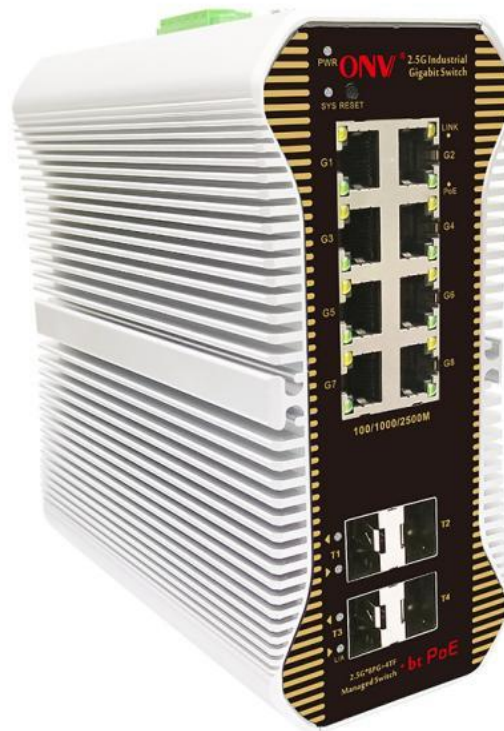**Product Datasheet**

12-port 2.5G Managed Industrial bt PoE Switch
(ONV-IPS57128PFM-bt)

OVERVIEW

The ONV-IPS57128PFM-bt is a 2.5G managed industrial bt PoE switch independently developed by ONV. It has 8*10/100/1000/2500Base-T adaptive RJ45 ports and 4*1/10G uplink SFP+ fiber ports. Port 1-8 can support IEEE802.3af/at/bt PoE standard, and the single-port max PoE power is 90W. As a PoE power supply device, it can automatically detect and identify standard-powered devices and supply power to them through network cables. It can supply power for high-power wireless AP, network dome cameras, high-power PoE lighting, industrial sensors, high-power network industrial control equipment, and other PoE terminal equipment through network cables to meet the network environment that requires high-density and high-power PoE power. It is suitable for intelligent transportation and industrial scenarios such as rail transit, electric power, mining, metallurgy, and green energy construction to establish cost-effective, stable, and

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reliable communication networks.

The ONV-IPS57128PFM-bt has L3 network management function, supports IPV4/IPV6 management, dynamic routing forwarding, complete security protection mechanism, complete ACL/QoS policy, rich VLAN functions, and is easy to manage and maintain. 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 one-way network fails, communication can be quickly restored to ensure important, uninterrupted application communication. According to the application needs, port management, routing address management, port flow control, VLAN division, IGMP, security policy, and other application services are configured through network management methods such as Web, CLI, SNMP, Telnet.

FEATURE

■ **2.5G 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 2.5G RJ45 port and 1/10G uplink SFP+ fiber port combination, which enables users to flexibly build networking to meet the needs of various scenarios.

■ **Smart PoE power supply**

◇ Comply with IEEE802.3 af/at/bt PoE standard, automatically identify PoE devices for power supply, and not damage non-PoE devices.

◇ 8*10/100/1000/2500Base-T RJ45 ports can support bt PoE power, meeting the demand for a high-power PoE power supply in various scenarios.

◇ The PoE port supports the priority. When the remaining power is insufficient, the power of the high-priority port is prioritized to avoid overloading the device.

◇ Support PoE network management function, which can be configured through the network management to realize PoE port on/off, port power status check, time scheduling, etc.

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■ **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/V3 multicast protocol, IGMP Snooping meets multi-terminal high-definition video surveillance and video conference access requirements.

■ **Security**

◇ Support port isolation and port broadcast storm suppression.

◇ 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, RoHS.

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

◇ Low power consumption, aluminum alloy housing, and 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.

