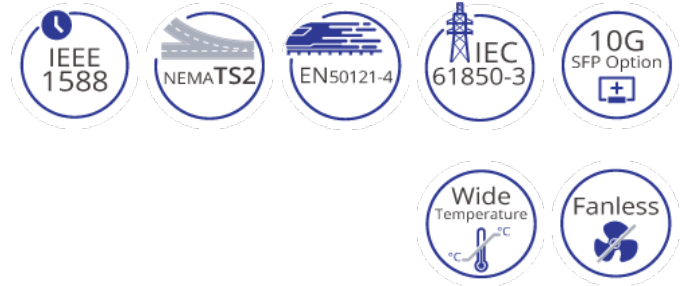


InfraGreEn IG5 Rack 系列

IEC 61850-3/IEEE 1613 強固級網管型 24 埠 Gigabit + 4 埠 1G/10G SFP+ 乙太網路交換器



產品介紹

益網科技IG5 機架系列強固級網管型交換器，將第 3 層路由協定的優勢與強大的管理功能和增強的規格相結合。支援靜態路由、路由資訊協定 (RIP) v1/v2、OSPF 和虛擬路由器備援協定 (VRRP)，在高性能與高成本效益的解決方案中，提供出色的靈活性和安全性。

具備多種銅纜/光纖連接埠組合選項，提供有效的模組化。全部 24 連接埠皆支援 Gigabit 傳輸和 4 個支援 10G 速度的 SFP+ 埠。1U 機架高度，搭載益網科技的 Alpha-Ring 自愈技術，提供小於 15 毫秒的斷線回復時間，完美應用於無法忍受中斷的網路架構環境，促進更強的通訊網路。

IG5 機架系列符合 IEEE 1588v2 標準的精確時間通訊協定 (PTP)，利用網路封包及時間戳記進行網路時間同步。廣泛的第 2 層功能包括連接埠安全性、IGMP 偵聽、連接埠基礎的 VLAN、GARP、鏈路聚合控制和 ACL，支援 SSH、SNMP、RMON、HTTPS 和 SFTP 等多種安全存取方法，實現豐富的管理功能和操作。

強固耐用的設計可勝任 -40°C 至 75°C 的惡劣環境，處理最極端的應用操作，並符合 IEC61850 和 IEEE 1613 認證規範，在高電磁干擾的環境中始終保持穩定的性能，使其成為關鍵任務應用的理想選擇。

EtherWAN — "When Connectivity is Crucial."

產品亮點

+ 高頻寬和多介面配置

24 埠 Full Gigabit 全千兆高頻寬連接
4 個獨立 SFP+ 埠支援 1G/10G 光纖連接
所有連接埠均採雙速率設計，最高可達 10G
多種光纖/銅纜介面搭配選擇

+ 支援時間戳記

所有連接埠皆支援 IEEE 1588v2 PTP 協議
支援 One-Step & Two-Step 對等延遲量測機制
可作為透明時鐘的網橋裝置運行

+ 適用於不通風和惡劣環境的強固設計

-40 至 75°C (-40至167°F) 寬工作溫度範圍
操作符合 IEC60068-2-2 環境類型測試
高耐溫衝擊和高雜訊抗噪
通過 IEC 61850-3 和 IEEE 1613 標準測試

+ 靈活的機櫃安裝

雙側 LED 面板設計，支援前後安裝
簡潔易讀的連結狀態顯示
方便的佈線管理

+ 第三層網管功能

靜態路由、RIP v1/v2，和 OSFP
VRRP 虛擬路由器備援協定
廣播流量減輕

+ 服務支援

提供技術支援
免費韌體升級和通知
有限終身保固

影片介紹

產品特色

+ Interface

CLI, Telnet, Web GUI

+ Management

Firmware Upgrade
Configuration Backup
DHCP Server/Client
RMON (Remote Monitoring)
Port Mirroring
NTP (Network Time Protocol) Synchronization
LLDP (Link Layer Discovery Protocol)
IPv4/IPv6
SNMP v1/v2c/v3
Modbus

