Industrial L2+ 24-Port 10/100/1000T 802.3at PoE + 4-Port 10G SFP+ Managed Ethernet Switch

Budget-friendly L2+ Manageable PoE Solution for Harsh Environments

PLANET IGS-R4215-24P4X **Rack-mount L2+ Managed Gigabit Switch** with **802.3at PoE+ injector function** and **one rack unit**, and without **fans** is designed for heavy industrial environments. With **IPv6/IPv4 dual stack management**, a built-in **Layer 3 static routing** capability, and a powerful L2/L4 Gigabit switching engine, this switch delivers an array of versatile features for industrial settings. Featuring **24 10/100/1000BASE-T ports with each port powering up to 36 watts**, **4 10GBASE-X SFP+ fiber slots and a USB Type C console port**, the IGS-R4215-24P4X 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 Capability

The four SFP+ ports built in the IGS-R4215-24P4X boast 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 can choose the transmission speed required to extend the network efficiently.

Redundant Ring, Fast Recovery for Critical Network Applications

The IGS-R4215-24P4X 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.
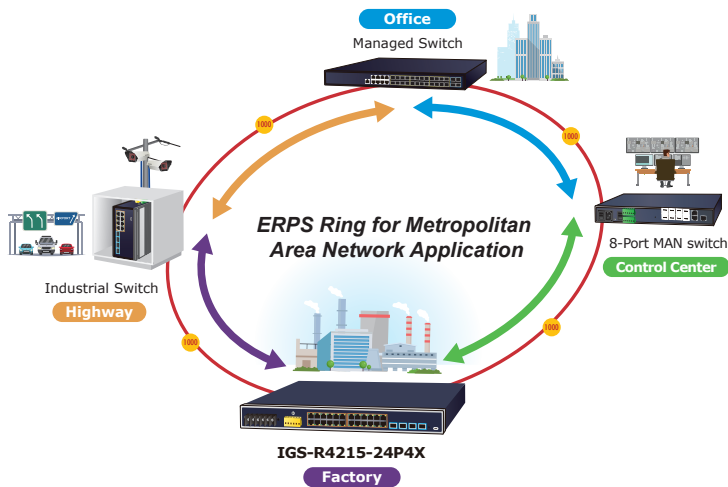
Physical Port

- **24 10/100/1000BASE-T** Gigabit Ethernet RJ45 ports with **IEEE 802.3at PoE+** Injector function
- **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.

Power over Ethernet

- Complies with IEEE 802.3at Power over Ethernet Plus, end-span PSE
- Power Up to 24 IEEE 802.3af PoE devices powered
- Supports PoE power up to 36 watts for each PoE port
- PoE budget
  - Dual power input: 440W
  - Single power input: 240W
- Auto detects powered device (PD)
- Circuit protection prevents power interference between ports
- Remote power feeding up to 100m in standard mode and 250m in extend mode
- PoE management features
  - Total PoE power budget control
  - Per port PoE function enable/disable
  - PoE admin-mode control
  - PoE port power feeding priority
  - Per PoE port power limitation
  - PD classification detection
  - PoE extension
- Intelligent PoE features
  - Temperature threshold control
  - PoE usage threshold control
  - PD alive check
  - PoE schedule
  - PD recycling schedule

Industrial Case and Installation

- IP30 metal case
- 19-inch rack-mountable design
- Dual 48~54V, redundant power with reverse polarity protection

ERPS Ring for Metropolitan Area Network Application

Office
Managed Switch

8-Port MAN switch
Control Center

Industrial Switch
Highway

IGS-R4215-24P4X
Factory

Cybersecurity Network Solution to Minimize Security Risks

The IGS-R4215-24P4X supports SSHv2 and TLSv1.2 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.

Layer 3 IPv4 and IPv6 VLAN Routing for Secure and Flexible Management

The IGS-R4215-24P4X switch not only provides ultra high transmission performance, and excellent Layer 2 and Layer 4 technologies, but also Layer 3 IPv4 and IPv6 VLAN routing feature which allows to cross over different VLANs and different IP addresses for the purpose of having a highly-secure, flexibly-managed and simple networking application.

