

Industrial 24-Port 10/100/1000Mbps with 4 Shared SFP Managed Gigabit Switch

Environmentally Hardened Design for Industrial Networks

The PLANET IGSW-24040T is an environmentally hardened Industrial Managed Ethernet Switch with high Port-density, Gigabit Fiber link capability and 19" rack-mountable design. It is specifically designed to operate stably in electrically harsh and the toughest environment under extended wide operating temperature range. The IGSW-24040T is equipped with advanced management functions and provides 24 10/100/1000Base-T copper ports and 4 shared 1000Base-S/LX SFP slots delivered in a rugged strong case. It is capable of providing non-blocking switch fabric and wire-speed throughput as high as 48Gbps in the temperature range from -40 to 75 Degree C without any packet loss and CRC error. It greatly



simplifies the tasks of upgrading the industrial network and building automation LAN for catering to increasing bandwidth demands such as IP video surveillance. The IGSW-24040T is the most reliable choice for highly-managed and Fiber Ethernet application in Industrial network.

- **Extended Operating Temperature:** From **-40 to 75 Degree C**
- **Robust Industrial Protection:** **IP30** metal case and 19" rack-mountable design
- **Ethernet Protection:** 6KV DC ESD protection
- **Power Redundant:** 1+2 RPS design, supports one **100~240V AC** and dual **36~72V DC** power input
- **Redundant Ethernet Network:** STP, RSTP and MSTP to greatly improve redundant data backup and guarantee network resilience
- **Flexible Fiber uplink capability:** Compatible with **1000Base-SX/LX** and **100Base-FX** SFP transceiver

Layer 2 / Layer 4 Full-functioned Managed Switch for Building Automation Networking

The IGSW-24040T Industrial Managed Ethernet Switch is perfect for applications in the factory data centers and distributions. It provides advanced Layer 2 to Layer 4 data switching and redundancy, Quality of Service traffic control, network access control and authentication, and Secure Management features to protect customer's industrial network connectivity with reliable switching recovery capability that is suitable for implementing fault tolerant and mesh network architectures.

Cost-effective IPv6 Managed Gigabit Switch Solution for Industrial Ethernet

The current IPv4 network infrastructure is not capable enough to provide IP Address to each single user / client. The situation forces the ISP to build up the IPv6 (Internet Protocol version 6) network infrastructure speedily. The IGSW-24040T is the ideal solution to fulfill the demand of IPv6 management Gigabit Ethernet Switch, especially in the Industrial hardened environment. It supports both IPv4 and IPv6 management functions and can work with original network structure. With easy and friendly management interfaces and plenty of management functions included, the IGSW-24040T Managed Switch is the best choice for you to build the IPv6 FTTx edge service and for Industrial applications to connect with IPv6 network.

Dual Redundant Power to Ensure Continuous Operation

The IGSW-24040T particularly supports both AC and DC redundant power to ensure reliable and continuous operation in Industrial Network. Generally, a regular Industrial switch may have two DC powers for redundancy; the IGSW-24040T provides one more power- "Alternating Current" (AC) for stronger redundant application besides providing redundant DC Power.



The IGSW-24040T is equipped with one 100~240V AC power supply unit and one additional DC 36~72V power supply unit for redundant power supply installation. The Redundant power systems are provided to enhance the reliability with either 100~240V AC power or DC 36~72V power supply unit and specifically designed to fulfill the demands of high tech facilities in handling the highest power integrity. In addition, with the 36~72V DC power supply implemented, the IGSW-24040T can be perfectly applied as the telecom level device which requires constant stable operation at the harsh electronic room.

Powerful Security

The IGSW-24040T offers comprehensive Access Control List (ACL) for enforcing security to the edge. Its protection mechanisms also comprise of port-based 802.1x and MAC-based user and device authentication. The port-security is effective in limiting the numbers of clients pass through, so that the network administrators can now construct highly secured corporate networks with time and effort considerably less than before.

