



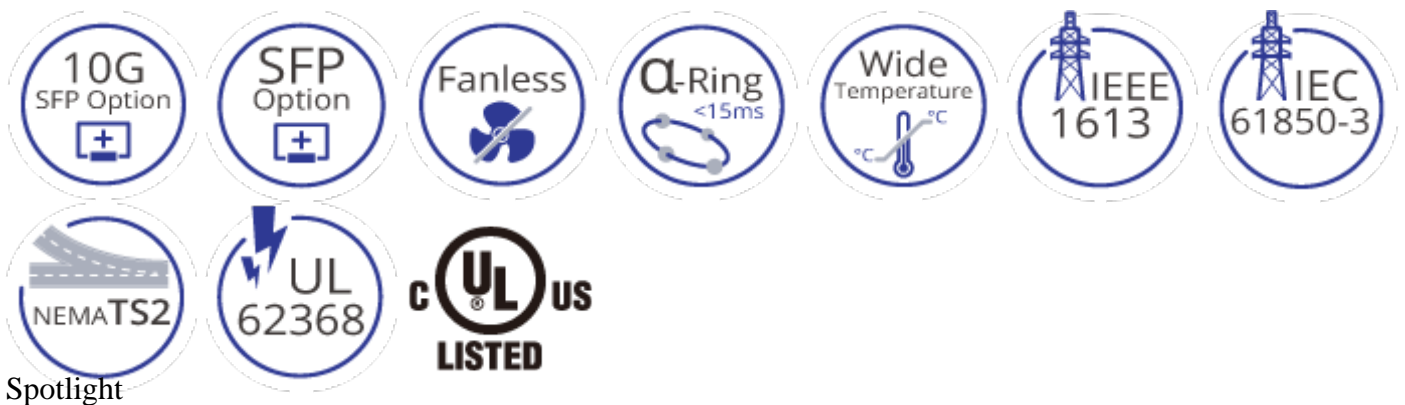
EtherWAN

migrate-ed9.hellosanta.tw/products/ex77900-series EX77900 Series

EX77900 Series

IEC 61850-3/IEEE 1613 Lite L3 Hardened Managed 24-port Gigabit and 4-port 1G/10G SFP+ Ethernet Switch





Spotlight

Hardened Grade

- Wide operating temperature range for extreme environments
- Fanless and ruggedized housing
- High shock and electric noise immunity

10GbE Connectivity

- Four 10G SFP+ for connecting the switch to the core network

Lite Layer 3 Routing Features

- Supports static route, RIP v1/v2 and OSPF
- Maximum number of routes in hardware: 64 entries
- Supports Virtual Router Redundancy Protocol (VRRP)

Overview

[When should you use an Industrial Layer 3 switch?](#)

EtherWAN's EX77900 Series provides a Hardened Full-Gigabit Managed 28-port switching platform that combines the advantages of Layer 3 routing protocols with robust management features and hardened specifications. With support for static routing, Routing Information Protocol (RIP) V1/V2, and Virtual Router Redundancy Protocol (VRRP), these switches deliver outstanding flexibility and security in a high performance and cost-effective package.

The EX77900 Series is equipped with twenty-eight gigabit ports, or a combination of twenty-four Gigabit copper ports and four 10G SFP+ for connecting the switch to the core network. Mountable on a 1U rack, the switches are equipped with EtherWAN's Alpha-Ring self-healing technology, providing less than 15ms fault recovery time making it ideal for applications intolerant to interruption.

A broad range of management features and options includes port security, IGMP snooping, port-based VLAN, GARP protocols, link aggregation and ACL, via web browser, telnet, SSH, SNMP, RMON, TFTP, and RS-232 console interfaces. With the hardened specifications, the EX77900 Series is designed to operate at -40 to 75°C in harsh environments, and is IEC 61850 & IEEE 1613 compliant, capable of operating under high EMI environments, making it an ideal choice for mission-critical applications.

EtherWAN — "When Connectivity is Crucial."