Robust Layer 2 Features

The IGS-R4215-24P4X 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-R4215-24P4X 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.

- – Active-active redundant power failure protection
- – Backup of catastrophic power failure on one supply
- – Fault tolerance and resilience
- • Supports EFT protection for 6KV DC power and 6KV 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 mode), auto-negotiation, and auto MDI/MDI-X
- • Features Store-and-Forward mode with wire-speed filtering and forwarding rates
- • Prevents packet loss with back pressure (half-duplex) and IEEE 802.3x pause frame flow control (full-duplex)
- • 16K MAC address table size
- • 12K jumbo frame
- • Automatic address learning and address aging
- • Supports CSMA/CD protocol

Layer 3 IP Routing Features

- • Supports maximum 32 static routes and route summarization
- • Routing interface provides per VLAN routing mode

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

L2/L4
Managed Switch

L2/L4
Managed Switch
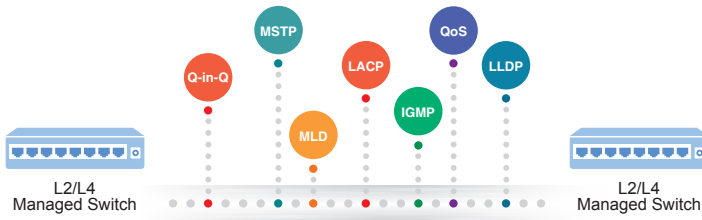
Efficient Traffic Control

The IGS-R4215-24P4X 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.

Enhancing Network Security

PLANET IGS-R4215-24P4X 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. 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.

User-friendly Management Interfaces

For efficient management, the IGS-R4215-24P4X is equipped with **console**, **Web** and **SNMP** management interfaces.

- With the built-in **Web-based** management interface, the IGS-R4215-24P4X 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-R4215-24P4X offers secure remote management by supporting **SSHv2**, **TLSv1.2** and **SNMP v3** connections which encrypt the packet content at each session.
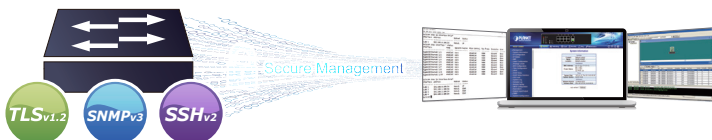
- Supports **Link Aggregation**
  - IEEE 802.3ad Link Aggregation Control Protocol (LACP)
  - Cisco ether-channel (Static Trunk)
  - Maximum 8 trunk groups, up to 8 ports per trunk group
- Provides port mirror (many-to-1)
- Loop protection to avoid broadcast loops
- Supports ERPS (Ethernet Ring Protection 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
  - 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
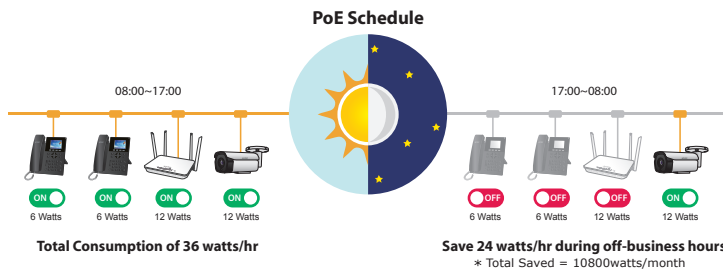
IPv6/IPv4 Dual Stack Management

