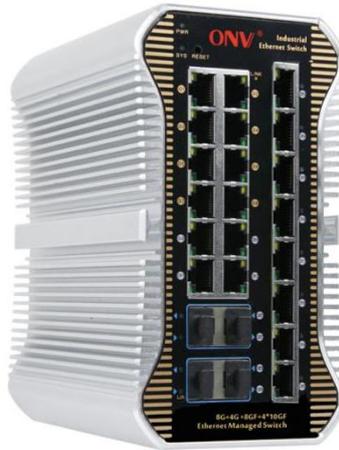**Product Datasheet**

24-port 10G Uplink Managed Industrial Ethernet Switch

(ONV-IPS36248FM-8G)

OVERVIEW

The ONV-IPS36248FM-8G is a 10G uplink L2+ managed industrial Ethernet fiber switch independently developed by ONV. It has 20*10/100/1000Base-T RJ45 ports and 4*1/10G uplink SFP+ fiber ports. Each port can support wire-speed forwarding.

The ONV-IPS36248FM-8G has a L2+ network management function to support IPV4/IPV6 management, static route 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. Each port can be formed into a ring to support a chain, star, double star, ring, tangent ring, intersecting ring, and coupling ring. The ONV-IPS36248FM-8G has high reliability, security, and manageability to ensure reliable transmission of critical data. It supports remote management and cooperates with the ONV-NMS network management platform for cluster management to achieve full-process blind-spot management. The ONV-IPS36248FM-8G follows industrial product design and materials, and the 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

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for establishing economical, efficient, stable, and reliable communication networks in industrial scenarios such as intelligent transportation, rail transportation, power industry, mining, petroleum, shipping, metallurgy, and green energy construction.

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

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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-IPS36248FM-8G
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) 20*10/100/1000Base-T RJ45 ports (Data) 2 set of V+, V- redundant DC power ports (6 Pin Phoenix terminal)

|	
Ethernet Port	Port 1-20 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)
SFP Port Expansion	Multi-mode: 850nm/ 0-500m, 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-LR/SR, IEEE802.3x
Forwarding Mode	Store and Forward (Full Wire Speed)
Switching Capacity	176Gbps (non-blocking)
Forwarding Rate@64byte	89.28Mpps
CPU	500MHz
DRAM	2G
FLASH	128M
MAC	32K
Buffer Memory	32M
Jumbo Frame	9.6K
LED Indicator	Power: PWR (Green), 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	

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Working Voltage	DC12-48V, 6 Pin industrial Phoenix terminal, support anti-reverse protection.
Power Consumption	Standby<30W, Full load<36W
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

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

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 (Full-duplex) Port temperature protection setting No connection port automatic sleep Port green Ethernet Energy-saving setting Broadcast storm control based on port speed SFP+ optical port DDMI real-time digital diagnosis The speed limit of the message flow in the access port, mini particle size is 64Kbps.
Layer 3 Features	ARP protocol max1024 entries L2+ network management function Static route/ default route max 128 entries L3 routing forwards communications between different network segments and different VLAN
VLAN	Port configuration of Access, Trunk, Hybrid. VLAN based on MAC, VLAN based on the protocol Voice VLAN, QinQ configuration, 4K VLAN based on port, IEEE802.1q
Port Aggregation	LACP, Static aggregation Max 12 aggregation groups and 8 ports per group.
Spanning Tree	STP (IEEE802.1d), RSTP (IEEE802.1w), MSTP (IEEE802.1s)
Industrial Ring Network Protocol	G.8032 (ERPS), Recovery time less than 20ms 250 Ring at most, Max 250 devices per ring.
Multicast	MLD Snooping v1/v2, Multicast VLAN IGMP Snooping v1/v2, Max 1024 multicast groups, Fast log out
Port Mirroring	Bidirectional data mirroring based on port
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
	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
	IP Source Guard function, AAA & RADIUS & TACACS+ certification
DHCP	DHCP Client, DHCP Snooping, DHCP Server, DHCP Relay
Management	Web network management (https)
	Link Layer Discovery Protocol(LLDP)
	Viewing CPU Instant Utilization Status
	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

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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

