

Industrial L2/L4 Multi-port 10/100/1000T + 2-Port 1G/2.5G SFP Managed Switch



Cost-effective Full Solution Ideal for Hardened Environment

Designed to be installed in heavy industrial demanding environments, the IGS-4215 series 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 **4/8/16 10/100/1000BASE-T** ports, and **2 extra 100/1000/2500BASE-X SFP fiber slots** for long-distance data and video uplink. The IGS-4215 series 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.

Environmentally Hardened Design

With the IP30 industrial case, the IGS-4215 series 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 series can be placed in almost any difficult environment.

Cybersecurity Network Solution to Minimize Security Risks

The IGS-4215 series supports SSHv2 and TLSv1.3 protocols to provide strong protection against advanced threats. It includes a range of cybersecurity features such as **DHCP Snooping**, **IP Source Guard**, **dynamic ARP Inspection**, **802.1x port-based** network access control, **RADIUS** and **TACACS+** user accounts management, **SNMPv3** authentication, and so on to complement it as an all-security solution.



Physical Port

- **4/8/16 10/100/1000BASE-T** Gigabit Ethernet RJ45 ports
- **2 100/1000/BASE-X SFP** slots for SFP type auto detection
- **2 100/1000/2500BASE-X SFP** slots for SFP type auto detection (IGS-4215-16T2S only)
- 1 USB Type C console interface for basic management and setup (IGS-4215-16T2S only)

Industrial Case and Installation

- IP30 metal case
- DIN rail and wall-mount design
- 9~48V DC, redundant power with reverse polarity protection
- Supports 6000V DC Ethernet ESD protection
- -40 to 75 degrees C operating temperature

Digital Input and Digital Output

- 2 digital input (DI)
- 2 digital output (DO)
- Integrate sensors into auto alarm system
- Transfer alarm to IP network via SNMP trap

Switching

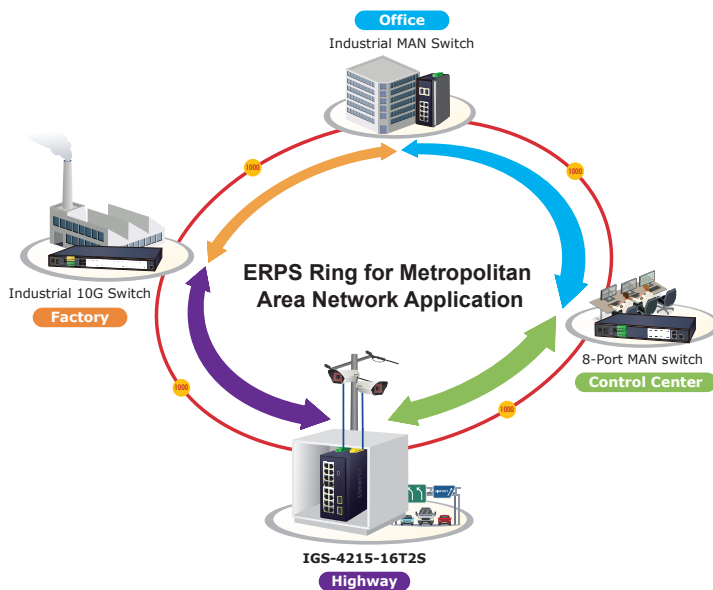
- Hardware-based 10/100Mbps (half/full duplex), 1000Mbps (full duplex), auto-negotiation and auto MDI/MDI-X
- IEEE 802.3x flow control for full duplex operation and back pressure for half duplex operation
- 8K/16K MAC address table size
- 9K/12K jumbo frame
- Automatic address learning and address aging

Layer 2 Features

- Supports **VLAN**
 - IEEE 802.1Q tagged VLAN
 - Provider bridging (VLAN Q-in-Q, IEEE 802.1ad) support
 - Protocol VLAN
 - Voice VLAN
 - Private VLAN (Protected port)
 - Management VLAN
 - GVRP
- Supports **Spanning Tree Protocol**
 - STP (Spanning Tree Protocol)
 - RSTP (Rapid Spanning Tree Protocol)
 - MSTP (Multiple Spanning Tree Protocol)
 - STP BPDU Guard, BPDU Filtering and BPDU Forwarding

Redundant Ring, Fast Recovery for Critical Network Applications

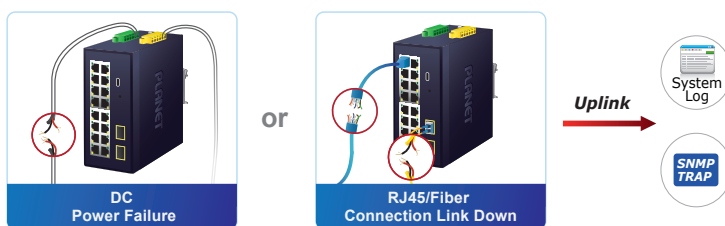
The IGS-4215 series supports redundant ring technology and features strong, rapid self-recovery capability to prevent interruptions and external intrusions. It incorporates advanced ITU-T G.8032 ERPS (Ethernet Ring Protection Switching) technology, Spanning Tree Protocol (802.1s MSTP) into customer's network to enhance system reliability and uptime in various environments.