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◇ 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

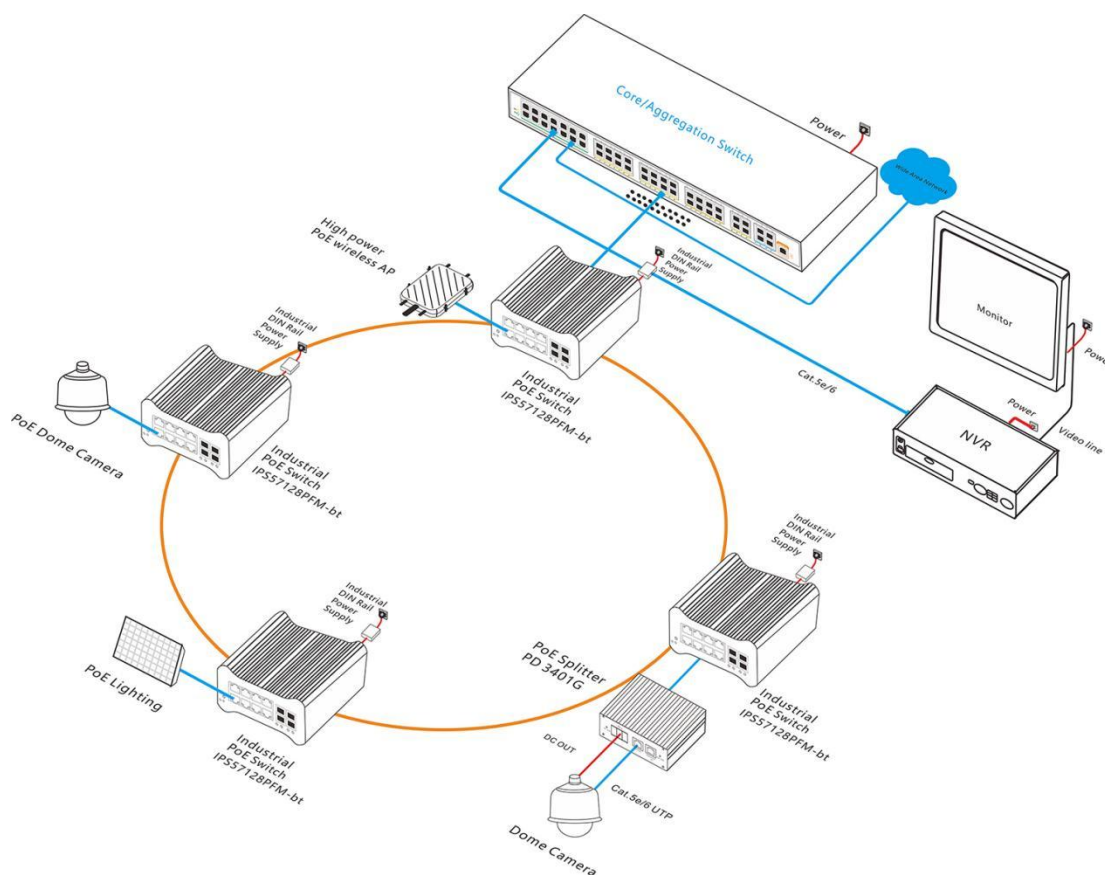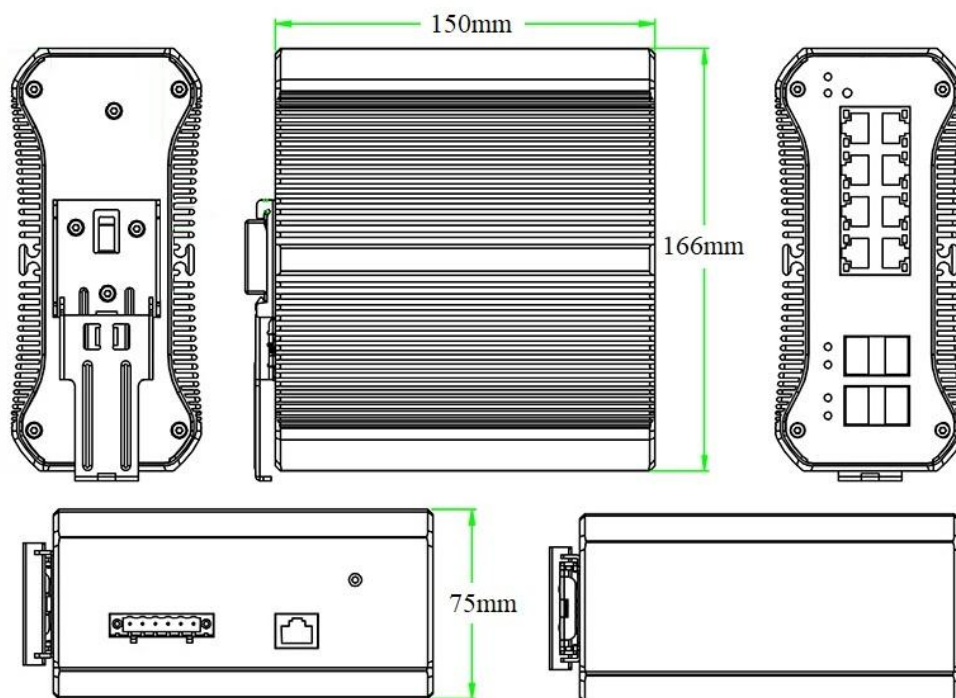| Model	ONV-IPS57128PFM-bt
Interface Characteristics	
Fixed Port	Power failure alarm switch port (FAULT) 1*Console RS232 port (115200, N, 8,1) 4*1/10G uplink SFP+ fiber ports (Data) 8*10/100/1000/2500Base-T bt PoE ports (Data/ Power) 2 set V+, V- redundant DC power ports (6P industrial Phoenix terminal)
Ethernet Port	Port 1-8 can support 10/100/1000/2500Base-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) 2500BASE-T: Cat6a or later UTP(≤100 meters)
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/ 0-550m, Single-mode: 1310nm/ 0-40km, 1550nm/ 0-120km
Chip Parameter	

