SM24DPB

Managed Layer 2 Gigabit Ethernet Switch

(20) 100/1000Base-X SFP Slots + (4) 100/1000Base-X SFP/RJ-45 Combo Ports

Install Guide

33681 Rev. B
Safety Warnings and Cautions

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

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

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

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

SM24DPB Managed Fiber Switch Install Guide - TN PN 33681 Rev. B

Record of Revisions

<table>
<thead>
<tr>
<th>Rev</th>
<th>Date</th>
<th>Description of Changes</th>
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<tr>
<td>A</td>
<td>6/3/16</td>
<td>Initial release for software v6.46.</td>
</tr>
<tr>
<td>B</td>
<td>8/14/18</td>
<td>Update for FW v6.54.2925; update EMC and contact information.</td>
</tr>
</tbody>
</table>

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Compliance and Safety Statements

**FCC-CLASS A**: This equipment has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when 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 his own expense. You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

You may use unshielded twisted-pair (UTP) for RJ-45 connections - Category 3 or better for 10 Mbps connections, Category 5 or better for 100 Mbps connections, Category 5, 5e, or 6 for 1000 Mbps connections. For fiber optic connections, you may use 50/125 or 62.5/125 micron multimode fiber or 9/125 micron single-mode fiber.

**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. SM24DPB tested and found to be in conformity with IEC 60950-1(ed.2), IEC 60950-1(ed.2);am1, IEC 60950-1(ed.2);am2. Additionally evaluated to EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013; National Differences specified in the CB Test Report.

**EMC**

European Standard EN 300 386 V1.6.1:2012, EN55032:2012
EN 55024:2010 (IEC 61000-4-2 Edition 2.0 2008-12,
IEC 61000-4-3 Edition 3.2 2010-04, IEC 6100-4-4 Edition 3.0 2012-04,
IEC 61000-4-5 Edition 2.0 2005-11, IEC 6100-4-6 Edition 3.0 2008-10,
IEC 61000-4-8 Edition 2.0 2009-09, IEC 61000-4-11 Edition 2.0 2004-03 and
**CAUTION:** Circuit devices are sensitive to static electricity, which can damage their delicate electronics. Dry weather conditions or walking across a carpeted floor may cause you to acquire a static electrical charge.

To protect your device, always:
- Touch the metal chassis of your computer to ground the static electrical charge before you pick up the circuit device.
- Pick up the device by holding it on the left and right edges only.
- If you need using outdoor device connect to this device with cable then you need to addition an arrester on the cable between outdoor device and this device.

**NOTE:** The switch is indoor device; if it will be used in outdoor environment or connects with some outdoor device, then it must use a lightning arrester to protect the switch.

**WARNING:**
- Self-demolition on Product is strictly prohibited. Damage caused by self-demolition will be charged for repairing fees.
- Before installation, make sure input power supply and product specifications are compatible to each other.
- To reduce the risk of electric shock. Disconnect all AC or DC power cord and RPS cables to completely remove power from the unit.
- Before importing / exporting configuration please make sure the firmware version is always the same.

After firmware upgrade, the switch will move the configuration automatically to the latest firmware version.
Overview

The SM24DPB L2+ Managed Switch is a next-generation Fiber Switch offering full suite of L2 features including advanced L3 features such as Static Route that delivers the better cost performance and lower total cost of ownership in Enterprise networks or backbone via fiber or copper connections. The SM24DPB delivers 20 GbE SFP ports, 4 Combo GbE RJ45/SFP ports and DB9 Console port with built-in AC and DC dual power supplies. SM24DPB provides front access to all data and management ports, and a compact form factor that facilitates desktop, wall-mount, or rack-mount installations. The SM24DPB is ideal to deliver management simplicity, better user experience, and lowest total cost of ownership.

About This Guide

This guide gives specific information on how to operate and use the management functions of the switch. The guide is intended for use by network administrators who are responsible for operating and maintaining network equipment; consequently, it assumes a basic working knowledge of general switch functions, the Internet Protocol (IP), and Simple Network Management Protocol (SNMP).

