



All ports PoE+ with up to 180W PoE budget
and Remote Management option
Select your new network engine!

As a leading provider of network equipment for SMBs, Benchu group understands the importance of providing a great choice of PoE port counts and power budgets that can adapt to your business' needs, whether in the hospitality, catering, education or retail domains.

The SP7500-16PGE2GF-L2M Gigabit Ethernet Switches with PoE+ and 2 SFP+ Ports join the Benchu group Standalone Smart Switches family, adding full 16 port PoE+

support for deployment of modern high-power PoE devices. Cautious spender organizations can now deploy denser PoE+ devices connected to a cost-effective switch, with a reasonable PoE power budget of 180W over 16-port. Organizations who buy infrastructure for the long term and want future proofing for the unforeseeable can now select a switch with a PoE power budget of 280W

Support 2 Ports 1G SFP Uplink, provides greater bandwidth and powerful processing capacity. It offers a maximum 0Gbps uplink bandwidth through the two 1Gbps SFP ports. In addition, the administrator can flexibly choose the suitable (1.25G) SFP transceiver according to the transmission distance required to extend the network efficiently.

Highlights

The Benchu group SP7500-16PGE2GF-L2M PoE+ Gigabit Smart Switches with Remote Management provides a great value, with configurable L2 network features like VLANs and PoE operation scheduling, allowing SMB customers to deploy PoE-based VoIP phones, IP cameras, video-over-IP endpoints and Wireless access points simply and securely. Advanced features such as IPv4/IPv6 Layer 3 static routing, LACP link aggregation, DiffServ QoS, Private VLANs, Multicast VLAN and Spanning Tree will satisfy even the most advanced small business networks.

Key features include:

- Layer 3 static routing (IPv4 and IPv6)
- Advanced VLAN and Private VLAN support for better network segmentation
- L2/L3/L4 access control lists (ACLs) for granular network access control including 802.1x port authentication
- Advanced per port PoE controls for remote power management of PoE connected devices including operation scheduling (e.g. Wireless APs, IP security cameras, LED lighting, secure access door locks, IoT devices...)
- Advanced QoS (Quality of Service) for traffic prioritization including port-based, 802.1p and L2/L3/L4 DSCP-based
- IGMP Snooping and Querier for multicast optimization
- Dynamic ARP for increased security targeting a class of Man in the Middle attack
- Rate limiting and priority queuing for better bandwidth allocation
- Port mirroring for network monitoring
- Energy Efficient Ethernet (IEEE 802.3az) for maximum power savings
- SNMP v1, v2c and RMON remote monitoring

Build a future-proof network with BENCHU:

- Solid performance with non-blocking architecture, 8K MAC addresses, 100 shared (ingress) ACLs and 128 Multicast groups
- Comprehensive IPv6 supporting management, QoS, ACL and routing, ensuring investment protection and a smooth migration to IPv6-based network
- PoE+ support on all models and on all ports
- 2 Dedicated SFPs, not only providing fiber uplinks, but also uplink redundancy and failover, improving reliability and availability for the network

Fast Access

- The remote units provide the full line-speed forwarding capability. All ports support non-blocking data packet forwarding, providing users with high-speed access experience and meeting the requirements of high-bandwidth services such as HD video conferencing, online video, and large file download.

BENCHU Quality and Reliability

- Low power consumption, fanless, high-strength metal casing.
- high redundancy design, providing a long term and stable PoE power output.
- CE, FCC, RoHS, CB.
- The user-friendly panel can show the device status through the LED indicator of PWR, Link.

Easy operation and maintenance management

- Web management, CLI command line (Console, Telnet), SNMP (V1/V2).
- HTTPS, and SSHV1/V2.
- RMON, system log, LLDP, and port traffic statistics.
- CPU monitoring, memory monitoring, Ping test, and cable diagnose.

