	10M, 100M	10M, 100M	10M, 100M	10M, 100M
Serial	TxD, RxD	TxD, RxD	TxD, RxD	TxD, RxD	TxD, RxD	TxD, RxD	TxD, RxD	TxD, RxD	TxD, RxD
Physical Characteristics									
Housing	Aluminum, industrial vertical form factor							SECC sheet metal (1 mm)	
Weight	585 g	1 kg	1 kg	950 g	950 g	950 g	950 g	430 g	500 g
Dimensions	116 x 35 x 146	52 x 113 x 162 mm	52 x 113 x 162 mm	60 x 115 x 152 mm	60 x 115 x 152 mm	60 x 115 x 152 mm	60 x 115 x 152 mm	60 x 137 x 100 mm	60 x 137 x 100 mm
Mounting	DIN-Rail, wall	DIN-Rail, wall	DIN-Rail, wall	DIN-Rail, wall	DIN-Rail, wall	DIN-Rail, wall	DIN-Rail, wall	DIN-Rail, wall	DIN-Rail, wall
Environmental Limits									
Operating Temperature	-10 to 60°C	-10 to 60°C or -40 to 75°C							
Operating Humidity	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH
Storage Temperature	-20 to 80°C	-20 to 80°C or -40 to 85°C							
Regulatory Approvals									
EMC	EN 55022 Class A, EN 61000-3-2 Class A, EN 61000-3-3, EN 55024, FCC Part 15 Subpart B Class A	CE (EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024), FCC (Part 15 Subpart B, CISPR 22 Class A), CCC (GB9254, GB 17625.1)						CE (EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024), FCC (Part 15 Subpart B, CISPR 22 Class A)	
Safety	UL 60950-1, EN 60950-1, CCC (GB4943, GB9254, GB17625.1)	UL/cUL (UL60950-1, CSA C22.2 No. 60950-1-03), LVD (EN60950-1), CCC (GB4943)						UL/cUL (UL60950-1, CSA C22.2 No. 60950-1-03), TÜV (EN60950-1)	
Green Product	RoHS, CRoHS, WEEE								
Reliability									
Buzzer, RTC, WDT	✓	✓	✓	✓	✓	✓	✓	✓	✓
Warranty	5 years (see www.moxa.com/warranty)								

Industrial Computing > DIN-rail Computers

Modules Boards Computers

	EM-2260-CE	EM-2260-LX	EM-1240-LX	EM-1240-T-LX	EM-1220-LX	EM-1220-T-LX
Computer						
CPU Speed	200 MHz	200 MHz	192 MHz	192 MHz	192 MHz	192 MHz
OS (pre-installed)	WinCE 6.0	Linux	Embedded µClinux			
DRAM	128 MB	128 MB	16 MB	16 MB	16 MB	16 MB
Flash	32 MB	32 MB	8 MB	8 MB	8 MB	8 MB
Digital I/O	8 DIs, 8 DOs	8 DIs, 8 DOs	10 GPIOs	10 GPIOs	10 GPIOs	10 GPIOs
Storage						
SD Slot	–	–	✓	✓	✓	✓
EIDE Interface	✓	✓	–	–	–	–
Display						
Graphics Controller	✓	✓	–	–	–	–
LAN Interface						
10/100 Mbps Ethernet Ports	2	2	2	2	2	2
Magnetic Isolation Protection	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV
Serial Interface						
RS-232/422/485 Ports	4	4	4	4	2	2
ESD Protection	15 KV	15 KV	15 KV	15 KV	15 KV	15 KV
Console Port	✓	✓	✓	✓	✓	✓
Serial Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark					
Flow Control	RTS/CTS, XON/XOFF, ADDC®					
Baudrate	50 bps to 921.6 Kbps (non-standard baudrates supported; see user's manual for details)					
Physical Characteristics						
Weight	70 g	70 g	50 g	50 g	40 g	40 g
Dimensions	106 x 87 mm	106 x 87 mm	90 x 80 mm	90 x 80 mm	80 x 50 mm	80 x 50 mm
Module Interface	–	–	Two 2 x 28 pin-headers (1.27 x 1.27 mm pitch)			
Environmental Limits						
Operating Temperature	-10 to 60°C	-10 to 60°C	-10 to 60°C or -40 to 75°C			
Storage Temperature	-20 to 80°C	-20 to 80°C	-20 to 80°C or -40 to 85°C			
Ambient Relative Humidity	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH
Regulatory Approvals						
EMC	EN 55022 Class A, EN 61000-3-2 Class A, EN 61000-3-3, EN 55024, FCC Part 15 Subpart B Class A		CE (EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024), FCC (Part 15 Subpart B, CISPR 22 Class A)			
Green Product	RoHS, CRoHS, WEEE					
Reliability						
Buzzer, RTC, WDT	✓	✓	✓	✓	✓	✓
Warranty	5 years (see www.moxa.com/warranty)					

