IGS-804SM-8PH

8x GbE RJ45 + 4x 100/1000Base-X SFP with 8x PoE

NEW

▲ **2.25K VDC Hi-pot isolation protection for Ethernet ports and power**

▲ **4KV surge protection for UTP and fiber ports**

▲ **EN60950-1,EN50121-4, EN61000-6-2, EN61000-6-4, CE and FCC certified**

CE FC EN50121-4 EN61000-6-2 EN61000-6-4 SmartView μ-Ring IEEE 1588v2

Industrial grade managed Gigabit PoE switch with 8 Gigabit UTP ports, each port complies with IEEE802.3af/at PoE standard, the total PoE power budget is 240 watts, 4 100/1000 SFP slots for fiber optic connections to meet the requirements for extended transmission distance. Fanless design, high MTBF, supports wide operating temperature, and has redundant 48VDC power input, providing stable and reliable transmission, suitable for heavy-duty applications in harsh environments, such as industrial factory automation and data centers, intelligent transportation systems, and environmental conditions exceeding commercial product specifications Military and utility market applications.

Features

▪ 8x 10/100/1000Base-T RJ-45 and 4x 100/1000Base-X SFP with 8x IEEE 802.3af/at PoE,240W PoE power budget
▪ Redundant dual DC input power 48VDC (44~57VDC)
▪ Isolated RS-232 console port
▪ Cable diagnostic, Measuring cable normal or broken point distance
▪ STP, RSTP, MSTP, ITU-T G.8032 Ethernet Ring Protection Switching (ERPS) for redundant cabling
▪ Provides 5 instances that each can support μ-Ring, μ-Chain or Sub-Ring type for flexible uses. Supports up to 5 rings in one device (Please see CTC μ-Ring white paper for more details and more topology application)
▪ μ-Ring for Redundant Cabling, recovery time<10ms in 250 devices
▪ DHCP Server/Client/Relay /Relay option 82 /Snooping
▪ QoS, Traffic classification QoS, CoS, bandwidth control for Ingress and Egress, Storm Control, DiffServ
▪ IEEE 802.1q VLAN, MAC based VLAN, IP subnet based VLAN, Protocol based VLAN, VLAN translation, GVRP, MVR
▪ Dynamic IEEE 802.3ad LACP Link Aggregation, Static Link Aggregation
▪ IGMP snooping V1/V2/V3, IGMP Filtering/ Throttling, IGMP query, IGMP proxy reporting, MLD snooping V1/V2
▪ Security : Port based and MAC based IEEE 802.1X, RADIUS, ACL, TACACS+, HTTP/HTTPS, SSL/SSH v2
▪ Software upgrade via TFTP and HTTP, redundant firmware to avoid in case of upgrade failure
▪ 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
▪ RMON, MIB II, Port mirroring, Event syslog, DNS, NTP, SNTP, IEEE 802.1ab LLDP
▪ Supports IPv6 Telnet server /ICMP v6
▪ CLI, Web based management, SNMP v1/v2c/v3, Telnet/SSH server for management

Specifications

Standard		
	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 802.3af	PoE (Power over Ethernet)
	IEEE 802.3at	PoE+ (Power over Ethernet enhancements)
	IEEE 802.1d	STP (Spanning Tree Protocol)

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Standard	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)
	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 802.3x	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)
VLAN ID	4094 IEEE 802.1Q VLAN VID	
Switch Architecture	Back-plane (Switching Fabric): 24Gbps (Full wire-speed)	
Data Processing	Store and Forward	
Flow Control	IEEE 802.3x for full duplex mode Back pressure for half duplex mode	
Network Connector	8x 10/100/1000Base-T RJ-45 + 4x 100/1000Base-X SFP connector RJ-45 UTP port support Auto negotiation speed, Auto MDI/MDI-X function SFP port support dual speed with DDMI	
PoE standard & RJ-45 Pin Assignment	8x IEEE 802.3af/at PoE+ 2 pairs PoE, PoE+, 30W/port End-Span, Alternative A mode. Positive (V+) : RJ-45 pin 1, 2. Negative (V-) : RJ-45 pin 3, 6.	
Console	RS-232 (RJ-45)	
Network Cable	UTP/STP above Cat. 5e cable	
	EIA/TIA-568 100-ohm (100m)	
Protocols	CSMA/CD	
Reverse Polarity Protection	Supported	
Overload Current Protection	Supported	
CPU Watch Dog	Supported	
Power Supply	Redundant Dual DC 48VDC (44~57VDC) Input power Removable Terminal Block for input power connector (50~57V input is recommended for IEEE 802.3at PoE+ in 30W applications)	

Power Consumption	Input Voltage	Total Power Consumption	Device Power Consumption	PoE Budget
	50 VDC	253.5W	13.5W	240W

