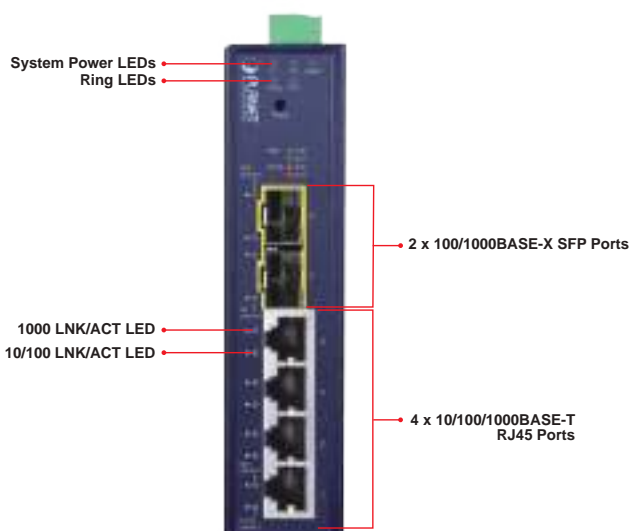


Industrial L2/L4 4-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch



Robustly Designed for Critical Business Applications

Designed to be installed in heavy industrial demanding environments, the IGS-4215-4T2S is the new member of PLANET Industrial-grade, DIN-rail type **L2/L4 Managed Gigabit Switch** family to improve the availability of critical business applications. It provides IPv6/IPv4 dual stack management and built-in L2/L4 Gigabit switching engine along with **4 10/100/1000BASE-T** ports, and **2 extra 100/1000BASE-X SFP fiber ports** for data and video uplink. The IGS-4215-4T2S is able to operate reliably, stably and quietly in any hardened environment without affecting its performance. It comes with operating temperature ranging from -40 to 75 degrees C in a rugged **IP30** metal housing.



Physical Port

- 4-port 10/100/1000BASE-T RJ45 with auto MDI/MDI-X function
- 2-port 100/1000BASE-X SFP transceiver type auto detection

Industrial Case and Installation

- Dual power input, redundant power with reverse polarity protection
 - DC 9 to 48V input or AC 24V input
 - Active-active redundant power failure protection
 - Backup of catastrophic power failure on one supply
 - Fault tolerance and resilience
- IP30 metal case
- DIN-rail and wall-mount designs
- Supports ESD 6KV DC Ethernet protection
- Supports -40 to 75 degrees C operating temperature
- Free fall, shock-proof and vibration-proof for industries

Switching

- Features Store-and-Forward mode with wire-speed filtering and forwarding rates
- IEEE 802.3x flow control for full duplex operation and back pressure for half duplex operation
- 8K MAC address table size
- 9K jumbo frame
- Automatic address learning and address aging
- Supports CSMA/CD protocol

Layer 2 Features

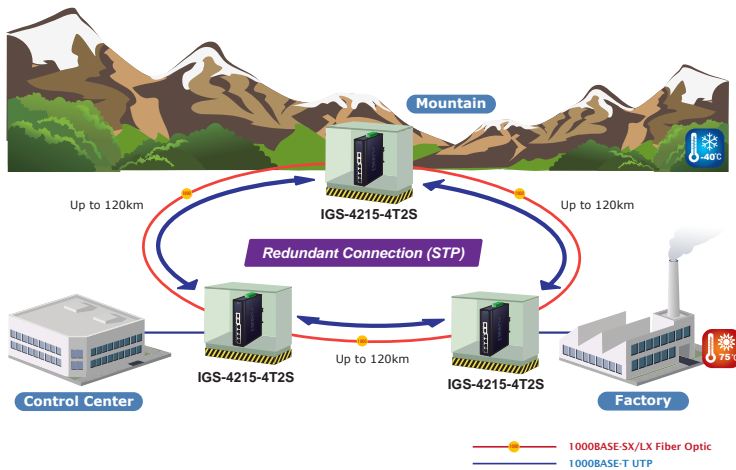
- Supports **VLAN**
 - IEEE 802.1Q tagged VLAN
 - Up to 256 VLAN groups, out of 4096 VLAN IDs
 - Provider bridging (VLAN Q-in-Q, IEEE 802.1ad) support
 - Private VLAN (Protected port)
 - Protocol-based VLAN
 - MAC-based VLAN
 - Voice VLAN
 - GVRP (GARP VLAN Registration Protocol)
- Supports **Spanning Tree Protocol**
 - IEEE 802.1D Spanning Tree Protocol (STP)
 - IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)

Robust Protection

The IGS-4215-4T2S provides contact discharge of $\pm 6\text{KV}$ DC and air discharge of $\pm 8\text{KV}$ DC for Ethernet ESD protection. It also supports $\pm 4\text{KV}$ surge immunity to improve product stability and protects users' networks from devastating ESD attacks, making sure the flow of operation does not fluctuate.

