

# EDS-510A Series

## 7+3G-Port Gigabit Managed Ethernet Switch



### Highlights

- > 2 Gigabit Ethernet ports for Redundant Ring and 1 Gigabit Ethernet port for Uplink solution
- > Turbo Ring (recovery time < 20 ms), RSTP/STP (IEEE802.1W/D) for Ethernet redundancy
- > QoS, IGMP snooping/GMRP, VLAN, LACP, SNMP V1/V2c/V3, RMON supported
- > IEEE802.1X and https/SSL enhance network security
- > ABC-01 (Automatic Backup Configurator) for system configuration backup



### Features

#### Industrial Networking Capability

- 2 Gigabit Ethernet ports for Turbo Ring redundancy and RSTP/STP (IEEE802.1W/D), 1 Gigabit Ethernet port for Uplink
- IGMP Snooping and GMRP for filtering multicast traffic from industrial Ethernet Protocols
- Port-based IEEE802.1Q VLAN and GVRP protocol to ease network planning
- QoS-IEEE802.1p/1Q and TOS/DiffServ to increase determinism
- 802.3ad, LACP for optimum bandwidth utilization
- IEEE802.1X and https/SSL to enhance network security
- SNMP V1/V2c/V3 for different levels of network management
- RMON for efficient network monitoring and proactive capability

#### Designed for Industrial Applications

- Bandwidth management prevents unpredictable network status
- ABC-01 (Automatic Backup Configurator) for system configuration backup
- Port Lock for access from unauthorized MAC address

- Port mirroring for online debugging
- Automatic warning through e-mail and relay output
- Digital inputs to integrate sensors and alarms with IP networks
- Automatic recovery of connected device's IP addresses
- Line-swap fast recovery
- Regular (0 to 60°C) and extended (-40 to 75°C) operating temperature models available
- IP30, rugged high-strength case
- Long-haul transmit distance of 40 km or 80 km
- DIN-Rail or panel mounting capability
- Ping commands to identify network segment integrity
- Redundant dual 12-45 VDC power inputs and over current protection

#### Recommended Software and Accessories

- ABC-01 RS-232 RJ45-based Automatic Backup Configurator
- EDS-SNMP OPC Server Pro
- DR series DIN-Rail 24 VDC power supplies

### Introduction

The EDS-510A Gigabit Managed Redundant Ethernet Switch is equipped with up to 3 gigabit Ethernet ports, making it ideal for building a Gigabit Turbo Ring, but leaving a spare gigabit port for Uplink use. The Ethernet Redundant Turbo Ring (recovery time < 20 ms) can increase system reliability and the availability of your network

backbone. The EDS-510A Ethernet switch also supports intelligent network management functions, including QoS, IGMP Snooping/GMRP, VLAN, Port Trunking, SNMP V1/V2c/V3, IEEE 802.1X, and https/SSL for optimal network planning.

## Specifications

### Technology

**Standards:** IEEE802.3, 802.3u, 802.3x, 802.1D, 802.1W, 802.1Q, 802.1p, 802.1X, 802.3ad, 802.3z

**Protocols:** IGMP V1/V2/V3 device, GMRP, GVRP, SNMP V1/V2c/V3, DHCP Server/Client, DHCP Option 82, BootP, TFTP, SNTp, SMTP, RARP, RMON

**MIB:** MIB-II, Ethernet-Like MIB, P-BRIDGE MIB, Q-BRIDGE MIB, Bridge MIB, RSTP MIB, RMON MIB Group 1, 2, 3, 9

**Flow Control:** IEEE802.3x flow control, back pressure flow control

### Interface

**RJ45 Ports:** 10/100BaseT(X) or 10/100/1000BaseT(X) auto negotiation speed

**Fiber Ports:** Optional 1000BaseSX/LX/LHX/ZX (LC connector)

**Console:** RS-232 (RJ45)

**LED Indicators:** PWR1, PWR2, FAULT, 10/100M (TP port), 1000M (Gigabit port), MASTER, COUPLER

**Alarm Contact:** Two relay outputs with current carrying capacity of 1A @ 24 VDC

**Digital Inputs:** Two inputs with the same ground, but electrically isolated from the electronics

- +13 to +30V for state "1"
- -30 to +3V for state "0"
- Max. input current: 8 mA

