LANTRONIX®

SM24TBT4XPA

Managed 2.5G PoE++ Switch with IEEE 1588v2
(12) 10/100/1000Base-T ports, (12) 100/1G/2.5GBase-T ports, and (4) 1G/10G SFP+ ports

Install Guide

Part Number 33876
Revision C March 2025

Intellectual Property

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

Warranty

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

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Revision History

Date	Rev	Description
5/24/24	A	Initial Lantronix release at FW 8.50.0139.
8/15/24	B	FW v8.50.0149: Percepxion related adjustments and bugs fixes. • Update Regulatory Compliance information. • Correct the default fallback IP address. • Disable SNMP mode by default. • Fix PoE Firmware version display and fix PoE power output issue. • Note that 10 Mbps and 10 Gbps are not supported. • Remove 'Extend PoE Mode' feature. See the Release Notes for details.
3/26/2025	C	FW v8.50.0160 : • Update Key Features and Ordering Information. • Update product label. • CoC to Update DoCs. • Update compliance statements. See the Release Notes for details.

Cautions and Warnings

Cautions indicate that there is the possibility of poor equipment performance or potential damage to the equipment.

Warnings indicate that there is the possibility of injury to person.

Cautions and Warnings appear here and may appear throughout this manual where appropriate. Failure to read and understand the information identified by this symbol could result in poor equipment performance, damage to the equipment, or injury to persons.

 **Caution**: While installing or servicing the power supply module, wear a grounding device and observe all electrostatic discharge precautions. Failure to observe this caution could result in damage to, or failure of the power module.

 **Warning**: Do not connect the power module to an external power source before installing it into the chassis. Failure to observe this warning could result in an electrical shock, even death.

Warning: Equipment grounding is vital to ensure safe operation. The installer must ensure that the power module is properly grounded during and after installation. Failure to observe this warning could result in an electric shock, even death.

Warning: A readily accessible, suitable National Electrical Code (NEC) or local electrical code approved disconnect device and branch-circuit protector must be part of the building's installed wiring to accommodate permanently connected equipment. Failure to observe this warning could result in an electric shock, even death.

Warning: Turn any external power source OFF and ensure that the power module is disconnected from the external power source before performing any maintenance. Failure to observe this warning could result in an electrical shock, even death.

Warning: Ensure that the disconnect device for the external power source is OPEN *(turned OFF)* before disconnecting or connecting the power leads to the power module. Failure to observe this warning could result in an electric shock, even death.

See *Electrical Safety Warnings* on page *36* for electrical safety warnings translated into multiple languages.

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1. Introduction

The Lantronix SM24TBT4XPA Managed PoE++ Switch features IEEE 1588v2 Precision Clock Synchronization Protocol, (12) 10/100/1000Base-T ports, (12) 100/1G/2.5GBase-T ports, and (4) 1G/10G SFP+ ports to deliver better functionality and performance for enterprise networks. This switch also comes integrated with the Lantronix cloud-based or on-premise Percepxion™ Software End-to-End Solutions platform, providing comprehensive device life cycle management, enterprise application integration, and data analytics, all through a single pane of glass.

With advanced Layer 2 features and a simple to navigate user interface, this switch offers performance and reliability at a cost-effective, secure, and reliable solution for the network edge.

Utilizing PoE enables users to connect, power and manage devices using a single Ethernet cable; simplifying installation and eliminating the need for additional power outlets.

This switch provides the benefits of ease of use in Security and Surveillance, Smart Building, and other applications. The switch also includes Device Management System Software (DMS), is accessible by Percepxion, or the local web manager, providing advanced configuration and management of all IP addressable devices in the network. This advanced management provides a graphical network topology, floor map creator, device map view, traffic monitoring, and network diagnostics for troubleshooting.

Key Features

- IPv4/IPv6 dual stack management
- IEEE 802.3af/at/bt
- Always on PoE
- Advanced PoE Management
- 2.5G RJ-45 Ports
- SSH/SSL secured management
- SNMP v1/v2c/v3
- RMON groups 1,2,3,9
- IGMP v1/v2 Snooping and MLD v1/v2 Snooping
- RADIUS and TACACS+ authentication
- IP Source Guard
- DHCP Relay (Option 82) and DHCP Snooping
- 802.1D (STP), 802.1w (RSTP) and 802.1s (MSTP)
- LACP and static link aggregation
- DMS (Device Management System)
- IEEE 1588v2 Precision Clock Synchronization Protocol
- Energy Efficient Ethernet (IEEE 802.3az)
- Cable Diagnostics
- Percepxion and LPM support
- 5 Year Warranty

Applications

- IP surveillance, supplying power and data to IP cameras
- Connecting and remotely powering wireless access points
- Monitoring/managing attached powered devices from various vendors


PoE Lighting


Smart Building


Security & Surveillance


Digital Signage

Ordering Information

Model	Description
SM24TBT4XPA	Managed 2.5G PoE++ Switch with IEEE 1588v2 and (12) 10/100/1000Base-T ports, (12) 100/1G/2.5GBase-T ports, and (4) 1G/10G SFP+ ports
Optional Accessories (order separately)	
SFP Modules	See Lantronix full line of SFP transceivers on our SFP webpage.
Percepxion	For subscription options, see Percepxion web page.
LEVEL-x-yYEAR	Technical Support Services, Level 1, 2 or 3 and 1-, 3-, or 5- year subscription