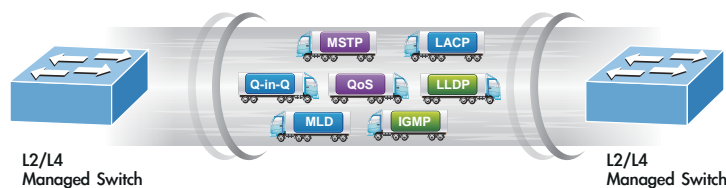
Redundant Ring, Fast Recovery for Surveillance System

The IGS-4215-4T2S supports redundant ring technology and features strong rapid self-recovery capability to prevent interruptions and external intrusions. It incorporates advanced ITU-T G.8032 ERPS (Ethernet Ring Protection Switching) technology, Spanning Tree Protocol (802.1s MSTP), and redundant power input system into customer's industrial automation network to enhance system reliability and uptime in harsh factory environments. In certain simple Ring network, the recovery time of data link can be as fast as $<450\text{ms}$.



Robust Layer 2 Features

The IGS-4215-4T2S can be programmed for advanced switch management functions such as dynamic port link aggregation, 802.1Q VLAN, **Q-in-Q VLAN**, **Multiple Spanning Tree Protocol (MSTP)**, **loop** and **BPDU guard**, **IGMP snooping**, and **MLD snooping**. Via the link aggregation, the IGS-4215-4T2S allows the operation of a high-speed trunk to combine with multiple ports such as an 8Gbps fat pipe, and supports fail-over as well. Also, the **Link Layer Discovery Protocol (LLDP)** is the Layer 2 protocol included to help discover basic information about neighboring devices on the local broadcast domain.



- IEEE 802.1s Multiple Spanning Tree Protocol (MSTP), spanning tree by VLAN
- BPDU Guard
- Supports **Link Aggregation**
 - IEEE 802.3ad Link Aggregation Control Protocol (LACP)
 - Cisco ether-channel (static trunk)
 - Up to 3 trunk groups
 - Up to 6 ports per trunk group with 12Gbps bandwidth
- Provides port mirror (many-to-1)
- IPv6 MAC/VLAN/Multicast Address Table
- Loop protection to avoid broadcast loops
- Supports ERPS (Ethernet Ring Protection Switching)
- Link Layer Discovery Protocol (LLDP)

Quality of Service

- Ingress/Egress Rate Limit per port bandwidth control
- Support 8 priority queues on all switch ports
- Traffic classification
 - IEEE 802.1p CoS
 - IP 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 on the switch port
- DSCP remarking

Multicast

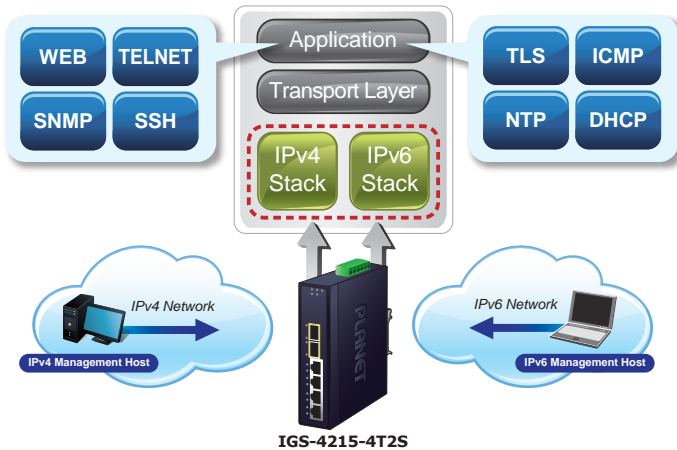
- Supports IPv4 IGMP snooping v1, v2, v3
- Supports IPv6 MLD snooping v1, v2
- Querier mode support
- IGMP snooping port filtering
- MLD snooping port filtering

Security

- Storm Control support
 - Broadcast/Multicast/Unicast
- Authentication
 - IEEE 802.1X port-based network access authentication
 - Built-in RADIUS client to cooperate with the RADIUS servers
 - DHCP Relay and DHCP Option 82
 - RADIUS/TACACS+ users access authentication
- Access Control List
 - IPv4/IPv6 IP-based ACL

IPv6/IPv4 Dual Stack Management

Supporting both IPv6 and IPv4 protocols, the IGS-4215-4T2S helps the SMBs to step in the IPv6 era with the lowest investment as its network facilities need not be replaced or overhauled if the IPv6 FTTx edge network is set up.



Remotely Manage Solution

PLANET's Universal Network Management System (UNI-NMS) and CloudViewer App support IT staff to remotely manage all network devices and monitor the PDs' operation statuses. Thus, they're designed for both the enterprises and industries where deployments of PDs can be as remote as possible, without having to go to the actual location once a bug or faulty condition is found. With the UNI-NMS or CloudViewer App, all kinds of businesses can now be speedily and efficiently managed from one platform.



Efficient Traffic Control

The IGS-4215-4T2S is loaded with robust QoS features and powerful traffic management to enhance services to business-class data, voice, and video solutions. The functionality includes broadcast/multicast/unicast storm control, per port bandwidth control, 802.1p/CoS/IP DSCP QoS priority and remarking. It guarantees the best performance in VoIP and video stream transmission, and empowers the enterprises to take full advantage of the limited network resources.

