# Industrial L2/L4 24-Port 10/100/1000T + 4-Port 10G SFP+ Managed Ethernet Switch

Budget-friendly High-speed L2/L4 Industrial Switch for Harsh Environments

The **IGS-R4215-24T4X** is PLANET's latest Industrial-grade, **Rack-mount L2/L4 Managed Gigabit Switch**, designed for heavy industrial environments **in a 1U fanless design**. With **IPv6/IPv4** dual stack management, and a built-in L2/L4 Gigabit switching engine, this switch delivers an array of versatile features for industrial settings. Featuring **24 10/100/1000BASE-T ports**, **4 10GBASE-X SFP+ fiber slots and a USB Type C console port**, the IGS-R4215-24T4X ensures unwavering, stable performance. Operating flawlessly and quietly within a temperature range of **-40 to 75 degrees Celsius**, it showcases remarkable adaptability.
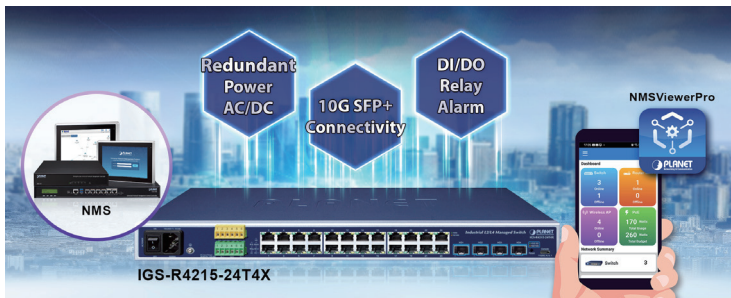
High Performance 10Gbps Ethernet Capacity

The four SFP+ ports built in the IGS-R4215-24T4X boasts a high-performance switch architecture that is capable of providing non-blocking switch fabric and wire-speed throughput as high as up to **128Gbps**, which greatly simplifies the tasks of upgrading the LAN for catering to increasing bandwidth demands. Each of the SFP+ ports supports **4 speeds**, **10GBASE-SR/LR**, **2500BASE-X**, **1000BASE-SX/LX and 100BASE-FX**, meaning the administrator now can flexibly choose the suitable SFP/SFP+ transceiver according to the transmission distance or the transmission speed required to extend the network efficiently.

Redundant Ring, Fast Recovery for Critical Network Applications

The IGS-R4215-24T4X 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 and **Spanning Tree Protocol (802.1s MSTP)** into customer's network to enhance system reliability and uptime in harsh environments.

Physical Port

- **24 10/100/1000BASE-T** Gigabit Ethernet RJ45 ports
- **4 10GBASE-SR/LR SFP+** slots, backward compatible with **100/1G/2.5GBASE-X SFP** transceivers
- **One USB Type C console** interface for basic management and setup.

Hardware Conformance

- One 100 to 240V AC or dual 24 to 60V DC power input, redundant power with reverse polarity protection
  - Active-active redundant power failure protection
  - Backup of catastrophic power failure on one supply
  - Fault tolerance and resilience
- 19-inch rack-mountable design
- IP30 metal case
- Supports EFT protection for 6KV DC power and 6KV DC Ethernet ESD protection
- -40 to 75 degrees C operating temperature for DC power input
- -10 to 60 degrees C operating temperature for AC power input

