

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 auto-sensing RJ45 ports and 4*1/10G SFP+ fiber ports. Ports 1-8 support IEEE 802.3af/at/bt PoE standards, with a single port delivering up to 90W of PoE power. As a PoE power supply device, it can automatically detect and identify compliant powered devices and supply power via a network cable. It can power high-power wireless APs, network PTZ cameras, high-power PoE lighting, industrial sensors, and high-power network control equipment, meeting the needs of network environments requiring high-density, high-power PoE power. It is suitable for building economical, efficient, stable, and reliable communication networks in industrial scenarios such as intelligent transportation, rail transit, power, mining, metallurgy, and green energy construction.

The ONV-IPS57128PFM-bt has L3 network management capabilities, supports IPv4/IPv6 management, dynamic routing and forwarding, and offers comprehensive security

mechanisms, robust ACL/QoS policies, and rich VLAN functionality, making it easy to manage and maintain. It supports multiple network redundancy protocols, including STP/RSTP/MSTP (<50ms) and (ITU-T G.8032) ERPS (<20ms), enhancing link backup and network reliability. In the event of a unidirectional network failure, communication can be quickly restored, ensuring uninterrupted communication for critical applications. Depending on application needs, it supports PoE power supply management via Web, CLI, SNMP, Telnet, and other network management methods, enabling port management, routing address management, port flow control, VLAN segmentation, IGMP, security policies, and other application service configurations.

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.
- ◇ 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.

■ 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

- ◇ CE, FCC, RoHS.
- ◇ The user-friendly panel can show the device status through the LED indicators of PWR, SYS, Link, 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, and Ping detection.
- ◇ HTTPS, SSLV3, SSHV1/V2, and other encryption methods are more secure in management.
- ◇ 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	Ports 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 does not include optical module (optional single-mode/ multi-mode, single fiber/ dual fiber optical module, LC)
Optical Cable/ Distance	Multi-mode: 850nm/ 0-550m, 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, IEEE802.3be

	2.5GBase-T, IEEE802.3ae 10GBase-SR/LR, IEEE802.3x
Forwarding Mode	Store and forward (Full wire speed)
Switching Capacity	240Gbps (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	DC44-57V, 6P industrial Phoenix terminal supports 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~+80°C, 5%~90% RH non-condensing
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

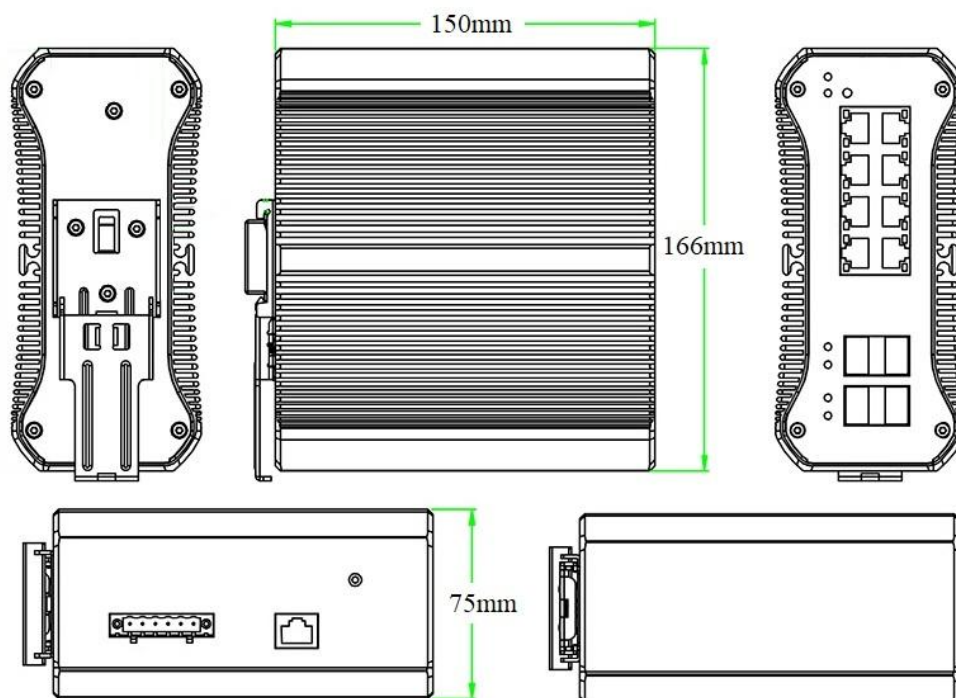
Network Management Feature

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 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