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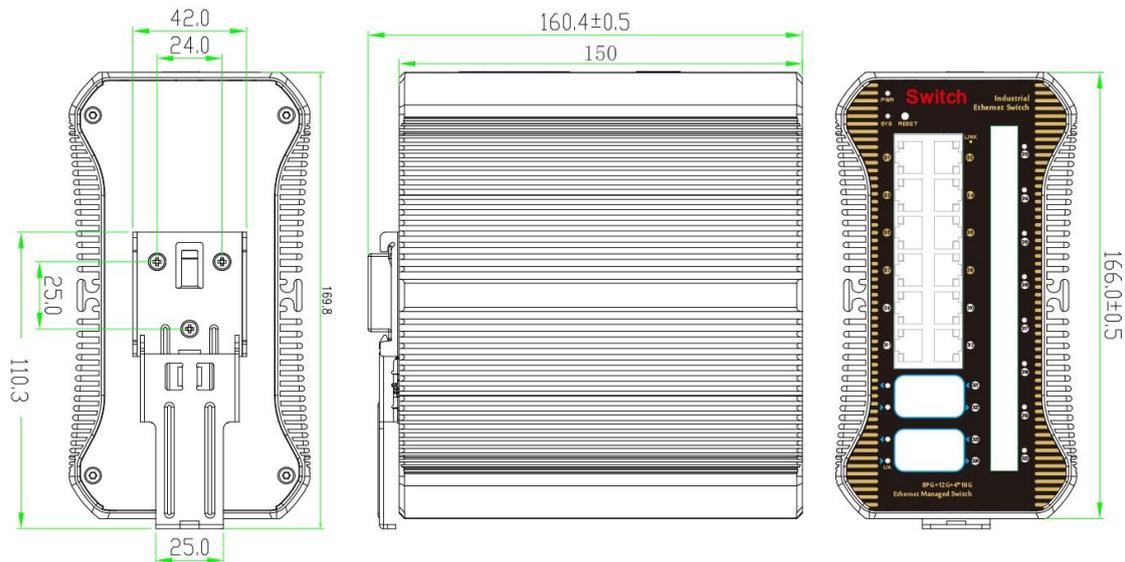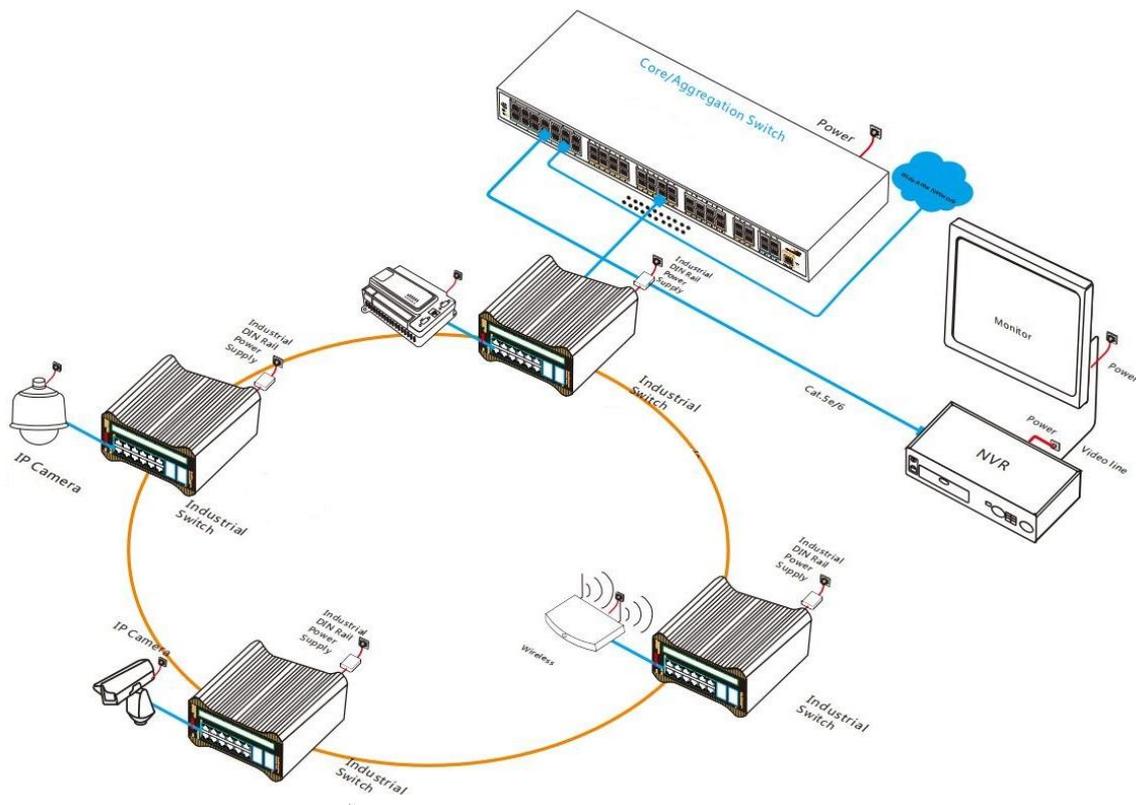
ORDERING INFORMATION

Model	Description	Recommended Power Supply
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.	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 L2+ 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 fiber TX1310nm/ RX1550nm, transmission distance: 20km, LC interface. supports DDM function and hot plugging.	PC

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	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 Supply	GWS-DP60-24	DIN Rail 60W single set of output power supply Input Voltage: AC100V~240V 50-60Hz, 1.0A Output Voltage: DC48V, 2.5A Operation Temperature: -40℃ to +70℃	PC

RELATED PRODUCT

Model	Description
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-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-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-IPS36248FM	L2+ 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.
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.

CONTACT US

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

Tel: 0086-755-33376606

Fax: 0086-755-33376608

WeChat: ONV-PoE-IoT

+86 755 33376606
Optical Network Video Technologies (Shenzhen) Co., Ltd.

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: Floor 4-6, Building A, Senyutai Industrial Park, No. 111, Huaning Road,

Xinshi Community, Dalang Street, Longhua District, Shenzhen

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