

# EX78900H 系列

強固級網管型 10 - 16 埠 Gigabit PoE 乙太網路交換器



## 產品亮點

### + 高頻寬彈性配置

8 或 12 個 10/100/1000BASE-T(X) 高速連接埠  
多達 4 個 100M/1000M SFP+ 光纖上行鏈路連接埠  
全雙工運行的全容量交換

### + 適用於不通風和惡劣環境的強固等級

-40 至 75°C(-40 至 167°F)的寬工作溫度範圍  
無風扇設計  
高衝擊、耐熱和電氣干擾抵抗力

### + 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

### + PoE 乙太網供電功能

IEEE 802.3bt 支援每埠最高 90W，總輸出功率達 360W  
PoE 看門狗監控設備的連接狀態與自訂排程

### + 管理/安全功能

連接埠控制，SFTP 安全檔案傳輸協定  
以 802.1x 連接埠基礎之網路登入控制以及透過 RADIUS 的遠端身份驗證  
使用 eVue™ 和 eLite™ 設定和監控

### + 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

## 產品介紹

益網科技 EX78900H 系列是強固級網管型導軌式 PoE 太網交換機平台。配備多達 12 個 90W 功率的 Gigabit PoE 連接埠，支援 IEEE 802.3.bt 標準協議以及 4 個雙速率 Gigabit SFP 連接埠，同時支援 IEEE 1588v2 標準的精確時間通訊協定，利用網路封包及時間戳記進行網路時間同步。為城市基礎設施、交通、安全和其他領域的重要網路連結、提供靈活、高速和可靠的通訊表現。

EtherWAN — "When Connectivity is Crucial."

## 產品特色

### + Interface

CLI, Telnet, Web GUI

### + Management

SFTP (Secured FTP) support

Configuration backup / restore

DHCP Server/Client

RMON (Remote Monitoring)

Port Mirroring

NTP (Network Time Protocol)  
synchronization

PoE Watchdog

LLDP (Link Layer Discovery Protocol)

IPv4/IPv6

SNMP v1/v2c/v3

Modbus TCP

### + Security

MAC Address filtering

Enable/Disable port

Storm Control and Detection

DoS (Denial of Service) Attack

Port Security

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

TLS 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 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

VRRP

## + Software Properties and Performance

Switching Fabric

32Gbps

Forwarding Rate

23.5Mpps

**Max VLANs**

256 (4096 VID)

**Jumbo Frame Size**

9KB

**MAC Table Size**

16K

**Packet Buffer Memory**

12M bits

## 產品規格

### + Interface

#### Ethernet

8 or 12 x 10/100/1000BASE-T(X)

2 or 4 x 100/1000BASE SFP

#### 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

Per Port: Link/Activity (Green)

Per PoE Port: PoE Status (Orange)

### + Technology

#### Standards

IEEE 802.3 10BASE-T

IEEE 802.3u 100BASE-TX/100BASE-FX

IEEE 802.3ab 1000BASE-T

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  
IEEE 802.3az EEE  
IEEE 802.3bt Power over Ethernet  
IEEE 1588v2 PTP

#### **Forward/Filtering Rate**

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

#### **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**

46-57VDC Redundant (Terminal block)\*\*

\*\* 46-57VDC for IEEE 802.3af type 1, ≤15.4W  
PD devices.

52-57VDC for IEEE 802.3at/bt type 2/3, 30W,  
60W PD devices.

54-57VDC for IEEE 802.3bt, type 4, 90W PD  
devices

**Power Consumption**

20W Max (without PoE)

**PoE Power Output**

Ports 1-12: Up to 90W/port

Power Budget: 360W

**Protection**

Reverse Polarity Protection

**+ Physical****Casing Material**

Aluminum

**IP Rating**

IP30

**Dimensions**

72 x 140 x 170mm (W x D x H)

2.8" x 5.5" x 6.7"

**Weight**

1.5kg (3.3lbs)

**Installation Type**

DIN-rail mounting

**+ Environmental****Operating Temp.**

-40 to 75°C (-40 to 167°F)

