**Product Datasheet**

# 16-port 10G Uplink Managed PoE Switch

## (ONV-POE56168PFM-4TF)



## OVERVIEW

The ONV-POE56168PFM-4TF is a 10G uplink managed PoE switch independently developed by ONV. It has 12*10/100/1000Base-T adaptive RJ45 ports and 4*1/10G uplink SFP+ fiber ports. Port 1-8 can support the IEEE802.3af/at PoE standard, and the single-port max PoE power is 30W. As a PoE power supply device, it can automatically detect and recognize the power-receiving equipment that meets the standard and supply power through the network cable. It can supply power to PoE terminal equipment such as wireless AP, IP camera, VoIP phone, and building visual access control intercom through a network cable to meet the network environment that needs a high-density PoE power supply. It is suitable for hotels, campuses, parks, supermarkets, scenic spots, factory dormitories, and small and medium-sized enterprises to build economical, efficient, stable, and reliable communication networks.

The ONV-POE56168PFM-4TF has L3 network management functions, supports IPV4/ IPV6 management, dynamic routing and forwarding, complete security protection mechanism, perfect

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ACL/QoS strategy, and rich VLAN functions for easy management and maintenance. Supports multiple network redundancy protocols STP/RSTP/MSTP (<50ms) and (ITU-T G.8032) ERPS (<20ms) to improve link backup and network reliability. When a unidirectional network fails, communication can be quickly restored to ensure uninterrupted communication of important applications. Port management, routing address management, port flow control, VLAN division, IGMP, security policy, and other application business configurations can be performed through Web, CLI, SNMP, Telnet, and other methods according to application needs.

## FEATURE

■ **Gigabit access, uplink 1/10G SFP+ fiber port**

◇ Support non-blocking wire-speed forwarding.

◇ Support full-duplex based on IEEE 802.3x and half-duplex based on Backpressure.

◇ Support Gigabit RJ45 port and 1/10G uplink SFP+ fiber port combination, which enables users to flexibly build networking to meet the needs of various scenarios.

■ **Smart PoE power supply**

◇ Comply with IEEE802.3af/at PoE standard, automatically identify PoE devices for power supply, and not damage non-PoE devices.

◇ 8*10/100/1000Base-T RJ45 ports support PoE power to meet security monitoring, conference call systems, wireless coverage, and other scenarios.

◇ Support PoE network management function, which can be configured through the network management to realize PoE port on/off, port power status check, time scheduling, etc.

■ **Security**

◇ Support port isolation and port broadcast storm suppression.

◇ Support port+ MAC binding and IP+ MAC+ port binding functions.

◇ Support 802.1X authentication, provide authentication function for LAN computers, and control the authorization status of controlled ports according to the authentication results.

■ **Strong business processing capability**

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◇ Support ERPS ring network and STP/ RSTP/ MSTP to eliminate layer 2 loops and realize link backup.

◇ Support IEEE802.1Q VLAN, Users can flexibly divide VLAN, Voice VLAN, and QinQ configuration according to their needs.

◇ Support static and dynamic aggregation to effectively increase link bandwidth, realize load balancing, link backup, and improve link reliability.

◇ Support QoS, port-based, 802.1P-based, and DSCP-based three priority modes and four queue scheduling algorithms: Equ, SP, WRR, and SP+WRR.

◇ Support ACL to filter data packets by configuring matching rule processing operations and time permissions, and provide flexible security access control policies.

◇ Support IGMP V1/V2/V3 multicast protocol, IGMP Snooping meets multi-terminal high-definition video surveillance and video conference access requirements.

■ **Stable and reliable**

◇ CCC, CE, FCC, RoHS.

◇ Self-developed power supply, high redundancy, providing a long-term and stable PoE power output.

◇ The user-friendly panel can show the device status through the LED indicator of PWR, SYS, Link, L/A, and PoE.

◇ Low power consumption, with fan, galvanized steel housing, and excellent heat dissipation to ensure the stable operation of the switch.

■ **Easy O&M management**

◇ Support CPU monitoring, memory monitoring, Ping detection, and cable length detection.

◇ HTTPS, SSLV3, SSHV1/V2, and other encryption methods are more secure in management.

◇ RMON, system log, and port traffic statistics are convenient for network optimization and transformation.