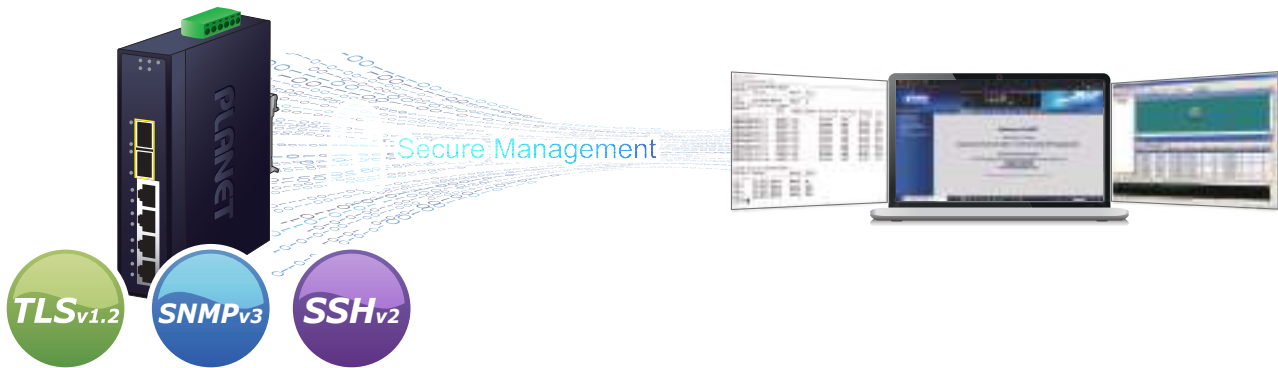
- IPv4/IPv6 IP-based ACE
- MAC-based ACL
- MAC-based ACE
- MAC Security
 - Static MAC
 - MAC filtering
- Port security for source MAC address entries filtering
- DHCP snooping to filter distrusted DHCP messages
- Dynamic ARP inspection discards ARP packets with invalid MAC address to IP address binding
- IP source guard prevents IP spoofing attacks
- IP address access management to prevent unauthorized intruder

Management

- IPv4 and IPv6 dual stack management
- Switch Management Interface
 - IPv4/IPv6 Web switch management
 - Console and telnet Command Line Interface
 - SNMP v1, v2c, v3
 - SSH, TLS secure access
- IPv6 IP address/NTP/DNS management
- Built-in Trivial File Transfer Protocol (TFTP) client
- Static and DHCP for IP address assignment
- System Maintenance
 - Firmware upload/download via HTTP/TFTP
 - Hardware reset button for system reboot or reset to factory default
 - Dual images
- User Privilege levels control
- Network Time Protocol (NTP)
- Link Layer Discovery Protocol (LLDP) and LLDP-MED
- Syslog remote alarm
- SNMP Management
 - SNMP trap for interface link up and link down notification
 - Four RMON groups (history, statistics, alarms and events)
- PLANET Smart Discovery Utility for deployment management
- PLANET UNI-NMS (Universal Network Management) and Smart Discovery Utility for deployment management
- Network diagnostic
 - SFP-DDM (Digital Diagnostic Monitor)
 - Cable diagnostic technology provides the mechanism to detect and report potential cabling issues
 - ICMPv6 / ICMPv4 remote pin

User-friendly and Secure Management

For efficient management, the IGS-4215-4T2S is equipped with console, Web and SNMP management interfaces. With the built-in Web-based management interface, it offers an easy-to-use, platform-independent management and configuration facility. For text-based management, the IGS-4215-4T2S can be accessed via Telnet and the console port. Moreover, it also offers secure remote management via any standard-based management software by supporting SNMPv3 connection which encrypts the packet content at each session.



Powerful Security from Layer 2 to Layer 4

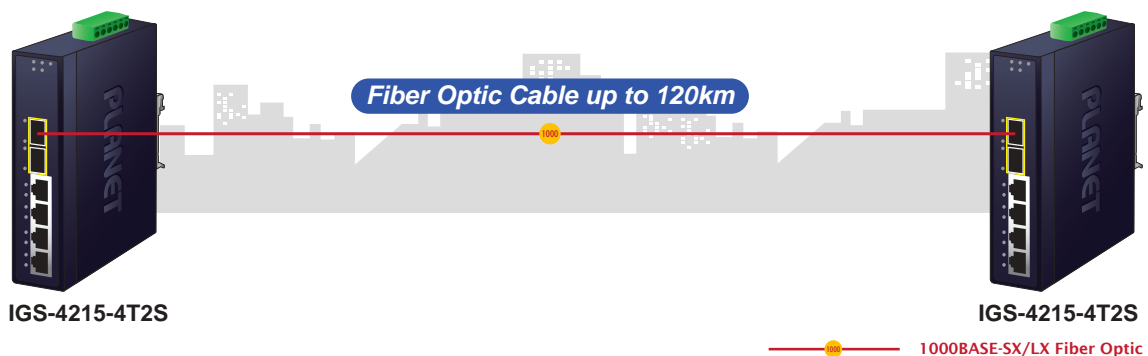
PLANET IGS-4215-4T2S offers comprehensive **IPv4/IPv6** Layer 2 to Layer 4 **Access Control List (ACL)** for enforcing security to the edge. It can be used to restrict network access by denying packets based on source and destination IP address, TCP/UDP ports or defined typical network applications. Its protection mechanism also comprises **802.1X port-based** user and device authentication, which can be deployed with RADIUS to ensure the port level security and block illegal users. With the **Protected Port** function, communication between edge ports can be prevented to guarantee user privacy. Furthermore, **Port Security** function allows limiting the number of network devices on a given port.