**Storage Temp.**

-45 to 85°C (-49 to 185°F)

**Relative Humidity**

5% to 95% (non-condensing)

**MTBF**

1,399,701 hours

**+ Regulatory****ISO**

Manufactured in ISO-9001 facility

**EMI**

FCC Part 15B Class A

VCCI Class A

EN 61000-6-4

EN 61000-3-2

EN 61000-3-3

#### **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)

PoE Ports: line to earth 6kV Surge

EN 61000-4-6 (Induced RFI)

EN 61000-4-8 (Magnetic field)

#### **Safety**

UL 61010

#### **Traffic**

NEMA TS2

#### **Rail**

EN 50121-4

#### **Vibration**

IEC 60068-2-6

#### **Shock**

IEC 60068-2-27

#### **Free Fall**

FED STD 101C Method 5007.1

#### **Industrial**

EN 50121-4

## **+ 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

### Installation

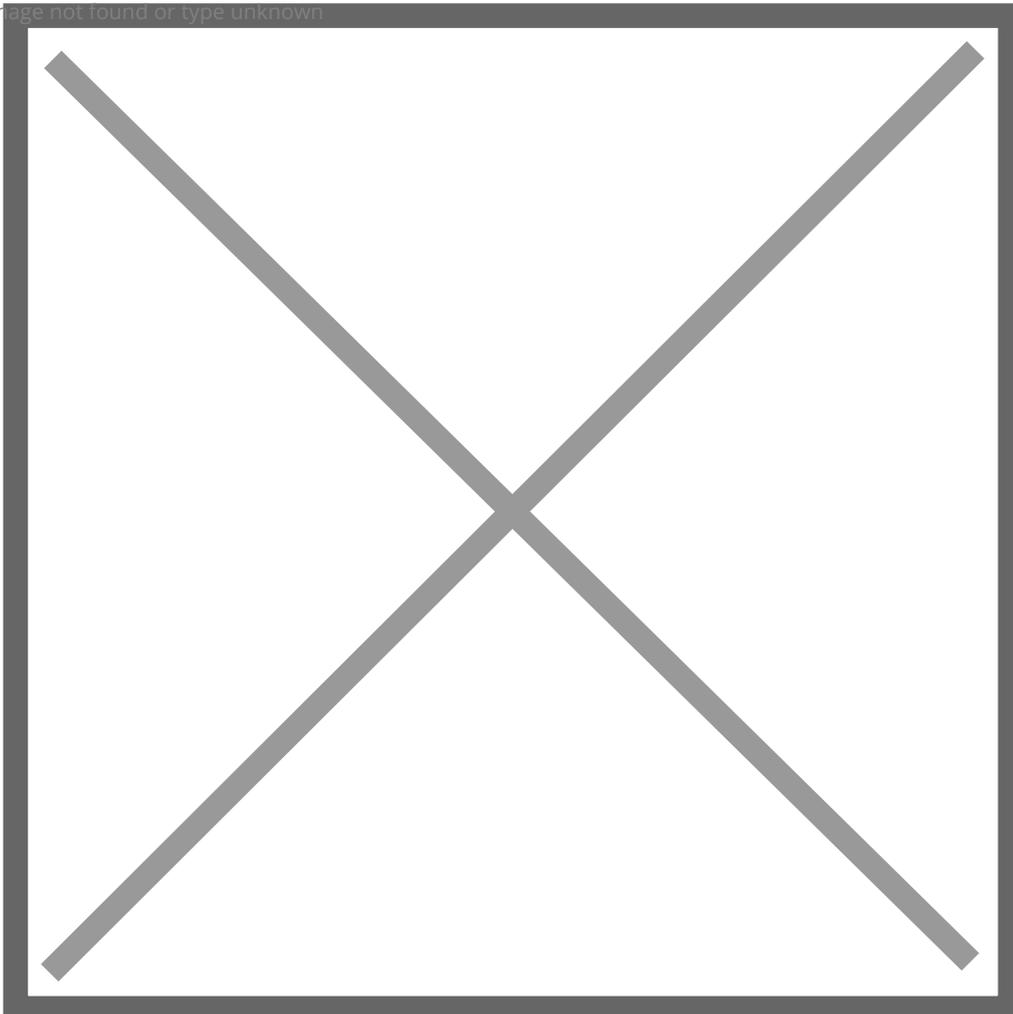
Mounting brackets, screws

### Documentation

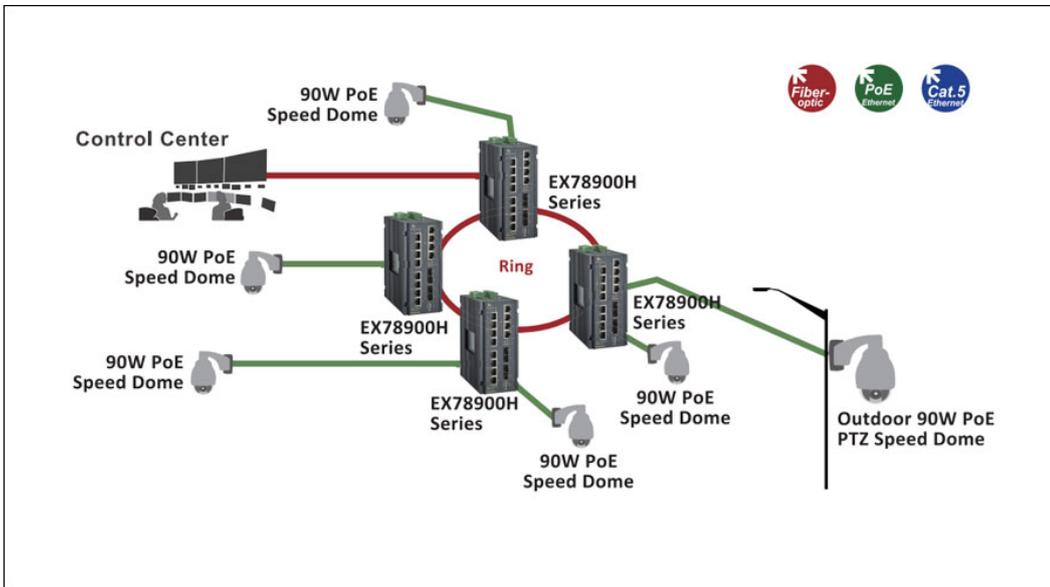
Quick Install Guide

## 產品尺寸圖

Image not found or type unknown



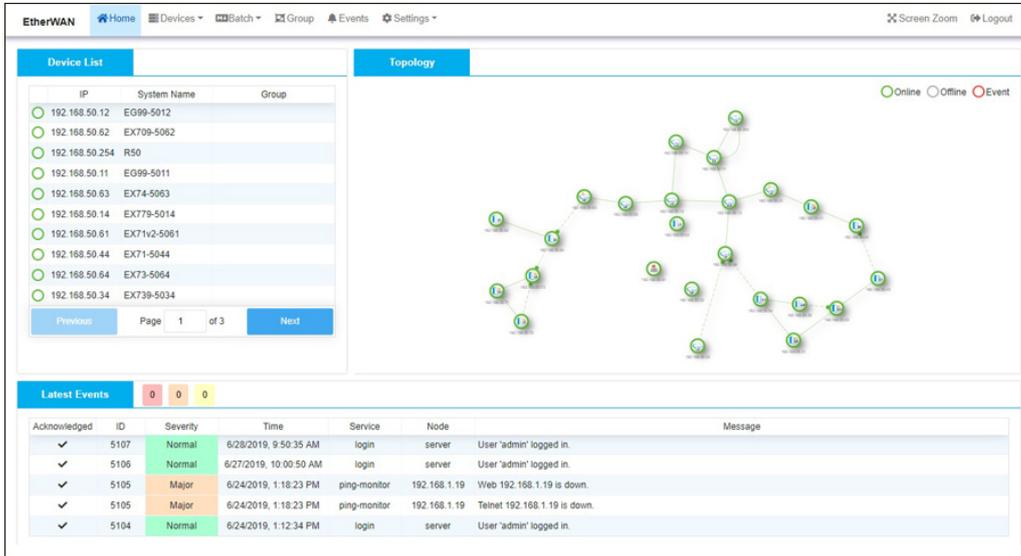
## 應用圖



# 管理軟體

網路管理 [eVue™ 網路配置和監控工具](#)

