

# EX73900X Series

Hardened Managed 12-Port Gigabit and 4-Port 10G SFP+ Ethernet Switch



## Overview

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, 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."

## Highlights

### + 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

### + 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

### 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

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

## + What's Included

### Device

Ethernet switch

### Cables

1 Console cable

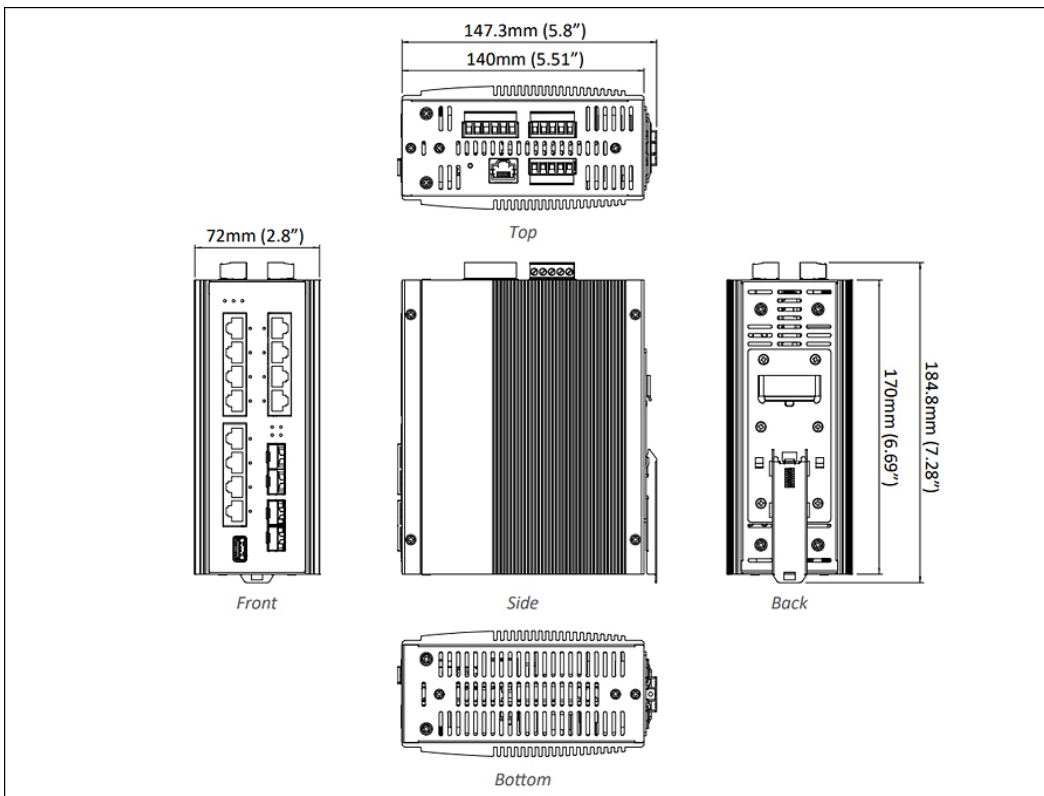
### Installation

Mounting brackets, screws

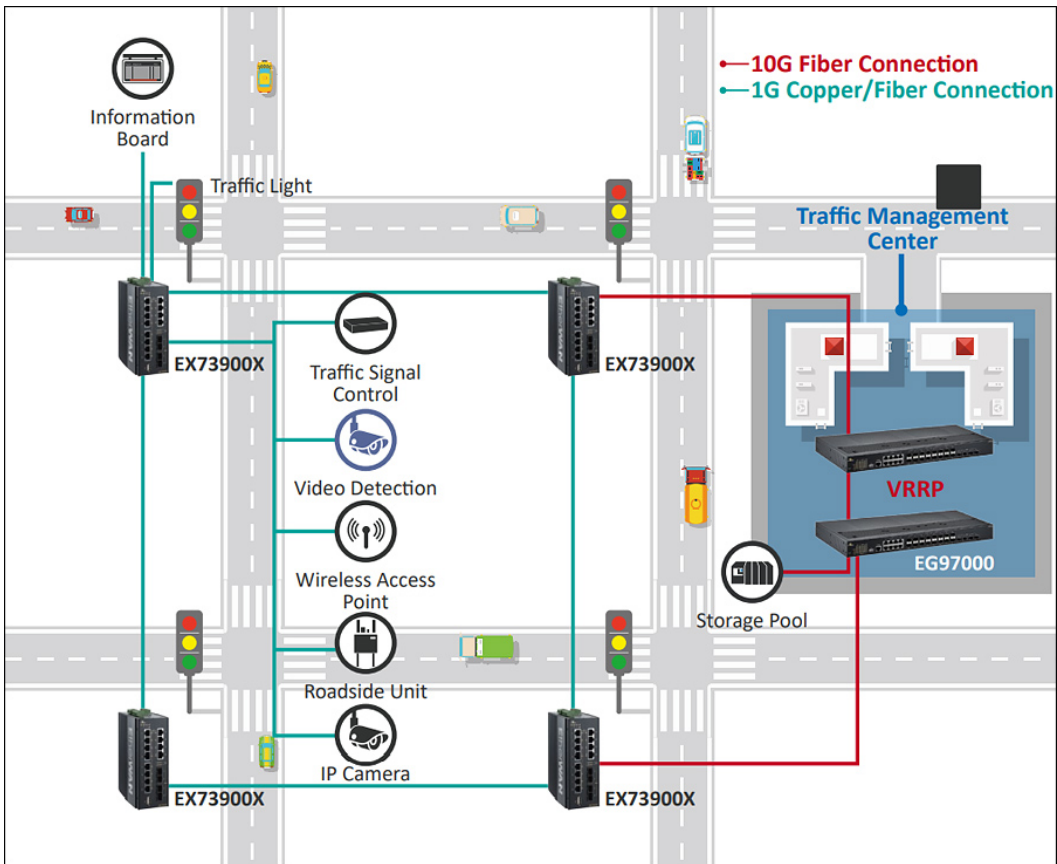
### Documentation

Quick install guide

## Dimensions



# Application





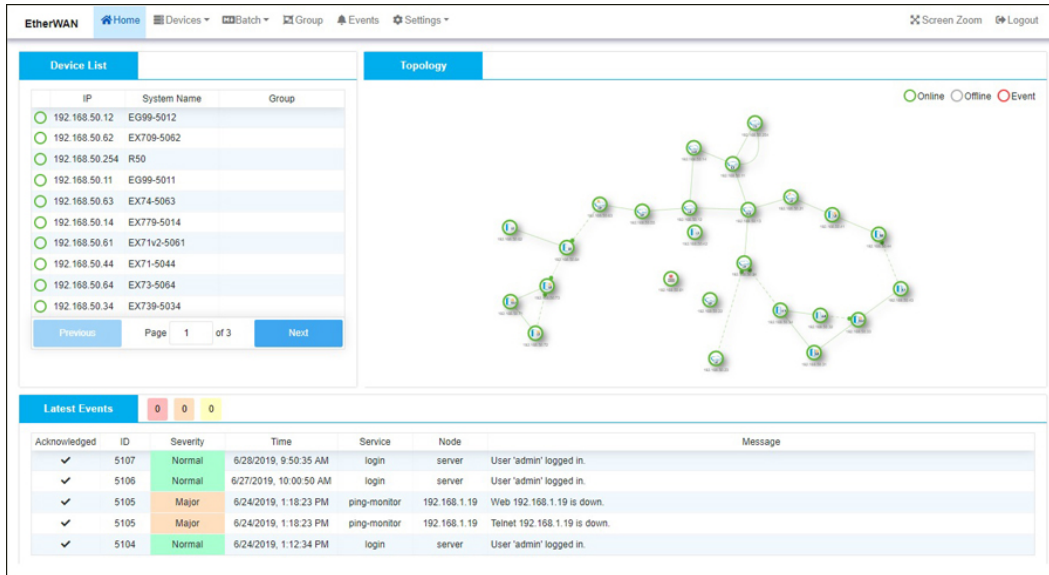
# Software

Network Management

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