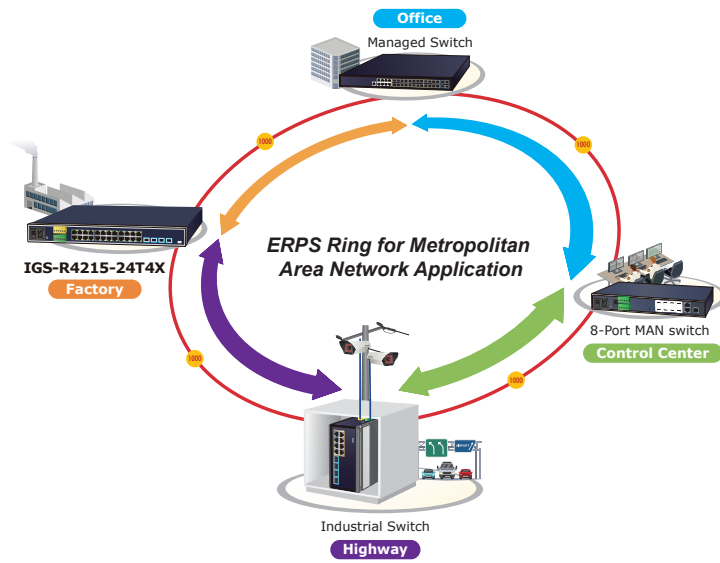## Digital Input and Digital Output

- 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 mode), auto-negotiation, and auto MDI/MDI-X
- 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
- 16K MAC address table size
- 12K jumbo frame
- Automatic address learning and address aging
- Supports CSMA/CD protocol

Layer 2 Features

- Prevents packet loss with back pressure (half-duplex) and IEEE 802.3x pause frame flow control (full-duplex)
- High performance Store and Forward architecture,

ERPS Ring for Metropolitan Area Network Application

broadcast storm control, and runt/CRC filtering that eliminates erroneous packets so as to optimize the network bandwidth

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

Security

- Storm Control support
  - Broadcast / Multicast / Unknown Unicast
- Authentication
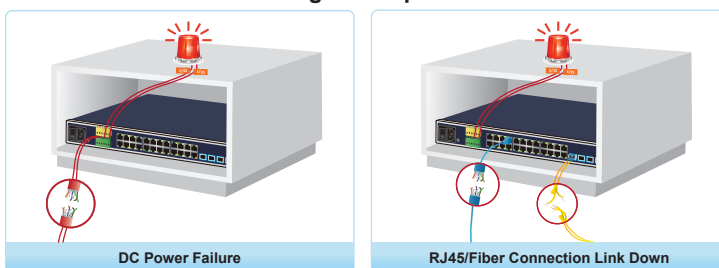 - Built-in RADIUS client to co-operate with the RADIUS servers
  - DHCP Option 82

Digital Input and Digital Output for External Alarm

The IGS-R4215-24T4X supports Digital Input and Digital Output through a terminal block located 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-R4215-24T4X port shows link down, link up or power failure.

Digital Input

Digital Output

Effective Alarm Alert for Better Protection

The IGS-R4215-24T4X incorporates a Fault Alarm feature that promptly notifies users of any issues with the switches. This valuable feature eliminates the need for users to spend time locating the problem, resulting in significant time and human resource savings.

Fault Alarm Feature

or

| DC Power Failure | RJ45/Fiber Connection Link Down | → | Mail / System Log / SNMP TRAP |

Robust Layer 2 Features

The IGS-R4215-24T4X can be programmed for advanced switch management functions such as dynamic port link aggregation, 802.1Q VLAN and **Q-in-Q VLAN**, **Multiple Spanning Tree protocol (MSTP)**, loop and **BPDU guard**, **IGMP snooping**, and **MLD snooping**. Via the link aggregation, the IGS-R4215-24T4X allows the operation of a high-speed trunk to combine with multiple ports, 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.

L2/L4 Managed Switch — L2/L4 Managed Switch
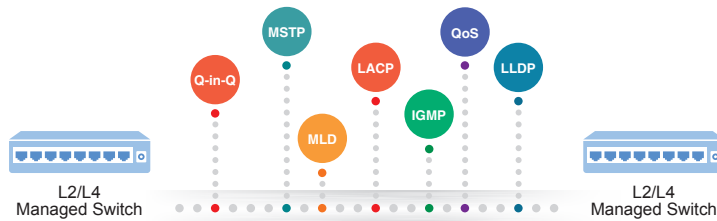
Efficient Traffic Control

The IGS-R4215-24T4X 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.

Cybersecurity Network Solution to Minimize Security Risks

The IGS-R4215-24T4X supports SSHv2 and TLS 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 Protection**, **RADIUS** and **TACACS+** user accounts management, **SNMPv3** authentication, and so on to complement it as an all-security solution.

