



SM24TBT2DPA

Managed Gigabit Ethernet PoE++ Switch

Install Guide

Part Number 33737
Revision L December 2022

Intellectual Property

© 2021-2022 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, 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

Phone: +1.952.358.3601 or 1.800.260.1312
Email: <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

Rev	Date	Description of Changes
H	5/11/21	Update certifications and add power supply specs.
J	6/21/21	FW vB6.64.0031: add note on the time it takes for PoE++ power on the ports to power PDs again after a cold restart. Add PoE force mode, support one VLAN interface gateway for default route, add two icons (Mini fridge and Shade) to identify DMS devices.
K	7/28/21	Update Safety certification from EN60950 / IEC60950 to IEC62368-1/EN62368-1.
L	12/1/22	FW vB6.64.0079: add DHCP per port function to select a particular IP interface. Add two DMS device icons. Change default settings: SNMP mode Disabled as factory default and change Auth Method Configuration default. Add First Time Wizard. Add DHCP option 229 support. In PoE schedule, if Start Time = End Time, reset PoE power on the ports. Update DMS Map View info. Add ConsoleFlow in web/cli/api, add CF on-premise support, add CF S/N and LPM MAC address, and support API in https. Note that SM24TBT2DPA is EoL. Note change to Power Supply monitoring.

Contents

1	Introduction	4
	Product Description	4
	About This Manual	4
	Related Documentation	4
	Ordering Information	4
	Features	5
	PoE Features	5
	Benefits	5
	Specifications	6
	Software Features	8
	Front Panel	11
	LED Descriptions	12
	Mode/Reset Button	14
	Back Panel	14
	Regional Versions of Power Cords	14
2	Installation	15
	Package Contents	15
	Safety Instructions for Rack Mount Installations	15
	Mounting the Switch in a 19-inch Rack	16
	Mounting the Switch on a Desk or Shelf	16
	Installing SFP Modules	17
	Grounding	17
	PS-AC-920 Power Supply Specifications	18
	Unpacking / Installing / Replacing Power Supplies	20
	Unpacking Power Supply	20
	Installing a Power Supply	21
	Replacing a Power Supply	22
	Connecting the AC Power Cord	22
	Power Disconnection	22
	PoE vs. PoE+ vs. PoE++	23
	PoE/PoE+/PoE++ Comparison	23
3	Initial Switch Configuration	24
	Initial Switch Configuration via Web Browser	24
	Initial Switch Configuration via CLI	25
4	Troubleshooting	26
	Basic Troubleshooting	26
	LED Summary	26
	LED Troubleshooting	27
	Troubleshooting PoE Problems	28
	PoE Modes and Compliance	29
	Device Label and Box Label	31
	Record Device and System Information	32
5	Regulatory and Safety Information	33
	Compliance and Safety Statements	33
	High Risk Activities Disclaimer	33
	Declaration of Conformity	34
	Record Device and System Information	35
	Cautions and Warnings	36
	Electrical Safety Warnings	37

1 Introduction

Product Description

The SM24TBT2DPA switch is a high performance Layer 2 managed switch with 52 Gbps switching capacity. It provides (24) 10/100/1000 copper ports with IEEE 802.3bt PoE ++ capability and (2) additional 100/1000 dual speed SFP/RJ-45 Combo ports. The SM24TBT2DPA complies with the latest IEEE 802.3bt PoE++ standard and supplies up to 90 Watts per port. It can provide up to 1640 Watts PoE output when equipped with the dual hot-swappable power supplies. The embedded DMS (Device Management System) is designed to make it easy to use, install and manage IP Phones, IP Cameras, high power WAPs, or LED lightening for enterprise applications.

The SM24TBT2DPA provides (24) 10/100/1000Base-T + (2) 100/1000Base-X SFP/RJ-45 Combo ports and one RJ45 Console port and includes (1) AC power supply and 19" rack mount brackets.

About This Manual

This manual describes how to install, initially configure, and troubleshoot the SM24TBT2DPA Switch, including:

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

Related Documentation

- SM24TBT2DPA Quick Start Guide, 33736
- SM24TBT2DPA Web User Guide, 33738
- SM24TBT2DPA CLI Reference, 33739
- SM24TBT2DPA API User Guide, 33822
- Release Notes (version specific)

Ordering Information

SKU	Description
SM24TBT2DPA	24-port Gigabit PoE++, 2-port SFP/RJ-45 Combo Managed Switch. Includes <u>one</u> AC power supply (820 Watts) and 19" rack mount brackets.
SM24TBT2DPA-2XPS	24-port Gigabit PoE++, 2-port SFP/RJ-45 Combo Managed Switch. Includes <u>two</u> AC power supply (820 Watts) and 19" rack mount brackets.
PS-AC-920	Secondary AC Power Supply (920 Watts); Optional; sold separately.
SFPs	Optional SFP modules sold separately. See our Optical Devices webpage.

Features

- Hot-swappable dual power supply modules
- Support IPV4/IPV6 dual protocol stack
- Support Jumbo Frame up to 9K bytes
- Authentication – RADIUS, TACACS+
- Security - Support SSH v1/SSH v2/SSL
- Port based or tagged (802.1Q) VLAN, MAC based, Management VLAN and Private VLAN Edge
- DHCP Relay, DHCP Server
- L2/L3/L4 ACLs support MAC ACL, IP standard/extended ACL
- LLDP (Link Layer Discovery Protocol)
- IEEE 802.3az Energy Efficiency
- IP Source Guard, Port Security
- Management: Web management, SNMP V1/V2c/V3, Telnet, CLI
- Quality of Service: Supports 8 hardware queues. Strict priority and WRR
- Spanning Tree: Supports IEEE 802.1s MSTP, IEEE 802.1w RSTP and IEEE 802.1D STP Compliant
- Rapid Ring

