The T1600G-28PS provides 24 10/100/1000Mbps RJ45 Ports which support 802.3at/af-compliant PoE, with a total PoE power supply up to 192W, powerful and flexible enough for users to deploy wireless access points or IP-based network surveillance cameras. The switch is also equipped with 4 Gigabit SFP slots, expanding your network flexibly. In addition, it provides high performance, powerful L2 and L2+ features like static routing, enterprise-level QoS, useful security strategies.

Static Routing helps route internal traffic for more efficient use of network resources. The Storm Control feature protects against Broadcast, Multicast and Unknown unicast Storm. 802.1X and Radius Authentication allows network client to be authenticated through external Radius Servers. Quality of Service (QoS, L2 to L4) provides enhanced traffic management capabilities to move your data smoother and faster. Moreover, the easy-to-use web management interfaces, along with SNMP, RMON and Dual Image, mean faster setup and configuration with less downtime. With all these advanced features, the JetStream Gigabit Smart PoE Switch T1600G-28PS is an ideal choice for small and medium-sized business networking.
JetStream 24-Port Gigabit Smart PoE+ Switch with 4 SFP Slots

T1600G-28PS (TL-SG2424P)

IEEE 802.3at/af-compliant Power over Ethernet
The T1600G-28PS provides 24 10/100/1000Mbps RJ45 Ports that support 802.3at/af-compliant PoE, with a total PoE power supply up to 192W to power any 802.3at/af compliant power device. Compact and flexible, the T1600G-28PS is ideal to flexibly use PoE to deploy wireless access points or IP-based network surveillance cameras for projects or small business networks.

Abundant L2 and L2+ features
T1600G-28PS supports rich L2 features, including 802.1Q tag VLAN, Port Isolation, Port Mirroring, STP/RSTP/MSTP, Link Aggregation Group and 802.3x Flow Control function. Besides, the switch provides advanced features for network maintenance such as Loop Back Detection, Cable Diagnostics and IGMP Snooping. IGMP snooping ensures the switch intelligently forward the multicast stream only to the appropriate subscribers while IGMP throttling & filtering restrict each subscriber on a port level to prevent unauthorized multicast access. Moreover, T1600G-28PS supports L2+ feature—static routing, which is a simple way to provide segmentation of the network with internal routing through the switch and helps network traffic for more efficient use.

Secure Networking
T1600G-28PS supports IP-MAC-Port Binding, Port Security, Storm control and DHCP Snooping which protect against broadcast storms, ARP attacks, etc. In addition, the Access Control Lists (ACL, L2 to L4) feature restricts access to sensitive network resources by denying packets based on source and destination MAC address, IP address, TCP/UDP ports and even VLAN ID. Besides, the switch supports 802.1X, which allows network clients to be authenticated through external Radius servers. Guest VLAN function supports to enable the non-802.1X clients to access the specific network resource.

Advanced QoS features
To integrate voice, data and video service on one network, the switch applies rich QoS policies. Administrator can designate the priority of the traffic based on a variety of means including Port Priority, 802.1P Priority and DSCP Priority, to ensure that voice and video are always clear, smooth and jitter free.

Enterprise Level Management Features
T1600G-28PS is easy to use and manage. It supports various user-friendly standard management features, such as intuitive web-based Graphical User Interface(GUI) or industry-standard Command Line Interface(CLI), SNMP (v1/2/3) and RMON support enables the switch to be polled for valuable status information and send traps on abnormal events. And comprehensive IPv6 supporting management ensures a smooth migration to IPv6-based network. Besides, it also supports Dual Image, which provides reduced down-time for the switches, when the image is being upgraded / downgraded.
# Specifications

## Hardware Features & Performance

<table>
<thead>
<tr>
<th>Product Picture</th>
<th><img src="image.png" alt="Image" /></th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>T1600G-28PS (TL-SG2424P)</td>
</tr>
</tbody>
</table>