LED	Per unit: Power 1 (Green), Power 2 (Green), Fault (Amber), CPU Act (Green), Ring Master (Yellow)
	Per RJ-45 port: 10/100 Link/Active (Green), 1000 Link/Active (Amber)
	SFP Fiber Per port: Link/Active (Green)
	PoE Port LED, 1 LED /per Port: PoE Output Power On : ON (Green), PoE Output Power OFF : OFF
Jumbo Frame	9.6KB
IEEE 802.3ac	Max frame size extended to 1522Bytes (allow Q-tag in packet)
MAC Address Table	8K
Memory Buffer	512K Bytes for packet buffer
Warning Message	System Syslog, SMTP/ e-mail event message, alarm relay
Alarm Relay Contact	Relay outputs with current carrying capacity of 1 A @24VDC
Removable Terminal Block	Provide 2 redundant power, alarm relay contact, 6 Pin
Operating Temperature	-10 ~ 60°C (IGS-804SM-8PH) -40 ~ 75°C (IGS-804SM-8PHE)
Operating Humidity	5% to 95% (Non-condensing)
Storage Temperature	-40 ~ 85°C
Housing	Rugged Metal, IP30 Protection, Fanless
Dimensions	106 x 72 x152 mm (D x W x H)
Weight	0.76kg
Installation Mounting	DIN Rail mounting, or wall mounting (optional)
MTBF	564,484 Hours (MIL-HDBK-217)
Warranty	5 years

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Certification

EMC	CE (EN55024, EN55032)
EMI (Electromagnetic Interference)	FCC Part 15 Subpart B Class A, CE
Railway Traffic	EN50121-4
Immunity for Heavy Industrial Environment	EN61000-6-2
Emission for Heavy Industrial Environment	EN61000-6-4
EMS (Electromagnetic Susceptibility) Protection Level	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
Safety	EN60950-1
Surge Protection	4KV for UTP and Fiber ports
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6

Software Specifications

Topology

VLAN	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(Ethernt, SNAP, LLC), up to 128 entries
	VLAN Translation, up to 256 entries
	GVRP (GARP VLAN Registration Protocal)
	MVR (Multicast VLAN Registration)
Link Aggregation (Port Trunk)	Static (Hash with SA, DA, IP, TCP/UDP port), Maximum trunk group: 6group
	Dynamic (IEEE 802.3ad LACP), Maximum trunk group: 6group
	Per group up-to 8 port
Spanning Tree	IEEE 802.1d STP
	IEEE 802.1w RSTP
	IEEE 802.1s MSTP
Multiple μ-Ring	up to 5 instances that each supports μ-Ring, μ-Chain or Sub-Ring type for flexible uses, and maximum up to 5 Rings. Recovery time <10ms The maximum number of devices allowed in a Ring supported ring is 250. (Please see CTC Union μ-Ring white paper for more details and more topology applications)
Loop Protection	Supported
ITU-T G.8032 / Y.1344 ERPS (Ethernet Ring Protection)	Recovery time <50ms
	Single Ring, Sub-Ring, Multiple ring topology network

QoS Features

Class of Service	IEEE 802.1p 8 active priorities queues for per port
Traffic Classification QoS	IEEE 802.1p based CoS
	IP Precedence based CoS
	IP DSCP based CoS
	QCL(QoS Control List): Frame Type, Source/Destination MAC, VLAN ID, PCP, DEI
	QCE(QoS Control Entry): Protocol, Source IP, IP Fragment, DSCP, TCP/UDP port number

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Bandwidth Control for Ingress	Rate in steps :1 kbps / Mbps / fps / kfps
	Range : 100 kbps to 1Gbps / 1fps to 3300kfps
	Rate Unit : bit or frame
Bandwidth Control for Egress	Rate in steps : 1 kbps / Mbps
	Range : 100 kbps to 1Gbps
	Rate Unit : bit
	Per queue / Per port shaper
DiffServ (RF 2474) Remarking	
Storm Control	for Unicast, Broadcast, Multicast

IP Multicasting Features

IGMP / MLD Snooping	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

Security Features

IEEE 802.1X	Port-Based
	MAC-Based
ACL	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
RADIUS authentication & accounting	
TACACS+ authentication	
HTTPS, HTTP	Supported
SSL / SSH v2	Supported
User Name Password Authentication	Local Authentication
	Remote Authentication (via RADIUS / TACACS+)
Management Interface Access Filtering	Web, Telnet / SSH , CLI RS-232 console

