

# 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),<sup>1</sup> 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

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

	<p>Supported functions:  Auto negotiation speed  Full/Half duplex mode  Auto MDI/MDI-X connection</p>
1000BaseSFP Slots	<p>EDS-510A-1GT2SFP Series: 2  EDS-510A-3SFP Series: 3</p>
Standards	<p>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</p>

### Ethernet Software Features

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

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
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#### Serial Interface

Console Port	RS-232 (TxD, RxD, GND), 10-pin RJ45 (115200, n, 8, 1)
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#### DIP Switch Configuration

Ethernet Interface	Turbo Ring, Master, Coupler, Reserve
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#### 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

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

Safety	EN 62368-1 (LVD) 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

Time	831,649 hrs
Standards	Telcordia (Bellcore), GB

## Warranty

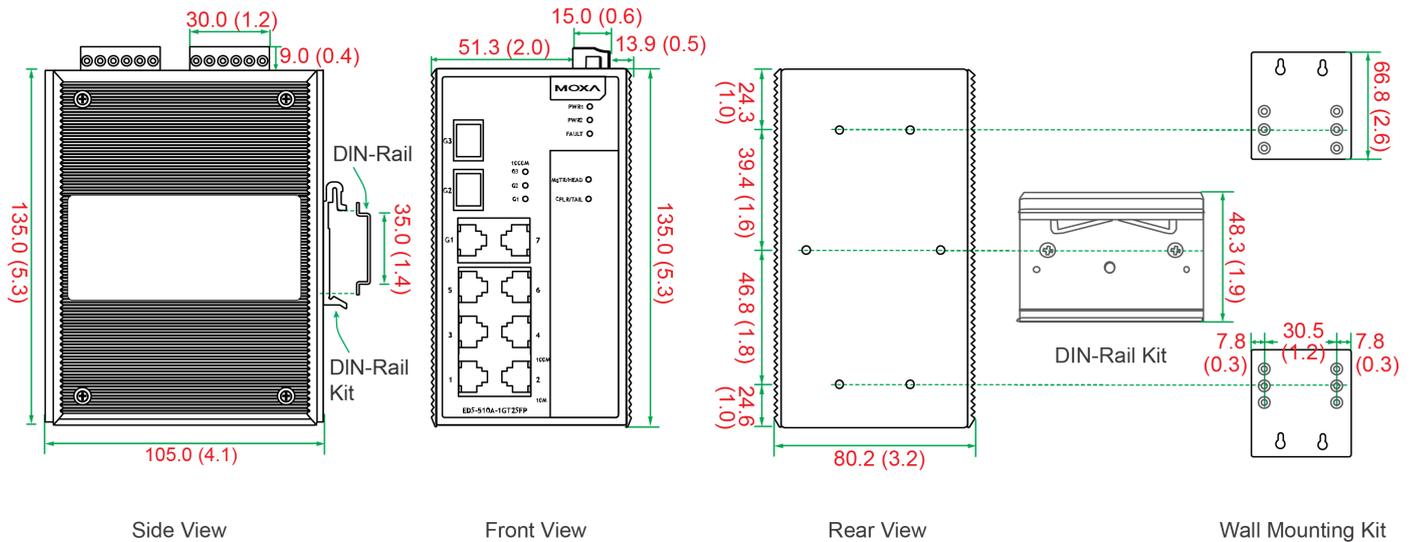
Warranty Period	5 years
Details	See <a href="http://www.moxa.com/warranty">www.moxa.com/warranty</a>

## Package Contents

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

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

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

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-1GLHXC	SFP module with 1 1000BaseLHX port with LC connector for 40 km transmission, 0 to 60°C operating temperature
SFP-1GLHXC-T	SFP module with 1 1000BaseLHX port with LC connector for 40 km transmission, -40 to 85°C operating temperature
SFP-1GLSXC	SFP module with 1 1000BaseLSX port with LC connector for 1km/2km transmission, 0 to 60°C operating temperature
SFP-1GLSXC-T	SFP module with 1 1000BaseLSX port with LC connector for 1km/2km transmission, -40 to 85°C operating temperature
SFP-1GLXC	SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, 0 to 60°C operating temperature
SFP-1GLXC-T	SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, -40 to 85°C operating temperature
SFP-1GSXC	SFP module with 1 1000BaseSX port with LC connector for 300m/550m transmission, 0 to 60°C operating temperature
SFP-1GSXC-T	SFP module with 1 1000BaseSX port with LC connector for 300m/550m transmission, -40 to 85°C operating temperature
SFP-1GZXC	SFP module with 1 1000BaseZX port with LC connector for 80 km transmission, 0 to 60°C operating temperature
SFP-1GZXC-T	SFP module with 1 1000BaseZX port with LC connector for 80 km transmission, -40 to 85°C operating temperature

#### Power Supplies

DR-120-24	120W/2.5A DIN-rail 24 VDC power supply with universal 88 to 132 VAC or 176 to 264 VAC input by switch, or 248 to 370 VDC input, -10 to 60°C operating temperature
DR-4524	45W/2A DIN-rail 24 VDC power supply with universal 85 to 264 VAC or 120 to 370 VDC input, -10 to 50°C operating temperature
DR-75-24	75W/3.2A DIN-rail 24 VDC power supply with universal 85 to 264 VAC or 120 to 370 VDC input, -10 to 60°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

MXview-50	Industrial network management software with a license for 50 nodes (by IP address)
MXview-100	Industrial network management software with a license for 100 nodes (by IP address)
MXview-250	Industrial network management software with a license for 250 nodes (by IP address)
MXview-500	Industrial network management software with a license for 500 nodes (by IP address)
MXview-1000	Industrial network management software with a license for 1000 nodes (by IP address)

MXview-2000	Industrial network management software with a license for 2000 nodes (by IP address)
MXview Upgrade-50	License expansion of MXview industrial network management software by 50 nodes (by IP address)

#### Wall-Mounting Kits

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

RK-4U	19-inch rack-mounting kit
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