

# IGS-2408SM-24PH

24x GbE RJ45 + 8x 100/1000Base SFP with 24x PoE 400W 48VDC

## 4KV Surge protection



- Supports IEEE 1588 PTP V2
- Supports u-Ring, ERPS, EPS, MSTP, RSTP, STP for redundant cabling
- EN62368-1, CE, FCC certified
- 4KV surge protection for PoE, RJ45 and SFP ports



IGS-2408SM-24PH is a rackmount, managed, Industrial Grade, L2 Gigabit PoE (Power over Ethernet) Switch that provides 24x 10/100/1000BaseTX PoE ports, plus 8 dual speed (100/1000Base-X) SFP ports, thus providing up to 32 ports total Ethernet connectivity. The PoE features enable power and data to be transferred via a single cable, thereby considerably reducing cabling and electrical wiring expenses. IGS-2408SM-24PH is an ideal solution for applications in Smart City, surveillance, Intelligent traffic control systems (ITS) and production automation applications. The IGS-2408SM-24PH is designed for harsh outdoor cabinet applications, with 4kV surge protection, to ensure the uninterrupted reliability of PoE systems. Isolated power inputs also help to increase system reliability and the availability of your network backbone.

## Features

- Maximum up to 24x IEEE 802.3af / 802.3at PoE+ output, 30W per port, 400W PoE power budget in total
- Redundant dual input power 48VDC (44~57VDC)
- STP, RSTP, MSTP, ITU-T G.8032 Ethernet Ring Protection Switching (ERPS) for network redundancy
- Provides 5 instances each can support u-Ring, u-Chain or Sub-Ring for flexible networking applications
- u-Ring redundancy, recovery time <20ms in 250 devices
- Supports IEEE 1588 PTP V2 for precise time synchronization to operate in Ordinary-Boundary, Peer to Peer Transparent Clock, End to End Transparent Clock, Master, Slave mode by each port
- Supports SmartView™ for Centralized Management\*

\*Please see Chapter 1- **Software Management** for more details

## Specifications

<b>Standard</b>	IEEE 802.3	10Base-T 10Mbit/s Ethernet
	IEEE 802.3u	100Base-TX, 100Base-FX, Fast Ethernet
	IEEE 802.3ab	1000Base-T Gbit/s Ethernet over twisted pair
	IEEE 802.3z	1000Base-X Gbit/s Ethernet over Fiber-Optic
	IEEE 802.1d	STP (Spanning Tree Protocol)
	IEEE 802.1w	RSTP (Rapid Spanning Tree Protocol)
	IEEE 802.1s	MSTP (Multiple Spanning Tree Protocol)
	ITU-T G.8032 / Y.1344	ERPS (Ethernet Ring Protection Switching)
	ITU-T G.8031 / Y.1342	EPS (Ethernet Protection Switching)
	IEEE 802.1Q	Virtual LANs (VLAN)
	IEEE 802.1X	Port based and MAC based Network Access Control, Authentication
	IEEE 802.3ac	Max frame size extended to 1522Bytes
	IEEE 802.3ad	Link aggregation for parallel links with LACP(Link Aggregation Control Protocol)
	IEEE 802.3af	PoE (Power over Ethernet)
	IEEE 802.3at	PoE+ (Power over Ethernet enhancement)
	IEEE 802.3X	Flow control for full duplex
	IEEE 802.1ad	Stacked VLANs, Q-in-Q
IEEE 802.1p	LAN Layer 2 QoS/CoS Protocol for Traffic Prioritization	
IEEE 802.1ab	Link Layer Discovery Protocol (LLDP)	
IEEE 802.3az	EEE (Energy Efficient Ethernet)	
<b>VLAN ID</b>	4094 IEEE802.1Q VLAN VID	
<b>Switch Architecture</b>	Back-plane (Switching Fabric): 64Gbps (Full wire-speed)	
<b>Data Processing</b>	Store and Forward	

