

Installation

The core switch comes with rack-mounting hardware brackets. When installing the rack-mounting brackets, be sure to correctly align the orientation pin. Use the screws provided in the rack-mounting kit to securely fasten the brackets.

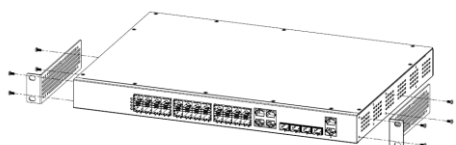


Figure 11. Attaching Rack-Mounting Brackets

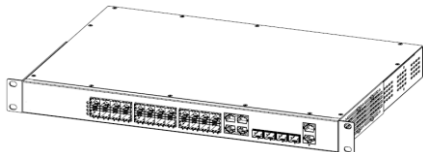


Figure 12. Core Switch with Rack-Mounting Brackets

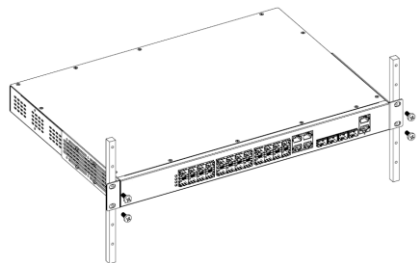


Figure 13. Mounting Core Switch in Rack

CTC[®] Union Technologies Co., Ltd. www.ctcu.com Quick Installation Guide

ICS-G24S2X

Industrial 24 x 100/1000Base-X SFP with 4 x GbE Combo, and 2 x 10GbE SFP+ Core Switch

ICS-G24S4X

Industrial 24 x 100/1000Base-X SFP with 4 x GbE Combo, and 4 x 10GbE SFP+ Core Switch



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To download this QIG or a more complete user manual, please visit
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Introduction

ICS-G24S2X & ICS-G24S4X Series are industrial grade managed core switches. ICS-G24S2X switches are equipped with 24 Gigabit SFP slots, 4 GbE combo ports and 2 10Gbps SFP+ ports; while ICS-G24S4X switches are with 24 Gigabit SFP slots, 4 GbE combo ports and 4 10Gbps SFP+ ports. These core switches provide a wide variety of redundant mechanisms to increase the reliability of network communications such as redundant and isolated power supplies, STP/RSTP/MSTP and ITU-T G.8032 Ethernet Ring Protection Switching. Apart from redundancy mechanism, advanced layer 2 management functions such as VLAN, QoS, IGMP are also supported. ICS-G24S2X & ICS-G24S4X Series are designed without fans and with IP30 rugged metal housing to meet demands of industrial grade and core layer applications.

Features

- Support isolated Low Voltage 24/48VDC and isolated High Voltage 110/220VAC or 110/220VDC redundant power inputs
- IP30 rugged metal housing and fanless design
- Wide operating temperature range -10°C~60°C
- Support many advanced Ethernet L2 functions
- Support proprietary u-Ring and provide up to 14 instances for ring redundancy applications
- Console, Telnet, SSH, Web and SNMP management
- CE, FCC, EN 50121-4 certified, EN61000-6-2, EN61000-6-4
- Support SmartView for centralized management and SmartConfig for quick and easy installation

Specifications

Optical & Ethernet Interface

- Port 1~20 support 100/1000Mbps dual speed SFP slots
- Port 21~24 support either SFP (100/1000Mbps) slot or RJ-45 (10/100/1000Mbps) interface
- Port 25~26 (ICS-G24S2X) & Port 25~28 (ICS-G24S4X) support 10Gbps SFP+ slots
- RJ-45 ports support Auto-negotiation, Auto MDI/MDI-X function
- SFP and SFP+ slots support DDMI

Switch Features

- Switching Fabric: 88Gbps Non-blocking (ICS-G24S2X), 128Gbps Non-blocking (ICS-G24S4X)
- Jumbo Frame: 10K
- MAC Table: 32K
- Memory Buffer: 4M Bytes

Specifications (cont.)

