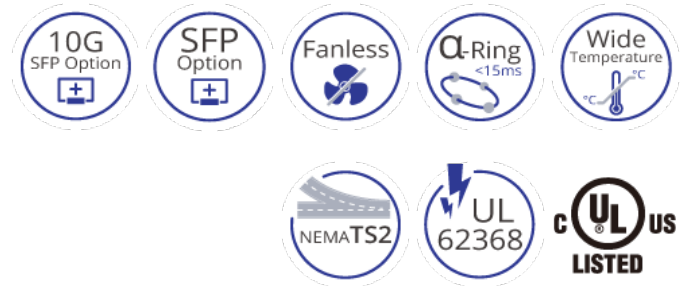


## EX77964

Lite L3 広範囲動作温度対応産業用/管理型 24ポート ギガビット+ 4ポート1G/10G SFP+ イーサネットスイッチ



## 概要

EtherWANのEX77964 シリーズは広範囲動作温度対応 管理型 全ギガビット最大28ポート運用可能なイーサネット スイッチです。スタティック ルーティング、ルーティングインフォメーションプロトコル (RIP) V1/V2とVirtual Router Redundancy Protocol (仮想ルータ冗長プロトコルVRRP) などのレイア3 ルーティング プロトコルを搭載した堅牢な管理機能と産業用仕様にあわせ、柔軟に安全的にハイパフォーマンスとコスト的なパッケージをご提供します。

EX77964は28ポートギガビット、又は24ポート ギガビット カッパー ポート +10G SFP+ 4ポートを装備し、コア ネットワークの一員として、使用されており、深さ254mmの特別な筐体設計により、狭いキャビネットの装置に最適です。

ポート セキュリティや IGMP snooping、ポートベース VLAN、GARPプロトコル、リンク アグリゲーションと ACLなどの様々な管理機能をブラウザ経由で設定可能で、Telnet、SSH、SNMP、RMON、TFTP、RS-232コンソール接続などにも対応します。EX77964は産業用-40~75°Cの広温度範囲の環境に安定したハイパフォーマンスをご提供します。

EtherWAN — "When Connectivity is Crucial."

## 特長

### + 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

### + High Bandwidth and Versatility

Up to 24 10/100/1000BASE-T(X) ports  
Up to 8 dual-rate 100/1000BASE SFP ports  
4 1G/10G SFP+ uplink ports

### + Lite Layer 3 Functionality

Static routing, RIP v1/v2, and OSPF support  
Redundancy with VRRP  
Reduces amount of broadcast traffic

### + Support

Complimentary Technical Support  
Free Firmware Upgrades  
Limited Lifetime Warranty

## 機能

### + Interface

CLI, Telnet and Web Browser  
SNMP v1/v2c/v3

### + Management

Firmware upgrade  
Configuration backup via TFTP  
DHCP Server/Client  
RMON (Remote Monitoring)  
Port Mirroring: TX/RX and both  
NTP (Network Time Protocol) synchronization  
IEEE 802.1ab LLDP (Link Layer Discovery Protocol)  
IPv4/IPv6

### + Security

MAC Address Filtering  
Enable/Disable port  
Storm control (Broadcast and multicast types)  
IEEE 802.1x LAN Access Control  
Remote authentication through RADIUS and TACACS+  
SSH for CLI and Telnet security  
SSL for web security  
ACL (Access Control List)

### + Quality of Service (QoS)

Priority Queues: 4 queues per port  
Traffic classification based on IEEE 802.1p CoS, DSCP, WRR and strict mode

Rate Limiting (Ingress/Egress)

## 仕様

### + Interface

Ethernet

16 or 24 x 10/100/1000BASE-T(X)

8 x 100/1000BASE SFP

4 x 10G SFP+

Console

1 x RJ45 RS-232

Config Backup

1 x USB (Type A Connector)

Alarm Contact

1 x Relay output, current capacity 0.6A/30VDC

LED Indicators

Per Unit: Power

Per Port: Link/Activity (Green)

### + Technology

Standards

IEEE 802.3 10BASE-T

IEEE 802.3u 100BASE-TX/100BASE-FX

IEEE 802.3ab 1000BASE-T

IEEE 802.3z 1000BASE-SX/1000BASE-LX

IEEE 802.3x Full duplex and flow control

IEEE 802.1p QoS

IEEE 802.1Q Tag VLANs

IEEE 802.1w RSTP

IEEE 802.1x PNAC

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 IEEE 802.3x Full-duplex flow control