### Hardware Features

<table>
<thead>
<tr>
<th>Connector</th>
<th>10/100/1000Mbps RJ45 Ports</th>
<th>24</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Gigabit SFP Slots</td>
<td>4</td>
</tr>
<tr>
<td>Power Supply</td>
<td>100-240VAC, 50/60Hz</td>
<td></td>
</tr>
<tr>
<td>FAN Quantity</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Certifications</td>
<td>CE, FCC</td>
<td></td>
</tr>
</tbody>
</table>

### Dimensions (W × D × H)

- 17.3 x 8.7 x 1.7 in. (440 x 220 x 44 mm)
- 19-inch Rack mount Steel Case, 1U Height

### Environment

- Operating Temperature: 0°C~40°C (32°F~104°F)
- Storage Temperature: -40°C~70°C (-40°F~158°F)
- Operating Humidity: 10%~90% non-condensing
- Storage Humidity: 5%~90% non-condensing

### Performance

<table>
<thead>
<tr>
<th>Switch Capacity</th>
<th>56Gbps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forwarding Rate</td>
<td>41.7Mpps</td>
</tr>
<tr>
<td>MAC Address Table</td>
<td>16K</td>
</tr>
<tr>
<td>Package Buffer Memory</td>
<td>1.5MB</td>
</tr>
<tr>
<td>Jumbo Frame</td>
<td>9KB</td>
</tr>
</tbody>
</table>

## Software Features

### L2+ Features

- **16 IP Interfaces**
  - Supports ipv4 interface

- **Static Routing**
  - 32 IPv4 static routes

### L2 Switching Features

- **Link Aggregation**
  - Supports 802.3ad LACP
  - Supports static link aggregation
  - Up to 14 aggregation groups, containing 8 ports per group

- **Spanning Tree Protocol (STP)**
  - IEEE 802.1D Spanning Tree Protocol
  - IEEE 802.1S Multiple Spanning Tree Protocol
  - STP Security: Loop Protect, TC Protect, BPDU Filter/Protect, Root Protect

  - **Loopback Detection**

  - **Flow Control**
    - 802.3x Flow Control
    - HOL Blocking Prevention

  - **Port Mirroring**
    - One-to-One
    - Many-to-One
    - Flow-Based
    - Tx/Rx/Both
- Multicast
  - Support IGMP Snooping v1/v2/v3, up to 256 groups
  - Support multicast VLANs, IGMP Immediate Leave, Unknown IGMP Throttling, IGMP Filtering, Static Multicast IP
  - Support MLD Snooping v1/v2
- VLAN
  - Support IEEE 802.1Q with 512 VLANs Simultaneously(out of 4K VIDs)
  - Support MAC-based VLAN and Protocol-based VLAN
- IEEE 802.3x flow control for Full Duplex mode and backpressure for Half Duplex Mode

Quality of Service (QoS)
- 802.1p CoS/DSCP priority
- 8 priority queues
- Queue scheduling
  - SP (Strict Priority)
  - WRR (Weighted Round Robin)
  - SP+WRR
- Bandwidth Control
  - Port/Flow based Rating Limiting
- Smoother Performance
- Actions for flows
  - Mirror (to supported interface)
  - Redirect (to supported interface)
  - Rate Limit
  - QoS Remark
- Voice VLAN

ACL
- Supports up to 300 entries
- MAC ACL
  - Source MAC
  - Destination MAC
  - VLAN ID
  - User Priority
  - EtherType
- Standard IP ACL
  - Source IP
  - Destination IP
- Extended IP ACL
  - Source IP
  - Destination IP
  - Fragment
  - IP Protocol
  - TCP Flag
  - TCP/UDP Port
  - DSCP/IP TOS
- Combined ACL
  - Source MAC
  - Destination MAC
  - VLAN ID
  - EtherType
  - User Priority
  - Source IP
  - Destination IP
- ACL apply to Port/VLAN

