Product Datasheet

44-port 10G Uplink Managed Industrial Ethernet Switch
(ONV-IPS38448FM)

OVERVIEW

The ONV-IPS38448FM is a 10G uplink managed industrial Ethernet fiber switch independently developed by ONV. It has 12*10/100/1000Base-T adaptive RJ45 ports and 28*100/1000Base-X SFP fiber ports and 4*1/10G uplink SFP+ fiber ports. Each port can support wire-speed forwarding.

The ONV-IPS38448FM has L3 network management functions, supports IPV4/IPV6 management, dynamic routing and full line-speed forwarding, complete security protection mechanism, perfect ACL/QoS strategy, and rich VLAN functions for easy management and maintenance. Supports various industrial-grade redundant ring network protocols, each port can form a ring to support chain, star, double star, ring, tangent ring, intersecting ring, coupled ring, and the ring network self-heals within 20ms. Supports remote management and cooperates with ONV-NMS network management platform for cluster management to achieve full-range blind spot network management. Complying with industrial product design and materials, it has excellent adaptability to industrial site environments (including mechanical stability, climate environment adaptability,

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electromagnetic environment adaptability, etc.). It is suitable for industrial scenarios such as intelligent transportation, rail transportation, power industry, mining, petroleum, shipping, metallurgy, and green energy construction to form an economical, efficient, stable, and reliable communication network.

FEATURE

■ **Gigabit multi-fiber port access, uplink 1/10G SFP+ fiber port**

◇ Support non-blocking wire-speed forwarding.

◇ Support full-duplex based on IEEE802.3x and half-duplex based on Backpressure.

◇ Support Gigabit RJ45 port and 1/10G uplink SFP+ fiber port to meet the networking requirements of various scenarios.

■ **Security**

◇ Support port isolation and port broadcast storm suppression.

◇ Support port + MAC binding, 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.

■ **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.

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◇ Support IGMP V1/V2/V3 multicast protocol, IGMP Snooping meets multi-terminal high-definition video surveillance and video conference access requirements.

■ **Stable and reliable**

◇ CCC, CE, FCC, RoHS.

◇ The user-friendly panel can show the device status through the LED indicator of PWR and Link.

◇ Self-developed power supply, redundant dual power supply provides long-term stable power output.

◇ Low power consumption, galvanized steel housing and aluminum alloy heat sink combination, and excellent heat dissipation ensure the switch's stable operation.

■ **Easy O&M management**

◇ Support CPU monitoring, memory monitoring, Ping detection, and cable length detection.

◇ Support RMON, system log, and port traffic statistics to facilitate network optimization and transformation.

◇ Support HTTPS, SSLV3, SSHV1/V2, and other encryption methods, making management more secure.

◇ Supports LLDP, making it easier for the network management system to query and determine the communication status of the link.

◇ Support Web network management, CLI command line (Console, Telnet), SNMP (V1/V2/V3), and other diversified management and maintenance.

TECHNICAL SPECIFICATION

Model	ONV-IPS38448FM
Interface Characteristics	
Fixed Port	Alarm switch terminal (FAULT) Console port (115200, N, 8, 1)

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4	2*AC100-240V input terminals
	12*10/100/1000Base-T RJ45 ports (Data)
	28*100/1000Base-X SFP optical ports (Data)
	4*1/10G 10G SFP+ uplink optical ports (Data)
	1 set DC12-48V input terminals (support reverse polarity protection)
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 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, 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 Rate@64byte	119.04Mpps
CPU (Hz)	500M
DRAM	4G
FLASH	256M
MAC	32K

