COMTROL®

SECURITY
INDUSTRIAL
ENERGY
HOSPITALITY
GOVERNMENT
BROADCAST
MEDICAL
TRANSPORTATION

PRODUCT CATALOG

INDUSTRIAL DEVICE CONNECTIVITY

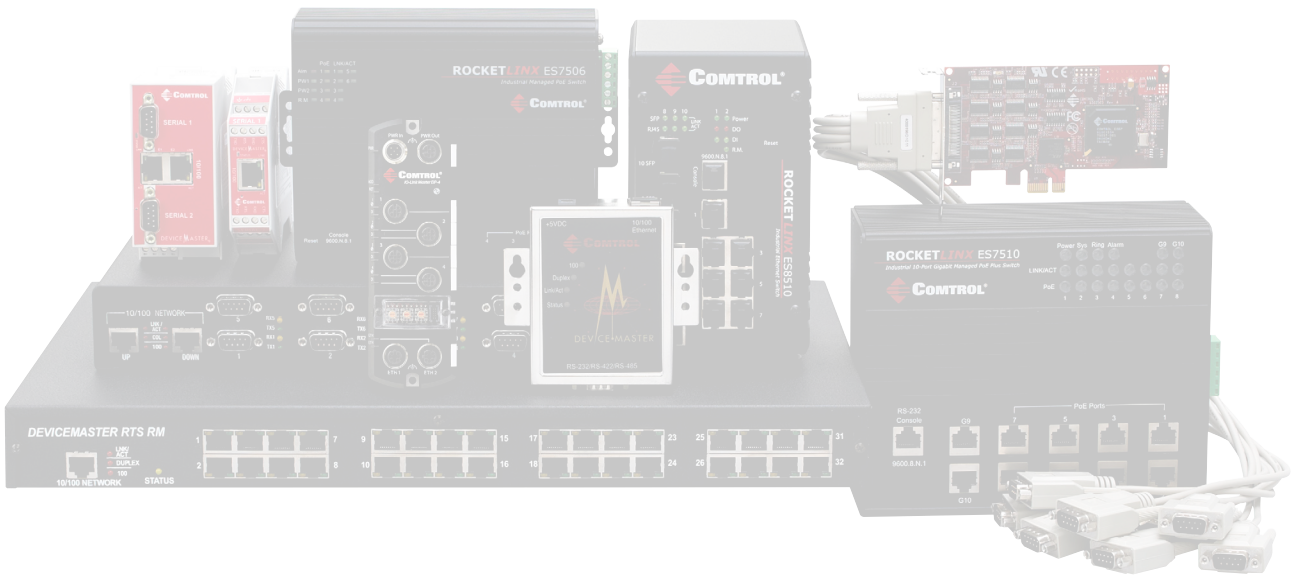

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TABLE OF CONTENTS

APPLICATIONS

Broadcast 3
Energy 4
Government 5
Hospitality 6
Industrial 7-8
Security and Surveillance 9-10
Transportation 11-14
Medical 15

PRODUCTS

IO-Link Masters 17-22
RocketLinx Industrial Switches 23-24
RocketLinx Industrial Power over Ethernet Switches 25-26
RocketLinx ACS 27-28
DeviceMaster UP Industrial Ethernet Gateways 29-30
DeviceMaster UP Ethernet/IP 31-32
DeviceMaster UP PROFINET 33-34
DeviceMaster UP Modbus 35-38
DeviceMaster RTS Ethernet Device Servers 39-40
DeviceMaster PRO, Serial Hub, and Freewire 41-42
RocketPort INFINITY Serial Cards 43-44
RocketPort EXPRESS Serial Cards 45-46
RocketPort uPCI Serial Cards 47-48
RocketPort SMPTE Serial Cards 49-50
RocketPort and RocketModem Serial Hub and Multimodem Cards 51-52
Product Accessories 53-54

PRODUCT COMPARISON CHARTS

RocketLinx Industrial Switch Comparison 55-58
RocketLinx Industrial Power over Ethernet Switch Comparison 59-60
DeviceMaster UP Comparison 61-62
DeviceMaster RTS Comparison 63-64
RocketPort INFINITY Comparison 65-66
RocketPort EXPRESS Comparison 67-68
SFPs (Small Form-Factor Pluggables) Comparison 69-70

RESOURCES

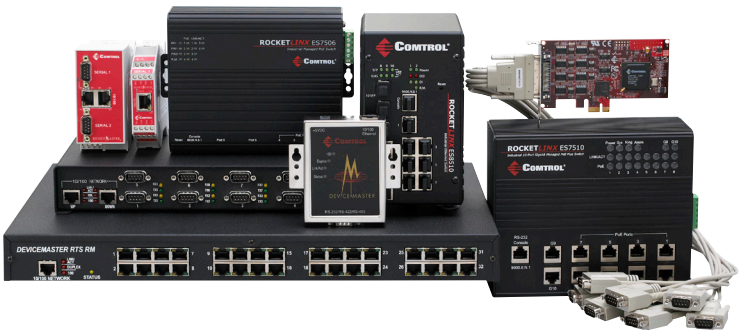
NEMA TS2 Compliance 71
Conformal Coating 72

COMTROL®

> As an expert device connectivity manufacturer and provider of networking products, we provide more than just product capabilities – we are committed to our customers' objectives.

WHO WE ARE

For more than 35 years, Comtrol Corporation has been a manufacturer and provider of quality networking and industrial data communication products, specializing in industrial Ethernet and device connectivity. With representation across North America, EMEA, Asia and Latin America, Comtrol sells RocketLinx™ industrial grade Ethernet and Power over Ethernet switches, DeviceMaster® Ethernet device servers and gateways and RocketPort® multiport serial cards through distributors, resellers and integrators worldwide. Providing exceptional product and technical support, Comtrol establishes solutions for a wide range of security, energy, industrial automation and traffic and transportation applications.



OUR VISION

Comtrol believes that each device connectivity product is the result of exceptional engineering, close collaboration with customers, outstanding vertical market sales and powerful domestic and international distribution channels.

Comtrol is committed to building relationships with worldwide technical and strategic partners. Our products are designed to work with the widest range of hardware and software environments to provide seamless network integration.

When you need network-connected devices and systems – connect with Comtrol.

GREEN PRODUCTS

Comtrol is committed to producing environmentally sound products. Not only does this commitment include making choices like selecting recycled material packing boxes, but Comtrol has undertaken an aggressive program to provide RoHS2 compliant standards for the majority of the products we offer. We appreciate your business and are dedicated to working with you to provide future-conscious products.

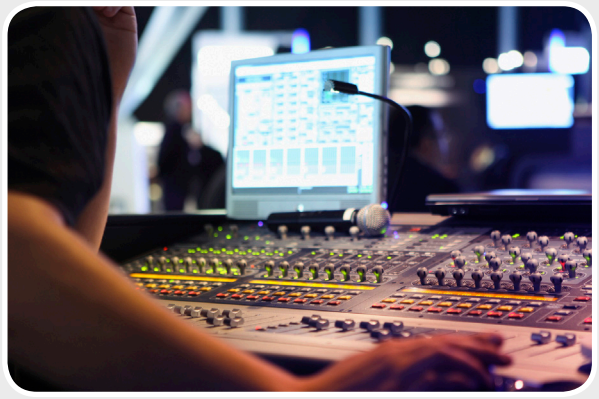
RoHS 2
COMPLIANT

REACH STATEMENT

Comtrol Corporation is aware of the requirements of REACH Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006. It is our intention to comply with the requirements of this regulation as it applies to producers of Articles. We will continue to work with our suppliers to identify any SVHC components contained in the materials procured for use in manufacturing Comtrol products.

FOLLOW US:

BROADCAST



Whether a television network displays remote live camera feeds during a newscast or a radio station needs to incorporate satellite signal communication into their broadcast, reliable connectivity is essential for the creation, control and distribution of content. The entire broadcast creation process from data-capture and compilation to editing and circulation requires reliable connectivity devices during multiple stages of production. With 30 years of experience supporting broadcast connectivity, we stand behind our products and commitment to the industry.

Comtrol's **RocketPort SMPTE** (Society of Motion Picture and Television Engineers) multiport serial card line is the most comprehensive line available for the broadcast market, providing numerous solutions to serial device connectivity challenges.

See more information on SMPTE products on pages 47 - 48.

Our **DeviceMaster** serial device servers are actively involved in facilitating communication between television station locations, as well as between multiple peripheral devices within television stations.

Satellite Control

- Collection unit maneuvering
- Satellite signal collection
- Transfer from traveling unit to control room
- Live feed and taped video collection from mobile units

Broadcast Creation

- Collect feeds from The Associated Press (news, video, audio, photo, text)
- Data-capture, share, storage, recover
- Full scale production — input, edit, timeline, broadcast
- VTR (video tape recorder) control
- Remote camera control
- Multi-studio control from master control station

Broadcast Solutions

- Media asset management
- Automation
- Creation
- Content manipulation
- Digital signage
- Hardware control and monitoring

Comtrol Customer Solutions

CBS

ABC

HBO

CNN

ENERGY

Discovering innovative ways to fuel the critical processes of our businesses, infrastructures, and our lives is essential because there is a finite amount of natural resources. Harvesting energy more efficiently helps preserve natural resources while providing reliable energy. Comtrol is committed to providing high-performance and quality communication, data transmission and connectivity devices for these processes.

Our **RocketPort** multiport serial cards provide data collection and control capabilities within systems such as electricity generation, transmission and distribution.

Our **DeviceMaster** device servers are currently controlling processes in renewable energy systems, including wind power and underwater hydropower. Comtrol's DeviceMaster Modbus solutions can also provide enhanced communication and control.

Our **RocketLinx** managed and unmanaged network switches have endless capabilities to streamline data into central networks for simplified management and control in large or complex energy systems.

Wind Farm SCADA

- Controller serial to IP network
- Redundant fiber ring
- Meter communication with Modbus

Transmission and Distribution / Substation SCADA

- Modbus RTU and IED serial connectivity
- Central station modem connectivity including DeviceMaster RTS Toggle

Oil and Gas Pipeline Monitoring and Process Control

- Flow, pressure, and temperature measurement
- Valve control
- Security sensors

Oil and Gas Well Monitoring and Process Control

- Drilling fluid management
- Drill motion control

Wireless Modem Control including DeviceMaster RTS Toggle

- Communication systems and pagers
- SCADA systems

Enhanced Modbus Solutions

See DeviceMaster UP Modbus Solutions pages 35-38.

GOVERNMENT

Military-based operations and government-mandated projects have become increasingly complex in design and technology, requiring comprehensive solutions for system integration and management. Comtrol has provided data acquisition and communication technology solutions for thousands of successful projects in over 100 government agencies. Our products offer high performance, cost effective solutions for a variety of applications ranging from building security to airplane data capture to electronic encryption/decoding.

Comtrol's **RocketPort** serial cards provide system expansion and connectivity in applications including military biological detection systems and peripheral device connectivity onboard unmanned aerial vehicles (UAVs) and Air Force One.

Our **DeviceMaster** device servers have facilitated multiple-location data transmission and complex sensor system coordination for military simulator training systems, and have designed controls of unmanned vehicles (UMV) for autonomous military operations.

Our **RocketLinx** industrial and Power over Ethernet managed switches have capabilities to provide power and essential networking connectivity to vital components of complex security networks.

GSA Schedule Contract GS-35F-0401V

Military and Government Applications

- Simulator training
- Satellite communication
- Unmanned vehicles
- Joint biological point detection system
- IP camera monitoring

GSA Schedule Information

Contract Number –GS-35F-0401V
TIN Number – 41-1598480
DUNS – 18-549-3327
CAGE Code – OU834
NAICS Code:
SIN 132-8 – 334119
SIN 132-12 – 811212
Period of Coverage – 05/01/2009 – 04/30/2014

Disadvantaged Business Enterprise

Comtrol Corporation is registered as a Disadvantaged Business Enterprise (DBE) under 49 Code of Federal Regulations Part 26 to provide the following services:

NAICS Codes:

#541512 Computer Systems Design Services
#541513 Computer Facilities Management Services
#423690 Other Electronic Parts & Equipment Merchant Wholesalers
#423430 Computer & Computer Peripheral Equipment And Software Merchant Wholesalers

HOSPITALITY

Comtrol's **DeviceMaster, RocketPort, RocketLinx,** and **Lodging Link®** products provide integration system solutions to the hospitality industry, creating integrated connectivity for multiple communication and control applications. For example, a hotel's Property Management System (PMS) and its peripheral service systems must maintain consistent contact and data transmission to accurately manage customer accounts. In addition, applications such as door access control, IP surveillance cameras, IP-based phone systems, and Wi-Fi and ZigBee access points must have reliable connectivity to the network.

Point-of-Sale (POS) systems also require reliable device connectivity to multiple peripheral systems. Peripherals may include printers, keyboards, mice, scanners and credit card readers.

Whether device connections are serial, USB, wireless, Ethernet, or a combination of those, Comtrol's products provide excellent connectivity solutions. From the DeviceMaster serial servers to the RocketPort cards and hubs, and from the RocketLinx Ethernet and Power over Ethernet switches to the Lodging Link device interfaces, the comprehensive product lines that Comtrol offers can overcome even the most complex connectivity challenges.

Comtrol's hospitality products division supplies products and technology solutions to PMS vendors, hotel management, and restaurant management for device connectivity and the integration of disparate systems. By applying Comtrol's technology toward communication challenges, leading PMS suppliers, hotels, and restaurants achieve complete integration with the most dependable device connectivity equipment on the market today.

PMS Connectivity to Guest Service Devices

- Serial port expansion
- Network switches
- Serial to IP

PMS Protocol Interfacing

- PBX
- Call accounting
- Voice mail
- Room energy management
- In-room entertainment
- In-room internet
- Minibars
- Key cards
- POS systems

Building Security

- Access Control
- IP Surveillance cameras
- Perimeter sensors

Guest Service Networks, Including Power Over Ethernet

- Backbone to guest WiFi
- Backbone to ZigBee

Point of Sale Systems, Serial or IP Connectivity

- Remote kitchen printers
- Cash drawers
- Modems
- Bar code readers

Comtrol Customers

IHG
Choice Hotels
Marriott
Radisson
Micros
Wyndham Worldwide
Hyatt Residence Club
Sabre Hospitality
Agilysys
IQWare

INDUSTRIAL

Comtrol provides a wide range of industrial connectivity products. From advanced industrial protocol gateways to ruggedized power supplies, media convertors, and Ethernet switches, Comtrol can provide a solution for you.

DEVICEMASTER UP

The DeviceMaster UP provides advanced PLC-to-device connectivity. With its feature-rich options, the DeviceMaster UP provides EtherNet/IP™, Modbus/TCP, Modbus RTU/ASCII, and PROFINET connectivity to a wide variety of devices. Easily connect your PLCs to serial and Ethernet TCP/IP devices such as barcode scanners, RFID readers, weigh scales, vision systems, printers, encoders, and sensors.

IO-LINK MASTER

IO-Link is the new standard serial digital communications protocol used for sensors and actuators in industrial automation systems. Major manufacturers of sensor technologies are joining the IO-Link consortium to promote this standard due to its many advantages over discrete IO.

See pages 17-22 for more information.

Modbus MEMBER

PROFINET INDUSTRIAL ETHERNET

EtherNet/IP™

Industrial Applications

- Fastening systems
- Barcode/RFID
- Robotics
- Logistics
- Oil/Gas pipelines
- Machine builders
- SCADA (System Control and Data Acquisition)
- Power generation/distribution
- Building automation
- Sensor networks
- HMI (Human-Machine Interface)
- Discrete control
- Process control
- OPC

IO-LINK MASTER

ROCKETLINX INDUSTRIAL ETHERNET SWITCHES

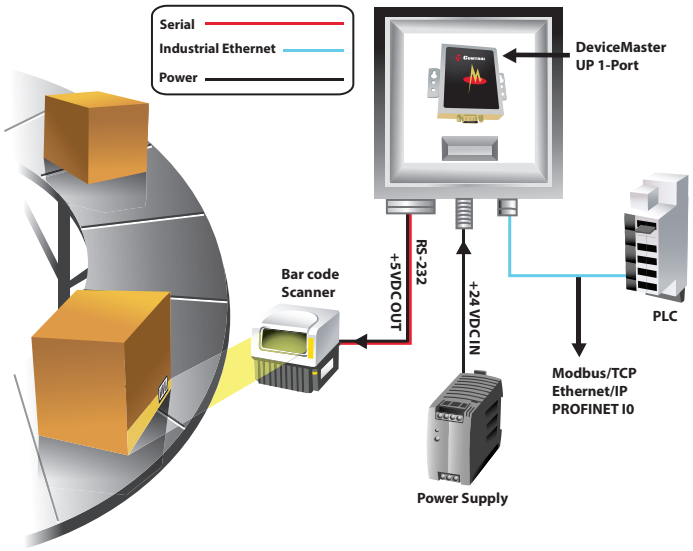
The RocketLinx family of industrial Ethernet switches are designed to meet the performance and environmental demands for applications requiring extended operating temperatures, rugged housings and high performance and reliability. With both managed and unmanaged models available, the RocketLinx ES series switch families provide cost-effective networking solutions delivering the industry's best Ethernet switch technologies.

ROCKETLINX MEDIA CONVERTERS

RocketLinx MC5001 and MC7001 are full-featured industrial grade serial and Ethernet fiber media converters. They are designed to meet the needs for EMI immunity and extended fiber transmission within the harsh environments typical of traffic, power, rail, and other industrial applications.

POWER SUPPLIES

Industrial 24V and 48V DIN-rail mounted switching power supplies have extended operating temperatures and a wide variety of equipment and wattage support.



Comtrol's DeviceMaster UP provides support for an efficient, compact solution to industrial automation – specifically bar code scanning. The integrator-developed enclosure (pictured) provides reduced cabling, Ethernet connectivity and power support for the bar code scanner. Data collected with the bar code scanner is then routed through the enclosure and DeviceMaster UP to the end PLC.

SECURITY & SURVEILLANCE

As nations around the globe battle increasing violence and escalating threats, development of security systems and components to protect data communication, infrastructure, transportation hubs, and vulnerable borders is a priority for both governments and private organizations. In the face of these threats, new technologies are emerging to provide improved performance and advancements in flexibility and deployment over previous standards. Comtrol's connectivity solutions including Ethernet communications and IP surveillance-enabling devices are improving the reliability of critical networks.

Comtrol's **DeviceMaster** device servers are currently involved in enabling critical access control applications to ensure asset and personnel safety and security.

Our line of **RocketLinx** industrial managed and Power over Ethernet switches provide power to vital components of security networks such as IP surveillance cameras and door access controls.

Our **RocketPort** serial cards and hubs expand the capability of complex networks by supplying the correct connections needed for multiple security devices and systems.

Security and Surveillance Applications

- Access control
- Perimeter/façade security
- Camera PTZ control
- IP cameras
- Mobile
- Radio
- Intrusion detection
- Chemical detection
- Prison PLC systems
- Theft deterrence/retail

Voltage Boost Capabilities

Comtrol's Voltage Boost (VB) technology provides the unique capability to power connected devices that require 48V through a switch that accepts 12-24V of power.

With the RocketLinx VB switch products, devices such as IP surveillance cameras, scanners, wireless access points and point-of-sale systems can easily be integrated within industrial settings without the use of separate 48V power supplies that are typically needed to power PoE devices.

LASER SCANNERS

Comtrol's line of laser scanners are very well suited for providing additional levels of security in areas that are deemed critical such as:

- Chemical facilities
- Food processing facilities
- Water treatment facilities
- Nuclear power plants
- Power substations

The scanners can be deployed wherever large areas require complete protection against unauthorized access or entry. The system, when used in conjunction with PTZ cameras, does not just report infringements of monitored fields, but provides exact position of the intrusion into the field.

For more information visit www.comtrol.com/laserscanners

ROCKETLINX INDUSTRIAL SWITCH SECURITY FEATURES

The unique features integrated into our PoE industrial switches provide you with the capabilities and options that you need for successful integration of your PoE solution:

12/24VDC Voltage Boost (VB)
Comtrol's Voltage Boost switch technology enables these switch models to be powered from 12/24 VDC sources, internally boosting the output voltage to 48 VDC to power PoE devices. This eliminates the need and expense of a separate power supply and allows direct integration with remote and vehicle power systems.

Forced power mode
RocketLinx PoE switches provide advanced forced powering control, bringing power to non-standard and older PoE devices that cannot be detected as valid PDs.

PoE port scheduling
Comtrol's PoE port scheduling feature provides an hourly/weekly scheduling mechanism for advanced power control. Each PoE port can be configured to be ON or OFF on an hourly basis to conserve energy and guarantee power only when needed.

Smart power device link connect
Monitor the status of PDs connected to RocketLinx PoE switches through RocketLinx PD management technology. When a PD fails to respond, the PoE port can cycle power, thereby resetting the PD and restoring functionality.

Power budget limitation with priority control
When conditions demand power exceeding the power budget threshold, the RocketLinx PoE switches provide budget and priority control ensuring that the total power consumption will not exceed the power limit defined by the user. It also allows the user to protect the high-priority PDs by limiting the output power, prioritizing port shut down, and maintaining power to the highest priority devices.

TRAFFIC & TRANSPORTATION

Traffic management techniques and technology are becoming more sophisticated as our transportation systems become more complex. In order to keep traffic flow and transportation grids operating efficiently, applications such as arterial intersection monitoring and control, transit management, open road tolling, electronic toll collection, and parking automation must have exceptional communication with management stations and presiding networks. Comtrol is committed to providing high-performance and quality data transmission, communication, and connectivity devices for transportation and traffic system structures.

Our **RocketLinx** industrial network switches are actively involved in managing traffic intersections from remote traffic management centers.

Our **DeviceMaster** serial device servers facilitate communication and data collection for transportation tolling systems, emergency traffic signal override systems, and air traffic control centers.

RocketPort serial cards provide additional serial ports, enabling and connecting tolling control and peripheral devices.

NEMA TS2

Tolling

- Open road tolling (ORT)
- Electronic toll collection (ETC)
- Toll plazas and manual lanes

Traffic Management Systems

- Arterial and freeway management
- Intelligent transportation systems (ITS)
- Roadside cabinet networking and connectivity
- Intersection management and control
- Emergency response infrastructures
- Parking automation

Gate Access and Control

- Parking revenue equipment
- Lane entry and exit equipment

Comtrol's NEMA TS2 Compliant Products

RocketLinx ES8508-XT	32010-4
RocketLinx ES8508F-S-XT	32011-1
RocketLinx ES8508F-M-XT	32012-8
RocketLinx ES8509-XT	32065-4
RocketLinx ES8510-XT	32061-6
RocketLinx ES8510-XTE	32062-3
RocketLinx ES9528-XT	32071-5
RocketLinx ES7510-XT	32046-3
DeviceMaster RTS 1-Port DB9	99435-0
DeviceMaster RTS 2-Port 1E	99480-0
DeviceMaster RTS 2-Port 2E	99481-7
DeviceMaster RTS 2-Port DB9 1E	99550-0
DeviceMaster RTS 2-Port DB9 2E	99560-9
DeviceMaster RTS 4-Port DB9	99445-9
DeviceMaster RTS 4-Port RJ45	99446-6
DeviceMaster RTS 8-Port DB9	99448-0
DeviceMaster RTS 8-Port RJ45	99449-7

INTELLIGENT TRANSPORTATION SYSTEMS (ITS)

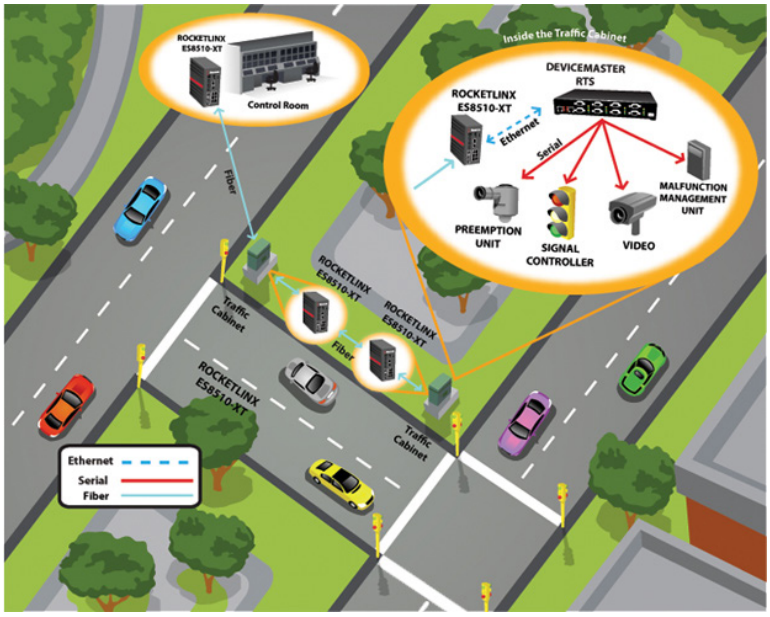
Transportation Device Connectivity to Traffic Management Systems

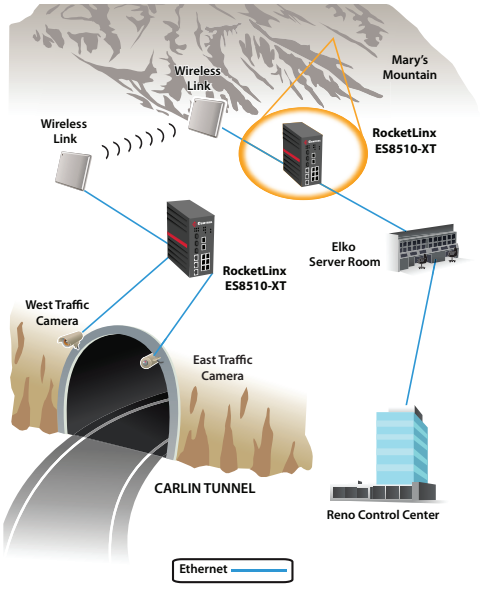
Comtrol currently works with a number of device manufacturers and agencies to aid in the networking and communications of Ethernet devices and legacy serial devices in the field. The range of applications that we have connectivity for are traffic management systems, arterial and freeway management, roadside cabinet networking, and intersection management and control.

