



SMxxTAT4Xx Family

SM48TAT4XA-RP

Managed Gigabit Ethernet PoE+ Switch
(48) 10/100/1000Base-T Ports + (4) 1G/10GBase-X SFP+ Ports

SM24TAT4XB

Managed Gigabit Ethernet PoE+ Switch
(24) 10/100/1000Base-T Ports + (4) 1G/10GBase-X SFP+ Ports

Install Guide

Intellectual Property

© 2022 Lantronix, Inc. All rights reserved. No part of the contents of this publication may be transmitted or reproduced in any form or by any means without the written permission of Lantronix.

Lantronix is a registered trademark of Lantronix, Inc. in the United States and other countries.

All other trademarks and trade names are the property of their respective holders.

Patented: <https://www.lantronix.com/legal/patents/>; additional patents pending.

Warranty

For details on the Lantronix warranty policy, please go to <http://www.lantronix.com/support/warranty>.

Contacts

Lantronix Corporate Headquarters

48 Discovery, Suite 250
Irvine, CA 92618, USA
Toll Free: 800-526-8766
Phone: 949-453-3990
Fax: 949-453-3995

Technical Support

Online: <https://www.lantronix.com/technical-support/>

Sales Offices

For a current list of our domestic and international sales offices, go to www.lantronix.com/about/contact.

Disclaimer

All information contained herein is provided "AS IS." Lantronix undertakes no obligation to update the information in this publication. Lantronix does not make, and specifically disclaims, all warranties of any kind (express, implied or otherwise) regarding title, non-infringement, fitness, quality, accuracy, completeness, usefulness, suitability or performance of the information provided herein. Lantronix shall have no liability whatsoever to any user for any damages, losses and causes of action (whether in contract or in tort or otherwise) in connection with the user's access or usage of any of the information or content contained herein. The information and specifications contained in this document are subject to change without notice.

Revision History

Date	Rev.	Comments
8/6/19	A	Initial SM48TAT4XA-RP and SM24TAT4XB release.
11/5/19	B	Update for SM48TAT4XA-RP.
9/16/20	C	Add SM48TAT4XA-RP UL 62368-1 Certification.
6/22/21	D	FW v8.50.0030: modify name "Non-stop PoE" to "Always-On PoE" and add "Always-On PoE" in mib. LLDP: When switch receives a packet with LLDP-MED, it sends an IEEE802.3 MAC/ PHY packet with two config/status TLVs. When port speed is 10/100Mbps, IEEE802.3 MAC/ PHY config/status TLV error sent from LLDP. Add PoE Force Mode and add 13 API commands.
11/30/22	E	FW v8.50.0079: add First Time Wizard, make SNMP mode disabled factory default, and change Auth Method default. Initial Lantronix rebrand. Note the two-step FW upgrade (v8.40.1845 > 8.50.0062 > 8.50.0070). Add DHCP per VLAN function and add PoE Force mode. Add SM24TAT4XB UL 62368-1 Certification. Update device and box labels.

Safety Warnings and Cautions

These products are not intended for use in life support products where failure of a product could reasonably be expected to result in death or personal injury. Anyone using this product in such an application without express written consent of an officer of Lantronix does so at their own risk and agrees to fully indemnify Lantronix for any damages that may result from such use or sale.



Attention: This product, like all electronic products, uses semiconductors that can be damaged by ESD (electrostatic discharge). Always observe appropriate precautions when handling.



Note: Emphasizes important information or calls your attention to related features or instructions.



Caution: Alerts you to a potential hazard that could cause loss of data or damage the system or equipment.



Warning: Alerts you to a potential hazard that could cause personal injury.

Contents

Safety Warnings and Cautions.....	3
Product Description	6
Ordering Information	6
Benefits	7
Specifications	8
Power Consumption	15
SM48TAT4XA-RP Power Consumption.....	15
SM24TAT4XB Power Consumption	16
About This Manual	18
Related Information	18
Front Panels	19
Ports	19
Console Port.....	19
10/100/1000 RJ45 Ports	19
1G/10G SFP+ Ports	20
LED Descriptions.....	20
Mode/Reset button	24
Back Panels	25
AC Power Connector	25
Electrical Safety Warnings	26
Installation	27
Package Contents	27
Power Cord Included.....	27
Safety Instructions for Rack Mount Installations	27
Mounting the Switch in a 19-inch Rack	28
Mounting the Switch on Desk or Shelf	28
Installing SFP+ Modules	29
Connecting Powered Devices (PDs).....	30
Connecting the AC Power Cord	30
Redundant Power (SM48TAT4XA-RP Only)	31
Replacing a Power Supply	31
Power Supply Specifications.....	31
Unpacking / Installing / Replacing Power Supplies.....	31
Power Supply Voltage and Frequency.....	32
Unpacking Power Supply	32
Installing a Power Supply	32
Replacing Power Supply	33
PoE vs. PoE+ vs. PoE++	34
PoE/PoE+/PoE++ Comparison	34
Initial Switch Configuration	35
Initial Switch Configuration via Web Browser	35
Initial Switch Configuration via CLI.....	36
Troubleshooting.....	37
Basic Troubleshooting.....	37
LED Troubleshooting	37
PoE Troubleshooting.....	38
Compliance Information	39

Declaration of Conformity	39
FCC Regulations	39
Canadian Regulations	40
RoHS, WEEE, and Environmental Programs	40
Device Label and Box Label	40
Record Device and System Information	41

Product Description

The SMxxTAT4Xx L2+ managed GbE PoE+ switches are next-generation Ethernet switches offering a full suite of L2 features, additional 10GbE uplink connections, better PoE functionality and usability, including advanced L3 features such as Static Route. In addition to the extensive management features, the SMxxTAT4Xx also provide carrier Ethernet features such as ERPS/EPs/PTPv2, of which make them suitable for Carrier Ethernet applications.

The SMxxTAT4Xx deliver 24 or 48 (10M/100M/1G) RJ45 with 48 PoE+ (support 802.3at/af, and total up to 820W) ports, 4 10GbE SFP+ ports and RJ45 Console port. The SMxxTAT4Xx provides high hardware performance and environment flexibility for SMBs and enterprises. The SM48TAT4XA-RP supports redundant power with a secondary power supply installed.

The embedded Device Managed System (DMS) features provide the benefits of easy to use, configure, install, and troubleshoot in video surveillance, wireless access, and other SMB and Enterprise applications. The SMxxTAT4Xx is ideal to deliver management simplicity, better user experience, and lowest total cost of ownership.

Key Features

- L2+ Managed features provide easier manageability, robust security and QoS.
- Built in Device Management System (DMS) Graphical Monitoring, Traffic Monitoring, & Troubleshooting
- ITU-T G.8031 Ethernet Linear Protection Switching (EPS)
- ITU-T G.8032 Ethernet Ring Protection Switching (ERPS)
- IEEE 1588v2 PTP
- DHCP Server, DHCP per port, DHCP per VLAN
- IPv4/IPv6 Management
- Compliant with IEEE 802.3at PoE+ and 802.3af PoE
- PoE Auto Power Reset, Always-On PoE, and PoE Force Mode
- Supports IPv4/IPv6 Layer 3 static routing
- IEEE 802.3az EEE Energy Efficient Ethernet standard for green Ethernet
- Supports two hot-swappable redundant PSU modules for power backup (SM48TAT4XA-RP only)

Ordering Information

Model	Description
SM48TAT4XA-RP	48-port Gigabit PoE+ with (4) 1G/10G SFP+ slots, 820 Watts PoE budget. Supports redundant power with secondary power supply installed.
SM24TAT4XB	24-port Gigabit PoE+ with (4) 1G/10G SFP+ slots, 370 Watts PoE budget.
PS-AC-920	Secondary Power Supply for redundant power support (920 Watts). Optional; sold separately (5 year warranty).
SFPs	See Lantronix full line of SFP transceivers on our SFP webpage (option; order separately)
BRSM24-01	Wall Mount Bracket for SM24TAT4XB (option; order separately)

Benefits

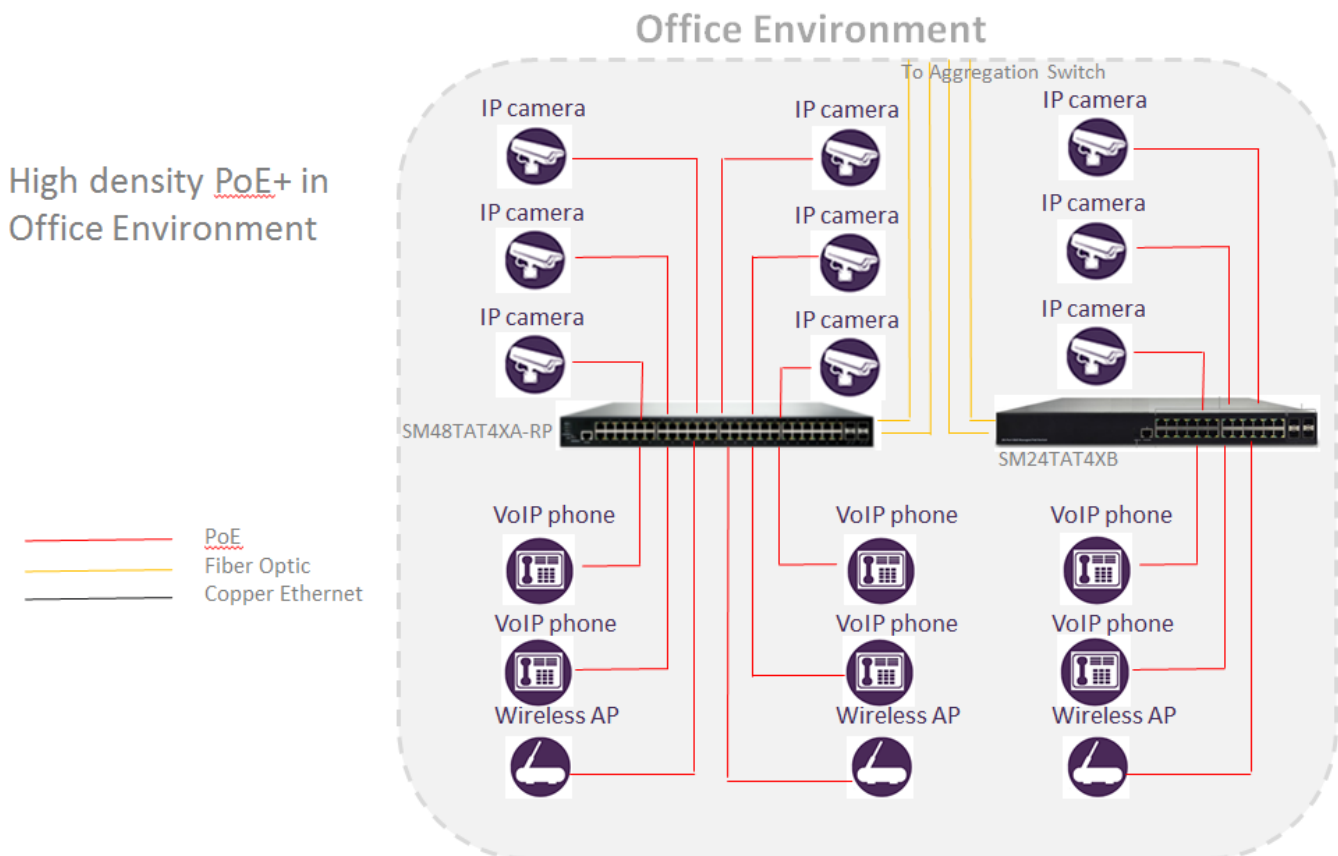
Feature-rich Ethernet Switch for Enterprise-class: The switch delivers advanced L2+ managed switch functionality, including Layer 3 static route, DHCP server, IPv6 support, LLDP, etc. It also has comprehensive security features such as IP source guard and ACL to protect your network from unauthorized access. It builds on the market-leading price/performance and provides security, reliability and ease-of-use for enterprise/SMB deployments.