PoE Features

- Compliant with IEEE 802.3bt PoE++
- Compliant with IEEE 802.3at PoE+
- Compliant with IEEE 802.3af PoE
- 802.1AB LLDP-MED Configuration
- PoE Configuration
- PoE Scheduling
- Auto Power Reset
- DHCP per Port
- Always on PoE

Benefits

- **Feature-rich Ethernet Switch for Enterprise-class:** The switch delivers advanced functionality in a L2+ managed switch 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 guard your network from unauthorized access. It builds on its market-leading price/performance with L2+ Managed GbE PoE switch, to provide secure, reliable, simple enterprise or SMB deployments.
- **Easy to Install, Configure and Troubleshoot by DMS:** The Device Management System provides embedded functions to facilitate device management anytime and anywhere. Its user-friendly interface helps you manage devices intuitively. It supports various IP device types (e.g., IP-phone, IP-camera, WAP) to enhance manageability and save time and money during installation and maintenance stages.
- **Lower TCO with Energy-efficient Design:** EEE is designed to help customers reduce power consumption and lower the TCO with Energy Efficient Ethernet (IEEE 802.3az) features for building a green Ethernet network environment.
- **Power over Ethernet Design:** PoE++ extends the IEEE PoE+ standard to double the power per port to 60 watts. It has options to power IP devices with features like Always-On PoE, Power scheduling, Power delay, PoE Auto Power Reset, and PoE configuration.

Specifications

Port Configuration

Total Ports	RJ45 (10M/100M/1G)	Uplinks (100M/1G)	Console
26	24	2 RJ45/SFP Combo	1 RJ45

Hardware Performance

Forwarding Capacity	Switching Capacity	Mac Table	Jumbo Frames
38.68 Mbps	52 Gbps	8 K	9216 Bytes

Environmental Range

Operating Temperature		Storage Temperature		Altitude	
Fahrenheit	Centigrade	Fahrenheit	Centigrade	Feet	Meters
+32° to +104°	0° to 40°	-4° to +158°	-20° to +70°	< 10000	< 3000

Dimensions, Weight, Humidity

Dimensions (W x D x H)		Weight		Operating Humidity
Millimeters	Inches	Kilograms	Pounds	
442 x 300 x 44	17.4 x 11.8 x 1.73	4.75	10.47	10% to 90% non-condensing

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 Module Power Redundancy, Dual Hot Swappable Power Supplies
Power Consumption	Maximum Power Consumption without PoE: <ul style="list-style-type: none"> 79 Watts with dual AC power modules 52 Watts with single AC power module

Power over Ethernet

Power Supplies	Available PoE Power
With two Power Supplies	Max 90 Watts output per port. Max PoE Budget 1640 Watts. 60 Watts for (24) ports simultaneously 90 Watts for (18) ports simultaneously
With one Power Supply	Max PoE budget 820 Watts. See the Web User Guide for more information. 30 Watts for (24) ports simultaneously 60 Watts for (13) ports simultaneously 90 Watts for (9) ports simultaneously

PoE Capacity

Available PoE Power	Number of Ports that Support PoE (15.4W), PoE+ (30.0W), and PoE++ (60~90W)
820W with one Power Supply	Each of Port 1-24 supports PoE, PoE+, PoE++ within available Power: One Power Supply: 820W PoE Power with one 920W Power Supply module.
1640W with two Power Supplies	Two Power Supplies: 1640W PoE Power with two 920W Power Supply modules. See the Web User Guide for more information.

Standards

Standards	
IEEE	802.3, 802.3u, 802.3z, 802.3ae, 802.3x, 802.3ad, 802.1D, 802.1w, 802.1s, 802.1Q, 802.1p, 802.1ad, 802.1AB, 802.3af, 802.3at, 802.3bt

Compliance

Regulation	Regulatory Agency
Electromagnetic Emissions (EMC)	FCC Part 15 Class A. European Emission Standard EN55022/EN61000-3 Generic European Immunity Standard
European health, safety, environmental protection	CE Marking
Safety	IEC62368-1, IEC 60417-6172 (2012-09), UL.

MTBF

MTBF	Environment
182,061 Hrs.	GB, GC - Ground Benign, Controlled 25.00°C
99,282 Hrs.	GB, GC - Ground Benign, Controlled 40.00°C

Software Features

Layer 2 Switching	
Spanning Tree Protocol (STP)	<ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> Up to 13 groups Up to 16 ports per group
VLAN	Supports up to 4K VLANs simultaneously (out of 4096 VLAN IDs) <ul style="list-style-type: none"> Port-based VLAN 802.1Q tag-based VLAN MAC-based VLAN Management VLAN Private VLAN Edge (PVE) Q-in-Q (double tag) VLAN Voice VLAN GARP VLAN Registration Protocol (GVRP)
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.

Device Management System (DMS)	
Graphical Monitoring	<ul style="list-style-type: none"> Topology view: Support intuitive way to configure and manage switches and devices with visual relations. Floor view: It's easy to drag and drop PoE devices and help you to build smart workforces. Map view: Enhance efficiency to drag and drop devices and monitor surroundings on Google Maps.
Find my Switch	Search your real switches quickly and manage directly.
Traffic Monitoring	Displays a visual chart of network traffic of all devices to let you monitor every port at any time from switches
Troubleshooting	Network diagnostic, protection mechanism, performance and link management

