Product Selection Guide

2016-2017

Enabling Connectivity for the Industrial Internet of Things

• Edge Connectivity • Industrial Computing • Network Infrastructure

MOXA®

Reliable Networks ▲ Sincere Service

Moxa: Your Trusted Partner in Automation

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

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

Promise for the Future

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

Reliable Networks

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

Sincere Service

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

Product Offerings

Edge Connectivity

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

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

Industrial Computing

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

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

Network Infrastructure

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

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

Get Connected to Success and Opportunity

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

Global Service Coverage

Customer-Oriented Service

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

Extended Teamwork

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

Total Quality Management

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

Robust Technology

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

Project Life-Cycle Management

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

Continuous Improvement

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

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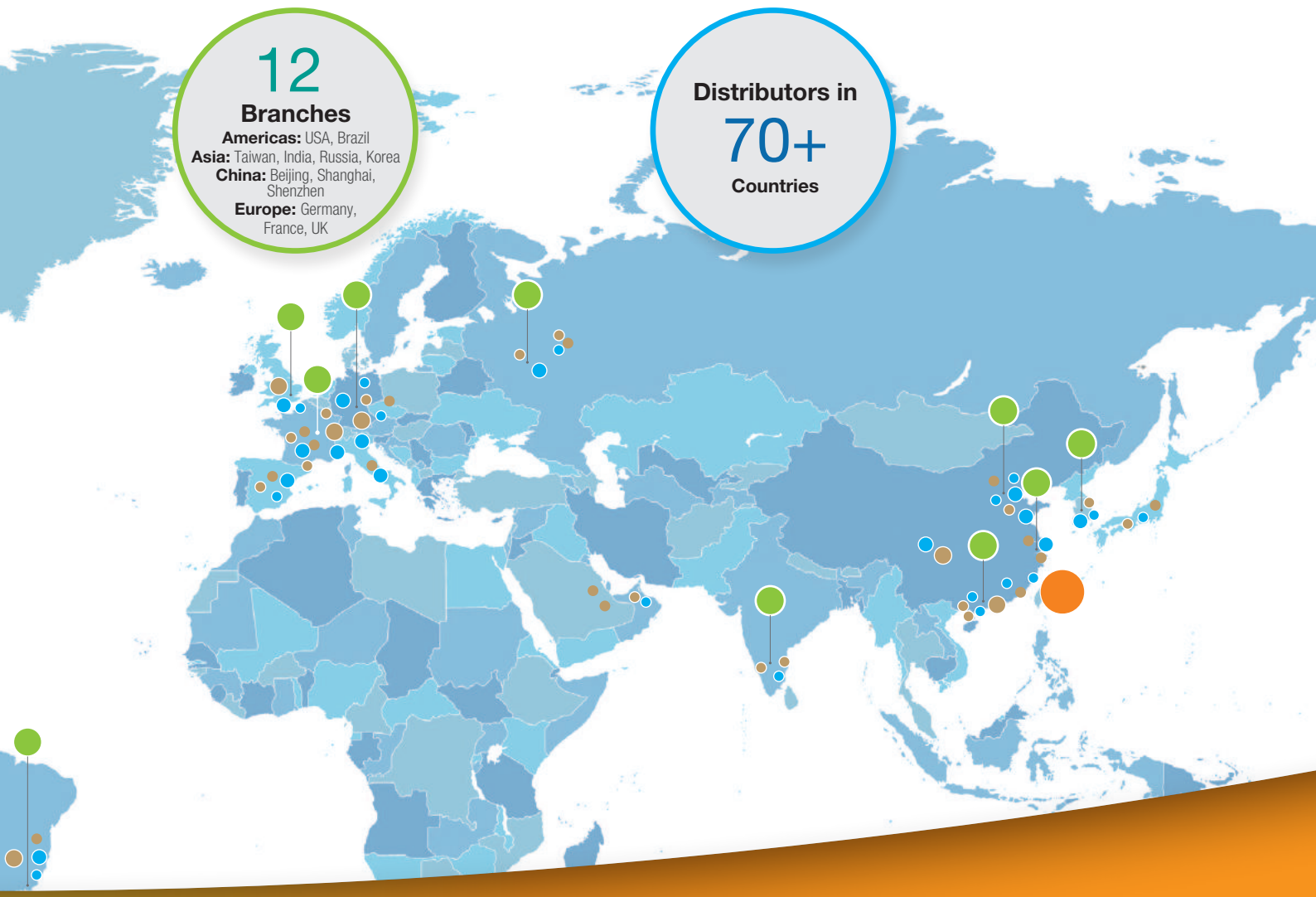
Branches
Americas: USA, Brazil
Asia: Taiwan, India, Russia, Korea
China: Beijing, Shanghai, Shenzhen
Europe: Germany, France, UK

Distributors in
70+
Countries



Technological Innovation

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

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

■ Reliability
Proven reliability for continuous productivity

■ Availability
Millisecond-level redundancy for nonstop operations

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

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

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

Industrial Ethernet

Industrial Wireless

Device Connectivity

Remote Automation

IP Surveillance

Industrial Computing

Accessories

Enabling Connectivity for the Industrial Internet of Things

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

Edge Connectivity

Serial/Fieldbus Connectivity

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

I/O Connectivity

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

Video Connectivity

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

Smart Value for Your Applications

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

Powering Productivity

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

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

Optimizing Operational Efficiency

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

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

Strengthening Security

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

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

Factory Automation

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

Industrial Computing

Industrial Computers

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

Network Infrastructure

Industrial Ethernet

Industrial Wireless

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

Industrial Routers

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

Management

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

Railway Automation

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

Power Automation

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

Oil and Gas Automation

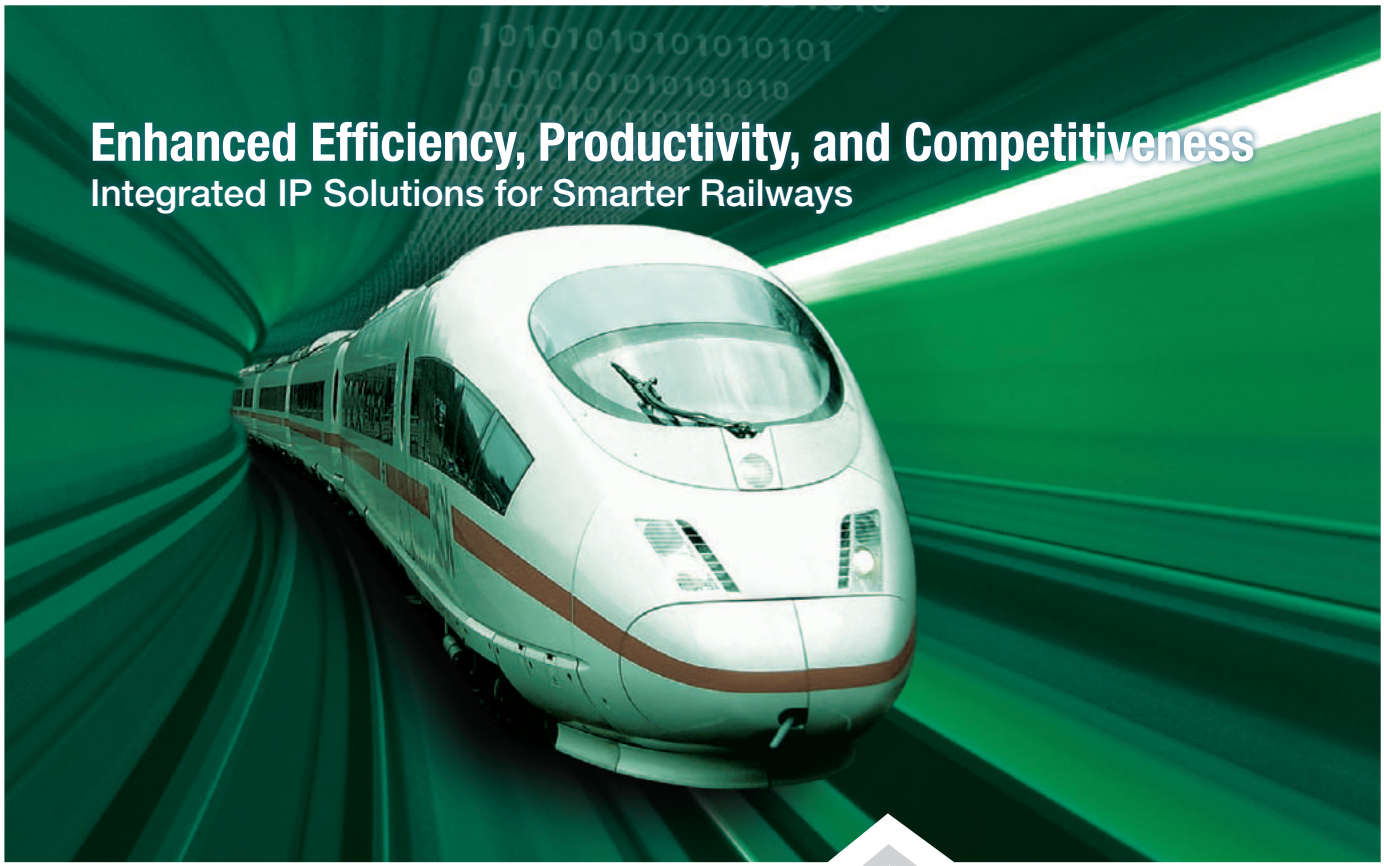
Moxa's oil and gas automation solutions comply with UL Class 1 Division 2, ATEX Zone 2, and IECEx standards, allowing customers to achieve maximum uptime and improved productivity with our oil and gas networking, monitoring, and computing solution portfolio.

Marine Automation

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

Intelligent Transportation Systems

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



IRIS-Certified Rail Solutions Verified for Maximum Quality

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

Application Focus

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

Leading Technologies

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

IRIS Certification

Visit www.moxa.com/rail

ACC Auto Carriage Connection FLI Industrial Auto Configuration EN 50155 EN 50121

ToughNet, EDS Series
Industrial Ethernet Switches
▶Page 15

TAP, AWK-RCC/RTG Series
Industrial Wireless AP/Bridge/Client
▶Page 33

NPort 5000AI-M12 Series
RS-232/422/485 Serial Device Servers
▶Page 39

TC-6000, V2000 Series
Industrial Embedded Computers
▶Page 79

VPort Series
Industrial IP Cameras
▶Page 75

ioPAC Series
Industrial RTU Controllers
▶Page 66

ioLogik E1500 Series
Remote I/Os
▶Page 71

Connect to the Smart Grid Today

End-to-End Networking and Computing Solutions for the Power Industry

Many Successful Deployments in Power Projects Worldwide

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

Application Focus

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

Leading Technologies

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

Visit www.moxa.com/SmartGrid

Turbo Chain | PRP HSR | IEC 61850 IEEE 1613 | ThingsPro

PT-7528 Series
IEC 61850 28-port IEEE 1613 Class 2 Managed Ethernet Switches
▶Page 23

PT-7728-PTP Series
IEC 61850 14-port IEEE 1588v2 Managed PRP/HSR Switches
▶Page 23

PT-G503-PHR-PTP Series
IEC 61850 3-port Full Gigabit Managed PRP/HSR Redundancy Boxes
▶Page 23

DA-820 Series
x86 IEC 61850-3 Certified i7 Rackmount Computers
▶Page 77

NPort S8000 Series
Combo Switches / Serial Device Servers
▶Page 38

UC-8100 Series
RISC Energy Monitoring Computers
▶Page 78

ioLogik E1200 Series
Compact Ethernet Remote I/O
▶Page 70

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

Proven Solutions for the Harshest Oil & Gas Environments

Integrated Networking, Monitoring, and Computing Systems

Your Trusted Partner in Oil & Gas Automation

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

Application Focus

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

Leading Technologies

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

Visit www.moxa.com/Solutions/Oil_and_gas

EDS/IKS/ICS Series
Edge-to-Core Ethernet Switches
▶Page 15

EDR Series
VPN/Firewall Secure Routers

AWK Series
IEEE 802.11a/b/g/n Wireless AP/Bridge/Client
▶Page 30

MGate and NPort Series
Industrial Gateways and Device Servers
▶Page 27, 46

ICF Series
Industrial Serial/PROFIBUS-to Fiber Converters
▶Page 62

ioLogik 2500 Series and ioLogik E1200 Series
Smart Remote I/O and Ethernet Remote I/O
▶Page 68, 70

VPort Series
HD IP Cameras
▶Page 74

EXPC-1519 Series
Zone 2 Panel Computers
▶Page 83

Make Your Marine Vision a Reality

Set Sail with Moxa's Reliable Marine Solutions

Successful Deployment of Integrated Marine Bridge Solutions Worldwide

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

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

Application Focus

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

Leading Technologies

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

Visit www.moxa.com/marine

GL Lloyd's Register DNV·GL ABS

IACS E10 IEC 61162 IEC 60945 ClassNK

MPC-2150/2190/2240/2260 Series
Marine Panel Computers
▶Page 82

MD-219/224/226 Series
Marine Displays
▶Page 82

MC-7200 Series
Marine ECDIS Computers
▶Page 81

MGate 5101-PBM-MN Series
PROFIBUS-to-Modbus TCP Gateways
▶Page 28

ioLogik E1200H Series
Ethernet Remote I/O
▶Page 71

EDS-408A Series
Managed Ethernet Switches
▶Page 18

Maximize Your Factory Potential

With Reliability, Ease of Integration, and Global Support

Your Trusted Partner for Factory Automation

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

Application Focus

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

Main Benefits

Reliability

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

Ease of Integration

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

Global Support

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

VPort Series
Industrial IP Cameras
▶Page 74

EDS Series
Industrial Ethernet Switches
▶Page 17

MGate Series
Industrial Ethernet Gateways
▶Page 27

NPort Series
Serial-to-Ethernet Device Servers
▶Page 40

ioLogik 2500-WL1 Series
Smart Wireless I/O
▶Page 68

EDR-810 Series
Industrial 8+2G Multiport Secure Routers

AWK-A Series
Industrial Wireless AP/Bridge/Client
▶Page 30

Integrated Network Solutions for Intelligent Transportation

Real-Time Convergence for Non-Stop Safety

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

Application Focus

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

Leading Technologies

High Bandwidth

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

Extreme Reliability

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

Efficient Management

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

Visit www.moxa.com/ITS

ICS Series
Industrial 10GbE Ethernet Switches
▶Page 15

AWK-A Series
Industrial 802.11n AP/Bridge/Client
▶Page 30

EDS-G512E-8PoE
8-port PoE+ Full Gigabit Managed Switch
▶Page 20

VPort Series
Industrial HD IP Cameras
▶Page 74

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

NPort IA5000A Series
2-Port Industrial Serial Device Servers
▶Page 46

MXstudio
Industrial Network Management Suite

Rackmount Ethernet Switches

	Managed Rackmount Switches							
								
	ICS-G7852A	ICS-G7850A	ICS-G7848A	ICS-G7752A	ICS-G7750A	ICS-G7748A	ICS-G7828A	ICS-G7826A
Supported Modules								
Gigabit Media Modules	✓	✓	✓	✓	✓	✓	–	–
Fast Media 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 Input								
24 VDC	–	–	–	–	–	–	–	–
24 VAC	–	–	–	–	–	–	–	–
48 VDC	–	–	–	–	–	–	–	–
12/24/48 VDC	–	–	–	–	–	–	–	–
85 to 264 VAC	✓	✓	✓	✓	✓	✓	✓	✓
88 to 300 VDC or 85 to 264 VAC, isolated	–	–	–	–	–	–	–	–
Installation Options								
DIN-Rail Mounting	–	–	–	–	–	–	–	–
Panel Mounting	–	–	–	–	–	–	–	–
Rack Mounting	✓	✓	✓	✓	✓	✓	✓	✓
Supported Operating Temperatures								
-10 to 60°C (14 to 140°F)	✓	✓	✓	✓	✓	✓	✓	✓
-40 to 75°C (-40 to 167°F)	–	–	–	–	–	–	–	–
Redundancy and Backup Options								
Turbo Ring	✓	✓	✓	✓	✓	✓	✓	✓
Turbo Chain	✓	✓	✓	✓	✓	✓	✓	✓
V-ON	✓	✓	✓	✓	✓	✓	✓	✓
STP/RSTP	✓	✓	✓	✓	✓	✓	✓	✓
Automatic Backup Configurator (ABC-02)	✓	✓	✓	✓	✓	✓	✓	✓
Network Management and Control								
Layer 3 Switching	✓	✓	✓	–	–	–	✓	✓
Port Trunking	✓	✓	✓	✓	✓	✓	✓	✓
Modbus/TCP	✓	✓	✓	✓	✓	✓	✓	✓
SNMP/RMON	✓	✓	✓	✓	✓	✓	✓	✓
LLDP	✓	✓	✓	✓	✓	✓	✓	✓
DHCP Option 66/67/82	✓	✓	✓	✓	✓	✓	✓	✓
IGMP/GMRP	✓	✓	✓	✓	✓	✓	✓	✓
QoS	✓	✓	✓	✓	✓	✓	✓	✓
VLAN	✓	✓	✓	✓	✓	✓	✓	✓
Access Control Lists (ACL)	✓	✓	✓	–	–	–	✓	✓
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					
						
	ICS-G7528A	ICS-G7526A	IKS-G6824A	IKS-G6524A	IKS-6728A	IKS-6726A
Supported Modules						
Gigabit Media Modules	–	–	–	–	–	–
Fast Media 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
10 Gigabit Ethernet	4	2	–	–	–	–
Gigabit Ethernet, 10/100/1000 Mbps	24	24	24	24	4	2
Fast Ethernet, 10/100 Mbps	–	–	–	–	up to 24	up to 24
Available Power Input						
24 VDC	–	–	–	–	✓	✓
24 VAC	–	–	–	–	–	–
48 VDC	–	–	–	–	✓	✓
12/24/48 VDC	–	–	–	–	–	–
85 to 264 VAC	✓	✓	✓	✓	✓	✓
88 to 300 VDC or 85 to 264 VAC, isolated	–	–	–	–	–	–
Installation Options						
DIN-Rail Mounting	–	–	–	–	–	–
Panel Mounting	–	–	–	–	–	–
Rack Mounting	✓	✓	✓	✓	✓	✓
Supported Operating Temperatures						
-10 to 60°C (14 to 140°F)	✓	✓	✓	✓	–	–
-40 to 75°C (-40 to 167°F)	–	–	✓	✓	✓	✓
Redundancy and Backup Options						
Turbo Ring	✓	✓	✓	✓	✓	✓
Turbo Chain	✓	✓	✓	✓	✓	✓
V-ON	✓	✓	✓	✓	✓	✓
STP/RSTP	✓	✓	✓	✓	✓	✓
Automatic Backup Configurator (ABC-02)	✓	✓	✓	✓	✓	✓
Network Management and Control						
Layer 3 Switching	–	–	✓	–	–	–
Port Trunking	✓	✓	✓	✓	✓	✓
Modbus/TCP	✓	✓	✓	✓	✓	✓
SNMP/RMON	✓	✓	✓	✓	✓	✓
LLDP	✓	✓	✓	✓	✓	✓
DHCP Option 66/67/82	✓	✓	✓	✓	✓	✓
IGMP/GMRP	✓	✓	✓	✓	✓	✓
QoS	✓	✓	✓	✓	✓	✓
VLAN	✓	✓	✓	✓	✓	✓
Access Control Lists (ACL)	–	–	✓	–	–	–
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	✓	✓	✓	✓	✓	✓

DIN-Rail Ethernet Switches

	Managed DIN-Rail Switches								
									
	EDS-828	EDS-728	EDS-619	EDS-616	EDS-611	EDS-608	EDS-G516E	EDS-G512E	EDS-G508E
Supported Modules									
Gigabit Media Modules	✓	✓	–	–	–	–	–	–	–
Fast Media Modules	✓	✓	✓	✓	✓	✓	–	–	–
SFP Gigabit Ethernet Modules	✓	✓	✓	–	✓	–	✓	✓	–
SFP Fast Ethernet Modules	–	–	✓	–	✓	–	✓	✓	–
Number of Ports									
Max. Number of Ports	28	28	19	16	11	8	16	12	8
Gigabit Ethernet, 10/100/1000 Mbps	up to 4	up to 4	3	–	3	–	16	12	8
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 Input									
24 VDC	✓	✓	–	–	–	–	–	–	–
12/24/48 VDC	–	–	✓	✓	✓	✓	–	–	–
12/24/48/-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	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
Supported Operating Temperatures									
0 to 60°C (32 to 140°F)	✓	✓	✓	✓	✓	✓	–	–	–
-10 to 60°C (14 to 140°F)	–	–	–	–	–	–	✓	✓	✓
-40 to 75°C (-40 to 167°F)	–	–	✓	✓	✓	✓	✓	✓	✓
Redundancy and Backup Options									
Turbo Ring	✓	✓	✓	✓	✓	✓	✓	✓	✓
Turbo Chain	✓	✓	✓	✓	✓	✓	✓	✓	✓
V-ON	–	–	–	–	–	–	✓	✓	✓
STP/RSTP	✓	✓	✓	✓	✓	✓	✓	✓	✓
MSTP	✓	✓	✓	✓	✓	✓	✓	✓	✓
Automatic Backup Configurator (ABC-01)	✓	✓	✓	✓	✓	✓	–	–	–
Automatic Backup Configurator (ABC-02)	–	–	–	–	–	–	✓	✓	✓
Network Management and Control									
Layer 3 Switching	✓	–	–	–	–	–	–	–	–
Port Trunking	✓	✓	✓	✓	✓	✓	✓	✓	✓
Modbus/TCP	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ethernet/IP	✓	✓	✓	✓	✓	✓	✓	✓	✓
PROFINET	–	–	–	–	–	–	✓	✓	✓
SNMP/RMON	✓	✓	✓	✓	✓	✓	✓	✓	✓
LLDP	✓	✓	✓	✓	✓	✓	✓	✓	✓
DHCP Option 66/67/82	✓	✓	✓	✓	✓	✓	✓	✓	✓
IGMP Snooping/GMRP	✓	✓	✓	✓	✓	✓	✓	✓	✓
QoS	✓	✓	✓	✓	✓	✓	✓	✓	✓
IEEE 802.1Q VLAN	✓	✓	✓	✓	✓	✓	✓	✓	✓
Port-based VLAN	–	–	✓	✓	✓	✓	✓	✓	✓
Access Control Lists (ACL)	✓	–	–	–	–	–	✓	✓	✓
IEEE 802.1X	✓	✓	✓	✓	✓	✓	✓	✓	✓
Port Lock	✓	✓	✓	✓	✓	✓	✓	✓	✓
IPv6	–	✓	✓	✓	✓	✓	✓	✓	✓
Relay Warning	✓	✓	✓	✓	✓	✓	✓	✓	✓
Standards and Certifications									
CE/FCC	✓	✓	✓	✓	✓	✓	✓	✓	✓
UL 60950-1	✓	✓	✓	✓	✓	✓	–	–	–
UL 508	✓	✓	✓	✓	✓	✓	✓	✓	✓
UL 61010-2-201	–	–	–	–	–	–	–	–	–
EN 60950-1	✓	✓	✓	✓	✓	✓	–	–	–
UL/cUL Class 1 Div. 2	–	–	✓	✓	✓	✓	✓	✓	✓
ATEX Zone 2	–	–	✓	✓	✓	✓	✓	✓	✓
DNV/GL	✓	✓	✓	✓	✓	✓	✓	✓	✓
ABS/LR/NK	✓	✓	✓	✓	✓	✓	✓	✓	✓
NEMA TS2	–	–	✓	✓	✓	✓	✓	✓	✓
EN 50121-4	–	–	✓	✓	✓	✓	✓	✓	✓
IEEE 1613	–	–	–	–	–	–	✓	✓	✓
IEC 61850-3	–	–	–	–	–	–	✓	✓	✓

DIN-Rail Ethernet Switches

	Managed DIN-Rail Switches								
									
	EDS-G509	EDS-518E	EDS-510E	EDS-516A	EDS-508A	EDS-505A	EDS-408A	EDS-405A	EDS-405A-PTP
Supported Modules									
Gigabit Media Modules	–	–	–	–	–	–	–	–	–
Fast Media Modules	–	–	–	–	–	–	–	–	✓
SFP Gigabit Ethernet Modules	✓	✓	✓	–	–	–	–	–	–
SFP Fast Ethernet Modules	✓	✓	✓	–	–	–	–	–	–
Number of Ports									
Max. Number of Ports	9	18	10	16	8	5	8	5	5
Gigabit Ethernet, 10/100/1000 Mbps	9	4	3	–	–	–	–	–	–
Fast Ethernet, 10/100 Mbps	–	14	7	16	8	5	8	5	5
Available Power Input									
24 VDC	–	–	–	✓	✓	✓	✓	✓	–
12/24/48 VDC	✓	–	–	–	–	–	–	–	✓
12/24/48/-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	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
Supported Operating Temperatures									
0 to 60°C (32 to 140°F)	✓	–	–	✓	✓	✓	✓	✓	–
-10 to 60°C (14 to 140°F)	–	✓	✓	–	–	–	–	–	✓
-40 to 75°C (-40 to 167°F)	✓	✓	✓	✓	✓	✓	✓	✓	✓
Redundancy and Backup Options									
Turbo Ring	✓	✓	✓	✓	✓	✓	✓	✓	✓
Turbo Chain	✓	✓	✓	✓	✓	✓	✓	✓	✓
V-ON	–	✓	✓	–	–	–	–	–	–
STP/RSTP	✓	✓	✓	✓	✓	✓	✓	✓	✓
MSTP	✓	✓	✓	✓	✓	✓	–	–	✓
Automatic Backup Configurator (ABC-01)	✓	-	–	✓	✓	✓	✓	✓	✓
Automatic Backup Configurator (ABC-02)	–	✓	✓	–	–	–	–	–	–
Network Management and Control									
Layer 3 Switching	–	-	–	–	–	–	–	–	–
Port Trunking	✓	✓	✓	✓	✓	✓	–	–	–
Modbus/TCP	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ethernet/IP	✓	✓	✓	✓	✓	✓	✓	✓	✓
PROFINET	–	✓	✓	–	–	–	EDS-408A-PN series only	EDS-405A-PN series only	✓
SNMP/RMON	✓	✓	✓	✓	✓	✓	✓	✓	✓
LLDP	✓	✓	✓	✓	✓	✓	✓	✓	✓
DHCP Option 66/67/82	✓	✓	✓	✓	✓	✓	✓	✓	✓
IGMP Snooping/GMRP	✓	✓	✓	✓	✓	✓	✓	✓	✓
QoS	✓	✓	✓	✓	✓	✓	✓	✓	✓
IEEE 802.1Q VLAN	✓	✓	✓	✓	✓	✓	✓	✓	✓
Port-based VLAN	✓	✓	✓	✓	✓	✓	✓	✓	✓
Access Control Lists (ACL)	–	–	–	–	–	–	–	–	–
IEEE 802.1X	✓	✓	✓	✓	✓	✓	–	–	✓
Port Lock	✓	✓	✓	✓	✓	✓	–	–	✓
IPv6	✓	✓	✓	✓	✓	✓	✓	✓	✓
Relay Warning	✓	✓	✓	✓	✓	✓	✓	✓	✓
Standards and Certifications									
CE/FCC	✓	✓	✓	✓	✓	✓	✓	✓	✓
UL 60950-1	–	–	–	✓	✓	✓	✓	✓	✓
UL 508	✓	✓	✓	✓	✓	✓	✓	✓	✓
UL 61010-2-201	–	–	–	–	–	–	–	–	–
EN 60950-1	✓	–	–	✓	✓	✓	–	–	–
UL/cUL Class 1 Div. 2	–	✓	✓	✓	✓	✓	✓	✓	✓
ATEX Zone 2	–	✓	✓	✓	✓	✓	✓	✓	✓
DNV/GL	✓	–	–	✓	✓	✓	✓	✓	✓
ABS/LR/NK	✓	–	–	–	–	–	EDS-408A 3 Fiber series only	–	–
NEMA TS2	–	✓	✓	–	–	–	✓	✓	✓
EN 50121-4	✓	✓	✓	–	–	–	✓	–	–
IEEE 1613	–	✓	✓	–	–	–	–	–	–
IEC 61850-3	–	✓	–	–	–	–	–	–	–

DIN-Rail Ethernet Switches

	Unmanaged DIN-Rail Switches										
											
	EDS-G308	EDS-G205	EDS-316	EDS-309	EDS-308	EDS-305	EDS-210A	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	10	8	5	8	5
Gigabit Ethernet, 10/100/1000 Mbps	8	5	–	–	–	–	up to 2	–	–	–	–
Fast Ethernet, 10/100 Mbps	–	–	16	9	8	5	up to 9	8	5	8	5
Available Power Input											
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	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	w/ optional kit
Supported Operating Temperatures											
0 to 60°C (32 to 140°F)	–	–	✓	✓	✓	✓	–	–	–	–	–
-10 to 60°C (14 to 140°F)	✓	✓	–	–	–	–	✓	✓	✓	✓	✓
-40 to 75°C (-40 to 167°F)	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	–
Standards and Certifications											
CE/FCC	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
UL 60950-1	–	–	✓	✓	✓	✓	–	–	–	–	–
UL 508	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
UL 61010-2-201	–	–	–	–	–	–	–	–	–	–	–
EN 60950-1	–	✓	✓	✓	✓	–	–	–	✓	✓	✓
UL/cUL Class 1 Div. 2	✓	✓	✓	✓	✓	✓	–	✓	✓	–	–
ATEX Zone 2	✓	✓	✓	✓	✓	✓	–	✓	✓	✓	–
DNV/GL	–	–	✓	✓	✓	✓	–	✓	✓	–	–
ABS/LR/NK	–	–	–	–	–	–	–	✓	✓	–	–
NEMA TS2	–	–	–	–	–	–	–	✓	✓	–	–
EN 50121-4	✓	✓	–	–	–	–	–	✓	✓	–	–
IEC 61850-3	–	–	–	–	–	–	–	–	–	–	–

PoE Switches

	Managed Rackmount PoE Switches		Managed DIN-Rail PoE Switches			Unmanaged DIN-Rail PoE Switches		
								
	IKS-6728A-8PoE	EDS-G512E-8PoE	EDS-P510A-8PoE	EDS-P510	EDS-P506A-4PoE	EDS-G205A-4PoE	EDS-P206A-4PoE	EDS-P308
Supported Modules								
Gigabit Media Modules	–	–	–	–	–	–	–	–
Fast Media Modules	✓	✓	–	–	–	–	–	–
SFP Gigabit Ethernet Modules	✓	✓	✓	✓	–	✓	–	–
SFP Fast Ethernet Modules	✓	✓	✓	✓	–	✓	–	–
Number of Ports								
Max. Number of Ports	28	12	10	10	6	5	6	8
Gigabit Ethernet, 10/100/1000 Mbps	up to 4	12	2	3	–	5	–	–
PoE, Gigabit Ethernet, 10/100/1000 Mbps	–	8 (PoE+)	–	–	–	4 (PoE+)	–	–
Fast Ethernet, 10/100 Mbps	up to 24	–	8	7	6	–	6	8
PoE, Fast Ethernet, 10/100 Mbps	up to 24 (PoE+)	–	8 (PoE+)	4	4 (PoE+)	–	4 (PoE+)	4
Available Power Input								
24 VDC	–	–	–	–	✓	–	✓	–
48 VDC	✓	✓	✓	✓	✓	–	✓	✓
12/24/48 VDC	–	–	–	–	–	✓	–	–
85-264 VAC	✓	–	–	–	–	–	–	–
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 (32 to 140°F)	–	–	–	✓	✓	✓	✓	✓
-10 to 60°C (14 to 140°F)	–	✓	✓	–	–	–	–	–
-40 to 75°C (-40 to 167°F)	✓	✓	✓	✓	✓	✓	✓	✓
Redundancy and Backup Options								
Turbo Ring	✓	✓	✓	✓	✓	–	–	–
Turbo Chain	✓	✓	✓	✓	✓	–	–	–
V-ON	✓	✓	✓	✓	–	–	–	–
STP/RSTP	✓	✓	✓	✓	✓	–	–	–
MSTP	✓	✓	✓	✓	✓	–	–	–
Automatic Backup Configurator (ABC-01)	–	–	✓	✓	✓	–	–	–
Automatic Backup Configurator (ABC-02)	✓	✓	–	–	–	–	–	–
Network Management and Control								
Port Trunking	✓	✓	✓	✓	✓	–	–	–
Modbus/TCP	✓	✓	✓	✓	✓	–	–	–
Ethernet/IP	✓	✓	✓	✓	✓	–	–	–
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 61010-2-201	–	–	–	–	–	–	–	–
EN 60950-1	✓	✓	–	✓	✓	✓	✓	✓
UL/cUL Class 1 Div. 2	–	–	✓	–	–	–	–	–
ATEX Zone 2	–	–	–	–	–	–	–	–
DNV/GL	–	–	–	✓	–	–	–	✓
ABS/LR/NK	–	–	–	✓	–	–	–	✓
NEMA TS2	–	–	✓	–	–	–	–	–
EN 50121-4	–	✓	✓	–	✓	✓	–	–
IEC 61850-3	–	–	–	–	–	–	–	–

EN 50155 Ethernet Switches

	NAT Router	L3 Managed Switches	L2 Managed Ethernet Switches				
	Fast Ethernet Series	Gigabit and Fast Ethernet Series	Power-over-Ethernet Series	Gigabit Ethernet Series	Gigabit Ethernet and Power-over-Ethernet Series	Fast Ethernet Series	Power-over-Ethernet Series
							
	TN-5916 Series	TN-5816ABP/5818A Series	TN-5524-8PoE Series	TN-5510A/5518A Series	TN-5510A/5518A-8PoE Series	TN-5508A/5516A Series	TN-5508A/5516A-8PoE Series
Number of Ports							
Max. Number of Ports	16	16/18	24	10/18	10/18	8/16	8/16
Gigabit Ethernet, 10/100/1000 Mbps	–	2 (TN-5818A)	–	2	2	–	–
Gigabit Fiber Ethernet, 1000 Mbps	–	–	–	–	–	–	–
Fast Ethernet, 10/100 Mbps	16	16	24 (8 PoE)	8/16	8 (8 PoE) / 16 (8 PoE)	8/16	8 (8 PoE) / 16 (8 PoE)
Power Supply							
24 to 110 VDC	✓	✓	–	✓	✓	✓	✓
12/24/36/48 VDC	–	–	–	–	–	–	–
72/96/110 VDC	–	–	–	–	–	–	–
80 to 300 VDC 85 to 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	w/ optional kit
Panel Mounting	✓	✓	✓	✓	✓	✓	✓
Operating Temperature							
-25 to 60°C (-13 to 140°F)	–	–	–	–	–	–	–
-40 to 75°C (-40 to 167°F)	✓	✓	✓	✓	✓	✓	✓
Redundancy and Backup Options							
Turbo Ring (Recovery Time < 20 ms)	✓	✓	✓	✓	✓	✓	✓
Turbo Chain (Recovery Time < 20 ms)	–	✓	✓	✓	✓	✓	✓
Turbo Ring v2 with Dynamic Ring Coupling	–	✓	–	✓	✓	✓	✓
STP/RSTP/MSTP	STP/RSTP	✓	✓	✓	✓	✓	✓
Bypass Relay	✓	✓	–	✓	✓	–	–
Network Management and Control							
IPv6	–	–	✓	✓	✓	✓	✓
DHCP Option 66/67/82	✓	✓	✓	✓	✓	✓	✓
LLDP	✓	✓	✓	✓	✓	✓	✓
Modbus/TCP	–	✓	✓	✓	✓	✓	✓
IGMP/GMRP	IGMP v1/v2	✓	✓	✓	✓	✓	✓
Port Trunking	✓	✓	✓	✓	✓	✓	✓
IEEE 802.1X	–	✓	✓	✓	✓	✓	✓
Port Lock	–	✓	✓	✓	✓	✓	✓
SNMP/RMON	SNMP	✓	✓	✓	✓	✓	✓
VLAN	✓	✓	✓	✓	✓	✓	✓
QoS	✓	✓	✓	✓	✓	✓	✓
Relay Warning	✓	✓	✓	✓	✓	✓	✓
Standards and Certifications							
CE/FCC	✓	✓	✓	✓	✓	✓	✓
UL 508	✓	✓	✓	✓	✓	✓	✓
Railway Applications: EN 50155 EN 50121-4	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓

EN 50155 Ethernet Switches

	L2 Managed Ethernet Switches		Unmanaged Ethernet Switches		
	Gigabit Fiber Ethernet Series	Gigabit Fiber and Power-over-Ethernet Series	Fast Ethernet Series		Power-over-Ethernet Series
					
	TN-5510A-2GLSX-ODC Series	TN-5510A-8PoE-2GLSX-ODC Series	TN-5308 Series	TN-5305 Series	TN-5308-4PoE/8PoE Series
Number of Ports					
Max. Number of Ports	8	8	8	5	8
Gigabit Ethernet, 10/100/1000 Mbps	–	–	–	–	–
Gigabit Fiber Ethernet, 1000 Mbps	2	2	–	–	–
Fast Ethernet, 10/100 Mbps	8	8 (8 PoE)	8	5	8 (4 PoE) / 8 (8 PoE)
Power Supply					
24 to 110 VDC	✓	✓	–	–	–
12/24/36/48 VDC	–	–	✓	–	–
72/96/110 VDC	–	–	✓	–	–
80 to 300 VDC 85 to 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
Panel Mounting	✓	✓	✓	✓	✓
Operating Temperature					
-25 to 60°C (-13 to 140°F)	–	–	✓	✓	✓
-40 to 75°C (-40 to 167°F)	✓	✓	✓	✓	✓
Redundancy and Backup Options					
Turbo Ring (Recovery Time < 20 ms)	✓	✓	–	–	–
Turbo Chain (Recovery Time < 20 ms)	✓	✓	–	–	–
Turbo Ring v2 with Dynamic Ring Coupling	✓	✓	–	–	–
STP/RSTP/MSTP	✓	✓	–	–	–
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	✓	✓	✓	✓	✓
Railway Applications: EN 50155, EN 50121-4	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓

