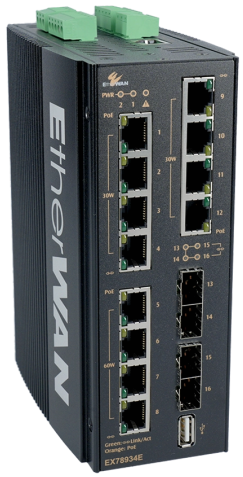
EX78900E Series

Hardened Managed 10 to 16-Port Gigabit PoE Ethernet Switch



Overview

EtherWAN's EX78900E series is a hardened DIN-rail mounted managed PoE Ethernet switch platform. Equipped with up to 12 gigabit PoE ports along with 60W power and IEEE 802.3.bt protocol support and 4 dual-rate gigabit SFP and the IEEE1588v2 Precision Time Protocol (PTP) that uses network packets and time stamps for network time synchronization. The EX78900E series provides flexibility, speed, and reliability for networks in urban infrastructure, transportation, security, 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

PoE Features

IEEE 802.3bt with 60W; 240W Power budget

PoE watchdog monitors status of connected PoE devices

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

Management/Security Features

Port control, SFTP

802.1x port-based network access control and remote authentication through RADIUS and TACACS+

Configure and monitor with eVue™ and eLite™

Lite Layer 3 Functionality

Static routing, RIP v1/v2, and OSPF

Redundancy with VRRP

Reduces amount of broadcast traffic

Support

Complimentary technical support

Free firmware upgrades and notifications

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)

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

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 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 0.5A/48VDC

LED Indicators

Per Unit: Power 1, Power 2

Per Port: Link/Activity (Green)

Per PoE Port: PoE Status (Orange)

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

1.5kg (3.3lbs)

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)

MTBF

1,108,382 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 802.3af/at/bt Power over Ethernet

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

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)

PoE Ports: line to earth 6kV 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

Vibration

IEC 60068-2-6

Shock

IEC 60068-2-27

Free Fall

FED STD 101C Method 5007.1

Power

Input

46-57VDC Redundant (Terminal block)**
** 46-57VDC for IEEE 802.3af type 1, ≤15.4W PD devices.
52-57VDC for IEEE 802.3at/bt type 2/3, 30W, 60W PD devices.
54-57VDC for IEEE 802.3bt, type 4, 90W PD devices

Power Consumption

20W Max (without PoE)

PoE Modes

802.3af/at Mode A: Pins 1/2(-), 3/6(+)

802.3bt (60W): Mode A & B, Pins 1/2(-), 3/6(+), 4/5(+), 7/8(-)

