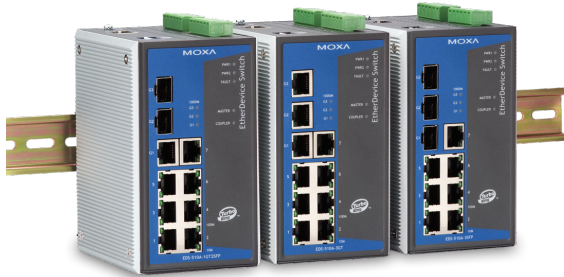


# EDS-510A Series

## 7+3G-port Gigabit managed Ethernet switches



- > 2 Gigabit Ethernet ports for redundant ring and 1 Gigabit Ethernet port for uplink solution
- > Turbo Ring, Turbo Chain, 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

\*Available in Q3, 2011



### 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 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.

\*Available in Q3, 2011

### Features and Benefits

- Command Line Interface (CLI) for quickly configuring major managed functions\*
- IPv6 Ready logo awarded (IPv6 Logo Committee certified)
- IEEE 1588 PTP V2\* (Precision Time Protocol) for precise time synchronization of networks
- DHCP Option 82 for IP address assignment with different policies
- Support EtherNet/IP\* and Modbus/TCP protocols for device management and monitoring
- Compatible with EtherNet/IP and PROFINET protocols for transparent data transmission
- Turbo Ring and Turbo Chain (recovery time < 20 ms), RSTP/STP, and MSTP\* for network redundancy
- 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
- TACACS+\*, SNMPv3, IEEE 802.1X, HTTPS, and SSH to enhance network security
- SNMPv1/v2c/v3 for different levels of network management
- RMON for efficient network monitoring and proactive capability
- Bandwidth management prevents unpredictable network status
- Lock port function for blocking unauthorized access based on MAC address
- Automatic warning by exception through e-mail, relay output

\*Available in Q3, 2011

### Specifications

#### Technology

##### Standards:

- IEEE 802.3 for 10BaseT
- IEEE 802.3u for 100BaseT(X) and 100BaseFX
- IEEE 802.3ab for 1000BaseT(X)
- IEEE 802.3z for 1000BaseX
- IEEE 802.3x for Flow Control
- IEEE 802.1D-2004 for Spanning Tree Protocol\*
- IEEE 802.1w for Rapid STP
- IEEE 802.1s for Multiple Spanning Tree Protocol\*
- IEEE 802.1Q for VLAN Tagging
- IEEE 802.1p for Class of Service
- IEEE 802.1X for Authentication
- IEEE 802.3ad for Port Trunk with LACP

**Protocols:** IGMPv1/v2, GMRP, GVRP, SNMPv1/v2c/v3, DHCP Server/Client, BootP, TFTP, SNMP, SMTP, RARP, RMON, HTTP, HTTPS, Telnet, Syslog, DHCP Option 66/67/82, SSH, SNMP Inform, EtherNet/IP\*, Modbus/TCP, LLDP, IEEE 1588 PTP V2\*, IPv6, NTP Server/Client\*

**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:** IEEE 802.3x flow control, back pressure flow control

\*Available in Q3, 2011

#### Switch Properties

- Priority Queues:** 4
- Max. Number of Available VLANs:** 64
- VLAN ID Range:** VID 1 to 4094
- IGMP Groups:** 256
- MAC Table Size:** 8 K
- Packet Buffer Size:** 1 Mbit

#### Interface

- Fiber Ports:** 1000BaseSFP slot
- RJ45 Ports:** 10/100BaseT(X) or 10/100/1000BaseT(X) auto negotiation speed
- Console Port:** RS-232 (RJ45 connector)
- DIP Switches:** Turbo Ring, Master, Coupler, Reserve
- LED Indicators:** PWR1, PWR2, FAULT, 10/100M (TP port), 1000M (Gigabit port), MSTR/HEAD, CPLR/TAIL
- Alarm Contact:** 2 relay outputs with current carrying capacity of 1 A @ 24 VDC

**Digital Inputs:** 2 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

**Power Requirements**

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

**Input Current:**

EDS-510A-3GT: 0.65 A @ 24 V

EDS-510A-1GT2SFP: 0.44 A @ 24 V

EDS-510A-3SFP: 0.46 A @ 24 V

**Overload Current Protection:** Present

**Connection:** 2 removable 6-contact terminal blocks

**Reverse Polarity Protection:** Present

**Physical Characteristics**

**Housing:** Metal, IP30 protection

**Dimensions:** 80.2 x 135 x 105 mm (3.16 x 5.31 x 4.13 in)

**Weight:** 1170 g

**Installation:** DIN-Rail mounting, wall mounting (with optional kit)

**Environmental Limits**

**Operating Temperature:**

Standard Models: 0 to 60°C (32 to 140°F)