Supporting both IPv6 and IPv4 protocols, the IGS-R4215-24P4X 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.
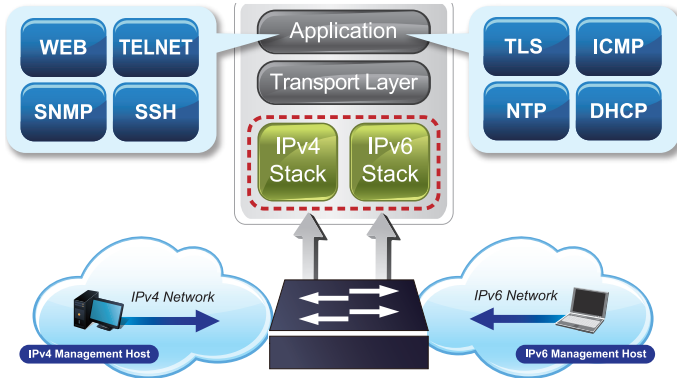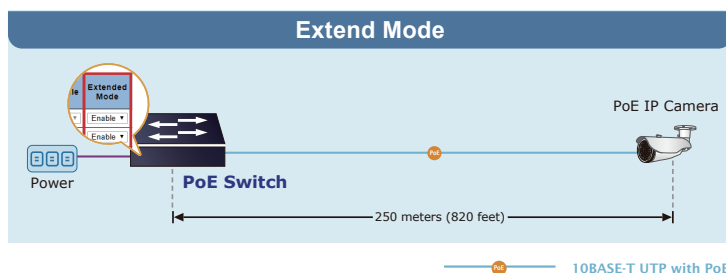

PoE Schedule for Energy Savings

Under the global trend of energy saving and contributing to environmental protection, the IGS-R4215-24P4X can effectively control the power supply besides its capability of giving high watts power. The **"PoE schedule"** function helps you enable or disable PoE power feeding for each PoE port during specified time intervals, which is a powerful function to help SMBs or enterprises save power and budget. It also increases security by powering off PDs that should not be in use during non-business hours.

PoE Schedule

08:00~17:00

ON | ON | ON | ON
6 Watts | 6 Watts | 12 Watts | 12 Watts

Total Consumption of 36 watts/hr

17:00~08:00

OFF | OFF | OFF | ON
6 Watts | 6 Watts | 12 Watts | 12 Watts

Save 24 watts/hr during off-business hours
∗ Total Saved = 10800watts/month

802.3at PoE+ Power and Ethernet Data Transmission Distance Extension

In the "Extend" operation mode, the IGS-R4215-24P4X operates on a per-port basis at 10Mbps duplex operation but can support 20-watt PoE power output over a distance of up to 250 meters overcoming the 100m limit on Ethernet UTP cable. With this brand-new feature, the IGS-R4215-24P4X provides an additional solution for 802.3at/af PoE distance extension, thus saving the cost of Ethernet cable installation.

Extend Mode

Extended Mode
Enable
Enable

Power

PoE Switch

PoE IP Camera

250 meters (820 feet)

10BASE-T UTP with PoE

- IP Source Guard prevents IP spoofing attacks
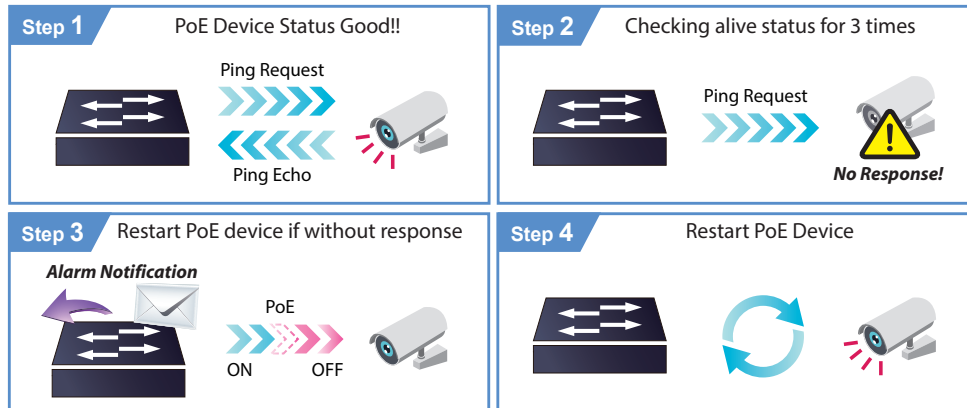- DoS Attack Prevention

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 HTTPs/TFTP
  - Configuration upload/download through HTTPs/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

Intelligent Powered Device Alive Check

The IGS-R4215-24P4X can be configured to monitor connected PD (powered device) status in real time via ping action. Once the PD stops working and responding, the IGS-R4215-24P4X will resume the PoE port power and bring the PD back to work. It will greatly enhance the network reliability through the PoE port resetting the PD's power source and reducing the administrator's management burden.

