

## EX78000 系列

強固級網管型 4 - 10 埠 10/100BASE (8 x PoE) + 2 埠 Gigabit 乙太網路交換器



## 產品亮點

### + Hardened-Grade for Non-Ventilated & Harsh Environments

Wide operating temperature range -40 to 75°C (-40 to 167°F)  
Fanless operation  
High impact, thermal shock, and electrical noise resistance

### + PoE Features

Up to 60W/port with 240W total power budget  
Long distance PoE up to 250m (820ft)  
PoE watchdog monitors status of connected PoE devices

### + Management/Security Features

Port control  
802.1x port-based network access control and remote authentication through RADIUS  
Configure and monitor with eVue™ and eLite™

### + Support

Complimentary Technical Support  
Free Firmware Upgrades  
Limited Lifetime Warranty

## 產品介紹

EX78000 系列為強固等級網管型乙太網路交換器，產品配備 8 個 10/100BASE PoE 連接埠加 2 埠 100BASE 及 2 個 Gigabit 光纖埠，可彈性搭配多種介面組合: SX/LX/BX/WDM 及 SFP 插槽。Ultra PoE 網路埠，每埠最高可支援 60W，總供電瓦數為 240W，可廣泛應用於許多終端設備，例如 PTZ 球型攝影機、無線基地台及軌旁通訊設備等。

支援標準備援通訊協定 STP/RSTP/MSTP，並支援益網獨家技術 Alpha-Ring 環狀網路備援機制，可在網路發生斷線時迅速啟動備援機制，可在小於 15 毫秒內快速恢復連線通訊。完整的管理功能，包含 IPV4/IPV6 協定, port security, IGMP snooping, port-based VLANs, GARP 協定, 和 link aggregation；使用者可透過網頁瀏覽、Telnet、SSH、SNMP、TFTP 和 RS-232 Console 管理介面，可使嚴苛複雜的專案規劃事半功倍。

EX78000 系列專為嚴峻戶外環境設計打造，工業等級設計，可承受強力的落摔衝擊、防震動及抗電磁波干擾，更可在 -40 到 75°C 寬溫環境下穩定運作，於嚴峻的專案規劃佈局中扮演致勝的關鍵角色。

EtherWAN — "When Connectivity is Crucial."

## 產品特色

### + Interface

CLI, Telnet, Web Browser  
SNMP v1/v2c/v3



## Management

Firmware and configuration upgrade and backup via TFTP  
Supports DHCP Server/Client  
RMON (Remote Monitoring): group 1, 2, 3, 9  
Port Mirroring: TX/RX and both  
NTP (Network Time Protocol) synchronization  
IEEE 802.1ab LLDP (Link Layer Discovery Protocol)  
IPv4/IPv6

## + Security

MAC Address Filtering  
Enable/Disable port  
Storm control (Broadcast and multicast types)  
IEEE 802.1x LAN Access control  
Remote authentication through RADIUS and TACACS+  
Multi-user login and privileged access management  
SSH for CLI and Telnet security  
SSL for web security  
System log (Remote/Local)  
ACL

## + Quality of Service (QoS)

Priority Queues: 4 queues per port  
Traffic classification based on IEEE 802.1p CoS, DSCP, WRR and strict mode  
Rate Limiting (Ingress/Egress)

## + Layer 2 Features

Auto-negotiation for port speed and duplex mode  
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 (<15ms)

### VLANs

IEEE 802.1Q Tag VLANs (128 groups, 4096 VID)  
GVRP  
GMRP

### Link Aggregation

Static Trunk (2 groups, support MAC base)  
IEEE 802.3ad LACP

IGMP Snooping v1/v2/v3

## 產品規格

## + Interface

Ethernet  
4 or 8 x 10/100BASE-T(X) (PoE)  
0, 2 or 4 x 100BASE FX  
2 x 100/1000BASE SFP Slot  
2 x Gigabit

Console  
1 x DB9 RS-232

Alarm Contact  
1 x Relay output, current capacity 0.5A/48VDC

LED Indicators  
Per Unit: Power 1, Power 2, Alarm  
Per Port: Link/Activity (Green)  
Per PoE Port: (Orange)

## + Technology

Standards  
IEEE 802.3 10BASE-T  
IEEE 802.3u 100BASE-TX/100BASE-FX  
IEEE 802.3ab 1000BASE-T  
IEEE 802.3z 1000BASE-SX/1000BASE-LX  
IEEE 802.3x Full duplex and flow control

IEEE 802.1p QoS  
IEEE 802.1Q Tag VLANs  
IEEE 802.1w RSTP  
IEEE 802.1x PNAC  
IEEE 802.3af/at Power over Ethernet

Forward/Filtering Rate  
14,880pps for 10Mbps  
148,810pps for 100Mbps  
1,488,100pps for 1000Mbps

Packet Buffer Memory  
12M bits

Processing Type  
Store-and-Forward  
Auto-negotiation  
Half-duplex back-pressure and IEEE 802.3x Full-duplex flow control  
Auto MDI/MDIX

Address Table Size  
16K MAC Addresses

## + Power

Input  
52-57VDC Redundant (Terminal block)

Power Consumption  
10.4W Max (without PoE)

Power Power Budget  
240W Max.