Device Management System (DMS) makes it easy to Install, configure and troubleshoot. The DMS provides embedded functions to facilitate devices management at anytime and anywhere. Its user-friendly interface helps you manage devices intuitively. It supports various IP device types (e.g., IP-phones, IP-cameras, WAPs) to enhance manageability and save time/cost during installation/maintenance stages.

Advanced Power over Ethernet Management: The switch includes PoE+ options to power IP devices with power-saving features like Power scheduling and PoE configuration.

Application Example

The figure below depicts and SM48TAT4XA-RP and an SM24TAT4XB providing high density PoE+ in an office environment.



Specifications

Port Configuration

Model	Total Ports	RJ45 (10M/100M/1G)	Uplinks	Console
SM48TAT4XA-RP	52	48	4 SFP+	RJ45
SM24TAT4XB	28	24	4 SFP+	RJ45

Hardware Performance

Model	Forwarding Capacity	Switching Capacity	Mac Table	Jumbo Frames
SM48TAT4XA-RP	130.944 Mpps	176 Gbps	32 K	10240 Bytes
SM48TAT4XB	95.238 Mbps	128 Gbps	32 K	10240 Bytes

Environmental Range (all Models)

Operating Temperature		Storage Temperature		Altitude	
Fahrenheit	Centigrade	Fahrenheit	Centigrade	Feet	Meters
32 to 122°	0 to 50°	-4 to +158°	-20 to +70°	< 10000	< 3000

Dimensions, Weights, Humidity

Model	Dimensions (WxHxD)		Weight		Operating Humidity
	Millimeters	Inches	Kilograms	Pounds	
SM48TAT4XA-RP	442x44x440	17.4x1.7x17.3	3.8	8.38	Up to 95%, Non-condensing
SM24TAT4XB	442x44x440	17.4x1.7x17.3	3.28	7.25	Up to 95%, Non-condensing

Voltage and Frequency

AC Input Voltage and Frequency (All Models)	
Voltage	100-240 VAC
Frequency	50~60 Hz
PSU Output Power	
SM48TAT4XA-RP	54VDC / 820W per Power Module. Supports dual 100-250 VAC power input (modular, hot swappable, power redundancy).
SM24TAT4XB	54VDC / 370W

PoE Power Capacity

Model	Available PoE Power	# of Ports that support PoE (15.4W) and PoE+ (30.0W)
SM48TAT4XA-RP	1640 W	Each of ports 1 - 48 support PoE/ PoE+ within available PoE power. Up to 820 W PoE budget with single power supply (15W on all 48 ports or 30W on 24 ports at the same time). Up to 1640 W PoE budget with dual power supplies (full 30W on all 48 ports at the same time).
SM24TAT4XB	370 W	Each of ports 1 - 24 support PoE/ PoE+ within available PoE Power.

Certifications

EMC and Safety
<p>EN61000-4-5 (for RJ45 Port, Surge 6KV) CE, FCC Part 15 Class A; UL Listed European Standard EN 55032:2015/AC:2016 Class A, EN61000-3-2:2014, EN6100-3-3:2013, EN 55024:2010/A1:2015 (IEC 61000-4-2 Edition 2.0 2008-12, IEC 61000-4-3 Edition 3.2 2010-04, IEC 61000-4-4 Edition 3.0 2012-04, IEC 61000-4-5 Edition 3.0 2014-05, IEC 61000-4-6 Edition 4.0 2013-10, IEC 61000-4-8 Edition 2.0 2009-09, IEC 61000-4-11 Edition 2.1 2017-05) and Australian Standard AS/NZS CISPR 32:2015 and CISPR 32:2015/COR1:2016. ANSI C63.4-2014, CISPR PUB. 22, FCC Part 15 Subpart B, Canada Standard ICES-003 Issue 6. Radiated and conducted emissions are compliance in Class A limits. With the technical construction on file at the above address, this product carries the CE Mark UL 62368-1 Certification</p>

MTBF (Environment: GB, GC - Ground Benign, Controlled)
<p>SM48TAT4XA-RP: Temp: 40.00 °C. MTBF = 69,015 Hrs. SM48TAT4XA-RP: Temp: 50.00 °C. MTBF = 44,683 Hrs.</p>
<p>SM24TAT4XB: Temp: 30.00 °C. MTBF = 63, 317 Hrs. SM24TAT4XB: Temp.: 50.00°C. MTBF = 63,317 Hrs.</p>

Software Features

Ring Management	
ITU-T G.8031	Supports ITU-T G.8031 Ethernet Linear Protection Switching (EPS)
ITU-T G.8032	Supports ITU-T G.8032 Ethernet Ring Protection Switching (ERPS)
Layer 2 Switching	
Spanning Tree Protocol (STP)	<ul style="list-style-type: none"> Standard Spanning Tree 802.1d: an OSI layer-2 protocol which ensures a loop free topology for any bridged LAN Rapid Spanning Tree (RSTP) 802.1w: provides for faster spanning tree convergence after a topology change Multiple Spanning Tree (MSTP) 802.1s: provides for multiple spanning tree instances
VLANs	<ul style="list-style-type: none"> 802.1Q tag-based VLAN: Supports up to 4K VLANs simultaneously (out of 4096 VLAN IDs) Port-based VLAN: A port member of a VLAN can be isolated to other isolated ports on the same VLAN and Private VLAN Private VLAN Edge (PVE): Private VLANs are based on the source port mask, and there are no connections to VLANs. This means that VLAN IDs and Private VLAN IDs can be identical Voice VLAN: The Voice VLAN feature enables voice traffic forwarding on the Voice VLAN Guest VLAN: The IEEE 802.1X Guest VLAN feature allows a guest VLAN to be configured for each 802.1X port on the device to provide limited services to non-802.1X-compliant clients Q-in-Q (double tag) VLAN: Business customers of service providers often have specific requirements for VLAN IDs and the number of VLANs to be supported 802.1v Protocol VLAN: Classifying multiple protocols into a single VLAN often imposes VLAN boundaries that are inappropriate for some of the protocols, requiring the presence of a non-standard entity to relay between VLANs the frames bearing the protocols for which the VLAN boundaries are inappropriate MAC-based VLAN: The MAC-based VLAN feature allows incoming untagged packets to be assigned to a VLAN and thus classify traffic based on the source MAC address of the packet IP Subnet-Based VLAN: In an IP subnet-based VLAN, all the end workstations in an IP subnet are assigned to the same VLAN. In this VLAN, users can move their workstations without reconfiguring their network addresses Management VLAN: used for managing the switch from a remote location by using protocols such as telnet, SSH, SNMP, syslog, etc.
LACP Trunking	Link Aggregation Control Protocol (LACP) IEEE 802.3ad: controls whether LACP is enabled on this switch port. LACP will form an aggregation when 2 or more ports are connected to the same partner. Up to 26 Groups and up to 16 ports per Group.

GARP VLAN Registration Protocol (GVRP)	GVRP (Generic Attribute Registration Protocol) VLAN Registration Protocol is a Layer 2 network protocol, for automatic configuration of switches in a VLAN network
DHCP Relay	<ul style="list-style-type: none"> Relay of DHCP traffic to DHCP server in different VLAN Works with DHCP Option 82
IGMP v1/v2/v3 Snooping	IGMP limits bandwidth-intensive multicast traffic to only the requesters. Supports 1024 multicast groups
IGMP Querier	IGMP querier is used to support a Layer 2 multicast domain of snooping switches in the absence of a multicast router
IGMP Proxy	IGMP snooping with proxy reporting or report suppression actively filters IGMP packets in order to reduce load on the multicast router
MLD v1/v2 Snooping	Delivers IPv6 multicast packets only to the required receivers
Multicast VLAN Registration (MVR)	MVR uses a dedicated manually-configured VLAN, called the multicast VLAN, to forward multicast traffic over Layer 2 network in conjunction with IGMP snooping
Layer 3 Switching	
IPv4 Static Routing	IPv4 Unicast: Static routing
IPv6 Static Routing	IPv6 Unicast: Static routing
Security	
ACLs	Supports up to 512 entries. Drop or rate limitation based on: <ul style="list-style-type: none"> Source and destination MAC, VLAN ID or IP address, protocol, port Differentiated services code point (DSCP) / IP precedence TCP/ UDP source and destination ports 802.1p priority Ethernet type Internet Control Message Protocol (ICMP) packets TCP flag
Port Security	Locks MAC addresses to ports, and limits the number of learned MAC address
IP Source Guard	Prevents illegal IP address from accessing to specific port in the switch
Storm Control	Prevents traffic on a LAN from being disrupted by a broadcast, multicast, or unicast storm on a port
IEEE 802.1X	<ul style="list-style-type: none"> IEEE802.1X: RADIUS authentication, authorization and accounting, MD5 hash, guest VLAN, single/multiple host mode and single/multiple sessions Supports IGMP-RADIUS based 802.1X Dynamic VLAN assignment
TACACS+	Supports TACACS+ authentication. Switch as a client
Secure Shell (SSH)	SSH secures Telnet traffic in or out of the switch; SSH v1 and v2 are supported