Comtrol's line of hardened NEMA TS2 certified RocketLinx switches are all that is required to transmit data from roadside devices and traffic cabinets to traffic management centers. Comtrol's use of fiber SFP/ RJ45 Ethernet combo port technology enables the traffic engineer to future-proof their network against infrastructure changes. Comtrol's hardened RocketLinx PoE switches, managed switches, unmanaged switches, and media converters, are all utilized in outdoor environments for connection of all components in an Intelligent Transportation System.

Comtrol's traffic technology solutions connect via Ethernet to allow real-time control to traffic management centers to connect via Ethernet to these devices:

- PTZ (Pan Tilt Zoom) cameras
- MMUs (Memory management units)
- Variable/Dynamic message signs
- Traffic lights
- Vehicle detection
- Preemption units
- Radars and sensors
- BBUs (Battery backup units)
- Traffic controllers
- PoE cameras
- Stop bar detection





A southwestern U.S. city with a fiber network needed to reliably network and remotely manage 120 traffic intersections from the city's traffic management center. Comtrol's RocketLinx ES8510-XT switches were mounted into the traffic cabinets at each of the intersections and were a perfect fit for the harsh environmental demands for the application.

During an expansion project, Nevada DOT chose Comtrol's RocketLinx ES8510-XT switches to enable data transmission from their traffic cameras to server room monitoring stations, eventually showing up on live feeds at NDOT's monitoring station.

TOLLING CONNECTIVITY

Comtrol's managed and unmanaged RocketLinx switches provide Gigabit and fast Ethernet connections for tolling sensors. These sensors are used to detect, charge, and classify vehicles while the switch reports back to the main traffic controller. The RocketLinx product line provides many different port configurations and mounting options which gives the toll authority a wide variety of products to choose from for their many different applications.

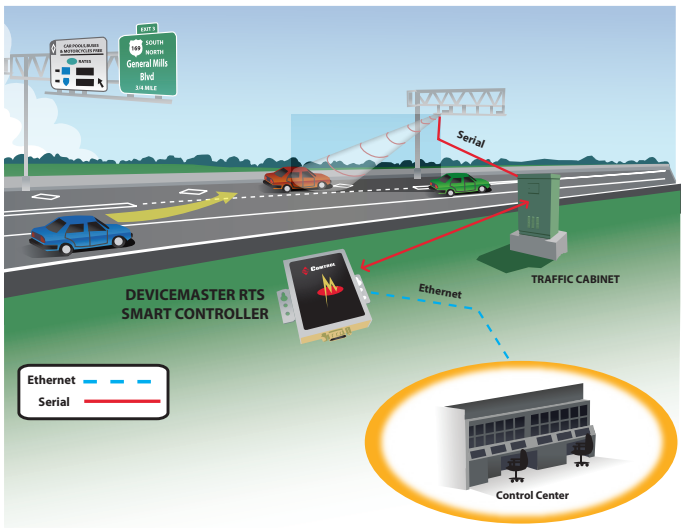
Comtrol's DeviceMaster RTS family of hardened device servers connects legacy RS-232, RS-422 or RS-485 serial tolling devices to high-speed Ethernet. For additional connectivity, select one of the RocketPort multiport serial expansion products. RocketPort serial cards can connect up to 32 additional serial devices using one PC BUS slot and offer a variety of common connection types like DB9, DB25, and RJ45.

Comtrol's technology provides reliable, easy-to-install, and cost-effective connectivity for open road tolling (ORT), electronic toll collection (ETC), toll plazas, licence place recognition (PoE switch technology), and manual lanes applications.

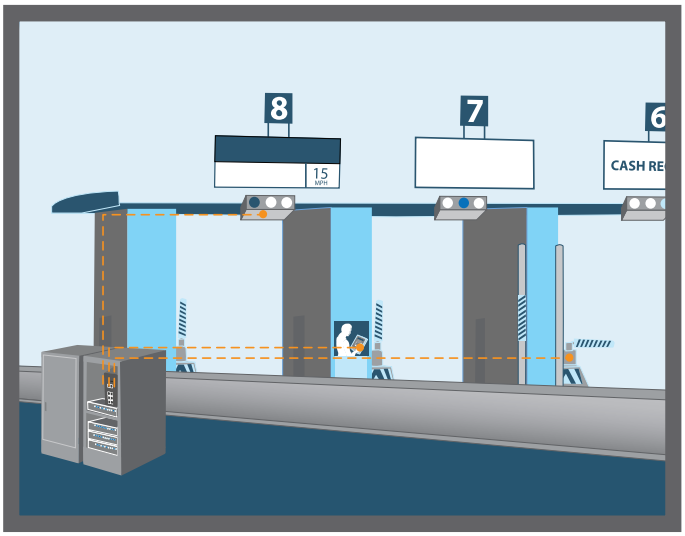
Tolling devices Comtrol provides connectivity for:

- License plate cameras
- Profiling sensors
- Radars
- Traffic cameras
- Message signs
- Vehicle classification, etc.

Open-Road Tolling: MNPass Tolling System



Traffic Toll Station Communication



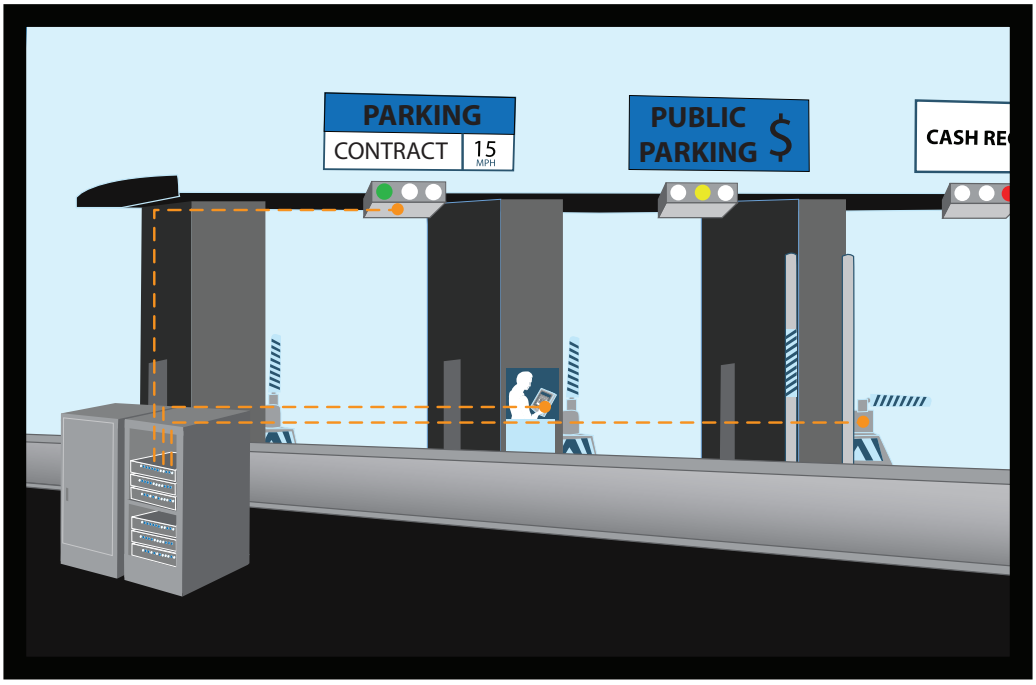
The U.S. Department of Transportation's Urban Partnership Agreement awarded Minnesota DOT the funds needed in order to improve traffic flow on I-35W to and from downtown Minneapolis. The project consisted of retrofitting existing high-occupancy vehicle (HOV) lanes with technology that would enable single occupant vehicles to use the HOV lanes for a toll.

Sensors within the tolling booth architecture control the "green light" and stop arm, indicating that traffic proceed after paying the toll. Comtrol's RocketPort serial cards and RocketLinx Ethernet switches enable communication between lights, controllers, cameras, and stop arms, enabling quicker payment and better traffic flow.

PARKING AUTOMATION - ACCESS CONTROL AND DEVICE CONNECTIVITY

Comtrol products can be used to quickly add economical and reliable serial ports to parking automation systems like gate and access control. Connect to equipment like parking revenue meters, and lane entry and exit monitoring devices.

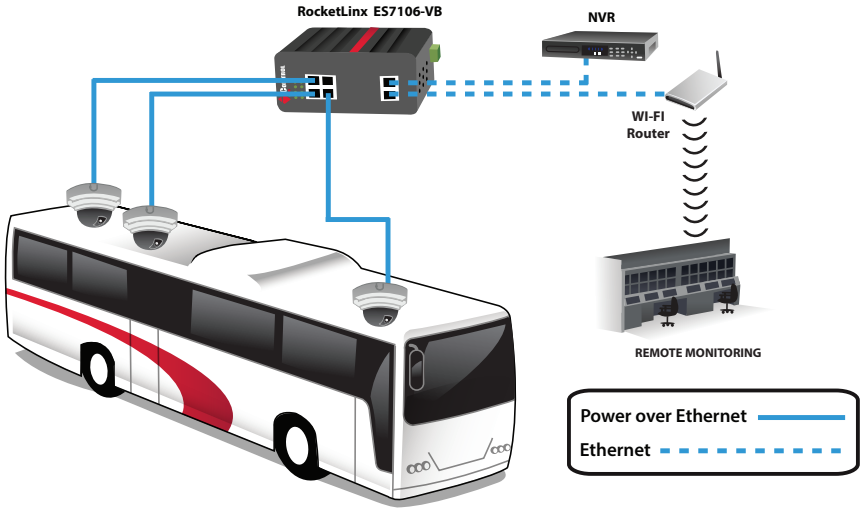
- Credit card readers
- Vehicle detectors
- Light curtains
- Entry and exit sensors
- Variable message signs
- Cameras
- Patron feedback display
- Automatic change collectors
- Receipt printers
- Ticket readers
- Ticket machines



TRANSIT - RAILWAY & BUS

Adding WiFi capabilities and cameras to bus applications not only improves security for passengers, but also allows transit customers to stay connected while commuting. Our RocketLinx 7106-VB switch can be powered from a 12V bus battery to power all onboard devices on buses, police cars, and trains. The following are examples of devices that can be connected using our Voltage Boost products:

- Credit card readers
- RFID tags
- PoE cameras
- WIFI routers
- NVRs



MEDICAL

As knowledge and processes within the medical community expand exponentially, the need for new equipment and applications increases also. The strict quality and technical demands required by the medical industry—as well as the cost and complexity of medical and FDA certifications—can pose challenges when trying to maintain equipment and devices manufactured for years of use. In addition to developing and supporting connectivity products that meet these standards, Comtrol recognizes the importance of lasting product stability for medical equipment manufacturers.

Comtrol's **DeviceMaster** device servers are used in a wide variety of communication and data collection applications, such as establishing the software bridge between medical facilities' patient rooms and Electronic Medical Records (EMR) system server locations.

Our **RocketPort** serial cards and hubs provide essential connectivity between peripheral devices and equipment to ensure precision and reliability for medical processes—anywhere from eyewear lens fitting to vital sign monitoring.

Medical Applications

- Patient monitors
- EKGs
- Blood analyzers
- Lens manufacturing
- Handheld computers
- Prosthetic manufacturing
- Medication delivery systems
- Emergency call systems (911 system)
- Refurbished medical equipment
- Automated biological testing systems
- Patient RTLS
- Medical printing stations
- Automated pharmaceutical systems

To learn more about our customer solutions, visit *www.comtrol.com/solutions*

SECURITY APPLICATION

ENERGY SUBSTATION SURVEILLANCE & POWER MONITORING

With rising value of scrap metal and struggling economies throughout the world, theft of copper and other materials is on the rise. Surveillance is increasing at energy substations, power plants and other critical infrastructure locations in attempt to deter thieves from cashing in stolen copper wiring, aluminum doors and other materials at scrap yards or metal melting facilities.

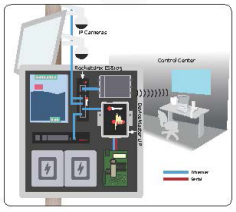
Comtrol and a few other companies have collaborated to create a solar-powered security system to monitor critical infrastructure around the world. The system is responsible for monitoring the power grid and establishing surveillance to prevent material theft and protect critical operations. As seen in the diagram, security cameras in each location record live feed from the grounds to send via Ethernet to Comtrol's RocketLinx ES8105 industrial Ethernet switch. The data travels via Ethernet to a wireless bridge, which communicates the data to a remote control center network.

In order for this system to operate efficiently, more equipment is needed. Also connected to the ES8105 Ethernet switch is a network console device. This device is responsible for auto-rebooting the other devices and monitoring temperature and current draw. A UPS (universal power supply) card plays an integral role in the system, as it is connected to the power grid and providing different voltages of power to all of the devices inside of the cabinet. A solar panel installed close to the system equipment box supplies power to the system, though the main power source comes from the power grid. If there are any unexpected power surges or outages, the UPS card regulates the power to protect the equipment and prevent the surveillance system from failing.

Batteries in the system box are charged via the UPS card as backup power supply if the power grid goes down. The UPS card also records power monitoring data which is sent via Modbus RTU to Comtrol's DeviceMaster UP and eventually to the control center network.

With rugged housings that operate in temperatures from -40° to 70°C, the RocketLinx ES8105 and DeviceMaster UP are used in this system to handle harsh weather conditions and withstand power surges. With both managed and unmanaged models available, the RocketLinx ES series of switches provide cost-effective networking solutions delivering the industry's best rugged Ethernet switch technologies.

The DeviceMaster UP provides EtherNet/IP, Modbus/TCP, Modbus RTU/ASCII, and PROFINET connectivity to a wide variety of devices, and its many unique features offer connectivity options and flexibility not provided by other gateway products.



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connect. communicate. control.

TRANSPORTATION

VOLTAGE BOOST TECHNOLOGY FOR MOBILE SURVEILLANCE

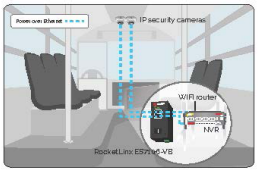
With the prevalence of crime in America's cities, it is essential that measures be taken for the safety of those who operate and use law enforcement vehicles or public transportation.

Mobile surveillance companies are helping to take these measures through manufacturing surveillance equipment that can be installed and operated in vehicles. However, as a result of the numerous pieces of equipment already in place, a vehicle's battery may be unable to supply enough power to support extra surveillance equipment.

One major mobile surveillance company turned to Comtrol for a solution for this issue, and Comtrol recommended the RocketLinx® ES7106-VB. The RocketLinx ES7106-VB is an industrial Power over Ethernet (PoE) switch that includes Voltage Boost (VB) technology to supply power to equipment within a vehicle while continuing to receive and transfer data from the connected devices. The switch is powered by the vehicle's battery and the VB technology allows it to "boost" power up to 48V to the other devices on board, such as IP cameras, WiFi routers, and Network Video Recorders (NVRs) via Ethernet. This two-in-one product was designed with precisely this application in mind, and the ability for the ES7106-VB to both power and connect to the devices within a vehicle was the determining feature for this mobile surveillance company's decision.

The RocketLinx ES7106-VB is a rugged, plug-and-play industrial PoE switch that can operate in a wide variety of environments. The ES7106 can operate efficiently in temperatures ranging from -25°C to +60°C. Additionally, it is protected by IP30 industrial-grade aluminum housing to prevent any water or dust damage. Comtrol's RocketLinx line of products is a staple of our dedication to durability and efficiency, the RocketLinx ES7106-VB is a perfect example of these qualities.

Comtrol's RocketLinx Power over Ethernet Switches are engineered for industrial security, and transportation applications such as IP video surveillance and inspection monitoring, where the power source is not conveniently located. With rugged, drip-proof housings, redundant power inputs and performance command-line interfaces, these Power over Ethernet switches provide reliable networking solutions.



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ENERGY APPLICATION

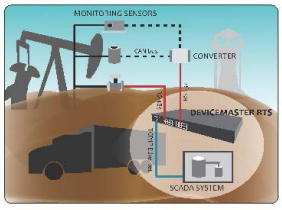
HYDRAULIC FRACTURING PROCESS MONITORING

Fracking, otherwise known as hydraulic fracturing, has become a word well-known with the recent expansion of oil exploration. As fracking helps to release natural substances (in this case, oil) from the earth's rock for extraction, monitoring sensors directly at the site provide data and supervisory control for engineers and personnel controlling the fracking process.

The fracturing process, in order to be profitable, must be truly mobile. Thus, many pressure pumping companies located in both the United States and Canada have created mobile command centers inside vehicles to control the fracking operation directly from the field. These vehicles, often termed "data vans," house important monitoring equipment. Sensors used directly at the fracking site such as pressure meters, flow meters and engine and pump monitoring sensors transmit data in various different protocols such as CAN bus, RS-232 and RS-485. Converting all of this data to a common medium - Ethernet - is necessary for the SCADA system to ensure the fracking process is safe and efficient.

Comtrol's DeviceMaster RTS 16-Port serial to Ethernet gateway is included in data vans as the center of communication with the field. As seen below, the data from the sensors is either converted from CAN bus to RS-232, or travels directly via RS-485 to the DeviceMaster. The DeviceMaster then relays that information via TCP/IP (Ethernet) to the SCADA system. The DeviceMaster provides great flexibility with software selectable RS-232/422/485 support, along with being reliable, rugged and tolerating use in a mobile environment for extended periods of time.

The Comtrol DeviceMaster RTS 16-Port rack mount is a 16-port device server designed for network-enabling serial communications devices. The DeviceMaster RTS family of serial device servers enables browser-based remote port/device monitoring and configuration and provides an application software platform for local processing. The DeviceMaster RTS product is a network-attached solid-state embedded device server network serial port that delivers exceptional price, performance and reliability.



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SECURITY APPLICATION

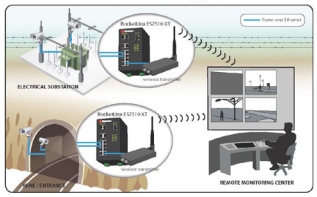
MINING SURVEILLANCE WITH VIDEO MONITORING

Simple perimeter alarms and barbed wire are no longer enough to protect critical infrastructure from unauthorized access, vandalism, and theft. Interior monitoring is becoming more important in providing a complete security system in mining environments.

A large mining company in Chile has enhanced its security system using video monitoring. A security integration company chose Comtrol's RocketLinx ES7510-XT Power over Ethernet (PoE) switches for installation at a particular mine to construct a complete surveillance solution. Cameras monitor access points along with activity inside the mine. As seen below, the camera feed is relayed to a remote monitoring station via the RocketLinx ES7510-XT switches and wireless radio equipment. The PoE switches are also being used in conjunction with slightly larger and more powerful surveillance cameras at an electrical substation near the mine. This video feed is also relayed to the remote monitoring station. Security personnel can monitor both feeds simultaneously for a complete surveillance of the mine.

The RocketLinx ES7510-XT switches provide power to the surveillance cameras, as power sources aren't always conveniently located. The switches' rugged design allows full and reliable operation in harsh weather conditions, including extreme temperatures. The combination of both of these features allows the mine to have complete surveillance, while the installation of Comtrol's RocketLinx ES7510-XT switches assure that connectivity and environmental needs of the system equipment are being met.

The full line of Comtrol's RocketLinx PoE Industrial Ethernet switches are designed to meet the performance and environmental demands for applications requiring extended operating temperatures, rugged design, and reliable power delivery to standard and high power devices.



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IO-LINK MASTER

INDUSTRIAL IO-LINK GATEWAYS

Comtrol's IO-Link Master combines the benefits of the IO-Link standard with the EtherNet/IP™ and Modbus TCP protocols. The IO-Link Master effectively shields the PLC programmers from the IO-Link complexities by handling those complexities itself. The result is simplified EtherNet/IP and Modbus TCP interfaces, which decreases system development time and installation efforts. Comtrol's IO-Link Master gateways are easily integrated into a system network, and is compatible with existing and new industrial Ethernet installations.

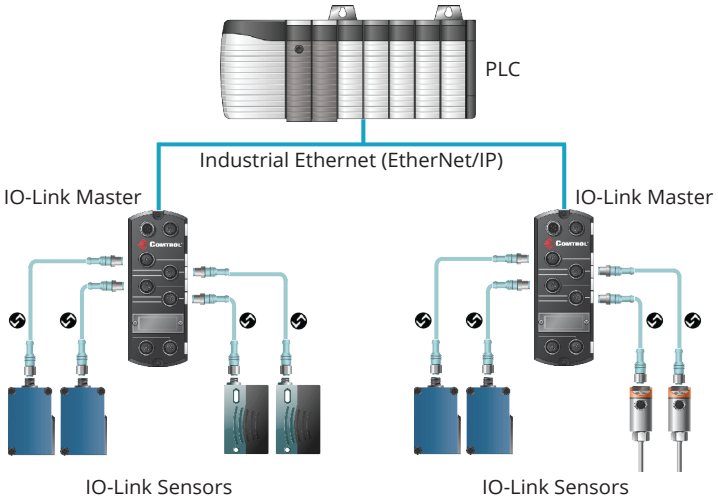
The IO-Link Master 4-EIP features a rugged IP67 slim-line design incorporating two Fast Ethernet ports and four IO-Link ports with M12 connectors. Designed for harsh environments, its machine-mount design uses industrial grade components. The IO-Link Master DR-4-EIP easily installs on a standard DIN rail and incorporates two Fast Ethernet ports, four IO-Link ports and two DI/DO ports.

For more information visit **www.comtrol.com/io-linkmaster**

IO-LINK FEATURES

- Four or eight channel IO-Link Master to EtherNet/IP or PROFINET IO* (see following page)
- EtherNet/IP access to IO-Link sensor process, event and service data
  - Class 1 (Implicit) and Class 3 (Explicit) interface
  - Write-to-Tag/File, Read-from-Tag/File
- Modbus TCP access to IO-Link sensor process, event and service data
- Windows app and web GUI for configuration and diagnostics
- LEDs for device, network and port status
- Additional digital input on every port
- Powerful web configuration
- IO-Link V1.1 compatibility
- IO-Link COM1, COM2 and COM3 support (230K baud rate)
- Innovative QuickLinx technology

IO-Link Master common configuration networking diagram



WHAT IS IO-LINK?

IO-Link is a point-to-point serial communication protocol used to communicate with sensors and/or actuators. This increasingly deployed protocol extends the globally recognized PLC standard IEC 61131, which allows three types of data to be exchanged: process data, service data and events.

Major sensor manufacturers and industrial manufacturing companies, including Comtrol, have joined the international IO-Link Consortium to promote the IO-Link communication protocol due to its many advantages over standard I/O.

WHY IO-LINK?

IO-Link is a powerful, yet simple, protocol with wide support in the industry. There are many resons to use IO-Link. In almost any place that a digital or analog sensor is used, an IO-Link sensor can provide the end user significantly more information, configurability, and control. From installation to operation and even maintenance of an automation system, IO-Link provides clear advantages over legacy solutions.

IO-Link Master 4-EIP/MOD
Part Number: 99570-8

IO-Link Master 4-PNIO
Part Number: 99575-3

KEY FEATURES AND BENEFITS

- Four channel IO-Link Master to Industrial EtherNet/IP
- Modbus access to IO-Link sensor service and process data
- EtherNet/IP Class 1 and Class 3
- Rugged IP67 housing with M12 connectors for harsh environments
- Windows app and web GUI for configuration and diagnostics
- Wide operating temperature (0° to 55°C)
- LEDs for device, network, and port status
- Additional digital input on every port
- Powerful web configuration
- IO-Link V1.1 compatibility
- IO-Link COM1, COM2 and COM3 support (230K throughput)
- Slim-line machine-mount installation
- RoHS2 compliant under CE
- Innovative QuickLinx technology

IO-Link Master DR-8-EIP/MOD
Part Number: 99590-6

IO-Link Master DR-8-PNIO
Part Number: 99592-0

KEY FEATURES AND BENEFITS

- Four or eight channel IO-Link Master to Industrial EtherNet/IP
- Modbus access to IO-Link sensor service and process data
- EtherNet/IP Class 1 and Class 3
- IP20 DIN rail mount enclosure
- Screw terminal connectors for IO-Link, Power, and Digital IO
- Windows app and web GUI for configuration and diagnostics
- Wide operating temperature (0° to 70°C)
- LEDs for device, network, and port status
- Ideal IO-Link connectivity for motor controllers
- Additional digital input on every port
- Powerful web configuration
- IO-Link V1.1 compatibility
- IO-Link COM1, COM2 and COM3 support (230K throughput)
- RoHS2 compliant under CE
- Innovative QuickLinx technology

View our new IO-Link Master 8 Port IP67 on page 19.