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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, IEEE802.3be 2.5GBase-T, IEEE802.3ae 10GBase-SR/LR, IEEE802.3x
Forwarding Mode	Store and forward (Full wire speed)
Switching Capacity	96Gbps (non-blocking)
Forwarding Rate@64byte	89.28Mpps
CPU(Hz)	Dual Core 1G
DRAM	2G
FLASH	256M
MAC	32K
Buffer Memory	16M
Jumbo Frame	12K
LED Indicator	Power/ System: SYS (Green), Rate: 100/1000 (Green), Network: Link (Yellow), PoE: PoE (Green), Fiber port: L/A (Green)
Reset Switch	Yes, press and hold the switch for 10 seconds and release it to restore the factory settings
PoE& Power Supply	
PoE Port	Port 1- 8
PoE Management	Port PoE real-time load power display, Port PoE output on/off, PoE work and time scheduling
Power Supply Pin	1/2/4/5(+),3/6/7/8(-)
Max Power Per Port	90W, IEEE802.3 af/at/bt
Power Consumption	Standby<13W, full load af<120W, at<240W, bt<480W
Input Voltage/ Interface	DC48-57V, 6P industrial Phoenix terminal, support anti-reverse protection.
Power Supply	No, optional 48V/120W or 48V/240W or 48V/480W industrial power supply
Physical Parameter	
Operation Temp/ Humidity	-40°C~75°C, 5%~90% RH non condensing

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Storage Temp/ Humidity	-40°C~85°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	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
	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	Port real-time flow management (Flow Interval)
	Broadcast storm suppression based on port rate
	SFP optical module DDMI real-time digital diagnosis
	Port EEE Green Ethernet Energy-Saving configuration and status view
	IEEE802.3x flow control (Full duplex), Port exception protection mechanism
	Limit the rate of packet traffic on incoming and outgoing ports, the mini