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Wireless Embedded Computers

	W406-CE	W406-T-CE	W406-LX	W406-T-LX	W315A-LX	W325A-LX	W311-LX	W321-LX	W341-LX
Computer									
CPU Speed	200 MHz	200 MHz	200 MHz	200 MHz	192 MHz	192 MHz	192 MHz	192 MHz	192 MHz
OS (pre-installed)	WinCE 6.0	WinCE 6.0	Embedded Linux	Embedded Linux	Embedded Linux		Embedded Linux with MMU support		
DRAM	32 MB	32 MB	32 MB	32 MB	32 MB	32 MB	32 MB	32 MB	64 MB
Flash	16 MB	16 MB	16 MB	16 MB	16 MB	16 MB	16 MB	16 MB	16 MB
USB Ports	1 (USB 2.0)	1 (USB 2.0)	1 (USB 2.0)	1 (USB 2.0)	–	–	–	–	2 (USB 2.0)
Relay Outputs	4 DIs, 4 DOs	4 DIs, 4 DOs	4 DIs, 4 DOs	4 DIs, 4 DOs	–	–	–	–	1
Storage									
SD Slot	✓	✓	✓	✓	✓	✓	✓	✓	✓
LAN Interface									
10/100 Mbps Ethernet Ports	1	1	1	1	1	1	1	1	1
Magnetic Isolation Protection	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV	1.5 KV
WLAN Interface									
Standard Compliance	–	–	–	–	–	–	802.11a/b/g		
Radio Frequency Type	–	–	–	–	–	–	DSSS, CCK, OFDM		
Transmission Rate	–	–	–	–	–	–	54 Mbps (max.) with auto fallback (54, 48, 36, 24, 18, 12, 11, 9, 6, 5.5, 2, 1 Mbps) • 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11b: 1, 2, 5.5, 11 Mbps		
Transmission Distance	–	–	–	–	–	–	Up to 100 meters (@ 11 Mbps in open areas)		
Wireless Security	–	–	–	–	–	–	WEP: 64-bit/128-bit, WPA, WPA2 data encryption		
WLAN Modes	–	–	–	–	–	–	Ad-hoc (802.11b/g), Infrastructure		
Cellular Interface									
Cellular Modes	GSM/GPRS/EDGE	GSM/GPRS/EDGE	GSM/GPRS/EDGE	GSM/GPRS/EDGE	GSM, GPRS		–	–	–
Radio Frequency Bands	850/900/1800/1900 MHz	850/900/1800/1900 MHz	850/900/1800/1900 MHz	850/900/1800/1900 MHz	850/900/1800/1900 MHz		–	–	–
GPRS Class	12	12	12	12	10		–	–	–
EDGE Class	12	12	12	12	–	–	–	–	–
Coding Schemes	CS1 to CS4	CS1 to CS4	CS1 to CS4	CS1 to CS4	CS1 to CS4		–	–	–
Serial Interface									
RS-232/422/485 Ports	2 (DB9-M)	2 (DB9-M)	2 (DB9-M)	2 (DB9-M)	1 (DB9-M)	2 (DB9-M)	1 (DB9-M)	2 (DB9-M)	4 (DB9-M)
ESD Protection	15 KV	15 KV	15 KV	15 KV	15 KV	15 KV	15 KV	15 KV	15 KV
Console Port	✓	✓	✓	✓	✓	✓	✓	✓	✓
Serial Communication Parameters	Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark						Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark		
Flow Control	RTS/CTS, XON/XOFF, ADDC™						RTS/CTS, XON/XOFF, ADDC™		
Baudrate	50 bps to 921.6 Kbps (non-standard baudrates supported)						50 bps to 921.6 Kbps (non-standard baudrates supported)		
LEDs									
System	Ready, Storage	Ready, Storage	Ready, Storage	Ready, Storage	Ready, SD	Ready, SD	Ready, SD	Ready, SD	Ready, SD
LAN	10M, 100M	10M, 100M	10M, 100M	10M, 100M	10M, 100M	10M, 100M	10M, 100M	10M, 100M	10M, 100M
WLAN	–	–	–	–	–	–	Enable, Signal Strength		
Cellular	Cellular Enabled, Signal Strength	Cellular Enabled, Signal Strength	Cellular Enabled, Signal Strength	Cellular Enabled, Signal Strength	GPRS Enabled, GSM Signal Strength		–	–	–
Serial	TxD, RxD	TxD, RxD	TxD, RxD	TxD, RxD	TxD, RxD	TxD, RxD	TxD, RxD	TxD, RxD	TxD, RxD
Physical Characteristics									
Housing	Aluminum (1 mm)	Aluminum (1 mm)	Aluminum (1 mm)	Aluminum (1 mm)	Aluminum (1 mm)		Aluminum (1 mm)		
Weight	1 kg	1 kg	1 kg	1 kg	195 g	195 g	170 g	185 g	390 g
Dimensions	44 x 119 x 40 mm	44 x 119 x 40 mm	44 x 119 x 40 mm	44 x 119 x 40 mm	77 x 111 x 26 mm	77 x 111 x 26 mm	77 x 111 x 26 mm	77 x 111 x 26 mm	150 x 100 x 38 mm
Mounting	DIN-Rail, wall	DIN-Rail, wall	DIN-Rail, wall	DIN-Rail, wall	DIN-Rail, wall	DIN-Rail, wall	DIN-Rail, wall	DIN-Rail, wall	DIN-Rail, wall
Antenna Length	85 mm	85 mm	85 mm	85 mm	110 mm	110 mm	150 mm	150 mm	150 mm
Environmental Limits									
Operating Temperature	-10 to 60°C or wide temperature (by request)	By request	-10 to 60°C	By request	-10 to 60°C	-10 to 60°C	-10 to 60°C	-10 to 60°C	-10 to 60°C
Operating Humidity	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH
Storage Temperature	-20 to 80°C or wide temperature (by request)	-20 to 80°C	-20 to 80°C	-20 to 80°C or by request	-20 to 80°C	-20 to 80°C	-20 to 80°C	-20 to 80°C	-20 to 80°C
Anti Vibration/Shock	2g/6g with DIN-rail/20g with wall mount	2g/6g with DIN-rail/20g with wall mount	2g/6g with DIN-rail/20g with wall mount	2g/6g with DIN-rail/20g with wall mount	5g/50g	5g/50g	5g/50g	5g/50g	5g/50g
Regulatory Approvals									
Safety	EN 60950-1, CSA C22.2 No. 60950-1-03				UL 60950-1, EN 60950-1, CSA C22.2 No. 60950-1-03		UL 60950-1, EN 60950-1		
EMC	EN 55022 Class B, EN 61000-3-2 Class A, EN 61000-3-3, EN 55024, FCC Part 15 Subpart B Class B				EN 55022 Class A, EN 61000-3-2, EN 61000-3-3, EN 55024, FCC Part 15 Subpart B Class A		EN 55022 Class A, EN 61000-3-2, EN 61000-3-3, EN 55024		
Radio	EN 301 489-1, EN 301 489-7, EN 301 511				EN 301 489-1, EN 301 489-7, EN 301 511		EN 301 489-1/17, EN 301 893, EN 300 328, EN 50392, FCC Part 15, Subpart C/E		
Wheeled Vehicles	–	–	–	–	–	–	e-Mark (e13) (W311/321 only)	e-Mark (e13) (W311/321 only)	–
Green Product	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE		
Reliability									
Buzzer, RTC, WDT	✓	✓	✓	✓	✓	✓	✓	✓	✓
Warranty	5 years (see www.moxa.com/warranty)								

