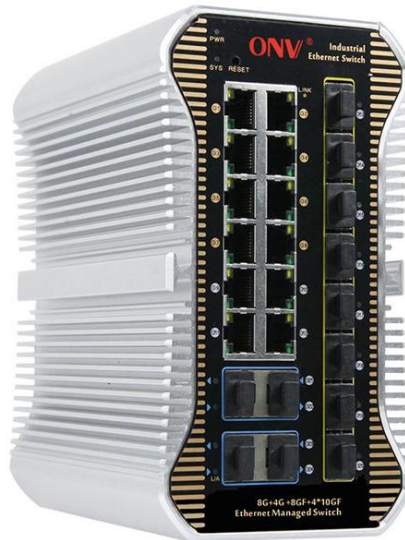


Product Datasheet

24-port 10G Uplink L3 Managed Industrial Ethernet Switch (ONV-IPS38248FM)



OVERVIEW

The ONV-IPS38248FM is a 10G uplink L3 managed industrial Ethernet switch independently developed by ONV. It has 12*10/100/1000Base-T RJ45 ports and 8*100/1000Base-X uplink SFP fiber ports and 4*1/10G uplink SFP+ fiber ports. Each port support wire-speed forwarding.

The ONV-IPS38248FM has L3 network management function to support IPV4/IPV6 management, dynamic routing and full line-speed forwarding, complete security protection mechanism, complete ACL/ QoS policy, and rich VLAN functions for easy management and maintenance. It has leading ring network technology that supports a variety of industrial-grade redundant ring network protocols. Any port can form a ring to support a chain, star, double star, ring, tangent ring, intersecting ring, and coupling ring. The ONV-IPS38248FM has high reliability, high security, and high manageability to ensure reliable transmission of critical data. It supports remote management and can cooperate with the ONV-NMS network management platform for cluster management to achieve full-process blind-spot management. The ONV-IPS38248FM industrial product design and materials, aluminum alloy shell enhances heat dissipation performance. It has excellent

industrial environment adaptability (including mechanical stability, climate environment adaptability, and electromagnetic environment adaptability). It meets the needs of various industrial Ethernet application environments and is suitable for intelligent transportation, rail transportation, power industry, mining, and petroleum, maritime transportation, metallurgy, green energy construction, and other industrial scenarios to establish an economical, efficient, stable, and reliable communication network.

FEATURE

■ Full gigabit port, 1/10G uplink SFP+ fiber port

- ◇ Support non-blocking wire-speed forwarding.
- ◇ Support full-duplex based on IEEE802.3x and half-duplex based on Backpressure.
- ◇ Support Ethernet port and SFP 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 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 multicast protocol and IGMP Snooping meets the needs of multi-terminal high-definition video surveillance and video conferencing access.

■ Security

- ◇ Port isolation, and 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

- ◇ Supports 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.
- ◇ Various management and maintenance methods such as Web network management, CLI command line (Console, Telnet), SNMP (V1/V2/V3), Telnet, etc.

TECHNICAL SPECIFICATION

Model	ONV-IPS38248FM
Interface Characteristics	
Fixed Port	Power off alarm switch port (FAULT) 1*RS232 console port (115200, N, 8,1) 4*1/10G uplink SFP+ fiber ports (Data) 12*10/100/1000Base-T uplink RJ45 ports (Data) 8*100/1000Base-X uplink SFP fiber ports (Data) 2 set of V+, V- redundant DC power ports (6 Pin Phoenix terminal)
Ethernet Port	Port 1-12 support 10/100/1000Base-T 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 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 Cable/ Distance	Multi-mode: 850nm/ 0-500m, 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, IEEE802.3u 100Base-TX IEEE802.3ab 1000Base-T, IEEE802.3z 1000Base-X, IEEE802.3ae 10GBase-LR/SR, IEEE802.3x
Forwarding Mode	Store and Forward (Full Wire Speed)
Switching Capacity	176Gbps (non-blocking)
Forwarding	89.28Mpps

