IG5 Rack Series

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

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

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.**"

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

What's Included

Device
Ethernet Switch

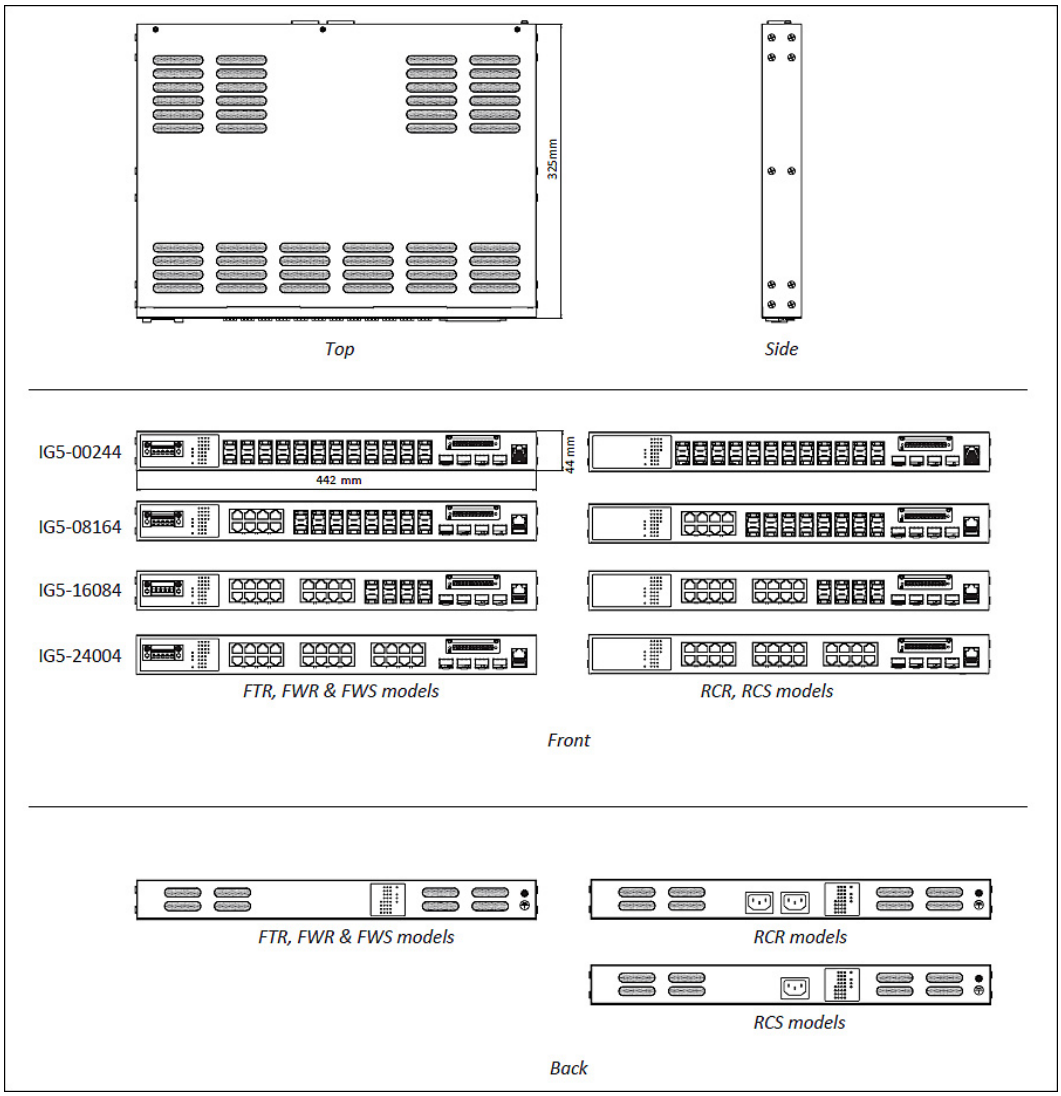
Cables
1 Console Cable

Installation
Mounting brackets, screws

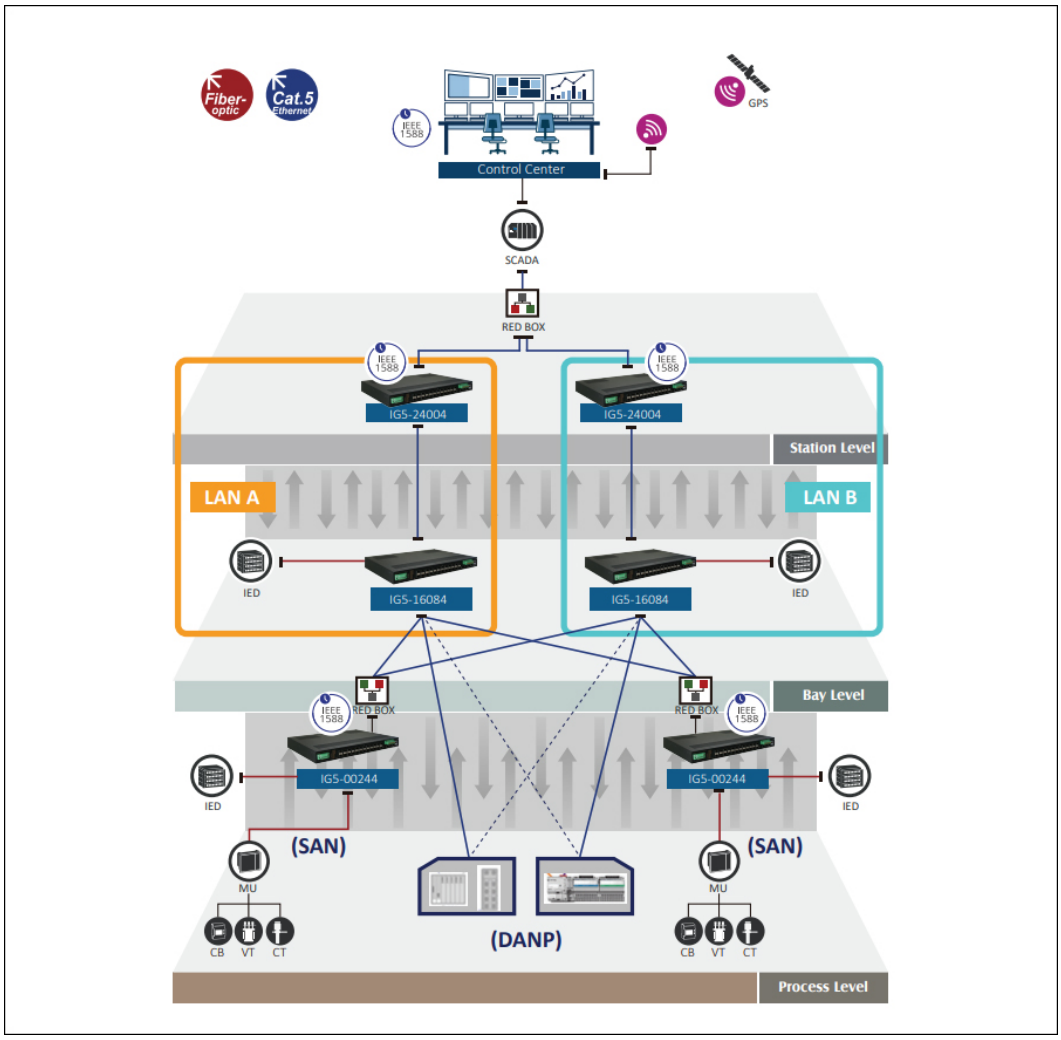
Documentation
Quick Install Guide

Power
1 AC Power Cord (RCS models)
2 AC Power Cord (RCR models)