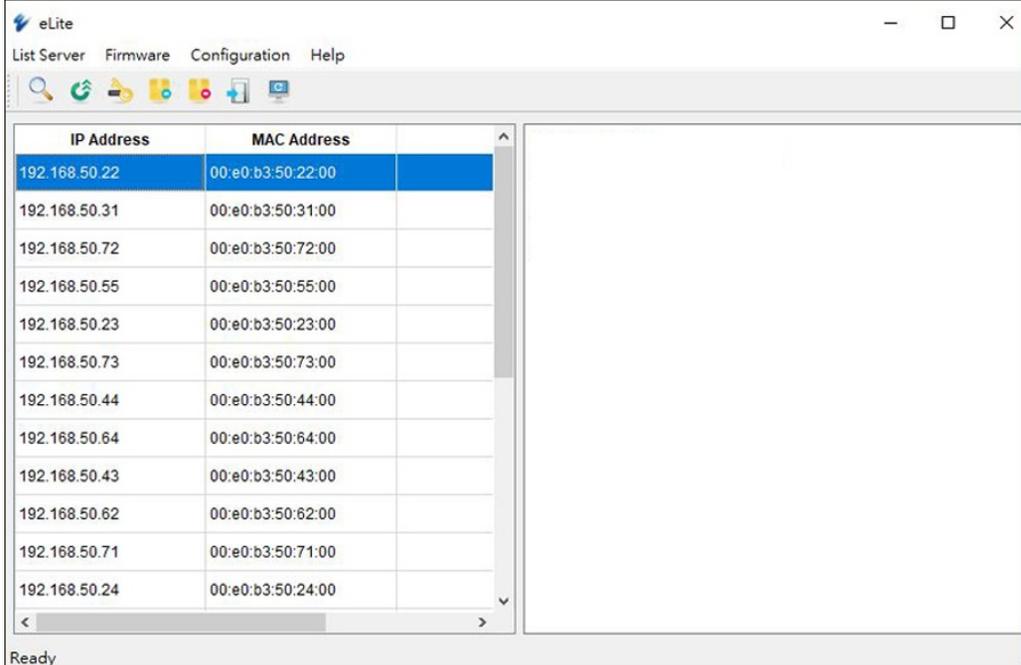
網路探索 [eLite™ 網路偵測 IP 配置工具](#)



The screenshot shows the EtherWAN management interface. On the left, there is a 'Device List' table with columns for IP, System Name, and Group. On the right, there is a 'Topology' diagram showing a network of interconnected nodes. Below these, there is a 'Latest Events' section with a table of system events.

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	

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.



The screenshot shows the eLite network discovery tool interface. It features a menu bar with 'List Server', 'Firmware', 'Configuration', and 'Help'. Below the menu is a table displaying discovered IP addresses and their corresponding MAC addresses.

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

EX78934H-0VB	12 埠 10/100/1000BASE-T(X) PoE + 4 埠 100/1000BASE SFP
EX78924H-0VB	8埠 10/100/1000BASE-T(X) PoE + 4 埠 100/1000BASE SFP
EX78922H-0VB	8埠 10/100/1000BASE-T(X) PoE + 2 埠 100/1000BASE SFP

### + Accessories

Hardened 100BASE SFP Modules	<a href="http://www.etherwan.com/products/sfp-fiber-transceiver">www.etherwan.com/products/sfp-fiber-transceiver</a>
Hardened Gigabit SFP Modules	<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> (* )
*Recommended Power Supply	NDR-480-48 480W 48VDC DIN-Rail Power Supply