Power

- Power Supply:
 - ICS-G24S2X-AD & ICS-G24S4X-AD: 1 x Isolated Low Voltage 24/48VDC (18~60VDC) + 1 x Isolated High Voltage 110/220VAC (88~264VAC) or Isolated High Voltage 110/220VDC (88~300VDC)
 - ICS-G24S2X-AA & ICS-G24S4X-AA: 2 x Isolated High Voltage 110/220VAC (88~264VAC) or Isolated High Voltage 110/220VDC (88~300VDC)
 - ICS-G24S2X-DD & ICS-G24S4X-DD: 2 x Isolated Low Voltage 24/48VDC (18~60VDC)
- Reverse Polarity Protection: Yes
- Dual Power Inputs: Yes
- Connector: Removable terminal block
- Consumption:

Model	Input Voltage			
	110VAC	220VAC	24VDC	48VDC
ICS-G24S2X	31.1W	31.1W	29.8W	30.1W
ICS-G24S4X	34.4W	34.4W	33.1W	33.4W

Mechanical

- Water & Dust Proof: IP30 Protection
- Dimensions: 315 mm (D) x 440 mm (W) x 43.5 mm (H)
- Mounting: 19" Rack Mount (Kits included)
- Weight: 4450g (ICS-G24S2X-AD), 4695g (ICS-G24S2X-AA), 4200g (ICS-G24S2X-DD), 4510g (ICS-G24S4X-AD), 4755g (ICS-G24S4X-AA), 4260g (ICS-G24S4X-DD)

Environmental

- Operating Temperature: -10°C~60°C
- Storage Temperature: -40°C~85°C
- Humidity: 5%~95% (Non-condensing)

Certifications

- EMC: CE, FCC
- EMI (Electromagnetic Interference): FCC Part 15 Subpart B Class A, CE EN55022 Class A
- 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 (EFT) 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
- Railway Traffic: EN50121-4
- Shock: EN60068-2-27
- Freefall: EN60068-2-32
- Vibration: EN60068-2-6
- MTBF: 102357 Hours (ICS-G24S2X-AD), 98989 Hours (ICS-G24S2X-AA), 108791 Hours (ICS-G24S2X-DD), 102230 Hours (ICS-G24S4X-AD), 98870 Hours (ICS-G24S4X-AA), 108647 Hours (ICS-G24S4X-DD)