- – RADIUS/TACACS+ login user 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
  - – 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
  - – Web switch management
  - – Console/Telnet Command Line Interface
  - – SNMP v1 and v2c switch management
  - – SSHv2, TLSv1.2 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
- BOOTP 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 NMSViewerPro/CloudViewerPro App for deployment management

User-friendly Management Interfaces

For efficient management, the IGS-R4215-24T4X is equipped with console, **Web** and **SNMP** management interfaces.
- With the built-in **Web-based** management interface, the IGS-R4215-24T4X offers an easy-to-use, platform-independent management and configuration facility.
- For **text-based** management, the switches can be accessed via Telnet and the console port.
- For standard-based monitor and management software, it offers SNMPv3 connection which encrypts the packet content at each session for secure remote management.

Moreover, the IGS-R4215-24T4X offers secure remote management by supporting **SSHv2**, **TLSv1.2** and **SNMP v3** connections which encrypt the packet content at each session.
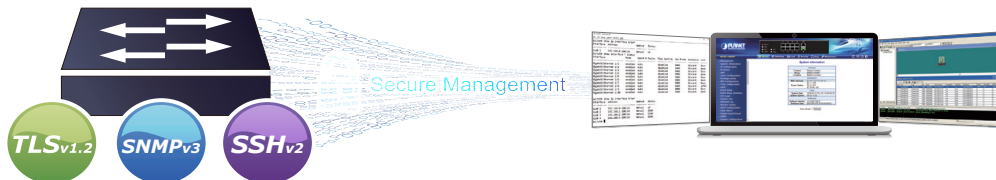
IPv4 and IPv6 VLAN Routing for Secure and Flexible Management

To help customers stay on top of their businesses, the IGS-R4215-24T4X not only provides ultra high transmission performance and excellent Layer 2 technologies, but also offers IPv4/IPv6 VLAN routing feature which allows to cross over different VLANs and different IP addresses for the purpose of having a highly-secure, flexible management and simpler networking application.
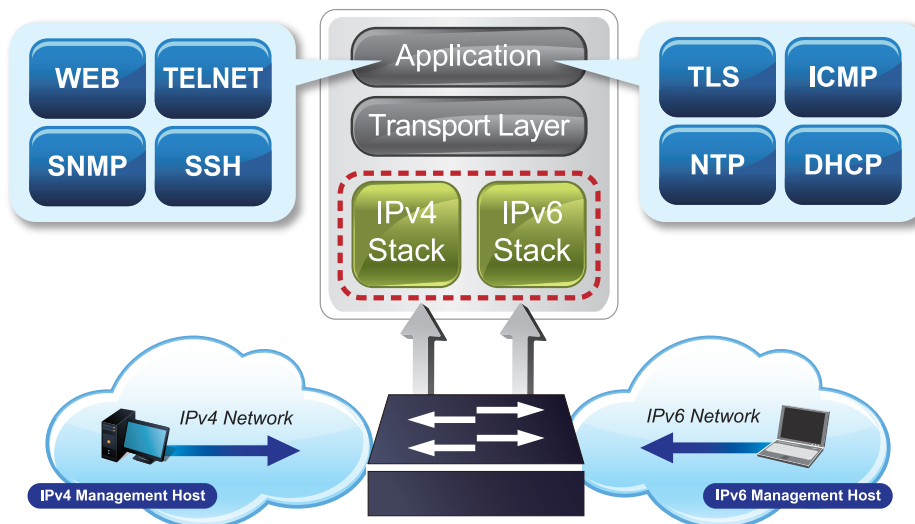
Intelligent SFP Diagnosis Mechanism

The IGS-R4215-24T4X supports **SFP-DDM (Digital Diagnostic Monitor)** function that greatly helps network administrator to easily monitor real-time parameters of the SFP and SFP+ transceivers, such as optical output power, optical input power, temperature, laser bias current, and transceiver supply voltage.