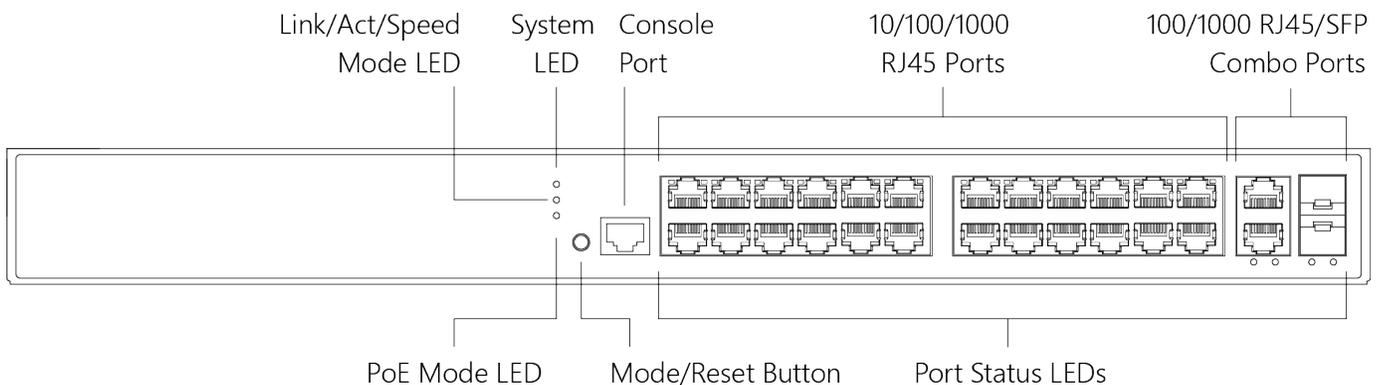
Layer 3 Switching	
Ipv4 Static Routing	Ipv4 Unicast: Static routing
Ipv6 Static Routing	Ipv6 Unicast: Static routing
Security	
Secure Shell (SSH)	SSH secures Telnet traffic in or out of the switch; SSH v1 and v2 are supported
Secure Sockets Layer (SSL)	SSL encrypts the http traffic, allowing advanced secure access to the browser-based management GUI in the switch
IEEE 802.1X	<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
Layer 2 Isolation Private VLAN Edge	PVE (also known as protected ports) provides L2 isolation between clients in the same VLAN. Supports multiple uplinks
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
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
ACLs	Supports up to 256 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
Quality of Service (QoS)	
Hardware Queue	Supports 8 hardware queues
Scheduling	<ul style="list-style-type: none"> • Strict priority and weighted round-robin (WRR) • Queue assignment based on DSCP and class of service
Classification	<ul style="list-style-type: none"> • Port based • 802.1p VLAN priority based • Ipv4/Ipv6 precedence / DSCP based • Differentiated Services (DiffServ) • Classification and re-marking ACLs
Rate Limiting	<ul style="list-style-type: none"> • Ingress policer

	<ul style="list-style-type: none"> • Egress shaping and rate control • Per port
Management	
DHCP Server	Support DHCP server to assign IP to DHCP clients
DHCP per Port	You can assign an IP address based on the switch port the device is connected to. This will speed up installations of IP cameras; cameras can be configured after they are on the network. The per-port assignment allows you to know which IP was assigned to which camera.
Link-Local Address binding interface	Configure Link-Local IP address to a different VLAN interface. The first IP interface entry (169.254.xx.xx) is for the default value (VLAN 1). A link-local address is a unicast address having link-only scope that can be used to reach neighbors. All interfaces on routers must have a link-local address. Also, ADDRCONF requires that interfaces on hosts have a link-local address.
Event Notifications	<ul style="list-style-type: none"> • Event Notification via Syslog and/or SNMP Traps • Event Notification with 8 Severity levels
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
Port Mirroring	Traffic on a port can be mirrored to another port for analysis with a network analyzer or RMON probe. Up to $n-1$ (where n is the max number of Switch Ports) ports can be mirrored to single destination port. A single session is supported.
UPnP	The Universal Plug and Play Forum was formed to standardize discovery and control of networked devices. See the Open Connectivity Foundation webpage .
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
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 extensions
Web GUI Interface	Built-in switch configuration utility for browser-based device configuration
CLI	For configuring / managing switch in Command Line Interface modes
Dual Image	Independent primary and secondary images for backup while upgrading
SNMP	SNMP version1, 2c and 3 with support for traps, and SNMP version 3 user-based security model (USM)
Firmware Upgrade	<ul style="list-style-type: none"> • Web browser upgrade (HTTP/ HTTPS) and TFTP • Upgrade via the console port
NTP	Network Time Protocol (NTP) is a networking protocol for clock synchronization between computer systems over packet-switched

Other Management	<ul style="list-style-type: none"> • HTTP/HTTPS; SSH • DHCP Client/ DHCPv6 Client • Cable Diagnostics • Ping • Syslog • Telnet Client • IPv6 Management
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 Power Reset	Checks the link status of PDs and reboots PDs if there are no responses
Power Delay	The switch provides power to the PDs based on configurable delay time when PoE switch boots up, in order to protect switch from misuse of the PDs
Always on PoE	Lets you restart device, upload software, or swap active and alternate (backup) firmware images while retaining PoE power to PDs. Note: It will take 75 - 80 seconds to have PoE++ power on the ports to power PDs again if the switch makes a cold restart. "Always on PoE" has no effect on this time.

Front Panel

The SM24TBT2DPA front panel LEDs, ports and buttons are shown and described below.



LED Descriptions

The LEDs on the front panel provide switch status checking and monitoring. The three types of LEDs are described below:

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

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.

Mode LEDs: indicate the mode of all RJ45/SFP ports on the switch. You can press the **Mode** button sequentially to switch between the two different modes (Link/Activity/Speed mode and PoE mode).

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.

Power Supply LEDs: The LEDs on the Power Supply indicate Power Supply status.

LED	Color	State	Description
DC OK	Green	On	DC output is ready.
	Red	On	DC output has failed.
	--	Off	DC output is off.
AC OK	Green	On	AC output is ready.
	Red	On	AC output has failed.
	--	Off	AC output is off.