### Optical Fiber

#### 1000BaseSX/LX/LHX/ZX

##### Distance:

Multi mode:

- 1000BaseSX 0 to 500 m, 850 nm (50/125 μm, 400 MHz\*km)  
0 to 275 m, 850 nm (62.5/125 μm, 200 MHz\*km)
- 1000BaseLX 0 to 1100 m, 1310 nm (50/125 μm, 800 MHz\*km)  
0 to 550 m, 1310 nm (62.5/125 μm, 500 MHz\*km)

Single mode:

- 1000BaseLX 0 to 10 km, 1310 nm (9/125 μm, 3.5 PS/(nm\*km))
- 1000BaseLHX 0 to 40 km, 1310 nm (9/125 μm, 3.5 PS/(nm\*km))
- 1000BaseZX 0 to 80 km, 1550 nm (9/125 μm, 19 PS/(nm\*km))

**Min. TX Output:** SFP-1GSXLC -9.5 dBm  
SFP-1GLXLC -9.5 dBm  
SFP-1GLHXL C -4 dBm  
SFP-1GZXLC 0 dBm

**Max. TX Output:** SFP-1GSXLC -4 dBm  
SFP-1GLXLC -3 dBm  
SFP-1GLHXL C +1 dBm  
SFP-1GZXLC +5 dBm

**RX Sensitivity:** SFP-1GSXLC 0 to -18 dBm  
SFP-1GLXLC -3 to -20 dBm  
SFP-1GLHXL C -3 to -24 dBm  
SFP-1GZXLC -3 to -24 dBm

### Power

**Input Voltage:** 24 VDC (12 to 45 VDC), redundant dual inputs

**Input Current:** 0.47A (EDS-510A-3GT)

0.38A (EDS-510A-1GT2SFP)

0.34A (EDS-510A-3SFP)

**Connection:** Two removable 6-pin terminal blocks

**Overload Current Protection:** Present

**Reverse Polarity Protection:** Present

### Mechanical

**Casing:** IP30 protection

**Dimensions (W x H x D):** 80.5 x 135 x 105 mm  
3.17 x 5.31 x 4.13 in.

**Weight:** 1170 g

**Installation:** DIN-Rail, Wall Mounting (optional kit)

### Environmental

**Operating Temperature:** 0 to 60°C (32 to 140°F)  
-40 to 75°C (-40 to 167°F) for T models

**Storage Temperature:** -40 to 85°C (-40 to 185°F)

**Ambient Relative Humidity:** 5 to 95% (non-condensing)

### Regulatory Approvals

**Safety:** UL508, UL60950-1, CSA C22.2 No. 60950-1, EN60950-1

#### Hazardous location:

UL/cUL Class I, Division 2, Groups A, B, C, and D (Pending)  
ATEX Class I, Zone 2, EEx nC IIC (Pending)

**Maritime:** DNV, GL

**EMI:** FCC Part 15, CISPR (EN55022) class A

**EMS:** EN61000-4-2 (ESD), level 3  
EN61000-4-3 (RS), level 3  
EN61000-4-4 (EFT), level 2  
EN61000-4-5 (Surge), level 3  
EN61000-4-6 (CS), level 3  
EN61000-4-8  
EN61000-4-11

