EDS-G512E Series

12G-port (with 8 PoE+ ports option) full Gigabit managed Ethernet switches

Features and Benefits

- 8 IEEE 802.3af and IEEE 802.3at PoE+ standard ports
- 36-watt output per PoE+ port in high-power mode
- Turbo Ring and Turbo Chain (recovery time < 50 ms @ 250 switches), RSTP/STP, and MSTP for network redundancy
- RADIUS, TACACS+, MAB Authentication, SNMPv3, IEEE 802.1X, MAC ACL, HTTPS, SSH, and sticky MAC-addresses to enhance network security
- EtherNet/IP, PROFINET, and Modbus TCP protocols supported for device management and monitoring
- Supports MXstudio for easy, visualized industrial network management
- V-ON™ ensures millisecond-level multicast data and video network recovery

Certifications

Introduction

The EDS-G512E Series is equipped with 12 Gigabit Ethernet ports and up to 4 fiber-optic ports, making it ideal for upgrading an existing network to Gigabit speed or building a new full Gigabit backbone. It also comes with 8 10/100/1000BaseT(X), 802.3af (PoE), and 802.3at (PoE+)-compliant Ethernet port options to connect high-bandwidth PoE devices. Gigabit transmission increases bandwidth for higher performance and transfers large amounts of triple-play services across a network quickly.

Redundant Ethernet technologies such as Turbo Ring, Turbo Chain, RSTP/STP, and MSTP increase the reliability of your system and improve the availability of your network backbone. The EDS-G512E Series is designed specifically for communication demanding applications, such as video and process monitoring, ITS, and DCS systems, all of which can benefit from a scalable backbone construction.

Additional Features and Benefits

- Command line interface (CLI) for quickly configuring major managed functions
- Advanced PoE management function (PoE port setting, PD failure check, and PoE scheduling)
- DHCP Option 82 for IP address assignment with different policies
- Supports EtherNet/IP, PROFINET, 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
- Supports the ABC-02-USB (Automatic Backup Configurator) for system configuration backup/restore and firmware upgrade
- Port mirroring for online debugging
- QoS (IEEE 802.1p/1Q and TOS/DiffServ) to increase determinism
- Port Trunking for optimum bandwidth utilization
- RADIUS, TACACS+, MAB Authentication, SNMPv3, IEEE 802.1X, MAC ACL, HTTPS, SSH, and sticky MAC address to enhance network security
- 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	1 Relay output with current carrying capacity of 1 A @ 24 VDC
Buttons	Reset button
Digital Input Channels	1
Digital Inputs	+13 to +30 V for state 1 -30 to +3 V for state 0 Max. input current: 8 mA

Ethernet Interface

10/100/1000BaseT(X) Ports (RJ45 connector)	EDS-G512E-4GSFP: 8 Auto negotiation speed Full/Half duplex mode Auto MDI/MDI-X connection EDS-G512E-4GSFP-T: 8 Auto negotiation speed Full/Half duplex mode Auto MDI/MDI-X connection
PoE Ports (10/100/1000BaseT(X), RJ45 connector)	EDS-G512E-8PoE-4GSFP: 8 EDS-G512E-8PoE-4GSFP-T: 8
100/1000BaseSFP Slots	4
Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) and 100BaseFX IEEE 802.3ab for 1000BaseT(X) IEEE 802.3z for 1000BaseSX/LX/LHX/ZX IEEE 802.3x for flow control 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 802.1p for Class of Service IEEE 802.1Q for VLAN Tagging IEEE 802.1X for authentication IEEE 802.3ad for Port Trunk with LACP

Ethernet Software Features

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

	RSTP STP Turbo Chain Turbo Ring v1/v2
Security	Broadcast storm protection HTTPS/SSL TACACS+ SNMPv3 MAB authentication Sticky MAC NTP authentication IP ACL MAC ACL Port Lock RADIUS SSH SMTP with TLS
Time Management	NTP Server/Client SNTP

Switch Properties

IGMP Groups	2048
Jumbo Frame Size	9.6 KB
MAC Table Size	8 K
Max. No. of VLANs	256
Packet Buffer Size	4 Mbits
Priority Queues	4
VLAN ID Range	VID 1 to 4094

