

8-Port 10/100Mbps + 2-Port Gigabit TP/SFP Combo PoE Managed Industrial Switch with Wide Operating Temperature



Enhanced Reliability for Industrial Networks

The PLANET ISW-1022MPT PoE Managed Industrial Ethernet Switch is equipped with multiple redundant ring technology and provides 8 10/100Mbps Fast Ethernet with IEEE 802.3af Power over Ethernet and 2 Gigabit TP/SFP combo interfaces delivered in a rugged strong case. It is an industrially (substation) hardened and fully managed with Ethernet Switch specifically designed to operate reliably in electrically harsh, climatically demanding, wide temperature range (-40°C to 75°C) and centralized power management environments. The ISW-1022MPT is the most reliable choice for highly-managed and Fiber Ethernet application.

- 8-Port Power over Ethernet
- Redundant Ethernet Network
- Manageable
- Power Redundant
- Gigabit / Fiber uplink capability
- Wide Temperature Support

Fast Recovery to a Redundant Ethernet Network

The ISW-1022MPT features strong and rapid self-recovery capability to prevent interruptions of industrial network operation and external intrusions. It incorporates advanced **redundant data Ring technology**, Rapid Spanning Protocol (IEEE 802.1w RSTP) and redundant power supply system into customer's industrial automation network to enhance system reliability and uptime in the harsh factory environments. It also protects customer's industrial network connectivity with switching recovery capability that is used for implementing fault tolerant ring and mesh network architectures. If the Industrial network was interrupted accidentally, the **fault recovery times could be less than 20ms** to quickly bring the network back to normal operation.

Tough, Environmentally Hardened Design

With IP-30 aluminum industrial case protection, the ISW-1022MPT provides a high level of immunity against electromagnetic interference and heavy electrical surges which are usually found on plant floors or in curb side traffic control cabinets. The ISW-1022MPT also provides a wide range of power supply options suitable for multiple industries and for worldwide operation. The feature of operating temperature range from **-40 to 75 Degree C** allows the Managed Industrial Switch to be placed in almost any difficult environment.

Robust Layer 2 Features and Advanced Security

The ISW-1022MPT supports robust advanced features including IEEE 802.1Q VLAN, GVRP, Port link aggregation, QoS, broadcast storm control, MAC address filtering, IGMP snooping enhanced security and bandwidth utilization to fit a variety of applications. Via aggregation of supporting port, the ISW-1022MPT allows the operation of high-speed trunk combining multiple ports. Maximum up to 4 ports of the ISW-1022MPT can be assigned for 4 trunk groups and support fail-over as well. Additionally, its standard-compliant implementation ensures interoperability with equipments from other vendors.

IEEE 802.3af Power over Ethernet Support

The PoE in-line power following the IEEE 802.3af standard makes the ISW-1022MPT able to deliver power to 8 PoE compliant devices at the distance up to 100 meters through the 4-pair Cat 5/5e UTP wire. With data and power over Ethernet from one unit, the ISW-1022MPT shall reduce cables deployment and eliminates the need for dedicated electrical outlets on the wall, ceiling or any unreachable place. A wire carries both data and power lowering the installation costs, simplifying the installation effort and eliminating the need for electricians or extension cords. It is also proud of the key feature – energy saving. With more efficient switching power supply, the efficiency of the ISW-1022MPT would be much better than four linear power adapters in a long run.

Efficient and Centralized Management

The ISW-1022MPT provides the benefit of efficient and centralized management with the built-in console, WEB and SNMP management interfaces. The Web-based management of the ISW-1022MPT is an easy-to-use, platform-independent management and configuration facility supporting standard Simple Network Management Protocol (SNMP) and can be managed via any standard-based network management system. For text-based management, the ISW-1022MPT can be accessed via Telnet and the console port. The enhanced system reliability and advanced networking features offered by the ISW-1022MPT makes it ideally suited to build the Industrial Ethernet networks for mission-critical and real-time control applications.

Flexibility and Extension Solution

The two mini-GBIC slots in the ISW-1022MPT are compatible with 1000Base-SX/LX/WDM and 100Base-FX through SFP (Small Form Factor Pluggable) fiber-optic transceivers. The fiber optical uplink capability guarantees the throughput to all nodes hooked into the network and the Gigabit Ethernet distance can be extended from 550 meters (Multi-Mode fiber cable) up to 10/20/30/40/50/70/120 kilometers (Single-Mode fiber or WDM fiber). They are well suited for applications within the factory data centers and distributions.