Note

Accessories

A

Accessories

Serial Connection Options

Serial Board Connection Box/Cable Usage Chart

Serial Board Model Name	Connection Boxes 8-port						Connection Cables 8-port						4-port							2-port		
	OPT8-M9	OPT8-RJ45	OPT8A/B/S	OPT8-M9+	OPT8A+/B+/S+	OPT8-RJ45+	CBL-M68M25x8-100 (OPT8C+)	CBL-M68M9x8-100 (OPT8D+)	CBL-M62M25x8-100 (OPT8C)	CBL-M62M9x8-100 (OPT8D)	CBL-M78M25x8-100	CBL-M78M9x8-100	CBL-M44M9x4-50	CBL-M44M9x4-50(POS)	CBL-M44M25x4-50	CBL-M37M9x4-30 (OPT4C)	CBL-M37M9x4-30 (OPT4D)	CBL-F40M9x4-50	CBL-F40M25x4-50	CBL-M25M9x2-50	CBL-F20M9x2-50	CBL-F20M25x2-50
C218Turbo Series	✓	✓	✓	–	–	–	–	–	✓	✓	–	–	–	–	–	–	–	–	–	–	–	–
C104H Series	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	–	–	–	–	–
CP-114 Series	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	–	–	–	–	–
CI-134 Series	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	–	–	–	–	–
CP-118U	✓	✓	✓	–	–	–	–	–	✓	✓	–	–	–	–	–	–	–	–	–	–	–	–
CP-138U	✓	✓	✓	–	–	–	–	–	✓	✓	–	–	–	–	–	–	–	–	–	–	–	–
CP-168U	✓	✓	✓	–	–	–	–	–	✓	✓	–	–	–	–	–	–	–	–	–	–	–	–
C168H Series	✓	✓	✓	–	–	–	–	–	✓	✓	–	–	–	–	–	–	–	–	–	–	–	–
CP-104UL	–	–	–	–	–	–	–	–	–	–	–	–	✓	–	✓	–	–	–	–	–	–	–
CP-134U Series	–	–	–	–	–	–	–	–	–	–	–	–	✓	–	✓	–	–	–	–	–	–	–
CP-114UL	–	–	–	–	–	–	–	–	–	–	–	–	✓	–	✓	–	–	–	–	–	–	–
CP-114UL-I	–	–	–	–	–	–	–	–	–	–	–	–	✓	–	✓	–	–	–	–	–	–	–
CP-104EL-A	–	–	–	–	–	–	–	–	–	–	–	–	✓	–	✓	–	–	–	–	–	–	–
CP-114EL	–	–	–	–	–	–	–	–	–	–	–	–	✓	–	✓	–	–	–	–	–	–	–
CP-114EL-I	–	–	–	–	–	–	–	–	–	–	–	–	✓	–	✓	–	–	–	–	–	–	–
CP-112UL	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	–	–
CP-112UL-I	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	–	–
CP-132UL Series	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	–	–
CP-102UL	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	–	–
CP-102EL	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	–	–
CP-132EL	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	–	–
CP-132EL-I	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	–	–
CP-118EL-A	–	–	–	✓	✓	✓	✓	✓	–	–	–	–	–	–	–	–	–	–	–	–	–	–
CP-168EL-A	–	–	–	✓	✓	✓	✓	✓	–	–	–	–	–	–	–	–	–	–	–	–	–	–
CP-118U-I	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	–	–	–	–	–	–	–	–
CP-138U-I	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	–	–	–	–	–	–	–	–
POS-104UL	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	–	–	–	–	–	–	–	–
CA-108	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	–	–	–
CB-108	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	–	–	–
CA-114	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	–	–	–
CB-114	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	–	–	–
CA-134I	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	–	–	–
CB-134I	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	–	–	–
CA-104	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓	–	–	–
CA-132	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓
CA-132I	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	✓

8-port RS-232 Connection Boxes

	OPT8-M9	OPT8-RJ45	OPT8A/S	OPT8B
Accessories Image				
Pin Assignment	DSR 6, RTS 7, CTS 8 / 1 DCD, 2 RxD, 3 TxD, 4 DTR, 5 GND	1 DSR, 2 RTS, 3 GND, 4 TxD, 5 RxD, 6 DCD, 7 CTS, 8 DTR	DSR 20 / 8 DCD, 7 GND, 6 DTR, 5 RTS, 4 CTS, 3 TxD, 2 RxD	2 TxD, 3 RxD, 4 RTS, 5 CTS, 6 DSR, 7 GND, 8 DCD / DTR 20
Board-side Connector	DB62 male x 1			
Device-side Connector	DB9 male x 8	8-pin RJ45 x 8	DB25 female x 8	DB25 male x 8
LEDs	TxD, RxD indicators for each device-side port	-	TxD, RxD indicators for each device-side port	
Baudrate	-	-	50 bps to 921.6 Kbps	
Dimensions	90 x 111 x 27.5 mm (3.5 x 4.3 x 1 in)	152.8 x 32.8 x 32 mm (6 x 1.29 x 1.25 in)	247 x 108 x 35 mm (9.7 x 4.3 x 1.4 in)	
Protection	-	-	25 KV ESD, 2 KV EFT surge protection (OPT8S only)	-
Connnection Cable	DB62 male to DB62 female 150 cm connection cable for connecting to the serial board	-	DB62 male to DB62 male 150 cm connection cable for connecting to the serial board	
Related Products	See page A-2 for details			

