EX73900E Series

IEC 61850-3/IEEE 1588 Hardened Managed 12-port Gigabit and 4-port 1G SFP Ethernet Switch

Overview

EtherWAN's EX73900E series is a hardened DIN-rail mounted managed Ethernet switch platform. Equipped with up to 12 gigabit Ethernet and 4 dual-rate gigabit SFP ports, and the IEEE1588v2 Precision Time Protocol (PTP) that uses network packets and time stamps for network time synchronization. The EX73900E 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 100/1000BASE SFP uplink ports for fiber connections

Full capacity switching running at full duplex

➕ 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

➕ Lite Layer 3 Functionality

Static routing, RIP v1/v2, and OSPF support

Redundancy with VRRP

Reduces amount of broadcast traffic

➕ Compliance

IEC 61850-3/IEEE 1613 certified for power substations

NEMA TS2 rated

UL certified for safety

➕ Management/Security Features

Port control

Dying gasp feature provides SNMP trap upon power off

Configure and monitor with eVue™ and eLite™

➕ Support

Complimentary Technical Support

Free Firmware Upgrades

Limited Lifetime Warranty

Features

+ Interface

CLI, Telnet, Web GUI

+ Management

Firmware upgrade
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
SSL and HTTPS for web security
ACL (Access Control List, up to 4096 entries)
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
32Gbps

Forwarding Rate
23.5Mpps

Total VLAN Entries
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 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 0.6A/30VDC

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

✚ Power

Input
12-48VDC Redundant (Terminal block)

Power Consumption
20W Max

Protection
Reverse Polarity Protection
Overload Current Protection

✚ 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

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 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

Physical

Casing Material
Aluminum

IP Rating
IP40

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)

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

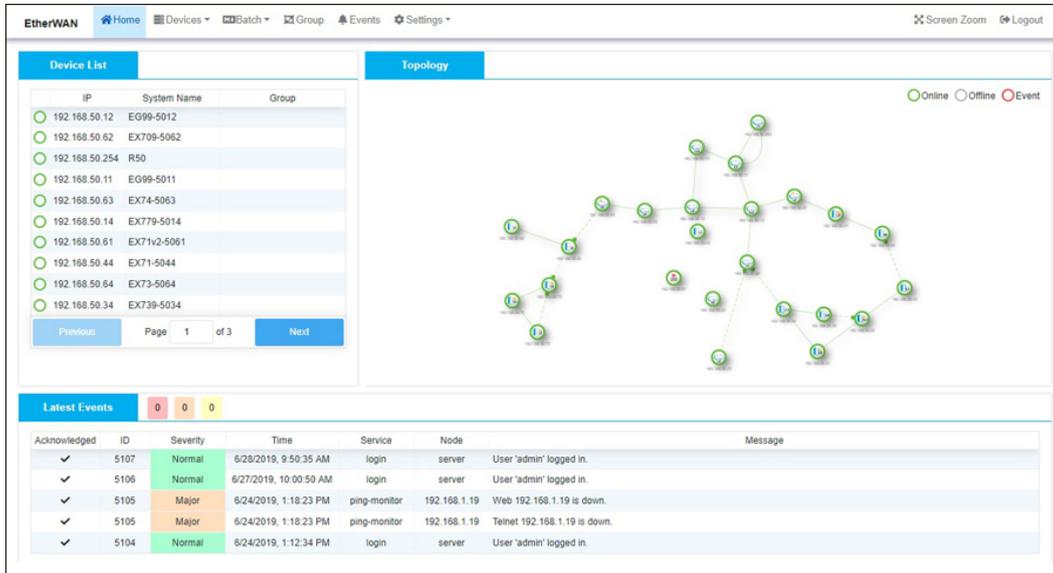**Documentation**
Quick install guide

Dimensions

140mm (5.51")

72mm (2.8")

170mm (6.69")