+ Layer 2 Features

Auto-negotiation for Port Speed and Duplex
Flow Control
IEEE 802.3x full duplex mode
Back-pressure half duplex mode

Redundant Protocols

IEEE 802.1D STP
IEEE 802.1w RSTP
IEEE 802.1s MSTP
EtherWAN's Alpha-Ring network fault recovery

VLANs

IEEE 802.1Q Tag VLANs
GVRP
GMRP

Link Aggregation

Static Trunk (4 groups)
IEEE 802.3ad LACP

IGMP Snooping v1/v2/v3

+ Security

- MAC Address Filtering
- Enable/Disable Port
- Storm Control
- System Logging
- IEEE 802.1x LAN Access Control
- Remote Authentication through RADIUS and TACACS+
- Complex Password Support
- Multi-user Login and Privileged Access Management
- SSH for CLI and Telnet Security
- SSL and HTTPS for Web Security
- ACL (Access Control List, up to 4096 Entries)

+ Quality of Service (QoS)

- Priority Queues: 8 Queues Per Port
- Traffic Classification Based on IEEE 802.1p CoS (Cost of Service), DSCP (Differentiated Services Code Point), WRR (Weighted Round Robin), and Strict Mode
- Rate Limiting (Ingress/Egress)

+ Layer 3 Features

IP Packet Routing

- Maximum number of routes in hardware: 64 entries
- Static Routing
- RIP v1/v2
- OSPF v2

Routing Redundancy

- VRRPv2

+ Software Properties and Performance

Switching Fabric

- 128Gbps

Forwarding Rate

- 95.23Mpps

Max VLANs

- 256 (4096 VID)

Jumbo Frame Size

- 9KB

MAC Table Size

- 16K

Packet Buffer Memory

- 12M bits

產品規格

+ Interface

Ethernet

10/100/1000BASE-T(X): 0, 8, 16 or 24 ports

100/1000BASE SFP: 0, 8, 16 or 24 ports

1G/10G SFP+: 4 ports

Console

1 x RJ45

Digital Input

2 x Digital Input

Wet Contact: 0-3V for State 0; 13-30V for State 1;
Max input current: 8mA

Dry Contact: Logic Level 1–Close to GND; Logic
Level 0-Open

Alarm Contact

2 x Relay output, current capacity
0.6A/30VDC

LED Indicators

Per Unit: Power 1, (Single Power models)

Power 2 (Dual Power models) (Green)

Per Port: Link/Activity (Green)

Per Port: Alarm (Red)

+ Physical

Casing Material

Metal

IP Rating

IP40

Dimensions

442 x 325 x 44mm (W x D x H)

17.4" x 12.8" x 1.73"

Weight

4.6kg (10.14lbs) / 4.0kg (8.82lbs)

Installation Type

Rack mounting

+ Environmental

Operating Temp.

-40 to 75°C (-40 to 167°F)

(-40°C to 85°C for IEC 60068-2-2 Environmental 16
hours)

Storage Temp.

-45 to 85°C (-49 to 185°F)

Relative Humidity

5% to 95% (non-condensing)

MTBF

446,556 hours

+ Technology

Standards

IEEE 802.3 10BASE-T
IEEE 802.3u 100BASE-TX/100BASE-FX
IEEE 802.3ab 1000BASE-T
IEEE 802.3ae 10Gigabit Ethernet
IEEE 802.3ad link aggregation control
IEEE 802.3z 1000BASE-SX/1000BASE-LX
IEEE 802.3x full duplex and flow control
IEEE 802.1D STP
IEEE 802.1p QoS
IEEE 802.1Q Tag VLANs
IEEE 802.1s MSTP
IEEE 802.1w RSTP
IEEE 802.1x PNAC
IEEE 802.1ab LLDP

Forward/Filtering Rate

14,880pps for 10Mbps
148,810pps for 100Mbps
1,488,100pps for 1000Mbps
14,881,000pps for 10Gbps

