**GWS**

**Product Datasheet**

# 52-port 10G Uplink Managed Industrial PoE Switch
## (GWS-IPS38048PFM)

## OVERVIEW

The GWS-IPS38048PFM is a 10G uplink managed industrial PoE switch independently developed by GWS. It has 48*10/100/1000Base-T adaptive RJ45 ports and 4*1/10G uplink SFP+ fiber ports. Port 1-48 can support IEEE 802.3 af/at PoE standard and the single-port PoE power reaches 30W. As a PoE power supply device, it can automatically detect and recognize power-compliant devices that meet the standard and supply power through the network cable. It can supply power to PoE terminal equipment such as wireless AP, IP camera, VoIP, and industrial sensor through the network cable, and meet the network environment that needs a high-density PoE power supply. It is suitable for intelligent transportation, rail transit, power industry, mining, petroleum, and industrial scenes such as shipping, metallurgy, and green energy construction forming a cost-effective, stable, and reliable communication network.

The GWS-IPS38048PFM has L3 network management function, supports IPV4/IPV6 management, dynamic routing full line-speed forwarding, complete security protection mechanism, perfect ACL/QoS strategy, and rich VLAN functions for easy management and maintenance. It has leading ring network technology, supports a variety of industrial-grade redundant ring network protocols, and all ports can form rings. It supports chain, star, double star, ring, tangent ring, intersecting ring, coupled ring, and the ring

network recovery time within 20ms. It has high reliability, high security, and high manageability to ensure reliable transmission of key data. It supports remote management and cooperates with the GWS-NMS network management platform for cluster management to achieve full-process blind spot network management.

## FEATURE

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

- **Smart 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.

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

◇ 48*10/100/1000Base-T RJ45 ports support PoE power, meeting the PoE power requirements of security monitoring, industrial automation systems, wireless coverage and other scenarios.

- **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 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.

◇ 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.

◇ Self-developed power supply, high redundancy design, providing a long-term and stable PoE power output.

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

◇ Low power consumption, with fan, galvanized steel metal housing, and excellent heat dissipation to ensure stable operation of the switch.

■ **Easy O&M management**

◇ Support 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.

◇ 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 | GWS-IPS38048PFM |
|---|---|
| **Interface Characteristics** | |
| Fixed Port | 2*AC100-240V input ports<br>1*Console port (115200, N, 8,1)<br>4*1/10G uplink SFP+ fiber ports (Data)<br>48*10/100/1000Base-T PoE ports (Data/Power)<br>2*DC48-57V input ports (support reverse polarity protection) |
| Ethernet Port | Port 1-48 can 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)<br>100BASE-TX: Cat5 or later UTP (≤100 meters)<br>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 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 | IEEE 802.3 10BASE-T, IEEE 802.3i 10Base-T, IEEE 802.3u 100Base-TX, IEEE 802.3ab 1000Base-T, IEEE 802.3z 1000Base-X, IEEE 802.3ae 10GBase-SR/LR, IEEE 802.3x |

| | |
|---|---|
| Forwarding Mode | Store and Forward (Full wire speed) |
| Switching Capacity | 176Gbps (non-blocking) |
| Forwarding Rate@64byte | 131Mpps |
| CPU | 500MHz |
| DRAM | 4G |
| FLASH | 256M |
| MAC | 32K |
| Buffer Memory | 32M |
| Jumbo Frame | 9.6K |
| LED Indicator | Power: PWR(Yellow), System: SYS(Green), Network: Link/Act (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 1-48 |
| PoE Management | PoE power supply total power limit configuration Power delay start, PoE work and time scheduling Port PoE working status display, Port PoE output priority configuration Port PoE output power distribution, PoE on/off, af/at power distribution |
| Power Supply Pin | 1/2(+) 3/6 (-) |
| Max Power Per Port | 30W, IEEE 802.3 af/at |
| Power Consumption | Standby<35W, Full load<600W |
| Power Supply | Built-in power supply, AC100~240V 50-60Hz, 6.6A |
| Power Input Port | Alarm switch port, 2*AC power input ports, 2*DC48-57V input ports Dual input power port design: AC power supply priority to support anti-reverse connection protection, and automatically switches to DC connection when power fails. |
| **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) | 440*378*44.5mm |
| Net /Gross Weight | 6.75kg/ 7.55kg |
| Installation | Desktop, 1U/19'' cabinet |
| **Certification& Warranty** | |
| Lightning Protection | IEC61000-4-3(RS):10V/m (80~1000MHz)<br><br>FCC Part 15/CISPR22 (EN55022): Class A<br><br>IEC61000-6-2 (Common Industrial Standard)<br><br>IEC61000-4-9 (Pulsed magnet field): 1000A/m<br><br>IEC61000-4-10 (Damped oscillation): 30A/m, 1MHz<br><br>IEC61000-4-12/18 (Shockwave): CM 2.5kV, DM 1kV<br><br>Protection level: IP30, Lightning protection: 6KV 8/20us<br><br>IEC61000-4-4(EFT): Power cable:±4kV, Data cable: ±2kV<br><br>IEC61000-4-16 (Common-mode transmission): 30V, 300V, 1s<br><br>IEC61000-4-2 (ESD): ±8kV contact discharge, ±15kV air discharge<br><br>IEC61000-4-6 (Radio frequency transmission): 10V(150kHz~80MHz)<br><br>IEC61000-4-8 (Power frequency magnetic field):100A/m,1000A/m,1-3s<br><br>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 A, RoHS |
| Warranty | 5 years, lifelong maintenance. |
| **Network Management Feature** | |
| Interface | No connection port automatic sleep<br><br>Port green Ethernet Energy-saving setting<br><br>Broadcast storm control based on port speed<br><br>SFP+ optical port DDMI real-time digital diagnosis<br><br>Port temperature protection setting, IEEE 802.3x flow control (Full-duplex) |