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7	granularity is 16Kbps and max 1Gbps
L3 Feature	Pingv6, Telnetv6, TFTPv6, DNSv6, ICMPv6
	VLANIF interfaces for IPV4/IPV6, up to 64 entries
	IPV4/IPV6 static routing/default routing, up to 64 entries
	NG protocol max 1000 entries, ARP protocol max 1000 entries
	IPV4 equal cost routing, VRRP for IPV4/IPV6, up to 255 entries
	IPV4 dynamic routing, RIPv1/v2, OSPFv2, routing 2000 entries
	L3 network management function, IPV4/ IPV6 dual-stack management
	L3 routing and forwarding, support communication between different network segments and different VLAN
VLAN	Port configuration of Access, Trunk, Hybrid, IEEE 802.1q
	Voice VLAN, GVRP VLAN protocol, Port-based VLAN (4K)
	Protocol-based VLAN, MAC address-based VLAN, QinQ configuration
Port Aggregation	LACP dynamic aggregation, 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	ERPS ring network, Recovery time less than 20ms, ITU-T G.8032
Multicast	Multicast VLAN, User quick log out, MLD Snooping, 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	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 is issued based on port and VLAN
	L2-L4 packet filtering function can match the first 80 bytes of the message
	and provide ACL definition based on source MAC address, destination MAC

8	address, source IP address, destination IP address, IP protocol type, TCP/UDP port range, VLAN, etc.
Security	Port based IEEE802.1X authentication

Port isolation, IP Source Guard function

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

IP source address protection, ARP message speed limit function

Support AAA, RADIUS, TACACS+ authentication (only supports authentication, not authorization and accounting) |
| DHCP | DHCP Client, DHCP Snooping, DHCP Server |
| Management | System work log, Link Layer Discovery Protocol

NTP clock, Cable length detection, SNMP V1/V2/V3

Ping detection, Web network management (HTTPS)

HTTP, TFTP file upload and download management

Console/ SSH/ Telnet/ CLI command line configuration

ONV-NMS platform cluster management (LLDP+SNMP)

One click recovery, View CPU real-time utilization status |
| 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 |

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APPLICATION

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ORDERING INFORMATION

Model	Description	Recommended Power Supply
ONV-IPS57128PFM-bt	L3 managed industrial bt PoE switch with 8*10/100/1000/2500M RJ45 ports and 4*1/10G uplink SFP+ fiber ports. Port 1-8 can support IEEE802.3af/at/bt PoE standard. It can support dual DC redundant power input (Phoenix terminal connection) and DIN rail mounting.	120W/240W/480W

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

PACKING LIST

	Content	Qty	Unit
Packing List	12-port 2.5G managed industrial bt PoE 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-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	PC

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Product	Model	Description	Unit
		TX1310nm/ RX1550nm, transmission distance: 20km, LC interface, support DDM function, support hot plug and pull.	
	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-G-SC	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-G-SC	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 interface, support DDM function, support hot plug and pull.	PC
	7832-27-G	Industrial SFP+ optical module, 10G, single-mode single fiber TX1270nm/ RX1330nm, transmission distance: 20km, LC interface, support DDM function, support hot plug and pull.	PC

POWER SUPPLY

Product	Model	Description	Unit
120W DIN Rail Industrial Power	GWS-DP120-48	DIN Rail 120W single set of output power supply Input Voltage: AC100V-240V 50-60Hz, 2.3A	PC

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		Output Voltage: DC48V, 2.5A	
Supply		Operation Temperature: -40℃ to 70℃	
240W DIN Rail Industrial Power Supply	GWS-DP240-48	DIN Rail 240W single set of output power supply Input Voltage: AC100V-240V 50-60Hz, 3.0A Output Voltage: DC48V, 5.0A Operation Temperature: -40℃ to 70℃	PC
480W DIN Rail Industrial Power Supply	GWS-DP480-48	DIN Rail 480W single set of output power supply Input Voltage: AC100V-240V 50-60Hz, 5.0A Output Voltage: DC48V, 10A Operation Temperature: -40℃ to 70℃	PC

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