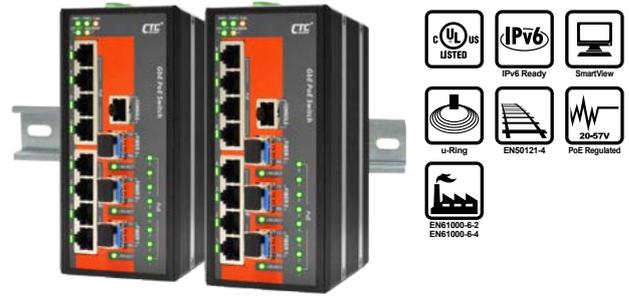# IGS-803SM-8PH24

8x 10/100/1000Base-T+ 3x 100/1000Base-X SFP Slot with 8x PoE+ 管理型交換器 (180 Watts, 24V Booster)

IGS-803SM-8PH24是工業級網管型千兆乙太網PoE（供電型）交換機，具有8個10/100/1000Base-T PoE電口和3個SFP千兆光口，提供穩定可靠的乙太網線路傳輸。該乙太網交換機支援多種管理功能，包括STP/ RSTP / MSTP和ITU-T G.8032, 及Multiple u-Ring 冗餘環網，先進的PoE管理功能，可作PoE PD設備自動檢測和自動重啟，PoE每週供電時間排程，L2乙太網IGMP，VLAN，QoS，安全，IPv6，頻寬控制，Port mirroring，電纜診斷和綠色節能乙太網。搭配堅固的Din Rail 軌道式或壁掛安裝外殼，此產品專為惡劣環境，如工業網路，安全自動化應用，交通監控，安防自動化應用，IP surveillance，城市安防，智能交通系統（ITS）也適用於許多軍事和公用事業的市場應用中，環境條件超出一般商規的產品規格。 標準工作溫度範圍型號（-10〜60°C）和寬工作溫度範圍型號（-40〜75°C）滿足特殊工業自動化應用的需求

功能特點

- 提供8 個10/100/1000Base-T RJ-45 電口+ 3 個100/1000Base-X SFP 光口
- 雙電源輸入24/48VDC 冗餘備份，內置電源升壓器PoE/PoE+輸出55 VDC 電壓
- PoE穩壓輸出電壓55VDC
- 提供8個IEEE802.3af / 802.3at PoE埠(輸出功率30W/每埠)
- 最大PoE 輸出總功率達 180W
- 支援先進的PoE 管理, PoE PD設備自動檢測,與自動重啟, 並具智慧電源管理計畫
- 通過UL60950-1, CE, FCC, Rail Traffic EN50121-4 認證
- 通過工業級 EMS(抗電磁干擾)，EMI (電磁波干擾), EN61000-6-2, EN61000-6-4 認證
- 支援網路線斷線診斷,可以診斷網路線故障點, 定位線纜的故障點
- 支援綠色節能乙太網IEEE802.3az EEE (Energy Efficient Ethernet) Management，優化電源消耗
- 每台設備可支援u-Ring, u-Chain 或Sub-Ring 型態的環網,最多可設5 個環網
- 在冗餘乙太網環網支援u-Ring, 在250 device (max.)恢復時間<10ms

- 支援STP, RSTP, MSTP, ITU-T G.8032 Ethernet Protection Ring(EPR)
- 支援DHCP client/Relay/Snooping/Snooping option 82/Relay option 82
- 支援QoS,Traffic classification QoS, CoS, 輸入或輸出頻寬控制，風暴抑制，DiffServ
- 支援IEEE802.1q VLAN, Mac based VLAN, IP子網 based VLAN, Protocol based VLAN, VLAN translation, MVR
- 支援動態IEEE 802.3ad LACP 鏈路聚合, 靜態鏈路聚合
- 支援IGMP snooping V1/V2/V3, IGMP Filtering/Throttling, IGMP query, IGMP proxy reporting, MLD snooping V1/V2
- 安全管制功能: Port based和Mac based IEEE802.1X, RADIUS, ACL, TACACS+,HTTP/HTTPS, SSL/SSH v2
- 支援透過TFTP 和HTTP 進行軟體升級, 韌體冗餘備份防止升級失敗
- 支援RMON, MIB II, Port mirroring, Event syslog, DNS, NTP/SNTP, IEEE802.1ab LLDP
- 支援IPv6 Telnet server/ICMP v6
- 支援CLI, Web based management, SNMP v1/v2c/v3, Telnet server for management
- 支援SmartView 管理系統