Industry 4.0 and IIoT Benefits of Comtrol's IO-Link

- Complete integration into overall industrial communication systems
- Easy sensor replacement
- Eliminates manual parameter settings
- Continuous data monitoring and status diagnostics
- Increased uptime

IO-LINK MASTER

INDUSTRIAL IO-LINK GATEWAYS

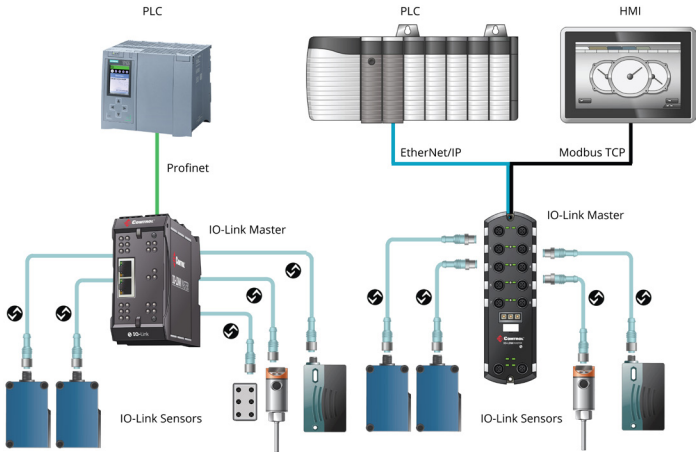
IO-Link Master 8-EIP/MOD
Part Number 99608-8

IO-Link Master 8-PNIO
Part Number 99605-7

KEY FEATURES AND BENEFITS

- Rugged IP67 housing designed for harsh environments, M12 connectors allowing up to eight sensor connections on one master block
- Rotary switches for IP address configuration
- Powerful web GUI for configuration and diagnostics, including: IO-Link device management using the IO-Link device manufacturers IODD file for easy device configuration
- Automatic data storage (upload and download)
- Manual data storage (upload and download)
- Device validation
- Data validation
- Wide operating temperature (-25° to +60°C)
- Additional digital input on every port
- IO-Link V1.1 compatibility
- IO-Link COM1, COM2 and COM3 support (230K baud rate)

IO-Link Masters working seamlessly with multiple PLC's



EtherNet/IP with Modbus TCP

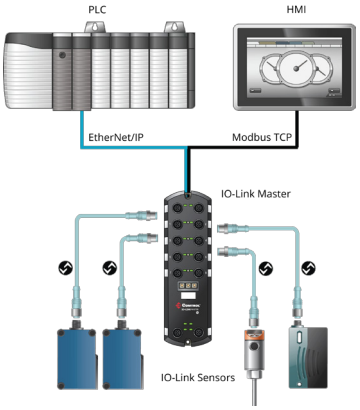
- MultiLink – Simultaneously provides IO-Link device access to multiple controllers
- EtherNet/IP™ and Modbus TCP access to IO-Link process, event and service data
- EtherNet/IP Class 1 (Implicit) and Class 3 (Explicit) interfaces and provides Write-to-Tag/File and **Read-from-Tag/File support**
- HMI, SCADA, and PLC access to IO-Link ISDU blocks without complex programming
- EDS files and sample programs

PROFINET IO

- PROFINET IO access to IO-Link process, event and service data
- PLC access to IO-Link ISDU blocks without complex programming
- Supports the IOL_CALL function module
- GDSML files

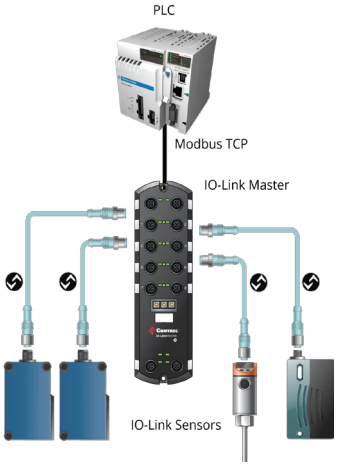
EtherNet/IP™

The IO-Link Master EtherNet/IP™ (EIP) series combines the benefits of the IO-Link standard with EtherNet/IP™ and Modbus TCP protocols. You can easily integrate the IO-Link Master into an industrial network with existing and new EtherNet/IP™ and Modbus TCP installations using our powerful web interface.



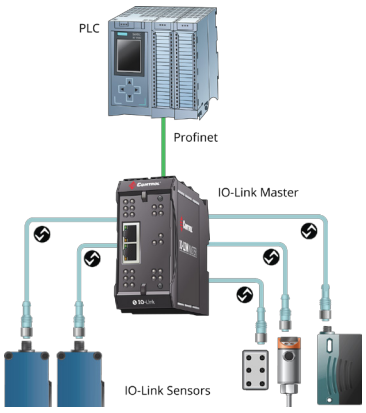
Modbus

The IO-Link Master Modbus series combines the benefits of the IO-Link standard with the Modbus TCP protocol. You can easily integrate the IO-Link Master into an industrial network with existing and new Modbus TCP installations using our powerful web interface.



PROFINET

The IO-Link Master PROFINET (PNIO) series combines the benefits of the IO-Link standard with the PROFINET protocol. You can easily integrate the IO-Link Master into an industrial network with existing and new PROFINET IO installations using our powerful web interface.



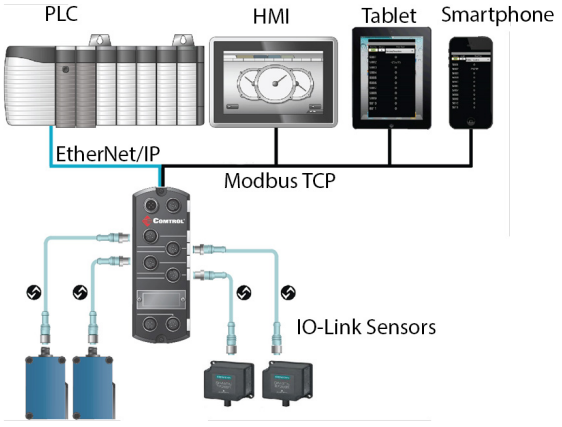
IO-LINK MASTER

IO-LINK MASTER FEATURES

Simultaneously Provide IO-Link Device Access to Multiple Controllers

Enjoy the flexibility of simultaneously connecting both EtherNet/IP and Modbus TCP based controllers to IO-Link devices.

- Provide simultaneous access to the PLC and the HMI
- Simultaneously control and monitor with a variety of systems



COMTROL'S IO-LINK GATEWAY USER BENEFITS

Comtrol, a company with a long history of industrial data communication solutions, is pleased to introduce the industry's highest density IO-Link Master Industrial IO-Link Gateway in its IO-Link Master EIP-4. The IO-Link to EtherNet/IP Master combines the benefits of the IO-Link standard with the EtherNet/IP and Modbus TCP protocols. Easily integrate the IO-Link Master EIP-4 into a system network with existing and new industrial Ethernet installations.

- Reduce maintenance and cabling costs
- Reduce PLC programming times
- System integration and interoperability for SCADA & process controllers
- Complete set of network management tools

Comtrol's IO-Link Gateway supports both Class 1 and Class 3 EtherNet/IP as well as Modbus TCP; the gateway is compatible with a vast array of PLCs both new and old:

- Control Logix
- Compact Logix
- SLC 500 / PLC5
- Micrologix
- Any PLC supporting EtherNet/IP
- Any Modbus enabled PLC, HMI, SCADA that can run as a Modbus TCP Master (Client)
- Any Modbus TCP Client (including apps on phones/tablets)

MOBILE APPLICATION – CONFIGURATION AND DIAGNOSTICS

Mobile visibility of IO-Link Master

- Configuration data
- Diagnostics data
- Process data

Available Platforms

- iOS Modbus TCP Client
- Android-based Modbus TCP Client

REMOTE PARAMETERIZATION

Allows remote communication from a PLC or HMI to a sensor in order to change the sensor's configuration or operational behavior

USER BENEFITS

- Dynamic reconfiguration of sensor distance read range, attenuation, or code library
- Reconfigure sensors in hard-to-reach or hazardous areas

AUTO-DEVICE CONFIGURATION

Additional configuration option using Comtrol's Parameter Server – allows an IO-Link device to be automatically configured using previously stored values

Quick and easy replacement of failed or damaged sensors

USER BENEFIT – Reduction in production line downtime and maintenance costs

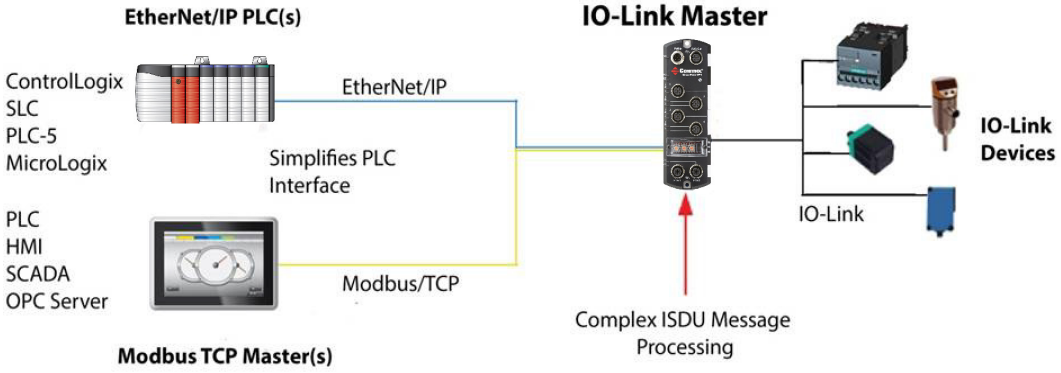
Enables quick initial set-up of a new IO-Link sensor

USER BENEFIT – Reduction in deployment time and associated costs

ISDU HANDLING (INDEXED SERVICE DATA UNIT)

Handles all programming to provide PLC access to IO-Link ISDU blocks with a flexible and simplified interface – provides multiple or single ISDU command message support and blocking and non-blocking messaging methods

USER BENEFIT - Eliminates lengthy and complex PLC programming to provide access to ISDU and process data



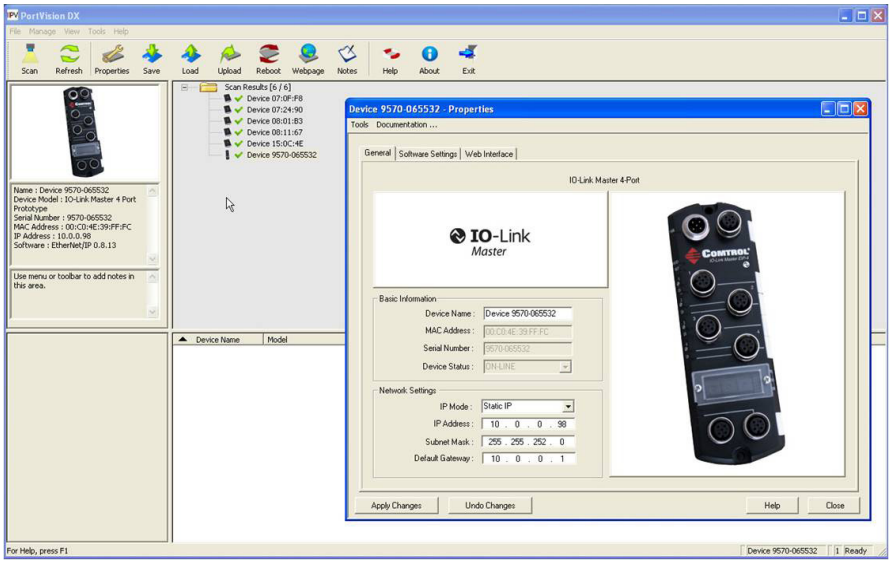
The PLC ISDU message format is designed for flexibility and ease of use. Each message can contain a single command, multiple commands with the same data area size, or multiple commands with varying data area sizes.

COMTROL NMS - NETWORK MANAGEMENT TOOLS

Comtrol's PortVision® DX management software allows you to configure network settings, upload firmware, and manage and monitor IO-Link attached devices.

FEATURES of PortVision DX

- Network Management Tools
- Scan the network for attached devices
- View networked devices in real-time
- Access product-specific network settings configurations
- Access Telnet/SSH sessions
- Remotely reboot devices
- Download technical documentation
- Enable event logging to assist in monitoring and troubleshooting
- Create shortcuts to quickly access your favorite applications
- Organize devices into folders and create multiple views
- Enter notes about a folder or device



For more information visit **www.comtrol.com/io-linkmaster**

ROCKETLINX
INDUSTRIAL ETHERNET SWITCHES

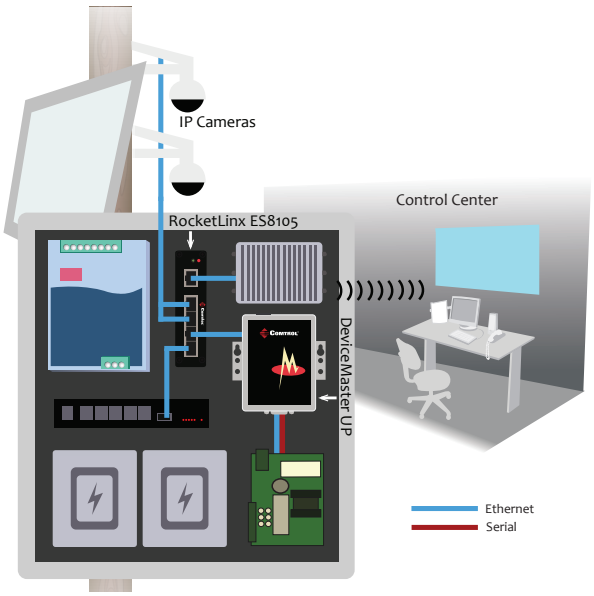
The Comtrol RocketLinx series of industrial Ethernet switches are designed to meet the performance and environmental demands for applications requiring extended operating temperatures, rugged housings, high performance and reliability.

With both managed and unmanaged models available, the RocketLinx industrial Ethernet switch series provides cost-effective networking solutions delivering the industry's best Ethernet switch technologies.

For more information visit **www.comtrol.com/rocketlinx**

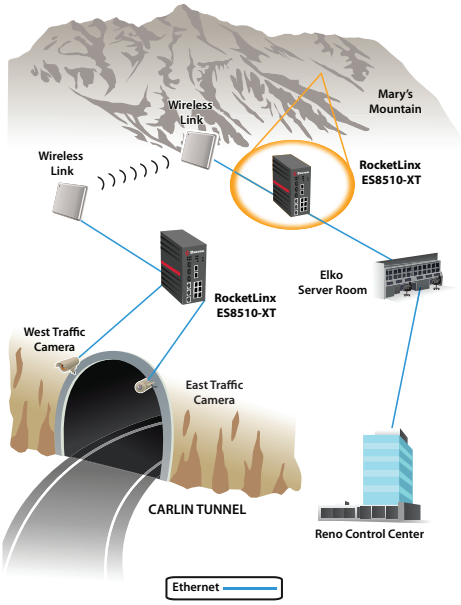
COMTROL PRODUCTS IN ACTION

Substation Surveillance & Power Monitoring



Solar-powered security systems containing Comtrol's RocketLinx ES8105 and Comtrol's DeviceMaster UP are responsible for monitoring the power grid and establishing surveillance to prevent material theft and protect critical operations around the world.

Traffic Monitoring System Communication



The RocketLinx ES8510-XT switches enable live-feed data transmission from traffic cameras to server room monitoring stations for the Nevada Department of Transportation's Interstate 80 traffic monitoring system expansion.

ROCKETLINX INDUSTRIAL ETHERNET SWITCH MODELS	PART NUMBER
RocketLinx ES8105 *Unmanaged 5-Port industrial Ethernet switch*	32025-8
RocketLinx ES8105F-S *Unmanaged 5-Port industrial Ethernet switch with Single-Mode fiber*	32026-5
RocketLinx ES8105F-M *Unmanaged 5-Port industrial Ethernet switch with Multi-Mode fiber*	32027-2
RocketLinx ES8105-XT *Unmanaged 5-Port industrial Ethernet switch, extended temperature*	32024-1
RocketLinx ES8105F-S-XT *Unmanaged 5-Port industrial Ethernet switch, extended temperature, Single-Mode Fiber*	32028-9
RocketLinx ES8105F-M-XT *Unmanaged 5-Port industrial Ethernet switch, extended temperature, Multi-Mode Fiber*	32029-6
RocketLinx ES8105-GigE *Unmanaged 5-Port industrial Ethernet switch with full Gigabit Ethernet*	32075-3
RocketLinx ES8108 *Unmanaged 8-Port industrial Ethernet switch*	32055-5
RocketLinx ES8108F-S *Unmanaged 8-Port industrial Ethernet switch with Single-Mode fiber*	32056-2
RocketLinx ES8108F-M *Unmanaged 8-Port industrial Ethernet switch with Multi-Mode fiber*	32057-9
RocketLinx ES8108-XT *Unmanaged 8-Port industrial Ethernet switch, extended temperature*	32054-8
RocketLinx ES8108F-S-XT *Unmanaged 8-Port industrial Ethernet switch, extended temperature, Single-Mode Fiber*	32058-6
RocketLinx ES8108F-M-XT *Unmanaged 8-Port industrial Ethernet switch, extended temperature, Multi-Mode Fiber*	32059-3
RocketLinx ES8108-GigE *Unmanaged 8-Port industrial Ethernet switch with full Gigabit Ethernet*	32085-2
RocketLinx ES8508-XT *Managed 8-Port industrial Ethernet switch with extended temperature*	32010-4
RocketLinx ES8508F-S-XT *Managed 8-Port industrial Ethernet switch with Single-Mode fiber and extended temperature*	32011-1
RocketLinx ES8508F-M-XT *Managed 8-Port industrial Ethernet switch with Multi-Mode fiber and extended temperature*	32012-8
RocketLinx ES8509-XT *Managed 9-Port industrial Ethernet switch with Gigabit and extended temperature*	32065-4
RocketLinx ES8510 *Managed 10-Port industrial Ethernet switch with Gigabit*	32060-9
RocketLinx ES8510-XT *Managed 10-Port industrial Ethernet switch with Gigabit and extended temperature*	32061-6
RocketLinx ES8510-XTE *Managed 10-Port industrial Ethernet switch with extended temperature*	32062-3
RocketLinx ES8520-XT *Managed 20-Port industrial Ethernet switch with Gigabit and extended temperature*	32142-2
RocketLinx ES9528 *Managed 24-Port industrial Ethernet switch with four Gigabit ports*	32070-8
RocketLinx ES9528-XT V.2 *Managed 24-Port industrial Ethernet switch with four Gigabit ports and extended temperature*	32073-9

View pages 55-58 for the RocketLinx Industrial Ethernet switch product comparison chart.

ROCKETLINX

INDUSTRIAL POWER OVER ETHERNET SWITCHES

The Comtrol RocketLinx series of industrial PoE Ethernet switches are designed to meet the performance and environmental demands for applications requiring extended operating temperatures, rugged design, and reliable power delivery to standard and high power devices.

Comtrol's PoE family of switch products offer unique features such as:

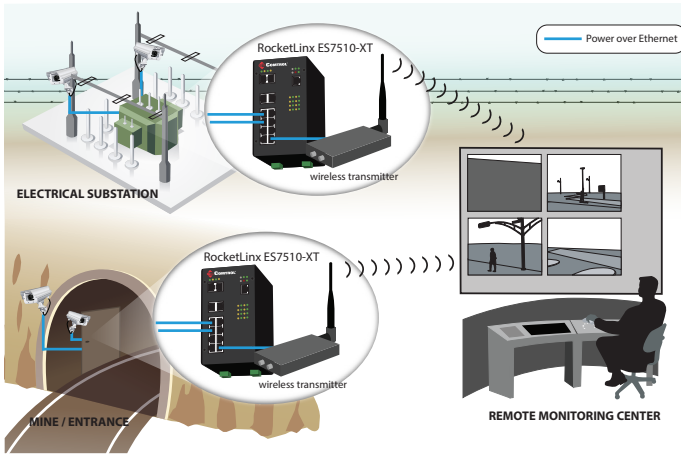
- Forced power mode
- PoE port scheduling
- Remote reboot of powered devices
- Power budget limitation with priority control

Featuring both managed and unmanaged models, the RocketLinx PoE industrial Ethernet switches provide cost-effective networking solutions delivering the industry's best Ethernet switch technologies.

For more information visit **www.comtrol.com/poe**

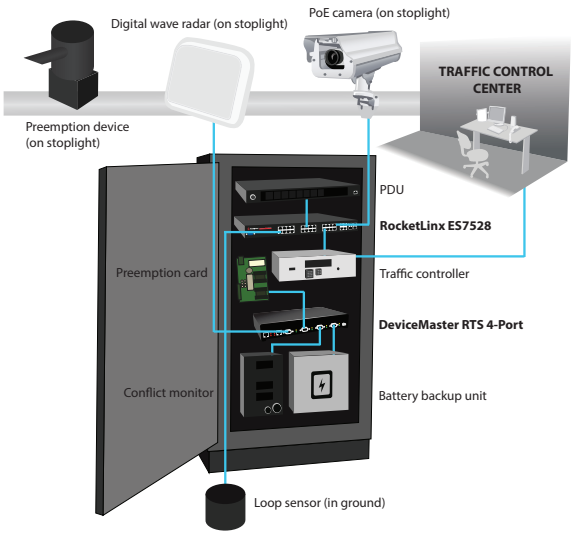
COMTROL PRODUCTS IN ACTION

Mining Surveillance with Video Monitoring



A security integration company chose Comtrol's RocketLinx ES7510-XT Power over Ethernet (PoE) switches for installation at a particular mine to construct a complete surveillance solution, monitoring access points.

Power over Ethernet (PoE) For Intersection Monitoring



The RocketLinx ES7528 PoE switches from Comtrol are being deployed to connect intersection devices to remote traffic control centers. The switches are connected to PoE IP cameras, sending video feed through a controller to the traffic control center.

ROCKETLINX POE SWITCH MODELS	PART NUMBER
RocketLinx ACS7106 *Unmanaged 6-Port PoE 802.3af and 802.3at access control Ethernet switch*	32130-9
RocketLinx ES7105 *Unmanaged 5-Port PoE 802.3af industrial Ethernet switch*	32045-6
RocketLinx ES7106-VB *Unmanaged 6-Port PoE 802.3af industrial Ethernet switch with 12/24VDC voltage boost*	32047-0
RocketLinx ES7110 *Unmanaged 10-Port PoE 802.3af industrial Ethernet switch*	32048-7
RocketLinx ES7110-VB *Unmanaged 10-Port PoE 802.3af industrial Ethernet switch with 12/24VDC voltage boost*	32049-4
RocketLinx ES7110F-VB* *Unmanaged 10-Port PoE 802.3af industrial Ethernet switch with fiber connectivity*	32042-5
RocketLinx ES7206-XT *Managed 6-Port PoE 802.3af/802.3at industrial Ethernet Gigabit PoE Plus switch*	32015-9
RocketLinx ES7506 *Managed 6-Port PoE 802.3af/at industrial Ethernet switch*	32050-0
RocketLinx ES7510 *Managed 10-Port PoE 802.3af/at industrial Ethernet switch with Gigabit*	32035-7
RocketLinx ES7510-XT *Managed 10-Port PoE 802.3af/at industrial Ethernet switch with Gigabit and extended temperature*	32046-3
RocketLinx ES7528 *Managed 28-Port PoE 802.3af/at industrial Ethernet switch*	32040-1

View pages 59-60 for the RocketLinx Industrial PoE switch product comparison chart.

** This product is preliminary.*

WHAT IS POWER OVER ETHERNET TECHNOLOGY?

Power over Ethernet or PoE is a technology that allows a system to safely pass electrical power, along with data, on Ethernet cabling. The IEEE standard for PoE requires Category 5 cable or higher for high power levels, but can operate with category 3 cable for low power levels.

Power is supplied in common mode over two or more of the differential pairs of wires found in the Ethernet cables and comes from a power supply within a PoE-enabled networking device such as an Ethernet switch.

The original IEEE 802.3af-2003 PoE standard provides up to 15.4 W of DC power (minimum 44 VDC and 350 mA to each device. Only 12.95 W is assured to be available at the powered device as some power is dissipated in the cable. The updated IEEE 802.3at-2009 PoE standard also known as PoE+ or PoE plus, provides up to 25.5 W of power.

CALCULATING POE POWER LOSS DUE TO CABLE RESISTANCE

In PoE applications, there are power losses due to cable resistance. For that reason, the PoE standard defines a higher PoE output voltage for PSE (Power Sourcing Equipment) than the PoE output voltage at the destination, which is a PoE Powered Device (PD). The voltage dictates how much power is available at a PoE powered device.

*Learn more at **www.comtrol.com/powerloss**.*

ROCKETLINX ACS7106

PoE PLUS ETHERNET SWITCH

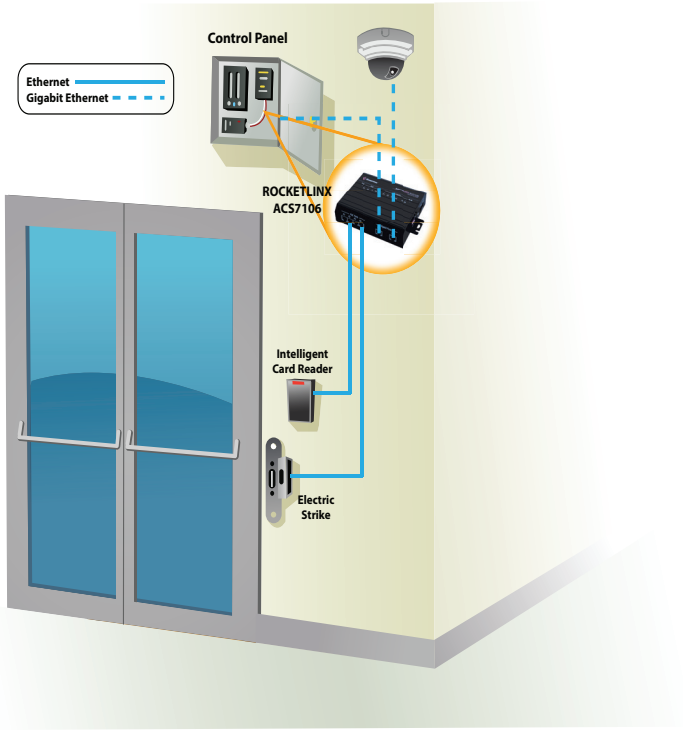
The Comtrol RocketLinx ACS7106 is a 6-port PoE Plus Ethernet switch purpose-built for delivering reliable power and data connections to access control and mobile surveillance applications.

The ACS7106 switch features four 10/100BASE-TX PoE Plus ports for providing power and data to remote PDs (Powered Devices) such as access card readers and IP surveillance cameras and two 10/100/1000BASE-TX uplink ports that assure maximum throughput for high bandwidth applications.

Housed in a durable aluminum enclosure and capable of operating in a wide environmental temperature range, the ACS7106 offers features not found in typical IT-grade switches, including enhanced reliability and ruggedness, voltage boost circuitry for 12/24VDC power connections, an alarm notification relay, and compliance with the stringent UL294B safety certification required by many cities for access control equipment.

Together, these enhanced capabilities and design details deliver the reliability and configuration options that make the Comtrol RocketLinx ACS7106 switch an ideal solution for integrating edge-of-network cameras and card readers into larger access control systems.