	OPT8-M9+	OPT8-RJ45+	OPT8A+/S+	OPT8B+
Accessories Image				
Pin Assignment	DSR 6, RTS 7, CTS 8 / 1 DCD, 2 RxD, 3 TxD, 4 DTR, 5 GND	1 DSR, 2 RTS, 3 GND, 4 TxD, 5 RxD, 6 DCD, 7 CTS, 8 DTR	DSR 20 / 8 DCD, 7 GND, 6 DTR, 5 RTS, 4 CTS, 3 TxD, 2 RxD	2 TxD, 3 RxD, 4 RTS, 5 CTS, 6 DSR, 7 GND, 8 DCD / DTR 20
Board-side Connector	VHDCI 68 x 1			
Device-side Connector	DB9 male x 8	8-pin RJ45 x 8	DB25 female x 8	DB25 male x 8
LEDs	TxD, RxD indicators for each device-side port	-	TxD, RxD indicators for each device-side port	
Baudrate	-	-	50 bps to 921.6 Kbps	
Dimensions	90 x 111 x 27.5 mm (3.5 x 4.3 x 1 in)	152.8 x 32.8 x 32 mm (6 x 1.29 x 1.25 in)	247 x 108 x 35 mm (9.7 x 4.3 x 1.4 in)	
Protection	-	-	25 KV ESD, 2 KV EFT surge protection (Opt8S only)	-
Connnection Cable	DB68 male to DB62 female 150 cm connection cable for connecting to the serial board	-	DB68 male to DB62 male 150 cm connection cable for the connecting to the serial board	
Related Products	See page A-2 for details			

8-port RS-232 connection Cables

	CBL-M62M25x8-100 (OPT8C)	CBL-M62M9x8-100 (OPT8D)	CBL-M68M25x8-100 (OPT8C+)	CBL-M68M9x8-100 (OPT8D+)	CBL-M78M25x8-100	CBL-M78M9x8-100
Accessories Image						
Pin Assignment	2 TxD, 3 RxD, 4 RTS, 5 CTS, 6 DSR, 7 GND, 8 DCD / DTR 20	DSR 6, RTS 7, CTS 8 / 1 DCD, 2 RxD, 3 TxD, 4 DTR, 5 GND	2 TxD, 3 RxD, 4 RTS, 5 CTS, 6 DSR, 7 GND, 8 DCD / DTR 20	DSR 6, RTS 7, CTS 8 / 1 DCD, 2 RxD, 3 TxD, 4 DTR, 5 GND	2 TxD, 3 RxD, 4 RTS, 5 CTS, 6 DSR, 7 GND, 8 DCD / DTR 20	DSR 6, RTS 7, CTS 8 / 1 DCD, 2 RxD, 3 TxD, 4 DTR, 5 GND
Board-side Connector	DB62 male x 1		VHDCI 68 x 1		DB78 male x 1	
Device-side Connector	DB25 male x 8	DB9 male x 8	DB25 male x 8	DB9 male x 8	DB25 male x 8	DB9 male x 8
Cable Length	100 cm					
Related Products	See page A-2 for details					

Accessories > Serial Connection Options
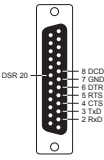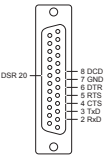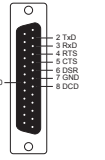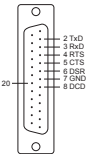
2-port Connection Cables

	CBL-F20M9x2-50				CBL-F20M25x2-50			
Accessories Image								

CBL-F20M9x2-50 Pin Assignment

PIN	RS-422	RS-485-4w	RS-485-2w
2	RxD+(B)	RxD+(B)	Data+(B)
3	TxD+(B)	TxD+(B)	–
4	–	–	–
5	–	–	–
6	–	–	–
7	GND	GND	GND
8	TxD-(A)	TxD-(A)	–
20	RxD-(A)	RxD-(A)	Data-(A)
22	–	–	–

CBL-F20M25x2-50 Pin Assignment

PIN	RS-422	RS-485-4w	RS-485-2w
1	TxD-(A)	TxD-(A)	–
2	TxD+(B)	TxD+(B)	–
3	RxD+(B)	RxD+(B)	Data+(B)
4	RxD-(A)	RxD-(A)	Data-(A)
5	GND	GND	GND
6	–	–	–
7	–	–	–
8	–	–	–
9	–	–	–

	CBL-F20M9x2-50	CBL-F20M25x2-50
Description	20-pin box header to 2-port DB9 male cable	20-pin box header to 2-port DB25 male cable
Cable Length	20 cm	
Related Products	See page A-2 for details	
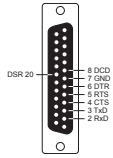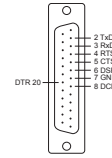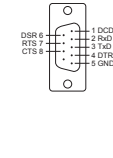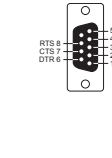
4-port Connection Cables