PD Alive Check

Step 1	PoE Device Status Good!!
	Ping Request
	Ping Echo

Step 2	Checking alive status for 3 times
	Ping Request
	No Response!

Step 3	Restart PoE device if without response
Alarm Notification	
	PoE
	ON OFF

Step 4	Restart PoE Device

Scheduled Power Recycling

The IGS-R4215-24P4X allows each of the connected PoE IP cameras or PoE wireless access points to reboot at a specified time each week. Therefore, it will reduce the chance of IP camera or AP crash resulting from buffer overflow.

IP Camera

AP Router

IP Phone

PoE lighting

Door Phone

S M T W T F S

Automatically Reboot
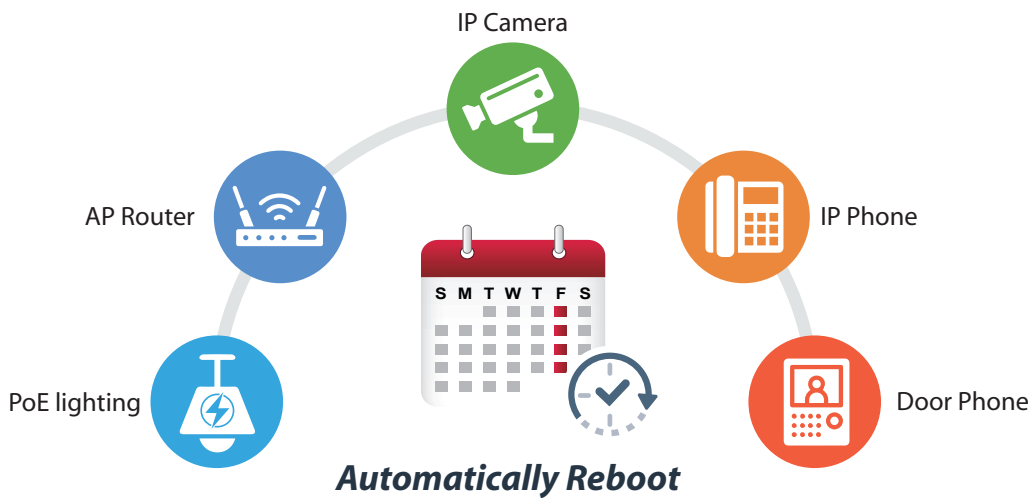
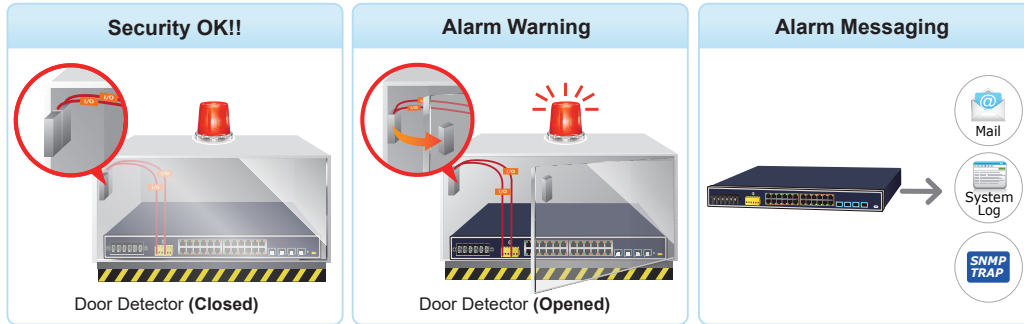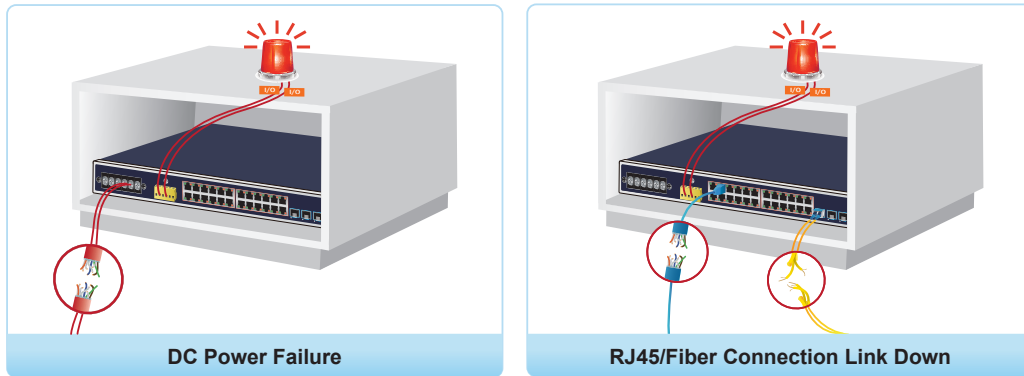### Digital Input and Digital Output for External Alarm

