

# ICS-G7752Aシリーズ

48G+4 10GbEポートレイヤー2フルギガビットモジュール式マネージド・イーサネット・スイッチ



## 機能とメリット

- 最大48個のギガビットイーサネットポートならびに4つの10Gイーサネットポート
- 最大52の光ファイバ接続（SFPスロット）
- 外部電源付き最大48個のPoE+ポート（IM-G7000A-4PoEモジュール搭載）
- ファンレス、動作温度範囲-10～60°C
- 柔軟性が高く、将来的に無理なく拡張できるモジュール設計
- 連続運転を実現するホットスワップ可能なインターフェースおよび電源モジュール
- 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-G7752Aシリーズのフルギガビットバックボーンスイッチのモジュール設計により、ネットワークの計画が容易になり、最大48個のギガビットイーサネットポート、4つの10Gイーサネットポートを設置できるため、柔軟性が向上します。

ICS-G7752A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

- 先進的なPoE管理機能：PoE出力設定、PD障害チェック、PoEスケジューリング、およびPoE診断（IM-G7000A-4PoEモジュール搭載）
- 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）
- 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およびModbus TCPプロトコルをサポート
- トランスペアレントデータ伝送のためのPROFINETプロトコルとの互換性
- メールとリレー出力を通じた例外検出による自動警告
- 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
- 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
- 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トラッキング
- 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
- オンラインデバッグ用のポートミラーリング

## 仕様

### 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<br>-30 to +1 V for state 0<br>Max. input current: 8 mA |

### Ethernet Interface

|                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10GbE SFP+ Slots | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Slot Combination | 12 slots for 4-port interface modules (10/100/1000BaseT(X), or PoE+ 10/100/1000BaseT(X), or 100/1000BaseSFP slots) <sup>1</sup>                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Standards        | IEEE 802.1D-2004 for Spanning Tree Protocol<br>IEEE 802.1p for Class of Service<br>IEEE 802.1Q for VLAN Tagging<br>IEEE 802.1s for Multiple Spanning Tree Protocol<br>IEEE 802.1w for Rapid Spanning Tree Protocol<br>IEEE 802.1X for authentication<br>IEEE 802.3 for 10BaseT<br>IEEE 802.3ab for 1000BaseT(X)<br>IEEE 802.3ad for Port Trunk with LACP<br>IEEE 802.3u for 100BaseT(X) and 100BaseFX<br>IEEE 802.3x for flow control<br>IEEE 802.3z for 1000BaseSX/LX/LHX/ZX<br>IEEE 802.3af/at for PoE/PoE+ output<br>IEEE 802.3ae for 10 Gigabit Ethernet |

### Ethernet Software Features

|                      |                                                                                                                                                                                                       |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Management           | ARP, Back Pressure Flow Control, BOOTP, DDM, DHCP Option 66/67/82, DHCP Server/Client, IPv4/IPv6, 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                                                                                                                                                                     |
| Redundancy Protocols | Link Aggregation, MSTP, RSTP, Turbo Chain, Turbo Ring v1/v2, V-ON                                                                                                                                     |
| 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                                                                                                                                                                               |
| Industrial Protocols | EtherNet/IP, Modbus TCP                                                                                                                                                                               |
| 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 |

1. See the IM-G7000A datasheet for Gigabit Ethernet module product information.

|                                        |                                                                                                                                                                                                                                            |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| VLAN ID Range                          | VID 1 to 4094                                                                                                                                                                                                                              |
| Priority Queues                        | 8                                                                                                                                                                                                                                          |
| <b>USB Interface</b>                   |                                                                                                                                                                                                                                            |
| Storage Port                           | USB Type A                                                                                                                                                                                                                                 |
| <b>Serial Interface</b>                |                                                                                                                                                                                                                                            |
| Console Port                           | USB-serial console (Type B connector)                                                                                                                                                                                                      |
| <b>Power Parameters</b>                |                                                                                                                                                                                                                                            |
| 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                          | 1.01/0.58 A @ 110/220 VAC                                                                                                                                                                                                                  |
| <b>Physical Characteristics</b>        |                                                                                                                                                                                                                                            |
| IP Rating                              | IP30                                                                                                                                                                                                                                       |
| Dimensions                             | 440 x 176 x 523.8 mm (17.32 x 6.93 x 20.62 in)                                                                                                                                                                                             |
| Weight                                 | 12,900 g (28.5 lb)                                                                                                                                                                                                                         |
| Installation                           | Rack mounting                                                                                                                                                                                                                              |
| <b>Environmental Limits</b>            |                                                                                                                                                                                                                                            |
| Operating Temperature                  | -10 to 60°C (14 to 140°F)                                                                                                                                                                                                                  |
| Storage Temperature (package included) | -40 to 85°C (-40 to 185°F)                                                                                                                                                                                                                 |
| Ambient Relative Humidity              | 5 to 95% (non-condensing)                                                                                                                                                                                                                  |
| <b>Standards and Certifications</b>    |                                                                                                                                                                                                                                            |
| Safety                                 | 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: 6 kV; Air: 8 kV<br>IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m<br>IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV<br>IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV<br>IEC 61000-4-6 CS: 10 V<br>IEC 61000-4-8 PFMF |
| Railway                                | EN 50121-4                                                                                                                                                                                                                                 |
| Freefall                               | IEC 60068-2-32                                                                                                                                                                                                                             |
| Shock                                  | IEC 60068-2-27                                                                                                                                                                                                                             |
| Vibration                              | IEC 60068-2-6                                                                                                                                                                                                                              |
| <b>MTBF</b>                            |                                                                                                                                                                                                                                            |
| Time                                   | 274,488 hrs                                                                                                                                                                                                                                |
| Standards                              | Telcordia (Bellcore), GB                                                                                                                                                                                                                   |

