

# ICS-G7528A Series

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



### Features and Benefits

- 24 Gigabit Ethernet ports plus up to 4 10G Ethernet ports
- Up to 28 optical fiber connections (SFP slots)
- Fanless, -40 to 75°C operating temperature range (T models)
- Turbo Ring and Turbo Chain (recovery time < 20 ms @ 250 switches)<sup>1</sup>, and STP/RSTP/MSTP for network redundancy
- Isolated redundant power inputs with universal 110/220 VAC power supply range
- Supports MXstudio for easy, visualized industrial network management
- V-ON™ ensures millisecond-level multicast data and video network recovery

### Certifications



## Introduction

Process automation and transportation automation applications combine data, voice, and video, and consequently require high performance and high reliability. The ICS-G7528A Series full Gigabit backbone switches are equipped with 24 Gigabit Ethernet ports plus up to 4 10 Gigabit Ethernet ports, making them ideal for large-scale industrial networks.

The ICS-G7528A'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 fanless switches support the Turbo Ring, Turbo Chain, and RSTP/STP redundancy technologies, and come with an isolated redundant power supply to increase system reliability and the availability of your network backbone.

### Additional Features and Benefits

- Command line interface (CLI) for quickly configuring major managed functions
- DHCP Option 82 for IP address assignment with different policies
- Supports EtherNet/IP, PROFINET, and Modbus TCP protocols for device management and monitoring
- 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
- Automatic warning by exception through email and relay output
- Digital inputs for integrating sensors and alarms with IP networks
- Port Trunking for optimum bandwidth utilization
- TACACS+, SNMPv3, IEEE 802.1X, HTTPS, and SSH to enhance network security
- Access control lists (ACL) increase the flexibility and security of network management (ICS-G7800A Series)
- SNMPv1/v2c/v3 for different levels of network management
- RMON for proactive and efficient network monitoring
- Bandwidth management to prevent unpredictable network status
- Lock port function for blocking unauthorized access based on MAC address
- Port mirroring for online debugging
- Redundant, dual AC power inputs

## Specifications

### Ethernet Interface

10/100/1000BaseT(X) Ports (RJ45 connector)	ICS-G7528A-4XG-HV-HV-T: 20 ICS-G7528A-8GSFP-4XG-HV-HV-T: 12
100/1000BaseSFP Ports	ICS-G7528A-8GSFP-4XG-HV-HV-T: 8 ICS-G7528A-20GSFP-4XG-HV-HV-T: 20
10GbE SFP+ Slots	4

1. If the port link speed is 1 Gigabit or higher, the recovery time is < 50 ms.

Combo Ports (10/100/1000BaseT(X) or 100/1000BaseSFP+)	4
Standards	<p>IEEE 802.1D-2004 for Spanning Tree Protocol  IEEE 802.1p for Class of Service  IEEE 802.1Q for VLAN Tagging  IEEE 802.1s for Multiple Spanning Tree Protocol  IEEE 802.1w for Rapid Spanning Tree Protocol  IEEE 802.1X for authentication  IEEE 802.3 for 10BaseT  IEEE 802.3ab for 1000BaseT(X)  IEEE 802.3ad for Port Trunk with LACP  IEEE 802.3u for 100BaseT(X) and 100BaseFX  IEEE 802.3x for flow control  IEEE 802.3z for 1000BaseSX/LX/LHX/ZX  IEEE 802.3ae for 10 Gigabit Ethernet</p>

### Ethernet Software Features

Management	<p>ARP  Back Pressure Flow Control  BOOTP  DDM  DHCP Option 66/67/82  DHCP Server/Client  Flow control  IPv4/IPv6  LLDP  Port Mirror  RARP  RMON  SCP  SMTP  SNMP Inform  SNMPv1/v2c/v3  Syslog  Telnet  TFTP</p>
Filter	<p>802.1Q  BPDU Filter  BPDU Guard  GMRP  GVRP  IGMP v1/v2/v3</p>
Redundancy Protocols	<p>Link Aggregation  MRP  MSTP  RSTP  Turbo Chain  Turbo Ring v1/v2  V-ON</p>
Security	<p>Access control list  Broadcast storm protection  HTTPS/SSL  MAB authentication  Sticky MAC  NTP authentication  Port Lock  RADIUS  SSH  TACACS+</p>
Time Management	<p>NTP Server/Client  SNTP</p>