IEC 61850-3 Ethernet Switches

	Managed Ethernet Switches							
								
	PT-7728-PTP	PT-7828	PT-7728	PT-7528	PT-7710	PT-G7509	PT-508/510	PT-G503-PHR-PTP
Number of Ports								
Max. Number of Ports	28	28	28	28	10	9	8/10	3
Max. Number of Hardware PTP Ports	14	–	–	–	–	–	–	3
Gigabit Ethernet, 10/100/1000 Mbps	Up to 4	Up to 4	Up to 4	Up to 4	Up to 2	9	–	3
Fast Ethernet, 10/100 Mbps	Up to 28	Up to 28	Up to 28	Up to 28	Up to 10	9	8/10	3
Power Supply								
24 VDC, isolated	✓	✓	✓	–	–	✓	✓	–
48 VDC, isolated	✓	✓	✓	–	–	✓	✓	–
12/24/48 VDC	–	–	–	–	✓	–	–	–
24/48 VDC, isolated	–	–	–	✓	–	–	–	✓
88 to 300 VDC or 85 to 264 VAC, isolated	✓	✓	✓	✓	✓	✓	✓	✓
Installation Options								
Rack Mounting	✓	✓	✓	✓	✓	✓	–	–
Panel Mounting	–	–	–	–	✓	–	w/ optional kit	w/ optional kit
DIN-Rail Mounting	–	–	–	–	–	–	✓	✓
Operating Temperature								
-40 to 85°C (-40 to 185°F)	✓	✓	✓	✓	✓	✓	✓	✓
Redundancy and Backup Options								
PRP/HSR (Recovery Time ≈ 0 ms)	✓	–	–	–	–	–	–	✓
Turbo Ring/Turbo Chain (Recovery Time < 20 ms)	✓	✓	✓	✓	✓	–	✓	–
Turbo Ring/Turbo Chain (Recovery Time < 50 ms)	–	–	–	–	–	✓	–	–
STP/RSTP	✓	✓	✓	✓	✓	✓	✓	–
Automatic Backup Configurator (ABC-01)	✓	✓	✓	–	✓	✓	✓	–
Automatic Backup Configurator (ABC-02)	–	–	–	✓	–	–	–	✓
Ethernet console port	–	–	–	–	–	–	–	✓
Network Management and Control								
Layer 3 Switching	–	✓	–	–	–	–	–	–
IPv6	✓	–	✓	✓	✓	✓	✓	–
DHCP Option 66/67/82	✓	✓	✓	✓	✓	✓	✓	–
NTP/SNTP	✓	✓	✓	✓	✓	✓	✓	✓
Software-based IEEE 1588v2 PTP	✓	✓	✓	✓	✓	✓	✓	–
Hardware-based IEEE 1588v2 PTP	✓	–	–	–	–	–	–	✓
LLDP	✓	✓	✓	✓	✓	✓	✓	✓
Modbus TCP	✓	✓	✓	✓	✓	✓	✓	–
EtherNet/IP	✓	✓	✓	✓	✓	✓	✓	–
IGMP/GMRP	✓	✓	✓	✓	✓	✓	✓	–
Port Trunking	✓	✓	✓	✓	✓	✓	✓	–
IEEE 802.1X	✓	✓	✓	✓	✓	✓	✓	–
Port Lock	✓	✓	✓	✓	✓	✓	✓	–
TACACS+/RADIUS	✓	✓	✓	✓	✓	✓	✓	Later release
Port Mirror	✓	✓	✓	✓	✓	✓	✓	by Ethernet console port
SNMP/RMON	✓	✓	✓	✓	✓	✓	✓	✓
VLAN	✓	✓	✓	✓	✓	✓	✓	–
QoS	✓	✓	✓	✓	✓	✓	✓	–
Relay Warning	✓	✓	✓	✓	✓	✓	✓	✓
Standards and Certifications								
CE/FCC	✓	✓	✓	✓	✓	✓	✓	✓
UL/cUL 60950-1	✓	✓	✓	✓	✓	✓	–	–
UL 508	–	–	–	✓	–	–	✓	✓
IEC 61850-3 (Power Substation)	✓	✓	✓	✓	✓	✓	✓	✓
IEEE 1613 (Power Substation)	✓	✓	✓	✓	✓	✓	✓	✓
50121-4 (Way-side Applications)	–	✓	✓	✓	✓	–	–	✓
EN 50155 (Railway Applications)	–	✓	✓	–	✓	–	–	–
NEMA TS2 (Traffic Control System)	–	✓	✓	✓	✓	–	–	–

Chassis Media Converters

	TRC-190-AC TRC-190-DC-48	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 (18.6 x 11 x 3.3 in)	86.8 x 136.5 x 21 mm (3.42 x 4.89 x 0.83 in)	
Weight	5.2 kg (11.4 lb), 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 (32 to 140°F)	0 to 60°C (32 to 140°F)	
Ambient Relative Humidity	5 to 95% (non-condensing)		
Storage Temperature	-40 to 85°C (-40 to 185°F)		
Power Requirements			
Input Voltage	100 to 240 VAC or 36 to 72 VDC	12 VDC	
Input Current	3.2 A @ 36 VDC	180 mA @ 12 VDC	
Standards and Certifications			
Safety	UL 60950-1		
EMC	EN 55022/24		
EMI	CISPR 22, FCC Part 15B Class A		
EMS	EN 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV EN 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m EN 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV EN 61000-4-5 Surge: Power: 1 kV; Signal: 0.5 kV EN 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m EN 61000-4-8 PFMF EN 61000-4-11	EN 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV EN 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m EN 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV EN 61000-4-5 Surge: Power: 1 kV; Signal: 0.5 kV EN 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m EN 61000-4-8 PFMF EN 61000-4-11	
Freefall	–	IEC 60068-2-32	
MTBF	Time: 1,055,112 hrs Standard: Telcordia (Bellcore), GB	Time: 1,454,560 hrs Standard: Telcordia (Bellcore), GB	
Reliability			
Warranty	5 years (see www.moxa.com/warranty)		

Ethernet-to-Fiber Media Converters

	PTC-101 Series (LV models)	PTC-101 Series (HV models)	IMC-P101 Series	IMC-101G Series	IMC-21GA Series	IMC-101 Series	IMC-21A Series	IMC-21 Series
IEEE Standards								
IEEE 802.3af	–	–	✓	–	–	–	–	–
Interface								
RJ45 Ports	10/100BaseT(X)			10/100/1000BaseT(X)	10/100/1000BaseT(X), auto MDI/MDI-X	10/100BaseT(X)		
M12 Port	✓	–	–	–	–	–	–	–
Fiber Modes	Multi-mode Fiber / Single-mode Fiber			Multi-mode Fiber / Single-mode Fiber				
Fiber Ports	100BaseFX (SC, ST, or LC connectors)		100BaseFX (SC or ST connectors)	Optional 1000BaseSX/LSX/LX/LH/LHX/ZX/EZX (LC connector)	100/1000BaseSX/LX or 100/1000BaseSFP slot	100BaseFX (SC or ST connectors)	100BaseFX (SC or ST)	
LED Indicators	PWR1, PWR2, Fiber Link/Act, 10/100M (TP port)	PWR, Fiber Link/Act, 10/100M (TP port)	PWR1, PWR2, Fiber Link/Act, PSE Indicator, 10/100M (TP port)	PWR1, PWR2, FAULT, 10/100M (TP port), 1000M (TP and Fiber port)	PWR1, PWR2, G1 (copper port 10M/100M/1000M), G2 (fiber port 100M/1000M), 10/100M (TP port), 1000M (TP and Fiber port)	PWR1, PWR2, FAULT, 10/100M (TP port), 100M (Fiber port), FDX/COL (Fiber port)	Power, 10/100M (TP port), 100M (fiber port), FDX/COL (fiber port)	
DIP Switches	Auto Negotiation, Force TP Speed, Force TP Duplex, Link Fault Pass Through, Operating Mode		Auto Negotiation, Force TP Speed, Force TP Duplex, Link Fault Pass Through, Operating Mode, PSE, P.R.R. (PD Remote Reset)	Port break alarm, Fault Pass-Through, Fiber AN/Force	Fiber speed 100M/1000M, Link Fault Pass-through, Energy Efficient Ethernet	100BaseFX Full/Half duplex selection, Port break alarm	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	See SFP-1G series datasheet (IMC-21GA-SX-SC) 100/1000BaseSX: 0 to 500 m, 850 nm (50/125 µm, 400 MHz*km)	–		
1000BaseLX	–			See SFP-1G series datasheet	See SFP-1G series datasheet	–		
Single-mode Transmission Distance								
1000BaseLX	–			See SFP-1G series datasheet	See SFP-1G series datasheet (IMC-21GA-LX-SC) 100/1000BaseLX: 0 to 10 km, 1310 nm (9/125 µm, 3.5 PS/(nm*km)	–		
1000BaseLHX	–			See SFP-1G series datasheet	See SFP-1G series datasheet	–		
1000BaseZX	–			See SFP-1G series datasheet	See SFP-1G series datasheet	–		
Physical Characteristics								
Housing	Metal (IP30)							Plastic (IP30)
Dimensions (mm)	66.65 x 135.1 x 101.4 mm (5.99 x 4.86 x 2.62 in)	66.65 x 135.1 x 101.4 mm (5.99 x 4.86 x 2.62 in)	51.65 x 144.45 x 110.2 mm (2.03 x 5.69 x 4.34 in)	53.6 x 135 x 105 mm (2.11 x 5.32 x 4.13 in)	30 x 125 x 79 mm (1.19 x 4.92 x 3.11 in)	53.6 x 135 x 105 mm (2.11 x 5.32 x 4.13 in)	30 x 125 x 79 mm (1.19 x 4.92 x 3.11 in)	25 x 109 x 97 mm (0.98 x 4.29 x 3.82 in)
Weight	690 g (1.52 lb)	690 g (1.52 lb)	525 g (1.16 lb)	630 g (1.39 lb)	170 g (0.37 lb)	630 g (1.39 lb)	170 g (0.37 lb)	125 g (0.27 lb)
Installation	DIN-rail mounting, wall mounting (with optional kit)						DIN-rail mounting	
Environmental Limits								
Operating Temperature	-40 to 85°C (-40 to 185°F)		Standard Models: 0 to 60°C (32 to 140°F) Wide Temp. Models: -40 to 75°C (-40 to 167°F)					-10 to 60°C (14 to 140°F)
Operating Humidity	5 to 95% (non-condensing)							
Storage Temperature	-40 to 85°C (-40 to 185°F)						-40 to 75°C (-40 to 167°F)	-40 to 70°C (-40 to 158°F)
Power Requirements								
Input Voltage	20 to 72 VDC	85 to 264 VAC 88 to 300 VDC	48 VDC (46 to 57 VDC), redundant inputs	12 to 45 VDC redundant inputs	12 to 48 VDC redundant inputs	12 to 45 VDC redundant inputs	12 to 48 VDC	
Input Current	170 mA @ 20 VDC	73 mA @ 85 VAC 47 mA @ 88 VDC	130 mA @ 46 VDC	220 mA @ 12 VDC	285 mA @ 12 VDC	320 mA @ 12 VDC	265 mA @ 12 VDC	300 mA @ 12 VDC
Connection	Removable terminal block							
Overload Current Protection	1.6 A	1.6 A	1.6 A	2.5 A	1.5 A	1.1 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 60950-1	UL 60950-1	UL 508	UL 508	UL 60950-1	UL 508, UL 60950-1	UL 60950-1	UL 508
EMI	CISPR 22, FCC Part 15B Class A			CISPR 22, FCC Part 15B Class A				
EMS	EN 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV EN 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m EN 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV EN 61000-4-5 Surge: Power: 4 kV; Signal: 4 kV EN 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m EN 61000-4-8 PFMF EN 61000-4-11		EN 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV EN 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m EN 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV EN 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV EN 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m EN 61000-4-8 PFMF EN 61000-4-11	EN 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV EN 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m EN 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV EN 61000-4-5 Surge: Power: 1 kV; Signal: 1 kV EN 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m EN 61000-4-8 PFMF EN 61000-4-11	EN 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV EN 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m EN 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV EN 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV EN 61000-4-6 CS: 150 kHz to 80 MHz: 10 V/m EN 61000-4-8 PFMF EN 61000-4-11	EN 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV EN 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m EN 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV EN 61000-4-5 Surge: Power: 1 kV; Signal: 1 kV EN 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m EN 61000-4-8 PFMF EN 61000-4-11	EN 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV EN 61000-4-3 RS: 80 MHz to 1 GHz: 1 V/m EN 61000-4-4 EFT: Power: 1 kV; Signal: 1 kV EN 61000-4-5 Surge: Power: 1 kV; Signal: 1 kV EN 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m EN 61000-4-8 PFMF EN 61000-4-11	EN 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV EN 61000-4-3 RS: 80 MHz to 1 GHz: 1 V/m EN 61000-4-4 EFT: Power: 1 kV; Signal: 1 kV EN 61000-4-5 Surge: Power: 1 kV; Signal: 1 kV EN 61000-4-6 CS: 150 kHz to 80MHz: 3 V/m EN 61000-4-8 PFMF EN 61000-4-11
Hazardous Location	–	–	–	UL/cUL Class1, Division 2, Groups A, B, C, and D, ATEX Class1, Zone 2, Ex nC IIC	–	UL/cUL Class1, Division 2, Groups A, B, C, and D, ATEX Class1, Zone 2, Ex nC IIC	–	–
Electrical Substation	IEC 61850-3, IEEE 1613	IEC 61850-3, IEEE 1613	–	–	–	–	–	–
Rail Traffc	EN 50121-4	EN 50121-4	–	–	–	–	–	–
Freefall	IEC 60068-2-32							
Shock	IEC 60068-2-27							
Vibration	IEC 60068-2-6							
Maritime	–	–	–	–	–	DNV, GL	–	–
MTBF	Time: 1,211,613 hrs Standard: Telcordia (Bellcore), GB	Time: 1,211,613 hrs Standard: Telcordia (Bellcore), GB	Time: 435,210 hrs Standard: Telcordia (Bellcore), GB	Time: 500,540 hrs Standard: Telcordia (Bellcore), GB	Time: 2,573,203 hrs Standard: Telcordia (Bellcore), GB	Time: 401,000 hrs Standard: MIL-HDBK-217F	Time: 353,000 hrs Standard: MIL-HDBK-217F	Time: 353,000 hrs Standard: MIL-HDBK-217F
Reliability								
Warranty	5 years (see http://www.moxa.com/warranty)							

Managed DSL Ethernet Extenders

Preliminary



	IEX-408E-2VDSL2	IEX-402-SHDSL	IEX-402-VDSL2
Number of Ports			
Fast Ethernet, 10/100 Mbps	6	1	1
DSL Port	2	1	1
Available Power Input			
12/24/48 VDC	✓	✓	✓
110/220 VDC/VAC	✓	–	–
Installation Options			
DIN-Rail Mounting	✓	✓	✓
Panel Mounting	w/ optional kit	w/ optional kit	w/ optional kit
Rack Mounting	w/ optional kit	w/ optional kit	w/ optional kit
Supported Operating Temperatures			
-10 to 60°C	✓	✓	✓
-40 to 75°C	✓	✓	✓
Redundancy and Backup Options			
Turbo Ring	✓	–	–
Turbo Chain	✓	–	–
STP/RSTP	✓	–	–
MSTP	✓	–	–
Automatic Backup Configurator (ABC-01)	–	✓	✓
Automatic Backup Configurator (ABC-02)	✓	–	–
Network Management and Control			
SNMP v1/v2c/v3	✓	✓	✓
LLDP	✓	✓	✓
IPv6	✓	✓	✓
Layer 3 Switching	–	–	–
Port Trunking	✓	–	–
Modbus/TCP	✓	–	–
Ethernet/IP	✓	–	–
PROFINET	✓	–	–
SNMP/RMON	✓	–	–
DHCP Option 66/67/82	✓	–	–
IGMP Snooping/GMRP	✓	–	–
QoS	✓	–	–
IEEE 802.1Q VLAN	✓	–	–
Port-based VLAN	✓	–	–
IEEE 802.1X	✓	–	–
Port Lock	✓	–	–
Relay Warning	✓	–	–
Maximum Support Speed / Distance over Twisted-Pair Copper Wire			
100 Mbps / 3 km	✓	–	✓
15.3 Mbps / 8 km	–	✓	–
Standards and Certifications			
CE/FCC	✓	✓	✓
UL 61010-2-201	✓	–	–
EN 60950-1 (LVD)	✓	–	–
UL 508	–	✓	✓
NEMA TS2	✓	–	✓
EN 50121-4	✓	✓	✓

Industrial Ethernet Gateways (Modbus)

	MGate MB3180	MGate MB3280	MGate MB3480	MGate MB3170 MGate MB3170-T MGate MB3170I MGate MB3170I-T	MGate MB3170-M-SC (-T) MGate MB3170-M-ST (-T) MGate MB3170-S-SC (-T) MGate MB3170I-M-SC (-T) MGate MB3170I-S-SC (-T)	MGate MB3270 MGate MB3270-T MGate MB3270I MGate MB3270I-T	MGate MB3660-8-2AC MGate MB3660-8-2DC MGate MB3660I-8-2AC MGate MB3660-16-2AC MGate MB3660-16-2DC
Ethernet Interface							
Protocols	Modbus TCP						
Number of Ports	1			2 (1 IP, Cascade)	–	2 (1 IP, Cascade)	2 (2 IPs)
Number of Fiber Ports	–				1	–	
Speed	10/100 Mbps, Auto MDI/MDIX				100 Mbps	10/100 Mbps, Auto MDI/MDIX	
Connector	RJ45				SC, ST	RJ45	
Magnetic Isolation Protection	1.5 kV (built-in)						
Serial Interface							
Protocols	Modbus RTU/ASCII						
Number of Ports	1	2	4	1		2	8, 16
Serial Standards	RS-232/422/485						
Connectors	DB9-M			RS-232: DB9-M, RS-422/485: Terminal block		DB9-M	
ESD Protection	15 kV						
RS-485 Data Direction Control	ADDC®						
Serial Communication Parameters	Data Bits: 7, 8 Stop Bits: 1, 2						
Parity	None, Even, Odd, Space, Mark						
Flow Control	RTS/CTS, DTR/DSR, RTS Toggle (RS-232 only)						
Baudrate	50 bps to 921.6 kbps						
Isolation	–	–	–	2 kV (built-in, -I model only)			
Software							
Utility	MGate Manager for Windows 2000, Windows XP, Server 2003, Vista, Server 2008 (x86/x64), Windows Server 2008 R2, Windows 7/8/8.1 (x86/x64), Windows Server 2012 (x64), Windows 2012 R2						Device Search Utility (DSU) for Windows O.S.
Smart Routing	✓	✓	✓	✓	✓	✓	✓
Serial Redirection	–	–	–	–	–	✓	✓
ProCOM	–	–	–	✓	✓	✓	–
Priority Control	–	–	–	✓	✓	✓	✓
MXview/MXconfig	✓	✓	✓	✓	✓	✓	✓
SNMP	v1 (read only)						
Physical Characteristics							
Housing	Metal (IP30)			Plastic (IP30)			Metal (IP30)
Dimensions	22 x 52 x 80 mm (0.87 x 2.05 x 3.15 in)	22 x 77 x 111 mm (0.87 x 3.03 x 4.37 in)	35.5 x 102.7 x 157.2 mm (1.40 x 4.04 x 6.19 in)	29 x 89.2 x 118.5 mm (1.14 x 3.51 x 4.67 in)			440 x 45 x 198 mm (17.32 x 1.77 x 7.80 in)
Weight	340 g (0.75 lb)	360 g (0.79 lb)	740 g (1.63 lb)	360 g (0.79 lb)	360 g (0.79 lb)	380 g (0.84 lb)	2,830 g (6.24 lb), max.
Environmental Limits							
Operating Temperature	0 to 60°C (32 to 140°F)			Standard Models: 0 to 60°C (32 to 140°F) Wide Temp. Models: -40 to 75°C (-40 to 167°F)			0 to 60°C (32 to 140°F)
Storage Temperature	-40 to 85°C (-40 to 185°F)			-40 to 85°C (-40 to 185°F)			
Ambient Relative Humidity	5 to 95% RH (non-condensing)						
Shock	–			IEC 60068-2-27			
Drop	–			IEC 60068-2-32			
Vibration	–			IEC 60068-2-6, IEC 60068-2-64			
Power Requirements							
Input Voltage	12 to 48 VDC						For DC models: Dual 20 to 60 VDC For AC models: Dual 100 to 240 VAC, 47 to 63 Hz
Input Current	200 mA @ 12 VDC	250 mA @ 12 VDC	385 mA @ 12 VDC	MGate MB3170: 435 mA @ 12 VDC MGate MB3170I: 555 mA @ 12 VDC	MGate MB3170-M-SC: 510 mA @ 12 VDC MGate MB3170-M-ST: 435 mA @ 12 VDC MGate MB3170-S-SC: 555 mA @ 12 VDC MGate MB3170I-M-SC: 555 mA @ 12 VDC MGate MB3170I-S-SC: 555 mA @ 12 VDC	MGate MB3270: 435 mA @ 12 VDC MGate MB3270I: 510 mA @ 12 VDC	MGate MB3660-8-2AC: 144 mA @ 110 VAC MGate MB3660-8-2DC: 312 mA @ 24 VDC MGate MB3660I-8-2AC: 244 mA @ 110 VAC MGate MB3660-16-2AC: 178 mA @ 110 VAC MGate MB3660-16-2DC: 390 mA @ 24 VDC
Power Connector	Power jack	Power jack and terminal block		Terminal block			Terminal block (for DC models)
Standards and Certifications							
Safety	UL 60950-1, EN 60950-1			UL 508, EN 60950-1			UL 60950-1, EN 60950-1
Hazardous Location	–	–	–	UL/cUL Class 1 Division 2 Groups A/B/C/D, ATEX Zone 2 Ex nA IIC T3 Gc, IECEx			–
EMC	EN 55022/24			EN 55022/24			
EMI	CISPR 22, FCC Part 15B Class A			CISPR 22, FCC Part 15B Class A			
EMS	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 1 kV (MB3180/MB3280) IEC 61000-4-5 Surge: Power: 1 kV; Signal: 2 kV (MB3480) IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11			IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 10 V/m IEC 61000-4-8 PFMF IEC 61000-4-11			IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 10 V/m IEC 61000-4-8 PFMF
Marine	–	–	–	DNV		–	–
Reliability							
Warranty	5 years (see www.moxa.com/warranty)						

Industrial Ethernet Gateways






	MGate 4101-MB-PBS MGate 4101-MB-PBS-T MGate 4101I-MB-PBS MGate 4101I-MB-PBS-T	MGate 5101-PBM-MN MGate 5101-PBM-MN-T	MGate 5102-PBM-PN MGate 5102-PBM-PN-T	MGate 5105-MB-EIP MGate 5105-MB-EIP-T	MGate EIP3170 MGate EIP3170-T MGate EIP3170I MGate EIP3170I-T	MGate EIP3270 MGate EIP3270-T MGate EIP3270I
Ethernet Interface						
Protocols	–	Modbus TCP	PROFINET RT	EtherNet/IP, Modbus TCP	CIP (PCCC) on EtherNet/IP	
Number of Ports	–	1	2 (1 IP, Ethernet cascade)			
Connectors	–	RJ45				
Magnetic Isolation Protection	–	1.5 kV (bulit-in)				
Speed	–	10/100 Mbps, Auto MDI/MDIX				
Serial Interface 1: PROFIBUS						
Protocols	PROFIBUS DP-V0 Slave	PROFIBUS DP-V1 Master		–		
Number of Ports	1			–		
Data Rate	9600 bps to 12 Mbps			–		
Connector	DB9-F			–		
Isolation Protection	2 kV (built-in)			–		
Serial Interface 2: Modbus						
Protocols	Modbus RTU/ASCII	–	–	Modbus RTU/ASCII	DF1 (full-duplex)	
Number of Ports	1	–	–	1	1	2
Serial Standards	RS-232/422/485, software selectable	–	–	RS-232/422/485, software selectable	RS-232/422	
Connectors	DB9-M	–	–	DB9-M	RS-232: DB9-M, RS-422: Terminal block	DB9-M
ESD Protection	15 kV	–	–	–	15 kV	
RS-485 Data Direction Control	ADDC®	–	–	ADDC®		
Serial Communication Parameters	Data Bits: 7, 8 Stop Bits: 1, 2	–	–	Data Bits: 7, 8 Stop Bits: 1, 2	Data Bits: 8 Stop Bits: 1, 2	
Parity	None, Even, Odd, Space, Mark	–	–	None, Even, Odd, Space, Mark	None, Even, Odd	
Flow Control	RTS/CTS, DTR/DSR (RS-232 only)	–	–	RTS/CTS, RTS Toggle (RS-232 only)	RTS/CTS, DTR/DSR (RS-232 only)	
Baudrate	50 bps to 921.6 Kbps	–	–	50 bps to 921.6 kbps	1200 bps to 921.6 Kbps	
Isolation Protection	2 kV (built-in, -I model only)	–	–	2 kV (built-in)	2 kV (built-in, -I model only)	
Software						
Utility	MGate Manager for Windows 2000, Windows XP, Server 2003, Vista, Server 2008 (x86/x64), Windows Server 2008 R2, Windows 7/8/8.1 (x86/x64), Windows Server 2012 (x64), Windows 2012 R2					
QuickLink	✓	–	–	–	–	
Paging	✓	–	–	–	–	
AutoScan	–	✓	✓	–	–	
MXview/Mxconfig	–	✓	✓	✓	✓	
SNMP	–	v1, v2, v3, Private MIB			v1 (read only)	
Physical Characteristics						
Housing	Metal (IP30)				Plastic (IP30)	
Dimensions	36 x 105 x 140 mm (1.42 x 4.14 x 5.51 in)				29 x 89.2 x 118.5 mm (1.14 x 3.51 x 4.67 in)	
Weight	500 g (1.10 lb)			507 g (1.12 lb)	360 g (0.79 lb)	380 g (0.84 lb)
Storage Card Slot	–		1 microSD (SDHC) card slot (supports up to 32 GB)		–	
Environmental Limits						
Operating Temperature	Standard Models: 0 to 60°C (32 to 140°F), Wide Temp. Models: -40 to 75°C (-40 to 167°F)					
Storage Temperature	-40 to 85°C (-40 to 185°F)					
Ambient Relative Humidity	5 to 95% RH (non-condensing)					
Shock	IEC 60068-2-27					
Drop	IEC 60068-2-32					
Vibration	IEC 60068-2-6, IEC 60068-2-64					
Power Requirements						
Input Voltage	12 to 48 VDC					
Input Current	MGate 4101-MB-PBS: 340 mA @ 12 VDC; 130 mA @ 48 VDC MGate 4101I-MB-PBS: 375 mA @ 12 VDC; 140 mA @ 48 VDC	365 mA @ 12 VDC	430 mA @ 12 VDC	455 mA @ 12 VDC; 125 mA @ 48 VDC	MGate EIP3170: 435 mA @ 12 VDC MGate EIP3170I: 555 mA @ 12 VDC	MGate EIP3270: 435 mA @ 12 VDC MGate EIP3270I: 510 mA @ 12 VDC
Power Connector	Terminal block					
Standards and Certifications						
Safety	UL 60950-1, EN 60950-1		UL 508, EN 60950-1			
Hazardous Location	Class 1 Division 2, ATEX, IECEx					
EMC	EN 55022/24					
EMI	CISPR 22, FCC Part 15B Class A		CISPR 22, FCC Part 15B Class B		CISPR 22, FCC Part 15B Class A	
EMS	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m IEC 61000-4-8 PFMF	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 10 V/m IEC 61000-4-8 PFMF	IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 10 V/m IEC 61000-4-8 PFMF	IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 10 V/m IEC 61000-4-8 PFMF	IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 4 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 10 V/m IEC 61000-4-8 PFMF IEC 61000-4-11	
Reliability						
Warranty	5 years (see www.moxa.com/warranty)					

Industrial Ethernet Gateways (Wireless)

Preliminary

*Available in March, 2016

Preliminary

*Available in March, 2016

	MGate W5108 MGate W5108-T	MGate W5208 MGate W5208-T
Ethernet Interface		
Protocols	Modbus TCP, DNP3, TCP Server/Client modes supported	
Number of Ports	1	
Connectors	RJ45	
Magnetic Isolation Protection	1.5 kV (built-in)	
Speed	10/100 Mbps, Auto MDI/MDIX	
Serial Interface		
Protocols	Modbus RTU/ASCII, DNP3	
Number of Ports	1	2
Serial Standards	RS-232/422/485, software selectable	
Baudrate	50 bps to 921.6 kbps	
Flow Control	RTS/CTS, RTS Toggle (for RS-232 only), XON/XOFF (for RAW TCP only)	
Serial Communication Parameters	Data Bits: 7, 8 Stop Bits: 1, 2	
Parity	None, Even, Odd, Space, Mark	
Connector	DB9-M	
Isolation Protection	2 kV (built-in)	
Wireless Interface		
Standards	802.11 a/b/g/n	
Number of Antenma	1	
Network Mode	Infrastructure, Ad-Hoc	
Antenna Connector	Reverse SMA	
Transmission Rate	802.11a/g: 65, 54, 48, 36, 24, 18, 12, 9, 6 Mbps, auto rate; 802.11b: 11, 5.5, 2, 1 Mbps, auto rate; 802.11n 2.4 GHz: HT20, MCS 0-7; 802.11n 5 GHz: HT20 & HT40 MCS 0-7	
Transmission Distance	Up to 100 meters (in open areas)	
Inputs and Outputs		
Digital Input	2 channel	
Digital Output	2 channel	
Contact Type	6-pin terminal block	
DI: Dry Contact	On: Short to GND Off: Open	
DI: Wet Contact (source type, COM to DI)	Sensor Type: NPN Off: +3 VDC max. On: +10 to 30 V	
Digital Output (Sink Type):	On: Short to GND Off: OPEN to GND Driver Current: Max. 200 mA per channel On-state voltage: 24 VDC nominal, open collector to 30 V	
Software		
Utility	Device Search Utility (DSU) for Windows 95, 98, ME, NT, 2000, Windows XP, Server 2003, Vista, Server 2008 (x86/x64),Windows Server 2008 R2, Windows 7/8/8.1 (x86/x64), Windows Server 2012 (x64), Windows 2012 R2	
Network Protocols	TCP/IP, UDP, HTTP, SMTP, NTP, DNS, DHCP Client, ARP, Telnet	
Security	Authentication: WEP encryption (64 or 128 bit), WPA / WPA2-Personal and Enterprise (IEEE 802.1X/RADIUS, TKIP and AES) 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+F120	
MXview/Mxconfig	✓	
SNMP	v1, v2, v3, Private MIB	
Physical Characteristics		
Housing	Metal (IP30)	
Dimensions	45.8 x 105 x 134 mm (1.8 x 4.13 x 5.28 in)	59.6 x 101.7 x 134 mm (2.35 x 4 x 5.28 in)
Weight	589 g (1.30 lb)	738 g (1.63 lb)
Storage Card Slot	1 microSD (SDHC) card slot (supports up to 32 GB)	
Environmental Limits		
Operating Temperature	Standard Models: 0 to 60°C (32 to 140°F), Wide Temp. Models: -40 to 75°C (-40 to 167°F)	
Storage Temperature	-40 to 85°C	
Ambient Relative Humidity	5 to 95% (non-condensing)	
Shock	IEC 60068-2-27	
Drop	IEC 60068-2-32	
Vibration	IEC 60068-2-6, IEC 60068-2-64	
Power Requirements		
Input Voltage	9 to 60 VDC	
Input Current	495 mA @ 9 VDC; 202 mA @ 24 VDC; 114 mA @ 48 VDC; 99 mA @ 60 VDC	
Power Connector	3-pin terminal block	
Standards and Certifications		
Safety	UL 508, EN 60950-1	
Hazardous Location	Class 1 Division 2, ATEX, and IECEx certification processes are underway. Please contact a Moxa sales representative for details.	
EMC	EN 55022/24	
EMI	CISPR 22, FCC Part 15B Class B	
EMS	IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 10 V/m IEC 61000-4-8 PFMF	
Radio	EN 300328, EN 301893, TELECOM 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)	

Industrial Wireless IEEE 802.11 Solutions

Preliminary

	Single-RF Wireless Tranceiver				Dual-RF Wireless Tranceiver	
	AWK-1131A	AWK-3131A	AWK-4131A	AWK-3191	AWK-5232	AWK-6232
WLAN						
Wireless Standard	802.11a/b/g/n	802.11a/b/g/n	802.11a/b/g/n	900 MHz	802.11a/b/g/n	802.11a/b/g/n
Number of RF Modules	1	1	1	1	2	2
Maximum Data Rate	300 Mbps	300 Mbps	300 Mbps	54 Mbps	300 Mbps	300 Mbps
Transmission Distance (with Default Antennas)	Up to 100 meters (in open areas)	Up to 100 meters (in open areas)	Up to 100 meters (in open areas)	Up to 30 km point-to-point (with high gain Yagi-antennas)	Up to 100 meters (in open areas)	Up to 100 meters (in open areas)
Interfaces						
Total Number of Antenna Ports	2 (2x2 MIMO)	2 (2x2 MIMO)	2 (2x2 MIMO)	2 (2R1T Diversity)	4 (2x2 MIMO)	4 (2x2 MIMO)
Antenna Port Type	RP-SMA (female)	RP-SMA (female)	N-Type (female)	RP-SMA (female)	RP-SMA (female)	N-Type (female)
Total Number of LAN Ports	1	1	1	1	2	2
LAN Port Type	RJ45	RJ45	Waterproof RJ45	RJ45	RJ45	M12 (female 8-pin A-coded)
LAN Port Speed	10/100/1000BaseT(X)	10/100/1000BaseT(X)	10/100/1000BaseT(X)	10/100BaseT(X)	10/100/1000BaseT(X)	10/100/1000BaseT(X)
RS-232 Console Ports	1, RJ45	1, RJ45	1, waterproof RJ45	1, RJ45	1, RJ45	1, waterproof RJ45
DI/DO	–	✓	✓	✓	✓	✓
DI/DO Connection Type	–	10-pin terminal block	M12 (female 8-pin A-coded)	10-pin terminal block	10-pin terminal block	M12 (male 8-pin A-coded)
Housing Protection						
IP-rating	IP30	IP30	IP68	IP30	IP30	IP68
Installation Options						
DIN-Rail Mounting	✓	✓	✓ (optional)	✓	✓	✓ (optional)
Wall Mounting	✓ (optional)	✓ (optional)	✓	✓ (optional)	✓ (optional)	✓
Pole Mounting	–	–	✓ (optional)	–	–	✓ (optional)
Supported Operating Temperatures						
-25 to 60°C (-13 to 140°F)	–	✓	–	✓	✓	–
0 to 60°C (32 to 140°F)	✓	–	–	–	–	–
-40 to 75°C (-40 to 167°F)	✓	✓	✓	✓	✓	✓
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
Connector Type	4-pin terminal block	10-pin terminal block	M12 (male 5-pin A-coded)	10-pin terminal block	10-pin terminal block	M12 (male 5-pin A-coded)
PoE Support	–	✓	✓	✓	✓	✓
Reverse Polarity Protection	✓	✓	✓	✓	✓	✓
Standards and Certifications						
Safety	UL 60950-1, EN 60950-1	UL 60950-1, EN 60950-1	UL 60950-1, EN 60950-1	UL 60950-1	UL 60950-1, EN 60950-1	UL 60950-1, EN 60950-1
Hazardous Location	–	UL/cUL Cl D2, ATEX Zone 2, IECEx	–	UL/cUL Cl D2	–	–
EMC	EN 55022/24	EN 61000-6-2/6-4	EN 61000-6-2/6-4	–	EN 55022/55024	EN 55022/24
Radio	EN 301 489-1/17, EN 300 328, EN 301 893, TELEC, FCC ID SLE-WAPN005	EN 301 489-1/17, EN 300 328, EN 301 893, TELEC, FCC ID SLE-WAPN005	EN 301 489-1/17, EN 300 328, EN 301 893, TELEC, FCC ID SLE-WAPN008	FCC ID SLE-WAFS001	EN 301 489-1/17, EN 300 328, EN 301 893, TELEC, FCC ID SLE-WAPN001	EN 301 489-1/17, EN 300 328, EN 301 893, TELEC, FCC ID SLE-WAPN001

Cellular Routers & LTE Cellular Gateway




	Cellular Router			Cellular Advanced IP Gateway
	WDR-3124A	OnCell 5004-HSPA	OnCell 5104-HSPA	OnCell G3470A-LTE
Cellular Interface				
Standards	GSM/GPRS/EDGE/UMTS/HSPA			GSM/GPRS/EDGE/UMTS/HSPA/LTE
4G Band Options	–	–	–	EU model: 2100/1800/2600/900/800 MHz (B1/B3/B7/B8/B20) US model:1900/AWS/850/700/700/1900 MHz (B2/B4/B5/B13/B17/B25)
LTE Data Rate	–	–	–	20 MHz bandwidth: 100 Mbps DL, 50 Mbps UL 10 MHz bandwidth: 50 Mbps DL, 25 Mbps UL
3G Band Options	800/850/900/1900/2100 MHz	800/850/AWS/1900/2100 MHz		EU model: 800/850/900/1900/2100 MHz US model: 850/900/AWS/1900/2100 MHz
HSPA Data Rate	14.4 Mbps DL, 5.76 Mbps UL (Category 6, 7)	14.4 Mbps DL, 5.76 Mbps UL		42 Mbps DL, 5.76 Mbps UL (Category 24, 6)
2G Band Options	850/900/1800/1900 MHz			850/900/1800/1900 MHz
EDGE Data Rate	237 kbps DL, 237 kbps UL (Class 12)	237 kbps DL, 237 kbps UL		237 kbps DL, 237 kbps UL (Class 10, 12)
GPRS Data Rate	85.6 kbps DL, 85.6 kbps UL	85.6 kbps DL, 85.6 kbps UL		85.6 kbps DL, 42.8 kbps UL
Ethernet WAN Interface				
Number of Ports	–	1		–
Ethernet	–	10/100M (RJ45)		–
Wireless Interface				
Standards	802.11a/b/g/n	–	–	–
Number of RF Modules	1	–	–	–
LAN Interface				
Number of Ports	4			4
Ethernet	10/100/1000M (RJ45)	10/100M (RJ45)		10/100/1000M (RJ45)
SIM Interface				
Number of SIMs	2			
SIM Control	3 V			
I/O Interface				
Alarm Contacts	1	–	1	1
Digital Inputs	2	–	2	2
Software				
Protocols	ICMP, DDNS, TCP/IP, UDP, DHCP, Telnet, DNS, SNMP, HTTP, HTTPS, SMTP, SNTP, ARP	ARP, DDNS, DHCP/BOOTP, DNS Relay, HTTP, HTTPS, ICMP, IPSec, PPP, PPPoE, SMTP, SNTP, SSH, SSL, TCP/IP, Telnet, UDP		ICMP, DDNS, TCP/IP, UDP, DHCP, Telnet, DNS, SNMP, HTTP, HTTPS, SMTP, SNTP, ARP
Routing/Firewall	NAT, port forwarding, IP/MAC/Port filtering	NAT, port forwarding, WAN IP filtering, static route		NAT, port forwarding, IP/MAC/Port filtering
Virtual Private Network	• Max. Tunnel Number: 5 (Responder/ Initiator) • IPSec (DES, 3DES, AES, MD5, SHA-1, DH2, DH5), PSK/X.509/RSA	IPSec (DES, 3DES, AES, MD5, SHA-1, SH1, DH2, DH5), PSK		• Max. Tunnel Number: 5 (Responder/ Initiator) • IPSec (DES, 3DES, AES, MD5, SHA-1, DH2, DH5), PSK/X.509/RSA
Cellular Connectivity	GuaranLink			
Utilities	OnCell Central Manager, Wireless Search Utility, SNMP v1/v2/v3, Web/Telnet/Serial Console, SSH, Remote SMS Control, Auto IP Report			
Physical Characteristics				
Housing	Aluminum (IP30)			
Weight	1280 g (2.82 lb)	510 g (1.12 lb)	650 g (1.43 lb)	1300 g (2.87 lb)
Dimensions	66.3 X 124 X 90 mm (2.61 x 4.88 x 3.54 in)	158 x 103 x 35 mm (6.22 x 4.06 x 1.38 in)	51 x 135 x 103 mm (2 x 5.32 x 4.16 in)	66.3 x 124 x 90 mm (2.61 x 4.88 x 3.54 in)
Environmental Limits				
Operating Temperature	Standard Models: 0 to 55°C (0 to 131°F) Wide Temp. Models: -30 to 70°C (-22 to 158°F)	-30 to 55°C (-22 to 131°F)	Standard Models: -30 to 55°C (-22 to 131°F) Wide Temp. Models: -30 to 70°C (-22 to 158°F)	Standard Models: -30 to 55°C (-22 to 131°F) Wide Temp. Models: -30 to 70°C (-22 to 158°F)
Ambient Relative Humidity	5 to 95% (non-condensing)			
Storage Temperature	-40 to 85°C (-40 to 185°F)	-40 to 75°C (-40 to 167°F)		-40 to 85°C (-40 to 185°F)
Power Requirements				
Number of Power Inputs	2 (terminal block), redundant dual inputs	2 (1 terminal block, 1 power jack)	2 (terminal block), redundant dual inputs	2 (terminal block), redundant dual inputs
Input Voltage	12 to 48 VDC			
Input Current	0.7 A @ 12 VDC; 0.2 A @ 48 VDC	0.9 A @ 12 VDC; 0.23 A @ 48 VDC	0.95 A @ 12 VDC; 0.25 A @ 48 VDC	0.7 A @ 12 VDC; 0.2 A @ 48 VDC
Standards and Certifications				
Safety	EN 60950-1, UL 60950-1	UL 60950-1		US model: UL 60950-1
EMC	EN 61000-6-2/6-4	EN 55022/24		EU model: EN 61000-6-2/6-4
Radio	EN 301 489-1, EN 301 489-7, EN 301 511, EN 301 908, EN 300 328, EN 301 893	FCC Part 22H, FCC Part 24E EN 301 489-1, EN 301 489-7, EN 301 489-24 EN 301511, EN 301 908		US model: FCC ID N7NMC7355 EU model: EN 301 489-1, EN 301 489-7, EN 301 511
Reliability				
Warranty	5 years (see www.moxa.com/warranty)			