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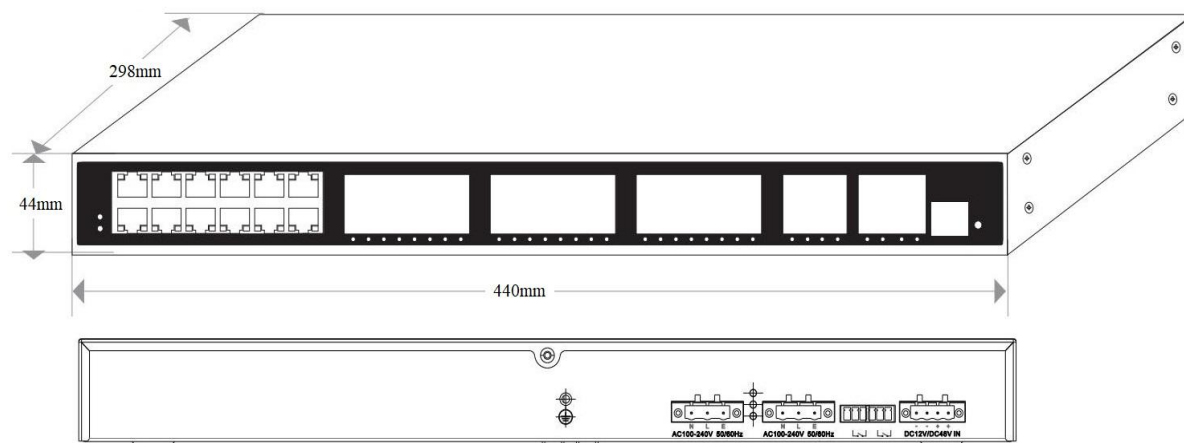
Buffer Memory	32M
Jumbo Frame	9.6K
LED Indicator	Power: PWR (Yellow), System: SYS (Yellow), Network: Link/Act (Yellow), Fiber port: L/A (Green)
Reset Switch	Yes, Press and hold the reset switch for 10s and release it to restore the factory settings
Power Supply	
Total PWR/ Input Voltage	60W/(AC100-240V)
Power Consumption	Standby<35W, full load<55W
Power Supply	Built-in power supply, AC 100~240V 50-60Hz, 0.65A
Power Input Port	Dual power input: AC power priority, reverse polarity protection, and automatic DC switching upon power failure. 2 set AC power inputs, 1 set DC12-48V input, and an alarm switch.
Physical Parameter	
Operation Temp/ Humidity	-40°C~+75°C, 5%~90% RH non condensing
Storage Temp/ Humidity	-40°C~+85°C, 5%~95% RH non condensing
Dimension (L*W*H)	440*298*44mm
Net /Gross Weight	4.0kg/ 4.8kg
Installation	Desktop, 1U/19" cabinet
Certification& Warranty	
Lightning Protection	IEC61000-4-3 (RS):10V/m (80-1000MHz) FCC Part 15/CISPR22 (EN55022): Class A 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): CM2.5kV, DM1kV Protection level: IP40, Lightning protection: 6KV 8/20us IEC61000-4-4(EFT): Power cable: ±4kV, data cable: ±2kV IEC61000-4-16 (Common-mode transmission): 30V, 300V, 1s

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6	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), IEC60068-2-27 (Anti Shock), IEC60068-2-32 (Free Fall)
Certification	CE mark, commercial, CE/LVD EN62368-1, FCC Part 15 Class A, RoHS
Warranty	5 years, lifelong maintenance.

Network Management Feature

Interface	IEEE802.3x flow control (Full duplex)
	Port green Ethernet Energy-saving setting
	Broadcast storm control based on port speed
	SFP+ optical port DDMI real-time digital diagnosis
	Port temperature protection setting, No connection port automatic sleep
	Limit the rate of packet traffic on incoming and outgoing ports, mini granularity is 64Kbps.
L3 Feature	Pingv6, Telnetv6, TFTPv6, DNSv6, ICMPv6
	IPV4/IPV6 VLANIF ports each support up to 128
	IPV4/IPV6 static route/ default route, max 128 entries
	IPV4 Equal Cost Routing, IPV4/IPV6 VRRP max 255 group
	NG protocol max 1000 entries, ARP protocol max 1000 entries
	L3 network management function, IPV4/IPV6 dual-stack management
	IPV4 dynamic routing, RIPv1/v2, OSPFv2, BGP4+, 4000 routing entries
	IPV6 dynamic routing OSPFv3, BGP+, RIPng, IPV6 management, 1000 routing entries
	L3 routing and forwarding, support communication between different network segments and different VLAN
VLAN	Voice VLAN, QinQ configuration, IEEE802.1q
	VLAN based on MAC, VLAN based on the protocol

