

EDS-510A Series

7+3G-port Gigabit managed Ethernet switches



Features and Benefits

- 2 Gigabit Ethernet ports for redundant ring and 1 Gigabit Ethernet port for uplink solution
- Turbo Ring and Turbo Chain (recovery time < 20 ms @ 250 switches),¹ RSTP/STP, and MSTP for network redundancy
- TACACS+, SNMPv3, IEEE 802.1X, HTTPS, and SSH to enhance network security
- Easy network management by web browser, CLI, Telnet/serial console, Windows utility, and ABC-01

Certifications



Introduction

The EDS-510A Gigabit managed redundant Ethernet switches are equipped with up to 3 Gigabit Ethernet ports, making them ideal for building a Gigabit Turbo Ring, but leaving a spare Gigabit port for uplink use. The Ethernet redundancy technologies, Turbo Ring and Turbo Chain (recovery time < 20 ms), RSTP/STP, and MSTP, can increase system reliability and the availability of your network backbone.

The EDS-510A Series is designed especially for communication demanding applications such as process control, shipbuilding, ITS, and DCS systems, which can benefit from a scalable backbone construction.

Additional Features and Benefits

- Command line interface (CLI) for quickly configuring major managed functions
- DHCP Option 82 for IP address assignment with different policies
- Supports EtherNet/IP and Modbus TCP protocols for device management and monitoring
- IGMP snooping and GMRP for filtering multicast traffic
- Port-based VLAN, IEEE 802.1Q VLAN, and GVRP to ease network planning
- QoS (IEEE 802.1p/1Q and TOS/DiffServ) to increase determinism
- Port Trunking for optimum bandwidth utilization
- SNMPv1/v2c/v3 for different levels of network management
- RMON for proactive and efficient network monitoring
- Bandwidth management to prevent unpredictable network status
- Lock port function for blocking unauthorized access based on MAC address
- Automatic warning by exception through email and relay output

Specifications

Input/Output Interface

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|------------------------|---|
| Alarm Contact Channels | 2 Relay output with current carrying capacity of 1 A @ 24 VDC |
| Digital Input Channels | 2 |
| Digital Inputs | +13 to +30 V for state 1 -30 to +3 V for state 0 Max. input current: 8 mA |

Ethernet Interface

| | |
|--|---|
| 10/100BaseT(X) Ports (RJ45 connector) | 7 Auto negotiation speed Full/Half duplex mode Auto MDI/MDI-X connection |
| 10/100/1000BaseT(X) Ports (RJ45 connector) | EDS-510A-1GT2SFP Series: 1 EDS-510A-3GT Series: 3 |

1. Gigabit Ethernet recovery time < 50 ms

| | |
|-------------------|---|
| | Supported functions: Auto negotiation speed Full/Half duplex mode Auto MDI/MDI-X connection |
| 1000BaseSFP Slots | EDS-510A-1GT2SFP Series: 2 EDS-510A-3SFP Series: 3 |
| Standards | IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) IEEE 802.3ab for 1000BaseT(X) IEEE 802.3z for 1000BaseSX/LX/LHX/ZX IEEE 802.1X for authentication IEEE 802.1D-2004 for Spanning Tree Protocol IEEE 802.1w for Rapid Spanning Tree Protocol IEEE 802.1s for Multiple Spanning Tree Protocol IEEE 802.1Q for VLAN Tagging IEEE 802.1p for Class of Service IEEE 802.3x for flow control IEEE 802.3ad for Port Trunk with LACP |

Ethernet Software Features

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|----------------------|--|
| Filter | 802.1Q VLAN Port-based VLAN IGMP v1/v2 GVRP GMRP |
| Industrial Protocols | EtherNet/IP Modbus TCP |
| Management | IPv4/IPv6 SNMPv1/v2c/v3 LLDP Port Mirror Back Pressure Flow Control BOOTP DDM DHCP Option 66/67/82 DHCP Server/Client Flow control RARP RMON SMTP SNMP Inform Syslog Telnet TFTP |
| MIB | MIB-II Bridge MIB Ethernet-like MIB P-BRIDGE MIB Q-BRIDGE MIB RMON MIB Groups 1, 2, 3, 9 RSTP MIB |
| Redundancy Protocols | STP MSTP RSTP LACP Link Aggregation Turbo Chain Turbo Ring v1/v2 |

