

## EX73900 系列

IEC 61850-3/IEEE 1613 Lite L3 強固級網管型 12 - 16 埠 Gigabit 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 Gigabit 光纖上行鏈路連接埠  
 全雙工運行的全容量交換

#### + 強固等級適用於不通風的惡劣環境

-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

#### + 簡配第 3 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

#### + 認證規範

IEC 61850-3 / IEEE 1613 變電站認證  
 NEMA TS2 規範  
 UL 安全認證

#### + 管理/安全功能

連接埠控制  
 支援 RADIUS 優化網路安全機制  
 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

### When should you use an Industrial Layer 3 switch?

益網科技 EX73900 系列強固級乙太網路交換器，提供高達 12 個 10/100/1000BASE-TX + 4 個 Gigabit SFP 埠。搭配益網獨家技術 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，於 15 毫秒內便可快速恢復連線。完整管理功能，包含 Port Security、IGMP Snooping、VLANs、GARP 協定、Link Aggregation 和 ACL；使用者可透過網頁瀏覽 Telnet、SSH、SNMP、RMON、TFTP 和 RS-232 Console 管理介面。

EX73900 系列專為嚴峻戶外環境設計打造，鋁軌式安裝，符合 IEC 61850 & IEEE 1613 標準，可在高 EMI 環境及 -40 到 75°C 寬溫環境下穩定運作，在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 upgrade  
Configuration backup via TFTP  
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+  
SSH for CLI and Telnet security  
SSL for web security  
System log (Remote/Local)  
ACL (Access Control List, up to 4096 entries)

### + 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

#### VLANs

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

#### Link Aggregation

Static Trunk (4 groups, support MAC base)  
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

## 產品規格

### + Interface

#### Ethernet

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

4 x 1000BASE SX/LX/SFP

#### Console

1 x DB9 RS-232

#### Alarm Contact

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

#### LED Indicators

Per Unit: Power 1, Power 2

Per Port: Link/Activity (Green)

### + 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

#### 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

12-48VDC Redundant (Terminal block)

#### Power Consumption

17.28W Max. 1.44A@12VDC, 0.72A@24VDC

#### 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  
1.4kg (3.09lbs)

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  
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)  
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**  
IEC 61850-3/IEEE 1613  
NEMA TS2

## + Warranty

**Length**  
Limited Lifetime

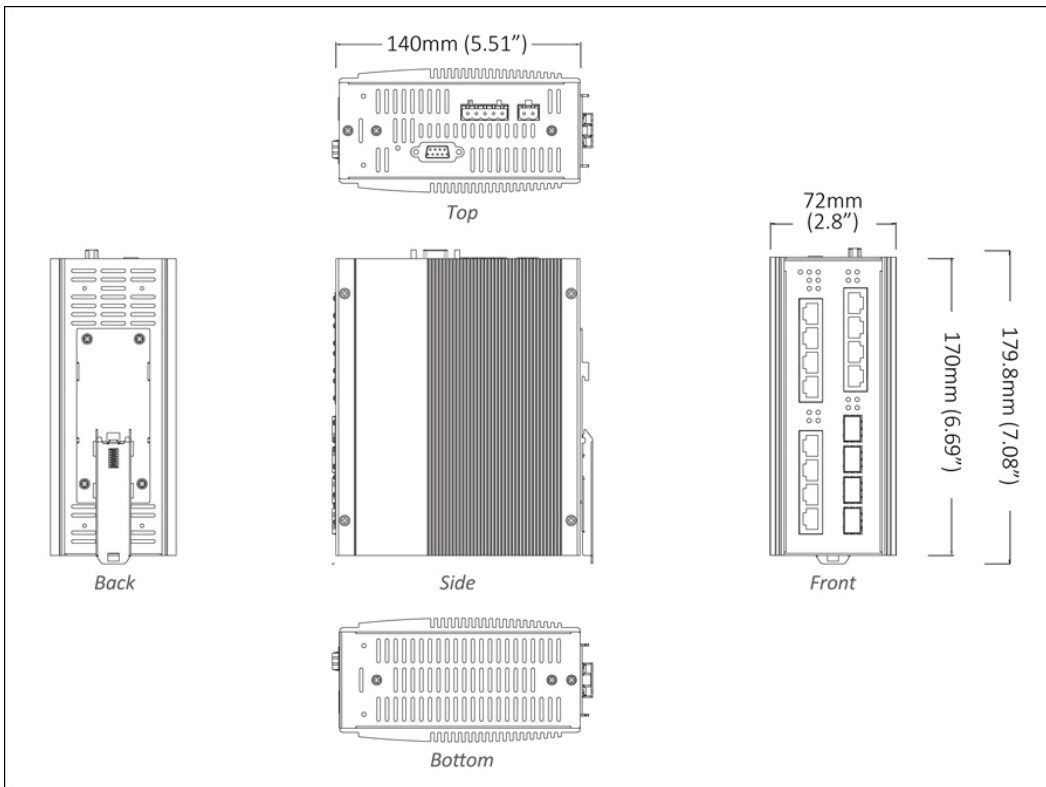
**Details**  
[www.etherwan.com/support/warranty-policy](http://www.etherwan.com/support/warranty-policy)

