

# EX78900G Series

Hardened Managed 8-Port Gigabit PoE++ and 4-Port 100/1G/2.5G SFP Ethernet Switch



## Product Highlights

### ➤ 2.5GbE High Bandwidth and Scalability

- 8 x 10/100/1000BASE-T(X) ports for high bandwidth connections
- Up to 4 tri-speed 100/1000/2500BASE 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

### ➤ PoE Features

- Backward compatible with IEEE 802.3af & IEEE 802.3at
- IEEE 802.3bt PoE with up to 90W per port; Max. 480W total power budget
- PoE watchdog monitors status of connected PoE devices

### ➤ Support

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

## Overview

The EX78900G series represents EtherWAN's latest advancement in 2.5G Ethernet switch technology, featuring comprehensive Layer 2 and Layer 3 management functionalities. This 2.5G managed PoE switch, compactly DIN-rail mounted, supports up to 8 gigabit PoE ports, providing a maximum of 90W PoE power. It adheres to the IEEE 802.3bt protocol while maintaining compatibility with IEEE 802.3af and IEEE 802.3at standards, allowing for versatile PoE power delivery ranging from 15W, 30W, 60W to 90W per Ethernet port.

Additionally, the switch integrates up to 4 tri-rate 2.5G SFP uplink ports, providing adaptability with triple-speed options of 100Mbps, 1000Mbps, and 2500Mbps for flexible connectivity expansion. The EX78900G series is designed to offer networks in urban infrastructure, transportation, security, and other critical sectors the trifecta of flexibility, speed, and reliability.

# Ordering Information

## Model

|                     |                                                                                                    |
|---------------------|----------------------------------------------------------------------------------------------------|
| <b>EX78924G-XYZ</b> | 8-port 10/100/1000BASE-T(X) PoE++ 90W + 4-port 100/1000/2500BASE SFP                               |
| <b>EX78922G-XYZ</b> | 8-port 10/100/1000BASE-T(X) PoE++ 90W + 2-port 100/1000/2500BASE SFP                               |
| <b>EX78912G-XYZ</b> | 4-port 10/100/1000BASE-T(X) PoE++ 90W + 4-port 10/100/1000BASE-T(X) + 2-port 100/1000/2500BASE SFP |

## Power Input Range (X)

|          |             |
|----------|-------------|
| <b>0</b> | 46 to 57VDC |
|----------|-------------|

## PoE PSE Standard Support (Y)

|          |                                            |
|----------|--------------------------------------------|
| <b>B</b> | IEEE 802.3bt / IEEE 802.3at / IEEE 802.3af |
|----------|--------------------------------------------|

## Power Input Interface (Z)

|          |                |
|----------|----------------|
| <b>T</b> | Terminal Block |
|----------|----------------|

## Software Features

|                                                                                                                                                           |   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| <b>Interface</b>                                                                                                                                          | + |
| CLI, Telnet, Web GUI                                                                                                                                      |   |
| <b>Management</b>                                                                                                                                         | + |
| Firmware Upgrade                                                                                                                                          |   |
| Configuration Backup                                                                                                                                      |   |
| DHCP Server/Client/Snooping/Relay                                                                                                                         |   |
| RMON (Remote Monitoring)                                                                                                                                  |   |
| Port Mirroring                                                                                                                                            |   |
| NTP (Network Time Protocol) Synchronization                                                                                                               |   |
| LLDP (Link Layer Discovery Protocol)                                                                                                                      |   |
| IPv4/IPv6                                                                                                                                                 |   |
| SNMP v1/v2c/v3                                                                                                                                            |   |
| <b>Security</b>                                                                                                                                           | + |
| MAC Address Filtering                                                                                                                                     |   |
| Enable/Disable Port                                                                                                                                       |   |
| Storm Control                                                                                                                                             |   |
| System Logging                                                                                                                                            |   |
| Remote Authentication through RADIUS and TACACS+                                                                                                          |   |
| Complex Password Support                                                                                                                                  |   |
| Multi-User Login and Privileged Access Management                                                                                                         |   |
| SSH for CLI and Telnet Security                                                                                                                           |   |
| SSL and HTTPS for Web Security                                                                                                                            |   |
| ACL (Access Control List)                                                                                                                                 |   |
| <b>Quality of Service (QoS)</b>                                                                                                                           | + |
| 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)                                                                                                                            |   |