SFP DDM (Digital Diagnostic Monitor)

Voltage   Ammeter   Temperature   Power Transceiver   Power Receiver
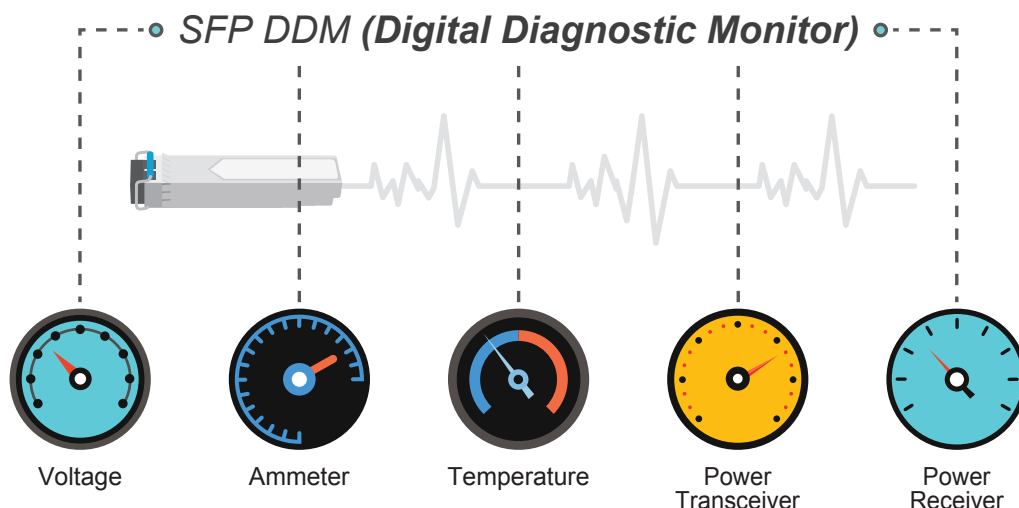
Redundant AC/DC Power Supply to Ensure Continuous Operation

The IGS-R4215-24T4X is particularly equipped with one **100~240V AC power supply** unit and one **24~60V DC power supply** unit to provide an enhanced reliable and scalable redundant power supply. The continuous power system is specifically designed to fulfill the demands of high-tech facilities requiring the highest power integrity. With the 24~60V DC power supply, the IGS-R4215-24T4X is able to act as a telecom-level device that can be located in the electronic room.

Remote Management Solution

PLANET's **Universal Network Management System (UNI-NMS)** and **CloudViewerPro app** provide robust support for IT staff in effectively managing and monitoring all network devices, including the IGS-R4215-24T4X, from remote locations. Tailored for deployment in both enterprises and industries where the IGS-R4215-24T4X is utilized remotely, these systems enable the identification of bugs or faulty conditions without the need for on-site visits. With PLANET's Remote Management Solution, businesses of all types can now be swiftly and efficiently managed through a unified platform, streamlining operational oversight.

NMS Controller   CloudViewerPro App

Applications

Redundant Ring, Fast Recovery for Critical Network Applications

The IGS-R4215-24T4X 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.