KEY FEATURES

PHYSICAL PORT

- **24-Port 10/100/1000Base-T** Gigabit Ethernet RJ-45
- **4 100/1000Base-SX/LX SFP slots**, shared with Port-21 to Port-24
- **RS-232** DB9 console interface for Switch basic management and setup

LAYER 2 FEATURES

- Prevents packet loss with back pressure (Half-Duplex) and IEEE 802.3x PAUSE frame flow control (Full-Duplex)
- High performance of Store-and-Forward architecture, broadcast storm control and runt/CRC filtering eliminates erroneous packets to optimize the network bandwidth
- Storm Control support
 - Broadcast / Multicast / Unknown-Unicast
- Supports VLAN
 - IEEE 802.1Q Tagged VLAN
 - Up to 255 VLAN groups, out of 4094 VLAN IDs
 - Provider Bridging (VLAN Q-in-Q) support (IEEE 802.1ad)
 - Private VLAN Edge (PVE)
 - Voice VLAN
- Supports Spanning Tree Protocol
 - STP, IEEE 802.1D Spanning Tree Protocol
 - RSTP, IEEE 802.1w Rapid Spanning Tree Protocol
 - MSTP, IEEE 802.1s Multiple Spanning Tree Protocol, spanning tree by VLAN
 - BPDU Guard
- Supports Link Aggregation
 - 802.3ad Link Aggregation Control Protocol (LACP)
 - Cisco ether-channel (Static Trunk)
 - Maximum 12 trunk groups, up to 16 ports per trunk group
 - Up to 16Gbps bandwidth (Duplex Mode)
- Provides Port Mirror (many-to-1)
- Port Mirroring to monitor the incoming or outgoing traffic on a particular port

QUALITY OF SERVICE

- Ingress Shaper and Egress Rate Limit per port bandwidth control
- 4 priority queues on all switch ports
- Traffic classification
 - IEEE 802.1p CoS
 - TOS / DSCP / IP Precedence of IPv4/IPv6 packets
 - IP TCP/UDP port number
 - Typical network application
- Strict priority and Weighted Round Robin (WRR) CoS policies
- Supports QoS and In/Out bandwidth control on each port

- Traffic-policing policies on the switch port
- QoS Control List Wizard makes QoS creation and configuration easier and more quickly
- DSCP remarking

MULTICAST

- Supports IGMP Snooping v1, v2 and v3
- IGMP Snooping port filtering
- Querier mode support
- Multicast VLAN Registration (MVR) support

SECURITY

- IEEE 802.1x Port-Based / MAC-Based network access authentication
- Built-in RADIUS client to co-operate with the RADIUS servers
- TACACS+ login users access authentication
- RADIUS / TACACS+ users access authentication
- IP-Based Access Control List (ACL)
- MAC-Based Access Control List
- Source MAC / IP address binding
- DHCP Snooping to filter un-trusted DHCP messages
- Dynamic ARP Inspection discards ARP packets with invalid MAC address to IP address binding
- IP Source Guard prevents IP spoofing attacks
- Auto DoS rule to defend DoS attack
- IP address access management to prevent unauthorized intruder

MANAGEMENT

- Switch Management Interfaces
 - Console / Telnet Command Line Interface
 - Web switch management
 - SNMP v1, v2c, and v3 switch management
 - SSH / SSL secure access
- Four RMON groups (history, statistics, alarms, and events)
- IPv6 IP Address / NTP / DNS management
- Built-in Trivial File Transfer Protocol (TFTP) client
- BOOTP and DHCP for IP address assignment
- Firmware upload / download via HTTP / TFTP
- DHCP Relay and Option 82
- User Privilege levels control
- NTP (Network Time Protocol)
- Link Layer Discovery Protocol (LLDP) Protocol
- Cable Diagnostic technology provides the mechanism to detect and report potential cabling issues