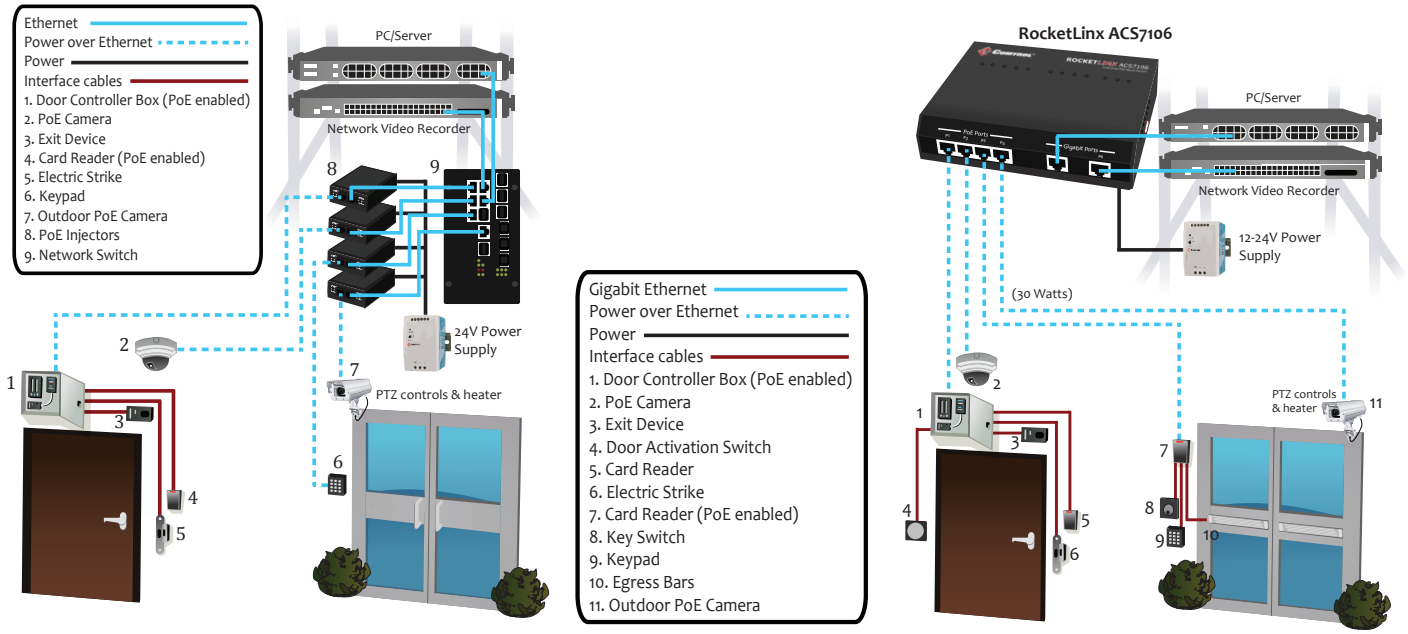
For more information visit **www.comtrol.com/rocketlinx-acs**



- UL294B approved PoE Plus switch meets state and government requirements for for Access Control applications
- Voltage boost technology: 12/24VDC input power and output up to 55VDC for PoE devices
- Four PoE Plus 802.3af/802.3at compliant ports for powering Access Control card readers and cameras
- 100W PoE power budget guarantees full 30W PoE Plus power to each port
- Four Fast Ethernet ports and two Gigabit uplink ports for high bandwidth throughput
- Relay alarm supporting 24VDC at 1A for notification of port and power events
- Rugged aluminum housing features panel or DIN rail mounting options
- Easy plug-and-play installation

FOR A CLEANER SOLUTION:

Comtrol's RocketLinx ACS7106 industrial PoE switch provides a cleaner solution, eliminating the need for PoE injectors and expensive cabling.



Easily connect the RocketLinx ACS7106 to devices such as:

- Key switches
- Key pads
- Card Readers
- Motion Egress and Egress bars
- Electric strikes
- Electrified locksets and maglocks
- Electrified exit devices
- Power transfer devices
- Door position switches
- Access Control Systems

What is UL294B?

UL294 is the standard of safety for Access Control System units that all access control systems must meet. UL294B is a newer subset of the UL294 standard, specifically for the use of Power over Ethernet (PoE) in access control systems where PoE is the primary power source. These PoE devices are required to remain working normally through multiple rigorous tests in hazardous conditions in order to obtain the UL294B certification. These tests consist of voltage/electrical variation, humidity, jarring, mechanical strength, temperature tests, etc.

The UL294 system standards apply to the construction, performance, and operation of systems intended to regulate controlled areas. These types of areas might include entry into a protected or restricted area or access to or the use of a device by electrical, electronic, or mechanical means. By having a system with devices that are UL294 compliant, you can avoid costly problems with contractors and inspectors.

DEVICEMASTER UP

INDUSTRIAL ETHERNET GATEWAYS

At Comtrol, we believe gateways should be intelligent, robust, and easy to use.

With its web-based configuration, example programs, and simplified interfaces, the DeviceMaster UP delivers near plug-and-play industrial connectivity.

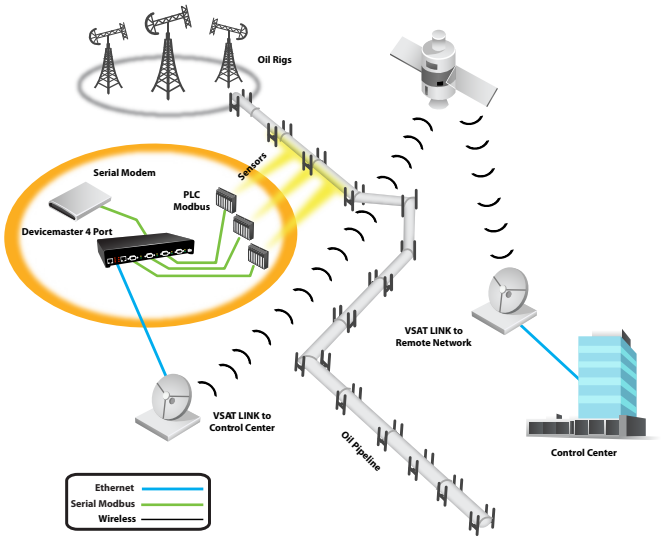
The DeviceMaster UP provides innovative EtherNet/IP™, Modbus, and PROFINET IO connectivity to a wide variety of devices. It enables quick PLC and application connection to devices such as barcode scanners, RFID readers, weigh scales, vision systems, printers, encoders, and sensors.

If you need PLC connectivity and want it done quickly and easily, the DeviceMaster UP is the solution for you.

For more information visit **www.comtrol.com/devicemaster-up**

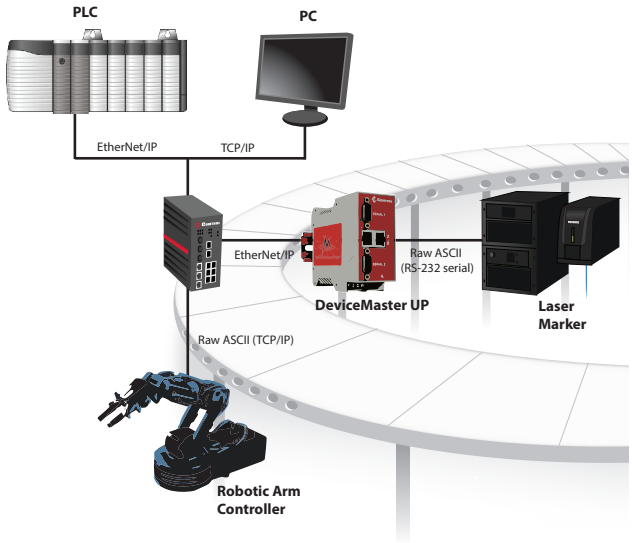
COMTROL PRODUCTS IN ACTION

Oil Pipeline Monitoring



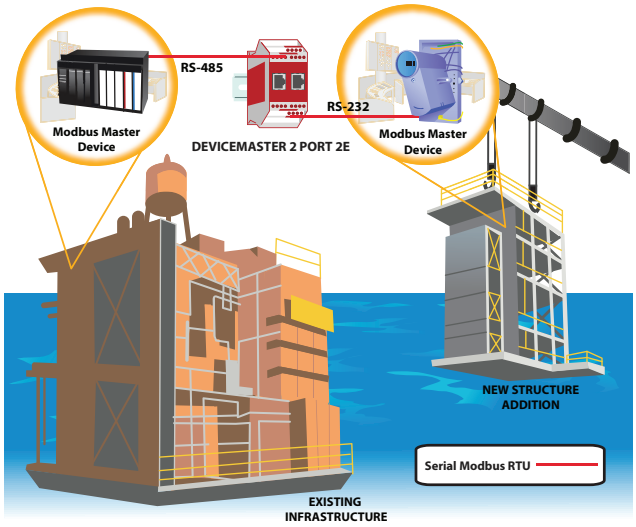
The DeviceMaster UP running Modbus firmware provides required communication links for monitoring oil pipeline infrastructure, enabling real-time communication over long distances from multiple Modbus masters to large numbers of remote devices.

Aircraft Part Manufacturing Automation



An industrial production company creating aircraft parts received a plan from a factory automation integrator to streamline a floor process in the warehouse. This configuration is integrated and controlled by a PLC, PC application and Comtrol's DeviceMaster UP 2-Port 2E with its DualConnectPlus™ feature.

DeviceMaster UP Modbus Master-to-Master Communication



A large oil and natural gas platform in the North Sea was expanding their facility capabilities by adding a massive system module to the existing platform infrastructure. In order for the two systems to communicate seamlessly with one another, the proper communication channels needed to be established. Previously thought impossible, Comtrol developed an innovative solution for connecting one Modbus master to another Modbus master using software programming supported by the DeviceMaster UP to enable this configuration.

Supported Ethernet Protocols:
EtherNet/IP™ | PROFINET IO | Modbus Solutions: Modbus/TCP, Modbus Router, Modbus Server

DEVICEMASTER UP ETHERNET/IP™

INDUSTRIAL ETHERNET GATEWAYS

The DeviceMaster UP provides highly flexible EtherNet/IP connectivity to serial and Ethernet TCP/IP devices

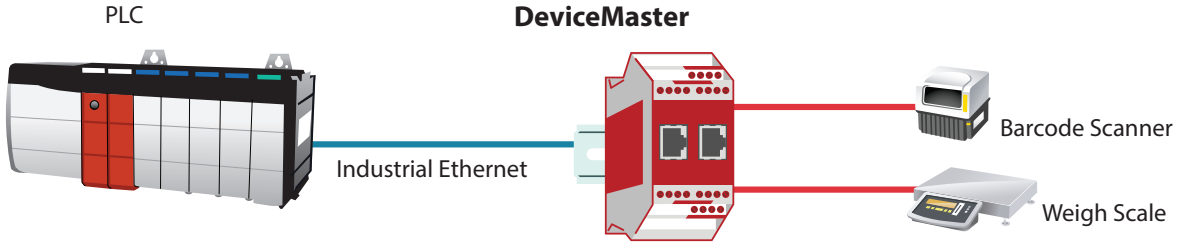
While simultaneously supporting up to 128 EtherNet/IP connections, the DeviceMaster UP provides connectivity to both serial and Ethernet TCP/IP raw/ASCII devices and provides detailed diagnostic capabilities not found in other gateways. Whether you need to connect your Rockwell PLC to a barcode scanner, weigh scale, vision system, or RFID reader, the DeviceMaster UP will provide the solution.

The DeviceMaster UP configures in just minutes, either directly from the PLC or remotely via embedded web pages. The included PortVision® DX remote management and configuration software makes it a simple task to detect and manage every DeviceMaster UP on the network, facilitating firmware updates, troubleshooting, and remote administration.

HIGHLIGHTS

- Connectivity – Ethernet/IP to serial and Ethernet TCP/IP raw/ASCII devices
- EtherNet/IP access to raw ASCII serial and Ethernet devices
  - Class 1 (Implicit) and Class 3 (Explicit) interfaces
  - Write-to-Tag/File and polling modes available
- Low-latency updates of received packets to PLC memory. Typically less than 10 ms
- Connectivity to high-speed devices – Supports message rates as high as 50 updates per second when receive mode is configured to Write-to-Tag/File.
- Large received packet support – up to 1518 bytes serial and 2048 bytes Ethernet TCP/IP
- Received packet size control – truncate or drop oversized packets
- Message throttling – ensures PLC can process each received data packet
- Intelligent packet identification – start and end of transmission character detection/appending
- Three methods of receive communication to the PLC – Write-to-Tag/File, Write-to-Tag/File-Synced, and Polling
- Vendor-specific CIP objects – configuration, data transfer, and statistics

EXAMPLE OF BASIC CONNECTIVITY OPTIONS

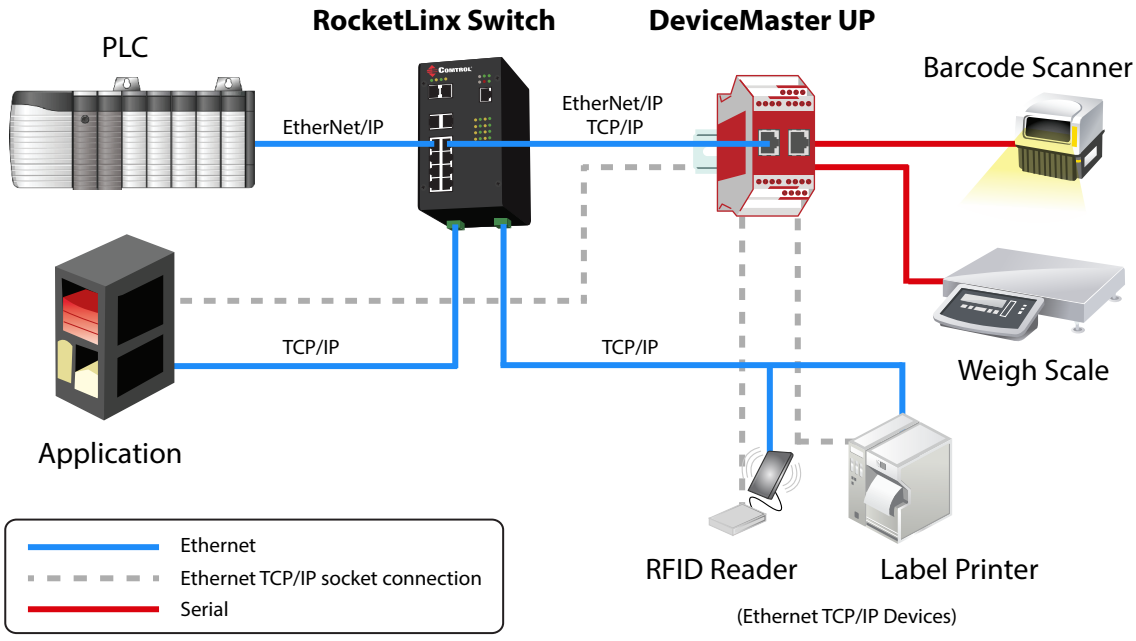


DEVICEMASTER UP ETHERNET/IP MODELS	PART NUMBER
DeviceMaster UP 1-Port VDC *1-Port industrial Ethernet serial device server with DB9 connections, 5-30VDC*	99441-1
DeviceMaster EIP-2101 *1-Port industrial Ethernet serial device server with screw terminal connectors and extended temperatures*	99601-9
DeviceMaster EIP-2201 *1-Port industrial Ethernet serial device server with terminal block connectors and extended temperatures*	99620-0
DeviceMaster UP 2-Port 1E *2-Port industrial Ethernet serial device server with terminal strip connections*	99531-9
DeviceMaster UP DB9 2-Port 1E *2-Port industrial Ethernet serial device server with DB9 connections*	99551-7
DeviceMaster UP 2-Port 2E *2-Port industrial Ethernet serial device server with terminal strip connections with Ethernet switch*	99541-8
DeviceMaster UP DB9 2-Port 2E *2-Port industrial Ethernet serial device server with DB9 connections with Ethernet switch*	99561-6
DeviceMaster EIP-2304 *4-Port industrial Ethernet serial device server with terminal block connectors and extended temperatures*	99611-8
DeviceMaster UP 4-Port *4-Port industrial Ethernet serial device server with DB9 connections*	99447-3

View pages 61-62 for the DeviceMaster UP EIP product comparison chart.

Supported PLC Models:
Allen Bradley ControlLogix, CompactLogix, FlexLogix, SoftLogix, SLC 5/05, PLC-5, and MicroLogix Models

ETHERNET/IP CONNECTIVITY USAGE DIAGRAM



DEVICEMASTER UP PROFINET®

INDUSTRIAL ETHERNET GATEWAYS

The DeviceMaster UP provides flexible PROFINET IO connectivity to serial and Ethernet TCP/IP devices

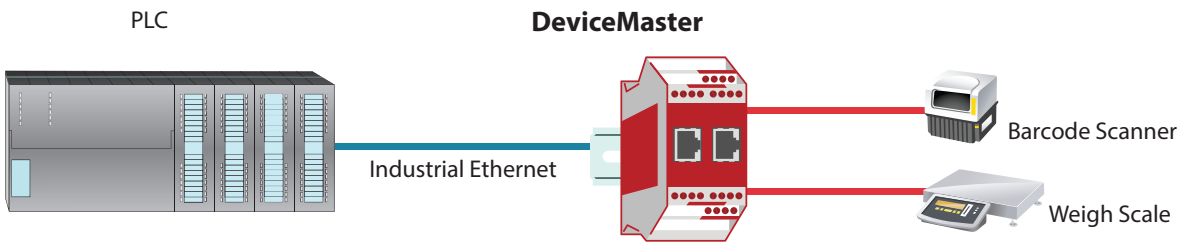
The DeviceMaster UP provides connectivity to both serial and Ethernet TCP/IP raw/ASCII devices and provides detailed diagnostic capabilities not found in other gateways. Whether you need to connect your PROFINET IO PLC to a barcode scanner, weigh scale, vision system, or RFID reader, the DeviceMaster UP will provide the solution.

The DeviceMaster UP configures in just minutes, either directly from the PROFINET Controller or remotely via embedded web pages. The included PortVision® DX remote management and configuration software makes it a simple task to detect and manage every DeviceMaster UP on the network, facilitating firmware updates, troubleshooting, and remote administration.

HIGHLIGHTS

- **Connectivity** – PROFINET IO to serial and Ethernet TCP/IP raw/ASCII devices
- **Low-latency updates** – cycle times of 8ms IO with packets less than 220 bytes
- **Large received packet support** – up to 1518 bytes serial and 1518 bytes Ethernet TCP/IP
- **Intelligent packet identification** – start and end of transmission character detection/appending
- **Received packet size control** – truncate or drop oversized packets
- Support for all PROFINET IO enabled PLCs
- **Lab certified** to PROFINET standards

EXAMPLE OF BASIC CONNECTIVITY OPTIONS



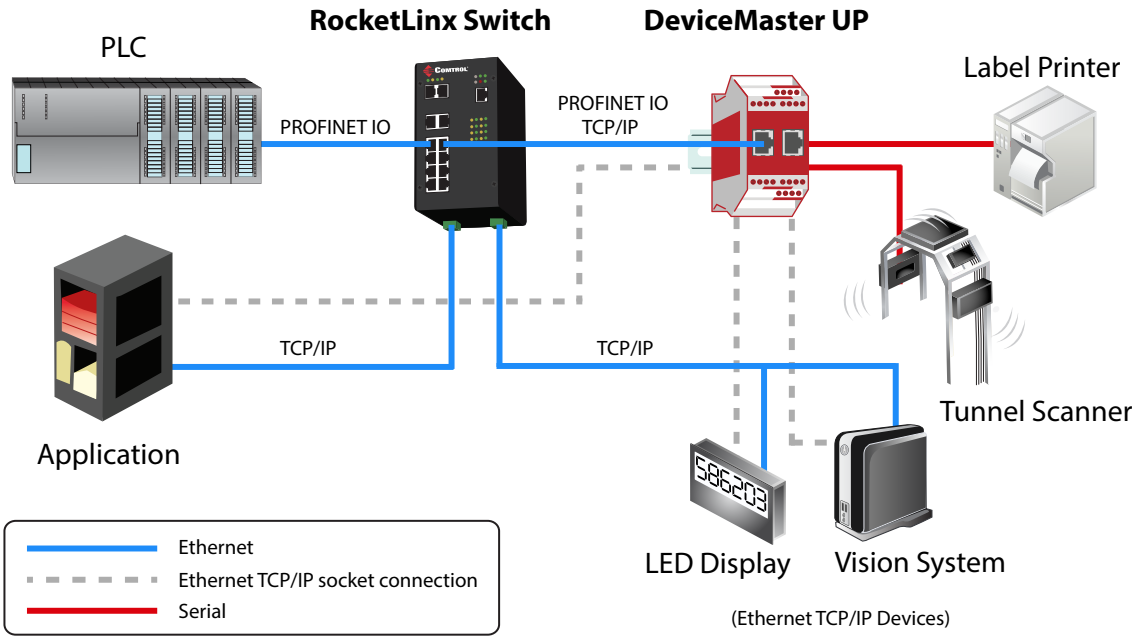
DEVICEMASTER UP PROFINET MODELS	PART NUMBER
DeviceMaster UP 1-Port VDC *1-Port industrial Ethernet serial device server with DB9 connections, 5-30VDC*	99441-1
DeviceMaster PNIO-2101 *1-Port industrial Ethernet serial device server with screw terminal connectors and extended temperatures*	99604-0
DeviceMaster PNIO-2201 *1-Port industrial Ethernet serial device server with terminal block connectors and extended temperatures*	99622-4
DeviceMaster UP 2-Port 1E *2-Port industrial Ethernet serial device server with terminal strip connections*	99531-9
DeviceMaster UP DB9 2-Port 1E *2-Port industrial Ethernet serial device server with DB9 connections*	99551-7
DeviceMaster UP 2-Port 2E *2-Port industrial Ethernet serial device server with terminal strip connections with Ethernet switch*	99541-8
DeviceMaster UP DB9 2-Port 2E *2-Port industrial Ethernet serial device server with DB9 connections with Ethernet switch*	99561-6
DeviceMaster PNIO-2304 *4-Port industrial Ethernet serial device server with terminal block connectors and extended temperatures*	99613-2
DeviceMaster UP 4-Port *4-Port industrial Ethernet serial device server with DB9 connections*	99447-3

View pages 63-64 for the DeviceMaster UP PNIO product comparison chart.

Supported PLC Models:

Siemens S7-400, S7-300
Omron CJ Series
Bosch Rexroth IndraControl L10, L15, L45, L65

PROFINET CONNECTIVITY USAGE DIAGRAM



DEVICEMASTER UP

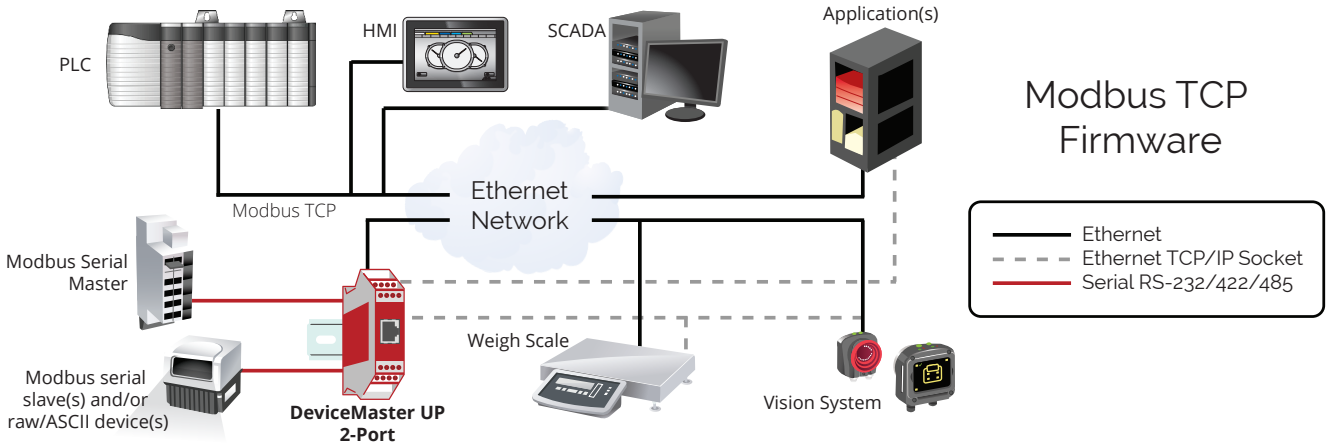
INDUSTRIAL ETHERNET GATEWAYS

MODBUS/TCP
MODBUS SERVER
MODBUS ROUTER

Loaded with Modbus Router firmware, the DeviceMaster UP is the most innovative Modbus gateway available today

Multiple Modbus master and slave types, serial and Ethernet raw/ASCII devices

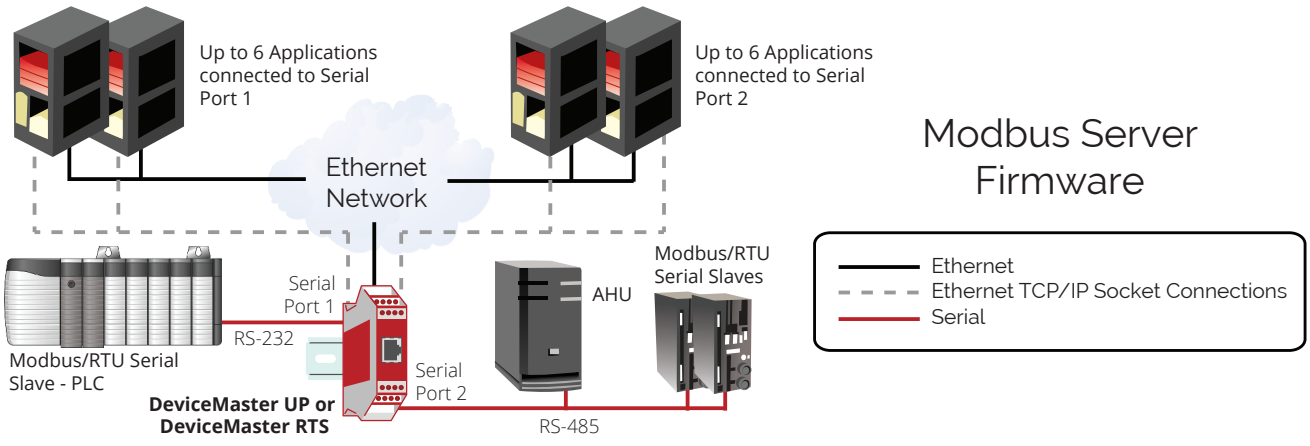
The Modbus/TCP firmware is the original DeviceMaster UP Modbus application. It has been designed to provide great flexibility for connecting both Modbus serial slaves and raw/ASCII devices to a variety of Modbus controllers and applications. Such advanced raw/ASCII options as filtering, command/response mode, peer-to-peer Modbus communications, and simultaneous connections to multiple Modbus controllers and/or Ethernet TCP/IP applications make the Modbus/TCP firmware the flagship of all Modbus gateways.



