

OPTICAL NETWORK VIDEO TECHNOLOGIES (SHENZHEN) CO., LTD.

Product Datasheet

## 28-Port 10G Uplink Managed PoE Switch

### ONV-POE36028PFM/at



## OVERVIEW

The ONV-POE36028PFM series is a 10G uplink layer two plus managed PoE switch independently developed by ONV. It has 24\*10/100/1000Base-T RJ45 ports and 4\*1/10G SFP+ fiber slot ports. Port 1-24 can support IEEE 802.3af/at standard PoE power supply. single port PoE power reaches 30W, and the maximum PoE output power is 400W(at-600W). 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, webcam, VoIP phone, building visual access control intercom, etc. through a network cable to meet the network environment that needs high-density PoE power supply. It is suitable for hotel, campus, factory dormitory and small and medium-sized enterprise.

The ONV-POE36028PFM has the layer two plus full network management function, supports IPV4/IPV6 management, supports static route full line rate forwarding, supports complete security protection mechanism, complete ACL/QoS policy and rich VLAN functions, and is easy to manage and maintain. Supports multiple network redundancy protocols STP/RSTP/MSTP (<50ms) and (ITU-T G.8032) ERPS to improve link backup and network reliability. When one-way network fails, communication can be quickly restored to ensure important Uninterrupted communication for applications. According to

the actual application requirements, you can configure multiple application services such as PoE power management, port traffic control, VLAN division, and SNMP through the Web network management mode.

## FEATURE

### ■ Gigabit access, 10G uplink

- ◇ All series supports “Gigabit Ethernet port and 10G SFP+ uplink port “combination, which enables users to flexibly build networking to meet the needs of various scenarios.
- ◇ Support non-blocking wire speed forwarding.
- ◇ Support full duplex based on IEEE802.3x and half duplex based on backpressure.

### ■ Intelligent PoE power supply function

- ◇ 24\*10/100/1000Base-T RJ45 ports support PoE power supply, which meets the requirements of PoE power supply in security monitoring, teleconferencing systems, and wireless coverage.
- ◇ It complies with the IEEE 802.3af/at PoE power supply standard and automatically recognizes PoE devices for power supply without damaging non-PoE devices. The maximum PoE output power is 400W(at-600W), and the maximum PoE output power of a single port is 30W.
- ◇ The PoE port supports the priority mechanism. When the remaining power is insufficient, the power supply of the high-priority port is preferentially guaranteed to prevent the device from being overloaded.
- ◇ Supports the POE network management function, which can be configured through the network management system to implement power allocation, priority setting, port power status check, and time scheduling of PoE ports.

### ■ Strong business processing capability

- ◇ Support IEEE 802.1Q VLAN, users can flexibly divide VLAN according to needs, and support QinQ configuration.
- ◇ Support QoS, support port based, 802.1P based and DSCP based three priority modes and Equ, SP, WRR, SP+WRR four queue scheduling algorithms.
- ◇ ACL supports the filtering of data packets by configuring matching rules, processing

operations and time permissions, and provides a flexible access control strategy.

- ◇ Support IGMP V1/V2 multicast protocol and support IGMP Snooping to meet the multi terminal HD video surveillance and video conference access requirements.
- ◇ Support STP/RSTP/MSTP production tree protocol, eliminates two layers of loops, and realizes link backup.
- ◇ Support G.8032 industrial fast Ring network ERPS Protocol network convergence time  $\leq 20\text{ms}$
- ◇ Support static convergence and dynamic convergence, effectively increases link bandwidth, achieves load balancing, link backup, and improves link reliability.

### ■ Complete safety protection mechanism

- ◇ Support 802.1X authentication, provide authentication function for LAN computer, and control the authorized status of controlled port according to the result of authentication.
- ◇ Support port isolation
- ◇ Support port broadcast storm suppression
- ◇ Support port +MAC binding, IP+MAC+ port binding function

### ■ The equipment is stable and reliable

- ◇ The host has low power consumption, no fan mute design, aluminum alloy metal shell, excellent heat dissipation, and ensure stable operation of products.
- ◇ The equipment meets the national CCC standard, fully meets the requirements of CE, FCC and RoHS safety regulations, and is safe and reliable.
- ◇ ONV-developed power supply, high redundancy design, provides long-term stable PoE power
- ◇ The user can easily understand the working status of the device through the power indicator (PWR), system status indicator (SYS), and port status indicator (Link/Act) operation indicator.

