

IFS+803GSM-8PH24

8x 10/100Base RJ45 + 3x 100/1000Base SFP with 8x PoE (180W, 24/48VDC)



- Supports IEEE 1588 PTP V2
- Supports u-Ring, ERPS, MSTP, RSTP, STP for redundant cabling
- Auto checking and auto reset when PoE PD fail
- EN50121-4, UL60950-1, EN60950-1, NEMA-TS2, EN61000-6-2, EN61000-6-4, CE, FCC certified
- 4KV surge protection for PoE, RJ45 and SFP ports



IFS+803GSM-8PH24 is a managed, industrial grade, L2 PoE (Power over Ethernet) switch that provide 8x 10/100Base-TX ports plus 3x 100/1000Base-X SFP ports with 8x PoE Ports. The PoE features enable power and data to be transferred via a single cable, hereby considerably reducing cabling and electrical wiring expenses. Housed in rugged DIN rail or wall mountable IP-30 enclosures, these switches are perfect choices for harsh environments, such as industrial networks, intelligent transportation systems (ITS) and are also suitable for many military and utility market applications where environmental conditions exceed commercial product specifications. The switch can also operate either at standard operating temperature range (-10 to 60°C) or at wide operating temperature range (-40 to 75°C) to fulfill the special needs of industrial automation applications.

Features

- 24/48VDC (20~57VDC) redundant dual input power with built-in very high efficiency booster (94~97%) to rise up 52VDC for PoE output (Figure 2)
 - Regulated PoE output voltage (52VDC) to stabilize PoE device, and guarantee delivery PoE power distance to 100meter (Figure 2)
 - Provides 8 port IEEE 802.3af / 802.3at PoE+ output, 30W per port, total 180W
 - Cable diagnostics, identifies opens/shorts distance
 - Provides 5 ring 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
 - 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
 - Provides SmartConfig for quick and easy mass Configuration Tool*
 - Supports SmartView for Centralized Management Tool*
- *Please see Chapter 1- **Software Management** for more details

Specifications

Standard	IEEE 802.3	10Base-T 10Mbit/s Ethernet	Flow Control	IEEE 802.3x	for full duplex mode Back pressure for half duplex mode
	IEEE 802.3u	100Base-TX, 100Base-FX, Fast Ethernet		Network Connector	8x 10/100Base-TX RJ-45 + 3x 100/1000Base-X SFP connector
	IEEE 802.3z	1000Base-X Gbit/s Ethernet over Fiber-Optic			RJ-45 UTP port supports Auto negotiation speed, Auto MDI/MDI-X function, SFP port supports 100/1000M dual speed with DDM1
	IEEE 802.3af	PoE (Power over Ethernet)		Console	RS-232 (RJ-45)
	IEEE 802.3at	PoE+ (Power over Ethernet enhancements)			PoE standard & RJ-45 Pin Assignment
	IEEE 802.1d	STP (Spanning Tree Protocol)		2 pairs PoE, PoE+, 30W/port	
	IEEE 802.1w	RSTP (Rapid Spanning Tree Protocol)		End-Span, Alternative A mode.	
	IEEE 802.1s	MSTP (Multiple Spanning Tree Protocol)		Positive (V+): RJ-45 pin 1, 2.	
	ITM-T G.8032 / Y.1344	ERPS (Ethernet Ring Protection Switching)		Negative (V-): RJ-45 pin 3, 6.	
	IEEE 802.1Q	Virtual LANs (VLAN)		Network Cable	UTP/STP above Cat. 5e cable
	IEEE 802.1X	Port based and MAC based Network Access Control, Authentication			EIA/TIA-568 100-ohm (100m)
	IEEE 802.3ac	Max frame size extended to 1522Bytes		Protocols	CSMA/CD
	IEEE 802.3ad	Link aggregation for parallel links with LACP(Link Aggregation Control Protocol)			Reverse Polarity Protection
	IEEE 802.3x	Flow control for Full Duplex		Overload Current Protection	
	IEEE 802.1ad	Stacked VLANs, Q-in-Q			CPU Watch Dog
	IEEE 802.1p	LAN Layer 2 QoS/CoS Protocol for Traffic Prioritization		Power Supply	
IEEE 802.1ab	Link Layer Discovery Protocol (LLDP)	Built-in very high efficiency booster(94~97%) to rise up 52VDC for PoE output			
IEEE 802.3az	EEE (Energy Efficient Ethernet)	Regulated PoE output voltage (52VDC) to stabilize PoE device, and guarantee delivery PoE power distance to 100meter (Figure 2)			
Switch Architecture	Back-plane (Switching Fabric): 7.6Gbps		Switch Architecture	Full wire-speed	
	Full wire-speed				
Data Processing	Store and Forward				