|                                                   |                                                                                                                |
|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| <b>Layer 2 Features</b>                           | +                                                                                                              |
| <b>Auto-Negotiation for Port Speed and Duplex</b> | Flow control<br>IEEE 802.3x full duplex mode<br>Back-pressure half duplex mode                                 |
| <b>Redundant Protocols</b>                        | IEEE 802.1D STP<br>IEEE 802.1w RSTP<br>IEEE 802.1s MSTP<br>ITU-T G.8032 Ethernet Ring Protection Switch (ERPS) |
| <b>VLANs</b>                                      | IEEE 802.1Q Tag VLANs<br>GVRP<br>GMRP                                                                          |
| <b>Link Aggregation</b>                           | Static Trunk (8 groups)<br>IEEE 802.3ad LACP                                                                   |
| <b>IGMP Snooping v1/v2/v3</b>                     |                                                                                                                |
| <b>Layer 3 Features</b>                           | +                                                                                                              |
| <b>IP Packet Routing</b>                          | Maximum 512 hosts<br>Maximum 64 routes<br>Static routing<br>RIP v1/v2<br>OSPF v2                               |
| <b>Routing Redundancy</b>                         | VRRP v2                                                                                                        |
| <b>Software Properties and Performance</b>        | +                                                                                                              |
| <b>Switching Fabric</b>                           | 36Gbps                                                                                                         |
| <b>Forwarding Rate</b>                            | 26.78Mpps                                                                                                      |
| <b>Max VLANs</b>                                  | 256 (4096 VID)                                                                                                 |
| <b>Jumbo Frame Size</b>                           | 9KB                                                                                                            |
| <b>MAC Table Size</b>                             | 16K                                                                                                            |
| <b>Packet Buffer Memory</b>                       | 512KB (4M bits)                                                                                                |

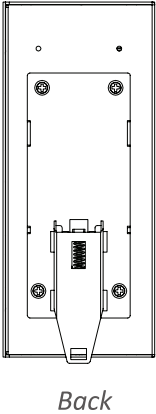
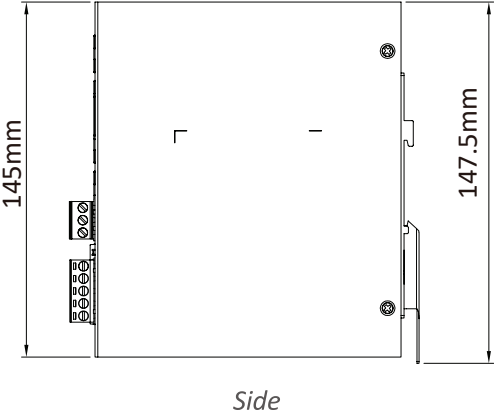
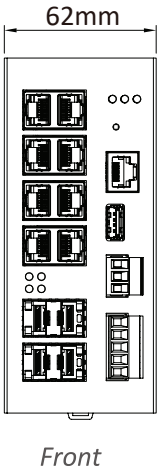
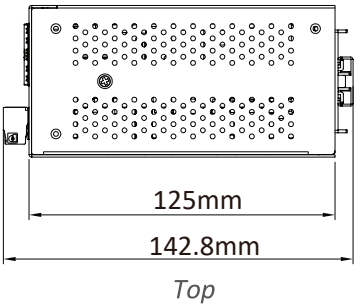
# Hardware Specifications

