

ICS-G4804X & ICS-G24044X

- ◀ 48x GbE RJ45 + 4x 1G/2.5G/10G SFP
- ▶ 24x GbE RJ45 + 4x 100/1000Base SFP + 4x 1G/2.5G/10G SFP



- Support u-Ring, ERPS, MSTP, RSTP, STP for redundant cabling
- Supports maximum up to 14 u-rings in one device
- UL60950-1, EN60950-1, CE, FCC, EN50121-4, EN61000-6-2, EN61000-6-4 certified
- 4KV surge protection for RJ45 and SFP ports
- Supports negative voltage power input



ICS-G4804X & ICS-G24044X are industrial grade, hardened design, managed L2+ switches, built for the rigorous demands of centralized and critical applications. The switch supports 4-ports 10GbE SFP+ and 24 / 48 GbE (10/100/1000BaseTX) RJ-45 ports, plus 4 dual speed (100/1000Base-X) SFP fiber optical slots. 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 24/48VDC, 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
 - Provides SmartConfig for quick and easy mass Configuration*
 - Supports SmartView for Centralized Management*
- *Please see Chapter 1- **Software Management** for more details

Specifications

Standard	IEEE 802.3	10Base-T 10Mbit/s Ethernet	Network Connector	10GbE SFP+ :	
	IEEE 802.3u	100Base-TX, 100Base-FX, Fast Ethernet		4x 1G/2.5G/10G SFP socket	
	IEEE 802.3ab	1000Base-T Gbit/s Ethernet over twisted pair		Supports DDMI	GbE SFP:
	IEEE 802.3z	1000Base-X Gbit/s Ethernet over Fiber-Optic		4x 100/1000Base-X SFP socket (ICS-G24044X)	Support DDMI
	IEEE 802.3ae	10 Gbit/s Ethernet over fiber		Support DDMI	RJ45:
	IEEE 802.1d	STP (Spanning Tree Protocol)		24x 10/100/1000Base-T RJ-45 (ICS-G24044X)	48x 10/100/1000Base-T RJ-45 (ICS-G4804X)
	IEEE 802.1w	RSTP (Rapid Spanning Tree Protocol)		Support Auto negotiation speed, Auto MDI/MDI-X function	
	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)		Jumbo Frame	10K Byte
	IEEE 802.1X	Port based and MAC based Network Access Control, Authentication		MAC Address Table	32K
	IEEE 802.3ac	Max frame size extended to 1522Bytes		Memory Buffer	4M Bytes for packet buffer
	IEEE 802.3ad	Link aggregation for parallel links with LACP(Link Aggregation Control Protocol)		Warning Message	System Syslog, SMTP/ e-mail event message, alarm relay
	IEEE 802.3X	Flow control for full duplex		Alarm Relay Contact	Relay outputs with current carrying capacity of 1A @24VDC, 2-Pin removable terminal block
	IEEE 802.1ad	Stacked VLANs, Q-in-Q		Operating Temperature	-10 ~ 60°C
	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, Fanless		
VLAN ID	4094	IEEE 802.1Q VLAN VID	Dimensions	280x 440 x 44mm (D x W x H)	
Switch Architecture	Back-plane (Switching Fabric):	136Gbps (ICS-G24044X)	Weight	4,755kg (ICS-G24044X-AA)	
	156Gbps (ICS-G4804X)	(Full wire-speed)	4.51kg (ICS-G24044X-AD)	4.26kg (ICS-G24044X-DD)	
Data Processing	Store and Forward		TBD (ICS-G4804X)		
			Installation Mounting	19" rack mount	
			MTBF	103,057 Hours (ICS-G24044X-AA)	
				103,451 Hours (ICS-G24044X-AD)	
				103,447 Hours (ICS-G24044X-DD)	
				TBD (ICS-G4804X)	
				(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
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	UL60950-1, EN60950-1
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
Freelfall	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
Link Aggregation (Port Trunk)	Static (IEEE 802.3ad LACP), Maximum trunk group: 16group (ICS-G24044X) 26group (ICS-G4804X)
	Dynamic (IEEE 802.3ad LACP), Maximum trunk group: 16group (ICS-G24044X) 26group (ICS-G4804X)
	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
ITU-T G.8032 / Y.1344 ERPS (Ethernet Ring Protection)	Recovery time <50ms
	Single Ring, Sub-Ring, Multiple ring topology
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
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) 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 & 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
Modbus/TCP	Support for management and monitoring
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
Mirroring	Local and Remote
Event Syslog	Syslog server (RFC3164) (Support 1 server)
Warning Message	System syslog, e-mail, alarm relay
DNS	Client, Proxy
IEEE 1588 PTP V2	Supports 5 operating mode in each port : Ordinary-Boundary, Peer to Peer Transparent Clock, End to End Transparent Clock, Master, Slave
NTP V4.0, 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
Other 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