Modbus Server is an innovative application providing advanced Modbus/RTU over Ethernet TCP/IP to serial device connectivity

Modbus/RTU over Ethernet master(s) to serial slave(s)

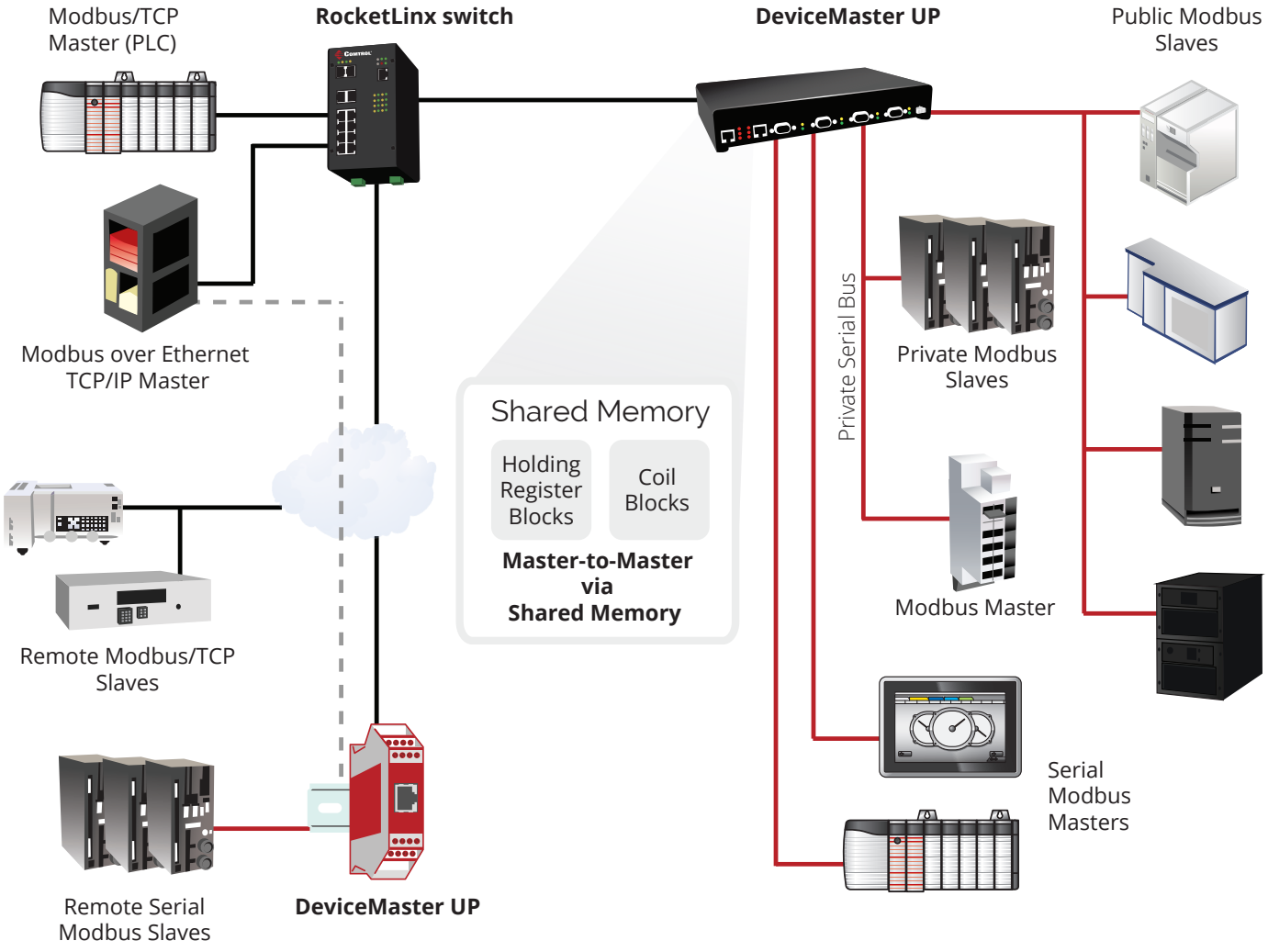
The Modbus Server application was designed to provide enhanced connectivity for OPC servers and applications that require Modbus/RTU communication from Ethernet TCP/IP or COM ports directly to serial ports. While standard gateways provide connectivity for only one application per serial port, Modbus Server provides connectivity for up to six applications per serial port. Modbus Server can be loaded onto any DeviceMaster UP, RTS, or PRO model.



Modbus Router is an innovative application providing highly versatile Modbus master to Modbus slave connectivity

Pure Modbus, more Modbus master and slave types, remote and local devices

The Modbus Router firmware was developed to provide network-wide Modbus connectivity from a wide variety of Modbus masters to a wide variety of local and remote Modbus slaves. Advanced features include master-to-master communication, private serial bus connectivity, write protection, and device ID aliasing. With simplified configuration pages and advanced routing, Modbus Router provides unmatched Modbus connectivity.



Modbus Router Firmware

Ethernet
Socket Connections
Serial

DEVICEMASTER UP

INDUSTRIAL ETHERNET GATEWAYS

MODBUS/TCP
MODBUS ROUTER
MODBUS SERVER

Modbus/TCP Supported Interfaces:
Modicon Quantum, Premium, Momentum, Compact, and Micro PLCs
GE Fanuc Rx3i, Rx7i, 90-30, 90-70 and Versamax PLCs
Numerous other PLCs, HMIs, OPC Servers, and SCADA Systems

Modbus Router Supported Interfaces:
Any PLC, SCADA System, HMI, OPC Server or Application that requires Modbus communications over Modbus/TCP, Com ports or Ethernet TCP/IP connections

Modbus Server Supported Interfaces:
OPC Servers and Applications that require Modbus/RTU communication over Com ports or Ethernet TCP/IP connections

DEVICEMASTER UP MODBUS MODELS	PART NUMBER
DeviceMaster UP 1-Port VDC *1-Port industrial Ethernet serial device server with DB9 connections, 5-30VDC*	99501-2
DeviceMaster MOD-2101 *1-Port industrial Ethernet serial device server with screw terminal connectors and extended temperatures*	99602-6
DeviceMaster MOD-2201 *1-Port industrial Ethernet serial device server with terminal block connectors and extended temperatures*	99621-7
DeviceMaster UP 2-Port 1E *2-Port industrial Ethernet serial device server with terminal strip connections*	99531-9
DeviceMaster UP DB9 2-Port 1E *2-Port industrial Ethernet serial device server with DB9 connections*	99551-7
DeviceMaster UP 2-Port 2E *2-Port industrial Ethernet serial device server with terminal strip connections with Ethernet switch*	99541-8
DeviceMaster UP DB9 2-Port 2E *2-Port industrial Ethernet serial device server with DB9 connections with Ethernet switch*	99561-6
DeviceMaster MOD-2304 *4-Port industrial Ethernet serial device server with terminal block connectors and extended temperatures*	99612-5
DeviceMaster UP 4-Port *4-Port industrial Ethernet serial device server with DB9 connections*	99447-3
DeviceMaster UP 16 *16 RS-232/422/485 software selectable ports with termination resistors*	99582-1

View pages 65-66 for the DeviceMaster UP MOD product comparison chart.

MODBUS MASTER-TO-MASTER CONNECTIVITY

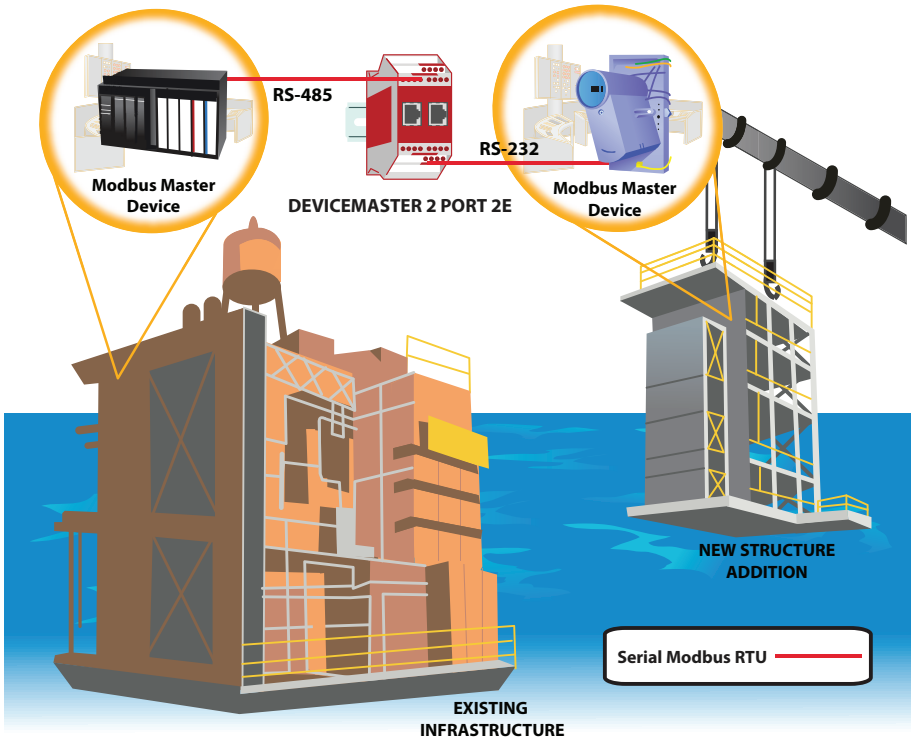
A large oil and natural gas platform in the North Sea was expanding their facility capabilities by adding a massive system module (over 1.5 million lbs) to the existing platform infrastructure. In order for the two systems to communicate seamlessly with one another, the proper communication channels needed to be established.

Control systems on each structure were configured to communicate with each other through a serial Modbus RTU RS-232 or RS-485 channel. However, the Modbus device configuration on each side was designed to communicate as a master, while traditional Modbus communication takes place between a master and a slave.

Each structure's respective developers had invested substantial resources into their control systems, so the systems integrator needed to find a way to overcome this obstacle by converting one configuration to act as a slave in the most cost-effective way possible – or by making two Modbus master devices communicate with one another. Many industry experts have expressed that master-to-master Modbus communication is impossible, but Comtrol had already developed an innovative solution to allow a Modbus master communicate with another master.

The systems integrator assigned to this task researched master-to-master connectivity and ultimately discovered the DeviceMaster UP's capabilities on a respected online forum. Hesitantly beginning the application, the integrator was highly satisfied with the end result.

As seen in the diagram, Comtrol was able to fix this integrator's problem using the DeviceMaster UP 2-Port 2E Modbus gateway. By running Modbus Router firmware, an internal slave that resides in RAM is provided that responds to commands from any properly connected external Master. The connected Master(s) can be serial or Ethernet based, and there can be 2 of them, a dozen, or more than 50. Each Master can read or write data into or out of holding registers or coils. For memory management and accessibility convenience, the slave memory is divided into 8 blocks of 200 registers, and 8 blocks of 160 coils for a total of 1600 holding registers and 1280 coils. By default, the slave ID is 252 but it can be customized to any valid Modbus slave ID (1-255.) Present values for all the registers and coils can be viewed or cleared by the user directly from the embedded web page, providing a convenient way to monitor the system or determine that a write was successful even with only one Master (writing) connected. The Modbus Router firmware was developed to provide innovative network-wide Modbus connectivity from a wide variety of Modbus masters to a wide variety of local and remote Modbus slaves. Advanced features include the above-described master-to-master communication and also private serial bus connectivity, write protection, and device ID aliasing. With simplified configuration pages and advanced routing, Modbus Router provides unmatched Modbus connectivity.



DEVICEMASTER RTS

ETHERNET DEVICE SERVERS

The DeviceMaster family of serial to Ethernet device servers enable superior device networking capabilities. Connect RS-232/422/485 serial devices to the network with DeviceMaster using your existing software applications. Supports native COM, TTY, or TCP/IP socket communications. Comtrol's DeviceMaster products feature enhanced security offering SSL & SSH management and SSL serial data stream encryption.

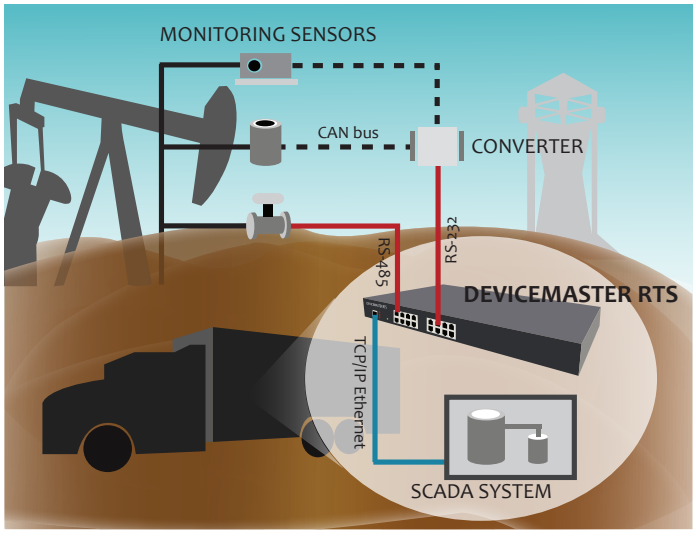
DeviceMaster offers the industry's most extensive selection of products for network-enabling serial devices. Ranging from 1-port models that provide single-device networking to 32-port models that offer high-density connections for specialized applications. The standard 1, 2, 4, and 8 port DeviceMaster RTS products are also NEMA TS2 compliant, withstanding temperatures ranging from -34° to 74° degrees Celsius.

The DeviceMaster has been ruggedized to handle extreme temperatures, operating voltage and humidity fluctuation, vibration, and shock commonly experienced in severe outdoor environments.

For more information visit **www.comtrol.com/devicemaster-rts**

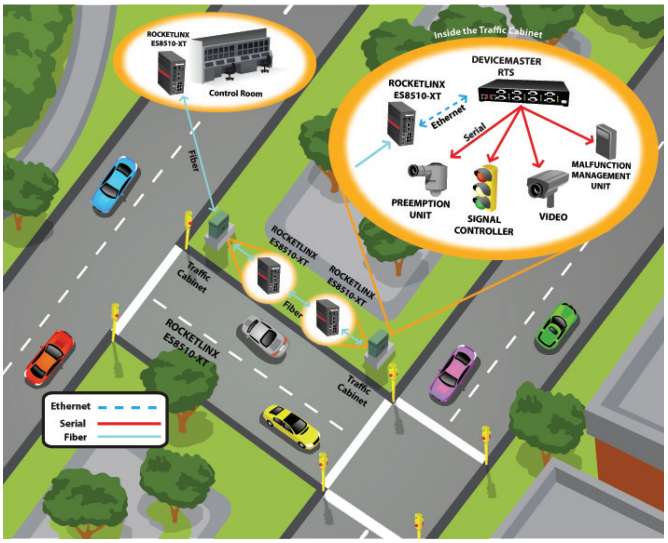
COMTROL PRODUCTS IN ACTION

Hydraulic Fracturing Process Monitoring



Comtrol's DeviceMaster RTS 16-Port serial to Ethernet gateway is included in fracking data vans as the center of communication with the field. The data from the sensors is either converted from CAN bus to RS-232, or travels directly via RS-485 to the DeviceMaster.

Traffic Intersection Monitoring



In conjunction with RocketLinx switches, the DeviceMaster RTS provides a reliable networking solution for a southwestern U.S. city with a fiber network, needing to remotely manage 120 traffic intersections from the city's traffic management center.

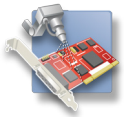
DEVICEMASTER RTS MODELS	PART NUMBER
DeviceMaster RTS 1-Port DB9 *1-Port serial device server with DB9 connections – RS/232/422/485*	99435-0
DeviceMaster RTS VDC 1-Port DB9 *1-Port serial device server with DB9 connections 5-30VDC – RS-232/422/485*	99440-4
DeviceMaster DM-2101 *1-Port industrial Ethernet serial device server with screw terminal connectors and extended temperatures*	99600-2
DeviceMaster DM-2201 *1-Port industrial Ethernet serial device server with terminal block connectors and extended temperatures*	99603-3
DeviceMaster RTS 2-Port 1E *2-Port serial device server with terminal strip connections – RS-232/422/485*	99480-0
DeviceMaster RTS 2-Port DB9 1E *2-Port serial device server with DB9 connections – RS-232/422/485*	99550-0
DeviceMaster RTS 2-Port 2E *2-Port serial device server with terminal strip connections and Ethernet switch – RS-232/422/485*	99481-7
DeviceMaster RTS 2-Port DB9 2E *2-Port serial device server with DB9 connections and Ethernet switch – RS-232/422/485*	99560-9
DeviceMaster DM-2304 *4-Port industrial Ethernet serial device server with terminal block connectors and extended temperatures*	99610-1
DeviceMaster RTS 4-Port DB9 *4-Port serial device server with DB9 connections – RS-232/422/485*	99445-9
DeviceMaster RTS 4-Port RJ45 *4-Port serial device server with RJ45 connections – RS-232/422/485*	99446-6
DeviceMaster RTS 8-Port DB9 *8-Port serial device server with DB9 connections – RS-232/422/485*	99448-0
DeviceMaster RTS 8-Port RJ45 *8-Port serial device server with RJ45 connections – RS-232/422/485*	99449-7
DeviceMaster RTS 16 LT *16-Port serial device server - RS-232/422/485*	99581-4
DeviceMaster RTS 16-Port RJ45 *16-Port serial device server with RJ45 connetions – RS-232/422/485*	99450-3
DeviceMaster RTS 16-Port RJ45 (Rack Mount) *16-Port rackmount serial device server with RJ45 connections – RS-232/422/485*	99455-8
DeviceMaster RTS 32-Port RJ45 (Rack Mount) *32-Port rackmount serial device server with RJ45 connections – RS-232/422/485*	99456-5

View pages 67-70 for the DeviceMaster RTS product comparison chart.

NEMA TS2

EXTENDED TEMPERATURE RATINGS

Conformal coating options available
See page 78 for details



DEVICEMASTER

PRO, SERIAL HUB, FREEWIRE, AND LT16

DeviceMaster PRO | DeviceMaster PRO is our top-of-the-line device server. The DeviceMaster PRO can also be deployed in harsh or electrically noisy environmental conditions because it delivers an unequalled 25KV surge protection on each serial port. The PRO also has software-selectable ports (RS-232/422/485), and the standard 1, 2, 4, and 8 port products are also NEMA TS2 compliant, withstanding temperatures ranging from -34° to 74° degrees Celsius.

DeviceMaster Serial Hub | DeviceMaster Serial Hubs are ideally suited for in-server multi-port card replacement when RS-232 serial devices are located remotely from the PC hosting your application. Serial Hubs are available in 8- and 16-port models, which are the most popular port-density configurations for in server multiport cards.

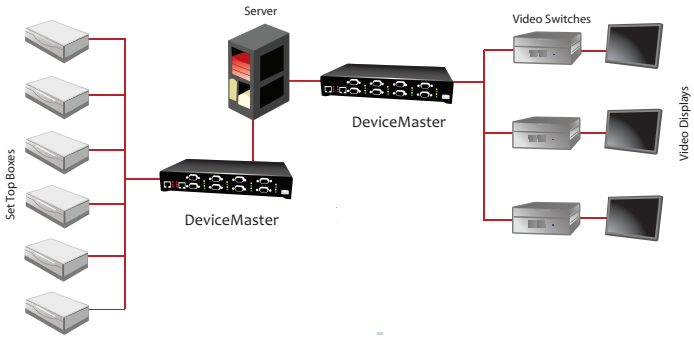
DeviceMaster FreeWire | DeviceMaster FreeWire is ideal for situations where LANs are not feasible, where running network cable is not practical, or where devices are physically moved or rearranged periodically. It offers 802.11b/g wireless communications with an option of direct 10/100 Ethernet connection, and industry leading wireless security.

DeviceMaster LT16 | DeviceMaster LT16 is a small form-factor 16-port serial device server with termination resistors, designed for network-enabling serial communications devices. The LT16 is also RS-232/422/485 software selectable with dual 10/100 Fast Ethernet ports and web-based or Windows configuration options.

For more information visit **www.comtrol.com/devicemaster**

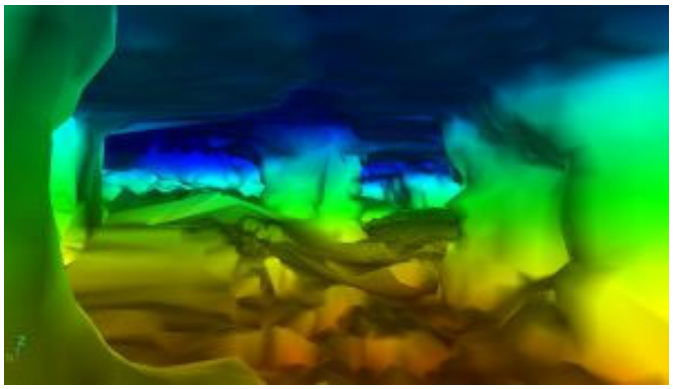
COMTROL PRODUCTS IN ACTION

Integrated Testing Equipment - Set Top Boxes



Comtrol's DeviceMaster serial hubs provide scalability, flexibility, and streamlined communication channels for an electronic testing company in order to perform accurate tests on set top boxes for a large cable corporation.

Wireless Communication to Underground Laser Scanner



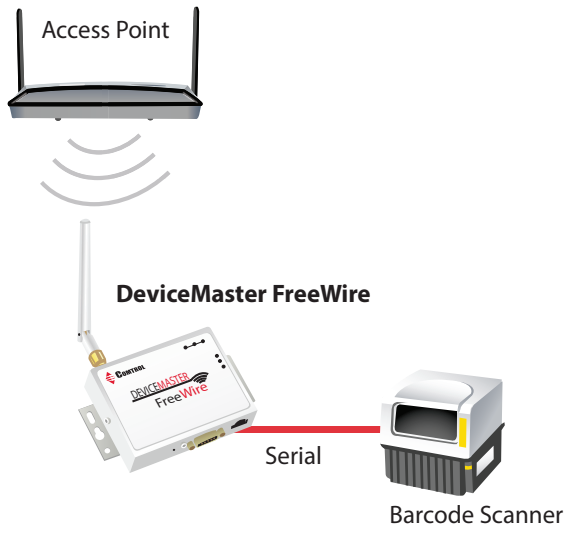
The DeviceMaster FreeWire enables wireless RS-232 communication between a laser measurement scanner system and a remote management location to safely monitor and read data from potentially hazardous mining cavities.

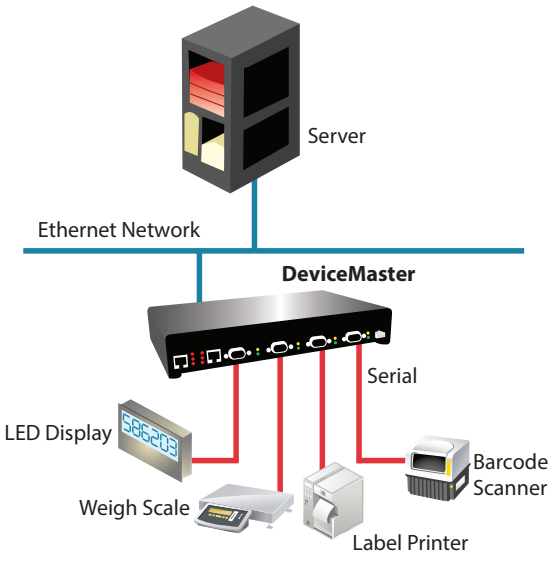
DEVICEMASTER PRO, SERIAL HUB, LT16, AND FREEWIRE MODELS	PART NUMBER
DEVICEMASTER PRO	
DeviceMaster PRO 8-Port *8-Port serial device server with DB9 connections – RS-232/422/485 – surge protection*	99443-5
DeviceMaster PRO 16-Port *16-Port serial device server with DB9 connections – RS-232/422/485 – surge protection*	99451-0
DEVICEMASTER SERIAL HUB	
DeviceMaster Serial Hub 8-Port *8-Port serial device server with DB9 connections – RS-232 only*	99465-7
DeviceMaster Serial Hub 16-Port *16-Port serial device server with DB9 connections – RS-232 only*	99460-2
DEVICEMASTER FREEWIRE	
DeviceMaster FreeWire 1-Port *1-Port wireless serial device server*	31300-7

NEMA TS2

EXTENDED TEMPERATURE RATINGS

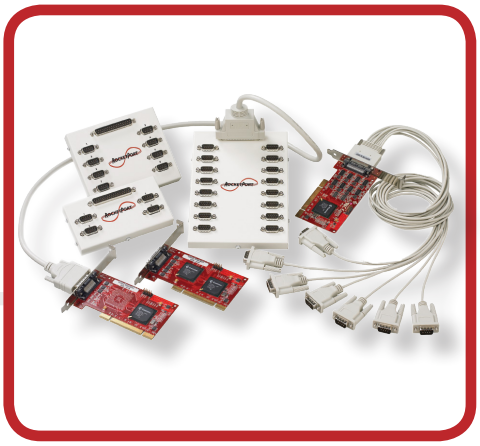
EXAMPLE OF BASIC CONNECTIVITY OPTIONS





ROCKETPORT INFINITY

MULTIPORT SERIAL CARDS



PCI-X serial device connectivity

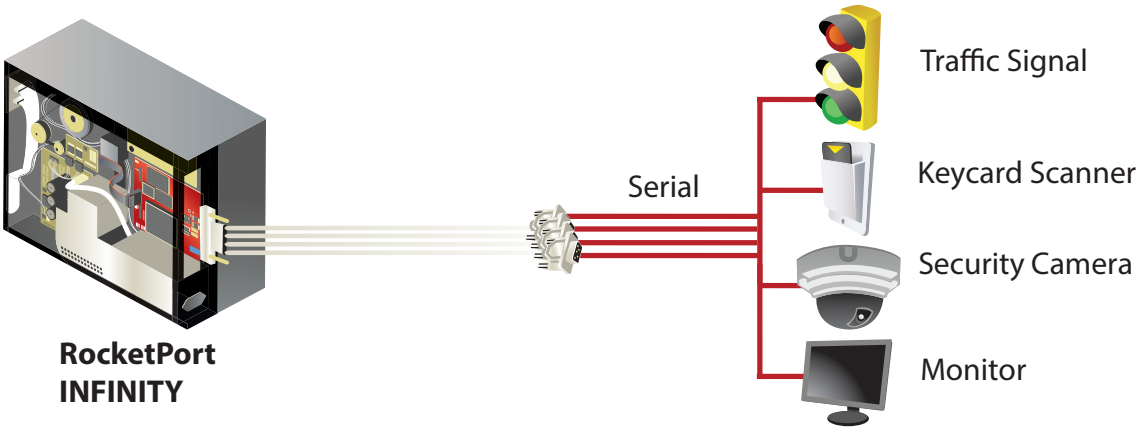
The INFINITY design maximizes serial performance via Comtrol's exclusive high-performance Unity ASIC chip. These cards provide a variety of options for connecting and communicating with your devices.

