

EX73900X Series

IEC 61850-3/IEEE 1588 Hardened Managed 12-port Gigabit and 4-port 10GSFP+ Ethernet Switch



Overview

When should you use an Industrial Layer 3 switch?

EtherWAN's EX73900X series is a hardened DIN-rail mounted managed Ethernet switch platform. Equipped with up to 12 gigabit Ethernet and 4 dual-rate 10 gigabit SFP+ ports, and the IEEE1588v2 Precision Time Protocol (PTP) that uses network packets and time stamps for network time synchronization. The EX73900X series provides flexibility, speed, and reliability to support networks for urban infrastructure, transportation, security, power substations, and other areas where connectivity is crucial.

EtherWAN — "When Connectivity is Crucial."

Highlight

+ High Bandwidth and Versatility

8 or 12 10/100/1000BASE-T(X) ports for high bandwidth connections
Up to 4 dual-rate 1/10G SFP+ uplink ports for fiber connections
Full capacity switching running at full duplex

+ Support

Complimentary Technical Support
Free Firmware Upgrades
Limited Lifetime Warranty

+ 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

+ Compliance

IEC 61850-3/IEEE 1613 certified for power substation
NEMA TS2 rated
UL certified for safety

+ L2/L3 Functionality

Static routing, RIP v1/v2, and OSPF support
Redundancy with VRRP
Reduces amount of broadcast traffic

+ Management/Security Features

Port control, SFTP
Dying gasp feature provides SNMP trap upon power off
Configure and monitor with eVue™ and eLite™

Features

+ Interface

CLI, Telnet, Web GUI, SSH

+ Management

Firmware upgrade
SFTP (Secured FTP) support
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 TCP

+ 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
TLS and HTTPS for Web security
ACL (Access Control List, up to 4096 entries)
Storm Detection Support
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

VRRP

+ 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

104Gbps

Forwarding Rate

75.29Mpps

Max VLANs

256 (4096 VID)

Jumbo Frame Size

9KB

MAC Table Size

16K

Packet Buffer Memory

12M bits

Specifications

+ Interface

Ethernet

8 or 12 x 10/100/1000BASE-T(X)
2 or 4 x 1/10G 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; 0.6A/30VDC

LED Indicators

Per Unit: Power 1, Power 2, Alarm
Per Port: Link/Activity

+ 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 (3.08lbs)

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)

+ 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 1588v2 PTP

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 fullduplex 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
EN 61000-3-2
EN 61000-3-3
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 61010

Traffic

NEMA TS2

Rail

EN 50121-4

Power Substation

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

Vibration

IEC 60068-2-6

Shock

IEC 60068-2-27

Free Fall

FED STD 101C Method 5007.1

+ Power

Input
12-48VDC Redundant (Terminal block)

