

# ICS-G7750A 系列

## 48G+2 10GbE 連接埠 Layer 2 全 Gigabit 模組化網管型乙太網路交換器



### 特色與優點

- 最多 48 個 Gigabit 乙太網路連接埠和 2 個 10G 乙太網路連接埠
- 多達 50 個光纖連接埠 ( SFP 插槽 )
- 最多 48 個 PoE+ 連接埠 ( 搭配 IM-G7000A-4PoE 模組 )
- 無風扇，-10 至 60°C 工作溫度範圍
- 模組化設計可達成最大的彈性和輕鬆的擴充
- 支援熱插拔網路介面及電源模組，允許不斷電下連續運作
- 支援 Turbo Ring 和 Turbo Chain ( 復原時間 < 20 毫秒 @ 250 台交換器 )<sup>1</sup>，以及透過 STP/RSTP/MSTP 協議支援網路備援
- 隔離式備援電源輸入，具有通用 110/220 VAC 電源供應範圍
- 支援 MXstudio，輕鬆實現可視化的工業網路管理
- V-ON™ 可確保毫秒等級的 Multicast 資料和視訊網路復原

### 認證



### 簡介

處理自動化和傳輸自動化應用結合數據、語音和視訊，因此需要高效能和高可靠性。ICS-G7750A 系列全 Gigabit 骨幹交換器的模組化設計讓您輕鬆進行網路規劃，並且可安裝最多 48 個 Gigabit 乙太網路連接埠以及 2 個 10 Gigabit 乙太網路連接埠，提供更大彈性。

ICS-G7750A 的全 Gigabit 可增加頻寬，藉以提供高效能以及透過網路快速傳輸大量視訊、語音和數據的能力。無風扇交換器支援 Turbo Ring、Turbo Chain 和 RSTP/STP 備援技術，配備隔離備援電源，藉以提高系統可靠性和網路骨幹的可用性。

### 附加特色與優點

- 進階的 PoE 管理功能：PoE 輸出設定、PD 故障檢查、PoE 排程和 PoE 診斷 ( 使用 IM-G7000A-4PoE 模組 )
- 命令列介面 ( CLI ) 快速設定主要網管功能
- DHCP Option 82 以不同原則指派 IP 位址
- 支援 EtherNet/IP 和 Modbus TCP 通訊協定以進行設備管理和監控
- 相容於 PROFINET 通訊協定以進行透通式數據傳輸
- Port mirroring 可用於除錯
- 發生狀況時可透過電子郵件或是繼電器輸出自動發出告警
- 數位輸入可將感應器和告警整合至 IP 網路
- IGMP snooping 和 GMRP，用於過濾 multicast 流量
- IEEE 802.1Q VLAN 以及 GVRP 通訊協定，可簡化網路規劃
- QoS ( IEEE 802.1p/1Q 和 TOS/DiffServ ) 提高資料傳送穩定性
- Port Trunking 可將頻寬使用率最佳化
- 支援 TACACS+、SNMPv3、IEEE 802.1X、HTTPS 和 SSH，強化網路安全
- 存取控制清單 (ACL) 可增加網路管理的彈性與安全性
- SNMPv1/v2c/v3，支援不同層級的網路管理
- RMON 提供主動且有效率的網路監控
- 頻寬管理可預防不穩定的網路狀態出現
- 連接埠鎖定功能可依據 MAC 位址封鎖未經授權的存取
- 備援雙交流 (AC) 電源輸入

### 規格

#### 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 |

1. 如果埠連結速度為 1 Gigabit 或更高，復原時間 < 50 毫秒

## Ethernet Interface

|                  |   |
|------------------|---|
| 10GbE SFP+ Slots | 2   |
| 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        | <p>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</p> |

## Ethernet Software Features

|                      |   |
|----------------------|---|
| Management           | <p>ARP<br/>           Back Pressure Flow Control<br/>           BOOTP<br/>           DDM<br/>           DHCP Option 66/67/82<br/>           DHCP Server/Client<br/>           Flow control<br/>           IPv4/IPv6<br/>           LLDP<br/>           Port Mirror<br/>           RARP<br/>           RMON<br/>           SCP<br/>           SMTP<br/>           SNMP Inform<br/>           SNMPv1/v2c/v3<br/>           Syslog<br/>           Telnet<br/>           TFTP</p> |
| Filter               | <p>802.1Q<br/>           BPDU Filter<br/>           BPDU Guard<br/>           GMRP<br/>           GVRP<br/>           IGMP v1/v2/v3</p>   |
| Redundancy Protocols | <p>Link Aggregation<br/>           MRP<br/>           MSTP<br/>           RSTP<br/>           Turbo Chain<br/>           Turbo Ring v1/v2<br/>           V-ON</p>   |
| Security             | <p>Access control list<br/>           Broadcast storm protection<br/>           HTTPS/SSL<br/>           MAB authentication<br/>           Sticky MAC<br/>           NTP authentication<br/>           Port Lock<br/>           RADIUS<br/>           SSH<br/>           TACACS+</p>  |
| Time Management      | <p>NTP Server/Client<br/>           SNTP</p>  |

|                      |   |
|----------------------|---|
| Industrial Protocols | EtherNet/IP<br>Modbus TCP   |
| MIB                  | Bridge MIB<br>Ethernet-like MIB<br>MIB-II<br>P-BRIDGE MIB<br>Q-BRIDGE MIB<br>RMON MIB Groups 1, 2, 3, 9<br>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 |
|--------------|------------|