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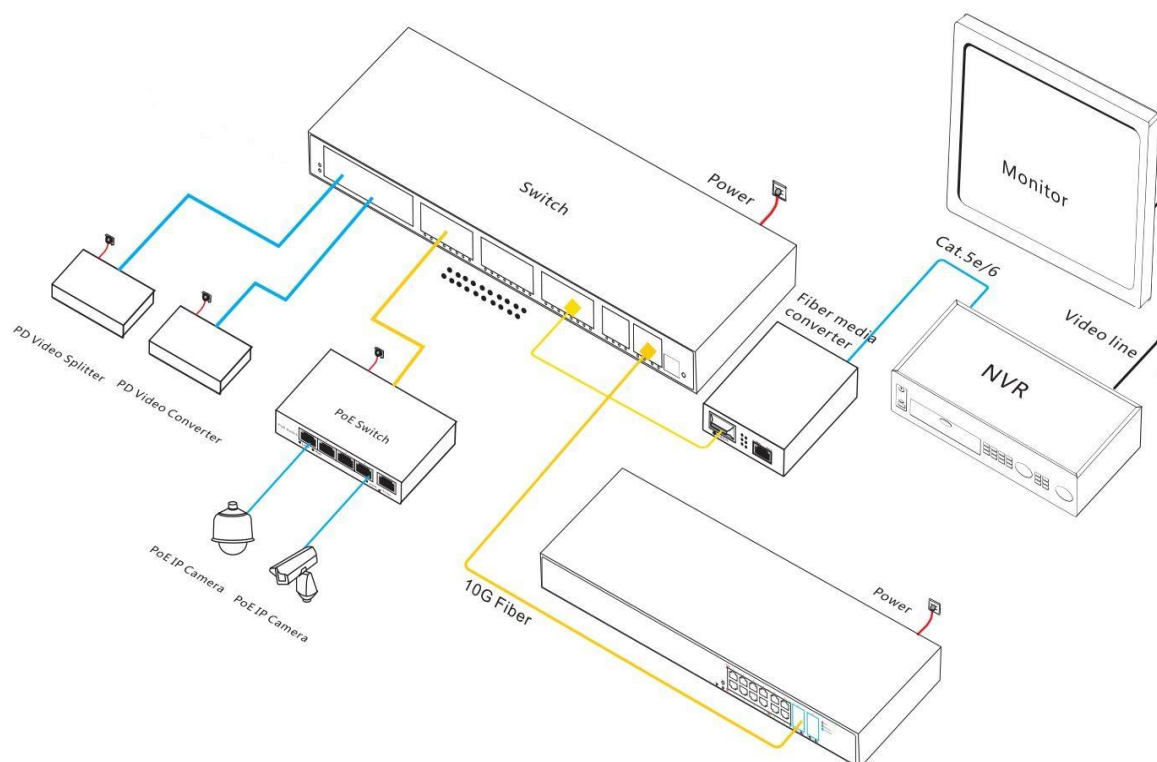|	
7	4K VLAN based on port, Port configuration of Access, Trunk, Hybrid.
Port Aggregation	LACP dynamic aggregation, Static aggregation, Max 22 aggregation groups and 8 ports per group.
Spanning Tree	STP (IEEE802.1d), RSTP (IEEE802.1w), MSTP (IEEE802.1s)
Industrial Ring Network Protocol	G.8032 (ERPS), Recovery time less than 20ms, 250 Ring at most, Max 250 devices per ring.
Multicast	MLD Snooping, Multicast VLAN, Fast log out, IGMP Snooping v1/v2/v3, Max 1024 multicast groups
Port Mirroring	Bidirectional data mirroring based on port
QoS	Flow-based rate limiting, Flow-based redirection Queue scheduling algorithm (SP, WRR, SP+WRR) 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	AAA&RADIUS&TACACS+ certification SSL ensures data transmission security Anti-DoS attack, IP source address protection Port isolation, Port broadcast message suppression User hierarchical management and password protection SSH 2.0 provides a secure encrypted channel for user login binding function of IP+MAC+VLAN+port, MAC address black hole IEEE802.1X authentication/ centralized MAC address authentication ARP intrusion detection function, ARP message speed limit function Host data backup mechanism MAC address learning limit Quadruple
DHCP	DHCP Server, DHCP Client, DHCP Relay, DHCP Snooping