- Reset button for system reboot or reset to factory default
- PLANET Smart Discovery Utility for deploy management
- ICMPv6
- Digital Input / Digital Output
- Fault Alarm
- SMTP / Syslog / SNMP Trap remote alarm
- System Log

DIGITAL INPUT / DIGITAL OUTPUT

- 2 Digital Input (DI)
- 2 Digital Output (DO)
- Integrates sensors into auto alarm system
- Transfers alarm to IP network via email and SNNP trap

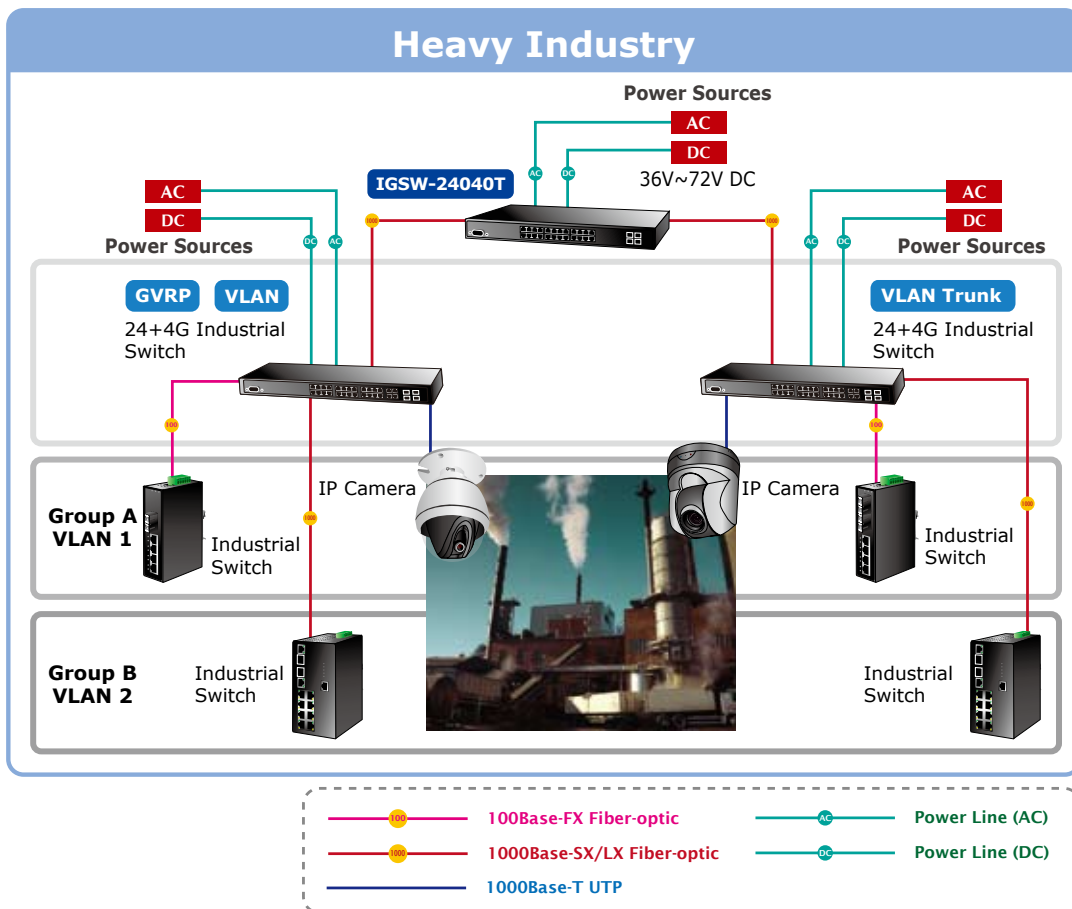
REDUNDANT POWER SYSTEM

- 100~240V AC / 36~ 72V DC Dual power redundant
- Active-active redundant power failure protection
- Backup of catastrophic power failure on one supply
- Fault tolerance and resilience