Advanced Network Security

The IGS-4215-4T2S also provides **DHCP Snooping**, **IP Source Guard** and **Dynamic ARP Inspection** functions to prevent IP snooping from attack and discard ARP packets with invalid MAC address. The network administrators can now construct highly-secure corporate networks with considerably less time and effort than before.

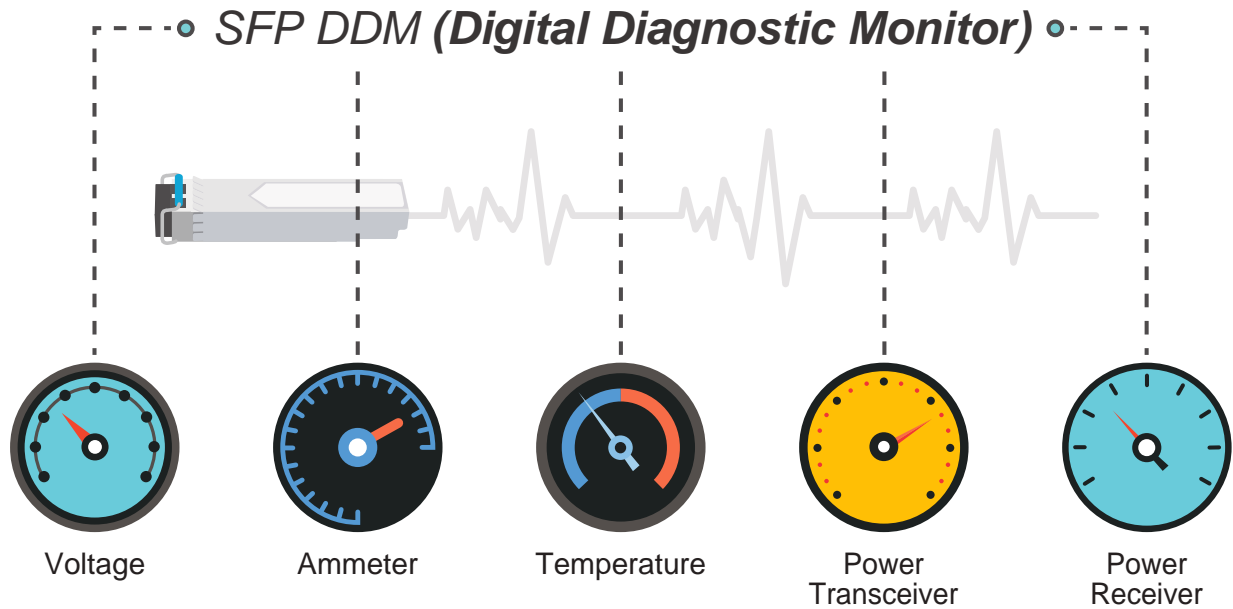
Flexibility and Long-distance Extension Solution

The two additional SFP slots built in the IGS-4215-4T2S support 100BASE-FX /1000BASE-SX/LX SFP (Small Form-factor Pluggable) fiber transceivers to uplink to backbone switch in long distance. The distance can be extended from 550 meters to 2 kilometers (multi-mode fiber) and up to 120 kilometers (single-mode fiber or WDM fiber). They are well suited for applications within the enterprise data centers and distributions.