USB Interface

Storage Port	USB Type A

LED Interface

LED Indicators	PWR1, PWR2, STATE, FAULT, 10/100M (TP port), 1000M (TP port), 100/1000M (SFP port), MSTR/HEAD, CPLR/TAIL, smart PoE LED (EDS-G512E-8PoE-4GSFP Series only)

Serial Interface

Console Port	USB-serial console (Type B connector)

DIP Switch Configuration

DIP Switches	Turbo Ring, Master, Coupler, Reserve

Power Parameters

Connection	2 removable 4-contact terminal block(s)
Input Current	EDS-G512E-4GSFP models: 0.34 A @ 24 VDC EDS-G512E-8PoE-4GSFP models: 5.30 A @ 48 VDC
Input Voltage	EDS-G512E-4GSFP models: 12/24/48/-48 VDC EDS-G512E-8PoE-4GSFP models: 48 VDC Redundant dual inputs
Operating Voltage	EDS-G512E-4GSFP models: 9.6 to 60 VDC EDS-G512E-8PoE-4GSFP models: 44 to 57 VDC (> 50 VDC for PoE+ output recommended)
Overload Current Protection	Supported

Reverse Polarity Protection	Supported
Power Budget	EDS-G512E-8PoE-4GSFP: Max. 240 W for total PD consumption EDS-G512E-8PoE-4GSFP: Max. 36 W for each PoE port
Power Consumption (Max.)	EDS-G512E-8PoE-4GSFP: Max. 14.36 W full loading without PDs' consumption EDS-G512E-8PoE-4GSFP-T: Max. 14.36 W full loading without PDs' consumption EDS-G512E-8PoE-4GSFP: When selecting a power supply, check the PD power consumption. EDS-G512E-8PoE-4GSFP-T: When selecting a power supply, check the PD power consumption.

Physical Characteristics

Housing	Metal
IP Rating	IP30
Dimensions	79.2 x 135 x 137 mm (3.1 x 5.3 x 5.4 in)
Weight	EDS-G512E-4GSFP: 1,440 g (3.18 lb) EDS-G512E-8PoE-4GSFP: 1,540 g (3.40 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	EDS-G512E-4GSFP/EDS-G512E-8PoE-4GSFP models: UL 508 EDS-G512E-8PoE-4GSFP models: EN 62368-1
EMC	EN 61000-6-2/-6-4
EMI	FCC Part 15B Class A
EMS	EDS-G512E-4GSFP: IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV EDS-G512E-4GSFP: IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m EDS-G512E-8PoE-4GSFP: IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m EDS-G512E-4GSFP-T: IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m EDS-G512E-8PoE-4GSFP-T: IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m EDS-G512E-4GSFP: IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV EDS-G512E-8PoE-4GSFP: IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV EDS-G512E-8PoE-4GSFP-T: IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV EDS-G512E-4GSFP-T: IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV EDS-G512E-4GSFP: IEC 61000-4-5 Surge: Power: 4 kV; Signal: 4 kV EDS-G512E-8PoE-4GSFP: IEC 61000-4-5 Surge: Power: 2 kV; Signal: 4 kV EDS-G512E-4GSFP: IEC 61000-4-5 Surge: Power: 4 kV; Signal: 4 kV EDS-G512E-4GSFP-T: IEC 61000-4-5 Surge: Power: 4 kV; Signal: 4 kV EDS-G512E-8PoE-4GSFP: IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV EDS-G512E-8PoE-4GSFP-T: 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	EDS-G512E-4GSFP Series: ATEX, Class I Division 2
Power Substation	IEC 61850-3 IEEE 1613
Railway	EN 50121-4
Traffic Control	NEMA TS2

Vibration	IEC 60068-2-6
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Maritime	EDS-G512E-4GSFP models: DNV, LR, ABS, NK

MTBF

Time	EDS-G512E-4GSFP(-T) models: 803,337 hrs EDS-G512E-8PoE-4GSFP(-T) models: 788,215 hrs
Standards	Telcordia (Bellcore), GB

