



## 6-Port Hardened Industrial Gigabit PoE+ Layer 2 Managed DIN-Rail Switch

TI-PG541i (v1.0R)

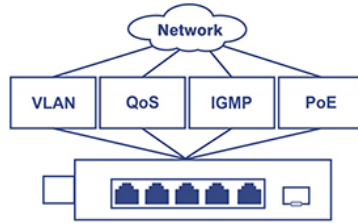
- Hardened IP30 rated metal enclosure with integrated DIN-Rail mount
- Wide operating temperature range - 40 to 75 °C (-40 to 167 °F)
- 4 x Gigabit PoE+ (802.3at) ports, 1 x Gigabit port, and 1 x Gigabit SFP slot
- 120 Watts total power budget
- Dual redundant power inputs and alarm relay output
- CLI (Telnet), Web (HTTP), SNMP v1 / v2c management
- 802.1Q / MAC-Based VLAN and IGMP Snooping support
- 802.1p / DSCP / Queue Scheduling (SP/WFQ/WRR) QoS support
- Power supply sold separately (models: 48VDC3000 / TI-S24048 / TI-S12048)
- Limited Lifetime Warranty

TRENDnet's 6-Port Hardened Industrial Gigabit PoE+ Layer 2 Managed DIN-Rail Switch, model TI-PG541i, has four Gigabit PoE+ ports, one Gigabit port, one Gigabit SFP slot and a 120 Watts PoE budget. The switch is equipped with an IP30 rated metal enclosure and designed to withstand a high degree of vibration, shock, protection against ESD / EMI / surge, and operate within a wide temperature range (- 40 – 75 °C (- 40 - 167 °F)) for harsh environments. L2 management include features such as PoE port control, VLAN, multicast, and QoS which allow for network integration flexibility.



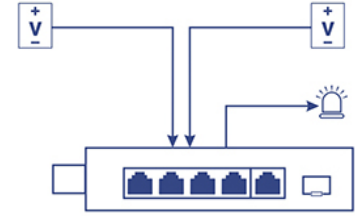
### Industrial Hardened Design

Equipped with a rugged IP30 rated enclosure and designed to withstand a high degree of vibration, shock, protection against ESD/EMI/surge, and operate with a wide temperature range (- 40 – 75 °C (- 40 - 167 °F)) for harsh environments.



### Integration Flexibility

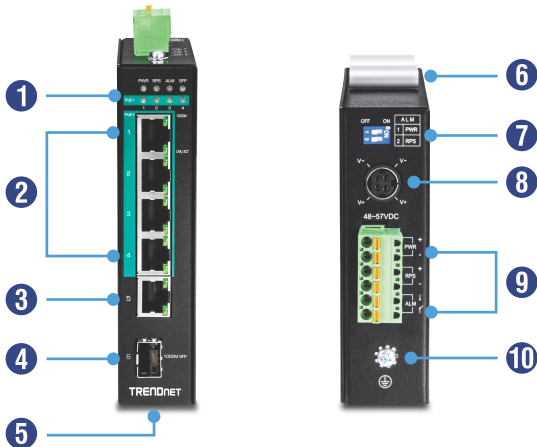
Managed features include PoE per port control/priority/scheduling/power delay, 802.1Q/MAC-based VLAN, IGMP snooping, per port bandwidth control/802.1p/DSCP/queue scheduling, and SNMP trap/RMON/SNMP alert/syslog/port mirror for monitoring and flexible network integration.