Top

Front

Side

Back

Bottom
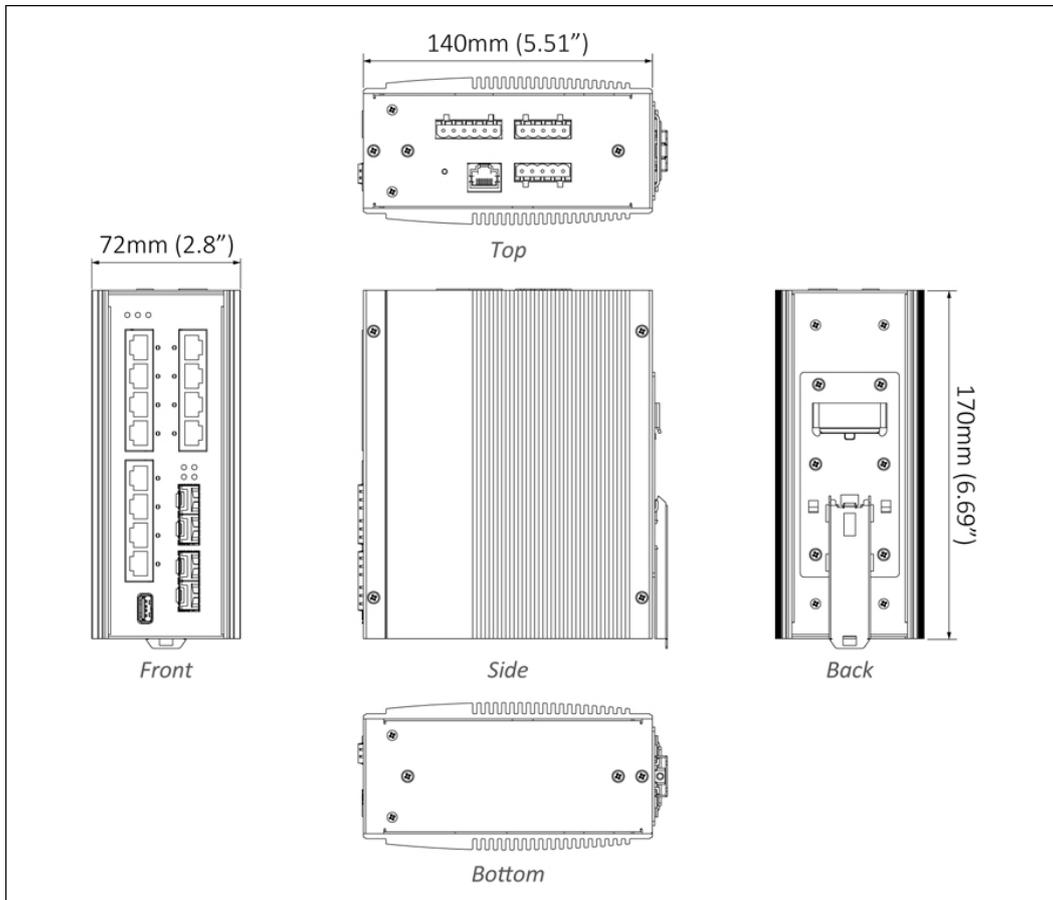
Application
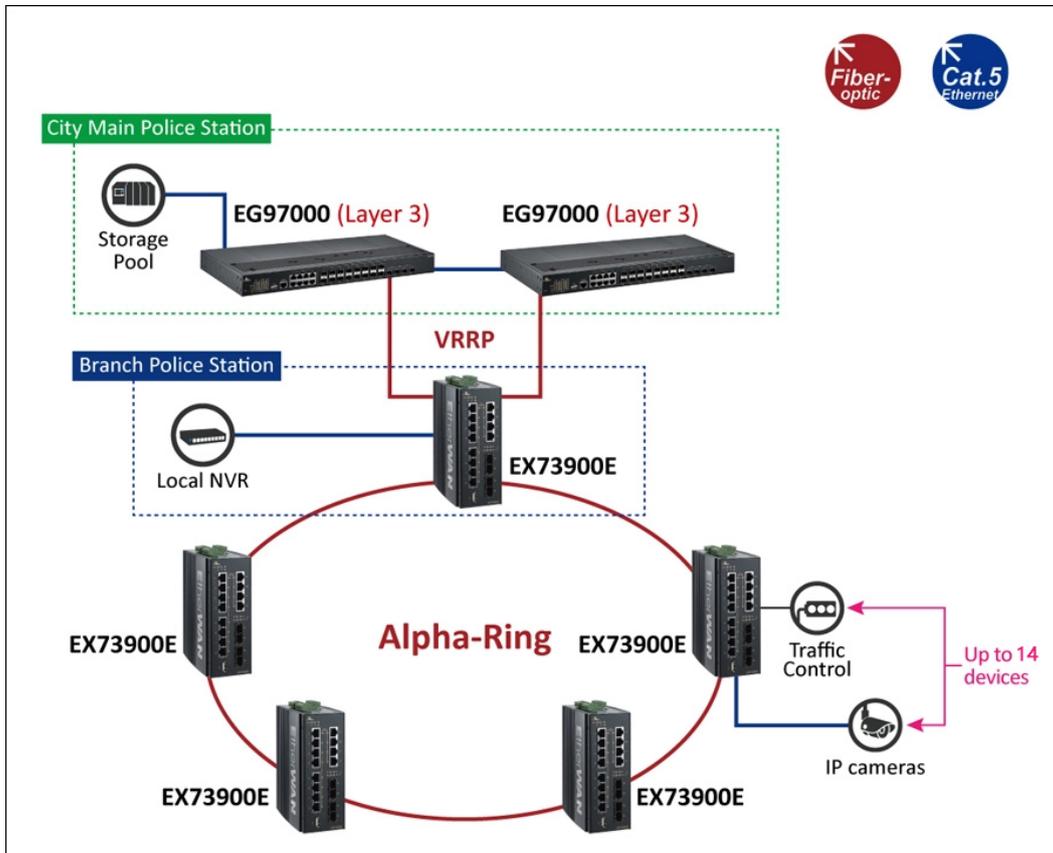
Software

