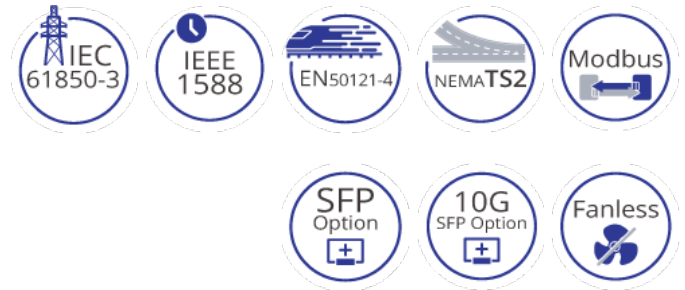# IG5 L Rack Series

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

Overview

EtherWAN's InfraGreEn IG5 L Rack series industrial 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 L 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 rugged design can handle the vast majority of industrial application operations from -10°C to 60°C and is compliant with IEC61850 and IEEE 1613 standards, maintaining consistent performance in high EMI environments, making it ideal 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

Dual rate design at all ports, up to 10G

Wide range of optical and electrical 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 Industrial Environments

Operation temperature range from -10 to 60°C (14 to 140°F)

Thermal shock and electrical noise resistance

High electrostatic / surge protection capability

✛ 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

✚ 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

➕ 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 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) (Green)
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.
-10 to 60°C (14 to 140°F)

Storage Temp.
-45 to 85°C (-49 to 185°F)

Relative Humidity
5% to 95% (non-condensing)

MTBF
644,723 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

FTRL: (Terminal Block)
 24VDC to 48VDC (Nominal)
 18 - 60VDC (Operational)

FWRL: (Terminal Block)
 100 - 250VDC or 100 - 240VAC (Nominal)
 88 - 300VDC or 88 - 264VAC (Operational)

RCRL: (AC Inlet)
 100 - 240VAC

Single Power

FWSL: (Terminal Block)
 100 - 250VDC or 100 - 240VAC (Nominal)
 88 - 300VDC or 88 - 264VAC (Operational)

RCSL: (AC Inlet)
 100 - 240VAC

Power Consumption
50W max.

Protection
Reverse Polarity Protection

+ 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 (RCSL models)
2 AC Power Cord (RCRL models)