### Fault Tolerance

Features dual redundant power inputs (Primary and RPS) from external power sources and an output alarm relay to indicate the event of input power failure

## NETWORKING SOLUTION



- 1 LED indicators
- 2 Gigabit PoE+ ports
- 3 Gigabit port
- 4 SFP slot
- 5 Reset button
- 6 Integrated DIN-Rail mount
- 7 DIP switches
- 8 DC power connector
- 9 6-pin terminal block
- 10 Grounding point

## FEATURES



### Full PoE+ Power Budget

Supplies up to 30 Watts of PoE / PoE+ power per port (ports 1-4 802.3at / 802.3af) with a 120 Watt PoE power budget



### Network Ports and Capacity

4 x Gigabit PoE+ ports, 1 x Gigabit Port, and 1 x Gigabit SFP slot allow for a 12 Gbps switching capacity



### Integrated DIN-Rail Mount

IP30 rated metal enclosure with integrated DIN-Rail mounting hardware



### Full PoE Control Per Port

PoE control features include enabling / disabling PoE and class, power priority, PD alive check, scheduling, and power delay per port using CLI or web management.



### L2 Management

Managed features include 802.1Q, /MAC-Based VLAN, IGMP v1/2/3 Snooping, per port bandwidth control/ 802.1p/DSCP/Queue Scheduling (SP/ WFQ/WRR), and Storm Control for flexible network integration.



### System Monitoring

Monitoring features include SNMPv1/v2c, MIB support, SNMP trap, RMON Groups (1, 2, 3, 9), SMTP alert, syslog, and port mirroring.



### Redundant Power

Dual redundant power inputs (primary and RPS) with overload current protection



### Alarm Output

Alarm relay output triggered by power failure of primary and / or redundant power (DIP switch)



### Jumbo Frame

Sends larger packets, or Jumbo Frames (up to 10 K)



### Wide Temperature

Hardened switch is rated for an operating temperature range of - 40 to 75 °C (-40 to 167 °F)



### Electro Magnetic Compliance

Complies with IEC61000-6-2 EMC generic standard immunity for industrial environments



### Shock and Vibration Resistant

Rated for shock (IEC 60068-2-27), freefall (IEC 60068-2-32), and vibration (IEC 60068-2-6)



### LED Indicators

LED indicators convey power, redundant power, alarm, SFP, PoE, and network port status



### Grounding Point

Grounding point protects equipment from external electrical surges

## SPECIFICATIONS

### Standards

- IEEE 802.1d\*
- IEEE 802.1p
- IEEE 802.1Q
- IEEE 802.1w\*
- IEEE 802.1X\*
- IEEE 802.1ab
- IEEE 802.1ax\*
- IEEE 802.3
- IEEE 802.3u
- IEEE 802.3x
- IEEE 802.3z
- IEEE 802.3ab
- IEEE 802.3ad\*
- IEEE 802.3af
- IEEE 802.3at
- IEEE 802.3az

### Device Interface

- 4 x Gigabit PoE+ ports
- 1 x Gigabit port
- 1 x Gigabit SFP slot
- 6-pin removable terminal block (primary / RPS power inputs & alarm relay output)
- Optional power adapter input (adapter sold separately)
- DIP switch (Alarm for Primary / RPS power)
- LED indicators

### Data Transfer Rate

- Ethernet: 10 Mbps (half-duplex), 20 Mbps (full-duplex)
- Fast Ethernet: 100 Mbps (half-duplex), 200 Mbps (full-duplex)
- Gigabit Ethernet: 2000 Mbps (full-duplex)
- SX / LX: 2000 Mbps (full-duplex)

### Performance

- Switch fabric: 12 Gbps
- RAM buffer: 128 MB
- MAC address table: 8K entries
- Jumbo frames: 10 KB
- Forwarding rate: 8.93 Mpps (64-byte packet size)

### Management

- CLI (Telnet)
- HTTP web based GUI
- SNMP v1, v2c
- SNMP trap
- RMON groups 1, 2, 3, 9
- Enable / disable 802.3az power saving
- LLDP
- Netlite device map\*
- ONVIF device discovery\*
- SNMP
- SMTP alert
- Syslog
- Port statistics / utilization
- Traffic monitor
- Trusted host
- Port mirror (Ingress, Egress, Both)
- Storm control (Multicast, DLF, Broadcast)
- Loopback detection\*
- DHCP relay/option 82\*
- Modbus/TCP\*
- SFP DDMI (Digital Diagnostic Monitoring Interface)\*