PoE Technology  
Alternative A & B  
Pins 1/2(+), 3/6(-), Pins 7/8(-), 4/5(+)

Power Power Output  
Port 1 to 8 support PoE+ (15.4W/30W/60W)  
IEEE 802.3af: up to 15.4W/port, 47-57VDC  
IEEE 802.3at: up to 30W/port, 52-57VDC;  
60W/port, 52-57VDC

Protection  
Reverse Polarity Protection

## + Physical

Casing Material  
Metal

IP Rating  
IP30

Dimensions  
71.4 x 140 x 170mm (W x D x H)  
2.85" x 5.6" x 6.8"

Weight  
1.7kg (3.74lbs)

Installation Type  
DIN-rail mounting

## + Environmental

Operating Temp.  
-40 to 75°C (-40 to 167°F)  
Tested @ -40 to 85°C (-40 to 185°F)

Storage Temp.  
-45 to 85°C (-49 to 185°F)

Relative Humidity  
5% to 95% (non-condensing)

## + 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 61010

Vibration  
IEC 60068-2-6 Fc

Shock  
IEC 60068-2-27 Ea

Free Fall  
FED STD 101C Method 5007.1

Industrial Compliance  
NEMA TS2

## + Warranty

Length  
Limited Lifetime

Details  
[www.etherwan.com/support/warranty-policy](http://www.etherwan.com/support/warranty-policy)