<b>Network Connector</b>	<b>SFP:</b>	8x 100/1000Base-X SFP socket Support DDM1
	<b>RJ45:</b>	24x 10/100/1000Base-T RJ-45 Support Auto negotiation speed, Auto MDI/MDI-X function
	<b>PoE:</b>	24x IEEE 802.3af /IEEE 802.3at PoE+ End-Span, Alternative A mode. Maximum 30W per port, 400W PoE power budget in total
<b>Console</b>	<b>RJ45 Pin Assignment:</b>	PoE Positive (V+): RJ-45 pin 1, 2. PoE Negative (V-): RJ-45 pin 3, 6. Data (1,2,3,6,4,5,7,8)
	<b>Console</b>	RS-232 (RJ-45)
<b>Network Cable</b>	UTP/STP Cat.5e cable or above EIA/TIA-568 100-ohm (100meter)	
<b>Protocols</b>	CSMA/CD	
<b>Reverse Polarity Protection</b>	For input power	
<b>Overload Current Protection</b>	Supported	
<b>CPU Watch Dog</b>	Supported	
<b>Power Supply</b>	Redundant dual input power 48VDC (44~57VDC) (Removable terminal block) (50~57VDC input is recommended for IEEE802.3at PoE+ in 30W applications)	
<b>Power Consumption</b>	< 30W @50VDC without PoE load <445W @50VDC with 400W PoE load	
<b>LED</b>	Per unit: Power 1 (Green), Power 2 (Green), Act/Alarm (Green/Amber), Ring Master (Green)	
	P1~P24	
	Per RJ-45 port: 10/100 Link/Active (Green) 1000 Link/Active (Amber)	
	P25~P32	
	Per SFP Fiber port: Link/Active (Amber) PoE port (P1~P24): PoE ON (Green)	

<b>Jumbo Frame</b>	10K Byte
<b>MAC Address Table</b>	32K
<b>Memory Buffer</b>	4M Bytes for packet buffer
<b>Device Memory</b>	16M Bytes Flash ROM, 1G Bytes RAM
<b>Warning Message</b>	System Syslog, SMTP/ e-mail event message, alarm relay
<b>Alarm Relay Contact</b>	Relay outputs with current carrying capacity of 1A @24VDC, 2-Pin removable terminal block
<b>Operating Temperature</b>	-40 ~ 75°C
<b>Operating Humidity</b>	5% to 95% (Non-condensing)
<b>Storage Temperature</b>	-40 ~ 85°C
<b>Housing</b>	Rugged Metal, IP30 Protection, Fanless
<b>Dimensions</b>	280x 440 x 44mm (D x W x H)
<b>Weight</b>	4.26kg
<b>Installation Mounting</b>	19" rack mount
<b>MTBF</b>	97,078 Hours (MIL-HDBK-217)