Processing Type

Store-and-forward
Auto-negotiation
Half-duplex back-pressure and full-duplex flow control
Auto MDI/MDIX

System Memory

2Gb DDR3 SDRAM

Flash Storage

1Gb

+ Power

Input Dual Power

FTR: (Terminal Block)
24VDC to 48VDC (Nominal)
18 - 60VDC (Operational)

FWR: (Terminal Block)
100 - 250VDC or 100 - 240VAC (Nominal)
88 - 300VDC or 88 - 264VAC (Operational)

RCR: (AC Inlet)
100 - 240VAC

Single Power

FWS: (Terminal Block)
100 - 250VDC or 100 - 240VAC (Nominal)
88 - 300VDC or 88 - 264VAC (Operational)

+ Regulatory

ISO

Manufactured in ISO-9001 facility

EMI

FCC Part 15B Class A
VCCI Class A
EN 61000-6-4

EMS

EN 61000-6-2
EN 61000-4-2 (ESD)
EN 61000-4-3 (Radiated RFI)
EN 61000-4-4 (Burst)
EN 61000-4-5 (Surge)
EN 61000-4-6 (Induced RFI)
EN 61000-4-8 (Magnetic field)

Safety

UL 62368-1

Vibration

IEC 60068-2-6

Shock

IEC 60068-2-27

Free Fall

IEC 60068-2-31

Industrial

EN 50121-4

Power Substation

IEC 61850-3/IEEE 1613

+ Warranty

Length

Limited Lifetime

Details

www.etherwan.com/support/warranty-policy

+ What's Included

Device

Ethernet Switch

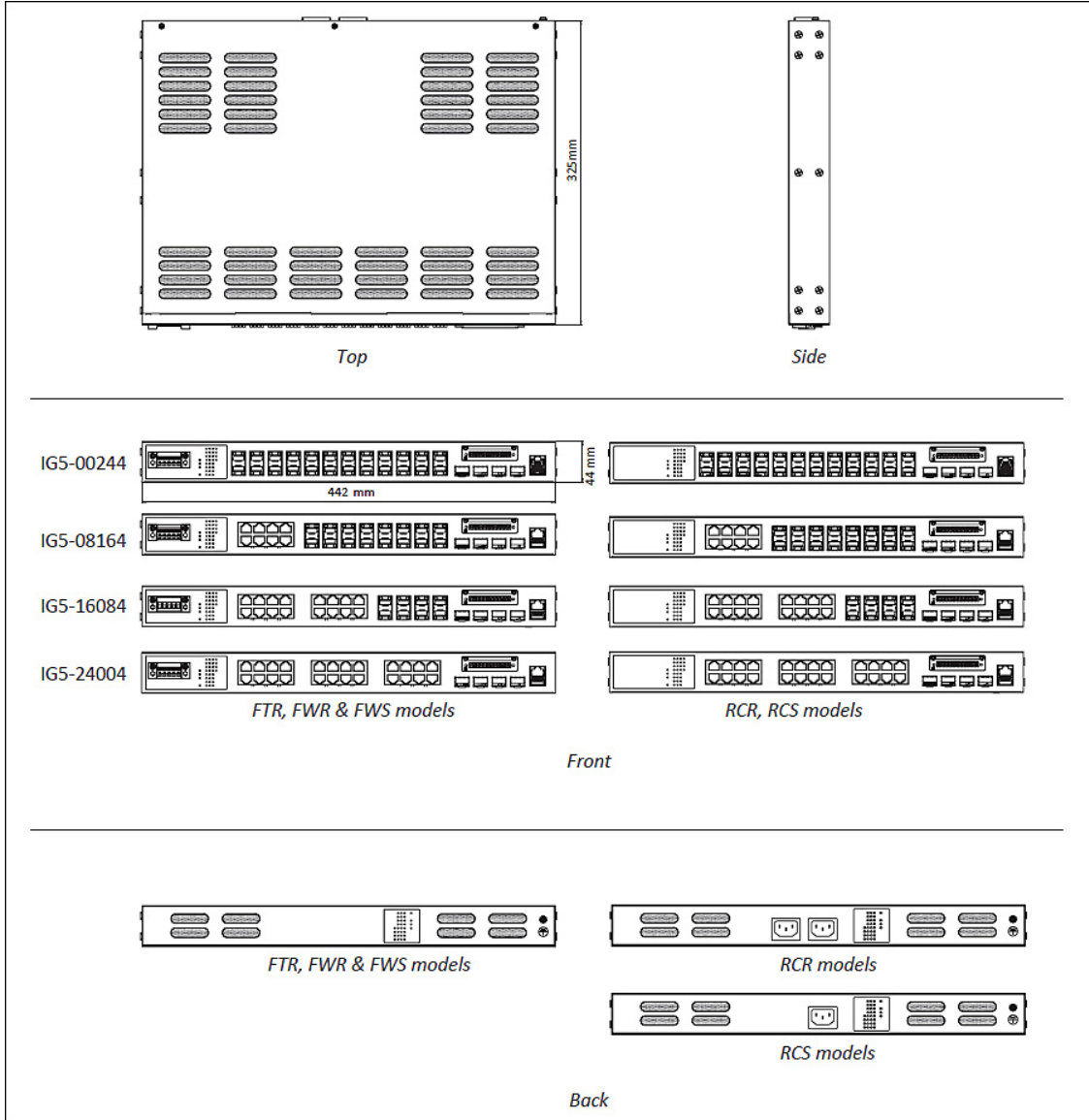