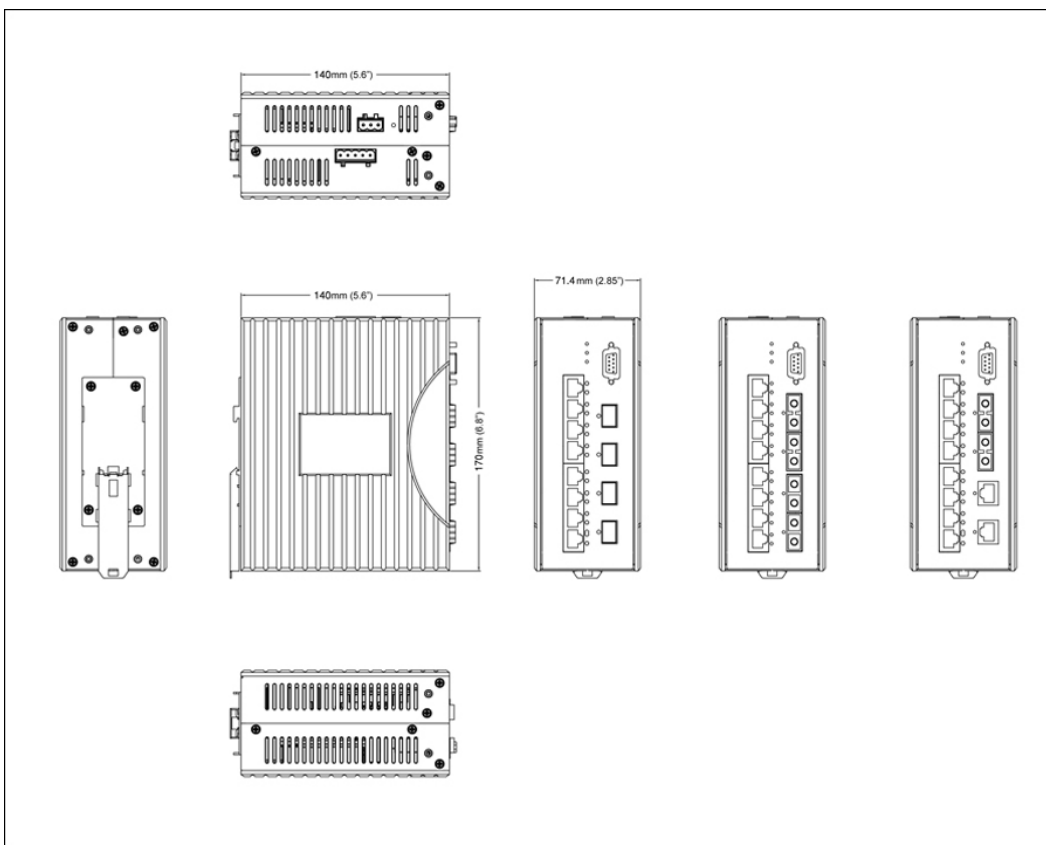
## + What's Included

Device  
Ethernet Switch

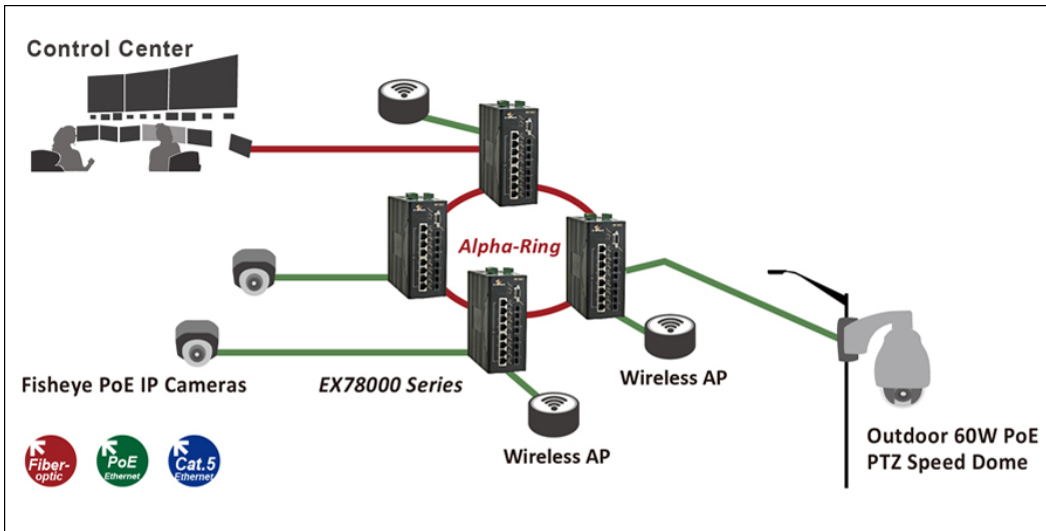
Cables  
1 Console Cable

Documentation  
Quick Install Guide

## 產品尺寸圖

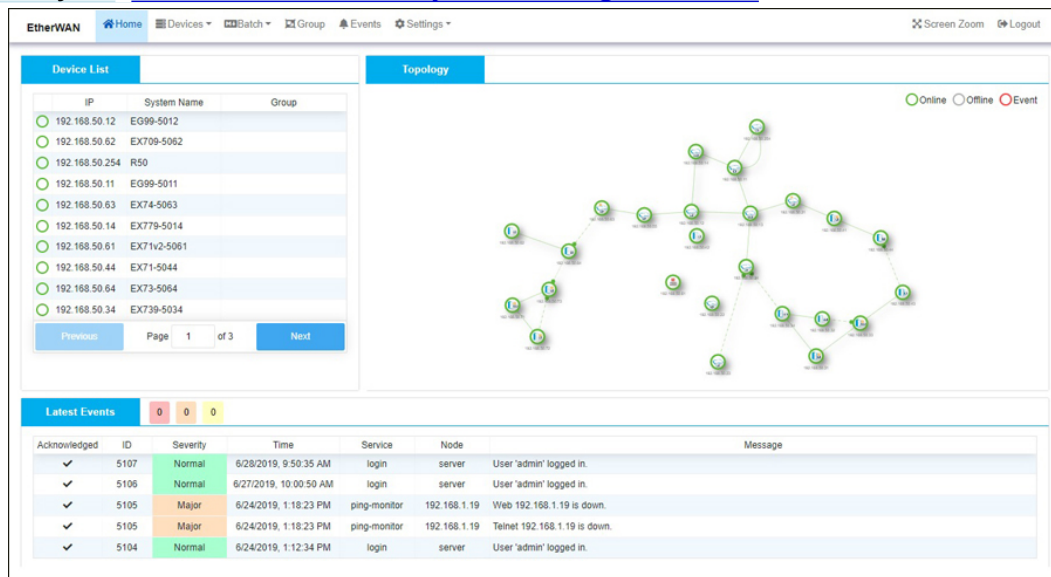


## 產品應用圖



## 管理軟體

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



**Device List**

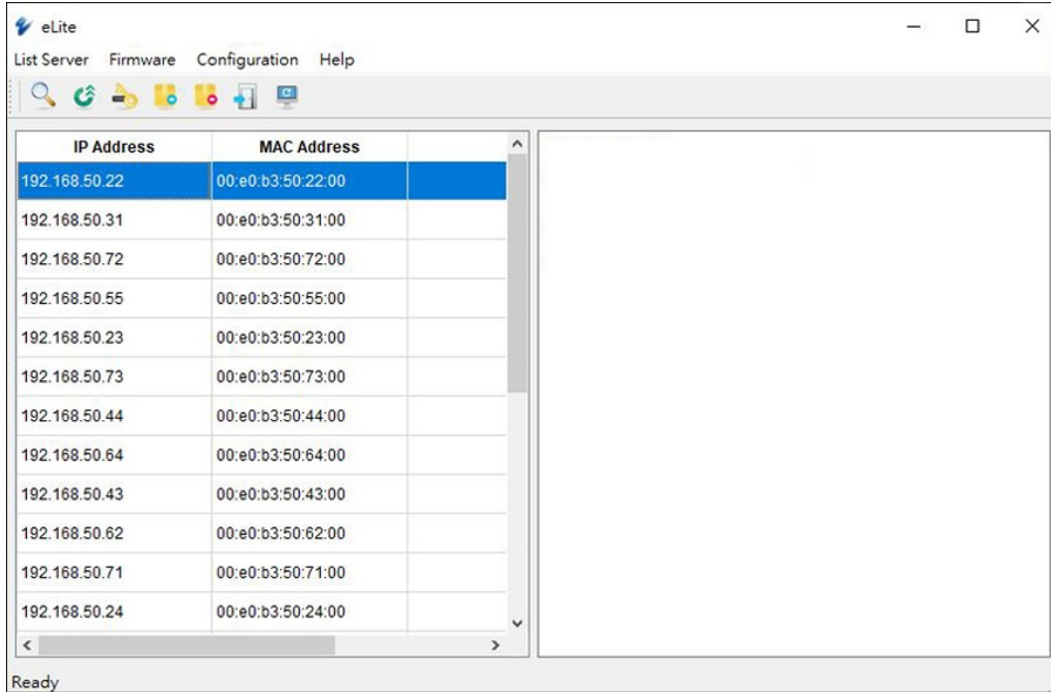
| IP             | System Name | Group |
|----------------|-------------|-------|
| 192.168.50.12  | EG99-5012   |       |
| 192.168.50.62  | EX709-5062  |       |
| 192.168.50.254 | R50         |       |
| 192.168.50.11  | EG99-5011   |       |
| 192.168.50.63  | EX74-5063   |       |
| 192.168.50.14  | 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**

Legend: ● Online ○ Offline ○ Event

**Latest Events** 0 0 0

| 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 | Teinet 192.168.1.19 is down. |
| ✓            | 5104 | Normal   | 6/24/2019, 1:12:34 PM  | login        | server       | User 'admin' logged in.      |



| 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 |

## 訂購型號

### + Model

- EX78402-0YBT 4-port 10/100BASE-TX PoE + 2-port Gigabit
- EX78802-0YBT 8-port 10/100BASE-TX PoE + 2-port Gigabit
- EX78822-XZBT 8-port 10/100BASE-TX PoE + 2-port 100BASE-FX +2-port Gigabit
- EX78822-VVBT 8-port 10/100BASE-TX PoE + 2-port 100BASE-SFP +2-port 100/1000BASE-SFP

\* DIN-Rail mounting kit included.