Panels

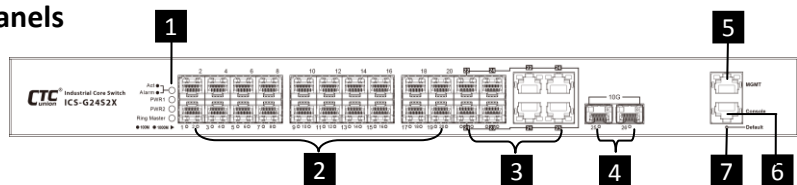


Figure 1. ICS-G24S2X Front Panel

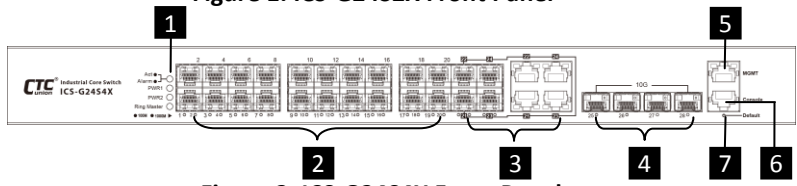


Figure 2. ICS-G24S4X Front Panel

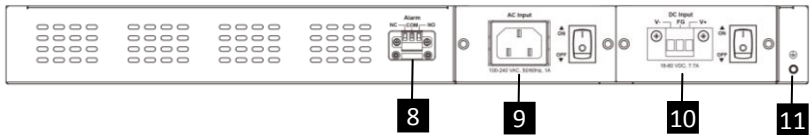


Figure 3. ICS-G24S2X-AD & ICS-G24S4X-AD Rear Panel

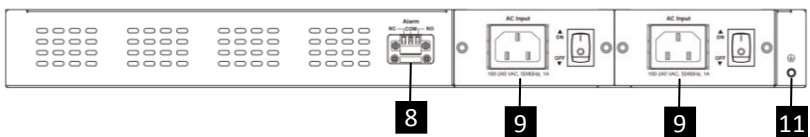


Figure 4. ICS-G24S2X-AA & ICS-G24S4X-AA Rear Panel

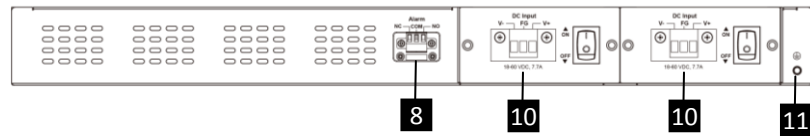


Figure 5. ICS-G24S2X-DD & ICS-G24S4X-DD Rear Panel

No.	Description
1	LED indicators
2	(Port 1~20) SFP Fiber interface
3	(Port 21~24) Combo SFP Fiber + RJ45 interface
4	(Port 25~26 or Port 25~28) 10Gbps SFP+ Fiber interface
5	Management Port
6	Console Port
7	Reset-to-Default Push Button
8	Alarm Relay Contacts
9	High Voltage AC/DC Power Input and Power On/Off Switch
10	Low Voltage DC Power Input and Power On/Off Switch
11	Earth Ground Connection

Fiber & LAN Connection

ICS-G24S2X & ICS-G24S4X Series support 20 100/1000Mbps dual speed SFP slots (labeled 1~20) and 4 combo ports that provide users either SFP slot (100/1000Mbps) or RJ-45 UTP (10/100/1000M) interface. For 10G fiber connection, ICS-G24S2X switches support 2 10G SFP+ slots (labeled 25~26) while ICS-G24S4X switches support 4 10G SFP+ slots (labeled 25~28). Users can use any compatible SFP or SFP+ fiber transceiver for network connection.

CONSOLE Port

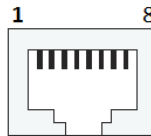


Figure 6. CONSOLE Port Pinout

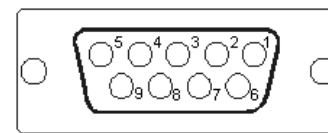


Figure 7. RS-232 (Female) Pinout

RJ-45 to DB-9 Cable Signal Mapping

RJ-45		Direction	DB-9 (Female)	
Signal	Pin		Pin	Signal
RXD	3	→	2	RXD
TXD	6	←	3	TXD
GND	4,5	—	5	GND

High Voltage AC/DC & Low Voltage DC Power Connection

ICS-G24S2X & ICS-G24S4X Series can be powered up by High Voltage AC/DC or Low Voltage DC power supply. On the rear panel of the device (AD or DD model; See Figure 3 & 5), a 3-pin terminal block is provided for DC power connection. To connect to the power supply, insert V+ and V- wire into power contacts. Then, tighten the wire-clamp screws to prevent power wires from loosening. For AC power connection (AD or AA model; See Figure 3 & 4), please connect the standard IEC power cord line plug to the power module. If the power supply is connected correctly, then the PWR LED on the front panel will light in green.

Alarm Relay

The Alarm is one electrical relay that can be wired into an alarm circuit and is triggered while the programmable events occur. From the common pin (COM), the relay can be connected as Normally Open (NO) or Normally Closed (NC). When an alarm occurs the NC-to-COM circuit opens and the COM-to-NO circuit closes. See Figure 9 and 10 for normal and fault illustration in each alarm relay type. Please note that the alarm relay contact can only support 1A current at 24VDC. Do not apply voltage and current that exceed these specifications.