Hardware at a Glance

| FRONT | | | | | REAR | SIDE |
|---------------------|-------------|------------------------------|--------------------------|-----------------------------|-----------------------|---------|
| Model Name | Form-Factor | 10/100/1000Base-T RJ45 ports | 1GBASE-X Fiber SFP Ports | PoE+ 802.3at Ports (Budget) | Power Supply | Fans |
| SP7500-16PGE2GF-L2M | Rackmount | 16 | 2 | 16PoE+ (180W) | 1 internal PSU, fixed | fanless |

Software at a Glance

| LAYER 2+ / LAYER 3 LITE FEATURES | | | | | | | |
|--|-----------------------|-------------------------------|---------------------------|--|--|--------------------------|----------------------------|
| Management | IPv4/IPv6 ACL and QoS | IPv4/IPv6 Multicast Filtering | G.8032 ERPS STP/RSTP/MSTP | IEEE (802.3az) Energy Efficient Ethernet | VLANs | Convergence | IPv4 & IPv6 Static Routing |
| Web Browser-based GUI (HTTP/HTTPS), PC-Based Smart Control Center Utility (SCC) , RMON, SNMP | L2, L3, L4, ingress | IGMP and MLD Snooping | Yes | Yes | Static Dynamic, Voice, MAC, Protocol-based, and Private VLAN | LLDP-MED, RADIUS, 802.1X | Yes |

Performance at a Glance

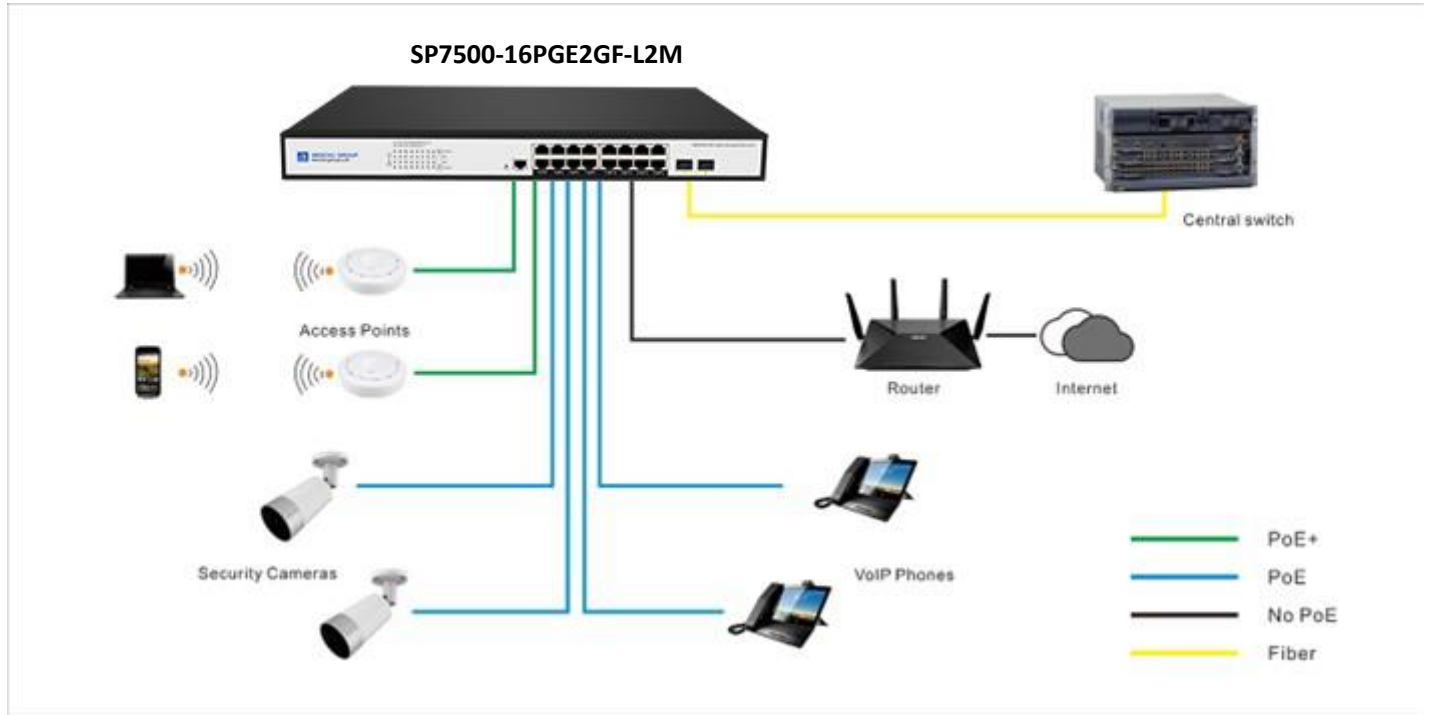
| Model Name | Packet buffer | Chip | ACLs | MAC Address Table ARP Table VLANs | Fabric | Latency (Max Connection Speed) | Routes (IPv4 & IPv6) | Multicast IGMP Group |
|---------------------|---------------|---------|------------|---|-------------------------------|--|----------------------|----------------------|
| SP7500-16PGE2GF-L2M | 6MB | Realtek | 100 shared | 8K MAC 256 ARP 4K VLANs QinQ | 56Gbps 27Mpps line-rate | 1G Copper: <3.35µs 1G Fiber: <2.5µs | IPv4: 32 IPv6: 32 | 128 |