| Interface +            |                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ethernet               | 8 x 10/100/1000BASE-T(X)<br>2 or 4 x 100/1000/2500BASE SFP                                                                                                                                                                                                                                                                                                                                                                                                  |
| Console                | 1 x RJ45                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Config Backup          | 1 x USB (Type A connector)                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Alarm Contact          | Relay output, current capacity<br>0.5A/48VDC                                                                                                                                                                                                                                                                                                                                                                                                                |
| LED Indicators         | Per Unit: Power 1, Power 2<br>Per Port: Link/Activity (Green)<br>Per PoE Port: PoE Status (Amber)                                                                                                                                                                                                                                                                                                                                                           |
| Technology +           |                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Standards              | IEEE 802.3 10BASE-T<br>IEEE 802.3u 100BASE-TX/100BASE-FX<br>IEEE 802.3ab 1000BASE-T<br>IEEE 802.3ad link aggregation control<br>IEEE 802.3z 1000BASE-SX/1000BASE-LX<br>IEEE 802.3x full duplex and flow control<br>IEEE 802.1D STP<br>IEEE 802.1p QoS<br>IEEE 802.1Q Tag VLANs<br>IEEE 802.1s MSTP<br>IEEE 802.1w RSTP<br>IEEE 802.1x Radius<br>IEEE 802.1ab LLDP<br>IEEE 802.3az Energy-Efficient Ethernet (EEE)<br>IEEE 802.3af/at/bt Power over Ethernet |
| Forward/Filtering Rate | 14,880pps for 10Mbps<br>148,809pps for 100Mbps<br>1,488,095pps for 1000Mbps<br>3,720,238pps for 2500Mbps                                                                                                                                                                                                                                                                                                                                                    |
| Processing Type        | Store-and-forward<br>Auto-negotiation<br>Half-duplex back-pressure and full-duplex flow control<br>Auto MDI/MDIX                                                                                                                                                                                                                                                                                                                                            |
| System Memory          | 1GB DDR3 SDRAM                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Flash Storage          | 128MB                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Power +                |                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Input                  | 46-57VDC Redundant (Terminal block)**                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Power Consumption      | Max. 14W (without PoE)                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Power Budget (Max.)    | For EX78912G-0BT:<br>• 240 Watts<br>For EX78924G-0BT & EX78922G-0BT:<br>• 480 Watts up to operating temp. 70°C<br>• 400 Watts up to operating temp. 75°C                                                                                                                                                                                                                                                                                                    |
| Protection             | Reverse polarity protection                                                                                                                                                                                                                                                                                                                                                                                                                                 |

\*\* Required power input voltage varies based on the connected powered devices (PDs):  
 IEEE 802.3 af (15W): 46 – 57 VDC  
 IEEE 802.3 at (30W): 52 – 57 VDC  
 IEEE 802.3 bt (Type 3: 60 Watts): 52 – 57 VDC  
 IEEE 802.3 bt (Type 4: 90 Watts): 54 – 57 VDC

| Physical +        |                                                                                                        |
|-------------------|--------------------------------------------------------------------------------------------------------|
| Casing Material   | Metal                                                                                                  |
| IP Rating         | IP30                                                                                                   |
| Dimensions        | 62 x 125 x 145mm (W x D x H)                                                                           |
| Weight            | 0.75 kg (1.65 lbs)                                                                                     |
| 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              | 2,696,769 hours                                                                                        |
| Regulatory +      |                                                                                                        |
| ISO               | Manufactured in ISO-9001 facility                                                                      |
| EMI               | FCC Part 15B Class A<br>VCCI Class A<br>EN 61000-6-4<br>EN 55032                                       |
| EMS               | EN 61000-6-2                                                                                           |
| Safety            | UL 62368                                                                                               |
| Traffic           | NEMA TS2                                                                                               |
| Rail              | EN 50121-4                                                                                             |
| Vibration         | IEC 60068-2-6                                                                                          |
| Shock             | IEC 60068-2-27                                                                                         |
| Free Fall         | IEC 60068-2-31                                                                                         |
| Warranty +        |                                                                                                        |
| Length            | Limited lifetime                                                                                       |
| Details           | <a href="http://www.etherwan.com/support/warranty-policy">www.etherwan.com/support/warranty-policy</a> |
| What's Included + |                                                                                                        |
| Device            | Ethernet switch                                                                                        |
| Cable             | 1 Console cable                                                                                        |
| Installation      | DIN-Rail mounting kit                                                                                  |

