

IGS-812SM

8x 10/100/1000Base-T+ 12x 100/1000Base-X SFP Slot Ethernet Managed Switch



8 Industrial ethernet managed switch

IGS-812SM models are managed industrial grade Gigabit switches with 8x 10/100/1000Base-TX ports and 12 SFP Gigabit/Fast Ethernet fiber ports that provide stable and reliable Ethernet transmission. The Ethernet switches support a variety of management functions, including STP/RSTP/MSTP and ITU-T G.8032 Ring <50ms recovery time, layer 2 Ethernet IGMP, VLAN, QoS, Security, IPv6, bandwidth control, port mirroring, cable diagnostic and Green Ethernet. Housed in rugged DIN rail or wall mountable enclosures, these switches are designed for harsh environments, such as industrial networking, security automation applications, intelligent transportation systems (ITS) and are also suitable for many military and utility market applications where environmental conditions exceed commercial product specifications. Standard operating temperature range models (-10 to 60°C) and wide operating temperature range models (-40 to 75°C) fulfill the special needs of industrial automation applications.

Features

- 8x 10/100/1000Base-T RJ-45 with 12x 100/1000Base-X SFP Fiber
- UL60950-1, CE, FCC, Rail Traffic EN50121-4 certified
- Industrial Grade EMS, EMI, EN61000-6-2, EN61000-6-4 certified
- Cable diagnostic, Measuring cable OK or broken point distance
- Support IEEE802.3az EEE (Energy Efficient Ethernet) Management to optimize the power consumption
- STP, RSTP, MSTP, ITU-T G.8032 Ethernet Protection Ring (EPR) for cabling redundant
- **u-Ring** for Redundant Ethernet Ring, recovery time<20ms in 250 units
- QoS, Traffic classification QoS, CoS, bandwidth control for Ingress and Egress, Storm Control, DiffServ
- IEEE802.1Q VLAN, port based VLAN, MAC based VLAN, IP subnet based VLAN, Protocol based VLAN, VLAN translation, MVR
- Dynamic IEEE 802.3ad LACP Link Aggregation, Static Link Aggregation
- IGMP/MLD snooping V1/V2/V3, IGMP Filtering / Throttling, IGMP query, IGMP proxy reporting, MLD snooping
- Security : Port based and MAC based IEEE802.1X, RADIUS, ACL, TACACS+, HTTP/HTTPS, SSL/SSH v2
- Software upgrade via TFTP and HTTP, redundant firmware to avoid in case of upgrading failure
- DHCP client/Relay/Snooping/Snooping option 82/Relay option 82
- RMON, MIB II, Port mirroring, Event syslog, DNS, NTP/SNTP, IEEE802.1ab LLDP
- Supports IPv6 Telnet server /ICMP v6, SNMP, HTTP, SSH/SSL, NTP/SNTP, TFTP, QoS, ACL
- CLI, Web based management, **SNMP** v1/v2c/v3, Telnet server for management
- **SmartView** Management System