Management	NTP clock, System work log, Dual system backup
	Ping detection, Link layer discovery protocol LLDP
	SNMP V1/V2/V3, Web network management (https)
	One-click restore, CPU real-time utilization status check
	FTP, TFTP, Xmodem, SFTP file upload and download management
	Console/AUX Modem/Telnet/SSH2.0 CLI command line configuration
	Cable length status detection, Mobile APP operation and maintenance
	ONV NMS Network management platform cluster management
	(PC+cloud)
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

298mm

44mm

440mm

AC100-240V 50/60Hz   AC100-240V 50/60Hz   DC12V/DC48V IN

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APPLICATION

ORDERING INFORMATION

Model	Description	Built-in Power Supply
ONV-IPS38448FM	L3 managed industrial Ethernet switch 12*10/100/1000M RJ45 ports and 28*100/1000M SFP fiber ports and 4*1/10G uplink SFP+ fiber ports. Built-in redundant dual power supply, It supports 2AC+DC power input and 1U/19" cabinet installation.	2*60W
Note: The optical module is not included and needs to be purchased.		

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PACKING LIST

	Content	Qty	Unit
Packing List	44-port 10G uplink managed industrial Ethernet switch	1	Set
	AC Power Cable	1	PC
	RJ45-DB9 Adapter Cable	1	PC
	Mounting Kit	1	Set
	User Guide	1	PC
	Warranty Card and Certificate of Conformity	1	PC

OPTICAL MODULE

Product	Model	Description	Unit
1.25G Optica 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
	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-G-SC	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-G-SC	Industrial SFP optical module, 1.25G single-mode single fiber	PC

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		TX1550nm/ RX1310nm, transmission distance: 20km, SC interface. supports DDM function and hot plugging.	
10G Optica 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/ RX1330nm, transmission distance: 20km, LC interface. supports DDM function and hot plugging.	PC

RELATED PRODUCT

Model	Description
ONV-IPS33018FM	L2+ managed industrial Ethernet fiber switch with 16*10/100/1000M RJ45 ports and 2*100/1000M uplink SFP fiber ports. Built-in redundant dual power supply, It supports 2AC+DC power input and 1U/19" cabinet installation.
ONV-IPS38028FM	L3 managed industrial Ethernet fiber switch with 24*10/100/1000M RJ45 ports and 4*1/10G uplink SFP+ fiber ports. Built-in redundant dual power supply, It supports 2AC+DC power input and 1U/19" cabinet installation.
ONV-IPS38036FM	L3 managed industrial Ethernet fiber switch with 24*10/100/1000M RJ45 ports and 8*100/1000M SFP fiber ports and 4*1/10G uplink SFP+ fiber ports. Built-in redundant dual power supply, It supports 2AC+DC

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12	power input and 1U/19" cabinet installation.
ONV-IPS38368FM	L3 managed industrial Ethernet fiber switch with 8*10/100/1000M RJ45 ports and 24*100/1000M SFP fiber ports and 4*1/10G uplink SFP+ fiber ports. Built-in redundant dual power supply, It supports 2AC+DC power input and 1U/19" cabinet installation.
ONV-IPS38048FM	L3 managed industrial Ethernet fiber switch with 48*10/100/1000M RJ45 ports and 4*1/10G uplink SFP+ fiber ports. Built-in redundant dual power supply, It supports 2AC+DC power input and 1U/19" cabinet installation.

CONTACT US

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