◇ LLDP is convenient for the network management system to query and judge the communication status of the link.

◇ Support diverse management and maintenance methods such as Web network management,

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CLI command line (Console, Telnet), SNMP (V1/V2/V3), Telnet, etc.

# TECHNICAL SPECIFICATION

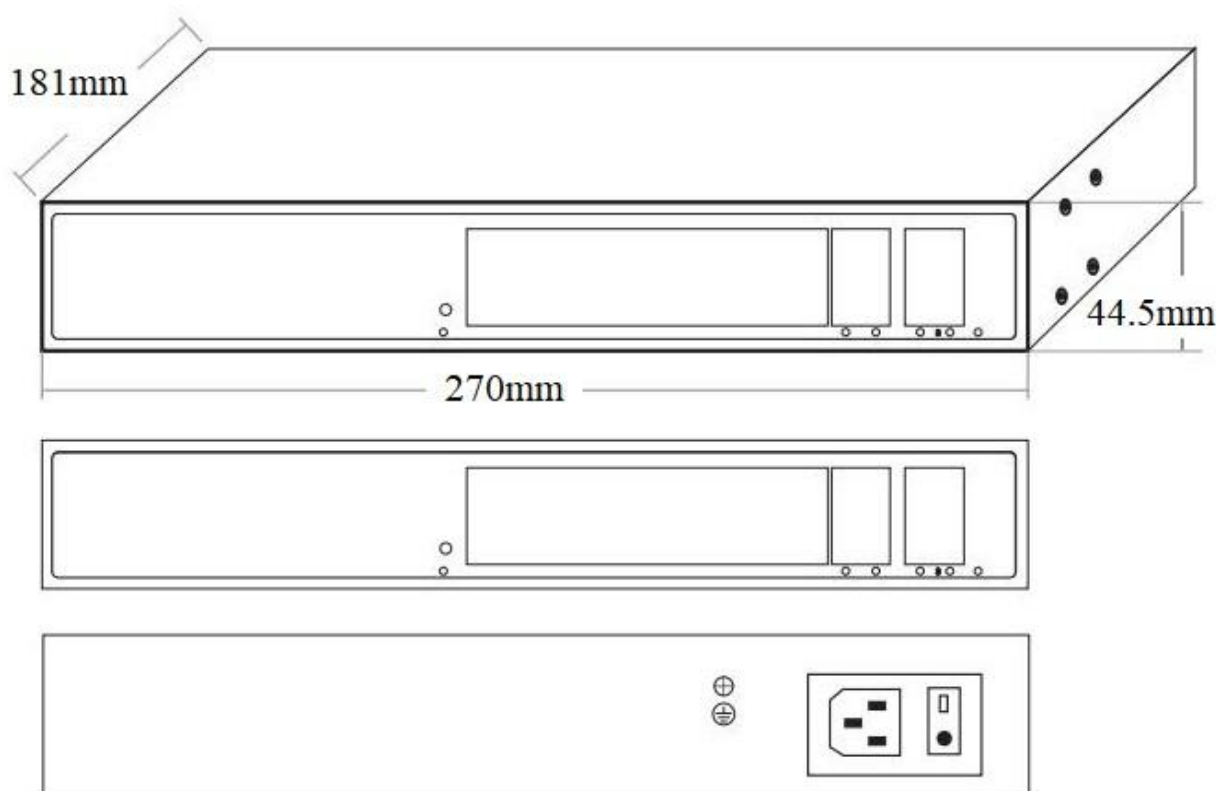| Model | ONV-POE56168PFM-4TF |
|---|---|
| **Interface Characteristics** | |
| Fixed Port | 1*Console port (115200,N,8,1)<br><br>4*1/10G uplink SFP+ fiber ports (Data)<br><br>4*10/100/1000Base-T uplink RJ45 ports (Data)<br><br>8*10/100/1000Base-T PoE ports (Data /Power) |
| Ethernet Port | Port 1-12 can support 10/100/1000Base-T(X) auto-sensing, full/ half duplex MDI/ MDI-X self-adaption |
| Twisted Pair Transmission | 10BASE-T: Cat3,4,5 UTP (≤100 meters)<br><br>100BASE-TX: Cat5 or later UTP (≤100 meters)<br><br>1000BASE-T: Cat5e/6 or later UTP (≤100 meters) |
| Optical Fiber Port | Default no include optical module (optional single-mode/ multi-mode, single fiber/ dual fiber optical module. LC) |
| Optical Fiber Port Expansion | Turbo overclocking 2.5G optical module expansion and ring network |
| Optical Cable/ Distance | Multi-mode: 850nm/ 0-550m (1G), 850nm/ 0-300m (10G), Single-mode: 1310nm/ 0-40km, 1550nm/ 0-120km |
| **Chip Parameter** | |
| Network Management Type | L3 |
| Network Protocol | IEEE802.3 10BASE-T, IEEE802.3i 10Base-T, IEEE 802.3u100Base-TX, IEEE802.3ab 1000Base-T, IEEE802.3z 1000Base-X, IEEE802.3ae 10GBase-SR/LR, IEEE802.3x |
| Forwarding Mode | Store and forward (Full wire speed) |
| Switching Capacity | 128Gbps (non-blocking) |