Port Status LEDs: indicate the current status of each RJ45/SFP port. You can check these LEDs to understand the port status in different modes, after changing the mode by pressing the **Mode** button.

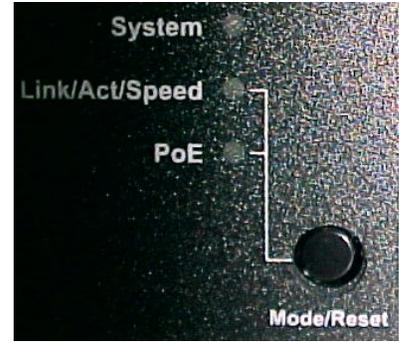
Press the **MODE** button for less than 2 seconds to change LED modes (Link/Act/Speed Mode or PoE Mode); you can then check the port status by reading the LED behaviors per the table below.

Table 3: Port Status LEDs

When Link/Act/Speed Mode LED Lit			
LED	Color	State	Description
RJ45 Ports	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	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 100Mbps.
	Amber	Blinking	The port is transmitting/receiving packets, and the connection speed is 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.
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

Pressing the front panel **Mode/Reset** button for a period of time lets you 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. Note that there is also a *Non-Stop PoE (soft reboot)* feature allows the switch to reboot without affecting PoE port power via the Web UI or CLI.
- **Restore the Switch to Factory Defaults:** to restore the original factory default settings back to the switch.

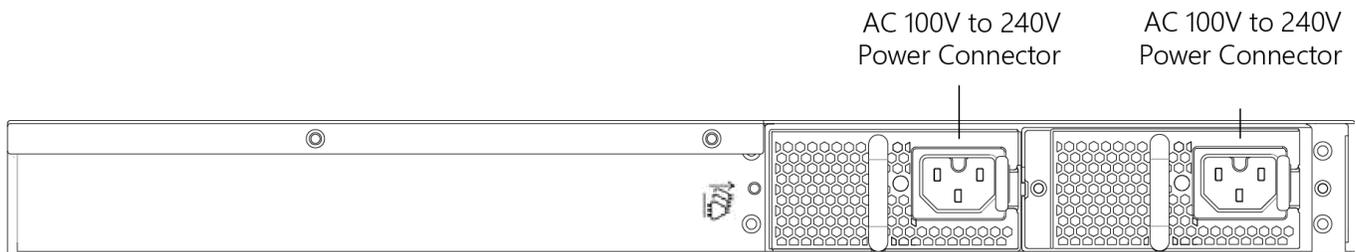
Note: Use the table below to determine which task is being performed by reading the LED behaviors while pressing and holding the Mode/Reset button. When the LED behavior displays correctly, release the button.

Table 4: Mode/Reset Button Descriptions

Task to Perform	Press Button for	SYS LED Behavior	Port Status LED Behavior
Change LED Mode	0 ~ 2 seconds	ON Green	LED status will change 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 Panel

The back panel provides for dual hot-swappable 1560W power supplies for powering the switch. The switch ships with one power supply (820 Watts) standard; order the secondary power supply module for the maximum power (1640 Watts).



Regional Versions of Power Cords

These regional versions of the power cords and power supplies are available: -NA = North America, -LA = Latin America, -EU = Europe, -UK = United Kingdom, -SA = South Africa, -JP = Japan, -OZ = Australia, and -BR = Brazil.

2 Installation

Package Contents

Check the package contents to make sure you have received the following items. Contact your sales representative if any item is damaged or missing. Please save the packaging for possible future use.

- One SM24TBT2DPA Switch with one AC Power Supply Module
- One Support Postcard (33504)
- One printed Quick Start Guide (33736)
- One DB9F to RJ45 Cable (6WPDB92RJ453)
- Four Rubber Feet (6RR2005AB4B2)
- Two Brackets (6EFS226C0E09)
- Eight Screws (6PF+UN3X5000)

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 it is strongly suggested you install a surge protector or surge suppressor in order to protect the switch.



Safety Instructions for Rack Mount Installations

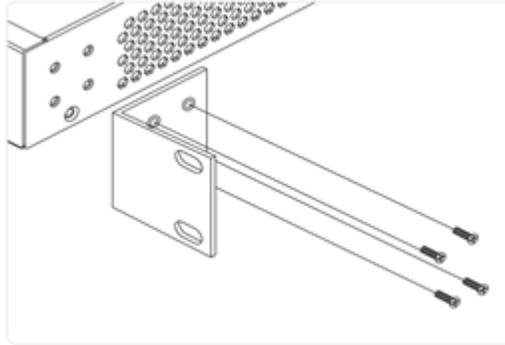
The instructions below (or similar) are intended for rackmount installation environments:

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: consider 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.

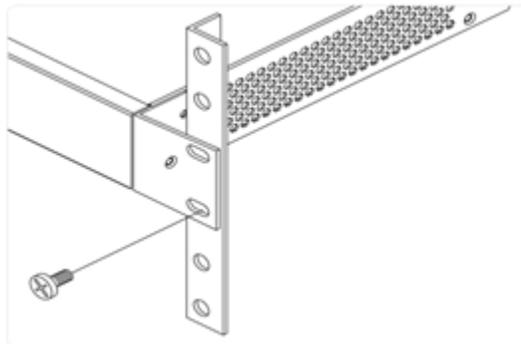
5. Reliable Earthing: maintain reliable earthing of rack-mounted equipment; pay particular attention to supply connections other than direct connections to the branch circuit (e.g., use of power strips).

