COMTROL
Pepperl+Fuchs

RocketLinx® ES9528-XT V.2

Part Number: 32073-9

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

- Supports TACACS+

- 16K MAC address table

- Supports jumbo frame up to 9,712 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 +75°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 typicially 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.

Your automation, our passion.

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

Ingress Protection
IP30

Installation Method
19-inch, 1U Rack Mount

LED Indicators
Power, Ring Signal (R.S.), Alarm
10/100BASE-TX Link/Activity
10/100BASE-TX Full/Half Duplex
Gigabit Copper Link/Activity, Duplex
Gigabit SFP Link/Activity

Serial Console Port
One RJ45 RS-232 (TXD, RXD, Signal GND), Baud Rate: 9600bps, Data Bits: 8, Parity: None, Stop Bits: 1, Flow Control: None

CPU Performance
600 MHz MIPS CPU/10 sec hardware Watchdog Timer

Dimensions
17.2" x 6.7" x 1.7"
438 x 170 x 44 mm

Product Weight
5.45 lbs
2.47 kg

ETHERNET SPECIFICATIONS

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

RJ45
10/100/100BASE-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 9728 bytes (including double tag VLAN)

Jumbo Frame Enabled
Up to 9,712 bytes

Standards
IEEE 802.1: AB Link Layer Discovery Protocol
IEEE 802.1D: Rapid Spanning Tree Procol (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

Alarm
Email warning by pre-defined events

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, IPv6, SNMP v1/v2c/v3 with SNMP Trap (4 Trap Stations), RMON Group 1,2,3,9, Modbus TCP, EtherNet/IP
USB Port to Backup/Restore Configuration Files

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

Email Warning
Automatic warning, up to four accounts by pre-defined events

Embedded Watchdog
Embedded hardware watchdog timer automatically resets system if switch system failure occurs

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, Comtrol Private MIB, and RMON

System Log
Supports both local mode and server mode with Authentication

System Upgrade/Backup
Provides TFTP/Web Interface for firmware upgrade and configuration backup/restore and USB Port Automatically Uploads Firmware or Configuration File with Hardware Power Cycle

NETWORK PERFORMANCE

Access Control List
Permit/Deny access control lists

Advanced Cyber Security
Port security, IEEE 802.1x, DHCP Snooping, IP Source Guard, Dynamic ARP Inspection, Denial of Service (DoS) protection, L2/L3/L4 Access Control List (ACL)

Back-Pressure
IEEE 802.3x: 1000Mbps Half-Duplex Only

Class of Service (CoS)
IEEE 802.1p: 8 priority queues/port

EtherNet/IP

Flow Control Pause Frame
IEEE 802.3x: 10/100/1000Mbps Full-Duplex

GMRP
GARP multicast registration protocol

IGMP Snooping
V1/V2/V3 for multicast filtering and IGMP query also; 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

Packet Buffer Memory
1.5MB Shared memory

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, filter rule (ACL) supports up to 200 rules

Port Trunk/Link Aggregation
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 PTP Precision Time protocol v1/v2

Traffic Prioritization (QoS)
Supports 8 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 funtion for implementing metro network topologies

NETWORK REDUNDANCY

Dual Homing
Multiple Uplink Paths to One or Multiple Upper Sitch, Up to 256 Groups RDH Peer Protection

Failure Recovery
0-10ms

ITU-T G.8032 ERPS
Supports ITU-T G.8032 EROS V1 Single Ring Topology, and ERPS v2 Multiple Rings with Ladder Topology

Multiple Ring
Couple or Multiples of Up to 14 Rapid Super Rings, Supports up to 12 x 100M rings plus 2 Gigabit Rings

Multiple Spanning Tree
IEEE 802.1s MSTP, Each MSTP Instance Can Include One or More VLANS, Also Supports Multiple RSTP Deployed in a VLAN or Multiple VLANs

Rapid Spanning Tree Protocol (RSTP)
IEEE 802.1D-2004 Rapid Spanning Tree Protocol (RSTP) Compatible with Legacy STP and IEEE 802.1w

Redundant Ring Technology
Rapid Dual Homing:
Ring Trunking:
Multiple Ring:

Ring Trunking
Integrates Port Aggregate Function in ring path to get higher Throughput Ring Architecture

Super Chain
New Ring Technology with Flexible and Scalability, Compatability, and Easy Configurable. The Ring includes 2 Types of Node Switch - Border Switch and Member Switch

ELECTRICAL SPECIFICATIONS

Device
AC Input Voltage   90-264VAC
Power Consumption (maximum)   4W

Power Connector
1

Power Connector Type
IEC320-C14 connector

ENVIRONMENTAL SPECIFICATIONS

Air Temperature
System On   -40° to 75°C
System Off   -40° to 75°C

Hi-Pot Insultation
AC 1/5KV for Ethernet Interface to Power, Power to Case

Operating Humidity
Non-condensing   10% to 95%

MTBF (Mean Time Between Failures)
41.46 Years

EXPORT INFORMATION

Packaged Shipping Weight
7.2 lb
3.27 kg

Package Dimensions
19.8" x 3.5" x 12"

UPC Code
7-56727-32073-9

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

CE ✓RoHS

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