

6-port Full Gigabit Bypass Managed Industrial PoE Switch (NVT-IPS33006PFM-BY)



OVERVIEW

The NVT-IPS33006PFM-BY is a full Gigabit bypass managed industrial PoE fiber switch independently developed by NVT. It has 4*10/100/1000M PoE ports and 2*100/1000M SFP ports. Port 1-4 can support IEEE 802.3 af/at PoE standard. Single-port POE power up to 30W. As a POE power supply device, it can automatically detect and identify the electrical equipment that meets the standard and supply power through the cable. It can supply the POE terminal equipment, such as wireless AP, IP camera, network telephone, industrial sensor and so on, to meet the demand for high density PoE power supply network environment. The switch integrates the Bypass optical switching module. When the power supply of the switch is interrupted, the optical fiber is automatically switched to the bypass-through state to avoid communication interruption due to switch failure and ensure the reliability of network transmission. It is suitable for intelligent transportation, rail transit, electric power, mining, metallurgy and green energy, industrial scenes such as construction set up a cost-effective and stable communication network.

The NVT-IPS33006PFM-BY has L2+ network management function, support IPV4 static

route forwarding, security protection mechanism, ACL/QoS policy and VLAN, and is easy to manage and maintain. Support multiple network redundancy protocols STP/RSTP/MSTP(<50ms) to improve link backup and network reliability. When one-way network fails, communication can be quickly restored to ensure important Uninterrupted communication for applications. According to the actual application requirements, you can configure multiple application services such as PoE power management, port traffic control, VLAN division, and SNMP through the Web network management mode.

FEATURE

■ Gigabit access, SFP fiber port uplink, Integrated Bypass function

- ◇ Support non-blocking wire-speed forwarding.
- ◇ Support full-duplex based on IEEE802.3x and half-duplex based on Backpressure.
- ◇ Support Gigabit Ethernet port and Gigabit SFP port combination, which enables users to flexibly build networking to meet the needs of various scenarios.
- ◇ Support physical single-mode single fiber optical path(Bypass) function, pure hardware switching, short switching time, does not affect the data transmission rate and improves the stability of the network system.

■ Intelligent PoE power supply

- ◇ PoE network management, realize PoE port power allocation, priority setting, port power status viewing, time scheduling, etc.
- ◇ Comply with IEEE 802.3 af/at PoE standard, automatically identify PoE devices for power supply, and not damage non-PoE devices.
- ◇ Priority system for PoE port, it will supply power to the high priority level port first when the power budget is insufficient and avoid overwork of the device.
- ◇ 4*10/100/1000Base-T RJ45 ports can support POE power to meet the needs of security monitoring, teleconferencing system, wireless coverage, and other scenarios.

■ Strong business processing ability

- ◇ Support STP/RSTP/MSTP production tree protocol, eliminate layer 2 loops and realize link backup.
- ◇ Support static and dynamic aggregation to effectively increase link bandwidth, realize load balancing, link backup, and improve link reliability.
- ◇ Support IGMP Snooping V1/V2/V3 to meet the multi-terminal high-definition video surveillance and video conference access requirements.
- ◇ 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 IEEE 802.1Q VLAN, users can flexibly divide VLAN according to needs, and support three types of port configurations: Access, Trunk, and Hybrid.
- ◇ Support ACL to filter data packets by configuring matching rule processing operations and time permissions, and provide flexible security access control policies.

■ Security

- ◇ Support port isolation.
- ◇ Support port broadcast storm suppression.
- ◇ Support IP+MAC+port+VLAN quadruple flexible combination binding function.
- ◇ Support 802.1X authentication to provide authentication functions for LAN computers, and control the authorization status of controlled ports according to the authentication results.

■ Stable and reliable

- ◇ CCC, CE, FCC, RoHS.
- ◇ The user-friendly pane can show the device status through the LED indicator of PWR, SYS, Link, L/A, PoE.
- ◇ Low power consumption, no fan, aluminum shell, and excellent heat dissipation ensure the stable operation of the switch.

■ Easy O&M management

- ◇ Support CPU monitoring, memory monitoring, Ping detection, cable length detection.
- ◇ Support HTTPS, SSHV1/V2 and other encryption methods, making management more secure.
- ◇ Support RMON, system log, and port traffic statistics to facilitate network optimization and transformation.
- ◇ Support LLDP to facilitate the network management system to query and judge the communication status of the link.
- ◇ Support Web network management, CLI (Console, Telnet), SNMP (V1/V2C/V3), Telnet and other diversified management and maintenance methods.

