EX78900X シリーズ

広範囲動作温度対応産業用/管理型 12ポート 10/100/1000BASE-T(X) +4ポート 1G/2.5G/10G SFP+ PoE ギガビット イーサネットスイッチ



概要

EtherWAN の EX78900X シリーズは、工業および重要なネットワーク向けに設計された、堅牢な DIN レール取付型のマネージド PoE スイッチです。最大で **12 ポートの Gigabit PoE** に対応し、 **IEEE 802.3bt 規格** をサポートしています。**1 ポートあたり最大 90W** の給電能力を持ち、**合計最大 360W** の電力供給が可能です。さらに、**4 ポートのデュアルレート 1G/2.5G/10G SFP+ アップリンク** を搭載し、高速なファイバー接続に対応します。 ファンレス設計により、**-40～75°C** の過酷な環境下でも安定した動作が可能で、衝撃、熱ショック、電磁ノイズへの耐性など、工業グレードの保護性能を備えています。 EX78900X full-duplexのスイッチング技術に対応し、 **PoE Watchdog 自動復旧機能** 、**802.1x アクセス制御**、**RADIUS/TACACS+ 認証** を搭載しています。直感的な管理が可能な **eVue™** と **eLite™** プラットフォームにより、柔軟性とネットワークセキュリティの両立を実現します。 また、**Lite Layer 3 機能** としてスタティックルート、RIP、OSPF、VRRP を内蔵しており、ブロードキャストトラフィックを削減しネットワーク全体の効率を向上します。スマートシティ、交通インフラ、産業オートメーションなどの導入に最適なソリューションです。

IEC 62443-4-2認証 — 重要な産業及びインフラ用途におけるサイバーレジリエンスと運用信頼性を向上させます。

EtherWAN — "When Connectivity is Crucial."

特長

High Bandwidth and Versatility

12 10/100/1000BASE-T(X) ports for high bandwidth connections

4 Dual-rate 1G/2.5G/10G SFP+ uplink ports for fiber connections

Full capacity switching running at full duplex

PoE Features

IEEE 802.3bt with up to 90W per port; 360W total power budget

PoE watchdog monitors status of connected PoE devices

ISA 12.12.01 Certification

Highly qualified for explosive environmental applications and certified by UL with ISA12.12.01 Class I, Division 2 classified for use in hazardous locations

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™

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

Support

Complimentary technical support

Free firmware upgrades and notifications

Limited lifetime warranty

Lite Layer 3 Functionality

Static routing, RIP v1/v2, and OSPF

Redundancy with VRRP

Reduces amount of broadcast traffic

機能

Interface

CLI, Telnet, Web GUI, SSH

Management

SFTP (Secured FTP) support
Configuration backup
DHCP Server/Client
RMON (Remote Monitoring)
Port Mirroring
NTP (Network Time Protocol) synchronization
PoE Watchdog
LLDP (Link Layer Discovery Protocol)
IPv4/IPv6
SNMP v1/v2c/v3
Modbus TCP

Security

MAC Address filtering
Enable/Disable port
Storm Control and Detection
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)
IPSG (IP Source guard)
DAI (Dynamic ARP Inspection)
DHCP Snooping

Layer 3 Features

IP Packet Routing

Maximum number of routes in hardware: 64 entries
Static Routing
RIP v1/v2
OSPF v2

Routing Redundancy

VRRP

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

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)

仕様

Interface

Ethernet

12 x 10/100/1000BASE-T(X)

4 x 1G/2.5G/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; 0.5A/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

1,496,987 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

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)

PoE Ports: line to earth 6kV Surge

EN 61000-4-6 (Induced RFI)

EN 61000-4-8 (Magnetic field)