Cellular IP Gateways & Modems





	Cellular Advanced IP Gateway		Cellular Compact IP Gateway		Cellular Modem
	OnCell G3110-HSPA OnCell G3150-HSPA	OnCell G3110 OnCell G3150	OnCell G3111-HSPA OnCell G3151-HSPA	OnCell G3111/OnCell G3211 OnCell G3151/OnCell G3251	OnCell G2111 OnCell G2151I
Cellular Interface					
Standards	GSM/GPRS/EDGE/UMTS/HSPA	GSM/GPRS/EDGE	GSM/GPRS/EDGE/UMTS/HSPA	GSM/GPRS	GSM/GPRS
3G band Options	800/850/AWS/1900/2100 MHz	–	800/850/900/1900/2100 MHz	–	–
HSPA Data Rate	14.4 Mbps DL, 5.76 Mbps UL	–	14.4 Mbps DL, 5.76 Mbps UL	–	–
2G band Options	850/900/1800/1900 MHz		850/900/1800/1900 MHz		
EDGE Data Rate	237 kbps DL, 237 kbps UL		237 kbps DL, 237 kbps UL	–	–
GPRS Data Rate	85.6 kbps DL, 85.6 kbps UL		85.6 kbps DL, 85.6 kbps UL	85.6 kbps DL, 42.8 kbps UL	85.6 kbps DL, 42.8 kbps UL
LAN Interface					
Number of Ports	1		1		–
Ethernet	10/100M (RJ45)		10/100 Mbps (RJ45)		–
SIM Interface					
Number of SIMs	1		1		1
SIM Control	3 V		3 V		3 V
Serial Interface					
Number of Ports	1		1	1 for G3111/G3151 2 for G3211/G3251	1
Serial Standards	G3110-HSPA: RS-232 G3150-HSPA: RS-232/422/485	G3110: RS-232 G3150: RS-232/422/485	G3111-HSPA: RS-232 G3151-HSPA: RS-232/422/485	G3111/G3211: RS-232 G3151/G3251: RS-232/422/485	G2111: RS-232 G2151I: RS-232/422/485
Connector	G3110-HSPA: DB9-M G3150-HSPA: DB9-M and TB	G3110: DB9-M G3150: DB9-M and TB	DB9-M		G2111: DB9-F G2151I: DB9-F and 5-pin TB
2.5 kV Optical Isolation	–		–		– ✓
I/O Interface					
Alarm Contacts	1		–		–
Digital Inputs	2		–		–
Software					
Protocols	ARP, DDNS, DHCP/BOOTP, DNS Relay, HTTP, HTTPS, ICMP, IPSec, SMTP, SNTP, SSH, SSL, TCP/IP, Telnet, UDP	ARP, AT Commands (Virtual Modem), DDNS, DHCP/BOOTP, DNS Relay, HTTP, HTTPS, ICMP, IPSec, SMTP, SNTP, SSH, SSL, TCP/IP, Telnet, UDP	ARP, DDNS, DHCP/BOOTP, DNS Relay, HTTP, HTTPS, ICMP, SMTP, SNTP, SSH, SSL, TCP/IP, Telnet, UDP		AT Commands
Routing/Firewall	NAT, port forwarding, WAN IP filtering		NAT, port forwarding, WAN IP filtering		–
Virtual Private Network	IPSec (DES, 3DES, AES, MD5, SHA-1, SH1, DH2, DH5), PSK		–		–
Serial Security	Accessible IP list		Accessible IP list		–
Serial Operation Modes	Real COM, Reverse Real COM, TCP Server, TCP Client, UDP, SMS Tunnel, RFC2217 Secure Real COM, Secure TCP Server, Secure TCP Client, Ethernet Modem		Real COM, Reverse Real COM, TCP Server, TCP Client, UDP, SMS Tunnel, RFC2217, Ethernet Modem		–
Cellular Connectivity	GuaranLink		GuaranLink		–
Utilities	OnCell Central Manager, Wireless Search Utility, SNMP v1/v2/v3, Web/Telnet/Serial Console, SSH, Remote SMS Control, Auto IP Report		OnCell Central Manager, Wireless Search Utility, SNMP v1/v2/v3, Web/Telnet/Serial Console, SSH, Remote SMS Control, Auto IP Report		–
Physical Characteristics					
Housing	Aluminum (IP30)		Aluminum (IP30)		ABS + PC (IP30)
Weight	445 g (0.98 lb)		170 g (0.38 lb)	190 g (0.42 lb)	155 g (0.34 lb)
Dimensions	28 x 126 x 93 mm (1.1 x 4.94 x 3.64 in)		77 x 111 x 26 mm (3.03 x 4.37 x 1.02 in)		27 x 123 x 79 mm (1.06 x 4.84 x 3.11 in)
Environmental Limits					
Operating Temperature	Standard Models: -30 to 55°C (-22 to 131°F) Wide Temp. Models: -30 to 70°C (-22 to 158°F)		-30 to 55°C (-22 to 131°F)		Standard Models: -20 to 55°C (-4 to 131°F) Wide Temp. Models: -25 to 70°C (-22 to 158°F) (OnCell G2111-T only)
Ambient Relative Humidity	5 to 95% (non-condensing)		5 to 95% (non-condensing)		5 to 95% (non-condensing)
Storage Temperature	-40 to 75°C (-40 to 167°F)		-40 to 75°C (-40 to 167°F)		-40 to 75°C (-40 to 167°F)
Power Requirements					
Number of Power Inputs	2 (terminal block), redundant dual inputs		1 (terminal block)	1 (power jack)	1 (terminal block)
Input Voltage	12 to 48 VDC		12 to 48 VDC		12 to 48 VDC
Input Current	0.9 A @ 12 VDC; 0.23 A @ 48 VDC		0.9 A @ 12 VDC; 0.23 A @ 48 VDC		0.625 A @ 12 VDC; 0.16 A @ 48 VDC
Standards and Certifications					
Safety	UL 60950-1		UL 60950-1		UL 60950-1
EMC	EN 55022/24		EN 55022/24 EN 61000-6-2/6- 4	EN 55022/24	EN 55022/24
Radio	FCC Part 22H, FCC Part 24E EN 301 489-1, EN 301 489-7, EN 301 489-24 EN 301 511, EN 301 908	FCC Part 22H, FCC Part 24E 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 301 489-24 EN 301 511, EN 301 908	FCC Part 22H, FCC Part 24E 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
Mobile Network	–	OnCell G3150: PTCRB	OnCell G3151-HSPA: PTCRB	–	–
Reliability					
Warranty	5 years (see www.moxa.com/warranty)				

Railway Wireless LAN Solutions

	Rail Train-to-Ground Series				Rail Carriage-to-Carriage Series	
	TAP-6226	AWK-3121-M12-RTG	AWK-3121-M12-HP-RTG	AWK-3121-SSC-RTG	AWK-3131-M12-RCC	AWK-5232-M12-RCC
WLAN						
IEEE 802.11 Standards	a/b/g	a/b/g			a/b/g/n	
Number of RF Modules	2	1	1	1	1	2
High Power RF Modules	✓	–	✓	–	–	–
Interfaces						
Number of Antenna Connectors	2	2	2	2	2	4
Antenna Connector Type	N-type (female)	QMA (female)	QMA (female)	RP-SMA (female)	QMA (female)	QMA (female)
Number of LAN Ports	6	1	1	1	1	2
LAN Port Type	4, M12; 2, SFP	1, M12	1, M12	1, SC connector	1, M12	2, M12
LAN Port Speed	10/100BaseT(X); 100BaseFX	10/100BaseT(X)	10/100BaseT(X)	100BaseFX	10/100/1000BaseT(X)	10/100/1000BaseT(X)
RS-232 Console Port	1, M12	1, RJ45	1, RJ45	1, RJ45	1, RJ45	1, RJ45
DI/DO	–	✓	✓	✓	✓	✓
DI/DO Connector Type	–	10-pin terminal block	10-pin terminal block	10-pin terminal block	10-pin terminal block	10-pin terminal block
Hosuing Protection						
IP-rating	IP68	IP30	IP30	IP30	IP30	IP30
Installation Options						
DIN-Rail Mounting	–	✓	✓	✓	✓	✓
Wall Mounting	✓	✓ (optional)	✓ (optional)	✓ (optional)	✓ (optional)	✓ (optional)
Power Requirements						
Input Voltage	110/220 VDC/VAC	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC
Connector	M23	10-pin terminal block	10-pin terminal block	10-pin terminal block	10-pin terminal block	10-pin terminal block
PoE Support	✓	✓	✓	✓	✓	✓
Reserve Polarity Protection	✓	✓	✓	✓	✓	✓

	Wireless Access Controller	
	WAC-1001	WAC-2004
Controller Features		
WLAN Security Support	WPA/WAP2-Personal and Enterprise	WPA/WAP2-Personal and Enterprise
Turbo Roaming for Layer 2 Network	✓	✓
Turbo Roaming for Layer 3 Network	–	✓
Mobile IP	–	✓
Interfaces		
Number of LAN Ports	1	4
LAN Port Type	1, RJ45	4, RJ45
LAN Port Speed	10/100BaseT(X)	10/100/1000BaseT(X)
RS-232 Console Port	1, RJ45	1, DB9 (male)
DI/DO	✓	–
DI/DO Connector Type	10-pin terminal block	–
Hosuing Protection		
IP-rating	IP30	–
Installation Options		
DIN-Rail Mounting	✓	–
Wall Mounting	✓ (optional)	–
Rack Mounting	–	Standard 19-inch rack mounting
Power Requirements		
Input Voltage	12 to 48 VDC	100 to 240 VAC
Connector	10-pin terminal block	AC power socket
PoE Support	✓	–
Reserve Polarity Protection	✓	–

NPort® 6000 Terminal Servers

	NPort 6150 NPort 6150-T	NPort 6250 NPort 6250-T	NPort 6250-M-SC NPort 6250-M-SC-T	NPort 6250-S-SC NPort 6250-S-SC-T	NPort 6450 NPort 6450-T	NPort 6610-8	NPort 6610-16
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)	–	–	–	–	1 or 2 ports	1 or 2 ports	1 or 2 ports
Multi-mode Fiber (SC)	–	–	–	–	1 or 2 ports	1 or 2 ports	1 or 2 ports
Single-mode Fiber (SC)	–	–	–	–	1 or 2 ports	1 or 2 ports	1 or 2 ports
Serial Interface							
RS-232 Ports	–	–	–	–	–	8	16
RS-232/422/485 Ports	1	2	2	2	4	–	–
Connector	DB9 male	DB9 male	DB9 male	DB9 male	DB9 male	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 nonstandard baudrates)						
RS-485 Data Direction Control	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
Offline Port Buffering	64 KB	64 KB	64 KB	64 KB	64 KB	64 KB	64 KB
SD Slot	–	✓	✓	✓	✓	✓	✓
Software							
Network Protocols	ICMP, IPv4/v6, TCP, UDP, ARP, DHCP, BOOTP, Telnet, DNS, SNMP V1/V2c/V3, DDNS, HTTP, SMTP, HTTPS, SSL, SSH, PPPoE, RFC2217, Turbo Ring, Turbo Ring 2						
Security Protocols	DES, 3DES, AES, SSH, SSL						
Configuration Options	Web Console, Telnet Console, Serial Console, Windows Utility						
Windows Real COM Drivers	Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7/8/8.1/10 (x86/x64), Windows 2008 R2/2012/2012 R2 (x64), Windows Embedded CE 5.0/6.0, Windows XP Embedded						
Fixed TTY Drivers	SCO Unix, SCO OpenServer, UnixWare 7, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i, Mac OS X						
Linux Real TTY Drivers	Linux 2.4.x, 2.6.x, 3.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 (1.54 lb)	730 g (1.61 lb)	730 g (1.61 lb)	730 g (1.61 lb)	1,020 g (2.25 lb)	3,460 g (7.63 lb)	3,580 g (7.89 lb)
Dimensions	67 x 100.4 x 29 mm (2.64 x 3.95 x 1.1 in)	77 x 111 x 29 mm (3.30 x 4.37 x 1.1 in)	77 x 111 x 29 mm (3.30 x 4.37 x 1.1 in)	77 x 111 x 29 mm (3.30 x 4.37 x 1.1 in)	158 x 103 x 35 mm (6.22 x 4.06 x 1.38 in)	440 x 195 x 44 mm (17.32 x 7.68 x 1.73 in)	440 x 195 x 44 mm (17.32 x 7.68 x 1.73 in)
Environmental Limits							
Operating Temperature (Standard Temperature)	0 to 55°C (32 to 131°F)						
Operating Temperature (Wide Temperature)	-40 to 75°C (-40 to 167°F)					–	–
Storage Temperature	-40 to 75°C (-40 to 167°F)						
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	100 to 240 VAC
Input Current	285 mA @ 12 VDC	430 mA @ 12 VDC			730 mA @ 12 VDC	285 mA @ 100 VAC, 47 to 63 Hz	
Standards and Certifications							
Safety	UL 60950-1						
EMC	EN 55022/24						
EMI	CISPR 22, FCC Part 15B Class A						
EMS	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 1 kV; Signal: 1 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m; Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11 Dips					IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m; Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11 Dips	
Transportation	NEMA TS2		–	–	NEMA TS2		
Reliability							
Buzzer, RTC, WDT	✓	✓	✓	✓	✓	✓	✓
MTBF	Time: 2,097,705 hrs Standard: Telcordia (Bellcore) Standard TR/SR	Time: 1,947,486 hrs Standard: Telcordia (Bellcore) Standard TR/SR	Time: 1,092,794 hrs Standard: Telcordia (Bellcore) Standard TR/SR	Time: 1,477,682 hrs Standard: Telcordia (Bellcore) Standard TR/SR	Time: 850,905 hrs Standard: Telcordia (Bellcore) Standard TR/SR	Time: 135,891 hrs Standard: Telcordia (Bellcore) Standard TR/SR	Time: 102,373 hrs Standard: Telcordia (Bellcore) Standard TR/SR
Warranty	5 years (see www.moxa.com/warranty)						

NPort® 6000 Terminal Servers

	NPort 6610-32	NPort 6610-8-48V NPort 6610-16-48V NPort 6610-32-48V	NPort 6650-8 NPort 6650-8-T	NPort 6650-16 NPort 6650-16-T	NPort 6650-32	NPort 6650-8-48V NPort 6650-16-48V NPort 6650-32-48V	NPort 6650-8-HV-T NPort 6650-16-HV-T NPort 6650-32-HV-T
LAN Interface							
10/100BaseT(X) Ports	1 port (8-pin RJ45 connector)						
Magnetic Isolation Protection	1.5 kV						
Expansion Modules							
10/100BaseT(X) (RJ45)	1 or 2 ports	1 or 2 ports	1 or 2 ports	1 or 2 ports	1 or 2 ports	1 or 2 ports	1 or 2 ports
Multi-mode Fiber (SC)	1 or 2 ports	1 or 2 ports	1 or 2 ports	1 or 2 ports	1 or 2 ports	1 or 2 ports	1 or 2 ports
Single-mode Fiber (SC)	1 or 2 ports	1 or 2 ports	1 or 2 ports	1 or 2 ports	1 or 2 ports	1 or 2 ports	1 or 2 ports
Serial Interface							
RS-232 Ports	32	8/16/32	–	–	–	–	–
RS-232/422/485 Ports	–		8	16	32	8/16/32	8/16/32
Connector	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 nonstandard baudrates)						
RS-485 Data Direction Control	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
Offline Port Buffering	64 KB	64 KB	64 KB	64 KB	64 KB	64 KB	64 KB
SD Slot	✓	✓	✓	✓	✓	✓	✓
Software							
Network Protocols	ICMP, IPv4/v6, TCP, UDP, ARP, DHCP, BOOTP, Telnet, DNS, SNMP V1/V2c/V3, DDNS, HTTP, SMTP, HTTPS, SSL, SSH, PPPoE, RFC2217, Turbo Ring, Turbo Ring 2						
Security Protocols	DES, 3DES, AES, SSH, SSL						
Configuration Options	Web Console, Telnet Console, Serial Console, Windows Utility						
Windows Real COM Drivers	Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7/8/8.1/10 (x86/x64), Windows 2008 R2/2012/2012 R2 (x64), Windows Embedded CE 5.0/6.0, Windows XP Embedded						
Fixed TTY Drivers	SCO Unix, SCO OpenServer, UnixWare 7, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i, Mac OS X						
Linux Real TTY Drivers	Linux 2.4.x, 2.6.x, 3.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	3,600 g (7.94 lb)	3,460 g (7.63 lb) / 3,580 g (7.89 lb) / 3,600 g(7.94 lb)	3,460 g (7.63 lb)	3,580 g (7.89 lb)	3,600 g (7.94 lb)	3,460 g (7.63 lb) / 3,580 g (7.89 lb) / 3,600 g (7.94 lb)	3,460 g (7.63 lb) / 3,580 g (7.89 lb) / 3,600 g (7.94 lb)
Dimensions	440 x 195 x 44 mm (17.32 x 7.68 x 1.73 in)	440 x 195 x 44 mm (17.32 x 7.68 x 1.73 in)	440 x 195 x 44 mm (17.32 x 7.68 x 1.73 in)	440 x 195 x 44 mm (17.32 x 7.68 x 1.73 in)	440 x 195 x 44 mm (17.32 x 7.68 x 1.73 in)	440 x 195 x 44 mm (17.32 x 7.68 x 1.73 in)	440 x 195 x 44 mm (17.32 x 7.68 x 1.73 in)
Environmental Limits							
Operating Temperature – Standard Temperature	0 to 55°C (32 to 131°F)						–
Operating Temperature – Wide Temperature	–	–	-40 to 75°C (-40 to 167°F)	-40 to 75°C (-40 to 167°F)	–	–	-40 to 85°C (-40 to 185°F)
Storage Temperature	-40 to 75°C (-40 to 167°F)						-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)						
Power Requirements							
Input Voltage	100 to 240 VAC	±48 VDC	100 to 240 VAC	100 to 240 VAC	100 to 240 VAC	±48 VDC	88 to 300 VDC
Input Current	285 mA @ 100 VAC, 47 to 63 Hz	293 mA @ 48 VDC	285 mA @ 100 VAC, 47 to 63 Hz			293 mA @ 48 VDC	200 mA @ 88 VDC
Standards and Certifications							
Safety	UL 60950-1						
EMC	EN 55022/24						
EMI	CISPR 22, FCC Part 15B Class A						
EMS	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m; Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11 Dips	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 1 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m; Signal: 3 V/m IEC 61000-4-8 PFMF	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m; Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11 Dips			IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 1 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m; Signal: 3 V/m IEC 61000-4-8 PFMF	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m; Signal: 3 V/m IEC 61000-4-8 PFMF
Transportation	NEMA TS2						
Reliability							
Buzzer, RTC, WDT	✓	✓	✓	✓	✓	✓	✓
MTBF	Time: 68,707 hrs Standard: Telcordia (Bellcore) Standard TR/SR	Time: 135,891 hrs/102,373 hrs/ 68,707 hrs Standard: Telcordia (Bellcore) Standard TR/SR	Time: 636,600 hrs Standard: Telcordia (Bellcore) Standard TR/SR	Time: 439,673 hrs Standard: Telcordia (Bellcore) Standard TR/SR	Time: 310,078 hrs Standard: Telcordia (Bellcore) Standard TR/SR	Time: 636,600 hrs/ 439,673 hrs/ 310,078 hrs Standard: Telcordia (Bellcore) Standard TR/SR	Time: 501,171 hrs/ 380,006 hrs/ 290,914 hrs Standard: Telcordia (Bellcore) Standard TR/SR
Warranty	5 years (see www.moxa.com/warranty)						

CN2600 Terminal Servers

		CN2610-8-2AC	CN2610-16-2AC	CN2650-8	CN2650-16	CN2650-8-2AC CN2650-8-2AC-T	CN2650-16-2AC CN2650-16-2AC-T
LAN Interface							
10/100BaseT(X) Ports		2 ports (2 MAC, 8-pin RJ45 connectors)					
Magnetic Isolation Protection		1.5 kV					
Serial Interface							
RS-232 Ports		8	16	–	–	–	–
RS-232/422/485 Ports		–	–	8	16	8	16
Connector		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					
2 kV Isolation Protection		–	–	–	–	–	–
RS-485 Data Direction Control		ADDC®	ADDC®	ADDC®	ADDC®	ADDC®	ADDC®
RS-232 Console Port		✓	✓	✓	✓	✓	✓
Advanced Features							
Serial Data Log		128K					
Offline Port Buffering		128K					
Software							
Network Protocols		ICMP, IPv4, 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 Utility					
Windows Real COM Drivers		Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7/8/8.1/10 (x86/x64), Windows 2008 R2/2012/2012 R2 (x64), Windows Embedded CE 5.0/6.0, Windows XP Embedded					
Fixed TTY Drivers		SCO Unix, SCO OpenServer, UnixWare 7, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i, Mac OS X					
Linux Real TTY Drivers		Linux 2.4.x, 2.6.x, 3.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		3,760 g (8.29 lb)	3,980 g (8.77 lb)	3,740 g (8.25 lb)	3,790 g (8.36 lb)	3,900 g (8.60 lb)	3,980 g (8.77 lb)
Dimensions		440 x 198 x 45.5 mm (17.32 x 7.80 x 1.77 in)					
Environmental Limits							
Operating Temperature	Standard Temperature	0 to 55°C (32 to 131°F)					
	Wide Temperature	–	–	–	–	-40 to 75°C (-40 to 167°F)	-40 to 75°C (-40 to 167°F)
Storage Temperature		-40 to 75°C (-40 to 167°F)					
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					
Input Current		280 mA @ 100 VAC, 47 to 63 Hz					
Standards and Certifications							
Safety		UL 60950-1					
EMC		EN 55022/24					
EMI		CISPR 22, FCC Part 15B Class A					
EMS		IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2.5 kV; Signal: 1 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m; Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11 Dips					
Reliability							
Buzzer, RTC, WDT		✓	✓	✓	✓	✓	✓
MTBF		Time: 124,859 hrs Standard: MIL-HDBK-217F	Time: 105,915 hrs Standard: MIL-HDBK-217F	Time: 457,140 hrs Standard: Telcordia (Bellcore) Standard TR/SR	Time: 375,472 hrs Standard: Telcordia (Bellcore) Standard TR/SR	Time: 457,140 hrs Standard: Telcordia (Bellcore) Standard TR/SR	Time: 375,472 hrs Standard: Telcordia (Bellcore) Standard TR/SR
Warranty		5 years (see www.moxa.com/warranty)					

CN2600 Terminal Servers

	CN2650I-8	CN2650I-16	CN2650I-8-2AC	CN2650I-16-2AC	CN2650I-8-HV-T	CN2650I-16-HV-T
LAN Interface						
10/100BaseT(X) Ports	2 ports (2 MAC, 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
Connector	DB9 male	DB9 male	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					
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, IPv4, 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 Utility					
Windows Real COM Drivers	Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7/8/8.1/10 (x86/x64), Windows 2008 R2/2012/2012 R2 (x64), Windows Embedded CE 5.0/6.0, Windows XP Embedded					
Fixed TTY Drivers	SCO Unix, SCO OpenServer, UnixWare 7, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i, Mac OS X					
Linux Real TTY Drivers	Linux 2.4.x, 2.6.x, 3.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	3,666 g (8.08 lb)	3,776 g (8.32 lb)	3,932 g (8.67 lb)	4,022 g (8.87 lb)	3,910 g (8.62 lb)	3,930 g (8.66 lb)
Dimensions	440 x 198 x 45.5 mm (17.32 x 7.80 x 1.77 in)					
Environmental Limits						
Operating Temperature – Standard Temperature	0 to 55°C (32 to 131°F)				–	–
Operating Temperature – Wide Temperature	–	–	–	–	-40 to 85°C (-40 to 185°F)	-40 to 85°C (-40 to 185°F)
Storage Temperature	-40 to 75°C (-40 to 167°F)				-40 to 85°C (-40 to 185°F)	
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				88 to 300 VDC	
Input Current	325 mA @ 100VAC, 47 to 63 Hz				200 mA @ 88 VDC	
Standards and Certifications						
Safety	UL 60950-1					
EMC	EN 55022/24					
EMI	CISPR 22, FCC Part 15B Class A					
EMS	IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2.5 kV; Signal: 1 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m; Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11 Dips				IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m IEC 61000-4-8 PFMF	
Reliability						
Buzzer, RTC, WDT	✓	✓	✓	✓	✓	✓
MTBF	Time: 190,562 hrs Standard: Telcordia (Bellcore) Standard TR/SR	Time: 115,887 hrs Standard: Telcordia (Bellcore) Standard TR/SR	Time: 190,562 hrs Standard: Telcordia (Bellcore) Standard TR/SR	Time: 115,887 hrs Standard: Telcordia (Bellcore) Standard TR/SR	Time: 191,326 hrs Standard: Telcordia (Bellcore) Standard TR/SR	Time: 116,924 hrs Standard: Telcordia (Bellcore) Standard TR/SR
Warranty	5 years (see www.moxa.com/warranty)					

Combo Switch / Serial Device Servers

NPort S8455I/S8458: Ethernet Switch Specifications	
Ethernet Interface	
Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) and 100BaseFX 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, IPv4, 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 1 A @ 24 VDC

NPort S8455I/S8458: Device Server Specifications	
Serial Interface	
Number of Ports	4
Serial Standards	RS-232/422/485
Connector	DB9 male
Serial Line Protection	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	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 Utility
Windows Real COM Drivers	Windows 95/98/ME/NT/2000, Windows XP/2003/ Vista/2008/7/8/8.1/10 (x86/x64), Windows 2008 R2/2012/2012 R2 (x64), Windows Embedded CE 5.0/6.0, Windows XP Embedded
Fixed TTY Drivers	SCO Unix, SCO OpenServer, UnixWare 7, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i, Mac OS X
Linux Real TTY Drivers	Linux 2.4.x, 2.6.x, 3.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 S8455I/S8458: General Specifications		
Port Summary		
Serial Ports		4 RS-232/422/485 ports
Ethernet Switch Ports		NPort S8455I fiber: 3 RJ45 copper ports, 2 multi-mode/ single-mode fiber ports NPort S8455I all copper: 5 RJ45 copper ports NPort S8458: 4 RJ45 copper ports and 4 single-mode fiber ports
Console Ports		1 (8-pin RJ45 connector)
LED Indicators		PWR1, PWR2, READY, MASTER, COUPLER, LINK4, LINK5
Physical Characteristics		
Housing		Metal
Weight		NPort S8455I series: 578 g (1.27 lb) NPort S8458 series: 1,105 g (2.44 lb)
Dimensions		NPort S8455I series: 73.1 x 134 x 105 mm (2.88 x 5.27 x 4.92 in) NPort S8458 series: 93 x 144 x 125 mm (3.66 x 5.64 x 4.92 in)
Environmental Limits		
Operating Temperature	Standard Temperature	0 to 60°C (32 to 140°F)
	Wide Temperature	NPort S8455I-T: -40 to 75°C (-40 to 167°F) NPort S8458-T: -40 to 85°C (-40 to 185°F)
Operating Humidity		5 to 95% (non-condensing)
Storage Temperature		-40 to 75°C (-40 to 167°F)
Power Requirements		
Input Voltage		12 to 48 VDC
Input Current		NPort S8458: 940 mA @ 12 VDC NPort S8455I: 935 mA @ 12 VDC
Standards and Certifications		
Safety		UL 508, UL 60950-1
EMC		EN 55022/24
EMI		CISPR 22, FCC Part 15B Class A
EMS		NPort S8455I: IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: 1 kV (4 kV for all copper models); Signal: 0.25 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 10 V/m; Signal: 10 V/m IEC 61000-4-8 PFMF NPort S8458 series: IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 4 kV; Signal: 4 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 10 V/m; Signal: 10 V/m IEC 61000-4-8 PFMF
Reliability		
Buzzer, RTC, WDT		✓
MTBF		Time: NPort S8455I Single-mode: 286,993 hrs NPort S8455I Multi-mode: 200,951 hrs NPort S8455I All copper: 287,354 hrs NPort S8458: 163,624 hrs Standard: Telcordia (Bellcore) Standard TR/SR
Warranty		5 years (see www.moxa.com/warranty)

Railway Device Servers



		NPort 5150AI-M12/ NPort 5150AI-M12-T/ NPort 5150AI-M12-CT	NPort 5250AI-M12/ NPort 5250AI-M12-T/ NPort 5250AI-M12-CT	NPort 5450AI-M12/ NPort 5450AI-M12-T/ NPort 5450AI-M12-CT
Ethernet Interface				
10/100BaseT(X) Ports		1	1	1
Connector		M12	M12	M12
Serial Interface				
RS-232/422/485 Ports		1	2	4
Connector		DB9 male	DB9 male	DB9 male
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, DTR/DSR, XON/XOFF		
Baudrate		50 bps to 921.6 kbps		
Software				
Network Protocols		ICMP, IPv4, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP V1, HTTP, SMTP, IGMP V1/2, LLDP, ARP		
Configuration Options		Web Console, Telnet Console, Windows Search Utility		
Windows Real COM Drivers		Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7/8/8.1/10 (x86/x64), Windows 2008 R2/2012/2012 R2 (x64), Windows Embedded CE 5.0/6.0, Windows XP Embedded		
Fixed TTY Drivers		SCO Unix, SCO OpenServer, UnixWare 7, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i, Mac OS X		
Linux Real TTY Drivers		Linux 2.4.x, 2.6.x, 3.x		
Physical Characteristics				
Housing		Metal, IP40 protection		
Weight		686 g (1.51 lb)		
Dimensions		80 x 216.6 x 52.9 mm (3.15 x 8.53 x 2.08 in)		
Environmental Limits				
Operating Temperature	Standard Temperature	-25 to 55°C (-13 to 131°F)		
	Wide Temperature	-40 to 75°C (-40 to 167°F)		
Operating Humidity		5 to 95% (non-condensing)		
Storage Temperature		-40 to 85°C (-40 to 185°F)		
Power Requirements				
Input Voltage		12 to 48 VDC		
Input Current		310 mA @ 12 VDC	360 mA @ 12 VDC	440 mA @ 12 VDC
Connector		M12		
Standards and Certifications				
Safety		UL 60950-1		
EMC		EN 55022/24		
EMI		CISPR 22, FCC Part 15B Class A		
EMS		IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power 2 kV; Signal 2 kV IEC 61000-4-5 Surge: Power 0.5 kV; Signal: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz, 10 V/m; Signal: 10 V/m IEC 61000-4-8 PFMF		
Rail Traffic		EN 50155 (essential compliance*), EN 50121-4		
Vibration		IEC 60068-2-6		
Reliability				
Comformal Coating		Yes (-CT model only)	Yes (-CT model only)	Yes (-CT model only)
Buzzer, RTC, WDT		Yes	Yes	Yes
MTBF		Time: 789,341 hrs Standard: Telcordia (Bellcore) Standard TR/SR	Time: 639,622 hrs Standard: Telcordia (Bellcore) Standard TR/SR	Time: 467,777 hrs Standard: Telcordia (Bellcore) Standard TR/SR
Warranty		5 years (see www.moxa.com/warranty)		

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

General-Purpose Device Servers

	NPort 5110A NPort 5110A-T	NPort 5130A NPort 5130A-T	NPort 5150A NPort 5150A-T	NPort P5150A NPort P5150A-T	NPort 5110 NPort 5110-T	NPort 5130	NPort 5150
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	1	–	–	–	1	–	–
RS-422/485 Ports	–	1	–	–	–	1	–
RS-232/422/485 Ports	–	–	1	1	–	–	1
Connector	DB9-M	DB9-M	DB9-M	DB9-M	DB9-M	DB9-M	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				110 bps to 230.4 kbps	50 bps to 921.6 kbps	
Software							
Network Protocols	ICMP, IPv4, ARP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP V1, HTTP, SMTP, IGMP V1/2				ICMP, IPv4, ARP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP V1, HTTP, SMTP		
Configuration Options	Web Console, Telnet Console, Serial Console, Windows Utility	Web Console, Telnet Console, Windows Utility	Web Console, Telnet Console, Serial Console, Windows Utility			Web Console, Telnet Console, Windows Utility	Web Console, Telnet Console, Serial Console, Windows Utility
Windows Real COM Drivers	Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7/8/8.1/10 (x86/x64), Windows 2008 R2/2012/2012 R2 (x64), Windows Embedded CE 5.0/6.0, Windows XP Embedded						
Fixed TTY Drivers	SCO Unix, SCO OpenServer, UnixWare 7, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i, Mac OS X						
Linux Real TTY Drivers	Linux 2.4.x, 2.6.x, 3.x						
Physical Characteristics							
Housing	Metal						
Weight	340 g (0.75 lb)			300 g (0.66 lb)	340 g (0.75 lb)		
Dimensions	52 x 80 x 22 mm (2.05 x 3.15 x 0.87 in)			77 x 111 x 26 mm (3.03 x 4.37 x 1.02 in)	52 x 80 x 22 mm (2.05 x 3.15 x 0.87 in)		
Environmental Limits							
Operating Temperature – Standard Temperature	0 to 60°C (32 to 140°F)				0 to 55°C (32 to 131°F)		
Operating Temperature – Wide Temperature	-40 to 75°C (-40 to 167°F)				-40 to 75°C (-40 to 167°F)	–	
Operating Humidity	5 to 95% (non-condensing)						
Storage Temperature	-40 to 75°C (-40 to 167°F)						
Power Requirements							
Input Voltage	12 to 48 VDC						
Input Current	82.5 mA @ 12 VDC	89.1 mA @ 12 VDC	92.4 mA @ 12 VDC	DC Jack I/P: 125 mA @ 12 VDC; PoE I/P: 180 mA @ 48 VDC	128.7 mA @ 12 VDC	200 mA @ 12 VDC	200 mA @ 12 VDC
Standards and Certifications							
Safety	UL 60950-1						
EMC	EN 55022/24						
EMI	CISPR 22, FCC Part 15B Class A						
EMS	IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 0.5 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 10 V/m; Signal: 10 V/m IEC 61000-4-8 PFMF IEC 61000-4-11 Dips			IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz, 3 V/m; Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11 Dips	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: 1 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m; Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11 Dips		
Reliability							
Buzzer, RTC, WDT	WDT only						
MTBF	Time: 2,231,530 hrs Standard: Telcordia (Bellcore) Standard TR/SR				Time: 3,126,448 hrs Standard: Telcordia (Bellcore) Standard TR/SR	Time: 2,836,863 hrs Standard: Telcordia (Bellcore) Standard TR/SR	Time: 2,736,202 hrs Standard: Telcordia (Bellcore) Standard TR/SR
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	Terminal Block	DB9-M	RJ45	Terminal Block	Terminal Block	Terminal Block
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, IPv4, ARP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP V1, HTTP, SMTP, IGMP V1/2			ICMP, IPv4, ARP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP V1, HTTP, SMTP			
Configuration Options	Web Console, Telnet Console, Serial Console, Windows Utility	Web Console, Telnet Console, Windows Utility	Web Console, Telnet Console, Serial Console, Windows Utility			Web Console, Telnet Console, Windows Utility	
Windows Real COM Drivers	Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7/8/8.1/10 (x86/x64), Windows 2008 R2/2012/2012 R2 (x64), Windows Embedded CE 5.0/6.0, Windows XP Embedded						
Fixed TTY Drivers	SCO Unix, SCO OpenServer, UnixWare 7, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i, Mac OS X						
Linux Real TTY Drivers	Linux 2.4.x, 2.6.x, 3.x						
Physical Characteristics							
Housing	Metal						
Weight	340 g (0.75 lb)				360 g (0.79 lb)		380 g (0.84 lb)
Dimensions	77 x 111 x 26 mm (3.03 x 4.37 x 1.02 in)			67 x 100.4 x 22 mm (2.64 x 3.95 x 0.87 in)			67 x 100.4 x 35 mm (2.64 x 3.95 x 0.87 in)
Environmental Limits							
Operating Temperature – Standard Temperature	0 to 60°C (32 to 140°F)			0 to 55°C (32 to 131°F)			
Operating Temperature – Wide Temperature	-40 to 75°C (-40 to 167°F)						
Storage Temperature	-40 to 75°C (-40 to 167°F)						
Operating Humidity	5 to 95% (non-condensing)						
Power Requirements							
Input Voltage	12 to 48 VDC						
Input Current	119 mA @ 12 VDC			325 mA @ 12 VDC	325 mA @ 12 VDC	280 mA @ 12 VDC	365 mA @ 12 VDC
Standards and Certifications							
Safety	UL 60950-1						
EMC	EN 55022/24						
EMI	CISPR 22, FCC Part 15B Class A						
EMS	IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 10 V/m; Signal: 10 V/m IEC 61000-4-8 PFMF IEC 61000-4-11 Dips			IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 1 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m; Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11 Dips			
Marine	–	–	–	–	DNV	DNV	DNV
Reliability							
Buzzer, RTC, WDT	✓						
MTBF	Time: 847,750 hrs Standard: Telcordia (Bellcore) Standard TR/SR			Time: 381,342 hrs Standard: Telcordia (Bellcore) Standard TR/SR	Time: 377,937 hrs Standard: Telcordia (Bellcore) Standard TR/SR	Time: 309,383 hrs Standard: Telcordia (Bellcore) Standard TR/SR	
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						
10/100BaseT(X) Ports		1	1	1	1	1
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	Terminal Block	Terminal Block	DB9-M	DB9-M
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, IPv4, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP V1, HTTP, SMTP, SNTP, ARP				
Configuration Options		Web Console, Telnet Console, Windows Utility				
Windows Real COM Drivers		Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7/8/8.1/10 (x86/x64), Windows 2008 R2/2012/2012 R2 (x64), Windows Embedded CE 5.0/6.0, Windows XP Embedded				
Fixed TTY Drivers		SCO Unix, SCO OpenServer, UnixWare 7, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i, Mac OS X				
Linux Real TTY Drivers		Linux 2.4.x, 2.6.x, 3.x				
Onsite Configuration						
Mini Screen with Push Buttons		✓	✓	✓	✓ (excluding T models)	✓ (excluding T models)
Physical Characteristics						
Housing		Metal				
Weight		740 g (1.63 lb)	740 g (1.63 lb)	740 g (1.63 lb)	740 g (1.63 lb)	740 g (1.63 lb)
Dimensions		158 x 103 x 33 mm (6.22 x 4.06 x 1.30 in)				
Environmental Limits						
Operating Temperature	Standard Temperature	0 to 55°C (32 to 131°F)				
	Wide Temperature	–	–	–	-40 to 75°C (-40 to 167°F)	
Operating Humidity		5 to 95% (non-condensing)				
Storage Temperature		-20 to 70°C (-4 to 158°F)			-40 to 75°C (-40 to 167°F)	
Power Requirements						
Input Voltage		12 to 48 VDC				
Input Current		350 mA @ 12 VDC	320 mA @ 12 VDC	530 mA @ 12 VDC	350 mA @ 12 VDC	554 mA @ 12 VDC
Standards and Certifications						
Safety		UL 60950-1				
EMC		EN 55022/24				
EMI		CISPR 22, FCC Part 15B Class A				
EMS		IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m; Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11 Dips	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 1 kV; Signal: 1 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m; Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11 Dips		IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m; Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11 Dips	IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 2.5 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power 1 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m; Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11 Dips
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		Time: 310,331 hrs Standard: Telcordia (Bellcore) Standard TR/SR	Time: 265,650 hrs Standard: Telcordia (Bellcore) Standard TR/SR		Time: 206,903 hrs Standard: Telcordia (Bellcore) Standard TR/SR	
Warranty		5 years (see www.moxa.com/warranty)				