Specifications

Hardware Performance

Transmission Method	Forwarding Capacity (Mbps)	Switching Capacity (Gbps)	Mac Table (K)	Jumbo Frames (Bytes)
Store-and-forward	122	164	32	14000

Environmental Range

Operating Temperature		Storage Temperature		Operating Humidity	Altitude	
Fahrenheit	Centigrade	Fahrenheit	Centigrade	10% to 90% non-condensing	Feet	Meters
+32° to +113°	0° to +45°	-4° to +158°	-20° to +70°		< 10000	<3000

Dimensions, Weights, Mounting

Dimensions (WxHxD)		Weight		Mounting Type
Millimeters	**Inches**	**Kilograms**	**Pounds**	
442 x 44 x 375	17.4 x 1.7 x 14.76	5.3	11.6	Desktop, Rack

Voltage and Frequency

AC Input Voltage, Frequency and Power	
Voltage	100-240 VAC

Frequency	50~60 Hz

PoE

Ports	PoE Support
Ports 1-12	PoE/PoE+ (IEEE 802.3at)
Ports 13-24	PoE/PoE+/PoE++ (IEEE 802.3bt)
PoE Budget	740 Watts

Power Consumption

Power	Non-Loading (W)	Non-Loading (BTU/Hr)	PoE Full Loading (W)	PoE Full Loading (BTU/Hr)
110VAC	42.99	146.6	887.34	3025.83
220VAC	41.97	143.12	865.69	2952

MTBF

Temperature	Mean Time Between Failures
25℃	152962 Hours
50℃	39307 Hours

Certifications

Electromagnetic Emissions (EMC) and Safety
• FCC Part 15 Class A • NDAA compliant and TAA compliant • UL Pending • CE, EN55032, EN55035 • CB (IECEE Certification Body Scheme)

Software Features

Feature	Description
Layer 2 Switching	
Spanning Tree Protocol (STP)	• Standard Spanning Tree 802.1D • Rapid Spanning Tree (RSTP) 802.1w • Multiple Spanning Tree (MSTP) 802.1s
Trunking	• Link Aggregation Control Protocol (LACP) IEEE 802.3ad • Static aggregation
VLAN	Supports up to 4K VLANs simultaneously (out of 4096 VLAN IDs). Port-based VLAN; 802.1Q tag-based VLAN; Protocol based VLAN; IP subnet-based VLAN; Private VLAN Edge (PVE); MAC-based VLAN; Q-in-Q (double tag) VLAN; GARP VLAN Registration Protocol (GVRP)
DHCP Relay	Relay of DHCP traffic to DHCP server in different VLAN Works with DHCP Option 82
IGMP Snooping	IGMP limits bandwidth-intensive multicast traffic to only the requesters. Supports 1024 512 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 to reduce load on the multicast router
MLD v1/v2 Snooping	Delivers IPv6 multicast packets only to the required receivers
Multicast VLAN Registration	MVR uses a dedicated manually configured VLAN, called the multicast VLAN, to forward multicast traffic over Layer 2 network in conjunction with IGMP snooping
Security	
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
IEEE 802.1X	• 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
Layer 2 Isolation Private VLAN Edge	PVE (also known as protected ports) provides L2 isolation between clients in the same VLAN. Supports multiple uplinks

Feature	Description
Port Security	Locks MAC addresses to ports and limits the number of learned MAC address
IP Source Guard	Prevents illegal IP address from accessing a specific port in the switch
RADIUS / TACACS+	Supports RADIUS and TACACS+ authentication. Switch as a client.
Storm Control	Prevents traffic on a LAN from being disrupted by a broadcast, multicast, or unicast storm on a port
DHCP Snooping	A feature acts as a firewall between untrusted hosts and trusted DHCP servers
Loop Protection	Prevents unknown unicast, broadcast, multicast loops in Layer 2 switching.
Quality of Service (QoS)	
Hardware Queue	Supports 8 hardware queues
Scheduling	Strict priority and weighted round-robin (WRR) Queue assignment based on DSCP and class of service
Classification	Port based 802.1p VLAN priority based
Rate Limiting	Ingress policer Egress shaping and rate control Per port
Management	
Port Mirroring	Traffic on a port can be mirrored to another port for analysis with a network analyzer or RMON probe. A single session is supported.
IEEE 802.1ab (LLDP)	Used by network devices for advertising their identities, capabilities, and neighbors on an IEEE 802ab local area network.
LLDP-MED	Supports LLDP-MED extensions per ANSI/TIA-1057 by the Telecommunications Industry Association (TIA).
Web GUI	Built-in switch configuration utility for browser-based device configuration
Dual Image	Independent primary and secondary images for backup while upgrading
UPnP	The Universal Plug and Play Forum was formed to standardize discovery and control of networked devices. See the Open Connectivity Foundation webpage.
DHCP Server	Support DHCP server to assign IP to DHCP clients
SNMP	SNMP v1, v2c, v3 with traps, and SNMP v 3 user-based security model (USM)