HIGHLIGHTS

- 32 or 64 Bit
- 3.3 or 5 Volt
- uPCI or PCI-X connectivity
- 4- to 32-port interfaces
- RoHS2 compliant
- Low-profile or standard height compatible
- RS-232/422/485 software-selectable
- High-performance cards with speeds up to 921 kbps
- Microsoft Signed Drivers (WHQL) for Windows 7, Windows Server 2008, Windows Vista, Windows Server 2003, and Windows XP

For more information visit **www.comtrol.com/rocketport**

EXAMPLE OF BASIC CONNECTIVITY OPTIONS



ROCKETPORT INFINITY MODELS	PART NUMBER
RocketPort INFINITY Quad/DB9 *4-Port PCI-X serial card with DB9 fanout cable*	30005-2
RocketPort INFINITY Quad/DB25 *4-Port PCI-X serial card with DB25 fanout cable*	30006-9
RocketPort INFINITY Octa/DB9 *8-Port PCI-X serial card with DB9 fanout cable*	30000-7
RocketPort INFINITY Octa/DB25 *8-Port PCI-X serial card with DB25 fanout cable*	30001-4
RocketPort INFINITY Octa/RJ45 *8-Port PCI-X serial card with RJ45 fanout cable*	30002-1
RocketPort INFINITY Quad/Octa Bulk *8-Port PCI-X serial card – No cable included – 50 pack*	30003-8
RocketPort INFINITY 4J *4-Port PCI INFINITY serial card with RJ45 connections*	30023-6
RocketPort INFINITY 8J *8-Port PPCI INFINITY serial card with RJ11 connections*	30027-4
RocketPort INFINITY 4-Port or 8-Port Card *8-Port PCI-X serial card – No cable included*	30020-5
RocketPort INFINITY 16-Port Card *16-Port PCI-X serial card*	30015-1
RocketPort INFINITY 32-Port Card *32-Port PCI-X serial card*	30010-6

These interfaces work with RocketPort INFINITY serial cards	
RocketPort 4-Port DB9M Interface *4-Port interface with DB9 male connections*	30050-2
RocketPort 8-Port DB9M Interface *8-Port interface with DB9 male connections*	30040-3
RocketPort 8-Port DB9M Surge Interface *8-Port interface with DB9 male connections – added surge protection*	30045-8
RocketPort 8-Port DB25F Interface *8-Port interface with DB25 female connections*	30080-9
RocketPort 8-Port DB25M Surge Interface *8-Port interface with DB25 female connections – added surge protection*	30085-4
RocketPort 16-Port DB9M Interface *16-Port interface with DB9 male connections*	30030-4
RocketPort 16-Port DB9M Surge Interface *16-Port interface with DB9 male connections – added surge protection*	30035-9
RocketPort 16-Port DB25F Interface *16-Port interface with DB25 male connections*	30070-0
RocketPort 16-Port Rack Mount Interface *16-Port interface with RJ45 connections*	30055-7
RocketPort 16-Port DB25M Surge Interface *16-Port interface with DB25 male connections – added surge protection*	30075-5
RocketPort 32-Port Rack Mount Interface *32-Port interface with RJ45 connections*	30060-1

View pages 71-72 for the RocketPort INFINITY product comparison chart.

ROCKETPORT EXPRESS
MULTIPORT SERIAL CARDS

PCI Express serial device connectivity

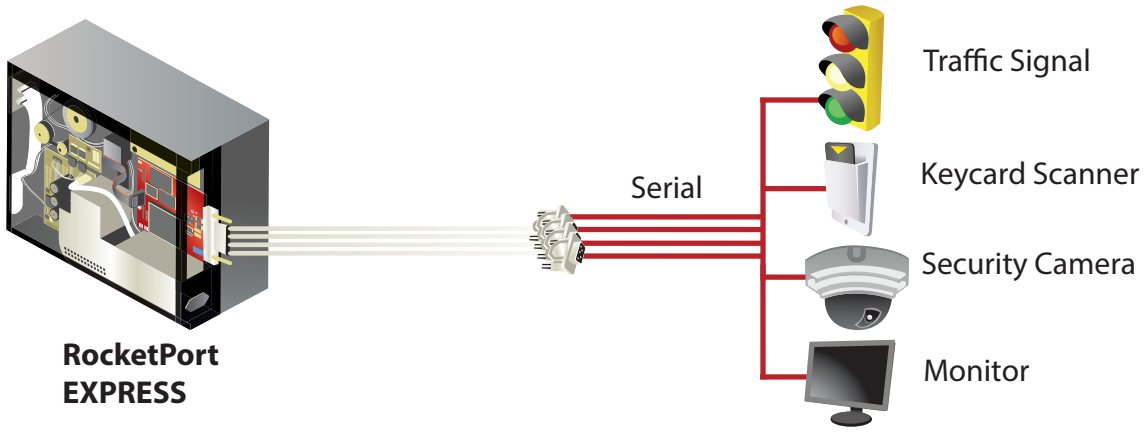
The RocketPort EXPRESS PCIe product family is upgraded from previous PCI BUS technology. These advanced PCIe cards can now be connected via PCIe BUS with increased speed. The EXPRESS design takes advantage of the increased performance of Comtrol's exclusive Unity ASIC chip.

HIGHLIGHTS

- PCI Express serial x1, x2, x4, x8, x12 and x16 lane connectivity
- Low-profile or standard height compatible
- RS-232, RS-422, RS-485 software-selectable
- 4- to 32-port interfaces
- RoHS2 compliant
- High-performance serial port expansion cards with speeds up to 921 kbps
- Microsoft Signed Drivers (WHQL) for Windows 7, Windows Server 2008, Windows Vista, Windows Server 2003 and Windows XP

For more information visit **www.comtrol.com/rocketport**

EXAMPLE OF BASIC CONNECTIVITY OPTIONS



ROCKETPORT EXPRESS MODELS	PART NUMBER
RocketPort EXPRESS Quad/DB9 *4-Port PCI EXPRESS serial card with DB9 fanout cable*	30126-4
RocketPort EXPRESS Quad/DB25 *4-Port PCI EXPRESS serial card with DB25 fanout cable*	30127-1
RocketPort EXPRESS Octa/DB9 *8-Port PCI EXPRESS serial card with DB9 fanout cable*	30128-8
RocketPort EXPRESS Octa/DB25 *8-Port PCI EXPRESS serial card with DB25 fanout cable*	30129-5
RocketPort EXPRESS Octa/RJ45 *8-Port PCI EXPRESS serial card with RJ45 fanout cable*	30130-1
RocketPort EXPRESS Quad/Octa Bulk *8-Port PCI EXPRESS serial card – No cable included – 50 pack*	30131-8
RocketPort EXPRESS 4-Port or 8-Port Card *8-Port PCI EXPRESS serial card - No cable included*	30136-3
RocketPort EXPRESS 4J RJ45 Card *4-Port PCI EXPRESS serial card with RJ45 connections*	31305-2
RocketPort EXPRESS 8J RJ11 Card *8-Port PCI EXPRESS serial card with RJ11 connections*	31310-6
RocketPort EXPRESS 16-Port Card *16-Port PCI EXPRESS serial card*	30137-0
RocketPort EXPRESS 32-Port Card *32-Port PCI EXPRESS serial card*	30138-7

These interfaces work with RocketPort EXPRESS serial cards	
RocketPort 4-Port DB9M Interface *4-Port interface with DB9 male connections*	30050-2
RocketPort 8-Port DB9M Interface *8-Port interface with DB9 male connections*	30040-3
RocketPort 8-Port DB9M Surge Interface *8-Port interface with DB9 male connections – added surge protection*	30045-8
RocketPort 8-Port DB25F Interface *8-Port interface with DB25 female connections*	30080-9
RocketPort 8-Port DB25M Surge Interface *8-Port interface with DB25 female connections – added surge protection*	30085-4
RocketPort 16-Port DB9M Interface *16-Port interface with DB9 male connections*	30030-4
RocketPort 16-Port DB9M Surge Interface *16-Port interface with DB9 male connections – added surge protection*	30035-9
RocketPort 16-Port DB25F Interface *16-Port interface with DB25 male connections*	30070-0
RocketPort 16-Port Rack Mount Interface *16-Port interface with RJ45 connections*	30055-7
RocketPort 16-Port DB25M Surge Interface *16-Port interface with DB25 male connections – added surge protection*	30075-5
RocketPort 32-Port Rack Mount Interface *32-Port interface with RJ45 connections*	30060-1

View pages 73-74 for the RocketPort EXPRESS product comparison chart.

ROCKETPORT uPCI

MULTIPORT SERIAL CARDS

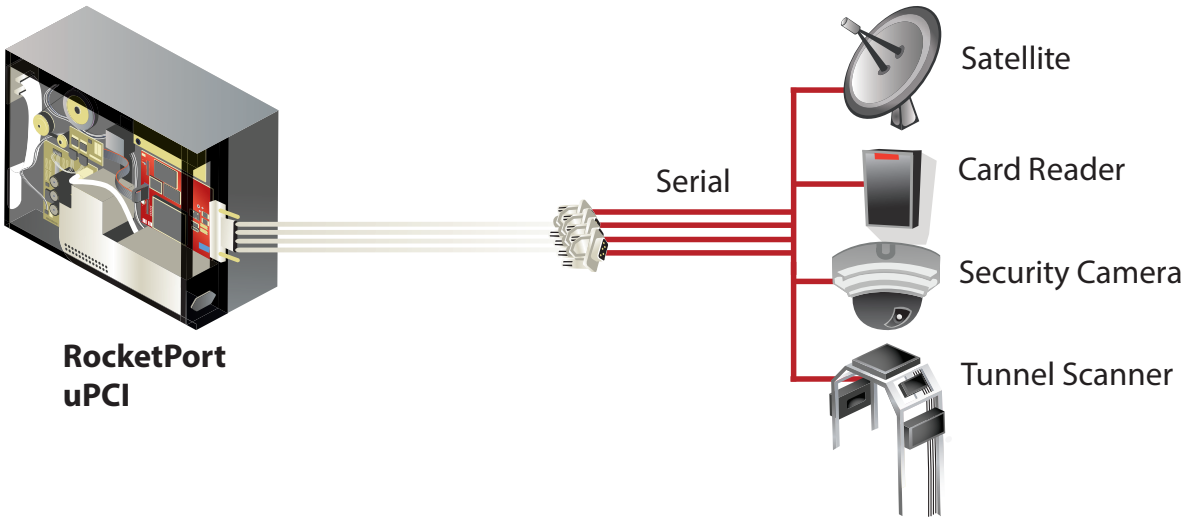
RocketPort Universal PCI (uPCI) multiport cards make serial device connectivity reliable, cost effective and easy.

HIGHLIGHTS

- 3.3 and 5.0 Volt PCI bus architectures
- RS-232 and RS-422 serial interfaces (depending on model)
- Both fan-out cables and serial interface boxes available, supporting DB9, DB25, and RJ45
- Up to 32 COM ports can be added using a single slot
- Highly optimized on-board processor delivers sustained throughput across all ports
- Large FIFOs, 64 times larger than a 16550 UART, maximize speed and minimize data loss while optimizing host efficiency and data integrity
- Exceptional reliability and one of the industry's longest Mean Time Between Failure (MTBF)
- Leading price/performance for any multiport card

For more information visit **www.comtrol.com/rocketport**

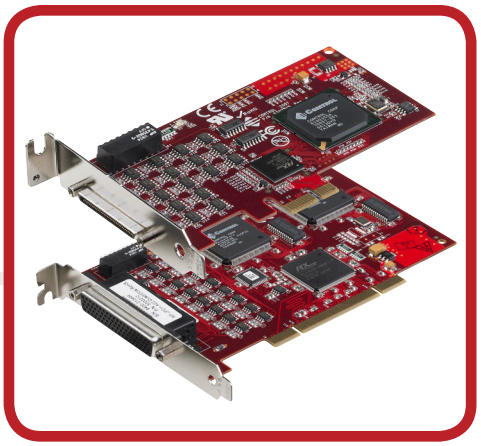
EXAMPLE OF BASIC CONNECTIVITY OPTIONS



ROCKETPORT UPCI MODELS	PART NUMBER
RocketPort uPCI Octa/RJ45 *8-Port PCI serial card with RJ45 fanout cable*	99345-2
RocketPort uPCI 8-Port Low Profile *8-Port PCI serial card – low profile*	99365-0
RocketPort uPCI 16-Port *16-Port PCI serial card*	99355-1
RocketPort uPCI 32-Port *32-Port PCI serial card*	99356-8

ROCKETPORT SMPTE

SMPTE MULTIPORT SERIAL CARDS



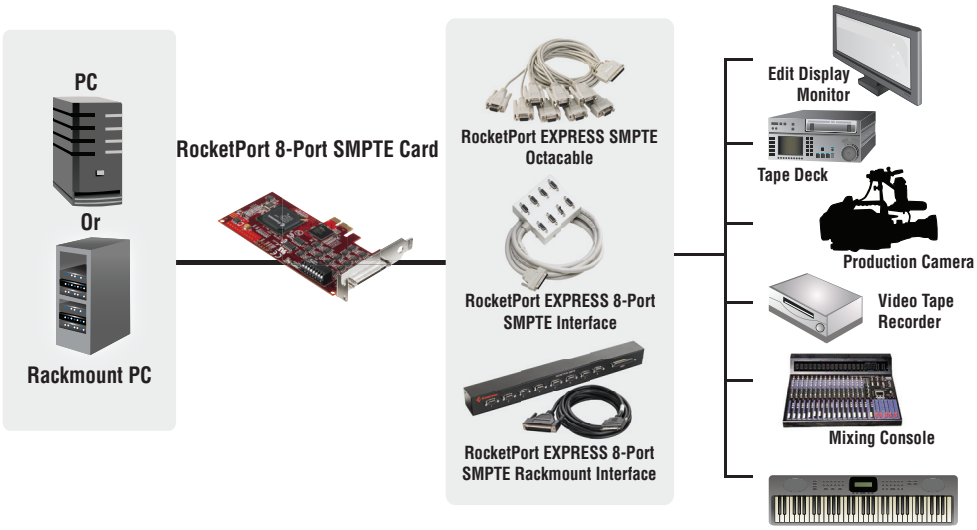
Designed specifically for the broadcast industry

The RocketPort SMPTE (Society of Motion Picture and Television Engineers) products are in compliance with the SMPTE 207M standard, meeting broadcast-specific needs. Comtrol offers multiple SMPTE cards, cables, and interfaces to maximize compatibility and efficiency throughout a system.

HIGHLIGHTS

- uPCI: 2 or 8 Port expansion utilizing a 32- or 64- bit PCI card slot
- EXPRESS: PCI Express x1, x2, x4, x8, x12 and x16 lane connectivity
- DB9 connectors
- Complies with SMPTE 207M standards
- RS-422 software support
- Various cards, interfaces and cabling options available
- 3.3 and 5.0 Volt PCI bus structures
- RoHS2 compliant

EXAMPLE OF BASIC CONNECTIVITY OPTIONS



ROCKETPORT SMPTE MODELS	PART NUMBER
UPCI AND EXPRESS CARD OPTIONS	
RocketPort uPCI 2-Port SMPTE Card *2-Port PCI SMPTE serial card*	99330-8
RocketPort EXPRESS 8-Port SMPTE Card (requires interface) *8-Port PCI EXPRESS serial SMPTE serial card*	31320-5
EXPRESS INTERFACE AND CABLE OPTIONS (Interfaces below exclusive to SMPTE cards)	
RocketPort EXPRESS SMPTE Octacable *8-Port PCI Express serial card with SMPTE DB9 fanout cable*	31330-4
RocketPort EXPRESS 8-Port SMPTE Interface *8-Port interface with SMPTE DB9 connections*	31325-0
RocketPort EXPRESS 8-Port SMPTE Rack Mount Interface *8-Port rack mount interface with SMPTE DB9 connections*	31315-1

For more information visit **www.comtrol.com/smpte**

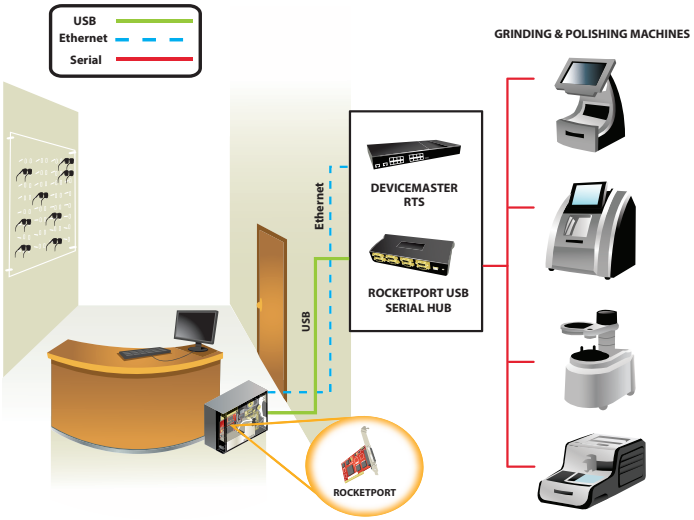
ROCKETPORT USB
USB SERIAL HUB

RocketPort USB Serial Hub | USB-attached serial expansion device for PC-based servers and client computers. Delivering four or eight RS-232 ports, the RocketPort USB Serial Hub provides the ideal solution to easily add multiple serial ports for virtually any system application, including retail, industrial applications, POS, remote access, and data collection.

For more information visit **www.comtrol.com/rocketportsh** or **www.comtrol.com/rocketmodem**

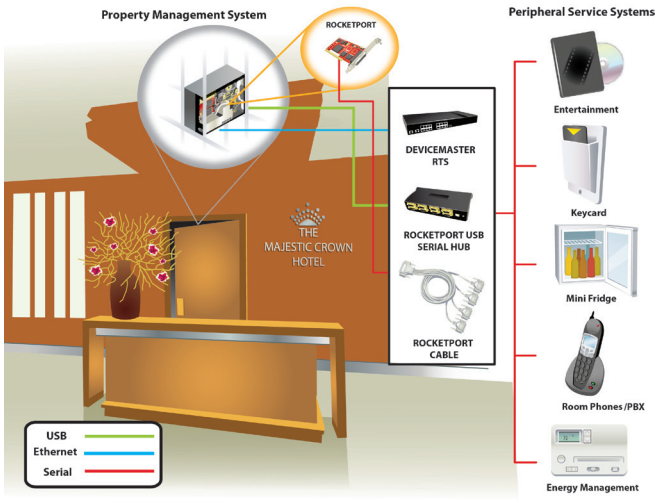
COMTROL PRODUCTS IN ACTION

PC & Lens Manufacturing Equipment Connectivity



The RocketPort serial card, along with the DeviceMaster RTS or RocketPort Serial Hub, provides serial communication between computers and eyewear equipment, allowing optometrists to perfectly fit prescription lenses into frames.

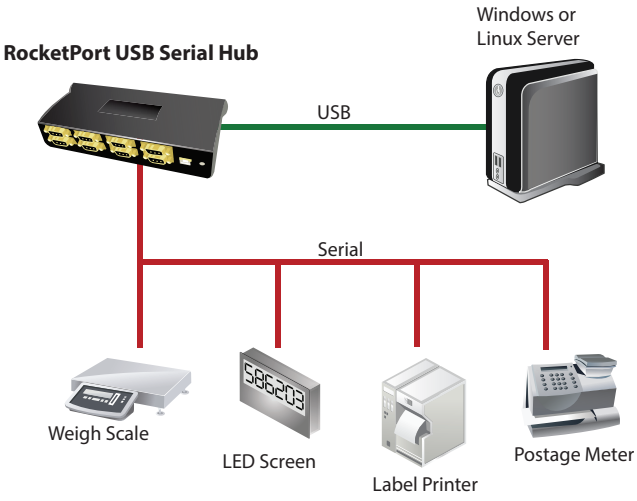
Property Management and Peripheral Systems Integration



Comtrol's RocketPort and DeviceMaster products assist in communication between PMS (Property Management Systems) and multiple peripheral service systems such as phones/PBX, keycard readers, and energy management systems.

ROCKETPORT USB SERIAL HUB AND ROCKETMODEM MODELS	PART NUMBER
ROCKETPORT USB SERIAL HUBS	
RocketPort USB Serial Hub II 4-Port *4-Port USB serial hub*	98295-1
RocketPort USB Serial Hub III 8-Port *8-Port USB serial hub*	98296-8

EXAMPLE OF BASIC CONNECTIVITY OPTIONS



PRODUCT ACCESSORIES

MEDIA CONVERTERS, POWER SUPPLIES, AND SFPs

PRODUCT ACCESSORIES MODELS	PART NUMBER
ROCKETLINX MC5001 SERIAL TO ETHERNET	
RocketLinx MC5001 Single-Mode	32000-5
RocketLinx MC5001 Multi-Mode	32001-2
ROCKETLINX MC7001 ETHERNET TO FIBER	
RocketLinx MC7001 Single-Mode	32020-3
RocketLinx MC7001 Multi-Mode	32021-0
DIN RAIL POWER SUPPLIES	
Power Supply PS1020 (24V, 24W)	32100-2
Power Supply PS1040 (24V, 40W)	32103-3
Power Supply PS1060 (24V, 60W)	32101-9
Power Supply PS1100 (24V, 100W)	32102-6
Power Supply PS1100A (48V, 100W)	32122-4
PULS ML60.242	32112-5
MeanWell SDR-240-48 (48-55VDC, 240W)	32123-1
MeanWell SDR-480-48 (48-55VDC, 480W)	32124-8
POWER CORDS	
Australia Power Cord Kit	1200052
China Power Cord Kit	1200049
India Power Cord Kit	1200051
Japan Power Cord Kit	1200050
UK Power Cord Kit	1200053
UNIVERSAL POWER SUPPLIES	
Universal Power Supply Kit (24V, 24W, 3-Pin Terminal Block)	1200035
Universal Power Supply Kit (24V, 24W, 3-Pin Terminal Block)	1200036
Universal Power Supply (5VDC, 10W, 2.1MM Barrel Connector) North America	1200107
Universal Power Supply (24VDC, 24W, 3-Wire)	1200038
Universal Power Supply (48V, 120W, Bare Wire)	1200048
Universal Power Supply (5VDC, 10W, 2.1MM Barrel Connector) EURO	1200108
DEVICEMASTER ACCESSORIES	
DeviceMaster Rack Mount Shelf	99160-1
DeviceMaster RTS 16 LT Bracket Kit	1200115
ROCKETPORT ACCESSORIES	
DB9F to RJ45F Adapter Kit, 4 Piece	1200047
DB9 Female to DB25 Female Adapter Kit	30300-8
RocketPort uPCI Extension Cable	1200109
RocketPort INFININITY/EXPRESS Cable	1200110
RocketPort RJ45 Male to RJ45 Female Cable	4000248

SFP TRANSCEIVERS	
SFP, Multi-Mode, 100BASE-FX Fast Ethernet	1200042
SFP, Multi-Mode, 100BASE-FX (Extended Temperature)	1200057
SFP, Single-Mode, 100 BASE-FX Fast Ethernet (Extended Temperature)	1200092
SFP, Single-Mode, 100BASE-FX Fast Ethernet	1200043
SFP, Single-Mode, 100BASE-FX (Extended Temperature)	1200058
SFP, Single-Mode, 100BASE-FX Fast Ethernet (Extended Temperature)	1200086
SFP, Single-Mode, 100BASE-FX Fast Ethernet (Extended Temperature)	1200069
SFP, Multi-Mode, 1000BASE-SX Gigabit Ethernet	1200044
SFP, Single-Mode, 100BASE-FX Fast Ethernet (Extended Temperature)	1200093
SFP, Multi-Mode, 1000BASE-SX Fast Ethernet (Extended Temperature)	1200088
SFP, Multi-Mode, 1000BASE-GSX (Extended Temperature)	1200059
SFP, Single-Mode, 1000BASE-LX Gigabit Ethernet	1200045
SFP, Single-Mode, 1000BASE-LX Gigabit Ethernet (Extended Temperature)	1200066
SFP, Single-Mode, 1000BASE-LHX (Extended Temperature)	1200067
SFP, Single-Mode, 1000BASE-LHX (Extended Temperature)	1200094
SFP, Single-Mode, 1000BASE-LHX Gigabit Ethernet (Extended Temperature)	1200068
SFP, Single-Mode, 1000BASE-GLX (Extended Temperature)	1200060
SFP, Single-Mode, 1000BASE-GLHX (Extended Temperature)	1200061
SFP, Single-Mode, 1000BASE-ZX (Extended Temperature)	1200065
SFP, BIDI, 10KM, 1310 TX/1550 RX, Gigabit	1200080
SFP, Single-Mode, 1000BASE-ZX Gigabit Ethernet (Extended Temperature)	1200095
SFP, BIDI, 10KM, 1550 TX/1310 RX, Gigabit	1200081
SFP, BIDI, 20KM, 1310 TX/1550 RX, Gigabit	1200082
SFP, BIDI, 20KM, 1550 TX/1310 RX, Gigabit	1200083
SFP, BIDI, 20KM, 1310 TX/1550 RX Fast Ethernet (Extended Temperature)	1200076
SFP, BIDI, 20KM, 1550 TX/1310 RX Fast Ethernet (Extended Temperature)	1200077
ROCKETLINX ACCESSORIES	
LC-ST Fiber Adapter Cable Multi-Mode	1200055
LC-ST Fiber Adapter Cable Single-Mode	1200056
LC-SC Fiber Adapter Cable Multi-Mode	1200090
LC-SC Fiber Adapter Cable Multi-Mode	1200089
Power over Ethernet Splitter (24VDC, 24 Watts)	1200054
RocketLinx Wall Mount Plate Kit	1200116
IO-LINK MASTER ACCESSORIES	
M12 Ethernet Cable, D-Coded, Male to RJ45M, 0.5M	1200097
M12 Ethernet Cable, D-Coded, Male to RJ45M, 1.0M	1200098
M12 Ethernet Cable, D-Coded, Male to RJ45M, 2.0M	1200099
M12 Ethernet Cable, D-Coded, Male to Male, 0.5M	1200100
M12 Ethernet Cable, D-Coded, Male to Male, 1.0M	1200101
M12 Ethernet Cable, D-Coded, Male to Male, 2.0M	1200102
M12 Ethernet Cable, A-Coded, Male to Female, 0.5M	1200103
M12 Ethernet Cable, A-Coded, Male to Female, 1.0M	1200104
M12 Ethernet Cable, A-Coded, Male to Female, 2.0M	1200105
M12 Ethernet Cable, A-Coded, Female to Bare Wire, 2.0M	1200106
M12 Ethernet Cable, T-Coded, Female to Bare Wire, 2.0M	1200112
M12 Ethernet Cable, T-Coded, Female to Bare Wire, 5.0M	1200113
M12 Ethernet Cable, T-Coded, Female to Bare Wire, 10.0M	1200114

