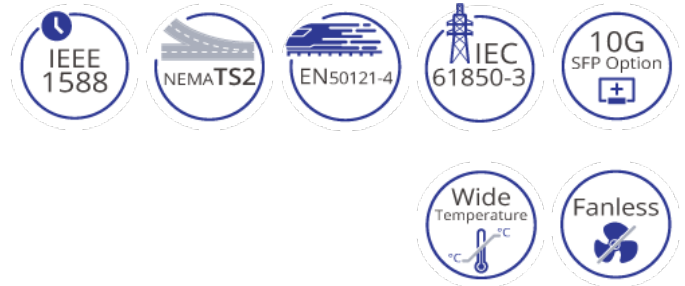


# IG5 Rack Series

IEC 61850-3/IEEE 1613 Lite L3 Hardened Managed 24-port Gigabit and 4-port 1G/10G SFP+ Ethernet Switch



## Overview

EtherWAN's IG5 series is a hardened 10-gigabit rack-mounted managed Ethernet switch platform, designed to support high bandwidth switching in harsh environments. Equipped with up to 24 gigabit SFP ports and 4 10-gigabit SFP+ ports, along with the IG5 series provides an ideal solution for aggregating network switches at the edge and connectivity into the hub/core. In addition, this innovative device supports the IEEE 1588v2 standard, which defines the Precision Time Protocol (PTP), used to synchronize clocks throughout a packet-switched network.

A broad range of management features and options includes IEEE 1588vs (PTP) for synchronizing clocks, port security, IGMP snooping, VLAN support, GARP protocols, link aggregation, and ACL, configurable via web GUI, Telnet, SSH, SNMP, RMON, HTTPS and SFTP. With the hardened specifications, the IG5 series is designed to operate at -40 to 75°C in harsh environments, and is IEC 61850 & IEEE 1613 compliant, capable of operating under high EMI environments, making it an ideal choice for mission-critical applications.

EtherWAN — "When Connectivity is Crucial."

## Highlights

### + High Bandwidth and Versatility

24 full gigabit ports for high bandwidth connections  
4 x 1G/10G SFP+ uplink ports for fiber connections  
128 Gbps full duplex switching capacity  
Variant of optical and electrical port interface options

### + Time Stamped Supported

IEEE 1588v2  
- Available in all ports  
- Hardware-based time stamping  
- Operation as transparent clock

### + Layer 3 Functionality

Static routing, RIP v1/v2, and OSPF  
Redundancy with VRRPv2  
Reduces amount of broadcast traffic

### + Flexible Rack Cabinet Installation

Dual LED Panel design, support rear and front display  
Concise communication status display  
Considerable ease of cabling management

### + Designed for Crucial Environments

Wide Operation Temperature range from -40 to 75°C(-40 to 167°F)  
-40 to 85°C operation meets IEC 60068-2-2 environmental type testing  
Thermal shock and electrical noise resistance

### + Support

Complimentary technical support  
Free firmware upgrades and notifications  
Limited Lifetime Warranty

## Features

### + Interface

CLI, Telnet, Web GUI

### + Management

Firmware Upgrade  
Configuration Backup  
DHCP Server/Client  
RMON (Remote Monitoring)  
Port Mirroring  
NTP (Network Time Protocol) Synchronization  
LLDP (Link Layer Discovery Protocol)  
IPv4/IPv6  
SNMP v1/v2c/v3  
Modbus

### + Security

MAC Address Filtering  
Enable/Disable Port  
Storm Control  
System Logging  
IEEE 802.1x LAN Access Control  
Remote Authentication through RADIUS and TACACS+  
Complex Password Support  
Multi-user Login and Privileged Access Management  
SSH for CLI and Telnet Security  
SSL and HTTPS for Web Security  
ACL (Access Control List, up to 4096 Entries)

### + Layer 2 Features

**Auto-negotiation for Port Speed and Duplex**  
Flow Control  
IEEE 802.3x full duplex mode  
Back-pressure half duplex mode

#### **Redundant Protocols**

IEEE 802.1D STP  
IEEE 802.1w RSTP  
IEEE 802.1s MSTP  
EtherWAN's Alpha-Ring network fault recovery

#### **VLANs**

IEEE 802.1Q Tag VLANs  
GVRP  
GMRP

#### **Link Aggregation**

Static Trunk (4 groups)  
IEEE 802.3ad LACP

#### **IGMP Snooping v1/v2/v3**

### + Layer 3 Features

#### **IP Packet Routing**

Maximum number of routes in hardware: 64 entries  
Static Routing  
RIP v1/v2  
OSPF v2