Features and Benefits

| Hardware Features | |
|---|---|
| 1000BASE-T Copper Ethernet PoE+ connections | Support high-density VoIP, Surveillance and Wi-Fi AP deployments, scal-able for future growth. Never face the risk of running out of PoE ports. |
| 1GBASE-X Fiber SFP ports | Four dedicated 1G SFP ports for aggregation to the network core. Support for Fiber and Copper modules. Can also build dual redundancy by a trunked uplink with link aggregation. |
| Great choice of PoE port counts and PoE power budgets that can adapt to the business's needs | 180W PoE budget available across 16 Gigabit PoE+ ports (802.3af/at) – Connect multiple power demanding devices to your network with a single wire for power and connectivity. |
| Energy Efficient Ethernet (IEEE 802.3az) | Maximum power reduction for onging operational cost savings. |
| Software Features | |
| Comprehensive IPv6 Support for Management, ACL and QoS | Build current network with future in mind. Ensure investment protection and a smooth migration to an IPv6-based network without switch replacement. |
| IPv4 & IPv6 Static Routing | A simple way to provide segmentation of the network with internal routing through the switch – reserving the router for external traffic routing only, making the entire network more efficient. |
| Robust security features: <ul style="list-style-type: none"> • 802.1x authentication (EAP) • Port-based security by locked MAC • ACL filtering to permit or deny traffic based on MAC and IP addresses | Build a secured, converged network with all types of traffic by preventing external attacks and blocking malware while allowing secure access for authorized users. |
| Comprehensive QoS features: <ul style="list-style-type: none"> • Port-based or 802.1p-based prioritization • Layer 3-based (DSCP) prioritization • Port-based ingress and egress rate limiting | Advanced controls for optimized network performance and better delivery of mission-critical traffic such as voice and video. |
| IGMP (IPv4) and MLD (IPv6) Snooping and Querier modes with Fast Leave | Facilitate fast receiver joins and leaves for multicast streams. Save cost and improve network efficiency by ensuring multicast traffic only reaches desig-nated receivers without the need of an extra multicast router. |