Application

Figure 1 : 10G Backbone application

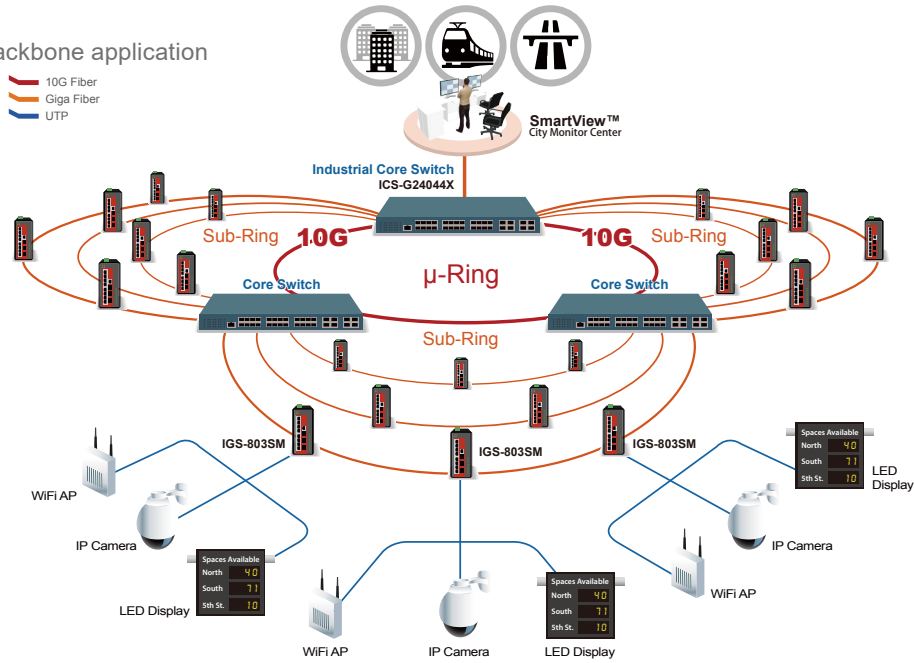
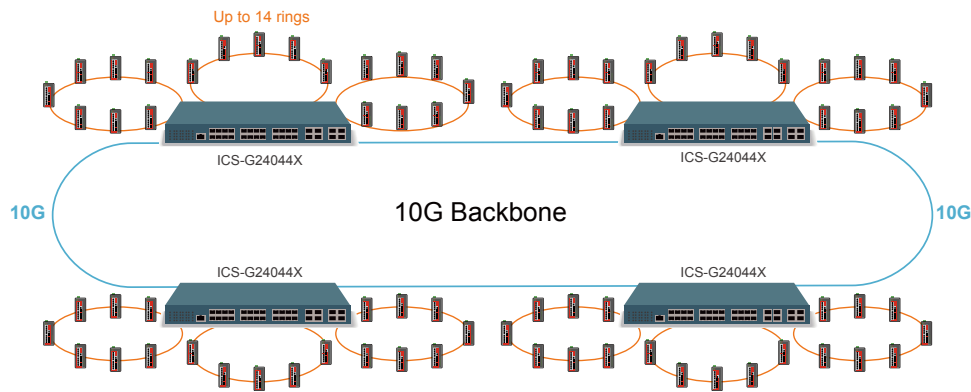


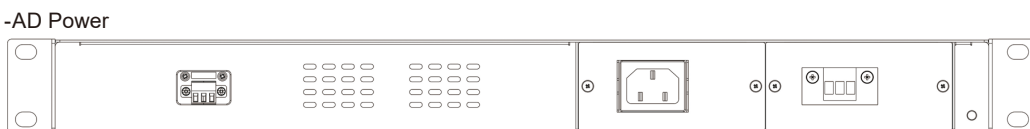
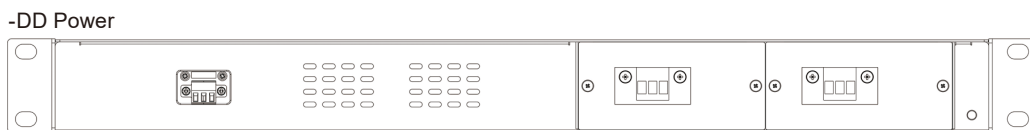
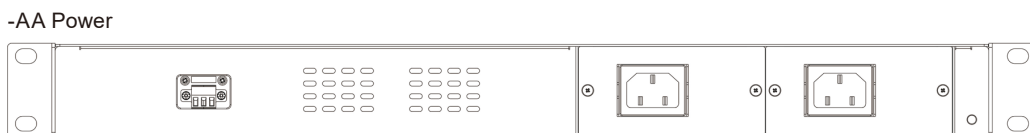
Figure 2 : 10G Backbone with μ -Ring topology