Intelligent SFP Diagnosis Mechanism

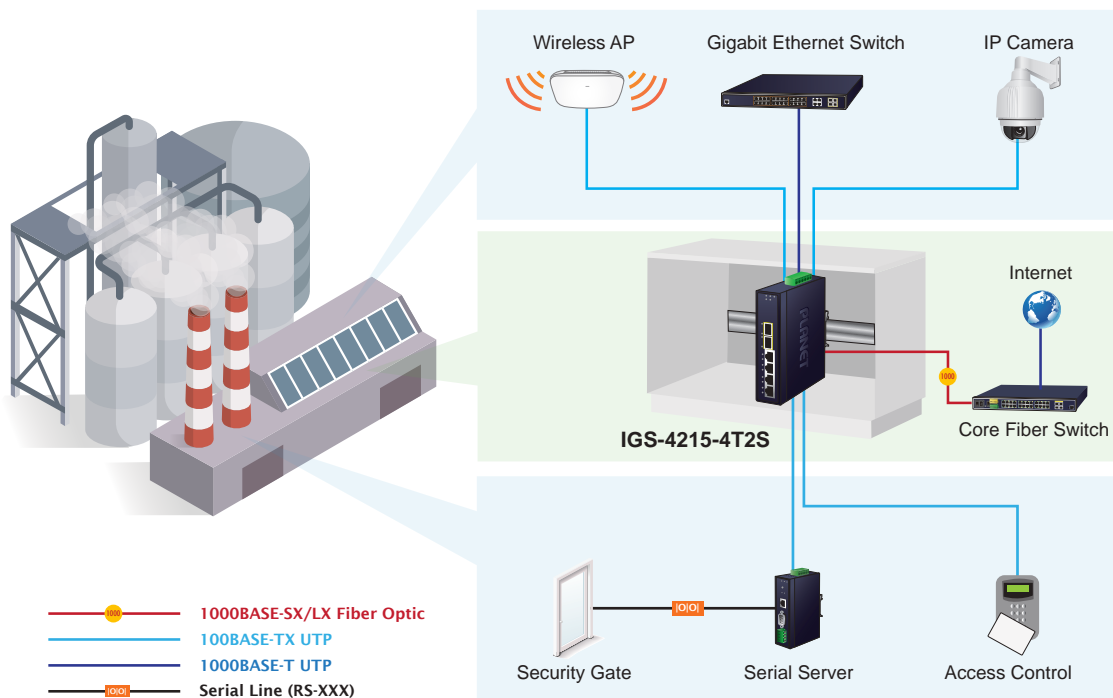
The IGS-4215-4T2S supports **SFP-DDM (Digital Diagnostic Monitor)** function that can easily monitor real-time parameters of the SFP for the network administrator, such as optical output power, optical input power, temperature, laser bias current, and transceiver supply voltage.



Applications

Industrial-grade Switch for Building Automation and Security

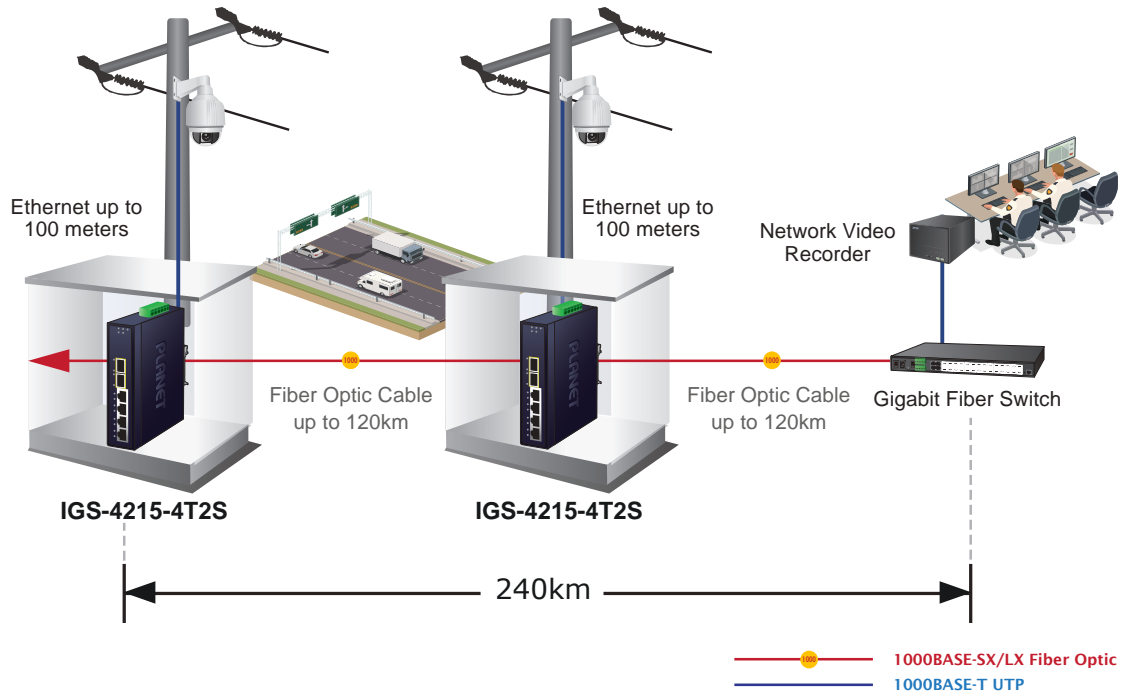
Suitable for buildings where security is strictly to be enforced, the IGS-4215-4T2S, with eight high-speed Gigabit Ethernet interfaces, can easily build a power centrally controlled for an IP phone system, IP surveillance system, and wireless AP group in the harsh Industrial environment.



Model that Withstands Harsh Operation and Extends Distance

The IGS-4215-4T2S is made to withstand any harsh operation in such environments as traffic control cabinets, factory floors, and indoor and outdoor locations where temperatures are extremely high or low. With a non-blocking design and compact size, the installation of the IGS-4215-4T2S is easy and helpful to build a Gigabit high-bandwidth switched network quickly.

