

PT-G7509 Series

IEC 61850-3 / EN50155 9G-port full Gigabit managed rackmount Ethernet switches



- > IEC 61850-3, IEEE 1613 (power substations), and EN50155/EN50121-4 (railway applications) compliant
- > VLAN Unaware: Supports priority-tagged frames to be received by specific IEDs
- > Turbo Ring, Turbo Chain, RSTP/STP, and MSTP* for network redundancy
- > Isolated redundant power inputs with universal 24/48 VDC or 110/220 VDC/VAC power supply range
- > NERC CIP compliance
- > -40 to 85°C operating temperature range

*Available in Q3, 2011



Introduction

The PowerTrans PT-G7509 is equipped with 9 combo Gigabit Ethernet ports, making it ideal for upgrading an existing network to Gigabit speeds and building a new full Gigabit backbone. The PT-G7509 is designed to meet the demands of power substation automation systems (IEC 61850-3, IEEE 1613), and railway applications (EN50155/EN50121-4). Gigabit transmission increases bandwidth to provide higher performance and

transfer large amounts of video, voice, and data across a network quickly. The redundant Ethernet Turbo Ring, Turbo Chain, and RSTP/STP (IEEE 802.1w/D) functions increase system reliability and the availability of your network backbone. The choice of either front or rear wiring makes the PT-G7509 suitable for different types of application.

General Features and Benefits

- Command line interface (CLI) for quickly configuring major managed functions*
- IPv6 Ready logo awarded (IPv6 Logo Committee certified)
- Software-based IEEE 1588 PTP V2* (Precision Time Protocol) for precise time synchronization of networks
- VLAN Unaware: Supports priority-tagged frames to be received by specific devices
- DHCP Option 82 for IP address assignment with different policies
- EtherNet/IP* and Modbus/TCP industrial Ethernet protocols supported
- Turbo Ring, Turbo Chain, RSTP/STP, and MSTP for network redundancy
- IGMP snooping and GMRP for filtering multicast traffic from industrial Ethernet protocols
- IEEE 802.3ad, LACP for optimum bandwidth utilization
- Bandwidth management prevents unpredictable network status
- Multi-port mirroring for online debugging
- Automatic warning by exception through email, relay output
- RMON for efficient network monitoring and proactive capability
- Automatic recovery of connected device's IP addresses
- Line-swap fast recovery
- Configurable by Web browser, Telnet/Serial console, CLI*, Windows utility, and ABC-01 automatic backup configurator

*Available in Q3, 2011

Cyber-security Features

- User passwords with multiple levels of security protect against unauthorized configuration
- SSH/HTTPS is used to encrypt passwords and data
- Lock switch ports with 802.1x port-based network access control so that only authorized clients can access the port
- Disable one or more ports to block network traffic
- 802.1Q VLAN allows you to logically partition traffic transmitted between selected switch ports
- Secure switch ports so that only specific devices and/or MAC addresses can access the ports
- Radius/TACACS+ allows you to manage passwords from a central location (available in Q1 Y2011)
- SNMPv3 provides encrypted authentication and access security

Specifications

Technology

Standards:

IEEE 802.3 for 10BaseT
 IEEE 802.3u for 100BaseT(X) and 100Base FX
 IEEE 802.3ab for 1000BaseT(X)
 IEEE 802.3z for 1000BaseX
 IEEE 802.3x for Flow Control

IEEE 802.1D-2004* for Spanning Tree Protocol
 IEEE 802.1w for Rapid STP
 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, SNMP, SMTP, RARP, RMON, HTTP, HTTPS, Telnet, SSH, Syslog, DHCP Option 66/67/82, LLDP, Modbus/TCP, IEEE 1588 PTP V2*, IPv6, SNMP Inform, NTP Server/Client*

MIB: MIB-II, Ethernet-like MIB, P-BRIDGE MIB, Q-BRIDGE MIB, Bridge MIB, RSTP MIB, RMON MIB Group 1, 2, 3, 9