**Shock:** IEC60068-2-27

**Freefall:** IEC60068-2-32

**Vibration:** IEC60068-2-6

**MTBF:** 204,000 hrs

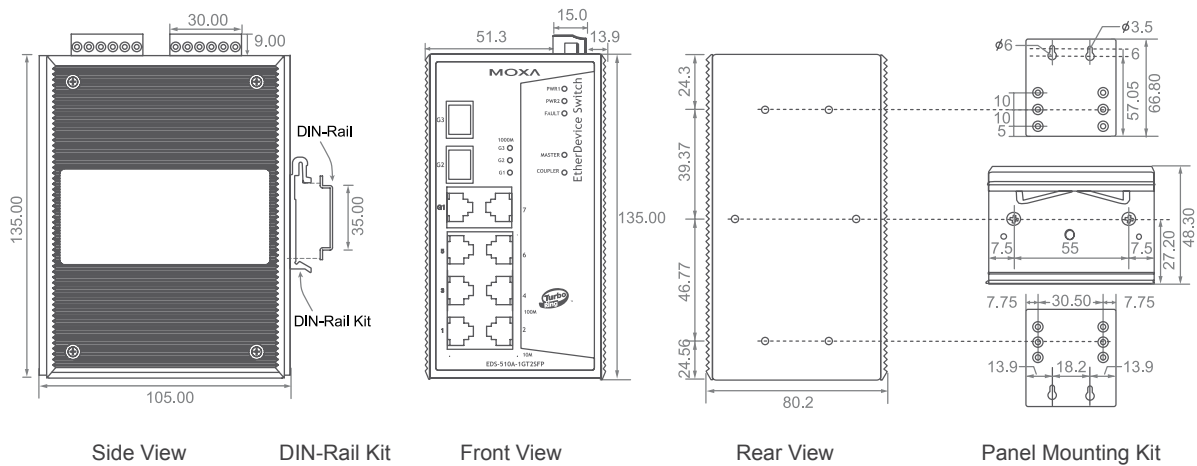
Database: MIL-HDBK-217F, GB 25°C

\*Please check MOXA's website for the most up-to-date certification status.

### Warranty

5 years

## Dimensions (unit = mm)



## Ordering Information

EDS-510A-**ABBBCDDD-E**

Ordering Code Definition	Number of Gigabit Ports	Copper/Fiber ports	Number of Rest Gigabit Ports	Fiber ports	Operating Temperature
	3: Three ports 1: One port	GT: 10/100/1000BaseT(X) port SFP: SFP (mini-GBIC) ports, LC Connector	2: Two Ports	SFP: SFP (mini-GBIC) ports, LC Connector	T: Operating Temp. -40 to 75°C (Standard Models: 0 to 60°C)
Available Models	<b>Standard:</b> <ul style="list-style-type: none"> <li>EDS-510A-3GT</li> <li>EDS-510A-1GT2SFP</li> <li>EDS-510A-3SFP</li> </ul>				<b>Wide Temperature:</b> <ul style="list-style-type: none"> <li>EDS-510A-3GT-T</li> <li>EDS-510A-1GT2SFP-T</li> <li>EDS-510A-3SFP-T</li> </ul>
Optional Accessories	<ul style="list-style-type: none"> <li><b>ABC-01:</b> Industrial RS-232, RJ45-based, Automatic Backup Configurator</li> <li><b>DR-4524:</b> 45W/2A DIN-Rail 24 VDC Power Supply, 85 to 264 VAC input</li> <li><b>DR-75-24:</b> 75W/3.2A DIN-Rail 24 VDC Power Supply, 85 to 264 VAC input</li> <li><b>DR-120-24:</b> 120W/5A DIN-Rail 24 VDC Power Supply, 88 to 132 VAC/176 to 264 VAC input by switch</li> <li><b>WK-46:</b> Wall Mounting Kit</li> </ul>				

## Gigabit Ethernet Modules, SFP-1G Series

SFP-**AGBBBCC-D**

Ordering Code Definition	Number of Gigabit Ports	Fiber ports	FO Connector	Operating Temperature
	1: One Fiber port	SX: 1000BaseSX port, 0.5 km LX: 1000BaseLX port, 10 km LHX: 1000BaseLHX port, 40 km ZX: 1000BaseZX port, 80 km	LC: LC Connector	T: Operating Temp. -40 to 75°C (Standard Models: 0 to 60°C)
Available Models	<b>Standard:</b> <ul style="list-style-type: none"> <li>SFP-1GSXLC</li> <li>SFP-1GLXLC</li> </ul>	<b>Long-Haul (40 km):</b> <ul style="list-style-type: none"> <li>SFP-1GLHXLC</li> </ul>	<b>Long-Haul (80 km):</b> <ul style="list-style-type: none"> <li>SFP-1GZLC</li> </ul>	<b>Wide Temperature:</b> <ul style="list-style-type: none"> <li>SFP-1GSXLC-T (-20 to 75°C)</li> <li>SFP-1GLXLC-T</li> <li>SFP-1GLHXLC-T</li> <li>SFP-1GZLC-T</li> </ul>