![PLANET Networking & Communication]
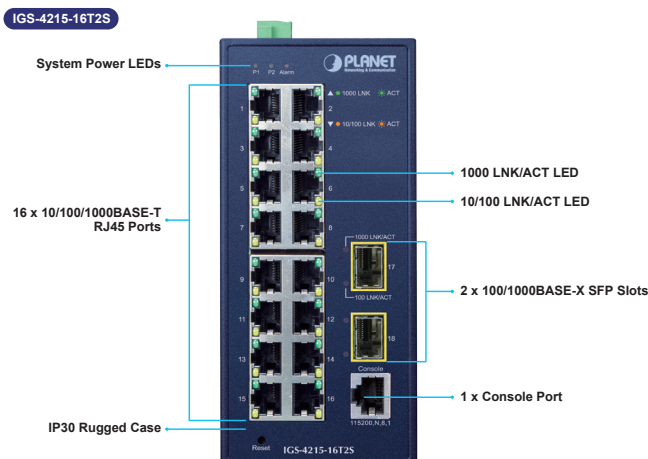
IGS-4215-16T2S/ IGS-4215-16T2S-U

Industrial L2/L4 16-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch

Cost-effective Full Solution Ideal for Hardened Environment

Designed to be installed in heavy industrial demanding environments, the IGS-4215-16T2S / IGS-4215-16T2S-U 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 **16 10/100/1000BASE-T** ports, and **2 extra 100/1000BASE-X SFP fiber slots** for long-distance data and video uplink. The IGS-4215-16T2S / IGS-4215-16T2S-U 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.

IGS-4215-16T2S

System Power LEDs

16 x 10/100/1000BASE-T RJ45 Ports

IP30 Rugged Case

1000 LNK/ACT LED

10/100 LNK/ACT LED

2 x 100/1000BASE-X SFP Slots

1 x Console Port

Physical Port

- 16-port 10/100/1000BASE-T RJ45 with auto MDI/MDI-X function
- 2 SFP interfaces, supporting 100/1000BASE-X SFP transceiver type auto detection
- 1-port RJ45 console for basic management and setup (IGS-4215-16T2S only)
- 1-port USB console for basic management and setup (IGS-4215-16T2S-U only)
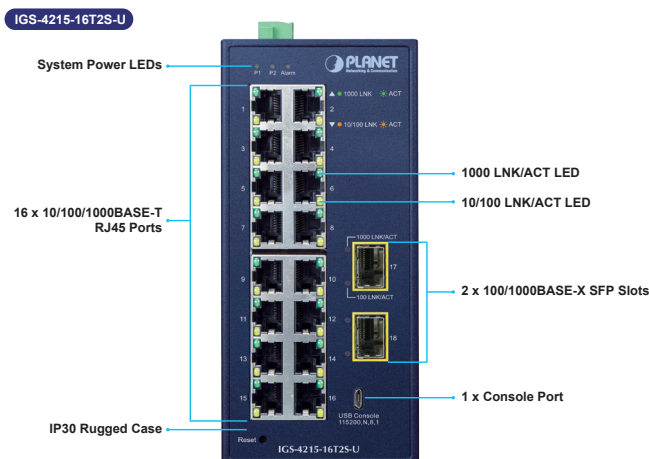
Industrial Case and Installation

- Dual power input, redundant power with reverse polarity protection
  - DC 12 to 48V input or AC 24V input (IGS-4215-16T2S only)
  - DC 9 to 48V input or AC 24V input (IGS-4215-16T2S-U only)
  - 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
- Fanless design

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
- 10K 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

IGS-4215-16T2S-U

System Power LEDs

16 x 10/100/1000BASE-T RJ45 Ports

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Environmentally Hardened Design

With the IP30 industrial case, the IGS-4215-16T2S / IGS-4215-16T2S-U 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 without air conditioner. Being able to operate under the temperature range from -40 to 75 degrees C, the IGS-4215-16T2S / IGS-4215-16T2S-U can be placed in almost any difficult environment.

Strengthen Reliability in Transportation Infrastructure

The IGS-4215-16T2S / IGS-4215-16T2S-U is compliant with the **EN 50121-4** standard for railway signaling and telecommunications applications, and comes with dual 12~48VDC (IGS-4215-16T2S) and 9~48VDC (IGS-4215-16T2S-U) wide range input.

