



## RocketLinx® ES9528-XT

Part Number: 32071-5



### KEY FEATURES AND BENEFITS::

- 28-port managed switch featuring 10/100-TX and 4-port Gigabit RJ45/SFP combo (10/100/1000BASE-TX, 1000BASE-X)
- 12.8Gbps switch fabric
- 8K MAC address table
- Supports jumbo frame up to 9,216 bytes
- Max 12 x 100M rings and 2 Gigabit rings aggregation capabilities
- VLAN, Private VLAN, QinQ, 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 features support IP security, port security, DHCP server, IP and MAC binding, 802.1x network access control
- 802.1s MSTP, RSTP and ring and multiple ring for redundant network topologies
- Event notification by e-mail, SNMP trap, syslog
- -40° to +74°C operating temperature for extreme environments
- Rack mount installation, low-power
- NEMA TS2 certified
- RoHS2 compliant under CE
- IPv6 support

### PRODUCT DESCRIPTION::

The RocketLinx ES9528-XT is a Layer 2 managed Industrial Ethernet switch, equipped with 24 10/100BASE-TX ports and four Gigabit Ethernet RJ45/SFP combo ports. The four gigabit combo port design allows 10/100/1000 triple speed, and the SFP ports accept all types of Gigabit SFP transceivers, including SX, LX, LHX, ZX and XD for a variety of connections and distances. It is specially designed for control rooms and applications where high-port density and performance are required.

The ES9528-XT is typically mounted within a 19-inch rack, along with other 19-inch public servers or other network devices. When lower industrial switches are aggregated to the ES9528-XT, the 24-port plus 4G design allows the connection of up to twelve 100M

rings plus two Gigabit rings. Each having its own ring redundancy protection.

The RocketLinx ES9528-XT is a fan-less rack mount switch with low power consumption and supports a wide operating temperature. It supports Jumbo Frame featuring up to 9,216 bytes packet size for large file transmissions.

The embedded software supports full Layer 2 management features, multi-form ring redundancy, network control, monitoring, security and notification. The RocketLinx ES9528-XT provides the perfect foundation for building your industrial Ethernet infrastructure.



# ROCKETLINX SPECIFICATIONS::

## HARDWARE

### Interface Specification

10/100/1000BASE-TX  
1000BASE-SX/LX/LHX/XD/ZX Gigabit Fiber

### Connector Type

24 - RJ45  
4 - RJ45/SFP Combo

### Enclosure

Black Finished Steel

### Installation Method

19-inch, 1U Rack Mount

### LED Indicators

Power, Ring Master (R.M)  
10/100BASE-TX Link/Activity  
10/100BASE-TX Full/Half Duplex  
Gigabit Copper Link/Activity, Duplex  
Gigabit SFP Link/Activity

### Serial Console Port

One DB9 RS-232 (TXD, RXD, Signal GND), Baud Rate: 9600bps,  
Data Bits: 8, Parity: None, Stop Bits: 1, Flow Control: None

### Dimensions

17.2" x 6.7" x 1.7"  
440 x 170 x 44 mm

### Product Weight

5.5 lbs  
2.49 kg

## ETHERNET SPECIFICATIONS

### Number of Ports

28 Total: 24 - RJ45 and 4 - Combo (RJ45/SFP)

### RJ45

10/100/1000BASE-TX, Auto MDI/MDIX, auto-negotiation (Speed/  
Duplex Mode)

### SFP (Optional)

1000BASE-SX/LX/LHX/XD/ZX, Auto MDI/MDIX, auto-negotiation  
(Speed/Duplex Mode)

### Cable Types

Cat 3, Cat 4, Cat 5, Cat 5e, Cat 6 (UTP or STP)

### Link Distances

RJ45: 100 Meters  
SFP: (Depends on model: Single-Mode: 30KM, Multi-Mode: 2KM)

### Transfer Packet Size

64 bytes to 1536 bytes

### Jumbo Frame Enabled

Up to 9216 bytes

### Standards

IEEE 802.1: AB Link Layer Discovery Protocol  
IEEE 802.1D: Rapid Spanning Tree Protocol (RSTP)  
IEEE 802.1p: Class of Service  
IEEE 802.1Q: VLAN Tagging and GVRP  
IEEE 802.1QinQ  
IEEE 802.1s: Multiple Spanning Tree Protocol (MSTP)  
IEEE 802.1X: Port Based Network Access Control  
IEEE 802.3: 10BASE-T  
IEEE 802.3ab: 1000BASE-TX  
IEEE 802.3ad: Port Trunk with Link Aggregation Control Protocol  
(LACP)  
IEEE 802.3u: 100BASE-TX  
IEEE 802.3x: Flow Control and Back-Pressure  
IEEE 802.3z: Gigabit Ethernet Fiber  
IEEE 1588: Precision Time Protocol (PTP)

### Internet Protocol

IPv4 and IPv6

## MANAGEMENT FEATURES

### Configuration and Monitoring

Out-Band Management: Console Port with Command Line  
Interface (CLI) - Similar to Cisco CLI, In-Band Management: 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

