

ICS-G7828Aシリーズ

24G+4 10GbEポートレイヤー2/レイヤー3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

- 24個のギガビットイーサネットポートと最大4つの10Gイーサネットポート
- 最大28の光ファイバ接続（SFPスロット）
- ファンレス、-40～75°Cの動作温度範囲（Tモデル）
- Turbo RingおよびTurbo Chain（リカバリ時間はスイッチ250台で20ミリ秒未満）をサポートし、STP/RSTP/MSTPでネットワーク冗長性を実現
- ユニバーサル110/220 VAC電力範囲の絶縁冗長電源
- 簡単に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
- V-ON™により、ミリ秒レベルのマルチキャストデータとビデオネットワークの回復を確実に実現

認証



製品紹介

プロセスオートメーションやトランスポートオートメーションの用途では、データ、音声、動画を組み合わせるため、高いパフォーマンスと高い信頼性が求められます。ICS-G7828Aシリーズは、24個のギガビットイーサネットポートと最大4つの10Gイーサネットポートを備え、レイヤー3ルーティング機能をサポートしており、ネットワーク全体にアプリケーションを簡単に展開できるため、大規模な産業用ネットワークに最適です。

ICS-G7828Aのフルギガビットの機能により、帯域幅が向上し、高いパフォーマンスを確保し、大量の動画、音声、データをネットワークをまたがってすばやく転送する機能を実現します。このファンレススイッチは、Turbo Ring、Turbo Chain、RSTP/STPの冗長性技術をサポートし、絶縁冗長電源を完備し、これによりネットワークバックボーンのシステムの信頼性と可用性を向上させます。

その他の機能とメリット

- ネットワーク間でデータと情報を移動するレイヤー3スイッチング機能
- 主なマネージド機能をすばやく構成するためのコマンドラインインターフェース（CLI）
- Q-in-Qタギングで高度なVLAN機能をサポート
- 各ポリシーに応じてIPアドレスを割り当てるDHCP Option 82
- デバイスの管理および監視用のEtherNet/IP、PROFINET、およびModbus TCPプロトコルをサポート
- マルチキャストトラフィックをフィルタリングするIGMPスヌーピングおよびGMRP
- ネットワーク計画を容易にするIEEE 802.1Q VLANとGVRPのプロトコル
- オンラインデバッグ用のポートミラーリング
- メールとリレー出力を通じた例外検出による自動警告
- QoS（IEEE 802.1p/1QおよびTOS/DiffServ）
- 最適な帯域幅利用のためのポートランキング
- TACACS+、SNMPv3、IEEE 802.1x、HTTPS、およびSSHで、ネットワークセキュリティを強化
- アクセス制御リスト（ACL）により、ネットワーク管理の柔軟性とセキュリティを向上
- 異なるレベルのネットワーク管理を実現するSNMPv1/v2c/v3
- プロアクティブで効率の高いネットワーク監視のためのRMON
- 予想外のネットワークステータスを防ぐ帯域幅管理
- 不正アクセスをブロックするためのMACアドレスによるポートロック機能
- センサーとアラームをIPネットワークと統合するためのデジタル入力
- 冗長なデュアルAC電源

仕様

Ethernet Interface

10/100/1000BaseT(X) Ports (RJ45 connector)	ICS-G7828A-4GTXSFP-4XG-HV-HV: 20 ICS-G7828A-4XG-HV-HV-T: 20 ICS-G7828A-8GSFP-4GTXSFP-4XG-HV-HV: 12 ICS-G7828A-8GSFP-4XG-HV-HV-T: 12
100/1000BaseSFP Ports	ICS-G7828A-8GSFP-4GTXSFP-4XG-HV-HV: 8 ICS-G7828A-8GSFP-4XG-HV-HV-T: 8 ICS-G7828A-20GSFP-4GTXSFP-4XG-HV-HV: 20 ICS-G7828A-20GSFP-4XG-HV-HV-T: 20
10GbE SFP+ Slots	4
Combo Ports (10/100/1000BaseT(X) or 100/1000BaseSFP+)	4
Standards	IEEE 802.1D-2004 for Spanning Tree Protocol IEEE 802.1p for Class of Service IEEE 802.1Q for VLAN Tagging IEEE 802.1s for Multiple Spanning Tree Protocol IEEE 802.1w for Rapid Spanning Tree Protocol IEEE 802.1X for authentication IEEE 802.3 for 10BaseT IEEE 802.3ab for 1000BaseT(X) IEEE 802.3ad for Port Trunk with LACP IEEE 802.3ae for 10 Gigabit Ethernet IEEE 802.3u for 100BaseT(X) and 100BaseFX IEEE 802.3x for flow control IEEE 802.3z for 1000BaseSX/LX/LHX/ZX