Advanced Security Strategies
- IP-MAC-Port Binding
- DoS Defend
- Dynamic ARP Inspection
- Static/Dynamic Port Security
  - Up to 64 MAC addresses per port
- Broadcast/ Multicast/ Unicast Storm Control
  - kbps/ratio/pps control mode
- 802.1X
  - Port based authentication
  - MAC (Host) based authentication
  - Guest VLAN
  - Support Radius authentication and accountability
- Port Isolation
- Secure web management through HTTPS and SSLv2/v3/TLSv1
- Secure command line interface (CLI) management with SSH v1/v2
- IP/Port/MAC based access control

IPv6 Support
- IPv6 Dual IPv4/IPv6
- Multicast Listener Discovery (MLD) Snooping
- IPv6 neighbor discovery (ND)
- Path maximum transmission unit (MTU) discovery
- Internet Control Message Protocol (ICMP) version 6
- TCPv6/UDPv6
- IPv6 applications
  - DHCPv6 Client / Ping6 / Tracert6 / Telnet(v6) / IPv6 SNMP
  - IPv6 SSH / IPv6 SSL
  - Http/Https
  - IPv6 TFTP
Management
- Web-based GUI
- Command Line Interface (CLI) through telnet
- SNMP v1/v2c/v3
- SNMP Trap/Inform
- RMON (1, 2, 3, 9 groups)
- DHCP/BOOTP Client
- DHCP Snooping
- DHCP Option82
- 802.1ab LLDP/LLDP-MED
- Dual Image
- CPU Monitoring
- Cable Diagnostics
- Access Control
- SNTP
- System Log

Ethernet Protocols
- IEEE 802.3i 10BASE-T
- IEEE 802.3u 100Base-TX/FX
- IEEE 802.3ab 1000Base-T
- IEEE 802.3z 1000Base-X
- IEEE 802.3x Flow control
- IEEE 802.1p QoS
- IEEE 802.1q VLANs/VLAN tagging
- IEEE 802.1D Spanning Tree Protocol (STP)
- IEEE 802.1W Spanning Tree Protocol (RSTP)
- IEEE 802.1S Multiple Spanning Tree (MSTP)
- IEEE 802.1x Port-based Network Access Control

MIBs
- MIB II (RFC1213)
- Interface MIB (RFC2233)
- Ethernet Interface MIB (RFC1643)
- Bridge MIB (RFC1493)
- P/Q-Bridge MIB (RFC2674)
- RMON MIB (RFC2819)
- RM0N2 MIB (RFC2021)
- Remote Ping, Traceroute MIB (RFC2925)
- Support TP-LINK private MIBs

Ordering Information

| Host Switch          | Description                                                    |
|----------------------|================================================================|
| Product Model        | Description                                                    |
| T1600G-28PS (TL-SG2424P) | JetStream 24-Port Gigabit Smart PoE+ Switch with 4 SFP Slots   |

| SFP Modules          | Description                                                    |
|----------------------|================================================================|
| Product Model        | Description                                                    |
| TL-SM311LS           | Gigabit SFP module, Single-mode, LC interface, Up to 10km distance |
| TL-SM311LM           | Gigabit SFP module, Multi-mode, LC interface, Up to 550m distance |
| TL-SM321A            | Gigabit WDM Bi-Directional SFP Module, single-mode, LC connector, TX:1550nm/RX:1310nm, 10km |
| TL-SM321B            | Gigabit WDM Bi-Directional SFP Module, single-mode, LC connector, TX:1310nm/RX:1550nm, 10km |

| Router               | Description                                                    |
|----------------------|================================================================|
| Product Model        | Description                                                    |
| TL-ER6120            | SafeStream Gigabit Dual-WAN VPN Router                          |
| TL-ERS120            | Gigabit Load Balance Broadband Router                           |

| Media Converter      | Description                                                    |
|----------------------|================================================================|
| Product Model        | Description                                                    |
| MC210CS              | Gigabit single-mode SC SFP Transceiver, up to 15Km, chassis mountable |
| MC200CM              | Gigabit multi-mode SC SFP Transceiver, up to 550m, chassis mountable |
| MC220L               | Gigabit SFP slot supporting mini-GBIC modules, chassis mountable |
| MC1400               | 14-slot power supply chassis for TP-LINK Media Converter, 19-inch rack-mountable |