KEY FEATURES

PHYSICAL PORT

- 8-Port 10/100Mbps with IEEE 802.3af PoE RJ-45
- 2-Port Gigabit TP/SFP combo interface, SFP(Mini-GBIC) supports 100/1000 Dual Mode
- 1 RJ-45 Console interface for Switch basic management and setup

INDUSTRIAL CONFORMANCE

- 48V DC, redundant power with polarity reverse protect function
- -40 to 75 Degree C operating temperature
- IP-30 metal case
- Relay alarm for port breakdown, power failure
- Supports 6000 VDC Ethernet ESD protection
- FCC Class A, CE compatibility
- Free fall, Shock and Vibration Stability

POWER OVER ETHERNET

- 8 10/100Base-TX ports with IEEE 802.3af inject built-in
- Supports 48VDC, 15.4 Watts PoE power output to 8 IEEE 802.3af compliant Powered Devices
- Power feeding On/Off and priority configuration
- Powered Device Auto Detection
- LED PoE Status Monitoring

RAPID RING

- Rapid Ring, Dual Homing, Couple Ring Topology
- Provides redundant backup feature and the recovery time less than 20ms

LAYER 2 FEATURES

- Complies with the IEEE 802.3, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3z Gigabit Ethernet standards
- Prevents packet loss with back pressure (Half-Duplex) and IEEE 802.3x PAUSE frame flow control (Full-Duplex)
- Supports VLANs
 - IEEE 802.1Q Tagged based VLAN
 - Port-Based VLAN
 - GVRP
 - Up to 256 VLANs groups, out of 4K VLAN IDs
- Supports Spanning Tree Protocol
 - STP, IEEE 802.1D Spanning Tree Protocol
 - RSTP, IEEE 802.1w Rapid Spanning Tree Protocol

- Supports Link Aggregation
 - Up to 4 Trunk groups
 - Up to 4 ports per trunk group with 800Mbps bandwidth (Full Duplex mode)
 - IEEE 802.3ad LACP (Link Aggregation Control Protocol)
 - Cisco ether-Channel (Static Trunk)

QUALITY OF SERVICE

- 4 priority queues on all switch ports
- Traffic classification by:
 - Port-Based priority
 - IEEE 802.1p Class of Service
 - IP TOS (Type of Service) priority
- Supports strict priority and Weighted Round Robin (WRR) policies
- Ingress/Egress Bandwidth control on each port

MULTICAST

- IGMP Snooping v1 and v2
- IGMP Query mode for Multicast Media application

SECURITY

- IEEE 802.1x Port-Based Authentication
- MAC address Filtering and MAC address Binding
- IP address security management to prevent unauthorized intruder
- Port Mirroring to monitor the incoming or outgoing traffic on a particular port

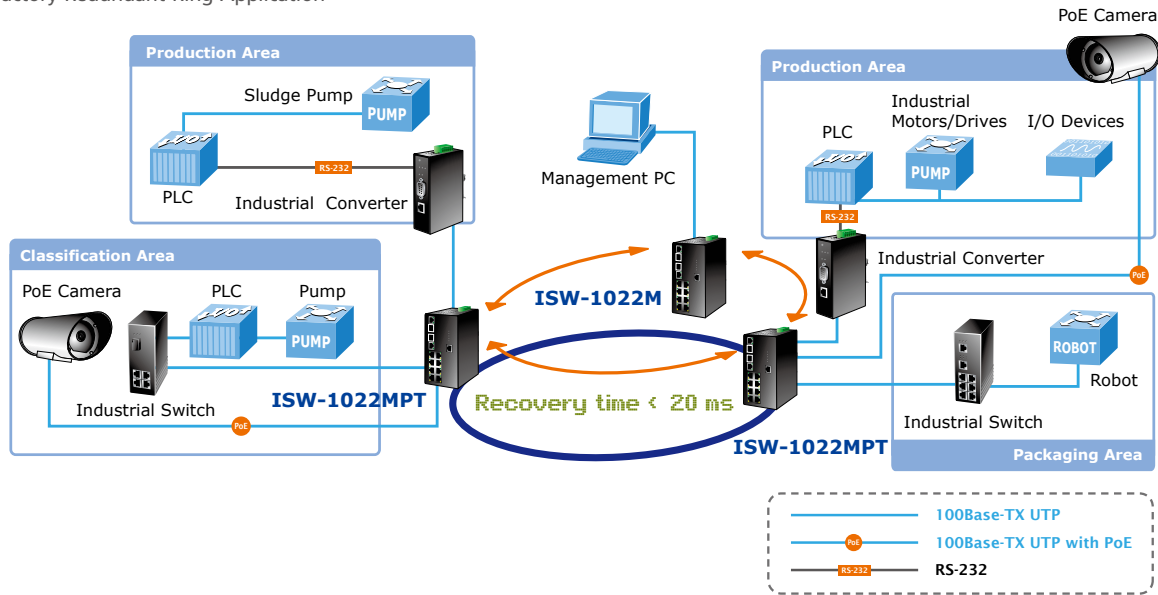
MANAGEMENT

- Web-based, Telnet, Console Command Line management
- Access through SNMP v1, v2c and v3 set and get requests
- SNMP Trap / SMTP email for alarm notification of events
- System Log Server / Client
- Configuration backup / restore
- E-mail event alert
- TFTP firmware upgrade
- Supports LLDP to allow switch to advise its identification and capability on the LAN

