IQS-402XSM



4x 2.5G RJ45 + 2x 1G/2.5G/10G SFP+ Compact Size

- >> Redundant 12/24/48VDC Power Input
- » Supports μ-Ring, ERPS, EPS, MSTP, RSTP, STP for Redundant Cabling
- » EN50121-4, EN61000-6-2, EN61000-6-4, CE and FCC Certified











The industrial 2.5G managed Ethernet switch IQS-402XSM features 4 ports 2.5Gbps UTP and equipped with 2 SFP plus slots of maximum 10Gbps to meet high-bandwidth transmission requirements, fanless design, high MTBF, supports wide operating temperature, and redundant 12/24/48VDC power input, it is suitable for heavy-duty applications in harsh environments such as industrial factory automation and data centers, intelligent transportation systems, military and utility market applications where environmental conditions exceed commercial product specifications.

Features

- 4x 10M/100M/1G/2.5GBase-T RJ-45 + 2x 1G/2.5G/10GBase-X SFP+
- Provides 3 ring instances that each can support μ-Ring, μ-Chain or Sub-Ring type for flexible uses.
- Supports up to 3 rings in one device (Please see CTC μ-Ring white paper for more details and more topology application)
- DHCP Server/Client/Relay/Snooping/Snooping option 82/Relay option 82
- QoS, Traffic classification QoS, CoS, bandwidth control for Ingress and Egress, Storm Control, DiffServ
- IEEE802.1q 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
- Flexibility 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 upgrade failure
- RMON, MIB II, Port mirroring, Event syslog, DNS, NTP, SNTP, IEEE802.1ab LLDP
- Supports IPv6 Telnet server /ICMP v6
- CLI, Web based management, SNMP v1/v2c/v3, Telnet 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 802.3bz	2.5GBase-T
	IEEE 802.3z	1000Base-X Gbit/s Ethernet over Fiber-Optic
	IEEE 802.3ae	10G bit/s Ethernet over Fiber
	ITU-T G.8032 / Y.1344	ERPS (Ethernet Ring Protection Switching)
	ITU-T G.8031 / Y.1342	EPS (Ethernet Protection Switching)
	IEEE 802.1d	STP (Spanning Tree Protocol)
	IEEE 802.1w	RSTP (Rapid Spanning Tree Protocol)
	IEEE 802.1s	MSTP (Multiple Spanning Tree Protocol)
	IEEE 802.1Q	Virtual LANs (VLAN)
	IEEE 802.1X	Port based and MAC based Network Access Control, Authentication

