

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

什麼是第三層交換器 (Layer 3 Switch) ?

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。

IEC 62443-4-2 認證 — 為關鍵工業與基礎設施應用打造更強大的資安韌性與營運可靠性。

益網科技 - “ 連結，制勝的關鍵 ”

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 OSPF
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

軟體功能

+ 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

+ 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)
IPSG (IP Source guard)
DAI (Dynamic ARP Inspection)
DHCP Snooping

+ 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

+ Layer 3 Features

IP Packet Routing

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

Routing Redundancy

VRRPv2

+ 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)

+ 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

硬體規格

+ 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

+ Regulatory

ISO

Manufactured in ISO-9001 facility

EMI

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

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

Cybersecurity

IEC 62443-4-1
IEC 62443-4-2

Vibration

IEC 60068-2-6

Shock

IEC 60068-2-27

Free Fall

IEC 60068-2-31

Traffic

NEMA TS2

Railway

EN 50121-4

Power Substation

IEC 61850-3/IEEE 1613/IEC 60255-27
IEC 61850-90-4

+ 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)

RCS: (AC Inlet)

100 - 240VAC

Power Consumption

50W max.

Protection

Reverse Polarity Protection

+ 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

Documentation

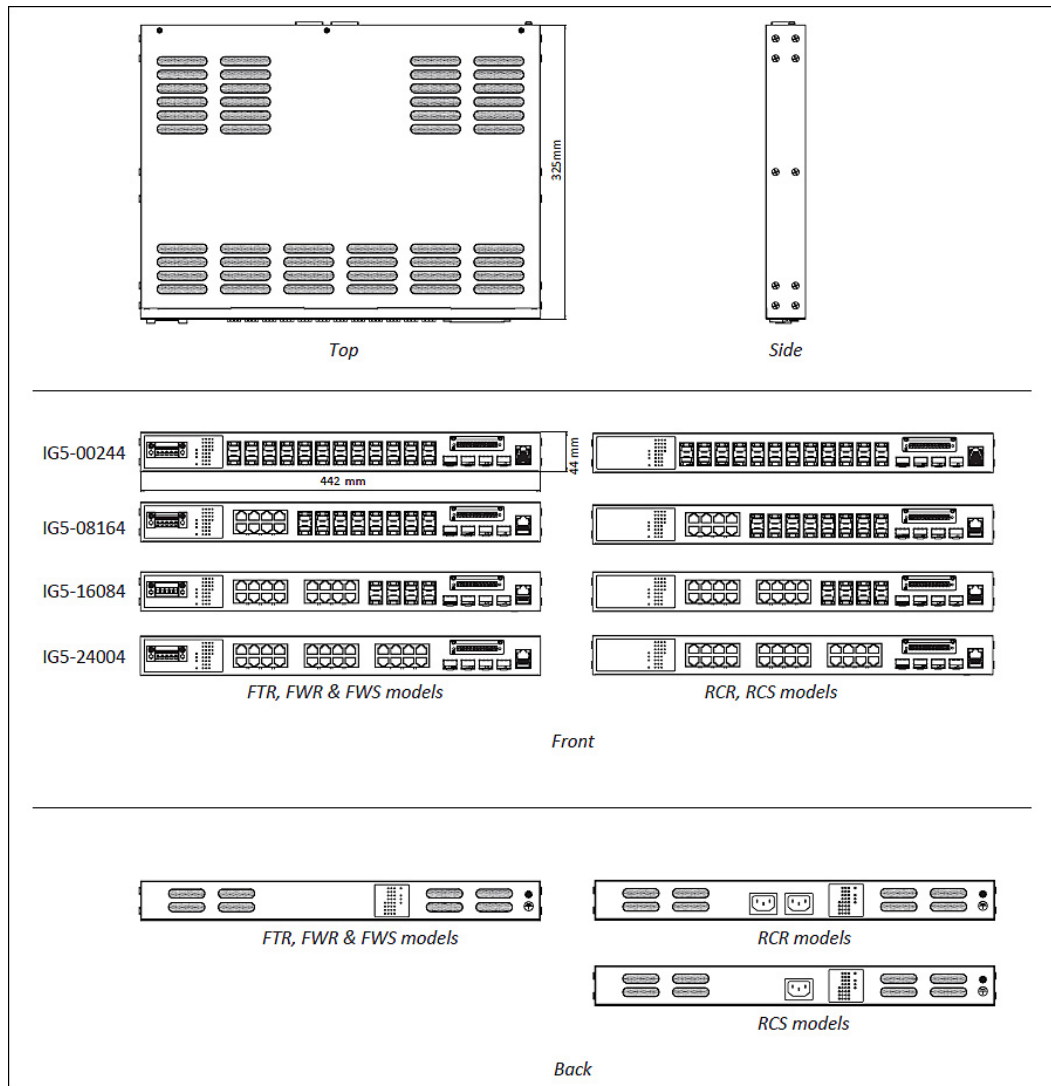
Quick Install Guide

Power

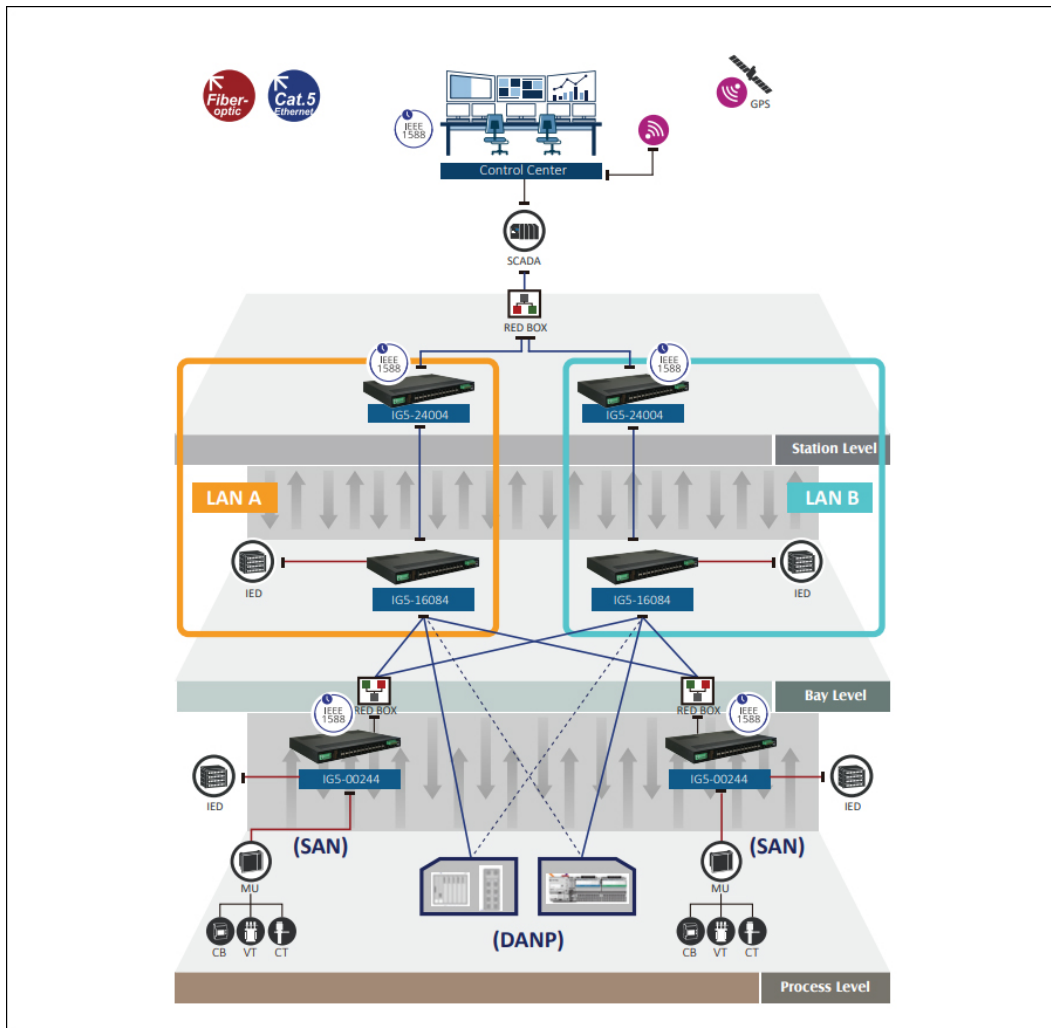
1 AC Power Cord (RCS models)