Cables

1 Console Cable

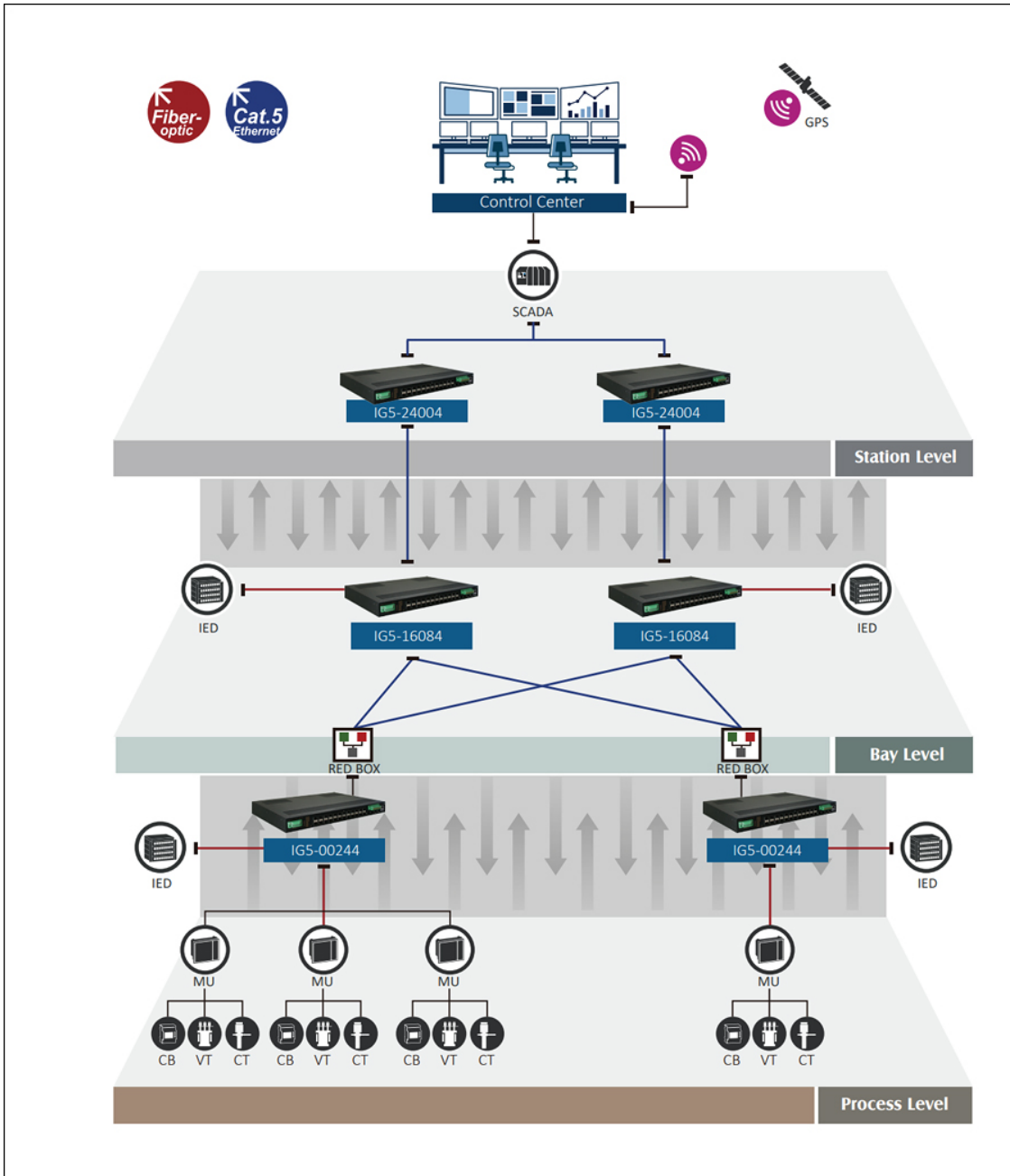
Installation

Mounting brackets, screws

產品尺寸圖

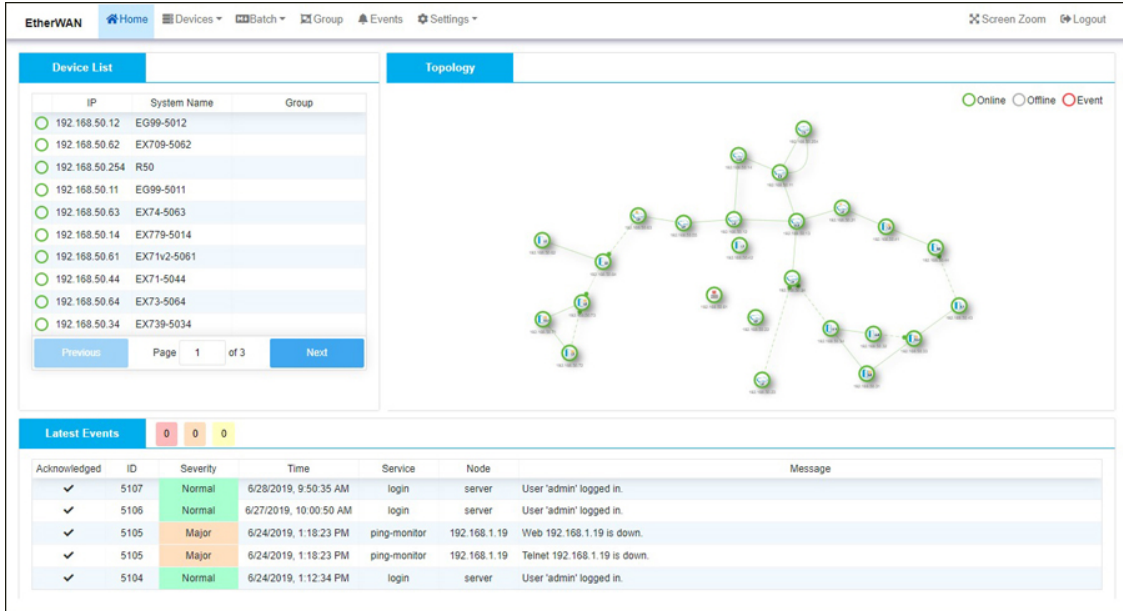


應用圖



管理軟體

Network Management [eVue™ Network Configuration and Monitoring Tool](#)
 Network Discovery [eLite™ Network Discovery and IP Configuration Tool](#)



The screenshot shows the EtherWAN management interface. It features a navigation bar at the top with options like Home, Devices, Batch, Group, Events, and Settings. The main content area is divided into two panels: 'Device List' and 'Topology'.