Wide Temp. Models: -40 to 75°C (-40 to 167°F)

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

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

**Standards and Certifications**

**Safety:** UL 508, UL 60950-1, CSA C22.2 No. 60950-1, EN 60950-1

**Hazardous Location:** UL/cUL Class I Division 2 Groups A/B/C/D, ATEX Zone 2 Ex nC IIC

**EMI:** FCC Part 15 Subpart B Class A, EN 55022 Class A

**EMS:**

EN 61000-4-2 (ESD) Level 3, EN 61000-4-3 (RS) Level 3,

EN 61000-4-4 (EFT) Level 3, EN 61000-4-5 (Surge) Level 3,

EN 61000-4-6 (CS) Level 3, EN 61000-4-8

**Marine:** DNV, GL

**Shock:** IEC 60068-2-27

**Freefall:** IEC 60068-2-32

**Vibration:** IEC 60068-2-6

*Note: Please check Moxa's website for the most up-to-date certification status.*

**MTBF (mean time between failures)**

**Time:** 204,000 hrs

**Database:** MIL-HDBK-217J, GB 25°C

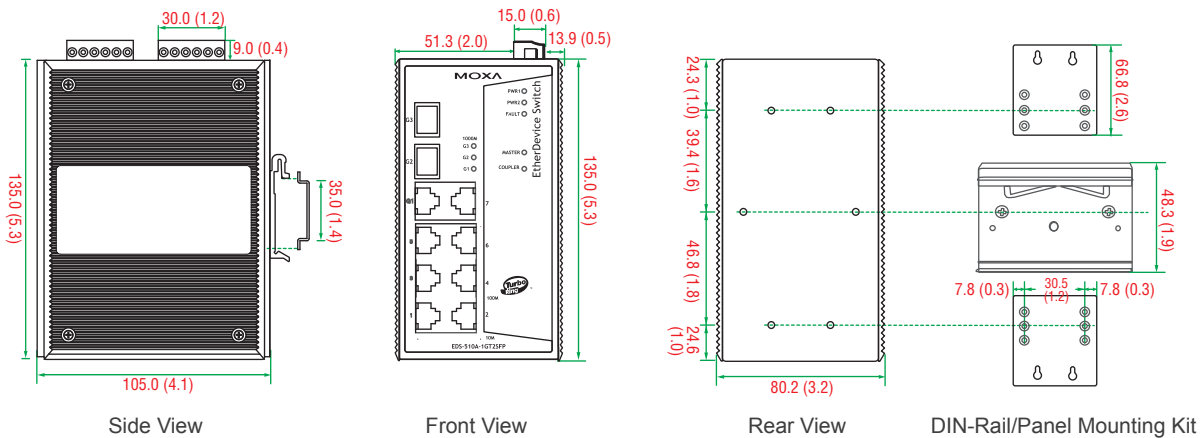
**Warranty**

**Warranty Period:** 5 years

**Details:** See [www.moxa.com/warranty](http://www.moxa.com/warranty)

**Dimensions**

Unit: mm (inch)



**Ordering Information**

| Available Models                    |                                   | Port Interface      |              |                |
|-------------------------------------|-----------------------------------|---------------------|--------------|----------------|
|                                     |                                   | Gigabit Ethernet    |              | Fast Ethernet  |
| Standard Temperature<br>(0 to 60°C) | Wide Temperature<br>(-40 to 75°C) | 10/100/1000BaseT(X) | 1000BaseSFP* | 10/100BaseT(X) |
| EDS-510A-3GT                        | EDS-510A-3GT-T                    | 3                   | –            | 7              |
| EDS-510A-1GT2SFP                    | EDS-510A-1GT2SFP-T                | 1                   | 2            | 7              |
| EDS-510A-3SFP                       | EDS-510A-3SFP-T                   | –                   | 3            | 7              |

\*The EDS-510A series supports up to 3 1000BaseSFP slots. See page 1-87 for SFP-1G series Gigabit Ethernet SFP module product information.