#### **Routing Redundancy**

VRRPv2

## + Quality of Service (QoS)

Priority Queues: 8 Queues Per Port  
Traffic Classification Based on IEEE 802.1p CoS (Cost of Service), DSCP (Differentiated Services Code Point), WRR (Weighted Round Robin), and Strict Mode  
Rate Limiting (Ingress/Egress)

## + Software Properties and Performance

### Switching Fabric

128Gbps

### Forwarding Rate

95.23Mpps

### Max VLANs

256 (4096 VID)

### Jumbo Frame Size

9KB

### MAC Table Size

16K

### Packet Buffer Memory

12M bits

## Specifications

### + Interface

#### Ethernet

10/100/1000BASE-T(X): 0, 8, 16 or 24 ports

100/1000BASE SFP: 0, 8, 16 or 24 ports

1G/10G SFP+: 4 ports

#### Console

1 x RJ45

#### Digital Input

2 x Digital Input

Wet Contact: 0-3V for State 0; 13-30V for State 1;

Max input current: 8mA

Dry Contact: Logic Level 1–Close to GND; Logic Level 0–Open

#### Alarm Contact

2 x Relay output, current capacity

0.6A/30VDC

#### LED Indicators

Per Unit: Power 1, (Single Power models)

Power 2 (Dual Power models) (Green)

Per Port: Link/Activity (Green)

Per Port: Alarm (Red)

### + Physical

#### Casing Material

Metal

#### IP Rating

IP40

#### Dimensions

442 x 325 x 44mm (W x D x H)

17.4" x 12.8" x 1.73"

#### Weight

4.6kg (10.14lbs) / 4.0kg (8.82lbs)

#### Installation Type

Rack mounting

### + Environmental

#### Operating Temp.

-40 to 75°C (-40 to 167°F)

(-40°C to 85°C for IEC 60068-2-2 Environmental 16 hours)

#### Storage Temp.

-45 to 85°C (-49 to 185°F)

#### Relative Humidity

5% to 95% (non-condensing)

#### MTBF

446,556 hours

## + Technology

### Standards

IEEE 802.3 10BASE-T  
IEEE 802.3u 100BASE-TX/100BASE-FX  
IEEE 802.3ab 1000BASE-T  
IEEE 802.3ae 10Gigabit Ethernet  
IEEE 802.3ad link aggregation control  
IEEE 802.3z 1000BASE-SX/1000BASE-LX  
IEEE 802.3x full duplex and flow control  
IEEE 802.1D STP  
IEEE 802.1p QoS  
IEEE 802.1Q Tag VLANs  
IEEE 802.1s MSTP  
IEEE 802.1w RSTP  
IEEE 802.1x PNAC  
IEEE 802.1ab LLDP

### Forward/Filtering Rate

14,880pps for 10Mbps  
148,810pps for 100Mbps  
1,488,100pps for 1000Mbps  
14,881,000pps for 10Gbps

### Processing Type

Store-and-forward  
Auto-negotiation  
Half-duplex back-pressure and full-duplex flow control  
Auto MDI/MDIX

### System Memory

2Gb DDR3 SDRAM

### Flash Storage

1Gb

## + Regulatory

### ISO

Manufactured in ISO-9001 facility

### EMI

FCC Part 15B Class A  
VCCI Class A  
EN 61000-6-4

### EMS

EN 61000-6-2  
EN 61000-4-2 (ESD)  
EN 61000-4-3 (Radiated RFI)  
EN 61000-4-4 (Burst)  
EN 61000-4-5 (Surge)  
EN 61000-4-6 (Induced RFI)  
EN 61000-4-8 (Magnetic field)

### Safety

UL 62368-1

### Vibration

IEC 60068-2-6

### Shock

IEC 60068-2-27

### Free Fall

IEC 60068-2-31

### Industrial

EN 50121-4

### Power Substation

IEC 61850-3/IEEE 1613

## + Power

### Input

#### Dual Power

FTR: (Terminal Block)

24VDC to 48VDC (Nominal)

18 - 60VDC (Operational)

FWR: (Terminal Block)

100 - 250VDC or 100 - 240VAC (Nominal)

88 - 300VDC or 88 - 264VAC (Operational)

RCR: (AC Inlet)

100 - 240VAC

#### Single Power

FWS: (Terminal Block)

100 - 250VDC or 100 - 240VAC (Nominal)

88 - 300VDC or 88 - 264VAC (Operational)

RCS: (AC Inlet)

100 - 240VAC

#### Power Consumption

50W max.