Warranty

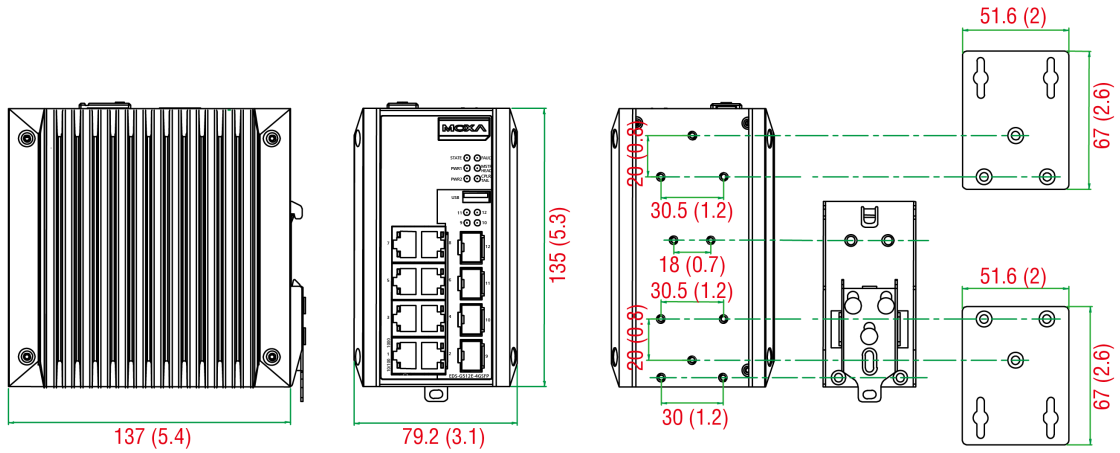
Warranty Period	5 years
Details	See www.moxa.com/warranty

Package Contents

Device	1 x EDS-G512E Series switch
Cable	1 x USB type A male to USB type B male
Installation Kit	4 x cap, plastic, for RJ45 port
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)



Side View | Front View | Rear View | DIN-Rail/Panel-Mounting Kit

Ordering Information

Model Name	10/100/1000BaseT(X) Ports, RJ45 Connector	PoE Ports, 10/100/1000BaseT(X), RJ45 Connector	IEEE 802.3af/at for PoE/PoE+ Output	100/1000Base SFP Slots	Operating Temp.
EDS-G512E-4GSFP	8	–	–	4	-10 to 60°C
EDS-G512E-4GSFP-T	8	–	–	4	-40 to 75°C
EDS-G512E-8PoE-4GSFP	–	8	✓	4	-10 to 60°C
EDS-G512E-8PoE-4GSFP-T	–	8	✓	4	-40 to 75°C

Accessories (sold separately)

Storage Kits

ABC-02-USB	Configuration backup and restoration tool, firmware upgrade, and log file storage tool for managed Ethernet switches and routers, 0 to 60°C operating temperature
ABC-02-USB-T	Configuration backup and restoration tool, firmware upgrade, and log file storage tool for managed Ethernet switches and routers, -40 to 75°C operating temperature

Power Supplies

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
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

Rack-Mounting Kits

RK-4U	19-inch rack-mounting kit

Wall-Mounting Kits

WK-51-01	Wall mounting kit with 2 plates (51.6 x 67 x 2 mm) and 6 screws

SFP Modules

SFP-1FELLC-T	SFP module with 1 100Base single-mode with LC connector for 80 km transmission, -40 to 85°C operating temperature
SFP-1FEMLC-T	SFP module with 1 100Base multi-mode, LC connector for 2/4 km transmission, -40 to 85°C operating temperature
SFP-1FESLC-T	SFP module with 1 100Base single-mode with LC connector for 40 km transmission, -40 to 85°C operating temperature
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-1GEZXLC	SFP module with 1 1000BaseEZX port with LC connector for 110 km transmission, 0 to 60°C operating temperature
SFP-1GEZXLC-120	SFP module with 1 1000BaseEZX 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
SFP-1GTXRJ45-T	SFP module with 1 1000BaseT port with RJ45 connector for 100 m transmission, -40 to 75°C operating temperature

Software

LIC-MXviewOne-NEW-XN-SR	MXview One node license with customizable node quantity (minimum 1 node)