	CBL-F40M9x4-50	CBL-F40M25x4-50
Accessories Image		

CBL-F40M9x4-50 Pin Assignment

PIN	RS-232	RS-422	RS-485-4w	RS-485-2w
1	DCD	TxD-(A)	TxD-(A)	–
2	RxD	TxD+(B)	TxD+(B)	–
3	TxD	RxD+(B)	RxD+(B)	Data+(B)
4	DTR	RxD-(A)	RxD-(A)	Data-(A)
5	GND	GND	GND	GND
6	DSR	–	–	–
7	RTS	–	–	–
8	CTS	–	–	–
9	–	–	–	–

CBL-F40M25x4-50 Pin Assignment

PIN	RS-232	RS-422	RS-485-4w	RS-485-2w
2	TxD	RxD+(B)	RxD+(B)	Data+(B)
3	RxD	TxD+(B)	TxD+(B)	–
4	RTS	–	–	–
5	CTS	–	–	–
6	DSR	–	–	–
7	GND	GND	GND	GND
8	DCD	TxD-(A)	TxD-(A)	–
20	DTR	RxD-(A)	RxD-(A)	Data-(A)
22	–	–	–	–

	CBL-F40M9x4-50	CBL-F40M25x4-50
Description	40-pin box header to 4-port DB9 male cable	40-pin box header to 4-port DB25 male cable
Cable Length	50 cm	
Related Products	See page A-2 for details	

8-pin RJ45 to DB9/DB25 Connection Cables

	CBL-RJ45F25-150	CBL-RJ45F9-150	CBL-RJ45M25-150	CBL-RJ45M9-150	CBL-RJ45SF25-150	CBL-RJ45SF9-150	CBL-RJ45SM25-150	CBL-RJ45SM9-150
Accessories Image								
Pin Assignment								
Cable Type	-	-	-	-	Shielded			
Board-side Connector	8-pin RJ45 x 1							
Device-side Connector	DB25 female x 1	DB9 female x 1	DB25 male x 1	DB9 male x 1	DB25 female x 1	DB9 female x 1	DB25 male x 1	DB9 male x 1
Cable Length	150 cm							
Related Products	CP-104JU, OPT8-RJ45, NPort® 5210, NPort® 5600, NPort® 6600, CN2510/2600, NPort® W2004, UC-7410/7420							

: 10-pin RJ45 to DB9/DB25 Connection Cables

	CN20030	CN20040	CN20060	CN20070
Accessories Image				
Pin Assignment	DSR 20 / 8 DCD / 7 GND / 6 DTR / 5 RTS / 4 CTS / 3 TxD / 2 RxD	DTR 20 / 2 TxD / 3 RxD / 4 RTS / 5 CTS / 6 DSR / 7 GND / 8 DCD	DSR 6 / RTS 7 / CTS 8 / 1 DCD / 2 RxD / 3 TxD / 4 DTR / 5 GND	RTS 8 / CTS 7 / DTR 6 / 5 GND / 4 DSR / 3 RxD / 2 TxD / 1 DCD
Board-side Connector	10-pin RJ45 x 1			
Device-side Connector	DB25 female x 1	DB25 male x 1	DB9 male x 1	DB9 female x 1
Cable Length	150 cm			
Related Products	C320Turbo Series, CP-204J, CI-104J, A52, A53, A60			

: Wiring Kits

	TB-M9	TB-F9	TB-M25	TB-F25	ADP-RJ458P-DB9M	ADP-RJ458P-DB9F
Accessories Image					DB9M / 8 7 6 5 4 3 2 1 / 7 2 1 3 8 4 5 6 / RJ-45	DB9F / 1 2 3 4 5 6 7 8 / 6 4 5 1 3 8 7 2 / RJ-45
Type	DB9 male DIN-Rail wiring terminal	DB9 female DIN-Rail wiring terminal	DM25 male DIN-Rail wiring terminal	DB25 female DIN-Rail wiring terminal	RJ45-to-DB9 adaptor (male)	RJ45-to-DB9 adaptor (female)
Connector	DB9 male	DB9 female	DB25 male	DB25 female	-	-
Rating	300 V, 20 A (IEC250V 10A)				-	-
Operating Temperature	-40 to 105°C (-40 to 221°F)				-	-
Suitable Wiring	24-12 AWG (IEC 0.5-2.5 mm2)				-	-
Dimensions	77.5 x 45 x 51 mm (3.05 x 1.77 x 2.01 in)		77.5 x 90 x 51 mm (3.05 x 3.54 x 2.01 in)		-	-

Accessories > Serial Connection Options

Power Accessories

: Power Cords

Accessories Image	PWC-C13US-3B-183	PWC-C-13EU-3B-183 (CEE 7/7 to IEC C13)	PWC-C13UK-3B-183	PWC-C13JP-3B-183	PWC-C13AU-3B-183	PWC-C13CN-3B-183
Region	US	EU	UK	JP	AU	CN
Voltage	125 V	250 V	250 V	125 V	250 V	250 V
Thickness	6.3 ±0.2 mm	6.7 ±0.2 mm	6.7 ±0.2 mm	7.0 ±0.2 mm	6.7 ±0.2 mm	6.7 ±0.2 mm
Max. Current	10 A	10 A	10 A	7 A	10 A	10 A
Length	1830 ±30 mm	1830 ±30 mm	1830 ±30 mm	1830 ±30 mm	1830 ±30 mm	1830 ±30 mm
Related Products	CN2500 Series, NPort® 6600 Series, NPort® 5600 Series, PWR-12200-DT-S1					