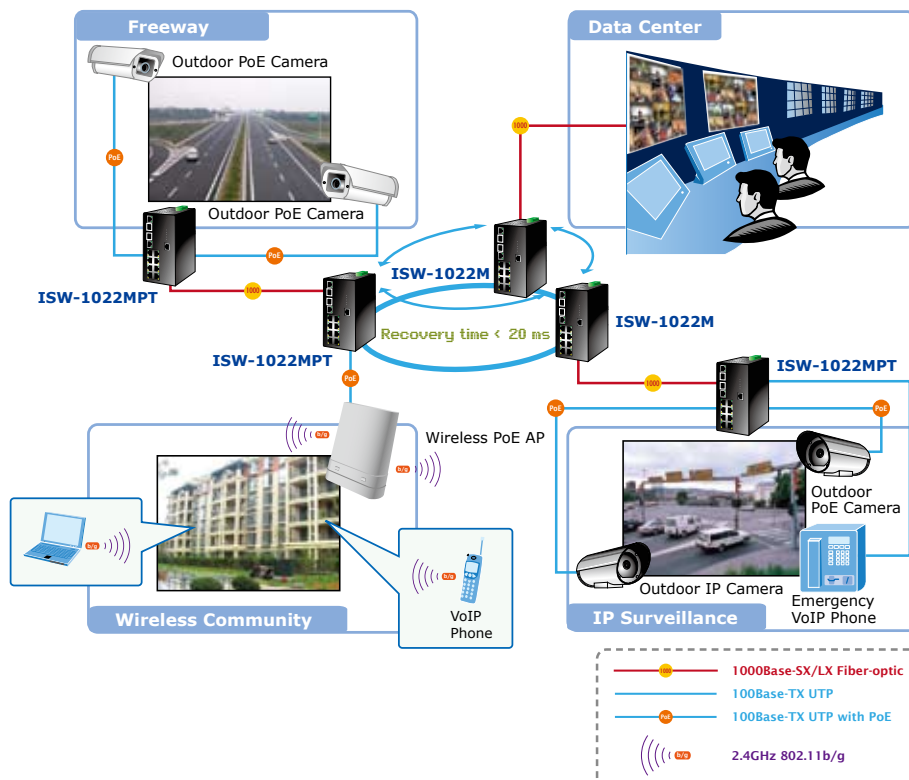
APPLICATIONS

PLANET Managed Industrial Ethernet Switch, ISW-1022MPT, offers high reliability and security to make sure the continuous industrial operation in harsh environments such as control cabinet of transportation, factory floors, outdoor space, and where in extreme low or high temperatures. In the industrial networking environments, each networked device is required to keep running continuously in the hazardous status. If the industrial equipment loses its connection to the network, it might influence the entire operation of industrial systems and thus cause incredible financial losses. By applying the ISW-1022MPT Managed Industrial Switch which complies with all the requirements of industrial applications, customers would have the advantages of high reliability, fast recovery capability, and safe Ethernet network operation.