Effective Alarm Alert for Better Protection

The IGS-4215 series supports a Fault Alarm feature which can alert the users when there is something wrong with the switches. With this ideal feature, the users would not have to waste time finding where the problem is. It will help to save time and human resource.

Fault Alarm Feature



Digital Input and Digital Output for External Alarm (IGS-4215-16T2S only)

The IGS-4215-16T2S supports Digital Input and Digital Output on its front panel. This external alarm enables users to use Digital Input to detect and log external device status (such as door intrusion detector), and send event alarm to the administrators. The Digital Output could be used to alarm the administrators if the IGS-4215-16T2S port shows link down, link up or power failure.

- Supports **Link Aggregation**
 - IEEE 802.3ad Link Aggregation Control Protocol (LACP)
 - Cisco ether-channel (static trunk)
 - Maximum 8 trunk groups, up to 8 ports per trunk group
- Provides port mirror (many-to-1)
- 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
- Traffic classification
 - IEEE 802.1p CoS
 - TOS/DSCP/IP precedence of IPv4/IPv6 packets
- Strict priority and Weighted Round Robin (WRR) CoS policies

Multicast

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

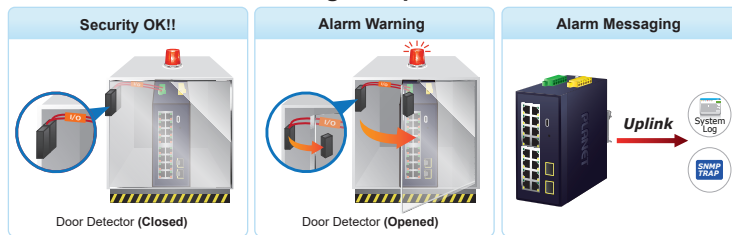
Security

- Storm Control support
 - Broadcast/ unknown multicast/unknown unicast
- Authentication
 - IEEE 802.1X port-based network access authentication
 - Built-in RADIUS client to cooperate with the RADIUS servers
 - DHCP Option 82
 - RADIUS/TACACS+ authentication
- Access Control List
 - IPv4/IPv6 IP-based ACL
 - 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
- DoS attack prevention

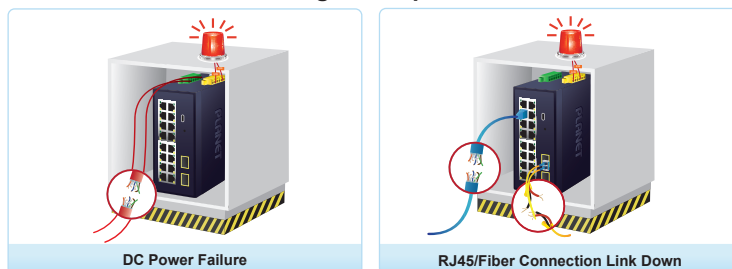
Management

- IPv4 and IPv6 dual stack management
- Switch Management Interface

Digital Input



Digital Output

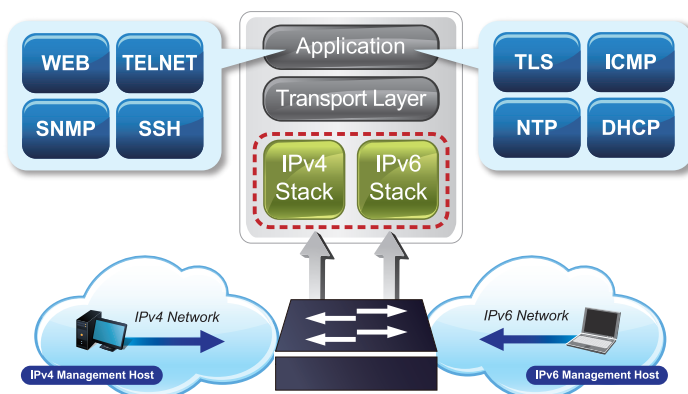


Robust Protection

The IGS-4215 series 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.