ROCKETLINX

INDUSTRIAL ETHERNET SWITCH PRODUCT COMPARISON CHART

Industrial Ethernet Switch	RocketLinx ES8105 (32025-8)	RocketLinx ES8105-XT (32024-1)	RocketLinx ES8105F-S (32026-5) & ES8105F-M (32027-2)	RocketLinx ES8105F-S-XT (32028-9) & ES8105F-M-XT (32029-6)
HARDWARE				
Managed/Unmanaged	Unmanaged	Unmanaged	Unmanaged	Unmanaged
Total Ports	5	5	5	5
10/100BASE-TX Ports	5	5	4	4
10/100/1000BASE-TX Ports	N/A	N/A	N/A	N/A
Fiber Ports	N/A	N/A	1 (100BASE-FX)	1 (100BASE-FX)
Fiber Support	N/A	N/A	2KM (Multi-Mode) 30KM(Single-Mode)	2KM (Multi-Mode) 30KM(Single-Mode)
Fiber Connector	N/A	N/A	Duplex SC	Duplex SC
AC Power Input	18-27V	18-27V	18-27V	18-27V
DC Power Input	18-32V	18-32V	18-32V	18-32V
Power Consumption	Max. 3 Watts	Max. 3 Watts	Max. 4 Watts	Max. 4 Watts
Alarm Relay Output	1A, 24VDC	1A, 24VDC	1A, 24VDC	1A, 24VDC
DI/DO	N/A	N/A	N/A	N/A
ENVIRONMENTAL				
Operating Temperature	-25 to 70°C	-40 to 75°C	-10 to 60°C	-40 to 75°C
MTBF	93.45 Years	93.45 Years	81.45 Years	81.45 Years
MECHANICAL				
Mounting Method	DIN rail	DIN rail	DIN rail	DIN rail
Case Protection	IP31	IP31	IP31	IP31
CERTIFICATIONS				
NEMA TS2	No	No	No	No
Railway Vibration/Shock	No	No	No	No
CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL 508 Class 1 Div 2/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL 508 Class 1 Div 2/RoHS2
Warranty	5 Years	5 Years	5 Years	5 Years

Industrial Ethernet Switch	RocketLinx ES8105-GigE (32075-3)	RocketLinx ES8108 (32055-5)	RocketLinx ES8108-XT (32054-8)	RocketLinx ES8108F-S (32056-2) & ES8108F-M (32057-9)
HARDWARE				
Managed/Unmanaged	Unmanaged	Unmanaged	Unmanaged	Unmanaged
Total Ports	5	8	8	8
10/100BASE-TX Ports	N/A	8	8	6
10/100/1000BASE-TX Ports	5	N/A	N/A	N/A
Fiber Ports	N/A	N/A	N/A	2 (100BASE-FX)
Fiber Support	N/A	N/A	N/A	2KM (Multi-Mode) 30KM(Single-Mode)
Fiber Connector	N/A	N/A	N/A	Duplex SC
AC Power Input	N/A	N/A	N/A	N/A
DC Power Input	12-48V	10-60VDC	10-60VDC	10-60VDC
Power Consumption	Max 8 Watts	Max. 3 Watts	Max. 3 Watts	Max. 6 Watts
Alarm Relay Output	1A, 24VDC	1A, 24VDC	1A, 24VDC	1A, 24VDC
DI/DO	N/A	N/A	N/A	N/A
ENVIRONMENTAL				
Operating Temperature	-10 to 70°C	-25 to 70°C	-40 to 75°C	-10 to 70°C
MTBF	29 Years	146.6 Years	146.6 Years	103.1 Years
MECHANICAL				
Mounting Method	DIN rail	DIN rail	DIN rail	DIN rail
Case Protection	IP31	IP31	IP31	IP31
CERTIFICATIONS				
NEMA TS2	No	No	No	No
Railway Vibration/Shock	No	No	No	No
CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL 508 Class 1 Div 2/RoHS2	CE/FCC/UL/RoHS2
Warranty	5 Years	5 Years	5 Years	5 Years

ROCKETLINX

INDUSTRIAL ETHERNET SWITCH PRODUCT COMPARISON CHART (continued)

Industrial Ethernet Switch	RocketLinx ES8108F-S-XT (32059-3) & ES8108F-M-XT (32058-6)	RocketLinx ES8108-GigE (32085-2)	RocketLinx ES8508-XT (32010-4)	RocketLinx ES8508F-S-XT (32011-1) & ES8508F-M-XT (32012-8)
HARDWARE				
Managed/Unmanaged	Unmanaged	Unmanaged	Managed	Managed
Total Ports	8	8	8	8
10/100BASE-TX Ports	6	0	8	6
10/100/1000BASE-TX Ports	N/A	8	0	0
Fiber Ports	2 (100BASE-FX)	N/A	N/A	2 (100BASE-FX)
Fiber Support	2KM (Multi-Mode) 30KM(Single-Mode)	N/A	N/A	2KM (Multi-Mode) 30KM (Single-Mode)
Fiber Connector	Duplex SC	N/A	N/A	Duplex SC
AC Power Input	N/A	N/A	N/A	N/A
DC Power Input	10-60VDC	12-48VDC	10-60VDC	10-60VDC
Power Consumption	Max. 6 Watts	Max. 8 Watts	Max. 15 Watts	Max. 15 Watts
Alarm Relay Output	1A, 24VDC	1A, 24VDC	1A, 24VDC	1A, 24VDC
DI/DO	N/A	N/A	1 DI, 1 DO (Alarm Relay Output)	1 DI, 1 DO (Alarm Relay Output)
ENVIRONMENTAL				
Operating Temperature	-40 to 75°C	-10 to 70°C	-40 to 75°C	-40 to 75°C
MTBF	103.1 Years	29 Years	79.98 Years	75.4 Years
MECHANICAL				
Mounting Method	DIN rail	DIN rail	DIN rail	DIN rail
Case Protection	IP31	IP31	IP31	IP31
CERTIFICATIONS				
NEMA TS2	No	No	Yes	Yes
Railway Vibration/Shock	No	No	EN 50121-4/-1 IEC 61373	EN 50121-4/-1 IEC 61373
CE/FCC/UL/RoHS2	CE/FCC/UL 508 Class 1 Div 2/ RoHS2	CE/FCC/UL/RoHS2	CE/FCC/RoHS2	CE/FCC/RoHS2
Warranty	5 Years	5 Years	5 Years	5 Years

Industrial Ethernet Switch	RocketLinx ES8509-XT (32065-4)	RocketLinx ES8510 (32060-9) & ES8510-XT (32061-6)	RocketLinx ES8510-XTE (32062-3)	RocketLinx ES8520-XT (32142-2)	RocketLinx ES9528 (32070-8) & ES9528-XT (32073-9)
HARDWARE					
Managed/Unmanaged	Managed	Managed	Managed	Managed	Managed
Total Ports	9	10	10	20	28
10/100BASE-TX Ports	0	7	7	16	24
10/100/1000BASE-TX Ports	4	3	3	4	4
Fiber Ports	5 Combo RJ45/SFP (Giga & 100BASE-FX)	3 Combo RJ45/SFP (Giga & 100BASE-FX)	3 Combo RJ45/SFP (100BASE-FX)	4 Gigabit RJ45/SFP combo ports	4 Combo RJ45/SFP (Giga)
Fiber Support	2KM (Multi-Mode) 30KM (Single-Mode)	2KM (Multi-Mode) 30KM (Single-Mode)	2KM (Multi-Mode) 30KM (Single-Mode)	2KM (Multi-Mode) 30KM (Single-Mode)	2KM (Multi-Mode) 30KM (Single-Mode)
Fiber Connector	Duplex LC	Duplex LC	Duplex LC	Duplex LC	Duplex LC
AC Power Input	N/A	N/A	N/A	N/A	90-264VAC
DC Power Input	10.5-60VDC	12-48VDC	12-48VDC	9.6 to 60VDC	N/A
Power Consumption	Max. 24 Watts	Max. 20 Watts	Max 24 Watts	Max. 20 Watts	Max. 20 Watts
Alarm Relay Output	1A, 30VDC	1A, 24VDC	1A, 24VDC	N/A	N/A
DI/DO	1DI, 1 DO (Alarm Relay Output)	2DI, 2 DO (Alarm Relay Output)	2DI, 2 DO (Alarm Relay Output)	1DI, 1 DO (Alarm Relay Output)	N/A
ENVIRONMENTAL					
Operating Temperature	-40° to 75°C	-20° to 70°C, -40° to 74°C (XT)	-40° to 74°C	-40 to 75°C	-25° to 70°C, -40° to 74°C(XT)
MTBF	48.62 Years	28.53 Years 43.76 Years (XT)	34.6 Years	28.53 years	25.11 Years
MECHANICAL					
Mounting Method	DIN rail	DIN rail	DIN rail	DIN rail	Rack mount
Case Protection	IP31	IP31	IP31	IP30	IP31
CERTIFICATIONS					
NEMA TS2	NEMA TS2	NEMA TS2 (XT)	NEMA TS2	NEMA TS2	NEMA TS2 (XT)
Railway Vibration/Shock	No	No	No	No	No
CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2
Warranty	5 Years	5 Years	5 Years	5 Years	5 Years

ROCKETLINX

POWER OVER ETHERNET INDUSTRIAL SWITCH PRODUCT COMPARISON CHART

PoE Industrial Switch	RocketLinx ACS7106 (32130-9)	RocketLinx ES7105 (32045-6)	RocketLinx ES7106-VB (32047-0)	RocketLinx ES7110 (32048-7)	RocketLinx ES7110-VB (32049-4)
HARDWARE					
Managed/Unmanaged	Unmanaged	Unmanaged	Unmanaged	Unmanaged	Unmanaged
Total Ports	6	5	6	10	10
10/100BASE-TX Ports	4	5	4	8	8
10/100/1000BASE-TX Ports	2	N/A	2	2	2
Fiber Ports	N/A	N/A	N/A	N/A	N/A
PoE Injector Ports	Ports 1-4	Ports 1-4	Ports 1-4	Ports 1-8	Ports 1-8
PoE Mode	Alternative B	Alternative B	Alternative B	Alternative B	Alternative B
PoE Standard	IEEE802.3 af/ IEEE802.3at	IEEE802.3 af	IEEE802.3 af	IEEE802.3 af	IEEE802.3 af
PoE Power per Port	30W	15.4 Watts	15.4 Watts	15.4 Watts	15.4 Watts
Power Connector	Screw Terminal	Screw Terminal	Screw Terminal	Screw Terminal	Screw Terminal
DC Power Input Voltage	12-24VDC	48VDC	12-24VDC	48VDC	12-24VDC
Total Power Budget	100 Watts	60 Watts	60 Watts	60 Watts	65 Watts
Power Input Redundancy	No	Yes	No	No	No
MECHANICAL					
Operating Temperature	-40° to 55° C	-20° to 70° C	-25° to 60° C	-25° to 70° C	-25° to 70° C
Mounting Method	Panel mount	Panel mount	DIN rail	DIN rail	DIN rail
Case Protection	IP20	IP31	IP30	IP31	IP30
NETWORKING					
Jumbo Frame	No	No	No	No	No
IGMP/Snooping	No	No	No	No	No
IEEE 802.1AB LLDP	No	No	No	No	No
IEEE 1588 PTP	No	No	No	No	No
SNMP	No	No	No	No	No
VLAN/QoS/LACP	No	No	QoS	QoS	QoS
DHCP	No	No	No	No	No
CERTIFICATIONS					
CE/FCC/UL/RoHS2	CE/UL/RoHS2	CE/UL/RoHS2	CE/RoHS2	CE/UL/RoHS2	CE/UL/RoHS2
EN 50121-3-2 Railway EMC	N/A	N/A	N/A	N/A	N/A
Warranty	5 Years	5 Years	5 Years	5 Years	5 Years

PoE Industrial Switch	RocketLinx ES7206-XT (32015-9)	RocketLinx ES7506 (32050-0)	RocketLinx ES7510 (32035-7)	RocketLinx ES7510-XT (32046-3)	RocketLinx ES7528 (32040-1)
HARDWARE					
Managed/Unmanaged	Unmanaged	Managed	Managed	Managed	Managed
Total Ports	6	6	10	10	28
10/100BASE-TX Ports	0	6	8	8	24
10/100/1000BASE-TX Ports	5	N/A	2	2 (RJ45/SFP)	4 (RJ45/SFP)
Fiber Ports	1 Gigabit (SFP)	N/A	N/A	2 Gigabit (SFP)	4 Gigabit (SFP)
PoE Injector Ports	Ports 1-4	Ports 1-4	Ports 1-8	Ports 1-8	Ports 1-24
PoE Mode	Alternative A	Alternative B	Alternative A	Alternative A	Alternative A
PoE Standard	IEEE802.3 af IEEE802.3 at	IEEE802.3 af	IEEE802.3 af IEEE 802.3at	IEEE802.3 af IEEE 802.3at	IEEE802.3 af IEEE 802.3at
PoE Power per Port	30 Watts	30 Watts	30 Watts	30 Watts	32 Watts
Power Connector	Screw Terminal	Screw Terminal	Screw Terminal	Screw Terminal	IEC320-C14/Screw Terminal
DC Power Input Voltage	12-36VDC	24-55VDC	802.3af: 46-57VDC 802.3at: 50-57VDC	802.3af: 46-57VDC 802.3at: 50-57VDC	802.3af: 46-57VDC 802.3at: 52-57VDC
Total Power Budget	110 Watts	80 Watts	220 Watts	120 Watts	720 Watts
Power Input Redundancy	Yes	Yes	Yes	Yes	Yes
MECHANICAL					
Operating Temperature	-40 to 75°C	-20 to 60°C	-40 to 70° C	-40 to 74° C	-25° to 65° C
Mounting Method	DIN rail	Panel mount	Panel mount	DIN rail	Rack mount
Case Protection	IP30	IP31	IP30	IP31	IP31
NETWORKING					
Jumbo Frame	Yes	No	Yes	No	Yes
IGMP/Snooping	No	Yes	Yes	Yes	Yes
IEEE 802.1AB LLDP	No	No	Yes	Yes	Yes
IEEE 1588 PTP	No	No	No	Yes	Yes
SNMP	No	Yes	Yes	Yes	Yes
VLAN/QoS/LACP	No	Port-based VLAN	VLAN/QoS/LACP	VLAN/LACP	VLAN/QoS/LACP
DHCP	No	Yes	Yes	Yes	Yes
CERTIFICATIONS					
CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/UL/RoHS2
EN 50121-3-2 Railway EMC	N/A	N/A	Yes	N/A	N/A
Warranty	5 years	5 Years	5 Years	5 Years	5 Years

DEVICEMASTER UP

INDUSTRIAL ETHERNET GATEWAYS
EtherNet/IP
PRODUCT COMPARISON CHART

Industrial Ethernet Gateways	UP 1-Port 5 - 30VDC (99441-1)	EIP-2101 (99601-9)	EIP-2201 (99620-0)	UP 2-Port 1E (99531-9)	UP DB9M 2-Port 1E (99551-7)	UP 2-Port 2E (99541-8)
HARDWARE						
Number of ports: 10/100BASE-TX	1	1	1	1	1	2
Number of Serial Ports	1 x RS232/422/485	1 x RS232/422/485	1 x RS232/422/485	2 x RS-232/422/485	2 x RS-232/422/485	2 x RS-232/422/485
Serial Baud Rate	300bps to 230.4Kbps	300bps to 230.4Kbps	300bps to 230.4Kbps	300bps to 230.4Kbps	300bps to 230.4Kbps	300bps to 230.4Kbps
Serial Interface	DB9M	DB9M	Screw Terminal Block	Screw Terminal	DB9M	Screw Terminal
Power Input	5-30VDC Terminal (2.5W)	5-30VDC (1.5W)	5-30VDC (1.5W)	5-30VDC Terminal (1.5W)	2 x 6-30VDC Terminal (1.56W)	5-30VDC Terminal (2W)
Serial Surge Protect	15KV	25KV	25KV	25KV	25KV	25KV
ENVIRONMENTAL						
MTBF	46.2 Years	61.4 Years	61.4 Years	58.57 Years	58.8 Years	45.66 Years
Enclosure	Stainless Steel	UL94-V0 Plastic	UL94-V0 Plastic	UL94-V0 Plastic	UL94-V0 Plastic	UL94-V0 Plastic
Dimension	3.6" x 0.8" x 2.8"	4.52" x 3.9" x 0.9"	4.7" x 3.9" x 0.9"	4.37" x 3.9" x 0.89"	4.6" x 3.9" x 0.9"	4.37" x 3.9" x 1.78"
Operating Temperature	-37° to 74°C	-40° C to 75° C	-40° C to 75° C	-37° to 74°C	37° to 74°C	-37° to 74°C
Installation Method	DIN rail/panel mount	DIN rail	DIN rail	DIN rail	DIN rail	DIN rail
SUPPORTED PLC PROTOCOLS						
EtherNet/IP™	Yes >>					
PROFINET	No >>					
Modbus	No >>					
SOFTWARE						
DualConnectPlus	Yes	Yes	Yes	Yes	Yes	Yes
PortVision® Remote Monitoring & Management	Yes	Yes	Yes	Yes	Yes	Yes
SSL & SSH Encryption	Yes	Yes	Yes	Yes	Yes	Yes
Web-based Configuration	Yes	Yes	Yes	Yes	Yes	Yes
CERTIFICATIONS						
CE/FCC/UL/RoHS2	CE/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2
NEMA TS2	Yes	Yes	Yes	Yes	Yes	Yes
Warranty	5 Years	5 Years	5 Years	5 Years	5 Years	5 Years

Industrial Ethernet Gateways	UP DB9M 2-Port 2E (99561-6)	EIP-2304 (99611-8)	UP 4-Port (99447-3)
HARDWARE			
Number of ports: 10/100BASE-TX	2	2	2
Number of Serial Ports	2 x RS-232/422/485	4 x RS-232/422/485	4 x RS-232/422/485
Serial Baud Rate	300bps to 230.4Kbps	300bps to 230.4Kbps	300bps to 230.4Kbps
Serial Interface	DB9M	DB9M	DB9M
Power Input	2 x 6-30VDC Terminal (2W)	5-30VDC (3W)	9-30VDC Terminal (4.8W)
Serial Surge Protect	25KV	25KV	15KV
ENVIRONMENTAL			
MTBF	49.5 Years	42.3 Years	25 Years
Enclosure	UL94-V0 Plastic	UL94-V0 Plastic	Black Finished Steel
Dimension	4.6" x 3.9" x 1.8"	4.6" x 3.9" x 1.8"	10.8"x1.5"x6.3"
Operating Temperature	-37° to 74°C	-40° C to 75° C	-37° to 74°C
Installation Method	DIN rail	DIN rail	Panel mount
SUPPORTED PLC PROTOCOLS			
EtherNet/IP™	Yes	Yes	Yes
PROFINET	No	No	No
Modbus	No	No	No
SOFTWARE			
DualConnectPlus	Yes	Yes	Yes
PortVision® Remote Monitoring & Management	Yes	Yes	Yes
SSL & SSH encryption	Yes	Yes	Yes
Web-based configuration	Yes	Yes	Yes
CERTIFICATIONS			
CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2
NEMA TS2	Yes	Yes	No
Warranty	5 Years	5 Years	5 Years

DEVICEMASTER UP

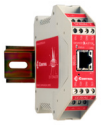
INDUSTRIAL ETHERNET GATEWAYS
PROFINET
PRODUCT COMPARISON CHART

Industrial Ethernet Gateways	UP 1-Port 5 - 30VDC (99441-1)	PNIO-2101 (99604-0)	UP 1-Port Terminal Block 1E (99622-4)	UP 2-Port 1E (99531-9)	UP DB9M 2-Port 1E (99551-7)	UP 2-Port 2E (99541-8)
HARDWARE						
Number of ports: 10/100BASE-TX	1			1	1	2
Number of Serial Ports	1 x RS232/422/485			2 x RS-232/422/485	2 x RS-232/422/485	2 x RS-232/422/485
Serial Baud Rate	300bps to 230.4Kbps			300bps to 230.4Kbps	300bps to 230.4Kbps	300bps to 230.4Kbps
Serial Interface	DB9M			Screw Terminal	DB9M	Screw Terminal
Power Input	5-30VDC Terminal (2.5W)			5-30VDC Terminal (1.5W)	2 x 6-30VDC Terminal (1.56W)	5-30VDC Terminal (2W)
Serial Surge Protect	15KV			25KV	25KV	25KV
ENVIRONMENTAL						
MTBF	46.2 Years			58.57 Years	58.8 Years	45.66 Years
Enclosure	Stainless Steel			UL94-V0 Plastic	UL94-V0 Plastic	UL94-V0 Plastic
Dimension	3.6" x 0.8" x 2.8"			4.37" x 3.9" x 0.89"	4.6" x 3.9" x 0.9"	4.37" x 3.9" x 1.78"
Operating Temperature	-37° to 74°C			-37° to 74°C	37° to 74°C	-37° to 74°C
Installation Method	DIN rail/panel mount			DIN rail	DIN rail	DIN rail
SUPPORTED PLC PROTOCOLS						
EtherNet/IP™	No			No	No	No
PROFINET	Yes			Yes	Yes	Yes
Modbus	No			No	No	No
SOFTWARE						
DualConnectPlus	Yes			Yes	Yes	Yes
PortVision® Remote Monitoring & Management	Yes			Yes	Yes	Yes
SSL & SSH Encryption	Yes			Yes	Yes	Yes
Web-based Configuration	Yes			Yes	Yes	Yes
CERTIFICATIONS						
CE/FCC/UL/RoHS2	CE/UL/RoHS2			CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2
NEMA TS2	Yes			Yes	Yes	Yes
Warranty	5 Years			5 Years	5 Years	5 Years

Industrial Ethernet Gateways	UP DB9M 2-Port 2E (99561-6)	PNIO-2304 (99613-2)	UP 4-Port (99447-3)
HARDWARE			
Number of ports: 10/100BASE-TX	2	2	2
Number of Serial Ports	2 x RS-232/422/485	4 x RS-232/422/485	4 x RS-232/422/485
Serial Baud Rate	300bps to 230.4Kbps	300bps to 230.4Kbps	300bps to 230.4Kbps
Serial Interface	DB9M	DB9M	DB9M
Power Input	2 x 6-30VDC Terminal (2W)	5-30VDC (3W)	9-30VDC Terminal (4.8W)
Serial Surge Protect	25KV	25KV	15KV
ENVIRONMENTAL			
MTBF	49.5 Years	42.3 Years	25 Years
Enclosure	UL94-V0 Plastic	UL94-V0 Plastic	Black Finished Steel
Dimension	4.6" x 3.9" x 1.8"	4.6" x 3.9" x 1.8"	10.8"x1.5"x6.3"
Operating Temperature	-37° to 74°C	-40° C to 75° C	-37° to 74°C
Installation Method	DIN rail	DIN rail	Panel mount
SUPPORTED PLC PROTOCOLS			
EtherNet/IP™	No	No	No
PROFINET	Yes	Yes	Yes
Modbus	No	No	No
SOFTWARE			
DualConnectPlus	Yes	Yes	Yes
PortVision® Remote Monitoring & Management	Yes	Yes	Yes
SSL & SSH encryption	Yes	Yes	Yes
Web-based configuration	Yes	Yes	Yes
CERTIFICATIONS			
CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2
NEMA TS2	Yes	Yes	No
Warranty	5 Years	5 Years	5 Years

DEVICEMASTER UP

INDUSTRIAL ETHERNET GATEWAYS
Modbus TCP
PRODUCT COMPARISON CHART



Industrial Ethernet Gateways	UP 1-Port VDC (99501-2)	MOD-2101 (99602-6)	MOD-2304 (99621-7)	UP 2-Port 1E (99532-6)	UP DB9 2-Port 1E (99552-4)	UP 2-Port 2E (99542-5)
HARDWARE						
Number of ports: 10/100BASE-TX	1	1	1	1	1	2
Number of Serial Ports	1 x RS-232/422/485	1 x RS-232/422/485	1 x RS232/422/485	2 x RS-232/422/485	2 x RS-232/422/485	2 x RS-232/422/485
Serial Baud Rate	50bps to 230Kbps	300 bps to 230Kbps	300bps to 230.4Kbps	300bps to 230.4Kbps	300bps to 230.4Kbps	300bps to 230.4Kbps
Serial Interface	DB9M	DB9M	Screw Terminal Block	Screw Terminal	DB9M	Screw Terminal
Power Input	90 - 260VAC Terminal (2.5W)	5-30VDC (1.5W)	5-30VDC (1.5W)	5-30VDC Terminal (1.5W)	2 x 6-30VDC Terminal (1.56W)	5-30VDC Terminal (2W)
Serial Surge Protect	15KV	25KV	25KV	25KV	25KV	25KV
ENVIRONMENTAL						
MTBF	46.2 Years	61.4 Years	61.4 Years	58.57 Years	58.8 Years	45.66 Years
Enclosure	Stainless Steel	UL94-V0 Plastic	UL94-V0 Plastic	UL94-V0 Plastic	UL94-V0 Plastic	UL94-V0 Plastic
Dimension	3.6" x 0.8" x 2.8"	4.52" x 3.9" x 0.9"	4.7" x 3.9" x 0.9"	4.37" x 3.9" x 0.89"	4.6" x 3.9" x 0.9"	4.37" x 3.9" x 1.78"
Operating Temperature	-37° to 74°C	-40° C to 75° C	-40° C to 75° C	-37° to 74°C	-37° to 74°C	-37° to 74°C
Installation Method	DIN rail/panel mount	DIN rail	DIN rail	DIN rail	DIN rail	DIN rail
SUPPORTED PLC PROTOCOLS						
EtherNet/IP™	No	No	No	No	Yes	No
PROFINET	No	No	No	No	Yes	No
Modbus	Yes	Yes	Yes	Yes	Yes	Yes
SOFTWARE						
DualConnectPlus	No	Yes	Yes	No	No	No
PortVision® Remote Monitoring & Management	Yes	Yes	Yes	Yes	Yes	Yes
SSL & SSH Encryption	Yes	Yes	Yes	Yes	Yes	Yes
Web-based Configuration	Yes	Yes	Yes	Yes	Yes	Yes
CERTIFICATIONS						
CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2
NEMA TS2	No	Yes	Yes	Yes	Yes	Yes
Warranty	5 Years	5 Years	5 Years	5 Years	5 Years	5 Years

