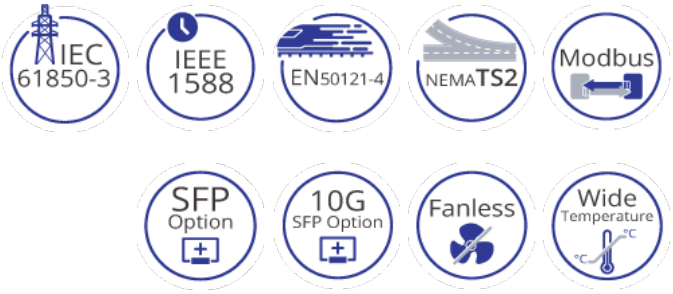
IG5 Rack Series

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



Overview

EtherWAN's InfraGreEn IG5 Rack series managed switching platform that combines the advantages of Layer 3 routing protocols with robust management features and enhanced specifications. With support for static routing, Routing Information Protocol (RIP) v1/v2, OSPF and Virtual Router Redundancy Protocol (VRRP), these switches deliver outstanding flexibility and security in a high performance and cost-effective solution.

The IG5 Rack series providing effective modularity through a wide range of port combination options. Supports full 28 ports gigabit transmission, and supports SFP+ to achieve 10G speed. Mountable on a 1U rack, equipped with EtherWAN's Alpha-Ring self-healing technology, providing less than 15ms fault recovery time making it ideal for applications intolerant to interruption, promote stronger communication networks.

This innovative device supports the IEEE 1588v2 standard, which defines the Precision Time Protocol (PTP), used to synchronize clocks throughout a packet-switched network. Wide range of Layer 2 features include port security, IGMP snooping, port-based VLAN, GARP, link aggregation and ACL, support variant security access method of SSH, SNMP, RMON, HTTPS and SFTP.

The hardened design can endure harsh environments from -40°C to 75°C with IEC 61850 & IEEE 1613 compliant, consistently perform stable performance 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

Layer 3 Functionality

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

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

Time Stamped Supported

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

Flexible Rack Cabinet Installation

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

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)

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)

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

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)

