

ICS-G7748A Series

48G-port Layer 2 full Gigabit modular managed Ethernet switches



Features and Benefits

- Up to 48 Gigabit Ethernet ports
- Up to 48 optical fiber connections (SFP slots)
- Up to 48 PoE+ ports with external power supply (with IM-G7000A-4PoE module)
- Fanless, -10 to 60°C operating temperature range
- Modular design for maximum flexibility and hassle-free future expansion
- Hot-swappable interface and power modules for continuous operation
- Turbo Ring and Turbo Chain (recovery time < 20 ms @ 250 switches), and STP/RSTP/MSTP for network redundancy
- Isolated redundant power inputs with universal 110/220 VAC power supply range
- Supports MXstudio for easy, visualized industrial network management
- V-ON™ ensures millisecond-level multicast data and video network recovery

Certifications



Introduction

Process automation and transportation automation applications combine data, voice, and video, and consequently require high performance and high reliability. The ICS-G7748A Series full Gigabit backbone switches' modular design makes network planning easy, and allows greater flexibility by letting you install up to 48 Gigabit Ethernet ports.

The ICS-G7748A's full Gigabit capability increases bandwidth to provide high performance and the ability to quickly transfer large amounts of video, voice, and data across a network. The fanless switches support the Turbo Ring, Turbo Chain, and RSTP/STP redundancy technologies, and come with an isolated redundant power supply to increase system reliability and the availability of your network backbone.

Additional Features and Benefits

- Advanced PoE management functions: PoE output setting, PD failure check, PoE scheduling, and PoE diagnostics (with IM-G7000A-4PoE module)
- Command line interface (CLI) for quickly configuring major managed functions
- DHCP Option 82 for IP address assignment with different policies
- Supports EtherNet/IP and Modbus TCP protocols for device management and monitoring
- Compatible with PROFINET protocol for transparent data transmission
- Port mirroring for online debugging
- Automatic warning by exception through email and relay output
- Redundant, dual AC power inputs
- Digital inputs for integrating sensors and alarms with IP networks
- IGMP snooping and GMRP for filtering multicast traffic
- IEEE 802.1Q VLAN and GVRP protocol 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
- Access control lists (ACL) increase the flexibility and security of network management
- 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

Specifications

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 |

Ethernet Interface

| | |
|------------------|--|
| Slot Combination | 12 slots for 4-port interface modules (10/100/1000BaseT(X), or PoE+ 10/100/1000BaseT(X), or 100/1000BaseSFP slots). See the IM-G7000A datasheet for Gigabit Ethernet module product information. |
| 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 802.3u for 100BaseT(X) and 100BaseFX IEEE 802.3x for flow control IEEE 802.3z for 1000BaseSX/LX/LHX/ZX IEEE 802.3af/at for PoE/PoE+ output |

Ethernet Software Features

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|----------------------|---|
| 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

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|--------------------|---------------|
| 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

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|--------------|------------|
| Storage Port | USB Type A |
|--------------|------------|

Serial Interface

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| Console Port | USB-serial console (Type B connector) |
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Power Parameters

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|-----------------------------|---------------------------------------|
| 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 | 0.87/0.51 A @ 110/220 VAC |

Physical Characteristics

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|--------------|--|
| 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 |

Environmental Limits

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|--|----------------------------|
| 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) |

Standards and Certifications

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|-----------|--|
| 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 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: 2 kV; Signal: 2 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

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|-----------|--------------------------|
| Time | 314,973 hrs |
| Standards | Telcordia (Bellcore), GB |

Warranty

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

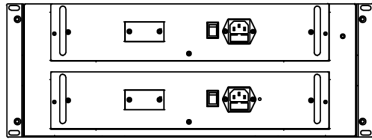
Package Contents

| | |
|--------|--|
| Device | 1 x ICS-G7748A Series switch |
| Cable | 1 x USB type A male to USB type B male |

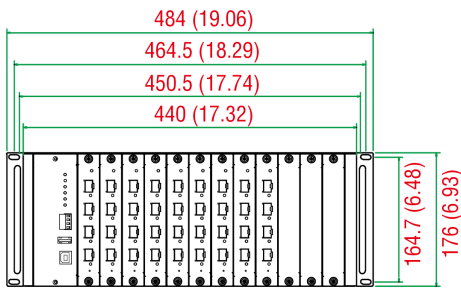
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|------------------|--|
| Installation Kit | 2 x rack-mounting ear 4 x cap, plastic, for SFP slot |
| Power Supply | 1 x power cord, EU type 1 x power cord, US type |
| Documentation | 1 x document and software CD 1 x warranty card |
| Note | 48 V external power supply, SFP modules and/or modules from the IM-G7000A Module Series need to be purchased separately for use with this product. |

Dimensions

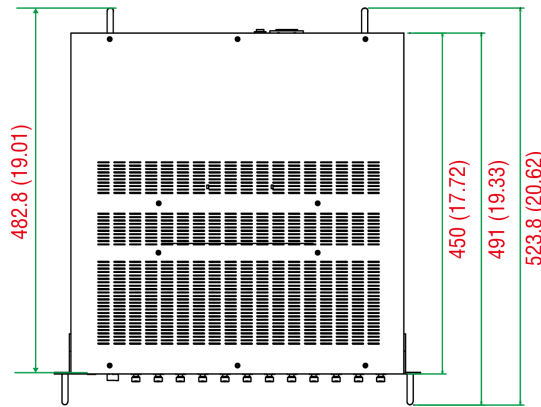
Unit: mm (inch)



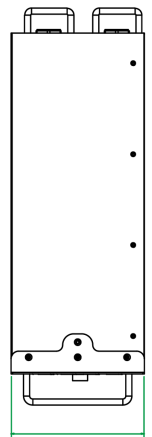
Rear View



Front View



Top View



Side View

Ordering Information

| Model Name | Layer | 10GbE SFP+ Slots | 100/1000Base SFP Slots | 10/100/1000BaseT(X) Ports RJ45 Connector | Operating Temp. |
|------------------|-------|------------------|------------------------|--|-----------------|
| ICS-G7748A-HV-HV | 2 | 0 | Up to 48 | Up to 48 | -10 to 60°C |

Accessories (sold separately)

IM-G7000A Module Series

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|-----------------|--|
| 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

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

SFP Modules

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|--------------|---|
| SFP-1FELLC-T | SFP module with 1 100Base single-mode with LC connector for 80 km transmission, -40 to 85°C operating temperature |
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|-----------------|--|
| 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 1000BaseEZXC port with LC connector for 110 km transmission, 0 to 60°C operating temperature |
| SFP-1GEZXLC-120 | SFP module with 1 1000BaseEZXC 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 500 m transmission, 0 to 60°C operating temperature |
| SFP-1GLSXC-T | SFP module with 1 1000BaseLSX port with LC connector for 500 m 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 300/550 m transmission, 0 to 60°C operating temperature |
| SFP-1GSXC-T | SFP module with 1 1000BaseSX port with LC connector for 300/550 m 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 |

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| 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 |

Power Cords

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|------------------|---|
| 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

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|-------------------|--|
| 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

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|--------------|---|
| 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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