PoE Power Output

Ports 1-4, 9-12: Up to 30W/port

Ports 5-8: Up to 60W/port

Power Budget: 240W

Protection

Reverse Polarity Protection

What's Included

Device

Ethernet Switch

Cables

1 Console Cable

Installation

Mounting brackets, screws

Documentation

Quick Install Guide

Warranty

Length

Limited Lifetime

Details

www.etherwan.com/support/warranty-policy

MPN

EX78922E-0VB

1451959

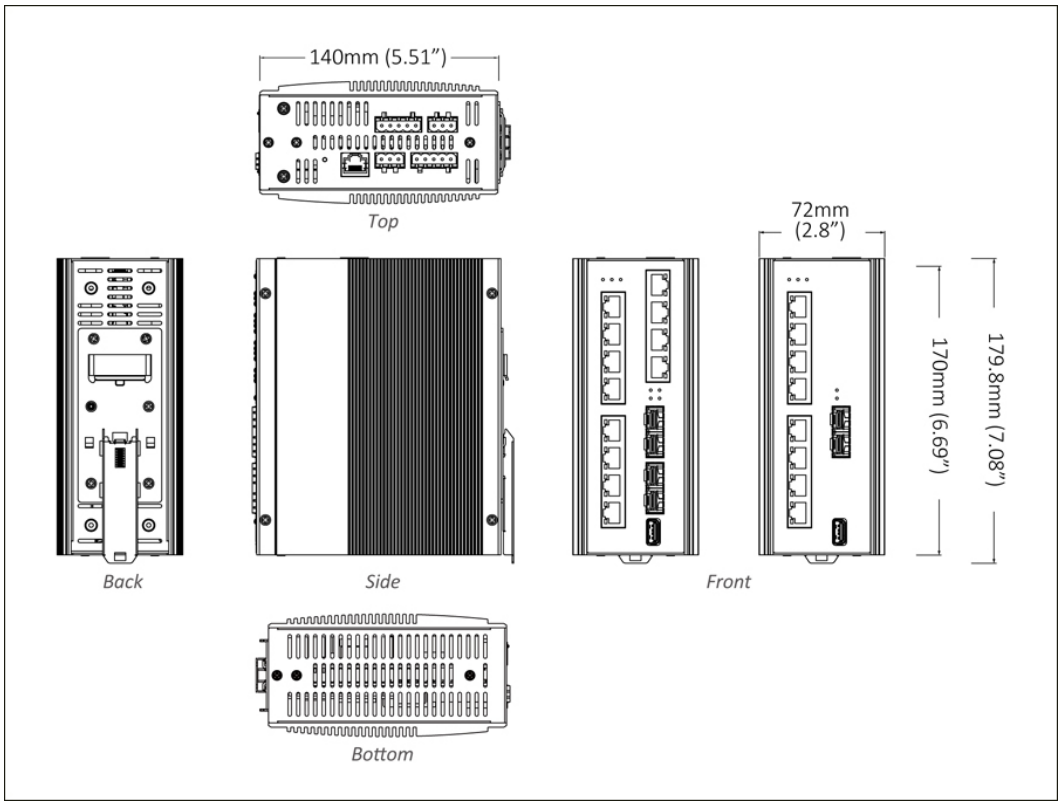
EX78924E-0VB

1451957

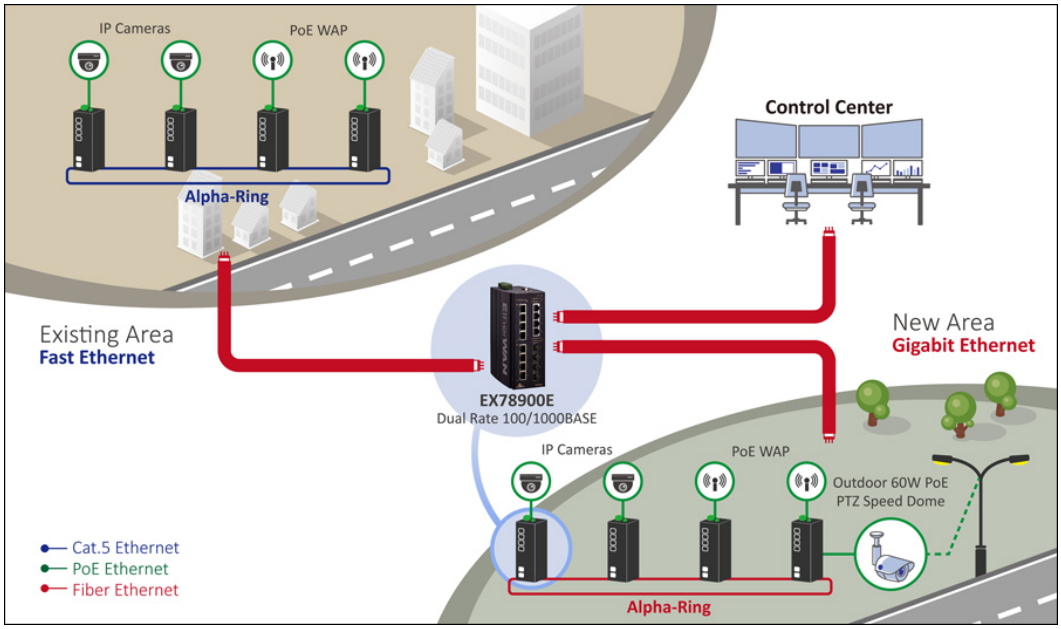
EX78934E-0VB

1451953

Dimensions

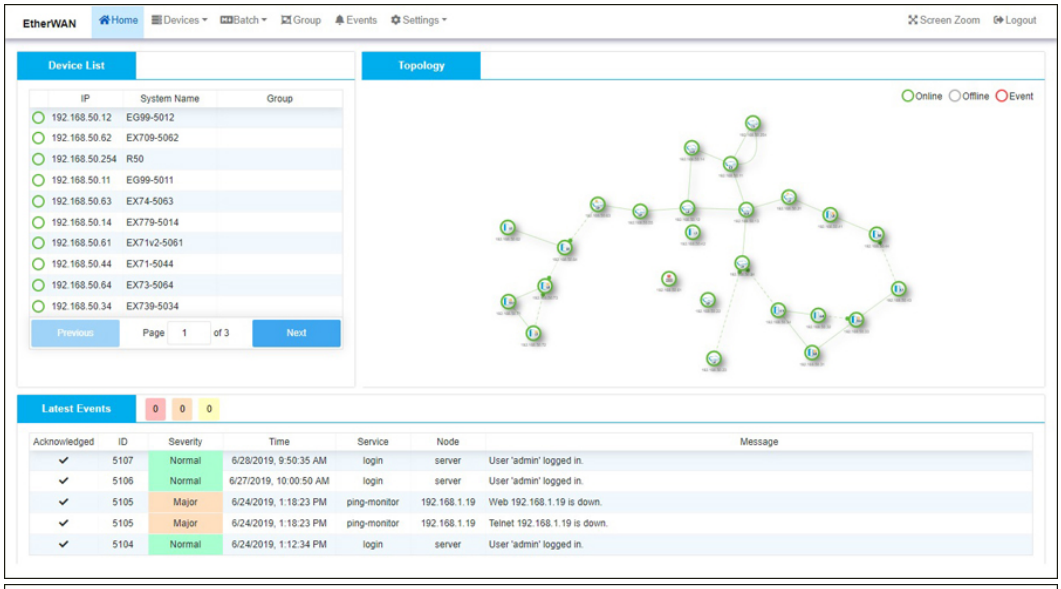


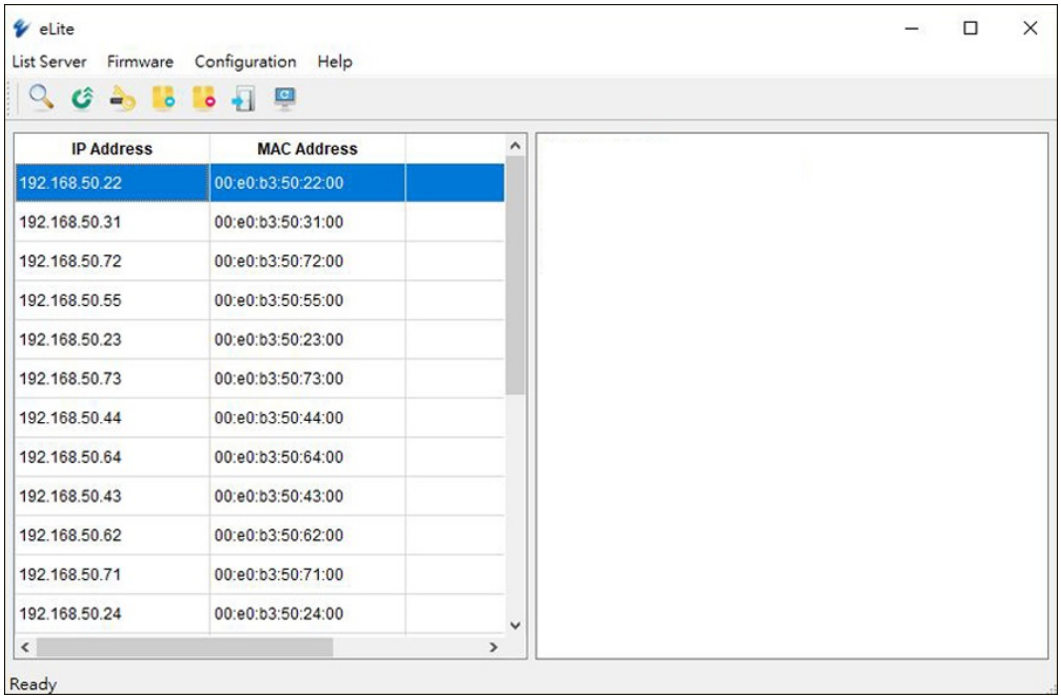
Application



Software

Network Management	eVue™ Network Configuration and Monitoring Tool
Network Discovery	eLite™ Network Discovery and IP Configuration Tool





Ordering Info

Model

EX78934E-0VB	12-port 10/100/1000BASE-T(X) PoE + 4-port 100/1000BASE SFP
EX78924E-0VB	8-port 10/100/1000BASE-T(X) PoE + 4-port 100/1000BASE SFP
EX78922E-0VB	8-port 10/100/1000BASE-T(X) PoE + 2-port 100/1000BASE SFP

Accessories

SFP Modules

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

Power Supplies