Dimensions

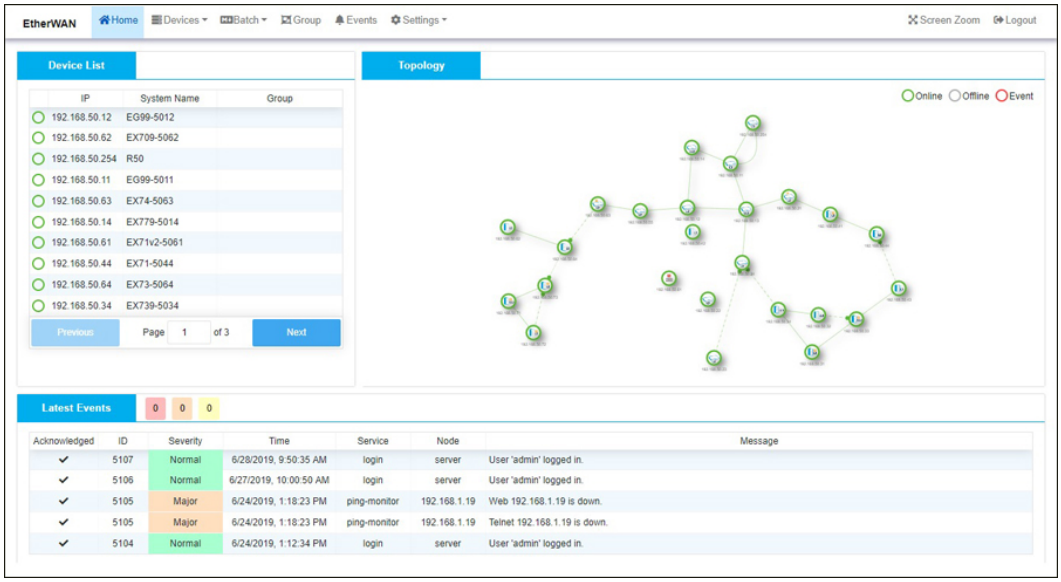

325mm
Top
Side
IG5-00244
IG5-08164
IG5-16084
IG5-24004
442 mm
44 mm
FTR, FWR & FWS models
RCR, RCS models
Front
FTR, FWR & FWS models
RCR models
RCS models
Back

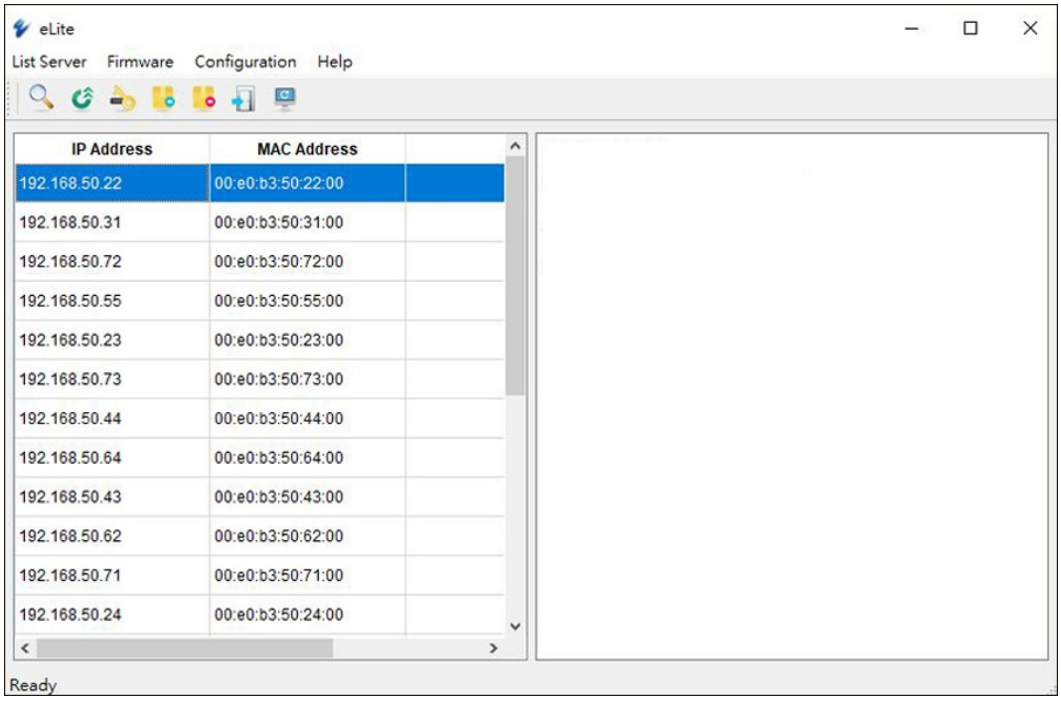
Application



Software

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





Ordering Info

Model

IG5-24004YYY	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