Feature	Description
Firmware Upgrade	Web browser upgrade (HTTP/ HTTPs) and TFTP
NTP	Network Time Protocol (NTP) is a networking protocol for clock synchronization between computer systems over packet-switched
Other Management	HTTP/HTTPs; DHCP Client; Cable Diagnostics; Syslog; Telnet Client; SSH, IPv6 Management
Device Management System (DMS)	
Graphical Monitoring	Topology view: Intuitive way to configure and manage switches and other devices with visual relations. Floor view: Easily drag and drop PoE devices and help you to build smart workforces. Map view: Efficiently drag and drop devices and monitor locations on Google Maps.
Find My Switch	The front panel LEDs flash for 15 seconds to visually identify the switch.
Traffic Monitoring	Display a visual chart of network traffic of all devices and monitor every port at any time.
Troubleshooting	Network diagnostic between master switch and devices. Supports protection mechanism, such as rate-limiting to protect your devices from brute-force downloading.
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 powered devices (PDs).
Auto Power Reset	Automatically monitors and reboots PD when no response to ICMP is received.
Power Delay	The switch provides power to the PDs based on delay time when PoE switch boots up, to protect switch from misuse of the PDs.
Always on PoE	Ensures there is always PoE power to the attached PDs so a switch reboot or firmware upgrade will not disrupt power to the PDs allowing camera or WAPs to continue functioning.
Percepxion and LPM	
Percepxion	Percepxion is Lantronix cloud-hosted or on-premise management platform that provides a single pane of glass for centralized management and automated monitoring of deployed Lantronix devices, along with real-time notifications, managed APIs and data dashboards. See the Percepxion product page.
LPM	Lantronix Provisioning Manager is software that provisions, configures and updates Lantronix devices for local site installations and deployments. LPM discovery is enabled by default and is not configurable. See the LPM product page.

About This Manual

This manual describes how to install, configure, and troubleshoot the SM24TBT4XPA switch, including how to:

- Install the switch.
- Initially set up the switch.
- Check switch status by reading the LED behavior.
- Reset the switch or restore the switch to factory defaults.
- Troubleshoot switch installation.

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

Related Manuals

Related manuals include:

- SM24TBT4XPA Quick Start Guide, 33875
- SM24TBT4XPA Web User Guide, 33877
- SM24TBT4XPA CLI Reference, 33878
- Release Notes (version specific)

For Lantronix drivers, firmware, manuals, etc. go to the Lantronix Technical Resource Center.

2. Product Description

Overview

This chapter describes the SM24TBT4XPA switch, including descriptions of:

- Front and Back Panels.
- How to reset the switch or restore the switch to factory defaults.
- MODE/RESET button operation and functions.
- LED operation.

Front Panel

The front panel is shown below.

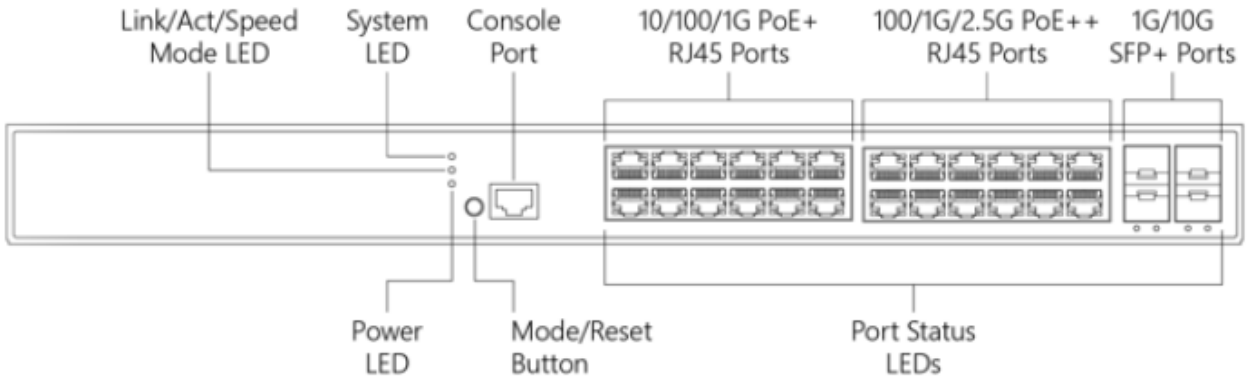


Figure 1: SM24TBT4XPA Front Panel

Back Panel

The back panel is shown below.

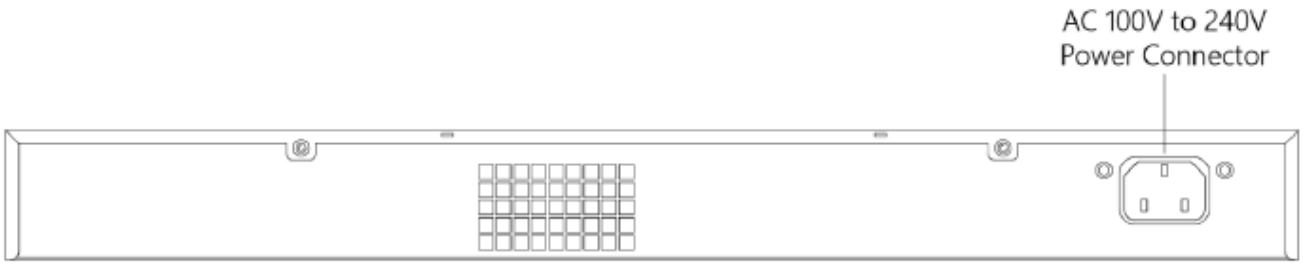


Figure 2: SM24TBT4XPA Back Panel

LED Descriptions

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

System LED: Indicates if the system is ready or not or indicates if there is a system alarm triggered for troubleshooting.

Power LEDs: Indicates if the switch is powered up correctly or not.

PoE LED: Indicates the status of PoE.