General-Purpose Device Servers

	NPort 5610-8	NPort 5610-8-48V	NPort 5610-16	NPort 5610-16-48V	NPort 5630-8	NPort 5630-16	NPort 5650-8 NPort 5650-8-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	8	8	16	16	–	–	–
RS-422/485 Ports	–	–	–	–	8	16	–
RS-232/422/485 Ports	–	–	–	–	–	–	8
Connector	RJ45	RJ45	RJ45	RJ45	RJ45	RJ45	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, XON/XOFF						
Baudrate	50 bps to 921.6 kbps						
Software							
Network Protocols	ICMP, IPv4, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP V1, HTTP, SMTP, SNTP, ARP, PPP, SLIP, RFC2217						
Configuration Options	Web Console, Telnet Console, Windows Utility						
Windows Real COM Drivers	Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7/8/8.1/10 (x86/x64), Windows 2008 R2/2012/2012 R2 (x64), Windows Embedded CE 5.0/6.0, Windows XP Embedded						
Fixed TTY Drivers	SCO Unix, SCO OpenServer, UnixWare 7, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i, Mac OS X						
Linux Real TTY Drivers	Linux 2.4.x, 2.6.x, 3.x						
Onsite Configuration							
Mini Screen with Push Buttons	✓	✓	✓	✓	✓	✓	✓ (excluding T models)
Physical Characteristics							
Housing	Metal						
Weight	3,340 g (7.36 lb)	3,160 g (6.97 lb)	3,420 g (7.54 lb)	3,260 g (7.19 lb)	3,380 g (7.45 lb)	3,400 g (7.50 lb)	3,360 g (7.41 lb)
Dimensions	440 x 45 x 198 mm (18.9 x 1.77 x 7.80 in)						
Environmental Limits							
Operating Temperature (Standard Temperature)	0 to 55°C (32 to 131°F)						
Operating Temperature (Wide Temperature)	–	–	–	–	–	–	-40 to 75°C (-40 to 167°F)
Operating Humidity	5 to 95% (non-condensing)						
Storage Temperature	-20 to 70°C (-4 to 158°F)						-40 to 75°C (-40 to 167°F)
Power Requirements							
Input Voltage	100 to 240 VAC, 47 to 63 Hz	±48 VDC	100 to 240 VAC, 47 to 63 Hz	±48 VDC	100 to 240 VAC, 47 to 63 Hz		
Input Current	141 mA @ 100 VAC, 47 to 63 Hz	135 mA @ 48 VDC	141 mA @ 100 VAC, 47 to 63 Hz	135 mA @ 48 VDC	152 mA @ 100 VAC, 47 to 63 Hz	152 mA @ 100 VAC, 47 to 63 Hz	158 mA @ 100 VAC, 47 to 63 Hz
Standards and Certifications							
Safety	UL 60950-1						
EMC	EN 55022/24						
EMI	CISPR 22, FCC Part 15B Class A						
EMS	IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2.5 kV; Signal: 1 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m; Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11 Dips						
Medical	EN 60601-1-2 Class B, EN 55011						
Reliability							
Buzzer, RTC, WDT	✓						
MTBF	Time: 97,294 hrs Standard: MIL-HDBK-217F	Time: 96,758 hrs Standard: MIL-HDBK-217F	Time: 94,928 hrs Standard: MIL-HDBK-217F	Time: 926,643 hrs Standard: Telcordia (Bellcore) Standard TR/SR	Time: 118,405 hrs Standard: MIL-HDBK-217F	Time: 91,483 hrs Standard: MIL-HDBK-217F	Time: 117,584 hrs Standard: MIL-HDBK-217F
Warranty	5 years (see www.moxa.com/warranty)						

General-Purpose Device Servers

	NPort 5650-8-M-SC	NPort 5650-8-S-SC	NPort 5650-8-HV-T	NPort 5650-16 NPort 5650-16-T	NPort 5650-16-M-SC	NPort 5650-16-S-SC	NPort 5650-16-HV-T
Ethernet Interface							
10BaseT Ports	–	–	–	–	–	–	–
10/100BaseT(X) Ports	–	–	1	1	–	–	1
100BaseFX Ports	1 (multi-mode)	1 (single-mode)	–	–	1 (multi-mode)	1 (single-mode)	–
Connector	SC	SC	RJ45	RJ45	SC	SC	RJ45
Magnetic Isolation Protection	–	–	1.5 kV	1.5 kV	–	–	1.5 kV
Serial Interface							
RS-232 Ports	–	–	–	–	–	–	–
RS-422/485 Ports	–	–	–	–	–	–	–
RS-232/422/485 Ports	8	8	8	16	16	16	16
Connector	RJ45	RJ45	RJ45	RJ45	RJ45	RJ45	RJ45
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, IPv4, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP V1, HTTP, SMTP, SNTP, ARP, PPP, SLIP,RFC2217						
Configuration Options	Web Console, Telnet Console, Windows Utility						
Windows Real COM Drivers	Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7/8/8.1/10 (x86/x64), Windows 2008 R2/2012/2012 R2 (x64), Windows Embedded CE 5.0/6.0, Windows XP Embedded						
Fixed TTY Drivers	SCO Unix, SCO OpenServer, UnixWare 7, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i, Mac OS X						
Linux Real TTY Drivers	Linux 2.4.x, 2.6.x, 3.x						
Onsite Configuration							
Mini Screen with Push Buttons	✓	✓	–	✓ (excluding T models)	✓	✓	–
Physical Characteristics							
Housing	Metal						
Weight	3,380 g (7.45 lb)	3,380 g (7.45 lb)	3,720 g (8.20 lb)	3,460 g (7.63 lb)	3,440 g (7.58 lb)	3,440 g (7.58 lb)	3,820 g (8.42 lb)
Dimensions	440 x 45 x 198 mm (18.9 x 1.77 x 7.80 in)						
Environmental Limits							
Operating Temperature (Standard Temperature)	0 to 55°C (32 to 131°F)		–	0 to 55°C (32 to 131°F)			–
Operating Temperature (Wide Temperature)	–	–	-40 to 85°C (-40 to 185°F)	-40 to 75°C (-40 to 167°F)	–	–	-40 to 85°C (-40 to 185°F)
Operating Humidity	5 to 95% (non-condensing)						
Storage Temperature	-20 to 70°C (-4 to 158°F)		-40 to 85°C (-40 to 185°F)	-40 to 75°C (-40 to 167°F)	-20 to 70°C (-4 to 158°F)		-40 to 85°C (-40 to 185°F)
Power Requirements							
Input Voltage	100 to 240 VAC, 47 to 63 Hz	100 to 240 VAC, 47 to 63 Hz	110 VDC (88 to 300 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	110 VDC (88 to 300 VDC)
Input Current	174 mA @ 100 VAC, 47 to 63 Hz	164 mA @ 100 VAC, 47 to 63 Hz	152 mA @ 88 VDC	158 mA @ 100 VAC, 47 to 63 Hz	174 mA @ 100 VAC, 47 to 63 Hz	164 mA @ 100 VAC, 47 to 63 Hz	152 mA @ 88 VDC
Standards and Certifications							
Safety	UL 60950-1						
EMC	EN 55022/24						
EMI	CISPR 22, FCC Part 15B Class A						
EMS	IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2.5 kV; Signal: 1 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m; Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11 Dips		IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m; Signal: 3 V/m IEC 61000-4-8 PFMF	IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power 2.5 kV; Signal 1 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m; Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11 Dips		IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m; Signal: 3 V/m IEC 61000-4-8 PFMF
Medical	EN 60601-1-2 Class B, EN 55011						
Reliability							
Buzzer, RTC, WDT	✓						
MTBF	Time: 116,914 hrs Standard: MIL-HDBK-217F		Time: 725,390 hrs Standard: Telcordia (Bellcore) Standard TR/SR	104,767 hrs	Time: 87,528 hrs Standard: MIL-HDBK-217F		Time: 531,264 hrs Standard: Telcordia (Bellcore) Standard TR/SR
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				
10/100BaseT(X) Ports		1	1	1
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
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, IPv4, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP V1, HTTP, SMTP, SNTP, ARP, RFC2217		
Configuration Options		Web Console, Serial Console, Telnet Console, Windows Utility		
Windows Real COM Drivers		Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7/8/8.1/10 (x86/x64), Windows 2008 R2/2012/2012 R2 (x64), Windows Embedded CE 5.0/6.0, Windows XP Embedded		
Fixed TTY Drivers		SCO Unix, SCO OpenServer, UnixWare 7, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i, Mac OS X		
Linux Real TTY Drivers		Linux 2.4.x, 2.6.x, 3.x		
Onsite Configurations				
Mini Screen with Push Buttons		–	–	–
Physical Characteristics				
Housing		Metal		
Weight		1,760 g (3.88 lb)	1,770 g (3.90 lb)	1,850 g (4.08 lb)
Dimensions		197 x 44 x 125 mm (7.76 x 1.73 x 4.92 in)		
Environmental Limits				
Operating Temperature	Standard Temperature	0 to 60°C (32 to 140°F)		
	Wide Temperature	-40 to 75°C (-40 to 167°F)		
Operating Humidity		5 to 95% (non-condensing)		
Storage Temperature		-40 to 75°C (-40 to 167°F)		
Power Requirements				
Input Voltage		12 to 48 VDC		
Input Current		340 mA @ 12 VDC	470 mA @ 12 VDC	740 mA @ 12 VDC
Standards and Certifications				
Safety		UL 60950-1		
EMC		EN 55022/24		
EMI		CISPR 22, FCC Part 15B Class A		
EMS		IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m; Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11 Dips		
Reliability				
Buzzer, RTC, WDT		✓		
MTBF		Time: 953,388 hrs Standard: Telcordia (Bellcore) Standard TR/SR	Time: 740,457 hrs Standard: Telcordia (Bellcore) Standard TR/SR	Time: 258,150 hrs Standard: Telcordia (Bellcore) Standard TR/SR
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 (2 IPs)	2 (2 IPs)	2 (2 IPs)	2 (2 IPs)	2 (2 IPs)	2 (2 IPs)
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/Terminal Block	DB9-M/Terminal Block	DB9-M	DB9-M	DB9-M	DB9-M
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, IPv4, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP V1, HTTP, SMTP, SNTP, IGMP, ARP					
Configuration Options	Web Console, Serial Console, Telnet Console, Windows Utility					
Windows Real COM Drivers	Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7/8/8.1/10 (x86/x64), Windows 2008 R2/2012/2012 R2 (x64), Windows Embedded CE 5.0/6.0, Windows XP Embedded					
Fixed TTY Drivers	SCO Unix, SCO OpenServer, UnixWare 7, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i, Mac OS X					
Linux Real TTY Drivers	Linux 2.4.x, 2.6.x, 3.x					
Physical Characteristics						
Housing	Metal					
Weight	475 g (1.05 lb)		485 g (1.07 lb)		560 g (1.23 lb)	
Dimensions	36 x 105 x 140 mm (1.42 x 4.13 x 5.51 in)				45.8 x 134 x 105 mm (1.8 x 5.28 x 4.13 in)	
Environmental Limits						
Operating Temperature – Standard Temperature	0 to 60°C (32 to 140°F)					
Operating Temperature – Wide Temperature	-40 to 75°C (-40 to 167°F)					
Operating Humidity	5 to 95% (non-condensing)					
Storage Temperature	-40 to 75°C (-40 to 167°F)					
Power Requirements						
Input Voltage	12 to 48 VDC					
Input Current	220 mA @ 12 VDC	225 mA @ 12 VDC	250 mA @ 12 VDC	290 mA @ 12 VDC	374 mA @ 12 VDC	512 mA @ 12 VDC
Standards and Certifications						
Safety	UL 508					
EMC	EN 55022/24					
EMI	CISPR 22, FCC Part 15B Class A					
EMS	IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 10 V/m; Signal: 10 V/m IEC 61000-4-8 PFMF					
Hazardous Location	UL/cUL Class I Division 2 Groups A/B/C/D, ATEX Class I Zone 2, IECEx					
Shock	IEC 60068-2-27					
Freefall	IEC 60068-2-32					
Vibration	IEC 60068-2-6					
Reliability						
Buzzer, RTC, WDT	✓					
MTBF	Time: 262,805 hrs Standard: Telcordia (Bellcore) Standard TR/SR					
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	NPort IA5250I NPort IA5250I-T
Ethernet Interface									
10/100BaseT(X) Ports		2 (1 IP)	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	RJ45
Magnetic Isolation Protection		1.5 kV	1.5 kV	–	–	–	–	1.5 kV	1.5 kV
Serial Interface									
RS-232/422/485 Ports		1	1	1	1	1	1	2	2
Connector		DB9-M/ Terminal Block	DB9-M/ Terminal Block	DB9-M/ Terminal Block	DB9-M/ Terminal Block	DB9-M/ Terminal Block	DB9-M/ Terminal Block	DB9-M	DB9-M
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, IPv4, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP V1, HTTP, SMTP, SNTP, ARP							
Configuration Options		Web Console, Serial Console, Telnet Console, Windows Utility							
Windows Real COM Drivers		Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7/8/8.1/10 (x86/x64), Windows 2008 R2/2012/2012 R2 (x64), Windows Embedded CE 5.0/6.0, Windows XP Embedded							
Fixed TTY Drivers		SCO Unix, SCO OpenServer, UnixWare 7, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i, Mac OS X							
Linux Real TTY Drivers		Linux 2.4.x, 2.6.x, 3.x							
Physical Characteristics									
Housing		Plastic (IP30)							
Weight		360 g (0.79 lb)						380 g (0.84 lb)	
Dimensions		29 x 89.2 x 118.5 mm (0.82 x 3.51 x 4.57 in)							
Environmental Limits									
Operating Temperature	Standard Temperature	0 to 55°C (32 to 131°F)							
	Wide Temperature	-40 to 75°C (-40 to 167°F)							
Operating Humidity		5 to 95% (non-condensing)							
Storage Temperature		-40 to 75°C (-40 to 167°F)							
Power Requirements									
Input Voltage		12 to 48 VDC							
Input Current		238 mA @ 12 VDC	257 mA @ 12 VDC	315 mA @ 12 VDC	339 mA @ 12 VDC	328 mA @ 12 VDC	333 mA @ 12 VDC	238 mA @ 12 VDC	300 mA max @ 12 VDC
Standards and Certifications									
Safety		UL 508, UL 60950-1							
EMC		EN 55022/24							
EMI		CISPR 22, FCC Part 15B Class A							
EMS		IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power 4 kV; Signal 2 kV IEC 61000-4-5 Surge: Power 2 kV; Signal 1 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz, 10 V/m; Signal: 10 V/m IEC 61000-4-8 PFMF							
Hazardous Location		UL/cUL Class I Division 2 Groups A/B/C/D, ATEX Class 1 Zone 2, IECEx							
Marine		DNV							
Shock		IEC 60068-2-27							
Freefall		IEC 60068-2-32							
Vibration		IEC 60068-2-6							
Reliability									
Buzzer, RTC, WDT		✓							
MTBF		Time: 183,747 hrs Standard: MIL-HDBK-217F	Time: 195,614 hrs Standard: MIL-HDBK-217F	Time: 183,747 hrs Standard: MIL-HDBK-217F	Time: 195,614 hrs Standard: MIL-HDBK-217F	Time: 183,747 hrs Standard: MIL-HDBK-217F	Time: 195,614 hrs Standard: MIL-HDBK-217F	Time: 194,765 hrs Standard: MIL-HDBK-217F	Time: 341,417 hrs Standard: Telcordia (Bellcore) Standard SR-332
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/n		✓	
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, IPv4, TCP, UDP, DHCP, Telnet, DNS, SNMP V1/V2c/V3, HTTP, SMTP, SNTP, SSH, HTTPS, ARP	
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/2008/7/8/8.1/10 (x86/x64), Windows 2008 R2/2012/2012 R2 (x64), Windows Embedded CE 5.0/6.0, Windows XP Embedded	
Fixed TTY Drivers		SCO Unix, SCO OpenServer, UnixWare 7, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i, Mac OS X	
Linux Real TTY Drivers		Linux 2.4.x, 2.6.x, 3.x	
Physical Characteristics			
Housing		Aluminum	
Weight		547 g (1.21 lb)	557 g (1.23 lb)
Dimensions		77 x 111 x 26 mm (3.03 x 4.37 x 1.02 in)	
Environmental Limits			
Operating Temperature	Standard Temperature	0 to 55°C (32 to 131°F)	
	Wide Temperature	-40 to 75°C (-40 to 167°F)	
Operating Humidity		5 to 95% (non-condensing)	
Storage Temperature		-40 to 75°C (-40 to 167°F)	
Power Requirements			
Input Voltage		12 to 48 VDC	
Input Current		179 mA @ 12 VDC	200 mA @ 12 VDC
Standards and Certifications			
Safety		UL 60950-1	
EMC		EN 55022/24	
EMI		CISPR 22, FCC Part 15B Class A	
EMS		IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m; Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11 Dips	
Radio		CE (ETSI EN 301 893, ETSI EN 300 328, ETSI EN 301 489-17, ETSI EN 301 489-1), ARIB RCR STD-33, ARIB STD-66	
Reliability			
MTBF		Time: 383,187 hrs Standard: Telcordia (Bellcore) Standard TR/SR	Time: 363,327 hrs Standard: Telcordia (Bellcore) Standard TR/SR
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/2008/7/8/10 x86/x64, Embedded CE 5.0/6.0, XP Embedded, Windows 2012 x64
Fixed TTY Drivers		–	–
Linux Real TTY Drivers		–	–
Physical Characteristics			
Housing		Aluminum	
Weight		340 g (0.75 lb)	780 g (1.72 lb)
Dimensions		52 x 80 x 22 mm (2.05 x 3.15 x 0.87 in)	77 x 111 x 26 mm (3.03 x 4.37 x 1.02 in)
Environmental Limits			
Operating Temperature	Standard Temperature	0 to 55°C (32 to 131°F)	
	Wide Temperature	-40 to 75°C (-40 to 167°F)	
Operating Humidity		5 to 95% (non-condensing)	
Storage Temperature		-40 to 75°C (-40 to 167°F)	
Power Requirements			
Input Voltage		12 to 48 VDC	
Input Current		45 mA @ 12 VDC	120 mA @ 12 VDC
Standards and Certifications			
Safety		UL 60950-1	
EMC		EN 55022/24	
EMI		CISPR 22, FCC Part 15B Class A	
EMS		IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 1 kV; Signal: 1 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m; Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11 Dips	
Radio		CE (ETSI EN 301 893, ETSI EN 300 328, ETSI EN 301 489-1-17, ETSI EN 301 489-1)	
Reliability			
MTBF		Time: 2,542,774 hrs Standard: Telcordia (Bellcore) Standard TR/SR	Time: 1,109,589 hrs Standard: Telcordia (Bellcore) Standard TR/SR
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	MiiNePort W1 MiiNePort W1-T
Form Factor			
Type	Drop-in module	Pin-header module	Drop-in module
Physical Characteristics			
Dimensions	29 x 17 x 12.6 mm (1.14 x 0.67 x 0.50 in)	35 x 52.5 x 18 mm (1.38 x 2.07 x 0.71 in)	44.4 x 44.4 x 9.7 mm (1.75 x 1.75 x 0.38 in)
Weight	5 g (0.01 lb)	12 g (0.03 lb)	15.35 g (0.03 lb)
Ethernet Interface			
10/100BaseT(X) Ports	1	1	1
Connector	4-pin pin header	RJ45	–
Magnetic Isolation Protection	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 (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 MiiNePort E2-H: 50 bps to 921.6 kbps (nonstandard baudrates supported)	MiiNePort E3: 50 bps to 230.4 kbps MiiNePort E3-H: 50 bps to 921.6 kbps (nonstandard baudrates supported)	50 bps - 921.6 kbps
Programmable GPIO Pins	4	4	8
Software			
Network Protocols	ICMP, ARP, IPv4, TCP, UDP, DHCP, HTTP, SNMP V1, SMTP, TFTP, Auto IP, Telnet, BOOTP		ICMP, IP, TCP, UDP, DHCP, Telnet, DNS, SNMP V1/V2c/V3, HTTP, SMTP, SNTP, SSH, HTTPS, ARP
Configuration Options	Web/Serial/Telnet Console, Windows Search Utility		
Serial Command Mode	✓	✓	✓
Windows Real COM Drivers	Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7/8/8.1/10 (x86/x64), Windows 2008 R2/2012/2012 R2 (x64), Windows Embedded CE 5.0/6.0, Windows XP Embedded		
Fixed TTY Drivers	SCO Unix, SCO OpenServer, UnixWare 7, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i, Mac OS X		
Linux Real TTY Drivers	Linux 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, RFC2217
NetEZ Technology	EZPower, EZPage, SCM, AutoCFG, MCSC	EZPower, EZPage, SCM, AutoCFG	SCM
Environmental Limits			
Operating Temperature – Standard Temperature	0 to 55°C (32 to 131°F)		
Operating Temperature – Wide Temperature	-40 to 85°C (-40 to 185°F)		-40 to 75°C (-40 to 167°F)
Ambient Relative Humidity	5 to 95% (non-condensing)		
Storage Temperature (package included)	-40 to 60°C (-40 to 140°F)		
Power Requirement			
Input Voltage	3.3 to 5 VDC	3.3 to 5 VDC	3.3 to 5 VDC
Input Current	140 mA @ 3.3 VDC	157 mA @ 3.3 VDC	400 mA @ 3.3 VDC
Standards and Certifications			
Safety	–	–	UL 60950-1
EMC	EN 55022/24	EN 55022/24	EN 55022/24
EMI	CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 0.5 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power 1 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11
Radio	–	–	EN 300 328, EN 301 489, EN 62311 (US), DSPR (Japan)
Reliability			
Watchdog Timer	✓	✓	✓
MTBF	Time: 5,696,350 hrs Standard: Telcordia (Bellcore) SR-332	Time: 3,608,031 hrs Standard: Telcordia (Bellcore) SR-332	Time: 441,378 hrs Standard: Telcordia (Bellcore) SR-332
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/2008/7/8/10 (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/Ethernet Sample Source Code		1. TCP Server Echo 2. TCP Server: Serial (single connection) 3. TCP Server: Serial (multiple connections) 4. TCP Client Echo 5. TCP Client: Serial (startup) 6. TCP Client: Serial (any character) 7. TCP Client: Serial (designated destination TCP/IP port from serial) 8. UDP echo 9. UDP-to-serial
Physical Characteristics		
Dimensions		29 x 22.8 x 14.5 mm (1.14 x 0.9 x 0.57 in)
Weight		3.16 g (0.01 lb)
Environmental Limits		
Operating Temperature	Standard Temperature	0 to 55°C (32 to 131°F)
Ambient Relative Humidity		5 to 95% (non-condensing)
Storage Temperature (package included)		-40 to 60°C (-40 to 140°F)
Power Requirements		
Input Voltage		3.3 to 5 VDC
Input Current		140 mA @ 3.3 VDC
Standards and Certifications		
Safety		–
EMC		EN 55022/24
EMI		CISPR 22, FCC Part 15B Class B
EMS		IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 0.5 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11
Reliability		
Watchdog Timer		✓
MTBF		Time: 2,463,960 hrs Standard: Telcordia (Bellcore) TR/SR
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
Hardware							
Comm. Controller	16C550C compatible						
Bus	PCI Express x1						
Connector	DB25 female	VHDCI 68		DB44 female			DB9 male
Serial Interface							
RS-232 Ports	32	–	8	–	–	4	2
RS-422/485 Ports	–	–	–	–	–	–	–
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						
Baudrate	50 bps to 460.8 kbps	50 bps to 921.6 kbps					
Electrical Isolation	–	–	–	–	2 kV	–	–
Driver Support							
Windows 95/98/ME/NT	–	–	–	–	–	–	–
Windows 2000	✓	✓	✓	✓	✓	✓	✓
Windows XP/2003/Vista (x86/x64)	✓	✓	✓	✓	✓	✓	✓
Windows 2008 (x86/x64)	✓	✓	✓	✓	✓	✓	✓
Windows 7 (x86/x64)	✓	✓	✓	✓	✓	✓	✓
Windows 8/8.1(x86/x64)	✓	✓	✓	✓	✓	✓	✓
Windows 10 (x86/x64)	✓	✓	✓	✓	✓	✓	✓
Windows 2008 R2/2012/2012 R2 (x64)	✓	✓	✓	✓	✓	✓	✓
Windows CE 5.0	–	–	–	–	–	–	–
Windows CE 6.0	–	–	–	–	–	–	–
Windows XP Embedded	–	✓	✓	✓	✓	✓	✓
DOS	–	✓	✓	✓	✓	✓	✓
Linux 2.4.x, 2.6.x, 3.x	✓	✓	✓	✓	✓	✓	✓
FreeBSD 4/5	–	✓	✓	✓	✓	✓	✓
QNX 4.25	–	–	–	–	–	–	–
QNX 6	–	✓	✓	✓	✓	✓	✓
SCO Open Server	–	✓	✓	✓	✓	✓	✓
UnixWare 7	–	✓	✓	✓	✓	✓	✓
Environmental Limits							
Dimensions	67 x 135 mm (2.64 x 5.32 in)	68.9 x 88 mm (2.71 x 3.46 in)	64.42 x 102 mm (2.54 x 4.02 in)	67.21 x 103 mm (2.69 x 4.06 in)	67.21 x 135 mm (2.69 x 5.31 in)	67.21 x 103 mm (2.65 x 4.06 in)	85.04 x 100 mm (3.40 x 4.00 in)
Operating Temperature	0 to 55°C (32 to 131°F)						
Storage Temperature	-20 to 85°C (-4 to 185°F)						
Ambient Relative Humidity	5 to 95% (non-condensing)						
Standards and Certifications							
EMC	EN 55022/24	EN 55022/24	EN 55022/24	EN 55022/24	EN 55022/24	EN 55022/24	EN 55022/24
EMI	CISPR 22, FCC Part 15B Class A	CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV IEC 61000-4-5 Surge: Power: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11					
Reliability							
MTBF	Time: 2,937,578 hrs Standard: Telcordia (Bellcore) TR/SR	Time: 1,359,482 hrs Standard: Telcordia (Bellcore) TR/SR	Time: 2,351,336 hrs Standard: Telcordia (Bellcore) TR/SR	Time: 2,347,197 hrs Standard: Telcordia (Bellcore) TR/SR	Time: 603,671 hrs Standard: Telcordia (Bellcore) TR/SR	Time: 3,601,447 hrs Standard: Telcordia (Bellcore) TR/SR	Time: 4,947,552 hrs Standard: Telcordia (Bellcore) TR/SR
Warranty	5 years (see www.moxa.com/warranty)						

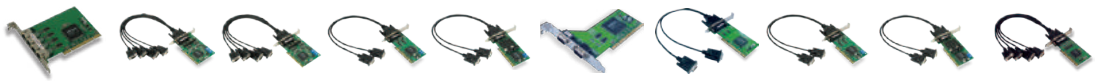
PCI Express Serial Boards

	CP-102EL	CP-132EL	CP-132EL-I	CP-116E-A	CP-118E-A-I	CP-138E-A-I	CP-134EL-A-I
Hardware							
Comm. Controller	16C550C compatible			16C550C compatible			
Bus	PCI Express x1			PCI Express x1			
Connector	DB25 female			VHDCI 68	DB78 Female	DB78 Female	DB44 Female
Serial Interface							
RS-232 Ports	2	–	–	–	–	–	–
RS-422/485 Ports	–	2	2	–	–	8	4
RS-232/422/485 Ports	–	–	–	16	8	–	–
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	XON/XOFF		RTS/CTS, XON/XOFF			
Baudrate	50 bps to 460.8 kbps			50 bps to 921.6 kbps			
Electrical Isolation	–	–	2 kV	–	2 kV	2 kV	2 kV
Driver Support							
Windows 95/98/ME/NT	–	–	–	–	–	–	–
Windows 2000	✓	✓	✓	✓	✓	✓	✓
Windows XP/2003/Vista (x86/x64)	✓	✓	✓	✓	✓	✓	✓
Windows 2008 (x86/x64)	✓	✓	✓	✓	✓	✓	✓
Windows 7 (x86/x64)	✓	✓	✓	✓	✓	✓	✓
Windows 8/8.1(x86/x64)	✓	✓	✓	✓	✓	✓	✓
Windows 10 (x86/x64)	✓	✓	✓	✓	✓	✓	✓
Windows 2008 R2/2012/2012 R2 (x64)	✓	✓	✓	✓	✓	✓	✓
Windows CE 5.0	–	–	–	✓	✓	✓	✓
Windows CE 6.0	–	–	–	✓	✓	✓	✓
Windows XP Embedded	✓	✓	✓	✓	✓	✓	✓
DOS	✓	✓	✓	–	–	–	–
Linux 2.4.x, 2.6.x, 3.x	✓	✓	✓	✓	✓	✓	✓
FreeBSD 4/5	–	–	–	–	–	–	–
QNX 4.25	–	–	–	–	–	–	–
QNX 6	✓	✓	✓	✓	✓	✓	✓
SCO Open Server	✓	✓	✓	✓	✓	✓	✓
UnixWare 7	✓	✓	✓	✓	✓	✓	✓
Solaris 10	–	–	–	✓	✓	✓	✓
Environmental Limits							
Dimensions	67.21 x 101.97 mm (2.65 x 4.08 in)	67.21 x 101.97 mm (2.65 x 4.08 in)	67.21 x 103.97 mm (2.65 x 4.16 in)	97.9 x 88.9 mm (3.86 x 3.50 in)	109.5 x 130 mm (4.31 x 5.11 in)		67.2 x 103 mm (2.69 x 4.06 in)
Operating Temperature	0 to 55°C (32 to 131°F)						
Storage Temperature	-20 to 85°C (-4 to 185°F)						
Ambient Relative Humidity	5 to 95% (non-condensing)						
Standards and Certifications							
EMC	EN 55022/24	EN 55022/24	EN 55022/24	EN 55022/24	EN 55022/24	EN 55022/24	EN 55022/24
EMI	CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class B
EMS	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11			IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 4 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 4 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11		
Reliability							
MTBF	Time: 4,947,552 hrs Standard: Telcordia (Bellcore) TR/SR	Time: 4,147,133 hrs Standard: Telcordia (Bellcore) TR/SR	Time: 1,681,099 hrs Standard: Telcordia (Bellcore) TR/SR	Time: 310,993 hrs Standard: Telcordia (Bellcore) TR/SR	Time: 390,883 hrs Standard: Telcordia (Bellcore) TR/SR	Time: 221,331 hrs Standard: Telcordia (Bellcore) TR/SR	Time: 431,064 hrs Standard: Telcordia (Bellcore) TR/SR
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-422/485 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 - 460.8 kbps	50 bps - 921.6 kbps								
Electrical Isolation	–	–	–	–	2 kV	2 kV	–	–	2 kV	–
Driver Support										
Windows 95/98/ME/NT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows 2000	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows XP/2003/Vista (x86/x64)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows 2008 (x86/x64)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows 7 (x86/x64)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows 8/8.1 (x86/x64)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows 10 (x86/x64)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows 2008 R2/2012/2012 R2 (x64)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows CE 5.0	–	–	✓	✓	✓	✓	✓	✓	✓	✓
Windows CE 6.0	–	–	✓	✓	✓	✓	✓	✓	✓	✓
Windows XP Embedded	–	–	✓	✓	✓	✓	✓	✓	✓	✓
DOS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Linux 2.4.x, 2.6.x, 3.x	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
FreeBSD 4/5	–	–	✓	✓	✓	✓	✓	✓	✓	✓
QNX 4.25	✓	✓	–	–	–	–	–	–	–	–
QNX 6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SCO Open Server	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
UnixWare 7	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Environmental Limits										
Dimensions	101.34 x 121.86 mm (3.99 x 4.80 in)	105 x 180 mm (4.13 x 7.09 in)	82 x 135 mm (3.22 x 5.31 in)	82 x 135 mm (3.22 x 5.31 in)	105 x 133 mm (4.13 x 5.23 in)	105 x 133 mm (4.13 x 5.23 in)	82 x 120 mm (3.22 x 4.72 in)	64.4 x 120 mm (2.53 x 4.72 in)	64.4 x 130 mm (2.53 x 5.12 in)	64.4 x 120 mm (2.53 x 4.72 in)
Operating Temperature (Standard Temperature)	0 to 55°C (32 to 131°F)		0 to 55°C (32 to 131°F)							
Operating Temperature (Wide Temperature)	–		-40 to 60°C (-40 to 140°F)							
Storage Temperature	-20 to 85°C (-4 to 185°F)		-40 to 60°C (-40 to 140°F)							
Ambient Relative Humidity	5 to 95% (non-condensing)		5 to 95% (non-condensing)							
Standards and Certifications										
EMC	EN 55022/24	EN 55022/24	EN 55022/24	EN 55022/24	EN 55022/24	EN 55022/24	EN 55022/24	EN 55022/24	EN 55022/24	EN 55022/24
EMI	CISPR 22, FCC Part 15B Class A	CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class B
EMS	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV IEC 61000-4-5 Surge: Power: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV IEC 61000-4-5 Surge: Power: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m; Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m			IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV		IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11	
Reliability										
MTBF	Time: 305,270 hrs Standard: MIL-HDBK-217F	Time: 303,325 hrs Standard: MIL-HDBK-217F	Time: 1,073,385 hrs Standard: Telcordia (Bellcore) SR-332	Time: 1,147,210 hrs Standard: Telcordia (Bellcore) SR-332	Time: 350,975 hrs Standard: Telcordia (Bellcore) SR-332	Time: 370,390 hrs Standard: Telcordia (Bellcore) SR-332	Time: 280,854 hrs Standard: Telcordia	Time: 114,223 hrs Standard: Telcordia (Bellcore) SR-332		Time: 558,961 hrs Standard: MIL-HDBK-217F
Warranty	5 years (see www.moxa.com/warranty)									