### + 100FX Fiber Options (X)

- 1 Multi Mode (SC) - 2Km
- 2 Multi Mode (ST) - 2Km
- A Single Mode (SC) - 20Km

\* More 100FX Fiber options also available upon request.

### + Gigabit Port Options (Y)

- 1 10/100/1000BASE-TX
- 3 1000BASE-SX (SC) - 550m
- 4 1000BASE-SX (SC) - 2Km
- 5 1000BASE-SX (ST) - 550m
- A 1000BASE-LX (SC) - 10Km
- R 1000BASE-BX (SC) WDM-TX: 1310nm/RX: 1550nm-20Km
- S 1000BASE-BX (SC) WDM-TX: 1550nm/RX: 1310nm-20Km
- V Support 2-port 100/1000BASE SFP (DDM)

\* More Gigabit options also available upon request.

### + Gigabit Port Options (Z)

- 1 10/100/1000BASE-TX
- 3 1000BASE-SX (SC) - 550m
- 4 1000BASE-SX (SC) - 2Km
- 5 1000BASE-SX (ST) - 550m
- A 1000BASE-LX (SC) - 10Km
- R 1000BASE-BX (SC) WDM-TX: 1310nm/RX: 1550nm-20Km

S 1000BASE-BX (SC) WDM-TX: 1550nm/RX: 1310nm-20Km

\* More Gigabit options also available upon request.

## + Accessories

|                                     |   |
|-------------------------------------|---|
| Hardened Gigabit SFP Module         | <a href="http://www.etherwan.com/products/sfp-fiber-transceiver">www.etherwan.com/products/sfp-fiber-transceiver</a>        |
| DIN-Rail Power Supplies             | <a href="http://www.etherwan.com/products/din-rail-power-supply">www.etherwan.com/products/din-rail-power-supply</a><br>(*) |
| *Recommended Power Supply<br>EB-232 | NDR-480-48 480W 48VDC DIN-Rail Power Supply<br>Configuration Backup and Restoration Tool                                    |