### ■ Easy operation and maintenance management

- ◇ Support various management and maintenance methods such as Web management, CLI command line (Console, Telnet), SNMP (V1/V2/V3).
- ◇ Support encryption methods such as HTTPS, SSLV3, and SSHV1/V2 for more secure management.
- ◇ Support RMON, system log, port traffic statistics, easy network optimization and

transformation.

- ◇ Support LLDP, which is convenient for the network management system to query and judge the communication status of the link.
- ◇ Support CPU monitoring, memory monitoring, ping detection, cable length detection.

## TECHNICAL SPECIFICATION

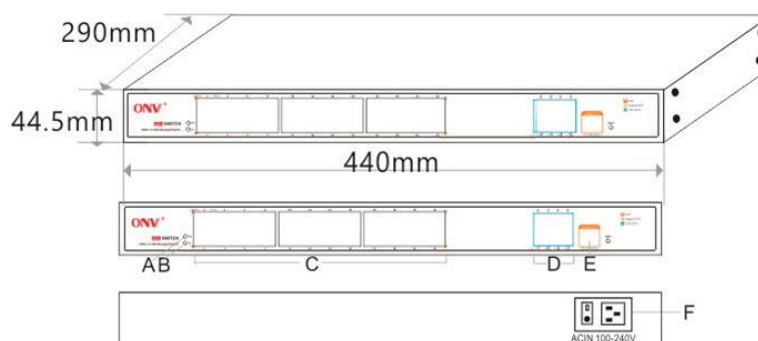
| Model                        | ONV-POE36028PFM  | ONV-POE36028PFM-at |
|------------------------------|--|--------------------|
| Interface                    | 24*10/100/1000Base-T PoE ports (Data/Power)<br>4*1/10G uplink SFP+ fiber slot ports (Data)<br>1*Console RS232 port (115200,N,8,1)                                |                    |
| Managed Type                 | L2+  |                    |
| POE Port                     | Port 1-24 can support IEEE 802.3af/at PoE standard   |                    |
| Network Protocol             | IEEE802.3 10BASE-T; IEEE802.3i 10Base-T;<br>IEEE802.3u 100Base-TX;<br>IEEE802.3ab 1000Base-T<br>IEEE802.3z 1000Base-X<br>IEEE802.3ae 10GBase-SR/LR<br>IEEE802.3x |                    |
| PoE Standard                 | IEEE802.3af/at international standard  |                    |
| Ethernet Port Feature        | Port 1-24 can support 10/100/1000Base-T(X) auto detect, full/half duplex MDI/MDI-X adaptive  |                    |
| Fiber Port Feature           | 10G SFP fiber interface (Fiber module is not included, need to order separately, module options include single/multi mode, single/dual fiber, LC)                |                    |
| Forwarding Mode              | Store and Forward(Full Wire Speed)   |                    |
| Switching Capacity           | 598Gbps (non-blocking)   |                    |
| Forwarding Rate@64byte       | 107.14Mpps   |                    |
| MAC                          | 32K  |                    |
| Buffer Memory                | 32M  |                    |
| Twisted Pair Transmission    | 10BASE-T:Cat3,4,5 UTP(≤100 meter) ;<br>100BASE-TX: Cat5 or later UTP(≤100 meter)<br>1000BASE-T:Cat5e or later UTP(≤100 meter)                                    |                    |
| Optical Fiber Cable          | Multi-mode:850nm 0~300M(10G) ,850nm 0~500M (1.25G);<br>Single-mode:1310nm 0~40KM,1550nm 0~120KM.   |                    |
| Power Supply Pin             | Default: 1/2(+),3/6(-)   |                    |
| Max / Average Power Per Port | 30W/15.4W  | 30W/30W            |