Features

Management

- » Interface
 - • CLI, Telnet and Web Browser
 - • SNMP v1/v2c/v3
- » Firmware and configuration upgrade and backup via TFTP
- » Supports DHCP Server/Client
- » RMON (Remote Monitoring)
- » Port mirroring: TX/RX and both
- » NTP (Network Time Protocol) time 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
-

Quality of Service (QoS)

- » Priority Queues: 4 queues per port
 - » Traffic classification based on IEEE 802.1p CoS, DSCP, WRR (Weighted Round Robin) and strict mode
 - » Rate Limiting (Ingress/Egress)
-

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 Protocol
 - • IEEE 802.1D Spanning Tree Protocol (STP)
 - • IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
 - • IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)
 - • EtherWAN's Alpha-Ring network fault recovery (<15ms) and Alpha-Chain
 - » VLANs
 - • IEEE 802.1Q Tag VLANs (128 groups, 4096 VID)
 - • GVRP (GARP VLAN Registration Protocol)
 - • GMRP (GARP Multicast Registration Protocol)
 - » Link Aggregation
 - • Static Trunk (4 groups, support MAC base)
 - • IEEE 802.3ad Link Aggregation Control Protocol
 - » IGMP Snooping
 - • IGMP Snooping v1/v2/v3
-

Layer 3 Features

- » Routing Protocols
 - • Maximum number of routes in hardware:64 entries
 - • Static routing
 - • RIP v1/v2
 - • OSPF v2
 - » Routing Redundancy
 - • VRRP
-

Specifications

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 Port-based Network Access Control
 -
 - **Forward and Filtering Rate**
 - 14,880pps for 10Mbps
 - 148,810pps for 100Mbps
 - 1,488,100pps for 1000Mbps
 - 14,880,952pps for 10Gbps
 -
 - **Packet Buffer Memory**
 - 12M bits
 -
 - **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**
 - Power input can be configured as:
 - 1. ± 48 VDC (Terminal Block)
 - 2. 88-300VDC or 100-240VAC (Terminal Block)
 - 3. 100-240VAC (AC Inlet)
 - 4. ± 48 VDC Redundant (Terminal Block)
 - 5. 88-300VDC or 100-240VAC Redundant (Terminal Block)
 - 6. 100-240VAC Redundant (AC Inlet)
 -
 - **Power Consumption**
 - 31.08W
-

Mechanical

- **Casing**
 - Metal Case
 - IP30
 -
 - **Dimensions**
 - 430 x 375 x 44.2mm (W x D x H)
(16.9" x 14.7" x 1.74")
 -
 - **Weight**
 - 5.27kg
 -
 - **Installation**
 - Rack mounting
-

Interface

- **Ethernet Port**
- 10/100/1000BASE-TX: 16 or 24 ports

- • 100/1000BASE-SX/LX/BX/SFP: 8 ports
 - • 10G SFP+: 4 ports
 -
 - **Console Port**
 - • One DB9 RS-232 port
 -
 - **USB Port**
 - • One USB Port (Type A connector)
 -
 - **Alarm Contact**
 - • One relay output with current 0.6A/30VDC
 -
 - **LED Indicators**
 - • Per Unit: Power 1, Power 2, Alarm
 - • Per Port: Link/Activity (Green)
-