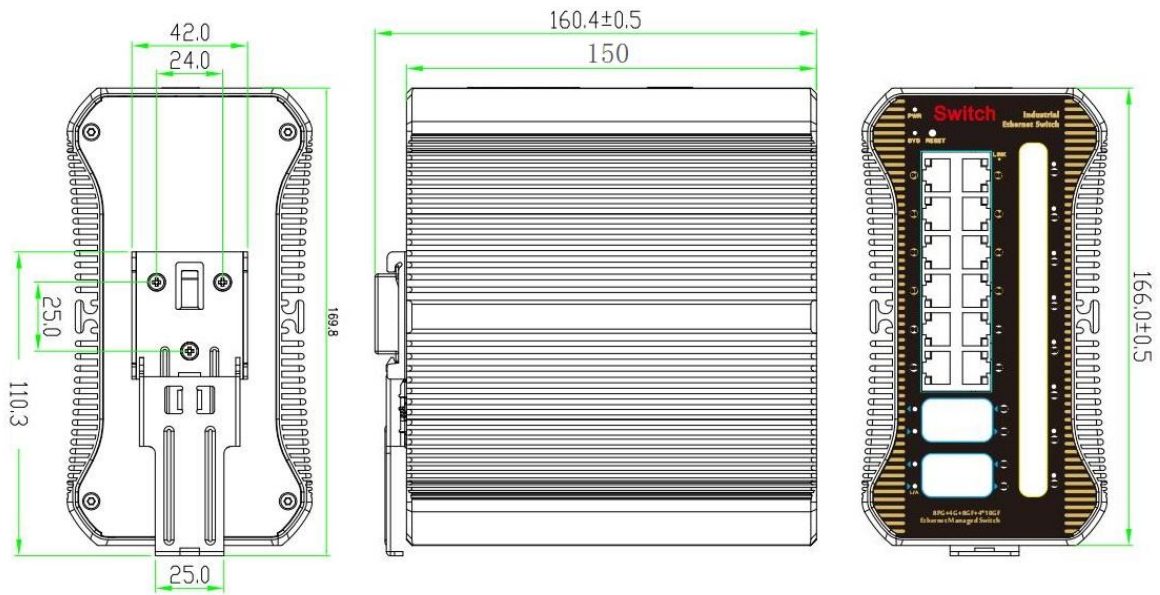
Rate@64byte	
CPU	500MHz
DRAM	2G
FLASH	128M
MAC	32K
Buffer Memory	32M
Jumbo Frame	9.6K
LED Indicator	Power: PWR (Green), System: SYS (Green) Fiber Port : L/A (Green), Network: Link (Yellow)
Reset Switch	Yes, press and hold the switch for 10 seconds and release it to restore the factory settings
Power Supply	
Power Consumption	Standby<30W, Full load<36W
Working Voltage	DC12-48V, 6 Pin industrial Phoenix terminal, support anti-reverse protection.
Power Supply	No, optional 24V/60W industrial power supply
Physical Parameter	
Operation TEMP / Humidity	-40~+80°C, 5%~90% RH Non condensing
Storage TEMP / Humidity	-40~+85°C, 5%~95% RH Non condensing
Dimension (L*W*H)	166*150*90mm
Net /Gross Weight	2.1kg / 2.3kg
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

	<p>IEC61000-6-2 (Common Industrial Standard)</p> <p>IEC61000-4-9 (Pulsed magnet field): 1000A/m</p> <p>IEC61000-4-10 (Damped oscillation): 30A/m, 1MHz</p> <p>IEC61000-4-12/18 (Shockwave): CM 2.5kV, DM 1kV</p> <p>IEC61000-4-4(EFT): Power cable:±4kV, Data cable: ±2kV</p> <p>IEC61000-4-16 (Common-mode transmission): 30V, 300V, 1s</p> <p>IEC61000-4-2 (ESD): ±8kV contact discharge, ±15kV air discharge</p> <p>IEC61000-4-6 (Radio frequency transmission): 10V(150kHz~80MHz)</p> <p>IEC61000-4-8 (Power frequency magnetic field):100A/m, 1000A/m, 1s-3s</p> <p>IEC61000-4-5 (Surge): Power cable: CM±4kV/ DM±2kV, Data cable: ±4kV</p>
Mechanical Properties	<p>IEC60068-2-6 (Anti Vibration), IEC60068-2-32 (Free Fall),</p> <p>IEC60068-2-27 (Anti Shock)</p>
Certification	<p>CCC, CE mark, commercial, CE/LVD EN62368-1, FCC Part 15 Class B, RoHS</p>
Warranty	<p>5 years, lifelong maintenance.</p>
Network Management Feature	
Interface	<p>IEEE802.3X (Full-duplex)</p> <p>Port temperature protection setting</p> <p>No connection port automatic sleep</p> <p>Port green Ethernet Energy-saving setting</p> <p>Broadcast storm control based on port speed</p> <p>SFP+ optical port DDMI real-time digital diagnosis</p> <p>The speed limit of the message flow in the access port, minimum particle size is 64Kbps.</p>
Layer 3 Features	<p>IPV4 Equal Cost Routing</p> <p>NG protocol, max 1000 entries</p> <p>ARP protocol, max 1000 entries</p>