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

+ 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

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

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

+ Warranty

Length

Limited Lifetime

Details

www.etherwan.com/support/warranty-policy

+ What's Included

Device

Ethernet Switch

Cables

1 Console Cable

Installation

Mounting brackets, screws

Documentation

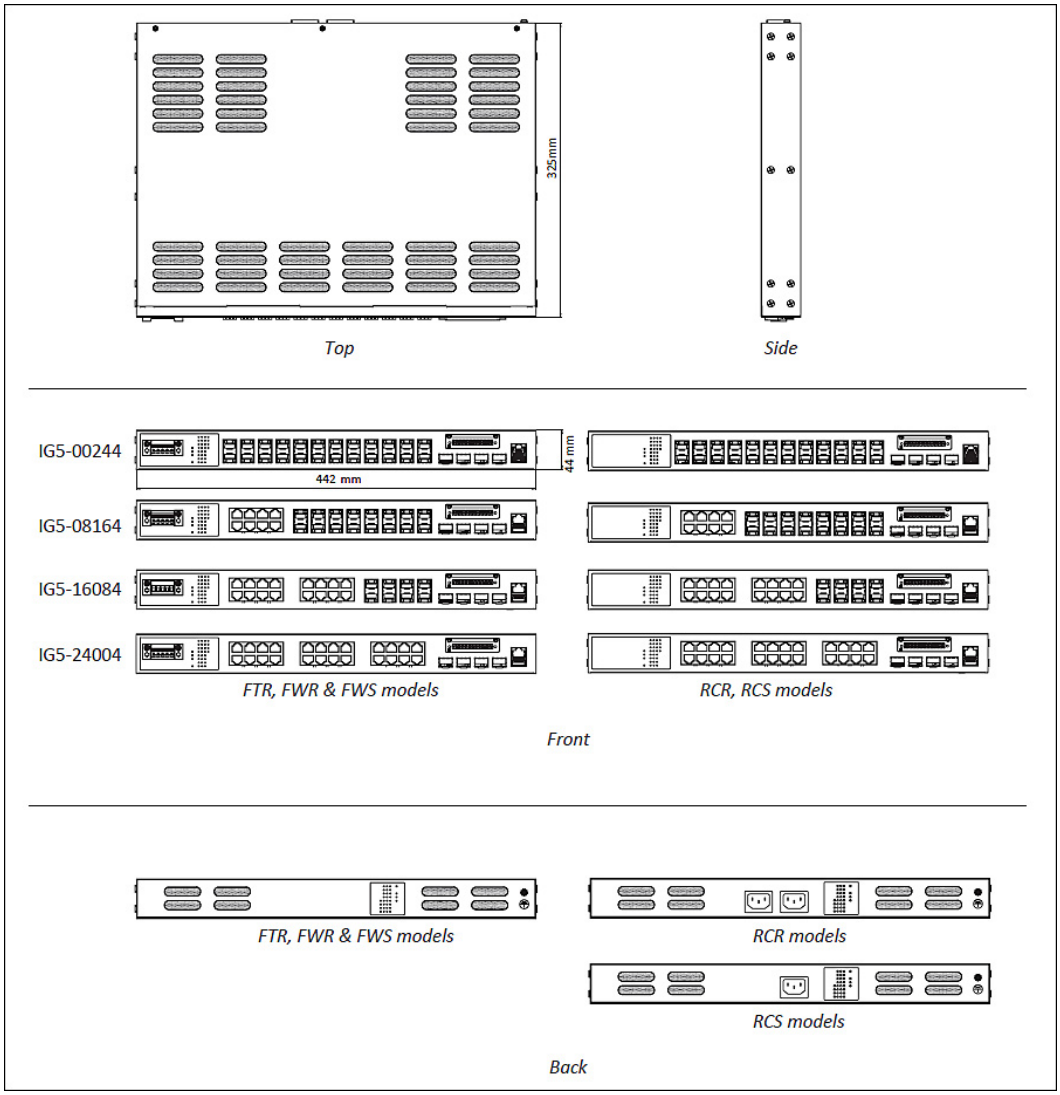
Quick Install Guide

Power

1 AC Power Cord (RCS models)

2 AC Power Cord (RCR models)

Dimensions



Application

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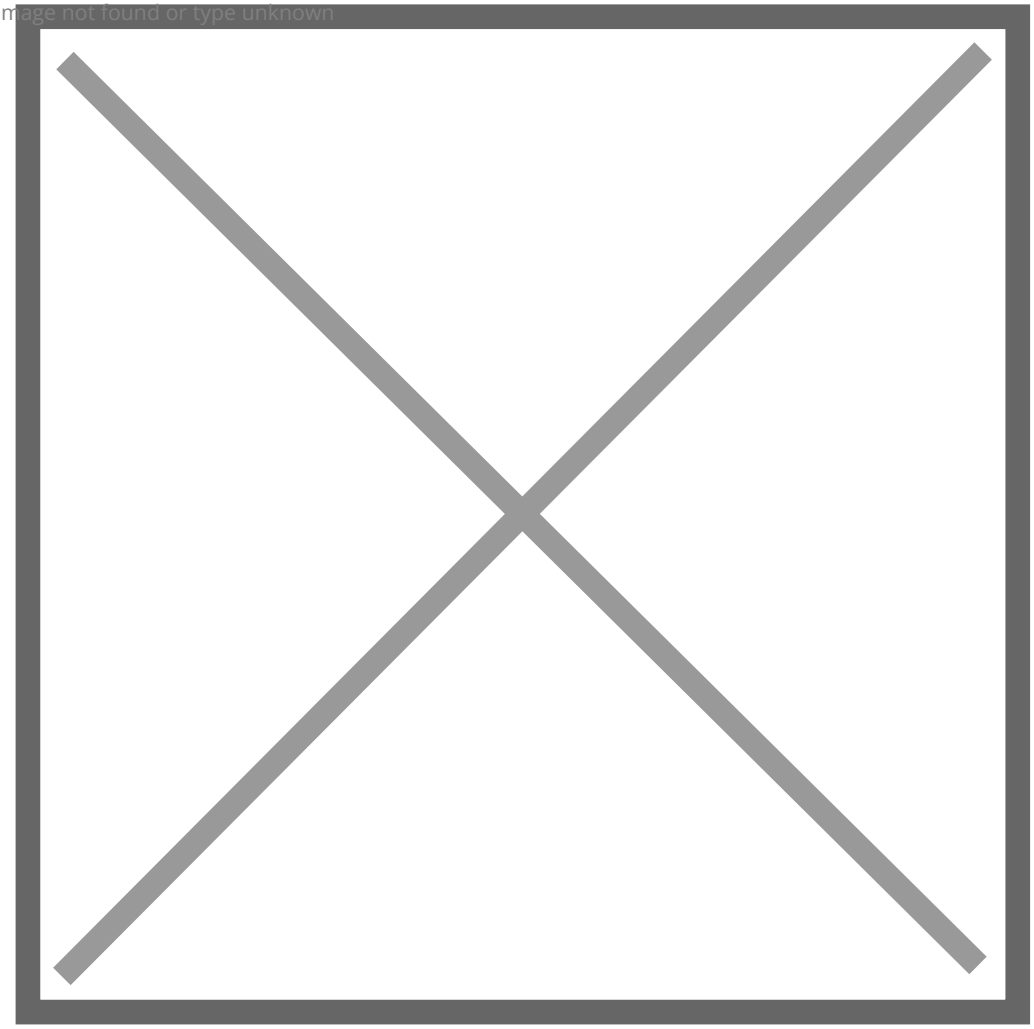