| | |
|---------------------------------|---|
| Security | HTTPS/SSL RADIUS TACACS+ Port Lock SSH |
| Time Management | NTP Server/Client SNTP |
| Switch Properties | |
| IGMP Groups | 256 |
| MAC Table Size | 8 K |
| Max. No. of VLANs | 64 |
| Packet Buffer Size | 1 Mbits |
| Priority Queues | 4 |
| VLAN ID Range | VID 1 to 4094 |
| LED Interface | |
| LED Indicators | PWR1, PWR2, FAULT, 10/100M (TP port), 1000M (Gigabit port), MSTR/HEAD, CPLR/ TAIL |
| Serial Interface | |
| Console Port | RS-232 (TxD, RxD, GND), 10-pin RJ45 (115200, n, 8, 1) |
| DIP Switch Configuration | |
| Ethernet Interface | Turbo Ring, Master, Coupler, Reserve |
| Power Parameters | |
| Connection | 2 removable 6-contact terminal block(s) |
| Input Current | EDS-510A-1GT2SFP Series: 0.38 A @ 24 VDC EDS-510A-3GT Series: 0.48 A @ 24 VDC EDS-510A-3SFP Series: 0.33 A @ 24 VDC |
| Input Voltage | 24 VDC Redundant dual inputs |
| Operating Voltage | 12 to 45 VDC |
| Overload Current Protection | Supported |
| Reverse Polarity Protection | Supported |
| Physical Characteristics | |
| Housing | Metal |
| IP Rating | IP30 |
| Dimensions | 80.2 x 135 x 105 mm (3.16 x 5.31 x 4.13 in) |
| Weight | 1170 g (2.58 lb) |
| Installation | DIN-rail mounting Wall mounting (with optional kit) |

Environmental Limits

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|--|---|
| Operating Temperature | Standard Models: -10 to 60°C (14 to 140°F) Wide Temp. Models: -40 to 75°C (-40 to 167°F) |
| Storage Temperature (package included) | -40 to 85°C (-40 to 185°F) |
| Ambient Relative Humidity | 5 to 95% (non-condensing) |

Standards and Certifications

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|---------------------|--|
| Safety | EN 62368-1 UL 60950-1 UL 508 |
| EMC | EN 55032/35 |
| EMI | CISPR 32, FCC Part 15B Class A |
| EMS | IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF |
| Hazardous Locations | ATEX Class I Division 2 |
| Railway | EN 50121-4 |
| Traffic Control | NEMA TS2 |
| Vibration | IEC 60068-2-6 |
| Shock | IEC 60068-2-27 |
| Freefall | IEC 60068-2-31 |
| Maritime | DNV |

MTBF

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|-----------|--|
| Time | EDS-510A-3GT: 2,464,744 hrs EDS-510A-1GT2SFP: 2,636,255 hrs |
| Standards | Telcordia (Bellcore), GB |