Control Center

IGS-R4215-24T4X

IP Camera

IGS-R4215-24T4X

Wireless AP

Warehouse

10G MSTP Data
Redundant Solution

IGS-R4215-24T4X

Wireless AP
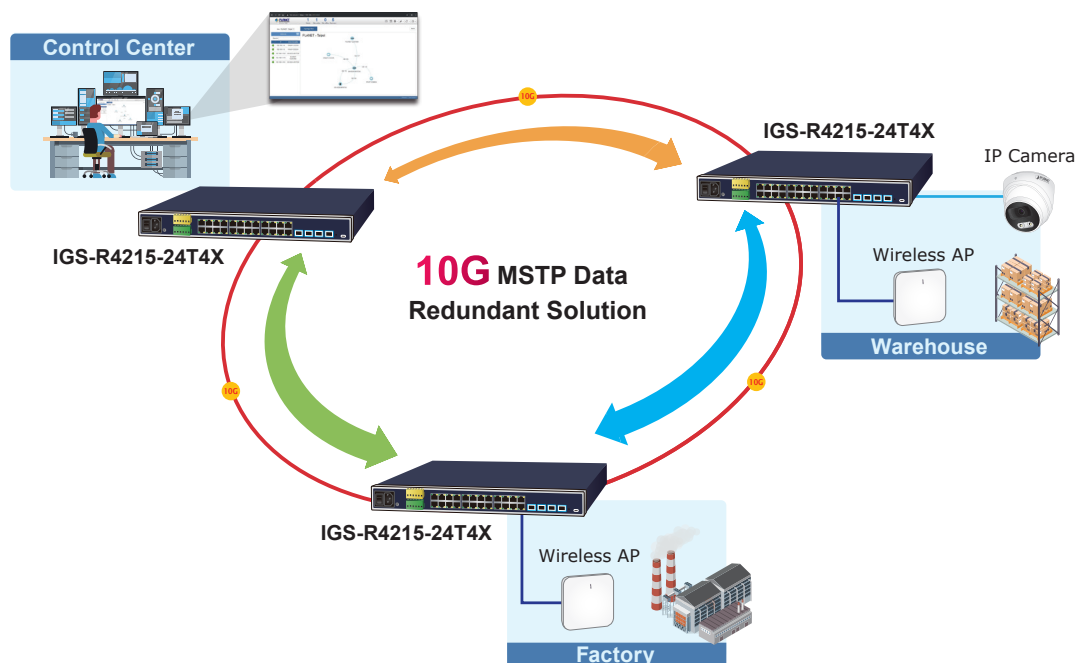
Factory

Industrial-grade Switch for Security and Automation

The IGS-R4215-24T4X's is particularly designed for heavy industries, such as factories, harbors, warehouses, and more. It is suitable for buildings where security is strictly enforced. With **24 1000BASE-T ports** and **4 10GBASE-X SFP+** fiber optic uplink interfaces, the IGS-R4215-24T4X can easily build an IP phone system, IP surveillance system, security control system and wireless AP group in the harsh Industrial environment.
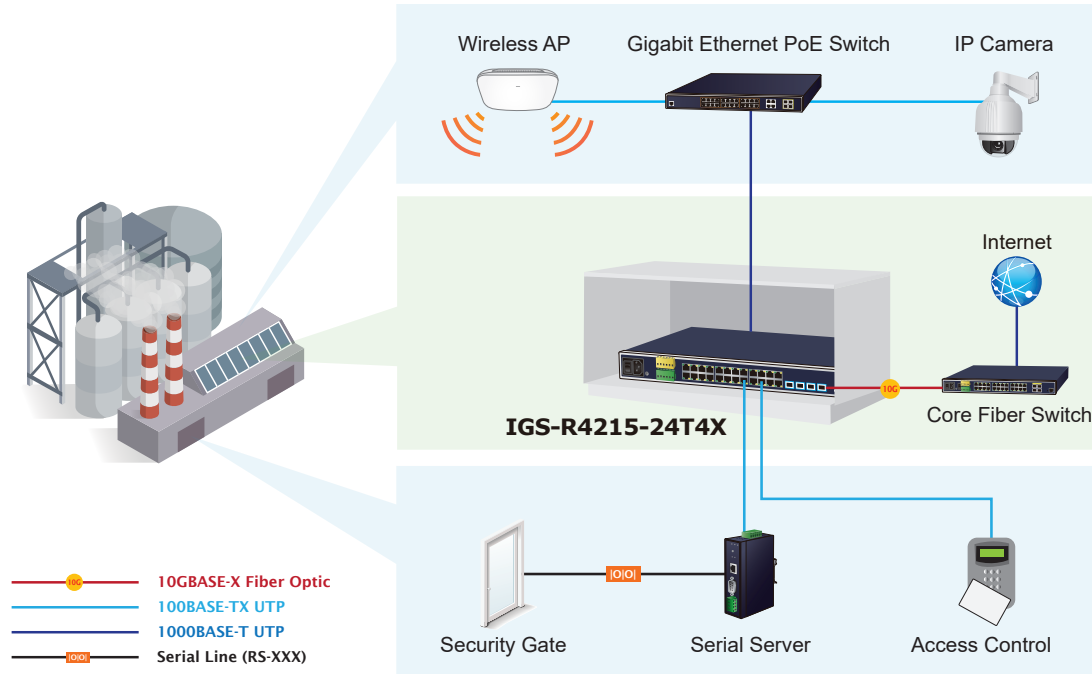
Specifications