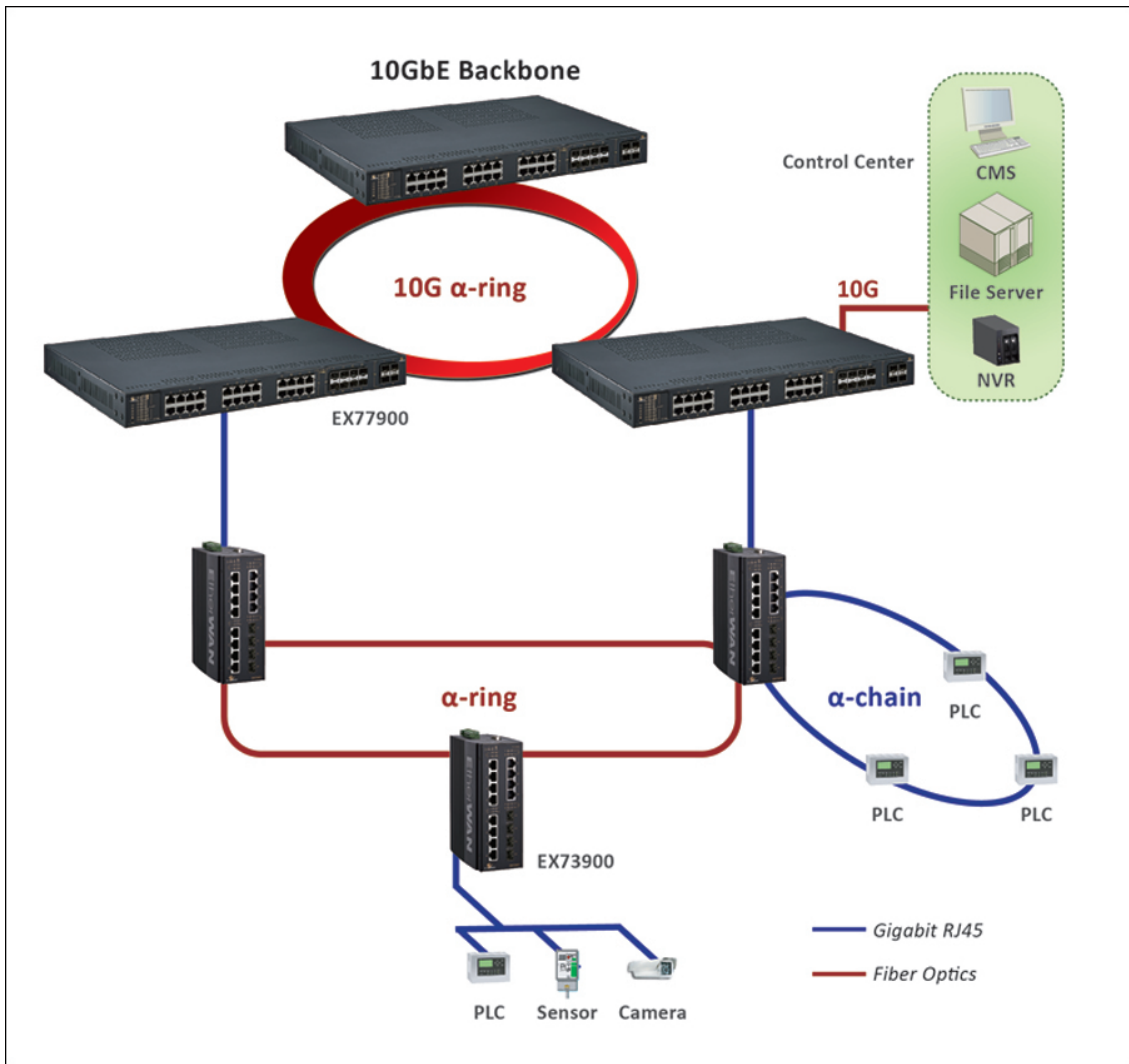
Environment

- **Operating Temperature**
 - • -40 to 75°C (-40 to 167°F)
 -
 - **Storage Temperature**
 - • -45 to 85°C (-49 to 185°F)
 -
 - **Ambient Relative Humidity**
 - • 5% to 95% (non-condensing)
-