**Optional Accessories** (can be purchased separately)

**MXview:** Moxa industrial network management software with 50, 100, 250, 500, or 1000 nodes

**EDS-SNMP OPC Server Pro:** OPC server software that works with all SNMP devices

**ABC-01:** Configuration backup and restoration tool for managed Ethernet switches, 0 to 60°C operating temperature

**DR-4524/75-24/120-24:** 45/75/120 W DIN-Rail 24 VDC power supplies

**MDR-40-24/60-24:** 40/60 W DIN-Rail 24 VDC power supplies, -20 to 70°C operating temperature

**WK-46:** Wall mounting kit

**RK-4U:** 4U-high 19" rack mounting kit

**Package Checklist**

- EDS-510A switch
- RJ45 to DB9 console port cable
- Protective caps for unused ports
- Documentation and software CD
- Hardware installation guide (printed)
- Warranty card

# SFP-1G Series

## 1-port Gigabit Ethernet SFP modules



- > IEEE 802.3z compliant
- > Differential LVPECL inputs and outputs
- > TTL signal detect indicator
- > Hot pluggable LC duplex connector
- > Class 1 laser product, complies with EN 60825-1



## Specifications

### Interface

Ethernet Ports: 1

Connectors: Duplex LC Connector or Simplex LC Connector (WDM-type only)

Note: WDM-type SFP modules must be used in pairs (e.g., SFP-1GXXALC and SFP-1GXXBLC)

### Optical Fiber

|                  | Gigabit Ethernet   |                   |                    |                    |                    |                    |                     |                     |                        |                        |                        |                        |                        |                        |
|------------------|--------------------|-------------------|--------------------|--------------------|--------------------|--------------------|---------------------|---------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
|                  | SFP-SX             | SFP-LSX           | SFP-LX             | SFP-LH             | SFP-LHX            | SFP-ZX             | SFP-EZX             | SFP-EZX-120         | SFP-10A                | SFP-10B                | SFP-20A                | SFP-20B                | SFP-40A                | SFP-40B                |
| Wavelength       | 850 nm             | 1310 nm           | 1310 nm            | 1310 nm            | 1310 nm            | 1550 nm            | 1550 nm             | 1550 nm             | TX 1310 nm, RX 1550 nm | TX 1550 nm, RX 1310 nm | TX 1310 nm, RX 1550 nm | TX 1550 nm, RX 1310 nm | TX 1310 nm, RX 1550 nm | TX 1550 nm, RX 1310 nm |
| Max. TX          | -4 dBm             | -1 dBm            | -3 dBm             | -2 dBm             | 1 dBm              | 5 dBm              | 5 dBm               | 3 dBm               | -3 dBm                 |                        | -2 dBm                 |                        | 2 dBm                  |                        |
| Min. TX          | -9.5 dBm           | -9 dBm            | -9.5 dBm           | -8 dBm             | -4 dBm             | 0 dBm              | 0 dBm               | -2 dBm              | -9 dBm                 |                        | -8 dBm                 |                        | -3 dBm                 |                        |
| RX Sensitivity   | -18 dBm            | -19 dBm           | -20 dBm            | -23 dBm            | -24 dBm            | -24 dBm            | -30 dBm             | -33 dBm             | -21 dBm                |                        | -23 dBm                |                        | -23 dBm                |                        |
| Link Budget      | 8.5 dB             | 10 dB             | 10.5 dB            | 15 dB              | 20 dB              | 24 dB              | 30 dB               | 31 dB               | 12 dB                  |                        | 15 dB                  |                        | 20 dB                  |                        |
| Typical Distance | 550 m <sup>a</sup> | 2 km <sup>b</sup> | 10 km <sup>c</sup> | 30 km <sup>c</sup> | 40 km <sup>c</sup> | 80 km <sup>c</sup> | 110 km <sup>c</sup> | 120 km <sup>c</sup> | 10 km <sup>c</sup>     |                        | 20 km <sup>c</sup>     |                        | 40 km <sup>c</sup>     |                        |
| Saturation       | 0 dBm              | -3 dBm            | -3 dBm             | -3 dBm             | -3 dBm             | -3 dBm             | -3 dBm              | -8 dBm              | -1 dBm                 |                        | -1 dBm                 |                        | -1 dBm                 |                        |

a. 50/125 μm, 400 MHz \* km or 62.5/125 μm, 500 MHz \* km @ 850 nm multi-mode fiber optic cable

b. 62.5/125 μm, 750 MHz \* km @ 1310 nm multi-mode fiber optic cable

c. 9/125 μm single-mode fiber optic cable

Note: The actual communication distance depends on many factors, including connector loss, cable deployment, and the age of the cabling system. We recommend doing a link budget analysis and reserving a 3 dB margin for such factors.