Port Status LEDs: indicates the current status of each RJ45/SFP+ port. Users can check these LEDs to understand the port status.

The LED indicators are described in the following tables.

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: Mode LEDs

LED	Color	State	Description
Link/Act/Speed	Green	On	The Port Status LEDs display link status, network activity, and speed of each port.
PoE	Green	On	The RJ45 Port Status LEDs display PoE powering status of each port.

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 3: Port Status LEDs

When Link/Act/Speed Mode LED Lit			
LED	**Color**	**State**	**Description**
RJ45 Ports (10M/100M/ 1G PoE+) (Left side ports 1-12)	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.

When Link/Act/Speed Mode LED Lit			
LED	**Color**	**State**	**Description**
	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 has not established a link to connected device. Otherwise, the port may have been disabled via the switch UI.
RJ45 Ports (100M/1G/2.5G PoE++) (Right side ports 13-24)	Green	On	The port is enabled and established a link to connected device, and the connection speed is 2.5Gbps.
	Green	Blinking	The port is transmitting or receiving packets and the connection speed is 2.5Gbps.
	Amber	On	The port is enabled and has established a link a link to a connected device and the connection speed is 100/1000Mbps.
	Amber	Blinking	The port is transmitting or receiving packets and the connection speed is 1000/1000Mbps.
	--	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 via the switch UI.
1G/10G SFP+ Ports (ports 25-28)	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 via the switch UI.

MODE/RESET Button

By pressing the MODE/RESET button for a certain period, you can perform these tasks:

- **Reset the Switch**: to reboot and get the switch back to the previous configuration settings saved. The First Time Wizard displays again after pressing the MODE/RESET button.
- **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 tell which task is being performed by reading the LED behaviors while pressing the MODE/RESET button. Once the LEDs are correctly displayed, you may release the button.

Table 4: MODE/RESET Button Descriptions

Task to Perform	Press Button for ..	SYS LED Behavior	Port Status LEDBehavior
Reset the Switch	2 ~ 7 seconds	Blinking Green	ALL LEDs are OFF.
Restore to Factory Defaults	7 ~ 12 seconds	Blinking Green	ALL LEDs Stay ON.

Press the MODE/RESET button until all port LEDs light, then release the MODE/RESET button. This will set the switch back to its factory default IP address. You can then log back in to display the First Time Wizard.

The First Time Wizard will only display when you use the hardware MODE/RESET button to reset the switch (press and hold the MODE/RESET button for over 10 seconds; when all the LEDs light, then release the button).

3. Installation

Package Contents

Carefully unpack the package contents. Make sure no items are missing or damaged. Please save the packaging for possible future use.

- SM24TBT4XPA switch
- AC Power cord (country specific)
- Four adhesive rubber feet
- Printed Quick Start Guide
- Mounting kit
- RJ45 to DB9 Serial Console Cable

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 to protect the switch.

Mounting the Switch in a 19-inch Rack

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

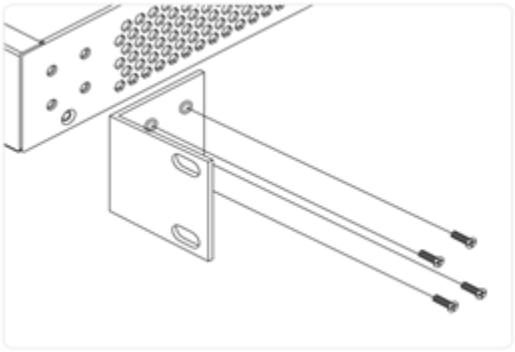


Figure 3: Attaching Brackets to the Switch

Step 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.

Step 3: Attach the brackets to the posts. Insert screws and tighten them.

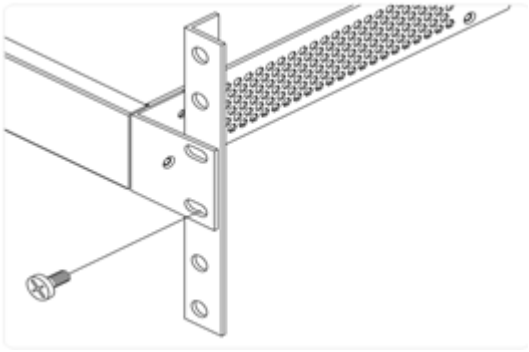


Figure 4: Attaching Brackets to the Rack Post

Mounting the Switch on Desk or Shelf

Step 1: Verify that the workbench is sturdy and reliably grounded.

Step 2: Attach the four adhesive rubber feet to the bottom of the switch.

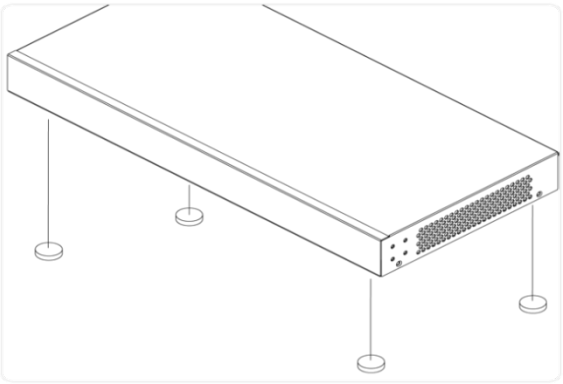


Figure 5: Attaching the Rubber Feet

Connecting PoE Devices

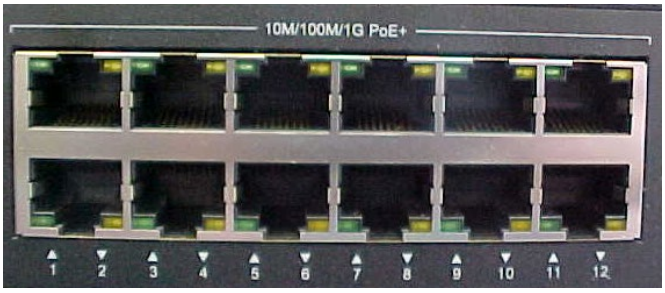
10M/100M/1G PoE+ Ports: Connect 1-12 IEEE 802.3at PoE+ PDs to ports 1-12.