Specifications

Standard	IEEE 802.3	10Base-T 10Mbit/s Ethernet	Network Connector	8x RJ-45 10/100/1000Base-T auto negotiation speed, Auto MDI/MDI-X function, Full/Half duplex 12x 100/1000Base-X dual speed mode SFP slot, with DDML
	IEEE 802.3u	100Base-TX, 100Base-FX, Fast Ethernet	Console	RS-232 (RJ-45)
	IEEE 802.3ab	1000Base-T Gbit/s Ethernet over twisted pair	Network Cable	UTP/STP above Cat. 5e cable EIA/TIA-568 100-ohm (100m)
	IEEE 802.3z	1000Base-X Gbit/s Ethernet over Fiber-Optic	Protocol	CSMA/CD
	IEEE 802.1d	STP (Spanning Tree Protocol)	Reverse Polarity Protection	Present
	IEEE 802.1w	RSTP (Rapid Spanning Tree Protocol)	Overload Current Protection	Present
	IEEE 802.1s	MSTP (Multiple Spanning Tree Protocol)	CPU Watch Dog	Present
	ITU-T G.8032 / Y.1344	EPR (Ethernet Protection Ring)	Power Supply	Redundant Dual DC12/24/48VDC (9.6~60VDC) Input power (Removable Terminal Block)
	IEEE 802.1Q	Virtual LANs (VLAN)	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)
	IEEE 802.1X	Port based Network Access Control, Authentication	Warning Message	System syslog, SMTP/e-mail event message, alarm relay
	IEEE 802.3ad	Link aggregation for parallel links with LACP (Link Aggregation Control Protocol)	Alarm Relay Contact	Relay outputs with current carrying capacity of 1 A @24VDC
	IEEE 802.3x	Flow control for Full Duplex	Removable Terminal Block	Provide 2 redundant power, alarm relay contact, 6 Pin
	IEEE 802.1ad	Stacked VLANs, Q-in-Q	Operating Temperature	-10 ~ 60°C (IGS-812SM) -40 ~ 75°C (IGS-812SM-E)
	IEEE 802.1p	LAN Layer 2 QoS/CoS Protocol for Traffic Prioritization	Operating Humidity	5% to 95% (Non-condensing)
	IEEE 802.1ab	Link Layer Discovery Protocol (LLDP)	Storage Temperature	-40 ~ 85°C
	IEEE 802.3az	EEE (Energy Efficient Ethernet)	Housing	Rugged Metal, IP30 Protection
VLAN ID	4096		Dimensions	106 x 72 x152 mm (D x W x H)
Switch Architecture	Back-plane (Switching Fabric): 40Gbps		Installation Mounting	DIN Rail mounting or wall mounting
Data Processing	Store and Forward			
Flow Control	IEEE 802.3x for full duplex mode Back pressure for half duplex mode			
Jumbo Frame	9.6KB			
MAC Address Table	8K			

Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.

Specifications

EMC/EMS	CE, FCC
EMI	FCC Part 15 Subpart B Class A, CE EN 55022 Class A EN61000-6-4 – Emission for industrial environment
EMS	EN61000-6-2 – Immunity for Industrial environment EN61000-4-2 (ESD) Level 3, Criteria B EN61000-4-3 (RS) Level 3, Criteria A EN61000-4-4 (EFT) Level 3, Criteria A EN61000-4-5 (Surge) Level 3, Criteria B EN61000-4-6 (CS) Level 3, Criteria A EN61000-4-8 (Magnetic Field) Level 3, Criteria A

Software Specifications

Topology	
VLAN	IEEE 802.1q VLAN, up to 4095 ID IEEE 802.1q VLAN, up to 4095 Groups IEEE 802.1ad Q-in-Q Port Based VLAN 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 MVR (Multiple VLAN Registration)
Link Aggregation (Port Trunk)	Static (Hash with SA, DA, IP, TCP/UDP port), up to 5 trunk group Dynamic (IEEE 802.3ad LACP), up to 5 trunk group
Spanning Tree	IEEE802.1d STP IEEE802.1w RSTP IEEE802.1s MSTP
Loop Protection	Present
u-Ring	Easy set for Ethernet protection Ring, Recovery Time <20ms, Maximum 250 Node
ITU-T G.8032 / Y.1344 ERPS (Ethernet Ring Protection)	Convergence time <50ms Single Ring, Sub-Ring, Multiple ring topology network
QoS Feature	
Class of Service	IEEE802.1p 8 active priorities queues for per port
Traffic Classification	IEEE802.1p based CoS
QoS	IP Precedence based CoS IP DSCP based CoS QCL(QoS Control List) : MAC Access control list (Source/Destination MAC, Ether type, Priority ID/ VLAN ID) QCL : IP extended access control list (Source/Destination IP, Protocol, TCP/UDP port number)
Bandwidth Control for Ingress	Rate in steps : 100 kbps / 1fps / 100fps Range : 100 kbps to 1Gbps / 1fps to 3300kfps Rate Unit : bit or frame
Bandwidth Control for Egress	Rate in steps : 100 kbps / 1fps / 100fps Range : 100 kbps to 1Gbps / 1fps to 3300kfps Rate Unit : bit or frame Per queue shaper
DiffServ (RF 2474) Remarkng	
Storm Control	for Unicast, Broadcast, Multicast
IP Multicasting Feature	
IGMP / MLD Snooping	IGMP Snooping v1, v2, v3 / MLD Snooping v1, v2 Port Filtering Profile Throttling Fast Leave Query
Security Features	
IEEE 802.1X	Port-Based MAC-Based
ACL	Number of rules : up to 256 entries for L2 / L3 / L4
RADIUS authentication & accounting	
TACACS+ authentication & accounting, TACACS+ 3.0	
HTTPS, HTTP	
SSL / SSH v2	
User Name	Local Authentication
Password Authentication	Remote Authentication (via RADIUS / TACACS+)