## Warranty

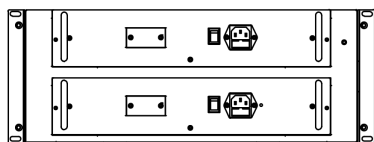
|                 |                                                                            |
|-----------------|----------------------------------------------------------------------------|
| Warranty Period | 5 years                                                                    |
| Details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

## Package Contents

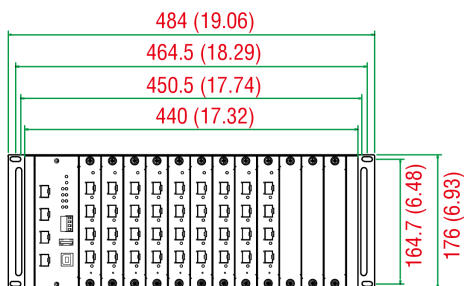
|                  |                                                                                                                                                    |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Device           | 1 x ICS-G7752A Series switch                                                                                                                       |
| Cable            | 1 x USB type A male to USB type B male                                                                                                             |
| Installation Kit | 2 x rack-mounting ear<br>8 x cap, plastic, for SFP slot                                                                                            |
| Power Supply     | 1 x power cord, EU type<br>1 x power cord, US type                                                                                                 |
| Documentation    | 1 x document and software CD<br>1 x warranty card                                                                                                  |
| Note             | 48 V external power supply, SFP modules and/or modules from the IM-G7000A Module Series need to be purchased separately for use with this product. |

## 寸法

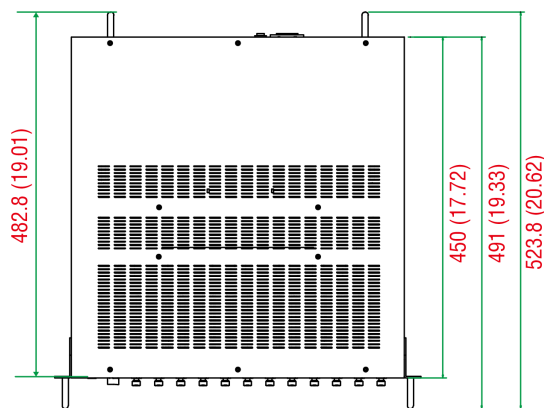
単位：mm（インチ）



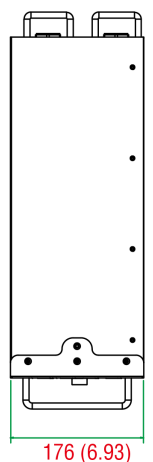
背面図



前面図



上面図



側面図

## 注文情報

| Model Name           | Layer | 10GbE SFP+ Slots | 100/1000Base SFP Slots | 10/100/1000BaseT(X) Ports RJ45 Connector | Operating Temp. |
|----------------------|-------|------------------|------------------------|------------------------------------------|-----------------|
| ICS-G7752A-4XG-HV-HV | 2     | 4                | Up to 48               | Up to 48                                 | -10 to 60°C     |

## アクセサリ（別売）

### IM-G7000A Module Series

|                 |                                                                                                            |
|-----------------|------------------------------------------------------------------------------------------------------------|
| IM-G7000A-4GSFP | Gigabit Ethernet interface module with 4 100/1000BaseSFP slots, -10 to 60°C operating temperature          |
| IM-G7000A-4GTX  | Gigabit Ethernet interface module with 4 10/100/1000BaseT(X) ports, -10 to 60°C operating temperature      |
| IM-G7000A-4PoE  | Gigabit Ethernet PoE+ interface module with 4 10/100/1000BaseT(X) ports, -10 to 60°C operating temperature |

## Power Supplies

|               |                                                                                                |
|---------------|------------------------------------------------------------------------------------------------|
| PWR-G7000A-AC | 85 to 264 VAC power supply module for the ICS-G7748A/G7750A/G7752A/G7848A/G7850A/G7852A Series |
|---------------|------------------------------------------------------------------------------------------------|

## 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-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 500 m transmission, 0 to 60°C operating temperature                                           |
| SFP-1GLSXLC-T   | SFP module with 1 1000BaseLSX port with LC connector for 500 m 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 300/550 m transmission, 0 to 60°C operating temperature   |
| SFP-1GSXLC-T   | SFP module with 1 1000BaseSX port with LC connector for 300/550 m 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-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) |

### 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 |

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