10M/100M/1G PoE++ Ports: Connect 1-12 IEEE 802.3bt PoE++ PDs to ports 13-24.

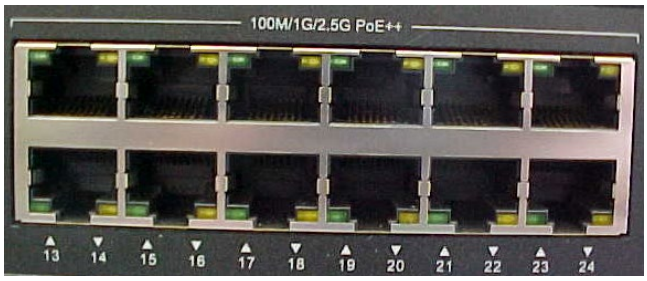
1G/10G SFP Ports: Connect 1-4 1G/10G SFP (Fiber) devices to ports labeled 25-28.

Caution: If utilizing the PoE Force mode feature, only connect PDs which support power input in the 48~56V range to prevent damage to PDs. When the port is changed to Force mode, the port's PoE LED lights immediately. See the *Web User Guide* for details.

Caution: PoE device components may fail due to transient voltage spikes on the PoE line. It is strongly suggested that a surge suppressor be used on each PoE port, especially in areas with frequent lightning and other types of interference.



10M/100M/1G PoE+ Ports



100M/1G/2.5G PoE++ Ports

1G/10G SFP Ports

Figure 6: Switch Ports

Installing SFP+ Modules

You can install or remove a mini-GBIC SFP+ module from an SFP+ port without having to power off the switch.

Note: See the related SFP device manual for important Safety warnings. See the Lantronix SFP page for our full line of SFP transceivers. See the FOA webpage for additional information. The Fiber Optic Association, Inc.is an international non-profit educational association chartered to promote professionalism in fiber optics through education, certification and standards.

Note: The SFP+ ports should use UL Listed Optional Transceiver product, Rated 3.3Vdc, Laser Class 1.

Step 1: Insert the module into the SFP port.

Step 2: Press firmly to ensure that the SFP module seats into the connector.

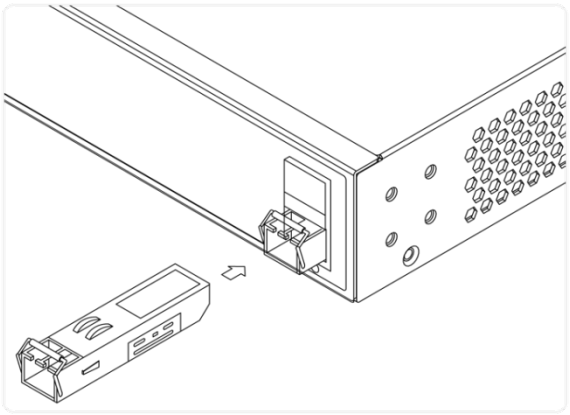


Figure 7: Installing an SFP+ Module into an SFP+ Port

Connecting the AC Power Cord

The switch ships with a country specific AC Power cord. To order the corresponding country specific power cord, add the Country Code extension to the end of the SKU (e.g., SM24TBT4XPA-NA = North America, -LA = Latin America, -EU = Europe, -UK = United Kingdom, -SA = South Africa, -JP = Japan, -OZ = Australia, -BR = Brazil).

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 to protect the switch.

Step 1: Connect the AC power cord to the AC power receptacle of switch.

Step 2: Connect the other end of the AC power cord to the AC power outlet. When connecting to AC power, avoid outlets connected to a wall switch.

Step 3: Check the SYS LED. If it is ON, the power connection is correct.

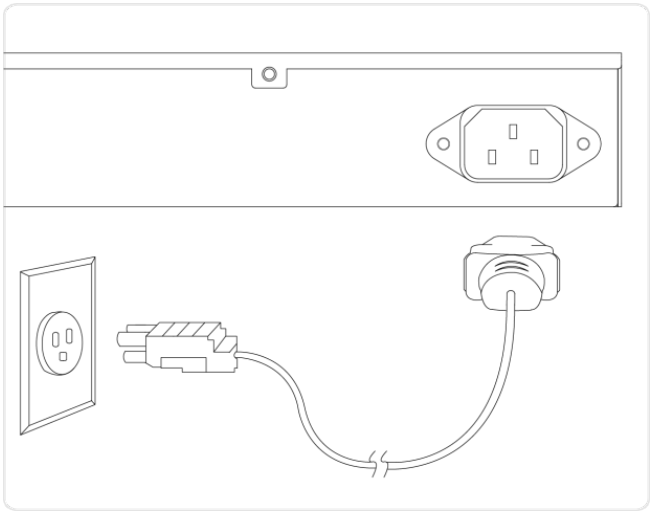


Figure 8: Connecting AC Power Cord

4. Initial Switch Setup

Default Configuration Settings

- IP address: 192.168.1.77
- Subnet Mask: 255.255.255.0
- Default Gateway: 192.168.1.254
- Username: admin
- Password: admin