## Access Control

- 802.1X authentication (Local user database, RADIUS, guest VLAN assignment)\*
- DHCP snooping/screening\*
- Port Security/MAC address learning restriction\*
- Static/dynamic ARP inspection\*

## ACL

- Source/Destination MAC address\*
- Source/Destination IP address\*
- Source Interface\*
- VLAN ID\*
- EtherType \*
- TCP/UDP port 1-65535\*

## MIB

- MIB II RFC 1213
- Bridge MIB RFC 1493
- Ethernet Interface MIB RFC 1643
- RMON MIB RFC 1757
- Power Ethernet MIB RFC 3621

## Spanning Tree

- IEEE 802.1d STP (spanning tree protocol)\*
- IEEE 802.1w RSTP (rapid spanning tree protocol)\*
- BPDU filter, guard, and root guard\*

## Link Aggregation

- Static link aggregation and 802.3ad dynamic LACP (Up to 2 groups)\*

## Quality of Service (QoS)

- 802.1p Class of Service (CoS)
- DSCP (Differentiated Services Code Point)
- Bandwidth control per port
- Queue Scheduling: Strict Priority (SP), Weighted Fair Queuing (WFQ), Weighted Round Robin (WRR)

## VLAN

- 802.1Q tagged VLAN
- MAC-based VLAN
- Port isolation
- Up to 256 VLAN groups, ID range 1-4094

## Multicast

- IGMP snooping v1, v2, v3
- IGMP querier
- IGMP fast leave
- Up to 256 multicast entries
- Static multicast entries

## Special Features

- CLI & web based management
- Full power PoE+
- Wide operating temperature range
- Dual redundant power inputs
- Alarm relay triggered by power failure
- Surge / ESD protection

## Power

- PWR (Primary) terminal input: 48 – 57 V DC (TI-S12048 sold separately)
- RPS (Redundant) terminal input: 48 – 57 V DC (TI-S12048 sold separately)
- Consumption: 10 Watts (max.), 130 Watts (max.) with PoE+ fully loaded

## Optional Power Adapter (48VDC3000 sold separately)

- Input: 100 – 240 V AC, 50/60 Hz, 2 A
- Output: 48 V DC, 3.34 A 160 Watts max.

## Optional Power Supply (TI-S24048 / TI-S12048 sold separately)

- Input: 100 – 240 V AC, 50/60 Hz, 1.8 A 125 – 370 V DC
- Output: 240 Watts, 48 V, 5 A
- DIN-rail: TS-35 / 7.5 or 15
- Operating Temperature: - 25 to 70 °C (- 13 to 158 °F)

## PoE

- PoE budget: 120 Watts
- Up to 15 Watts per port for PoE
- Up to 30 Watts per port for PoE+
- Mode A: Pins 1, 2 (V+) and pins 3, 6 (V-)
- PoE enable / disable per port setting, priority, scheduling, power delay, and PD alive check

## Enclosure

- IP30 rated metal enclosure
- DIN-Rail Mount
- Grounding Point
- ESD (Ethernet) Protection: 8KV DC
- Surge (Power) Protection: 6KV DC

## MTBF

- 180,136 hrs @ 65 °C
- 435,905 hrs @ 25 °C

## Operating Temperature

- - 40 – 70 °C (- 40 - 158 °F)

## Operating Humidity

- Max. 95% non-condensing

## Dimensions

- 135 x 120 x 31 mm (5.31 x 4.72 x 1.22 in.)

## Weight

- 528 g (1.17 lbs.)

## Certifications

- CE
- FCC
- Shock (IEC 60068-2-27)
- Freefall (IEC 60068-2-32)
- Vibration (IEC 60068-2-6)

## Warranty

- Limited Lifetime Warranty

## Package Contents

- TI-PG541i
- Quick Installation Guide
- CD-ROM (User's Guide)

TRENDnet offers a limited lifetime warranty for all of its metal-enclosed network switches that have been purchased in the United States/Canada on or after 1/1/2015. Cooling fan and internal power supply carry a one-year warranty.