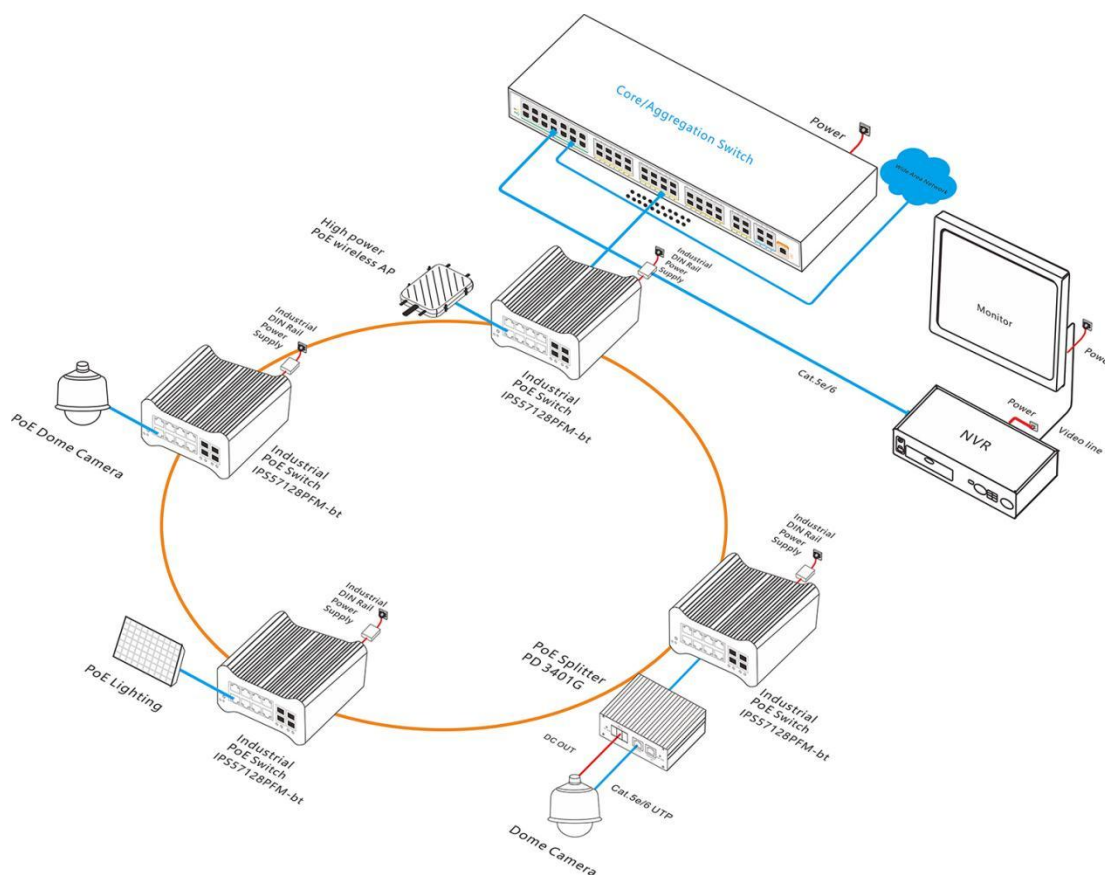
	NG protocol max 1000 entries, ARP protocol max 1000 entries IPV4 equal cost routing, VRRP for IPV4/IPV6, up to 255 entries IPV4 dynamic routing, RIPv1/v2, OSPFv2, routing 2000 entries L3 network management function, IPV4/ IPV6 dual-stack management L3 routing and forwarding, support communication between 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 256 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 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 Ping detection, Web network management (HTTPS) HTTP, TFTP file upload and download management NTP clock, Cable length detection, SNMP V1/V2C/V3 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: Google Chrome V42 or later, Mozilla Firefox 2.5 or later, Microsoft Internet Explorer 10 or later TCP/IP, network adapter, and network operating system (such as Microsoft Windows, Linux, or Mac OS X) are installed on each computer in the network using a Category 5 or higher Ethernet cable.

DIMENSION



APPLICATION



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. Ports 1-8 support the IEEE 802.3 af/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	PC
	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

		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-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 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

Supply		Output voltage: DC48V, 2.5A 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, 5.5A Output voltage: DC48V, 10.0A Operation temperature: -40℃ to 70℃	PC

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