: Power Adaptors

Accessories Image	PWR-12050-WPEU-S1	PWR-12050-WPUK-S1	PWR-12050-WPAU-S1	PWR-12050-WPUSJP-S1	PWR-12150-CN-S2
Input Rating					
I/P	100-240 VAC 50-60Hz	100-240 VAC 50-60Hz	100-240 VAC 50-60Hz	100-240 VAC 50-60Hz	100-240 VAC 50-60Hz
Input Plug					
Plug type	EU	UK	AU	US/JP	CN
Output Rating					
O/P	0.5A @ 12VDC	0.5A @ 12VDC	0.5A @ 12VDC	0.5A @ 12VDC	1.5A @ 12VDC
Output Plug					
Connector type	S-Type 5.5/2.1/7.5	S-Type 5.5/2.1/7.5	S-Type 5.5/2.1/7.5	S-Type 5.5/2.1/7.5	S-Type 5.5/2.1/7.5
Outer Diameter	5.5 ±0.1mm	5.5 ±0.1mm	5.5 ±0.1mm	5.5 ±0.1mm	5.5 ±0.1mm
Inner Diameter	2.1 ±0.1mm	2.1 ±0.1mm	2.1 ±0.1mm	2.1 ±0.1mm	2.1 ±0.1mm
Physical Characteristics					
Dimensions	64 x 40.5 x 30mm	64 x 40.5 x 30mm	64 x 40.5 x 30mm	64 x 40.5 x 30mm	70 x 45 x 54mm
Weight	70g	70g	70g	70g	200g
Cord Length	1530 ±100 mm	1530 ±100 mm	1530 ±100 mm	1530 ±100 mm	1800 ±200 mm
Environmental Limits					
Operating Temperature	0 to 40°C (32 to 104°F)	0 to 40°C (32 to 104°F)	0 to 40°C (32 to 104°F)	0 to 40°C (32 to 104°F)	0 to 40°C (32 to 104°F)
Regulatory Approvals					
Safety	CE/FCC/UL/GS/PSE/RCM	CE/FCC/UL/GS/PSE/RCM	CE/FCC/UL/GS/PSE/RCM	CE/FCC/UL/GS/PSE/RCM	CCC
Related Products					
Related Products	NPort® 5110A, NPort® 5130A, NPort® 5150A, NPort® 5210A, NPort® 5230A, NPort® 5250A, NPort® Z2150, NPort® Z3150				

: Power Adaptors

	PWR-12150-CN-S1	PWR-12120-USJP-S2	PWR-12200-DT-S1	PWR-12150-EU-S2	PWR-12150-UK-S2	PWR-12150-AU-S2
Accessories Image						
Input Rating						
I/P	100-240 VAC 50-60Hz	100-240 VAC 50-60Hz	100-240 VAC 50-60Hz	100-240 VAC 50-60Hz	100-240 VAC 50-60Hz	100-240 VAC 50-60Hz
Input Plug						
Plug type	CN	US/JP	-	EU	UK	AU
Output Rating						
O/P	1.5A @ 12VDC	1.5A @ 12VDC	2A @ 12VDC	1.5A @ 12VDC	1.5A @ 12VDC	1.2A @ 12VDC
Output Plug						
Connector type	L-Type 5.5/2.1/9.0	L-Type 5.5/2.1/9.0	S-Type 5.5/2.1/7.5	L-Type 5.5/2.1/9.0	L-Type 5.5/2.1/9.0	L-Type 5.5/2.1/9.0
Outer Diameter	5.5 ±0.1mm	5.5 ±0.1mm	5.5 ±0.1mm	5.5 ±0.1mm	5.5 ±0.1mm	5.5 ±0.1mm
Inner Diameter	2.1 ±0.1mm	2.1 ±0.1mm	2.1 ±0.1mm	2.1 ±0.1mm	2.1 ±0.1mm	2.1 ±0.1mm
Physical Characteristics						
Dimensions	70 x 45 x 54mm	75 x 34 x 72mm	110.8 x 51.8 x 32mm	70 x 45 x 66.5mm	70 x 48 x 60mm	75 x 41 x 75mm
Weight	200g	130g	200g	200g	200g	150g
Cord Length	1800 ±200 mm	1830 to 1950 mm	1800 ±200 mm	1800 ±200 mm	1800±200 mm	1500±100 mm
Environmental Limits						
Operating Temperature	0 to 40°C (32 to 104°F)	0 to 40°C (32 to 104°F)	0 to 40°C (32 to 104°F)	0 to 40°C (32 to 104°F)	0 to 40°C (32 to 104°F)	0 to 40°C (32 to 104°F)
Regulatory Approvals						
Safety	CCC	UL/PSE	UL/CE/FCC/GS/CCC/PSE/ TUV/BSMI	CE/GS	CE	CE/SAA
Related Products						
Related Products	A52/A52, MGate™ MB3X80 Series, DE-211, DE-311, NPort® W2X50 Series, NPort® 5400 Series, NPort® 5100 Series, NPort® 5200 Series, TK-485		NPort® 5600-8-DT Series, NPort® 5600-8-DTL Series	NPort® 5400 Series, NPort® W2x50 Plus, MGate™ MB3480		

