

RocketLinx® ES8510-XT

Part Number: 32061-6



KEY FEATURES AND BENEFITS

- Multiple redundant ring (recovery time <5ms)
- Supports TACACS+
- Seven 10/100BASE-TX ports and three Gigabit RJ45/SFP combo ports (10/100/1000BASE-TX, 100BASE-FX, 1000BASE-X)
- 32Gbps non-blocking, 8K MAC address table
- VLAN, GVRP, QoS, IGMP snooping V1/V2/V3, rate control, port trunking, LACP, online multi-port mirroring
- Management via console CLI, Web, SNMP V1/V2c/V3, RMON, HTTPS, SSH and NetVision
- Advanced security feature supports IP security, port security, DHCP server, IP and MAC binding, 802.1x network access control
- Event notification by email, SNMP trap, syslog, digital input and relay output
- -40° to +74°C operating temperature for extreme environments
- Rigid aluminum IP31 housing, excellent heat dispersion, redundant power, DIN rail/wall mount installation
- NEMA TS2 Compliant
- RoHS2 compliant under CE
- IPv6 support

PRODUCT DESCRIPTION

The RocketLinx ES8510-XT is a managed industrial Ethernet switch, equipped with seven 10/100TX ports and three 10/100/1000 RJ45/100-FX/Gigabit SX/LX/LHX/ZX/SFP combo ports. Two Gigabit ports may be used to form a non-stop Redundant Ring while the third Gigabit port enables connection to an upper switch, couple ring or public server. The Gigabit combo port design provides flexibility to choose copper or fiber media supporting 100BASE-FX or 1000BASE-X, Multi-Mode or Single-Mode for a wide variety of distance and installation requirements.

The RocketLinx ES8510-XT is housed in a rugged aluminum enclosure that features an excellent heat dispersing mechanical design and extended operating temperature support. The embedded software supports full Layer 2 management features, multi-form ring redundancy, network control, monitoring, security and notification. The RocketLinx ES8510-XT also provides a built-in watchdog timer and digital input and relay output to avoid undetected problems. The RocketLinx ES8510-XT provides the perfect foundation for building your industrial Ethernet infrastructure.

Three Gigabit Ports for Flexible Network Planning

A unique feature to the RocketLinx ES8510-XT is the three Gigabit RJ45/SFP combo ports, which can improve performance dramatically compared to products with only two Gigabit RJ45/SFP combos. Each combo comes with a flexible connection - 100Mbps or 1000Mbps, as well as fiber or copper connection options. All together, as many as ten different combinations of port connections are possible. By selecting the appropriate fiber transceivers, the RocketLinx ES8510-XT can meet your industrial application requirements with virtually any transmission distance.

100/1000Mbps SFP

The RocketLinx ES8510-XT SFP socket supports 100BASE-FX Single/Multi-Mode and 1000BASE-SX/LX/LHX/XD Multi/Single-Mode transceivers. The available distance of the 100BASE-FX is up to 30KM. 1000BASE-SX Multi-Mode supports 550M, 1000BASE-LX Single-Mode supports 10KM, 1000BASE-LHX Single-Mode supports 30KM, 1000BASE-XD Single-Mode supports up to 50KM. 1000BASE-ZX Single-Mode supports up to 70KM.

ROCKETLINX SPECIFICATIONS

HARDWARE

Network Interfaces	
10/100BASE-TX, 10/100/1000BASE-TX or 100BASE-FX and 1000BASE-SX/LX/LHX/XD/ZX Gigabit Fiber	
Connector Types	RJ45, SFP
Enclosure	
IP31 grade aluminum metal case	
Installation Method	DIN rail, wall mount
LED Indicators	
Power 1, Power 2, Ring Master (R.M.), 10/100BASE-TX link/activity, 10/100BASE-TX Full-Duplex/collision, Gigabit copper/SFP combo link activity, Digital Input 1&2, Digital Output 1&2	
Digital Input (DI)	Two Digital Inputs, 4-Pin screw terminal block
Digital Output	Two Digital Outputs (Dry Relay Output), 4-Pin screw terminal block
Serial Console Port	
One RJ45 RS232 (TXD, RXD, Signal GND), Baud Rate: 9600bps	
Data Bits	8
Parity	None
Stop Bits	1
Flow Control	None
Dimensions	
5.0" x 6.3" x 3.7"	
12.7 x 16 x 9.4 cm	
Product Weight	
2.63 lb	
1.19 kg	