Extending Ethernet Distance



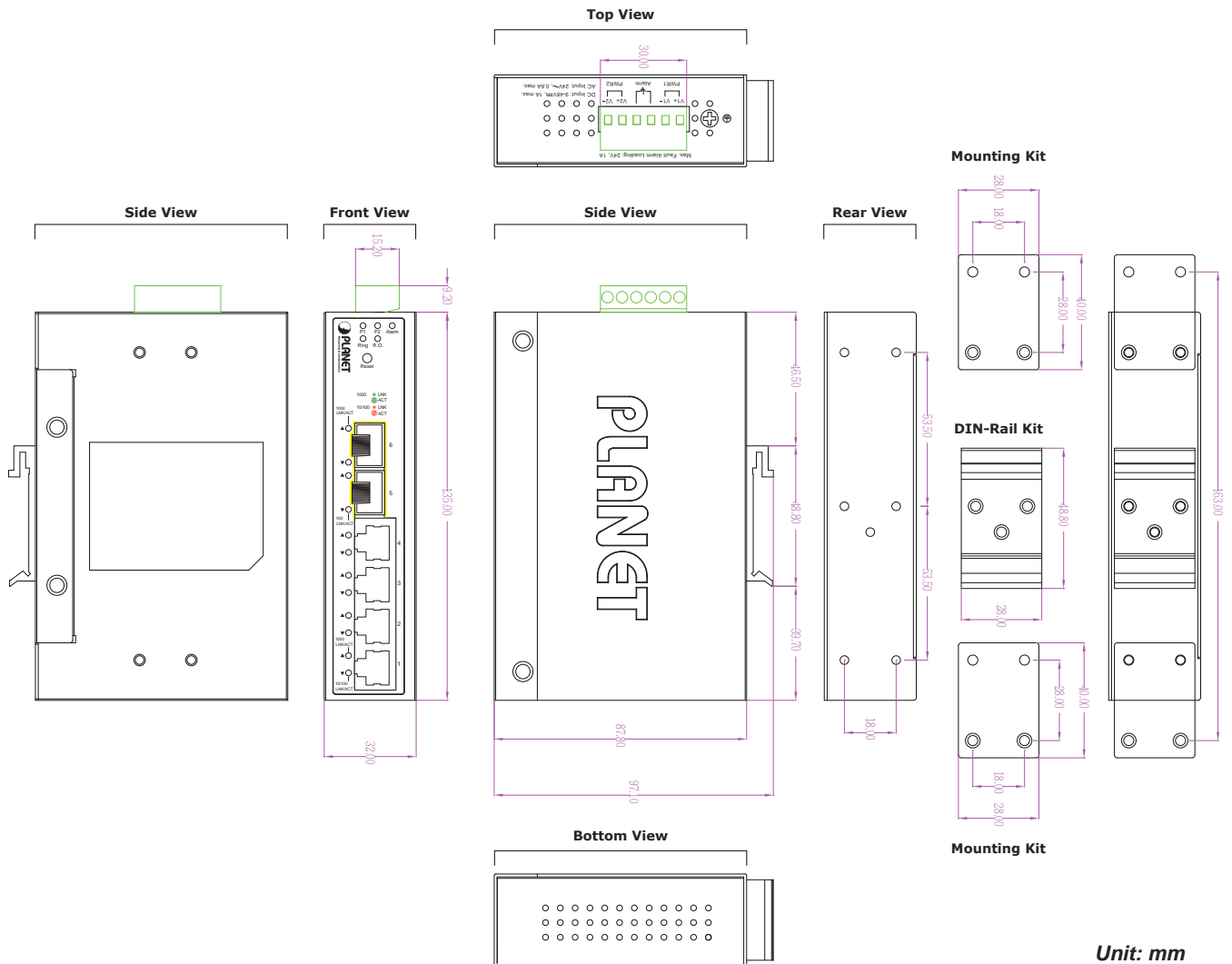
Specifications

| | |
|--------------------------------|--|
| Product | IGS-4215-4T2S |
| Hardware Specifications | |
| Copper Ports | 4 10/100/1000BASE-T RJ45 auto-MDI/MDI-X ports |
| Gigabit SFP Slots | 2 100/1000BASE-SX/LX/BX SFP interfaces |
| Reset Button | < 5 sec: System reboot > 5 sec: Factory default |
| Connector | Removable 6-pin terminal block for power input <ul style="list-style-type: none"> ■ Pin 1/2 for Power 1 ■ Pin 3/4 for fault alarm ■ Pin 5/6 for Power 2 |
| Alarm | One relay output for power failure. Alarm relay current carry ability: 1A @ 24V DC |
| Power Requirements | Dual 9~48V DC 24V AC |
| Power Consumption | DC input: Max. 1.92 watts/6.5BTU (System on) Max. 4.68 watts/15.9BTU (Full loading) AC input: Max. 1.6 watts/5.4BTU (System on) Max. 4.3 watts/14.6BTU (Full loading) |
| Enclosure | IP30 metal case |
| Dimensions (W x D x H) | 32 x 87.8 x 135 mm |
| Weight | 400g |
| Installation | DIN-rail kit and wall-mount ear |
| ESD Protection | 6KV DC |