Safety	UL60950-1 (Pending)
Rail Traffic	EN 50121-4
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
MTBF	TBD (Above 30 years)
Warranty	5 years

Management Interface Access	Web, Telnet / SSH
Filtering	
Management Features	
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 II	RFC 1213
DHCP	Client Relay Snooping Snooping option 82 Relay option 82

IP Source Guard	
Port Mirroring	
Event Syslog	Syslog server (RFC3164) (Support 1 server)
Warning Message	System syslog, e-mail, alarm relay
DNS	Client, Proxy
NTP /SNTP	
LLDP (IEEE 802.1ab)	Link Layer Discovery Protocol LLDP-MED
IPv6 Features	
IPv6 Management	Telnet Server/ICMP v6
Stateless Auto-Configuration	
SNMP over IPv6	
HTTP over IPv6	
SSH over IPv6	
IPv6 Telnet Support	
IPv6 NTP / SNTP Support	
IPv6 TFTP Support	
IPv6 QoS	
IPv6 ACL	Number of rules: up to 256 entries L2 / L3 / L4

Others Features	
Green Ethernet	Supports IEEE802.3az 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 cable OK or broken point distance

Application

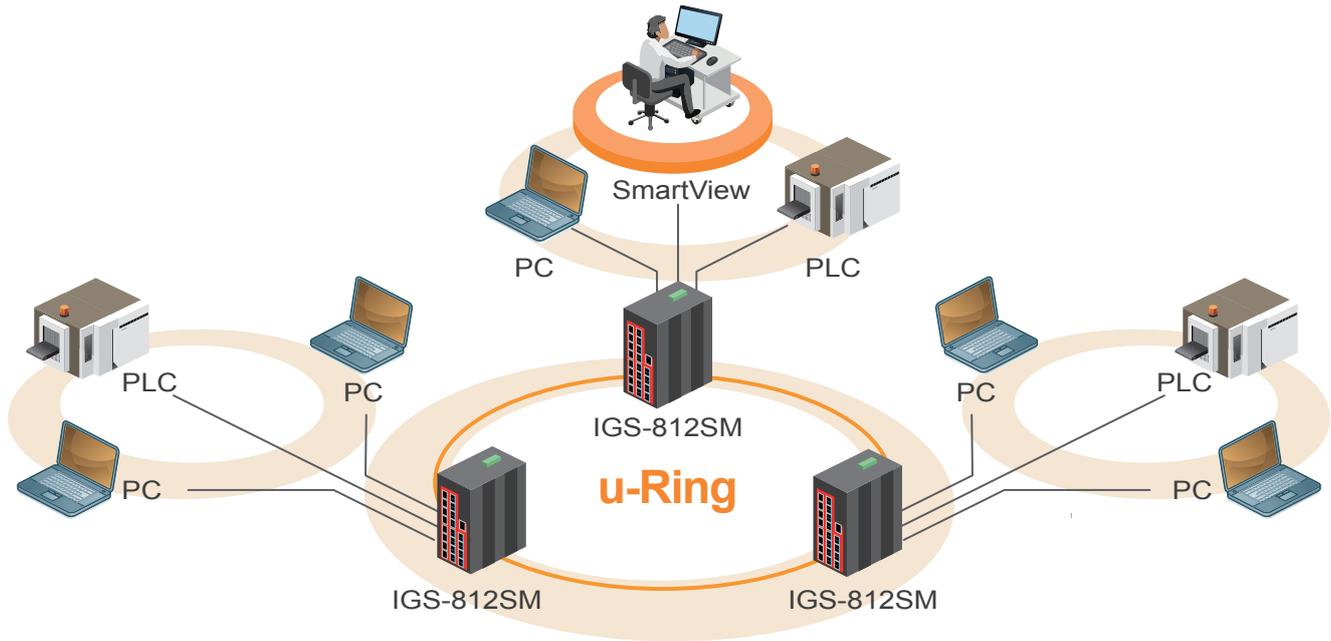
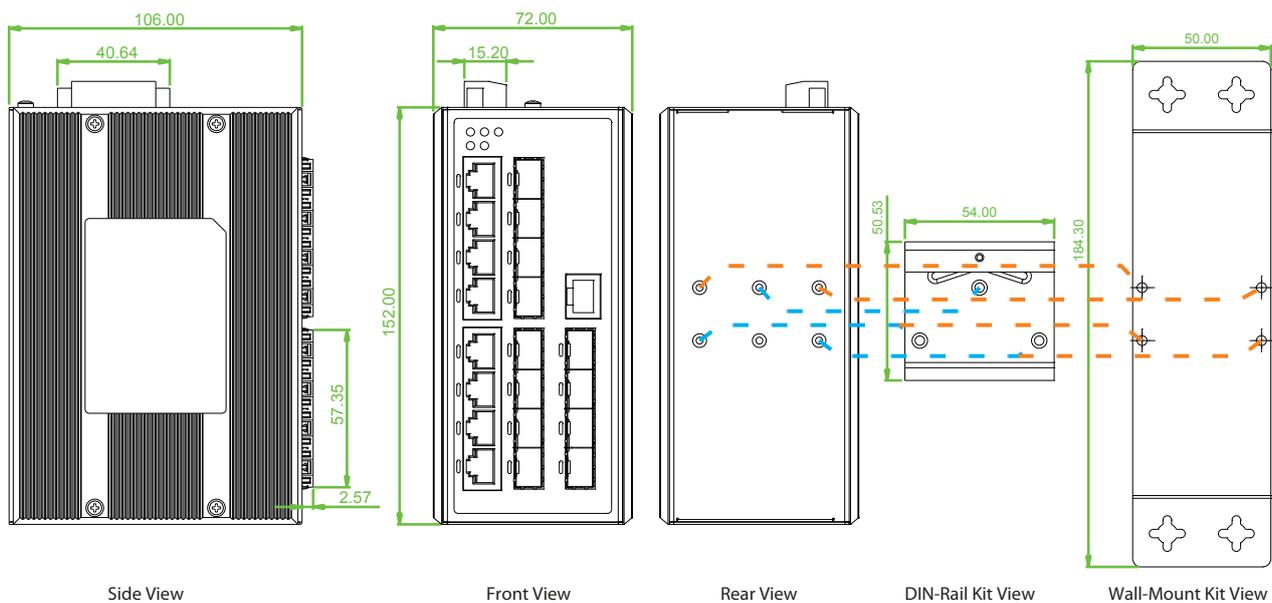


Figure : Topology

Dimensions



Ordering Information

Model Name	Description
IGS-812SM	8x 10/100/1000Base-T + 12x 100/1000Base-X SFP Slot Managed Switch (-10~60°C)
IGS-812SM-E	8x 10/100/1000Base-T + 12x 100/1000Base-X SFP Slot Managed Switch (-40~75°C)

Accessories

DR-4524	Industrial Power, Input 85 ~ 264VAC, Output 24VDC, 48W, -10 ~ +50°C
MDR-40-24	Industrial Power, Input 85 ~ 264VAC, Output 24VDC, 40W, -20 ~ +70°C
SFP Transceiver	Compatible, Reliable, 5-year Warranty

IGS-812SM – Temperature
 Example: IGS-812SM – E



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