Product	IGS-R4215-24T4X
Hardware Specifications	
Copper Ports	24 10/100/1000BASE-T RJ45 auto-MDI/MDI-X ports (Ports 1 to 24)
SFP+	4 10GBASE-SR/LR SFP+ interfaces (Ports XG1 to XG4) Backward compatible with 100M/1G/2.5GBASE-SX/LX/BX transceivers
Console	1 x USB Type C to RS232 serial port (115200,8, N, 1)
Reset Button	< 5 sec: System reboot > 5 sec: Factory default
Terminal Block	Removable 6-pin terminal block - Pin 1/2 for Power 1; Pin 3/4 for fault alarm; Pin 5/6 for Power 2 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 port breakdown and power failure. Alarm relay current carry ability: 1A @ 24V AC
Digital Input (DI)	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 (DO)	2 digital output (DO) - Open collector to 24V DC, 100mA max.
Enclosure	IP30 metal case
Installation	Rack-mount kit
Dimensions (W x D x H)	440 x 200 x 44.5 mm, 1U height
Weight	2826g
Power Requirements	DC: 24-60V, 1.5A (max.) AC: 100~240V, 50/60Hz, 1A (max.)

Power Consumption/ Dissipation	DC: Max. 7.86 watts / 26.82 BTU (system on)
	    Max. 24.06 watts / 82.1 BTU (Full loading)
	AC: Max. 6.9 watts / 23.54 BTU (system on)
	    Max. 19.3 watts / 65.85 BTU (Full loading)

EFT Protection	6KV DC
ESD Protection	6KV DC
LED	**System:** DC1 (**Green**) DC2 (**Green**) AC (**Green**) Alarm (**Red**) Ring (**Green**) R.O. (**Green**) I/O (**Red**) **Per 10/100/1000T RJ45:** 1000 LNK/ACT (**Green**) 10/100 LNK/ACT (**Amber**) **Per 10G SFP+ Interface:** 1G/2.5G LNK/ACT (**Green**) 100/10G LNK/ACT (**Amber**)

Switching Specifications

Switch Architecture	Store-and-forward
Switch Fabric	128Gbps/non-blocking
Switch Throughput@64Bytes	95.23Mpps @64Bytes
Address Table	16K MAC address table with auto learning function
Shared Data Buffer	12Mbits
Flow Control	IEEE 802.3x pause frame for full duplex Back pressure for half duplex
Jumbo Frame	12KBytes

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 4094 VLAN IDs
Link Aggregation	IEEE 802.3ad LACP/Static Trunk - Static Port Trunking, (Max. 8 groups with 8 ports for each group) - Dynamic LACP (Max. 8 groups with 8 ports for each group)
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 (v1/v2/v3) Snooping IGMP Querier Up to 256 multicast groups
MLD Snooping	IPv6 MLD snooping v2, v3, up to 256 multicast groups
QoS	8 mapping ID to 8 level priority queues - Port number - 802.1p priority - 802.1Q VLAN tag - 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	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	USB to RS232 console
	Web browser
	Telnet
	SNMP v1, v2c
Secure Management Interfaces	SSHv2, TLS v1.2, SNMP v3
System Management	Firmware upgrade by HTTP/TFTP protocol through Ethernet network
	LLDP protocol
	SNTP
	PLANET Smart Discovery Utility
	PLANET NMS System, NMSViewerPro and CloudViewerPro App
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

Standards Conformance

Regulatory Compliance	FCC Part 15 Class A, CE	
Standards Compliance	IEEE 802.3 10BASE-T	IEEE 802.1ab LLDP
	IEEE 802.3u 100BASE-TX/100BASE-FX	IEEE 802.3az Energy Efficient Ethernet (EEE)
	IEEE 802.3z Gigabit SX/LX	RFC 768 UDP
	IEEE 802.3ab Gigabit 1000T	RFC 783 TFTP
	IEEE 802.3bz 2.5GBASE-X	RFC 791 IP
	IEEE 802.3ae 10Gb/s Ethernet	RFC 792 ICMP
	IEEE 802.3x Flow Control and Back Pressure	RFC 2068 HTTP
	IEEE 802.3ad Port Trunk with LACP	RFC 1112 IGMP v1
	IEEE 802.1D Spanning Tree Protocol	RFC 2236 IGMP v2
	IEEE 802.1w Rapid Spanning Tree Protocol	RFC 3376 IGMP v3
	IEEE 802.1s Multiple Spanning Tree Protocol	RFC 2710 MLD v1
	IEEE 802.1p Class of Service	RFC 3810 MLD v2
	IEEE 802.1Q VLAN Tagging	ITU-T G.8032 ERPS Ring