2 AC Power Cord (RCR models)

產品尺寸圖



應用圖



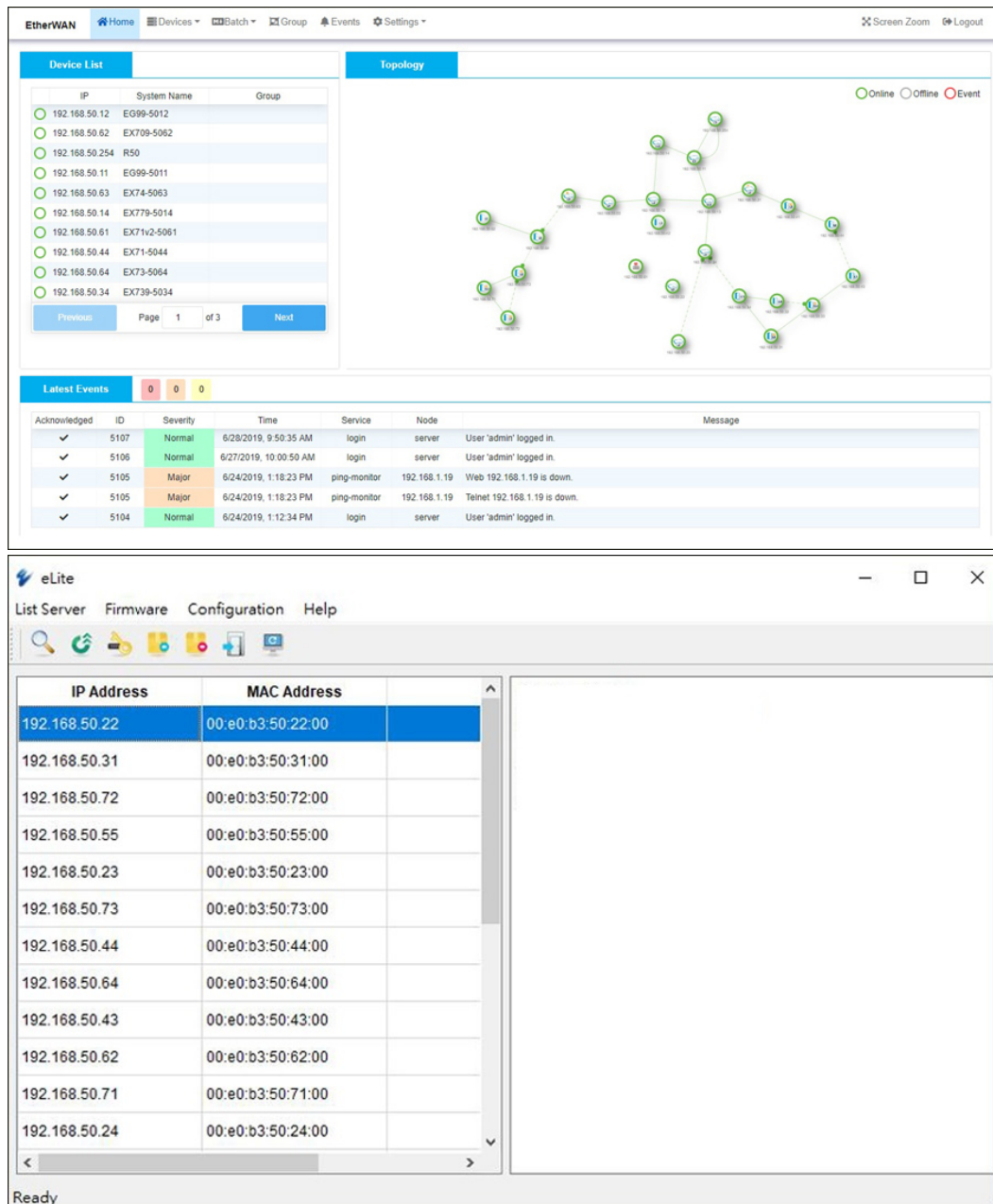
軟體工具

網路管理

[eVue™ 網絡配置和監控工具](#)

網路探索

[eLite™ 網絡偵測和IP 配置工具](#)



The screenshot displays the EtherWAN eLite web interface, which is divided into two main sections: the top section for network management and the bottom section for IP/MAC address management.

Top Section: Network Management

- Device List:** A table listing network devices with columns for IP, System Name, and Group. The list includes devices like EG99-5012, EX709-5062, R50, and EX74-5063.
- Topology:** A visual network diagram showing the connectivity between various devices, represented by icons and lines.
- Latest Events:** A table showing recent system events, including login attempts, ping monitor results, and status changes. The table has columns for Acknowledged, ID, Severity, Time, Service, Node, and Message.

Bottom Section: eLite IP/MAC Management

- Navigation:** A menu bar with options: List Server, Firmware, Configuration, and Help.
- Table:** A table with two columns: IP Address and MAC Address. It lists several IP addresses (e.g., 192.168.50.22, 192.168.50.31) and their corresponding MAC addresses (e.g., 00:e0:b3:50:22:00).
- Status:** A status bar at the bottom indicates the application is "Ready".

訂購型號

+ Model

				
	IG5-24004YYY	IG5-08164YYY	IG5-16084YYY	IG5-00244YYY
10/100/1000BASE TX	24	8	16	-
100/1000 BASE SFP	-	16	8	24
1G/2.5G/10G SFP+	4			
Network management	L3 Routing			
Digital Input / Output	2 sets			
	訂購諮詢	訂購諮詢	訂購諮詢	訂購諮詢

+ 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	✓
SFPTIS10M	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

