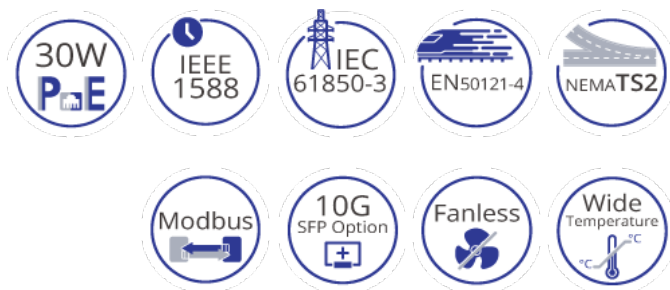


IG5 SV 系列

IEC 61850-3/IEEE 1613 強固級網管型 24 埠 Gigabit (8*PoE) + 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 SV 強固級網管型交換器在原有 IG5 Rack 系列高可靠性基礎上進一步升級。更好的性能表現承襲原有豐富的連接埠組合, 並在 16 埠 和 8 埠 的銅纜組合中新增兩款具有 8 個 IEEE 802.3af/at PoE 連接埠的新型號。提供每埠高達 30W 的功率輸出, 搭配智慧控制器讓 90W 的總功率預算做最有效即時的分配。特別適合需要高電磁安全防護和整合網路供電配置的應用。

24 ~ 48VDC 的輸入電壓, 強固的 IP40 金屬機殼防護搭配更緊湊的機身尺寸, 為深度有限的空間安裝提供了更好的靈活性。豐富的第二層管理功能, 並支持第三層路由設置, 滿足大型網路環境的高效數據傳輸。內建數位 I/O 與繼電器控制埠, 可擴充偵測、告警系統, 實現多元彈性的網路建構。

所有型號均符合 IEC 61850-90-4 GOOSE 訊息傳輸要求和 IEEE 1588v2 精確時間協定 (PTP) 進行網路時間同步, 確保電力系統的快速反應和高可靠性。IG5 SV 具有 10G 頻寬、IEEE 802.3at type 2 相容性, 符合 IEC 61850-3、IEEE 1613 和 IEC 60255-27 標準, 高達 5kV 的脈衝保護, 是城市基礎設施、智慧交通、工業物聯網和智慧能源管理等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
128Gbps 全雙工交換容量
內建數位 I/O 控制埠銜接偵測、告警系統

+ PoE 功能

提供 8 個 IEEE 802.3 af/at type 2 PoE 埠
每埠最大 30W 輸出, 總功率預算 90W
支援 PoE 看門狗 (PoE Watchdog) 監控功能

+ 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

+ 靈活的安裝

支援機架式和面板式安裝
整合式通訊狀態面板
便於電纜管理

+ 支援變電站通訊傳輸與時間同步

符合 IEC61850-90-4 GOOSE 與多播訊息傳輸
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
通過 IEC 60255-27 電氣保護安全測試

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:
512 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) PoE: 8 ports (PoE models)
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

Config Backup

1 x USB (Type A Connector)

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
0.5A/48VDC

LED Indicators

Per Unit: Power 1, Power 2 (Green)
Link/Activity (Green)
Per Port: Alarm (Red)
PoE Port: PoE Status (Green)

+ Physical

Casing Material

Metal

IP Rating

IP40

Dimensions

442 x 267 x 44mm (W x D x H)
17.4" x 10.5" x 1.73"

Weight

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

Installation Type

Rack mounting / Panel 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

790,907 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 802.1D 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

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/IEC 60255-27
IEC 61850-90-4

+ Power

Input

24VDC to 48VDC (Nominal)

18 - 60VDC (Operational)

Redundant Power Inputs (Terminal Block)

Power Consumption

50W max. (Without PoE)

Protection

Reverse Polarity Protection

Overload Current Protection

PoE (Available for PoE models)

PoE Modes

- 802.3af/at Mode A: Pins 1/2(-), 3/6(+)

Power Output

- Ports 1-8: 15W Up to 30W/port

- Total Power Budget: 90W

Compliance

- IEEE 802.3af type 1, ≤15.4W PD devices

- IEEE 802.3at type 2, 30W PD devices.