## + What's Included

**Device**  
Ethernet Switch

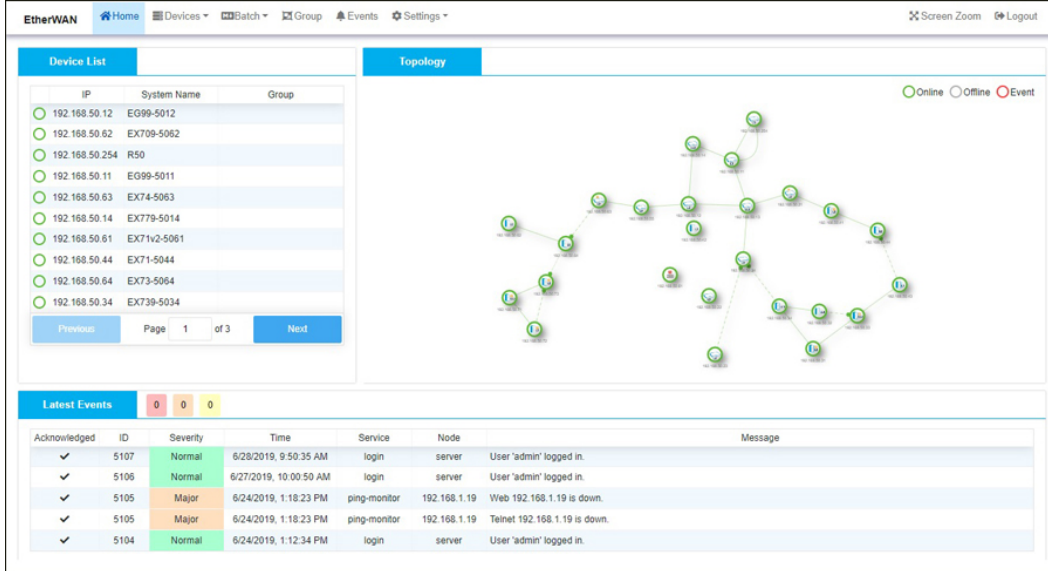
**Cables**

## 產品尺寸圖



# 管理軟體

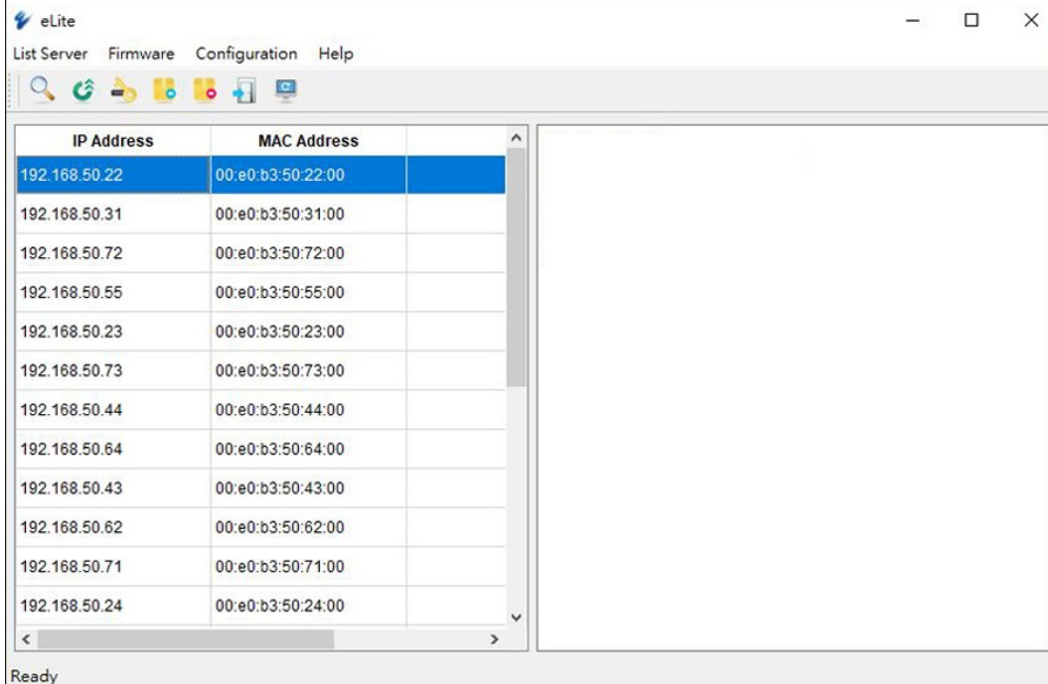
Network Management [eVue™ Network Configuration and Monitoring Tool](#)  
 Network Discovery [eLite™ Network Discovery and IP Configuration Tool](#)



The screenshot shows the EtherWAN web 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 devices. 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	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 application window. It has a menu bar with 'List Server', 'Firmware', 'Configuration', and 'Help'. Below the menu is a toolbar with various icons. The main area contains a table with IP addresses and 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

**EX73931-0VB** 12-Port 10/100/1000BASE-TX + 4-port Gigabit SFP  
**EX73921-0VB** 8-Port 10/100/1000BASE-TX + 4-Port Gigabit SFP  
**EX73921-0XB** 8-Port 10/100/1000BASE-TX + 4-Port Gigabit Fiber

\* DIN-Rail mounting kit included.

### + Gigabit Fiber Options (X)

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

\* More Gigabit options are also available upon request.

### + Accessories

<b>Hardened Gigabit SFP Modules</b>	<a href="http://www.etherwan.com/products/sfp-fiber-transceiver">www.etherwan.com/products/sfp-fiber-transceiver</a>
<b>DIN-Rail Power Supplies</b>	<a href="http://www.etherwan.com/products/din-rail-power-supply">www.etherwan.com/products/din-rail-power-supply</a> (*)
<b>*Recommended Power Supply</b>	HDR-30-24 30W 24VDC DIN-Rail Power Supply
<b>EB-232</b>	Configuration Backup and Restoration Tool