|   |  |   |
|---|--|---|
| Total PWR / Input Voltage               | 400W (AC100-240V)  | 600W (AC100-240V)                               |
| Power Consumption                       | Standby<25W; Full Load<400W  | Standby<30W;Full Load<600W                      |
| Power Supply                            | Built-in power supply, AC 100~240V 50-60Hz 5A  | Built-in power supply, AC 100~240V 50-60Hz 6.6A |
| LED Indicator                           | Power indicator:PWR(yellow); system indicator:SYS(yellow); Network indicator;Link(yellow); PoE indicator: PoE (green); Fiber port indicator L/A(green)   |   |
| Reset Button                            | Support one key to restore factory settings  |   |
| Operation TEMP/Humidity                 | -20~+55°C;5%~90% RH Non condensing   |   |
| Storage TEMP /Humidity                  | -40~+80°C;5%~95% RH Non condensing   |   |
| Dimension (L*W*H)                       | 440*290*44.5mm   |   |
| Net /Gross Weight                       | <4.4kg / <5.0kg  | <4.6kg / <5.3kg                                 |
| Lightning protection / Protection Level | Lightning protection :4KV 8/20us;<br>Protection Level:IP30   |   |
| Certification                           | CCC;CE mark, commercial; CE/LVD EN60950; FCC Part 15 Class B; RoHS;  |   |
| Warranty                                | 3 years , lifelong maintenance.  |   |
| <b>Managed Series Feature</b>           |  |   |
| Interface                               | IEEE802.3x flow control (full duplex)<br>Broadcast storm suppression for port rate<br>support speed limit for incoming and offline message traffic, with a minimum particle size of 64Kbps.<br>Temperature protection setting<br>Energy saving configuration of port IEEE Ethernet   |   |
| PoE Management                          | Total power limit of PoE power supply<br>PoE output power allocation per port, close /af/at<br>PoE output priority configuration for each port<br>PoE working state display per port<br>Power delay start<br>PoE work and time scheduling  |   |
| Layer3 Function                         | Support L2+ managed function,<br>Support IPV4/IPV6 management<br>Support layer3 soft routing (weak three tier) forwarding,<br>Support different network segments, communication between different VLAN<br>Support static routing / default routing 128, 1024 ARP software forwarding |   |
| VLAN                                    | Support port based VLAN (4K), IEEE802.1q<br>Support protocol based VLAN  |   |

|                                  |  |
|----------------------------------|--|
|                                  | <p>Support Access, Trunk, Hybrid three types of port configuration</p> <p>Support QinQ configuration</p>   |
| Port Aggregation                 | <p>Support LACP</p> <p>Support static polymerization</p> <p>Support the largest 8 aggregation groups, each aggregation group supports 8 ports.</p>   |
| Spanning Tree                    | <p>STP (IEEE802.1d)</p> <p>RSTP (IEEE802.1w)</p> <p>MSTP (IEEE802.1s)</p>  |
| Industrial Ring Network Protocol | <p>Support G.8032 (ERPS), support 255 loops at most, and supports 1024 devices per ring.</p> <p>The self healing time of the ring network is less than 20ms</p>  |
| Multicast                        | <p>Support IGMP Snooping V1/V2 and support 1024 multicast groups at most.</p> <p>Support the user's quick departure mechanism</p> <p>Support MLD Snooping V1/V2</p> <p>Support multicast VLAN</p>  |
| Image                            | <p>Bi-directional traffic mirroring supporting the basic port</p>  |
| QoS                              | <p>Diff-Serv QoS</p> <p>Each port supports 8 output queues</p> <p>Support 802.1p/DSCP priority mapping</p> <p>Support queue scheduling mechanism (SP, WRR, SP+WRR)</p> <p>priority tag Mark/Remark</p> <p>stream based packet filtering</p> <p>Support for stream based redirection</p> <p>Support flow based speed limit</p>  |
| ACL                              | <p>Support L2 to L4 packet filtering function, can match the first 80 bytes of the message, provide based on the source MAC address, destination MAC address, source IP address, destination IP address, IP protocol type, TCP/UDP port, TCP/UDP port range, VLAN and other definition ACL.</p> <p>Support ACL based on port and VLAN</p>  |
| Safety Characteristics           | <p>Support user grading management and password protection</p> <p>Support IEEE802.1X authentication / centralized MAC address authentication</p> <p>Support AAA&amp;RADIUS authentication</p> <p>Support the number of MAC address learning restrictions</p> <p>Support MAC address black hole</p> <p>Support SSH 2 to provide secure passwords for user login.</p> <p>Support SSL to ensure data transmission security</p> <p>Support port isolation</p> <p>Support the speed limit function of ARP message</p> <p>Support IP source address protection</p> <p>Support ARP intrusion detection function</p> |