Mounting the Switch in a 19-inch Rack

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



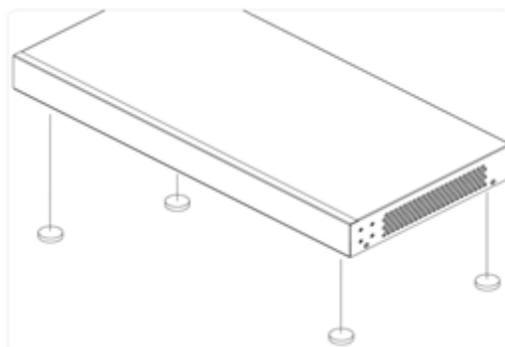
2. Place the switch on a rack shelf in the rack. Push it in until the oval holes in the brackets align with the mounting holes in the rack posts.



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

Mounting the Switch on a 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 an 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. 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.

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 (Port 25) or down (Port 26).
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.



Grounding

ATTENTION:

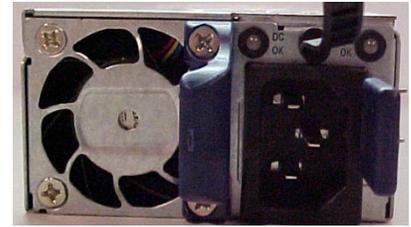
This case must be earth grounded.
No DC input may be earth grounded.
Use Isolated Power Supply.



PS-AC-920 Power Supply Specifications

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.

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 Module Power Redundancy, Dual Hot Swappable Power Supplies

Power Supply Efficiency

The power supply efficiency will be higher than 80Plus Silver 230VAC internal specification without fan loading.

Input voltage	20% of full load	50% of full load	100% of full load
230Vac internal	85%	89%	85%

The power supply efficiency must meet the efficiency requirement with fan as shown in the table below:

Efficiency Standard	20% load	50% load	100% load
With fan/115Vac	84%	87%	86%
With fan/230Vac	86%	90%	89%

Power Supply Input Current

Input current will be less than 13A (rms) at 115Vac and 60 Hz.

Input current will be less than 6.5A (rms) at 230Vac and 50 Hz.

The input fuse value should be less than 15 A.

Input Voltage	Vin Range	Maximum Input Current
230Vac internal	180-264Vac	6.5A@920W
230Vac internal	90-136Vac	13A@920W

Power Supply Electrical Specification

Output requirements: The power supply has +54.5V single output. The table below specifies its output parameters.

Parameter	+54.5V Output
Voltage	+54.5VDC
Minimum Current	0A
Maximum Current	16.88A
Line Regulation	+/-1%
Load Regulation	+/-3%
Overshoot	3%
Undershoot	3%

Maximum continuous output power: Maximum continuous output power is not to exceed 920W.

Over-voltage protection (OVP) : The outputs should be over-voltage protected. The output should never exceed +60V on the +54.5V output.

	Minimum	Typical	Maximum
OVP	+57.3V	+58.65V	+60V

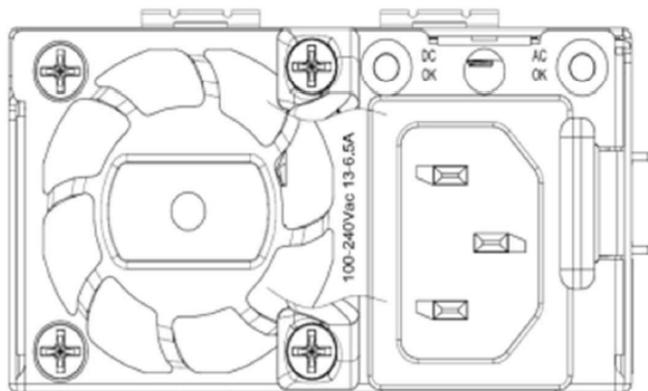
Over-current protection (OCP) : The outputs should be over-current protected. The output should never exceed 21.84A@920W on the +54.5V output.

	Minimum	Typical	Maximum
920W OCP	18.56A	20.256A	+21.84A

Power Supply LED Indication: Each module shall provide two LED status indicators on the front panel.

	AC OK	DC OK
LED location	Right side of front panel.	Left side of front panel.
Color=GREEN	AC on line.	DC is good.
Frequency	1Hz	1Hz
Color=RED	Loss AC. @1+1	DC is failing. @1+1
Frequency	1Hz	1Hz

Note: “@1+1” the mean is 1+1 redundant mode condition.



DC OK and AC OK LED indication location diagram

Power Supply PS-AC-920 MTBF

Environment	MTBF
GB, GC - Ground Benign, 230Vac Input line, Full Load, 25°C (Amb.)	857,983 Hrs.
GB, GC - Ground Benign, 115Vac Input line, Full Load, 25°C (Amb.)	697,667 Hrs.
GB, GC - Ground Benign, 230Vac Input line, Full Load, 50°C (Amb.)	219,472 Hrs.
GB, GC - Ground Benign, 115Vac Input line, Full Load, 50°C (Amb.)	174,188 Hrs.

Unpacking / Installing / Replacing Power Supplies

The switch ships with one power supply (820 Watts) standard; order the second Power Supply for an additional 820 Watts.



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.

Unpacking Power Supply

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.

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.



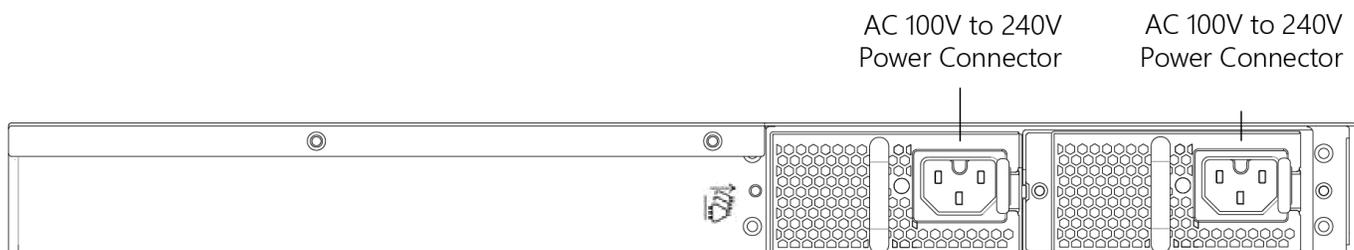
Warning: Class I Equipment. This equipment must be earthed. The power plug must be connected to a properly wired earth ground socket outlet. An improperly wired socket outlet could place hazardous voltages on accessible metal parts.