APPLICATIONS

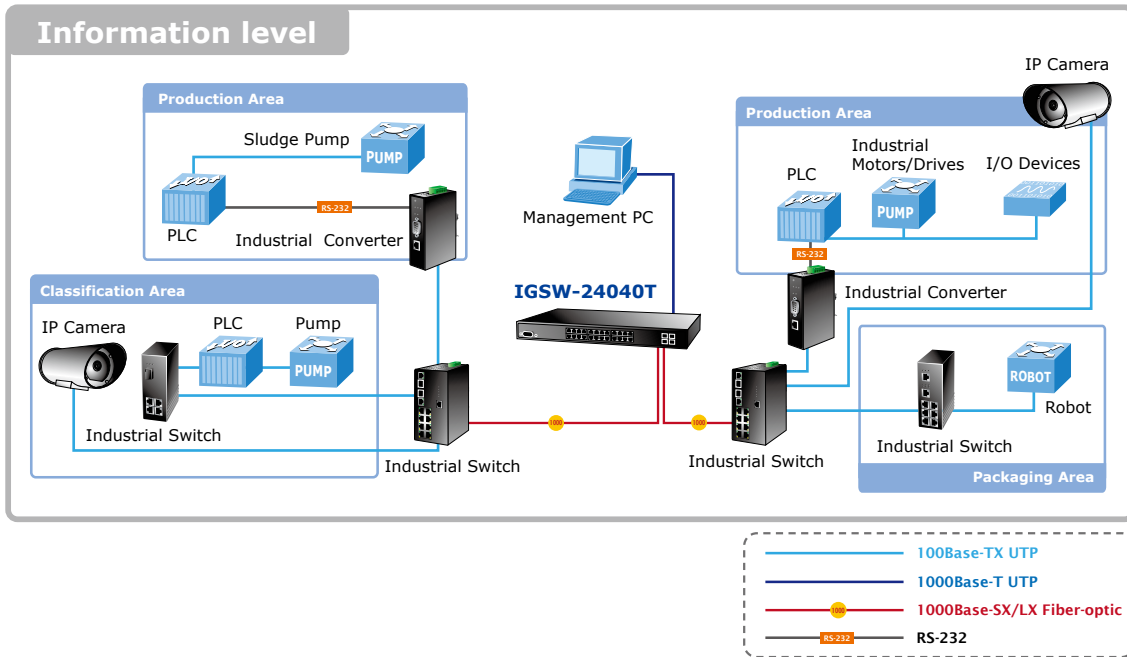
Extended Operation Temperature and Redundant Dual Power Sources

With Dual Power Input Sources "Alternating Current" (AC) and "Direct Current" (DC) design, the IGSW-24040T prevents the system switch to shut down from a sudden case like power outage. The IGSW-24040T is also equipped with the IP-30 metal case that is ideal for operation temperature range from -40 to 75 Degrees C and it can be placed in any harsh environment such as in the telecom control room.



