

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.

IEC 62443-4-2 Certified – Strengthening cyber resilience for critical industrial and infrastructure applications.

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)

(-40°C to 85°C for IEC 60068-2-2 Environmental 16
hours)

Storage Temp.

-45 to 85°C (-49 to 185°F)

Relative Humidity

5% to 95% (non-condensing)

MTBF

2,027,629 hours

+ 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 full duplex 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

Cybersecurity

IEC 62443-4-1
 IEC 62443-4-2

Traffic

NEMA TS2

Railway

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

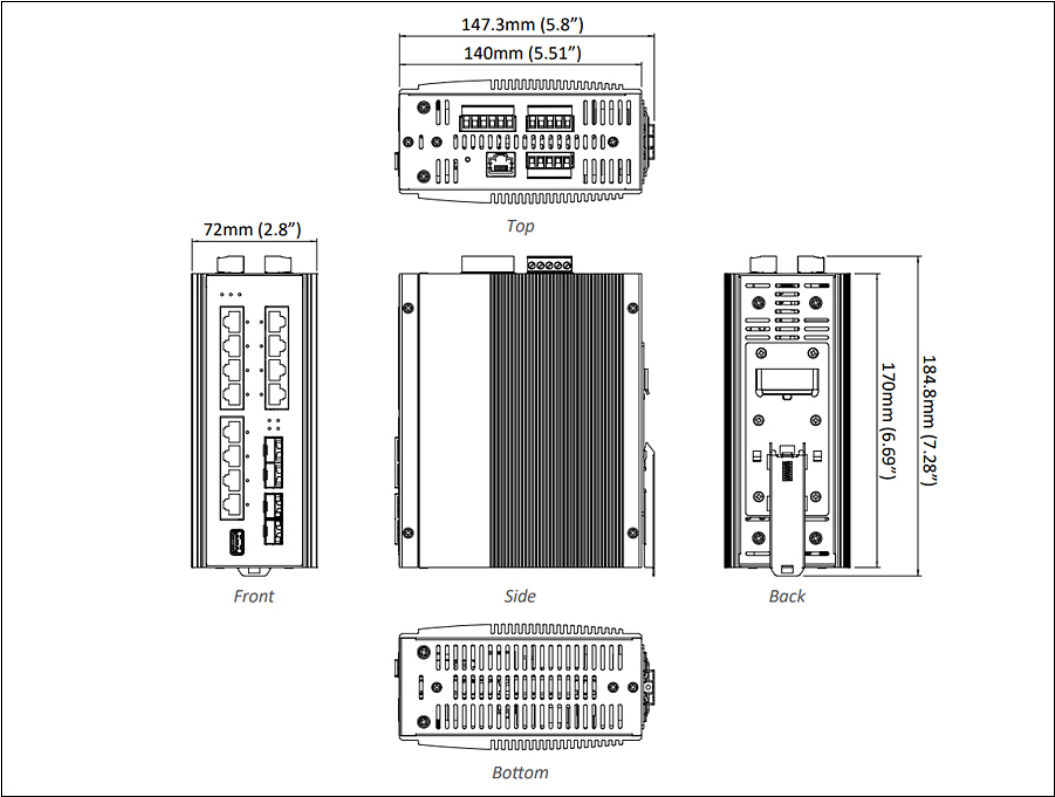
Installation

Mounting brackets, screws

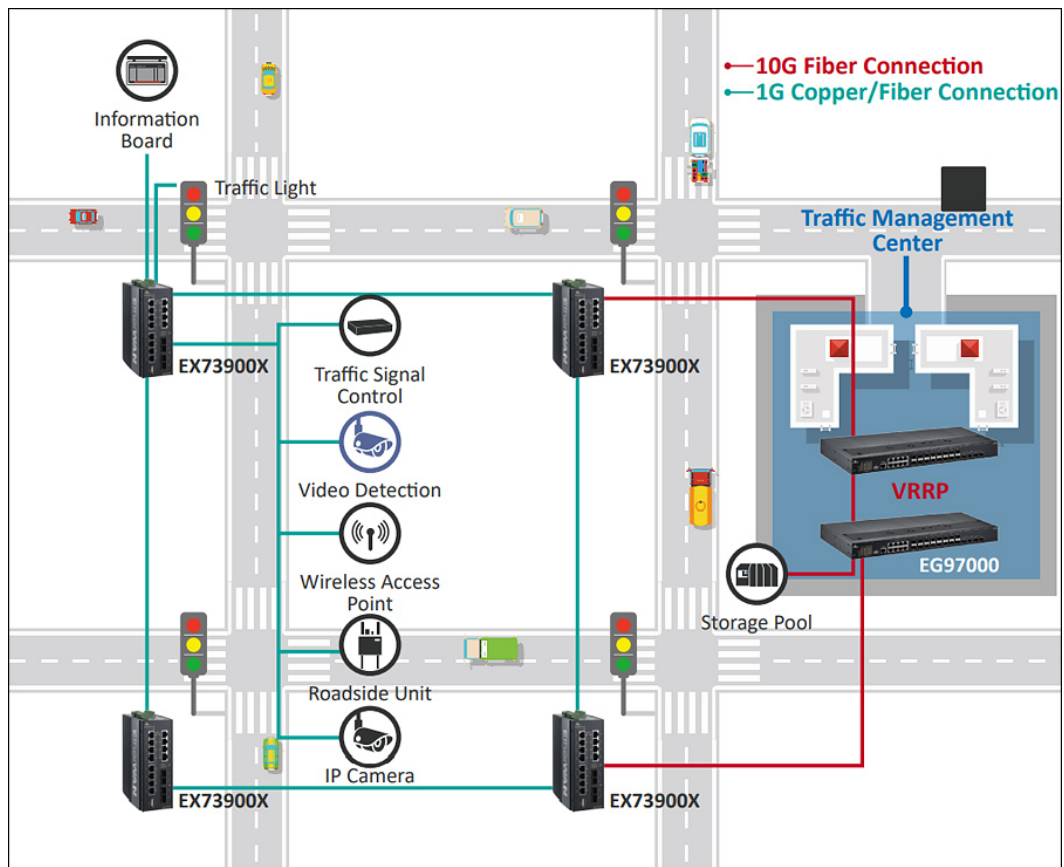
Documentation

Quick install guide

Dimensions



Application



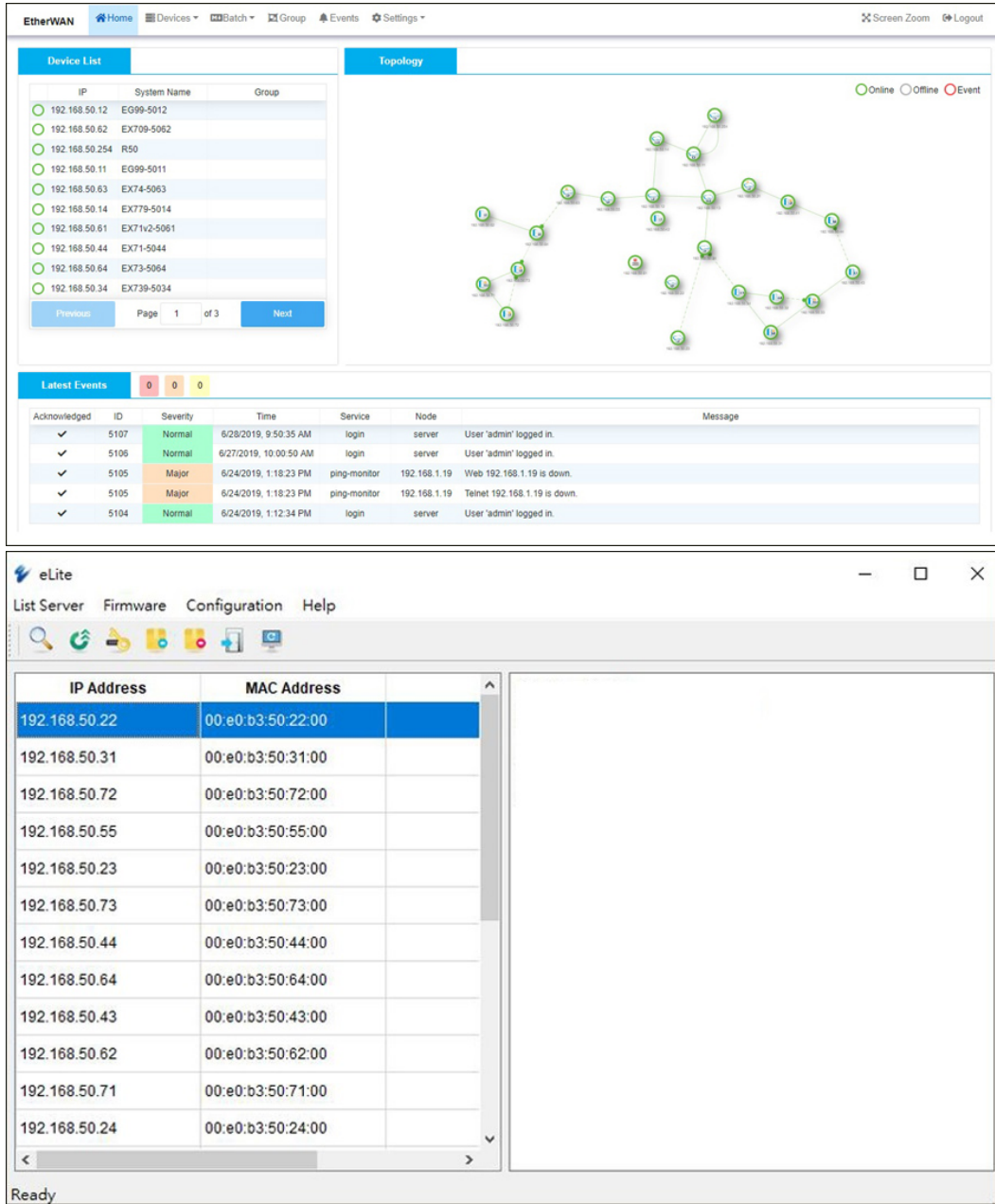
Software

Network Management

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

Network Discovery

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



The image displays two screenshots of network management software. The top screenshot shows the EtherWAN eVue interface, which includes a 'Device List' table, a 'Topology' diagram, and a 'Latest Events' log. The bottom screenshot shows the eLite interface, which features a table of IP and MAC addresses.

Device List (from eVue):

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	

Latest Events (from eVue):

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 Interface Table:

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

Ordering Info

+ Model

			
	EX73934X-0VB	EX73924X-0VBB	EX73922X-0VB
10/100/1000BASE TX	12	8	8
1G/10G SFP+	4	4	2
	Quote	Quote	Quote

+ 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