Key Features

- L2+ Managed features provide easier manageability, robust security and QoS.
- AC/DC Dual Power Supply
- DHCP Server
- APR (Auto Power Reset)
- IPv4/IPv6 L3 static route
- IEEE 802.3az EEE Energy Efficient Ethernet standard for green Ethernet
- DMS (Device Management System)

Benefits

- With the APR feature enabled, the switch automatically pings the device, and if the device fails, the switch toggles the PoE power, automatically resetting the device. Auto Power Reset eliminates the need for a manual reset of the device, saving time and money. These features make installation and maintenance quick and easy.
- Feature-rich Ethernet Switch for Enterprise-class: The switch delivers advanced functionality in an 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, Access Control List to guard your network from unauthorized access. It helps users to build on the market-leading price/performance with L2+ Managed GbE fiber switch, and provides secure, reliable and easy to use functions for enterprise and SMB deployments.
- Lower Total Cost of Ownership (TCO) with Energy-efficient Design: It is designed to help you reduce power consumption and lower the TCO features like Energy Efficient Ethernet (IEEE 802.3az). It can be used for customers to build a green Ethernet networking environment.
- AC/DC Dual Power Supply: Power failover when power supplies are connected to different circuits for reduced network operating risk.
Specifications

Port Configuration

<table>
<thead>
<tr>
<th>Total Ports</th>
<th>SFPs (100M/1G)</th>
<th>Uplinks (100M/1G)</th>
<th>Console</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>20</td>
<td>4 RJ45/SFP Combo</td>
<td>DB9</td>
</tr>
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Hardware Performance

<table>
<thead>
<tr>
<th>Forwarding Capacity</th>
<th>Switching Capacity</th>
<th>Mac Table</th>
<th>Jumbo Frames</th>
</tr>
</thead>
<tbody>
<tr>
<td>35.712 Mpps</td>
<td>48 Gbps</td>
<td>32 K</td>
<td>10056 Bytes</td>
</tr>
</tbody>
</table>

Environmental Range

<table>
<thead>
<tr>
<th>Operating Temperature</th>
<th>Storage Temperature</th>
<th>Altitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>32 to 140 deg. Fahrenheit</td>
<td>-40 to 185 deg. Fahrenheit</td>
<td>&lt; 10000 Feet</td>
</tr>
<tr>
<td>0 to 60 deg. Centigrade</td>
<td>-40 to 85 deg. Centigrade</td>
<td>&lt; 3000 Meters</td>
</tr>
</tbody>
</table>

Dimension, Weights, Humidity

<table>
<thead>
<tr>
<th>Dimensions (WxHxD)</th>
<th>Weight</th>
<th>Operating Humidity</th>
</tr>
</thead>
<tbody>
<tr>
<td>442 x 44 x 211 Millimeters</td>
<td>3.1 Kilograms</td>
<td>10% to 90% non-condensing</td>
</tr>
<tr>
<td>17.4 x 1.73 x 8.31 Inches</td>
<td>6.8 Pounds</td>
<td></td>
</tr>
</tbody>
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Voltage and Frequency

<table>
<thead>
<tr>
<th>Input Voltage and Frequency</th>
<th></th>
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<tr>
<td>AC Voltage</td>
<td>100-240 VAC</td>
</tr>
<tr>
<td>AC Frequency</td>
<td>50-60 Hz</td>
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<tr>
<td>DC Voltage</td>
<td>24-72 VDC</td>
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<tr>
<td>CE, FCC Part 15 Class A</td>
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<tr>
<td>Spanning Tree Protocol (STP)</td>
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<tr>
<td>• Standard Spanning Tree 802.1d</td>
</tr>
<tr>
<td>• Rapid Spanning Tree (RSTP) 802.1w</td>
</tr>
<tr>
<td>• Multiple Spanning Tree (MSTP) 802.1s</td>
</tr>
<tr>
<td>Trunking</td>
</tr>
<tr>
<td>Link Aggregation Control Protocol (LACP) IEEE 802.3ad</td>
</tr>
<tr>
<td>• Up to 26 groups</td>
</tr>
<tr>
<td>• Up to 4 ports per group</td>
</tr>
<tr>
<td>VLAN</td>
</tr>
<tr>
<td>Supports up to 4K VLANs simultaneously (out of 4096 VLAN IDs)</td>
</tr>
<tr>
<td>• Port-based VLAN</td>
</tr>
<tr>
<td>• 802.1Q tag-based VLAN</td>
</tr>
<tr>
<td>• MAC-based VLAN</td>
</tr>
<tr>
<td>• Management VLAN</td>
</tr>
<tr>
<td>• Private VLAN Edge (PVE)</td>
</tr>
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Transition Networks  SM24DPB Install Guide

Private

Classification

Scheduling

Hardware

Quality

ACLs

IPv4 Static Routing

IPv6 Static Routing

DHCP Snooping

Layer 2 Switching

Security

Secure Shell (SSH)

Secure Sockets Layer (SSL)

IEEE 802.1X

Layer 2 Isolation

Private VLAN Edge

Port Security

IP Source Guard

RADIUS/ TACACS+

Storm Control

DHCP Snooping

ACLs

Quality of Service

Hardware Queue

Scheduling

Classification

- Q-in-Q (double tag) VLAN
- Voice VLAN
- GARP VLAN Registration Protocol (GVRP)