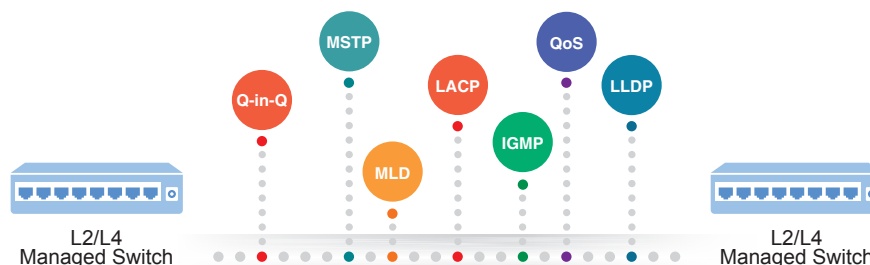
IPv6/IPv4 Dual Stack Management

Supporting both IPv6 and IPv4 protocols, the IGS-4215 series 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.



Robust Layer 2 Features

The IGS-4215 series 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 **BPD guard**, **IGMP snooping**, and MLD snooping. Via the link aggregation, the IGS-4215 series allows the operation of a high-speed trunk to combine with multiple ports such as an 16Gbps 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.



- Web switch management
- Console/Telnet Command Line Interface
- SNMP v1 and v2c switch management
- SSHv2, TLSv1.3 and SNMP v3 secure access
- SNMP Management
 - SNMP trap for interface Link Up and Link Down notification
 - Four RMON groups (history, statistics, alarms and events)
- User privilege levels control
- Built-in Trivial File Transfer Protocol (TFTP) client
- Static and DHCP for IP address assignment
- System Maintenance
 - Firmware upload/download via HTTP/TFTP
 - Configuration upload/download through HTTP/TFTP
 - Dual images
 - Hardware reset button for system reboot or reset to factory default
- SNTP Network Time Protocol
- Network Diagnostic
 - Cable diagnostics
 - ICMPv6/ICMPv4 Remote Ping
 - SFP-DDM (Digital Diagnostic Monitor)
- Link Layer Discovery Protocol (LLDP) Protocol and LLDP-MED
- Event message logging to remote syslog server
- PLANET Smart Discovery Utility for deployment management
- PLANET NMS system and CloudNMS for deployment management

Efficient Traffic Control

The IGS-4215 series 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.

Powerful Security

PLANET IGS-4215 series 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 to limit the number of network devices on a given port. The network administrators can now construct highly-secure corporate networks with considerably less time and effort than before.

Advanced Network Security

The IGS-4215 series 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.

User-friendly and Secure Management

For efficient management, the IGS-4215 series is equipped with Command line, Web and SNMP management interfaces.

- With the built-in **Web-based** management interface, the IGS-4215 series offers an easy-to-use, platform-independent management and configuration facility.
- For **text-based** management, it can be accessed via Telnet and the console port.
- By supporting the standard SNMP protocol, the switch can be managed via any SNMP-based management software.

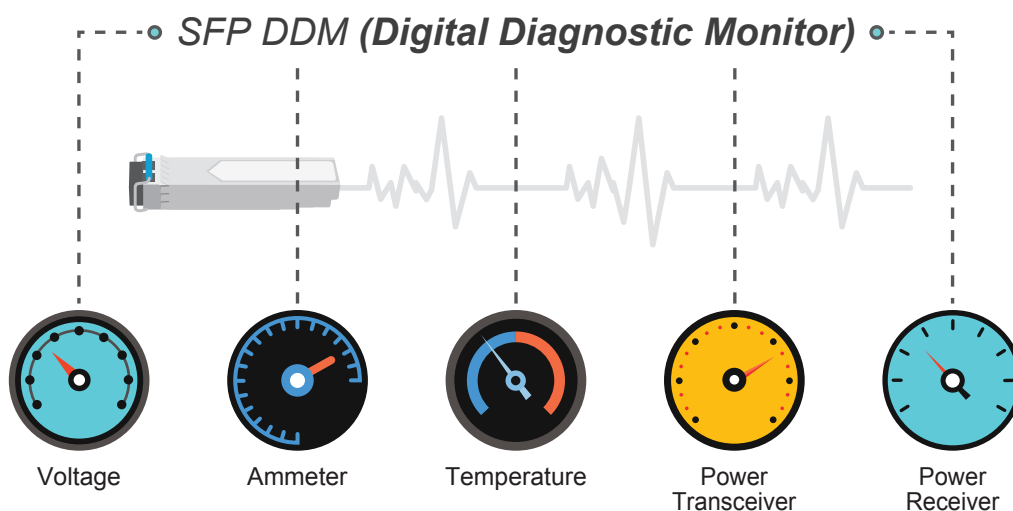
Moreover, the IGS-4215 series offers secure remote management by supporting **SSHv2**, **TLSv1.3** and **SNMP v3** connections which encrypt the packet content at each session.

