

New

ICS-GS24044X & ICS-G24044X & ICS-G4804X

◀ 24x GbE SFP + 4x GbE RJ45 + 4x 1G/2.5G/10G SFP+

■ 24x GbE RJ45 + 4x GbE SFP + 4x 1G/2.5G/10G SFP+

▶ 48x GbE RJ45 + 4x 1G/2.5G/10G SFP+



- Support u-Ring, ,ERPS, EPS, MSTP, RSTP, STP for redundant cabling
- Supports maximum up to 14 u-rings in one device
- EN62368-1, CE, FCC, EN50121-4, EN61000-6-2, EN61000-6-4 certified
- 4KV surge protection for RJ45 and SFP ports
- Supports negative voltage power input



The industrial grade rackmount 10G up link switch, ICS-GS24044X, ICS-G24044X and ICS-G4804X managed L2+, hardened design, built for the rigorous demands of centralized and critical applications. The switch supports 4-ports 10GbE SFP+ and 24GbE SFP /24GbE RJ45 /48GbE RJ45ports. ICS series models are all fan-less designs with redundant, isolated power supplies (2 AC, 2 DC, AC + DC) and can be mounted in 19-inch EIA standard rack. ICS Series are certified with many industrial-grade standards and are ideal for deployments in harsh environments to deliver mission-critical network services. This product is ideal for Smart City, surveillance, Intelligent traffic control systems and production automation applications.

Features

- Redundant isolated 24/48/-48VDC (18~60VDC), or/and isolated 110/220VAC power inputs
- Supports negative voltage power input
- 2.25KVDC Hi-pot isolation protection for Ethernet ports and power
- STP, RSTP, MSTP, ITU-T G.8032 Ethernet Ring Protection Switching (ERPS) for network redundancy
- Provides 14 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 (ICS-GS24044X, ICS-G24044X)
- Supports SmartView™ for Centralized Management*

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

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 802.3ae	10 Gbit/s Ethernet over fiber
	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 802.3X	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): 136Gbps (ICS-GS24044X) 136Gbps (ICS-G24044X) 176Gbps (ICS-G4804X) (Full wire-speed)	
Data Processing	Store and Forward	
Network Connector	10GbE SFP+ : 4x 1G/2.5G/10G SFP socket Supports DDMI GbE SFP: 24x 100/1000Base-X SFP socket (ICS-GS24044X) 4x 100/1000Base-X SFP socket (ICS-G24044X) Support DDMI RJ45: 4x 10/100/1000Base-T RJ-45 (ICS-GS24044X) 24x 10/100/1000Base-T RJ-45 (ICS-G24044X) 48x 10/100/1000Base-T RJ-45 (ICS-G4804X) Support Auto negotiation speed, Auto MDI/MDI-X function	
Console	RS-232 (RJ-45)	
Network Cable	UTP/STP Cat.5e cable or above EIA/TIA-568 100-ohm (100meter)	
Protocols	CSMA/CD	
Reverse Polarity	Protection for input power	
Overload Current	Protection Supported	
CPU Watch Dog	Supported	
Power Supply	Redundant 2x AC input power (-AA model) Redundant 1x AC and 1x DC input power (-AD model) Redundant 2x DC input power (-DD model) AC input power (A) : Isolated 110/220VAC (85VAC~264VAC) DC input power (D) : Isolated 24/48/-48VDC (18~60VDC), Removable Terminal Block Supports negative voltage power input	
Power Consumption	<36W (ICS-GS24044X) <33W (ICS-G24044X) <52W (ICS-G4804X)	
LED	Per unit: Power 1 (Green), Power 2 (Green), Act/Alarm (Green/Amber), Ring Master (Green) P25~28 (ICS-GS24044X) P1~24 (ICS-G24044X) P1~48 (ICS-G4804X) Per RJ-45 port: 10/100 Link/Active (Green) 1000 Link/Active (Amber) P1~24 (ICS-GS24044X) P25~28 (ICS-G24044X) Per SFP Fiber port: Link/Active (Amber) P29~32 (ICS-GS24044X) P29~32 (ICS-G24044X) P49~52 (ICS-G4804X) Per SFP+ Fiber port: Link/Active (Amber) 10GBase-X Link/Active (Blue)	
Jumbo Frame	10K Byte	
MAC Address Table	32K	
Memory Buffer	4M Bytes for packet buffer	
Device Memory	16M Bytes Flash ROM, 1G Bytes RAM	
Warning Message	System Syslog, SMTP/ e-mail event message, alarm relay	
Alarm Relay Contact	Relay outputs with current carrying capacity of 1A @24VDC, 2-Pin removable terminal block	
Operating Temperature	-40 ~ 60°C	
Operating Humidity	5% to 95% (Non-condensing)	