Industrial Ethernet Gateways	UP DB9M 2-Port 2E (99562-3)	MOD-2304 (99612-5)	UP 4-Port VDC (99521-0)	UP 16-Port (99582-1)
HARDWARE				
Number of ports: 10/100BASE-TX	2	2	2	2
Number of Serial Ports	2 x RS-232/422/485	4 x RS-232/422/485	4 x RS-232/422/485	16 x RS-232/422/485
Serial Baud Rate	300bps to 230.4Kbps	300bps to 230.4Kbps	50bps to 230Kbps	300bps to 230.4Kbps
Serial Interface	DB9M	DB9M	DB9M	RJ45
Power Input	2 x 6-30VDC Terminal (2W)	5-30VDC (3.0W)	5-30VDC Terminal (2.5W)	5-30VDC Terminal
Serial Surge Protect	25KV	25KV	15KV	15KV
ENVIRONMENTAL				
MTBF	49.5 Years	42.3 Years	25 Years	TBD
Enclosure	UL94-V0 Plastic	UL94-V0 Plastic	Black Finished Steel	Black Finished Steel
Dimension	4.6" x 3.9" x 1.8"	4.6" x 3.9" x 1.8"	10.8"x1.5"x6.3"	11.5" x 1.2" x 5.4"
Operating Temperature	-37° to 74°C	-40° to 75°C	-37° to 74°C	0° to 60°C
Installation Method	DIN rail	DIN rail	Panel mount	Desk/surface mount
SUPPORTED PLC PROTOCOLS				
EtherNet/IP™	No	No	No	No
PROFINET	No	No	No	No
Modbus	Yes	Yes	Yes	Yes
SOFTWARE				
DualConnectPlus	No	Yes	No	No
PortVision® Remote Monitoring & Management	Yes	Yes	Yes	Yes
SSL & SSH encryption	Yes	Yes	Yes	Yes
Web-based configuration	Yes	Yes	Yes	Yes
CERTIFICATIONS				
CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2
NEMA TS2	Yes	Yes	No	No
Warranty	5 Years	5 Years	5 Years	5 Years

DEVICEMASTER RTS

ETHERNET DEVICE SERVERS
PRODUCT COMPARISON CHART

Ethernet Device Servers	RTS VDC 1-Port DB9 (99440-4)	RTS 1-Port DB9 (99435-0)	DM-2101 (99600-2)	RTS 1-Port TB DB9 1E (99603-3)	RTS 2-Port 1E (99480-0)	RTS 2-Port 2E (99481-7)
HARDWARE						
Number of Ports: 10/100BASE-TX	1	1	1	1	1	2
Number of Serial Ports	1 x RS-232/422/485	1 x RS-232/422/485	1 x RS-232/422/485	1 x RS232/422/485	2 x RS-232/422/485	2 x RS-232/422/485
Serial Baud Rate	300bps to 230.4Kbps	300bps to 230.4Kbps	300bps to 230.4Kbps	300bps to 230.4Kbps	300bps to 230.4Kbps	300bps to 230.4Kbps
Serial Interface	DB9M	DB9M	DB9M	Screw Terminal Block	Screw Terminal	Screw Terminal
Power Input	5-30VDC Terminal (2.5W)	5VDC Terminal (2.1W)	5-30VDC Terminal (1.5W)	5-30VDC (1.5W)	5-30VDC Terminal (1.5W)	5-30VDC Terminal (2W)
Included Power Supply	N/A	N/A	N/A	25KV	N/A	N/A
Serial Surge Protect	15KV	15KV	25KV		25KV	25KV
ENVIRONMENTAL						
MTBF	46.2 Years	48.4 Years	61.4 Years	61.4 Years	58.57 Years	45.66 Years
Enclosure	Stainless Steel	Stainless Steel	UL94-V0 Plastic	UL94-V0 Plastic	UL94-V0 Plastic	UL94-V0 Plastic
Dimension	3.6" x 0.8" x 2.8"	3.6" x 0.8" x 2.8"	4.52" x 3.9" x 0.9"	4.7" x 3.9" x 0.9"	4.37" x 3.9" x 0.89"	4.37" x 3.9" x 1.78"
Operating Temperature	-37° to 74°C	-37° to 74°C	-40 to 85° C	-40° C to 75° C	-37° to 74°C	-37° to 74°C
Installation Method	DIN rail/panel mount	DIN rail/panel mount	DIN rail	DIN rail	DIN rail	DIN rail
SUPPORTED DEVICE DRIVERS						
Windows 2000/Server 2003/XP	Yes >>					
Windows Server 2008						
Windows Vista						
Windows 7						
Linux						
SOFTWARE						
TCP, UDP Socket	Yes >>					
PortVision® Remote Monitoring & Management						
Web-based Configuration						
SSL & SSH Encryption						
E-mail Event Notification						
CERTIFICATIONS						
CE/FCC/UL/RoHS2	Yes	Yes	Yes	Yes	Yes	Yes
NEMA TS2	No	Yes	Yes	Yes	Yes	Yes
Warranty	5 Years	5 Years	5 Years	5 Years	5 Years	5 Years

Ethernet Device Servers	RTS DB9 2-Port 1E (99550-0)	RTS DB9 2-Port 2E (99560-9)	DM-2304 (99610-1)	RTS 4-Port DB9 (99445-9)	RTS 4-Port RJ45 (99446-6)	RTS 8-Port DB9 (99448-0)
HARDWARE						
Number of Ports: 10/100BASE-TX	1	2	4	2	2	2
Number of Serial Ports	2 x RS-232/422/485	2 x RS-232/422/485	4 x RS-232/422/485	4 x RS-232/422/485	4 x RS-232/422/485	8 x RS-232/422/485
Serial Baud Rate	300bps to 230.4Kbps	300bps to 230.4Kbps	300bps to 230 Kbps	300bps to 230.4Kbps	300bps to 230.4Kbps	300bps to 230.4Kbps
Serial Interface	DB9M	DB9M	DB9M	DB9M	RJ45	DB9M
Power Input	2 x 6-30VDC Terminal (1.6W)	2 x 6-30VDC Terminal (2W)	5-30VDC	9-30VDC Terminal	9-30VDC Terminal	9-30VDC Terminal
Included Power Supply	N/A	N/A	N/A	External 90-240VAC (US/EU)	External 90-240VAC (US/EU) input	External 90-240VAC (US/EU) input
Serial Surge Protect	25KV	25KV	25KV	15KV	15KV	15KV
ENVIRONMENTAL						
MTBF	58.57 Years	49.5 Years	42.3 Years	25.0 Years	25.0 Years	21.5 Years
Enclosure	UL94-V0 Plastic	UL94-V0 Plastic	UL94-V0 Plastic	Black Finished Steel	Black Finished Steel	Black Finished Steel
Dimension	4.6" x 3.9" x 0.9"	4.6" x 3.9" x 1.8"	4.6" x 3.9" x 1.8"	10.8" x 1.5" x 6.3"	10.8" x 1.5" x 6.3"	10.8" x 1.8" x 6.3"
Operating Temperature	-37° to 74°C	-37° to 74°C	-40° to 75°C	-37° to 74°C	-37° to 74°C	-37° to 74°C
Installation Method	DIN rail	DIN rail	DIN rail	Panel mount	Panel mount	Panel mount
SUPPORTED DEVICE DRIVERS						
Windows 2000/Server 2003/XP	Yes >>					
Windows Server 2008						
Windows Vista						
Windows 7						
Linux						
SOFTWARE						
TCP, UDP Socket	Yes >>					
PortVision® Remote Monitoring & Management						
Web-based Configuration						
SSL & SSH Encryption						
E-mail Event Notification						
CERTIFICATIONS						
CE/FCC/UL/RoHS2	Yes	Yes	Yes	Yes	Yes	Yes
NEMA TS2	Yes	Yes	Yes	Yes	Yes	Yes
Warranty	5 Years	5 Years	5 Years	5 Years	5 Years	5 Years

DEVICEMASTER RTS

ETHERNET DEVICE SERVERS
PRODUCT COMPARISON CHART

Ethernet Device Servers	RTS 8-Port RJ45 (99449-7)	DeviceMaster LT16 (99581-4)	RTS 16-Port RJ45 (99455-8)	RTS 16-Port RJ45 (99450-3)	RTS 32-Port RJ45 (99456-5)
HARDWARE					
Number of Ports: 10/100BASE-TX	2	2	1	2	1
Number of Serial Ports	8 x RS-232/422/485	16 x RS232/422/485	16 x RS-232/422/485	16 x RS-232/422/485	32 x RS-232/422/485
Serial Baud Rate	300bps to 230.4Kbps	300bps to 230.4Kbps	300bps to 230.4Kbps	300bps to 230.4Kbps	300bps to 230.4Kbps
Serial Interface	RJ45	RJ45	RJ45	RJ45	RJ45
Power Input	9-30VDC Terminal	5-30VDC Terminal	100-240VAC (US/EU Cord)	9-30VDC Terminal	100-240VAC (US/EU Cord)
Included Power Supply	External 90-240VAC (US/EU) input	External 100-240VAC (US/EU) input	N/A	External 90-240VAC (US/EU) input	N/A
Serial Surge Protect	15KV	15KV	15KV	15KV	15KV
ENVIRONMENTAL					
MTBF	21.5 Years	TBD	8.1 Years	13.2 Years	6.0 Years
Enclosure	Black Finished Steel	Black Finished Steel	Black Finished Steel	UL94HB Black Plastic	Black Finished Steel
Dimension	10.8" x 1.8" x 6.3"	11.5" x 1.2" x 5.4"	17.25" x 1.74" x 10.8"	17.25" x 1.74" x 10.8"	17.25" x 1.74" x 10.8"
Operating Temperature	-37° to 74°C	0° to 60°C	-37° to 74°C	-20° to 60°C	-37° to 74°C
Installation Method	Panel mount	Desk/surface mount	Rack mount	Rack mount	Rack mount
SUPPORTED DEVICE DRIVERS					
Windows 2000/Server 2003/XP	Yes >>				
Windows Server 2008					
Windows Vista					
Windows 7					
Linux					
SOFTWARE					
TCP, UDP Socket	Yes >>				
PortVision® Remote Monitoring & Management					
Web-based Configuration					
SSL & SSH Encryption					
E-mail Event Notification					
CERTIFICATIONS					
CE/FCC/UL/RoHS2	Yes	Yes	Yes	Yes	Yes
NEMA TS2	Yes	No	Yes	Yes	Yes
Warranty	5 Years	5 Years	5 Years	5 Years	5 Years

ROCKETPORT INFINITY

MULTIPORT SERIAL CARDS
PRODUCT COMPARISON CHART

Multiport Serial Cards	INFINITY Quad DB9M (30005-2)	INFINITY Quad DB25M (30006-9)	INFINITY Octa DB9M (30000-7)	INFINITY Octa DB25M (30001-4)	INFINITY Octa RJ45 (30002-1)	INFINITY 4J (30023-6)	INFINITY 8J (30027-4)
HARDWARE							
Max Cards/System	4	4	4	4	4		
Bus Interface	uPCI/PCI-X	uPCI/PCI-X	uPCI/PCI-X	uPCI/PCI-X	uPCI/PCI-X		
Board Dimensions	4.7"x2.6"	4.7"x2.6"	4.7"x2.6"	4.7"x2.6"	4.7"x2.6"		
Serial Ports	RS-232/422/485	RS-232/422/485	RS-232/422/485	RS-232/422/485	RS-232/422/485		
ELECTRICAL							
Power Consumption	1.8W	1.8W	1.8W	1.8W	1.8W		
Surge Protection	15KV	15KV	15KV	15KV	15KV		
Baud Rate	300bps - 921.6Kbps	300bps - 921.6Kbps	300bps - 921.6Kbps	300bps - 921.6Kbps	300bps - 921.6Kbps		
ENVIRONMENTAL							
Operating Temperature	0° to 60° C	0° to 60° C	0° to 60° C	0° to 60° C	0° to 60° C		
MTBF	57.1 Years	57.1 Years	57.1 Years	57.1 Years	57.1 Years		
DEVICE DRIVERS							
Windows Vista/XP/7/2000 Windows Server 2003/2008 FreeBSD 5/6 Linux QNX 6.X SCO OpenSever 5/6	Yes >>						
DATA CONTROL							
Data Bits	5, 6, 7, or 8 >>						
Parity	odd, even, or none, Mark & space >>						
Stop Bits	1, 1.5, 2 >>						
Flow Control	Hardware or Software >>						
Ring Indicator	Yes >>						
CERTIFICATIONS							
CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2		
Warranty	5 Years	5 Years	5 Years	5 Years	5 Years		

Multiport Serial Cards	INFINITY Quad/ Octa Cable 50-pack (30003-8)	INFINITY 8-Port (30020-5)	INFINITY 16-Port (30015-1)	INFINITY 32-Port (30010-6)
HARDWARE				
Max Cards/System	4	4	4	4
Bus Interface	uPCI/PCI-X	uPCI/PCI-X	uPCI/PCI-X	uPCI/PCI-X
Board Dimensions	4.7"x2.6"	4.7"x2.6"	4.7"x2.6"	4.7"x2.6"
Serial Ports	RS-232/422/485	RS-232/422/485	RS-232/422/485	RS-232/422/485
ELECTRICAL				
Power Consumption	1.8W	2.5W	3.6W	6.7W
Surge Protection	15KV	15KV	15KV	15KV
Baud Rate	300bps - 921.6Kbps	300bps - 460.8Kbps	300bps - 460.8Kbps	300bps - 460.8Kbps
ENVIRONMENTAL				
Operating Temperature	0° to 60° C	0° to 60° C	0° to 60° C	0° to 60° C
MTBF	57.1 Years	187.2 Years	187.2 Years	152.6 Years
DEVICE DRIVERS				
Windows Vista/XP/7/2000 Windows Server 2003/2008 FreeBSD 5/6 Linux QNX 6.X SCO OpenSever 5/6	Yes >>			
DATA CONTROL				
Data Bits	5, 6, 7, or 8 >>			
Parity	odd, even, or none, mark & space >>			
Stop Bits	1, 1.5, 2 >>			
Flow Control	Hardware or Software >>			
Ring Indicator	N/A >>			
CERTIFICATIONS				
CE/FCC/UL/RoHS	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2
Warranty	5 Years	5 Years	5 Years	5 Years

ROCKETPORT EXPRESS

PCIe MULTIPORT SERIAL CARDS PRODUCT COMPARISON CHART

PCIe Multiport Serial Cards	EXPRESS Quadcable DB9M (30126-4)	EXPRESS Quadcable DB25M (30127-1)	EXPRESS Octacable DB9M (30128-8)	EXPRESS Octacable DB25M (30129-5)	EXPRESS Octacable RJ45 (30130-1)	EXPRESS Quad/Octa Cable Bulk 50-Pack (30131-8)
HARDWARE						
Max Cards/sSystem	4	4	4	4	4	4
Bus Interface	PCIe	PCIe	PCIe	PCIe	PCIe	PCIe
Board Dimensions	4.7"x2.6"	4.7"x2.6"	4.7"x2.6"	4.7"x2.6"	4.7"x2.6"	4.7"x2.6"
Serial Ports	RS-232/422/485	RS-232/422/485	RS-232/422/485	RS-232/422/485	RS-232/422/485	RS-232/422/485
ELECTRICAL						
Power Consumption	3.1W	3.1W	3.1W	3.1W	3.1W	3.1W
Surge Protection	15KV	15KV	15KV	15KV	15KV	15KV
Baud Rate	300bps - 921.6Kbps	300bps - 921.6Kbps	300bps - 921.6Kbps	300bps - 921.6Kbps	300bps - 921.6Kbps	300bps - 921.6Kbps
ENVIRONMENTAL						
Operating Temperature	0° to 60° C	0° to 60° C	0° to 60° C	0° to 60° C	0° to 60° C	0° to 60° C
MTBF	48.7 Years	48.7 Years	48.7 Years	48.7 Years	48.7 Years	48.7 Years
DEVICE DRIVERS						
Windows Vista/XP/7/2000 Windows Server 2003/2008 FreeBSD 5/6 Linux QNX 6.X SCO OpenSever 5/6	Yes >>					
DATA CONTROL						
Data Bits	5, 6, 7, or 8 >>					
Parity	odd, even, or none, Mark & space >>					
Stop Bits	1, 1.5, 2 >>					
Flow Control	Hardware or Software >>					
Ring Indicator	Yes >>					
CERTIFICATIONS						
CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2
Warranty	5 Years	5 Years	5 Years	5 Years	5 Years	5 Years

PCIe Multiport Serial Cards	EXPRESS 4J (31305-2)	EXPRESS 8J (31310-6)	EXPRESS 8-Port (30136-3)	EXPRESS 16-Port (30137-0)	EXPRESS 32-Port (30138-7)
HARDWARE					
Max Cards/System	4	4	4	4	4
Bus Interface	PCIe	PCIe	PCIe	PCIe	PCIe
Board Dimensions	4.7"x4.0"	4.7"x4.0"	4.7"x2.6"	4.7"x2.6"	4.7"x2.6"
Serial Ports	RS-232/422/485	RS-232/422/485	RS-232/422/485	RS-232/422/485	RS-232/422/485
ELECTRICAL					
Power Consumption	3.1W	3.1W	3.6W	4.7W	7.8W
Surge Protection	15KV	15KV	15KV	15KV	15KV
Baud Rate	300bps - 921.6Kbps	300bps - 921.6Kbps	300bps - 460.8Kbps	300bps - 460.8Kbps	300bps - 460.8Kbps
ENVIRONMENTAL					
Operating Temperature	0° to 60° C	0° to 60° C	0° to 60° C	0° to 60° C	0° to 60° C
MTBF	99.2 Years	65.6 Years	118.7 Years	118.7 Years	99.6 Years
DEVICE DRIVERS					
Windows Vista/XP/7/2000 Windows Server 2003/2008 FreeBSD 5/6 Linux QNX 6.X SCO OpenSever 5/6	Yes >>				
DATA CONTROL					
Data Bits	5, 6, 7, or 8 >>				
Parity	odd, even, or none, Mark & space >>				
Stop Bits	1, 1.5, 2 >>				
Flow Control	Hardware or Software >>				
Ring Indicator	N/A >>				
CERTIFICATIONS					
CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2	CE/FCC/UL/RoHS2
Warranty	5 Years	5 Years	5 Years	5 Years	5 Years

SFPs

SMALL FORM-FACTOR PLUGGABLES PRODUCT COMPARISON CHART

Part Number	Description	Mode	Distance	Temperature	Wavelength
Gigabit SFPs					
1200044	1000Mbps-SX Fiber Transceiver	Multi	550M	-10 to 70°C	850nm
1200059	1000Mbps-SX Fiber Transceiver	Multi	550M	-40 to 85°C	850nm
1200088	1000Mbps-MLX Fiber Transceiver	Multi	2KM	-40 to 85°C	1310nm
1200045	1000Mbps-LX Fiber Transceiver	Single	10KM	-10 to 70°C	1310nm
1200060	1000Mbps-LX Fiber Transceiver	Single	10KM	-40 to 85°C	1310nm
1200066	1000Mbps-LH Fiber Transceiver	Single	20KM	-40 to 85°C	1310nm
1200061	1000Mbps-LH Fiber Transceiver	Single	30KM	-40 to 85°C	1310nm
1200067	1000Mbps-LHX Fiber Transceiver	Single	40KM	-40 to 85°C	1310nm
1200094	1000Mbps-XD Fiber Transceiver	Single	50KM	-40 to 85°C	1550nm
1200065	1000Mbps-ZX Fiber Transceiver	Single	70KM	-40 to 85°C	1550nm
1200095	1000Mbps-ZX Fiber Transceiver	Single	90KM	-40 to 85°C	1550nm
1200068	1000Mbps-LHX Fiber Transceiver	Single	110KM	-40 to 85°C	1550nm
Fast Ethernet BIDI SFPs					
1200076	100Mbps BIDI 1310nm Fiber Transceiver	Single	20KM	-40 to 85°C	TX-1310nm RX-1550nm
1200077	100Mbps BIDI 1550nm Fiber Transceiver	Single	20KM	-40 to 85°C	TX-1550nm RX-1310nm
1200082	1000Mbps BIDI Fiber Transceiver	Single	20KM	-40 to 85°C	1310nm
1200083	1000Mbps BIDI Fiber Transceiver	Single	20KM	-40 to 85°C	1550nm

Part Number	Description	Mode	Distance	Temperature	Wavelength
100 Mbit SFPs					
1200042	100Mbps Fiber Transceiver	Multi	2KM	-10 to 70°C	1310nm
1200057	100Mbps Fiber Transceiver	Multi	2KM	-40 to 85°C	1310nm
1200092	100Mbps Fiber Transceiver	Single	20KM	-40 to 85°C	1550nm
1200043	100Mbps Fiber Transceiver	Single	30KM	-10 to 70°C	1310nm
1200058	100Mbps Fiber Transceiver	Single	30KM	-40 to 85°C	1310nm
1200086	100Mbps Fiber Transceiver	Single	60KM	-40 to 85°C	1310nm
1200069	100Mbps Fiber Transceiver	Single	100KM	-40 to 85°C	1550nm
1200093	100Mbps Fiber Transceiver	Single	120KM	-40 to 85°C	1310nm
Gigabit BIDI SFPs					
1200080	1000Mbps BIDI Fiber Transceiver	Single	10KM	-40 to 85°C	1310nm
1200081	1000Mbps BIDI Fiber Transceiver	Single	10KM	-40 to 85°C	1550nm
1200082	1000Mbps BIDI Fiber Transceiver	Single	20KM	-40 to 85°C	1310nm
1200083	1000Mbps BIDI Fiber Transceiver	Single	20KM	-40 to 85°C	1550nm

Comtrol offers a comprehensive line of SFPs to support our RocketLinx industrial Ethernet switches.

NEMA TS2 Compliance

The NEMA TS2 standard was established by the National Electrical Manufacturers Association (NEMA) to define safe traffic control equipment. Section 2 contains the environmental and testing requirements, including guidelines for temperature (-34° to 74°C), humidity, vibration and shock.

Independent lab testing verified the performance of Comtrol's DeviceMaster serial device servers' and RocketLinx industrial Ethernet switches' when subjected to the extreme temperatures, operating voltage and humidity fluctuation, vibration and shock commonly experienced in severe outdoor environments.

DeviceMaster Product Family

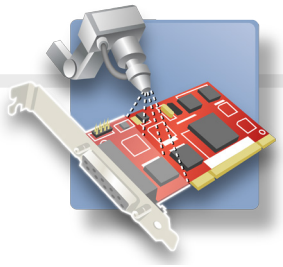
RocketLinx Product Family

Comtrol's NEMA TS2 Compliant Products

RocketLinx ES8508-XT	32010-4
RocketLinx ES8508F-S-XT	32011-1
RocketLinx ES8508F-M-XT	32012-8
RocketLinx ES8509-XT	32065-4
RocketLinx ES8510-XT	32061-6
RocketLinx ES8510-XTE	32062-3
RocketLinx ES9528-XT	32071-5
RocketLinx ES7510-XT	32046-3
DeviceMaster RTS 1-Port DB9	99435-0
DeviceMaster RTS 2-Port 1E	99480-0
DeviceMaster RTS 2-Port 2E	99481-7
DeviceMaster RTS 2-Port DB9 1E	99550-0
DeviceMaster RTS 2-Port DB9 2E	99560-9
DeviceMaster RTS 4-Port DB9	99445-9
DeviceMaster RTS 4-Port RJ45	99446-6
DeviceMaster RTS 8-Port DB9	99448-0
DeviceMaster RTS 8-Port RJ45	99449-7

NEMA TS2

Conformal Coating



Conformal coating is a protective non-conductive dielectric layer that is applied onto the printed circuit board assembly to protect the electronic assembly from damage due to contamination, salt spray, moisture, fungus, dust, and corrosion caused by harsh or extreme environments.

It is most commonly applied to products that are used in outdoor environments where heat and moisture are prevalent. Coating may also prevent damage from rough handling, installation, reduction of mechanical and thermal stress. It also acts to protect circuitry and components from abrasion and solvents.

Comtrol offers three different types of conformal coatings:

Silicone (Dow 1-2577)

Silicone is typically used in high-temperature environments. It has good moisture and humidity resistance. It has good thermal shock resistance due to its flexibility. Its moisture resistance is similar to urethane and acrylic. Its dielectric withstand is lower than for the other coatings (1100 volts/mil). Its typical temperature range is -65°C to 200°C.

Urethane (Conap CE1155)

A urethane coating is hard and durable, making it have excellent resistance to solvents. It has similar moisture resistance to acrylic and silicone. Shrinkages during curing and hard film may stress the electronic components. The urethane temperature range is quite similar to acrylic.

Acrylic (Humiseal 1B73)

An acrylic coating is typically solvent-based and is usually tough, hard and transparent. It exhibits low moisture absorption and has short drying times. However, this type of coating does not demonstrate resistance to either abrasion or chemicals, especially petroleum solvents and alcohol.

The acrylic coating's typical dielectric withstand is greater than 1500 volts and has a temperature range of -59°C to 132°C.

COMTROL®

Comtrol Corporation
www.comtrol.com

+1 763.957.6000
800.926.6876
sales@comtrol.com

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