硬體規格

符合標準		
	IEEE 802.3	10Base-T 10Mbit/s Ethernet
	IEEE 802.3u	100Base-TX, 100Base-FX, Fast Ethernet
	IEEE 802.3ab	1000Base-T Gbit/s Ethernet over twisted pair
	IEEE 802.3z	1000Base-X Gbit/s Ethernet over Fiber-Optic
	IEEE 802.1d	STP (Spanning Tree Protocol)
	IEEE 802.1w	RSTP (Rapid Spanning Tree Protocol)
	IEEE 802.1s	MSTP (Multiple Spanning Tree Protocol)
	ITU-T G.8032 / Y.1344	ERPS (Ethernet Ring Protection Switching)
	IEEE 802.1Q	Virtual LANs (VLAN)
	IEEE 802.1X	Port based and MAC based Network Access Control, Authentication
	IEEE 802.3ad	Link aggregation for parallel links with LACP(Link Aggregation Control Protocol)
	IEEE 802.3x	Flow control for Full Duplex
	IEEE 802.3af	PoE (Power over Ethernet)
	IEEE 802.3at	PoE+ (Power over Ethernet ehancements)
	IEEE 802.1ad	Stacked VLANs, Q-in-Q
	IEEE 802.1p	LAN Layer 2 QoS/CoS Protocol for Traffic Prioritization
	IEEE 802.1ab	Link Layer Discovery Protocol (LLDP)
	IEEE 802.3az	EEE (Energy Efficient Ethernet)
VLAN ID	4094 IEEE802.1Q VLAN VID	
Switch Architecture	Back-plane (Switching Fabric): 22Gbps	
Data Processing	Store and Forward	
Flow Control	IEEE 802.3x for full duplex mode Back pressure for half duplex mode	

PoE RJ-45針腳定義	8 RJ-45 ports support IEEE 802.3af / IEEE 802.3at End-Span, Alternative A mode.
	Positive (V+) : RJ-45 pin 1, 2. Negative (V-) : RJ-45 pin 3, 6. Data (1,2,3,6,4,5,7,8)
網路連接器	8 x RJ-45 10/100/1000Base-T auto negotiation speed, Auto MDI/MDI-X function, Full/Half duplex 3X 100/1000 Base-X dual speed mode SFP slot, with DDMI
Console	RS-232 (RJ-45)
網路線規格	UTP/STP above Cat. 5e cable
	EIA/TIA-568 100-ohm (100m)
通訊協議	CSMA/CD
極性保護	提供
過載保護	提供
CPU Watch Dog	提供
電源供應	Redundant Dual DC 24/48V (20~57VDC) Input power (Removable Terminal Block)
LED指示燈	Per unit: Power 1 (Green), Power 2 (Green), Fault (Amber), CPU Act (Green), Ring Master (Yellow)
	Per RJ-45 port: 10/100 Link/Active (Green) 1000 Link/Active (Amber)
	SFP Fiber Per port: Link/Active (Green)
	PoE Port LED 1 LED /per Port : • PoE Output Power On : ON (Green) • PoE Fault (Over Load, Short Circuit, Port failed at Startup) : Flash 1times /sec (Green) • PoE Output Power Off : Off (Green)

硬體規格

Jumbo Frame	9.6KB
MAC Address Table	8K
PoE標準	IEEE802.3af, IEEE802.3at
PoE供電輸出	Maximum PoE output power budget 180W (30W/per port)

耗電量

項目 電量輸出	總電源消耗	設備消耗功率	PoE Budget	升壓效率
24VDC	200.2W	9.2W	180W	94%
48VDC	195.1W	9.8W	180W	97%