Dimensions

Top

Side

IG5-00244

442 mm

44 mm

325mm

IG5-08164

IG5-16084

IG5-24004

FTRL, FWRL & FWSL models

RCRL, RCSL models

Front

FTRL, FWRL & FWSL models

RCRL models

RCSL models

Back
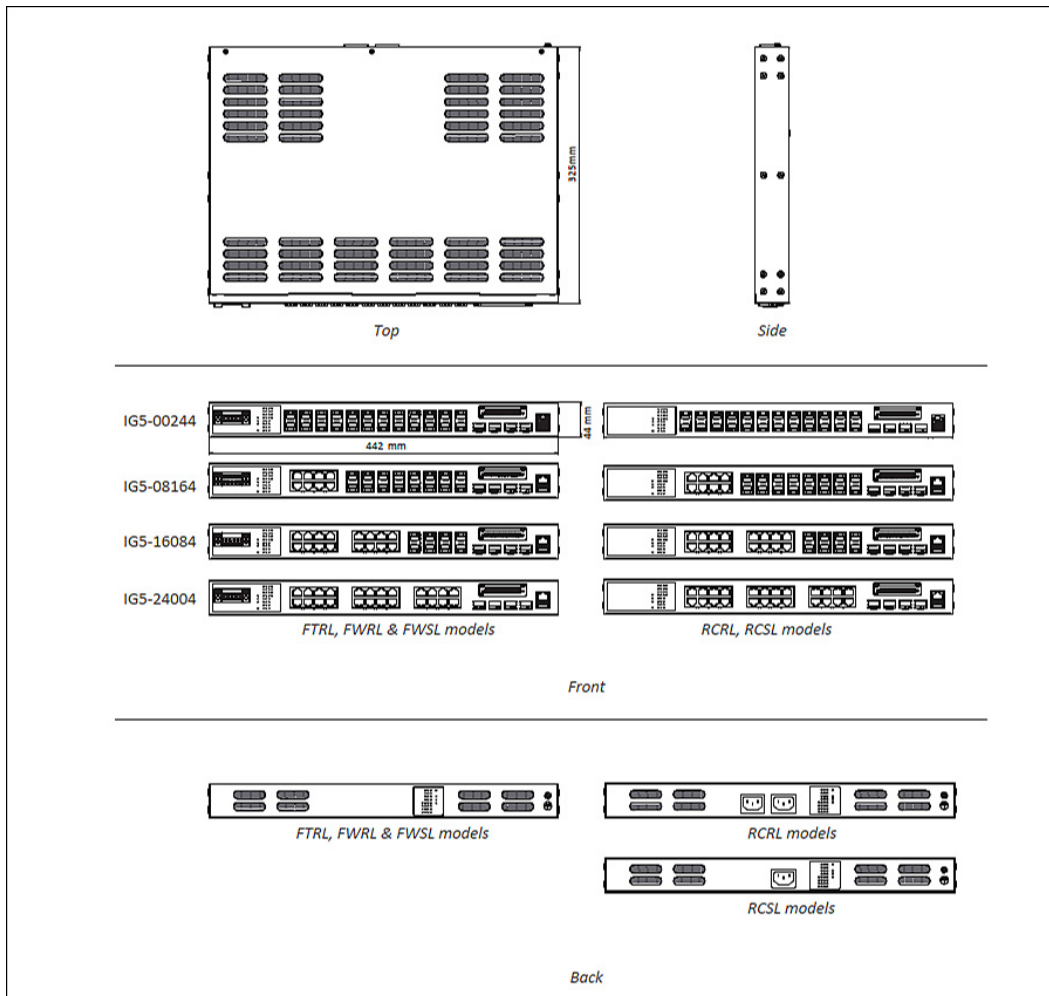
Application
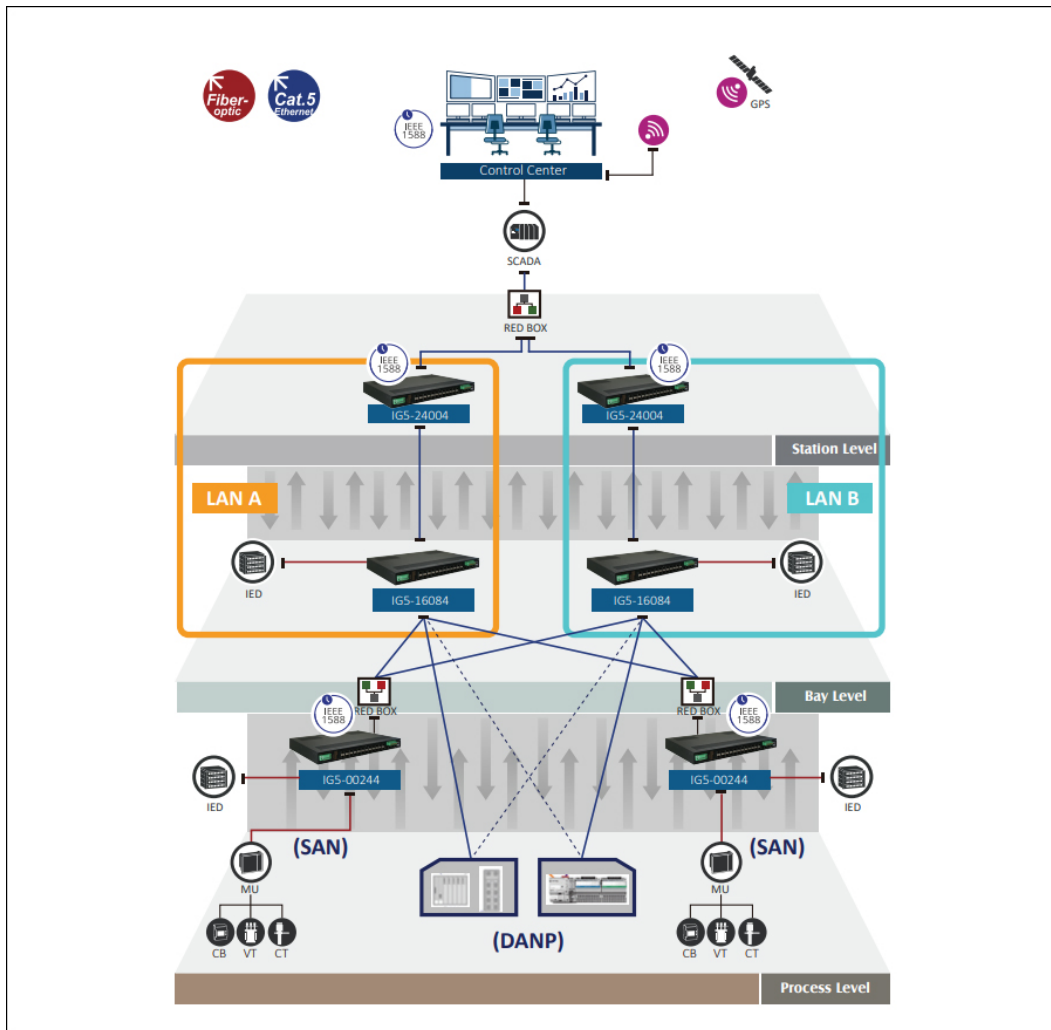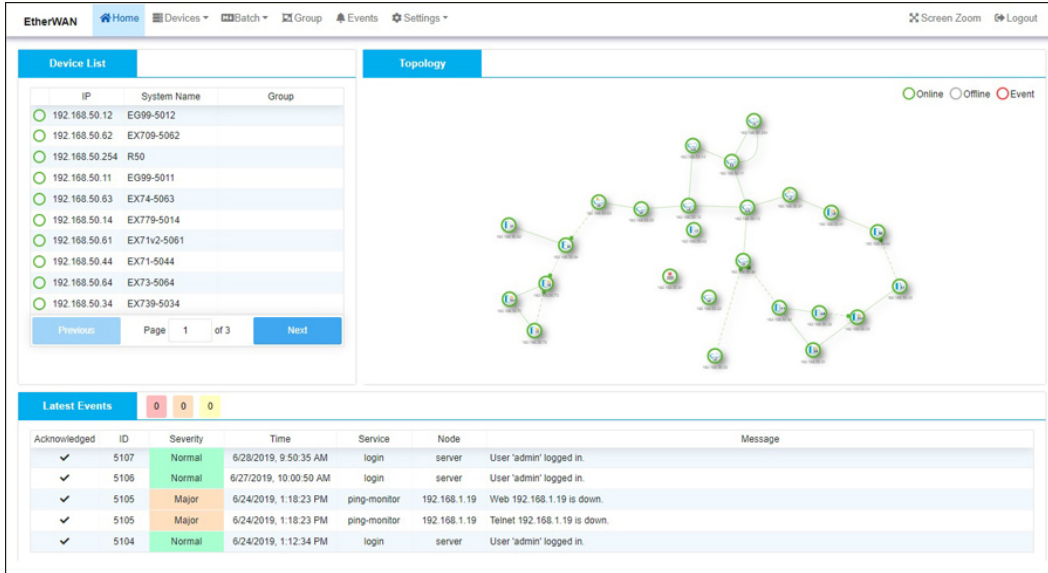
Software