TECHNICAL SPECIFICATION

Model	NVT-IPS33006PFM-BY
Interface Characteristics	
Fixed Port	2 set of bypass optical fiber ports
	1*Console RS232 port (115200,N,8,1)
	2*100/1000Base-X uplink SFP ports (Data)
	4*10/100/1000Base-T PoE ports (Data/Power)
	2 set of V+, V- redundant DC power ports (5P Phoenix terminal)
Bypass Optical Port	Power ON: P1—P4 intercommunication, P2—P3 intercommunication
	Power OFF: P1—P3 Pass-through
Ethernet Port	Port 1-4 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)
SFP Slot Port	Gigabit SFP optical fiber interface, default no include optical modules (Only supports single-mode single fiber optical module. LC)

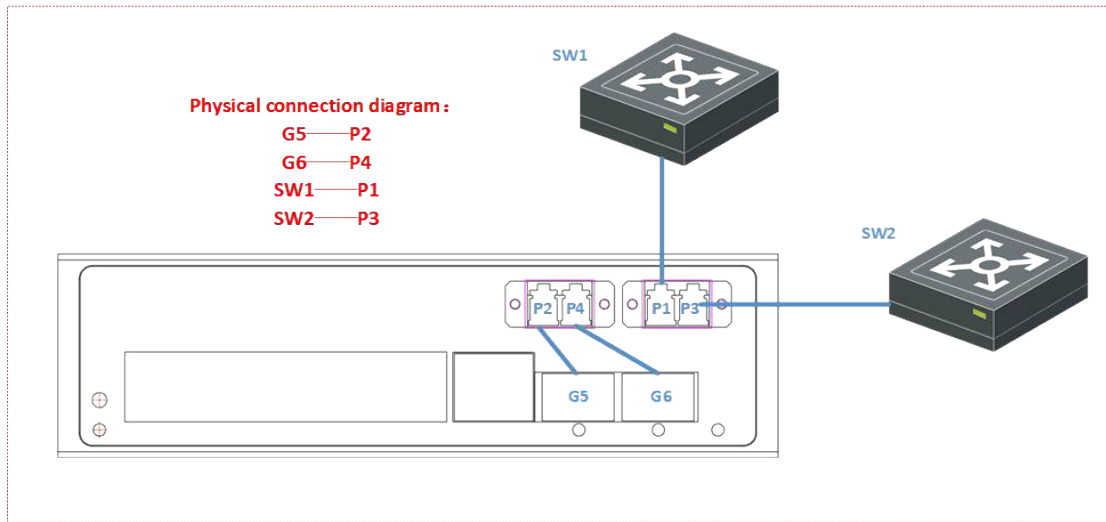
Optical Cable/ Distance	Single-mode: 1310nm/ 0-40km, 1550nm/ 0-120km.
Chip Parameter	
Network Management Type	L2+
Network Protocol	IEEE802.3 10BASE-T, IEEE802.3i 10Base-T, IEEE802.3u 100Base-TX IEEE802.3ab 1000Base-T, IEEE802.3z 1000Base-X, IEEE802.3x
Forwarding Mode	Store and Forward(Full Wire Speed)
Switching Capacity	12Gbps
Forwarding Rate@64byte	8.93Mpps
CPU(Hz)	500M
DRAM	1G
Flash	128M
MAC	8K
Buffer Memory	4M
Jumbo Frame	10K
LED Indicator	Power/ System: SYS(Green), Network: Link (Yellow), PoE: PoE (Green) Fiber port: L/A (Green)
Reset Switch	Yes. Press and hold the reset switch for 10 seconds and release it to restore factory settings
PoE & Power Supply	
PoE Port	Port 1 to port 4 IEEE 802.3 af/at
PoE Management	PoE working status display, Port PoE out on/off
Power Supply Pin	1/2 (+) 3/6 (-)
Max Power Per Port	30W, IEEE 802.3 af/at
Total Power/ Input Voltage	60W/ 48-57VDC

