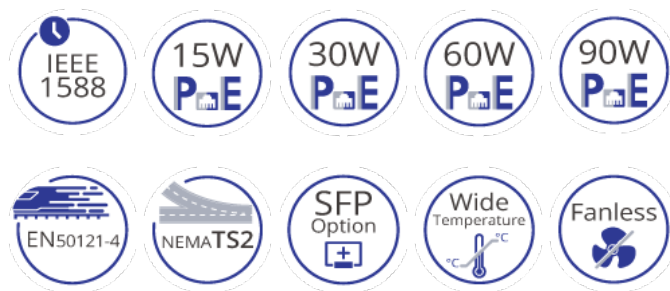


EX78900Hシリーズ

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 SFP+ PoE ギガビットイーサネットスイッチ



概要

EX78900Hシリーズは堅牢なDINレールマウント型マネージドPoEイーサネットスイッチです。最大12ギガビットPoEポートと90Wの電力、IEEE 802.3btプロトコルサポート、4つのデュアルレートギガビットSFPポートを備えたEX78900Hシリーズは、都市インフラ、交通、セキュリティなどのネットワークに柔軟性、速度、信頼性を提供します。

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

+ 高帯域幅と多用途性

8または12の10/100/1000BASE-T(X)ポートによる高帯域幅接続
最大4つのデュアルレート100/1000BASE SFPアップリンクポート
全二重で動作する最大帯域スイッチン

+ PoE機能

最大90WのポートあたりIEEE 802.3bt; パワーバジェット360W
PoEウォッチドッグのオートリブート機能で、カメラの自動復旧を可能に

+ 過酷環境向けの堅牢設計

広い動作温度範囲 -40～75°C (-40～167°F)
ファンレス動作
熱衝撃および電気ノイズ耐性

+ 管理/セキュリティ機能

ポート制御、SFTP
802.1xポートベースのネットワークアクセス制御とRADIUSを介したリモート認証
eVue™とeLite™で構成およびネットワーク状態監視

+ レイヤー3機能

スタティックルーティング、RIP v1/v2、OSPF
VRRPによる冗長性
ブロードキャストトラフィックの量を削減する

+ サポート

技術サポート
ファームウェアアップグレードと通知のサポート
条件付き永久保証

機能

+ Interface

CLI, Telnet, Web GUI

+ Management

SFTP (Secured FTP) support
Configuration backup / restore
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

+ 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

+ Security

- MAC Address filtering
- Enable/Disable port
- Storm Control and Detection
- DoS (Denial of Service) Attack
- Port Security
- 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

+ 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)

+ 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

- 32Gbps

Forwarding Rate

- 23.5Mpps

Max VLANs

- 256 (4096 VID)

Jumbo Frame Size

- 9KB

MAC Table Size

- 16K

Packet Buffer Memory

- 12M bits

仕様

+ 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)

+ 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

1,399,701 hours

+ 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

+ 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

+ 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 802.3bt 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