- Relay of DHCP traffic to DHCP server in different VLAN.
- Works with DHCP Option 82

IGMP v1/v2/v3 Snooping

IGMP Querier

IGMP Proxy

MLD v1/v2 Snooping

Delivers IPv6 multicast packets only to the required receivers

Layer 2 Switching

IPv4 Static Routing

IPv6 Unicast: Static routing

IPv6 Static Routing

IPv6 Unicast: Static routing

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

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 512 entries. Drop or rate limitation based on:
- 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

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
- IPv4/IPv6 precedence / DSCP based
- Differentiated Services (DiffServ)
- Classification and re-marking ACLs
### Rate Limiting
- Ingress policer
- Egress shaping and rate control
- Per port

### Management
<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DHCP Server</td>
<td>Support DHCP server to assign IP to DHCP clients</td>
</tr>
<tr>
<td>Remote Monitoring (RMON)</td>
<td>Embedded RMON agent supports RMON groups 1,2,3,9 (history, statistics, alarms, and events) for enhanced traffic management, monitoring and analysis</td>
</tr>
<tr>
<td>Port Mirroring</td>
<td>Traffic on a port can be mirrored to another port for analysis with a network analyzer or RMON probe. Up to N-1 (N is Switch’s Ports) ports can be mirrored to single destination port. A single session is supported.</td>
</tr>
<tr>
<td>UPnP</td>
<td>The Universal Plug and Play Forum, an industry group of companies working to enable device-to-device interoperability by promoting Universal Plug and Play.</td>
</tr>
<tr>
<td>sFlow</td>
<td>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</td>
</tr>
</tbody>
</table>
| IEEE 802.1ab (LLDP)           | • 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 (Command Line Interface)  | For users to configure/manage switches in command line 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              | • Web browser upgrade (HTTP/ HTTPs) and TFTP  
                                | • Upgrade through console port as well                                                         |
| NTP                           | Network Time Protocol (NTP) is a networking protocol for clock synchronization between computer systems over packet-switched networks |
| Other Management              | • HTTP/HTTPs; SSH  
                                | • DHCP Client/ DHCPv6 Client  
                                | • Cable Diagnostics  
                                | • Ping / Traceroute  
                                | • Syslog  
                                | • Telnet Client  
                                | • IPv6 Management |

### Switch Architecture
The switch performs a wire-speed, non-blocking switching fabric. This allows wire-speed transport of multiple packets at low latency on all ports simultaneously. The switch also features full-duplex capability on all ports, which effectively doubles the bandwidth of each connection.

This switch uses store-and-forward technology to ensure maximum data integrity. With this technology, the entire packet must be received into a buffer and checked for validity before being forwarded. This prevents errors from being propagated throughout the network.

### Network Management Options
The switch can be managed over the network with a web browser or Telnet application. The switch includes a built-in network management agent that allows it to be managed in-band using SNMP or RMON (Groups 1, 2, 3, 9) protocols.
Hardware Description

1000BASE-T Ports: The switch contains 10/100/1000BASE-T RJ-45 ports. All RJ-45 ports support automatic MDI/MDI-X operation, auto-negotiation and IEEE 802.3x auto-negotiation of flow control, so the optimum data rate and transmission can be selected automatically.

SFP Transceiver Slots: The switch supports the Small Form Factor Pluggable (SFP) transceiver slots port 1 to port 24, ports 21 to 24 are shared with RJ-45 (ports 21-24 are combo interface RJ45/SFP). In the default configuration, if an SFP transceiver (purchased separately) is installed in a slot and has a valid link on the port, the associated RJ-45 port is disabled.
Front Panel

Port and System Status LEDs

**LED: P1-P24 SFP Link/Act/Speed**
Condition: Green/Amber
Status: Lights when Fiber connection with remote device is good. Blinks when any traffic is present. The light is green when linking up at 1000Mbps. The light is Amber when linking up at 100Mbps.

**LED: P21-P24 TP Link/Act/Speed**
Condition: Green/Amber
Status: Blinks when any traffic is present. The light is green when linking up 10/1000Mbps. The light is Amber when linking up 100Mbps.

**System LED: PWR AC**
Condition: Green
Status: Lights when power on from AC source.

**System LED: PWR DC**
Condition: Green
Status: Lights when power on from DC source.

**System LED: SYS**
Condition: Green
Status: Blinking when system is booting; lit when system is coming up.

**System LED: ALM (Alarm)**
Condition: Red
Status: Always off; until any message about system error lights the ALM LED.

**RST (Reset) button:** push to reset the SM24DPB; requires a re-login.
**Power Supply Sockets:** There are dual power inputs on the front panel of the switch for power redundancy requirement, the SM24DPB switch has 100~240 VAC power socket for AC power Input and -36VDC ~ -48VDC power input via terminal block.