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-422/485 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									
Electrical Isolation	–	–	2 kV	–	2 kV	–	–	–	2 kV	–
Driver Support										
Windows 95/98/ME/NT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows 2000	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows XP/2003/Vista (x86/x64)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows 2008 (x86/x64)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows 7 (x86/x64)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows 8/8.1(x86/x64)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows 10 (x86/x64)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows 2008 R2/2012/2012 R2 (x64)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows CE 5.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows CE 6.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows XP Embedded	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
DOS	✓	✓	✓	–	–	✓	✓	✓	✓	✓
Linux 2.4.x, 2.6.x, 3.x	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
FreeBSD 4/5	✓	✓	✓	–	–	✓	✓	✓	✓	✓
QNX 4.25	–	–	–	–	–	–	–	–	–	–
QNX 6	✓	✓	✓	–	–	✓	✓	✓	✓	✓
SCO Open Server	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
UnixWare 7	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Environmental Limits										
Dimensions	83 x 120 mm (3.27 x 4.72 in)	82.5 x 120 mm (3.24 x 4.72 in)	115 x 120 mm (4.52 x 4.72 in)	64.4 x 120 mm (2.53 x 4.72 in)	64.4 x 120 mm (2.53 x 4.72 in)	80 x 120 mm (3.15 x 4.72 in)	64.5 x 120 mm (2.53 x 4.72 in)	64.4 x 120 mm (2.53 x 4.72 in)	64.4 x 120 mm (2.53 x 4.72 in)	64.4 x 120 mm (2.53 x 4.72 in)
Operating Temperature – Standard Temperature	0 to 55°C (32 to 131°F)									
Operating Temperature – Wide Temperature	-40 to 85°C (-40 to 185°F)									
Storage Temperature	-40 to 85°C (-40 to 185°F)									
Ambient Relative Humidity	5 to 95% (non-condensing)									
Standards and Certifications										
EMC	EN 55022/24	EN 55022/24	EN 55022/24	EN 55022/24	EN 55022/24	EN 55022/24	EN 55022/24	EN 55022/24	EN 55022/24	EN 55022/24, EN 61000-6-2/-6-4
EMI	CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class B
EMS	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m			IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11		IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11			IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m Signal: 10 V/m IEC 61000-4-8 PFMF IEC 61000-4-11
Reliability										
MTBF	Time: 571,627 hrs Standard: Telcordia (Bellcore) TR/SR	Time: 480,209 hrs Standard: Telcordia (Bellcore) TR/SR	Time: 360,732 hrs Standard: Telcordia (Bellcore) TR/SR	Time: 219,971 hrs Standard: Telcordia (Bellcore) SR-332		Time: 574,050 hrs Standard: MIL-HDBK-217F	Time: 576,401 hrs Standard: Telcordia (Bellcore) TR/SR	Time: 1,647,832 hrs Standard: Telcordia (Bellcore) SR-332		Time: 2,124,022 hrs Standard: Telcordia (Bellcore) TR/SR
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	16C550C compatible			
Bus	16-bit ISA			
Connector	DB62 female	DB37 female	DB37 female	DB9 male x 2
Serial Interface				
RS-232 Ports	8	4	–	–
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			
Electrical Isolation	–	–	– / 2 kV / 2 kV	– / 2 kV / 2 kV
Driver Support				
Windows 95/98/ME/NT	✓	✓	✓	✓
Windows 2000	✓	✓	✓	✓
Windows XP/2003/Vista (x86)	✓	✓	✓	✓
Windows 2008 (x86)	✓	✓	✓	✓
Windows 7 (x86)	✓	✓	✓	✓
Windows 8/8.1 (x86)	✓	✓	✓	✓
Windows 10 (x86)	✓	✓	✓	✓
Windows CE 5.0	–	–	–	–
Windows CE 6.0	–	–	–	–
Windows XP Embedded	✓	✓	✓	✓
DOS	✓	✓	✓	✓
Linux 2.4.x, 2.6.x, 3.x	✓	✓	✓	✓
FreeBSD 4/5	✓	✓	✓	✓
QNX 4.25	✓	✓	✓	✓
QNX 6	✓	✓	✓	✓
SCO Open Server	✓	✓	✓	✓
UnixWare 7	✓	✓	✓	✓
Environmental Limits				
Dimensions	93 x 157 mm (3.66 x 6.18 in)	83 x 157 mm (3.27 x 6.18 in)	CI-134: 85 x 160 mm (3.35 x 6.30 in) CI-134I/IS: 110 x 180 mm (4.33 x 7.09 in)	CI-132: 75 x 157 mm (2.95 x 6.18 in) CI-132I/IS: 105 x 157 mm (4.13 x 6.18 in)
Operating Temperature	0 to 55°C (32 to 131°F)			
Storage Temperature	-20 to 85°C (-4 to 185°F)			
Ambient Relative Humidity	5 to 95% (non-condensing)			
Standards and Certifications				
EMC	EN 55022/24	EN 55022/24	EN 55022/24	EN 55022/24
EMI	CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class B
EMS	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11		IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Signal: 2 kV	
Reliability				
MTBF	Time: 601,501 hrs Standard: MIL-HDBK-217F	Time: 629,545 hrs Standard: MIL-HDBK-217F	Time: 424,655 hrs Standard: Telcordia (Bellcore) TR/SR	Time: 441,015 hrs Standard: Telcordia (Bellcore) TR/SR
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
Connector		DB9 male x 2	DB9 male x 2	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		
Electrical 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)		✓	✓	✓
Windows 8/8.1 (x86/x64)		✓	✓	✓
Windows 2008 R2/2012/2012 R2 (x64)		✓	✓	✓
Visual Basic Library		✓	✓	✓
C/C++ Library		✓	✓	✓
Environmental Limits				
Dimensions		80 x 120 mm (3.15 x 4.72 in)	85 x 100 mm (3.35 x 3.94 in)	90.2 x 95.9 mm (3.55 x 3.78 in)
Operating Temperature	Standard Temperature	0 to 55°C (32 to 131°F)		
	Wide Temperature	-40 to 85°C (-40 to 185°F)		
Storage Temperature		-40 to 85°C (-40 to 185°F)		
Ambient Relative Humidity		5 to 95% (non-condensing)		
Standards and Certifications				
EMC		EN 55022/24	EN 55022/24	EN 55022/24
EMI		CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class B	CISPR 22, FCC Part 15B Class B
EMS		IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV IEC 61000-4-5 Surge: Power: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m Signal: 3 V/m IEC 61000-4-8 PFMF IEC 61000-4-11
Reliability				
MTBF		Time: 1,989,990 hrs Standard: Telcordia (Bellcore) SR-332	Time: 4,645,502 hrs Standard: Telcordia (Bellcore) SR-332	Time: 248,563 hrs Standard: Telcordia (Bellcore) SR-332
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	RTS/CTS, XON/XOFF								
FIFO	64 bytes				128 bytes				
Baudrate	50 bps to 921.6 kbps								
Embedded ESD Protection	15 kV								
Electrical 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 7 x86/ x64	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows 8/8.1 x86/x64	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows 10 x86/ x64	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows 2012 x64	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows 2008 R2/2012 R2 x64	✓	✓	✓	✓	✓	✓	✓	✓	✓
WinCE 5.0/6.0	✓	✓	✓	✓	✓	✓	✓	✓	✓
Linux 2.4.x	✓	✓	✓	✓	✓	✓	✓	✓	✓
Linux 2.6.x	✓	✓	✓	✓	✓	✓	✓	✓	✓
Linux 3.x	✓	✓	✓	✓	✓	✓	✓	✓	✓
Physical Characteristics									
Housing	ABS + PC			SECC sheet metal (1 mm)					
Product Weight	60 g (0.13 lb)			75 g (0.65 lb)	180 g (0.40 lb)		720 g (1.59 lb)		
Packaged Weight	200 g (7.05 lb)			320 g (0.72 lb)	370 g (0.82 lb)	680 g (1.5 lb)	1345 g (2.96 lb)		
Dimensions	37.5 x 20.5 x 60 mm (1.48 x 0.81 x 2.36 in)			52 x 80 x 22 mm (2.05 x 3.15 x 0.87 in)	77 x 26 x 111 mm (3.03 x 1.02 x 4.37 in)		204 x 30 x 125 mm (8.03 x 1.18 x 4.92 in)		
Environmental Limits									
Operating Temperature	0 to 55°C (32 to 131°F)								
Ambient Relative Humidity	5 to 95% (non-condensing)								
Storage Temperature	-20 to 70°C (-4 to 158°F)								
Standards and Certifications									
Safety	–	–	–	–	UL 60950-1				
EMC	EN 55022/24				EN 55022/24				
EMI	CISPR 22, FCC Part 15B Class B				CISPR 22, FCC Part 15B Class A				
EMS	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 2 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m IEC 61000-4-8 PFMF				IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV IEC 61000-4-5 Surge: Power: 1 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m IEC 61000-4-8 PFMF				
Power Requirements									
Input Voltage	5 VDC				5 VDC	12 to 48 VDC	5 VDC for USB port 12 to 48 VDC for external adapter		12 to 48 VDC
Input Current	30 mA @ 5 VDC	60 mA @ 5 VDC	77 mA @ 5 VDC	260 mA @ 5 VDC	360 mA @ 5 VDC	200 mA @ 12 VDC	5 VDC, 0.5 A for USB port 12 to 48 VDC, 260 mA for external adapter		12 to 48 VDC, 360 mA external adapter
Reliability									
MTBF (Time)	Time: 1,949,025 hrs Standard: Telcordia (Bellcore), GB				Time: 563,179 hrs Standard: Telcordia (Bellcore), GB		Time: UPort 1410: 394,441 hrs UPort 1450/1450I: 546,770 hrs Standard: UPort 1410: MIL-HDBK-217F UPort 1450/1450I: Telcordia (Bellcore), GB		
Warranty	5 years (see www.moxa.com/warranty)								

USB-to-Serial Converters

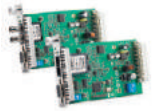
	UPort® 1610-8	UPort® 1650-8	UPort® 1610-16	UPort® 1650-16	UPort® 2210	UPort® 2410
USB Interface						
Compliance	USB 1.1/2.0 compliant					
Connector	USB Type B					
Speed	480 Mbps (Hi-Speed USB) and 12 Mbps (Full-Speed USB)					
Serial Interface						
Number of Ports	8 x RS-232	8 x RS-232/422/485	16 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	✓	✓	✓	✓	✓	✓
Windows 8/8.1 x86/x64	✓	✓	✓	✓	✓	✓
Windows 10 x86/ x64	✓	✓	✓	✓	✓	✓
Windows 2012 x64	✓	✓	✓	✓	✓	✓
WinCE 5.0/6.0	✓	✓	✓	✓	–	–
Linux 2.4.x	✓	✓	✓	✓	–	–
Linux 2.6.x	✓	✓	✓	✓	✓	✓
Linux 3.x	✓	✓	✓	✓	✓	✓
Physical Characteristics						
Housing	SECC sheet metal (1 mm)				Polycarbonate (PC)	
Product Weight	835 g (1.84 lb)		2475 g (5.45 lb)		120 g (0.26 lb)	210 g (0.46 lb)
Packaged Weight	1435 g (3.16 lb)		3485 g (7.68 lb)		325 g (0.72 lb)	455 g (1 lb)
Dimensions (mm)	204 x 44 x 125 mm (8.03 x 1.73 x 4.92 in)		440 x 45.5 x 198.1 mm (17.32 x 1.79 x 7.80 in)		70 x 35 x 120 mm (2.76 x 1.38 x 4.72 in)	80 x 35 x 185 mm (3.15 x 1.38 x 7.28 in)
Environmental Limits						
Operating Temperature	0 to 55°C (32 to 131°F)					
Operating Humidity	5 to 95% (non-condensing)					
Storage Temperature	-20 to 75°C (-4 to 167°F)					
Standards and Certifications						
Safety	UL 60950-1					
EMC	EN 55022/24					
EMI	CISPR 22, FCC Part 15B Class A				CISPR 22, FCC Part 15B Class B	
EMS	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV IEC 61000-4-5 Surge: Power: 1 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m IEC 61000-4-8 PFMF				IEC 61000-4-2 ESD: Contact: 8 kV; Air: 4 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV IEC 61000-4-5 Surge: Power: 1 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m IEC 61000-4-8 PFMF	
Power Requirements						
Input Voltage	12 to 48 VDC		100 to 240 VAC		5 VDC	
Input Current	230 mA @ 12 VDC	340 mA @ 12 VDC	130 mA @ 100 VAC	150 mA @ 100 VAC	140 mA @ 5 VDC	240 mA @ 5 VDC
Reliability						
MTBF (Time)	Time: 208,413 hrs Standard: MIL-HDBK-217F	Time: 186,567 hrs Standard: MIL-HDBK-217F	Time: 138,704 hrs Standard: MIL-HDBK-217F	Time: 120,001 hrs Standard: MIL-HDBK-217F	Time: 4,221,778 hrs Standard: Telcordia (Bellcore), GB	Time: 3,901,775 hrs Standard: Telcordia (Bellcore), GB
Warranty	5 years (see www.moxa.com/warranty)					

USB Hubs




		UPort® 404/404-T	UPort® 407/407-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)
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)	
Product Weight		850 g (1.87 lb)	950 g (2.1 lb)	800 g (1.76 lb)	875 g (1.93 lb)
Packaged Weight		855 g (1.88 lb)	965 g (2.13 lb)	805 g (1.87 lb)	890 g (1.96 lb)
Dimensions		80 x 35 x 130 mm (3.15 x 1.38 x 5.12 in)	100 x 35 x 192 mm (3.94 x 1.38 x 7.55 in)	70 x 35 x 120 mm (2.76 x 1.38 x 4.72 in)	80 x 35 x 185 mm (3.15 x 1.38 x 4.72 in)
Environmental Limits					
Operating Temperature	Standard Temperature	0 to 60°C (32 to 140°F)		0 to 60°C (32 to 140°F)	
	Wide Temperature	-40 to 85°C (-40 to 185°F)			
Operating Humidity		5 to 95% (non-condensing)	5 to 95% (non-condensing)	5 to 95% (non-condensing)	5 to 95% (non-condensing)
Storage Temperature		-40 to 85°C (-40 to 185°F)		-20 to 75°C (-4 to 167°F)	
Standards and Certifications					
Safety		UL 508			
EMC		EN 55022/24, EN 61000-6-2/6-4			
EMI		CISPR 22, FCC Part 15B Class A			
EMS		IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 2 kV IEC 61000-4-5 Surge: Power: 1 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 10 V/m IEC 61000-4-8 PFMF			
Power Requirements					
Input Voltage		12 to 40 VDC			
Input Current		1.3 A @ 12 VDC	2.3 A @ 12 VDC	1.21 A @ 12 VDC	2.17 A @ 12 VDC
Reliability					
MTBF (Time)		Time: 1,490,340 hrs Standard: Telcordia (Bellcore), GB	Time: 1,111,361 hrs Standard: Telcordia (Bellcore), GB	Time: 1,577,573 hrs Standard: Telcordia (Bellcore), GB	
Warranty		5 years (see www.moxa.com/warranty)			

Chassis Media Converters



	TRC-190-AC TRC-190-DC-48	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	
Cable 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	
Physical Characteristics			
Housing	SECC (1.2 mm)	–	
Dimensions	440 x 260 x 77 mm (18.6 x 11 x 3.3 in)	86.8 x 136.5 x 21 mm (3.42 x 5.37 x 0.83 in)	
Weight	5.2 kg (11.4 lb), with one power module installed	105 g (0.23 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 (32 to 140°F)		
Ambient Relative Humidity	5 to 95% (non-condensing)		
Storage Temperature	-25 to 75°C (-4 to 167°F)		
Power Requirements			
Input Voltage	100 to 240 VAC or 36 to 72 VDC	12 VDC	
Input Current	3.2 mA @ 36 VDC	150 mA @ 12 VDC	
Standards and Certifications			
Safety	UL 60950-1		
EMC	EN 55022/24		
EMI	CISPR 22, FCC Part 15B Class A		
EMS	EN 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV EN 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m EN 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV EN 61000-4-5 Surge: Power: 1 kV; Signal: 0.5 kV EN 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m EN 61000-4-8 PFMF EN 61000-4-11 DIPS		
Freefall	–	IEC 60068-2-32	
Green Product	RoHS, CRoHS, WEEE		
Reliability			
MTBF	Time: 959,780 hrs Standard: MIL-HDBK-217F		
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
Cable 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						–
Multidrop 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						–
Isolation	–	2 kV	–	2 kV	–	–	–
Physical Characteristics							
Housing	Metal						ABS + PC
Weight	330 g (0.73 lb)	330 g (0.73 lb)	330 g (0.73 lb)	330 g (0.73 lb)	320 g (0.71 lb)	320 g (0.71 lb)	150 g (0.33 lb)
Dimensions	30.3 x 70 x 115 mm (1.19 x 2.76 x 4.53 in)				67 x 100 x 22 mm (2.64 x 3.94 x 0.87 in)		42 x 80 x 22 mm (1.65 x 3.15 x 0.87 in)
Environmental Limits							
Operating Temperature	Standard Temperature: 0 to 60°C (32 to 140°F) Wide Temperature: -40 to 85°C (-40 to 185°F)				Standard Temperature: 0 to 60°C (32 to 140°F) Wide Temperature: -40 to 85°C (-40 to 167°F)		0 to 60°C (32 to 140°F)
Ambient Relative Humidity	5 to 95% (non-condensing)						
Storage Temperature	-40 to 85°C (-40 to 185°F)						-20 to 75°C (-4 to 167°F)
Power Requirements							
Source of Input Power	–	–	–	–	–	–	RS-232 port (TxD, RTS, DTR) or power input jack
Input Voltage	12 to 48 VDC						5 to 12 VDC
Input Current	127 mA @ 12 VDC	163 mA @ 12 VDC	127 mA @ 12 VDC	163 mA @ 12 VDC	140 mA @ 12 VDC		20 mA @ 12 VDC
Voltage Reversal Protection	Protects against V+/V- reversal						–
Overcurrent 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, IECEx				–	–	–
EMC	EN 55022/24						
EMI	CISPR 22, FCC Part 15B Class A						CISPR 22, FCC Part 15B Class A
EMS	EN 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV EN 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m EN 61000-4-4 EFT: Power: 4 kV; Signal: 2 kV EN 61000-4-5 Surge: Power: 4 kV; Signal: 0.5 kV EN 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m EN 61000-4-8 PFMF				EN 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV EN 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m EN 61000-4-4 EFT: Power: 1 kV EN 61000-4-5 Surge: Power: 1 kV EN 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m EN 61000-4-8 PFMF		EN 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV EN 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m EN 61000-4-4 EFT: Power: 0.5 kV; Signal: 1 kV EN 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV EN 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m EN 61000-4-8 PFMF
Freefall	IEC 60068-2-32				–	–	–
Green Product	RoHS, CRoHS, WEEE				RoHS, CRoHS, WEEE		RoHS, CRoHS, WEEE
Reliability							
MTBF	Time: 792,085 hrs Standard: Telcordia (Bellcore), GB				Time: 780,480 hrs Standard: Telcordia (Bellcore), GB		Time: 2,272,562 hrs Standard: MIL-HDBK-217F
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	1k/150k ohm		1k ohm	4.7k ohm	1k/150k ohm		–
Optical Isolation	–	2 kV	–	2.5 kV	–	2 kV	4 kV
Physical Characteristics							
Housing	Metal		ABS + PC		Metal		ABS
Dimensions	67 x 100.4 x 22 mm (2.64 x 3.93 x 0.87 in)		42 x 80 x 22 mm (1.65 x 3.15 x 0.87 in)		67 x 100.4 x 22 mm (2.64 x 3.93 x 0.87 in)		42 x 80 x 23.6 mm (1.65 x 3.15 x 0.93 in)
Weight	148 g (0.325 lb)		50 g (0.11 lb)		148 g (0.325 lb)		60 g (0.132 lb)
Environmental Limits							
Operating Temperature	Standard Temperature: -20 to 60°C (-4 to 140°F) Wide Temperature: -40 to 85°C (-40 to 185°F)		0 to 60°C (32 to 140°F)		-20 to 60°C (4 to 140°F)		0 to 60°C (32 to 140°F)
Ambient Relative Humidity	5 to 95% (non-condensing)						
Storage Temperature	-40 to 85°C (-40 to 185°F)		-20 to 75°C (-4 to 167°F)		-20 to 75°C (-4 to 167°F)		-20 to 75°C (-4 to 167°F)
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
Input Current	85 mA @ 12 VDC	150 mA @ 12 VDC	10 mA @ 5 VDC	20 mA @ 5 VDC	65 mA @ 12 VDC	180 mA @ 12 VDC	20 mA @ 5 VDC
Voltage Reversal Protection	Protects against V+/V- reversal		–	–	Protects against V+/V- reversal		–
Overcurrent Protection	✓	✓	–	–	✓	✓	–
Standards and Certifications							
Safety	UL 60950-1						
EMC	EN 55022/24						
EMI	CISPR 22, FCC Part 15B Class B						
EMS	EN 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV EN 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m EN 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV EN 61000-4-5 Surge: Power: 1 kV EN 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m EN 61000-4-8 PFMF		EN 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV EN 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m EN 61000-4-4 EFT: Power: 1 kV EN 61000-4-5 Surge: Power: 1 kV EN 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m EN 61000-4-8 PFMF		EN 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV EN 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m EN 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV EN 61000-4-5 Surge: Power: 1 kV EN 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m EN 61000-4-8 PFMF		EN 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV EN 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m EN 61000-4-4 EFT: Power: 0.5 kV EN 61000-4-5 Surge: Power: 1 kV EN 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m EN 61000-4-8 PFMF
Green Product	RoHS, CRoHS, WEEE						
Reliability							
MTBF	Time: 3,017,857 hrs Standard: MIL-HDBK-217F		Time: 2,781,161 hrs Standard: Telcordia (Bellcore), GB		Time: 1,949,025 hrs Standard: Telcordia (Bellcore), GB		Time: 959,780 hrs Standard: MIL-HDBK-217F
Warranty	5 years (see www.moxa.com/warranty)						

Serial Surge Protector




	ISD-1110-T	ISD-1130-T	ISD-1210-T	ISD-1230-T
Data Line Surge Protection				
Interface	RS-232	RS-422/485	RS-232	RS-422/485
Maximum Power Protection	400 watts		5000 watts	
Number of Protected Lines	7	4		
Surge Capacity	4 kV, 8/20 μs impulse per line		20 kV, 8/20 μs impulse per line	
Working Voltage	15 V	5 V	15 V	5 V
Maximum Load Current	0.1 A (23°C), 0.05 A (85°C)	0.12 A (23°C), 0.07 A (85°C)	0.4 A (20°C), 0.13 A (85°C)	0.4 A (20°C), 0.13 A (85°C)
Response Time	< 1 ns			
Bandwidth	10 MHz loss < 1 dB			
Connector				
Connector	Data in: DB9 male Data out: DB9 female	Data in: Terminal Block Data out: Terminal Block		
Physical Characteristics				
Housing	Plastic (IP30)		Metal (IP30)	
Weight	58 g (0.13 lb)	30 g (0.07 lb)	214 g (0.48 lb)	212 g (0.47 lb)
Dimension	53 x 37 x 20.6 mm (2.01 x 1.46 x 0.81 in)		95 x 53 x 25 mm (3.74 x 2.01 x 0.98 in)	
Environmental Limits				
Operating Temperature	-40 to 85°C (-40 to 185°F)			
Ambient Relative Humidity	-40 to 85°C (-40 to 185°F)			
Operating Humidity	5 to 95% (non-condensing)			
Standards and Certifications				
EMS	EN 61000-4-5 Surge: Signal 4 kV		IEC 61643-21 C2: 20 kV 1.2/50, 10 kA 8/20	
Reliability				
Warranty	5 years (limited to 1-time use) (see www.moxa.com/warranty) Note: ISD products will only be repaired once within 5 years of purchase. After the first repair, the product's warranty will no longer be valid.			
MTBF	Time: 862,859 hrs Standard: Telcordia (Bellcore), GB		Time: 964,269 hrs Standard: Telcordia (Bellcore), GB	

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	ICF-1280I-M-ST/ST-T ICF-1280I-S-ST/ST-T
Optical Fiber Side			
Fiber Connector	ST		
Cable Requirements	Multi-mode: 50/125, 62.5/125, or 100/140 µm		
Transmission Distance	Up to 2 km	Multi-mode: 4 km Single-mode: 45 km	Multi-mode: 4 km Single-mode: 45 km
Wavelength	Multi-mode: 850 nm	Multi-mode: 820 nm Single-mode: 1310 nm	Multi-mode: 820 nm Single-mode: 1310 nm
Tx Output	Multi-mode: > -5 dBm	Multi-mode: > -14 dBm Single-mode: > -7 dBm	Multi-mode: > -14 dBm Single-mode: > -7 dBm
Rx Sensitivity	Multi-mode: -20 dBm	Multi-mode: -28 dBm Single-mode: -29 dBm	Multi-mode: -28 dBm Single-mode: -29 dBm
Fieldbus Interface			
Connector	3-pin removable screw terminal	DB9 female	DB9 female
Specification	CAN 2.0A and 2.0B (ISO 11898-2)	PROFIBUS DP (IEC 61158-2)	PROFIBUS DP (IEC 61158-2)
Signal Support	CAN_H, CAN_L, CAN_GND	PROFIBUS D+, PROFIBUS D-, RTS, Signal common, 5 V	PROFIBUS D+, PROFIBUS D-, RTS, Signal common, 5 V
Optical Isolation	2 kV		
Transfer Rate	Up to 1 Mbps	Up to 12 Mbps	Up to 12 Mbps
Termination Resistors	120 ohms (selected by DIP switch)		
Physical Characteristics			
Housing	Metal		
Weight	178 g (0.39 lb)	164 g (0.36 lb)	308 g (0.68 lb)
Dimensions	30.3 x 115 x 70 mm (11.9 x 45.3 x 27.6 in)		39 x 115 x 70 mm (1.54 x 45.3 x 2.76 in)
Environmental Limits			
Operating Temperature – Standard Temperature	0 to 60°C (32 to 140°F)		
Operating Temperature – Wide Temperature	-40 to 85°C (-40 to 185°F)	-40 to 75°C (-40 to 167°F)	-40 to 75°C (-40 to 167°F)
Ambient Relative Humidity	5 to 95% (non-condensing)		
Storage Temperature	-40 to 85°C (-40 to 185°F)	-40 to 75°C (-40 to 167°F)	-40 to 75°C (-40 to 167°F)
Power Requirements			
Input Voltage	12 to 48 VDC dual power inputs for redundant power		
Input Current	221 mA @ 12 VDC	186 mA @ 12 VDC	315 mA @ 12 VDC
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	UL 508, EN 60950-1
EMC	EN 55022/24		
EMI	CISPR 22, FCC Part 15B Class B A	CISPR 22, FCC Part 15B Class B A	CISPR 22, FCC Part 15B Class B A
EMS	EN 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV EN 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m EN 61000-4-4 EFT: Power: 4 kV; Signal: 2 kV EN 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV EN 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m EN 61000-4-8 PFMF	EN 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV EN 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m EN 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV EN 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV EN 61000-4-6 CS: 150 kHz to 80 MHz: 10 V/m EN 61000-4-8 PFMF	EN 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV EN 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m EN 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV EN 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV EN 61000-4-6 CS: 150 kHz to 80 MHz: 10 V/m EN 61000-4-8 PFM)
Freefall	IEC 60068-2-32	IEC 60068-2-32	IEC 60068-2-32
Green Product	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE
Reliability			
MTBF	Time: 792,085 hrs Standard: Telcordia (Bellcore), GB	Time: 1,870,854 hrs Standard: Telcordia (Bellcore), GB	Time: 1,567,875 hrs Standard: Telcordia (Bellcore), GB
Warranty	5 years (see www.moxa.com/warranty)		

Modular and Compact RTU Controllers

Preliminary




	ioPAC 8600 series	ioPAC 8500 Series	ioPAC 8020 Series	ioPAC 5542 Series
Inputs/Outputs				
Digital Inputs	–	–	–	8
Configurable DIOs	–	–	–	8
Analog Inputs	–	–	–	8
Cellular				
HSPA	–	–	–	✓ (ioPAC 5542-HSPA)
Ethernet				
Ports (Connector)	2 (M12 or RJ45)			2 (RJ45)
Speed	10/100 Mbps			
Switch (Daisy Chain)	✓	–	✓	–
2 MACs	✓	✓	–	✓
Protocols	Modbus TCP (master/slave), SNMP, TCP/IP, UDP, DHCP, BOOTP, SNTP, SMTP		Modbus TCP (master/slave), TCP/IP, UDP, DHCP, BOOTP, SNTP, SMTP	Modbus TCP (master/slave), SNMP, TCP/IP, UDP, DHCP, BOOTP, SNTP, SMTP
Serial				
Ports (Connector)	–	2 (DB9 male)	1 (DB9 male)	2 (DB9 male)
Interface	–	RS-232/422/485		
Protocols	Modbus RTU (master/slave)		Modbus RTU (master)	Modbus RTU (master/slave)
Physical Characteristics				
I/O Module Slots	5/9/12	2/5/9	5/9	–
Environmental Limits				
Operating Temperature	-40 to 75°C (-40 to 176°F)			-40 to 75°C (-40 to 176°F) -30 to 75°C (-22 to 176°F) for HSPA model
Storage Temperature	-40 to 85°C (-40 to 185°F)			
Ambient Relative Humidity	5 to 95% RH (non-condensing)			
Shock	IEC 60068-2-27			
Vibration	IEC 60068-2-6			
Software				
Programmability	C/C++, IEC 61131-3		C/C++	C/C++, IEC 61131-3
MX-AOPC UA Server	✓	✓	✓	✓
Active OPC Server	–	✓	✓	✓
DA Center	–	✓	✓	✓
RTUxpress	✓		–	✓
RTUAdmin	–	–	✓	–
Standards and Certifications				
Safety	UL 508			
EMC	EN 55022, EN 55024			
EMI	FCC Part 15 Subpart B Class A, CISPR 22			
EMS	IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8			
Radio	–	–	–	NCC (ioPAC 5542-HSPA)
Rail Traffic	EN 50155 (essential compliance*), EN 50121-3-2, EN 50121-4	EN 50155**, EN 50121-3-2, EN 50121-4		EN 50121-4
Hazardous Location	–	–	–	Class 1 Division 2
Reliability				
Warranty	5 years			

*Moxa defines “essential compliance” to include those EN 50155 requirements that make products more suitable for rolling stock railway applications.
**Complies with a portion of EN 50155 specifications.

I/O Modules for the ioPAC 8600 Series

Preliminary

	Digital Input		Digital Output		Analog Output	Communication	
	86M-1620D-T	86M-1832D-T	86M-2830D-T	86M-2604D-T	86M-4420-T	86M-5212U-T	86M-5250-T
Module Properties							
Channels/Ports (Connector)	16 (terminal block)	8 (terminal block)	8 (terminal block)	6 (terminal block)	4 (terminal block)	2 (M12)	2 (DB9 male)
Input/Output Mode	24 to 110 VDC	24 VDC ch-to-ch isolation	24 VDC ch-to-ch isolation	Relay	0 to 10 V -10 to 10 V 0 to 20 mA 4 to 20 mA	–	–
Type	sink	sink/source	sink	Form A (N.O.)	–	–	–
Communication Ports	–	–	–	–	–	2-wire Ethernet	CAN
Standards	–	–	–	–	–	100BASE-TX IEEE 802.3u 10BASE-T IEEE 802.3 100 Mbps BroadR-Reach® 10 Mbps BroadR-Reach®	CAN 2.0A CAN 2.0B CANopen DS301 CANopen DS401
Enviromental Limits							
Operating Temperature	-40 to 75°C (-40 to 176°F)						
Storage Temperature	-40 to 85°C (-40 to 185°F)						
Ambient Relative Humidity	5 to 95% RH (non-condensing)						
Reliability							
Warranty	5 years (see www.moxa.com/warranty)						

I/O Modules for the ioPAC 8500 Series

	Digital Input	Digital Output	Analog Input				High Speed Analog Input		Communication
	85M-1602-T	85M-2600-T	85M-3800	85M-3801	85M-6600-T	85M-6810-T	85M-3801-T	85M-3811-T	85M-5401-T
Module Properties									
Channels/Ports (Connector)	16 (terminal block)	16 (terminal block)	8 (terminal block)	8 (terminal block)	6 (terminal block)	8 (terminal block)	8 (terminal block)	8 (terminal block)	4 (DB44 female)
Input/Output Mode	24 VDC	24 VDC	4 to 20 mA	0 to 10 V	RTD	Thermocouple	4 to 20 mA	0 to 10 V	–
Type	sink/source	sink	–	–	–	–	–	–	–
Sampling Rate	–	–	All channels: 100 samples/sec Per channel: 12.5 samples/sec	All channels: 100 samples/sec Per channel: 12.5 samples/sec	All channels: 12 samples/sec Per channel: 2 samples/sec	All channels: 12 samples/ sec Per channel: 1.5 samples/sec	All channels: 40k samples/sec Per channel: 5k samples/sec	All channels: 40k samples/sec Per channel: 5k samples/sec	–
Serial Ports	–	–	–	–	–	–	–	–	RS-232/422/485
Environmental Limits									
Operating Temperature	-40 to 75°C (-40 to 176°F)								
Storage Temperature	-40 to 85°C (-40 to 185°F)								
Ambient Relative Humidity	5 to 95% RH (non-condensing)								
Reliability									
Warranty	5 years (see www.moxa.com/warranty)								

Note: 85M modules can also be used with ioPAC 8600 systems.

I/O Modules for the ioPAC 8020 Series

	Digital Input		Digital Output	Analog Input		Communication
	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)
Input/Output Mode	110 VDC ch-to-ch isolation	24 VDC	24 VDC	4 to 20 mA	0 to 10 VDC	–
Type	sink/source	sink/source	sink	–	–	–
Communication Ports	–	–	–	–	–	Unmanaged Ethernet switch
Standards	–	–	–	–	–	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) IEEE 802.3x for Flow Control
Environmental Limits						
Operating Temperature	-40 to 75°C (-40 to 176°F)					
Storage Temperature	-40 to 85°C (-40 to 185°F)					
Ambient Relative Humidity	5 to 95% RH (non-condensing)					
Reliability						
Warranty	5 years (see www.moxa.com/warranty)					

Smart Remote I/O with Click&Go Plus Logic

	ioLogik 2542-HSPA	ioLogik 2542-GPRS	ioLogik 2542-WL1	ioLogik 2542	ioLogik 2512-HSPA	ioLogik 2512-GPRS	ioLogik 2512-WL1	ioLogik 2512
Inputs/Outputs								
Digital Inputs	–	–	–	–	8	8	8	8
Configurable DIOs	12	12	12	12	8	8	8	8
Analog Inputs	4	4	4	4	–	–	–	–
Cellular								
Band Options	UMTS/HSPA+: five-band 800/850/900/1900/2100 MHz GSM/GPRS/EDGE: quad-band 850/900/1800/1900 MHz	GSM/GPRS/EDGE: quad-band 850/900/1800/1900 MHz	–	–	UMTS/HSPA+: five-band 800/850/900/1900/2100 MHz GSM/GPRS/EDGE: quad-band 850/900/1800/1900 MHz	GSM/GPRS/EDGE: quad-band 850/900/1800/1900 MHz	–	–
WLAN								
Standard	–	–	IEEE 802.11a/b/g for Wireless LAN IEEE 802.11i for Wireless Security	–	–	–	IEEE 802.11a/b/g for Wireless LAN IEEE 802.11i for Wireless Security	–
Ethernet								
Ports (Connector)	4 switched ports, with 1 optimized port for faster downstream communications with up to 8 daisy-chained ioLogik E1200 units (RJ45)							
Speed	10/100 Mbps							
Protocols	Modbus/TCP (slave), TCP/IP, UDP, DHCP, BOOTP, SNMP, HTTP, CGI, SNTP, SMTP							
Serial								
Ports (Connector)	2 (RJ45)							
Interface	RS-232/422/485 software-selectable							
Protocols	Modbus/RTU (master/gateway), serial tunnel mode (client/server)							
Environmental Limits								
Standard Operating Temp.	-10 to 60°C (14 to 140°F)							
Wide Operating Temp.	-30 to 70°C (-22 to 158°F)			-40 to 75°C (-40 to 167°F)	-30 to 70°C (-22 to 158°F)			-40 to 75°C (-40 to 167°F)
Storage Temp.	-40 to 85°C (-40 to 185°F)							
Ambient Relative Humidity	5 to 95% (non-condensing)							
Software								
Click&Go Plus	✓	✓	✓	✓	✓	✓	✓	✓
MX-AOPC UA Server	✓	✓	✓	✓	✓	✓	✓	✓
MX-AOPC UA Logger (Data Complement)	✓	✓	✓	✓	✓	✓	✓	✓
MXIO	✓	✓	✓	✓	✓	✓	✓	✓
IOxpress	✓	✓	✓	✓	✓	✓	✓	✓
Standards and Certifications								
Safety	UL 508							
EMC	EN 55022; EN 55024; EN 61000-6-2; EN 61000-6-4							
EMI	CISPR 22, FCC Part 15B 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							
Shock	IEC 60068-2-27							
Vibration	IEC 60068-2-6							
Radio	R&TTE; NCC		R&TTE; NCC; VCCI	–	R&TTE; NCC		R&TTE; NCC; VCCI	–
Hazardous Location	Class I Division 2, ATEX Zone 2							
Green Product	RoHS, CRoHS, WEEE							
Reliability								
Warranty	5 years							

Smart Remote I/O with Click&Go Logic

	ioLogik E2210	ioLogik E2212	ioLogik E2214	ioLogik E2240	ioLogik E2242	ioLogik E2260	ioLogik E2262	ioLogik W5340-HSPA
Inputs/Outputs								
Digital Inputs	12	8	6	–	–	–	–	–
Digital Outputs	8	8	–	–	–	4	4	–
Relays	–	–	6	–	–	–	–	2
Configurable DIOs	–	4	–	–	12	–	–	8
Analog Inputs	–	–	–	8	4	–	–	4
Analog Outputs	–	–	–	2	–	–	–	–
RTDs	–	–	–	–	–	6	–	–
Thermocouples	–	–	–	–	–	–	8	–
Ethernet								
Ports (Connector)	1 (RJ45)							1, with up to 3 ioLogik E1200 units daisy-chained (RJ45)
Speed	10/100 Mbps							
Protocols	Modbus/TCP (slave), TCP/IP, UDP, DHCP, BOOTP, SNMP, HTTP, CGI, SNTP, SMTP							Modbus/TCP (slave), TCP/IP, UDP, DHCP, BOOTP, SNMP, SNTP, SMTP
Serial								
Ports (Connector)	1 (Euroblock terminal)							1 (DB9 male or Euroblock terminal)
Interface	RS-485							RS-232/422/485 software-selectable
Protocols	Modbus/RTU (gateway)							Modbus/RTU (master/gateway), serial tunnel mode (client/server)
Environmental Limits								
Standard Operating Temp.	-10 to 60°C (14 to 140°F)							-10 to 55°C (14 to 131°F)
Wide Operating Temp.	-40 to 75°C (-40 to 167°F)							-30 to 70°C (-22 to 158°F)
Storage Temperature	-40 to 85°C (-40 to 185°F)							
Ambient Relative Humidity	5 to 95% RH (non-condensing)							
Software								
Click&Go	✓	✓	✓	✓	✓	✓	✓	✓
Active OPC Server	✓	✓	✓	✓	✓	✓	✓	✓
MX-AOPC UA Server	✓	✓	✓	✓	✓	✓	✓	✓
DA-Center (Data Complement)	–	–	–	–	–	–	–	✓
MXIO	✓	✓	✓	✓	✓	✓	✓	✓
ioAdmin	✓	✓	✓	✓	✓	✓	✓	✓
Standards and Certifications								
Safety	UL 508							
EMC	EN 61000-6-2; EN 61000-6-4							
EMI	CISPR 22, FCC Part 15B 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							
Shock	IEC 60068-2-27							
Vibration	IEC 60068-2-6							
Radio	–	–	–	–	–	–	–	R&TTE; NCC
Green Product	RoHS, CRoHS, WEEE							
Reliability								
Warranty	5 years	5 years	2 years*	5 years	5 years	5 years	5 years	2 years*

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

Ethernet I/O

	ioLogik E1210	ioLogik E1211	ioLogik E1212	ioLogik E1214	ioLogik E1213**	ioLogik E1240	ioLogik E1241	ioLogik E1242	ioLogik E1260	ioLogik E1262
Input/Output										
Digital Inputs	16	–	8	6	4	–	–	4	–	–
Digital Outputs	–	16	–	–	4	–	–	–	–	–
Relays	–	–	–	6	–	–	–	–	–	–
Configurable DIOs	–	–	8	–	4	–	–	4	–	–
Analog Inputs	–	–	–	–	–	8	–	4	–	–
Analog Outputs	–	–	–	–	–	–	4	–	–	–
RTDs	–	–	–	–	–	–	–	–	6	–
Thermocouples	–	–	–	–	–	–	–	–	–	8
Ethernet										
Ports (Connector)	2 (RJ45)									
Speed	10/100 Mbps									
Switch (Daisy Chain)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Protocols	Modbus/TCP (slave), TCP/IP, UDP, DHCP, BOOTP, HTTP, SNMP									
Environmental Limits										
Standard Models	-10 to 60°C (14 to 140°F)									
Wide Temp. Models	-40 to 75°C (-40 to 167°F)									
Storage Temperature	-40 to 85°C (-40 to 185°F)									
Operating Humidity	5 to 95% RH (non-condensing)									
Software										
Active OPC Server	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
MX-AOPC UA Server	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
MXIO	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ioSearch	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Peer-to-Peer	✓	✓	✓	✓	✓	✓	✓	✓	–	–
Standards and Certifications										
Safety	UL 508									
EMC	EN 55022, EN 55024									
EMI	CISPR 22, FCC Part 15B 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									
Shock	IEC 60068-2-27									
Vibration	IEC 60068-2-6									
Hazardous Locations	Class 1 Division 2; ATEX Zone 2									
Green Product	RoHS, CRoHS, WEEE									
Reliability										
Warranty	5 years	5 years	5 years	2 years*	5 years	5 years	5 years	5 years	5 years	5 years

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

**DO of ioLogik E1213 is source type

Ethernet I/O





	ioLogik E1261W-T	ioLogik E1263H-T	ioLogik E1261H-T	ioLogik E1510-M12-T	ioLogik E1512-M12-T
Input/Output					
Digital Inputs	–	–	–	12	4
Configurable DIOs	12	24	12	–	4
Analog Inputs	5	10	5	–	–
RTDs	3	3	3	–	–
Ethernet					
Ports (Connector)	1 (RJ45)	2 (RJ45)		1 (M12)	
Speed	10/100 Mbps				
Switch (Daisy Chain)	–	✓	✓	–	–
Protocols	Modbus/TCP (slave), TCP/IP, UDP, DHCP, BOOTP, HTTP				
Environmental Limits					
Operating Temperature	-40 to 75°C (-40 to 167°F)			-40 to 85°C (-40 to 185°F)	
Storage Temperature	-40 to 85°C (-40 to 185°F)				
Operating Humidity	5 to 95% RH (non-condensing)				
Software					
Active OPC Server	✓	✓	✓	✓	✓
MX-AOPC UA Server	✓	✓	✓	✓	✓
MXIO	✓	✓	✓	✓	✓
ioSearch	✓	✓	✓	✓	✓
Standards and Certifications					
Safety	UL 508				
EMC	EN 55022, EN 55024			EN 61000-6-2, EN 61000-6-4	
EMI	CISPR 22, FCC Part 15B 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				
Shock	IEC 60068-2-27				
Vibration	IEC 60068-2-6				
Rail Traffic	–	–	–	EN 50155; EN 50121-3-2; EN 50121-4	
Marine Communications	–	IEC 60945		–	–
Green Product	RoHS, CRoHS, WEEE				
Reliability					
Warranty	5 years				