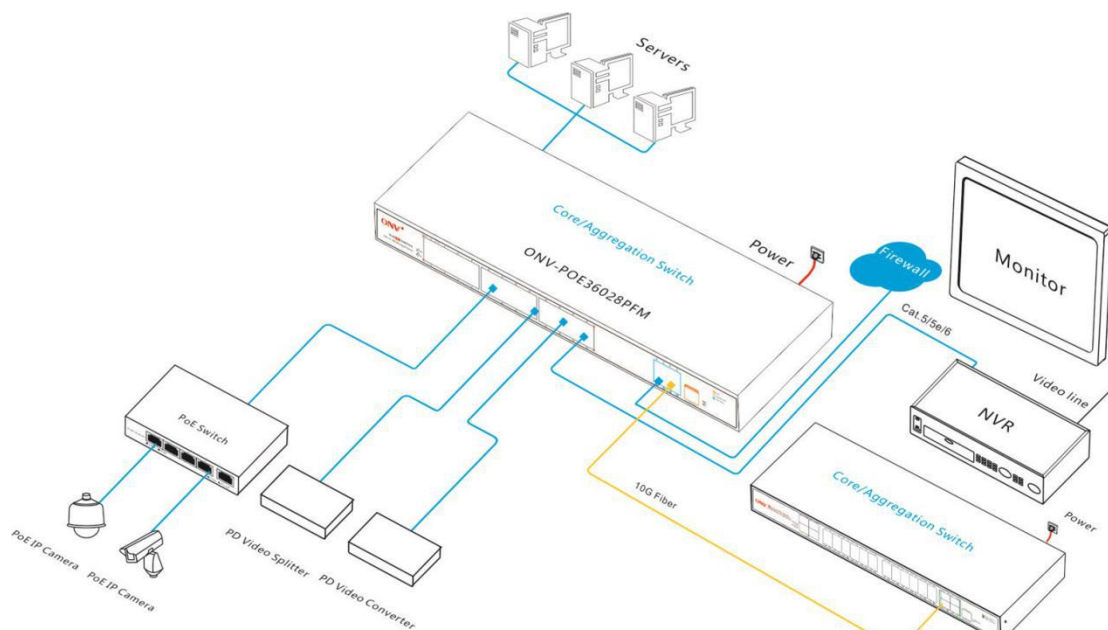
|                            |  |
|----------------------------|--|
|                            | <p>Support against DoS attacks</p> <p>Support port broadcast message suppression</p> <p>Support host data backup mechanism</p> <p>Binding capabilities of IP+MAC+VLAN+ ports</p>   |
| DHCP                       | <p>Support DHCP Client</p> <p>Support DHCP Snooping</p> <p>Support DHCP Serve</p> <p>Support DHCP Relay</p>  |
| Management And Maintenance | <p>Support Console/AUX Modem/Telnet/SSH2.0 CLI command line configuration</p> <p>Support WEB network management (HTTPS)</p> <p>Support FTP, TFTP, Xmodem, SFTP file download management</p> <p>Support SNMP V1/V2C/V3</p> <p>Support one bond reduction</p> <p>Support NTP clock</p> <p>Support system work log</p> <p>Support Ping detection</p> <p>Support cable state detection</p> <p>Support CPU instant utilization status view</p> <p>Support link layer discovery protocol LLDP</p> <p>Support ONV NMS intelligent management center</p> |
| System Requirements        | <p>Web browser: Mozilla Firefox 2.5 or higher, Google browser chrome V42 or higher, Microsoft Internet Explorer10 or later;</p> <p>Cat5e or later Ethernet cable;</p> <p>TCP/ IP, network adapter and network operating system (Microsoft Windows, Linux or Mac OS X) installed on every computer in the network.</p>  |