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| Forwarding Rate@64byte | 77.38Mpps |
| CPU(Hz) | 800M |
| DRAM | 1G |
| FLASH | 128M |
| MAC | 16K |
| Buffer Memory | 12M |
| Jumbo Frame | 12K |
| LED Indicator | System: SYS ( Green), Network: Link (Yellow), Fiber port: L/A (Green), PoE: PoE (Green) |
| Reset Switch | Yes, press and hold the switch for 10 seconds and release it to restore the factory settings |
| **PoE& Power Supply** | |
| PoE Port | Port 1-8 |
| PoE Management | Port PoE real-time load power display, Port PoE output on/off, PoE work and time scheduling |
| Power Supply Pin | 1/2(+) 3/6 (-) |
| Max Power Per Port | 30W, IEEE802.3af/at |
| Power Consumption | Standby<13W, full load<160W |
| Total PWR/ Input Voltage | 160W/ (AC100-240V) |
| Power Supply | Built-in power supply, AC100~240V 50-60Hz, 3.0A |
| **Physical Parameter** | |
| Operation Temp/ Humidity | -20~55°C, 5%~90% RH non condensing |
| Storage Temp/ Humidity | -40~75°C, 5%~95% RH non condensing |
| Dimension (L*W*H) | 270*181*44.5mm |
| Net /Gross Weight | 1.6kg/ 2.2kg |
| Installation | Desktop, 1U/19" cabinet |
| **Certification& Warranty** | |
| Lightning Protection | Lightning protection: 4KV 8/20us, Protection level: IP30 |
| Certification | CCC, CE mark, commercial, CE/LVD EN62368-1, FCC Part 15, RoHS |

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| Warranty | 3 years, lifelong maintenance |
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| **Network Management Feature** | |
| Interface | Port real-time flow management (Flow Interval) <br><br> Broadcast storm suppression based on port rate <br><br> SFP optical module DDMI real-time digital diagnosis <br><br> Port EEE Green Ethernet Energy-Saving configuration and status view <br><br> IEEE802.3x flow control (Full duplex), Port exception protection mechanism <br><br> Limit the rate of packet traffic on incoming and outgoing ports, the mini granularity is 16Kbps and max 1Gbps |
| L3 Feature | Pingv6, Telnetv6, TFTPv6, DNSv6, ICMPv6 <br><br> VLANIF interfaces for IPV4/IPV6, up to 64 entries <br><br> IPV4/IPV6 static routing/default routing, up to 64 entries <br><br> NG protocol max 1000 entries, ARP protocol max 1000 entries <br><br> IPV4 equal cost routing, VRRP for IPV4/IPV6, up to 255 entries <br><br> IPV4 dynamic routing, RIPv1/v2, OSPFv2, routing 2000 entries <br><br> L3 network management function, IPV4/ IPV6 dual-stack management <br><br> L3 routing and forwarding, support communication between different network segments and different VLAN |
| VLAN | Port configuration of Access, Trunk, Hybrid, IEEE 802.1q <br><br> Voice VLAN, GVRP VLAN protocol, Port-based VLAN (4K) <br><br> Protocol-based VLAN, MAC address-based VLAN, QinQ configuration |
| Port Aggregation | LACP dynamic aggregation, Static aggregation, Max 8 aggregation groups and max 8 ports per group. |
| Spanning Tree | STP BPDU Guard, BPDU filtering and BPDU forwarding <br><br> STP (IEEE802.1d), RSTP (IEEE802.1w), MSTP (IEEE802.1s) |
| ERPS Ring Network | ERPS ring network, Recovery time less than 20ms, ITU-T G.8032 |
| Multicast | Multicast VLAN, User quick log out, MLD Snooping, MVR (Multicast VLAN Registration), IGMP Snooping v1/v2/v3 and 1024 multicast groups at most |
| Mirroring | Bidirectional traffic mirroring for basic ports |

