

## Product Datasheet

# 16-port 10G Uplink Managed Ethernet Switch

(ONV56168FM-4TF)



## OVERVIEW

The ONV56168FM-4TF is a 10G uplink managed Ethernet switch independently developed by ONV. It has 12\*10/100/1000Base-T adaptive RJ45 ports and 4\*1/10G uplink SFP+ fiber ports. Each port can support wire-speed forwarding.

The ONV56168FM-4TF has L2+ network management function, supports IPV4/IPV6 management, static routing forwarding, complete security protection mechanism, perfect ACL/QoS strategy, and rich VLAN function for easy management and maintenance. It 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. According to actual application needs, port management, routing address management, port flow control, VLAN division, IGMP, security policy, and other application business configurations can be performed through network management methods such as Web, CLI, SNMP, Telnet, etc. It meets the

high-density network application environment and is suitable for hotels, campuses, parks, supermarkets, scenic spots, hospitals, banks, and other small and medium-sized scenes to build economical, efficient, and reliable communication networks.

## 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.

### ■ Strong business processing capability

- ◇ 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 IGMP Snooping V1/V2/V3 multicast protocol to meet the high-definition video surveillance and video conference access requirements.
- ◇ 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.

### ■ Security

- ◇ Support port isolation and port broadcast storm suppression.
- ◇ Support port+MAC binding and IP+MAC+port binding functions.
- ◇ Support 802.1X authentication to provide authentication functions for LAN computers, and control the authorization status of controlled ports according to the authentication

results.

#### ■ Stable and reliable

- ◇ CCC, CE, FCC, RoHS.
- ◇ Self-developed power supply, high redundancy, providing a long-term and stable power output.
- ◇ The user-friendly panel can show the device status through the LED indicator of PWR, SYS, and Link.
- ◇ Low power consumption, Galvanized steel housing, and excellent heat dissipation to ensure the stable operation of the switch.

#### ■ Easy O&M management

- ◇ Support CPU monitoring, memory monitoring, and Ping detection.
- ◇ Support HTTPS, SSLV3, SSHV1/V2, and other encryption methods, making management more secure.
- ◇ Support RMON, system log, and port traffic statistics to facilitate network optimization and transformation.
- ◇ Support LLDP to facilitate the network management system to query and judge the communication status of the link.
- ◇ Support Web network management, CLI command line (Console, Telnet), SNMP (V1/V2/V3), Telnet, and other diversified management and maintenance.

## TECHNICAL SPECIFICATION

Model	ONV56168FM-4TF
<b>Interface Characteristics</b>	
Fixed Port	1*Console port (115200, N, 8,1) 4*1/10G uplink SFP+ fiber ports (Data) 12*10/100/1000Base-T RJ45 ports (Data)
Ethernet Port	Port 1-12 can support 10/100/1000Base-T(X) auto-sensing, full/ half duplex