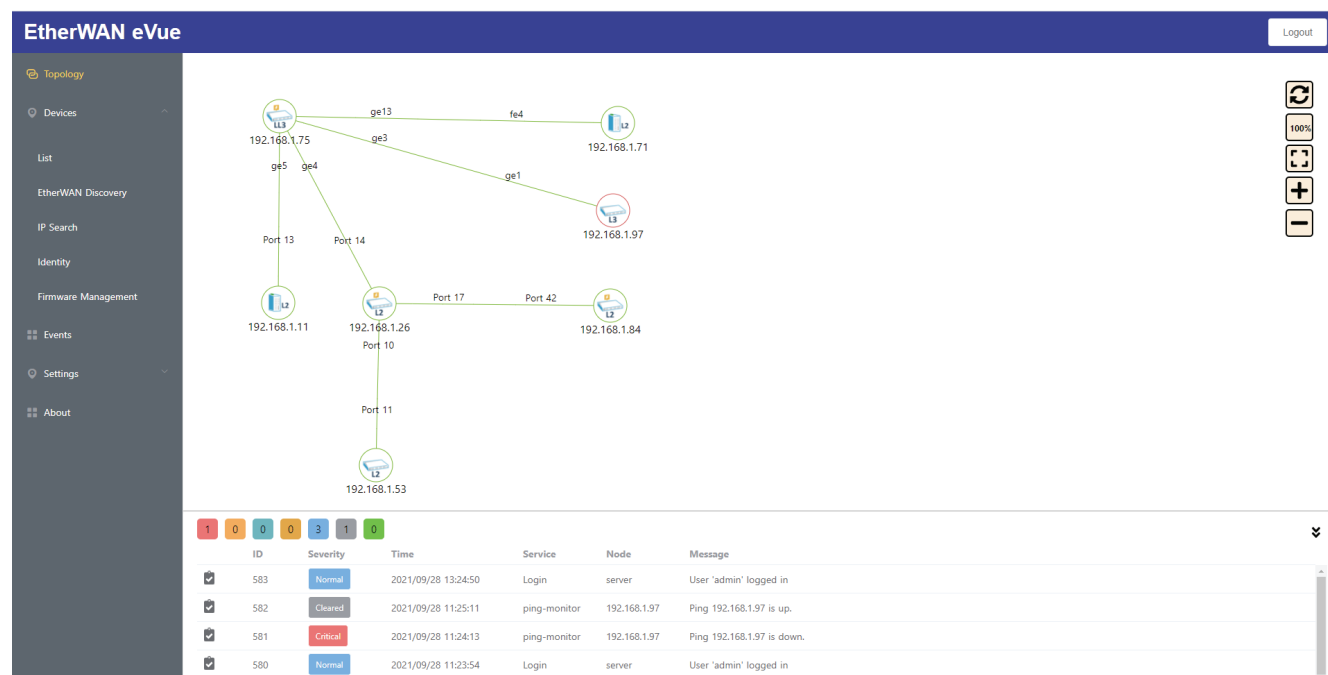
# Dimensions



# Software

Network Management eVue™ Network Configuration and Monitoring Tool

Network Discovery eLite™ Network Discovery and IP Configuration Tool



**EtherWAN eVue** v1.30.00

**Firmware Management**

Firmware Information

| File             | Series | Version |
|------------------|--------|---------|
| swt001-0000-0000 | 000000 | 00000   |
| swt002-0000-0000 | 000000 | 00000   |
| swt003-0000-0000 | 000000 | 00000   |
| swt004-0000-0000 | 000000 | 00000   |
| swt005-0000-0000 | 000000 | 00000   |
| swt006-0000-0000 | 000000 | 00000   |

**EtherWAN eVue**

Events

| ID  | Severity | Time                | Service      | Node         | Message                    |
|-----|----------|---------------------|--------------|--------------|----------------------------|
| 583 | Normal   | 2021/09/28 13:24:50 | Login        | server       | User 'admin' logged in     |
| 582 | Cleared  | 2021/09/28 11:25:11 | ping-monitor | 192.168.1.97 | Ping 192.168.1.97 is up.   |
| 581 | Critical | 2021/09/28 11:24:13 | ping-monitor | 192.168.1.97 | Ping 192.168.1.97 is down. |
| 580 | Normal   | 2021/09/28 11:23:54 | Login        | server       | User 'admin' logged in     |
| 579 | Normal   | 2021/09/28 11:23:54 | Login        | server       | User 'admin' logged in     |