Storage Temperature	-40 ~ 85°C	
Housing	Rugged Metal, IP30 Protection, Fanless	
Dimensions	280x 440 x 44mm (D x W x H)	
Weight	3.92kg	(ICS-GS24044X-AA)
	3.82kg	(ICS-GS24044X-AD)
	3.72kg	(ICS-GS24044X-DD)
	4.755kg	(ICS-G24044X-AA)
	4.51kg	(ICS-G24044X-AD)
	4.26kg	(ICS-G24044X-DD)
	3.23kg	(ICS-G4804X-AA)
	3.115kg	(ICS-G4804X-AD)
Installation Mounting	3.0kg	(ICS-G4804X-DD)
	19" rack mount	
MTBF	190,213Hours	(ICS-GS24044X-AA)
	205,524Hours	(ICS-GS24044X-AD)
	223,567Hours	(ICS-GS24044X-DD)
	103,057 Hours	(ICS-G24044X-AA)
	103,451 Hours	(ICS-G24044X-AD)
	103,447 Hours	(ICS-G24044X-DD)
	91,012 Hours	(ICS-G4804X-AA)
	99,582 Hours	(ICS-G4804X-AD)
	110,547 Hours	(ICS-G4804X-DD)
	(MIL-HDBK-217)	
Warranty	5 years	
Certification		
EMC	CE (EN55032, EN55035)	

Software Specifications

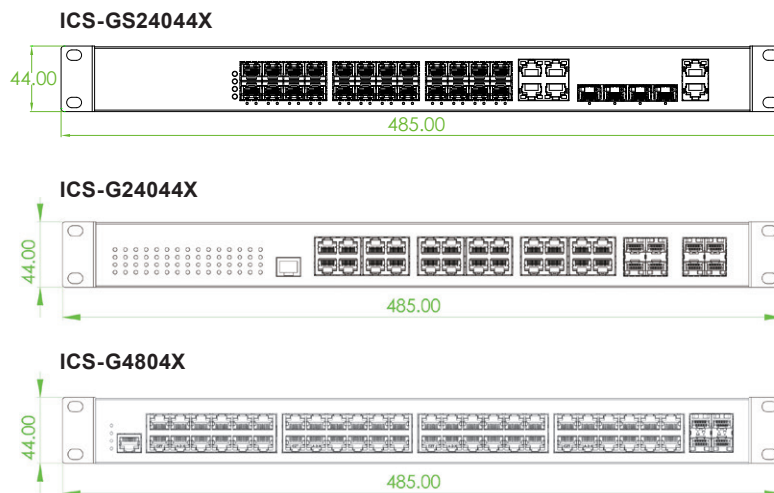
Topology		
VLAN	IEEE 802.1q VLAN, up to 4094	802.1Q VLAN VID
	IEEE 802.1q VLAN, up to	4094 Groups
	IEEE 802.1ad Q-in-Q	
	MAC-based VLAN, up to	256 entries
	IP Subnet-based VLAN, up to	128 entries
	Protocol-based VLAN (Ethernet, SNAP, LLC), up to	128 entries
	VLAN Translation, up to	256 entries
	Private VLAN for port isolation	
	GVRP (GARP VLAN Registration Protocol)	
	MVR (Multicast VLAN Registration)	
	Voice VLAN	
	Static	(IEEE 802.3ad LACP), Maximum trunk group : 16group (ICS-GS24044X, ICS-G24044X) 26group (ICS-G4804X)
	Dynamic (IEEE 802.3ad LACP), Maximum trunk group : 16group (ICS-GS24044X, ICS-G24044X) 26group (ICS-G4804X)	
Link Aggregation (Port Trunk)	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 14 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.	
Loop Protection	Supported	
	Recovery time <50ms	
ITU-T G.8032 / Y.1344 ERPS (Ethernet Ring Protection)	Single Ring, Sub-Ring, Multiple ring topology	
ITU-T G.8031 / Y.1342 EPS (Ethernet Protection Switching)	Supported	
QoS Features		
Class of Service	IEEE 802.1p 8 active priorities queues per port	
Traffic Classification QoS	IEEE 802.1p based CoS	
	IP Precedence based CoS	
	IP DSCP based CoS	
Traffic Classification QoS	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	Per port based	
Bandwidth Control for Egress	Per port based	
	Per queue / Per port shaper	
DiffServ (RF 2474) Remarkings		
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	
Security Features	Query / Static Router Port	
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	