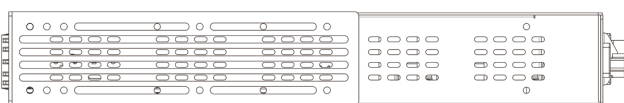
Dimensions

ICS-G24044X

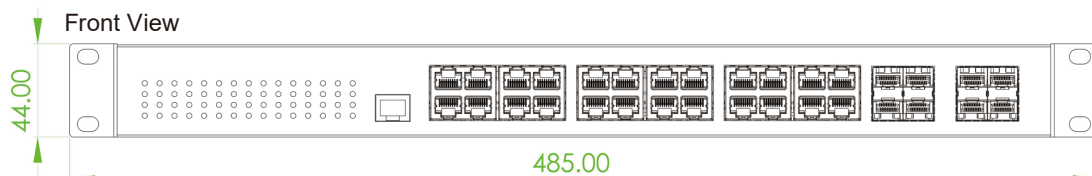
Rear View



Side View



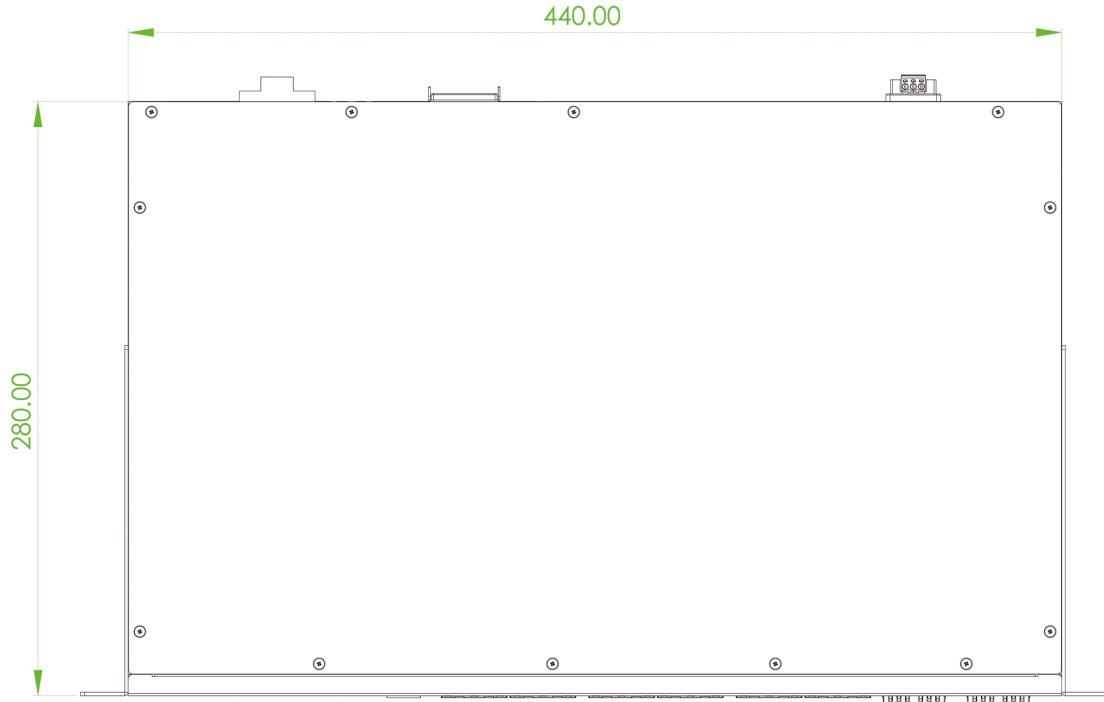
Front View



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Industrial 10G Core Switch ICS-G4804X & ICS-G24044X

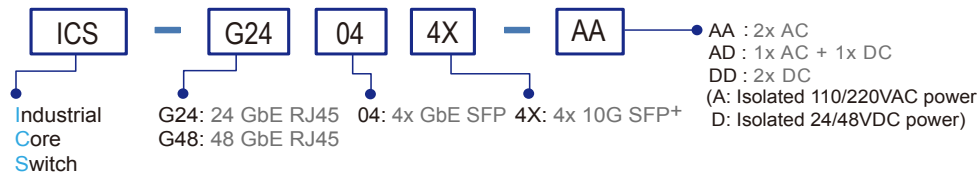
Top View



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+	24/48VDC	110/220VAC	Safety UL60950-1 EN60950-1	EN50121-4	EN61000-6-2 EN61000-6-4	CE, FCC
ICS-G24044X-AA	V	32	24	4	4		2	V	V	V	V
ICS-G24044X-AD	V	32	24	4	4	1	1	V	V	V	V
ICS-G24044X-DD	V	32	24	4	4		2	V	V	V	V
ICS-G4804X-AA	V	52	48		4		2	V	V	V	V
ICS-G4804X-AD	V	52	48		4	1	1	V	V	V	V
ICS-G4804X-DD	V	52	48		4		2	V	V	V	V

Model Naming Rule



Package List

- One device of the series
- 19" rack-mount kit (brackets and screws)
- AC Power cord (for AC power -A model)
- Console cable (RJ-45 to DB-9)
- Protective caps for SFP ports

Optional Accessories

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.

ISFP-M9000-85-D(E)	Industrial SFP 10GbE 10GBase-SR, M/M, 300 meter (OM3 fiber), wave length 850nm, DDMI, -10~70°C (-40~85°C)
ISFP-S9010-31-D(E)	Industrial SFP 10GbE 10GBase-LR, S/M, 10km, wave length 1310nm, 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)
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