### Environmental Limits

#### Operating Temperature:

Standard Models: 0 to 60°C (32 to 140°F)

Wide Operating Temp. Models: -40 to 85°C (-40 to 185°F)

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

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

### Standards and Certifications

Safety: UL 60950-1, TÜV

### Warranty

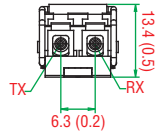
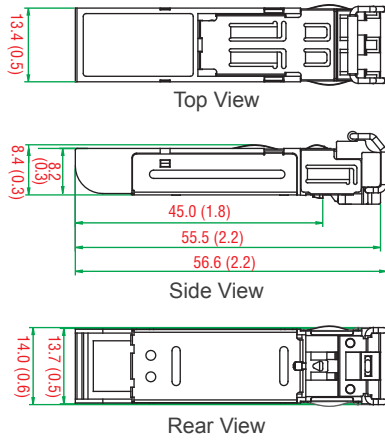
Warranty Period: 5 years

Details: See [www.moxa.com/warranty](http://www.moxa.com/warranty)

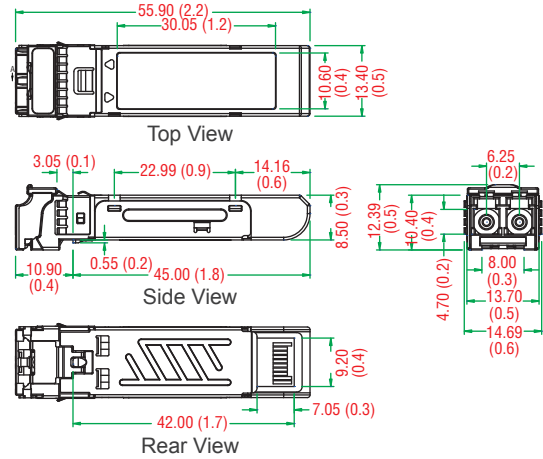
## Dimensions

Unit: mm (inch)

### SFP-1G Series



### SFP-1GEZXC-120



## Ordering Information

### SFP Modules

| Available Models                 |                                | Port Interface                   |                                 |                                 |                                 |                                  |                                 |                                  |                                  |
|----------------------------------|--------------------------------|----------------------------------|---------------------------------|---------------------------------|---------------------------------|----------------------------------|---------------------------------|----------------------------------|----------------------------------|
| Standard Temperature (0 to 60°C) | Wide Temperature (-40 to 85°C) | 1000BaseSX, LC Connector, 0.5 km | 1000BaseLSX, LC Connector, 2 km | 1000BaseLX, LC Connector, 10 km | 1000BaseLH, LC Connector, 30 km | 1000BaseLHX, LC Connector, 40 km | 1000BaseZX, LC Connector, 80 km | 1000BaseEZ, LC Connector, 110 km | 1000BaseEZ, LC Connector, 120 km |
| SFP-1GSXLC                       | SFP-1GSXLC-T*                  | 1                                | -                               | -                               | -                               | -                                | -                               | -                                | -                                |
| SFP-1GLSXLC                      | SFP-1GLSXLC-T                  | -                                | 1                               | -                               | -                               | -                                | -                               | -                                | -                                |
| SFP-1GLXLC                       | SFP-1GLXLC-T                   | -                                | -                               | 1                               | -                               | -                                | -                               | -                                | -                                |
| SFP-1GLHLC                       | SFP-1GLHLC-T                   | -                                | -                               | -                               | 1                               | -                                | -                               | -                                | -                                |
| SFP-1GLHLC                       | SFP-1GLHLC-T                   | -                                | -                               | -                               | -                               | 1                                | -                               | -                                | -                                |
| SFP-1GLHLC                       | SFP-1GLHLC-T                   | -                                | -                               | -                               | -                               | -                                | 1                               | -                                | -                                |
| SFP-1GZXLC                       | SFP-1GZXLC-T                   | -                                | -                               | -                               | -                               | -                                | -                               | 1                                | -                                |
| SFP-1GEZXC                       | -                              | -                                | -                               | -                               | -                               | -                                | -                               | -                                | 1                                |
| SFP-1GEZXC-120                   | -                              | -                                | -                               | -                               | -                               | -                                | -                               | -                                | 1                                |