RS-485 I/O

	ioLogik R1210	ioLogik R1212	ioLogik R1214	ioLogik R1240	ioLogik R1241
Input/Output					
Digital Inputs	16	8	6	–	–
Relays	–	–	6	–	–
Configurable DIOs	–	8	–	–	–
Analog Inputs	–	–	–	8	–
Analog Outputs	–	–	–	–	4
Serial					
Ports (Connector)	2 (5-wire Euroblock terminal)				
Interface	Dual RS-485				
Protocols	Modbus/RTU (slave)				
Environmental Limits					
Standard Models	-10 to 75°C (14 to 167°F)				
Wide Temp. Models	-40 to 85°C (-40 to 185°F)				
Storage Temperature	-40 to 85°C (-40 to 185°F)				
Operating Humidity	5 to 95% RH (non-condensing)				
Software					
MXIO	✓	✓	✓	✓	✓
ioSearch	✓	✓	✓	✓	✓
Standards and Certifications					
Safety	UL 508				
EMC	EN 55022, EN 55024				
EMI	CISPR 22, FCC Part 15B 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				
Shock	IEC 60068-2-27				
Vibration	IEC 60068-2-6				
Green Product	RoHS, CRoHS, WEEE				
Reliability					
Warranty	5 years	5 years	2 years*	5 years	5 years

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

Modular I/O




	NA-4010	NA-4020	NA-4021	ioLogik E4200
Inputs/Outputs				
Digital Inputs	–	–	–	–
Digital Outputs	–	–	–	–
Analog Inputs	–	–	–	–
Analog Outputs	–	–	–	–
Ethernet				
Ports (connector)	1 (RJ45)	–	–	2 MACs (RJ45)
Speed	10/100 Mbps	–	–	10/100 Mbps
Protocols	Modbus/TCP (slave), BOOTP, HTTP	–	–	Modbus/TCP (slave), TCP/IP, UDP, DHCP, BOOTP, SNMP, HTTP, SNTP
Serial				
Ports (connector)	–	1 (terminal block)	1 (DB9 female)	1 (DB9 male)
Interface	–	RS-485	RS-232	RS-232
Protocols	–	Modbus/RTU (slave), Modbus/ASCII (slave)		For Moxa OnCell only
Physical Characteristics				
I/O Module Slots	32	32	32	16
Environmental Limits				
Operating Temperature	-10 to 60°C (14 to 140°F)			
Storage Temperature	-40 to 85°C (-40 to 185°F)			
Ambient Relative Humidity	5 to 95% RH (non-condensing)			
Software				
Click&Go	–	–	–	✓
Active OPC Server	–	–	–	✓
MXIO	✓	✓	✓	✓
ioAdmin	✓	✓	✓	–
Modular ioAdmin	–	–	–	✓
Standards and Certifications				
Safety	UL 508			
EMC	EN 61000-6-2, EN 61000-6-4			
EMI	CISPR 22, FCC Part 15B 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			
Shock	IEC 60068-2-27			
Vibration	IEC 60068-2-6			
Reliability				
Warranty	2 years	2 years	2 years	2 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)
Relays	–	–	–	–	–	–	4	–	–	–	–
Warranty	2 years										

Analog I/O Modules

	M-3802	M-3810	M-4402	M-4410	M-6200	M-6201
Inputs/Outputs						
Analog Inputs	8 (4 to 20 mA)	8 (00 to 10 V)	–	–	–	–
Analog Outputs	–	–	4 (4 to 20 mA)	4 (0 to 10 V)	–	–
RTDs	–	–	–	–	2	–
Thermocouples	–	–	–	–	–	2
Warranty	2 years					

Power Modules

	M-7001	M-7002	M-7804	M-7805
Power				
VDC	24	5/24/48	0	24
VAC	–	110/220	–	–
Purpose	System	Field	Field	Field
Warranty	2 years			

IP Cameras

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

IP Cameras

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

Industrial Video Encoders/Recorders

	Industrial Video Encoders	
		
	VPort 461A	VPort 364A
Form Factor		
Protection Rating	IP30	IP30
DIN-Rail Mounting	✓	✓
Panel Mounting	w/ optional kit	w/ optional kit
Audio/Video Channels		
Video Inputs	1	4
Video Outputs	0	0
Audio Inputs	1	1
Audio Outputs	1	1
Video Stream		
H.264	✓	✓
MJPEG	✓	✓
MPEG4	–	–
No. of Streams	3	2
DynaStream	✓	✓
Video Performance		
Resolution (max.)	NTSC: 720 x 480 PAL: 720 x 576	NTSC: 720 x 480 PAL: 720 x 576
FPS (max.)	NTSC: 30 PAL: 25	NTSC: 30 PAL: 25
Quad View	30 FPS (max.)	30 FPS (max.)
Connections (Max.)	10 unitcast 50 mulitcast RTSP	8 unitcast 50 mulitcast RTSP
Multicast Push	✓	✓
Network Connections		
10/100BaseTX Ports	1	1
100BaseFX Ports (optional)	1	1
Peripherals		
PTZ Ports	1	1
COM Ports	1	–
RS-232 Console Ports	1	1
SDHC Slot	1, SDXC	–
Network Management and Control		
Web Browser	✓	✓
SNMP Protocols	v1/v2c/v3	v1/v2c/v3
RTSP (Real Time Streaming Protocol)	✓	✓
Modbus/TCP	✓	✓
Multicast (IGMP)	v3	v3
QoS	✓	✓
UPnP	✓	✓
DDNS	✓	✓
IP Filtering	✓	✓
Power Requirements		
Power Redundancy	✓	✓
Power Inputs	2	2
Alarms		
VMD (Video Motion Detection)	✓	✓
Digital Inputs	2	4
Relay (Digital) Outputs	2	2
Alarm Video Recording	✓	–
Alarm Snapshot Image	✓	✓
Supported Operating Temperature Ranges		
0 to 60°C (32 to 140°F)	–	✓
-25 to 60°C (-13 to 140°F)	✓	–
-40 to 75°C (-40 to 167°F)	✓	✓
Standards and Certifications		
CE/FCC	✓	✓
UL 60950-1	✓	✓
NEMA TS2	✓	–
ONVIF	✓	✓
Profile S	✓	–

	Industrial Video Recorders
	Preliminary 
	MxNVR-RO-T
Form Factor	
Type of Product	Onboard NVR
Dimensions	287 x 290 x 101 mm
Panel Mounting	✓
Video Recording	
Video Inputs	IP Video via Ethernet
Capability	Recording: 900 FPS @ 1080P Live view: 120 FPS @ 1080P
Video Stream	H.264, MJPEG, MPEG4
Video File Format	MP4
Record Modes	Manual, Schedule, Event
Pre-Alarm Record	1 to 600 sec
Post-Alarm Record	1 to 600 sec
Search	
Search Mode	Camera, date/time, event
Playback	
Remote Playback	Through Configuration Tool
File Download	Through Configuration Tool
Popular Media Players	✓
Network Connections	
10/100/1000 Mbps M12 connector	1 (up to 1000 Mbps, M12 X-coded)
Storage	
SATA Interfaces	2
Peripherals	
Audio Ports	Line-in, line-out (M12)
COM Ports	2
USB Ports	2
Digital Inputs	6
Digital Outputs	2
Power Requirements	–
Power Inputs	1
Supported Operating Temperature Ranges	
Wide Temp. Model	-40 to 70°C (-40 to 167°C)
Regulatory Approvals	
CE/FCC	✓
UL 60950-1	✓
EN 50155:2007	✓
EN 50121-3-2	✓

Power Computers




	DA-820 Series	DA-682A Series	DA-681A Series	DA-683 Series
Computer				
CPU Speed	2.5 GHz/2.1 GHz	1.4 GHz single core / 1.1 GHz dual core / 1.5 GHz dual core	1.4 GHz	1.66 GHz
OS	–	Linux Debian 7 or Windows Embedded Standard 7 (pre-installed) Note: The OS is pre-installed.	Linux Debian 8 (pre-installed) Note: W7E available by CTOS	Linux, Windows Embedded Standard 2009, or Windows Embedded Standard 7 Note: The OS is pre-installed.
OS (Optional)	64-bit Debian 7 64-bit Windows Embedded Standard 7 64-bit Windows 7 Professional for embedded systems	–	–	–
System Memory	Max. 16 GB capacity (204-pin SO-DIMM x 2, each supporting un-buffered ECC DDR3 memory at 1333 and 1600 MT/s, 8 GB Max.)	8 GB capacity, 1 GB (LX) / 2 GB (W7E) pre-installed: 1 slot of 4 GB DDR3-1066/1333 SO-DIMM SDRAM	8 GB capacity, 2 GB for Linux pre-installed; 1 slot of DDR3-1066/1333 SO-DIMM SDRAM	2 GB capacity, 1 GB (LX and XPE)/ 2 GB (W7E) pre-installed: 1 or 2 slots of 2 GB 200-pin DDR2-667 SO-DIMM
Expansion Bus	–	–	PCI/104 onboard (DPP models only)	PCI/104 interface reserved
USB	USB 2.0 hosts x 6, type A connector	USB 2.0 hosts x 2, type A connector	USB 2.0 hosts x 4, type A connector	USB 2.0 hosts x 4, type A connector
Storage				
Built-in	CFast socket: Optional Cfast card to store OS	2 GB (LX) / 8 GB (W7E) industrial DOM for read-only OS volume	8 GB for Linux (pre-installed in mSATA)	2 GB (LX and XPE) / 8 GB (W7E) industrial DOM onboard to store OS
Storage Expansion	4 SATA 2.0 interfaces, supporting RAID 0, 1, 5, 10, hot-swappable	• 1 x CompactFlash socket • 2 x SATA-300 connector	SATA 3.0 interface	CompactFlash socket for CF card expansion, supporting CF Type-I/II
Display				
Graphics Controller	Intel® HD Graphics 4000	Intel 915GME, and Intel Extreme Graphics 2 technology	Intel® HD Graphics (Integrated)	Intel® GMA3150 graphics controller in Intel D510 card
Display Interface	2 VGA outputs (DB15 female connector)	1 VGA output (DB15 female connector)	1 VGA output (DB15 female connector)	Analog RBG display/Digital DVI display
Resolution	CRT display mode with pixel resolution up to 2048 x 1536 at 75 Hz	CRT display mode with pixel resolution up to 2548 x 1536 at 75 Hz	CRT display mode with pixel resolution up to 2048 x 1536 at 75 Hz	• Analog RBG display; output resolution up to 2048 x 1536 @ 60 Hz • Digital DVI display; output resolution up to 1024 x 768 @ 60 Hz
Ethernet Interface				
LAN	10/100/1000 Mbps ports x 4	10/100/1000 Mbps ports x 6	10/100/1000 Mbps ports x 6	10/100/1000 Mbps ports x 6
Magnetic Isolation Protection	1.5 kV built-in	1.5 kV built-in	1.5 kV built-in	1.5 KV built-in
Serial Interface				
Serial Standards	2 RS-232/422/485 ports (DB9 male)	–	• 2 RS-232/422/485 ports (DB9 male) • 10 RS-485 ports (terminal block)	2 RS-232 ports (DB9 male)
ESD Protection	–	–	15 kV for all signals	–
Surge Protection	–	–	4 kV (DA-681A-I-DPP Series)	–
Serial Signals				
RS-232	TxD, RxD, DTR, DSR, RTS, CTS, DCD, GND	–	TxD, RxD, DTR, DSR, RTS, CTS, DCD, GND	TxD, RxD, DTR, DSR, RTS, CTS, DCD, GND, RI
RS-422	TxD+, TxD-, RxD+, RxD-, GND	–	TxD+, TxD-, RxD+, RxD-, GND	–
RS-485-4w	TxD+, TxD-, RxD+, RxD-, GND	–	TxD+, TxD-, RxD+, RxD-, GND	–
RS-485-2w	Data+, Data-, GND	–	Data+, Data-, GND	–
Digital Input/Digital Output				
Input/Output Channels	–	–	–	4, sink-type
Input Voltage/Output Current	–	–	–	0 to 30 VDC/200 mA per channel max.
Physical Characteristics				
Housing	SECC sheet metal (1 mm)	SECC sheet metal (1 mm)	SECC sheet metal (1 mm)	SECC sheet metal (1 mm)
Weight	14 kg (31.11 lb)	7 kg (15.56 lb)	4.5 kg (10 lb)	4 kg (8.89 lb)
Dimensions	361 x 440 x 133 mm (14.23 x 17.32 x 5.24 in) (without rackmount ears)	440 x 315 x 90 mm (17.32 x 12.40 x 3.54 in) (without rackmount ears)	440 x 315 x 45 mm (17.32 x 12.40 x 1.77 in), 19-inch 1U height	315 x 440 x 90 mm (12.40 x 17.32 x 3.54 in) (without rackmount ears)
Environmental Limits				
Operating Temperature	• DA-820-C8: -40 to 60°C (-40 to 140°F) • DA-820-C7: -40 to 75 °C (-40 to 167°F)	-10 to 60°C (14 to 140°F)	SP Models: -25 to 55°C (-13 to 131°F) DPP Models: -25 to 55°C (-13 to 131°F) DPP-T Models: -40 to 70°C (-40 to 158°F)	Standard models: -10 to 60°C (14 to 140°F) DPP-T models: -40 to 70°C (-40 to 158°F)
Storage Temperature	-40 to 85°C (-40 to 185°F)	-20 to 80°C (-4 to 176°F)	-40 to 85°C (-40 to 185°F)	Standard models: -20 to 80°C (-4 to 176°F) DPP-T models: -40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)	5 to 95% (non-condensing)	5 to 95% (non-condensing)	5 to 95% (non-condensing)
Power Requirements				
Input Voltage	• High Voltage: 100 to 240 VAC/VDC, 50/60 Hz, 1 A • Low Voltage: 24 to 110 VDC, 4.7 A	100 to 240 VAC auto-ranging (47 to 63 Hz for AC input)	100 to 240 VAC; 100 to 240 VDC	100 to 240 VAC, 50/60 Hz, 0.9-0.4 A
Multiple Power Supplies	Single /Dual power supplies	–	Single / Dual power supplies	Single / Dual power supplies
Power Consumption	60 W	30 W (full loading)	25 W	40 W
Standards and Certifications				
Safety	LVD, UL, cUL	UL 60950-1, CSA C22.2 No. 60950-1-03, EN 60950-1, CCC (GB4943, GB9254, GB17625.1)	UL 60950-1, IEC 60950-1, EN 60950-1	UL/cUL (UL 60950-1, CSA C22.2 No. 60950-1-03), LVD (EN 60950-1), CCC (GB4943)
Electrical Substation	IEC 61850-3, IEC 60255, IEEE 1613	–	IEC 61850-3, IEEE 1613, IEC 60255	IEC 61850-3, IEEE 1613
Protection Relay	IEC 60255	–	IEC 60255	–
EMS	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	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE
Warranty				
Warranty Period	3 years	3 years	3 years	3 years
Details	See www.moxa.com/warranty	See www.moxa.com/warranty	See www.moxa.com/warranty	See www.moxa.com/warranty

Power Computers




	DA-685 Series	DA-710 Series	DA-662A Series	UC-8100 Series
Computer				
CPU Speed	1.66 GHz	2.2 GHz	500 MHz	300/600/1000 MHz
OS	Linux, Windows Embedded Standard 2009, or Windows Embedded Standard 7	Windows Embedded Standard 2009, Linux 2.6	Embedded Linux (pre-installed)	–
System Memory	2 GB capacity, 1 GB (LX and XPE)/ 2 GB (W7E) pre-installed: 1 or 2 slots of 2 GB 200-pin DDR2-667 SO-DIMM	2 GB capacity, 1 GB pre-installled: 1 slot of DDR2-533/667 200-pin SO-DIMM SDRAM	128 MB DRAM onboard, 32 MB Flash onboard	256 or 512 MB DDR3 SDRAM
Expansion Bus	PCI/104 interface reserved		–	–
USB	USB 2.0 hosts x 2, type A connector	USB 2.0 hosts x 4, type A connector	–	USB 2.0 hosts x 1, type A connector
Storage				
Built-in	2 GB (LX and XPE) / 8 GB (W7E) industrial DOM onboard to store OS	2 GB industrial DOM onboard to store OS	–	–
Storage Expansion	CompactFlash socket	CompactFlash socket	–	1 GB SD or 2 GB MicroSD card pre-installed
Other Peripherals				
KB/MS	1 PS/2 interface, supports standard PS/2 keyboard and mouse through Y-type cable	1 PS/2 interface, supports standard PS/2 keyboard and PS/2 mouse	–	–
Graphics Controller	Intel® GMA3150 graphics controller on Intel D510 card	Integrated Intel graphics media accelerator (GMA X3100)	–	–
Intel Clear Video Technology		MPEG-2 hardware accelerator, Microsoft DirectX 9	–	–
Display Interface	1 VGA output (DB15 female connector)	1 VGA output (DB15 female connector)	–	–
Resolution	CRT display mode with pixel resolution up to 2048 x 1536 at 75 Hz	QXGA maximum with resolution up to 2048 x 1536 at 60 Hz	–	–
Ethernet Interface				
LAN	Auto-sensing 10/100/1000 Mbps ports x 6	Auto-sensing 10/100/1000 Mbps ports (RJ45) x 4	Auto-sensing 10/100 Mbps ports (RJ45) x 4	Auto-sensing 10/100 Mbps ports (RJ45) x 2
Magnetic Isolation Protection	1.5 kV built-in	1.5 kV built-in	1.5 kV built-in	1.5 kV built-in
Serial Interface				
Serial Standards	• 2 RS-232/422/485 ports (DB9 male) • 6 RS-485-2W ports (terminal block)	2 RS-232 ports (DB9 male)	8 to 16 RS-232/422/485 ports, software selectable (8-pin RJ45)	RS-232/422/485 ports, software-selectable (5-pin terminal block connector) x 1 or 2
ESD Protection	–	4 kV for all signals	8 kV contact, 15 kV Air ESD protection for all signals	
Console Port	–	–	RS-232 (all signals), RJ45 connector	RS-232 (TxD, RxD, GND), 4-pin pin header output (115200, n, 8, 1)
Serial Signals				
RS-232	TxD, RxD, DTR, DSR, RTS, CTS, DCD, GND, RI	TxD, RxD, DTR, DSR, RTS, CTS, DCD, GND	TxD, RxD, DTR, DSR, RTS, CTS, DCD, GND (DA-662A-I-8/16-LX only: TxD, RxD, RTS, CTS, GND)	TxD, RxD, RTS, CTS, GND
RS-422	TxD+, TxD-, RxD+, RxD-, GND	–	TxD+, TxD-, RxD+, RxD-, GND	TxD+, TxD-, RxD+, RxD-, GND
RS-485-4w	TxD+, TxD-, RxD+, RxD-, GND	–	TxD+, TxD-, RxD+, RxD-, GND	TxD+, TxD-, RxD+, RxD-, GND
RS-485-2w	Data+, Data-, GND	–	Data+, Data-, GND	Data+, Data-, GND
Digital Input/Digital Output				
Input Channel/Output Channel	–	4, sink-type	–	–
Input Voltage/Output Current	–	0 to 30 VDC/max. 200 mA per channel	–	–
Physical Characteristics				
Housing	SECC sheet metal (1 mm)	SECC sheet metal (1 mm)	SECC sheet metal (1 mm)	Polycarbonate plastic
Weight	4 kg (8.89 lb)	14 kg (31.11 lb)	4.3 kg (9.56 lb)	224 g (0.50 lb)
Dimensions	315 x 440 x 90 mm (12.40 x 17.32 x 3.54 in) (without rackmount ears)	• Without ears: 400 x 420 x 180 mm (15.75 x 16.54 x 7.09 in) • With ears: 400 x 480 x 180 mm (15.75 x 18.90 x 7.09 in)	Without ears: 440 x 45 x 237 mm (17.32 x 1.77 x 9.33 in) With ears: 480 x 45 x 237 mm (18.90 x 1.77 x 9.33 in)	101 x 27 x 128 mm (3.98 x 1.06 x 5.04 in)
Mounting	Standard 19-inch rackmount	Standard 19-inch rackmount	Standard 19-inch rackmount	DIN-rail, wall (with optional kit)
Environmental Limits				
Operating Temperature	-10 to 55°C (14 to 131°F)	-10 to 50°C (14 to 122°F)	-10 to 60°C (14 to 140°F)	-10 to 60°C (14 to 140°F) or -40 to 75°C (-40 to 167°F)
Storage Temperature	-20 to 80°C (-4 to 176°F)	-20 to 80°C (4 to 176°F)	-20 to 80°C (-4 to 176°F)	-40 to 80°C (-40 to 176°F)
Ambient Relative Humidity	5 to 95% (non-condensing)	5 to 95% (non-condensing)	5 to 95% (non-condensing)	5 to 95% (non-condensing)
Power Requirements				
Input Voltage	100 to 240 VAC, 50/60 Hz, 0.9-0.4 A	Single or dual inputs, 100 to 240 VAC/ VDC auto-ranging, 47 to 63 Hz, terminal block	100 to 240 VAC auto ranging (47 to 63 Hz for AC input)	12 to 24 VDC (3-pin terminal block, V+, V-, SG)
Power Consumption	40 W	60 W	20 W	5.4 W
Standards and Certifications				
Safety	LVD, UL, cUL, CCC	UL 60950-1, CSA C22.2 No. 60950-1-07, CCC (GB4943, GB9254, GB17625.1)	UL 60950-1	UL 60950-1, EN 60950-1
EMS	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	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE
Warranty				
Warranty Period	3 years	3 years	5 years	5 years
Details	See www.moxa.com/warranty	See www.moxa.com/warranty	See www.moxa.com/warranty	See www.moxa.com/warranty

Railway Computers




	TC-6110 Series	V2616A Series	V2406A Series	V2416A Series
Computer				
CPU	Intel Atom D525 (dual-core, 1.8 GHz)	Intel Core i5-3610ME (2.7 GHz) Intel Core i7-3517UE (1.7 GHz) Intel Core i7-3612QE (2.1 GHz)	Intel Celeron 1047UE (1.4 GHz) Intel Core i7-3517UE (1.7 GHz)	Intel Celeron 1047UE (1.4 GHz) Intel Core i7-3517UE (1.7 GHz)
OS	Windows Embedded Standard 7 or Linux Debian 7	Windows Embedded Standard 7 or Linux Debian 7	Windows Embedded Standard 7 or Linux Debian 7	Windows Embedded Standard 7 or Linux Debian 7
System Memory	2 GB pre-installed	4 GB pre-installed	4 GB pre-installed	4 GB pre-installed
USB	USB 2.0 hosts x 3 (Type A connectors x 2, supporting system boot up, M12 connectors x 1)	USB 2.0 hosts x 3 (Type A connectors x 2, supporting system boot up, M12 connectors x 1)	USB 2.0 hosts x 3 (Type A connectors x 2, supporting system boot up, M12 connectors x 1)	USB 2.0 hosts x 3 (Type A connectors x 2, supporting system boot up, M12 connectors x 1)
Storage				
Built-in	8 GB onboard industrial CompactFlash card for operating system storage	–	–	–
Expansion Slot	–	1 full-size/half-size mini PCIe socket with 1 SIM card socket. Mini PCIe socket supports power on/off control	–	–
HDD/SSD Support	2 removable TC-SATA-T storage trays for 2.5-inch SSD or HDD storage drive (with Intelligent Heating Solution)	2 hot-swappable storage trays for 2.5-inch SATA SSD or HDD, 1 internal SATA-II storage connector for 2.5-inch SSD or HDD	1 internal SATA-II bus for 2.5-inch HDD/SSD*	2 hot-swappable trays for 2.5-inch HDD/SSD storage expansion*
CFast Support	–	1 slot for OS*, 1 slot for backup storage	1 slot for OS*, 1 slot for backup storage	1 slot for OS*, 1 slot for backup storage
Display				
Graphics Controller	Integrated Intel GMA 3150 (Pineview) Graphics Engine	Intel® HD Graphics 4000 (integrated)	Intel® HD Graphics 4000 (integrated)	Intel® HD Graphics 4000 (integrated)
Connector Type	–	1 DVI-I connector, 1 VGA connector	2 DVI-I connectors	2 DVI-I connectors
Display Interface	Up to 2048 x 1536 resolution at 75 Hz, DB9 female connector	• DVI up to 1920 x 1200 resolution @ 60 Hz • VGA up to 1920 x 1200 resolution @ 60 Hz • VGA up to 2048 x 1536 resolution @ 75 Hz	• DVI up to 1920 x 1200 resolution @ 60 Hz • VGA up to 1920 x 1200 resolution @ 60 Hz • VGA up to 2048 x 1536 resolution @ 75 Hz	• DVI up to 1920 x 1200 resolution @ 60 Hz • VGA up to 1920 x 1200 resolution @ 60 Hz • VGA up to 2048 x 1536 resolution @ 75 Hz
Ethernet Interface				
LAN	Auto-sensing 10/100/1000 Mbps ports (M12) x 2	Auto-sensing 10/100/1000 Mbps ports (M12 X-coded) x 2	Auto-sensing 10/100/1000 Mbps ports (M12 X-coded) x 2	Auto-sensing 10/100/1000 Mbps ports (M12 X-coded) x 2
Serial Interface				
Serial Standards	1 RS-232 port (DB9 male)	2 software-selectable RS-232/422/485 ports (DB9 male)	4 RS-232/422/485 ports, software selectable (DB9 male)	4 software-selectable RS-232/422/485 ports (DB9 male)
ESD Protection	–	4 kV for all signals	4 kV for all signals	4 kV for all signals
Data Bits	5, 6, 7, 8	5, 6, 7, 8	5, 6, 7, 8	5, 6, 7, 8
Stop Bits	1, 1.5, 2	1, 1.5, 2	1, 1.5, 2	1, 1.5, 2
Parity	None, Even, Odd, Space, Mark	None, Even, Odd, Space, Mark	None, Even, Odd, Space, Mark	None, Even, Odd, Space, Mark
Flow Control	RTS/CTS	RTS/CTS	RTS/CTS	RTS/CTS
Isolation Protection	–	1.5 kV	1.5 kV	1.5 kV
Digital Input				
Input Channels	–	6	6	6
Input Voltage	–	0 to 30 VDC at 25 Hz	0 to 30 VDC at 25 Hz	0 to 30 VDC at 25 Hz
Digital Output				
Output Channels	–	2, sink type	2, sink type	2, sink type
Output Current	–	Max. 200 mA per channel	Max. 200 mA per channel	Max. 200 mA per channel
On-state Voltage	–	24 VDC nominal, open collector to 30 VDC	24 VDC nominal, open collector to 30 VDC	24 VDC nominal, open collector to 30 VDC
Physical Characteristics				
Housing	Aluminum and SECC sheet metal (1 mm)	Aluminum	Aluminum	Aluminum
Weight	5 kg (11.11 lb)	5 kg (11.11 lb)	2 kg (4.44 lb)	4 kg (8.98 lb)
Dimensions	With ears: 210 x 269 x 133 mm (8.27 x 10.60 x 5.24 in)	287 x 290 x 101 mm (11.29 x 11.41 x 3.97 in)	With ears: 275 x 63 x 154 mm (10.83 x 2.47 x 6.06 in)	With ears: 275 x 92 x 154 mm (10.83 x 3.62 x 6.06 in)
Mounting	Rack	Wall	DIN rail, wall, VESA	DIN rail, wall, VESA
Environmental Limits				
Operating Temperature	-25 to 55°C (-13 to 140°F) or -40 to 70°C (-40 to 158°F)	-25 to 55°C (-13 to 140°F) or -40 to 70°C (-40 to 158°F)	-25 to 55°C (-13 to 131°F) or -40 to 70°C (-40 to 158°F)	-25 to 55°C (-13 to 131°F) or -40 to 70°C (-40 to 158°F)
Storage Temperature	-40 to 85°C (-40 to 185°F)	(with SSD installed) -40 to 85°C (-40 to 185°F)	-40 to 85°C (-40 to 185°F)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)	5 to 95% (non-condensing)	5 to 95% (non-condensing)	5 to 95% (non-condensing)
Conformal Coating	Available	Available	Available on request	Available on request
Power Requirements				
Input Voltage	24 to 110 VDC (M12 A-coded)	24 to 110 VDC (M12 A-coded)	12 to 48 VDC (M12 A-coded)	12 to 48 VDC (M12 A-coded)
Power Consumption	32 W (without heater), 62 W (with heater)	• 60 W (no SSD/HDD attached) • 2.5 A @ 24 VDC to 0.55 A @ 110 VDC	• 3.3 A @ 12 VDC, 39.6 W • 0.82 A @ 48 VDC, 39.4 W	• 3.3 A @ 12 VDC, 39.6 W • 0.82 A @ 48 VDC, 39.4 W
Standards and Certifications				
Safety	UL 60950-1, CSA C22.2 No. 60950-1-07, EN 60950-1	UL 60950-1, CSA C22.2 No. 60950-1-07, EN 60950-1	UL 60950-1, EN 60950-1	UL 60950-1, EN 60950-1
EMC	EN 55022:2010 Class A, EN 55024:2010, FCC CFR Title 47 Part 15 Subpart B: 2011 Class A, CISPR 22:2008, ANSI C63.4:2009, ICES-003 Issue 5:2012 Class A	EN 55022 Class A, EN 61000-3-2 Class D, EN 61000-3-3, EN 55024, FCC Part 15 Subpart B Class A	EN 55022/24	EN 55022/24
EMI	–	–	CISPR 22, FCC Part 15B Class A	CISPR 22, FCC Part 15B Class A
EMS	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	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE
RF	EN 62311:Jan 2008, ETSI EN 301 489-1:V1.9.2 (2011-09), ETSI EN 301 489-3:V1.4.1 (2002-08), ETSI EN 301 893:V1.6.1 (2011-11), ETSI EN 300 328:V1.7.1 (2006-10), ETSI EN 300 440-1:V1.6.1 (2010-08), ETSI EN 300 440-2:V1.4.1 (2010-08)	–	–	–
Rail Traffic	EN 50155:2007 (essential compliance*), EN 50121-3-2:2006, EN 50121-4:2006	EN 50155 (essential compliance*), EN 50121-3-2, EN 50121-4	EN 50155*, EN 50121-3-2, EN 50121-4	EN 50155*, EN 50121-3-2, EN 50121-4
Environmental Tests	EN 60068-2-1:2007, EN 60068-2-2:2007, EN 61373:1999	EN 60068-2-1:2007, EN 60068-2-2:2007, EN 61373:1999	–	–
Warranty				
Warranty Period	3 years	3 years	3 years	3 years
Details	See www.moxa.com/warranty	See www.moxa.com/warranty	See www.moxa.com/warranty	See www.moxa.com/warranty

Railway Computers

	V2426A Series	UC-8481 Series	RNAS-1200 Series
Computer			
CPU	Intel Celeron 1047UE (1.4 GHz), Intel Core i7-3517UE (1.7 GHz)	533 MHz	1.0 GHz
OS	Windows Embedded Standard 7 or Linux Debian 7	Linux (pre-installed)	–
System Chipset	Mobile Intel® HM65 Express	–	–
System Memory	1 DDR3-1600 SO-DIMM SDRAM slot, 8 GB max., 4 GB pre-installed	–	–
USB	USB 2.0 hosts x 3 (Type A connectors x 2, M12 D-coded x 1)	USB 2.0 hosts x 2	–
DRAM	–	512 MB DDR2 SDRAM onboard, 32 MB NOR Flash, 512 MB NAND Flash	512 MB DDRII
Flash Memory	–	–	Onboard 2 GB USB DOM to store OS
Storage			
Storage Expansion	–	CompactFlash socket	–
HDD/SSD Support	1 internal SATA-II bus for 2.5-inch HDD/SSD storage expansion*	–	2.5-inch HDD bays x 2, reserved for storage expansion
CFast Support	1 slot for OS*, 1 slot for backup storage	–	–
Display			
Graphics Controller	Intel® HD Graphics 4000 (integrated)	–	–
Connector Type	2 DVI-I connectors	–	–
Display Interface	DVI up to 1920x1200 resolution @ 60 Hz VGA up to 1920x1200 resolution @ 60 Hz VGA up to 2048x1536 resolution @ 75 Hz	–	–
Ethernet Interface			
LAN	Auto-sensing 10/100/1000 Mbps ports (M12 X-coded) x 2	Auto-sensing 10/100 Mbps ports (M12) x 2	Auto-sensing 10/100/1000 Mbps ports (M12) x 2
Magnetic Isolation Protection	–	1.5 kV built in	–
Serial Signals			
RS-232	TxD, RxD, DTR, DSR, RTS, CTS, DCD, GND	TxD, RxD, DTR, DSR, RTS, CTS, DCD, GND	–
RS-422	TxD+, TxD-, RxD+, RxD-, GND	TxD+, TxD-, RxD+, RxD-, GND	–
RS-485-4w	TxD+, TxD-, RxD+, RxD-, GND	TxD+, TxD-, RxD+, RxD-, GND	–
RS-485-2w	Data+, Data-, GND	Data+, Data-, GND	–
Digital Input			
Input Channels	6	4	–
Input Voltage	0 to 30 VDC at 25 Hz	0 to 30 VDC	–
Digital Input Levels for Dry Contacts	• Logic level 0: Close to GND • Logic level 1: Open	• Logic level 0: Close to GND • Logic level 1: Open	–
Digital Input Levels for Wet Contacts	• Logic level 0: +3 V max. • Logic level 1: +10 V to +30 V (Source to DI)	• Logic level 0: +3 V max. • Logic level 1: +10 V to +30 V (COM to DI)	–
Digital Output			
Output Channels	2, sink type	4, sink type	–
Output Current	Max. 200 mA per channel	Max. 200 mA per channel	–
On-state Voltage	24 VDC nominal, open collector to 30 VDC	24 VDC nominal, open collector to 30 ⊗	–
Connector Type	10-pin screw-fastened Euroblock terminal (6 inputs, 2 outputs, DI Source, GND)	10-pin screw terminal block (4 points, GND)	–
Isolation	3 kV optical isolation	–	–
IHS Control			
IHS Function Control	–	–	Temperature reading, power output control for heating function
Physical Characteristics			
Housing	Aluminum	SECC sheet metal (1 mm)	Aluminum
Weight	3 kg (6.67 lb)	1 kg (2.22 lb)	1.98 kg (4.4 lb) (RNAS-1201-T)/2 kg (4.44 lb) (RNAS-1211-T)
Dimensions	With ears: 275 x 92 x 154 mm (10.83 x 3.62 x 6.06 in)	200 x 57 x 120 mm (7.87 x 2.24 x 4.72 in)	252 x 130 x 57 mm (9.92 x 5.12 x 2.24 in)
Mounting	DIN rail, wall, VESA	DIN rail, wall	wall
Environmental Limits			
Operating Temperature	-25 to 55°C (-13 to 131°F) or -40 to 70°C (-40 to 158°F)	-25 to 55°C (-13 to 131°F) or -25 to 70°C (-13 to 158°F)	-40 to 70°C (-40 to 158°F)
Storage Temperature	-40 to 85°C (-40 to 185°F)	-25 to 75°C (-13 to 167°F) or -40 to 80°C (-40 to 176°F)	-40 to 85°C (-40 to 176°F)
Ambient Relative Humidity	5 to 95% (non-condensing)	5 to 95% (non-condensing)	5 to 95% (non-condensing)
Anti-Vibration	EN 50155 standard	IEC 61373 standard	EN 50155 standard
Anti-Shock	EN 50155 standard	IEC 61373 standard	EN 50155 standard
Conformal Coating	Available on request	–	Available on request
Power Requirements			
Input Voltage	12 to 48 VDC (M12 A-coded)	24 VDC (9 to 48 V), M12 connector	PoE (IEEE 802.3af), or PoE+ (IEEE 802.3at)
Power Consumption	47 W	20 W	25.5 W
Standards and Certifications			
Safety	UL 60950-1, EN 60950-1	UL 60950-1, EN 60950-1	UL 60950-1
EMC	EN 55022/24	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 A, EN 61000-3-2, EN 61000-3-3, EN 55024
EMI	CISPR 22, FCC Part 15B Class A	–	FCC Part 15 Subpart B Class A, CISPR 22:2008
EMS	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	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE
Rail Traffic	EN 50155*, EN 50121-3-2, EN 50121-4 , IEC 60571	EN 50155*, EN 50121-2-3, EN 50121-4, IEC 61373	EN 50155 (essential compliance*), EN 50121-3-2, IEC 61373
Warranty			
Warranty Period	3 years	5 years (does not apply to cellular module)	5 years (storage drive not included)
Details	See www.moxa.com/warranty	See www.moxa.com/warranty	See www.moxa.com/warranty