+ What's Included

Device

Ethernet Switch

Cables

1 Console Cable

Installation

Mounting brackets, screws

Documentation

Quick Install Guide

+ Warranty

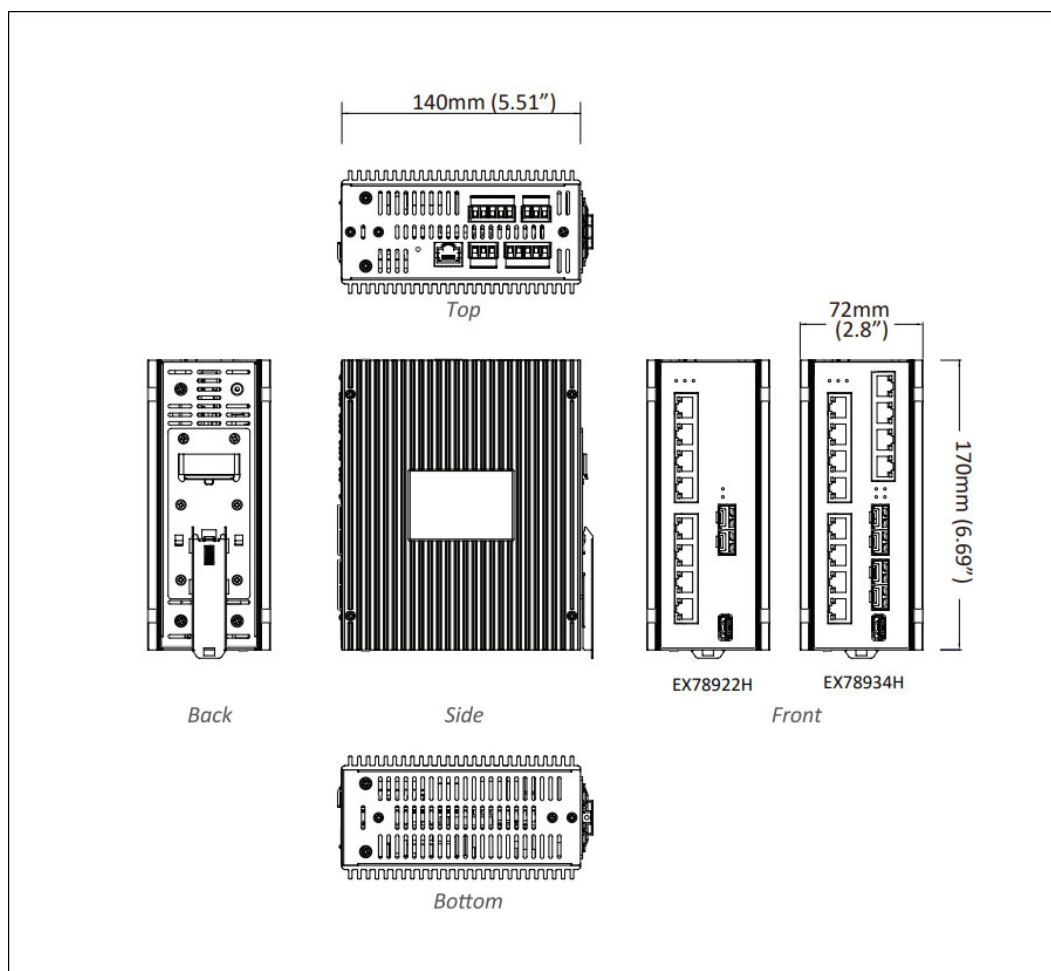
Length

Limited Lifetime

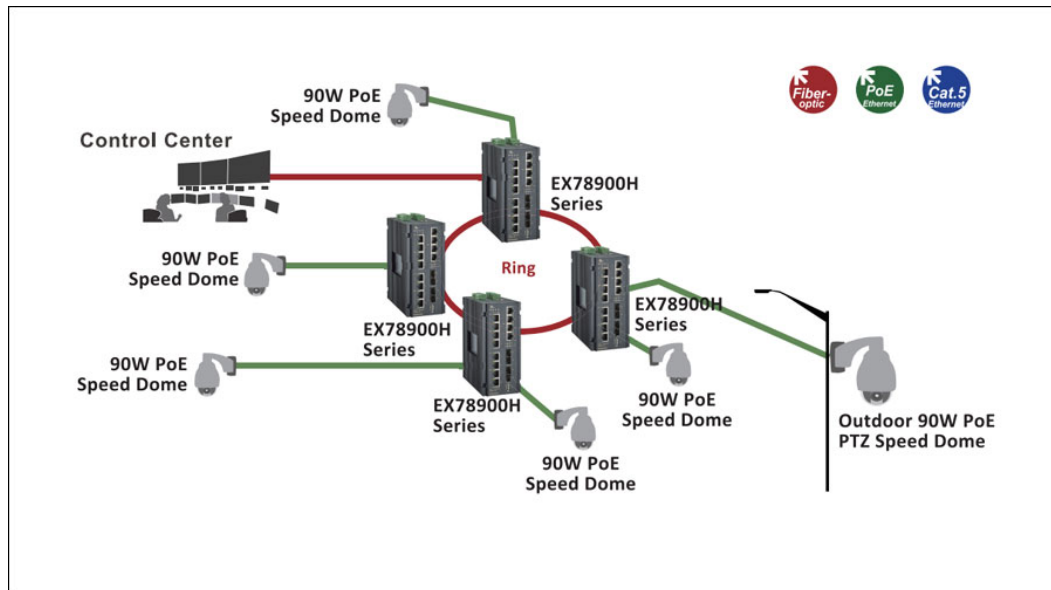
Details

www.etherwan.com/support/warranty-policy

寸法図



応用例



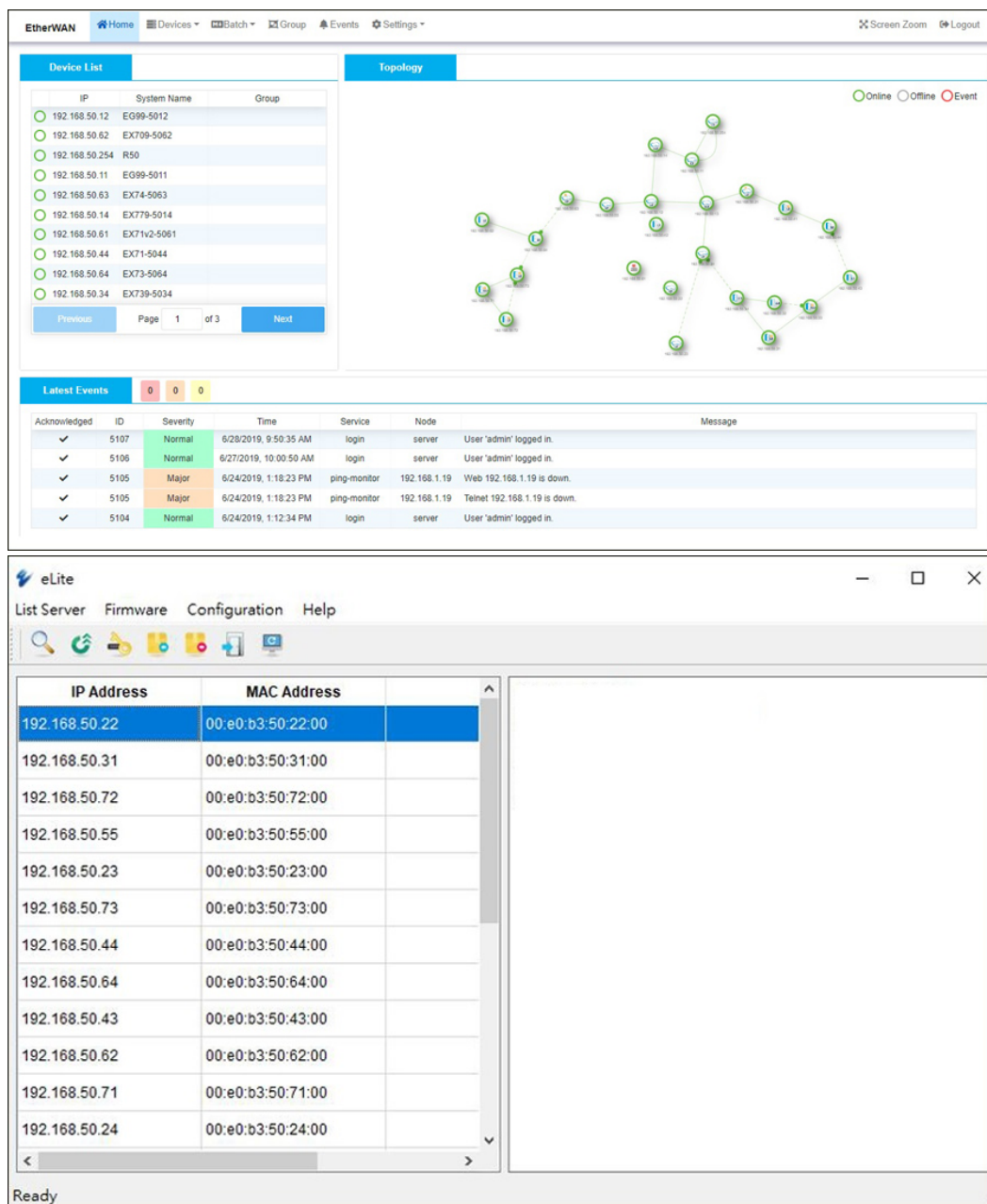
ソフトウェア

Network Management

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

Network Discovery

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



The screenshot displays the EtherWAN eLite software interface, which is used for network discovery and IP configuration. The interface is divided into several sections:

- Header:** Includes the EtherWAN logo, navigation tabs (Home, Devices, Batch, Group, Events, Settings), and utility buttons (Screen Zoom, Logout).
- Device List:** A table listing discovered devices with columns for IP, System Name, and Group. The list shows 10 devices, all with green status indicators.
- Topology:** A network diagram showing the discovered devices connected in a mesh-like structure. A legend indicates Online (green circle), Offline (white circle), and Event (red circle).
- Latest Events:** A table showing recent system events with columns for Acknowledged, ID, Severity, Time, Service, Node, and Message. It lists 6 events, including login attempts and ping-monitor results.
- eLite Main Window:** A separate window titled "eLite" with a menu bar (List Server, Firmware, Configuration, Help) and a toolbar. It contains a table of IP and MAC addresses for the discovered devices.

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	

Acknowledged	ID	Severity	Time	Service	Node	Message
✓	5107	Normal	6/28/2019, 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	Teinet 192.168.1.19 is down.
✓	5104	Normal	6/24/2019, 1:12:34 PM	login	server	User 'admin' logged in.

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

製品型番

+ Model

			
	EX78934H-0VB	EX78924H-0VB	EX78922H-0VB
10/100/1000BASE TX	12	8	8
100/1000 BASE SFP	4	4	2
PoE per port	最大90W		
	お問い合わせ	お問い合わせ	お問い合わせ

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