\* SFP-1GSXLC-T: -20 to 75°C operating temperature

### WDM-type (BiDi) SFP Modules

| Available Models                 |                                | Port Interface                   |                        |                                  |                        |                                  |                        |
|----------------------------------|--------------------------------|----------------------------------|------------------------|----------------------------------|------------------------|----------------------------------|------------------------|
| Standard Temperature (0 to 60°C) | Wide Temperature (-40 to 85°C) | 1000BaseSFP, LC Connector, 10 km |                        | 1000BaseSFP, LC Connector, 20 km |                        | 1000BaseSFP, LC Connector, 40 km |                        |
|                                  |                                | TX 1310 nm, RX 1550 nm           | TX 1550 nm, RX 1310 nm | TX 1310 nm, RX 1550 nm           | TX 1550 nm, RX 1310 nm | TX 1310 nm, RX 1550 nm           | TX 1550 nm, RX 1310 nm |
| SFP-1G10ALC                      | SFP-1G10ALC-T                  | 1                                | -                      | -                                | -                      | -                                | -                      |
| SFP-1G10BLC                      | SFP-1G10BLC-T                  | -                                | 1                      | -                                | -                      | -                                | -                      |
| SFP-1G20ALC                      | SFP-1G20ALC-T                  | -                                | -                      | 1                                | -                      | -                                | -                      |
| SFP-1G20BLC                      | SFP-1G20BLC-T                  | -                                | -                      | -                                | 1                      | -                                | -                      |
| SFP-1G40ALC                      | SFP-1G40ALC-T                  | -                                | -                      | -                                | -                      | 1                                | -                      |
| SFP-1G40BLC                      | SFP-1G40BLC-T                  | -                                | -                      | -                                | -                      | -                                | 1                      |

The SFP-1G series modules can be used with the following products:

IM-2GSFP, EDS-611/619 series, EDS-G509 series, EDS-518A series, EDS-510A series, EDS-P510 series, ICS-G7826/G7828 series, ICS-G7526/G7528 series, IM-G7000-4GSFP, IKS-G6824 series, IKS-G6524 series, IKS-6526-2GTXSFP series, PM-7200-2G/4G series, EDS-G308 series, EDR-G903 series, IMC-101G series, PT-G7509

### Package Checklist

- SFP-1G module
- Warranty card

# Tento produkt můžete zakoupit u společnosti AutoCont IPC a.s.



## AutoCont IPC a.s.

Váš dodavatel průmyslových počítačů, komponent a speciálních průmyslových IT systémů.

 Uhlířská 1064/3, 710 00 Ostrava, Česká republika

 obchod@autocont-ipc.cz

 +420 552 301 002

 [www.autocont-ipc.cz](http://www.autocont-ipc.cz)



### PRŮMYSLOVÉ POČÍTAČE

fanless embedded PC, do racku, ...



### POČÍTAČE S DISPLEJEM

panelové PC, terminály, do vozidel, ...



### AUTOMATIZACE A SBĚR DAT

převodníky, karty, moduly, switche, ...



### PERIFERIE A KOMPONENTY

monitory, klávesnice, desky, skříně, ...



### NOTEBOOKY A TABLETY

odolné, windows, android, IP65, ...



### INFORMAČNÍ KIOSKY

interiérové, venkovní, ...



### MEDICÍNSKÁ TECHNIKA

počítače, tablety, LCD, klávesnice, ...



### SOFTWAREVÁ ŘEŠENÍ

pro výrobu, zaměstnance, kiosky, ...



### PŘEJÍT DO E-SHOPU

[eshop.autocont-ipc.cz](http://eshop.autocont-ipc.cz)



### DOPRAVA ZDARMA

Doprava zdarma v ČR a SR při objednávce nad 10 000 Kč bez DPH nebo nad 400 EUR.



### PRODLOUŽENÁ ZÁRUKA

Záruka 2 roky na vyráběné počítače s možností jejího prodloužení až na 5 let.



### ODMĚNA ZA VĚRNOST

Pravidelní zákazníci u nás nakupují za nižší ceny. Výše slevy se odvíjí od realizovaného obrátu.



### SERVIS ON-SITE A IN-TIME

K projektovým dodávkám nabízíme rozšířenou podporu a servis s garancí výměny zařízení do 48 hodin.