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|---|---|
| | The speed limit of the message flow in the access port, mini particle size is 64Kbps. |
| L3 Routing | IPV4 Equal Cost Routing |
| | NG protocol max 1000 entries |
| | ARP protocol max 1000 entries |
| | IPV4/IPV6 VRRP max group is 255 |
| | Pingv6, Telnetv6, TFTPv6, DNSv6, ICMPv6 |
| | IPV4/IPV6 VLANIF interface supports up to 128 |
| | IPV4/IPV6 static route/ default route supports up to 128 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 |
| | 4K VLAN based on port, Port configuration of Access, Trunk, Hybrid. |
| Port Aggregation | LACP, Static aggregation, Max 26 aggregation groups and 8 ports per group. |
| Spanning Tree | STP (IEEE802.1d), RSTP (IEEE802.1w), MSTP (IEEE802.1s) |
| 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, Max 1024 multicast groups |
| Port Mirroring | Bidirectional data mirroring based on port |
| QoS | Flow-based redirection, Flow-based rate limiting |
| | Flow-based packet filtering, Priority Mark/Remark |
| | 8*Output queues of each port, 802.1p/ DSCP priority mapping |

| | |
|---|---|
| | Queue Scheduling Algorithm (SP, WRR, SP+WRR), Diff-Serv QoS |
| 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 | ARP message rate limiting function |
| | Port broadcast message suppression |
| | SSL ensures data transmission security |
| | AAA& RADIUS& TACACS+ certification |
| | Limit the number of MAC addresses learned |
| | Port isolation, Host data backup mechanism |
| | Anti-DoS attack, ARP intrusion detection function |
| | Quadruple binding function of IP+MAC+VLAN+port |
| | IP source address protection, MAC address black hole |
| | User hierarchical management and password protection |
| | SSH 2.0 provides a secure encrypted channel for user login |
| | IEEE802.1X authentication/ centralized MAC address authentication |
| DHCP | DHCP Client, DHCP Snooping, DHCP Server, DHCP Relay |
| Management | System work log, Link Layer Discovery Protocol |
| | NTP clock, Cable length detection, SNMP V1/V2/V3 |
| | Ping detection, Web network management (HTTPS) |
| | GWS-NMS platform cluster management (LLDP+SNMP) |
| | One click recovery, View CPU real-time utilization status |
| | FTP, TFTP, Xmodem, SFTP file upload and download management |
| | Console/ AUX Modem/ Telnet/ SSH2.0 CLI command line configuration |
| 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 |