Note: PWR-12200-DT-S1 not included with power cord

: Wide Temperature Power Adaptors

	PWR-12150-USJP-SA-T	PWR-12150-EU-SA-T	PWR-12150-UK-SA-T	PWR-12150-CN-SA-T	PWR-12150-AU-SA-T
Accessories Image					
Input Rating					
I/P	100-240 VAC, 40-60 Hz				
Input Plug					
Plug Type	US/JP	EU	UK	CN	AU
Output Rating					
O/P	1.5 A @ 12 VDC				
Protection Requirements					
Protection	Over current protection/ Over voltage protection				
Physical Characteristics					
Dimensions	88 x 32 x 70.3 mm (L x W x H)				
Power Jack (Nuts)	2.1 mm (inner), 5.5 mm (outer), 7.5 mm (length)				
Cable Length	1730 mm				
Environmental Limits					
Operating Temperature	-40 to 75°C (-40 to 167°F)				
Storage Temperature	-40 to 85°C (-40 to 185°F)				
Regulatory Approvals					
Safty	PSE/CE/FCC/EN 60950/UL	CE/FCC/EN 60950/UL/TUV	CE/FCC/EN 60950	CCC/CE/FCC/EN 60950	C-Tick/CE/FCC/EN 60950
MTBF	50,000 hours minimum at 25°C by MIL-STD-217F				
Related Products					
Related Products	NPort® 5110-T, NPort® 5450-T, NPort® 5450I-T, NPort® 5610-8-DTL-T, NPort® 5650-8-DTL-T, NPort® 5650I-8-DTL-T, NPort® 5110A-T, NPort® 5130A-T, NPort® 5150A-T, NPort® 5210A-T, NPort® 5230A-T, NPort® 5250A-T, NPort® W2150Plus-T, NPort® W2250Plus-T, NPort® W2X50A-T, NPort® Z2150-T, NPort® Z3150-T				

: Power Supplies

24/48 VDC power supplies for installation on a DIN-Rail

	24 VDC DIN-Rail Power Supplies					48 VDC DIN-Rail Power Supplies		
	DR-4524	DR-75-24	DR-120-24	MDR-40-24	MDR-60-24	DR-75-48	DR-120-48	DRP-248-48
Accessories Image								
Physical Characteristics and Temperature Limits								
Dimensions (mm)	78 x 67 x 93	55.5 x 100 x 125.2	65.5 x 100 x 125.2	40 x 90 x 100	40 x 90 x 100	55.5 x 100 x 125.2	65.5 x 100 x 125.2	125.5 x 125.5 x 100
Weight	400 g	550 g	650 g	260 g	280 g	550 g	650 g	1.2 kg
Operating Temperature	-10 to 50°C (14 to 122°F)	-10 to 60°C (14 to 140°F)		-20 to 70°C (-4 to 158°F)		-10 to 60°C (14 to 140°F)		-10 to 70°C (14 to 158°F)
Relative Humidity	20 to 90% RH	20 to 90% RH		20 to 90% RH		20 to 90% RH		
Power Requirements								
Wattage	45 W	75 W	120 W	40 W	60 W	75 W	120 W	240 W
Input	85-264 VAC (47-63 Hz), or 120-370 VDC		88-132 VAC, or 176-264 VAC (47-63 Hz) by switch, or 248-370 VDC	85-264 VAC (47-63 Hz) or 120-370 VDC		85-264 VAC (27-63 Hz) or 120-370 VDC	88-132 VAC, or 176-264 VAC (47-63 Hz) by switch, or 248-370 VDC	85-264 VAC (47-63 Hz) or 120-370 VDC
Output	48 W (24 VDC @ 0-2 A)	76.8 W (24 VDC @ 0-3.2 A)	120 W (24 VDC @ 0-5 A)	40 W (24 VDC @ 0-1.7 A)	60 W (24 VDC @ 0-2.5 A)	76.8 W (48 VDC @ 0-1.6 A)	120 W (48 VDC @ 0-2.5 A)	240 W (48 VDC @ 0-5 A)
Over-voltage Protection	27.6-32.4 V	29-33 V		31.2-36 V		58-65 V		54-60 V
Overload Protection	105-150%							
Type	Constant Current Limiting							
Reset	Auto Recovery							
Inrush Current	30 A and 115 V, or 60 A and 230 V							
Reliability								
Safety Standards	EN 60950-1, UL 508 approved							
EMC Standards	EN 55022 Class B, EN 61000-4-2/3/4/5/6/8/11, ENV 50204, EN 61000-3-2, EN 50082-2							
Warranty	3 years (see www.moxa.com/warranty)							

Fiber Accessories

: Fiber Optic Adaptors

SC male to ST female duplex adaptors

These SC male to ST female duplex adaptors are provided as an optional accessory to give users of Moxa industrial Ethernet switches more fiber optic connection options. Simply plug the adaptors directly into the SC connector of any Moxa industrial Ethernet switch to convert the original SC connector into an ST connector. This allows you to use an ST connector with any MOXA industrial Ethernet switch, but without the need for an extra patchcord.

ADP-SCm-STf-S
SC male to ST female duplex adaptor for single-mode fiber

Single-mode: 9/125 µm
Ferrules and Sleeves: Zirconia Ceramic
Body Color: Blue
Insertion Loss: 0.5/1.1 (TYP/MAX)
SC-side Connector: SC male
ST-side Connector: ST female

ADP-SCm-STf-M
SC male to ST female duplex adaptor for multi-mode fiber

Multi-mode: 62.5/125 µm
Ferrules and Sleeves: Zirconia Ceramic
Body Color: Gray
Insertion Loss: 0.1/0.3 (TYP/MAX)
SC-side Connector: SC male
ST-side Connector: ST female

Caps

	A-CAP-M12M-M	A-CAP-M12F-M	A-CAP-N-M	A-CAP-M30M-MIP67	A-CAP-WPRJ45-MC
Accessories Image					
Description	Metal cap to cover M12-male connector	Metal cap to cover M12-female connector	Metal cap to cover N-type connector	Metal cap to cover M30 connector	Metal cap with chain for RJ45 connector
Related Products	Power cap for the AWK-4121 AWK-4131-M12 AWK-6222 AWK-6232-M12 DI/O cap for the AWK-4131-M12 AWK-6232-M12 PM-7200-4M12 TN Series	DI/O cap for the AWK-4121 AWK-6222 LAN cap for the AWK-1121 AWK-1127 AWK-3121-M12 AWK-3131-M12 AWk-4131-M12 AWK-5222-M12 AWK-5232-M12 AWK-6232-M12 TN Series	Antenna cap for the AWK-4121 AWK-4131-M12 AWK-6222 AWK-6232-M12	SFP cap for the AWK-4131-M12	Console & LAN caps for the AWK-4121 AWK-6222 Console cap for the AWK-4131-M12 AWK-6232-M12