Warranty

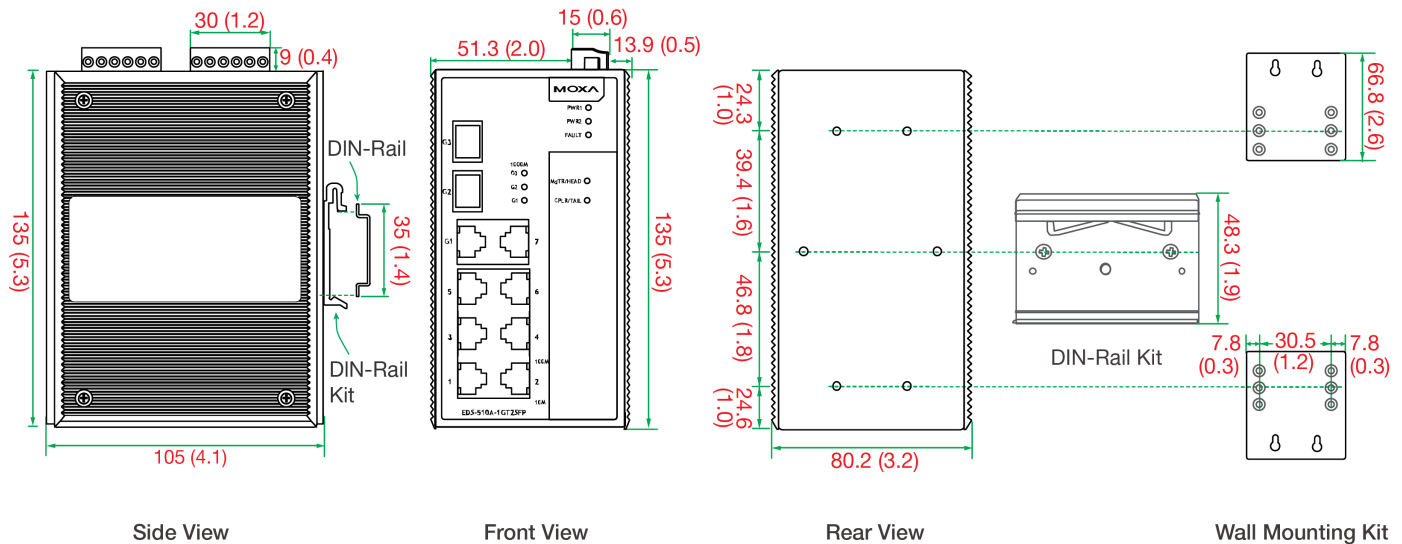
| | |
|-----------------|--|
| Warranty Period | 5 years |
| Details | See www.moxa.com/warranty |

Package Contents

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|------------------|---|
| Device | 1 x EDS-510A Series switch |
| Cable | 1 x DB9 female to RJ45 10-pin |
| Installation Kit | 4 x cap, plastic, for RJ45 port 2 x cap, plastic, for SC fiber port (-1GT2SFP models) 2 x cap, plastic, for ST fiber port (-3SFP models) |
| Documentation | 1 x quick installation guide 1 x warranty card 1 x product certificates of quality inspection, Simplified Chinese 1 x product notice, Simplified Chinese |
| Note | SFP modules need to be purchased separately for use with this product. |

Dimensions

Unit: mm (inch)



Ordering Information

| Model Name | 10/100BaseT(X) Ports RJ45 Connector | 10/100/1000BaseT(X) Ports RJ45 Connector | 1000Base SFP Slots | Operating Temp. |
|--------------------|--|---|--------------------|-----------------|
| EDS-510A-3GT | 7 | 3 | - | -10 to 60°C |
| EDS-510A-3GT-T | 7 | 3 | - | -40 to 75°C |
| EDS-510A-3SFP | 7 | - | 3 | -10 to 60°C |
| EDS-510A-3SFP-T | 7 | - | 3 | -40 to 75°C |
| EDS-510A-1GT2SFP | 7 | 1 | 2 | -10 to 60°C |
| EDS-510A-1GT2SFP-T | 7 | 1 | 2 | -40 to 75°C |

Accessories (sold separately)

Storage Kits

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| ABC-01 | Configuration backup and restoration tool for managed Ethernet switches and AWK Series wireless APs/bridges/clients, 0 to 60°C operating temperature |
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SFP Modules

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|---------------|--|
| SFP-1G10ALC | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1310 nm, RX 1550 nm, 0 to 60°C operating temperature |
| SFP-1G10ALC-T | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1310 nm, RX 1550 nm, -40 to 85°C operating temperature |
| SFP-1G10BLC | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1550 nm, RX 1310 nm, 0 to 60°C operating temperature |
| SFP-1G10BLC-T | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1550 nm, RX 1310 nm, -40 to 85°C operating temperature |
| SFP-1G20ALC | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1310 nm, RX 1550 nm, 0 to 60°C operating temperature |
| SFP-1G20ALC-T | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1310 nm, RX 1550 nm, -40 to 85°C operating temperature |
| SFP-1G20BLC | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1550 nm, RX 1310 nm, 0 to 60°C operating temperature |
| SFP-1G20BLC-T | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1550 nm, RX 1310 nm, -40 to 85°C operating temperature |