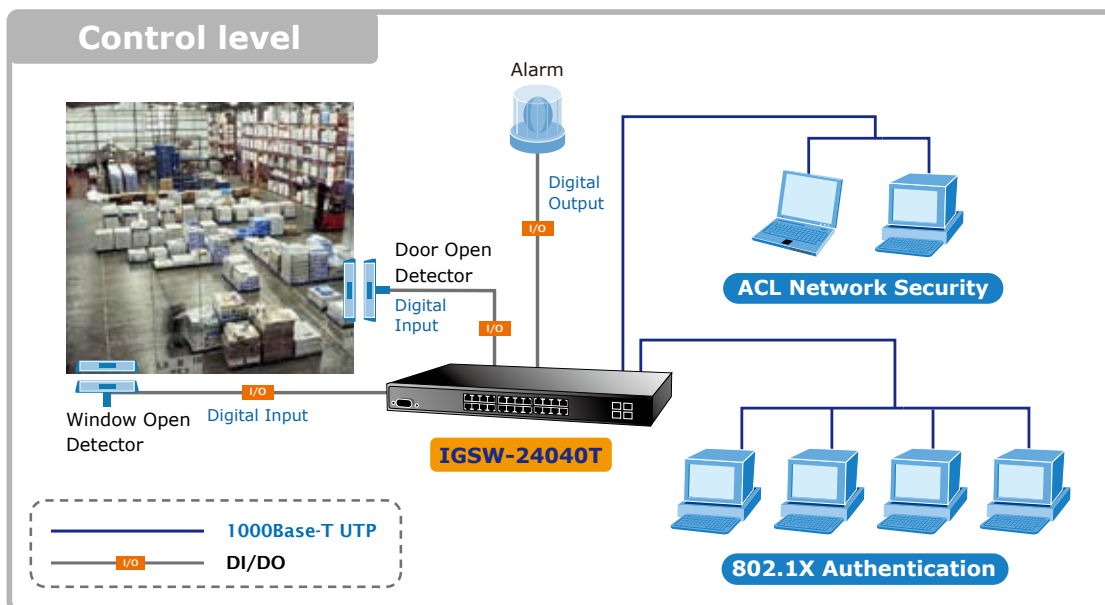
Excellent Solution of Core / Department Switch

With 24 10/100/1000Mbps ports, the IGSW-24040T is able to connect up to 24 edge switches in the Ethernet environment. Moreover, the IGSW-24040T provides 48 Gigabit per second switch fabric and high bandwidth for backbone connection. The IGSW-24040T is an excellent choice of core layer switch for a Gigabit network.



Advanced Protection via Digital Input and Digital Output Features

The IGSW-24040T's digital input and digital output functions help the administrator to efficiently react to the emergency events. The digital input can be setup to indicate urgent events and send the messages or alarm to the network system once the urgent event detected by the external device such as door open detector or windows open detector . The digital output function can define the immediate response such as port failed or power failed to the related urgent event.



SPECIFICATION

Product	Industrial 24-Port 10/100/1000Mbps with 4 Shared SFP Managed Gigabit Switch
Model	IGSW-24040T
Hardware Specification	
Copper Ports	24 10/ 100/1000Base-T RJ-45 Auto-MDI/MDI-X ports
SFP/mini-GBIC Slots	4 1000Base-SX/LX/BX SFP interfaces, shared with Port 21 to Port 24 Compatible with 100Base-FX SFP
Console Port	1 x RS-232 DB9 serial port (115200, 8, N, 1)
Switch Processing Scheme	Store-and-Forward
Switch Fabric	48Gbps / non-blocking
Address Table	8K entries, automatic source address learning and ageing
Share data Buffer	1392 kilobytes
Flow Control	IEEE 802.3x Pause Frame for Full-Duplex Back pressure for Half-Duplex
Jumbo Frame	10Kbytes
Reset Button	< 5 seconds: System reboot > 10 seconds: Factory Default
Dimension (W x D x H)	440 x 200 x 44.5 mm, 1U high / 19"
Weight	2.96kg
LED	Power, Fault, Link/Act and speed per Gigabit port
Power Consumption	Max. 30 Watts / 102 BTU (AC)
Power Requirement – AC	AC 100~240V, 50/60Hz 0.75A
Power Requirement – DC	36V DC @ 0.75A, Range: 36V ~ 72V DC
ESD Protection	6KV DC
DI/DO	2 Digital Input (DI): Level 0: -30~0V Level 1: 0~30V Max. input current: 8mA 2 Digital Output (DO): Open collector to 30VDC, 200mA
Layer 2 Function	
Basic Management Interfaces	Console, Telnet, Web Browser, SNMPv1, v2c and v3
Secure Management Interface	SSH, SSL, SNMP v3
Port configuration	Port disable / enable Auto-Negotiation 10/100/1000Mbps full and half duplex mode selection Flow Control disable / enable Bandwidth control on each port Power saving mode control
Port Status	Display each port's speed duplex mode, link status, Flow control status, Auto negotiation status, trunk status
VLAN	802.1Q Tagged Based VLAN Port-Based VLAN Q-in-Q Private VLAN Edge (PVE) Up to 256 VLAN groups, out of 4094 VLAN IDs
Port Trunking	IEEE 802.3ad LACP / Static Trunk Supports 12 groups of 16-Port trunk
QoS	Traffic classification based, Strict priority and WRR 4-level priority for switching - Port Number - 802.1p priority - 802.1Q VLAN tag DSCP/TOS field in IP Packet Policy-Based QoS
IGMP Snooping	IGMP (v1/v2) Snooping, up to 255 multicast Groups IGMP Querier mode support
Access Control List	IP-Based ACL / MAC-Based ACL Up to 256 entries