Flexible Long-distance Extension Solution

The IGS-4215 series provides 2 extra Gigabit TP interfaces supporting 10/100/1000BASE-T RJ45 copper to connect with surveillance network devices such as NVR, Video Streaming Server or NAS to facilitate surveillance management. Or through the two **dual-speed fiber SFP slots**, it can also connect with the **100BASE-FX /1000BASE-SX/LX SFP** (Small Form-factor Pluggable) fiber transceiver to uplink to backbone switch and monitoring center in long distance. The distance can be extended from 550 meters to 2 kilometers (multi-mode fiber) and to 10/20/40/60/80/120 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 series 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.



PLANET CloudNMS – Cloud-Based Universal Network Management

PLANET's **CloudNMS** platform and mobile app empower IT staff to remotely manage all network devices and Powered Devices (PDs) in real time. Designed for enterprises and industries, **CloudNMS** minimizes the need for on-site troubleshooting by providing centralized monitoring, fault detection, and instant alerts.

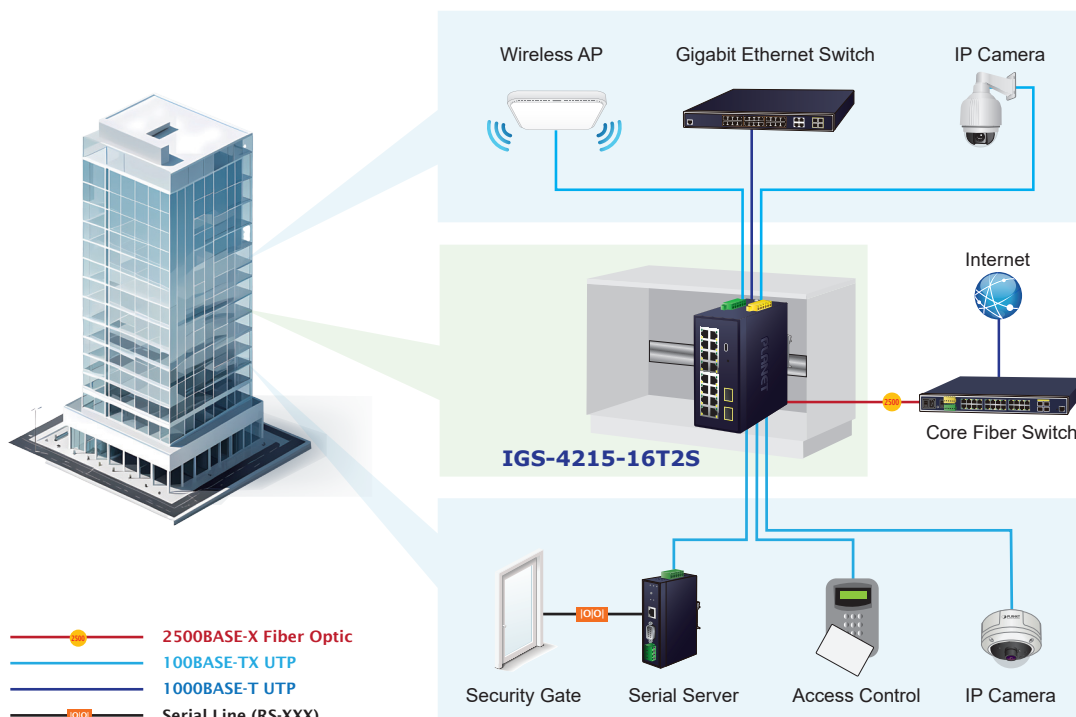
With **CloudNMS**, businesses can manage diverse network deployments more efficiently, securely, and intelligently—all from a single cloud-based platform.