警告訊息	System Syslog, SMTP/ e-mail event message, alarm relay
報警繼電器規格	Relay outputs with current carrying capacity of 1 A @24VDC
可插拔接線板	提供一個6針可拔插式接線板。內含2個備援輸入電源，一個繼電器告警
工作溫度	-10 ~ 60°C (IGS-803SM-8PH24) -40 ~ 75°C (IGS-803SM-8PHE24)
工作濕度	5% to 95% (Non-condensing)
儲存溫度	-40 ~ 85°C
外殼	Rugged Metal, IP30 Protection
尺寸	106 x 72 x152 mm (D x W x H)
重量	0.96kg
安裝方式	DIN Rail mounting or wall mounting

軟體規格

拓撲

VLAN	IEEE 802.1q VLAN,up to 4094 802.1Q VLAN VID
	IEEE 802.1q VLAN,up to 4094 Groups
	IEEE 802.1ad Q-in-Q
	MAC-based VLAN,up to 256 entries
	IP Subnet-based VLAN, up to 128 entries
	Protocol-based VLAN(Ethernt, SNAP, LLC), up to 128 entries
	VLAN Translation, up to 256 entries
	MVR (Multicast VLAN Registration)
鏈路聚合 (Port Trunk)	Static (Hash with SA, DA, IP, TCP/UDP port), up to 5 trunk group
	Dynamic (IEEE 802.3ad LACP), up to 5 trunk group
生成樹協議	IEEE802.1d STP
	IEEE802.1w RSTP
	IEEE802.1s MSTP
Multiple u-Ring	up to 5 instances that each supports u-Ring, u-Chain or Sub-Ring type for flexible uses, and maximum up to 5 Rings. Recovery time <10ms The maximum number of devices allowed in a Ring supported ring is 250.
Loop Protection	提供
ITU-T G.8032 / Y.1344 ERPS (Ethernet Ring Protection)	恢復時間 <50ms
	單環, 子網環, 多環拓撲

QoS 特色

Class of Service	IEEE802.1p 8 active priorities queues for per port
Traffic Classification QoS	IEEE802.1p based CoS
	IP Precedence based CoS
	IP DSCP based CoS
	QCL(QoS Control List): Frame Type, Source/Destination MAC, VLAN ID, PCP, DEI
	QCE(QoS Control Entry): Protocol, Source IP, IP Fragment, DSCP, TCP/UDP port number
頻寬控制（入方向）	Rate in steps :1 kbps / Mbps / fps / kfps
	Range : 100 kbps to 1Gbps / 1fps to 3300kfps
	Rate Unit : bit or frame
頻寬控制（出方向）	Rate in steps : 1 kbps / Mbps
	Range : 100 kbps to 1Gbps
	Rate Unit : bit
	Per queue / Per port shaper
DiffServ (RF 2474) Remarking	
風暴控制	for Unicast, Broadcast, Multicast

IP多點特色

IGMP / MLD Snooping	IGMP Snooping v1, v2, v3 / MLD Snooping v1, v2
	Port Filtering Profile
	Throttling
	Fast Leave
	Maximum Multicast Group : up to 1022 entries
	Query / Static Router Port

安全性

IEEE 802.1X	Port-Based
	MAC-Based
ACL	Number of rules : up to 256 entries
	for L2 / L3 / L4
RADIUS authentication & accounting	

認證

EMC	CE
EMI (Electromagnetic Interference)	FCC Part 15 Subpart B Class A,CE EN55022 Class A
Railway Traffic	EN50121-4
Immunity for Heavy Industrial Environment	EN61000-6-2
Emission for Heavy Industrial Environment	EN61000-6-4
EMS (Electromagnetic Susceptibility) Protection Level	EN61000-4-2 (ESD) Level 3, Criteria B
	EN61000-4-3 (RS) Level 3, Criteria A
	EN61000-4-4 (Burst) Level 3, Criteria A
	EN61000-4-5 (Surge) Level 3, Criteria B
	EN61000-4-6 (CS) Level 3, Criteria A
	EN61000-4-8 (PFMF, Magnetic Field) Field Strength: 300A/m, Criteria A
Safety	UL60950-1
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
MTBF	311,376hrs (MIL-HDBK-217)
產品保固	5 years