Environment

Operating	Temperature: -10 ~ 60 degrees C for AC power input
	Temperature: -40 ~ 75 degrees C for DC power input
	Relative Humidity: 5 ~ 95% (non-condensing)
Storage	Temperature: -40 ~ 80 degrees C
	Relative Humidity: 5 ~ 95% (non-condensing)

Ordering Information

IGS-R4215-24T4X	Industrial L2/L4 24-Port 10/100/1000T + 4-Port 10G SFP+ Managed Ethernet Switch

Related Products

IGS-4215-8T4X	Industrial L2/L4 8-Port 10/100/1000T + 4-Port 10G SFP+ Managed Ethernet Switch
IGS-4215-8UP4X	Industrial L2/L4 8-Port 10/100/1000T 802.3bt PoE + 4-Port 10G SFP+ Managed Ethernet Switch
IGS-4215-16P2T2S	Industrial 16-Port 10/100/1000T 802.3at PoE + 2-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Ethernet Switch
IGS-4215-16T2S/IGS-4215-16T2S-U	Industrial L2/L4 16-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-4215-8P2T2S	Industrial 8-Port 10/100/1000T 802.3at PoE + 2-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch
IGS-4215-8T2S	Industrial L2/L4 8-Port 10/100/1000T + 2-Port 100/1000X SFP 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
IGS-4215-4P4T	Industrial 4-Port 10/100/1000T 802.3at PoE + 4-Port 10/100/1000T Managed Switch
IGS-4215-4T2S	Industrial L2/L4 4-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch

Available SFP/SFP+ Modules

10 Gigabit Ethernet Transceiver (10GBASE-SX/LX SFP+)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength	Operating Temp.
MTB-TSR	10G	Dual LC/UPC	Multi-Mode	300m	850nm	-40 ~ 85°C
MTB-TSR2	10G	Dual LC/UPC	Single Mode	2km	1310nm	-40 ~ 85°C
MTB-TLR	10G	Dual LC/UPC	Single Mode	10km	1310nm	-40 ~ 85°C
MTB-TLR20	10G	Dual LC/UPC	Single Mode	20km	1310nm	-40 ~ 85°C
MTB-TLR40	10G	Dual LC/UPC	Single Mode	40km	1310nm	-40 ~ 85°C
MTB-TLR60	10G	Dual LC/UPC	Single Mode	60km	1550nm	-40 ~ 85°C
MTB-TLR80	10G	Dual LC/UPC	Single Mode	80km	1550nm	-40 ~ 85°C

10 Gigabit Ethernet Transceiver (10GBASE-BX, Single Fiber Bi-directional SFP+)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (TX)	Wavelength (RX)	Operating Temp.
MTB-TLA20	10G	Simplex LC/UPC	Single Mode	20km	1270nm	1330nm	-40 ~ 85°C
MTB-TLB20	10G	Simplex LC/UPC	Single Mode	20km	1330nm	1270nm	-40 ~ 85°C
MTB-TLA40	10G	Simplex LC/UPC	Single Mode	40km	1270nm	1330nm	-40 ~ 85°C
MTB-TLB40	10G	Simplex LC/UPC	Single Mode	40km	1330nm	1270nm	-40 ~ 85°C
MTB-TLA60	10G	Simplex LC/UPC	Single Mode	60km	1270nm	1330nm	-40 ~ 85°C
MTB-TLB60	10G	Simplex LC/UPC	Single Mode	60km	1330nm	1270nm	-40 ~ 85°C

2.5 Gigabit Ethernet Transceiver (2500BASE-SX/LX SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength	Operating Temp.
MGB-2GTSR	2.5G	Dual LC/UPC	Multi-Mode	300m	850nm	-40 ~ 85°C
MGB-2GTLR2	2.5G	Dual LC/UPC	Single Mode	2km	1310nm	-40 ~ 85°C
MGB-2GTLR20	2.5G	Dual LC/UPC	Single Mode	20km	1310nm	-40 ~ 85°C