The IGS-R4215-24P4X 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-R4215-24P4X port shows link down, link up or power failure.

Digital Input

Security OK!!	Alarm Warning	Alarm Messaging
Door Detector (Closed)	Door Detector (Opened)	

Digital Output

DC Power Failure	RJ45/Fiber Connection Link Down

### Effective Alarm Alert for Better Protection

The IGS-R4215-24P4X 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

DC Power Failure or **RJ45/Fiber Connection Link Down**
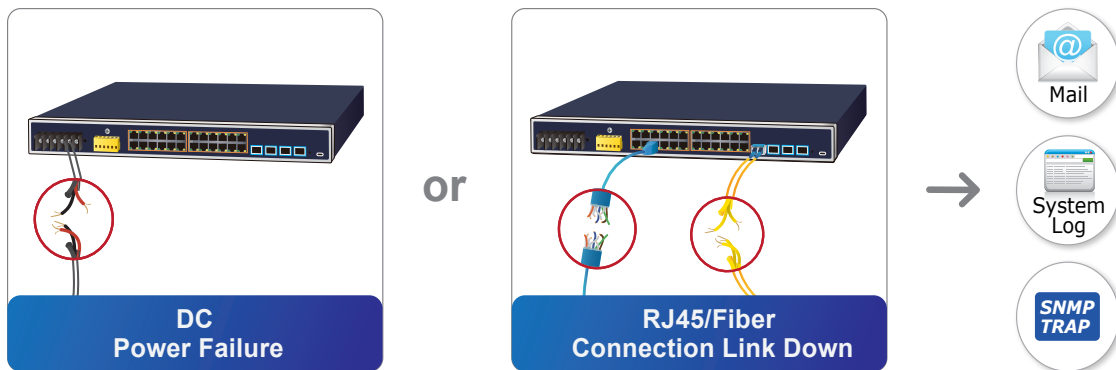
Intelligent SFP Diagnosis Mechanism