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

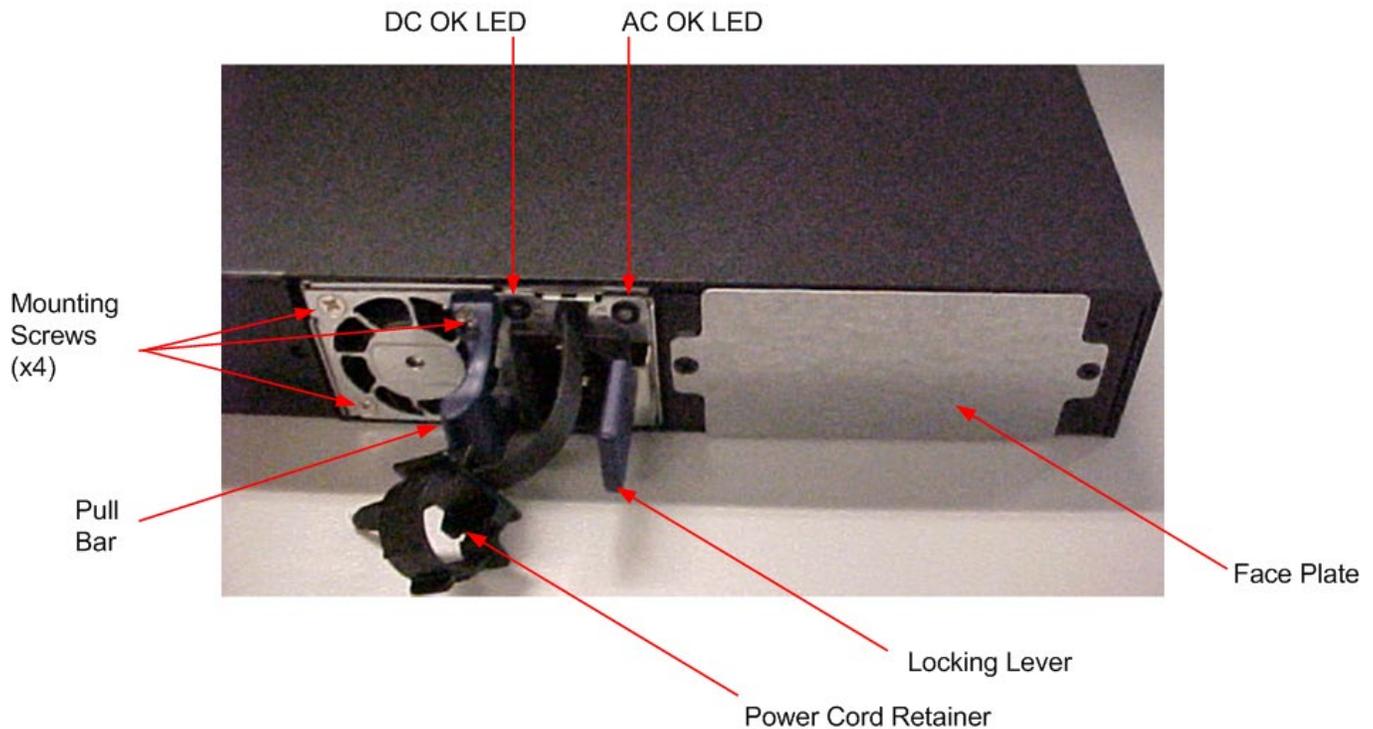
If using only one power supply, it can be installed in either power supply bay, and the Face Plate must be installed in the other bay.

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 page 22.

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

Replacing a Power Supply

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



Connecting the AC Power Cord

1. Connect the AC power cord to the switch AC power receptacle.
2. Use the Power Cord Retainer if desired.
3. Connect the other end of the AC power cord to live 3-prong grounded AC power outlet.
4. Check the **SYS** LED. If it is On, the power connection is correct.



Power Disconnection

To disconnect power from the switch after a successful boot, follow these steps:

1. Turn off power to the switch.
2. Disconnect the cables.

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 IEE 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++	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

3 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 for details.

To begin with the initial configuration stage, you need to reconfigure 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 as shown below.

Note: The switch factory default IP address is 192.168.1.77. The factory default Subnet Mask is 255.255.255.0.

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:
 - 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 skip step 2a to 2c, by pressing WinKey+R and type "ncpa.cpl" command to get to step 2d 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 in the IP for the PC (e.g., any IP address not in use, and between 192.168.1.78 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; enter the factory default IP address to access the switch's Web interface.

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



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

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

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

Initial Switch Configuration via CLI

Use an RJ-45 cable to connect a terminal or PC/terminal emulator to the switch port to access the CLI.

Attach the RJ-45 serial port on the switch front panel to the cable for Telnet/CLI configuration.

Attach the other end of the DB-9 cable to a PC running Telnet or a terminal emulation program such as HyperTerminal or TeraTerm.

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.