Power Consumption
20W Max

Protection
Reverse Polarity Protection

+ Warranty

Length
Limited Lifetime

Details
www.etherwan.com/support/warranty-policy

+ What's Included

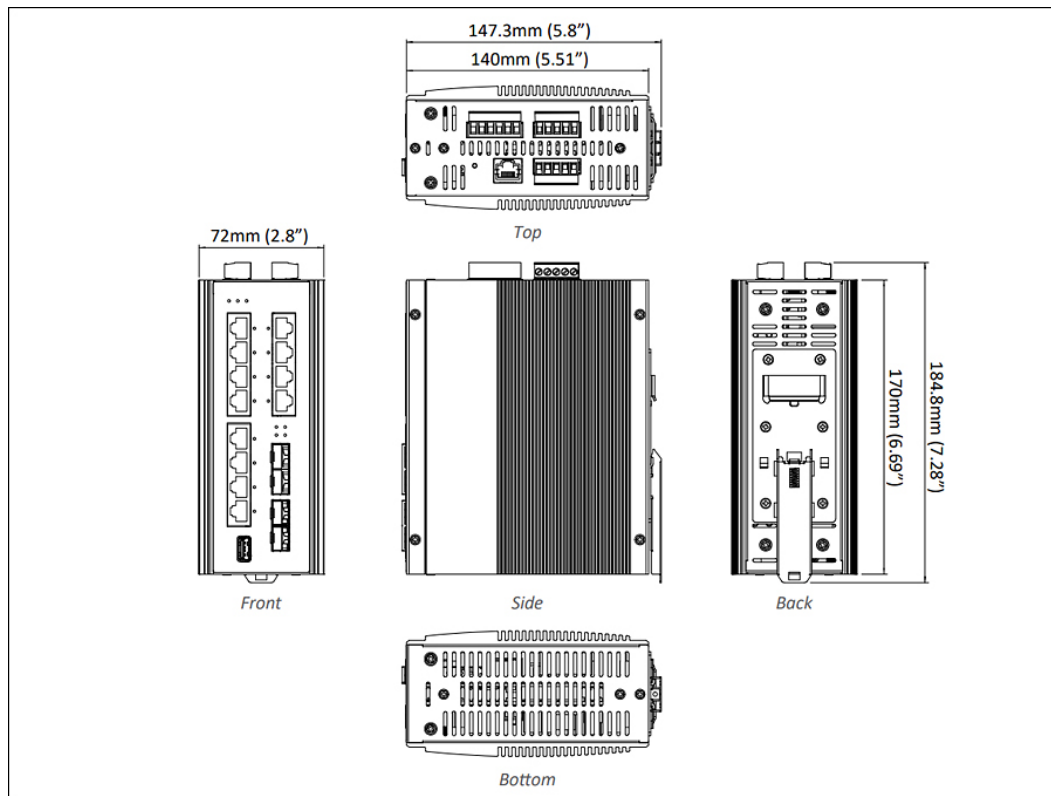
Device
Ethernet switch

Cables
1 Console cable

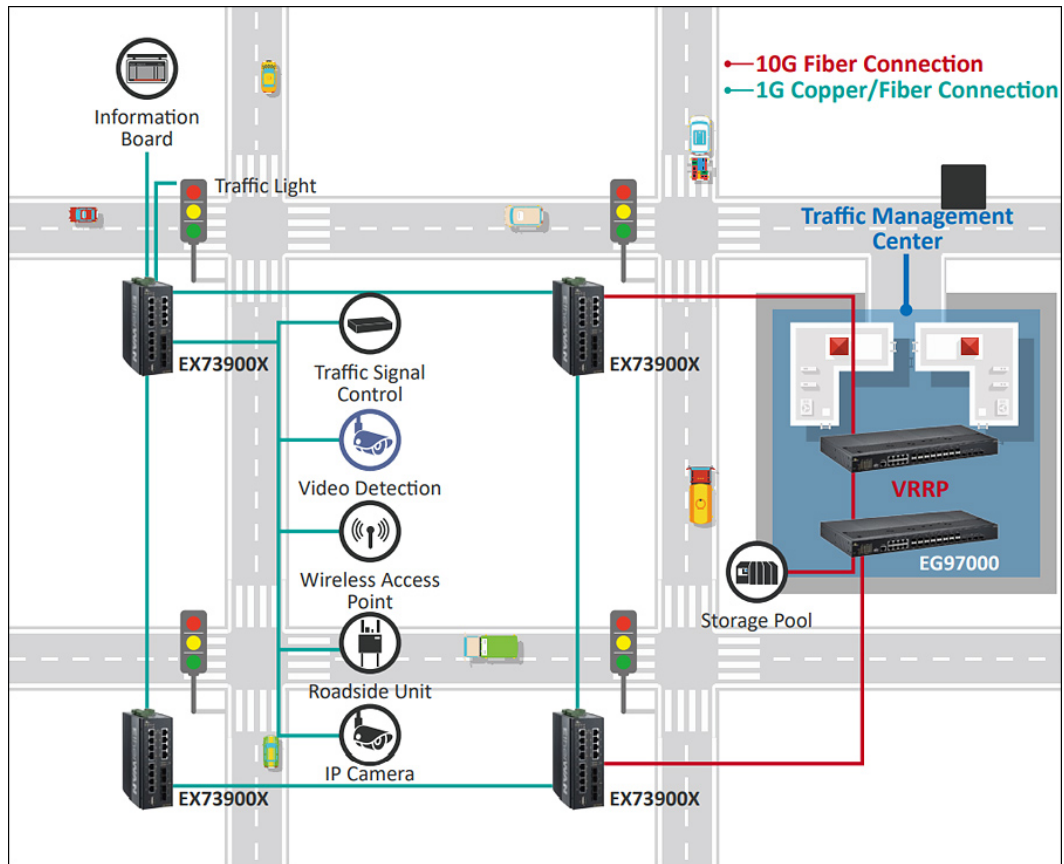
Installation
Mounting brackets, screws

Documentation
Quick install guide

Dimensions



Application



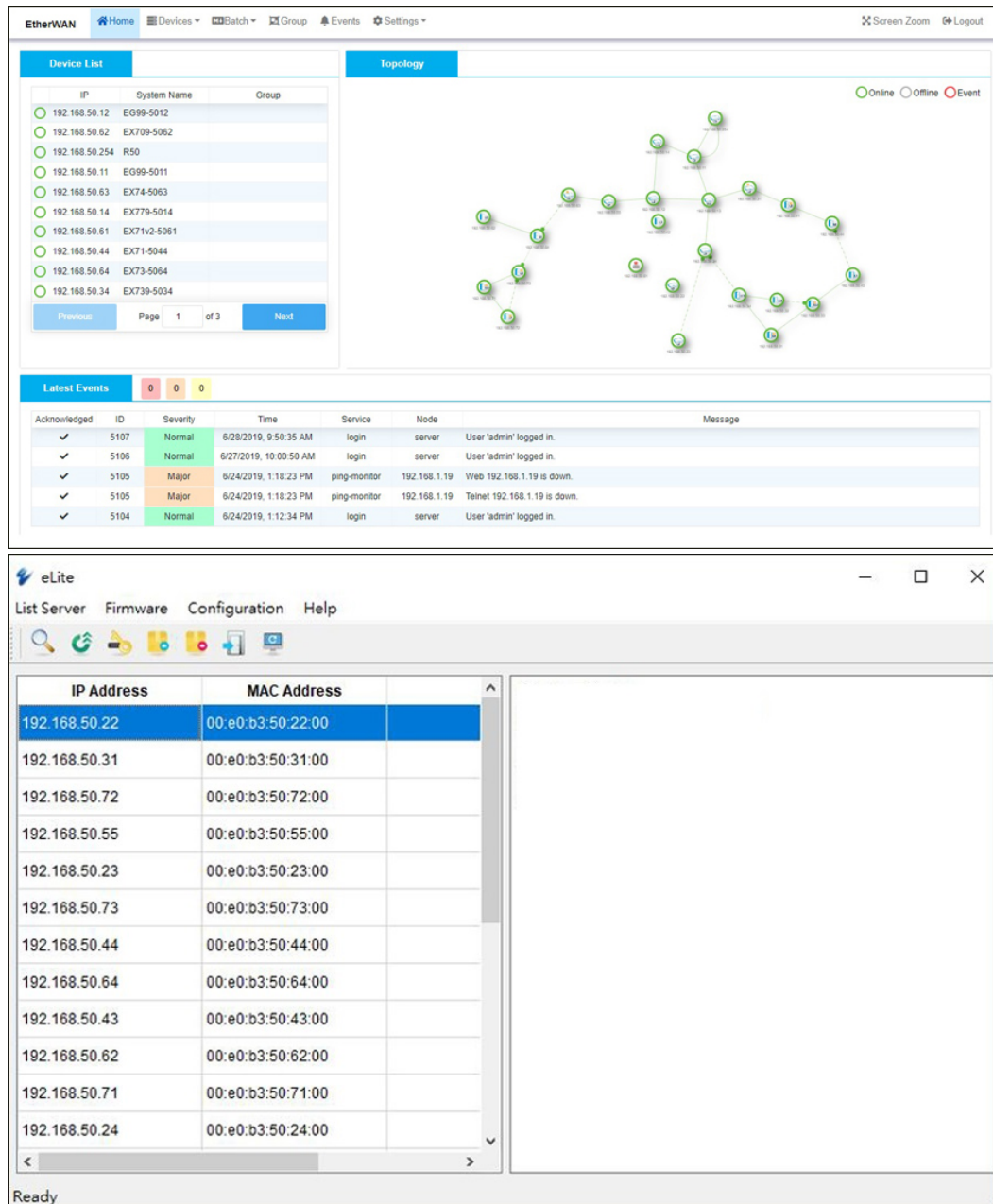
Software

Network Management

[eVue™ Network Configuration and Monitoring Tool](#)

Network Discovery

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



The screenshot displays the EtherWAN eLite software interface, which is used for network discovery and IP configuration. The interface is divided into several sections:

- Device List:** A table listing discovered devices with columns for IP, System Name, and Group. The list includes 12 devices, all with IP addresses in the 192.168.50.x range and system names like EG99-5012, EX709-5062, etc.
- Topology:** A network diagram showing the physical or logical connections between the devices listed in the Device List. Nodes are represented by green circles with IP addresses, and lines represent network connections.
- Latest Events:** A table showing recent system events. It includes columns for Acknowledged, ID, Severity, Time, Service, Node, and Message. The events include login attempts, ping monitor results, and system status changes.
- eLite Main Window:** A separate window titled 'eLite' showing a list of IP addresses and their corresponding MAC addresses. The list is scrollable and includes 12 entries, all with IP addresses in the 192.168.50.x range and MAC addresses starting with 00:e0:b3:50.

Ordering Info

+ Model

EX73934X-0VB	12-port 10/100/1000BASE-T(X) + 4-port 1/10G SFP+
EX73924X-0VB	8-port 10/100/1000BASE-T(X) + 4-port 1/10G SFP+
EX73922X-0VB	8-port 10/100/1000BASE-T(X) + 2-port 1/10G SFP+

+ Accessories

Hardened Gigabit & 10 Gigabit SFP Modules	www.etherwan.com/products/sfp-fiber-transceiver
DIN-Rail Power Supplies	www.etherwan.com/products/din-rail-power-supply (*)
*Recommended Power Supply	EX41-145046 Power Supply 45W 12VDC with Open Wire