TACACS+ authentication & accounting, TACACS+ 3.0	
HTTPS, HTTP	
SSL / SSH v2	
用戶密碼認證	Local Authentication
	Remote Authentication (via RADIUS / TACACS+)
管理端口存取過濾	Web, Telnet / SSH，CLI RS-232 console

管理特色

CLI	
Web Based Management	
Telnet	Server
SNMP	V1, V2c, V3
SW& Configuration 更新	TFTP, HTTP
	韌體冗餘防止升級失敗
RMON	RMON I (1, 2, 3, 9 group), RMON II
MIB II	RFC 1213
DHCP	Client
	Relay
	Snooping
	Snooping option 82
	Relay option 82
IP Source Guard	
Port Mirroring	
Event Syslog	Syslog server (RFC3164) (Support 1 server)
Warning Message	System syslog, e-Mail, 告警繼電器
DNS	Client, Proxy
NTP / SNTP	
LLDP (IEEE 802.1ab)	Link Layer Discovery Protocol
	LLDP-MED

IPv6 特色

IPv6 Management	Telnet Server/ICMP v6
SNMP over IPv6	
HTTP over IPv6	
SSH over IPv6	
支援IPv6 Telnet	
支援IPv6 NTP/SNTP	
支援IPv6 TFTP	
IPv6 QoS	
IPv6 ACL	Number of rules: up to 256 entries
	L2 / L3 / L4

其他特色

綠色節能乙太網	支援IEEE802.3az EEE (Energy Efficient Ethernet) 優化電源消耗
	依照網路線長短，自動調節功耗,以節省短線時的耗電
	網路埠無連接時，自動降低輸出功耗
	LED 功率管理 :調節LED
網路線斷線診斷	自動診斷定位網路線的故障點
先進PoE管理	PoE PD設備自動檢測,與自動重啟
	PoE排程（定時開啟/關閉 以周為單位）
	PoE 設定
	PoE的啟用/關閉
	Power limit by classification
	Power limit by classification
	PoE電源總功率最大限制（最大180W）

應用說明

Figure 1: 應用案例

Figure 2: Multiple Rings
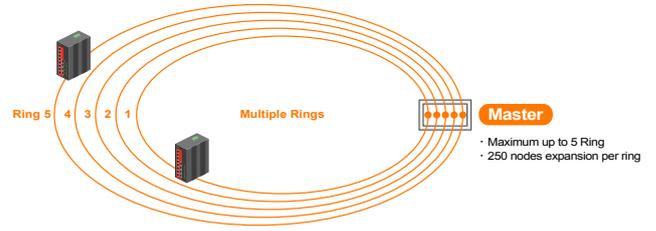
Figure 3: Web介面u-Ring狀態說明

u-Ring Configuration

Auto-refresh ☐ Refresh

Delete	Instance	Type	Master	East		West	
				Port	Edge	Port	Edge
Delete	1	u-Ring ▼	☐	1 ▼		2 ▼	
Delete	2	u-Ring ▼	☐	4 ▼		3 ▼	
Delete	3	u-Ring ▼	☐	10 (Fiber2) ▼		11 (Fiber3) ▼	
Delete	4	Sub-Ring ▼	☐	6 ▼			
Delete	5	u-Chain ▼	☐	5 ▼	☐	9 (Fiber1) ▼	☐