**eLite**

File Edit About

IP Range: 192.168.1.1 ~ 192.168.1.50 SNMP: v2

| IP           | Name     | MAC Address       | Brand    | Series     | Model      | Firmware                   |
|--------------|----------|-------------------|----------|------------|------------|----------------------------|
| 192.168.1.40 | switch_a | 00:e0:b3:41:e2:ec | EtherWAN | 71000      | 71000      | 4.02.6.0 08/10/22 09:10:45 |
| 192.168.1.20 | switch_a | 00:e0:b3:50:32:00 | EtherWAN | 73921SC    | 73921SC    | 2.02.9.5 09/21/22 10:04:45 |
| 192.168.1.50 | switch_a | 00:e0:b3:00:03:00 | EtherWAN | 73934E-SFP | 73934E-SFP | 5.02.1.0 08/04/22 13:56:10 |

Information LLDP MAC Table Interface

Local ChassisId: 0x00e0b341e2ec Local System Name: switch\_a

Local System Description: Etherwan 8TX+2G Managed Switch, Firmware rev: 4.02.6.0 08/10/22 09:10:45

| Port | Neighbor ID       | Neighbor Port | Description | System   |
|------|-------------------|---------------|-------------|----------|
| fe1  | 00:e0:b3:00:03:00 | ge1           |             | switch_a |

# Accessories

## SFP Modules

| Model Number      | Transmission Speed | Mode        | Distance | Operating Temperature | Wavelength | Connector Type | DDM |
|-------------------|--------------------|-------------|----------|-----------------------|------------|----------------|-----|
| SFP2IS20M         | 2500Mbps           | Single-mode | 20km     | -40 to 85°C           | 1310nm     | Duplex LC      | V   |
| SFP2IM2AM         | 2500Mbps           | Multi-mode  | 160m     | -40 to 85°C           | 850nm      | Duplex LC      | V   |
| SFP2XT1AM         | 2500Mbps           | -           | 100m     | -40 to 85°C           | -          | RJ-45          | -   |
| SFPGIM5AM         | 1000Mbps           | Multi-mode  | 275/550m | -40 to 85°C           | 850nm      | Duplex LC      | V   |
| SFPGIM02M         | 1000Mbps           | Multi-mode  | 2km      | -40 to 85°C           | 1310nm     | Duplex LC      | V   |
| SFPGIS10M         | 1000Mbps           | Single-mode | 10km     | -40 to 85°C           | 1310nm     | Duplex LC      | V   |
| SFPGIS20M         | 1000Mbps           | Single-mode | 20km     | -40 to 85°C           | 1310nm     | Duplex LC      | V   |
| SFPGXT1AM         | 1000Mbps           | -           | 100m     | -40 to 85°C           | -          | RJ-45          | -   |
| EX-0155NSP-MB2L-A | 100Mbps            | Multi-mode  | 2km      | -40 to 85°C           | 1310nm     | Duplex LC      | -   |
| SFPMIS20M (DDM)   | 100Mbps            | Single-mode | 20km     | -40 to 85°C           | 1310nm     | Duplex LC      | V   |

For more SFP, please visit website: [www.etherwan.com/products/sfp-fiber-transceiver](http://www.etherwan.com/products/sfp-fiber-transceiver)

## Industrial DIN-Rail Power Supplies

| Model Number | Input Voltage | Output Voltage | Description                                      | Operating Temperature |
|--------------|---------------|----------------|--------------------------------------------------|-----------------------|
| NDR-480-48   | 90 - 264VAC   | 48VDC          | 480W/10A DIN-Rail 48VDC Industrial Power Supply  | -20 to 70°C           |
| NDR-240-48   | 90 - 264VAC   | 48VDC          | 240W/5A DIN-Rail 48VDC Industrial Power Supply   | -20 to 70°C           |
| NDR-120-48   | 90 - 264VAC   | 48VDC          | 120W/2.5A DIN-Rail 48VDC Industrial Power Supply | -20 to 70°C           |

For more Power Supplies, please visit website: [www.etherwan.com/products/din-rail-power-supply](http://www.etherwan.com/products/din-rail-power-supply).

## Mounting Kits

| Part Name   | Description                                                                         |
|-------------|-------------------------------------------------------------------------------------|
| KP-AA96-480 |  |
| KP-BK78900G |  |
| KR-BK71000  |  |

For more information, please visit website: <https://www.etherwan.com/products/mounting-kits>.