+ Warranty

Length

Limited Lifetime

Details

www.etherwan.com/support/warranty-policy

+ What's Included

Device

Ethernet Switch

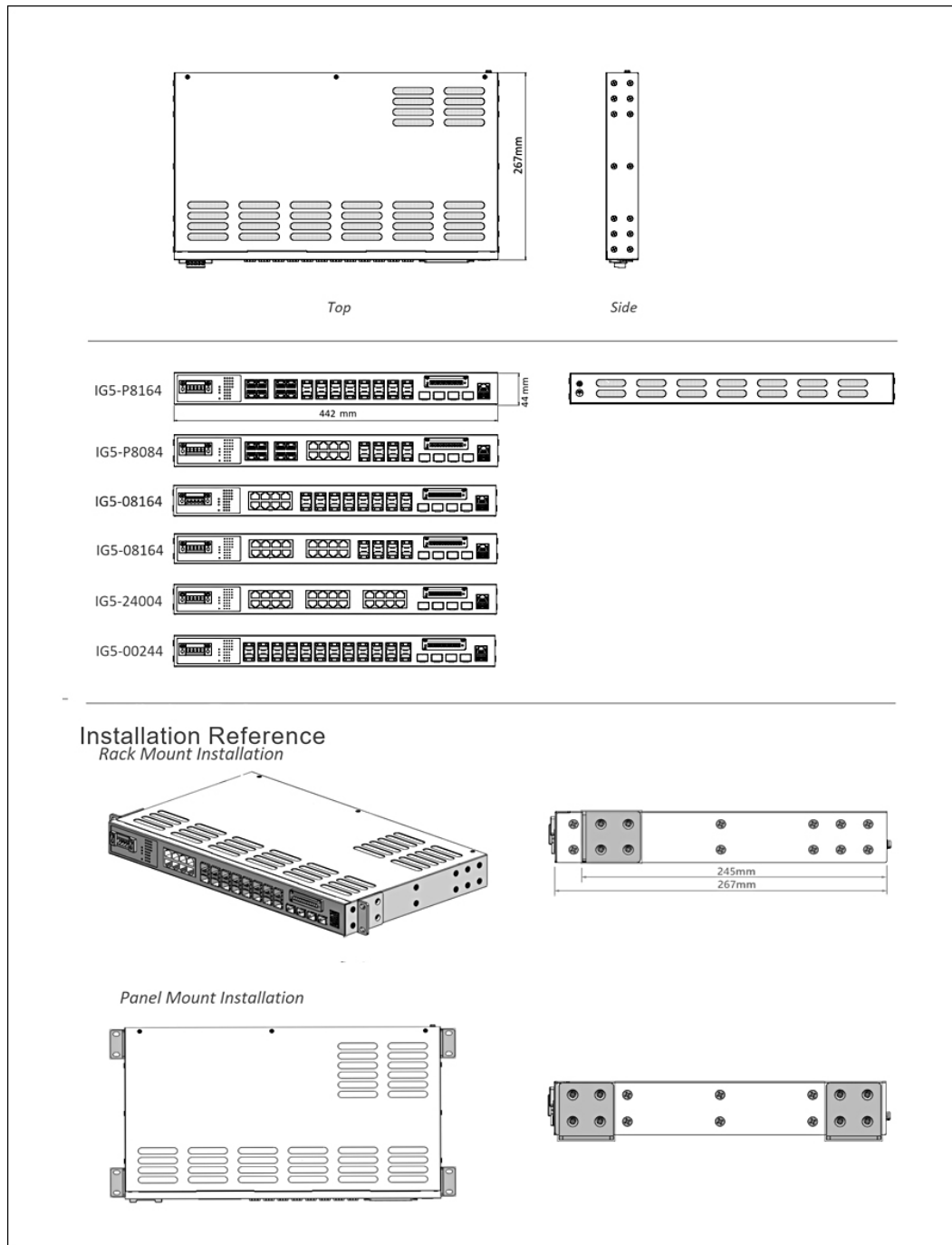
Cables

1 Console Cable

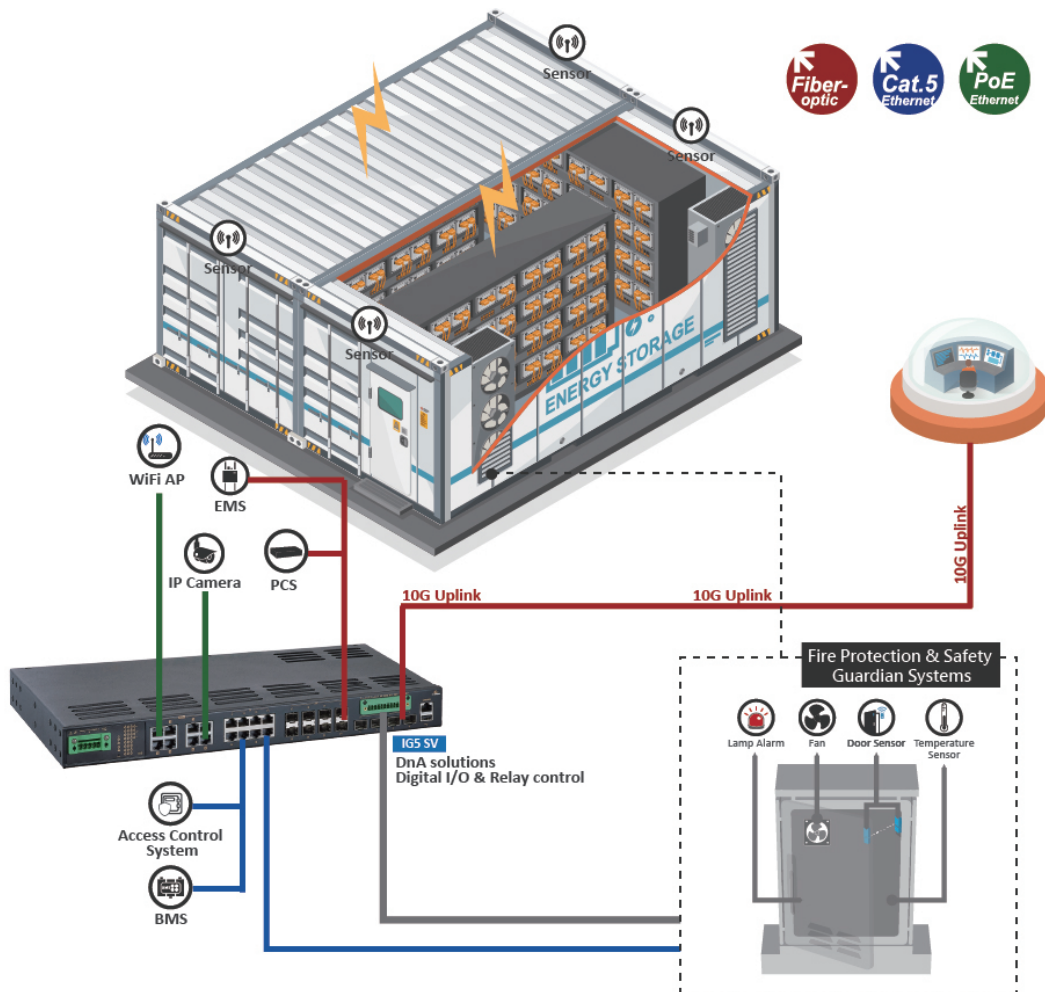
Installation

Mounting brackets, screws

產品尺寸圖



應用範例



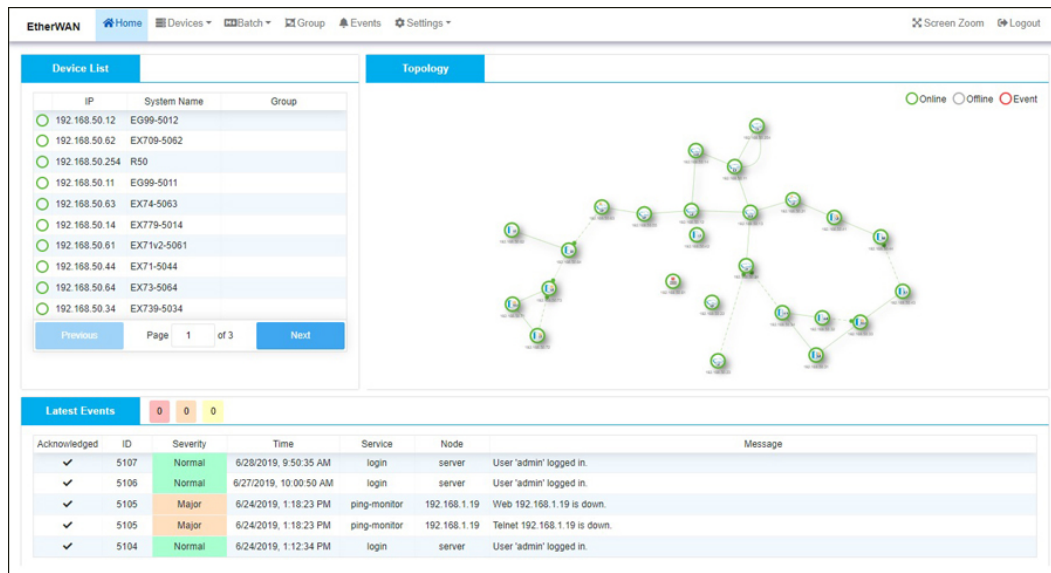
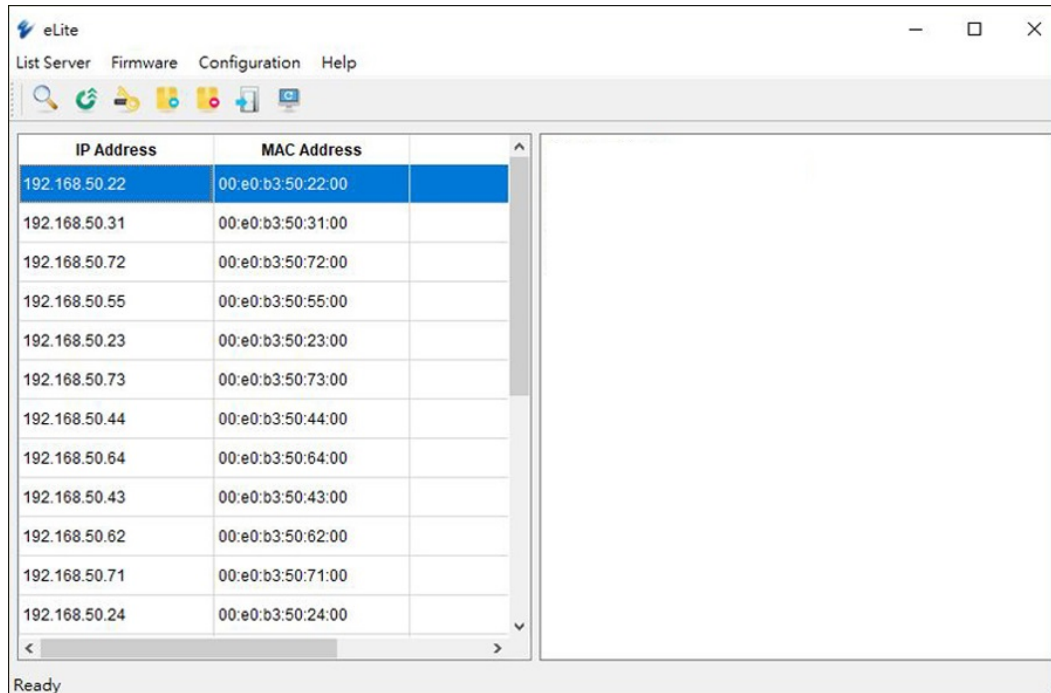
軟體工具

網路管理

[eVue™ 網路配置和監控工具](#)

網路探索

[eLite™ 網路偵測和IP 配置工具](#)

eLite

List Server Firmware Configuration Help

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

Ready

訂購型號

+ PoE 機種

IG5-P8084FTE	8 埠 10/100/1000BASE-T(X) PoE + 8 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-P8164FTE	8 埠 10/100/1000BASE-T(X) PoE + 16 埠 100/1000BASE SFP + 4 埠 1G/10G SFP+ 網管型乙太網路交換器

+ Non-PoE 機種

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

+ 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:

Hardened 100BASE SFP Modules	www.etherwan.com/tw/products/sfp-fiber-transceiver
Hardened Gigabit SFP Modules	www.etherwan.com/tw/products/sfp-fiber-transceiver
Hardened 10G SFP+ Modules	www.etherwan.com/tw/products/sfp-fiber-transceiver
DIN-Rail Power Supplies	www.etherwan.com/tw/products/din-rail-power-supply