Secure Sockets Layer (SSL)	SSL encrypts the HTTP traffic, allowing advanced secure access to the browser-based management GUI in the switch
HTTPs (Secured Web)	Hyper Text Transfer Protocol Secure (HTTPS) is the secure version of HTTP
BPDU Guard	BPDU guard, an enhancement to STP, removes a node that reflects BPDUs back in the network. It enforces the STP domain borders and keeps the active topology predictable by not allowing any network devices behind a BPDU guard-enabled port to participate in STP.
DHCP Snooping	A feature acts as a firewall between untrusted hosts and trusted DHCP servers
Loop Protection	Prevents unknown unicast, broadcast and multicast loops in Layer 2 switching configurations
Quality of Service (QoS)	
Hardware Queues	Supports 8 hardware queues
Classification	<ul style="list-style-type: none"> Port based: Traffic QoS by Port 802.1p: VLAN priority based Layer 2 CoS QoS, Class of service is a parameter used in data and voice protocols to differentiate the types of payloads contained in the packet being transmitted DSCP based Differentiated Services (DiffServ) Layer 3 DSCP QoS: IP packets can carry either an IP precedence (IPP) value or a Differentiated Services Code Point (DSCP) value. QoS supports the use of either value because DSCP values are backward-compatible with IP precedence values Classification and re-marking TCP/IP ACLs: QoS by ACL
Rate Limiting	<ul style="list-style-type: none"> Ingress policer Egress shaping and rate control Per port
Scheduling	Strict priority and weighted round-robin (WRR): a scheduling algorithm that uses weights assigned to queues to determine how much data will be emptied from a queue before moving to the next queue
Management	
IEEE 1588v2 PTP (TC)	Support IEEE 1588 v2 PTP (Precision Time Protocol)
DHCP	<ul style="list-style-type: none"> DHCP Server: supports DHCP server to assign IP to DHCP clients DHCP Client: a standardized network protocol used on Internet Protocol (IP) networks for dynamically distributing network configuration parameters, such as IP addresses for interfaces and services DHCP per port provides port-based address allocation support
Event/Error Log	Support SNMP Trap/Syslog/SMTP
SNMP	SNMP version1, 2c and 3 with support for traps and SNMP v3 user-based security model (USM)

Remote Monitoring (RMON)	Embedded RMON agent supports RMON groups 1,2,3,9 (history, statistics, alarms, and events) for enhanced traffic management, monitoring and analysis
Firmware Upgrade	<ul style="list-style-type: none"> • Web browser upgrade (HTTP/ HTTPS) and TFTP • Upgrade via console port as well
Configuration Backup/Restore	Save and update the config files controlling the switch
Port Mirroring	Traffic on a port can be mirrored to another port for analysis with a network analyzer or RMON probe. Up to N-1 (N is Switch's Ports) ports can be mirrored to single destination port. A single session is supported.
IEEE 802.1ab (LLDP)	<ul style="list-style-type: none"> • Used by network devices for advertising their identities, capabilities, and neighbors on an IEEE 802ab local area network • Support LLDP-MED (ANSI/TIA-1057) extensions
UPnP	The Universal Plug and Play Forum was formed to standardize discovery and control of networked devices. See the Open Connectivity Foundation webpage .
CDP Aware	CDP operation is restricted to decoding incoming CDP frames (the switch doesn't transmit CDP frames). CDP frames are only decoded if LLDP on the port is enabled
s-Flow	The industry standard for monitoring high speed switched networks. It gives complete visibility into the use of networks enabling performance optimization, accounting/billing for usage, and defense against security threats
Web GUI	Built-in switch configuration utility for browser-based device configuration
CLI	Lets you configure/monitor/diagnose switch in Command Line mode
Dual Image	Independent primary and secondary firmware images for backup while upgrading
NTP	Network Time Protocol (NTP) is a networking protocol for clock synchronization between computer systems over a packet-switched network
Switch Management	<ul style="list-style-type: none"> • HTTP/HTTPS • SSH • DHCP Client/ DHCPv6 Client • Telnet Client • IPv6 Management
Diagnostics	<ul style="list-style-type: none"> • Cable diagnostics • Ping • Syslog • Traceroute

Power over Ethernet (PoE)	
Port Configuration	Supports per port PoE configuration function
PoE Scheduling	Supports per port PoE scheduling to turn on/off the PoE devices (PDs)
Auto-checking	Check the link status of PDs. Reboot PDs if there are no responses
Power Delay	The switch provides power to the PDs based on delay time when PoE switch boots up, in order to protect switch from misuse of the PDs
Power Management modes (SM48TAT2XA-RP only)	<p>In <u>Redundant</u> mode, only provide Primary Power Supply up to 820W when two power supply modules are installed. If one power supply crashes, it can still provide enough power for system operation and also PD's operation. This is the default.</p> <p>In <u>Boost</u> mode, provide Primary Power Supply up to 1640W when two power supply modules are installed. When the application total PDs' power use is over 820W, if one power supply crashes, the system will automatically reboot due to power loading influence. After the switch finishes rebooting, it will only provide 820W to PDs.</p>
Device Management System (DMS)	
Graphical Monitoring	<ul style="list-style-type: none"> • Topology view: Intuitive way to configure and manage switches and devices with visual relations • Floor view: Easily drag and drop PoE devices to help build smart workforces • Map view: Enhance efficiency to drag and drop devices and view surroundings on Google Maps • Traffic Monitoring: Display visual chart of network traffic of all devices and monitor every port at any time from switches
Find my Switch	Helps you locate switches quickly and manage directly
Traffic Monitoring	Display visual chart of network traffic of all devices and monitor every port at any time from switches
Troubleshooting	<ul style="list-style-type: none"> • Network diagnostic between master switch and devices • Provides protection mechanisms, such as rate-limiting to protect your devices from brute-force downloading

Power Consumption

SM48TAT4XA-RP Power Consumption

2-module Power

AC 100V Input

Status	Operation Interface	AC Voltage (V)	AC Current Consumption (A)	Power Factor	Apparent Power (VA)	Real Power (W)
Full-loading 60 minutes later	1G TP Port x 48 10G SFP x 4	100	16.74	0.97	1674.00	1623.78
Non-PoE Full-loading 60 minutes later	1G TP Port x 48 10G SFP x 4	100	1.01	0.95	101.00	95.95

AC 110V Input

Status	Operation Interface	AC Voltage (V)	AC Current Consumption (A)	Power Factor	Apparent Power (VA)	Real Power (W)
Full-loading 60 minutes later	1G TP Port x 48 10G SFP x 4	110	15.09	0.98	1659.90	1626.70
Non-PoE Full-loading 60 minutes later	1G TP Port x 48 10G SFP x 4	110	0.93	0.94	102.30	96.16

AC 220V Input

Status	Operation Interface	AC Voltage (V)	AC Current Consumption (A)	Power Factor	Apparent Power (VA)	Real Power (W)
Full-loading 60 minutes later	1G TP Port x 48 10G SFP x 4	220	7.34	0.97	1614.80	1566.36
Non-PoE Full-loading 60 minutes later	1G TP Port x 48 10G SFP x 4	220	0.60	0.70	132.00	92.40

AC 240V Input

Status	Operation Interface	AC Voltage (V)	AC Current Consumption (A)	Power Factor	Apparent Power (VA)	Real Power (W)
Full-loading 60 minutes later	1G TP Port x 48 10G SFP x 4	240	6.69	0.97	1605.60	1557.43
Non-PoE Full-loading 60 minutes later	1G TP Port x 48 10G SFP x 4	240	0.61	0.65	146.40	95.16

SM24TAT4XB Power Consumption

AC Power Consumption: Measure AC power consumption after 60 minutes under full loading with wire speed forwarding.

1. AC 100V Input (SM24TAT4XB)

Device Status	Operation Interface	AC Voltage (V)	AC Current Consumption (A)	Power Factor	Apparent Power (VA)	Real Power (W)
Non-loading	None	100	0.30	0.90	30.00	27.00
Standby mode 1 minute	1G TP Port x 24 10G SFP x 4	100	4.5	0.99	450.00	445.50
Full-loading 60 minutes later	1G TP Port x 24 10G SFP x 4	100	4.54	0.99	454.00	449.46
Non-PoE Standby mode	1G TP Port x 24 10G SFP x 4	100	0.42	0.95	42.00	39.90
Non-PoE Full-loading 60 minutes later	1G TP Port x 24 10G SFP x 4	100	0.45	0.97	45.00	43.65

Note: Apparent Power (VA) = AC Voltage x AC Current Consumption.
Real Power (W) = Apparent Power (VA) x Power Factor.

2. AC 110V Input (SM24TAT4XB)

Device Status	Operation Interface	AC Voltage (V)	AC Current Consumption (A)	Power Factor	Apparent Power (VA)	Real Power (W)
Non-loading	None	110	0.28	0.90	30.80	27.72
Standby mode 1 minute	1G TP Port x 24 10G SFP x 4	110	4.07	0.99	447.70	443.22
Full-loading 60 minutes later	1G TP Port x 24 10G SFP x 4	110	4.09	0.99	449.90	445.40
Non-PoE Standby mode	1G TP Port x 24 10G SFP x 4	110	0.38	0.97	41.80	40.55
Non-PoE Full-loading 60 minutes later	1G TP Port x 24 10G SFP x 4	110	0.43	0.93	47.30	43.99

Note: Apparent Power (VA) = AC Voltage x AC Current Consumption.
Real Power (W) = Apparent Power (VA) x Power Factor.

3. AC 220V Input (SM24TAT4XB)

Device Status	Operation Interface	AC Voltage (V)	AC Current Consumption (A)	Power Factor	Apparent Power (VA)	Real Power (W)
Non-loading	None	220	0.22	0.56	48.40	27.10
Standby mode 1 minute	1G TP Port x 24 10G SFP x 4	220	1.99	0.98	437.80	429.04
Full-loading 60 minutes later	1G TP Port x 24 10G SFP x 4	220	2.01	0.98	442.20	433.36
Non-PoE Standby mode	1G TP Port x 24 10G SFP x 4	220	0.27	0.67	59.40	39.80
Non-PoE Full-loading 60 minutes later	1G TP Port x 24 10G SFP x 4	220	0.27	0.72	59.40	42.77

Note: Apparent Power (VA) = AC Voltage x AC Current Consumption.

Real Power (W) = Apparent Power (VA) x Power Factor.

4. AC 240V Input (SM24TAT4XB)

Device Status	Operation Interface	AC Voltage (V)	AC Current Consumption (A)	Power Factor	Apparent Power (VA)	Real Power (W)
Non-loading	None	240	0.22	0.51	52.80	26.93
Standby mode 1 minute	1G TP Port x 24 10G SFP x 4	240	1.82	0.98	436.80	428.06
Full-loading 60 minutes later	1G TP Port x 24 10G SFP x 4	240	1.84	0.98	441.60	432.77
Non-PoE Standby mode	1G TP Port x 24 10G SFP x 4	240	0.27	0.62	64.80	40.18
Non-PoE Full-loading 60 minutes later	1G TP Port x 24 10G SFP x 4	240	0.27	0.67	64.80	43.42

Note: Apparent Power (VA) = AC Voltage x AC Current Consumption.