Connectors
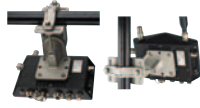
	CBL-M12(FF5P)/ OPEN-100 IP67	CBL-M12D(MM4P)/ RJ45-100 IP67	CBL-M23(FF6P)/ OPEN-BK-100 IP67	M12A-5P-IP68	M12A-8PMM-IP68	CBL-M12DFF4PRJ45-BK-10-IP67	CBL-M12MM8PRJ45-BK-100-IP67	M12A-8PFF-IP67
Accessories Image								
Description	1-meter M12-to-5-pin power cable with IP67-rated 5-pin female A-coded M12 connector	1-meter M12-to-RJ45 Cat-5C UTP Ethernet cable with IP67-rated 4-pin male D-coded M12 connector	1-meter M23-to-6-pin power cable with IP-67-rated female 6-pin M23 connector	Field-installation A-coded M12 screw-in 5-pin connector, female connector female pins	Field-installation A-coded M12 screw-in 8-pin connector, male connector male PIN	M12-to-RJ45 Cat-5E UTP Ethernet cable with IP67-rated female 4-pin D-coded M12 connector	M12-to-RJ45 Cat-5E UTP Ethernet cable with IP67-rated male 8-pin A-coded M12 connector	Field-installation A-coded M12 screw-in 8-pin connector, female connector female PIN
Cable Length	1 m	-	-	-	-	10 m	1 m	-
Related Products	AWK-4121 AWK-4131-M12 AWK-6222 AWK-6232-M12	TN Series	TN Series	Power connector for the AWK-4121 Series AWK-4131-M12 AWK-6222 Series AWK-6232-M12	DI/O connector for the AWK-4121 AWK-6222 LAN connector for the AWK-4131-M12 AWK-6232-M12	AWK-4121 AWK-6222	AWK-4131 Series	DI/DO connector for the AWK-4131 Series AWK-6232-M12

	Field-Installation Connectors	
	A-PLG-WPM30IP67-01	A-PLG-WPRJ
Accessories Image		
Description	Field-Installation for M30 plug	Field-installation RJ-type plug
Cable Length	-	-
Related Products	SFP LAN connector for the AWK-4131-M12	LAN connector for the AWK-4121 AWK-6222

Mounting Kits

	Wall Mounting Kits			
	WK-30	WK-32	WK-36-02	WK-46
Accessories Image				
Dimensions	40 x 30 x 1 mm	30.3 x 140 x 12.3 mm	36 x 67 x 2 mm	51.6 x 66.8 x 1 mm
Related Products	EDS-205A Series EDS-G205 Series EDS-G205A-4PoE Series ICF-1170I Series	EDS-828 Series EDS-728 Series	NPort® IA5150A Series NPort® IA5250A Series	EDS-208A Series EDS-300 Series EDS-400A Series EDS-500A Series EDS-G308 Series EDS-G509 Series EDS-P206A-4PoE Series EDS-P308 Series EDS-P510 Series OBU-102 Series IMC-101G/101 Series ioLogik W5312 Series ioLogik W5340 Series PT-500 Series VPort 254 Series VPort 351 Series VPort 354 Series VPort 364 Series VPort 451 Series VPort 461 Series VPort 3310 Series VPort D351 VPort D361 Series

	Wall Mounting Kits				Swivel Mounting Kit
	WK-51-01	WK-55	WK-75	WK-90	WK-HA1002SU
Accessories Image					
Dimensions	55 x 67 x 1 mm	55 x 34.5 x 2.5 mm	75 x 90 x 2.5 mm	99 x 62 x 2.5 mm	-
Related Products	AWK-1121 AWK-1127 AWK-3121 Series AWK-3131 Series AWK-5222 Series EDR-G902 Series EDR-G903 Series EDS-P506A-4PoE Series EDS-316 Series IMC-P101 Series PTC-101 Series NPort® IA5450A Series	AWK-4121 AWK-4131-M12 AWK-6222 AWK-6232-M12	EDS-600 Series ioPAC 8000 Series	ioLogik E1500 Series	ANT-WSB-PNF-12

	DIN-Rail Mounting Kits				Pole Mounting Kit
	DK-DC50131	DK-TN-5308	DK-M12-305	DK-35A	PK-DC2DOF
Accessories Image					
Dimensions	50 x 131 x 1 mm	66 x 174 x 12.8 mm	60 x 125 x 12.8 mm	42.5 x 10 x 19.34 mm	-
Related Products	TN-5500 Series AWK-3121 Series AWK-3131 Series AWK-4121 Series AWK-4131 Series AWK-5222 Series AWK-6222 Series AWK-6232 Series ioPAC 8000 Series ioLogik E1500 Series MxNVR-MO4 Series	TN-5308 Series	TN-5305 Series	MGate™ 3x80 Series NPort® Express DE-211 NPort® Express DE-311 NPort® 5100 Series NPort® 5100A Series NPort® 5200 Series NPort® 5200A Series NPort® 5400 Series NPort® 6150/6250/6450 NPort® W2x50 Plus Series NPort® W2x50A UPort 1150I UPort 404/407 UPort 1250/1250I TCF-142 Series TCC-100/100I TCC-120/120I	AWK-4121 AWK-4131-M12 AWK-6222 AWK-6232-M12

Note

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