Target Application

Network Convergence

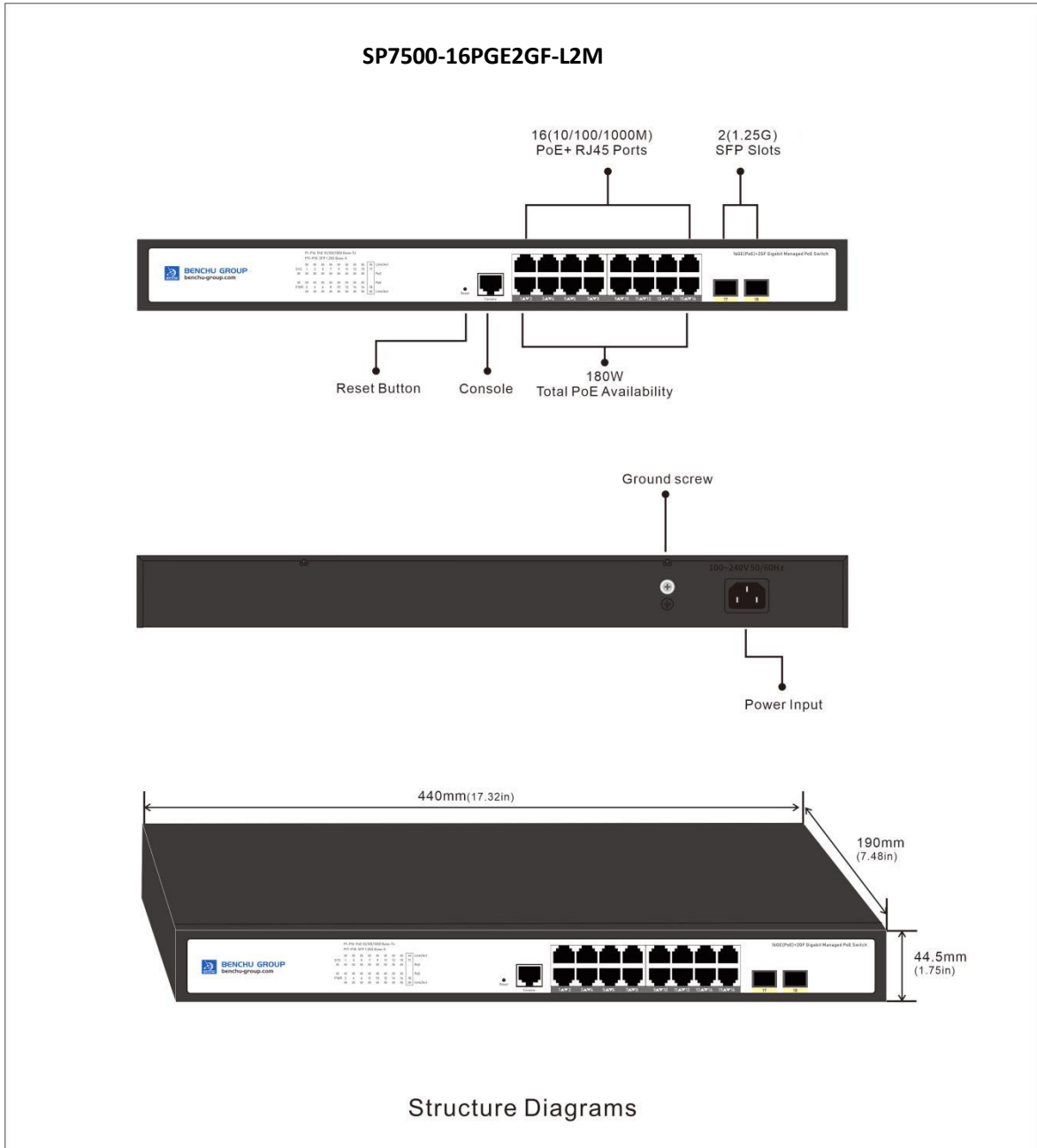


Within small and medium-sized organizations — especially in the hospitality, catering, education, and retail industries — there is growing deployment of VoIP phones, IP security cameras, video-over-IP endpoints, proximity sensors, LED lighting, secure access door locks, and other IoT devices. The dense proximity of these devices requires network switches capable of supporting PoE so a network manager can add power-hungry devices to the network with a single wire for power AND connectivity. Wave 2 802.11ac wireless access points and pan-tilt-zoom HD surveillance cameras with features such as night vision and built-in motion tracking also require PoE+ power (802.3at), increasing the power demands on PoE switches.

The new 16-port BENCHU GROUP Smart Switches support dense deployments of these modern high-power PoE+ devices. They offer powerful Layer 2 and Layer 3 features for IPv4 and IPv6 with enhanced performance and a focus on usability within SMB environments:

- 180W (SP7500-16PGE2GF-L2M) PoE budget across 16 Gigabit PoE+ ports
- 2 dedicated 1.25G SFP fiber ports for aggregation to the network core
- Layer 3 static routing (IPv4 and IPv6) for interVLAN local routing
- IGMP Snooping, IGMP Querier and IGMP Fast Leave for multicast optimization
- ERPS(G.8032) STP/FSTP/MSTP for Ring network and Link protection
- Include VLANs, Private VLAN, PoE scheduling, ACLs, DiffServ, LACP, MVR and DHCP
- Easy-to-use Web browser-based management GUI — No need for an IT expert
- Limited Lifetime* Warranty, Tech support