## Software Specifications

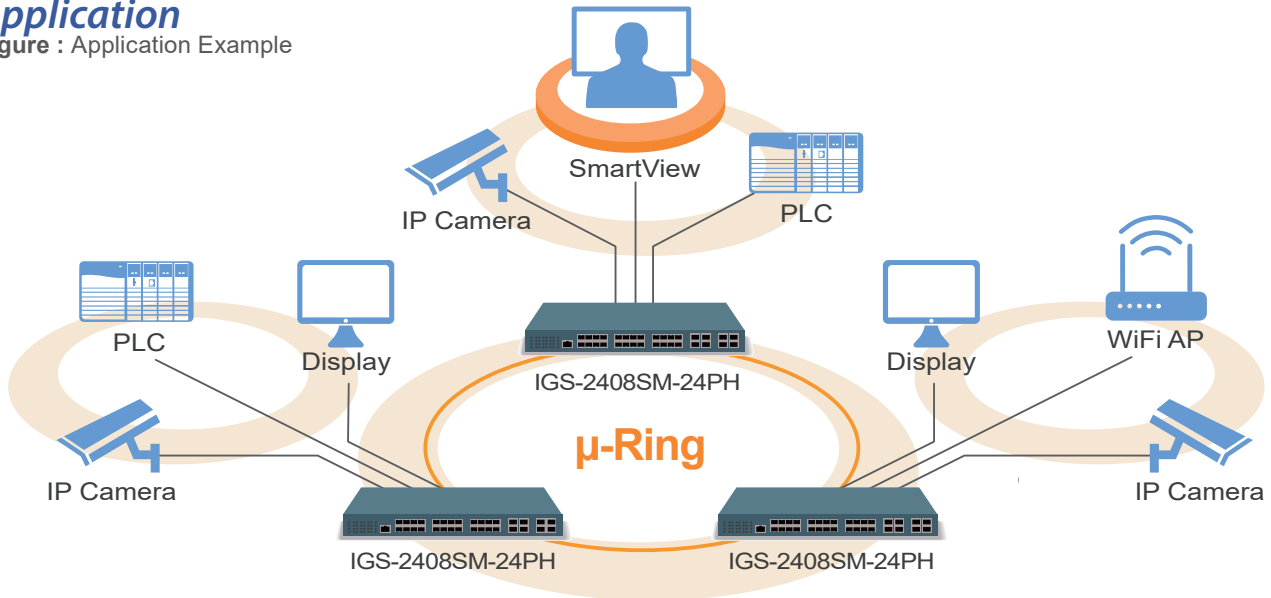
<b>Topology</b>	
<b>VLAN</b>	IEEE 802.1q VLAN, up to 4094 802.1Q VLAN VID IEEE 802.1q VLAN, up to 4094 Groups IEEE 802.1ad Q-in-Q MAC-based VLAN, up to 256 entries IP Subnet-based VLAN, up to 128 entries Protocol-based VLAN (Ethernet, SNAP, LLC), up to 128 entries VLAN Translation, up to 256 entries Private VLAN for port isolation GVRP (GARP VLAN Registration Protocol) MVR (Multicast VLAN Registration) Voice VLAN
<b>Link Aggregation (Port Trunk)</b>	Static (Hash with SA, DA, IP, TCP/UDP port), up to 16 trunk group Dynamic (IEEE 802.3ad LACP), up to 16 trunk group Per group up-to 8 port
<b>Spanning Tree</b>	IEEE 802.1d STP, IEEE 802.1w RSTP, IEEE 802.1s MSTP
<b>Multiple μ-Ring</b>	Up to 5 instances each support μ-Ring, μ-Chain or Sub-Ring for flexible networking applications. Recovery time <20ms The maximum number of device is allowed 250 in a Ring.
<b>Loop Protection</b>	Supported
<b>ITU-T G.8032 / Y.1344 ERPS (Ethernet Ring Protection)</b>	Single Ring, Sub-Ring, Multiple ring topology
<b>ITU-T G.8031 / Y.1342 EPS (Ethernet Protection Switching)</b>	Supported
<b>QoS Features</b>	
<b>Class of Service</b>	IEEE 802.1p 8 active priorities queues per port
<b>Traffic Classification QoS</b>	IEEE 802.1p based CoS IP Precedence based CoS IP DSCP based CoS
<b>Traffic Classification QoS</b>	QCL(QoS Control List): Frame Type, Source/Destination MAC, VLAN ID, PCP, DEI Protocol, Source IP, IP Fragment, DSCP, TCP/UDP port number
<b>Bandwidth Control for Ingress</b>	Per port based
<b>Bandwidth Control for Egress</b>	Per port based Per queue / Per port shaper
<b>DiffServ (RF 2474) Remarking</b>	
<b>Storm Control</b>	for Unicast, Broadcast, Multicast
<b>IP Multicasting Features</b>	
<b>IGMP / MLD Snooping</b>	IGMP Snooping v1, v2, v3 / MLD Snooping v1, v2 Port Filtering Profile Throttling, Fast Leave Maximum Multicast Group : up to 1022 entries Query / Static Router Port
<b>Security Features</b>	
<b>IEEE 802.1X</b>	Port-Based MAC-Based
<b>ACL</b>	Number of rules : up to 256 entries for L2 / L3 / L4 L2 : Mac address SA/DA/VLAN L3 : IP address SA/DA, Subnet L4 : TCP/UDP
<b>RADIUS authentication &amp; accounting</b>	
<b>TACACS+ authentication &amp; accounting, TACACS+ 3.0</b>	
<b>HTTPS, HTTP</b>	Supported
<b>SSL / SSH v2</b>	Supported