#### Protection

Reverse Polarity Protection

## + Warranty

### Length

Limited Lifetime

### Details

[www.etherwan.com/support/warranty-policy](http://www.etherwan.com/support/warranty-policy)

## + What's Included

### Device

Ethernet Switch

### Cables

1 Console Cable

### Installation

Mounting brackets, screws

### Documentation

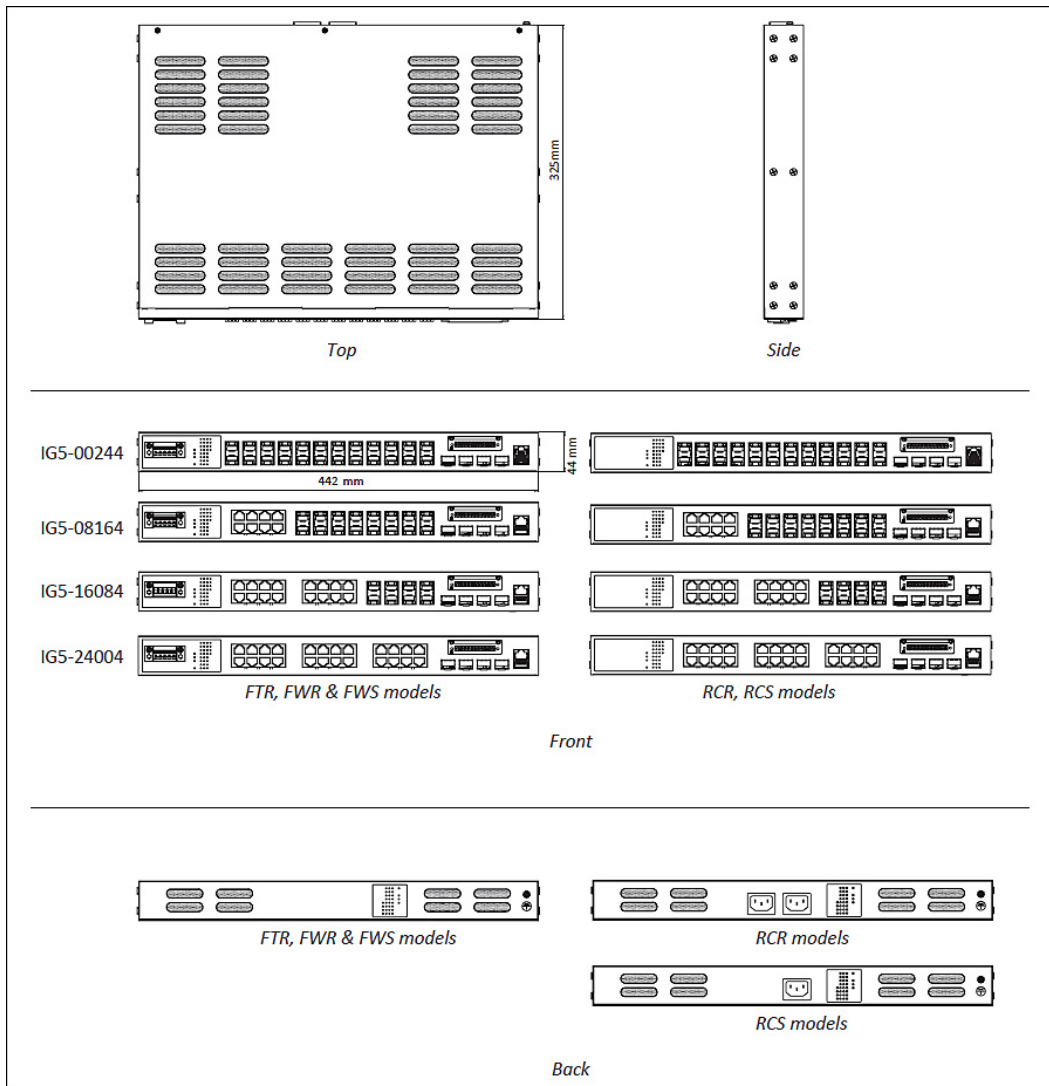
Quick Install Guide

### Power

1 AC Power Cord (RCS models)

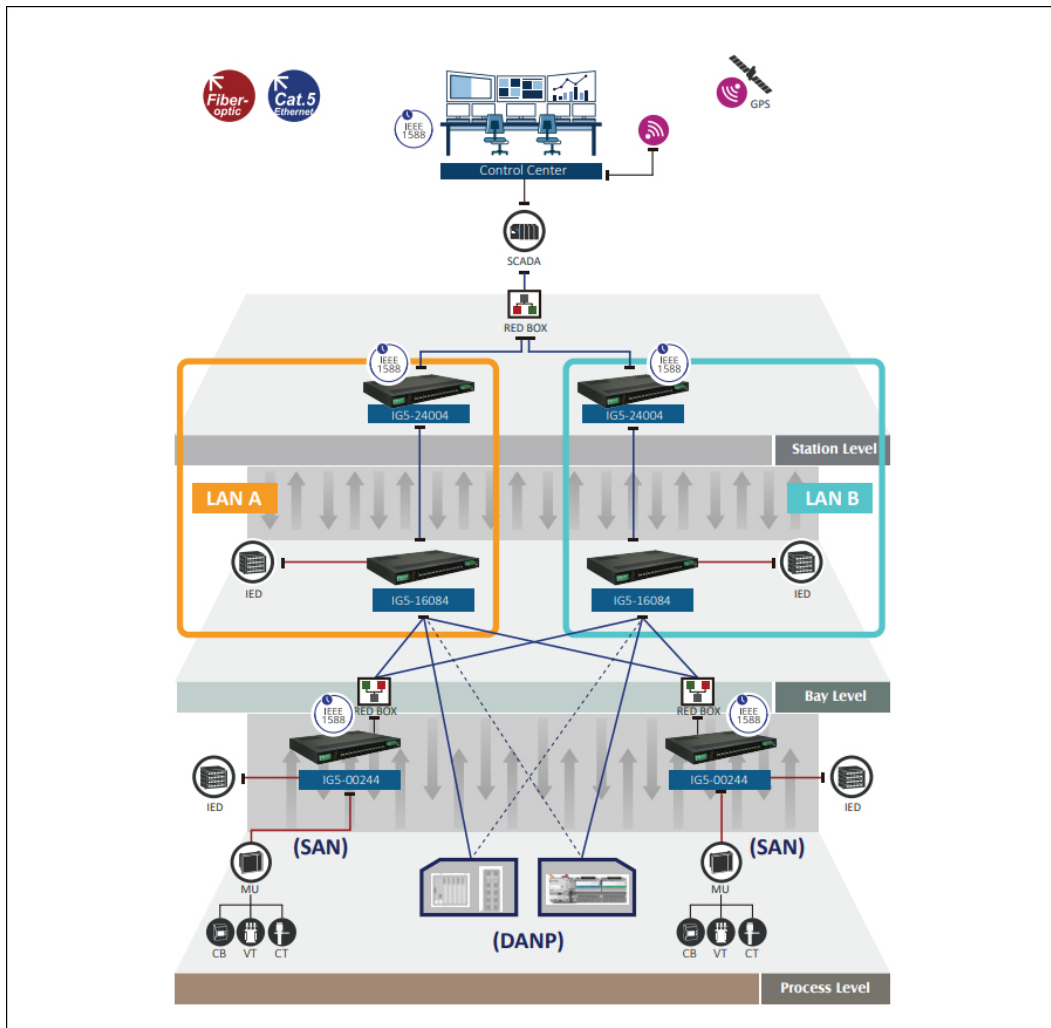
2 AC Power Cord (RCR models)