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| SFP-1G40ALC | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1310 nm, RX 1550 nm, 0 to 60°C operating temperature |
| SFP-1G40ALC-T | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1310 nm, RX 1550 nm, -40 to 85°C operating temperature |
| SFP-1G40BLC | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1550 nm, RX 1310 nm, 0 to 60°C operating temperature |
| SFP-1G40BLC-T | WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1550 nm, RX 1310 nm, -40 to 85°C operating temperature |
| SFP-1GEZXC | SFP module with 1 1000BaseEZC port with LC connector for 110 km transmission, 0 to 60°C operating temperature |
| SFP-1GEZXC-120 | SFP module with 1 1000BaseEZC port with LC connector for 120 km transmission, 0 to 60°C operating temperature |
| SFP-1GLHLC | SFP module with 1 1000BaseLH port with LC connector for 30 km transmission, 0 to 60°C operating temperature |
| SFP-1GLHLC-T | SFP module with 1 1000BaseLH port with LC connector for 30 km transmission, -40 to 85°C operating temperature |
| SFP-1GLHXLC | SFP module with 1 1000BaseLHX port with LC connector for 40 km transmission, 0 to 60°C operating temperature |
| SFP-1GLHXLC-T | SFP module with 1 1000BaseLHX port with LC connector for 40 km transmission, -40 to 85°C operating temperature |
| SFP-1GLSXLC | SFP module with 1 1000BaseLSX port with LC connector for 1km/2km transmission, 0 to 60°C operating temperature |
| SFP-1GLSXLC-T | SFP module with 1 1000BaseLSX port with LC connector for 1km/2km transmission, -40 to 85°C operating temperature |
| SFP-1GLXLC | SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, 0 to 60°C operating temperature |
| SFP-1GLXLC-T | SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, -40 to 85°C operating temperature |
| SFP-1GSXLC | SFP module with 1 1000BaseSX port with LC connector for 300m/550m transmission, 0 to 60°C operating temperature |
| SFP-1GSXLC-T | SFP module with 1 1000BaseSX port with LC connector for 300m/550m transmission, -40 to 85°C operating temperature |
| SFP-1GZXLC | SFP module with 1 1000BaseZX port with LC connector for 80 km transmission, 0 to 60°C operating temperature |
| SFP-1GZXLC-T | SFP module with 1 1000BaseZX port with LC connector for 80 km transmission, -40 to 85°C operating temperature |

Power Supplies

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| HDR-60-24 | 60 W/2.5 A DIN-rail 24 VDC power supply, universal 85 to 264 VAC or 120 to 370 VDC input voltage, -30 to 70°C operating temperature |
| NDR-120-24 | 120 W/5.0 A DIN-rail 24 VDC power supply, universal 90 to 264 VAC or 127 to 370 VDC input voltage, -20 to 70°C operating temperature |
| NDR-120-48 | 120 W/2.5 A DIN-rail 48 VDC power supply, universal 90 to 264 VAC or 127 to 370 VDC input voltage, -20 to 70°C operating temperature |
| NDR-240-48 | 240 W/5.0 A DIN-rail 48 VDC power supply, universal 90 to 264 VAC or 127 to 370 VDC input voltage, -20 to 70°C operating temperature |
| MDR-40-24 | DIN-rail 24 VDC power supply with 40W/1.7A, 85 to 264 VAC, or 120 to 370 VDC input, -20 to 70°C operating temperature |
| MDR-60-24 | DIN-rail 24 VDC power supply with 60W/2.5A, 85 to 264 VAC, or 120 to 370 VDC input, -20 to 70°C operating temperature |

Software

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|------------|------------------------------|
| MXview-50 | MXview license for 50 nodes |
| MXview-100 | MXview license for 100 nodes |
| MXview-250 | MXview license for 250 nodes |

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|-------------------|---------------------------------------|
| MXview-500 | MXview license for 500 nodes |
| MXview-1000 | MXview license for 1000 nodes |
| MXview-2000 | MXview license for 2000 nodes |
| MXview Upgrade-50 | MXview license expansion for 50 nodes |

Wall-Mounting Kits

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| WK-46 | Wall-mounting kit, 2 plates, 8 screws, 46.5 x 66.8 x 1 mm |
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Rack-Mounting Kits

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| RK-4U | 19-inch rack-mounting kit |
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