Safety

UL 61010

ISA 12.12.01

• Class 1, Division 2 group A, B, C & D for hazardous locations

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 Power Output

Ports 1-12: Up to 90W/port; Power Budget: 360W

Protection

Reverse Polarity Protection

Warranty

Length

Limited Lifetime

Details

www.etherwan.com/support/warranty-policy

What's Included

Device

Ethernet switch

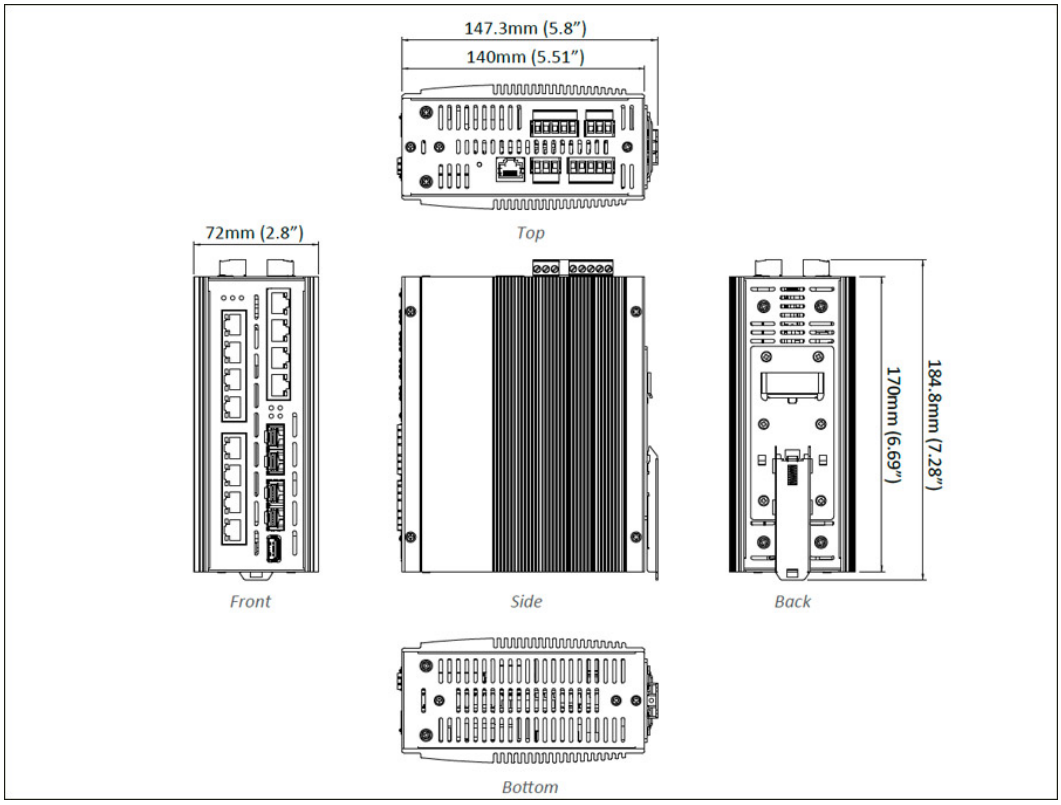
Cables

1 Console cable

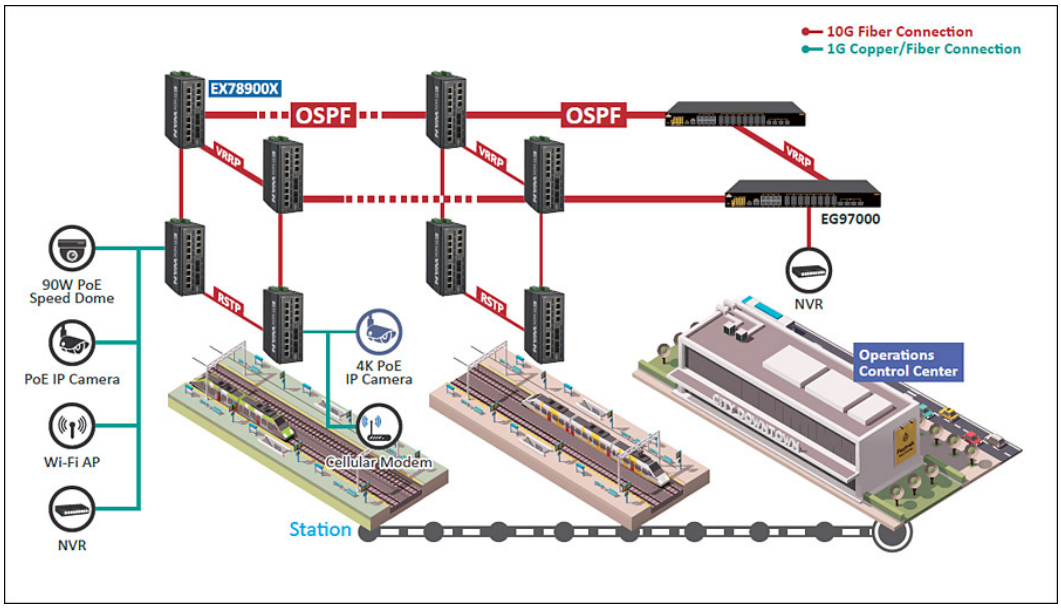
Installation

Mounting brackets, screws

寸法図

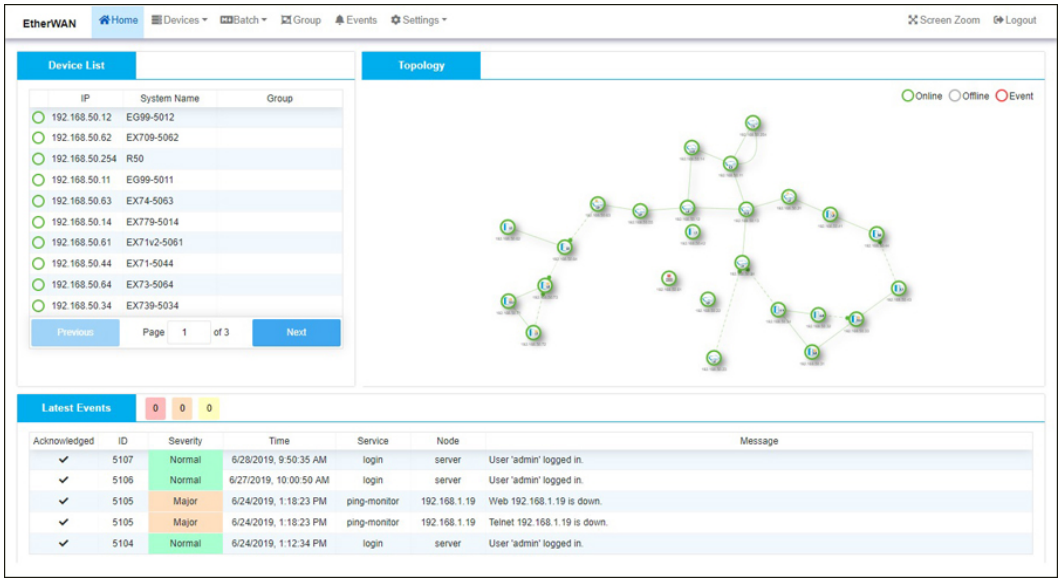


