Product Datasheet

12-port 10G Uplink Managed Industrial Ethernet Switch
(ONV-IPS56128FM)

OVERVIEW

The ONV-IPS56128FM is a 10G uplink L2+ managed industrial Ethernet fiber switch independently developed by ONV. It has 8*10/100/1000Base-T adaptive RJ45 ports and 4*1/10G uplink SFP+ fiber ports. Each port support wire-speed forwarding.

The ONV-IPS56128FM has L2+ network management functions, supports IPV4/ IPV6 management, static route forwarding, complete security protection mechanisms, complete ACL/ QoS policies, 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. Communication can be quickly restored when a one-way network fails Ensure uninterrupted communication for important applications. According to the application needs, the port management, routing address management, port flow control, VLAN division, IGMP, security policy, and other application business configurations are performed through network management methods such as Web, CLI, SNMP, and Telnet. The ONV-IPS56128FM follows industrial product design and materials. The aluminum alloy shell enhances heat dissipation and has excellent industrial environment adaptability

(including mechanical stability, climate environment adaptability, electromagnetic environment adaptability, etc.). Protection grade IP40, dual redundant power supply, low power consumption and no fan, 5-year warranty. It is suitable for industrial scenarios such as intelligent transportation, rail transportation, power industry, mining, petroleum, shipping, metallurgy, and green energy construction to establish an economical, efficient, stable, and reliable communication network.

FEATURE

■ **Gigabit access, SFP+ fiber port uplink**

◇ 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+ port combination, which enables users to flexibly build networking to meet the needs of various scenarios.

■ **Strong business processing capability**

◇ Support industrial 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.

■ **Security**

◇ Port isolation, storm control.

◇ IP+MAC+port+VLAN quadruple flexible combination binding function.

◇ 802.1X authentication provides authentication functions for LAN computers, and controls the authorization status of controlled ports according to the authentication results.

■ **Stable and reliable**

◇ CCC, CE, FCC, and RoHS.

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

◇ Low power consumption, no fan, aluminum shell, 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, CLI command line (Console, Telnet), SNMP (V1/V2/V3), Telnet, etc.

TECHNICAL SPECIFICATION

Model	ONV-IPS56128FM
Interface Characteristics	
Fixed Port	1*RS232 console port (115200, N, 8,1) Power failure alarm switch port (FAULT)

	4*1/10G uplink SFP+ fiber ports (Data)
	8*10/100/1000Base-T RJ45 ports (Data)
	2*DC12-48V input ports (supports reverse connection protection)
Ethernet Port	Port 1-8 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 modules (optional order single-mode / multi-mode, single fiber / dual fiber optical module. LC)
Optical Port Expansion	Turbo overclocking 2.5G optical module expansion and ring network
Optical Cable/ Distance	Multi-mode: 850nm/ 0-500m(1G), 850nm/ 0-300m(10G)
	Single-mode: 1310nm/ 0-40km, 1550nm/ 0-120km
Chip Parameter	
Network Management Type	L2+
Network Protocol	IEEE802.3 10BASE-T, IEEE802.3i 10Base-T, IEEE802.3u 100Base-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
Forwarding Rate@64byte	71.42Mpps
CPU	800MHz
DRAM	1Gb
FLASH	128Mb
MAC	16K
Buffer Memory	12Mb ▶

Jumbo Frame	12KB
LED Indicator	System: SYS (Green), Network: Link (Yellow), Fiber port: L/A (Green)
Reset Switch	Yes, press and hold the switch for 10 seconds and release it to restore the factory settings

Power Supply

Power Consumption	Standby<8W, Full load <15W
Working Voltage	DC12-48V, 6 Pin industrial Phoenix terminal, support anti-reverse protection
Power Supply	No, optional 24V/24W industrial power supply

Physical Parameter

Operation TEMP /Humidity	-40~+75°C, 5%~90% RH Non condensing
Storage TEMP /Humidity	-40~+80°C, 5%~95% RH Non condensing
Dimension (L*W*H)	166*150*75mm
Net /Gross Weight	1.8kg / 2.1kg
Installation	Desktop, 35mm DIN Rail

Certification & Warranty

Lightning Protection	Protection level: IP40
	Lightning protection: 6KV 8/20us
	IEC61000-4-3 (RS):10V/m (80~1000MHz)
	FCC Part 15/CISPR22 (EN55022): Class B
	IEC61000-6-2 (Common Industrial Standard)
	IEC61000-4-9 (Pulsed magnet field): 1000A/m
	IEC61000-4-10 (Damped oscillation): 30A/m, 1MHz
	IEC61000-4-12/18 (Shockwave): CM 2.5kV, DM 1kV
	IEC61000-4-4(EFT): Power cable:±4kV, Data cable: ±2kV
	IEC61000-4-16 (Common-mode transmission): 30V, 300V, 1s
	IEC61000-4-2 (ESD): ±8kV contact discharge, ±15kV air discharge

