

# EDS-G4012シリーズ

12Gポート（8つの802.3bt PoEポートオプションあり）フルギガビットマネージドイーサネットスイッチ



## 機能とメリット

- IEEE 802.3bt PoEをサポートし、ポートあたり最大90 Wの出力を実現
- 最大2.5 Gbpsに対応するファイバー-SFPスロットにより、帯域幅が向上
- Turbo RingおよびTurbo Chain（リカバリ時間はスイッチ250台で50ミリ秒未満）をサポートし、RSTP/STPでネットワーク冗長性を実現
- 柔軟な導入を可能にする広い電源入力範囲
- 狭いスペースにも収まるコンパクトで柔軟な筐体設計
- 簡単で視覚化された産業用ネットワーク管理を行うためのMXstudioに対応
- IEC 62443-4-2セキュリティレベル2認証を取得

## 認証



## 製品紹介

EDS-G4012シリーズは、12個のギガビットイーサネットポートと最大4つの1 Gbpsまたは2.5 Gbps光ファイバーポートを備えており、既存のネットワークをギガビット速度にアップグレードしたり、新しいフルギガビットバックボーンを構築するのに最適です。ギガビット伝送速度により、帯域幅を増加させ、より高いパフォーマンスを実現し、大量のトリプルプレイサービスをネットワーク全体に迅速に転送します。また、高帯域幅PoEデバイスを接続するために、8つの10/100/1000BaseT(X) 802.3af (PoE)、802.3at (PoE+)、および802.3bt準拠のイーサネットポートオプションも搭載されています。

Turbo Ring、Turbo Chain、およびRSTP/STPなどのイーサネット冗長性技術により、システムの信頼性が高まり、ネットワークバックボーンの可用性が向上します。EDS-G4012シリーズは、スケーラブルなバックボーン構築からメリットを得られる、ビデオおよびプロセス監視、ITS、DCSシステムなどの要求の多いアプリケーション向けに特別に設計されています。

## IEC 62443-4-2セキュリティレベル2認証を取得

EDS-(G) 4000シリーズは、IEC 62443-4-2セキュリティレベル2認証（詳細は<https://certificates.iecee.org/#/deliverables/CERT/1605016/view>をご参照ください）を取得し、安全な産業用ネットワークの要件を満たすのに役立ちます。

## 仕様

### Ethernet Interface

10/100/1000BaseT(X) Ports (RJ45 connector)	EDS-G4012-4GC-HV/-LV/-T models: 8 Auto MDI/MDI-X connection Auto negotiation speed Full/Half duplex mode
Combo Ports (10/100/1000BaseT(X) or 100/1000BaseSFP)	EDS-G4012-4GC-LV/-HV/-T models: 4
PoE Ports (10/100/1000BaseT(X), RJ45 connector)	EDS-G4012-8P-4QGS-LVA/-LVB/-T models: 8

1000/2500BaseSFP Ports	EDS-G4012-8P-4QGS-LVA/-LVB/-T models: 4
Standards	<p>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 802.3bz for 2.5GBaseX  IEEE 802.3x for flow control  IEEE 802.3ad for Port Trunk with LACP  IEEE 802.1Q for VLAN Tagging  IEEE 802.1D-2004 for Spanning Tree Protocol  IEEE 802.1w for Rapid Spanning Tree Protocol  IEEE 802.1p for Class of Service  IEEE 802.1X for authentication</p>

## Ethernet Software Features

Industrial Protocols	<p>EtherNet/IP  Modbus TCP  PROFINET IO Device</p>
Management	<p>IPv4/IPv6  Flow control  Back Pressure Flow Control  DHCP Server/Client  ARP  RARP  LLDP  Port Mirroring (SPAN, RSPAN)  Linkup Delay  SMTP  SNMP Trap  SNMP Inform  SNMPv1/v2c/v3  RMON  TFTP  SFTP  HTTP  HTTPS  Telnet  Syslog  Private MIB  Fiber check</p>
Filter	<p>GMRP  GVRP  GARP  802.1Q VLAN  IGMP Snooping v1/v2/v3  IGMP Querier</p>
Redundancy Protocols	<p>STP  RSTP  Turbo Ring v2  Turbo Chain  Ring Coupling  Dual-Homing  MRP  Link Aggregation  MSTP</p>
Security	<p>Broadcast storm protection  Rate Limit  Trust access control  Static Port Lock  MAC Sticky  HTTPS/SSL  SSH  RADIUS  TACACS+  Login and Password Policy  Access control list  DHCP Snooping</p>

