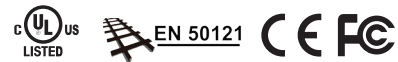


ICS-G7826/G7828 Series

24G+2 10GbE/24G+4 10GbE-port Layer 3 full Gigabit managed Ethernet switches



- > Layer 3 routing interconnects multiple LAN segments
- > 24 Gigabit Ethernet ports plus up to 4 10G Ethernet ports
- > Up to 28 optical fiber connections (SFP slots)
- > Fanless, 0 to 60°C operating temperature range
- > Turbo Ring and Turbo Chain (recovery time < 50 ms @ 250 switches), RSTP/STP, and MSTP for network redundancy
- > Isolated redundant power inputs with universal 110/220 VAC power supply range



Introduction

Process automation and transportation automation applications combine data, voice, and video, and consequently require high performance and high reliability. The ICS-G7826/G7828 series full Gigabit backbone switches are equipped with 24 Gigabit Ethernet ports plus up to 4 10 Gigabit Ethernet ports, and support Layer 3 routing functionality to facilitate the deployment of applications across networks, making them ideal for large scale industrial networks.

The ICS-G7826/G7828's full Gigabit capability increases bandwidth to provide high performance and the ability to quickly transfer large amounts of video, voice, and data across a network. The switches support the Turbo Ring, Turbo Chain, and RSTP/STP redundancy protocols, and are fanless and come with an isolated redundant power supply to increase system reliability and the availability of your network backbone.

Features and Benefits

- Layer 3 switching functionality to move data and information across networks
- Command line interface (CLI) for quickly configuring major managed functions
- Supports advanced VLAN capability with Q-in-Q tagging
- Software based IEEE 1588 PTP V2 (Precision Time Protocol) for precise time synchronization of networks
- DHCP Option 82 for IP address assignment with different policies
- Support EtherNet/IP and Modbus/TCP protocols for device management and monitoring
- Compatible with EtherNet/IP and PROFINET protocols for transparent data transmission
- Redundant Gigabit Turbo Ring and Turbo Chain (recovery time < 50 ms @ 250 switches), RSTP/STP, and MSTP for network redundancy
- IGMP snooping and GMRP for filtering multicast traffic
- IEEE 802.1Q VLAN and GVRP protocol to ease network planning
- QoS (IEEE 802.1p/1Q and TOS/DiffServ) to increase determinism
- Port Trunking for optimum bandwidth utilization
- TACACS+, SNMPv3, IEEE 802.1X, HTTPS, and SSH to enhance network security
- SNMPv1/v2c/v3 for different levels of network management
- RMON for efficient network monitoring and proactive capability
- Bandwidth management prevents unpredictable network status
- Lock port function for blocking unauthorized access based on MAC address
- Port mirroring for online debugging
- Automatic warning by exception through e-mail, relay output
- Digital inputs for integrating sensors and alarms with IP networks
- Redundant, dual AC power inputs

Specifications

Technology

Standards:

- IEEE 802.3 for 10BaseT
- IEEE 802.3u for 100BaseT(X) and 100BaseFX
- IEEE 802.3ab for 1000BaseT(X)
- IEEE 802.3z for 1000BaseSX/LX/LHX/ZX
- IEEE 802.3ae for 10 Gigabit Ethernet
- IEEE 802.3x for Flow Control
- IEEE 802.1D-2004 for Spanning Tree Protocol
- IEEE 802.1w for Rapid Spanning Tree Protocol
- IEEE 802.1s for Multiple Spanning Tree Protocol

- IEEE 802.1Q for VLAN Tagging
- IEEE 802.1p for Class of Service
- IEEE 802.1X for Authentication
- IEEE 802.3ad for Port Trunk with LACP
- Protocols:** IGMPv1/v2, GMRP, GVRP, SNMPv1/v2c/v3, DHCP Server/Client, BootP, TFTP, SNTP, SMTP, RARP, RMON, HTTP, HTTPS, Telnet, Syslog, DHCP Option 66/67/82, SSH, LLDP, IEEE 1588 PTP V2, EtherNet/IP, Modbus/TCP, SNMP Inform, NTP Server/Client
- Layer 3 Switching:** Static routing, RIP V1/V2, OSPF, DVMRP, PIM-DM
- Layer 3 Switching Redundancy:** VRRP
- MIB:** MIB-II, Ethernet-like MIB, P-BRIDGE MIB, Q-BRIDGE MIB, Bridge

MIB, RSTP MIB, RMON MIB Groups 1, 2, 3, 9

Flow Control: IEEE 802.3x flow control, back pressure flow control

Switch Properties

Priority Queues: 8

Max. Number of Available VLANs: 256

VLAN ID Range: VID 1 to 4094

IGMP Groups and Multicast Route: 1000

MAC Table Size: 16 K

Packet Buffer Size: 12 Mbit

DRAM Size: 128 MB

Flash Size: 16 MB

Jumbo Frame Size: 9 KB

Switching Fabric Capacity:

ICS-G7826: 88 Gbps

ICS-G7828: 128 Gbps

Forwarding Rate:

ICS-G7826: 65.5 Mpps (packets per second)

ICS-G7828: 95.2 Mpps

Interface

Gigabit Ethernet: 10/100/1000BaseT(X) or 100/1000BaseSFP slot

10 Gigabit Ethernet: 10GbE SFP+ slot

Console Port: RS-232 (RJ45 connector)

LED Indicators: STAT, PWR1, PWR2, FAULT, MSTR/HEAD, CPLR/TAIL

Alarm Contact: 1 relay output with current carrying capacity of 2 A @ 30 VDC

Digital Inputs: 1 input with the same ground, but electrically isolated from the electronics.