Network Discovery

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



**Device List**

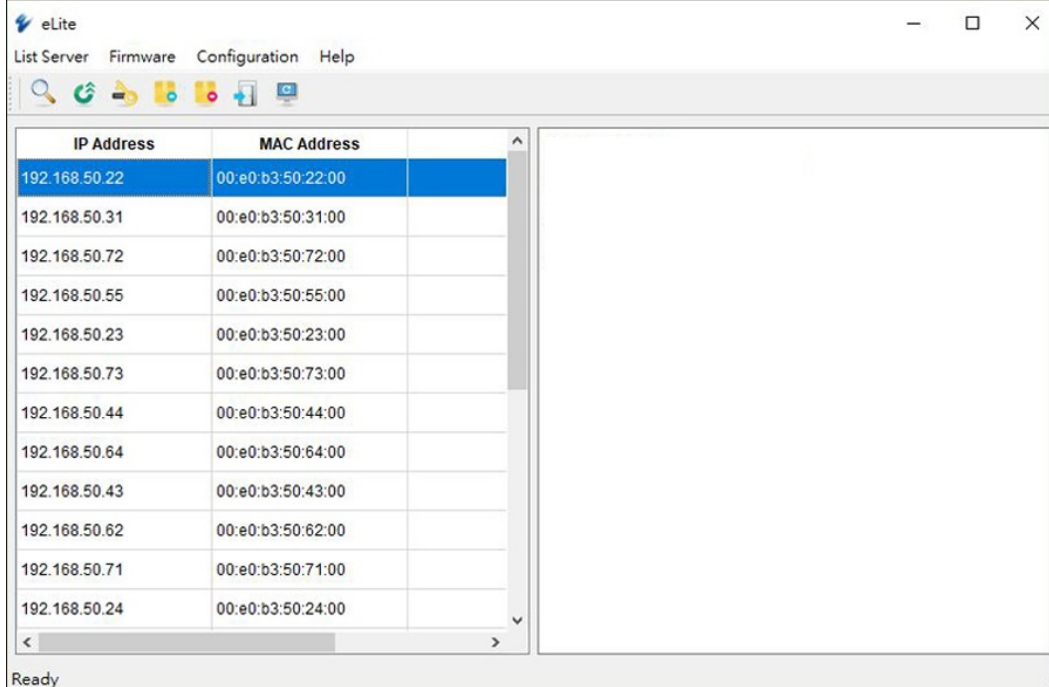
IP	System Name	Group
192.168.50.12	EG99-5012	
192.168.50.62	EX709-5062	
192.168.50.254	R50	
192.168.50.11	EG99-5011	
192.168.50.63	EX74-5063	
192.168.50.14	EX779-5014	
192.168.50.61	EX71v2-5061	
192.168.50.44	EX71-5044	
192.168.50.64	EX73-5064	
192.168.50.34	EX739-5034	

**Topology**

Legend: ● Online ○ Offline ○ Event

**Latest Events**

Acknowledged	ID	Severity	Time	Service	Node	Message
✓	5107	Normal	6/29/2019, 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.



**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

## 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	<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	EX41-145046 Power Supply 45W 12VDC with Open Wire Supply