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| 7 | | one-to-multiple mirroring, supports up to 4 port sessions |
| QoS | | Flow-based Rate Limiting, Flow-based redirection |
| | | Queue Scheduling Algorithm (SP, WRR, SP+WRR) |
| | | Flow-based Packet Filtering, 8*Output queues of each port |
| | | 802.1p/DSCP priority mapping, Diff-Serv QoS, Priority Mark/Remark |
| ACL | | ACL is issued based on port and VLAN |
| | | L2-L4 packet filtering function can match the first 80 bytes of the message and provide ACL definition based on source MAC address, destination MAC address, source IP address, destination IP address, IP protocol type, TCP/UDP port range, VLAN, etc. |
| Security | | Port based IEEE802.1X authentication |
| | | Port isolation, IP Source Guard function |
| | | SSL guarantees data transmission security |
| | | Quad binding function of IP+MAC+VLAN+ports |
| | | MAC address learning limit, MAC address black hole |
| | | Anti DoS attack, Port broadcast message suppression |
| | | Hierarchical user management and password protection |
| | | SSH 2.0 provides a secure encrypted channel for user login |
| | | Host data backup mechanism, ARP intrusion detection function |
| | | IP source address protection, ARP message speed limit function |
| | | Support AAA, RADIUS, TACACS+ authentication (only supports authentication, not authorization and accounting) |
| DHCP | | DHCP Client, DHCP Snooping, DHCP Server |
| Management | | System work log, Link Layer Discovery Protocol |
| | | NTP clock, Cable length detection, SNMP V1/V2/V3 |
| | | Ping detection, Web network management (HTTPS) |
| | | HTTP, TFTP file upload and download management |
| | | Console/ SSH/ Telnet/ CLI command line configuration |
| | | ONV-NMS platform cluster management (LLDP+SNMP) |

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| 8 | One click recovery, View CPU real-time utilization status |
| System | Web browser: Mozilla Firefox 2.5 or higher, Google Chrome V42 or higher, Cat5 and above Ethernet cable<br><br>TCP/IP, network adapter, and network operating system (such as Microsoft Windows, Linux, Mac OS X) installed on each computer in the network Cat5 and above Ethernet cable |