Structure Diagrams





| Technical Specifications | SP7500-16PGE2GF-L2M |
|--|---|
| 10M/100M/1000M RJ-45 copper ports | 16 |
| PoE / PoE+ ports | 16 (180W PoE budget) |
| 1.25G SFP (fiber) ports uplink | 2 |
| Console Port (For config) | Yes |
| Performance Specification | |
| CPU | Dual-Core 512GHz MIPS InterActive CPU subsystem |
| Packet buffer memory (Dynamically shared across only used ports) | 4.2Mb |
| Forwarding modes | Store-and-forward |
| Bandwidth | 56Gbps |
| Priority queues | 8 |
| MAC address database size (48-bit MAC addresses) | 8K |
| Multicast groups | 128K |
| Number of IPv4 static routes | 32 |
| Number of IPv6 static routes | 32 |
| Number of VLANs | 4094 |
| Number of VLANs(Open QinQ) | 16,760,836(4094*4094) |
| Number of ARP cache entries | 256 ARP |
| Packet forwarding rate (64 byte packet size) (Mpps) | 26.79Mpps |
| Jumbo frame support (bytes) | Up to 9K packet size |
| Mean Time Between Failures (MTBF) @ 25°C | 135,321 hours |
| 100M Copper Latency (64-byte; 1518-byte; 9216-byte frames) | 8.329µs; 8.413µs; 8.431µs |
| 1G Copper Latency (64-byte; 1518-byte; 9216-byte frames) | 3.412µs; 3.511µs; 3.621µs |
| 1G Fiber Latency (64-byte; 1518-byte; 9216-byte frames) | 2.972µs; 3.152µs; 3.268µs |

| L2 Services - VLANs | SP7500-16PGE2GF-L2M |
|---|----------------------------|
| IEEE 802.1Q VLAN tagging | Yes |
| QinQ VLAN tagging | Yes |
| IP-based VLANs | Yes |
| MAC-based VLANs | Yes |
| Protocol-based VLAN | Yes |
| Voice VLAN | Yes |
| VLAN mapping | Yes |
| L2 Services - Availability | |
| Broadcast, multicast, unknown unicast storm control | Yes |
| IEEE 802.3ad - LAGs (LACP) | Yes |
| IEEE 802.3x (full duplex and flow control) | Yes |
| IEEE 802.1D Spanning Tree Protocol | Yes |
| IEEE 802.1w Rapid Spanning Tree Protocol | Yes |
| IEEE 802.1s Multiple Spanning Tree Protocol | Yes |
| ITU-TG.8032 (ERPS) | Yes, Recovery time < 50ms |
| L2 Services - Multicast Filtering | |
| IGMP snooping (v1, v2 and v3) | Yes |
| MLD snooping support (v1 and v2) | Yes |
| IGMP snooping querier (v2) | Yes |
| MLD snooping querier (v1) | Yes |
| Multicast VLAN Registration (MVR) | Yes |
| L3 Services - DHCP | |
| DHCP client | Yes |
| DHCP snooping | Yes |
| L3 Services - Routing | |
| IPv4 static routing | 32 |
| IPv6 static routing | 32 |

| Link Aggregation | SP7500-16PGE2GF-L2M |
|---|---------------------------------------|
| IEEE 802.3ad - LAGs (LACP) | Yes |
| Manual LAG | Yes |
| # of LAGs / # of members in each LAG | 8 LAGs with max 8 members in each LAG |
| Network Monitoring and Discovery Services | |
| 802.1ab LLDP | Yes |
| SNMP | v1, v2c, v3 |
| RMON group 1,2,3,9 | Yes |
| Network Security | |
| IEEE 802.1x | Yes |
| RADIUS accounting | Yes |
| Access Control Lists (ACLs) | Yes |
| IP-based ACLs (IPv4 and IPv6) | L2 / L3 / L4 |
| MAC-based ACLs | Yes |
| TCP/UDP-based ACLs | Yes |
| Control MAC # static entries | 24 |
| Port-based security by locked MAC addresses | Yes |
| Dynamic ARP inspection | Yes |
| Quality of Service (QoS) | |
| Port-based rate limiting | Yes ingress and egress |
| Port-based QoS | Yes |
| Support for IPv6 fields | Yes |
| DiffServ QoS | Yes ingress |
| IEEE 802.1p COS | Yes |
| Destination MAC and IP | Yes |
| IPv4 and v6 DSCP | Yes |
| TCP/UDP-based | Yes |
| Weighted Round Robin (WRR) | Yes |
| Strict priority queue technology | Yes |