Industrial Managed 2.5G/10G Switch

Standard H+ 802 36	Standard		May frame pize extended to		
ILEL 802.3r	Stanuaru	IEEE 802.3ac			
FFF 802 lab		200 2000 2 1/			
EEE 802.1p					
Switch Architecture Data Processing Flow Control Network Connector Network Connector Network Connector Architecture Archit					
Switch Architecture Back-Plane (Switching Fabric) (BOSpes (Full Wire-Speed)		· · · · · · · · · · · · · · · · · · ·			
Riow Control Riow Control Rick 8002.5x for hill diplax mode Back pressure for half duplex mode Network Connector AutoMarioMario/2.56Rase-T RJ-45 + 2x 10x2.56/106Rase-X SFP RJ45 port supports Auto negotation, Auto MbI/MDI/X function RJ45 port supports Auto negotation, Auto MbI/MDI/X function RJ45 port supports Gr2.56/106 speed with DDMI RJ45 port supports Gr2.56/106 sp	Curitab Arabitaatura				
Network Connector Act 10M/100M/10(2/5)6/Base TR.H-45 + 2x 10/2/56/Base TR.H-45 + 2x 10/2/56/		, ,	j Fabric): 60Gbps (Full Wire-Spee	30)	
Network Connector					
RL45 port supports Auto negotiation, Auto MDVMDLX function SPP port supports 16/2.56/106 speed with DDMI Network Cable EINTIA-568 100-otem (100meter) CPU Watch Dog Power Supply Power Supply Power Consumption Redundant dual power input 12/24/48/VDC(9.6–60VDC) (Removable terminal block) Input voltage Total Power Consumption Power Consumption LED System: Power 1 (Groon), Power 2 (Groon) LIPT 10/100 Link/Active (Groon) Jumbo Frame REER802.3ac MAC Address Table Max frame size extended to 1522Bytes (allow 0-tag in packet) MAC Address Table SFP Slot: Link/Active (Groon) LED Device Memory Warning Message Alarm Relay Contact Removable Terminal Block Operating Temperature Operating Temperature Operating Temperature Operating Temperature Operating Temperature Housing Dimensions Dimensions Weight Installation Mounting Dimensions Warranty Certification MTBF S88.603 Hours (MIL-HDBK-217) SYstem P. Subpart B Class A.CE Immunity for Heavy Industrial Environment Emission for Heavy Industrial Environment Industrial Environment Emission for Heavy Industrial Environment Industrial Environment Emission for Heavy Industrial Environment Industrial En					
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Network Cable EIA/TIA 568 100-ohm (100meter)			-	function	
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Protocols Supported Supported Supported Supported Supported Supported Supported Power Supply Redundant dual power input 12/24/48/DC(9.6~60VDC) (Removable terminal block) Input Voltage Total Power Consumption 12VDC 11.7W 24VDC 12.3W 48VDC 14.W Voltage Total Power 2 (Green) VITP: 10/100 Link/Active (Green), 16/2.5G Link/Active (Amber) SFP Slic: Link/Active (Green), 16/2.5G Link/Active (Amber) SFP Slic: Link/Active (Green), 16/2.5G Link/Active (Amber) SFP Slic: Link/Active (Green) SFP Slic	Network Cable	EIA/TIA-568 100-ohm (100meter)			
CPU Watch Dog Supported	5				
CPU Watch Dog Power Supply Redundant dual power input 12/24/48VDC(9.6~60VDC) (Removable terminal block) Power Consumption Input Voltage					
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Input Voltage					
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LED System: Power 1 (Green), Power 2 (Green) UTP: 10/100 Link/Active (Green) SFP Slot: Link/Active (Green), 16/2.5G Link/Active (Amber) SFP Slot: Link/Active (Green) Jumbo Frame 9.6K Byte IEEE802.3ac Max frame size extended to 1522Bytes (allow Q-tag in packet) MAC Address Table Memory Buffer 512K Bytes for packet buffer Device Memory Warning Message Alarm Relay Contact Removable Terminal Block Operating Temperature Operating Temperature Housing Storage Temperature Housing Dimensions 127.6 x 48.6 x 160mm (Dx W x H) Weight 1,530g Installation Mounting MTBF Warranty Warranty Sex Sex Subpart B Class A,CE EMI (Electromagnetic Interference) Railway Traffic Immunity for Heavy Industrial Environment Emission for Heavy Installation		24VDC	12.3W		
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Railway Traffic EN50121-4 Immunity for Heavy Industrial Environment Emission for Heavy EN61000-6-2	(Electromagnetic	FCC Part 15 Subpart 6	B Class A,CE		
Immunity for Heavy Industrial Environment Emission for Heavy ENG1000-6-2	,	The out of			
Emission for Heavy ENGLOOD G. 4	•	EN50121-4			
Emission for Heavy Industrial Environment EN61000-6-4		EN61000-6-2			
	Emission for Heavy Industrial Environment	EN61000-6-4			

Industrial Managed 2.5G/10G Switch

	2101000 12 (200) 201010 0 0110110 0
(Electromagnetic Susceptibility) Protection Level	EN61000-4-3 (RS) Level 3, Criteria A
	EN61000-4-4 (Burst) Level 3, Criteria A
11010011011 20101	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
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-31
Vibration	IEC 60068-2-6