Add New Instance

Save Reset

Figure 4: u-Ring 的型態
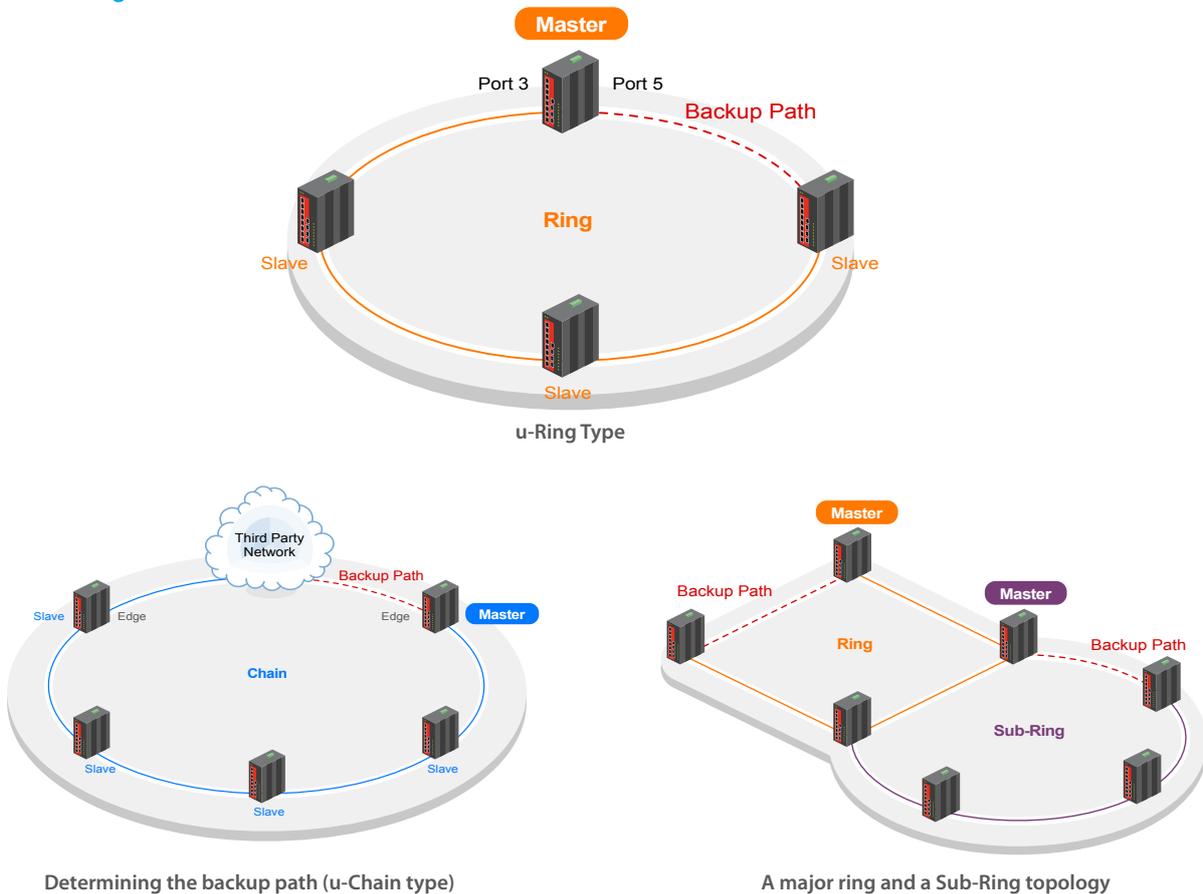
u-Ring Type

Determining the backup path (u-Chain type)