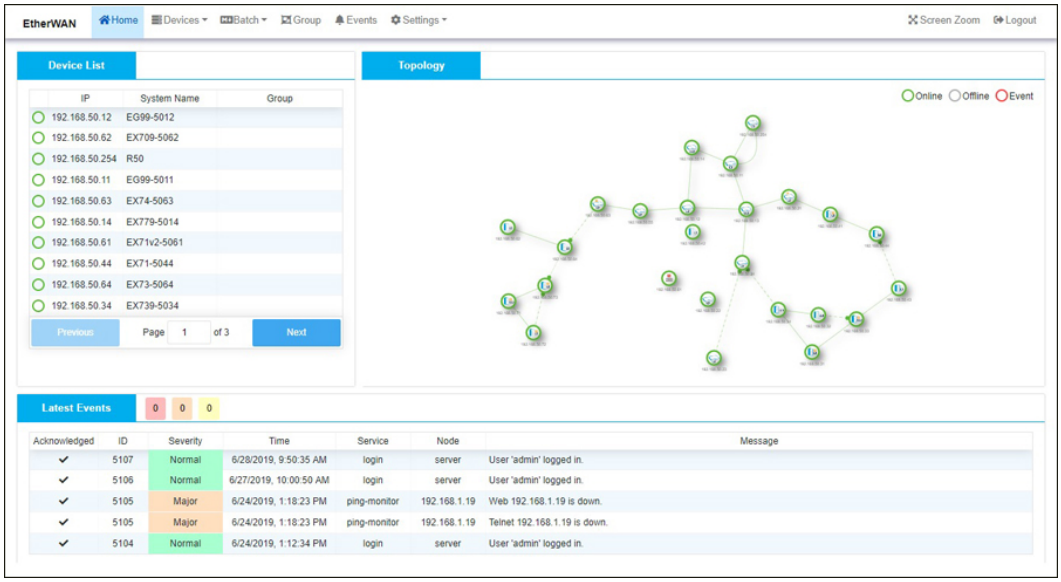
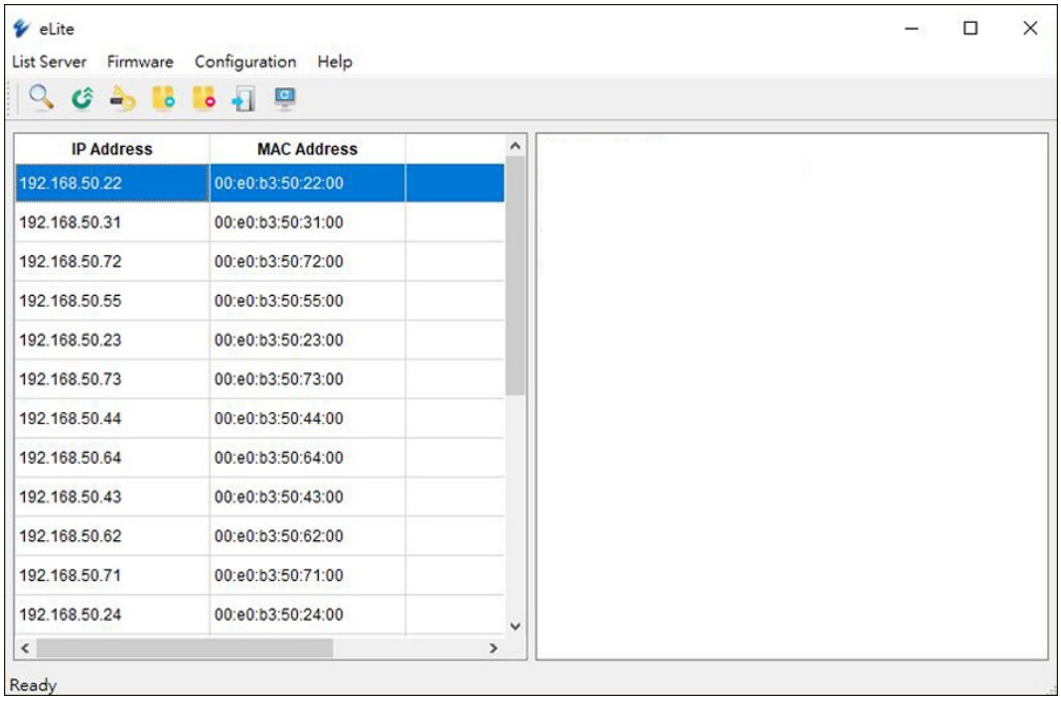


Software

Network Management	eVue™ Network Configuration and Monitoring Tool
Network Discovery	eLite™ Network Discovery and IP Configuration Tool





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	www.etherwan.com/products/sfp-fiber-transceiver
Hardened Gigabit SFP Modules	www.etherwan.com/products/sfp-fiber-transceiver
Hardened 10G SFP+ Modules	www.etherwan.com/products/sfp-fiber-transceiver
DIN-Rail Power Supplies	www.etherwan.com/products/din-rail-power-supply

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