Ethernet Software Features

Management	ARP, Back Pressure Flow Control, BOOTP, DDM, DHCP Option 66/67/82, DHCP Server/Client, IPv4, LLDP, Port Mirror, RMON, SNMP Inform, SNMPv1/v2c/v3, Syslog, Telnet, TFTP, SMTP, RARP, Flow control
Filter	802.1Q, GMRP, GVRP, IGMP v1/v2/v3, QinQ VLAN
Multicast Routing	DVMRP, PIM-DM, PIM-SM, PIM-SSM
Redundancy Protocols	Link Aggregation, MSTP, RSTP, Turbo Chain, Turbo Ring v1/v2, V-ON
Routing Redundancy	VRRP
Security	Access control list, Broadcast storm protection, HTTPS/SSL, MAB authentication, Sticky MAC, NTP authentication, Port Lock, RADIUS, SSH, TACACS+
Time Management	NTP Server/Client, SNTP
Unicast Routing	OSPF, RIPv1/V2, Static Route
Industrial Protocols	EtherNet/IP, Modbus TCP, PROFINET
MIB	Bridge MIB, Ethernet-like MIB, MIB-II, P-BRIDGE MIB, Q-BRIDGE MIB, RMON MIB Groups 1, 2, 3, 9, RSTP MIB

Switch Properties

DRAM	128 MB
Flash	16 MB
IGMP Groups	4096
Jumbo Frame Size	9.6 KB
MAC Table Size	16 K

Max. No. of VLANs	256
Packet Buffer Size	12 Mbits
VLAN ID Range	VID 1 to 4094
Priority Queues	8

USB Interface

Storage Port	USB Type A
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Serial Interface

Console Port	USB-serial console (Type B connector)
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Input/Output Interface

Alarm Contact Channels	Relay output with current carrying capacity of 2 A @ 30 VDC
Digital Inputs	+13 to +30 V for state 1 -30 to +1 V for state 0 Max. input current: 8 mA

Power Parameters

Input Voltage	110 to 220 VAC, Redundant dual inputs
Operating Voltage	85 to 264 VAC
Overload Current Protection	Supported
Reverse Polarity Protection	Supported
Input Current	1/0.5 A @ 110/220 VAC

Physical Characteristics

IP Rating	IP30
Dimensions	440 x 44 x 386.9 mm (17.32 x 1.73 x 15.23 in)
Weight	Standard Models: 5500 g(12.14 lb) Wide Temp. Models: 6470 g(14.26 lb) 5500 g (12.14 lb)
Installation	Rack mounting

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	UL 61010-2-201, EN 61010-2-201, EN 60950-1, UL 60950-1
EMC	EN 55032/24
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV IEC 61000-4-6 CS: 10 V

	IEC 61000-4-8 PFMF
Railway	EN 50121-4
Freefall	IEC 60068-2-32
Shock	IEC 60068-2-27
Vibration	IEC 60068-2-6

MTBF

Time	310,205 hrs
Standards	Telcordia (Bellcore), GB

Warranty

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

Package Contents

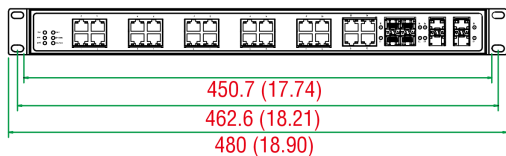
Device	1 x ICS-G7828A Series switch
Cable	1 x USB type A male to USB type B male
Installation Kit	2 x rack-mounting ear
Power Supply	1 x power cord, EU type 1 x power cord, US type
Documentation	1 x document and software CD 1 x warranty card
Note	SFP modules need to be purchased separately for use with this product.