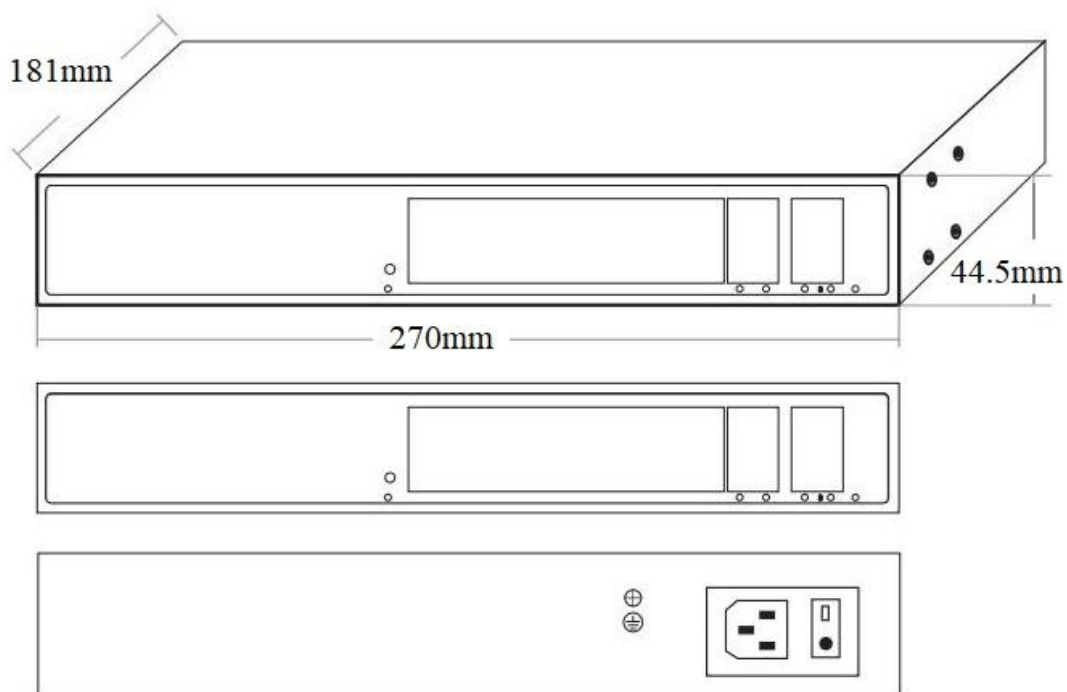
	MDI/ MDI-X self-adaption
Twisted Pair Transmission	10BASE-T: Cat3,4,5 UTP (≤100 meters) 100BASE-TX: Cat5 or later UTP (≤100 meters) 1000BASE-T: Cat5e/6 or later UTP (≤100 meters)
Optical Fiber Port	1/10G SFP+ optical fiber port, default no include optical module (optional single-mode/ multi-mode, single 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), 0-300m (10G), Single-mode: 1310nm/ 0-40km, 1550nm/ 0-120km.
<b>Chip Parameter</b>	
Network Management Type	L2+
Network Protocol	IEEE 802.3 10BASE-T, IEEE 802.3i 10Base-T, IEEE 802.3u 100Base-TX, IEEE 802.3ab 1000Base-T, IEEE 802.3z 1000Base-X, IEEE 802.3ae 10GBase-SR/LR, IEEE 802.3x
Forwarding Mode	Store and Forward (Full wire speed)
Switching Capacity	104Gbps (non-blocking)
Forwarding Rate@64byte	77.38Mpps
CPU(Hz)	800M
DRAM	1G
FLASH	128M
MAC	16K
Buffer Memory	12M
Jumbo Frame	12K
LED Indicator	Fiber port: L/A (Green), Network: Link (Yellow), System: SYS (Green)
Reset Switch	Yes, press and hold the switch for 10 seconds and release it to restore the factory settings
<b>Power Supply</b>	

Total Power/ Input Voltage	30W/ (AC100-240V)
Power Consumption	Standby<13W, full load<20W
Power Supply	Built-in power supply, AC100~240V 50-60Hz, 0.65A
<b>Physical Parameter</b>	
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	1.3kg/ 1.8kg
Installation	Desktop, 1U/19" cabinet
<b>Certification&amp; Warranty</b>	
Lightning Protection	Lightning protection: 4KV 8/20us, Protection level: IP30
Certification	CCC, CE mark, commercial, CE/LVD EN62368-1, FCC Part 15, RoHS
Warranty	3 years, lifelong maintenance.
<b>Network Management Feature</b>	
Interface	Port real-time flow management (Flow Interval) Broadcast storm suppression based on port rate Optical port SFP module DDMI real-time digital diagnosis Port IEEE Green Ethernet Energy-Saving configuration and status view IEEE 802.3x flow control (Full duplex), Port exception protection mechanism Limit the rate of packet traffic on incoming and outgoing ports, mini granularity is 16Kbps and max 1Gbps
L3 Feature	RIPv1/v2, OSPFv2, ARP protocol max 1024 entries Static routing max 128 entries, L2+ network management function, IPv4/IPv6 dual-stack management
VLAN	Protocol-based VLAN, MAC address-based VLAN Port configuration of Access, Trunk, Hybrid. GVRP VLAN protocol (4K) VLAN based on port, IEEE802.1q, Voice VLAN, QinQ configuration
Port Aggregation	LACP, Static aggregation, Max 8 aggregation groups and 8 ports per group
Spanning Tree	STP BPDU Guard, BPDU filtering and BPDU forwarding