To prevent unauthorized access, change the default password on first use and periodically.
Serial settings:

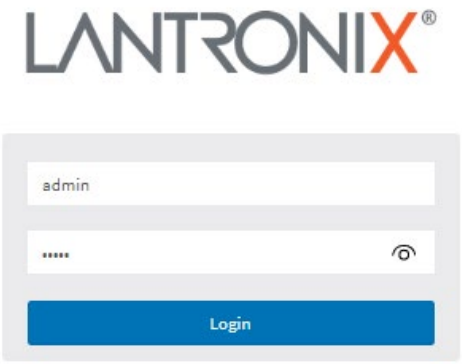
- Baud rate=115200bps
- Data bits=8
- Parity=None
- Stop bits=1
- Flow control=none

Initial Setup via Web Browser

After powering up the switch for the first time, you can perform the initial switch setup using a web browser. To begin the initial setup, you must change your PC's IP address and subnet mask to make sure the PC can communicate with the switch. After changing PC's IP address (for example, 192.168.1.250), then you can access the Web interface of the switch using the switch's default IP address and Subnet Mask.

To connect and complete initial setup via the web browser:

1. Power up the PC that you will use for the initial configuration. Make sure the PC has the Ethernet RJ45 connector to be connected to the switch via standard Ethernet LAN cable.
2. Change the PC's IP address and Subnet Mask so that it can communicate with the switch.
3. Power up the switch for its initial configuration 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, then 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; enter the factory default IP address to access the switch's Web interface.
6. If your PC is configured correctly, the switch Login page displays.



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

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

7. Enter the factory default username (**admin**) and password (**admin**) on login page.
8. Click "Login" to log into the switch. See the *Web User Guide* for additional information.

Access the CLI through the Console Port

The switch can be accessed and configured using a direct serial connection between the switch and your computer and terminal emulation software on your computer. Use a standard serial cable (RJ-45 to DB9). You will need a USB to serial adapter if your computer doesn't have a serial port.

To access the CLI through the console port:

1. Connect the serial cable to the console port (RJ45) on the switch and to the serial port on the computer (DB9) or use a DB9 to USB adapter if your computer lacks a serial port.
2. Use a terminal emulator program such as PuTTY or Tera Term to start a serial session.
3. Select Serial connection type, select the COM port, and enter the speed.
    a. To find out which COM port to select, go to Device Manager > Ports to view the COM ports in use. (Windows)
4. At the terminal window, enter the factory default username (admin) and password (admin).
5. Perform initial switch configuration using the CLI.

Access the CLI using an SSH or Telnet Connection

The switch can be remotely accessed and configured through the Command Line Interface (CLI) using SSH or Telnet. Use a terminal emulator program such as PuTTY or Tera Term to establish the connection.

Your computer should have an IP address on the same network as the switch and be able to reach the switch's configured management IP address. SSH or Telnet service must be enabled on your switch. Telnet is disabled by default.

Note: *Telnet is not secure and can expose data to potential eavesdroppers. SSH should be used for more secure communication.*

To access the CLI using SSH or Telnet:

1. Launch the terminal emulator program on your computer .
2. Select SSH or Telnet as the session type.
3. Enter the hostname or IP address of the switch. SSH port = 22, Telnet port = 23.
4. At the terminal window, enter the factory default username (admin) and password (admin).
5. Perform switch configuration using the CLI.

Login to the CLI

Access the CLI through a direct serial connection to the device or using an SSH or Telnet session.
The default username and password are:

- Username: admin
- Password: admin

After you login successfully, the prompt displays as "<sys_name>**#**". The # prompt indicates that you have administrator privilege for setting the managed switch.

If you're logged in as other than the administrator, the prompt displays as "<sys_name>**>**". The > prompt indicates that you have guest privileges and are allowed only a subset of administrator privilege commands. Each CLI command has a particular privilege level.

Example:

```
Username: admin
Password: admin
SM12XPA#
```

You should change the password as soon as possible to prevent unauthorized access.

5. Troubleshooting, Support, and Compliance

Troubleshooting

The following table provides steps to troubleshoot problems by taking actions based on the suggested solutions.

Table 5: Troubleshooting Procedure

Symptom	Possible Cause	Suggested Solution
SYSTEM LED is Off	The switch is not receiving power.	**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 was detected by the switch.	Check the system log to understand the abnormal state (e.g., exceeding operating temperature range) and take corresponding actions to resolve.
RJ45 ports left side Status LED is Off	The port is not connected, or the connection is not working.	**1.** Check if the cable connector plug is firmly inserted and locked into the port at both the switch and 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 to tell if it is related to the cable or specific port. **4.** Check if the port is disabled in the configuration settings via the Web user interface.
RJ45 ports right side LED is Off	The port is not supplying power	**1.** Check if the cable connector plug is firmly inserted and locked into the port at both the switch and connected device. **2.** Make sure the correct Ethernet cables are used. **3.** If 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 configuration settings via the Web user interface.