| | |
|---------------------------------|---|
| LED | <p>System</p> <ul style="list-style-type: none"> ■ Green: Power 1 ■ Green: Power 2 ■ Red: Alarm ■ Green: Ring ■ Green: R.O. <p>Per 10/100/1000T RJ45 Ports</p> <ul style="list-style-type: none"> ■ Green: 1000 LNK/ACT ■ Amber: 10/100 LNK/ACT <p>Per 100/1000X SFP Ports</p> <ul style="list-style-type: none"> ■ Green: 1000 LNK/ACT ■ Amber: 100 LNK/ACT |
| Switching Specifications | |
| Switch Architecture | Store-and-Forward |
| Switch Fabric | 12Gbps (non-blocking) |
| Switch Throughput@64 bytes | 8.9Mpps@ 64 bytes |
| MAC Address Table | 8K entries |
| Shared Data Buffer | 4.1Mbits |
| Flow Control | IEEE 802.3x pause frame for full duplex Back pressure for half duplex |
| Jumbo Frame | 9K |
| Layer 2 Functions | |
| Port Mirroring | TX/RX/Both Many-to-1 monitor Up to 4 sessions |
| VLAN | 802.1Q tag-based VLAN 802.1ad Q-in-Q tunneling (VLAN stacking) Voice VLAN Protocol VLAN Private VLAN (Protected port) GVRP Up to 256 VLAN groups, out of 4096 VLAN IDs |
| Link Aggregation | IEEE 802.3ad LACP and static trunk Cisco ether-channel (Static Trunk) Up to 3 trunk groups Up to 6 ports per trunk group with 12Gbps bandwidth |
| Spanning Tree Protocol | IEEE 802.1D Spanning Tree Protocol (STP) IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) IEEE 802.1s Multiple Spanning Tree Protocol (MSTP) STP BPDU Guard, BPDU Filtering and BPDU Forwarding |
| IGMP Snooping | IPv4 IGMP snooping v1, v2, v3 IGMP querier IGMP Snooping port filtering Up to 256 multicast groups |
| MLD Snooping | IPv6 MLD snooping v1, v2 Up to 256 multicast groups |
| QoS | Ingress/Egress Rate Limit per port bandwidth control 8-level priority for switching <ul style="list-style-type: none"> ■ Port number ■ 802.1p priority ■ DSCP/IP precedence of IPv4/IPv6 packets ■ Typical network application DSCP remarking |
| Security Functions | |
| Access Control List | IPv4/IPv6 IP-based ACL/MAC-based ACL IPv4/IPv6 IP-based ACE/MAC-based ACE |
| Security | IP-MAC port binding MAC filtering Static MAC address DHCP Relay and DHCP Option 82 STP BPDU guard, BPDU filtering and BPDU forwarding DoS attack prevention ARP inspection IP source guard Storm control support <ul style="list-style-type: none"> ■ Broadcast / Multicast / Unicast |

| | | |
|------------------------------|---|---|
| AAA | Built-in RADIUS client to cooperate with RADIUS server | |
| Network Access Control | IEEE 802.1X port-based authentication RADIUS/TACACS+ user access authentication | |
| Management Functions | | |
| Basic Management Interfaces | Telnet Web browser SNMP v1, v2c | |
| Secure Management Interfaces | SSHv2, TLS v1.1/v1.2, SNMPv3 | |
| System Management | Firmware upgrade by HTTP protocol through Ethernet network Configuration upload/download through HTTP LLDP protocol SNTP PLANET Smart Discovery Utility PLANET UNI-NMS (Universal Network Management) PLANET CloudViewer app | |
| Event Management | Remote Syslog System log | |
| SNMP MIBs | RFC 1213 MIB-II RFC 1493 Bridge MIB RFC 1643 Ethernet MIB RFC 2863 Interface MIB RFC 2665 Ether-Like MIB RFC 2819 RMON MIB (Groups 1, 2, 3 and 9) RFC 2737 Entity MIB RFC 2618 RADIUS Client MIB RFC 2863 IF-MIB RFC 2933 IGMP-STD-MIB RFC 3411 SNMP-Frameworks-MIB RFC 4292 IP Forward MIB RFC 4293 IP MIB RFC 4836 MAU-MIB IEEE 802.1X PAE LLDP MAU-MIB | |
| Standards Conformance | | |
| Regulatory Compliance | FCC Part 15 Class A, CE | |
| Stability Testing | IEC 60068-2-32 (free fall) IEC 60068-2-27 (shock) IEC 60068-2-6 (vibration) | |
| 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 802.1ad Q-in-Q VLAN stacking IEEE 802.1x Port Authentication Network Control | IEEE 802.1ab LLDP IEEE 802.3az for Energy-Efficient Ethernet RFC 768 UDP RFC 793 TFTP RFC 791 IP RFC 792 ICMP RFC 2068 HTTP RFC 1112 IGMP v1 RFC 2236 IGMP v2 RFC 3376 IGMP v3 RFC 2710 MLD v1 RFC 3810 MLD v2 ITU-T G.8032 ERPS Ring |
| Environment | | |
| Operating Temperature | -40 ~ 75 degrees C | |
| Storage Temperature | -40 ~ 85 degrees C | |
| Humidity | 5 ~ 95% (non-condensing) | |