SNMP MIBs	RFC-1213 MIB-II IF-MIB RFC-1493 Bridge MIB RFC-1643 Ethernet MIB RFC-2863 Interface MIB RFC-2665 Ether-Like MIB RFC-2819 RMON MIB (Group 1) RFC-2737 Entity MIB RFC-2618 RADIUS Client MIB RFC-2933 IGMP-STD-MIB RFC3411 SNMP-Frameworks-MIB IEEE802.1X PAE LLDP MAU-MIB
Standards Conformance	
Regulation Compliance	FCC Part 15 Class A, CE
Standards Compliance	IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX/100Base-FX IEEE 802.3z Gigabit SX/LX IEEE 802.3ab Gigabit 1000T IEEE 802.3x Flow Control and Back pressure IEEE 802.3ad Port trunk with LACP IEEE 802.1D Spanning tree protocol IEEE 802.1w Rapid spanning tree protocol IEEE 802.1s Multiple spanning tree protocol IEEE 802.1p Class of service IEEE 802.1Q VLAN Tagging IEEE 802.1x Port Authentication Network Control IEEE 802.1ab LLDP RFC 768 UDP RFC 793 TFTP RFC 791 IP RFC 792 ICMP RFC 2068 HTTP RFC 1112 IGMP version 1 RFC 2236 IGMP version 2
Stability	IEC60068-2-32 (Free fall) IEC60068-2-27 (Shock) IEC60068-2-6 (Vibration)
Environment	
Operating	Temperature: -40 ~ 75 Degree C (DC power) -20 ~ 60 Degree C (AC power) Relative Humidity: 5 ~ 95% (non-condensing)
Storage	Temperature: -40 ~ 85 Degree C Relative Humidity: 5 ~ 95% (non-condensing)

ORDERING INFORMATION

IGSW-24040T	Industrial 24-Port 10/100/1000Mbps with 4 Shared SFP Managed Gigabit Switch
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AVAILABLE MODULES FOR IGSW-24040T

MGB-GT	SFP-Port 1000Base-T Module
MGB-SX	SFP-Port 1000Base-SX mini-GBIC module - 550m
MGB-LX	SFP-Port 1000Base-LX mini-GBIC module - 10km
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
MGB-TLX	SFP-Port 1000Base-LX mini-GBIC module - 10km (-40~75°C)
MGB-TSX	SFP-Port 1000Base-SX mini-GBIC module - 550m (-40~75°C)
MGB-TL30	SFP-Port 1000Base-LX mini-GBIC module - 30km (-40~75°C)
MGB-TL70	SFP-Port 1000Base-LX mini-GBIC module - 70km (-40~75°C)
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
MFB-TFX	SFP-Port 100Base-FX Transceiver (1310nm) -2km (-40~75°C)
MFB-TF20	SFP-Port 100Base-FX Transceiver (1310nm) - 20km (-40~75°C)