Power Consumption	Input Voltage	Total Power Consumption	Device Power Consumption	PoE Budget	Boost efficiency
	24VDC	191.2W	7.8W	180W	97.00%
	48VDC	193.4W	8.9W	180W	97.00%
PoE Power Budget	Maximum PoE Output power budget 30W / Per Port 180W for total				
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) SFP Fiber Per port: Link/Active (Green) PoE Port LED 1 LED /per Port : • PoE Output Power On : ON (Green) • PoE Fault (Over Load, Short Circuit,Port failed at Startup) : Flash 1times /sec (Green)				
Jumbo Frame	9.6KB				
IEEE802.3ac	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 (IFS+803GSM-8PH24) -40 ~ 75°C (IFS+803GSM-8PHE24)				
Operating Humidity	5% to 95% (Non-condensing)				
Storage Temperature	-40 ~ 85°C				
Housing	Rugged Metal, IP30 Protection, Fanless				
Dimensions	106 x 72 x 152 mm (D x W x H)				

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(Ethernet, SNAP, LLC), up to 128 entries VLAN Translation, up to 256 entries GVRP (GARP VLAN Registration Protocol) MVR (Multicast 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	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 application)
Loop Protection	Supported
ITM-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
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

Weight	0.86kg
Installation Mounting	DIN Rail mounting, or wall mounting (Optional)
MTBF	528,753 Hours (MIL-HDBK-217)
Warranty	5 years
Certification	
EMC	CE (EN55024, EN55032)
EMI (Electromagnetic Interference)	FCC Part 15 Subpart B Class A, CE
Railway Traffic	EN50121-4
Traffic control	NEMA TS2
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
EMS (Electromagnetic Susceptibility) Protection Level	EN61000-4-6 (CS) Level 3, Criteria A
Safety	UL60950-1, EN60950-1
Surge protection	4KV for PoE, UTP and Fiber ports
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6

DiffServ (RF 2474) Remark	
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 & accounting, TACACS+ 3.0	
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
EtherNet/IP	Supports for management and monitoring
Modbus/TCP	Supports for management and monitoring
SW & Configuration Upgrade	TFTP, HTTP Redundant firmware in case of upgrade failure
FTP client	Supports for upload/download configuration
RMON	RMON I (1, 2, 3, 9 group), RMON II
MIB	RFC1213 MIB II, Private MIB
UPnP	Supported

BOOTP	Supported
DHCP	Server, Client, Relay, Relay option 82 , Snooping
RARP	Supported
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	Server/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	Server/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
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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 budget limitation: maximum 180W

Application

Figure 1 : Application Example

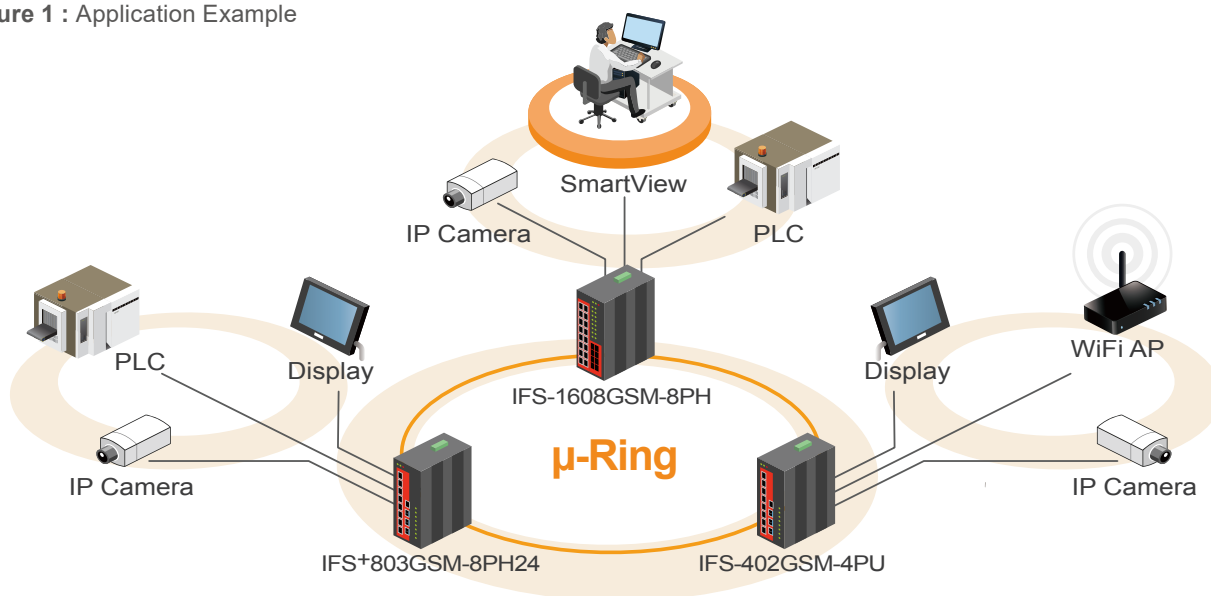
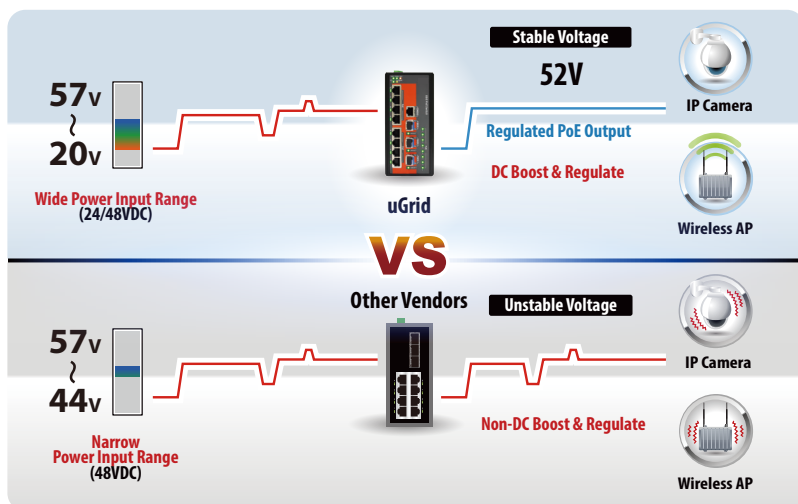