Real Power (W) = Apparent Power (VA) x Power Factor.

About This Manual

This manual describes how to install, initially configure, and troubleshoot the switch, including how to:

- Install the switch,
- Check switch status by reading the LED behavior,
- Reset the switch or restore the switch to factory defaults,
- Use a Web browser or the CLI to initially configure the switch, and
- Troubleshoot the switch.

Note that this manual provides links to third party web sites for which Lantronix is not responsible.

Related Information

A printed Quick Start Guide is shipped with each switch. For Lantronix Documentation, Firmware, App Notes, etc. go to <https://www.lantronix.com/technical-support/>. For SFP manuals see Lantronix [SFP webpage](#). Note that this manual provides links to third party web sites for which Lantronix is not responsible.

Other related manuals are listed below.

- SMxxTAT4Xx Quick Start Guide, 33784
- SMxxTAT4Xx Install Guide, 33785 (this manual)
- SMxxTAT4Xx Web User Guide, 33786
- SMxxTAT4Xx CLI Reference, 33787
- API User Guide for SM24TAT4XB and SM48TAT4XA-RP, 33843
- Release Notes (version specific)

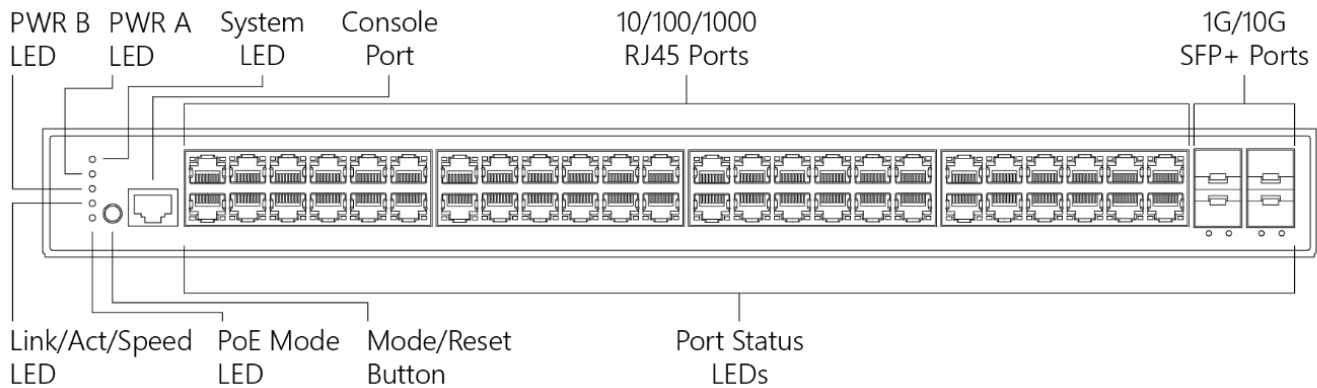
Caution: The switch is an indoor device. If it is to be used with outdoor devices such as outdoor IP cameras or outdoor Wi-Fi APs, then you are strongly suggested to install a surge protector or surge suppressor in order to protect the switch. The switch is compliant with 802.3at in Environment A when using an isolated power supply. For 802.3at Environment B applications, i.e., building to building, copper to copper endpoint connections: **1)** use an Ethernet network isolator module (PoE disabled), or **2)** use mid-span injector(s), such as Lantronix MIL-L100 or, L1000i-at, between this switch's PSE port and link partner PD port.

Warning: This equipment is compliant with Class A of CISPR 32. In a residential environment this equipment may cause radio interference.

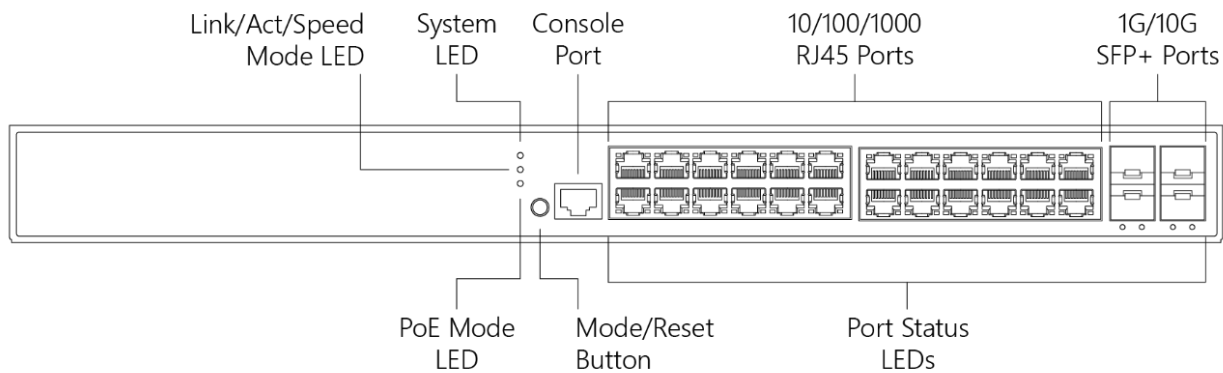
Front Panels

The SM24TAT4XB and the SM48TAT4XA-RP front panel contain the Ports, LEDs, Console Port, and Mode/Reset button as shown and described below.

SM48TAT4XA-RP front panel:



SM24TAT4XB front panel:



Ports

The front panel data ports are described below.

Console Port

The front panel Console port provides an RJ-45 Console port to connect to a PC or terminal for Command Line Interface (CLI) command entry (e.g., a PC running Hyper Terminal, Tera Term, etc.). See [Initial Switch Configuration via CLI](#) on page 36.

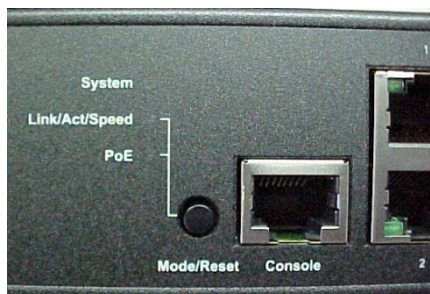
10/100/1000 RJ45 Ports

The SM48TAT4XA-RP provides 48 10M/100M/1G (RJ45) front panel ports. The SM24TAT4XB provides 24 10M/100M/1G (RJ45) front panel ports.

1G/10G SFP+ Ports

The SM48TAT4XA-RP and the SM24TAT4XB both provide four SFP+ uplink ports.

SM24TAT4XB:



SM48TAT4XA-RP:



LED Descriptions

The front panel LEDs provide switch status checking and monitoring. There are four types of LEDs as follows:

System LED: Indicates if the switch is powered up correctly or indicates if there is a system alarm triggered for troubleshooting.

Power LEDs (SM48TAT4XA-RP only): Indicates if the switch power supply A/B powered up correctly or not.

Port Status LEDs: Indicates the current status of each port. You can check these LEDs to understand the port status in different modes, after changing the mode by pressing the Mode/Reset button.

Mode LED: Indicates the mode of all ports on the switch. You can press the Mode/Reset button sequentially to switch among the two different modes (Link/Activity/Speed mode and PoE mode).

Table 1: System LED

LED	Color	State	Description
System	Green	On	The switch is powered ON correctly.
		Off	The switch is not receiving power.
	Red	On	An abnormal state, such as exceeding operating temperature range, has been detected in the switch.

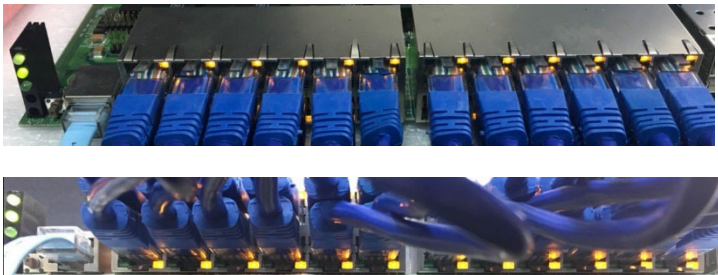
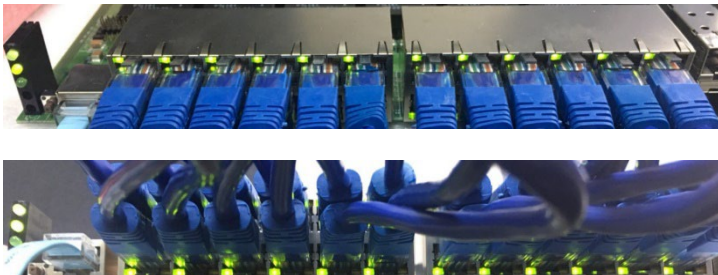
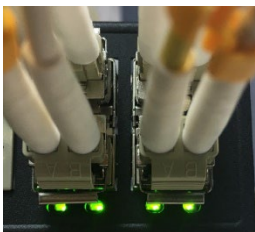
Table 2: Power LEDs (SM48TAT4XA-RP only)

LED	Color	State	Description
PWRA	Green	On	The switch is powered ON correctly.
		Off	The switch is not receiving power from power supply A.
PWRB	Green	On	The switch is powered ON correctly.
		Off	The switch is not receiving power from power supply B.

Table 3: Port Status LEDs:


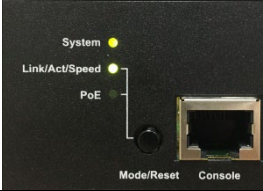
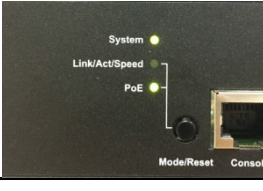
LED	Color	Function
TP Port	Green/ Amber	<p>For Ethernet Mode:</p> <ul style="list-style-type: none"> • 1G Link/Act: Green Color <p># RJ45 Port Left LED Behavior:</p> <p>=> Light off: port disconnected or link failed</p> <p>=> Green Light on: Link Present, No Activity</p> <p>=> Green Blinking: Activity. Port is sending or receiving data</p> <ul style="list-style-type: none"> • 10M/100M Link/Act: Amber Color <p># RJ45 Port Right LED Behavior:</p> <p>=>Light off: port disconnected or link failed</p> <p>=>Amber Light on: Link Present, No Activity</p> <p>=>Amber Blinking: Activity. Port is sending or receiving data</p>
SFP+ Port	Green/ Blue	<p>LNK: Blue/Green (Two Color)</p> <p>Light off: port disconnected or link failed</p> <p>Green Light on: link-up (1G)</p> <p>Blue Light on: link-up (10G)</p> <p>ACT: Blinking: activity (receiving or transmitting data)</p>

Sample Port Status LED Results

TP Link up at 10/100M speed	
TP Link up at 1G speed	
SFP+ Link up at 1G speed	

SFP+ Link up at 10G speed	
---------------------------	---

Table 4: Mode LEDs

LED	Color	Function
POWER/Alarm 	Green/Red	<ul style="list-style-type: none"> • SYS: Green/Red Bi-Color Light off: Power Off Green Lit: Indicates the switch in power on system initialization process. => Red Lit: Indicates a malfunction. Contact technical support => Green Blinking: Indicates that the switch is running normally => Red Blinking: N/A
Link/Act/ Speed 	Green	<p>The Port Status LEDs are displaying link status, network activity and speed of each port.</p> <ul style="list-style-type: none"> • SYS: Green Single Color • Use Mode / Reset Button to change Mode <p>=> Light off: Changed Port LED to Other Mode => Green Light on: Change Port LED to Link/Act/Speed Mode</p>
PoE 	Green	<p>The RJ45 Port Status LEDs are displaying PoE powering status of each port.</p> <ul style="list-style-type: none"> • SYS: Green Single Color • Use Mode / Reset Button to change Mode <p>=> Light off: Changed Port LED to Other Mode => Green Light on: Change Port LED to PoE Mode</p>

By pressing the Mode/Reset button for less than 2 seconds to change LED modes (Link/Act/Speed Mode or PoE Mode) you can check the port status by reading the LED behaviors per the table below.