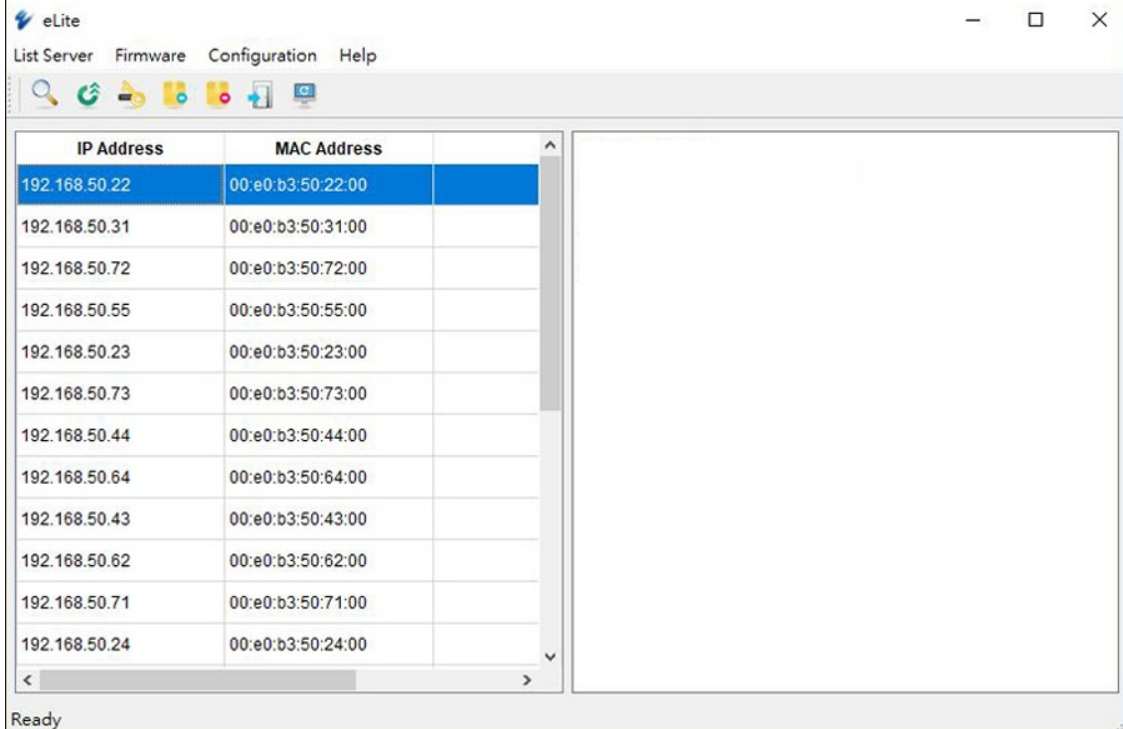
Device List:

IP	System Name	Group
192.168.50.12	EG99-5012	
192.168.50.62	EX709-5062	
192.168.50.254	R50	
192.168.50.11	EG99-5011	
192.168.50.63	EX74-5063	
192.168.50.14	EX779-5014	
192.168.50.61	EX71v2-5061	
192.168.50.44	EX71-5044	
192.168.50.64	EX73-5064	
192.168.50.34	EX739-5034	

Topology: A network diagram showing various nodes connected in a mesh-like structure. A legend indicates Online (green circle), Offline (grey circle), and Event (red circle).

Latest Events:

Acknowledged	ID	Severity	Time	Service	Node	Message
✓	5107	Normal	6/28/2019, 9:50:35 AM	login	server	User 'admin' logged in.
✓	5106	Normal	6/27/2019, 10:00:50 AM	login	server	User 'admin' logged in.
✓	5105	Major	6/24/2019, 1:18:23 PM	ping-monitor	192.168.1.19	Web 192.168.1.19 is down.
✓	5105	Major	6/24/2019, 1:18:23 PM	ping-monitor	192.168.1.19	Telnet 192.168.1.19 is down.
✓	5104	Normal	6/24/2019, 1:12:34 PM	login	server	User 'admin' logged in.