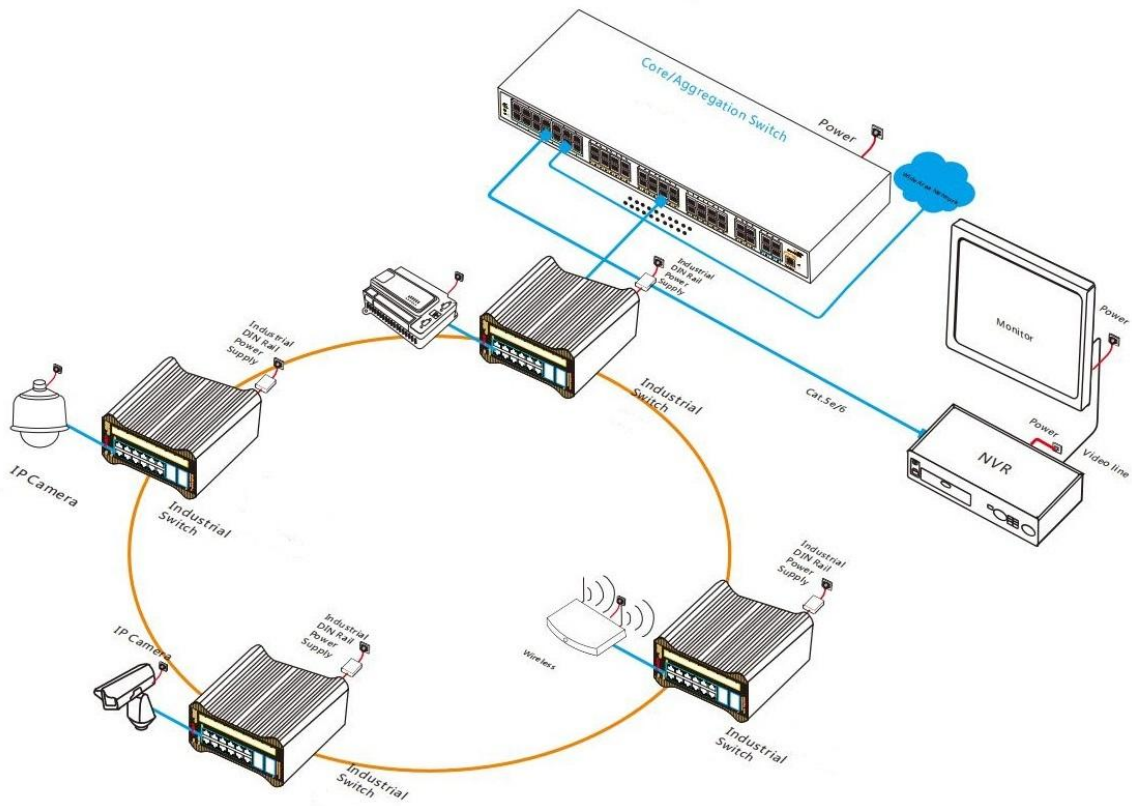
	<p>IPV4/IPV6 VRRP, max group is 255</p> <p>Pingv6, Telnetv6, TFTPv6, DNSv6, ICMPv6</p> <p>IPV4/IPV6 VLANIF interface supports up to 128</p> <p>IPV4/IPV6 static route/ default route supports up to 128 entries</p> <p>L3 network management function, IPV4/IPV6 dual-stack management</p> <p>IPV4 dynamic routing, RIPv1/v2, OSPFv2, BGP4+, 4000 routing entries</p> <p>IPV6 dynamic routing OSPFv3, BGP+, RIPng, IPV6 management, 1000 routing entries</p> <p>L3 routing and forwarding, support communication between different network segments and different VLAN</p>
VLAN	<p>Port configuration of Access, Trunk, Hybrid.</p> <p>VLAN based on MAC, VLAN based on the protocol</p> <p>Voice VLAN, QinQ configuration, 4K VLAN based on port, IEEE802.1q</p>
Port Aggregation	<p>LACP, Static aggregation</p> <p>Max 12 aggregation groups and 8 ports per group.</p>
Spanning Tree	STP (IEEE802.1d), RSTP (IEEE802.1w), MSTP (IEEE802.1s)
Industrial Ring	G.8032 (ERPS), Recovery time less than 20ms
Network Protocol	250 Ring at most, Max 250 devices per ring.
Multicast	<p>MLD Snooping v1/v2, Multicast VLAN</p> <p>IGMP Snooping v1/v2, Max 1024 multicast groups, Fast log out</p>
Port Mirroring	Bidirectional data mirroring based on port
QoS	<p>Queue Scheduling Algorithm (SP, WRR, SP+WRR)</p> <p>Flow-based Rate Limiting, Stream based redirection</p> <p>Flow-based Packet Filtering, 8*Output queues of each port</p> <p>802.1p/ DSCP priority mapping, Diff-Serv QoS, Priority Mark/ Remark</p>
ACL	<p>ACL distribution based on port and VLAN</p> <p>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</p>