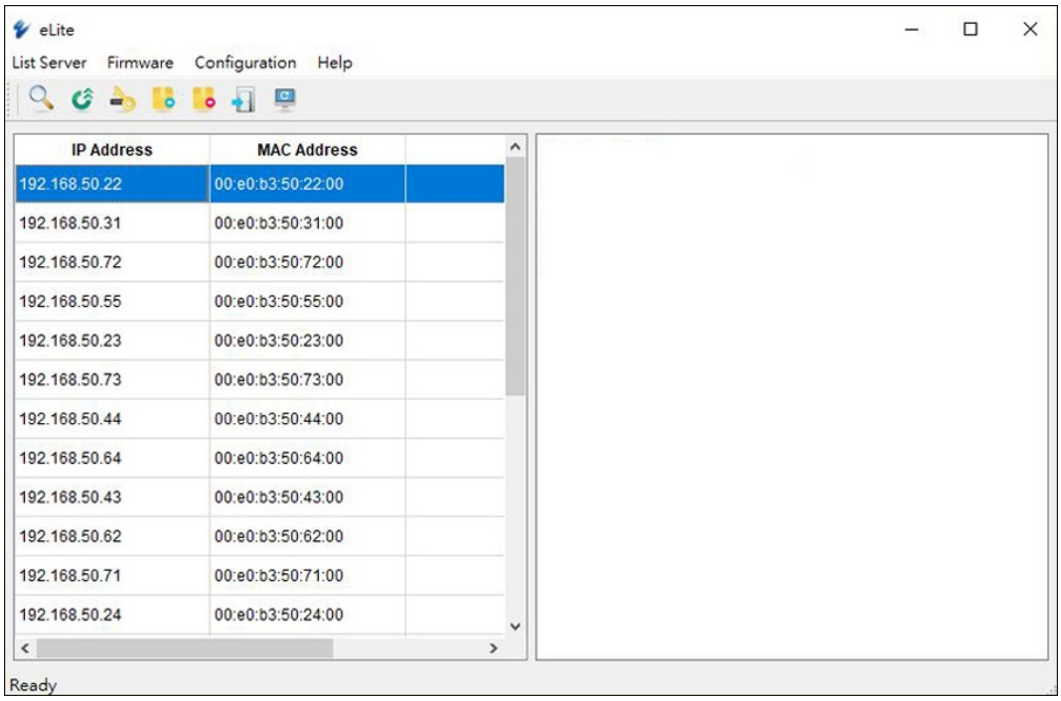
応用例


10G Fiber Connection
1G Copper/Fiber Connection
EX78900X
OSPF
OSPF
VRRP
VRRP
VRRP
EG97000
NVR
90W PoE
Speed Dome
PoE IP Camera
Wi-Fi AP
NVR
RSTP
RSTP
4K PoE
IP Camera
Cellular Modem
Station
Operations
Control Center

ソフトウェア

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





製品型番

Model



	EX78934X-0VB
10/100/1000BASE TX	12
1G/2.5G/10G SFP+	4
supports PoE++	12
PoE per port	最大 90W
	お問い合わせ

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	NDR-480-48 480W 48VDC DIN-Rail Power Supply

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