| IEEE Network Protocols | SP7500-16PGE2GF-L2M |
|---|---|
| <ul style="list-style-type: none"> • IEEE 802.3 Ethernet • IEEE 802.3u 100BASE-T • IEEE 802.3ab 1000BASE-T • IEEE 802.3z Gigabit Ethernet 1000BASE-SX/LX • IEEE 802.3af PoE • IEEE 802.3at PoE+ • IEEE 802.3az Energy Efficient Ethernet (EEE) • IEEE 802.3ad Trunking (LACP) | <ul style="list-style-type: none"> • IEEE 802.3x Full-Duplex Flow Control • IEEE 802.1Q VLAN Tagging • IEEE 802.1AB LLDP with ANSI/TIA-1057 (LLDP-MED) • IEEE 802.1p Class of Service • IEEE 802.1D Spanning Tree (STP) • IEEE 802.1s Multiple Spanning Tree (MSTP) • IEEE 802.1w Rapid Spanning Tree (RSTP) • ITU-TG.8032 Ethernet Ring Protection Switching (ERPS) • IEEE 802.1x RADIUS Network Access Control |
| Management, Monitoring & Troubleshooting | |
| Password management | Yes |
| Admin access control via RADIUS and TACACS+ | Yes |
| IPv6 management | Yes |
| SNMP v1/v2C/v3 | Yes |
| RMON group 1,2,3,9 | Yes |
| Port mirroring | Yes ingress and egress |
| Many-to-one port mirroring | 18 |
| Cable test utility | Yes |
| TLS/HTTPS Web-based access (version) | Yes (v1.2) |
| File transfers (uploads, downloads) | TFTP / HTTP |
| HTTP upload/download (firmware) | Yes |
| Syslog (RFC 3164) | Yes |
| LEDs | Yes |
| Per port | Speed, Link, Activity; or PoE in different mode |
| Per device | Power, system |
| Physical Specifications | |
| Dimensions | 440 x 190 x 44.5 mm (17.32 x 7.48 x 1.75 in) |
| Weight | 2.6 kg (5.73 lb) |
| Power Requirements | AC 100~240V 50/60Hz |
| Power Consumption (when all ports used, line-rate traffic and max PoE) | 180W |
| Max power (worst case, all ports used, full PoE, line-rate traffic) (Watts) | 16W |
| Idle power consumption (all ports link-down standby) (Watts) | 12W |
| Energy Efficient Ethernet (EEE) IEEE 802.3az | Yes (deactivated by default) |

| Environmental Specifications | | SP7500-16PGE2GF-L2M |
|--|--|---|
| Operating | | |
| Operating Temperature | | -20° to 50°C (-4° to 122°F) |
| Humidity | | 90% maximum relative humidity (RH), non-condensing |
| Altitude | | 10,000 ft (3,000 m) maximum |
| Storage | | |
| Storage Temperature | | -20° to 70°C (-4° to 158°F) |
| Humidity (relative) | | 95% maximum relative humidity, non-condensing |
| Altitude | | 10,000 ft (3,000 m) maximum |
| Electromagnetic Emissions and Immunity | | |
| Certifications | | CE mark, commercial |
| | | FCC Part 15 Class A, VCCI Class A |
| | | Class A EN 55022 (CISPR 22) Class A |
| | | Class A C-Tick |
| | | EN 55024 |
| | | CCC |
| | | 47 CFR FCC Part 15, SubpartB, Class A ICES-003: 2016 Issue 6, Class A |
| | ANSI C63.4:2014 | |
| | IEC 60950-1:2005 (ed.2)+A1:2009+A2:2013 AN/NZS CISPR 22:2009+A1:2010 CLASS A | |
| Safety | | |
| Certifications | | CB mark, commercial |
| | | CSA certified (CSA 22.2 #950) |
| | | EN 60950-1: 2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013 IEC 60950-1:2005 |
| | | (ed.2)+A1:2009+A2:2013 |
| | | AN/NZS 60950.1:2015 |
| | CCC (China Compulsory Certificate) | |
| Warranty and Support | | |
| Hardware Limited Warranty | | Limited Lifetime* |
| Technical Support via Phone and Email* | | Limited Lifetime* |
| Limited Lifetime* 24x7 Online Chat Technical Support | | Limited Lifetime* |
| Package Contents | | |
| All models | | Smart Managed PoE Switch |
| | | AC Power cord with C13 connector (localized to region of sale) |
| | | Brackets and screws for rack mounting |
| | | Rubber protection caps, which are already installed in the SFP sockets Installation guide |
| | | User's manual |