EPOW-54-240	Power Supply, Hardened (-40°C - +75°C) External 100-277 VAC Input; NEMA-TS2 rated; 240W, 54VDC, 0-11.1A with Open Wire (US Plug) - No Deration at High Temps
EPOW-54-400	Hardened Power Supply, 100-277 VAC Input; NEMA-TS2 Rated; 54VDC, 400W/7.4A, with Open Wire (US Plug) - No Deration at High Temps
EPOW-54-600	Power Supply, Hardened (-40°C - +75°C) External 100-277 VAC Input; NEMA-TS2 rated; 600W, 54VDC, 0-11.1A with Open Wire (US Plug) - No Deration at High Temps
EPHX-48-240	240W/5A DIN-Rail 48VDC (42-56VDC Adjustable) Industrial Power Supply - No Deration at High Temps
EPHX-48-480	480W/10A DIN-Rail 48VDC (36-55VDC Adjustable) Industrial Power Supply - No Deration at High Temps

Power Supplies

KR-BKZDIN	Z-Shaped Vertical Bracket
KR-BKZDIN-D	Din Rail configuration for Z-Shaped Vertical Bracket
KR-BKZDIN2	Z-Shaped Horizontal Bracket
KR-BKZDIN2-D	Din Rail configuration for Z-Shaped Horizontal Bracket
KR-DINRAILB	TransRack 19 rack mount adjustable DIN rail bracket
KR-BK7800040	19" Rack mounting kit for EX78900/78000/73900 series, black

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