## DIMENSION

# APPLICATION
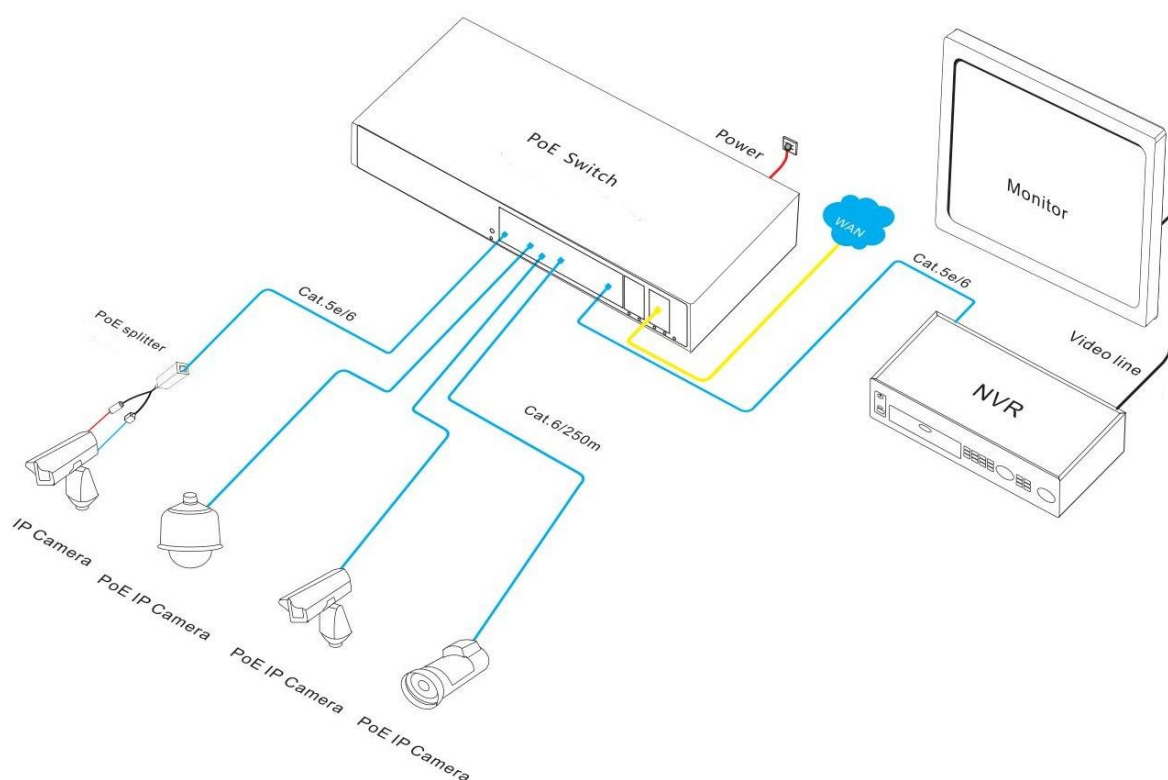


# ORDERING INFORMATION

| Model | Description | Built-in Power Supply |
|-------|-------------|----------------------|
| ONV-POE56168PFM-4TF | L3 managed PoE switch with 12*10/100/1000M RJ45 ports and 4*1/10G uplink SFP+ fiber ports. Port 1-8 can support IEEE802.3af/at PoE standard. It built-in power supply and 1U/19" cabinet installation. | 160W |
| **Note:** The optical module is not included and needs to be purchased. | | |

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# PACKING LIST

| Packing List | Content | Qty | Unit |
|---|---|---|---|
| | 16-port 10G uplink managed PoE switch | 1 | Set |
| | AC Power Cable | 1 | PC |
| | RJ45-DB9 Adapter Cable | 1 | PC |
| | User Guide | 1 | PC |
| | Warranty Card and Certificate of Conformity | 1 | PC |

# OPTICAL MODULE

| Product | Model | Description | Unit |
|---|---|---|---|
| 1.25G Optical Module | 2630 | SFP optical module, 1.25G multi-mode dual fiber 850nm, transmission distance: 550m, LC interface. supports DDM function and hot plugging. | PC |
| | 2632 | SFP optical module, 1.25G single-mode dual fiber 1310nm, transmission distance: 20km, LC interface. supports DDM function and hot plugging. | PC |
| | 2612-T | SFP optical module, 1.25G single-mode single fiber TX1310nm/ RX1550nm, transmission distance: 20km, LC interface. supports DDM function and hot plugging. | PC |
| | 2613-R | SFP optical module, 1.25G single-mode single fiber TX1550nm/ RX1310nm, transmission distance: 20km, LC interface. supports DDM function and hot plugging. | PC |
| | 2612-T-SC | SFP optical module, 1.25G single-mode single fiber TX1310nm/ RX1550nm, transmission distance: 20km, SC interface. supports DDM function and hot plugging. | PC |
| | 2613-R-SC | SFP optical module, 1.25G single-mode single fiber TX1550nm/ RX1310nm, transmission distance: 20km, SC | PC |

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| | | interface. supports DDM function and hot plugging. | |
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| 10G Optical Module | 6630 | SFP+ optical module, 10G multi-mode dual fiber 850nm, transmission distance: 300m, LC interface. supports DDM function and hot plugging. | PC |
| | 7832 | SFP+ optical module, 10G single-mode dual fiber 1310nm, transmission distance: 20km, LC interface. supports DDM function and hot plugging. | PC |
| | 7832-33 | SFP+ optical module, 10G single-mode single fiber TX1330nm/ RX1270nm, transmission distance: 20km, LC interface. supports DDM function and hot plugging. | PC |
| | 7832-27 | SFP+ optical module, 10G single-mode single fiber TX1270nm/ RX1330nm, transmission distance: 20km, LC interface. supports DDM function and hot plugging. | PC |

# CONTACT US

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