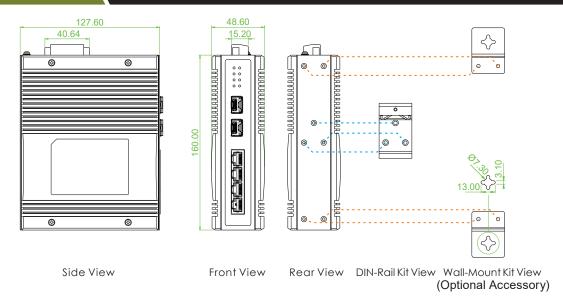
Software Specific	cations		
Topology			
	IEEE 802.1q VLAN, up to 4094 802.1Q VLAN ID		
	IEEE 802.1q VLAN, up to 4094 Groups		
	IEEE 802.1ad Q-in-Q		
	MAC-based VLAN, up to 256 entries		
	IP Subnet-based VLAN, up to 128 entries		
	Protocol-based VLAN (Ethernt, SNAP, LLC), up to 128 entries		
	VLAN Translation, up to 256 entries		
	Private VLAN for port isolation		
	GVRP (GARP VLAN Registration Protocol)		
	MVR (Multicast VLAN Registration)		
	Voice VLAN		
Link Aggregation	Static (Hash with SA, DA, IP, TCP/UDP port), up to 5 trunk group		
(Port Trunk)	Dynamic (IEEE 802.3ad LACP), up to 5 trunk group		
Spanning Tree	IEEE802.1d STP		
	IEEE802.1w RSTP		
	IEEE802.1s MSTP		
Multiple μ-Ring	Up to 3 instances that each supports μ -Ring, μ -Chain or Sub-Ring type for flexible uses, and maximum up to 3 Rings		
	Recovery time <10ms		
	The maximum number of devices in the ring supports 250 nodes		
ITU-T G.8032 / Y.1344 ERPS	Recovery time <50ms		
(Ethernet Ring Protection)	Single Ring, Sub-Ring, Multiple ring topology network		
ITU-T G.8031 / Y.1342 EPS (Ethernet Protection Switching)	Supported		
Loop Protection	Supported		
QoS Features			
Class of Service	IEEE802.1p 8 active priorities queues for per port		
Traffic Classification QoS	IEEE802.1p based CoS		
	IP Precedence based CoS		
	IP DSCP based CoS		
	QCL (QoS Control List): Frame Type, Source/Destination MAC, VLAN ID, PCP, DEI, Protocol, Source IP, IP Fragment, DSCP, TCP/UDP port number		
Bandwidth Control for Ingress	100~1,000,000 when the "Unit" is "kbps" and 1~1,000 when the "Unit" is "Mbps"		
Bandwidth Control for Egress	100~1,000,000 when the "Unit" is "kbps" and 1~1,000 when the "Unit" is "Mbps"		
	Per queue / Port shaper		
DiffServ (RF 2474) Remarking			
Storm Control	for Unicast, Broadcast, Multicast		
IP Multicasting Fea	atures		
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		

Coourity East-was	
Security Features	D. d D d
IEEE 802.1X	Port-Based MAG Broad
401	MAC-Based
ACL	Training of the Local Charles
	for L2 / L3 / L4 L2 : Mac address SA/DA/VLAN
	L3: IP address SA/DA, Subnet
RADIUS	L4 : TCP/UDP
	Authentication & Accounting
TACACS+	Authentication, Authorization, Accounting
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
Management Featu	res
CLI	Cisco® like CLI
WeB UI	Supported Supported
Telnet	
SNMP	V1, V2c, V3
sFlow	Supported
Modbus/TCP	Support for management and monitoring
SW & Configuration Upgrade	SFTP, TFTP, HTTP
garana apgrana	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 Supported
DHCP	Server, Client, Relay, Relay option 82, Snooping
IP Source Guard	Supported
Port Mirroring	Supported
Event Syslog	Syslog server (RFC3164) (Supports 4 servers)
Warning Message	System syslog, SMTP/e-mail event message, alarm relay
DNS	Client, Proxy
NTP, SNTP	Client
LLDP	Link Layer Discovery Protocol
(IEEE 802.1ab)	LLDP-MED
IPv6 Features	
IPv6 Management	Telnet Server/ICMP v6
SNMP over IPv6	Supported 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
II VO AOL	for L2 / L3 / L4
	L2: Mac address SA/DA/VLAN
	L3: IP address SIP, Subnet (32bit) L4: TCP/UDP
	LT . IOI/UUI

Industrial Managed 2.5G/10G Switch

10

Dimensions



Ordering	Informa	ation					
	Total Ports	RJ45	SFP	Redundant Power Input	Certification		
Model Name		10/100/1G/2.5G Base-T	1G/2.5G/10G		EN50121-4	EN61000-6-2 EN61000-6-4	CE FCC
IQS-402XSM	6	4	2	12/24/48VDC	V	V	V

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-M9000-85-D(E)	Industrial SFP 10GBase-SR MM, 300meter, wave length 850nm LC, DDMI, -10~70°C (-40~85°C)
ISFP-S9010-31-D(E)	Industrial SFP 10GBase-LR SM, 10km, 1310nm, 6.4dB, LC, DDMI, -10~70°C (-40~85°C)
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)

■ Industrial Power Supply

MDR-40-48 Industrial Power, Input 85 ~ 264VAC/120 ~ 370VDC, Output 48VDC, 40W, -20 ~ 70°C