Table 4: Port Status LEDs

When Link/Act/Speed Mode LED Lit			
LED	Color	State	Description
RJ45 Ports	Green	On	The port is enabled and established a link to connected device, and the connection speed is 1000Mbps.
	Green	Blinking	The port is transmitting/receiving packets, and the connection speed is 1000Mbps.
	Amber	On	The port is enabled and established a link to connected device, and the connection speed is 10/100Mbps.
	Amber	Blinking	The port is transmitting/receiving packets, and the connection speed is 10/100Mbps.
	--	Off	The port has no active network cable connected, or it is not established a link to connected device. Otherwise, the port may have been disabled through the switch user interface.
SFP+ Ports	Blue	On	The port is enabled and established a link to connected device, and the connection speed is 10Gbps.
	Blue	Blinking	The port is transmitting/receiving packets, and the connection speed is 10Gbps.
	Green	On	The port is enabled and established a link to connected device, and the connection speed is 1Gbps.
	Green	Blinking	The port is transmitting/receiving packets, and the connection speed is 1Gbps.
	--	Off	The port has no active network cable connected, or it has not established a link to connected device. Otherwise, the port may have been disabled through the switch user interface.
When PoE Mode LED Lit			
LED	Color	State	Description
RJ45 Ports	Green	On	The port is enabled and supplying power to connected device.
	Amber	On	An abnormal state, such as overload status, has been detected in the switch.
	--	Off	The port has no active network cable connected, or it is not connected a PoE PD device. Otherwise, the port may have been disabled through the switch user interface.

Mode/Reset button

You can press the Mode/Reset Button for certain period of time to perform these tasks:

Change Port Status LED Mode: To read the port status correctly in the two different modes (Link/Act/Speed mode or PoE mode).

Reset the Switch: To reboot and get the switch back to the previous configuration settings saved.

Restore the Switch to Factory Defaults: To restore the original factory default settings back to the switch.

Note: Based on the table below, you can determine which task is being performed by reading the LED behaviors while pressing the Mode/Reset button.

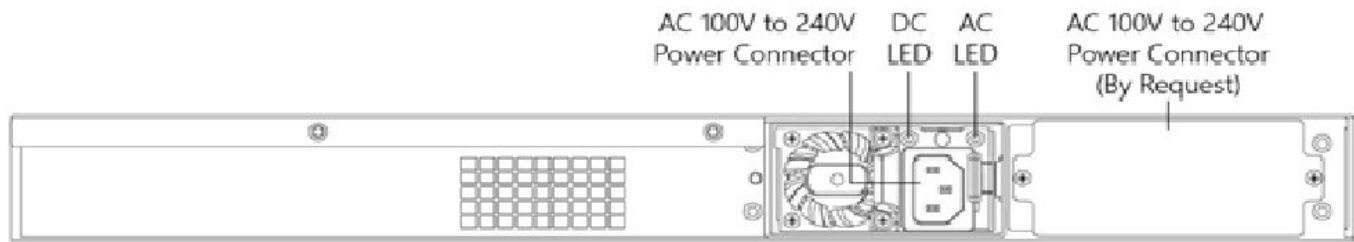
Once the LED behaviors are correctly displayed, just release the button.

Table 4: Mode/Reset Button

Task to perform	Press the button for	SYS LED Behavior	Port Status LED Behavior
Change LED Mode	0 ~ 2 seconds	ON Green	LED status changes based on the mode selected.
Reset the Switch	2 ~ 7 seconds	Blinking Green	All LEDs Off
Restore to Defaults	7 ~ 12 seconds	Blinking Green	All LEDs stay On

Back Panels

The **SM48TAT4XA-RP** back panel contains the AC Power Connector(s), DC and AC LEDs, and a second AC Power Connector.

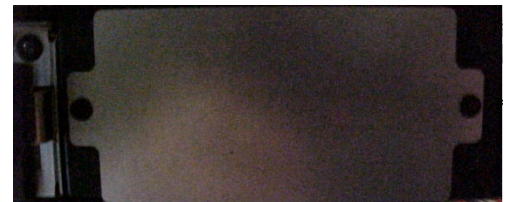
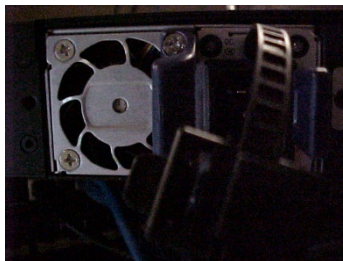


SM24TAT4XB back panel contains the AC Power Connector.



AC Power Connector

The back panel provides the AC Power Connector marked AC Line: 100-200V 50-60Hz.



Note: The switch is an indoor device. If you use it to connect outdoor devices such as outdoor IP cameras or outdoor WiFi with cable, then you must install an arrester on the cable between outdoor device and the switch.



Electrical Safety Warnings

Electrical Safety

IMPORTANT: This equipment must be installed in accordance with safety precautions.

Elektrische Sicherheit

WICHTIG: Für die Installation dieses Gerätes ist die Einhaltung von Sicherheitsvorkehrungen erforderlich.

Elektrisk sikkerhed

VIGTIGT: Dette udstyr skal installeres i overensstemmelse med sikkerhedsadvarslerne.

Elektrische veiligheid

BELANGRIJK: Dit apparaat moet in overeenstemming met de veiligheidsvoorschriften worden geïnstalleerd.

Sécurité électrique

IMPORTANT: Cet équipement doit être utilisé conformément aux instructions de sécurité.

Säihköturvallisuus

TÄRKEÄÄ: Tämä laite on asennettava turvaohjeiden mukaisesti.

Sicurezza elettrica

IMPORTANTE: questa apparecchiatura deve essere installata rispettando le norme di sicurezza.

Elektrisk sikkerhet

VIKTIG: Dette utstyret skal installeres i samsvar med sikkerhetsregler.

Segurança eléctrica

IMPORTANTE: Este equipamento tem que ser instalado segundo as medidas de precaução de segurança.

Seguridad eléctrica

IMPORTANTE: La instalación de este equipo deberá llevarse a cabo cumpliendo con las precauciones de seguridad.

Elsäkerhet

OBS! Alla nödvändiga försiktighetsåtgärder måste vidtas när denna utrustning används.

Installation

Package Contents

Carefully unpack the switch from the packaging and verify you have received the items below. Save the packaging for possible future use.

- One Switch
- One AC Power cord (Option)
- Four adhesive rubber feet
- One printed Quick Start Guide
- Two 19" Ear Rack Brackets
- Screws (x8)
- Screws for power plate cover (x2)
- One DB9F to RJ45 Plug Console Cable, 26AWG
- EPE for PSU (x2) (-RP only)
- Mounting kit (Option)
- One Documentation Post card



Note: The switch is an indoor device. If it is to be used with outdoor devices such as outdoor IP cameras or outdoor WAPs, then users are strongly suggested to install a surge protector or surge suppressor in order to protect the switch.

Power Cord Included

To order the corresponding country specific power cord, add the extension from the list below to the end of the SKU : -NA = North America, -LA = Latin America, -EU = Europe, -UK = United Kingdom, -SA = South Africa, -JP = Japan, -OZ = Australia, and -BR = Brazil. For example: SM24TAT4XB-NA.

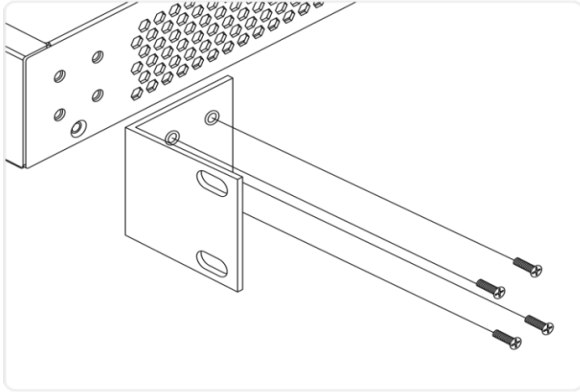
Safety Instructions for Rack Mount Installations

The instructions below (or similar) are intended for rackmount installation environments:

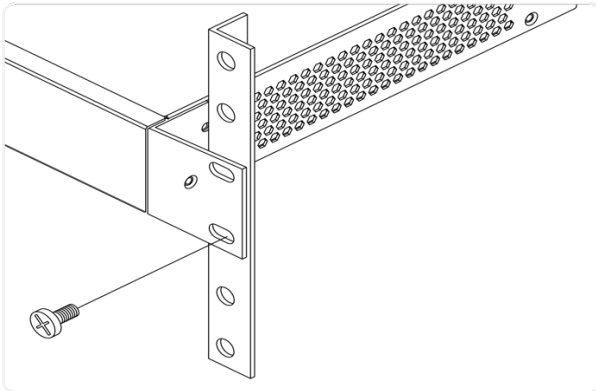
1. **Elevated Operating Ambient:** if installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may exceed room ambient. Install the equipment in an environment compatible with the maximum ambient temperature (T_{ma}) specified.
2. **Reduced Air Flow:** install the equipment in a rack so that the amount of air flow required for safe operation is not compromised.
3. **Mechanical Loading:** Mount the equipment in the rack so that a hazardous condition does not occur due to uneven mechanical loading (weight distribution/rack balance).
4. **Circuit Overloading:** give consideration to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Consider all equipment nameplate ratings when addressing this concern.
5. **Reliable Earthing:** maintain reliable earthing of rack-mounted equipment; pay particular attention to supply connections other than direct connections to the branch circuit (e.g., use of power strips).

Mounting the Switch in a 19-inch Rack

1. Attach the mounting brackets to both sides of the chassis. Insert screws and tighten them with a screwdriver to secure the brackets.