Applications

Industrial-grade Switch for Building Automation and Security

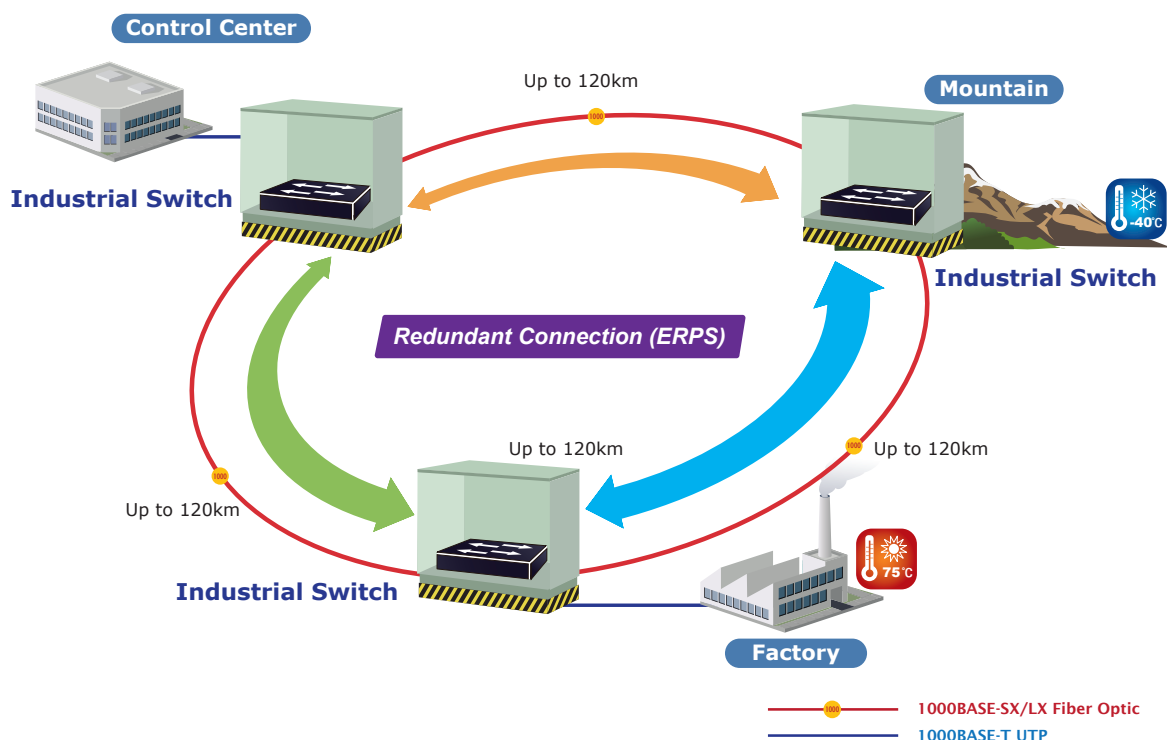
Suitable for buildings where security is strictly to be enforced, the IGS-4215 series, with sixteen high-speed Gigabit Ethernet interfaces, can easily build a power centrally controlled for an IP phone system, IP surveillance system, and wireless AP group in the harsh Industrial environment.



The IGS-4215 series 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-4215-16T2S is easy and helpful to build a Gigabit high-bandwidth switched network quickly.

The diagram illustrates a network topology for a 240km link. It features two IGS-4215-16T2S switches, each housed in a cabinet and connected to a power source. Each switch is also connected to an outdoor IP camera via Ethernet, with a maximum distance of 100 meters. The switches are connected to each other via a 2500BASE-X Fiber Optic cable, with a maximum distance of 120km. A Gigabit Fiber Switch is connected to the second IGS switch via a 1000BASE-T UTP cable, with a maximum distance of 120km. The Gigabit Fiber Switch is also connected to a Network Video Recorder (NVR) and several desktop computers. A legend at the bottom indicates that the red line represents 2500BASE-X Fiber Optic and the blue line represents 1000BASE-T UTP.

The IGS-4215 series features strong rapid self-recovery capability to prevent interruptions and external intrusions. It incorporates ITU-T G.8032 ERPS (Ethernet Ring Protection Switching) technology into customer's automation network to enhance system reliability and uptime. Applying the IEEE 802.3at Power over Ethernet standard, the IGS-4215 series can directly connect with any IEEE 802.3at end-nodes like PTZ (Pan, Tilt & Zoom) network cameras and speed dome cameras. The IGS-4215 series can easily help system integrators with the available network infrastructure to build wireless AP, IP camera and VoIP systems where power can be centrally-controlled.