4 Troubleshooting

Basic Troubleshooting

1. Make sure your switch model supports the feature or function attempted; see [Features](#) on page 5 and check the Release Notes for your particular version.
2. Verify the install process; see chapter 2 [Install](#) on page 15.
3. Verify the initial switch configuration; see 3 [Initial Switch Configuration](#) on page 24.
4. Troubleshoot connected network devices to pinpoint the problem to the switch.
5. Run the System Diagnostics (ping, cable diagnostics, traceroute). See the Web User Guide or CLI Reference.
6. Reset the switch; see [Mode/Reset Button](#) on page 14.
7. Restore the switch to its factory default settings; see [Mode/Reset Button](#) on page 14.
8. If using the CLI, try configuring / testing via the Web UI and vice versa. See the Web User Guide or the CLI Reference.

LED Summary

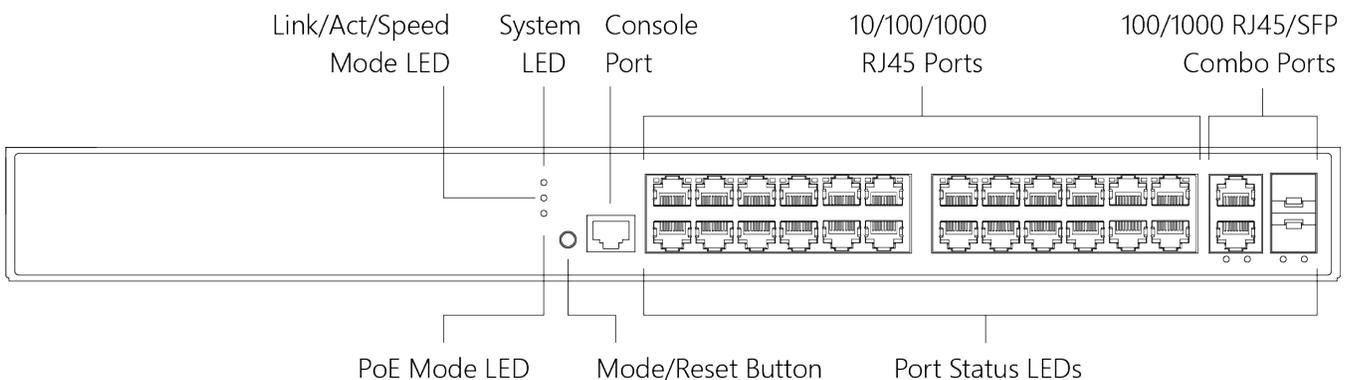
Category	LED	Color	Function
Global	System/Alarm	Green	LED Off: The switch is not receiving power. LED On: The switch is Powered On.
Global	Red / Alarm	Red	LED Off: AC Power Supply or Normal Power Supply. LED On: Power less than 11.8V
TP Ports 1-24	Link/Act	Green/ Amber	LED Off: Port disconnection or link fail. Green On: 1000M Ethernet link good. Amber On: 100M/10M Ethernet link good. Amber blinking: this port is receiving or transmitting data.
TP Ports 25-26	Link/Act	Green/ Amber	LED Off: Port disconnection or link fail. Green On: 1000M Ethernet link good. Amber On: 100M/10M Ethernet link good. Amber blinking: this port is receiving or transmitting data.
Fiber Ports 25-26	Link/Act	Green/ Amber	LED Off: Port disconnection or link fail. Green On: 10G/1000M Ethernet link good. Amber On: 100M/10M Ethernet link good. Amber blinking: this port is receiving or transmitting data.

LED Troubleshooting

Use the table below to troubleshoot problems by taking actions based on the suggested solutions within.

Table 5: Troubleshooting

Symptom	Possible Cause	Suggested Solution
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. Cycle 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 a 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 switch system log via the Web UI for any 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 a 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 config 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 that correct Ethernet cables are used. 3. If the symptom still exists, try a 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 config settings via the Web UI.



Troubleshooting PoE Problems

1. Note that this product is to be connected only to UL listed PoE networks and without routing to the outside plant.
2. Note that PoE devices initially draw more power during their boot up sequence than during normal operation.
3. Determine what the requested power was at the time of failure.
4. Identify how long the device was up and what events may have occurred at the time of the error to help find the root cause (e.g., an IP phone that comes out of sleep and turns on fully may draw more power momentarily).
5. Determine if there is an issue with the PD drawing too much power; check the PD vendor documentation to determine why it exceeds the power it has negotiated with the switch.
6. Check the type and length of the cabling for any effect on the electrical characteristics and impact on the amount of power drawn on a port.
7. Investigate the power negotiation and confirm that the power requested by a device is also the amount of power that gets allocated. For example, using LLDP requires additional power budget for cabling between the PD and the PSE.
8. Use power measuring and testing equipment to determine if the PD overdraws the amount of power it gets allocated.
9. Enable CDP awareness via the Web UI or the CLI. CDP (Cisco Discovery Protocol) is a Cisco-proprietary Layer 2 protocol that runs on most Cisco equipment and shares information about directly connected Cisco equipment. PoE switches with CDP enabled can recognize Cisco powered devices such as IP phones and WAPs. The actual power requirement can be advertised by the powered device, and the unused class power is returned to the switch power budget.

PoE Modes and Compliance

PoE Deployment 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 has to 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 completely separate power supply per port, which makes multi-port PSE's 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 PSE's should normally be used when PD's 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 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-L100i or L1000i-at, 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" devices and "compatible" devices can help avoid interoperability and connectivity issues. Compliant 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 Watts - 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.

VoIP vs SIP

VoIP (Voice over IP) involves making or receiving phone calls over the Internet or internal networks.

SIP (Session Initiation Protocol) is an application layer protocol used to establish, modify, and terminate multimedia sessions such as VoIP calls. One difference is their scope. VoIP is not a discrete technology; it is a set of technologies used in modern telecom networks. SIP is a signaling protocol used within VoIP technology. Another difference is that VoIP sends only voice messages, while SIP can carry all media forms (not just voice messages).