MIB	Bridge MIB Ethernet-like MIB MIB-II P-BRIDGE MIB Q-BRIDGE MIB RMON MIB Groups 1, 2, 3, 9 RSTP MIB
Industrial Protocols	EtherNet/IP Modbus TCP PROFINET

#### Switch Properties

DRAM	128 MB
Flash	16 MB
IGMP Groups	4096
Jumbo Frame Size	9.6 KB
MAC Table Size	16 K
Max. No. of VLANs	256
Packet Buffer Size	12 Mbits
VLAN ID Range	VID 1 to 4094
Priority Queues	8

#### USB Interface

Storage Port	USB Type A
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#### Serial Interface

Console Port	USB-serial console (Type B connector)
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#### Input/Output Interface

Alarm Contact Channels	Relay output with current carrying capacity of 2 A @ 30 VDC
Digital Inputs	+13 to +30 V for state 1 -30 to +1 V for state 0 Max. input current: 8 mA

#### Power Parameters

Input Voltage	110 to 220 VAC Redundant dual inputs
Operating Voltage	85 to 264 VAC
Overload Current Protection	Supported
Reverse Polarity Protection	Supported
Input Current	1/0.5 A @ 110/220 VAC

#### Physical Characteristics

IP Rating	IP30
Dimensions	440 x 44 x 386.9 mm (17.32 x 1.73 x 15.23 in)
Weight	6470 g (14.26 lb)
Installation	Rack mounting

## Environmental Limits

Operating Temperature	-40 to 75°C (-40 to 167°F)
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)

## Standards and Certifications

Safety	UL 61010-2-201, EN 61010-2-201: ICS-G7528A-4XG-HV-HV-T, ICS-G7528A-8GSFP/20GSFP-4XG-HV-HV-T
EMC	EN 55032/24
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Railway	EN 50121-4
Freefall	IEC 60068-2-32
Shock	IEC 60068-2-27
Vibration	IEC 60068-2-6

## MTBF

Time	ICS-G7528A-4XG-HV-HV-T: 444,388 hrs ICS-G7528A-8GSFP-4XG-HV-HV-T: 427,108 hrs ICS-G7528A-20GSFP-4XG-HV-HV-T: 403,574 hrs
Standards	Telcordia (Bellcore), GB

## Warranty

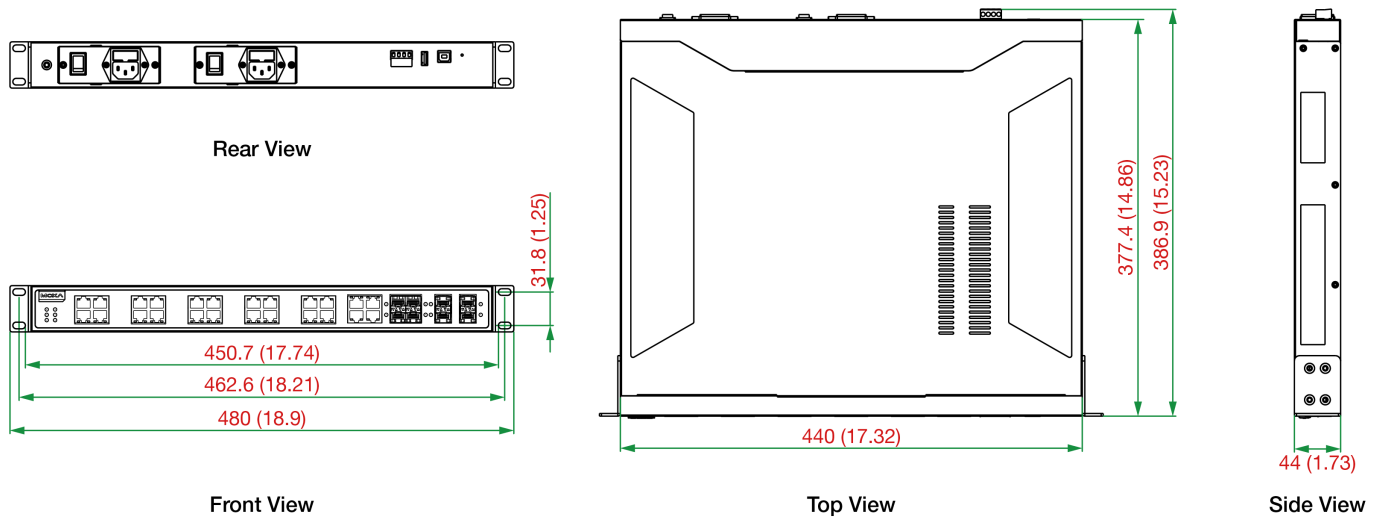
Warranty Period	5 years
Details	See <a href="http://www.moxa.com/warranty">www.moxa.com/warranty</a>