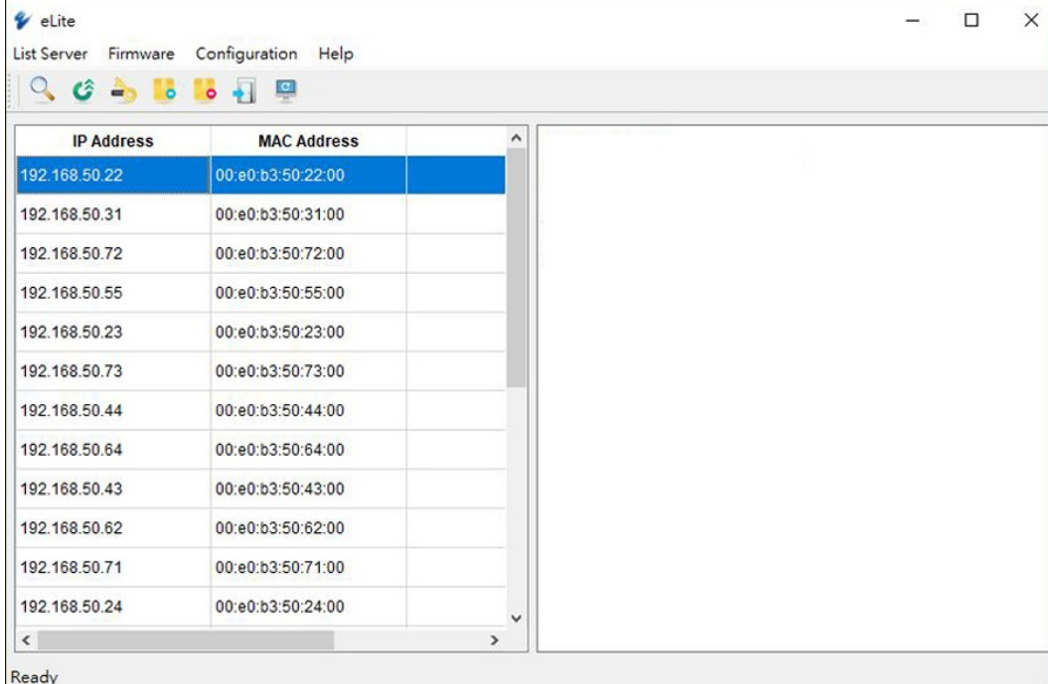|	
Network Management	eVue™ Network Configuration and Monitoring Tool
Network Discovery	eLite™ Network Discovery and IP Configuration Tool

Ordering Info

➕ Model

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

➕ Power Input Interface (YYYZ)

FTRL	24VDC to 48VDC Redundant (Terminal Block), Industrial Grade (-10 to 60°C)
FWRL	88-300VDC or 100-240VAC Redundant (Terminal Block), Industrial Grade (-10 to 60°C)
RCRL	100-240VAC Redundant (AC Inlet), Industrial Grade (-10 to 60°C)
FWSL	88-300VDC or 100-240VAC (Terminal Block), Industrial Grade (-10 to 60°C)
RCSL	100-240VAC (AC Inlet), Industrial Grade (-10 to 60°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