Flow Control: IEEE 802.3x flow control, back pressure flow control
*Available in Q3, 2011

Switch Properties

- Priority Queues:** 4
- Max. Number of Available VLANs:** 64
- VLAN ID Range:** VID 1 to 4094
- IGMP Groups:** 256

Interface

- RJ45 Ports:** 10/100/1000BaseT(X) auto negotiation speed
- Fiber Ports:** 100/1000BaseSFP slot
- Console Port:** RS-232 (RJ45)
- System LED Indicators:** STAT, PWR1, PWR2, FAULT, MSTR/HEAD, CPLR/TAIL
- Mode LED Indicators:** LNK/ACT, FDX/HDX, RING/CHAIN PORT, COUPLER PORT, SPEED
- Alarm Contact:** 1 relay output with current carrying capacity of 3 A @ 30 VDC or 3 A @ 240 VAC

Power Requirements

- Input Voltage:**
 - 24 VDC (18 to 36 V)
 - 48 VDC (36 to 72 V)
 - 110/220 VDC/VAC (88 to 300 VDC, 85 to 264 VAC)

Input Current: (all ports are equipped with fiber)

- Max. 1.17 A @ 24 VDC
- Max. 0.59 A @ 48 VDC
- Max. 0.27/0.16 A @ 110/220 VDC
- Max. 0.61/0.35 A @ 110/220 VAC

Overload Current Protection: Present

Connection: 10-pin terminal blocks

Reverse Polarity Protection: Present

Physical Characteristics

- Housing:** IP30 protection
- Dimensions:** 440 x 44 x 254 mm (17.32 x 1.73 x 10.00 in)
- Weight:** 3300 g
- Installation:** 19" rack mounting

Environmental Limits

- Operating Temperature:** -40 to 85°C (-40 to 185°F), cold start requires min. of 100 VAC at -40°C
- 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, CSA C22.2 No. 60950-1, EN 60950-1
- EMI:** FCC Part 15 Subpart B Class A, EN 55022 Class A
- Power Automation:** IEC 61850-3, IEEE 1613

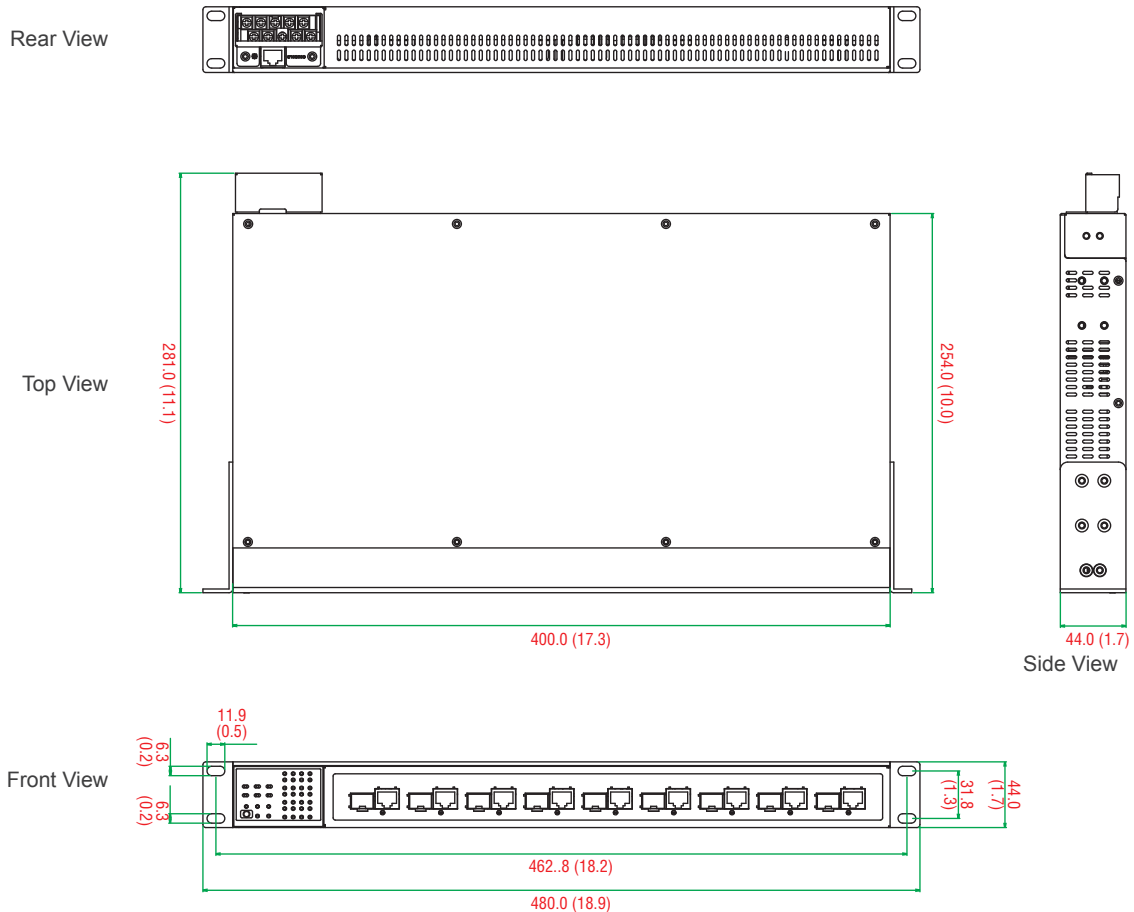
Note: Please check Moxa's website for the most up-to-date certification status.