Mission-Critical Computers







	MC-7200-MP Series	MC-7200-DC-CP Series	MC-7130-MP	MC-5150-DC-CP Series	MC-5150-AC/DC Series	MC-5157-AC/DC Series	MC-1100 Series
Computer							
CPU	Intel® Core™ i7-3555LE 2.5 GHz, Intel® Core™ i3-3120ME 2.4 GHz, Intel® Celeron® 1047UE 1.4 GHz	Intel® Core™ i7-3555LE 2.5 GHz, Intel® Core™ i3-3120ME 2.4 GHz, Intel® Celeron® 1047UE 1.4 GHz	Intel® Core™ i3-3120ME 2.4 GHz	Intel® Core™ i5-520E 2.4 GHz	Intel® Core™ i5-520E 2.4 GHz	Intel® Core™ i5-520E 2.4 GHz	Intel® Atom™ E3845 (Quad Core, 1.91 GHz), Intel® Atom™ E3826 (Dual Core, 1.46 GHz)
Supported OSs	W7E, 32/64-bit W7P, 32/64-bit	W7E, 32/64-bit W7P, 32/64-bit	W7E, 32/64-bit W7P, 32/64-bit	W7E, 32/64-bit W7P, 32/64-bit	W7E, 32/64-bit W7P, 32/64-bit	W7E, 32/64-bit W7P, 32/64-bit	W7E, 32/64-bit
OS Pre-installed	–	–	–	–	–	–	–
System Chipset	Intel® QM77	Intel® QM77	Intel® QM77	Intel® QM57	Intel® QM57	Intel® QM57	–
System Memory Slots	2 SO-DIMM slots, 16 GB capacity	2 SO-DIMM slots, 16 GB capacity	2 SO-DIMM slots, 16 GB capacity	2 SO-DIMM slots, 8 GB capacity	2 SO-DIMM slots, 8 GB capacity	2 SO-DIMM slots, 8 GB capacity	1 SO-DIMM slot, 8 GB capacity
System Memory Pre-installed	4 GB, in 1 slot	4 GB, in 1 slot	4 GB, in 1 slot	2 GB, in 1 slot	2 GB, in 1 slot	2 GB, in 1 slot	2 GB, in 1 slot
Internal Storage Slots	2.5-inch SATA x 2	2.5-inch SATA x 2	2.5-inch SATA x 2	2.5-inch SATA x 1	2.5-inch SATA x 1	2.5-inch SATA x 1	CFast x 1 SD 3.0 (SDHC/SDXC) x 1
External Storage Slots	2.5-inch SATA x 1	2.5-inch SATA x 1	2.5-inch SATA x 1	2.5-inch SATA x 1	2.5-inch SATA x 1	2.5-inch SATA x 1	–
Storage Pre-installed	–	–	–	64 GB MLC SSD	–	–	–
I/O Interface							
USB	USB 2.0 x 6, Type A USB 3.0 x 2, Type A	USB 2.0 x 6, Type A	USB 2.0 x 6, Type A USB 3.0 x 2, Type A	USB 2.0 x 6, Type A	USB 2.0 x 6, Type A	USB 2.0 x 6, Type A	USB 2.0 x 2, Type A
Audio	Line in x 1, Line out x 1, Mic input x 1	Line in x 1, Line out x 1, Mic input x 1	Line in x 1, Line out x 1, Mic input x 1	Line in x 1, Line out x 1	Line in x 1, Line out x 1	Line in x 1, Line out x 1	–
KB/MS	2 PS/2 interfaces	2 PS/2 interfaces	2 PS/2 interfaces	2 PS/2 interfaces	2 PS/2 interfaces	2 PS/2 interfaces	–
PCI Slots	2	–	2	–	–	2	–
PCIe Slots	1, PCIE x16	–	1, PCIE x16	–	–	–	–
Display Interface	1 VGA output, DB15 female 2 DVI-D			1 VGA output, DB15 female 1 DVI-I			1 VGA output, DB15 female 1 display port
LAN Ports	10/100/1000 Mbps (RJ45) x 4			10/100/1000 Mbps (RJ45) x 2			10/100/1000 Mbps (RJ45) x 4
Serial Ports	RS-232/422/485 (DB9) x 2 RS-232 (DB9) x 2						RS-232/422/485 (DB9) x 2
NMEA Ports	NMEA 0183 x 8 (IEC-61162)	–	NMEA 0183 x 8 (IEC-61162)	–	NMEA 0183 x 8 (IEC-61162)	NMEA 0183 x 8 (IEC-61162)	–
Digital Iuput/Output	8DI/8DO	–	8DI/8DO	–	–	–	4DI/4DO
LPT ports	DB25 x 1			–	DB25 x 1		–
Physical Characteristics							
Housing	Aluminum sheet metal						
Weight	8 kg (17.78 lb)	3.75 kg (8.33 lb)	8 kg (17.8 lb)	3.85 kg (8.56 lb)	6.85 kg (15.22 lb)	8 kg (17.78 lb)	1.21 kg (2.69 lb), or 0.97 kg (2.16 lb)
Dimensions	287 x 250 x 70 mm (11.30 x 9.84 x 2.76 in)	150 x 160 x 80 mm (5.91 x 6.30 x 3.15 in)	322 x 300 x 150 mm (12.68 x 11.81 x 5.91 in)	287 x 250 x 70 mm (11.30 x 9.84 x 2.76 in)	287 x 250 x 135 mm (11.30 x 9.84 x 5.31 in)	320 x 300 x 171 mm (12.60 x 11.81 x 6.73 in)	132 x 120 x 92 mm (5.20 x 4.72 x 3.62 in)
Mounting	Wall		Wall	Wall			Wall, DIN rail
Thermal Solution	Fanless		Intelligent fan	Fanless			Fanless
Environmental Limits							
Operating Temperature	-40 to 70°C (-40 to 131°F)		-15 to 55°C (5 to 131°F)				-40 to 70°C (-40 to 131°F)
Storage Temperature	-50 to 80°C (-40 to 176°F)		-20 to 60°C (-4 to 131°F)				-45 to 75°C (-49 to 103°F)
Ambient Relative Humidity	5 to 95% (non-condensing)		5 to 95% (non-condensing)				5 to 95% (non-condensing)
Anti-Vibration	DNV 2.4 standard						
Power Requirements							
Input Voltage	24 VDC (18 to 30 VDC); 100 to 240 VAC						12/24 VDC (9 to 36 VDC)
Power Consumption	Less than 100 W, 2.5 A @ 24 VDC						Less than 30 W
Standards and Certifications							
Marine	DNV 2.4, IEC 60945 4th., IACS-E10						DNV 2.4, IEC 60945 4th
Green Product	RoHS, cRoHS, WEEE						
Warranty							
Warranty Period	3 years						
Details	See www.moxa.com/warranty						

Marine Displays and Panel Computers

Preliminary





	MD-119/124 Series	MD-219/224/226 Series	MD-215 Series	MPC-2190/2240/2260 Series	MPC-2150 Series
Computer					
CPU	–	–	–	Intel® Core™ i7-3517UE 1.7 GHz, or Intel® Celeron® 1047UE 1.4 GHz	Intel® Core™ i7-3517UE 1.7 GHz, or Intel® Celeron® 1047UE 1.4 GHz
Supported OS	–	–	–	Windows Embedded Standard 7 32/64-bit, Windows 7 Professional 32/64-bit	Windows Embedded Standard 7 32/64-bit, Windows 7 Professional 32/64-bit
OS Pre-installed	–	–	–	–	–
System Chipset	–	–	–	Intel® HM65 Express Chipset	Intel® HM65 Express Chipset
Memory Slot	–	–	–	1 SO-DIMM slot	1 SO-DIMM slot
System Memory Pre-installed	–	–	–	4 GB pre-installed (SDRAM)	4 GB pre-installed (SDRAM)
Expansion Bus	–	–	–	–	–
USB	–	–	–	USB 2.0 x 4, Type A connectors	USB 2.0 x 4, Type A connectors
Storage slot	–	–	–	MPC-2190: 1 2.5" HDD/SSD slot MPC-2240/2260: 2 2.5" HDD/SSD slot	1 2.5" HDD/SSD slot + 1 CFast slot
Storage Pre-installed	–	–	–	–	–
BIOS	–	–	–	64 Mbit Flash BIOS SPI type, ACPI function supported	64 Mbit Flash BIOS SPI type, ACPI function supported
Other Peripherals					
Audio	–	–	–	Line-in and line-out interface, with 3.5 mm mini jack	Line-in and line-out interface, with 3.5 mm mini jack
KB/MS	–	–	–	2 PS/2 interfaces	2 PS/2 interfaces
Buzzer	75 to 85 db (IEC 60945 compliant)	75 to 85 db (IEC 60945 compliant)	75 to 85 db (IEC 60945 compliant)	75 to 85 db (IEC 60945 compliant)	75 to 85 db (IEC 60945 compliant)
Display					
Panel Size	19/24 inches	19/24/26 inches	15 inches	19/24/26 inches	15 inches
Touch	Resistive touch	Projected capacitive touch	Projected capacitive touch, glove friendly	Projected capacitive touch	Projected capacitive touch, glove friendly
Aspect Ratio	• MD-119: 5:4 • MD-124: 16:9	• MD-219: 5:4 • MD-224: 16:9 • MD-226: 16:10	5:4	• MD-219: 5:4 • MD-224: 16:9 • MD-226: 16:10	5:4
Pixels	• MD-124: 1920 x 1080 • MD-119: 1280 x 1024 (WSXGA+)	• MD-219: 1280 x 1024 (SXGA) • MD-224: 1920 x 1080 (Full HD) • MD-226: 1920 x 1200 (WUXGA)	1024 x 768	• MD-219: 1280 x 1024 (SXGA) • MD-224: 1920 x 1080 (Full HD) • MD-226: 1920 x 1200 (WUXGA)	1024 x 768
Contrast Ratio	• MD-124: 5000:1 • MD-119: 1000:1	• MD-219: 2000: 1 • MD-224: 5000: 1 • MD-226: 1500: 1	700:1	• MD-219: 2000: 1 • MD-224: 5000: 1 • MD-226: 1500: 1	700:1
Light Intensity	• MD-124: 300 cd/m^2 • MD-119: 350 cd/m^2	• MD-219: 300 cd/m^2 • MD-224: 300 cd/m^2 • MD-226: 350 cd/m^2	1000 cd/m^2	• MD-219: 300 cd/m^2 • MD-224: 300 cd/m^2 • MD-226: 350 cd/m^2	1000 cd/m^2
Viewing Angles	• MD-124: 178° x 178° • MD-119: 170° x 160°	• MD-219: 178°/178° • MD-224: 178°/178° • MD-226: 176°/176°	170°/160°	• MD-219: 178°/178° • MD-224: 178°/178° • MD-226: 176°/176°	170°/160°
Max. No. of Colors	16.7M (8-bit)	16.7M (8-bit)	16.7M (8-bit)	16.7M (8-bit)	16.7M (8-bit)
Video inputs	DVI-I x 2, BNC composite x 3	DVI-D x 1, VGA x 1 (DB15 female)	DVI-D x 1, VGA x 1 (DB15 female)	–	DVI-D x 1, VGA x 1 (DB15 female)
Video output	VGA x 1	–	–	DVI-D x 1, VGA x 1 (DB15 female)	–
Ethernet Interface					
LAN	–	–	–	10/100/1000 Mbps ports (RJ45 port) x 2	10/100/1000 Mbps ports (RJ45 port) x 2
Serial Interface					
Serial Standards	2 RS-232 port (DB9)	1 RS-232 port (DB9) 1 RS-422/485 port (terminal block)	1 RS-232 port (DB9) 1 RS-422/485 port (terminal block)	2 RS-232/422/485 ports, software-selectable (DB9 male)	2 RS-232/422/485 ports, software-selectable (DB9 male)
Physical Characteristics					
Housing	Aluminum sheet metal	Aluminum sheet metal	Aluminum sheet metal	Aluminum sheet metal	Aluminum sheet metal
Weight	• MD-124: 12 kg (26.46 lb) • MD-119: 9.7 kg (21.38 lb)	• MD-219: 7.8 kg (17.20 lb) • MD-224: 12 kg (26.46 lb) • MD-226: 15.2 kg (35.51 lb)	6.5 kg (13.44 lb)	• MD-219: 7.8 kg (17.20 lb) • MD-224: 12 kg (26.46 lb) • MD-226: 15.2 kg (35.51 lb)	6.5 kg (14.44 lb)
Dimensions	• MD-124: 85 x 593 x 384 mm (3.35 x 23.45 x 15.12 in) • MD-119: 82 x 483 x 444 mm (3.23 x 19.02 x 17.48 in)	• MD-219: 429 x 387 x 75 mm (16.89 x 15.24 x 2.95 in) • MD-224: 595 x 393 x 75 mm (23.43 x 15.47 x 2.95 in) • MD-226: 621 x 440 x 90 mm (24.45 x 17.48 x 3.57 in)	356 x 315 x 77.2 mm (14.02 x 12.40 x 3.04 in)	• MD-219: 429 x 387 x 75 mm (16.89 x 15.24 x 2.95 in) • MD-224: 595 x 393 x 75 mm (23.43 x 15.47 x 2.95 in) • MD-226: 621 x 440 x 90 mm (24.45 x 17.48 x 3.57 in)	356 x 315 x 77.2 mm (14.02 x 12.40 x 3.04 in)
Mounting	Console	VESA, desktop, panel	VESA, desktop, panel	VESA, desktop, panel	VESA, desktop, panel
System Cooling	Fan	Fanless	Fanless	Fanless	Fanless
Environmental Limits					
Operating Temperature	-15 to 55°C (5 to 131°F)	-15 to 55°C (5 to 131°F)	-40 to 70°C (-40 to 158°F)	-15 to 55°C (5 to 131°F)	-40 to 70°C (-40 to 158°F)
Storage Temperature	-20 to 60°C (-4 to 140°F)	-20 to 60°C (-4 to 140°F)	-40 to 70°C (-40 to 158°F)	-20 to 60°C (-4 to 140°F)	-40 to 70°C (-40 to 158°F)
Ambient Relative 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)
Power Requirements					
Input Voltage	• 24 VDC (18 to 36 VDC) • 110 to 230 VAC, 50/60 Hz	• 24 VDC (18 to 36 VDC) • 110 to 230 VAC, 50/60 Hz	• 12/24 VDC (9 to 36 VDC) • 100 to 240 VAC	• 24 VDC (18 to 36 VDC) • 110 to 230 VAC, 50/60 Hz	• 12/24 VDC (9 to 36 VDC) • 100 to 240 VAC
Standards and Certifications					
Safety	UL 60950-1, CCC	UL 60950-1, CCC	UL 60950-1, CCC	UL 60950-1, CCC	UL 60950-1, IEC 60950-1
EMC	EN 55022/24, CISPR 22, FCC Part 15B Class A	EN 55022/24, CISPR 22, FCC Part 15B Class A	EN 55022/24, CISPR 22, FCC Part 15B Class A	EN 55022/24, CISPR 22, FCC Part 15B Class A	EN 55022/24
Ingress Protection Rating	• Front: IP66 • Rear: IP22	• Front: IP54 • Rear: IP22	• Front: IP66 • Rear: IP22	• Front: IP54 • Rear: IP22	• Front: IP66 • Rear: IP22
Marine	IEC 60945 4th	IEC 60945 4th, DNV, IACS E10, IEC 61174	IEC 60945 4th, DNV, IACS E10	IEC 60945 4th, DNV, IACS E10, IEC 61174	–
Warranty					
Warranty Period	• System: 3 years • LCD panel: 1 year	• System: 3 years • LCD panel: 1 year	• System: 3 years • LCD panel: 1 year	• Computer system: 3 years • LCD panel: 1 year	• Computer system: 3 years • LCD panel: 1 year
Details	See www.moxa.com/warranty	See www.moxa.com/warranty	See www.moxa.com/warranty	See www.moxa.com/warranty	See www.moxa.com/warranty

Oil & Gas Displays & Panel Computers

	MD-219Z-HB/224Z-HB Series	MD-215 Series	MPC-2150 Series	EXPC-1519 Series	EXPC-1319 Series
Computer					
CPU	–	–	Intel® Core™ i7-3517UE 1.7 GHz, or Intel® Celeron® 1047UE 1.4 GHz	Intel® Core™ i7-3555LE 2.5 GHz or Intel® Celeron® 1047UE 1.4 GHz Processor	Intel Atom D525 dual core 1.8 GHz processor
Supported OS	–	–	W7E, 32/64-bit W7P, 32/64-bit	W7E, 32/64-bit W7P, 32/64-bit	W7E, 32/64-bit W7P, 32/64-bit
OS Pre-installed	–	–	–	–	Windows Embedded Standard 7
System Chipset	–	–	Intel® HM65 Express Chipset	Intel® QM77 Express Chipset	Intel Pineview-D+ ICH8M
Memory Slots	–	–	1 SO-DIMM slot	2 SO-DIMM slots	2 SO-DIMM slots
System Memory Pre-installed	–	–	4 GB pre-installed (SDRAM)	4 GB pre-installed	2 GB pre-installed
Expansion Bus	–	–	–	1 mini PCIe socket (internal)	–
USB	–	–	USB 2.0 x 4	USB 2.0 x 1/3/4 (S1 model)	USB 2.0 x 2
Storage Slots	–	–	2.5-inch HDD/SSD x 1, CFast x 1	2.5-inch HDD/SSD x 1, CFast x 1	2.5-inch HDD/SSD x 1, CompactFlash x 1
Storage Pre-Installed	–	–	–	–	32 GB MLC SSD
Video Output	–	–	DVI-D x 1, VGA x 1 (DB15 female)	VGA x 1 (DB15 female) (S1 model)	VGA output (DB15 female)
Display					
Panel Size	19/24 inches	15 inches	15 inches	19 inches	19 inches
Touch	Projected capacitive touch, glove friendly	Projected capacitive touch, glove friendly	Projected capacitive touch, glove friendly	Projected capacitive touch, glove friendly	Resistive touch
Aspect Ratio	• MD-219Z-HB: 5:4 • MD-224Z-HB: 16:9	5:4	5:4	5:4	5:4
Pixels	• MD-219Z-HB: 1280 x 1024 (SXGA) • MD-224Z-HB: 1920 x 1080 (WSXGA+)	1024 x 768	1024 x 768	1280 x 1024	1280 x 1024
Contrast Ratio	• MD-219Z-HB: 2000:1 • MD-224Z-HB: 5000:1	700:1	700:1	1000:1	1000:1
Light Intensity	1000 cd/m²	1000 cd/m²	1000 cd/m²	1000 cd/m²	1000 cd/m²
Viewing Angles	178°/178°	160°/140°	160°/140°	170°/160°	170°/160°
Video Input	DVI-D x 1, VGA x 1 (DB15 female)	DVI-D x 1, VGA x 1 (DB15 female)	–	–	–
Ethernet Interface					
LAN	–	–	2 10/100/1000 Mbps ports (RJ45 port)	2 10/100/1000 Mbps ports (RJ45 port)	2 10/100/1000 Mbps ports (RJ45 port)
Optical Fiber Interface	–	–	–	2 multimode 100M fiber ports	2 multimode 100M fiber ports
WLAN	–	–	–	1 802.11b/g/n interface (available on request)	–
Serial Interface					
Serial Standards	1 RS-232 port (DB9) 1 RS-422/485 port (terminal block)	1 RS-232 port (DB9) 1 RS-422/485 port (terminal block)	2 RS-232/422/485 ports (DB9 male)	2 RS-232/422/485 ports (DB9 male)	2 RS-232/422/485 ports
Physical Characteristics					
Housing	Aluminum sheet metal	Aluminum sheet metal	Aluminum sheet metal	Aluminum	Aluminum
Weight	• MD-219Z-HB: 7.8 kg (17.33 lb) • MD-224Z-HB: 12 kg (26.67 lb)	6.5 kg (13.44 lb)	6.5 kg (14.44 lb)	15.8 kg (34.83 lb)	10.7 kg (23.78 lb) or 11.9 kg (26.44 lb)
Dimensions	• MD-219Z-HB: 429 x 387 x 75 mm (16.89 x 15.24 x 2.95 in) • MD-224Z-HB: 595 x 393 x 75 mm (23.43 x 15.47 x 2.95 in)	356 x 315 x 77.2 mm (14.02 x 12.40 x 3.04 in)	356 x 315 x 77.2 mm (14.02 x 12.40 x 3.04 in)	483 x 408 x 99.5 mm (19.02 x 16.06 x 3.92 in)	483 x 408 x 99 mm (19.02 x 16.06 x 3.90 in)
Mounting	VESA, desktop, panel	VESA, desktop, panel	VESA, desktop, panel	VESA, desktop, yoke, wall, panel	VESA, desktop, yoke, wall, panel
System Cooling	Fanless thermal design	Fanless thermal design	Fanless thermal design	Fanless thermal design	Fanless thermal design
Environmental Limits					
Operating Temperature	-20 to 60°C (-4 to 140°F)	-40 to 70°C (-40 to 158°F)	-40 to 70°C (-40 to 158°F)	-40 to 70°C (-40 to 158°F)	-20 to 60°C (-4 to 140°F) or -40 to 60°C (-40 to 140°F)
Storage Temperature	-20 to 60°C (-4 to 140°F)	-40 to 70°C (-40 to 158°F)	-40 to 70°C (-40 to 158°F)	-40 to 70°C (-40 to 158°F)	-40 to 80°C (-40 to 176°F)
Ambient Relative Humidity	5 to 95% (non-condensing)	5 to 95% (non-condensing)	5 to 95% (non-condensing)	5 to 95% (non-condensing)	–
Power Requirements					
Input Voltage	• DC: 24 VDC (with tolerance from 18 to 30 VDC, 2-pin terminal block) • AC: 100 to 240 VAC	• DC: 12/24 VDC (Range 9 to 36 VDC) • AC: 100 to 240 VAC	• DC: 12/24 VDC (Range 9 to 36 VDC) • AC: 100 to 240 VAC	• DC: 24 VDC (2-pin terminal block) • AC: 100 to 240 VAC (3-pin terminal block)	Typical 24 VDC
Standards and Certifications					
Safety	UL 60950-1, CCC	UL 60950-1, CCC	UL 60950-1, IEC 60950-1	UL 60950-1, IEC 60950-1	UL 60950-1, IEC 60950-1
Ingress Protection Rating	IP66 (front) / IP22 (rear)	IP66 (front) / IP22 (rear)	IP66 (front) / IP22 (rear)	IP66 (front) / IP22 (rear) / NEMA 4X	IP66 (front) / IP22 (rear) / NEMA 4X
Hazardous Environments	Class 1 Division 2	–	Class 1 Division 2, ATEX Zone2, IECEx	Class 1 Division 2, ATEX Zone2, IECEx	Class 1 Division 2, ATEX Zone2, IECEx
Marine	IEC 60945 4th, DNV, IACS E10, IEC 61174	IEC 60945 4th, DNV, IACS E10, IEC 61174	–	–	–
Green Product	RoHS, cRoHS, WEEE	RoHS, cRoHS, WEEE	RoHS, cRoHS, WEEE	RoHS, cRoHS, WEEE	RoHS, cRoHS, WEEE
Warranty					
Warranty Period	• System: 3 years • LCD panel: 1 year	• System: 3 years • LCD panel: 1 year	• Computer system: 3 years • LCD panel: 1 year	• Computer system: 3 years • LCD panel: 1 year	• Computer system: 3 years • LCD panel: 1 year
Details	See www.moxa.com/warranty	See www.moxa.com/warranty	See www.moxa.com/warranty	See www.moxa.com/warranty	See www.moxa.com/warranty

x86 Computers

	V2403 Series	V2201 Series
Computer		
CPU	V2403-C2 Series: Intel® Celeron 1047UE (Dual Core, 2M Cache, 1.40 GHz) V2403-C3 Series: Intel® Core i3-3217UE (Dual Core, 2M Cache, 1.60 GHz) V2403-C7 Series: Intel® Core i7-3517UE (Dual Core, 4M Cache, 1.70 GHz)	V2201-E1 Series: Intel® Atom™ Processor E3815 (Single Core, 512K Cache, 1.46 GHz) V2201-E2 Series: Intel® Atom™ Processor E3826 (Dual Core, 1M Cache, 1.46 GHz) V2201-E4 Series: Intel® Atom™ Processor E3845 (Quad Core, 1M Cache, 1.91 GHz)
OS	Windows Embedded Standard 7 64-bit or Linux Debian 8 64-bit	Windows Embedded Standard 7 64-bit or Linux Debian 8 64-bit
System Memory	1 DDR3-1600 SDRAM slot, 4 GB pre-installed, 8 GB max.	1 DDR3 SO-DIMM slot (2 GB pre-installed for Linux models, 4 GB pre-installed for Windows models, 8 GB max.) • E3815 and E3826 support DDR3L-1066 • E3845 supports DDR3L-1333
USB	USB 2.0 hosts x 4, type A connectors	USB 3.0 hosts x 1, USB 2.0 hosts x 2, type A connectors
Storage		
CFast	1 removable CFast socket for OS storage, 1 internal CFast socket for OS backup	–
mSATA	1 internal mini-PCIe socket for storage expansion	1 internal mini-PCIe socket for OS storage
SD	–	1 SD 3.0 (SDHC/SDXC) socket for storage expansion
SSD/HDD	1 internal SATA-II connector for 2.5" SSD/HDD	–
Audio		
Input	Line-in interface (audio jack)	–
Output	Line-out interface (audio jack)	Line-out interface (together with HDMI)
Other Peripherals		
Expansion Slot	2 Mini-PCIe sockets • 1 USB signal, for Sierra Wireless 3G/LTE module • 1 USB + PCIe signal	2 Mini-PCIe sockets • 1 USB signal, for Sierra Wireless 3G/LTE module • 1 USB + PCIe signal
USIM	2 USIM slot	1 USIM slot
Display		
Graphics Controller	Intel® HD (integrated)	Intel® HD (integrated)
Connector Type	1 HDMI connector (type A), 1 DVI-I connector, 1 VGA connector (CV required)	1 HDMI connector (type A)
Display Interface	HDMI supports HDMI 1.4b, 1920 x 1200 resolution @ 60 Hz • DVI up to 1920x1200 resolution @ 60 Hz • VGA up to 1920x1200 resolution @ 60 Hz • VGA up to 2048x1536 resolution @ 75 Hz	Supports HDMI 1.4a, 1920 x 1080 pixels @ 60/24 Hz
Ethernet Interface		
LAN	Auto-sensing 10/100/1000 Mbps ports (RJ45) x 2	Auto-sensing 10/100/1000 Mbps ports (RJ45) x 2
Isolation Protection	1.5 kV	1.5 kV
Wireless SMA Interface		
Wi-Fi	2 SMA connectors	2 SMA connectors
3G/LTE	2 SMA connectors	2 SMA connectors
GPS	1 SMA connector	1 SMA connector
Serial Interface		
Serial Standards	RS-232/422/485 x 4 (DB9 male)	RS-232/422/485 x 2 (DB9 male)
Digital Input/Digital Output		
Input/Output Channels	DI x 4, DO x 4, sink type	DI x 4, DO x 4, sink type
Connector Type	10-pin screw-fastened Euroblock terminal	10-pin screw-fastened Euroblock terminal
Physical Characteristics		
Weight	2.247 kg (4.99 lb) or 2.168 kg (4.82 lb)	940 g (2.09 lb)
Dimensions	275 x 63 x 154 mm (10.83 x 2.47 x 6.06 in)	178 x 52.5 x 120.2 mm (7.01 x 2.07 x 4.73 in)
Mounting	DIN-rail, wall	DIN-rail, wall
Environmental Limits		
Operating Temperature	-40 to 70°C (-40 to 158°F)	-40 to 85°C (-40 to 185°F) or -40 to 70°C (-40 to 158°F)
Storage Temperature	-40 to 85°C (-40 to 185°F)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)	5 to 95% (non-condensing)
Anti-Vibration	IEC 60068-2-64: 5 Grms, 5 Hz to 500 Hz, 1 hr/axis w/ mSATA, CFast, SSD	IEC 60068-2-64: 5 Grms, 5 Hz to 500 Hz, 1 hr/axis w/ mSATA, SD
Anti-Shock	IEC 60068-2-27: 50 g/11ms ±X, ±Y, ±Z, 3 shocks each axis w/ mSATA, CFast, SSD	IEC 60068-2-27: 100 g/11ms ±X, ±Y, ±Z, 3 shocks each axis w/ mSATA, SD
Power Requirements		
Input Voltage	9 to 36 VDC (3-pin terminal block for V+, V-, SG)	9 to 36 VDC (3-pin terminal block for V+, V-, SG)
Input Current	1.39 A @ 24 VDC	2 A @ 9 VDC
Power Consumption	31.59 W	18 W
Standards and Certifications		
Safety	UL 60950-1, CSA C22.2 No. 60950-1-03 (60950-1-07), EN 60950-1, UL 508	UL 60950-1, CSA C22.2 No. 60950-1-03 (60950-1-07), EN 60950-1, UL 508
EMC	EN 55022/24, EN 61000-6-2/6-4	EN 55022/24, EN 61000-6-2/6-4*
EMI	CISPR 22, FCC Part 15B Class A	CISPR 22, FCC Part 15B Class A
EMS	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 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8
Green Product	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE
Warranty		
Warranty Period	3 years	3 years
Details	See www.moxa.com/warranty	See www.moxa.com/warranty

RISC Computers





	UC-8416/8418 Series	UC-7101/7110/7112 Series	UC-7122/7124 Series	IA260 Series	IA240 Series
Computer					
CPU Speed	533 MHz	192 MHz	200 MHz	200 MHz	192 MHz
OS	Linux or Windows CE 6.0	µClinux or Linux	Windows CE 5.0	Linux or Windows CE 6.0	Linux
Expansion Bus	PCI/104 onboard	–	–	–	–
USB	USB 2.0 hosts x 2	–	USB 2.0 hosts x 1	USB 2.0 hosts x 2	USB 2.0 hosts x 1
DRAM	DDR2 SDRAM, 256 MB (512 MB max.)	UC-7101/7110/7112: 16 MB UC-7112 Plus: 32 MB	DDR2 SDRAM, 32 MB	DDR2 SDRAM, 128 MB	DDR2 SDRAM, 64 MB
Flash	• NOR Flash, 16 MB • NAND Flash, 32 MB	UC-7101/7110/7112: 8 MB UC-7112 Plus: 16 MB	NOR Flash, 16 MB	NOR Flash, 32 MB	NOR Flash, 16 MB
SRAM	256 KB, battery backup	–	–	–	–
Storage					
Storage Expansion	CompactFlash socket	SD slot (UC-7101, UC-7112, and UC-7112 Plus only)	SD slot	CompactFlash socket	SD slot
Display					
Display Interface	–	–	–	CRT interface for VGA output, DB15 female connector	–
Resolution	–	–	–	1024 x 768, 8 bits	–
Ethernet Interface					
LAN	10/100 Mbps ports x 2 (RJ45)	10/100 Mbps ports x 1 or 2 (RJ45)	10/100 Mbps ports x 2 (RJ45)	10/100 Mbps ports x 2 (RJ45)	10/100 Mbps ports x 2 (RJ45)
Switch Port	10/100 Mbps unmanaged ports (RJ45) x 8 (UC-8416)	–	–	–	–
Serial Interface					
Serial Standards	RS-232/422/485 x 8 (RJ45)	RS-232/422/485 x 1 or 2 (DB9 male)	RS-232/422/485 ports x 2 (DB9) or 4 (RJ45)	RS-232/422/485 ports x 4 (DB9 male)	RS-232/422/485 ports x 4 (RJ45)
Console Port	RS-232 (TxD, RxD, GND), 4-pin header output (115200, n, 8, 1)	RS-232 (TxD, RxD, GND) • UC-7101: 4-pin pin header output • UC-7110/7112: 3-wire pin-header	RS-232 (TxD, RxD, GND), 4-pin pin header output	RS-232 (TxD, RxD, GND), 4-pin header output (115200, n, 8, 1)	RS-232, RJ45 connector, supports PPP
Digital Input					
Input Channels	UC-8416: DI x 4 UC-8418: DI x 12	–		DI x 8	DI x 4
Connector Type	10-pin screw-fastened terminal block (4 points, COM, GND)			10-pin screw-fastened terminal block (8 points, COM, GND)	–
Digital Output					
Output Channels	UC-8416: DO x 4, sink type UC-8418: DO x 12, sink type	–	–	DO x 8, sink type	DO x 4
Connector Type	10-pin screw-fastened terminal block (4 points, GND)	–	–	9-pin screw-fastened terminal block	–
Physical Characteristics					
Weight	1 kg (2.22 lb)	• UC-7101: 130 g (0.29 lb) • UC-7110/7112: 190 g (0.42 lb)	UC-7122: 190 g (0.42 lb) UC-7124: 200 g (0.44 lb)	1 kg (2.22 lb)	430 g (0.96 lb)
Dimensions	200 x 57 x 120 mm (7.87 x 2.24 x 4.72 in)	• UC-7101: 67 x 22 x 100.4 mm (2.64 x 0.87 x 3.95 in) • UC-7110/7112: 77 x 111 x 26 mm (3.03 x 4.37 x 1.02 in)	77 x 111 x 26 mm (3.03 x 4.37 x 1.02 in)	52 x 112.6 x 162 mm (2.05 x 4.43 x 6.38 in)	60 x 137 x 100 mm (2.36 x 5.39 x 3.94 in)
Environmental Limits					
Operating Temperature	-10 to 60°C (14 to 140°F) or -40 to 75°C (-40 to 167°F)	-10 to 60°C (14 to 140°F) or -40 to 75°C (-40 to 167°F)	-10 to 60°C (14 to 140°F) or -40 to 75°C (-40 to 167°F)	-10 to 60°C (14 to 140°F) or -40 to 75°C (-40 to 167°F)	-10 to 60°C (14 to 140°F) or -40 to 75°C (-40 to 167°F)
Storage Temperature	-20 to 75°C (-4 to 167°F) or -40 to 85°C (-40 to 185°F)	-20 to 75°C (-4 to 167°F) or -40 to 85°C (-40 to 185°F)	-20 to 75°C (-4 to 167°F) or -40 to 85°C (-40 to 185°F)	-20 to 75°C (-4 to 167°F) or -40 to 85°C (-40 to 185°F)	-20 to 75°C (-4 to 167°F) or -40 to 85°C (-40 to 185°F)
Ambient Relative 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)
Anti-Vibration	2 g rms @ IEC-68-2-34, random wave, 5-500 Hz, 1 hr per axis	1 g @ IEC-68-2-6, sine wave (resonance search), 5-500 Hz, 1 Oct/min, 1 cycle, 13 min 17 sec per axis (UC-7101/7110 only)	1 g @ IEC-68-2-6, sine wave (resonance search), 5-500 Hz, 1 Oct/min, 1 cycle, 13 min 17 sec per axis	2 g rms @ IEC-68-2-34, random wave, 5-500 Hz, 1 hr per axis	1 g @ IEC-68-2-6, sine wave (resonance search), 5-500 Hz, 1 Oct/min, 1 cycle, 13 min 17 sec per axis
Anti-Shock	20 g @ IEC-68-2-27, half sine wave, 11 ms	–	–	20 g @ IEC-68-2-27, half sine wave, 11 ms	–
Power Requirements					
Input Voltage	12 to 48 VDC (3-pin terminal block)	12 to 48 VDC	12 to 48 VDC	12 to 48 VDC (3-pin terminal block)	12 to 48 VDC
Input Current	• 310 mA @ 48 VDC • 625 mA @ 24 VDC • 1350 mA @ 12 VDC	• 170 mA @ 24 VDC • 340 mA @ 12 VDC	• 170 mA @ 24 VDC • 340 mA @ 12 VDC	• 450 mA @ 24 VDC • 900 mA @ 12 VDC	• 300 mA @ 24 VDC • 600 mA @ 12 VDC
Power Consumption	15 W	4.5 W	UC-7122: 4.1 W UC-7124: 4.3 W	5.8 W/11 W	7 W
Standards and Certifications					
Safety	UL 60950-1, EN 60950-1, CCC (GB9254, GB17625.1)	• UC-7101: UL 60950, CSA-C22.2 No. 60950-1, EN 60950-1 • UC-7110/7112: 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	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
EMC	FCC Part 15 Subpart B Class A	FCC Part 15 Subpart B Class A	FCC Part 15 Subpart B Class A	FCC Part 15 Subpart B Class A	FCC Part 15 Subpart B Class A
EMI	–	–	–	–	–
EMS	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	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE
Warranty					
Warranty Period	5 years	5 years	5 years	5 years	5 years
Details	See www.moxa.com/warranty	See www.moxa.com/warranty	See www.moxa.com/warranty	See www.moxa.com/warranty	See www.moxa.com/warranty

Wireless Embedded Computers

	MAR-2000	W6000	UC-8100-ME-T	UC-8410A
Computer				
CPU Speed	533 Mhz	300 MHz	1 GHz	1 GHz x 2
OS (pre-installed)	Linux	Linux	Linux	Linux Debian 8
DRAM	512 MB	512 MB	512 MB	512 MB
Flash	32 MB	4 GB	4 GB	–
USB Ports	2 (USB 2.0)	–	1 (USB 2.0)	2 (USB 2.0 Type A)
Relay Outputs	4 DIs, 4 DOs	–	–	4 DIs, 4 DOs
Storage				
SD Slots	–	mSD Slot x 1	SD Slot x 1	SD Slot x 1, with 1 GB pre-installed
CompactFlash	✓	–	–	–
mSATA Slots	–	–	–	1
LAN Interface				
10/100 Mbps Ethernet Ports	2	1	2	–
10/100/1000 Mbps Ethernet Ports	–	–	–	3
Magnetic Isolation Protection	1.5 kV	1.5 kV	1.5 kV	1.5 kV
WLAN Interface				
Standard Compliance	802.11a/b/g/n	802.11a/b/g/n	–	802.11a/b/g/n
Radio Frequency Type	DSSS, CCK, OFDM	DSSS, CCK, OFDM	–	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	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	–	802.11a: 6 to 54 Mbps 802.11b: 1 to 11 Mbps 802.11g: 6 to 54 Mbps
Wireless Security	WEP: 64/128-bit WPA, WPA2 data encryption	WEP: 64/128-bit WPA, WPA2 data encryption	–	64/128-bit WEP, WPA, WPA2, 802.1x
Cellular Interface				
Cellular Modes	GSM/GPRS/EDGE/UMTS/HSPA+	GSM/GPRS/EDGE/UMTS/HSPA+/LTE	GSM/GPRS/EDGE/UMTS/HSPA+/LTE	GSM/GPRS/EDGE/UMTS/HSPA+/LTE
Radio Frequency Bands	• Five band UMTS(WCDMA/FDD) • 800/850/1900 AWS and 2100 MHz • Quad-band GSM: 850/900/1800/1900 MHz • 4G: LTE-FDD / HSPA+ (B1, B2, B3, B5, B7, B8, B20) • 4G: LTE-FDD, HSPA+, GSM/GPRS/EDGE, GSM/GPRS/EDGE, CDMA (B1, B2, B4, B5, B8, B13, B17, B25, BC0, BC1, BC10)	• Five band UMTS(WCDMA/FDD) • 800/850/1900 AWS and 2100 MHz • Quad-band GSM: 850/900/1800/1900 MHz • 4G: LTE-FDD / HSPA+ (B1, B2, B3, B5, B7, B8, B20) • 4G: LTE-FDD, HSPA+, GSM/GPRS/EDGE, GSM/GPRS/EDGE, CDMA (B1, B2, B4, B5, B8, B13, B17, B25, BC0, BC1, BC10)	• Five band UMTS(WCDMA/FDD) • 800/850/1900 AWS and 2100 MHz • Quad-band GSM: 850/900/1800/1900 MHz • 4G: LTE-FDD / HSPA+ (B1, B2, B3, B5, B7, B8, B20) • 4G: LTE-FDD, HSPA+, GSM/GPRS/EDGE, GSM/GPRS/EDGE, CDMA (B1, B2, B4, B5, B8, B13, B17, B25, BC0, BC1, BC10)	• Five band UMTS(WCDMA/FDD) • 800/850/1900 AWS and 2100 MHz • Quad-band GSM: 850/900/1800/1900 MHz • 4G: LTE-FDD / HSPA+ (B1, B2, B3, B5, B7, B8, B20) • 4G: LTE-FDD, HSPA+, GSM/GPRS/EDGE, GSM/GPRS/EDGE, CDMA (B1, B2, B4, B5, B8, B13, B17, B25, BC0, BC1, BC10)
Serial Interface				
RS-232/422/485 Ports	2 (DB9 male)	2 (terminal block)	2 (terminal block)	8
ESD Protection	4 kV	15 kV	15 kV	15 kV
Console Port	–	✓	✓	✓
Serial Communication Parameters	Even, Odd, Space, Mark	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	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	RTS/CTS, XON/XOFF, ADDC™	RTS/CTS, XON/XOFF, ADDC™	RTS/CTS, XON/XOFF, ADDC™
Baudrate	50 bps to 115.2 kbps	50 bps to 921.6 kbps (nonstandard baudrates supported)	50 bps to 921.6 kbps (nonstandard baudrates supported)	50 bps to 115.2 kbps (nonstandard baudrates supported)
LEDs				
System	Power, Ready, Storage, Programmable	Ready, PWR	Ready, PWR	Ready, PWR
Diagnostics	–	–	✓	✓
LAN	10M, 100M	10M, 100M	10M, 100M	10M, 100M, 1000M
WAN	–	–	–	–
Cellular	–	Cellular Enabled, Signal Strength	Cellular Enabled, Signal Strength	Signal Strength
Serial	–	TxD, RxD	TxD, RxD	TxD, RxD
Physical Characteristics				
Housing	SECC sheet metal (1 mm)	SECC sheet metal (1 mm)	SECC sheet metal	SECC sheet metal (1 mm)
Weight	1 kg (2.22 lb)	875 g (1.94 lb)	1.02 kg (2.27 lb)	1 kg (2.22 lb)
Dimensions	200 x 57 x 120 mm	111 x 25 x 77 mm	141 x 54.8 x 125.6 mm	200 x 120 x 48.6 mm
Mounting	DIN rail, wall	DIN rail, wall	DIN rail, wall	DIN rail, wall
Environmental Limits				
Operating Temperature	-25 to 70°C (-13 to 158°F)	-40 to 70°C (-40 to 158°F)	-40 to 85°C (-40 to 185°F)	-10 to 60°C / -40 to 75°C (-14 to 140°F / -40 to 167°F)
Operating Humidity	5 to 95% RH	5 to 95% RH	5 to 95% RH	5 to 95% RH
Storage Temperature	-40 to 80°C (-40 to 176°F)	-40 to 85°C (-40 to 185°F)	-40 to 85°C (-40 to 185°F)	-20 to 75°C / -40 to 85°C (-4 to 167°F / -40 to 185°F)
Anti Vibration/Shock	IEC 61373 standard	IEC 61373 standard	IEC 61373 standard	IEC 61373 standard
Regulatory Approvals				
Safety	UL 60950-1, EN 60950-1	UL 60950-1, EN 60950-1	UL 60950-1, EN 60950-1	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 B, EN 61000-3-2 Class A, EN 61000-3-3, EN 55024, FCC Part 15 Subpart B Class B	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 B, EN 61000-3-2 Class A, EN 61000-3-3, EN 55024, FCC Part 15 Subpart B Class B
Wheeled Vehicles	EN 50155, EN 50121-2-3, EN -4, IEC 61373	–	–	–
Green Product	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE	RoHS, CRoHS, WEEE
Reliability				
Buzzer, RTC, WDT	✓	✓	✓	✓
Warranty	5 years (see www.moxa.com/warranty)			