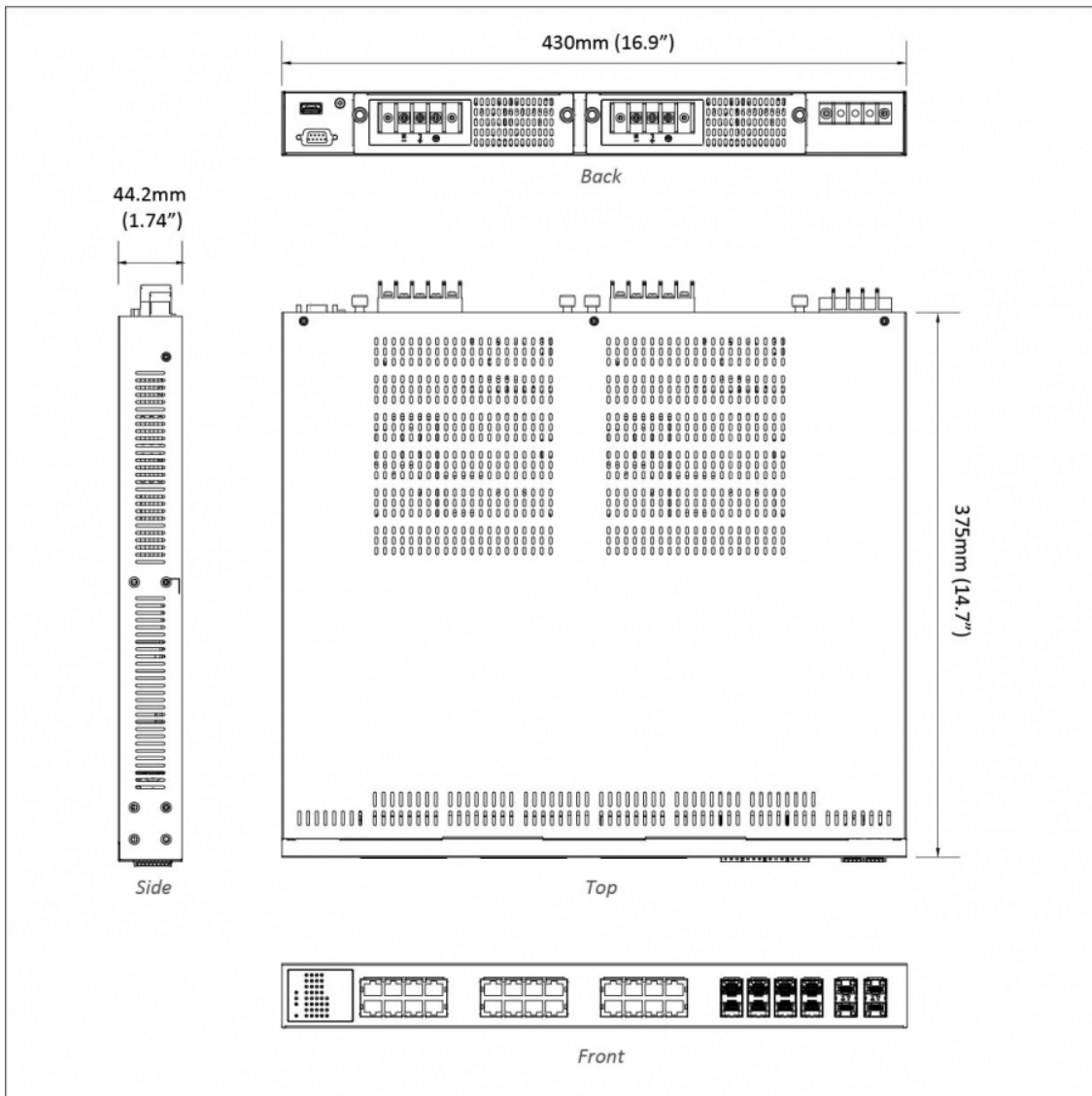
Regulatory Approvals

- **ISO**
 - • Manufactured in an ISO 9001 facility
 -
 - **Safety**
 - UL 62368
 -
 - **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 Standards)
 - • EN 61000-4-3 (Radiated RFI Standards)
 - • EN 61000-4-4 (Burst Standards)
 - • EN 61000-4-5 (Surge Standards)
 - • EN 61000-4-6 (Induced RFI Standards)
 - • EN 61000-4-8 (Magnetic Field Standards)
 -
 - **Environmental Test Compliance**
 - IEC 60068-2-6 Fc (Vibration Resistance)
 - IEC 60068-2-27 Ea (Shock)
 - FED STD 101C Method 5007.1 (Free fall w/package)
 -
 - **Industrial Compliance**
 - IEC 61850-3/IEEE 1613
 - EN 50121-4
 - NEMA TS2
-

Application



Dimensions



Ordering Info

Model

EX77964-8V 16-port 10/100/1000BASE-TX +8-port 100/1000BASE SFP Combo +4-port 1G/10G SFP+ Hardened Managed
 Z Ethernet Switch

Power Input Interface (Z)

- T ±48VDC (Terminal Block)
- W 88-300VDC or 100-240VAC (Terminal Block)
- C 100-240VAC (AC Inlet)
- TR ±48VDC Redundant (Terminal Block)
- WR 88-300VDC or 100-240VAC Redundant (Terminal Block)
- CR 100-240VAC Redundant (AC Inlet)

Optional Accessory

EB-232 Configuration Backup and Restoration Tool for EtherWAN switch with firmware 2.01.1 or above



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