Auto MDI/MDIX

Address Table Size

16K MAC Addresses

### + Power

Input

### + Layer 2 Features

Auto-negotiation for port speed and duplex mode

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

(<15ms) and Alpha-Chain

VLANs

IEEE 802.1Q Tag VLANs (128 groups, 4096 VID)

GVRP

GMRP

Link Aggregation

Static Trunk (4 groups, support MAC base)

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

12-24VDC Redundant (Terminal block)

Power Consumption  
31.08W

## + Physical

Casing Material  
Metal

IP Rating  
IP30

Dimensions  
430 x 254 x 44.2mm (W x D x H)  
16.9" x 10" x 1.74"

Weight  
3.29Kg (7.25lbs)

Installation Type  
Rack 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)

## + 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)  
EN 61000-4-6 (Induced RFI)  
EN 61000-4-8 (Magnetic Field)

**Safety**  
UL 62368

**Vibration**  
IEC 60068-2-6 Fc

**Shock**  
IEC 60068-2-27 Ea

**Free Fall**  
FED STD 101C Method 5007.1

**Industrial Compliance**  
NEMA TS2

## + Warranty

**Length**  
Limited Lifetime

**Details**  
[www.etherwan.com/support/warranty-policy](http://www.etherwan.com/support/warranty-policy)

## + What's Included

**Device**  
Ethernet Switch

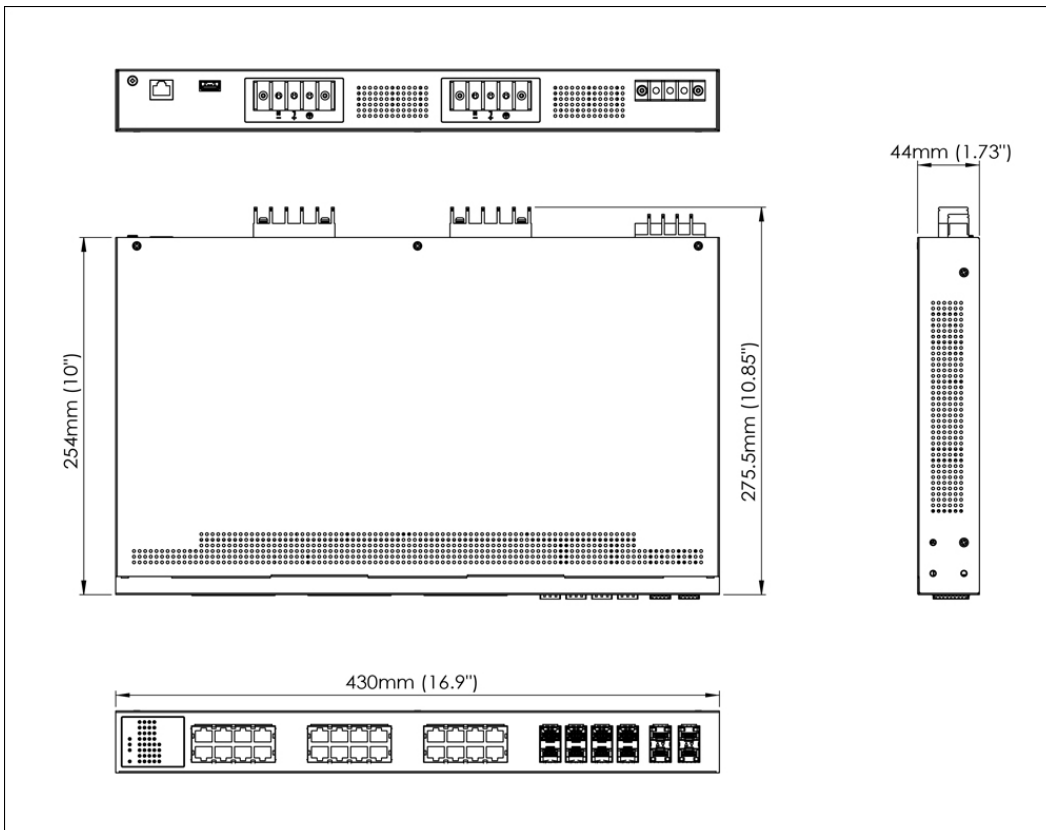
**Cables**  
1 Console Cable

**Installation**

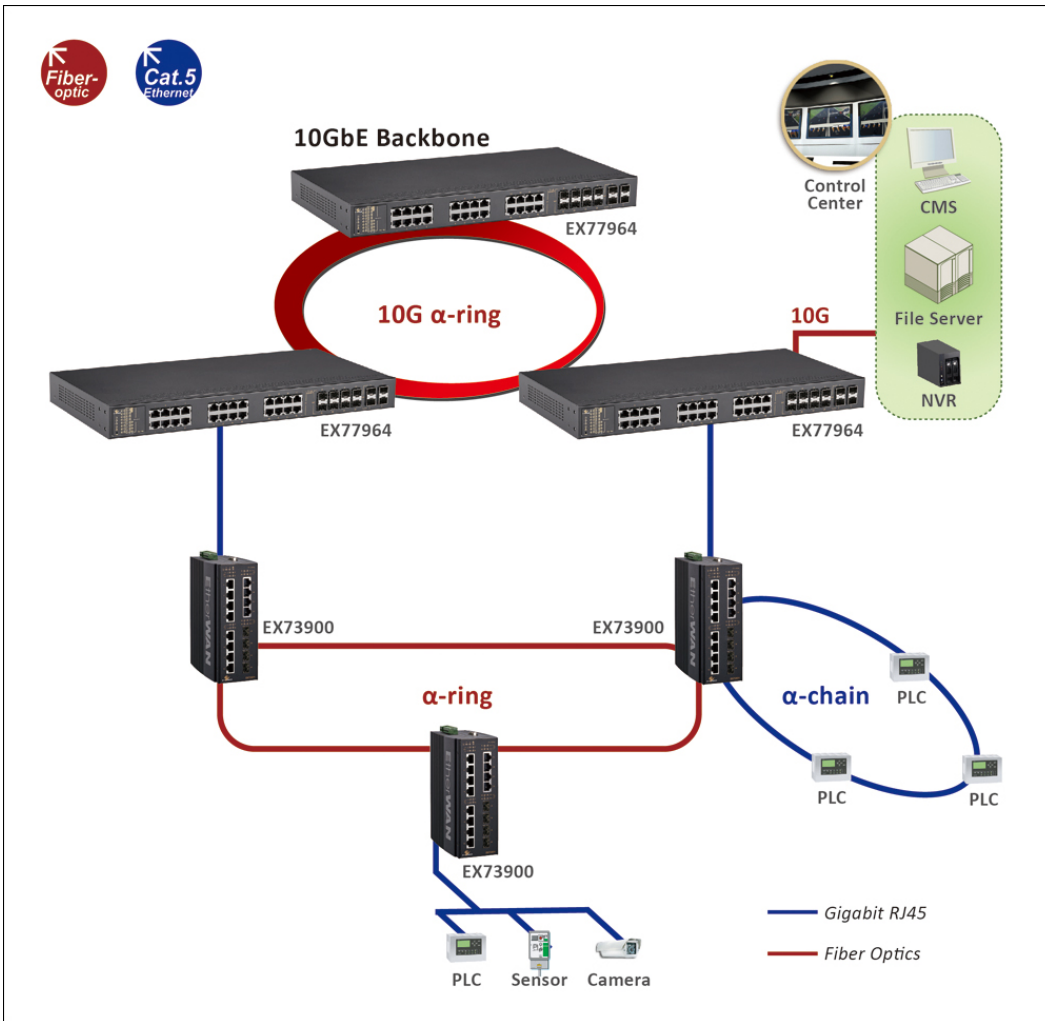
Mounting brackets

Documentation  
Quick Install Guide

## 寸法図

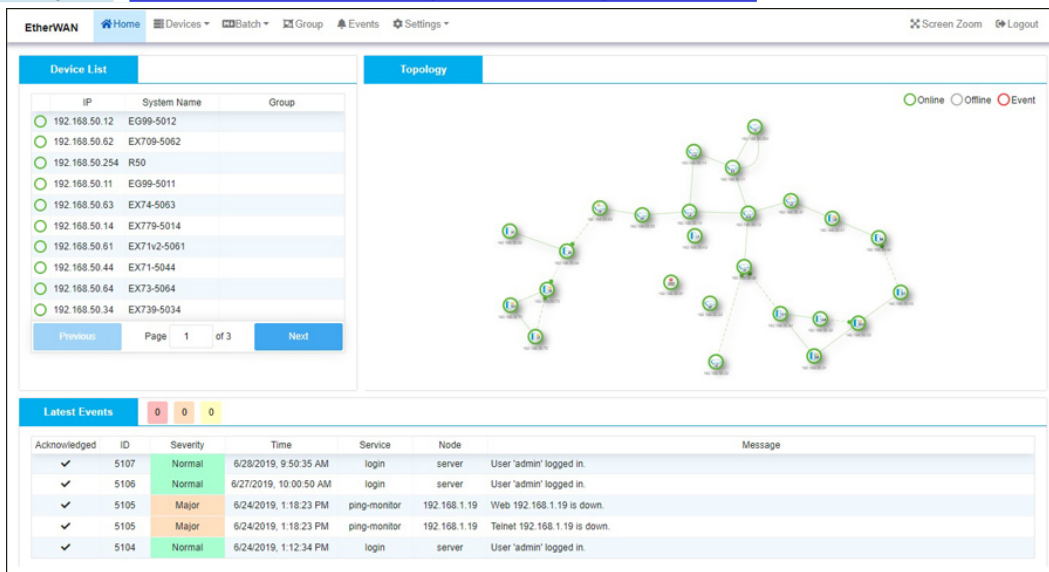


## 応用例



## ソフトウェア

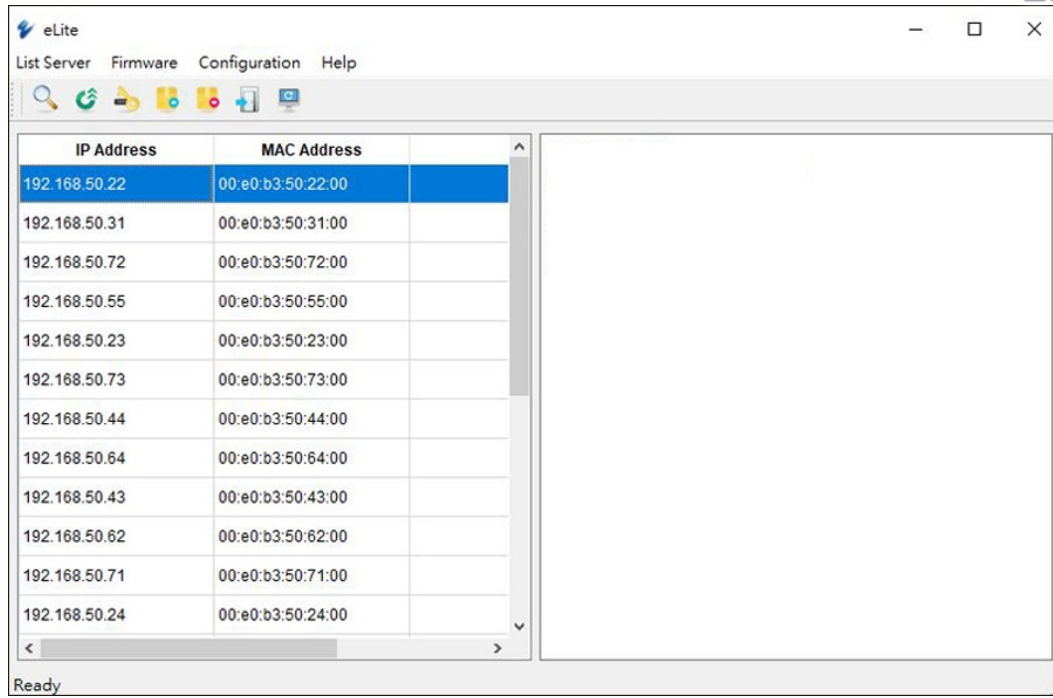
Network Management [eVue™ Network Configuration and Monitoring Tool](#)  
 Network Discovery [eLite™ Network Discovery and IP Configuration Tool](#)



The screenshot shows the EtherWAN management interface. It includes a navigation bar with 'Home', 'Devices', 'Batch', 'Group', 'Events', and 'Settings'. The main content is divided into three sections:

- Device List:** A table listing network devices with columns for IP, System Name, and Group.
- Topology:** A network diagram showing the physical and logical connections between devices, with a legend for Online (green), Offline (grey), and Event (red).
- Latest Events:** A table showing recent system events with columns for Acknowledged, ID, Severity, Time, Service, Node, and Message.

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	Telnet 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

**EX77964-8VB** 16-port 10/100/1000BASE-TX + 8-port 100/1000BASE SFP Combo + 4-port 1G/10G SFP+ (12-24VDC)

### + Accessories

Hardened 100BASE SFP Modules	<a href="http://www.etherwan.com/products/sfp-fiber-transceiver">www.etherwan.com/products/sfp-fiber-transceiver</a>
Hardened Gigabit and 10-Gigabit SFP Modules	<a href="http://www.etherwan.com/products/sfp-fiber-transceiver">www.etherwan.com/products/sfp-fiber-transceiver</a>
DIN-Rail Power Supplies	<a href="http://www.etherwan.com/products/din-rail-power-supply">www.etherwan.com/products/din-rail-power-supply</a>
	(*)
*Recommended Power Supply	HDR-60-24 60W 24VDC DIN-Rail Power Supply
EB-232	Configuration Backup and Restoration Tool