Warranty

- Warranty Period:** 5 years
- Details:** See www.moxa.com/warranty

Dimensions

Unit: mm (inch)



Ordering Information

PT-G7509 Full Gigabit Managed Rackmount Ethernet Switch System

The PT-G7509 switch system consists of 9 combo 10/100/1000BaseT(X) or 100/1000BaseSFP slot Gigabit ports and the switch can be used in a temperature range from -40 to 85°C.

Note: See page 1-87 and 1-89 for SFP-1G/1FE series Gigabit/fast Ethernet SFP module product information.

Available Models		Power Supply					
Front Cabling, Front Display	Rear Cabling, Front Display	Isolated Power Supply 1			Isolated Power Supply 2		
		24 VDC (18 to 36 V)	48 VDC (36 to 72 V)	HV: 88 to 300 VDC and 85 to 264 VAC	24 VDC (18 to 36 V)	48 VDC (36 to 72 V)	HV: 88 to 300 VDC and 85 to 264 VAC
PT-G7509-F-24	PT-G7509-R-24	1	–	–	–	–	–
PT-G7509-F-24-24	PT-G7509-R-24-24	1	–	–	1	–	–
PT-G7509-F-24-48	PT-G7509-R-24-48	1	–	–	–	1	–
PT-G7509-F-24-HV	PT-G7509-R-24-HV	1	–	–	–	–	1
PT-G7509-F-48	PT-G7509-R-48	–	1	–	–	–	–
PT-G7509-F-48-48	PT-G7509-R-48-48	–	1	–	–	1	–
PT-G7509-F-48-HV	PT-G7509-R-48-HV	–	1	–	–	–	1
PT-G7509-F-HV	PT-G7509-R-HV	–	–	1	–	–	–
PT-G7509-F-HV-HV	PT-G7509-R-HV-HV	–	–	1	–	–	1

PT-G7509-F series
(Front Cabling, Front Display)



PT-G7509-R series
(Rear Cabling, Front Display)



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

Package Checklist

- PT-G7509 series switch
- RJ45-to-DB9 console port cable
- Protective caps for unused ports
- 2 rackmount ears
- Documentation and software CD
- Hardware installation guide
- Warranty card