## DIMENSION



- A. PWR LED Indicator
- B. SYS LED Indicator
- C. 24\*10/100/1000M PoE Ports
- D. 10G SFP Port
- E. Console Port
- F. Power Input Port - AC100-240V,50/60Hz

## APPLICATION



## PACKING LIST

|              | CONTENT  | QTY | UNIT |
|--------------|--|-----|------|
| PACKING LIST | 28-Port 10G uplink managed PoE switch (ONV-POE36028PFM/at) | 1   | SET  |
|              | AC Power Cable   | 1   | PC   |
|              | RJ45-DB9 Line  | 1   | PC   |
|              | Mounting Kits(Hanging Ear )                                | 1   | SET  |
|              | User Guide   | 1   | PC   |
|              | Warranty Card  | 1   | PC   |

**Note:** PoE switch does not match the power supply by default. If you need to purchase it, please refer to the accessory product information.



## ORDERING INFORMATION

| Model                  | Description  |
|------------------------|--|
| ONV-POE36028<br>PFM    | Layer two plus managed PoE fiber switch with 24* 10/100/1000M RJ45 ports and 4*1/10G SFP+ fiber slot ports , Port 1-24 can support IEEE 802.3af/at PoE standard, Built-in 400W power supply. Support 1U/19 inch rack installation. |
| ONV-POE36028<br>PFM-at | Layer two plus managed PoE fiber switch with 24* 10/100/1000M RJ45 ports and 4*1/10G SFP+ fiber slot ports , Port 1-24 can support IEEE 802.3af/at PoE standard, Built-in 600W power supply. Support 1U/19 inch rack installation. |

## SELECTION OF INFORMATION

### Fiber Module Selection Table

| Product            | Model             | Description  | Unit |
|--------------------|-------------------|--|------|
| 1.25G Fiber Module | ONV-2630          | SFP optical module, 1.25G, multi mode dual fiber 850nm, transmission distance: 550m, LC interface, support DDM function, support hot plug and pull.                | PC   |
|                    | ONV-2632          | SFP optical module, 1.25G, single-mode dual fiber 1310nm, transmission distance: 20km, LC interface, support DDM function, support hot plug and pull.              | PC   |
|                    | ONV-2612-T        | SFP optical module, 1.25G, single-mode single fiber TX1310nm/RX1550nm, transmission distance: 20km, LC interface, support DDM function, support hot plug and pull. | PC   |
|                    | ONV-2613-R        | SFP optical module, 1.25G, single-mode single fiber TX1550nm/RX1310nm, transmission distance: 20km, LC interface, support DDM function, support hot plug and pull. | PC   |
|                    | ONV-2612-T-S<br>C | SFP optical module, 1.25G, single-mode single fiber TX1310nm/RX1550nm, transmission distance: 20km, SC interface, support DDM function, support hot plug and pull. | PC   |
|                    | ONV-2613-R-S<br>C | SFP optical module, 1.25G, single-mode single fiber TX1550nm/RX1310nm, transmission distance: 20km, SC interface, support DDM function, support hot plug and pull. | PC   |

|                  |             |   |    |
|------------------|-------------|---|----|
| Electric Module  | ONV-2633    | 1.25G SFP optical module transfers to 10/100/1000M RJ45 net port.   | PC |
| 10G Fiber Module | ONV-6630    | SFP+ optical module,10G Multi-mode dual fiber 850nm, transmission distance: 300m, LC interface, support DDM function,support hot plug and pull.                   | PC |
|                  | ONV-7832    | SFP+ optical module,10G Single-mode dual fiber 1310nm, transmission distance: 20km, LC interface, support DDM function, support hot plug and pull.                | PC |
|                  | ONV-7832-33 | SFP+ optical module,10G Single-mode single fiber TX1330nm/RX1270nm , transmission distance: 20km, LC interface, support DDM function, support hot plug and pull.  | PC |
|                  | ONV-7832-27 | SFP+ optical module,10G Single-mode single fiber TX1270nm/RX13300nm , transmission distance: 20km, LC interface, support DDM function, support hot plug and pull. | PC |

## CONTACT US



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