The IGS-R4215-24P4X 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 |
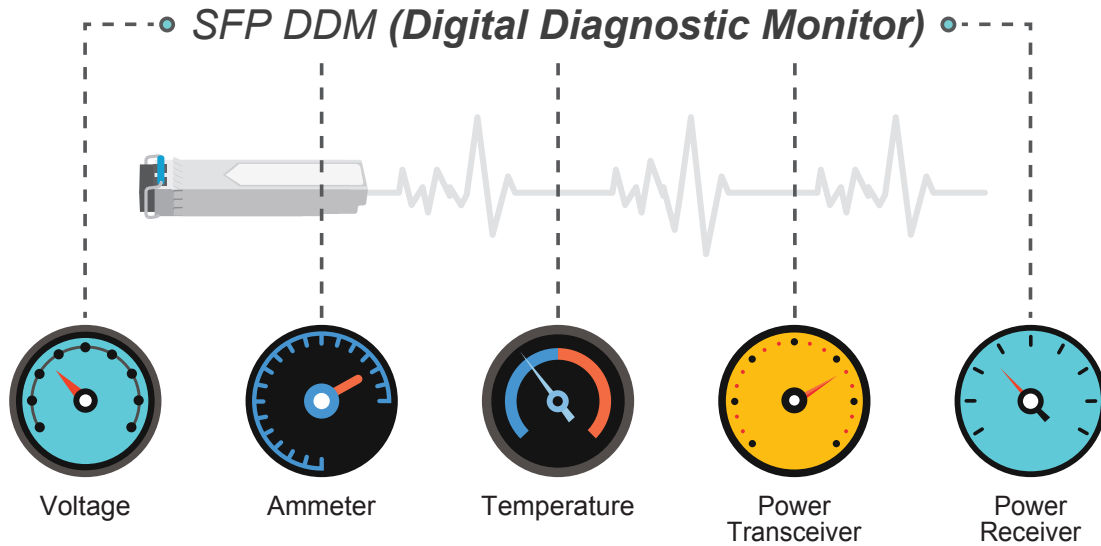
Remote Management Solution

PLANET's **Universal Network Management System (UNI-NMS)**, **NMSViewerPro** and **CloudViewerPro app** provide robust support for IT staff in effectively managing and monitoring all network devices, including the IGS-R4215-24P4X, from remote locations. Tailored for deployment in both enterprises and industries where the IGS-R4215-24P4X 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-R4215-24P4X 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.
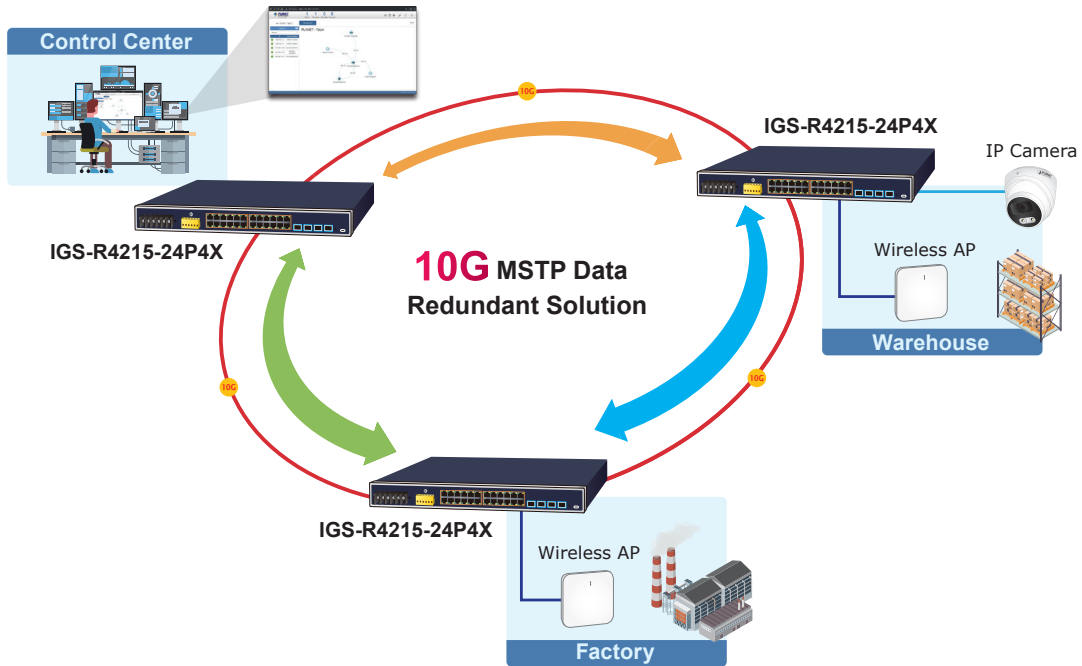
Industrial Area Department/Workgroup PoE Switch

Providing up to 24 PoE+, in-line power interfaces, the IGS-R4215-24P4X can easily build a power centrally controlled for IP phone system, IP camera system, or wireless AP group for Industrial network. For instance, 24 PoE IP cameras or wireless access points can be easily installed around the corner in the industrial environment for surveillance demands or for a wireless roaming network. Without the power-socket limitation, the IGS-R4215-24P4X makes the installation of IP cameras or wireless AP easier and more efficient.