PoE Modes and Compliance

PoE Deployment in Environments A and B

IEEE802.3at-2009 defines two deployment environments in section 33.4.1:

Environment A: when both PSE and PD are located indoors, inside the same building. In this environment, there must be electrical isolation between the PoE circuitry and the data circuitry inside a PSE. Multi-port PSE's can all share the same ground isolation. Environment A is therefore an indoor PSE –indoor PD environment (a.k.a. indoor/indoor).

Environment B: when the PSE and PD are not located in the same building. In this environment there needs to be electrical isolation between PoE and data, as well as between every port in a multi-port PSE. This isolation between ports requirement de facto determines a separate power supply per port, which makes multi-port PSEs for outdoor PD deployment impractical. Environment B is therefore an indoor PSE-outdoor PD (a.k.a. indoor/outdoor) or outdoor PSE-outdoor PD (a.k.a. outdoor/outdoor) environment.

This means only single-port PSEs should normally be used when PDs are deployed outdoors. In summary, the PD-PSE environment is one of these three combinations:

1. PoE Source is indoor, PD is indoor (Env. A)

2. PoE Source is indoor, PD is outdoor (Env. B)

3. PoE Source is outdoor, PD is outdoor (Env. B)

Option 3 is the most challenging environment since both the PD and PSE are installed outdoors.
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 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) between this switch's PSE port and link partner PD port.

Mode A vs. Mode B

Alternative A, also known as Mode A, uses the data pairs of an Ethernet link to deliver power. Data Pairs include pins 1,2 and 3,6. PSEs using Mode A supply a positive voltage to pins 1 and 2. Alternative B, also known as Mode B, uses the spare pairs to deliver power. Spare Pairs include pins 4,5 and 7,8.

802.3af/at Standard "compliant" vs "compatible" PDs

Knowing the difference between PoE "compliant" and "compatible" devices can help avoid interoperability and connectivity issues. Compliant PoE devices and compatible PoE devices are not held to the same 802.3af/at standard:

- 802.3af/at "compliant" PDs fulfill the IEEE strict requirement to support both Mode A and Mode B power modes.
- 802.3af/at "compatible" PDs typically can provide power using only Mode B.

Typical PD Power Requirements

- 1.8 Watts: Lantronix' M/GE-ISW-SFP-01-PD (Class 1 Powered Device (0.44 - 3.84 Watts).
- 13W: IP Camera, VoIP Phone, Wireless Access Point, Networked Audio.
- 30W: IP Telephone, WiMAX Access Point, PTZ Camera, Remote Computer Terminal.

- 60W : Door Access System, Video Phone, Thin Client.
- 100W: Digital Signage Display, Point-of-Sale System, LCD TV, Computer Monitor.
- 200W: Larger TV, Larger Display, Larger Monitor, Laptop.

After eliminating basic network factors, ask your PD vendor for the PD's power supply mode and polarities supported and exact power consumption.

Calculate PoE Power Budget

To calculate how many 802.3at devices the unit supports, divide the Total PoE Budget (130 Watts) by 30 Watts.

To calculate the maximum number of 802.3af devices, divide the Total PoE Budget (130 Watts) by 15.4 Watts.

Mixing PoE and Non-PoE Devices

You can mix PoE and non-PoE devices on the same PoE switch (i.e., you can put PCs on the same PoE switch as a SIP phone or a VOIP phone). The PSE (your switch) will only send power if requested by the PD.

Ethernet and PoE Intra-Building Cabling Warnings

1. Ethernet cables are intended for intrabuilding use only. Connecting your Lantronix switch directly to Ethernet cables that run outside the building in which the switch is housed will void the user's warranty and could create a fire or shock hazard.
2. PoE cables are intended for intrabuilding use only. Connecting your Lantronix switch directly to PoE cables that run outside the building in which the switch is housed will void the user's warranty and could create a fire or shock hazard.
3. For outdoor PoE applications, we recommend using hardened PoE+ Injector/Converter.

Legacy PD Detection / Capacitor Detection

Legacy PDs refers to powered devices manufactured before the IEEE standard was finalized and do not have the expected PD signature required by the PSE's detection signal. Such PDs usually feature large capacitance as the detection signature that does not completely comply with the 802.3af specs. By enabling this option, the switch will probe for legacy PDs and if a legacy PD is detected, the switch will provide power to the PD.

Troubleshooting PoE Problems

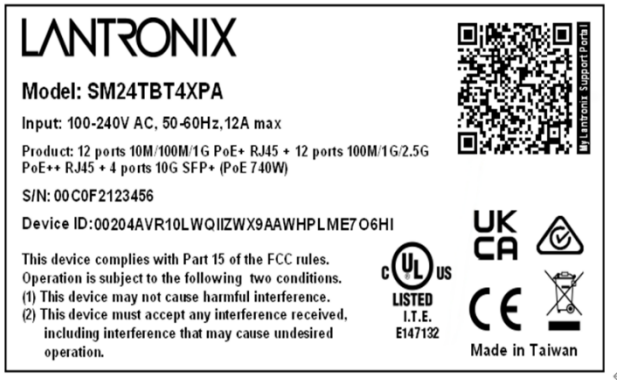
1. Get as much detail as possible regarding the symptom, including any system messages from the PoE switch. For example, does a PD not power up at all, or does it power up briefly and then power down?
2. Determine if the trouble occurred on initial installation or after the PD had been working normally?
3. If the trouble started after the PD was working, what changed? 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 enough 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. 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.
13. 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.
14. 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.
15. 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.
16. Check if related features (LLDP mode, CDP mode) are enabled.