# DIMENSION
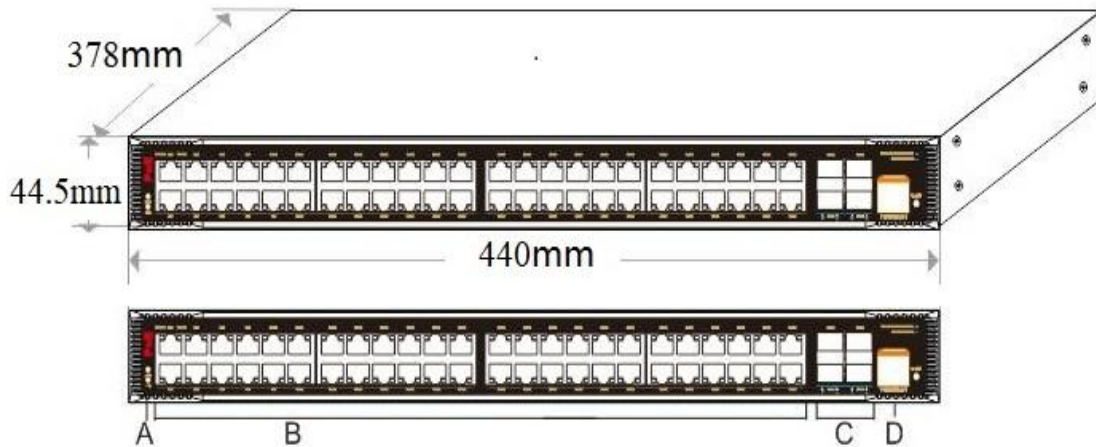


A. Working indicator

B. 48*10/100/1000M PoE ports

C. 4*1/10G uplink SFP+ fiber ports

D. Console port

# APPLICATION
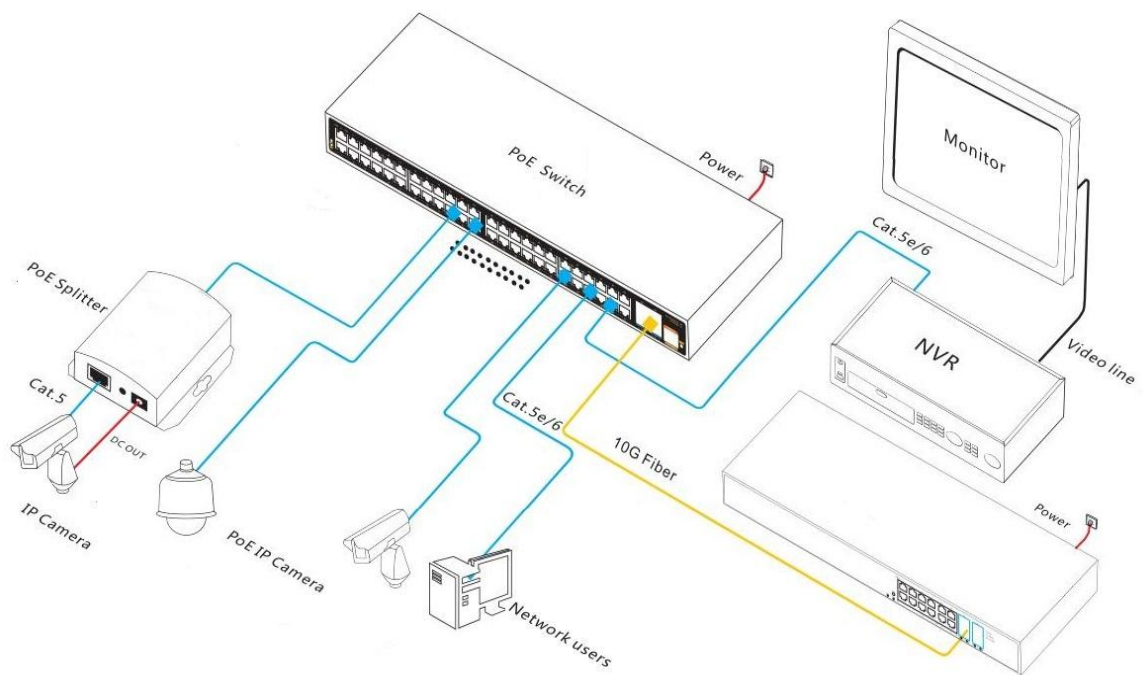
# ORDERING INFORMATION

| Model | Description | Built-in Power Supply |
|---|---|---|
| GWS-IPS38048PFM | L3 managed industrial PoE switch with 48*10/100/1000M RJ45 ports and 4*1/10G uplink SFP+ fiber ports. Port 1-48 can support IEEE 802.3 af/at PoE standard. It built-in power supply and 1U/19" cabinet installation. | 2*600W |

**Note:** The optical module is not included and needs to be purchased separately.

# PACKING LIST

| | Content | Qty | Unit |
|---|---|---|---|
| **Packing List** | 52-port 10G uplink managed industrial PoE switch | 1 | Set |
| | RJ45-DB9 Adapter Cable | 1 | PC |
| | AC Power Cable | 1 | PC |
| | Mounting Kits (Hanging Ear) | 1 | Set |
| | 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, 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 | PC |

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|---|---|---|---|
| | | DDM function and hot plugging. | |
| | 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-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/ RX1330nm, transmission distance: 20km, LC interface, supports DDM function and hot plugging. | PC |

# RELATED PRODUCT

| Model | Description |
|-------|-------------|
| GWS-IPS38168PFM | L3 managed industrial PoE switch with 12*10/100/1000M RJ45 ports and 4*1/10G uplink SFP+ fiber ports. Port 1-8 can support IEEE 802.3 af/at PoE standard. It can support dual DC redundant power input and DIN rail mounting. |
| GWS-IPS38036PFM | L3 managed industrial PoE switch with 24*10/100/1000M RJ45 ports and 8*100/1000M uplink SFP fiber ports and 4*1/10G uplink SFP+ fiber ports. Port 1-24 can support IEEE 802.3 af/at PoE standard. It built-in power supply and 1U/19" cabinet installation. |
| GWS-IPS38028PFM | L3 managed industrial PoE switch with 24*10/100/1000M RJ45 ports and 4*1/10G uplink SFP+ fiber ports. Port 1-24 can support IEEE 802.3 af/at PoE standard. It built-in power supply and 1U/19" cabinet installation. |

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