## Package Contents

Device	1 x ICS-G7528A Series switch
Cable	1 x USB type A male to USB type B male
Installation Kit	2 x rack-mounting ear caps, plastic, for SFP slot 12 x cap, plastic, for SFP slot 20 x cap, plastic, for SFP slot 32 x cap, plastic, for SFP slot
Power Supply	1 x power cord, EU type 1 x power cord, US type
Documentation	1 x quick installation guide 1 x warranty card
Note	SFP modules need to be purchased separately for use with this product.

## Dimensions

Unit: mm (inch)



## Ordering Information

Model Name	Layer	10GbE SFP+ Slots	Combo Ports 10/100/ 1000BaseT(X) or 100/ 1000BaseSFP+	100/1000BaseSFP Slots	10/100/ 1000BaseT(X) Ports (RJ45 Connector)	Operating Temp.
ICS-G7528A-4XG-HV-HV-T	2	4	4	0	20	-40 to 75°C
ICS-G7528A-8GSFP-4XG-HV-HV-T	2	4	4	8	12	-40 to 75°C
ICS-G7528A-20GSFP-4XG-HV-HV-T	2	4	4	20	0	-40 to 75°C

## Accessories (sold separately)

### Storage Kits

ABC-02-USB	Configuration backup and restoration tool, firmware upgrade, and log file storage tool for managed Ethernet switches and routers, 0 to 60°C operating temperature
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### SFP Modules

SFP-1FELLC-T	SFP module with 1 100Base single-mode with LC connector for 80 km transmission, -40 to 85°C operating temperature
SFP-1FEMLC-T	SFP module with 1 100Base multi-mode, LC connector for 2/4 km transmission, -40 to 85°C operating temperature
SFP-1FESLC-T	SFP module with 1 100Base single-mode with LC connector for 40 km transmission, -40 to 85°C operating temperature
SFP-1G10ALC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1310 nm, RX 1550 nm, 0 to 60°C operating temperature
SFP-1G10ALC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1310 nm, RX 1550 nm, -40 to 85°C operating temperature
SFP-1G10BLC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1550 nm, RX 1310 nm, 0 to 60°C operating temperature
SFP-1G10BLC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1550 nm, RX 1310 nm, -40 to 85°C operating temperature
SFP-1G20ALC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1310 nm, RX 1550 nm, 0 to 60°C operating temperature
SFP-1G20ALC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1310 nm, RX 1550 nm, -40 to 85°C operating temperature



PWC-C7UK-2B-183	Power cord with United Kingdom (UK) plug, 2.5A/250V, 1.83 m
PWC-C13UK-3B-183	Power cord with United Kingdom (UK) plug, 1.83 m
PWC-C13US-3B-183	Power cord with United States (US) plug, 1.83 m
PWC-C7EU-2B-183	Power cord with Continental Europe (EU) plug, 2.5A/250V, 1.83 m
PWC-C7US-2B-183	Power cord with United States (US) plug, 10A/125V, 1.83 m
PWC-C13EU-3B-183	Power cord with Continental Europe (EU) plug, 1.83 m

#### Software

MXview-50	Industrial network management software with a license for 50 nodes (by IP address)
MXview-100	Industrial network management software with a license for 100 nodes (by IP address)
MXview-250	Industrial network management software with a license for 250 nodes (by IP address)
MXview-500	Industrial network management software with a license for 500 nodes (by IP address)
MXview-1000	Industrial network management software with a license for 1000 nodes (by IP address)
MXview-2000	Industrial network management software with a license for 2000 nodes (by IP address)
MXview Upgrade-50	License expansion of MXview industrial network management software by 50 nodes (by IP address)

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