Figure 8. Alarm Relay Terminal Block

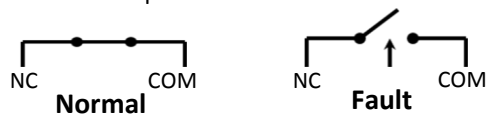


Figure 9. Alarm Relay for NC (Normally Closed) Type

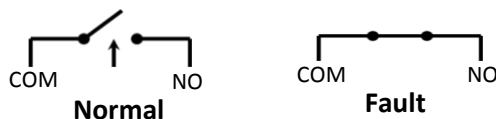


Figure 10. Alarm Relay for NO (Normally Open) Type

CLI & Web Basic Operation

ICS-G24S2X & ICS-G24S4X Series are managed core switches. Initial configuration (assignment of IP address) may be accomplished via the RS-232 console and a PC or laptop running terminal emulation software.

First, use the provided console cable to connect the RJ-45 to the "CONSOLE" port and the DB9 to PC COM port. Then, apply power to the switch. Run terminal emulation software and configure the terminal as follows:

115200 speed, 8 data bits, no parity, 1 stop bit, no flow control

At the "Username:" prompt, enter 'admin' (lower case, no quotes). Just press Enter when prompted for password.

ICS-G24S2X & ICS-G24S4X switches use a command line interface (CLI) through the serial port. Once the IP address has been configured, a web browser can be used to configure the device through a more easy-to-use GUI (graphical user interface). Please refer to the operation manual on the CDROM for Web management.

To set the IP address and subnet mask, issue the following commands:

```
# config terminal
(config)# interface vlan 1
(config-if-vlan)# ip address 192.168.0.10 255.255.255.0
(example: sets VID 1 to 192.168.0.10, subnet 255.255.255.0)
```

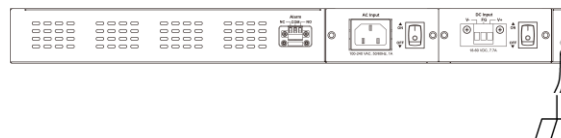
NOTE: The factory default IP address is 10.1.1.1 with mask 255.255.255.0

Earth Ground Connection

An earth ground connector is provided on the rear panel (See Figure 3, 4, 5) next to the power supply. Grounding the device can help to release leakage of electricity to the earth safely so as to reduce injuries from electromagnetic interference (EMI).

Prior to connecting to the power, it is important to connect the ground wire to the earth. Follow steps below to install ground wire:

1. Remove the grounding screw.
2. Attach the grounding screw to the ring terminal of the grounding cable. Make sure that the grounding cable is long enough to reach the earth.
3. Use a screwdriver to fasten the grounding screw.



LED Indicators

LED	Color	Definition
PWR1/ PWR2	Green	Power is connected and active at the corresponding input terminal connection.
ACT/Alarm	Red	When one or more of the programmable alarm conditions is active or abnormal conditions occur.
	Green	Normal operation without faults. Alarm conditions are all disabled.
Ring Master	Green	Lit when this unit is the 'master' in a fiber ring and all units are configured for u-Ring or ERPS (Ethernet Ring Protection Switching or G.8032).
Combo RJ-45 LINK/ACT	Green	The connected LAN speed is 10/100M.
	Yellow	The connected LAN speed is 1000M.
	Blinking	Blinking when there is Ethernet traffic.
SFP 1~24 LINK/ACT	Green	The fiber link speed is 100M.
	Yellow	The fiber link speed is 1000M.
	Blinking	Blinking when there is data traffic.
SFP+ 25~26 or 25~28 LINK/ACT	Amber	The fiber link speed is 1000M.
	Blue	The fiber link speed is 10G.
	Blinking	Blinking when there is data traffic.
MGMT	Green	The link speed is 10/100M.
	Yellow	The link speed is 1000M.
	Blinking	Blinking when link activity present.