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
	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
Safety	EN61000-4-8 (PFMF, Magnetic Field) Field Strength: 300A/m, Criteria A
	EN62368-1
Hi pot protection	DC 2.25KV for power to chassis ground, Ethernet port to chassis ground
4KV surge protection	Supported for RJ45 and SFP ports
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6

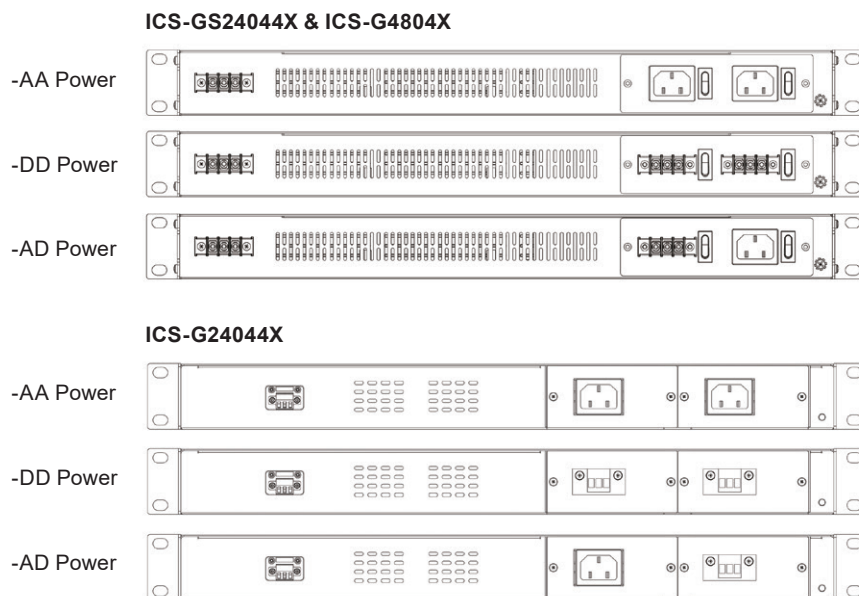
RADIUS	Authentication & Accounting
TACACS+	Authentication, Authorization, Accounting
HTTPS, HTTP	Supported
SSL / SSH v2	Supported
User Name Password Authentication	Local Authentication
Management Interface Access Filtering	Remote Authentication (via RADIUS / TACACS+)
Management Features	Web, Telnet / SSH, CLI RS-232 console
CLI	Cisco® like CLI
Web Based Management	
Telnet	Server
SNMP	V1, V2c, V3
sFlow	Supported
Modbus/TCP	Support for management and monitoring
SW & Configuration Upgrade	TFTP, HTTP
RMON	Redundant firmware in case of upgrade failure
MIB	RMON I (1, 2, 3, 9 group), RMON II
UPnP	RFC1213 MIB II, Private MIB
DHCP	Supported
IP Source Guard	Server, Client, Relay, Relay option 82, Snooping
Mirroring	Supported
Event Syslog	Local and Remote
Warning Message	Syslog server (RFC3164) (Support 4 server)
DNS	System syslog, e-mail, alarm relay
IEEE 1588 PTP V2 (ICS-GS24044X, ICS-G24044X)	Client, Proxy
NTP V4.0, SNTP	Supports 5 operating mode in each port : Ordinary-Boundary, Peer to Peer Transparent Clock, End to End Transparent Clock, Master, Slave
LLDP (IEEE 802.1ab)	Client
IPv6 Features	Link Layer Discovery Protocol
	LLDP-MED
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 SIP, Subnet (32bit)
Other Features	L4 : TCP/UDP
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