Specifications

Product	IGS-4215-4T2S		IGS-4215-8T2S		IGS-4215-16T2S	
Hardware Specifications						
Copper Ports	4		8		16	
SFP Slots	2 1000BASE-SX/LX/BX SFP interfaces Backward compatible with 100BASE-FX SFP				2 1000/2500BASE-SX/LX/BX SFP interfaces (Ports 17 to 18) Backward compatible with 100BASE-FX SFP	
Console	-				1 x USB Type C to RS232 serial port (115200,8, N, 1)	
Reset Button	< 5 sec: System reboot > 5 sec: Factory default					
Power Connector	Removable 6-pin terminal block Pin 1/2 for Power 1; Pin 3/4 for fault alarm; Pin 5/6 for Power 2					
I/O Connector	-				Removable 6-pin terminal block for DI/DO interface Pin 1/2 for DI 1 & 2, Pin 3/4 for DO 1 & 2, Pin 5/6 for GND	
Alarm	One relay output for power failure. Alarm relay current carry ability: 1A @ 24V AC					
Digital Input	-		-		2 digital input (DI) Level 0: -24V~2.1V (±0.1V) Level 1: 2.1V~24V (±0.1V) Input load to 24V DC, 10mA max.	
Digital Output	-		-		2 digital output (DO) Open collector to 24V DC,1 00mAmax.	
Power Requirements	Dual 9~48V DC 24V AC 50/60Hz					
Power Consumption	Max. 1.92 watts/6.5BTU (System on) Max.4.68 watts/15.9BTU (Full loading)		Max. 1.98 watts/6.7BTU (System on) Max.6.93 watts/23.6BTU (Full loading)		Max. 3.31 watts/11.3BTU (System on) Max.10.41 watts/35.5BTU (Full loading)	
Dimensions (W x D x H)	32 x 87.8 x 135 mm		50 x 87.8 x 135 mm		66 x 107 x 152 mm	
Weight	400g		510g		829g	
Enclosure	IP30 metal case					
Installation	DIN-rail kit and wall-mount ear					
ESD Protection	6KV DC					
LED	System: Power 1 (Green) Power 2 (Green) Alarm (Red) Ring (Green) R.O.(Green) I/O (Red) Per 10/100/1000T RJ45Ports: 1000 LNK/ACT (Green) 10/100 LNK/ACT (Amber) Per SFP Interface: 1000 LNK/ACT (Green) 100 LNK/ACT (Amber) Per SFP Interface: (IGS-4215-16T2S) 1000/2500 LNK/ACT (Green) 100 LNK/ACT (Amber)					
Switching Specifications						
Switch Architecture	Store-and-Forward					
Switch Fabric	12Gbps (non-blocking)		20Gbps (non-blocking)		42Gbps (non-blocking)	
Switch Throughput@64 bytes	8.9Mpps@ 64 bytes		14.8Mpps@ 64 bytes		31.25Mpps@ 64 bytes	
MAC Address Table	8K entries		8K entries		16K entries	
Shared Data Buffer	4Mbits					
Flow Control	IEEE 802.3x pause frame for full duplex Back pressure for half duplex					
Jumbo Frame	9 Kbytes		9 Kbytes		12 Kbytes	
Layer 2 Functions						
Port Mirroring	TX/RX/Both Many-to-1 monitor Up to 4 sessions					

VLAN	802.1Q tagged VLAN 802.1ad Q-in-Q tunneling (VLAN stacking) Voice VLAN Protocol VLAN Private VLAN (Protected port) GVRP Management VLAN Up to 256 VLAN groups, out of 4094 VLAN IDs
Link Aggregation	IEEE 802.3ad LACP and static trunk Supports 8 groups with 8 ports per trunk
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 v2, v3 IGMP querier Up to 256 multicast groups
MLD Snooping	IPv6 MLD snooping v2, v3, up to 256 multicast groups
QoS	8 mapping IDs to 8 level priority queues - Port number - 802.1p priority - DSCP/IP precedence of IPv4/IPv6 packets Traffic classification based, strict priority and WRR Ingress/Egress Rate Limit per port bandwidth control
Ring	Supports ERPS, and complies with ITU-T G.8032 Recovery time < 450ms
Security Functions	
Access Control List	IPv4/IPv6 IP-based ACL/MAC-based ACL IPv4/IPv6 IP-based ACE/MAC-based ACE Max. 256 ACL entries
Port Security	IEEE 802.1X – Port-based authentication Built-in RADIUS client to co-operate with RADIUS server RADIUS/TACACS+ user access authentication
MAC Security	IP-MAC port binding MAC filter Static MAC address, max. 256 static MAC entries
Enhanced Security	DHCP Snooping and DHCP Option82 STP BPDU guard, BPDU filtering and BPDU forwarding DoS attack prevention ARP inspection IP source guard
Management Functions	
Basic Management Interfaces	RS232 to RJ45 Console Web browser Telnet SNMP v1, v2c
Secure Management Interfaces	SSHv2, TLSv1.3, SNMP v3
System Management	Firmware upgrade by HTTP/TFTP protocol through Ethernet network Configuration upload/download through HTTP/TFTP LLDP protocol SNTP PLANET Smart Discovery Utility PLANET NMS System/CloudNMS
Event Management	Remote/Local Syslog System log

SNMP MIBs	RFC 1213 MIB-II RFC 1215 Generic Traps RFC 1493 Bridge MIB RFC 2674 Bridge MIB Extensions RFC 2737 Entity MIB (Version 2) RFC 2819 RMON (1, 2, 3, 9) RFC 2863 Interface Group MIB RFC 3635 Ethernet-like MIB LLDP MIB PLANET-Aggr-MIB PLANET-DDMI-MIB PLANET-Firmware-MIB PLANET-GVRP-MIB PLANET-LACP-MIB PLANET-SYSUTIL-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 1000BASE-T 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 IEEE 802.3az for Energy-Efficient Ethernet RFC 768 UDP RFC 783 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
Environment	
Operating Temperature	-40 ~ 75 degrees C
Storage Temperature	-40 ~ 85 degrees C
Humidity	5 ~ 95% (non-condensing)