Embedded CPU Modules

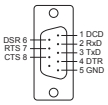
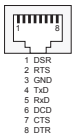
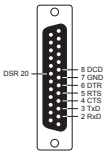
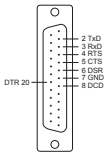
	EM-2260-CE	EM-2260-LX	EM-1220-LX	EM-1220-T-LX	EM-1240-LX	EM-1240-T-LX
Computer						
CPU Speed	200 MHz	200 MHz	192 MHz	192 MHz	192 MHz	192 MHz
OS (pre-installed)	WinCE 6.0	Linux	Embedded µClinux	Embedded µClinux	Embedded µClinux	Embedded µClinux
DRAM	128 MB	128 MB	16 MB	16 MB	16 MB	16 MB
Flash	32 MB	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	2	2	4	4
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 (nonstandard baudrates supported; see user's manual for details)					
Physical Characteristics						
Weight	70 g (0.16 lb)		40 g (0.09 lb)		50 g (0.11 lb)	
Dimensions	106 x 87 mm (4.17 x 3.43 in)		80 x 50 mm (3.15 x 1.97 in)		90 x 80 mm (3.54 x 3.15 in)	
Module Interface	–	–	Two 2 x 28 pin-headers (1.27 x 1.27 mm pitch)			
Environmental Limits						
Operating Temperature	-10 to 60°C (14 to 140°F)	-10 to 60°C (14 to 140°F)	-10 to 60°C (14 to 140°F)	-40 to 75°C (-40 to 167°F)	-10 to 60°C (14 to 140°F)	-40 to 75°C (-40 to 167°F)
Storage Temperature	-20 to 80°C (-4 to 176°F)	-20 to 80°C (-4 to 176°F)	-20 to 80°C (-4 to 176°F)	-40 to 85°C (-40 to 185°F)	-20 to 80°C (-4 to 176°F)	-40 to 85°C (-40 to 185°F)
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)					

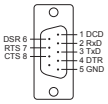
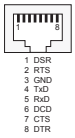
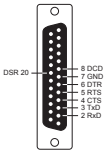
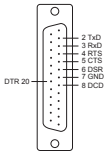
Serial Connection Options

Serial Board Connection Box/Cable Usage Chart

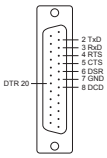
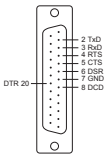
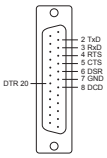
Serial Board Model Name	Connection Boxes						Connection Cables													
	8-port						8-port						4-port						2-port	
	OPT8-M9	OPT8-RJ45	OPT8A/B/S	OPT8-M9+	OPT8A+/B+/S+	OPT8-RJ45+	CBL-M68M25x8-100 (OPT8C+)	CBL-M68M9x8-100 (OPT8D+)	CBL-M62M25x8-100 (OPT8C)	CBL-M62M9x8-100 (OPT8D)	CBL-M78M25x8-100	CBL-M78M9x8-100	CBL-M44M9x4-50	CBL-M44M9x4-50(POS)	CBL-M44M25x4-50	CBL-M37M9x4-30 (OPT4C)	CBL-M37M9x4-30 (OPT4D)	CBL-F40M25x4-50	CBL-M25M9x2-50	CBL-F20M25x2-50
C218Turbo Series	✓	✓	✓	–	–	–	–	–	✓	✓	–	–	–	–	–	–	–	–	–	–
C104H 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

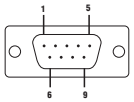
Model Name	OPT8-M9	OPT8-RJ45	OPT8A/S	OPT8B
Accessories Image				
Pin Assignment				
Board-Side Connector	DB62 male x 1			
Device-Side Connector	DB9 male x 8	8-pin RJ45 x 8	DB25 female x 8	DB25 male x 8
LEDs	TxD, RxD indicators for each device-side port	–	TxD, RxD indicators for each device-side port	
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			

Model Name	OPT8-M9+	OPT8-RJ45+	OPT8A+/S+	OPT8B+
Accessories Image				
Pin Assignment				
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

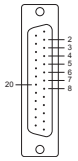
Model Name	CBL-M62M25x8-100 (OPT8C)	CBL-M62M9x8-100 (OPT8D)	CBL-M68M25x8-100 (OPT8C+)	CBL-M68M9x8-100 (OPT8D+)	CBL-M78M25x8-100	CBL-M78M9x8-100
Accessories Image						
Pin Assignment						
Board-Side Connector	DB62 male x 1		VHDCI 68 x 1		DB78 male x 1	
Device-Side Connector	DB25 male x 8	DB9 male x 8	DB25 male x 8	DB9 male x 8	DB25 male x 8	DB9 male x 8
Cable Length	100 cm (39.37 in)					
Related Products	See page A-2 for details					

2-port Connection Cables

Model Name	CBL-M25M9x2-50
Accessories Image	
Pin Assignment	
Description	DB25 male to DB9 male x 2
Cable Length	50 cm (19.69 in)
Related Products	See page A-2 for details

PIN	RS-232
1	DCD
2	RxD
3	TxD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS

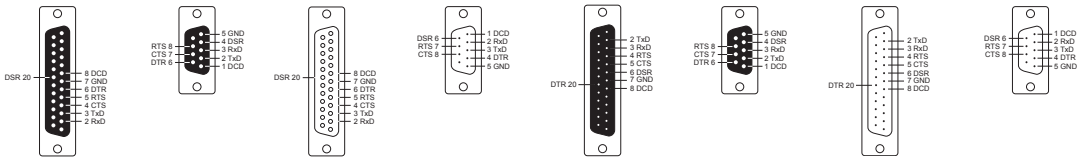
4-port Connection Cables

Model Name	CBL-M44M9x4-50	CBL-M44M25x4-50
Accessories Image		
Pin Assignment		
Description	DB44 male to DB9 male x4	DB44 male to DB25 male x4
Cable Length	50 cm (19.69 in)	
Related Products	See page A-2 for details	

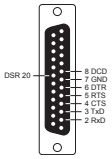
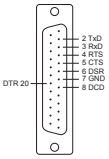
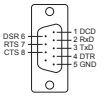
PIN	RS-232	RS-422	RS-485-4w	RS-485-2w
1	DCD	TxD-(A)	TxD-(A)	–
2	RxD	TxD+(B)	TxD+(B)	–
3	TxD	RxD+(B)	RxD+(B)	Data+(B)
4	DTR	RxD-(A)	RxD-(A)	Data-(A)
5	GND	GND	GND	GND
6	DSR	–	–	–
7	RTS	–	–	–
8	CTS	–	–	–
9	–	–	–	–

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	–	–	–	–

8-pin RJ45 to DB9/DB25 Connection Cables

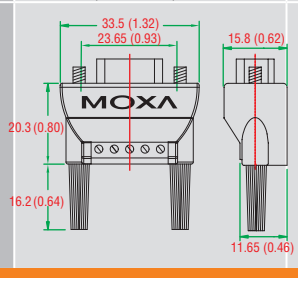
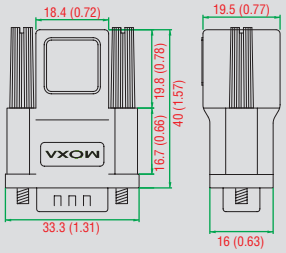
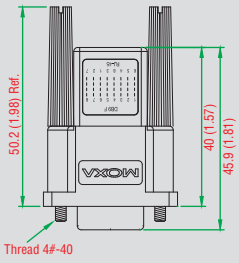
Model Name	CBL-RJ45F25-150	CBL-RJ45F9-150	CBL-RJ45M25-150	CBL-RJ45M9-150	CBL-RJ45SF25-150	CBL-RJ45SF9-150	CBL-RJ45SM25-150	CBL-RJ45SM9-150
Accessories Image								
Pin Assignment								
Cable Type	-	-	-	-	Shielded			
Board-Side Connector	8-pin RJ45 x 1							
Device-Side Connector	DB25 female x 1	DB9 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 (59.06 in)							
Related Products	CP-104JU, OPT8-RJ45, NPort 5210, NPort 5600, NPort 6600, CN2510/2600							

10-pin RJ45 to DB9/DB25 Connection Cables

Model Name	CN20030	CN20040	CN20060	CN20070
Accessories Image				
Pin Assignment				
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 (59.06 in)			
Related Products	C320Turbo Series, A52, A53			

Wiring Kits

Model Name	TB-M9	TB-F9	TB-M25	TB-F25
Accessories Image				
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
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)	

Model Name	Mini DB9F-to-TB	ADP-RJ458P-DB9M	ADP-RJ458P-DB9F	A-ADP-RJ458P-DB9F-ABC01
Accessories Image				
Pin Assignment	DB9-F / TB 1 2 2 1 3 3 4 4 5 5	DB9-M / RJ45 1 6 2 5 3 4 4 8 5 3 6 1 7 2 8 7	DB9-F / RJ45 1 6 2 4 3 5 4 1 5 3 6 8 7 7 8 2	DB9 / RJ45 1 6 2 5 3 4 4 8 5 7 6 1 7 2 8 7
Description	DB9 female to terminal block adapter for RS- 422/485 applications	RJ45-toDB9 male adapter	RJ45-toDB9 female adapter	RJ45-toDB9 female adapter
Operating Temperature	0 to 70°C (32 to 158°F)	-15 to 70°C (5 to 158°F)	-15 to 70°C (5 to 158°F)	0 to 70°C (32 to 158°F)
Dimensions				

Power Accessories

AC Power Supplies

Locking barrel plugs, 12 VDC 0.5 A, 100-240 VAC (Switch-Mode)

Model Name	PWR-12050-WPUSJP-S1	PWR-12050-WPEU-S1	PWR-12050-WPUK-S1	PWR-12050-WPAU-S1	PWR-12050-WPCN-S1
					
Input Rating					
I/P	100 to 240 VAC 50 to 60 Hz	100 to 240 VAC 50 to 60 Hz	100 to 240 VAC 50 to 60 Hz	100 to 240 VAC 50 to 60 Hz	100 to 240 VAC 50 to 60 Hz
Input Plug					
Plug Type	US/JP	EU	UK	AU	CN
Output Rating					
O/P	0.5 A @ 12 VDC	0.5 A @ 12 VDC	0.5 A @ 12 VDC	0.5 A @ 12 VDC	0.5 A @ 12 VDC
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±0.1 mm (0.22±0.004 in)	5.5±0.1 mm (0.22±0.004 in)	5.5±0.1 mm (0.22±0.004 in)	5.5±0.1 mm (0.22±0.004 in)	5.5±0.1 mm (0.22±0.004 in)
Inner Diameter	2.1±0.1 mm (0.08±0.004 in)	2.1±0.1 mm (0.08±0.004 in)	2.1±0.1 mm (0.08±0.004 in)	2.1±0.1 mm (0.08±0.004 in)	2.1±0.1 mm (0.08±0.004 in)
Physical Characteristics					
Dimensions (L x W x H)	64 x 40.5 x 47.5 mm (2.52 x 1.59 x 1.87 in)	64 x 40.5 x 68.7 mm (2.52 x 1.59 x 2.71 in)	64 x 40.5 x 56.2 mm (2.52 x 1.59 x 2.21 in)	64 x 40.5 x 58.5 mm (2.52 x 1.59 x 2.30 in)	64 x 40.5 x 46.5 mm (2.52 x 1.59 x 1.83 in)
Packaged Dimensions (L x W x H)	83 x 50 x 70 mm (3.27 x 1.97 x 2.76 in)	83 x 50 x 70 mm (3.27 x 1.97 x 2.76 in)	83 x 50 x 70 mm (3.27 x 1.97 x 2.76 in)	83 x 50 x 70 mm (3.27 x 1.97 x 2.76 in)	83 x 50 x 70 mm (3.27 x 1.97 x 2.76 in)
Weight	70 g (0.15 lb)	70 g (0.15 lb)	70 g (0.15 lb)	70 g (0.15 lb)	70 g (0.15 lb)
Cord Length	1530±100 mm (60.24±3.94 in)	1530±100 mm (60.24±3.94 in)	1530±100 mm (60.24±3.94 in)	1530±100 mm (60.24±3.94 in)	1530±100 mm (60.24±3.94 in)
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)
Storage Temperature	-10 to 70°C (14 to 158°F)	-10 to 70°C (14 to 158°F)	-10 to 70°C (14 to 158°F)	-10 to 70°C (14 to 158°F)	-10 to 70°C (14 to 158°F)
Regulatory Approvals					
Safety	CE/FCC/UL/GS/PSE/RCM/CCC	CE/FCC/UL/GS/PSE/RCM/CCC	CE/FCC/UL/GS/PSE/RCM/CCC	CE/FCC/UL/GS/PSE/RCM/CCC	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/Z3150, NPort W2150A/W2250A, NPort P5110A				

DC Power Cord

Locking barrel plug to bare wires

CBL-PJ21NOPEN-BK-30

Cable Length: 300±20 mm (11.81±0.79 in)

AC Power Supplies

Locking barrel plugs, 12 VDC, 3 A 100-240 VAC (Switch-Mode)

Model Name	PWR-12300-WPUSJP-S1	PWR-12300-WPEU-S1	PWR-12300-WPUK-S1	PWR-12300-WPAU-S1	PWR-12300-WPCN-S1
					
Input Rating					
I/P	100-240 VAC 50-60 Hz	100-240 VAC 50-60 Hz	100-240 VAC 50-60 Hz	100-240 VAC 50-60 Hz	100-240 VAC 50-60 Hz
Input Plug					
Plug Type	US/JP	EU	UK	AU	CN
Output Rating					
O/P	3 A @ 12 VDC	3 A @ 12 VDC	3 A @ 12 VDC	3 A @ 12 VDC	3 A @ 12 VDC
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±0.1 mm (0.22±0.004 in)	5.5±0.1 mm (0.22±0.004 in)	5.5±0.1 mm (0.22±0.004 in)	5.5±0.1 mm (0.22±0.004 in)	5.5±0.1 mm (0.22±0.004 in)
Inner Diameter	2.1±0.1 mm (0.08±0.004 in)	2.1±0.1 mm (0.08±0.004 in)	2.1±0.1 mm (0.08±0.004 in)	2.1±0.1 mm (0.08±0.004 in)	2.1±0.1 mm (0.08±0.004 in)
Physical Characteristics					
Dimensions (L x W x H)	74 x 43.5 x 52.3 mm (2.91 x 1.71 x 2.06 in)	74 x 43.5 x 73.5 mm (2.91 x 1.71 x 2.89 in)	74 x 43.5 x 61 mm (2.91 x 1.71 x 2.40 in)	74 x 43.5 x 63.3 mm (2.91 x 1.71 x 2.49 in)	74 x 43.5 x 51.3 mm (2.91 x 1.71 x 2.02 in)
Packaged Dimensions (L x W x H)	100 x 60 x 90 mm (3.94 x 2.36 x 3.54 in)	100 x 60 x 90 mm (3.94 x 2.36 x 3.54 in)	100 x 60 x 90 mm (3.94 x 2.36 x 3.54 in)	100 x 60 x 90 mm (3.94 x 2.36 x 3.54 in)	100 x 60 x 90 mm (3.94 x 2.36 x 3.54 in)
Weight	163 g (0.36 lb)	163 g (0.36 lb)	163 g (0.36 lb)	163 g (0.36 lb)	163 g (0.36 lb)
Cord Length	1530±200 mm (60.24±7.87 in)	1530±200 mm (60.24±7.87 in)	1530±200 mm (60.24±7.87 in)	1530±200 mm (60.24±7.87 in)	1530±200 mm (60.24±7.87 in)
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)
Storage Temperature	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)
Regulatory Approvals					
Safety	FCC/CE/UL/GS/CCC/RCM/PSE	FCC/CE/UL/GS/CCC/RCM/PSE	FCC/CE/UL/GS/CCC/RCM/PSE	FCC/CE/UL/GS/CCC/RCM/PSE	FCC/CE/UL/GS/CCC/RCM/PSE
Related Products					
Related Products	UPort 204, UPort 207, UPort 404, UPort 407				

DC Power Cord

Locking barrel plug to bare wires

CBL-PJ21NOPEN-BK-30

Cable Length: 300±20 mm (11.81±0.79 in)

AC Power Supplies

Non-locking barrel plugs, 12 VDC 0.5 A, 100-240 VAC (Switch-Mode)

Model Name	PWR-12050-WPUSJP-S2	PWR-12050-WPEU-S2	PWR-12050-WPUK-S2	PWR-12050-WPAU-S2	PWR-12050-WPCN-S2
					
Input Rating					
I/P	100 to 240 VAC 50 to 60 Hz	100 to 240 VAC 50 to 60 Hz	100 to 240 VAC 50 to 60 Hz	100 to 240 VAC 50 to 60 Hz	100 to 240 VAC 50 to 60 Hz
Input Plug					
Plug Type	US/JP	EU	UK	AU	CN
Output Rating					
O/P	0.5 A @ 12 VDC	0.5 A @ 12 VDC	0.5 A @ 12 VDC	0.5 A @ 12 VDC	0.5 A @ 12 VDC
Output Plug					
Connector Type	L-Type 5.5/2.1/9.0	L-Type 5.5/2.1/9.0	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±0.1 mm (0.22±0.004 in)	5.5±0.1 mm (0.22±0.004 in)	5.5±0.1 mm (0.22±0.004 in)	5.5±0.1 mm (0.22±0.004 in)	5.5±0.1 mm (0.22±0.004 in)
Inner Diameter	2.1±0.1 mm (0.08±0.004 in)	2.1±0.1 mm (0.08±0.004 in)	2.1±0.1 mm (0.08±0.004 in)	2.1±0.1 mm (0.08±0.004 in)	2.1±0.1 mm (0.08±0.004 in)
Physical Chracteristics					
Dimensions (L x W x H)	64 x 40.5 x 30 mm (2.52 x 1.59 x 1.18 in)	64 x 40.5 x 68.7 mm (2.52 x 1.59 x 2.71 in)	64 x 40.5 x 56.2 mm (2.52 x 1.59 x 2.21 in)	64 x 40.5 x 58.5 mm (2.52 x 1.59 x 2.30 in)	64 x 40.5 x 46.5 mm (2.52 x 1.59 x 1.83 in)
Packaged Dimensions (L x W x H)	83 x 50 x 70 mm (3.27 x 1.97 x 2.76 in)	83 x 50 x 70 mm (3.27 x 1.97 x 2.76 in)	83 x 50 x 70 mm (3.27 x 1.97 x 2.76 in)	83 x 50 x 70 mm (3.27 x 1.97 x 2.76 in)	83 x 50 x 70 mm (3.27 x 1.97 x 2.76 in)
Weight	70 g (0.15 lb)	70 g (0.15 lb)	70 g (0.15 lb)	70 g (0.15 lb)	70 g (0.15 lb)
Cord Length	1830±100 mm (72.05±3.94 in)	1830±100 mm (72.05±3.94 in)	1830±100 mm (72.05±3.94 in)	1830±100 mm (72.05±3.94 in)	1830±100 mm (72.05±3.94 in)
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)
Storage Temperature	-10 to 70°C (14 to 158°F)	-10 to 70°C (14 to 158°F)	-10 to 70°C (14 to 158°F)	-10 to 70°C (14 to 158°F)	-10 to 70°C (14 to 158°F)
Regulatory Approvals					
Safety	CE/FCC/UL/RMC/PSE/CCC	CE/FCC/UL/RMC/PSE/CCC	CE/FCC/UL/RMC/PSE/CCC	CE/FCC/UL/RMC/PSE/CCC	CE/FCC/UL/RMC/PSE/CCC
Regulatory Products					
Related Products	NPort 5110, NPort 5130, NPort 5150, NPort 5210, NPort 5230, NPort 5232, NPort 5232I, MGate MB3180, MGate MB3280, DE-211, DE-311, A52, A53, MiiNePort E1-ST				

DC Power Cord

Non-locking barrel plug to bare wires

CBL-PJTB-10

Cable Length: 100±20 mm (3.94±0.79 in)

AC Power Supplies

Non-locking barrel plugs, 12 VDC 1.25/1.5 A, 100-240 VAC

Model Name	PWR-12125-USJP-S1	PWR-12150-EU-S2	PWR-12150-UK-S2	PWR-12150-AU-S2	PWR-12150-CN-S1
					
Input Rating					
I/P	100 to 240 VAC 50 to 60 Hz	100 to 240 VAC 50 to 60 Hz	100 to 240 VAC 50 to 60 Hz	100 to 240 VAC 50 to 60 Hz	100 to 240 VAC 50 to 60 Hz
Input Plug					
Plug Type	US/JP	EU	UK	AU	CN
Output Rating					
O/P	1.25 A @ 12 VDC	1.5 A @ 12 VDC	1.5 A @ 12 VDC	1.5 A @ 12 VDC	1.5 A @ 12 VDC
Output Plug					
Connector Type	L-Type 5.5/2.1/9.5	L-Type 5.5/2.1/9.0	S-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±0.1 mm (0.22±0.004 in)	5.5±0.1 mm (0.22±0.004 in)	5.5±0.1 mm (0.22±0.004 in)	5.5±0.1 mm (0.22±0.004 in)	5.5±0.1 mm (0.22±0.004 in)
Inner Diameter	2.1±0.1 mm (0.08±0.004 in)	2.1±0.1 mm (0.08±0.004 in)	2.1±0.1 mm (0.08±0.004 in)	2.1±0.1 mm (0.08±0.004 in)	2.1±0.1 mm (0.08±0.004 in)
Physical Characteristics					
Dimensions (L x W x H)	74 x 43.5 x 52.5 mm (2.91 x 1.71 x 2.07 in)	70 x 45 x 66.5 mm (2.76 x 1.77 x 2.62 in)	70 x 48 x 60 mm (2.76 x 1.89 x 2.36 in)	70 x 55 x 56 mm (2.76 x 2.17 x 2.21 in)	70 x 45 x 54 mm (2.76 x 1.77 x 2.13 in)
Packaged Dimensions (L x W x H)	100 x 60 x 90 mm (3.94 x 2.36 x 3.54 in)	100 x 60 x 90 mm (3.94 x 2.36 x 3.54 in)	100 x 60 x 90 mm (3.94 x 2.36 x 3.54 in)	100 x 60 x 90 mm (3.94 x 2.36 x 3.54 in)	100 x 60 x 90 mm (3.94 x 2.36 x 3.54 in)
Weight	108 g (0.24 lb)	200 g (0.44 lb)	200 g (0.44 lb)	200 g (0.44 lb)	200 g (0.44 lb)
Cord Length	1530±100 mm (60.24±3.84 in)	1800±200 mm (70.87±7.87 in)	1800±200 mm (70.87±7.87 in)	1800±200 mm (70.87±7.87 in)	1800±200 mm (70.87±7.87 in)
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)
Storage Temperature	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)
Regulatory Approvals					
Safety	CE/FCC/UL/RMC/PSE/GS	CE/GS	CE	RMC	CCC
Related Products					
Related Products	NPort 5410, NPort 5430, NPort 5430I, NPort 5450, NPort 5450I, MGate MB3480				

DC Power Cord

Non-locking barrel plug to bare wires

CBL-PJTB-10

Cable Length: 100±20 mm (3.94±0.79 in)

AC Power Supplies

Desktop type power adapters

Model Name	PWR-12200-DT-S1	PWR-12125-DT-S2
		
Input Rating		
I/P	100 to 240 VAC 50 to 60 Hz	100 to 240 VAC 50 to 60 Hz
Input Plug		
Plug Type	Desktop	Desktop
Output Rating		
O/P	2 A @ 12 VDC	1.25 A @ 12 VDC
Output Plug		
Connector Type	S-Type 5.5/2.1/7.5	S-Type 5.5/2.1/7.5
Outer Diameter	5.5±0.1 mm (0.22±0.004 in)	5.5±0.1 mm (0.22±0.004 in)
Inner Diameter	2.1±0.1 mm (0.08±0.004 in)	2.1±0.1 mm (0.08±0.004 in)
Physical Characteristics		
Dimensions (L x W x H)	110.8 x 51.8 x 32 mm (4.36 x 2.04 x 1.26 in)	75 x 47.5 x 27.3 mm (2.95 x 1.87 x 1.07 in)
Packaged Dimensions (L x W x H)	135 x 75 x 35 mm (5.31 x 2.95 x 1.38 in)	100 x 70 x 51.5 mm (3.94 x 2.76 x 2.03 in)
Weight	200 g (0.44 lb)	200 g (0.44 lb)
Cord Length	1800±200 mm (70.87±7.87 in)	1530±100 mm (60.24±3.84 in)
Environmental Limits		
Operating Temperature	0 to 40°C (32 to 104°F)	0 to 40°C (32 to 104°F)
Storage Temperature	-20 to 70°C (-4 to 158°F)	-10 to 70°C (14 to 158°F)
Regulatory Approvals		
Safety	Efficiency Level 5: CE/FCC/UL/PSE/RCM/CCC Efficiency Level 6: CE/FCC/UL/PSE	CE/FCC/UL/PSE/GS
Related Products		
Related Products	NPort 5610-8-DT, NPort 5610-8-DT-J, NPort 5650-8-DT, NPort 5650-8-DT-J, NPort 5650I-8-DT, NPort 5610-8-DTL, NPort 5650-8-DTL, NPort 5650I-DTL	NPort 6150, NPort 6250-M-SC, NPort 6250, NPort 6250-S-SC, NPort 6450, UPort 1250I, UPort 1450, UPort 1450I, UPort 1610-8, UPort 1650-8

Note: PWR-12200-DT-S1and PWR-12125-DT-S2 not included with power cord

Model Name	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 (0.25±0.01 in)	6.7±0.2 mm (0.26±0.01 in)	6.7±0.2 mm (0.26±0.01 in)	7.0±0.2 mm (0.28±0.01 in)	6.7±0.2 mm (0.26±0.01 in)	6.7±0.2 mm (0.26±0.01 in)
Max. Current	10 A	10 A	10 A	7 A	10 A	10 A
Length	1830±30 mm (72.05±1.18 in)	1830±30 mm (72.05±1.18 in)	1830±30 mm (72.05±1.18 in)	1830±30 mm (72.05±1.18 in)	1830±30 mm (72.05±1.18 in)	1830±30 mm (72.05±1.18 in)
Related Products	CN2500 Series, NPort 6600 Series, NPort 5600 Series, PWR-12200-DT-S1					

Model Name	PWC-C7US-2B-183	PWC-C7EU-2B-183	PWC-C7UK-2B-183	PWC-C7JP-2B-183	PWC-C7AU-2B-183	PWC-C7CN-2B-183
						
Region	US	EU	UK	JP	AU	CN
Length	1830±200 mm (72.05±7.87 in)	1830±200 mm (72.05±7.87 in)	1830±200 mm (72.05±7.87 in)	1830±200 mm (72.05±7.87 in)	1830±200 mm (72.05±7.87 in)	1830±200 mm (72.05±7.87 in)
Related Products	PWR-12125-DT-S2	PWR-12125-DT-S2	PWR-12125-DT-S2	PWR-12125-DT-S2	PWR-12125-DT-S2	PWR-12125-DT-S2

Locking barrel plug to bare wires

CBL-PJ21NOPEN-BK-30

Cable Length: 300±20 mm (11.81±0.79 in)

Wide Temperature AC Power Supplies

Locking barrel plug, 12VDC 1.5A, 100-240VAC (Switch-Mode)

Model Name	PWR-12150-USJP-SA-T	PWR-12150-EU-SA-T	PWR-12150-UK-SA-T	PWR-12150-AU-SA-T	PWR-12150-CN-SA-T
Accessories Image					
Input Rating					
I/P	100 to 240 VAC, 50 to 60 Hz	100 to 240 VAC, 50 to 60 Hz	100 to 240 VAC, 50 to 60 Hz	100 to 240 VAC, 50 to 60 Hz	100 to 240 VAC, 50 to 60 Hz
Input Plug					
Plug Type	US/JP	EU	UK	AU	CN
Output Rating					
O/P	1.5A @ 12VDC	1.5A @ 12VDC	1.5A @ 12VDC	1.5A @ 12VDC	1.5A @ 12VDC
Protection Requirements					
Protection	Over current protection/ Over voltage protecction				
Output Plug					
Connector Type	L-Type 5.5/2.1/7.5	L-Type 5.5/2.1/7.5	L-Type 5.5/2.1/7.5	L-Type 5.5/2.1/7.5	L-Type 5.5/2.1/7.5
Outer Diameter	5.5±0.1 mm (0.22±0.004 in)	5.5±0.1 mm (0.22±0.004 in)	5.5±0.1 mm (0.22±0.004 in)	5.5±0.1 mm (0.22±0.004 in)	5.5±0.1 mm (0.22±0.004 in)
Inner Diameter	2.1±0.1 mm (0.08±0.004 in)	2.1±0.1 mm (0.08±0.004 in)	2.1±0.1 mm (0.08±0.004 in)	2.1±0.1 mm (0.08±0.004 in)	2.1±0.1 mm (0.08±0.004 in)
Physical Characteristics					
Dimensions (L x W x H)	32 x 70.3 x 88 mm (1.26 x 2.77 x 3.46 in)	32 x 85.3 x 88 mm (1.26 x 3.36 x 3.46 in)	50 x 91 x 82.5 mm (1.97 x 3.58 x 2.25 in)	41 x 73.9 x 89.5 mm (1.61 x 2.91 x 3.52 in)	32 x 60 x 88 mm (1.26 x 2.36 x 3.46 in)
Weight	200 g (0.44 lb)	200 g (0.44 lb)	200 g (0.44 lb)	200 g (0.44 lb)	200 g (0.44 lb)
Cord Length	1500±200 mm (59.06±7.87 in)	1500±200 mm (59.06±7.87 in)	1500±200 mm (59.06±7.87 in)	1500±200 mm (59.06±7.87 in)	1500±200 mm (59.06±7.87 in)
Environmental Limits					
Operating Temperature	-40 to 75°C (-40 to 167°F)	-40 to 75°C (-40 to 167°F)	-40 to 75°C (-40 to 167°F)	-40 to 75°C (-40 to 167°F)	-40 to 75°C (-40 to 167°F)
Regulatory Approvals					
Safty	FCC/UL/PSE	TUV/CE/GS	CE	RCM	CCC
Related Products					
Related Products	NPort 5110-T, NPort 5450-T,NPort 5450I-T, NPort 5110A-T, NPort 5610-8-DTL-T, NPort 5650-8-DTL-T, NPort 5650I-8-DTL-T, NPort 5130A-T, NPort 5150A-T, NPort 5210A-T, NPort 5230A-T, NPort 5250A-T, NPort 6100-T, NPort 6200-T, NPort 6400-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			
Model Name	DR-4524	DR-75-24	DR-120-24	MDR-40-24	MDR-60-24	DR-75-48	DR-120-48	DRP-240-48	SDR-480P-48
Accessories Image									
Physical Characteristics and Temperature Limits									
Dimensions	78 x 67 x 93 mm (3.07 x 2.64 x 3.66 in)	55.5 x 100 x 125.2 mm (2.19 x 3.94 x 4.93 in)	65.5 x 100 x 125.2 mm (2.58 x 3.94 x 4.93 in)	40 x 90 x 100 mm (1.57 x 3.54 x 3.94 in)	40 x 90 x 100 mm (1.57 x 3.54 x 3.94 in)	55.5 x 100 x 125.2 mm (2.19 x 3.94 x 4.93 in)	65.5 x 100 x 125.2 mm (2.58 x 3.94 x 4.93 in)	125.5 x 125.5 x 100 mm (4.94 x 4.94 x 3.94 in)	85.5 x 125.2 x 128.5 mm (3.37 x 4.93 x 5.06 in)
Weight	400 g (0.88 lb)	550 g (1.21 lb)	650 g (1.43 lb)	260 g (0.57 lb)	280 g (0.62 lb)	550 g (1.21 lb)	650 g (1.43 lb)	1.2 kg (2.65 lb)	1.6 kg (3.53 lb)
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)	-25 to 70°C (-13 to 158°F)
Relative Humidity	20 to 90% RH	20 to 90% RH		20 to 90% RH		20 to 90% RH			10 to 95% RH
Power Requirements									
Wattage	45 W	75 W	120 W	40 W	60 W	75 W	120 W	240 W	480 W (current sharing up to 3840 W)
Input Voltage	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	90 to 264 VAC or 127 to 370 VDC
Output Power	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)	480 W (48 VDC @ 0-10 A)
Over-voltage Protection	27.6 to 32.4 V	29 to 33 V		31.2 to 36 V		58 to 65 V		54 to 60 V	56-65 V
Overload Protection	105-150%								110-150%
Type	Constant Current Limiting								
Reset	Auto Recovery								
Inrush Current	30 A and 115 V, or 60 A and 230 V								40 A/115 VAC or 80 A/230 VAC
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 Adapters

SC male to ST female duplex adapters

These SC male to ST female duplex adapters are provided as an optional accessory to give users of Moxa industrial Ethernet switches more fiber optic connection options. Simply plug the adapters 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 adapter 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 adapter 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

Model Name	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-3121-M12-RTG AWK-3131-M12-RCC AWK-5232-M12-RCC AWK-4131-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

Model Name	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 (39.37 in)	–	–	–	–	10 m (393.70 in)	1 m (39.37 in)	–
Related Products	AWK-4121 AWK-4131-M12 AWK-6222 AWK-6232-M12	TN Series ioPAC 8000 Series	TN Series TAP-6226-TC	Power connector for the AWK-4121 AWK-4131-M12 AWK-6222 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-M12 AWK-6232-M12	DI/DO connector for the AWK-4131-M12 AWK-6232-M12

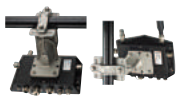
	Field-Installation Connectors	
Model Name	A-PLG-WPM30IP67-01	A-PLG-WPRJ
Accessories Image		
Description	Field-Installation for M30 plug	Field-installation RJ-type plug
Related Products	SFP LAN connector for the AWK-4131-M12	LAN connector for the AWK-4121 AWK-6222

Mounting Kits

	Wall-Mounting Kits							
Model Name	WK-30	WK-32	WK-35-01	WK-35-02	WK-36-02	WK-44-01	WK-45-01	WK-46
Accessories Image								
Dimensions	40 x 30 x 1 mm (1.57 x 1.18 x 0.04 in)	30.3 x 140 x 12.3 mm (1.19 x 5.51 x 0.48 in)	35 x 44 x 2.5 mm (1.38 x 1.73 x 0.10 in)	35 x 24 x 1.2 mm (1.38 x 0.94 x 0.05 in)	36 x 67 x 2 mm (1.42 x 2.64 x 0.08 in)	44 x 57.5 x 1.6 mm (1.73 x 2.26 x 0.06 in)	45 x 57 x 2.5 mm (1.77 x 2.24 x 0.10 in)	51.6 x 66.8 x 1 mm (2.03 x 2.63 x 0.04 in)
Related Products	EDS-205A Series EDS-G205 Series EDS-G205A-4PoE Series ICF-1170I Series	EDS-828 Series EDS-728 Series	NPort 6450, UPort 1410, UPort 1450, UPort 1450I	NPort 6150/6250 Series UPort 404 UPort 407	NPort IA5150A Series NPort IA5250A Series MGate 4101-MB-PBS MGate 4101I-MB-PBS	NPort 6600-8 Series NPort 6600-16 Series NPort 6600-32 Series UPort 1600-16 Series	NPort 5600-8 Series NPort 5600-16 Series NPort 5650-8-HV-T NPort 5650-16-HV-T CN2600-8 Series CN2600-16 Series CN2600-8-2AC Series CN2600-16-2AC 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 PT-500 Series VPort 354 Series VPort 364A Series VPort 461A Series NPort S8455I-MM-SC NPort S8455I-MM-SC-T NPort S8455I-SS-SC NPort S8455I-SS-SC-T NPort S8458-4S-SC-T

	Wall-Mounting Kits				
Model Name	WK-51-01	WK-55	WK-75	WK-90	WK-195
Accessories Image					
Dimensions	55 x 67 x 1 mm (2.17 x 2.64 x 0.04 in)	55 x 34.5 x 2.5 mm (2.17 x 1.36 x 0.10 in)	75 x 90 x 2.5 mm (2.95 x 3.54 x 0.10 in)	99 x 62 x 2.5 mm (3.90 x 2.44 x 0.10 in)	195 x 17.5 x 52.5 mm (7.68 x 0.69 x 2.07 in)
Related Products	AWK-1000 Series AWK-3000 Series AWK-5222 Series AWK-1000A Series AWK-3000A Series OnCell 5104-HSPA OnCell G3470A-LTE WDR-3124A WAC-1001 EDR-G902 Series EDR-G903 Series EDS-P506A-4PoE Series EDS-316 Series IMC-101/IMC-P101 Series PTC-101 Series NPort IA5450A Series ioPAC 5500 Series	AWK-4121 AWK-4131-M12 AWK-6222 AWK-6232-M12	EDS-600 Series ioPAC 8000 Series	ioLogik E1500 Series	PT-7710 Series

Mounting Kits

	DIN-Rail Mounting Kits					Pole-Mounting Kit
Model Name	DK-DC50131	DK-TN-5308	DK-M12-305	DK-25-01	DK-35A	PK-DC2DOF
Accessories Image						
Dimensions	50 x 131 x 1 mm (1.97 x 5.16 x 0.05 in)	66 x 174 x 12.8 mm (2.60 x 6.85 x 0.50 in)	60 x 125 x 12.8 mm (2.36 x 4.92 x 0.50 in)	25 x 48.3 mm (0.98 x 1.90 in)	42.5 x 10 x 19.34 mm (1.67 x 0.39 x 0.76 in)	–
Related Products	TN-5500 Series AWK-4121 AWK-4131-M12 AWK-6222 AWK-6232-M12 ioPAC 5500 Series ioPAC 8000 Series ioLogik E1500 Series MxNVR-MO4 Series	TN-5308 Series	TN-5305 Series	UPort 404 UPort 407	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 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

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Moxa Green Core

Delivering a Unified Brand Presence

Moxa's brand new "Green Core" product identity incorporates a special shade of green to deliver a unified brand presence. The Green Core product identity emphasizes the three design concepts of simplicity, robustness, and user-centric experience, and was carefully planned to complement our brand promise of "Reliable Networks, Sincere Service."

New Moxa products already adhere to the Green Core product identity, and existing products will be converted to the Green Core design starting in May 2014. All Moxa products will be Green Core by the end of 2016. For more information about Moxa Green Core, please visit **www.moxa.com/greencore** to understand our brand promise, essence, and story.

Your Trusted Partner in Automation

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

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