Time Management	SNTP NTP Server/Client NTP Authentication IEEE 1588v2 PTP (hardware-based) Supported power profiles: IEEE 1588 Default 2008, IEC 61850-9-3-2016, IEEE C37.238-2017
Protocols	IPv4/IPv6 TCP/IP UDP ICMP ARP RARP TFTP DNS NTP Client DHCP Server DHCP Client 802.1X QoS HTTPS HTTP Telnet SMTP SNMPv1/v2c/v3 RMON Syslog
MIB	P-BRIDGE MIB Q-BRIDGE MIB IEEE8021-SPANNING-TREE-MIB IEEE8021-PAE-MIB IEEE8023-LAG-MIB LLDP-EXT-DOT1-MIB LLDP-EXT-DOT3-MIB SNMPv2-MIB RMON MIB Groups 1, 2, 3, 9

### Switch Properties

MAC Table Size	16 K
Jumbo Frame Size	9.216 KB
Max. No. of VLANs	256
VLAN ID Range	VID 1 to 4094
IGMP Groups	512
Priority Queues	4
Packet Buffer Size	1 MB

### LED Interface

LED Indicators	PWR1, PWR2, STATE, FAULT, MSTR/HEAD, CPLR/TAIL, SYNC
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### Serial Interface

Console Port	RS-232 (TxD, RxD, GND), 8-pin RJ45 (115200, n, 8, 1)
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### USB Interface

USB Connector	USB Type A (Reserved)
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### Input/Output Interface

Alarm Contact Channels	1, Relay output with current carrying capacity of 1 A @ 24 VDC
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
Buttons	Reset button
<b>DIP Switch Configuration</b>	
DIP Switches	Turbo Ring, Master, Coupler, Reserve
<b>Power Parameters</b>	
Connection	2 removable 4-contact terminal block(s)
Pre-installed Power Module	-LV/-LV-T models: PWR-100-LV -HV/-HV-T models: PWR-105-HV-I -LVA/-LVA-T models: PWR-101-LV-BP-I -LVB/-LVB-T models: PWR-103-LV-VB-I
Note	The EDS-G4012 Series supports modular power supplies. The model names and power parameters are determined by the installed power module.  For example: EDS-G4012-4GC-T + PWR-100-LV = EDS-G4012-4GC-LV-T EDS-G4012-4GC-T + PWR-105-HV-I = EDS-G4012-4GC-HV-T  If you install a different power module, refer to the specifications of the corresponding model. For example, if you replace the power module of the EDS-G4012-4GC-LV-T with the PWR-105-HV-I, refer to the specifications of the EDS-G4012-4GC-HV-T.
Input Voltage	-LV/-LV-T models: 12/24/48 VDC, Redundant dual inputs -HV/-HV-T models: 110/220 VDC/VAC, Single input -LVA/-LVA-T models: 48 VDC, Redundant dual inputs -LVB/-LVB-T models: 12/24/48 VDC, Redundant dual inputs
Operating Voltage	-LV/-LV-T models: 9.6 to 60 VDC -HV/-HV-T models: 88 to 300 VDC, 85 to 264 VAC -LVA/-LVA-T models: 44 to 57 VDC (>52 VDC for PoE+ output recommended) -LVB/-LVB-T models: 12 to 57 VDC (>52 VDC for PoE+ output recommended)
Input Current	-LV/-LV-T models: 12-48 VDC, 1.50-0.40 A or 24 VDC, 0.70 A -HV/-HV-T models: 110-220 VAC, 50-60 Hz, 0.30-0.20 A or 110-220 VDC, 0.30-0.20 A -LVA/-LVA-T models: 48 VDC, 5.42 A -LVB/-LVB-T models: 12/48 VDC, 7.46/4.27 A or 24 VDC, 7.26 A
Power Consumption (Max.)	EDS-G4012-4GC-LV(-T) models: 12.68 W EDS-G4012-4GC-HV(-T) models: 15.8 W  EDS-G4012-8P-4QGS-LVA(-T) models: Without PoE: 15.58 W With PoE: Max. 240 W for total PD power consumption @ 48 VDC input  EDS-G4012-8P-4QGS-LVB(-T) models: Without PoE: 17.96 W With PoE: Max. 180 W for total PD power consumption @ 48 VDC input; Max. 150 W for total PD power consumption @ 24 VDC input; Max. 62 W for total PD power consumption @ 12 VDC input
Max. PoE Power Output per Port	90 W
Overload Current Protection	Supported
Reverse Polarity Protection	Supported
<b>Physical Characteristics</b>	
IP Rating	IP40
Dimensions	55 x 140 x 122.5 mm (2.17 x 5.51 x 4.82 in)