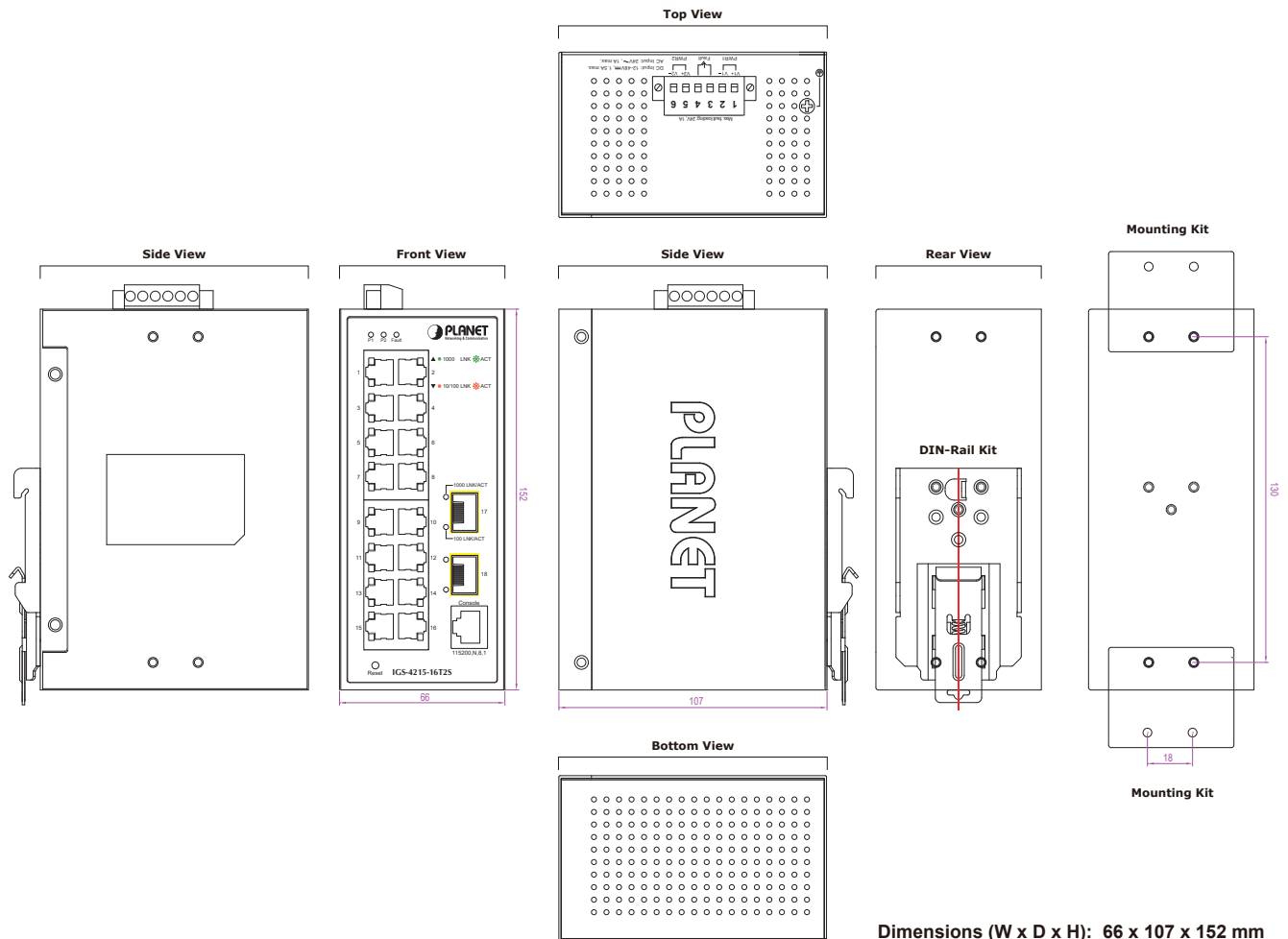
- IGS-4215-4T2S



- IGS-4215-8T2S



■ IGS-4215-16T2S



Dimensions (W x D x H): 66 x 107 x 152 mm

Ordering Information

IGS-4215-4T2S	Industrial L2/L4 4-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch (-40~75 degrees C)
IGS-4215-8T2S	Industrial L2/L4 8-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch (-40~75 degrees C)
IGS-4215-16T2S	Industrial L2/L4 16-Port 10/100/1000T + 2-Port 1G/2.5G SFP Managed Switch (-40~75 degrees C)