# Dimensions



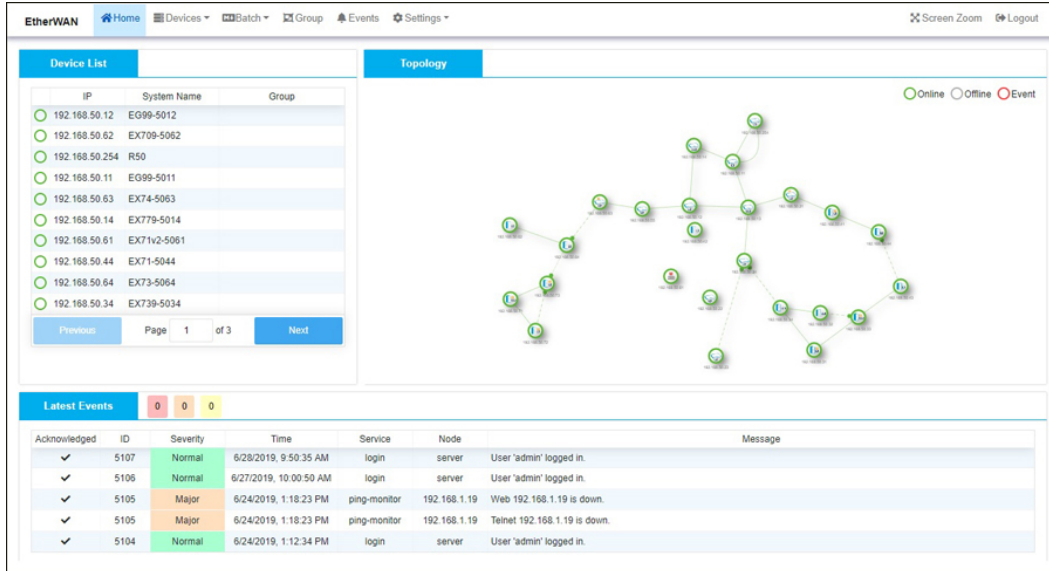


# Application



## Software

- [Network Management](#)    [eVue™ Network Configuration and Monitoring Tool](#)
- [Network Discovery](#)    [eLite™ Network Discovery and IP Configuration Tool](#)



The screenshot shows the EtherWAN web interface. At the top, there are navigation tabs: Home, Devices, Batch, Group, Events, and Settings. The main content area is divided into two sections: 'Device List' and 'Topology'.

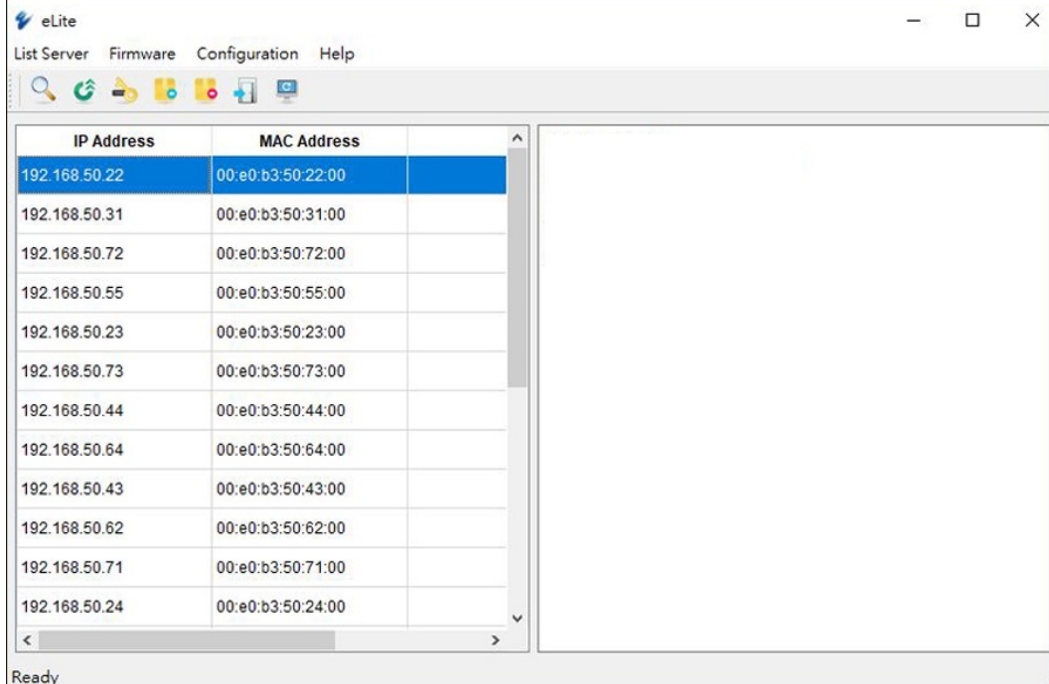
**Device List:** A table with columns for IP, System Name, and Group. It lists 13 devices with their respective IP addresses and system names.

IP	System Name	Group
192.168.50.12	EG99-5012	
192.168.50.62	EX709-5062	
192.168.50.254	R50	
192.168.50.11	EG99-5011	
192.168.50.63	EX74-5063	
192.168.50.14	EX779-5014	
192.168.50.61	EX71v2-5061	
192.168.50.44	EX71-5044	
192.168.50.64	EX73-5064	
192.168.50.34	EX739-5034	

**Topology:** A network diagram showing various nodes connected in a mesh-like structure. A legend indicates Online (green circle), Offline (grey circle), and Event (red circle).

**Latest Events:** A table showing recent events with columns for Acknowledged, ID, Severity, Time, Service, Node, and Message.