2.5 Gigabit Ethernet Transceiver (2500BASE-BX, Single Fiber Bi-directional SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (TX)	Wavelength (RX)	Operating Temp.
MGB-2GTLA20	2.5G	Simplex LC/UPC	Single Mode	20km	1310nm	1550nm	-40 ~ 85°C
MGB-2GTLB20	2.5G	Simplex LC/UPC	Single Mode	20km	1550nm	1310nm	-40 ~ 85°C

Gigabit Ethernet Transceiver (1000BASE-T)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength	Operating Temp.
MGB-TGT	1G	Copper	--	100m	--	-40 ~ 85°C

Gigabit Ethernet Transceiver (1000BASE-SX/LX SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength	Operating Temp.
MGB-TSX	1G	Dual LC/UPC	Multi-Mode	550m	850nm	-40 ~ 85°C
MGB-TSX2	1G	Dual LC/UPC	Multi-Mode	2km	1310nm	-40 ~ 85°C
MGB-TLX	1G	Dual LC/UPC	Single Mode	20km	1310nm	-40 ~ 85°C
MGB-TL40	1G	Dual LC/UPC	Single Mode	40km	1310nm	-40 ~ 85°C
MGB-TL80	1G	Dual LC/UPC	Single Mode	80km	1550nm	-40 ~ 85°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-TLA	1G	Simplex LC/UPC	Multi-Mode	2km	1310nm	1550nm	-40 ~ 85°C
MGB-TLB	1G	Simplex LC/UPC	Multi-Mode	2km	1550nm	1310nm	-40 ~ 85°C
MGB-TLA10	1G	Simplex LC/UPC	Single Mode	10km	1310nm	1550nm	-40 ~ 85°C
MGB-TLB10	1G	Simplex LC/UPC	Single Mode	10km	1550nm	1310nm	-40 ~ 85°C
MGB-TLA20	1G	Simplex LC/UPC	Single Mode	20km	1310nm	1550nm	-40 ~ 85°C
MGB-TLB20	1G	Simplex LC/UPC	Single Mode	20km	1550nm	1310nm	-40 ~ 85°C
MGB-TLA40	1G	Simplex LC/UPC	Single Mode	40km	1310nm	1550nm	-40 ~ 85°C
MGB-TLB40	1G	Simplex LC/UPC	Single Mode	40km	1550nm	1310nm	-40 ~ 85°C
MGB-TLA80	1G	Simplex LC/UPC	Single Mode	80km	1490nm	1550nm	-40 ~ 85°C
MGB-TLB80	1G	Simplex LC/UPC	Single Mode	80km	1550nm	1490nm	-40 ~ 85°C
MGB-TLA120	1G	Simplex LC/UPC	Single Mode	120km	1490nm	1550nm	-40 ~ 85°C
MGB-TLB120	1G	Simplex LC/UPC	Single Mode	120km	1550nm	1490nm	-40 ~ 85°C

Fast Ethernet Transceiver (100BASE-FX SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength	Operating Temp.
MFB-TFX	100M	LC	Multi-Mode	2km	1310nm	-40 ~ 85°C
MFB-TF20	100M	LC	Single Mode	20km	1310nm	-40 ~ 85°C
MFB-TF120	100M	LC	Single Mode	120km	1550nm	-40 ~ 85°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-TSA	155M	LC	Multi-Mode	2km	1310nm	1550nm	-40 ~ 85°C
MFB-TSB	155M	LC	Multi-Mode	2km	1550nm	1310nm	-40 ~ 85°C
MFB-TFA20	100M	WDM/ Bidi LC	Single Mode	20km	1310nm	1550nm	-40 ~ 85°C
MFB-TFB20	100M	WDM/ Bidi LC	Single Mode	20km	1550nm	1310nm	-40 ~ 85°C
MFB-TFA40	100M	WDM/ Bidi LC	Single Mode	40km	1310nm	1550nm	-40 ~ 85°C
MFB-TFB40	100M	WDM/ Bidi LC	Single Mode	40km	1550nm	1310nm	-40 ~ 85°C

IGS-R4215-24T4X