Provides 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

### Alarm

Email warning by pre-defined events

### System Log

Supports both local mode and server mode

### DHCP

DHCP client, DHCP server with IP and MAC address binding, port-  
based DHCP server configuration and DHCP relay agent (Option  
82)

## NETWORK PERFORMANCE

### Access Control List

Permit/Deny access control lists

### Back-Pressure

IEEE 802.3x: 1000Mbps Half-Duplex Only

### Class of Service (CoS)

IEEE 802.1p: 4 priority queues/port

### Flow Control Pause Frame

IEEE 802.3x: 10/100/1000Mbps Full-Duplex

### GMMP

GARP multicast registration protocol

### 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

### IP Security

Assign authorized IP addresses to specific port, filter rule (ACL)  
supports up to 200 rules

### LLDP

Provides Link Layer Discovery Protocol, advertizes system and  
port identity capability on the local network

### 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).

### Packet Buffer Memory

2Mbits

### Port-Based Network Access Control

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, filter rule (ACL)  
supports up to 200 rules

### Port Trunk

IEEE 802.3ad LACP with timer and static port trunk; Trunk  
member up to 8 ports and maximum 8 trunk groups including  
gigabit Ethernet ports

### Private VLAN

Direct client ports in isolated/community VLAN to promiscuous  
port in Primary VLAN

### RADIUS

Login with RADIUS account/password, key for RADIUS server  
authentication

### Rate Control

Ingress filtering for broadcast, multicast, unknown DA or all  
packets, egress filtering for all packet types

### Switch Technology

12.8Gbps switch fabric, Store/Forward switch technology, 8K  
MAC address

### System Throughput

14,880pps - 10Mbps; 148,800pps - 100Mbps; 1,488,100pps -  
1000Mbps

### Time Synchronization

Supports IEEE 1588  
NTP protocol with Daylight Saving function and Localize Time  
Sync function

### Traffic Prioritization (QoS)

Supports 4 physical queues, weighted Round Robin Queueing  
(WRR 8:4:2:1) and Strict Priority Scheme, which follows 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 and 2K GVRP  
entries; 3 VLAN link modes: Trunk, Hybrid and Link Access. IEEE  
802.1 QinQ supports Double VLAN Tag function for implementing  
metro network topologies

## NETWORK REDUNDANCY

### Rapid Spanning Tree Protocol (RSTP)

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

### Redundant Ring Technology

Failure Recovery within 0-100ms  
Rapid Dual Homing: Multiple uplink paths to upper switches  
Ring Trunking: Integrates Port Aggregate Function in ring path to  
get higher Throughput Ring  
Multiple Ring: Couple or Multiples of up to 14 Rapid Super Rings,  
Supports up to 12 x 100M rings plus 2 Gigabit Rings

## ELECTRICAL SPECIFICATIONS

### Device

AC Input Voltage 90-264VAC  
Power Consumption (maximum) 20W

### Power Connector

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### Power Connector Type

IEC320-C14 connector

## ENVIRONMENTAL SPECIFICATIONS

### Air Temperature

System On -40° to 85°C  
System Off -40° to 85°C

### Operating Humidity

Non-condensing 5% to 95%  
MTBF (Mean Time Between Failures) 24.98 Years

## EXPORT INFORMATION

### Packaged Shipping Weight

7.55 lb  
3.42 kg

### Package Dimensions

19.8" x 3.5" x 12"  
50.29 x 8.89 x 30.48 cm

### UPC Code

7-56727-32070-8

### ECCN

5A992

### Schedule B Number

8517.62.0050

## REGULATORY APPROVALS

### Emissions

European Standard EN55022  
European Standard EN61000-6-4  
FCC Part 15 Subpart B  
Class A limit

### Immunity

European Standard EN55024  
European Standard EN61000-6-2  
EN61000-4-2: Electrostatic Discharge (ESD)  
EN61000-4-3: Radiated, Radio-Frequency (RF)  
EN61000-4-4: Fast Transient/Burst  
EN61000-4-5: Surge  
EN61000-4-6: Conducted Disturbance  
EN61000-4-8: Magnetic Field  
EN61000-4-11: Dips and Voltage Variations

### Safety

IEC 60950/EN60950 (LISTED)  
CSA C22.2 No. 60950/UL60950 Third Edition

### Vibration

IEC60068-2-6

### Shock

IEC60068-2-27

### Free Fall

IEC60068-2-32

### Other

European Standard: 2002/95/EC Directive (RoHS2)  
NEMA TS2 Certified

### Regulatory Approvals



## RECOMMENDED PRODUCTS::

**1200059** SFP, Multi-Mode, 550M 1000BASE-GSX  
(Extended Temperature)

**1200060** SFP, Single-Mode, 10KM 1000BASE-GLX  
(Extended Temperature)



### Warranty Information

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

### Sales Support

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### Technical Support

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