寸法

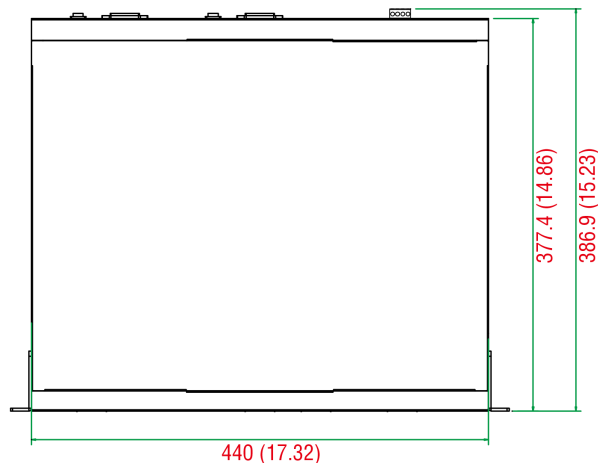
単位：mm（インチ）



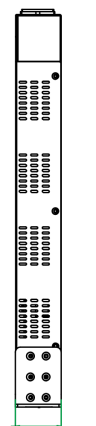
背面図



前面図



上面図



側面図

注文情報

Model Name	Layer	10GbE SFP+ Slots	Combo Ports 10/100/ 1000BaseT(X) or 100/ 1000BaseSFP+	100/1000Base SFP Slots	10/100/ 1000BaseT(X) Ports RJ45 Connector	Operating Temp.
ICS-G7828A-4GTXSFP-4XG-HV-HV	3	4	4	0	20	-10 to 60°C
ICS-G7828A-4XG-HV-HV-T	3	4	4	0	20	-40 to 75°C
ICS-G7828A-8GSFP-4GTXSFP-4XG-HV-HV	3	4	4	8	12	-10 to 60°C
ICS-G7828A-8GSFP-4XG-HV-HV-T	3	4	4	8	12	-40 to 75°C
ICS-G7828A-20GSFP-4GTXSFP-4XG-HV-HV	3	4	4	20	0	-10 to 60°C
ICS-G7828A-20GSFP-4XG-HV-HV-T	3	4	4	20	0	-40 to 75°C

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

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 with LC connector for 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-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
SFP-10GERLC	SFP+ module with 1 10GBase-ER port with LC connector for 40 km transmission, 0 to 60°C operating temperature
SFP-10GLRLC	SFP+ module with 1 10GBase-LR port with LC connector for 10 km transmission, 0 to 60°C operating temperature
SFP-10GSRLC	SFP+ module with 1 10GBase-SR port with LC connector for 33 m transmission, 0 to 60°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 Cords

PWC-C13AU-3B-183	Power cord with Australian (AU) plug, 1.83 m
PWC-C13CN-3B-183	Power cord with three-prong China (CN) plug, 1.83 m
PWC-C13EU-3B-183	Power cord with Continental Europe (EU) plug, 1.83 m
PWC-C13UK-3B-183	Power cord with United Kingdom (UK) plug, 1.83 m
PWC-C13US-3B-183	Power cord with United States (US) plug, 1.83 m
PWC-C7AU-2B-183	Power cord with Australian (AU) plug, 2.5A/250V, 1.83 m
PWC-C7EU-2B-183	Power cord with Continental Europe (EU) plug, 2.5A/250V, 1.83 m
PWC-C7UK-2B-183	Power cord with United Kingdom (UK) plug, 2.5A/250V, 1.83 m
PWC-C7US-2B-183	Power cord with United States (US) plug, 10A/125V, 1.83 m

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)

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