

## **EtherWAN Hardened Managed LL3 Gigabit Ethernet PoE Switch with 8x Gigabit PoE Ports & 4x 100/1000Base SFP Ports**

EtherWAN's EX78900H series is a hardened DIN-rail mounted managed PoE Ethernet switch platform. Equipped with up to 12 gigabit PoE ports along with 90W power and IEEE 802.3bt protocol support and 4 dual-rate gigabit SFP ports, the EX78900H series provides flexibility, speed, and reliability for networks in urban infrastructure, transportation, security, and other areas where connectivity is crucial.

### **High Bandwidth and Versatility**

- 8 or 12 10/100/1000BASE-T(X) ports for high bandwidth connections
- Up to 4 Dual-rate 100/1000BASE SFP uplink ports for fiber connections
- Full capacity switching running at full duplex

### **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

### **Lite Layer 3 Functionality**

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

### **PoE Features**

- IEEE 802.3bt with up to 90W per port; 360W total power budget
- PoE watchdog monitors status of connected PoE devices

## **Management/Security Features**

- Port control, SFTP
- 1x port-based network access control and remote authentication through RADIUS
- Configure and monitor with eVue™ and eLite™

## **Support**

- Complimentary technical support
- Free firmware upgrades and notifications
- Limited lifetime warranty

## **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

## 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)

## 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 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

### Software Properties and Performance

- Switching Fabric
  - 32Gbps
- Forwarding Rate
  - 5Mpps
- Max VLANs
  - 256 (4096 VID)
- Jumbo Frame Size
  - 9KB
- MAC Table Size
  - 16K
- Packet Buffer Memory
  - 12M bits

## 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)

## 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

## Power

- Input
  - 46-57VDC Redundant (Terminal block)\*\*  
\*\* 46-57VDC for IEEE 802.3af type 1, ≤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)  
8" x 5.5" x 6.7"
- Weight
  - 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
  - 1,399,701 hours

## **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
- Traffic
  - NEMA TS2
- Rail
  - EN 50121-4
- Vibration
  - IEC 60068-2-6
- Shock
  - IEC 60068-2-27
- Free Fall
  - FED STD 101C Method 5007.1
- Industrial
  - EN 50121-4

## **What's Included**

- Device
  - Ethernet Switch
- Cables
  - 1 Console Cable
- Installation
  - Mounting brackets, screws
- Documentation
  - Quick Install Guide