<b>Warranty</b>	5 years
<b>Certification</b>	
<b>EMC</b>	CE (EN55032, EN55035)
<b>EMI (Electromagnetic Interference)</b>	FCC Part 15 Subpart B Class A, CE
<b>EMS (Electromagnetic Susceptibility) Protection Level</b>	EN61000-4-2 (ESD) Level 3, Criteria B EN61000-4-3 (RS) Level 3, Criteria A EN61000-4-4 (Burst) Level 3, Criteria A EN61000-4-5 (Surge) Level 3, Criteria B EN61000-4-6 (CS) Level 3, Criteria A EN61000-4-8 (PFMF, Magnetic Field) Field Strength: 300A/m, Criteria A
<b>Safety</b>	EN62368-1
<b>Surge protection</b>	4KV for PoE, RJ45 and SFP ports
<b>Shock</b>	IEC 60068-2-27
<b>Freefall</b>	IEC 60068-2-32
<b>Vibration</b>	IEC 60068-2-6

<b>User Name</b>	Local Authentication
<b>Password Authentication</b>	Remote Authentication (via RADIUS / TACACS+)
<b>Management Interface Access Filtering</b>	Web, Telnet / SSH , CLI RS-232 console
<b>Management Features</b>	
<b>CLI</b>	Cisco® like CLI
<b>Web Based Management</b>	
<b>Telnet</b>	Server
<b>SNMP</b>	V1, V2c, V3
<b>sFlow</b>	Supported
<b>Modbus/TCP</b>	Support for management and monitoring
<b>SW &amp; Configuration Upgrade</b>	TFTP, HTTP Redundant firmware in case of upgrade failure
<b>RMON</b>	RMON I (1, 2, 3, 9 group), RMON II
<b>MIB</b>	RFC1213 MIB II, Private MIB
<b>UPnP</b>	Supported
<b>DHCP</b>	Server, Client, Relay, Relay option 82 , Snooping
<b>IP Source Guard</b>	Supported
<b>Mirroring</b>	Local and Remote
<b>Event Syslog</b>	Syslog server (RFC3164)
<b>Warning Message</b>	System syslog, e-mail, alarm relay
<b>DNS</b>	Client, Proxy
<b>IEEE1588 PTP V2</b>	Supports 5 operating mode in each port : Ordinary-Boundary, Peer to Peer Transparent Clock, End to End Transparent Clock, Master, Slave
<b>NTP V4.0, SNTP</b>	Client
<b>LLDP (IEEE 802.1ab)</b>	Link Layer Discovery Protocol LLDP-MED
<b>IPv6 Features</b>	
<b>IPv6 Management</b>	Telnet Server/ICMP v6
<b>SNMP over IPv6</b>	Supported
<b>HTTP over IPv6</b>	Supported
<b>SSH over IPv6</b>	Supported
<b>IPv6 Telnet</b>	Supported
<b>IPv6 NTP, SNTP</b>	Client
<b>IPv6 TFTP</b>	Supported
<b>IPv6 QoS</b>	Supported
<b>IPv6 ACL</b>	Number of rules: up to 256 entries for L2 / L3 / L4 L2 : Mac address SA/DA/VLAN L3 : IP address SIP, Subnet (32bit) L4 : TCP/UDP
<b>Advanced PoE Management</b>	PoE PD failure auto checking, and auto reset when PD fail PoE port on/off weekly scheduling PoE Configuration PoE Enable/Disable Power limit by classification Power limit by management Total PoE Power budget limitation management: Maximum 400W power budget Power feeding priority
<b>Other Features</b>	<b>Green Ethernet</b> Supports IEEE 802.3az EEE (Energy Efficient Ethernet) Management to optimize the power consumption Determine the cable length and lowering the power for ports with short cables Lower the power for a port when there is no link LED Power Management : Adjustment LEDs intensity <b>Cable Diagnostic</b> Measuring UTP cable normal or broken point distance