Dimensions

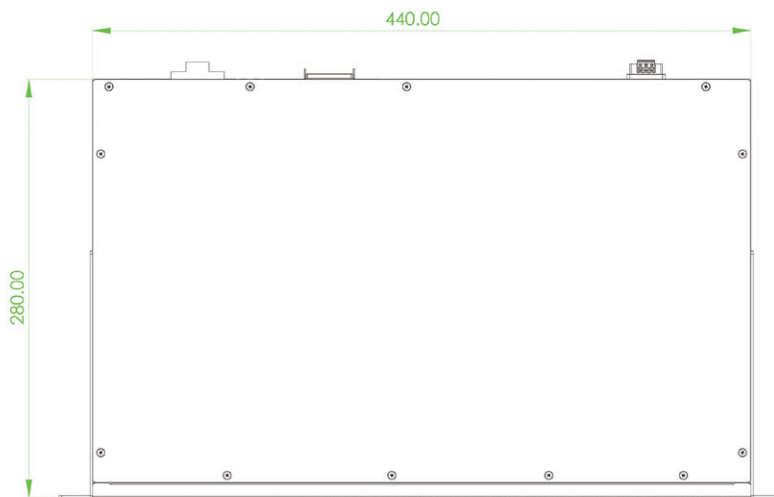
Front View



Rear View



Top View



Side View



Ordering Information

Model Name	Managed	Total Ports (Maximum)	GbE		10GbE	Input Power		Certification		
			10/100/1000 Base-T(X) RJ45	100/1000 Base-X SFP	1G/2.5G/ 10GBase-X SFP+	24/48/-48VDC	110/220VAC	Safety EN62368-1	CE, FCC	EN50121-4 EN61000-6-2 EN61000-6-4
ICS-GS24044X-AA	V	32	4	24	4		2	V	V	V
ICS-GS24044X-AD	V	32	4	24	4	1	1	V	V	V
ICS-GS24044X-DD	V	32	4	24	4	2		V	V	V
ICS-G24044X-AA	V	32	24	4	4		2	V	V	V
ICS-G24044X-AD	V	32	24	4	4	1	1	V	V	V
ICS-G24044X-DD	V	32	24	4	4	2		V	V	V
ICS-G4804X-AA	V	52	48		4		2	V	V	V
ICS-G4804X-AD	V	52	48		4	1	1	V	V	V
ICS-G4804X-DD	V	52	48		4	2		V	V	V

■ Package List

- ICS-GS24044X, ICS-G24044X or ICS-G4804X device
- Console cable (RJ-45 to DB-9)
- 19" rack-mount kit (brackets and screws)
- Protective caps for SFP ports
- AC Power cord (for AC power -A model)

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 10GbE 10GBase-SR, M/M, 300 meter (OM3 fiber), wave length 850nm, DDML, -10~70°C (-40~85°C)
ISFP-S9010-31-D(E)	Industrial SFP 10GbE 10GBase-LR, S/M, 10km, wave length 1310nm, DDML, -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, DDML, -10~70°C (-40~85°C)
ISFP-S7020-31-D(E)	Industrial SFP 1000Base-LX, S/M, 20km, wave length 1310nm, 15dB, LC, DDML, -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, DDML, -10~70°C (-40~85°C)
ISFP-S5030-31-D(E)	Industrial SFP 155M 100Base-FX, SM, 30km, 1310nm, 19dB, LC, DDML, -10~70°C (-40~85°C)

■ Industrial Power Supply

NDR-120-48	Industrial Power, Input 90 ~ 264VAC/127 ~ 370VDC, Output 48VDC, 120W, -20 ~ +70°C (For DC type)
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