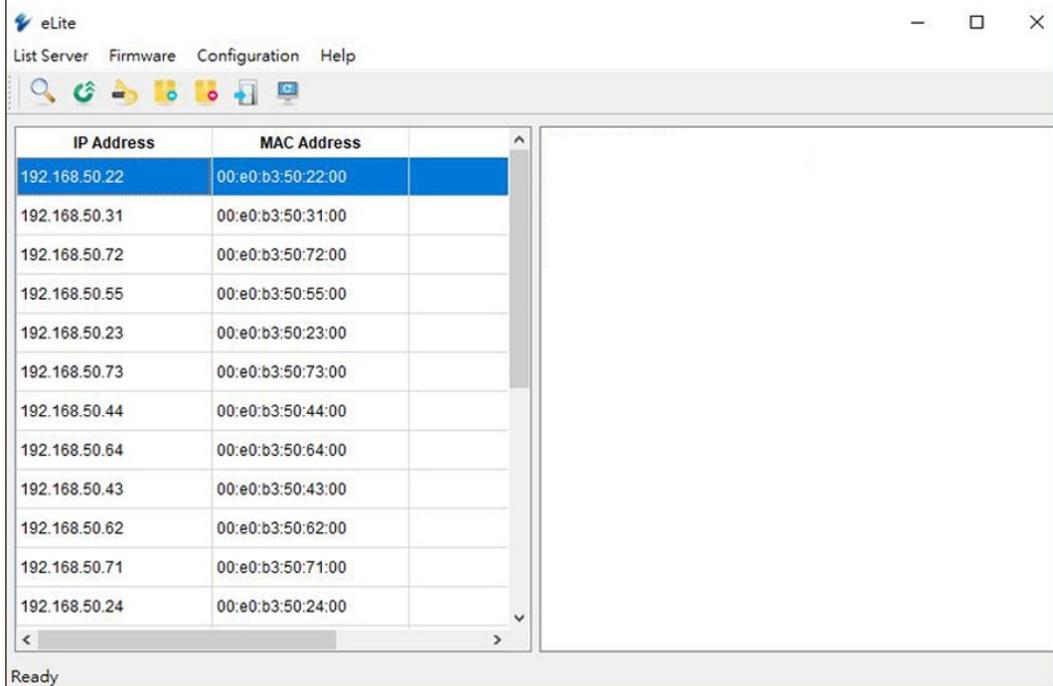|	
Network Management	[eVue™ Network Configuration and Monitoring Tool](#)
Network Discovery	[eLite™ Network Discovery and IP Configuration Tool](#)

Ordering Info

➕ Model

EX73934E-0VB	12-port 10/100/1000BASE-T(X) + 4-port 100/1000BASE SFP
EX73924E-0VB	8-port 10/100/1000BASE-T(X) + 4-port 100/1000BASE SFP
EX73922E-0VB	8-port 10/100/1000BASE-T(X) + 2-port 100/1000BASE SFP

➕ Accessories

Hardened 100BASE SFP Modules	www.etherwan.com/products/sfp-fiber-transceiver
Hardened 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