- +13 to +30V for state “1”
- -30 to +3V for state “0”
- Max. input current: 8 mA

Power Requirements

Input Voltage: 110/220 VAC (85 to 264 VAC)

Input Current:

ICS-G7826: Max. 0.98/0.55 A @ 110/220 VAC

ICS-G7828: Max. 1.16/0.65 A @ 110/220 VAC

Overload Current Protection: Present

Reverse Polarity Protection: Present

Physical Characteristics

Housing: IP30 protection

Dimensions: 440 x 44 x 386.9 mm (17.32 x 1.73 x 15.23 in)

Weight:

ICS-G7826: 5.3 kg

ICS-G7828: 5.5 kg

Installation: 19” rack mounting

Environmental Limits

Operating Temperature: 0 to 60°C (32 to 140°F)

Storage Temperature: -40 to 85°C (-40 to 185°F)

Ambient Relative Humidity: 5 to 95% (non-condensing)

Standards and Certifications

Safety: UL 60950-1, EN 60950-1

EMI: FCC Part 15 Subpart B Class A, EN 55022 Class A

EMS:

EN 61000-4-2 (ESD) Level 3, EN 61000-4-3 (RS) Level 3,

EN 61000-4-4 (EFT) Level 3, EN 61000-4-5 (Surge) Level 3,

EN 61000-4-6 (CS) Level 3, EN 61000-4-8, EN 61000-4-11

Rail Traffic: EN 50121-4

Shock: IEC 60068-2-27

Freefall: IEC 60068-2-32

Vibration: IEC 60068-2-6

Note: Please check Moxa’s website for the most up-to-date certification status.

MTBF (mean time between failures)

Time: 233,244 hrs

Database: Telcordia (Bellcore), GB

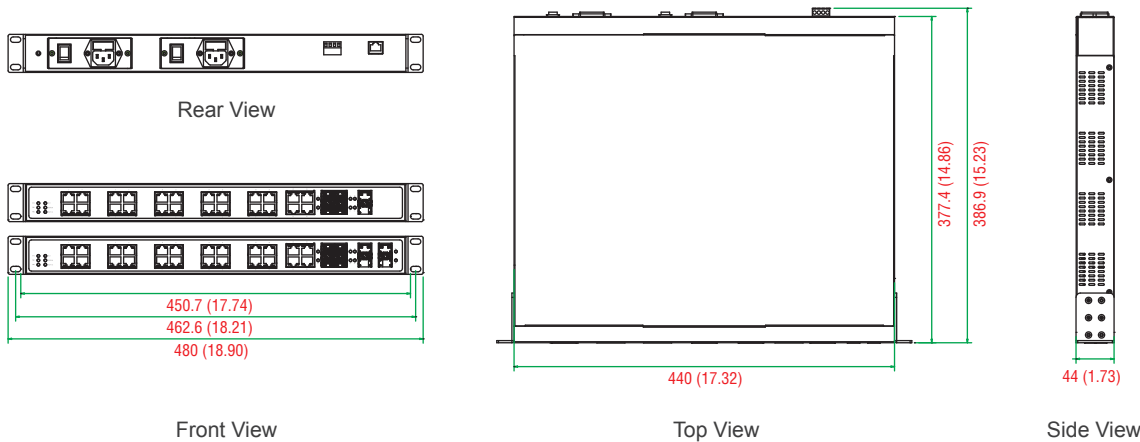
Warranty

Warranty Period: 5 years

Details: See www.moxa.com/warranty

Dimensions

Unit: mm (inch)



Ordering Information

Available Models	Port Interface				Power Supply	
	Gigabit Ethernet			10 Gigabit Ethernet	Isolated Power Supply 1	Isolated Power Supply 2
	10/100/1000BaseT(X)	100/1000BaseSFP*	Combo Port, 10/100/1000BaseT(X) or 100/1000BaseSFP*	10GbE SFP+*	HV: 85 to 264 VAC	HV: 85 to 264 VAC
ICS-G7826-4GTXSFP-2XG-HV-HV	20	–	4	2	1	1
ICS-G7826-8GSFP-4GTXSFP-2XG-HV-HV	12	8	4	2	1	1
ICS-G7826-20GSFP-4GTXSFP-2XG-HV-HV	–	20	4	2	1	1
ICS-G7828-4GTXSFP-4XG-HV-HV	20	–	4	4	1	1
ICS-G7828-8GSFP-4GTXSFP-4XG-HV-HV	12	8	4	4	1	1
ICS-G7828-20GSFP-4GTXSFP-4XG-HV-HV	–	20	4	4	1	1

Note: The ICS-G7826/G7828 series supports 10GbE SFP+ and 100/1000BaseSFP slots. See pages below for SFP-10G/1G/1FE series SFP module product information.

Optional Accessories (can be purchased separately)

MXview: Moxa industrial network management software with 50, 100, 250, 500, or 1000 nodes

EDS-SNMP OPC Server Pro: OPC server software that works with all SNMP devices

ABC-01: Configuration backup and restoration tool for managed Ethernet switches, 0 to 60°C operating temperature

Power Cords: See website accessories pages for details

Package Checklist

- ICS-G7826 or ICS-G7828 switch
- RJ45 to DB9 console port cable
- 2 power cords (EU and US)
- Protective caps for unused ports
- 2 rackmount ears
- Documentation and software CD
- Hardware installation guide (printed)
- Warranty card