Management Features

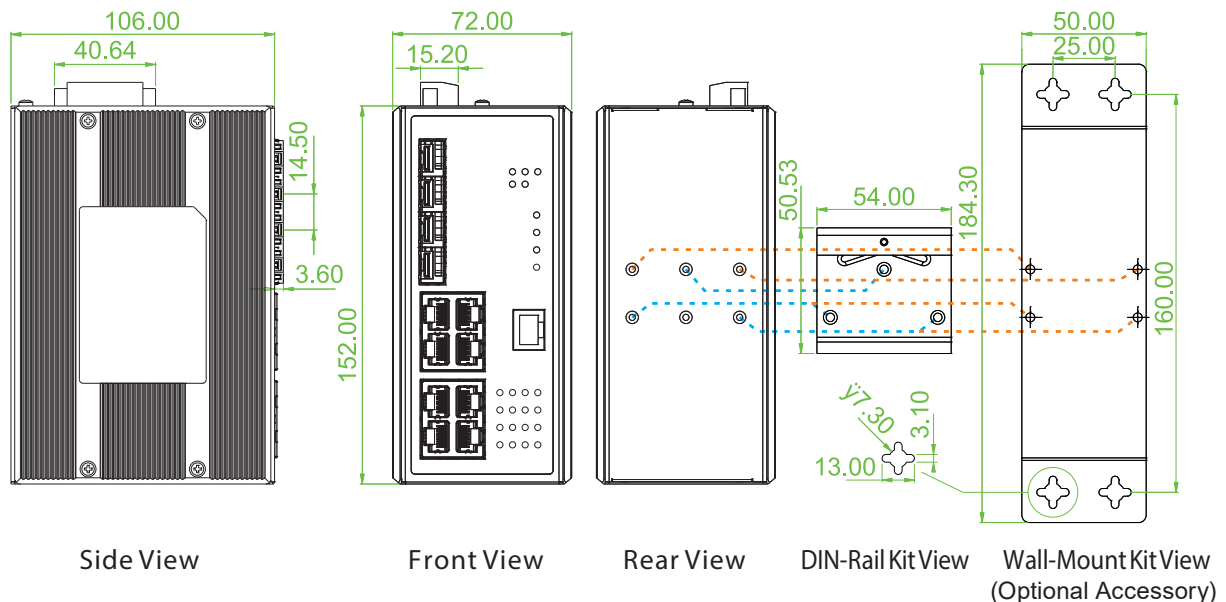| CLI	Cisco® like CLI
Web Based Management	
Telnet	Server
SNMP	V1, V2c, V3
SW & Configuration Upgrade	TFTP, HTTP
	Redundant firmware in case of upgrade failure
RMON	RMON I (1, 2, 3, 9 group), RMON II
MIB	RFC1213 MIB II, Private MIB
UPnP	Supported
DHCP	Server, Client, Relay, Relay option 82 , Snooping
IP Source Guard	Supported
Port Mirroring	Supported
Event Syslog	Syslog server (RFC3164) (Support 1 server)
Warning Message	System syslog, e-mail, alarm relay
DNS	Client, Proxy
IEEE1588 PTP V2	Support 5 operating mode in each port : Ordinary-Boundary, Peer to Peer Transparent Clock, End to End Transparent Clock, Master, Slave
NTP, SNTP	Client
LLDP (IEEE 802.1ab)	Link Layer Discovery Protocol
	LLDP-MED

IPv6 Features

IPv6 Management	Telnet Server/ICMP v6
SNMP over IPv6	Supported
HTTP over IPv6	Supported
SSH over IPv6	Supported
IPv6 Telnet	Supported
IPv6 NTP, SNTP	Client
IPv6 TFTP	Supported
IPv6 QoS	Supported
IPv6 ACL	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

Others Features

Green Ethernet	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
Cable Diagnostic	Measuring UTP cable normal or broken point distance
Advanced PoE Management	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 feeding priority Total PoE Power budge limitation: Maximum 240W

Dimensions

Side View   Front View   Rear View   DIN-Rail Kit View   Wall-Mount Kit View (Optional Accessory)

Ordering Information

Model Name	Managed	Total Port	UTP	Fiber	PoE		Input Power	Certification				Operating Temperature
			10/100/1000 Base-T	100/1000 Base-X	IEEE 802.3af/at	Power Budget	Redundant	Railway EN50121-4	Safety	EN61000-6-2 EN61000-6-4	CE FCC	
IGS-804SM-8PH	V	12	8	4 SFP	8	240W	48VDC	V	EN60950-1	V	V	-10~60℃
IGS-804SM-8PHE	V	12	8	4 SFP	8	240W	48VDC	V	EN60950-1	V	V	-40~75℃

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Optional Accessories

■ Wall Mount Kit

IND-WMK02	Wall Mount kit for Industrial product (Wide) (184 x 50mm)

■ 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-240-48	Industrial Power, Input 90 ~ 264VAC/127 ~ 370VDC, Output 48VDC, 240W, -20 ~ +70°C
NDR-480-48	Industrial Power, Input 90 ~ 264VAC/127 ~ 370VDC, Output 48VDC, 480W, -20 ~ +70°C (For more ref)