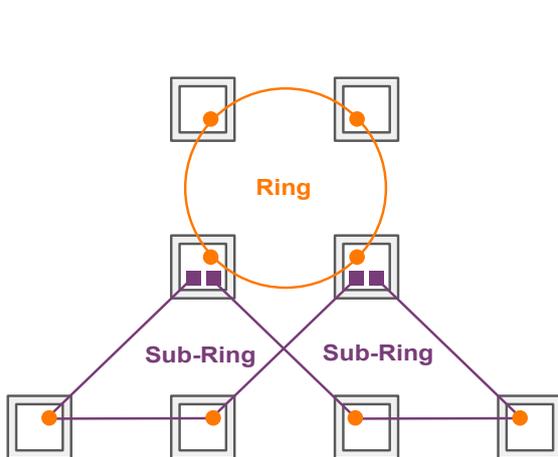

A major ring and a Sub-Ring topology

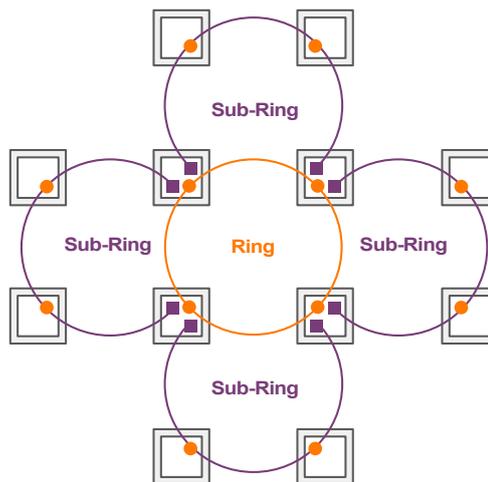## Figure 5: u-Ring架設範例

Ring Configuration Type

- 🟠 u-Ring
- 🟪 Sub-Ring
- 🔺 u-Chain
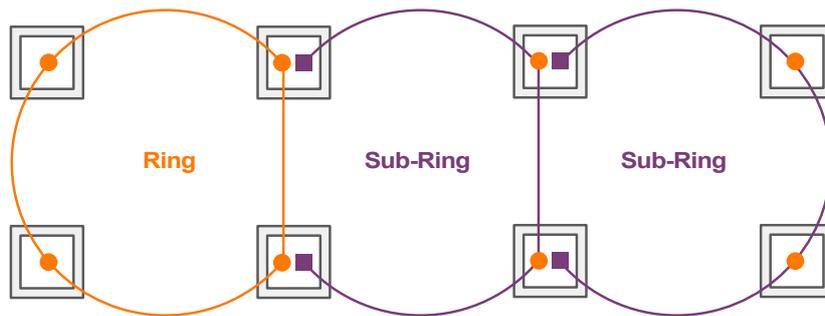
Ring Configuration Type

Combination of a ring and two Sub-Ring

Combination of a ring and four Sub-Ring

機構尺寸

Side View   Front View   Rear View   DIN-Rail Kit View   Wall-Mount Kit View
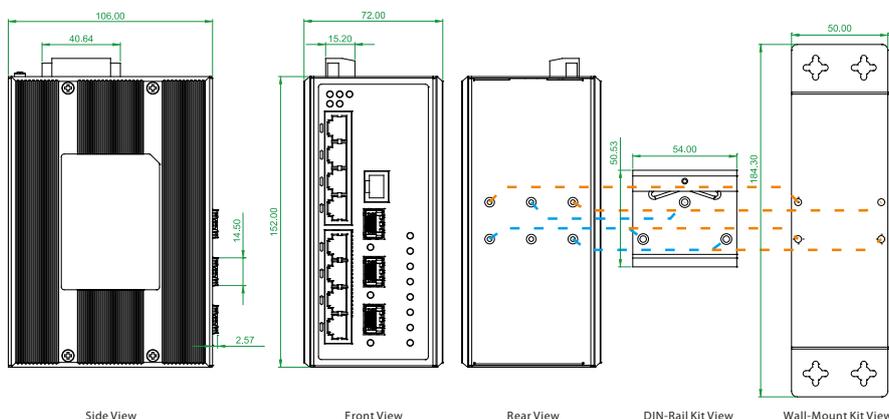
訂購說明

型號	說明
IGS-803SM-8PH24	8x 10/100/1000Base-T + 3x 100/1000Base-X SFP slot with 8 High Power PoE Managed Switch (30W/Per Port ,Total 180W, 24V Booster, -10~60˚C)
IGS-803SM-8PHE24	8x 10/100/1000Base-T + 3x 100/1000Base-X SFP slot with 8 High Power PoE Managed Switch (30W/Per Port ,Total 180W, 24V Booster, -40~75˚C)

配件

DR-120-24	Industrial Power, Input 88 ~ 132VAC / 176 ~ 264VAC, Output 24VDC, 120W, -10 ~ +60℃
DRP-240-48	Industrial Power, Input 85 ~ 264VAC, Output 48VDC, 240W, -10 ~ +70℃
SFP Transceiver	Compatible, Reliable, 5-year Warranty

Temperature

IGS-803SM – 8PH ☐ 24

Example: IGS-803SM – 8PH E24

ISFP – M 7 040 – 31 – E

- 🔵 **Industrial SFP Transceiver**
- 🟠 **M :** Multi Mode
  S : Single Mode
  T : Copper
- 🔵 **7 :** GbE
  5 : FE
- 🔵 **Distance** 002(2km), 020(20km), 040(40km)...
- 🟠 **Wavelength**
- 🔵 **E :** -40~85℃
  Blank : 0~70℃