Power Consumption	Standby<6W, Full load<60W
Input Voltage/ Interface	DC48-57V, 5P industrial phoenix terminal, support anti-reverse protection.
Power Supply	No, optional 48V/60W or 48V/120W industrial power supply
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)	145*134.5*47mm
Net /Gross Weight	<0.6kg / <0.8kg
Installation	Desktop, 35mm DIN rail
Certification & Warranty	
Lightning Protection	<p>Lightning protection: 6KV 8/20us, Protection level: IP40</p> <p>IEC61000-4-2(ESD): ±8kV contact discharge, ±15kV air discharge</p> <p>IEC61000-4-3(RS): 10V/m(80~1000MHz)</p> <p>IEC61000-4-4(EFT): power cable: ±4kV; data cable: ±2kV</p> <p>IEC61000-4-5(Surge): power cable: CM±4kV/DM±2kV; data cable: ±4kV</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 to 3s</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>IEC61000-4-16(common-mode transmission): 30V; 300V,1s</p> <p>FCC Part 15 Class A</p> <p>IEC61000-6-2(Common Industrial Standard)</p>
Mechanical	IEC60068-2-6 (anti vibration), IEC60068-2-27 (anti shock)

Properties	IEC60068-2-32 (free fall)
Certification	CCC, CE mark, commercial, CE/LVD EN62368-1, FCC Part 15 Class A, RoHS
Warranty	5 years, lifelong maintenance.
Network Management Features	
Interface	IEEE802.3x flow control (Full duplex) Port real-time traffic management (Flow Interval) Broadcast storm suppression based on port rate Limit the rate of packet traffic on the ingress and egress ports. The minimum granularity is 16Kbps and the maximum is 1Gbps
Layer 3 Features	Static routing/ default routing with max 128 entries L2+ network management, ARP protocol max entries 1024
VLAN	Port configuration of Access, Trunk, Hybrid 4K VLAN based on port, IEEE802.1q, VLAN based on the protocol
Port Aggregation	LACP dynamic aggregation, Static aggregation Max 3 aggregation groups and 8 ports per group.
Spanning Tree	STP (IEEE802.1d), RSTP (IEEE802.1w), MSTP (IEEE802.1s)
Multicast	Multicast VLAN, Fast log out IGMP Snooping v1/v2/V3, Max 1024 multicast groups
Port Mirroring	Bidirectional data mirroring based on port
QoS	Diff-Serv QoS, Priority Mark/ Remark Queue Scheduling Algorithm (SP, WRR, SP+WRR) Flow-based rate limiting, Flow-based packet filtering 8*output queues of each port, 802.1p/DSCP priority mapping
ACL	Port-based Issuing ACL, ACL based on port and VLAN L2 to L4 packet filtering, matching first 80 bytes message. Provide ACL based on MAC, Destination MAC address, IP Source, Destination IP, IP Protocol Type, TCP/UDP Port, TCP/UDP Port Range, and VLAN, etc.
Security	IP-MAC-VLAN-Port binding

	<p>ARP inspection, Anti-DoS attack</p> <p>AAA & RADIUS, MAC learning limit</p> <p>Mac black holes, IP source protection</p> <p>IEEE802.1X & MAC address authentication</p> <p>Broadcast storm control, Backup for host datum</p> <p>SSH 2.0, SSL, Port isolation, ARP message speed limit</p> <p>User hierarchical management and password protection</p>
DHCP	DHCP Client, DHCP Snooping, DHCP Server
Management	<p>FTP, TFTP file upload and download management</p> <p>NVT NMS platform cluster management (LLDP+SNMP)</p> <p>NTP, System work log, Ping Test, SNMP V1/V2C/V3, LLDP</p> <p>CPU instant utilization status view, Console/ Telnet/ SSH2.0 CLI</p> <p>Web Management (HTTPS), Cable Diagnose, One-key recovery</p>
System	<p>Category 5 Ethernet network cable</p> <p>Web browser: Mozilla Firefox 2.5 or higher, Google browser chrome V42 or higher, Microsoft Internet Explorer10 or later;</p> <p>TCP/IP, network adapter, and network operating system (such as Microsoft Windows, Linux, or Mac OS X) installed on each computer in a network</p>

APPLICATION



ORDERING INFORMATION

Model	Description	Recommended Power Supply
NVT-IPS33006PFM-BY	L2+ managed bypass industrial PoE fiber switch with 4*10/100/1000M RJ45 ports and 2*100/1000M SFP ports. Port 1-4 can support IEEE 802.3 af/at PoE standard. It can support dual DC power supply input and DIN rail mounting.	60W/120W

Note: Industrial PoE switches do not include optical module and power supply by default.

PACKING LIST

	Content	Qty	Unit
Packing List	6-port full gigabit bypass managed industrial PoE switch	1	SET
	RJ45-DB9 Line	1	PC
	User Guide	1	PC
	Warranty Card	1	PC