Acknowledged	ID	Severity	Time	Service	Node	Message
✓	5107	Normal	6/28/2019, 9:50:35 AM	login	server	User 'admin' logged in.
✓	5106	Normal	6/27/2019, 10:00:50 AM	login	server	User 'admin' logged in.
✓	5105	Major	6/24/2019, 1:18:23 PM	ping-monitor	192.168.1.19	Web 192.168.1.19 is down.
✓	5105	Major	6/24/2019, 1:18:23 PM	ping-monitor	192.168.1.19	Teinet 192.168.1.19 is down.
✓	5104	Normal	6/24/2019, 1:12:34 PM	login	server	User 'admin' logged in.



The screenshot shows the eLite web interface. At the top, there are navigation tabs: List Server, Firmware, Configuration, and Help. The main content area is a table with columns for IP Address and MAC Address.

IP Address	MAC Address
192.168.50.22	00:e0:b3:50:22:00
192.168.50.31	00:e0:b3:50:31:00
192.168.50.72	00:e0:b3:50:72:00
192.168.50.55	00:e0:b3:50:55:00
192.168.50.23	00:e0:b3:50:23:00
192.168.50.73	00:e0:b3:50:73:00
192.168.50.44	00:e0:b3:50:44:00
192.168.50.64	00:e0:b3:50:64:00
192.168.50.43	00:e0:b3:50:43:00
192.168.50.62	00:e0:b3:50:62:00
192.168.50.71	00:e0:b3:50:71:00
192.168.50.24	00:e0:b3:50:24:00

The interface also includes a search bar and a status bar at the bottom that says 'Ready'.

## Ordering Info

### + Model

IG5-24004YYY	24-port 10/100/1000BASE-T(X) + 4-port 1G/10G SFP+ Managed Ethernet Switch
IG5-16084YYY	16-port 10/100/1000BASE-T(X) + 8-port 100/1000BASE SFP + 4-port 1G/10G SFP+ Managed Ethernet Switch
IG5-08164YYY	8-port 10/100/1000BASE-T(X) + 16-port 100/1000BASE SFP + 4-port 1G/10G SFP+ Managed Ethernet Switch
IG5-00244YYY	24-port 100/1000BASE SFP + 4-port 1G/10G SFP+ Managed Ethernet Switch

### + Power Input & Operation Temp. (YYY)

FTR	24VDC to 48VDC Redundant (Terminal Block), Hardened Grade (-40 to 75°C)
FWR	88-300VDC or 100-240VAC Redundant (Terminal Block), Hardened Grade (-40 to 75°C)
RCR	100-240VAC Redundant (AC Inlet), Hardened Grade (-40 to 75°C)
FWS	88-300VDC or 100-240VAC (Terminal Block), Hardened Grade (-40 to 75°C)
RCS	100-240VAC (AC Inlet), Hardened Grade (-40 to 75°C)

### + Accessories

Part Number	Speed Info	Mode	Distance	Operating Temperature	Wavelength	DDM
EX-0155NSP-MB2L-A	100Mbps	Multi	2km	-40 to 85°C	1310nm	-
SFPMIS20M	100Mbps	Single	20km	-40 to 85°C	1310nm	✓
SFPGIM5AM	1000Mbps	Multi	275m/550m	-40 to 85°C	850nm	✓
SFPGIM02M	1000Mbps	Multi	2km	-40 to 85°C	1310nm	✓
SFPGIS10M	1000Mbps	Single	10km	-40 to 85°C	1310nm	✓
SFPTIM3AM	10Gbps	Multi	300m	-40 to 85°C	850nm	✓
SFPTIM3AM	10Gbps	Single	10km	-40 to 85°C	1310nm	✓

### + For more SFP, please visit website:

Hardened 100BASE SFP Modules	<a href="http://www.etherwan.com/products/sfp-fiber-transceiver">www.etherwan.com/products/sfp-fiber-transceiver</a>
Hardened Gigabit SFP Modules	<a href="http://www.etherwan.com/products/sfp-fiber-transceiver">www.etherwan.com/products/sfp-fiber-transceiver</a>
Hardened 10G SFP+ Modules	<a href="http://www.etherwan.com/products/sfp-fiber-transceiver">www.etherwan.com/products/sfp-fiber-transceiver</a>
DIN-Rail Power Supplies	<a href="http://www.etherwan.com/products/din-rail-power-supply">www.etherwan.com/products/din-rail-power-supply</a>