Robust Protection

The IGS-4215-16T2S / IGS-4215-16T2S-U provides contact discharge of ±6KV DC and air discharge of ±8KV DC for Ethernet ESD protection. It also supports ±4KV 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 Critical Network Applications

The IGS-4215-16T2S / IGS-4215-16T2S-U 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) into customer's network to enhance system reliability and uptime in various environments. IGS-4215-16T2S-U also features watchdog self-healing.

Robust Layer 2 Features

The IGS-4215-16T2S / IGS-4215-16T2S-U 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-4215-16T2S / IGS-4215-16T2S-U 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.

- – Voice VLAN
- – GVRP
- Supports **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), spanning tree by VLAN
  - – BPDU Guard
- Supports **Link Aggregation**
  - – IEEE 802.3ad Link Aggregation Control Protocol (LACP)
  - – Cisco ether-channel (static trunk)
  - – Up to 8 trunk groups
  - – Up to 8 ports per trunk group with 16Gbps 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)

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
- 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
  - – IPv4/IPv6 IP-based ACE
  - – MAC-based ACL
  - – MAC-based ACE
- MAC Security
  - – Static MAC

L2/L4 Managed Switch

L2/L4 Managed Switch
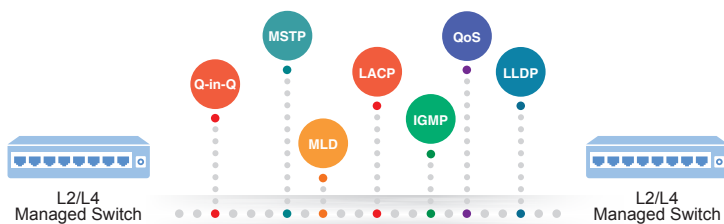
IPv6/IPv4 Dual Stack Management

Supporting both IPv6 and IPv4 protocols, the IGS-4215-16T2S / IGS-4215-16T2S-U 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.
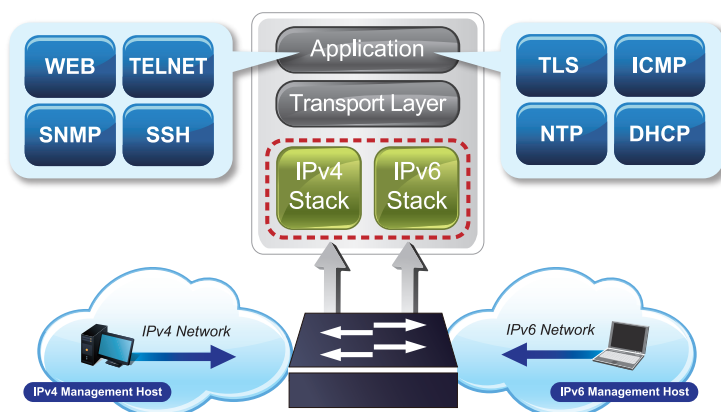

Efficient Traffic Control

The IGS-4215-16T2S / IGS-4215-16T2S-U 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.

User-friendly and Secure Management

The IGS-4215-16T2S / IGS-4215-16T2S-U comes with enhanced cybersecurity to fend off cyberthreats and cyberattacks. It supports **SSHv2**, **TLSv1.2** and **SNMPv3** protocols to provide strong protection against advanced threats. Served as a key point to transmit data, the cybersecurity feature of the IGS-4215-16T2S / IGS-4215-16T2S-U protects the switch management and enhances the security of the mission-critical network without any extra deployment cost and effort.
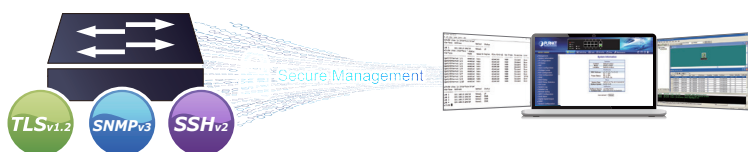
Powerful Security

PLANET IGS-4215-16T2S / IGS-4215-16T2S-U 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

- – 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 and v2c switch management
  - – SSHv2, TLSv1.2 and SNMP v3 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 NMS system and CloudViewer 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 ping
  - – Live remote checking is designed to make sure the devices are still connected