Weight	EDS-G4012-4GC(-T) models: 881.5 g (1.94 lb) EDS-G4012-8P-4QGS(-T) models: 972 g (2.14 lb)
Installation	DIN-rail mounting Wall mounting (with optional kit)
Housing	Metal

### 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

EMC	EN 55032/35 EN 61000-6-2/-6-4
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV IEC 61000-4-5 Surge: Power: 4 kV; Signal: 4 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Industrial Cybersecurity	IEC 62443-4-2 Security Level 2
Safety	UL 61010-2-201 EN 62368-1 (LVD)
Maritime	-LV/-LV-T, PoE/PoE-T models: DNV, ABS, NK, LR
Vibration	IEC 60068-2-6
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Railway	EN 50121-4
Traffic Control	NEMA TS2
Power Substation	IEC 61850-3 IEEE 1613 Class 1
Hazardous Locations	-LV/-LV-T models: ATEX IECEX Class I Division 2

### MTBF

Time	EDS-G4012-4GC-HV/HV-T: 456,870 hrs EDS-G4012-4GC-LV/LV-T: 867,981 hrs EDS-G4012-8P-4QGS-LVA/LVA-T: 799,780 hrs EDS-G4012-8P-4QGS-LVB/LVB-T: 759,924 hrs
Standards	Telcordia Standard SR-332

### Warranty

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



## アクセサリ（別売）

### 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
ABC-03-microSD-T	MicroSD-based configuration backup and restoration tool, firmware upgrades, and log file storage tool for managed Ethernet switches and WLAN products, -40 to 85°C operating temperature

### SFP Modules

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-1GLHXLC	SFP module with 1 1000BaseLHX port with LC connector for 40 km transmission, 0 to 60°C operating temperature
SFP-1GLSXL	SFP module with 1 1000BaseLSX port with LC connector for 1km/2km transmission, 0 to 60°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-1GSXL	SFP module with 1 1000BaseSX port with LC connector for 300m/550m transmission, 0 to 60°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-1GLHLC-T	SFP module with 1 1000BaseLH port with LC connector for 30 km transmission, -40 to 85°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-1GLSXL-T	SFP module with 1 1000BaseLSX port with LC connector for 1km/2km transmission, -40 to 85°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-1GSXL-T	SFP module with 1 1000BaseSX port with LC connector for 300m/550m transmission, -40 to 85°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-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-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-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-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-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-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-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-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-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-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-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-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-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-2.5GSLHLC-T	SFP module with 1 2.5GBaseFX port with LC connector, single-mode, for 45 km transmission, -40 to 85 °C operating temperature
SFP-2.5GSLC-T	SFP module with 1 2.5GBaseFX port with LC connector, single-mode, for 5 km transmission, -40 to 85 °C operating temperature
SFP-2.5GMLC-T	SFP module with 1 2.5GBaseFX port with LC connector, multi-mode, for 170, 200, 550, 600 m transmission, -40 to 85 °C operating temperature
SFP-2.5GLSLC-T	SFP module with 1 2.5GBaseFX port with LC connector, single-mode, for 20 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

## Power Supplies

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

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