Related Products

IGS-4215-4P4T	Industrial 4-Port 10/100/1000T 802.3at PoE + 4-Port 10/100/1000T Managed Switch
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
IGS-4215-4UP4T2S	Industrial 4-Port 10/100/1000T 802.3bt PoE + 4-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch
IGS-4215-8UP2T2S	Industrial 8-Port 10/100/1000T 802.3bt PoE + 2-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch
IGS-801M	Industrial L2/L4 8-Port 10/100/1000T Managed Switch (-40~75 degrees C)
IGS-4215-16T2S	Industrial L2/L4 16-Port 10/100/1000T + 2-Port 1G/2.5G SFP Managed Switch (-40~75 degrees C)
IGS-4215-16T4X	Industrial L2+ 16-Port 10/100/1000T + 4-Port 10G SFP+ Managed Ethernet Switch (-40~75 degrees C)

Accessories

PWR-40-24	40W 24V DC Single Output Industrial DIN-rail Power Supply (-20 ~ 70 degrees C)
PWR-60-24	60W 24V DC Single Output Industrial DIN-rail Power Supply (-20 ~ 70 degrees C)
PWR-75-24	75W 24V DC Single Output Industrial DIN-rail Power Supply (-20 ~ 70 degrees C)

Available 2500Mbps Modules

2.5Gigabit Ethernet Transceiver (2500BASE-X SFP) for IGS-4215-16T2S only

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (nm)	Operating Temp.
MGB-2GTSR	2488	LC	Multi Mode	300m	850nm	-40 ~ 85 degrees C
MGB-2GTLA20	2488	LC	Single Mode	20km	Tx:1310nm Rx:1550nm	-40 ~ 85 degrees C
MGB-2GTLB20	2488	LC	Single Mode	20km	Tx:1550nm Rx:1310nm	-40 ~ 85 degrees C
MGB-2GTLR20	2488	LC	Single Mode	20km	1310nm	-40 ~ 85 degrees C
MGB-2GTLR2	2488	LC	Single Mode	2km	1310nm	-40 ~ 85 degrees C
MGB-2GTRJ	2488	Copper	--	100m	--	-40 ~ 85 degrees C

Available 1000Mbps Modules

Gigabit Ethernet Transceiver (1000BASE-X SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (nm)	Operating Temp.
MGB-GT	1000	Copper	--	100m	--	0 ~ 60 degrees C
MGB-TSX	1000	LC	Multi Mode	550m	850nm	-40 ~ 85 degrees C
MGB-TLX	1000	LC	Single Mode	10km	1310nm	-40 ~ 85 degrees C
MGB-TL30	1000	LC	Single Mode	30km	1310nm	-40 ~ 85 degrees C
MGB-TL70	1000	LC	Single Mode	70km	1550nm	-40 ~ 85 degrees C

Gigabit Ethernet Transceiver (1000BASE-BX, Single Fiber Bi-directional SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (TX)	Wavelength (RX)	Operating Temp.
MGB-TLA10	1000	WDM(LC)	Single Mode	10km	1310nm	1550nm	-40 ~ 85 degrees C
MGB-TLB10	1000	WDM(LC)	Single Mode	10km	1550nm	1310nm	-40 ~ 85 degrees C
MGB-TLA20	1000	WDM(LC)	Single Mode	20km	1310nm	1550nm	-40 ~ 85 degrees C
MGB-TLB20	1000	WDM(LC)	Single Mode	20km	1550nm	1310nm	-40 ~ 85 degrees C
MGB-TLA40	1000	WDM(LC)	Single Mode	40km	1310nm	1550nm	-40 ~ 85 degrees C
MGB-TLB40	1000	WDM(LC)	Single Mode	40km	1550nm	1310nm	-40 ~ 85 degrees C
MGB-TLA60	1000	WDM(LC)	Single Mode	60km	1310nm	1550nm	-40 ~ 85 degrees C
MGB-TLB60	1000	WDM(LC)	Single Mode	60km	1550nm	1310nm	-40 ~ 85 degrees C

Available 100Mbps Modules

Fast Ethernet Transceiver (100BASE-X SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (nm)	Operating Temp.
MFB-TFX	100	LC	Multi Mode	2km	1310nm	-40 ~ 85 degrees C
MFB-TF20	100	LC	Single Mode	20km	1550nm	-40 ~ 85 degrees C

Fast Ethernet Transceiver (100BASE-BX, Single Fiber Bi-directional SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (TX)	Wavelength (RX)	Operating Temp.
MFB-TFA20	100	WDM(LC)	Single Mode	20km	1310nm	1550nm	-40 ~ 85 degrees C
MFB-TFB20	100	WDM(LC)	Single Mode	20km	1550nm	1310nm	-40 ~ 85 degrees C
MFB-TFA40	100	WDM(LC)	Single Mode	40km	1310nm	1550nm	-40 ~ 85 degrees C
MFB-TFB40	100	WDM(LC)	Single Mode	40km	1550nm	1310nm	-40 ~ 85 degrees C