Specifications

Product	IGS-R4215-24P4X
Hardware Specifications	
Copper Ports	24 10/100/1000BASE-T RJ45 auto-MDI/MDI-X ports (Ports 1 to 24)
PoE Injector Port	24 ports with 802.3at PoE+ injector function (Ports 1 to 24)
SFP+ Interfaces	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	Fixed 6-pin terminal block for power input - 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: 3A @ 24V DC
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	3250g
Power Requirements	Dual 48-54V DC, 12A max.
Power Consumption/ Dissipation	Max. 10.7 watts / 36.6 BTU (system on) Max. 486 watts / 1658.4 BTU (Full loading)
EFT Protection	6KV DC
ESD Protection	6KV DC

LED	**System:**
	  DC1 (**Green**)
	  DC2 (**Green**)
	  Alarm (**Red**)
	  Ring (**Green**)
	  R.O. (**Green**)
	  I/O (**Red**)
	Per 10/100/1000T RJ45 PoE+ Ports:
	  Left: 1000 LNK/ACT (**Green**)
	  10/100 LNK/ACT (**Amber**)
	  Right: 802.3at (**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
Power over Ethernet	
PoE Standard	IEEE 802.3at Power over Ethernet Plus PSE
PoE Power Supply Type	End-span
PoE Power Output	IEEE 802.3af Standard - Per port 48V~54V DC (depending on the power supply), max. 15.4 watts IEEE 802.3at Standard - Per port 50V~54V DC (depending on the power supply), max. 36 watts
Power Pin Assignment	1/2(+), 3/6(-)

Power Power Budget	Single Power input: 240W maximum
	Dual Power input: 440W maximum
	* Dual power input must be the same as DC voltage, like dual 54V.
Max. Number of Class 2 PDs	24
Max. Number of Class 3 PDs	24
Max. Number of Class 4 PDs	16
PoE Management Functions	
PoE Management	PD Alive Check
	Scheduled Power Recycling
	PoE Schedule
	PoE Usage Monitoring
	PoE Extension
Enhanced PoE Mode	Standard/ Legacy/ Force
Active PoE Device Live Detection	Yes
PoE Power Recycling	Yes, daily or predefined schedule
PoE Schedule	4 schedule profiles
PoE Extend Mode	Yes, max. up to 250 meters
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 (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
Layer 3 Functions	
IP Interfaces	Max. 64 VLAN interfaces
Routing Table	Max. 32 routing entries
Routing Protocols	IPv4 hardware static routing
	IPv6 hardware static routing
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	Console/ Telnet/ Web browser/ 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
	RFC 3621 Power Ethernet MIB

Standards Conformance

Regulatory 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 802.3bz 2.5GBASE-X
	IEEE 802.3ae 10Gb/s Ethernet
	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 802.1ab LLDP
	IEEE 802.3af Power over Ethernet
	IEEE 802.3at Power over Ethernet Plus
	IEEE 802.3az Energy Efficient Ethernet (EEE)
	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
	ITU-T G.8032 ERPS Ring

Environment

Operating	Temperature: -40 ~ 75 degrees C
	Relative Humidity: 5 ~ 95% (non-condensing)
Storage	Temperature: -40 ~ 85 degrees C
	Relative Humidity: 5 ~ 95% (non-condensing)

Ordering Information

IGS-R4215-24P4X	Industrial L2+ 24-Port 10/100/1000T 802.3at PoE + 4-Port 10G SFP+ Managed Ethernet Switch

Related Products

IGS-R4215-24T4X	Industrial L2/L4 24-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-4215-8T4X	Industrial L2/L4 8-Port 10/100/1000T + 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-R4215-24P4X