Dimensions



Ordering Information

| | |
|---------------|--|
| IGS-4215-4T2S | Industrial L2/L4 4-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch |
|---------------|--|

Related Products

| | |
|-----------------|---|
| IGS-4215-8T2S | Industrial L2/L4 8-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch |
| IGS-4215-16T2S | Industrial L2/L4 16-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch (-40~75 degrees C) |
| IGS-4215-4P4T | Industrial 4-Port 10/100/1000T 802.3at PoE + 4-Port 10/100/1000T Managed Switch (-40~75 degrees C) |
| IGS-4215-4P4T2S | Industrial 4-Port 10/100/1000T 802.3at PoE + 4-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch (-40~75 degrees C) |
| IGS-4215-8P2T2S | Industrial 8-Port 10/100/1000T 802.3at PoE + 2-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch |

Available Gigabit SFP Modules for IGS-4215-4T2S

| | |
|-----------|---|
| MGB-GT | SFP-Port 1000BASE-T Module |
| MGB-SX | SFP-Port 1000BASE-SX mini-GBIC module - 220/550m |
| MGB-SX2 | SFP-Port 1000BASE-SX mini-GBIC module - 2km |
| MGB-LX | SFP-Port 1000BASE-LX mini-GBIC module - 20km |
| MGB-L40 | SFP-Port 1000BASE-LX mini-GBIC module - 40km |
| MGB-L80 | SFP-Port 1000BASE-LX mini-GBIC module - 80km |
| 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-TSX | SFP-Port 1000BASE-SX mini-GBIC module - 220/550m (-40 ~ 75 degrees C) |
| MGB-TLX | SFP-Port 1000BASE-LX mini-GBIC module - 20km (-40 ~ 75 degrees C) |
| MGB-TL40 | SFP-Port 1000BASE-LX mini-GBIC module - 40km (-40 ~ 75 degrees C) |
| MGB-TL80 | SFP-Port 1000BASE-LX mini-GBIC module - 80km (-40 ~ 75 degrees C) |
| MGB-TLA10 | SFP-Port 1000BASE-LX (WDM,TX:1310nm) mini-GBIC module - 10km (-40 ~ 75 degrees C) |
| MGB-TLB10 | SFP-Port 1000BASE-LX (WDM,TX:1550nm) mini-GBIC module - 10km (-40 ~ 75 degrees C) |
| MGB-TLA20 | SFP-Port 1000BASE-LX (WDM,TX:1310nm) mini-GBIC module - 20km (-40 ~ 75 degrees C) |
| MGB-TLB20 | SFP-Port 1000BASE-LX (WDM,TX:1550nm) mini-GBIC module - 20km (-40 ~ 75 degrees C) |
| MGB-TLA40 | SFP-Port 1000BASE-LX (WDM,TX:1310nm) mini-GBIC module - 40km (-40 ~ 75 degrees C) |
| MGB-TLB40 | SFP-Port 1000BASE-LX (WDM,TX:1550nm) mini-GBIC module - 40km (-40 ~ 75 degrees C) |
| MGB-TLA60 | SFP-Port 1000BASE-LX (WDM,TX:1310nm) mini-GBIC module - 60km (-40 ~ 75 degrees C) |
| MGB-TLB60 | SFP-Port 1000BASE-LX (WDM,TX:1550nm) mini-GBIC module - 60km(-40 ~ 75 degrees C) |

Available Fast Ethernet SFP Modules for IGS-4215-4T2S

| | |
|-----------|---|
| 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-F120 | SFP-Port 100BASE-FX Transceiver (1310nm) - 120km |
| MFB-TFX | SFP-Port 100BASE-FX Transceiver (1310nm) - 2km (-40 ~ 75 degrees C) |
| MFB-TF20 | SFP-Port 100BASE-FX Transceiver (1310nm) - 20km (-40 ~ 75 degrees C) |
| MFB-FA20 | SFP-Port 100BASE-BX Transceiver (WDM,TX:1310nm) - 20km |
| MFB-FB20 | SFP-Port 100BASE-BX Transceiver (WDM,TX:1550nm) - 20km |
| MFB-TFA20 | SFP-Port 100BASE-BX Transceiver (WDM,TX:1310nm) - 20km (-40 ~ 75 degrees C) |
| MFB-TFB20 | SFP-Port 100BASE-BX Transceiver (WDM,TX:1550nm) - 20km (-40 ~ 75 degrees C) |
| MFB-TFA40 | SFP-Port 100BASE-BX Transceiver (WDM,TX:1310nm) - 40km (-40 ~ 75 degrees C) |
| MFB-TFB40 | SFP-Port 100BASE-BX Transceiver (WDM,TX:1550nm) - 40km (-40 ~ 75 degrees C) |