	type, TCP/UDP port, TCP/UDP port range, VLAN, etc.
Security	<p>Port based IEEE802.1X authentication</p> <p>SSL guarantees data transmission security</p> <p>Quad binding function of IP+MAC+VLAN+ports</p> <p>MAC address learning limit, MAC address black hole</p> <p>Anti DoS attack, Port broadcast message suppression</p> <p>Hierarchical user management and password protection</p> <p>SSH 2.0 provides a secure encrypted channel for user login</p> <p>Host data backup mechanism, ARP intrusion detection function</p> <p>Port isolation, IP Source Guard, ARP message speed limit function</p> <p>IP Source Guard function, AAA & RADIUS & TACACS+ certification</p>
DHCP	DHCP Client, DHCP Snooping, DHCP Server, DHCP Relay
Management	<p>Web network management (https)</p> <p>Link Layer Discovery Protocol(LLDP)</p> <p>Viewing CPU Instant Utilization Status</p> <p>NTP clock, One click restore, SNMP V1/V2/V3</p> <p>Cable status check, Ping detection, System work log</p> <p>ONV NMS platform cluster management (LLDP+SNMP)</p> <p>Console/AUX Modem/Telnet/CLI command line configuration</p> <p>FTP, TFTP, Xmodem, SFTP file upload and download management</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	Recommended Power Supply
ONV-IPS38248FM	L3 managed industrial Ethernet fiber switch with 12*10/100/1000M RJ45 ports and 8*100/1000M uplink SFP fiber ports and 4*1/10G uplink SFP+ fiber ports. It support dual DC power supply input and DIN rail mounting.	60W

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

PACKING LIST

	Content	Qty	Unit
Packing List	24-port 10G uplink L3 managed industrial Ethernet switch	1	SET
	RJ45-DB9 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. supports DDM function and hot plugging.	PC
	2632-G	Industrial SFP optical module, 1.25G single-mode dual fiber 1310nm, transmission distance: 20km, LC interface. supports DDM function and hot plugging.	PC
	2612-T-G	Industrial SFP optical module, 1.25G single-mode single	PC

		fiber TX1310nm/ RX1550nm, transmission distance: 20km, LC interface. supports DDM function and hot plugging.	
	2613-R-G	Industrial 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-G	Industrial 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-G	Industrial 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-G	Industrial SFP+ optical module, 10G multi-mode dual fiber 850nm, transmission distance: 300m, LC interface. supports DDM function and hot plugging.	PC
	7832-G	Industrial SFP+ optical module, 10G single-mode dual fiber 1310nm, transmission distance: 20km, LC interface. supports DDM function and hot plugging.	PC
	7832-33-G	Industrial SFP+ optical module, 10G single-mode single fiber TX1330nm/ RX1270nm, transmission distance: 20km, LC interface. supports DDM function and hot plugging.	PC
	7832-27-G	Industrial SFP+ optical module, 10G single-mode single fiber TX1270nm/ RX13300nm, transmission distance: 20km, LC interface. supports DDM function and hot plugging.	PC

POWER SUPPLY

Product	Model	Description	Unit
60W DIN Rail Industrial Power	GWS-DP60-24	DIN Rail 60W single set of output power supply Input Voltage: AC100V~240V 50-60Hz, 1.0A	PC

Supply	Output Voltage: DC48V, 2.5A
	Operation Temperature: -40°C to +70°C

RELATED PRODUCT

Model	Description
ONV-IPS33248FM	L2+ managed industrial Ethernet fiber switch with 12*10/100/1000M RJ45 ports and 12*100/1000M uplink SFP fiber ports. It support dual DC power supply input and DIN rail mounting.
ONV-IPS33248FM-4GF	L2+ managed industrial Ethernet fiber switch with 20*10/100/1000M RJ45 ports and 4*100/1000M uplink SFP fiber ports. It support dual DC power supply input and DIN rail mounting.
ONV-IPS36168FM	L2+ managed industrial Ethernet fiber switch with 12*10/100/1000M RJ45 ports and 4*1/10G uplink SFP+ fiber ports. It support dual DC power supply input and DIN rail mounting.
ONV-IPS36248FM-8G	L2+ managed industrial Ethernet fiber switch with 20*10/100/1000M RJ45 ports and 4*1/10G uplink SFP+ fiber ports. It support dual DC power supply input and DIN rail mounting.
ONV-IPS38168FM	L3 managed industrial Ethernet fiber switch with 12*10/100/1000M RJ45 ports and 4*1/10G uplink SFP+ fiber ports. It support dual DC power supply input and DIN rail mounting.
ONV-IPS38248FM-8G	L3 managed industrial Ethernet fiber switch with 20*10/100/1000M RJ45 ports and 4*1/10G uplink SFP+ fiber ports. It support dual DC power supply input and DIN rail mounting.

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