### Serial Interface

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

### Power Parameters

|                             |  |
|-----------------------------|--|
| Input Voltage               | 110 to 220 VAC<br>Redundant dual inputs  |
| Operating Voltage           | 85 to 264 VAC  |
| Input Current               | 1.1/0.72 A @ 110/220 VAC<br>Note: These are the input current ratings for the device with the maximum number of modules installed.         |
| Power Consumption (Max.)    | 109.68/117.8 W @ 110/220 VAC<br>Note: These are the power consumption ratings for the device with the maximum number of modules installed. |
| Total PoE Power Budget      | Installed with IM-G7000A-4PoE Module: Maximum 1,440 W @ 48 VDC   |
| Overload Current Protection | Supported  |
| Reverse Polarity Protection | Supported  |

### Physical Characteristics

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

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

|           |  |
|-----------|--|
| Safety    | EN 61010-2-201<br>UL 61010-2-201   |
| EMC       | EN 55032/35  |
| 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  |

## MTBF

|           |                          |
|-----------|--------------------------|
| Time      | 282,329 hrs              |
| Standards | Telcordia (Bellcore), GB |

## Warranty

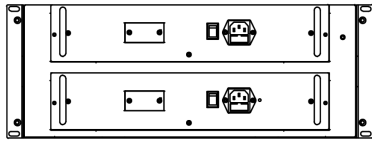
|                 |  |
|-----------------|--|
| Warranty Period | 5 years  |
| Details         | See <a href="http://www.moxa.com/tw/warranty">www.moxa.com/tw/warranty</a> |

## Package Contents

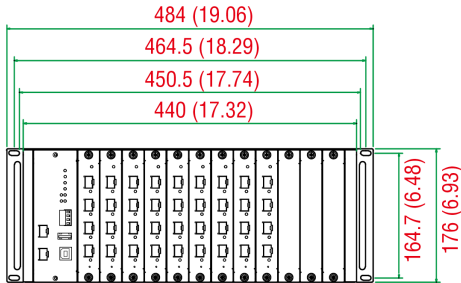
|                  |  |
|------------------|--|
| Device           | 1 x ICS-G7750A Series switch   |
| Cable            | 1 x USB type A male to USB type B male   |
| Installation Kit | 2 x rack-mounting ear<br>6 x cap, plastic, for SFP slot  |
| Power Supply     | 1 x power cord, EU type<br>1 x power cord, US type   |
| Documentation    | 1 x quick installation guide<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. |

## 尺寸

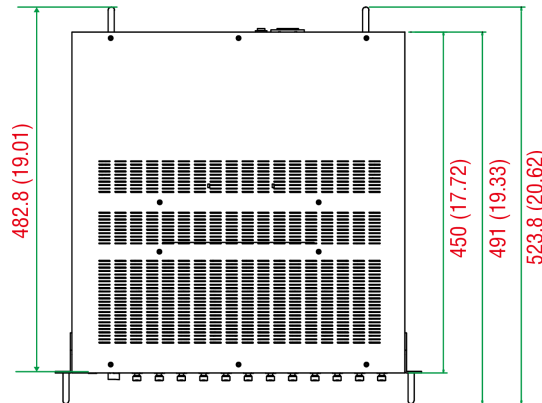
單位：公釐（英吋）



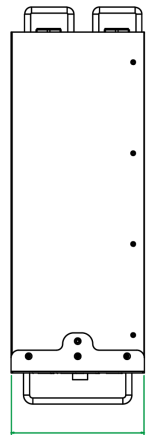
Rear View



Front View



Top View



176 (6.93)

Side View

## 訂購資訊

| Model Name           | Layer | 10GbE SFP+ Slots | 100/1000Base SFP Slots | 10/100/1000BaseT(X) Ports RJ45 Connector | Operating Temp. |
|----------------------|-------|------------------|------------------------|--|-----------------|
| ICS-G7750A-2XG-HV-HV | 2     | 2                | Up to 48               | Up to 48                                 | -10 to 60°C     |

## 配件（選購）

### 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 Modules

|               |   |
|---------------|---|
| PWR-G7000A-AC | Power supply module (85 to 264 VAC) for ICS-G7748A/G7750A/G7752A/G7848A/G7850A/G7852A Series, -10 to 60°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, 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-1GEZXC     | SFP module with 1 1000BaseEZ port with LC connector for 110 km transmission, 0 to 60°C operating temperature   |
| SFP-1GEZXC-120 | SFP module with 1 1000BaseEZ 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 1000BaseLS port with LC connector for 1km/2km transmission, 0 to 60°C operating temperature  |
| SFP-1GLSXC-T   | SFP module with 1 1000BaseLS 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-1GTXRJ45-T | SFP module with 1 1000BaseT port with RJ45 connector for 100 m transmission, -40 to 75°C operating temperature   |
| SFP-10GLRLC-T  | SFP+ module with 1 10GBase-LR port, LC connector for 10 km transmission, -40 to 85°C operating temperature   |
| SFP-10GERLC-T  | SFP+ module with 1 10GBase-ER port, LC connector for 40 km transmission, -40 to 85°C operating temperature   |
| SFP-10GSRLC-T  | SFP+ module with 1 10GBase-SR port, LC connector for 33m/82m/300m/400m transmission, -40 to 85°C operating temperature                                 |
| SFP-10GZRLC-T  | SFP+ module with 1 10GBase-ZR port, LC connector for 80 km transmission, -40 to 85°C operating temperature   |

## Power Cords

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