■ Factory Redundant Ring Application



■ Transportation Networking and Public Wireless Service



SPECIFICATION

Product	8-Port 10/100Mbps + 2-Port Gigabit TP/SFP Managed Industrial PoE Switch
Model	ISW-1022MPT
Hardware Specification	
Copper Ports	8 10/ 100Base-TX RJ-45 Auto-MDI/MDI-X ports 2 10/100/1000Base-T RJ-45 port
SFP/mini-GBIC Slots	2 SFP interface, shared with Port-9 and Port-10
Switch Architecture	Store-and-Forward
Switch Fabric	5.6Gbps / non-blocking
Switch Throughput	8.3Mpps
Address Table	8K entries
Share Data Buffer	1Mbit
Maximum Frame Size	1522 Bytes packet
Flow Control	Back pressure for half duplex, IEEE 802.3x Pause Frame for full duplex
LED	Per unit: Power (Green), Power 1 (Green), Power 2 (Green), Fault (Red), Master (Green), FWD (Green) 8 port 10/100: Link/Activity (Green), Full duplex/Collision (Yellow) SFP port: LNK/ACT(Green), 1000T: LNK/ACT(Green), 1000M(Green)
Console Interface	One RJ-45-to -RS-232 male connector for switch management
ESD Protection	6KV DC
ETT Protection	3KV DC
Power Over Ethernet	
PoE Standard	IEEE 802.3af PSE (Power Sourcing Equipment)
Units can be Powered	8
PoE Power Output	48V DC, Max. 15.4 Watts, 350mA
Power Pin Assignment	1/2(+), 3/6(-)
Layer 2 Function	
Management Interface	Console, Telnet, Web Browser, SNMP v1, v2c and v3
Port Configuration	Port disable/enable Auto-negotiation 10/100Mbps full and half duplex mode selection Flow Control disable / enable Bandwidth control on each port
VLAN	Port-Based VLAN, up to 9 VLAN groups IEEE 802.1q Tagged Based VLAN , 4K VLAN ID, up to 256 VLAN groups
Spanning Tree	IEEE 802.1D Spanning Tree IEEE 802.1w Rapid Spanning Tree
Link Aggregation	Supports 4 groups of 4-Port trunk support
QoS	Traffic classification based on : <ul style="list-style-type: none"> • Port Number, • 802.1Q Tag, • 802.1p priority, • IP DSCP/TOS field in IP Packet
IGMP Snooping	v1 and v2, 256 multicast groups and IGMP query
Bandwidth Control	Per port bandwidth control Ingress: 100Kbps~102Mbps or 100Kbps ~256Mbps(Gigabit port) Egress: 100Kbps~102Mbps or 100Kbps ~256Mbps(Gigabit port)
Port Mirror	RX / TX / Both
Security	Supports 100 entries of MAC address for static MAC and another 100 for MAC filter Supports 10 IP addresses that have permission to access the switch management and to prevent unauthorized intruder
SNMP MIBs	RFC-1213 MIB-II RFC-2863 Interface MIB RFC-1493 Bridge MIB RFC-2674 Extended Bridge MIB (Q-Bridge) Private MIB

Standards Conformance

Regulation Compliance	FCC Part 15 Class A, CE
Safety	UL 331236
Standards Compliance	IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX/100Base-FX IEEE 802.3ab 1000Base-T IEEE 802.3z Gigabit SX/LX IEEE 802.3x Flow Control and Back pressure IEEE 802.1D Spanning tree protocol IEEE 802.1w Rapid spanning tree protocol IEEE 802.1p Class of service IEEE 802.1Q VLAN Tagging IEEE 802.1x Port Authentication Network Control IEEE 802.3af Power over Ethernet

ORDERING INFORMATION

ISW-1022MPT	8-Port 10/100Mbps + 2G TP/SFP Combo PoE Managed Industrial Switch (-40~75 Degree C)
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ACCESSORIES INFORMATION

UPS-400	48V DC / 400 Watts UPS Power Supply Unit
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AVAILABLE MODULES

MGB-GT	SFP-Port 1000Base-T Module
MGB-SX	SFP-Port 1000Base-SX mini-GBIC module
MGB-LX	SFP-Port 1000Base-LX mini-GBIC module
MGB-L30	SFP-Port 1000Base-LX mini-GBIC module-30km
MGB-L50	SFP-Port 1000Base-LX mini-GBIC module-50km
MGB-L70	SFP-Port 1000Base-LX mini-GBIC module-70km
MGB-L120	SFP-Port 1000Base-LX mini-GBIC module-120km
MGB-LA10	SFP-Port 1000Base-LX (WDM,TX:1310nm) mini-GBIC module-10km
MGB-LB10	SFP-Port 1000Base-LX (WDM,TX:1550nm) mini-GBIC module-10km
MGB-LA20	SFP-Port 1000Base-LX (WDM,TX:1310nm) mini-GBIC module-20km
MGB-LB20	SFP-Port 1000Base-LX (WDM,TX:1550nm) mini-GBIC module-20km
MGB-LA40	SFP-Port 1000Base-LX (WDM,TX:1310nm) mini-GBIC module-40km
MGB-LB40	SFP-Port 1000Base-LX (WDM,TX:1550nm) mini-GBIC module-40km
MFb-FX	SFP-Port 100Base-FX Transceiver (1310nm) -2KM
MFb-F20	SFP-Port 100Base-FX Transceiver (1310nm) - 20KM
MFb-F40	SFP-Port 100Base-FX Transceiver (1310nm) - 40KM
MFb-F60	SFP-Port 100Base-FX Transceiver (1310nm) - 60KM
MFb-FA20	SFP-Port 100Base-BX Transceiver (WDM,TX:1310nm) -20KM
MFb-FB20	SFP-Port 100Base-BX Transceiver (WDM,TX:1550nm) -20KM