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 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 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 Lantronix' SI-IES-1200-LRT Unmanaged Hardened PoE+ Injector or SI-IES-111D-LRT Unmanaged Hardened PoE+ Injector/Converter Use of any other PoE injector will void the user's warranty and could create a fire or shock hazard.

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.

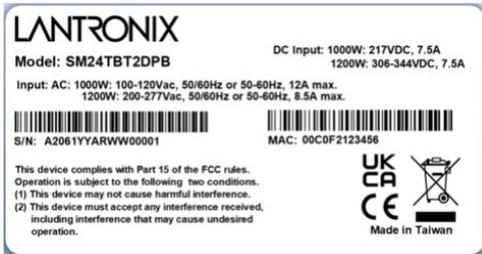
PoE ++ Connectivity, Arcing, and Temperature Issues

- PoE is not live until powered device (PD) and powered sourcing equipment (PSE) handshake.
- When unplugging live PoE, an arc (or spark) occurs between plug and jack contacts.
- Arcing occurs with ALL mated PoE connections.
- Ensure jack meets IEC 60512-99-001 for compliance.
- Ambient jack temperature must be 5 deg. C below maximum jack operating temperature. To operate in 60 deg. C ambient, you need a 65 deg. C rated jack.

See the BICSI webpage for your particular type of PoE (e.g., for [PoE++](#)). See the [ANSI/NECA/BICSI 568-2006](#) Standard for Installing Commercial Building Telecommunications Cabling. ANSI/NECA/BICSI 568 describes minimum requirements and procedures for installing the infrastructure for telecoms, including balanced twisted-pair copper cabling and optical fiber cabling that transport telecommunications signals (e.g., voice, data, and video). The 2008 NEC standard is a safety code widely adopted in the USA as minimum required safety rules for the electrical industry. The 2008 NEC points to the ANSI/NECA/BICSI 568 standard as a best practices source document.

Device Label and Box Label

In addition to the device CLI and Web GUI, you can find product information on the device serial label and box serial label.



Device Serial Label



Box Serial 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 to help the Technical Support Specialist.

1. Select the **Configuration > System > Information** menu path. From the CLI, use the **show** commands needed to gather the information below or as requested by the Support Specialist.

2. Record Model Name: _____ Hardware Version: _____

Serial Number: _____ Firmware Version: _____

Number of Power Supplies installed: _____ Power Status: _____

3. 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: _____

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: _____

5 Regulatory and Safety Information

Compliance and Safety Statements

FCC, Class A: This product 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 product generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause harmful interference with radio communications. Operation of this product in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your 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.
- 2) This device must accept any interference received, including interference that may cause undesired operation.

CE MARK DECLARATION OF CONFORMANCE FOR EMI AND SAFETY (EEC): This equipment has been tested and found to comply with the protection requirements of European Emission Standard EN55022/EN61000-3 and the Generic European Immunity Standard EN55024.

November 5, 2019: add UL mark to Product Label.

High Risk Activities Disclaimer

Components, units, or third-party products used in the product described herein are NOT fault-tolerant and are NOT designed, manufactured, or intended for use as on-line control equipment in the following hazardous environments requiring fail-safe controls: the operation of Nuclear Facilities, Aircraft Navigation or Aircraft Communication Systems, Air Traffic Control, Life Support, or Weapons Systems ("High Risk Activities"). Lantronix and its supplier(s) specifically disclaim any expressed or implied warranty of fitness for such High Risk Activities.

Declaration of Conformity

Declaration of Conformity

Manufacture's Name: Lantronics, Inc.

Manufacture's Address: 7535 Irvine Center Drive, Suite 100, Irvine, California 92618

Declares that the products: SM24TBT2DPA, SM24TBT2DPA-2XPS

Conforms to the following Product Regulations:

EN 55032:2015+AC:2016, Class A; CISPR 32:2015+Cor1:2016, Class A;

AS/NZ CISPR 32:2015, Class A; EN 61000-3-2:2014, Class A; EN 61000-3-3:2013;

EN 55024:2010; EN 61000-4-2:2009; IEC 6100-4-3: 2008 ED. 2.0;

EN 6100-4-3:2006+A1:2008+A2:2010 / IEC 61000-4-3:2010 ED. 3.2; EN 61000-4-4:2012/

IEC 61000-4-4:2012 ED. 3.0; EN 61000-4-5:2006 / IEC 61000-4-5:2005 ED. 2.0;

EN 61000-4-6:2014 / IEC61000-4-6:2013 ED. 4.0, EN 61000-4-8:2010 / IEC 61000-4-8:2009;

ED. 2.0; EN 6100-4-11:2004 / IEC 61000-4-11:2004 ED. 2.0;

IEC 62368-1:2014 (Second Edition); and/or EN 62368-1:2014/A11:2017; and/or BS EN 62368-12014+A11:2017.

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

Record Device and System Information

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

Record Model name: _____ SN: _____

LED Status: _____

Current Alarm data and alarm history: _____

Power Supply used : _____

Your Lantronix service contract number: _____

Describe the failure: _____

Describe any action(s) already taken to resolve the problem (e.g., changing DIP switch setting, etc.):

The model # and serial # of all other Lantronix products in the network: _____

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

Any previous Return Material Authorization (RMA) numbers: _____

List Lantronix or third-party equipment in the network (e.g., PCs, servers, switches, routers, or hubs, remote devices (camera, etc.), SFPs, etc.): _____

Cautions and Warnings

Definitions

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.

Cautions

While installing or servicing the power 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.

Warnings

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: The power module has a provision for grounding. 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 the 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 below for Electrical Safety Warnings translated into multiple languages.

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 sikkerhedsadvarselne.

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

Tel: +1 (800) 526-8766, Tel: +1 (949) 453-3990, or <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.