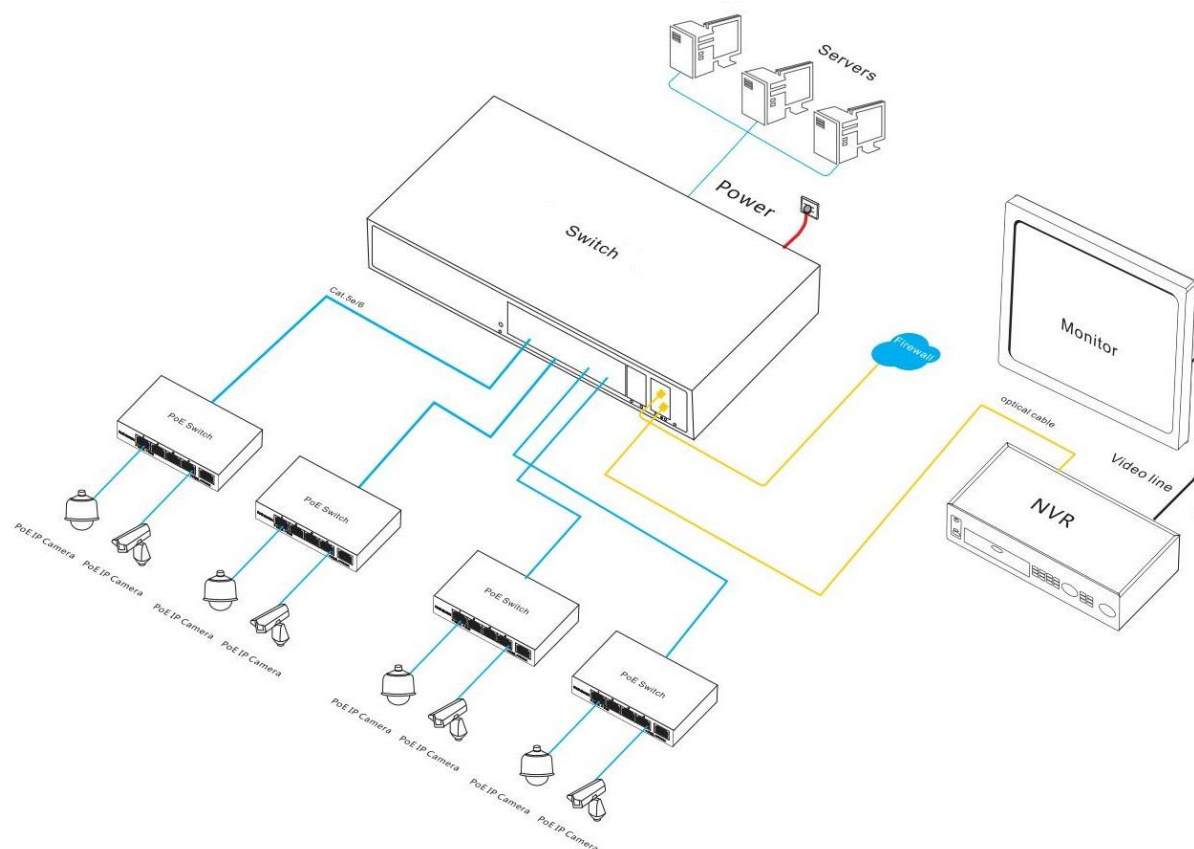
	STP (IEEE802.1d), RSTP (IEEE802.1w), MSTP (IEEE802.1s)
ERPS Ring Network	ERPS, Recovery time less than 20ms, ITU-T G.8032
Multicast	IGMP Snooping v1/v2/v3 and 256 multicast groups at most MLD Snooping, Multicast VLAN, User quick log out, MVR (Multicast VLAN Registration)
Mirroring	Bidirectional traffic mirroring for basic ports one-to-multiple mirroring, supports up to 4 port sessions
QoS	Queue Scheduling Algorithm (SP, WRR, SP+WRR) Flow-based Rate Limiting, Flow-based Packet Filtering Flow-based redirection, 8*Output queues of each port 802.1p/DSCP priority mapping, Diff-Serv QoS, Priority Mark/ Remark
ACL	ACL distribution based on port and VLAN L2-L4 packet filtering function, matching the first 80 bytes message, and provides ACL definitions based on source MAC address, destination MAC address, source IP address, destination IP address, IP protocol type, TCP/UDP port, TCP/UDP port range, VLAN, etc.
Security	Port based IEEE802.1X authentication SSL guarantees data transmission security Quad binding function of IP+MAC+VLAN+ports IP Source Guard function, AAA&RADIUS certification 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 Port isolation, MAC address learning limit, MAC address black hole
DHCP	DHCP Client, DHCP Snooping, DHCP Server
Management	NTP clock, Viewing CPU Instant Utilization Status FTP, TFTP file upload and download management

	<p>SNMP V1/V2/V3, Web network management (https)</p> <p>Ping detection, Link Layer Discovery Protocol (LLDP)</p> <p>Console/ Telnet/ CLI/SSH command line configuration</p> <p>One-click restore, Cable status check, System work log</p> <p>ONV-NMS platform cluster management (LLDP+SNMP)</p>
System	<p>Web browser: Mozilla Firefox 2.5 or higher, Google Chrome V42 or higher, Cat5 and above Ethernet cable</p> <p>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</p>

## DIMENSION



## APPLICATION



## ORDERING INFORMATION

Model	Description	Built-in Power Supply
ONV56168FM-4TF	L2+ managed Ethernet switch with 12*10/100/1000M RJ45 ports and 4*1/10G uplink SFP+ fiber ports. It built-in power supply and 1U/19" cabinet installation.	30W

**Note:** The optical module is not included and needs to be purchased.



## PACKING LIST

Packing List	Content	Qty	Unit
	16-port 10G uplink managed Ethernet switch	1	Set
	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 interface, supports DDM function and hot plugging.	PC

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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