Labels

The product and package labels contain important information to record before contacting Technical Support.



Product Label

Package Label

Recording Device and System Information

After performing the troubleshooting procedures, and before calling or emailing Technical Support, please record as much information as possible to help the Tech Support Engineer.

1. Select the SM24TBT4XPA **Configuration** > **System** > **Information** menu path. From the CLI, use the **show** commands needed to gather the information below or as requested by the Tech Support Engineer.
2. Record **Model Information**: Model Name: _____

Hardware Version: _____Mechanical Version: _____
Firmware Version: _____ System Date: _____

3. Record the **LED** Status: _____

_____

4. 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 serial and revision numbers of all involved Lantronix products in the network: _____

_____

A description of your network environment (layout, cable type, etc.): _____

_____
_____

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

_____

_____

_____

Any previous Return Material Authorization (RMA) numbers: _____

6. Compliance Information

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.

Standards: 47 CFR FCC Part 15, Subpart B, Class A

ANSI C63.4:2014

ANSI C63.4a-2017

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.

NDAA, RoHS, REACH and WEEE Compliance

See our Compliance Statement at NDAA, RoHS, REACH and WEEE Compliance Statement | Lantronix.

Trade Agreement Act (TAA) Compliant Products

See the TAA webpage at https://www.lantronix.com/legal/rohs/taa-compliant-products/.

Accessibility Statement

In our effort to help provide a fully accessible and optimized experience for our website visitors, lantronix.com has taken careful measures to help ensure an enhanced user experience, whether the website visitor is using assistive technologies such as a screen reader, magnifier or other assistive technology to access the website.

For more information see https://www.lantronix.com/accessibility-statement/.

EU Declaration of Conformity

LANTRONIX®

CE

EU DECLARATION OF CONFORMITY

Manufacturer's Name: LANTRONIX INC.
Manufacturer's Address: 48 Discovery, Suite 250, Irvine, CA 92618 USA
Model Number: SM24TBT4XPA

Manufacturer's Quality System:

ISO 9001:2015 Certificate No. 74 300 4282 TUV Rheinland

Applicable EU Directives:

Low Voltage Directive (2014/35/EU)

- **EN 62368-1:2020+A11:2020**

EMC Directive (2014/30/EU)

- **EN 55032:2015+AMD1:2020**
- **EN 55035:2017+A11:2020**
- **EN 61000-3-2:2014**
- **IEC EN 61000-3-2:2019+A1:2021**
- **EN 61000-3-3:2013+A1:2019+A2:2021**

EU Directive 2011/65/EU for Restriction of Hazardous Substance (RoHS2) with exemption 7(c)-I

- **EN 50581:2012**

Statement of Conformity: The product specified above complies with applicable EU directive referenced, including the application of sound engineering practice.

Signature: Eric Bass Date: 18 November 2024

Name: Eric Bass Title: VP of Engineering

UK Declaration of Conformity

LANTRONIX®

UK CA

UK DECLARATION OF CONFORMITY

Manufacturer's Name: LANTRONIX INC.
Manufacturer's Address: 48 Discovery, Suite 250, Irvine, CA 92618 USA
Model Number: SM24TBT4XPA

Manufacturer's Quality System:

ISO 9001:2015 Certificate No. 74 300 4282 TUV Rheinland

Electrical Equipment Regulations 2016

- **BS EN 62368-1:2020+A11:2020**

Electromagnetic Compatibility Regulations 2016

- **BS EN 55032:2015+AMD1:2020**
- **BS EN 55035:2017+A11:2020**
- **BS EN IES 61000-3-2:2019+A1:2021**
- **BS EN 61000-3-3:2013+A1:2019+A2:2021**

UK SI 2012 No. 3032 for Restriction of Hazardous Substance (RoHS2) with exemption 7(c)-I and 6(c).
1) 2011/65/EU Restriction of the use of Hazardous Substances in EEE (RoHS)
2) 2015/863/EU Change of Annex II from 2011/65/EU
EN 50581:2012

Statement of Conformity: The product specified above meets the test requirements of the relevant legislation of United Kingdom, including the application of sound engineering practice.

Signature: Eric Bass Date: 18 November 2024

Name: Eric Bass Title: VP of Engineering

FCC Certificate of Conformity

CERTIFICATE OF CONFORMITY

Standard: 47 CFR FCC Part 15, Subpart B, Class A
ANSI C63.4:2014
ANSI C63.4a–2017

Report No.: FDBEFT-WTW-P24050643

Product: 12 ports 10M/100M/1G PoE+ RJ45 + 12 ports 100M/1G/2.5G PoE++ RJ45 + 4 ports 10G SFP+ (PoE 740W)

Brand: LANTRONIX

Model No.: SM24TBT4XPA

Received Date: 2022/1/26

Test Date: 2022/1/28 ~ 2022/2/7

Issued Date: 2024/6/6

Applicant: Lantronix, Inc.

Address: 48 Discovery, Suite 250 Irvine, CA 92618 USA

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lin Kou Laboratories

Lab Address: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan

Test Location: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan

FCC Registration / Designation Number: 418586 / TW1078

Approved by: Jim Hsiang , **Date:** 2024/6/6
Jim Hsiang / Associate Technical Manager

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Prepared by : Ivy Lin / Specialist

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.

Sähköturvallisuus

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.

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.