ETHERNET SPECIFICATIONS

Number of Ports	10
7 standard fast Ethernet and 3 combo RJ45/SFP Gigabit Ethernet	
RJ45	
10/100BASE-TX, auto MDI/MDIX, auto negotiation (speed/duplex mode) 10/100/1000BASE-TX, auto MDI/MDIX, auto negotiation (speed/duplex mode)	
SFP (Optional)	
100BASE-FX Fiber, 1000BASE-SX/LX, auto MDI/MDIX, auto negotiation (speed/duplex mode)	
Cable Types	
Cat 3, Cat 4, Cat 5, Cat 5e (UTP or STP)	
Link Distances	
RJ45: 100 meters	
SFP: depends on model: Single-Mode: 30KM, Multi-Mode: 2KM	
Port Alarm Relay	Yes
Standards	
IEEE 802.1AB: Link Layer Discovery Protocol (LLDP)	
IEEE 802.1D-2004: Rapid Spanning Tree Protocol (RSTP)	
IEEE802.1p: Class of Service	
IEEE 802.1Q: VLAN Tagging and GVRP	
IEEE 802.1s: Multiple Spanning Tree Protocol (MSTP)	
IEEE 802.1X: Port Based Network Access Control	
IEEE 802.3: 10BASE-T	
IEEE 802.3ad: Link Aggregation Control Protocol (LACP)	
IEEE 802.3u: 100BASE-TX, 100BASE-FX	
IEEE 802.3x: Flow Control and Back-Pressure	
Internet Protocol	
IPv4 and IPv6	

MANAGEMENT FEATURES

Configuration Management	
Out-band management: Console port with Command Line Interface (CLI) - similar to Cisco CLI, In-band management: NetVision (Windows application), web interface (HTTP/HTTPS) or a Telnet/SSH console with CLI	
Embedded Watchdog	
Embedded hardware watchdog timer automatically resets system if switch system failure occurs	
System Upgrade/Backup	
TFTP/web interface for firmware upgrade and configuration backup/restore	
SNMP	
V1, V2c, V3 with SNMP trap function, up to four trap stations	
SNMP MIB	
MIB-II, bridge MIB, VLAN MIB, IGMP MIB, Ethernet-like MIB, Control private MIB, and RMON	
Email Warning	
Automatic warning, up to four accounts by pre-defined events	
System Log	
Supports both local mode and server mode	
DHCP	
DHCP client, DHCP server with IP and MAC address binding and DHCP	

NETWORK PERFORMANCE

Back Pressure	
IEEE 802.3x: 10/100Mbps Half-Duplex Only	
Class of Service (CoS)	
IEEE 802.1p: 4 priority level (0-7), queue ID (0-3)	
Flow Control Pause Frame	
IEEE 802.3x: 10/100Mbps Full-Duplex	
IGMP Snooping	
V1/V2/V3 for multicast filtering and IGMP query V1/V2; supports unknown multicasting, processes forwarding policies: drop, flooding and forward to router port, 256 IGMP multicast groups	
IP Security	
Assign authorized IP addresses to specific port, 10 max/port	
Time Synchronization	
Supports NTP protocol with daylight saving function, and localized time sync function	
Port-Based Network Access Control	
IEEE 802.1X: Supports user authentication by the RADIUS account, password and key for the RADIUS servers (primary and secondary), Supports TACACS+	
Port Configuration	
Port link speed, link mode, port status, enable/disable	
Port Mirroring	
Online traffic monitoring on multiple selected ports	
Port Security	
Assign authorized MAC addresses to specific port, 10 max/port	
Port Trunk	
IEEE 802.3ad LACP with timer and static port trunk; trunk member up to 8 ports and maximum 5 trunk groups	
Private VLAN	
Direct client ports in isolated/community VLAN to promiscuous port in primary VLAN	
Rate Control	
Ingress filtering for broadcast, multicast, unknown DA or all packets. Egress filtering for all packet types	
Switch Technology	
32Gbps switch fabric store and forward switch technology, 8K MAC address	
System Throughput	
10Mbps	14,880pps
100Mbps	148,880pps
Gigabit Ethernet	1,488,100pps
64 byte packet size	
Transfer Packet Size	
64 bytes to 1522 bytes (includes VLAN tag)	
Packet Buffer	
1MBits shared memory	
Traffic Prioritization (QoS)	
Supports 4 physical queues, weighted Round Robin queuing (WRR 8:4:2:1) and strict priority scheme (IEEE 802.1p COS tag and IPv4 ToS/ diffserv information) to prioritize industrial network traffic	
VLAN	
IEEE 802.1Q: Tag VLAN with 256 (Max) VLAN entries, 2K GVRP entries; 3 VLAN link modes (trunk, hybrid, and link access)	
Modbus TCP/IP	
CLI support for Modbus TCP/IP communications with Function Code 4 (factory automation). Operates as slave/server device, while a typical master/client device is a host computer running appropriate through Ethernet. The Modbus TCP/IP master can read or write to the Modbus registers provided by the Modbus TCP/IP application software (SCADA / HMI System)	