## Application

Figure : Application Example

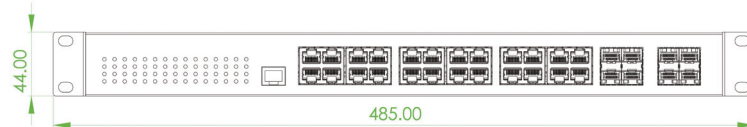


## Dimensions

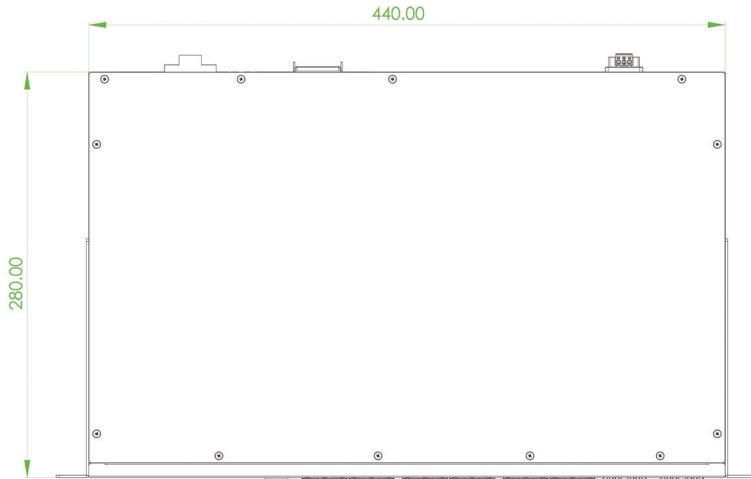
Rear View



Front View



Top View



Side View



## Ordering Information

Model Name	Managed	Total Port	RJ45 Port	SFP Port	PoE Port		Input Power	Certification		Operating Temperature
			10/100/1000 Base-T(X)	100/1000 Base-X	IEEE 802.3at	Power Budget	48VDC	Safety EN62368-1	CE, FCC	
IGS-2408SM-24PHE	V	32	24	8	24	400W	2	V	V	-40~75°C

### Package List

- IGS-2408SM-24PH device
- 19" rack-mount kit (brackets and screws)
- Console cable (RJ-45 to DB-9)
- Protective caps for SFP ports

## Optional Accessories

### Industrial SFP Transceiver

The ISFP series of industrial grade SFP modules have been fully tested with all CTC Union industrial grade Ethernet switches for guaranteed compatibility and performance. Best performance can be guaranteed, even in mission-critical applications. (Please see CTC Union's Industrial SFP datasheets for more items and detailed information.)

ISFP-M7000-85-D(E)	Industrial SFP GbE 1000Base-SX, M/M, 500 meter, wave length 850nm, 7.5dB, LC, DDMI, -10~70°C (-40~85°C)
ISFP-S7020-31-D(E)	Industrial SFP 1000Base-LX, S/M, 20km, wave length 1310nm, 15dB, LC, DDMI, -10~70°C (-40~85°C)
ISFP-T7T00-00-(E)	Industrial SFP 10/100/1000Base-T UTP 100meter, -10~70°C (-40~85°C)
ISFP-M5002-31-D(E)	Industrial SFP 155M 100Base-FX, MM, 2km, wave length 1310nm, 12dB, LC, DDMI, -10~70°C (-40~85°C)
ISFP-S5030-31-D(E)	Industrial SFP 155M 100Base-FX, SM, 30km, 1310nm, 19dB, LC, DDMI, -10~70°C (-40~85°C)

### Industrial Power Supply

NDR-480-48	Industrial Power, Input 90 ~ 264VAC/127 ~ 370VDC, Output 48VDC, 480W, -20 ~ +70°C
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