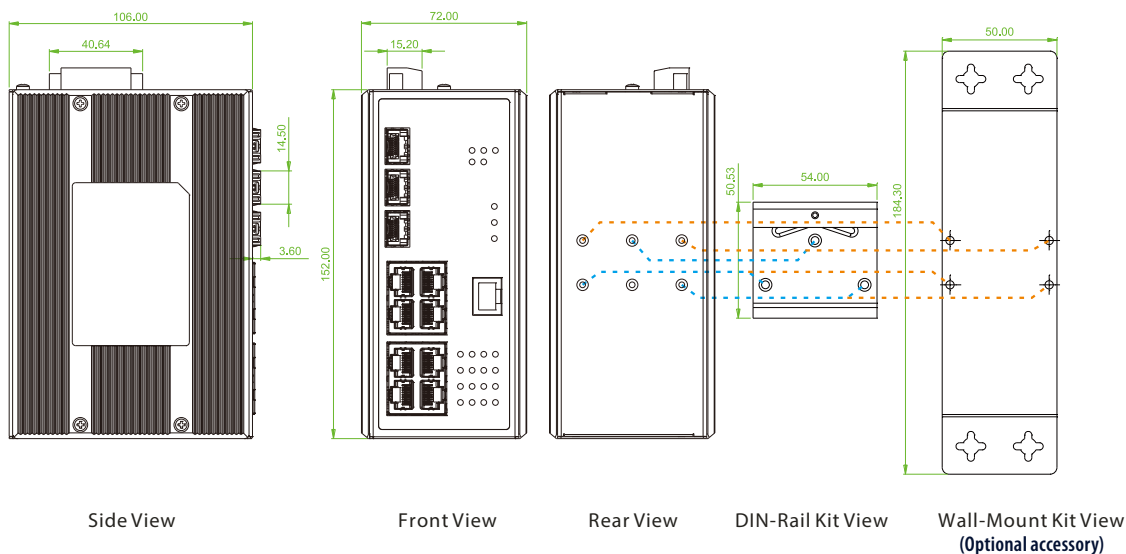
Figure 2 : High Efficiency Boost Technology for PoE



- Regulated PoE output voltage (52VDC) to stabilize PoE device
- Guarantee delivery PoE power distance to 100 meters
- Wide range input power 24/48VDC (20~57VDC)
- Built-in very high efficiency (94~97%) to boost PoE output voltage

Dimensions

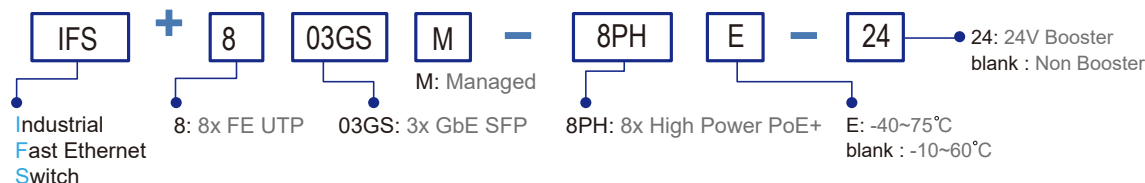
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Ordering Information

Model Name	Total Port	UTP		Fiber		PoE Port		Input power			Certification			Operating Temperature
		10/100 Base-TX	100/1000 Base-X	IEEE802.3at	Power Budget	Redundant	Railway EN50121-4	NEMA TS2	Safety UL60950-1 EN60950-1	EN61000-6-2 EN61000-6-4	CE, FCC			
IFS+803GSM-8PH24	11	8	3 SFP	8	180W	24/48VDC	V	V	V	V	V	-10~60°C		
IFS+803GSM-8PHE24	11	8	3 SFP	8	180W	24/48VDC	V	V	V	V	V	-40~75°C		

Model Naming Rule



Package List

- One device of the series
- Console cable (RJ-45 to DB9)
- Din Rail with screws
- Terminal block
- Protective caps for SFP ports

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 the series product for guaranteed compatibility and performance. The best performance can be guaranteed even in mission-critical applications. (Please see CTC Union's Industrial SFP datasheet for more details and more items.)

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-T7100-00-(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)

SFP Naming Rule