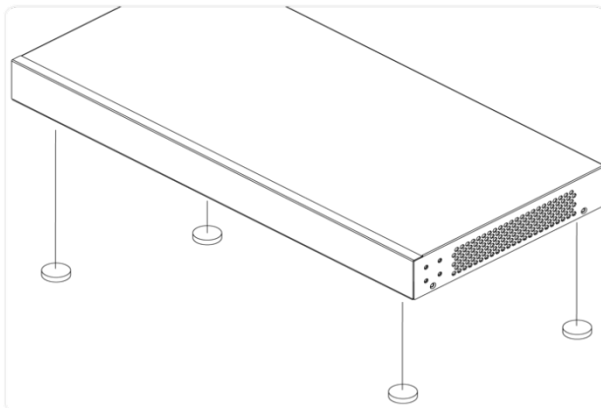


2. Place the switch on a rack shelf in the rack. Push it in until the oval holes in the brackets align with the mounting holes in the rack posts.
3. Attach the brackets to the posts. Insert screws and tighten them.



Mounting the Switch on Desk or Shelf

1. Verify that the workbench is sturdy and reliably grounded.
2. Attach the four adhesive rubber feet to the bottom of the switch.



Installing SFP+ Modules

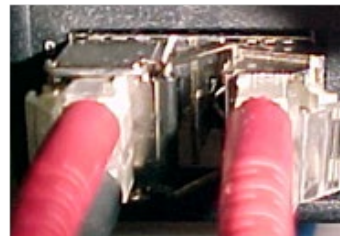
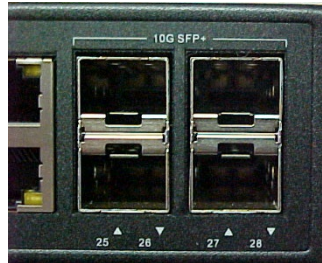
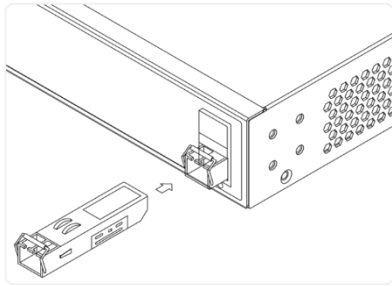
You can install or remove a mini-GBIC SFP+ module from a 1G/10G SFP+ Ports SFP+ port without having to power off the switch. **Note:** The SFP+ ports should use UL Listed Optional Transceiver product, Rated 3.3Vdc, Laser Class 1.

See the SFP manual for specific cautions, warnings, and instructions. See the Lantronix [SFP webpage](#) for our full range of Optical Devices.

During installation and maintenance, avoid direct exposure to laser beams. Specifically, do not look into laser ports. Ensure that each SFP port at which laser beams are (or will be) present is occupied by an SFP that is locked in position.

1. Position the SFP device at either installation slot, with the SFP label facing up on upper SFP slots or down on lower SFP slots.
2. Carefully slide the SFP device into the slot, aligning it with the internal installation guides.
3. Press firmly to ensure that the SFP device is firmly seated against the internal mating connector.
4. Attach an appropriate cable into the SFP module port.
5. Attach the other end of the cable to the other device.

Note: Do not remove and replace the SFP modules more often than necessary; excessive SFP removing/replacing can shorten the SFPs useful life.



Connecting Powered Devices (PDs)

Note that this device does not comply with IEEE 802.3at at 48-51.4 VDC, or with IEE 802.3bt at 48-53.4 VDC. The latest device label indicates:

- 802.3af: 48-57VDC
- 802.3at: 52-57VDC
- 802.3bt: 54-57VDC

This device drops ~1.3V from Vin to PSEout. IEEE requires PSEout voltages at the PSE output into the cable:

- 802.3af: 44VDC
- 802.3at: 50VDC
- 802.3bt: 52VDC

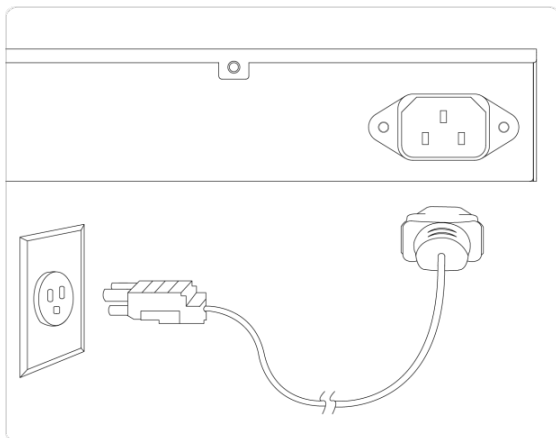
Not meeting this PSEout requirement may cause power up failures or power cycling with devices drawing the maximum power with maximum cable loss.

Power Connection: Warning: Connect the power supply to the switch first, and then connect the power supply to power. Otherwise catastrophic product failure may occur. **1.** Verify that power is off to the DC circuit that you are going to attach to the switch PoE DC-input connector. This can be either of the two power supplies (AC-input or DC-input) or site source DC. **2.** As an added precaution, place an appropriate safety flag and lockout device at the source power circuit breaker, or place a piece of adhesive tape over the circuit breaker handle to prevent accidental power restoration while you are working on the circuit.

Power Disconnection: To disconnect power from the switch after a successfully boot: **1.** Turn off power to the switch. **2.** Disconnect the cables.

Connecting the AC Power Cord

1. Connect the AC power cord to the AC power receptacle of switch.
2. Connect the other end of the AC power cord to the AC power outlet.
3. Check the SYS LED. If it is ON, the power connection is correct.



Redundant Power (SM48TAT4XA-RP Only)

The SM48TAT4XA-RP supports two power supplies for power redundancy.

1. Use a screw driver to remove the power plate cover.
2. Carefully insert the new Power Supply into the chassis slot until the Locking Lever clicks.
3. See “[Connecting the AC Power Cord](#)” above.
4. Save the power plate cover and screws for possible future use.

Replacing a Power Supply

Warning: Risk of electrical shock. For multiple power sources.

Warning: Shock/damage hazard exists if power supply is installed / removed while powered on.

1. Disconnect the AC power cord from the AC power outlet.
2. Disconnect the AC power cord from the switch AC power receptacle and Power Cord Retainer (if used).
3. Pinch the Pull Bar and the Locking Lever together and pull the old Power Supply from the chassis slot.
4. Carefully insert the new Power Supply into the chassis slot until the Locking Lever clicks.
5. See “[Connecting the AC Power Cord](#)” above.

Power Supply Specifications

The PS-AC-920 Secondary power supply provides redundant power support (920 Watts). The PS-AC-920 is optional and is sold and packaged separately.

CAUTION! Hazardous Area: Do Not remove this cover. Trained service people only. No serviceable components inside.

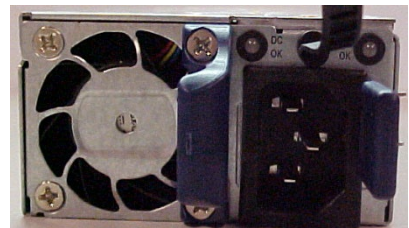
LEDs: DC OK and AC OK LEDs on front panel. See “[Power Supply LEDs](#)” on page 13.

Dimensions (H x W x D): 1-9/16” x 2-13/16” x 8-9/16” (25.4 mm x 50.8 mm x 203.2 mm)

Warranty: 5 years warranty for the PS-AC-920.

Unpacking / Installing / Replacing Power Supplies

The switch ships with one power supply (820 Watts) standard; order the second Power Supply (820 Watts) if the full 90 Watts output is needed on all ports.



Note: The switch supports dual redundant power supplies and they are hot-swappable. You can apply the AC power cord to any AC receptacle of the switch. If only one power supply is installed, it can be installed in either bay. The table below refers to the specification of the input/output voltage to the switch; use the following information to order the AC power cord.

Power Supply Voltage and Frequency

AC Input Voltage and Frequency	
Voltage	100-240 VAC
Frequency	50~60 Hz
Output Power	
Voltage	<ul style="list-style-type: none">54VDC/820W per ModulePower Redundancy, Dual Hot Swappable Power Supplies

Unpacking Power Supply

The power supply is packed separately. Unpack the power supply and save the packaging for possible future use. The optional second power supply is packed separately, if ordered. Unpack the optional second power supply and save the packaging for possible future use.

Installing a Power Supply

CAUTION: Hot Surfaces.



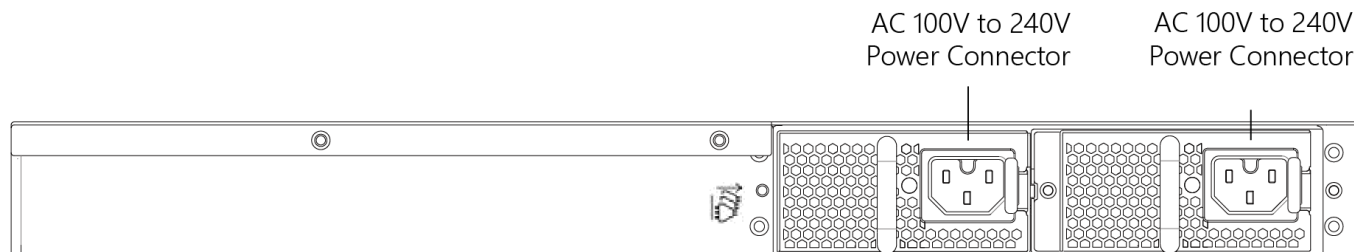
Warning: Class I Equipment. This equipment must be earthed. The power plug must be connected to a properly wired earth ground socket outlet. An improperly wired socket outlet could place hazardous voltages on accessible metal parts.



Indicates shock hazards that result in serious injury or death if safety instructions are not followed.



Disconnect all power sources; indicates to unplug all power cord(s) to disconnect AC power.