NETWORK REDUNDANCY

Rapid Spanning Tree Protocol	
IEEE 802.1D-2004 Rapid Spanning Tree Protocol (RSTP): Compatible with Legacy STP and IEEE 802.1w	
Multiple Spanning Tree Protocol	
IEEE 802.1s MSTP: each MSTP instance can include one or more VLANs and supports multiple RSTPs deployed in a VLAN or multiple VLANs	
Redundant Ring Technology	
Failure Recovery within 5ms	
Rapid Dual Homing	
Multiple uplink paths to upper switches	
Ring Trunking	
Integrates port aggregate function in ring path to get higher throughput ring architecture	
Multiple Ring	
Couple or multiples of up to 16 rings, supports up to 5 Fast Ethernet rings/switch	

ELECTRICAL SPECIFICATIONS

Device	
DC Input Voltage (positive or negative)	12-48 VDC
Current Consumption (24VDC)	0.8A
Power Consumption (Max)	20W
Number of Power Connectors	
1	
Power Connector Type	
4-Pin screw terminal block	
Power Input Redundancy	
Dual Redundant Inputs	
Reverse Polarity Protection	
Yes	
Digital Input	
2 with photo optical isolation	
Logic Low (0)	0 to 10VDC
Logic High (1)	11 to 30VDC
Digital Output (Relay Output)	
2	
DC Input Voltage	24VDC
Current Consumption (24VDC)	1A Maximum

ENVIRONMENTAL SPECIFICATIONS

Air Temperature	
System On	-40 ⁰ to 74 ⁰ C
System Off	-40 ⁰ to 85 ⁰ C
Operating Humidity	
Non-condensing	
5% to 95%	
MTBF (Mean Time Between Failures)	
28.53 years	

EXPORT INFORMATION

Packaged Shipping Weight	3.9 lbs
	1.77 kg
Package Dimensions	28.7 x 13.97 x 23.11 cm
UPC Code	7-56727-32061-6
ECCN	5A992
Schedule B Number	8517.62.0050

REGULATORY APPROVALS

Emissions	
Canadian EMC Requirements	
ICES-003	
European Standard EN55022	
EN61000-6-4	
CISPR 22	
FCC Part 15 Subpart B	
Class A limit	
Immunity	
European Standard EN55024	
IEC 61000-6-2:	
IEC 1000-4-2/EN61000-4-2: ESD	
IEC 1000-4-3/EN61000-4-3: RF	
IEC 1000-4-4/EN61000-4-4: Fast Transient	
IEC 1000-4-5/EN61000-4-5: Surge	
IEC 1000-4-6/EN61000-4-6: Conducted Disturbance	
IEC 1000-4-8/EN61000-4-8: Magnetic Field	
IEC 1000-4-11/EN61000-4-11: Dips and Voltage Variations	
Safety	
IEC 60950/EN60950 (LISTED)	
CSA C22.2 No. 60950/UL60950 Third Edition	
Shock	IEC 60068-2-27
Vibration	IEC 60068-2-6
Free Fall	IEC 60068-2-32
Hi-Pot	
AC 1.2KV for all ports and power	
Regulatory Approvals	
European Standard: RoHS2 compliant under CE	
NEMA TS2 Certified	
Other Regulatory Approvals	



Warranty Information

Control offers a 30-day satisfaction guarantee and 5-year limited warranty.

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