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	IEC61000-4-6 (Radio frequency transmission): 10V(150kHz~80MHz)
	IEC61000-4-8 (Power frequency magnetic field):100A/m, 1000A/m, 1s-3s
	IEC61000-4-5 (Surge): Power cable: CM±4kV/ DM±2kV, Data cable: ±4kV
Mechanical Properties	IEC60068-2-6 (Anti Vibration), IEC60068-2-32 (Free Fall), IEC60068-2-27 (Anti Shock)
Certification	CCC, CE mark, commercial, CE/LVD EN62368-1, FCC Part 15 Class B, RoHS
Warranty	5 years, lifelong maintenance.
Network Management Feature	
Interface	IEEE802.3x flow control (Full duplex) Port exception protection mechanism Port real-time flow management (Flow Interval) Broadcast storm suppression based on port rate Jumbo frame configuration, the largest 12000byte Optical port SFP module DDMI real-time digital diagnosis Port EEE Green Ethernet Energy-Saving configuration and status view Limit the rate of incoming and outgoing packet traffic, with mini granularity of 16Kbps and max of 1Gbps
Layer 3 Features	ARP protocol, max 1024 entries static route, RIPv1/v2, RIPng, OSPFv1/v2, OSPFv3 L2+ network management function, dual-stack IPv4/IPv6 management
VLAN	VLAN based on MAC, VLAN based on the protocol 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 6 aggregation groups and max 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	Support ERPS ring network, ring network self-healing time is less than

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	20ms, ITU-T G.8032
Multicast	MLD Snooping, Multicast VLAN User quick log out, MVR (Multicast VLAN Registration) IGMP Snooping v1/v2/v3 and 1024 multicast groups at most
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, Stream based redirection Flow-based Packet Filtering, 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 MAC address learning limit, MAC address black hole Anti DoS attack, Port broadcast message suppression IP Source Guard function, AAA&RADIUS certification 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 Port isolation, IP Source Guard, ARP message speed limit function
DHCP	DHCP Client, DHCP Snooping, DHCP Server
Management	Web network management (https) Link Layer Discovery Protocol (LLDP) Viewing CPU Instant Utilization Status

8	NTP clock, One click restore, SNMP V1/V2/V3
	Cable status check, Ping detection, System work log
	ONV NMS platform cluster management (LLDP+SNMP)
	Console/ AUX Modem/ Telnet/ CLI command line configuration
	FTP, TFTP, Xmodem, SFTP file upload and download management
System	Web browser: Mozilla Firefox 2.5 or higher, Google Chrome V42 or higher, Cat5 and above Ethernet cable
	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

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APPLICATION

ORDERING INFORMATION

Model	Description	Recommended Power Supply
ONV-IPS56128FM	L2+ managed industrial Ethernet fiber switch with 8*10/100/1000M RJ45 ports and 4*1/10G uplink SFP+ fiber ports. It support dual DC power supply input and DIN rail mounting.	24W/36W

Note: The optical module and power supply are not included and need to be purchased.

PACKING LIST

	Content	Qty	Unit
Packing List	12-port 10G uplink L2+ managed industrial Ethernet switch	1	SET
	RJ45-DB9 adapter conversion Line	1	PC
	User Guide	1	PC
	Warranty Card	1	PC

OPTICAL MODULE

Product	Model	Description	Unit
1.25G Optical Module	2630-G	Industrial SFP optical module, 1.25G multi-mode dual fiber 850nm, transmission distance: 550m, LC interface, support DDM function, support hot plug and pull.	PC
	2632-G	Industrial SFP optical module, 1.25G single-mode dual fiber 1310nm, transmission distance: 20km, LC interface, support DDM function, support hot plug and pull.	PC
	2612-T-G	Industrial 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
	2613-R-G	Industrial 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
	2612-T-SC-G	Industrial 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
	2613-R-SC-G	Industrial 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
10G Optical Module	6630-G	Industrial SFP+ optical module, 10G multi-mode dual fiber 850nm, transmission distance: 300m, LC interface, support DDM function,support hot plug and pull.	PC
	7832-G	Industrial SFP+ optical module, 10G single-mode dual fiber 1310nm, transmission distance: 20km, LC interface, support DDM function, support hot plug and pull.	PC
	7832-33-G	Industrial SFP+ optical module, 10G single-mode single fiber TX1330nm/ RX1270nm, transmission distance: 20km, LC	PC

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11		interface, support DDM function, support hot plug and pull.	
	7832-27-G	Industrial SFP+ optical module, 10G single-mode single fiber TX1270nm/ RX13300nm, transmission distance: 20km, LC interface, support DDM function, support hot plug and pull.	PC

POWER SUPPLY

Product	Model	Description	Unit
24W DIN Rail Industrial Power Supply	GWS-DP24-24	DIN Rail 24W single set of output power supply Input Voltage: AC100V-240V 50-60Hz, 0.35A Output Voltage: DC24V, 1.0A Operation Temperature: -40℃ to +70℃	PC
36W DIN Rail Industrial Power Supply	GWS-DP36-24	DIN Rail 36W single set of output power supply Input Voltage: AC100V-240V 50-60Hz, 0.56A Output Voltage: DC24V, 1.5A Operation Temperature: -40℃ to +70℃	PC

CONTACT US

ONV Optical Network Video Technologies (Shenzhen) Co., Ltd.

Tel: 0086-755-33376606

Fax: 0086-755-33376608

WeChat: ONV-PoE-IoT

Email: onv@onv.com.cn

Skype: onv@onv.com.cn

Website: www.onvcom.com

Headquarter Address: Room 1003, Block D, Terra Building, Futian District, Shenzhen

Factory Address: Building B3, Galaxy Artificial Intelligence Industrial Park, No. 333, Zhongkai 6th Road, Chenjiang Street, Zhongkai High-tech Zone, Huizhou

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