The screenshot shows the eLite network discovery tool interface. It has a menu bar with 'List Server', 'Firmware', 'Configuration', and 'Help'. Below the menu is a toolbar with various icons. The main area displays a table of discovered devices.

IP Address	MAC Address
192.168.50.22	00:e0:b3:50:22:00
192.168.50.31	00:e0:b3:50:31:00
192.168.50.72	00:e0:b3:50:72:00
192.168.50.55	00:e0:b3:50:55:00
192.168.50.23	00:e0:b3:50:23:00
192.168.50.73	00:e0:b3:50:73:00
192.168.50.44	00:e0:b3:50:44:00
192.168.50.64	00:e0:b3:50:64:00
192.168.50.43	00:e0:b3:50:43:00
192.168.50.62	00:e0:b3:50:62:00
192.168.50.71	00:e0:b3:50:71:00
192.168.50.24	00:e0:b3:50:24:00

The status bar at the bottom indicates 'Ready'.

訂購型號

+ Model

IG5-24004YYY	24 埠 10/100/1000BASE-T(X) + 4 埠 1G/10G SFP+ 網管型乙太網路交換器
IG5-16084YYY	16 埠 10/100/1000BASE-T(X) + 8 埠 100/1000BASE SFP + 4 埠 1G/10G SFP+ 網管型乙太網路交換器
IG5-08164YYY	8 埠 10/100/1000BASE-T(X) + 16 埠 100/1000BASE SFP + 4 埠 1G/10G SFP+網管型乙太網路交換器
IG5-00244YYY	24 埠 100/1000BASE SFP + 4- 埠 1G/10G SFP+ 網管型乙太網路交換器

+ Power Input & Operation Temp. (YYY)

FTR	24VDC 到 48VDC 雙電源配置 (接線端子台)，強固級別操作溫度 (-40 到 75°C)
FWR	88 到 300VDC 或 100-240VAC 雙電源配置 (接線端子台)，強固級別操作溫度 (-40 到 75°C)
RCR	100 到 240VAC 雙電源配置 (AC 電源插座)，強固級別操作溫度 (-40 到 75°C)
FWS	88 到 300VDC 或 100-240VAC 單電源配置 (接線端子台)，強固級別操作溫度 (-40 到 75°C)
RCS	100 到 240VAC 單電源配置 (AC 電源插座)，強固級別操作溫度 (-40 到 75°C)

+ 配件選購

Part Number	Speed Info	Mode	Distance	Operating Temperature	Wavelength	DDM
EX-0155NSP-MB2L-A	100Mbps	Multi	2km	-40 to 85°C	1310nm	-
SFPMIS20M	100Mbps	Single	20km	-40 to 85°C	1310nm	✓
SFPGIM5AM	1000Mbps	Multi	275m/550m	-40 to 85°C	850nm	✓
SFPGIM02M	1000Mbps	Multi	2km	-40 to 85°C	1310nm	✓
SFPGIS10M	1000Mbps	Single	10km	-40 to 85°C	1310nm	✓
SFPTIM3AM	10Gbps	Multi	300m	-40 to 85°C	850nm	✓
SFPTIM3AM	10Gbps	Single	10km	-40 to 85°C	1310nm	✓

+ 更多配件選擇, 請參照下列網址:

強固級 100BASE SFP 模組	www.etherwan.com/tw/products/sfp-fiber-transceiver
強固級 Gigabit SFP 模組	www.etherwan.com/tw/products/sfp-fiber-transceiver
強固級 10G SFP+ 模組	www.etherwan.com/tw/products/sfp-fiber-transceiver
DIN-Rail 導軌式電源供應器	www.etherwan.com/tw/products/din-rail-power-supply



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