Procedure

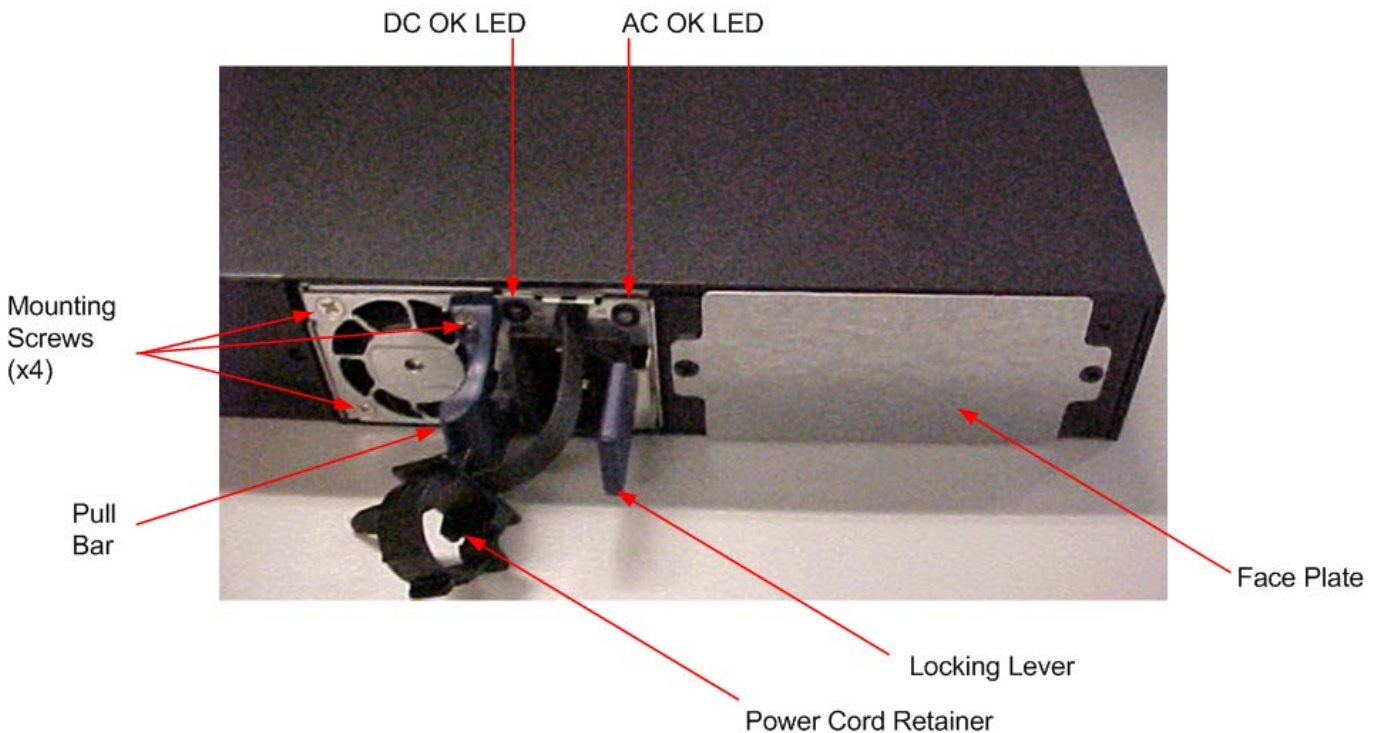
If using only one power supply, it can be installed in either power supply bay, and the Face Plate must be installed in the other bay.

1. Remove the blank Face Plate to use the one open Power Supply slot. Save the Face Plate and screws.
2. Carefully insert the Power Supply into the chassis until the Locking Lever clicks.
3. Fasten the AC Power Supply with the Mounting Screws (and Power Cord Retainer, if used).
4. Continue with “[Connecting the AC Power Cord](#)” on the next page.

Note: This product is to be connected only to UL listed PoE networks and without routing to the outside plant.

Replacing Power Supply

6. Pinch the Pull Bar and the Locking Lever together and pull the old Power Supply from the chassis slot.
7. Carefully insert the new Power Supply into the chassis slot until the Locking Lever clicks.
8. Continue with “[Connecting the AC Power Cord](#)” below.



PoE vs. PoE+ vs. PoE++

PoE was first developed to power Voice over Internet Protocol (VoIP) phones. In 2001 and 2002, Wireless Access Point makers, and other manufacturers took advantage of the technique. Per IEEE 802.3af, PoE can use a single, standard RJ45 connector and CAT 5 (or even CAT 3) cable.

PoE+ (PoE Plus) provides extended support for new end devices with higher power requirements. The IEEE 802.3at standard provides up to 30 W of power to include newer end devices such as IEEE 802.11n wireless access points, surveillance cameras, etc.

PoE++: As manufacturers advance the use of PoE, PoE++ became available for PoE with greater output. PoE++ delivers up to 60 watts of power using the same 802.3at standard. PoE++ is delivered using the simultaneous transmission of Mode A and Mode B. PoE++ is ideal for IP surveillance cameras that require more throughput or a various other equipment such as LCD displays, computer workstations, and biomedical equipment. Min. cable type Cat5e; recommend Cat 6A cabling. Higher categories have better PoE++ performance.

The [IEEE 802.3bt](#) amendment to IEEE Std 802.3-2015 increases the maximum PD power available by utilizing all four pairs in the specified structured wiring plant. This represents a substantial change to the capabilities of Ethernet with standardized power. The power classification information exchanged during negotiation is extended to allow meaningful power management capability. These enhancements provide higher power and more efficient standardized PoE delivery systems for applications such as VoIP phones, pan-tilt-zoom (PTZ) cameras with integrated fans and heating elements to operate at extreme temperatures, security card readers, LED lighting, POS equipment, thin clients, multi-radio wireless access points, digital signage, building automation, industrial sensors/actuators, etc.

See below for PoE++ type, class, and power descriptions.

PD Type	PD Power	Cable Category	Classes
Type 3	40 – 51 W	Cat5e	4 pairs class 5-6
Type 4	62 – 71 W	Cat5e	4 pairs class 7-8

PoE/PoE+/PoE++ Comparison

The table below compares the PoE types.

Type	Standard	Max. Current	Twisted pairs used	Power at Source	Power at Device	Max. Data Rate	Standard Ratified
PoE	IEEE 802.3af (802.3at Type 1)	350 mA	2 pairs	15.4 W	13 W	1000Base-T	2003
PoE+	802.3at Type 2	600 mA	2 pairs	30 W	25.5 W	1000Base-T	2009
PoE++	Proposed IEEE 802.3bt Type 3 / Type 4	600 mA / 900 mA	4 pairs	60 W / 90 W	51 W / 71.3 W	10GBase-T	2018

Initial Switch Configuration

Initial Switch Configuration via Web Browser

After powering up the switch for the first time, you can perform the initial switch configuration using a web browser. For managing other switch features, see the Web User Guide.

To begin with the initial configuration stage, you must reconfigure your PC's IP address and subnet mask to make sure the PC can communicate with the switch. After changing your PC's IP address (e.g., 192.168.1.250), then you can access the Web interface of the switch using the switch default IP address as shown below.

Note: The factory default IP address of the switch is **192.168.1.77** and the factory default Subnet Mask is **255.255.255.0**.

The initial switch configuration procedure is as follows:

1. Power up the PC that you will use for the initial configuration. Please make sure the PC has the Ethernet RJ45 connector to be connected to the switch via standard Ethernet LAN cable.
2. Reconfigure the PC's IP address and Subnet Mask as below, so that it can communicate with the switch. The method to change the PC's IP address, for example, for a PC running Windows® 7/8.x/10, is as follows:
 - 2a. Type "network and sharing" into the Search box in the Start Menu.
 - 2b. Select Network and Sharing Center.
 - 2c. Click on Change adapter settings on the left of PC screen

Note: You can also skip steps 2a to 2c, by pressing WinKey+R and type "ncpa.cpl" command to get to step 3 directly.

 - 2d. Right-click on your local adapter and select Properties
 - 2e. In the Local Area Connection Properties window highlight Internet Protocol Version 4 (TCP/IPv4) then click the Properties button.

Note: Be sure to record all your PC's current IP settings to be able to restore them later.

 - 2f. Select the radio button Use the following IP address and enter the IP address for the PC (e.g., any IP address not in use, and in between 192.168.1.2 and 192.168.1.254), Subnet mask (e.g., 255.255.255.0), and Default Gateway that corresponds with your network setup. Then enter your Preferred and Alternate DNS server addresses.
 - 2g. Click OK to change the PC's IP address.
3. Power up the switch to be initially configured and wait until it has finished its start-up processes.
4. Connect the PC to any port on the switch using a standard Ethernet cable, and check the port LED on the switch to make sure the link status of the PC is OK.
5. Run your Web browser on the PC.
6. Enter the factory default IP address (**192.168.1.77**) to access the switch's Web interface.

If your PC is configured correctly, the Login page displays as shown.

If you do not see the Login page, perform these steps:

- Refresh the web page.
- Check to see if there is an IP conflict issue.
- Clean browser cookies and temporary internet files.
- Check your PC settings again and repeat step 2.

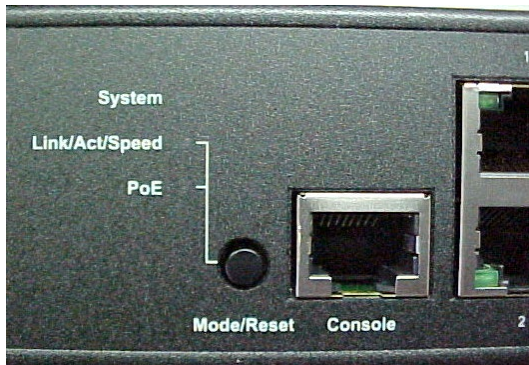


7. Enter the factory default username (**admin**) and password (**admin**) on the Login page.
8. Click “Login” to log into the switch. The Web UI startup page displays; see the *Web User Guide* for more information.

Initial Switch Configuration via CLI

1. Use an RJ-45 cable to connect a terminal or PC/terminal emulator to the switch port to access the CLI.
2. Attach the RJ-45 serial Console port on the switch front panel to the cable for Telnet/CLI configuration.
3. Attach the other end of the DB-9 cable to a PC running Telnet or a terminal emulation program such as HyperTerminal or TeraTerm.
4. After powering up the switch for the first time, you can perform the initial switch configuration using the CLI (Command Line Interface). For managing other switch features, see the *CLI Reference* for details.

SM24TAT4XB:



SM48TAT4XA-RP:



Troubleshooting

This section provides information to troubleshoot problems by taking actions based on the suggested solutions.

Basic Troubleshooting

1. Make sure your switch model supports the feature or function attempted; see [Specifications](#) on page 7 and check the Release Notes for your particular version.
2. Verify the install process; see [Installation](#) on page 27.
3. Verify the initial switch configuration; see [Initial Switch Configuration](#) on page 35.
4. Troubleshoot connected network devices to pinpoint the problem to the switch.
5. Run System Diagnostics (ping, cable diagnostics, traceroute). See the Web User Guide or the CLI Reference.
6. Reset the switch; see [Mode/Reset button](#) on page 24.
7. Restore the switch to its factory default settings; see [Mode/Reset button](#) on page 24.
8. If using the CLI, try the Web UI and vice versa. See the Web User Guide or the CLI Reference.

LED Troubleshooting

Symptoms	Possible Causes	Suggested Solutions
System LED is Off	The switch is not receiving power.	<ol style="list-style-type: none">1. Check if correct power cord is connected firmly to the switch and to the AC outlet socket.2. Perform power cycling the switch by unplugging and plugging the power cord back into the switch.3. If the LED is still off, try to plug power cord into different AC outlet socket to make sure correct AC source is supplied.
System LED is Red	An abnormal state has been detected by the switch.	Check the system log within the switch from Web UI to understand the abnormal state (e.g., exceeding operating temperature range) and take corresponding actions to resolve.
Port Status LED is Off in Link/Act/Speed Mode	The port is not connected or the connection is not working.	<ol style="list-style-type: none">1. Check if the cable connector plug is firmly inserted and locked into the port at both the switch and the connected device.2. Make sure the connected device is up and running correctly.3. If the symptom still exists, try different cable or different port, in order to identify if it is related to the cable or specific port.4. Check if the port is disabled in the configuration settings via the Web UI.
Port Status LED is Off in PoE Mode	The port is not supplying power.	<ol style="list-style-type: none">1. Check if the cable connector plug is firmly inserted and locked into the port at both the switch and the connected device.2. Make sure the correct Ethernet cables are used.3. If the symptom still exists, try different cable or different port, to identify if it is related to the cable or specific port.4. Check if the port is disabled in the Web UI settings.

PoE Troubleshooting

1. Get as much detail as possible regarding the symptom, including any system messages from the PoE switch. For example, does a PD not power up at all, or does it power up briefly and then power down?
2. Determine if the trouble occurred on initial installation or after the PD had been working normally?
3. If the trouble started after the PD was working, what changed? Were there any hardware or software changes?
4. Verify that the port is not shut down, disabled, or errored.
5. Verify that the Ethernet cable from the PD to the switch port is good.
6. Verify that the total cable length from the switch front panel to the connected PD is not more than 100 meters. Some of the power from the switch port is dissipated in the cable due to wire resistance, especially on cables as long as 100 meters. Only the remaining power is available to the PD. The 100-meter limit for twisted-pair Ethernet cable assumes **a)** not more than four RJ-45 connection points in the transmission path, **b)** 90 meters of solid-strand Category 5 or 5e, and **c)** 10 meters of flexible multistrand cable (2-to-5 meters of multistrand Category 5 patch cords).
7. Verify that the PSE switch power budget can power the PD. If the switch power budget is depleted, additional PDs will not power-on when connected to a PoE port. Verify that the switch power budget (available PoE) is not depleted before or after the PD is connected. Verify that sufficient power is available for the PD type.
8. Verify if non-powered Ethernet devices can establish an Ethernet link on any port and that PoE devices do not power up on the same port.
9. Review alarms reported previously by system messages.
10. If a working IP Phone or WAP intermittently reloads or disconnects from inline power, verify all electrical connections from the switch to the PD. An unreliable connection results in power interruptions and intermittent PD operation, such as PD disconnects and reloads.
11. Check for changes in the electrical environment at the switch site. What is happening at the PD when the disconnect occurs? Check for error messages reported by the switch at the same time of the disconnect.
12. Verify that an IP Phone is not losing access just before a reload occurs (a network problem, not a PoE problem).
13. Pre-standard and post-standard VoIP phones may use different detection and connect / disconnect methods. Note that PD detection occurs when an Ethernet device is first connected to a PoE port. If a non-PoE device is connected to a PoE port, detection is deactivated. If the non-PoE device is later disconnected and replaced by a PD, the switch may not detect it immediately.
14. Verify that the PD is not causing an overcurrent condition on the port. Specifically: does the VoIP phone initially power on and then disconnect? If so, the problem may be an initial current surge that exceeds a current-limit threshold for the switch port. Some PDs may have excessive “surge in” current when first connected to a PoE port. The switch initially provides power to the port, and then quickly removes power due to a momentary overcurrent condition. The PD starts to power up, but then quickly powers down.
15. Most PoE switches have voltage and current regulators that detect an overcurrent threshold and disconnect power from the line. This prevents excessive current from being delivered by the PoE port, which could possibly result in damage to port-level components.
16. A variety of disturbances on the AC power line (mains) can cause odd PoE problems. The power supplies in various switches and PDs can react uniquely to AC input disturbances. AC disruption problems are usually temporary or one-time occurrences. For example, a specific switch or PD may reboot due to an AC power

problem, while other switches or PDs may show a greater immunity to the problem. This is a typical occurrence during lightning storms or AC power maintenance. In a worst-case scenario, a PoE power supply may appear to shut down, with no PoE output voltage to any port. It's possible the switch's Ethernet functions appear normal, and only the PoE functions are disrupted or degraded, or the switch may power down completely due to the AC disturbance. PDs may exhibit unusual behavior. In such cases, power cycle the switch (unplug the switch, wait at least three seconds, then plug it back in. This will ensure a total system reset that should restore normal operation.

17. Check if related features (LLDP mode, CDP mode) are enabled. See the Lantronix [PoE Brochure](#) for more information.

Compliance Information

Declaration of Conformity

Manufacture's Name: Lantronics, Inc.

Manufacture's Address: 48 Discovery, Suite 250, Irvine, California 92618

Declares that the products:

SM48TAT4XA-RP and SM24TAT4XB

Conforms to the following Product Regulations:

European Standard EN 55032:2015/AC:2016 Class A,

EN6100-3-2:2014, EN6100-3-3:2013, EN 55024:2010/A1:2015

(IEC 61000-4-2 Edition 2.0 2008-12, IEC 61000-4-3 Edition 3.2 2010-04,

IEC 61000-4-4 Edition 3.0 2012-04, IEC 61000-4-5 Edition 3.0 2014-05,

IEC 61000-4-6 Edition 4.0 2013-10, IEC 61000-4-8 Edition 2.0 2009-09,

IEC 61000-4-11 Edition 2.0 2004-03) and Australian Standard AS/NZS CISPR 32:2015 Class A.

With the technical construction on file at the above address, this product carries the CE Mark

I, the undersigned, hereby declare that the equipment specified above conforms to the above Directive(s) and Standard(s).

Place: Irvine, California

Date: April 27, 2022

Signature: *Fathi Hakam*

Full Name: Fathi Hakam

Position: Vice President of Engineering

FCC Regulations

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at the user's own expense.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Canadian Regulations

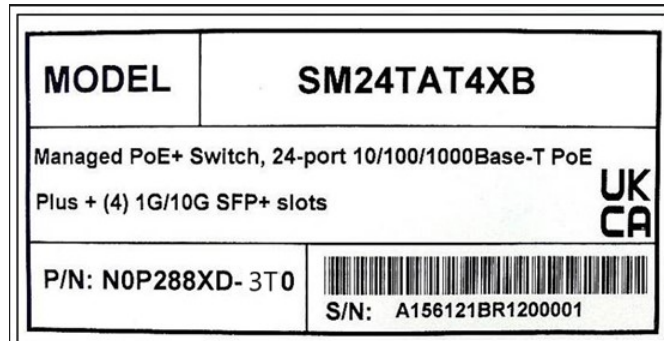
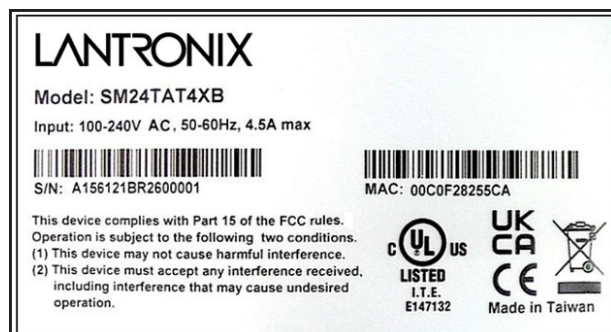
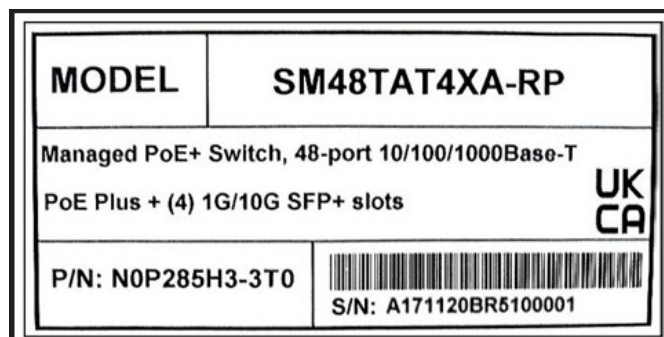
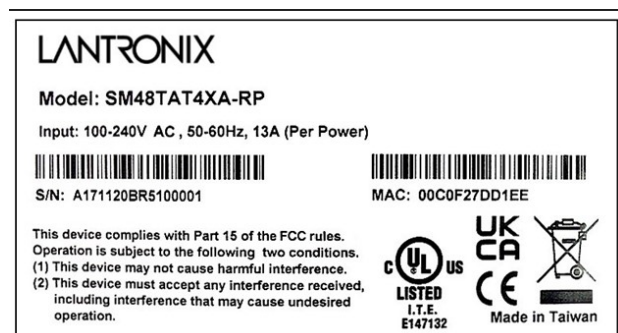
This digital apparatus does not exceed the Class A limits for radio noise for digital apparatus set out on the radio interference regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la Class A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

RoHS, WEEE, and Environmental Programs

See <https://www.lantronix.com/legal/rohs/>

Device Label and Box Label



Device Label

Box Label

Record Device and System Information

After performing the troubleshooting steps, and before calling or emailing Technical Support, please record as much information as possible in order to help the Tech Support Specialist.

1. In the Web UI, select the **System Information** webpage. From the CLI, use the **show** commands to gather the information below or as requested by the Tech Support Specialist.

2. Record Model information: Model Name: _____

Serial Number: _____ Software Revision: _____

3. Record Port Configuration, PoE Configuration, and PoE Status: _____

4. SMxxTAT4Xx options installed: _____

5. Provide additional information to your Tech Support Specialist. See the "Troubleshooting" section above.

Your Lantronix service contract number: _____

Describe the failure: _____

Describe any action(s) already taken to resolve the problem (e.g., changing mode, rebooting, etc.): _____

The model and serial numbers of other Lantronix devices in the network: _____

Describe your network environment (layout, cable type, etc.): _____

Network load and frame size at the time of trouble (if known): _____

PD equipment used: _____

The device history (i.e., have you returned the device before, is this a recurring problem, etc.): _____

Any previous Return Material Authorization (RMA) numbers: _____

**Lantronix Corporate Headquarters**

48 Discovery, Suite 250
Irvine, CA 92618, USA
Toll Free: 800-526-8766
Phone: 949-453-3990
Fax: 949-453-3995

Technical Support

Online: <https://www.lantronix.com/technical-support/>

Sales Offices

For a current list of our domestic and international sales offices, go to the Lantronix web site at www.lantronix.com/about/contact.