![Power Supply Sockets](image)

**Installation**

**Unpacking**

Verify that you have received the packing items.

- One SM24DPB GbE Fiber Managed Switch
- Four adhesive rubber feet
- Mounting Accessory (for 19” Rack Shelf)
- One printed Quick Start Guide
- AC Power Cord
- RS232 DB9 to DB9 Cable

An optional DC Power Supply may be included. Contact your sales representative if any items are missing or damaged. Save the packaging for possible future use.

**Selecting a Site**

The Switch can be mounted in a standard 19-inch equipment rack (via Rack mount Kit). Be sure to follow the guidelines below when choosing a location.

◆ The site should:
  - Be at the center of all the devices you want to link and near a power outlet.
  - Be able to maintain its temperature within -20 to 60°C and its humidity within 5% to 95%, non-condensing.
  - Be accessible for installing, cabling and maintaining the devices.
  - Allow the status LEDs to be clearly visible.

◆ Make sure the twisted-pair Ethernet cable is always routed away from power lines, radios, transmitters or any other electrical interference.

Make sure that SM24DPB Series Switch is connected to a separate grounded power outlet.
**Ethernet Cabling**

To ensure proper operation when installing the switch into a network, make sure that the current cables are suitable for 100BASE-TX or 1000BASE-T operation. Check the following criteria against the current installation of your network:

- Cable type: Unshielded twisted pair (UTP) or shielded twisted pair (STP) cable with RJ-45 connectors; Category 5 or Category 5e with maximum length of 100 meters is recommend 100BASE-TX, and Category 5e or 6 with maximum length of 100 meters is recommend for 1000BASE-T.
- Protection from radio frequency interference emissions.
- Electrical surge suppression.
- Separation of electrical wires and data based network wiring.
- Safe connections with no damaged cables, connectors or shields.

**WARNING:** SFPs and mini-GBICs are Class 1 laser devices. Avoid direct eye exposure to the beam coming from the transmit port.
Mounting
The switch can be mounted in a standard 19-inch equipment rack or on a desktop or shelf. Mounting instructions for each type is provided below.

Rack Mounting (Optional):
Before rack mounting the switch, please pay attention to the following factors:

- Temperature: Since the temperature within a rack assembly may be higher than the ambient room temperature, check that the rack-environment temperature is within the specified operating temperature range (-20 to 60 °C).
- Mechanical Loading: Do not place any equipment on top of a rack-mounted unit.
- Circuit Overloading: Be sure that the supply circuit to the rack assembly is not overloaded.
- Grounding: Rack-mounted equipment should be properly grounded.

Step 1. Attach the brackets to the device using the screws provided in the Mounting Accessory.

Step 2. Mount the device in the rack (via Rack-Mount kit), using four rack-mounting screws (not provided). Be sure to secure the lower rack-mounting screws first to prevent the brackets being bent by the weight of the switch.

Step 3. If installing a single switch only, turn to “Connecting to Power” on page 15.

Step 4. If installing multiple switches, mount them in the rack, one below the other, in any order.
Desktop or Shelf Mounting

**Step 1.** Attach the four adhesive rubber feet to the bottom of the first switch.

![Diagram of Rubber Feet Attached](image)

**Step 2.** Set the device on a flat surface near an AC power source, making sure there are at least two inches of space on all sides for proper air flow.

**Step 3.** If installing a single switch only, go to “Connecting to Power” on page 15.

**Step 4.** If installing multiple switches, attach four adhesive feet to each one. Place each device squarely on top of the one below, in any order.
Installing an Optional SFP Transceiver

You can install or remove a mini-GBIC SFP from a mini-GBIC slot without having to power off the switch. Use only Manufacture mini-GBIC.

NOTE:
- The mini-GBIC slots are shared with the four 10/100/1000Base-T RJ-45 ports. If a mini-GBIC is installed in a slot, the associated RJ-45 port is disabled and cannot be used. SFP transceivers are not provided in the switch package.
- The mini-GBIC ports operate only at full duplex. Half duplex operation is not supported.
- Ensure the network cable is NOT connected when you install or remove a mini-GBIC.

Inserting an SFP Transceiver into a Slot

**Step 1.** Consider network and cabling requirements to select an appropriate SFP transceiver type.

**Step 2.** Insert the transceiver with the optical connector facing outward and the slot connector facing down. Note that SFP transceivers are keyed so they can only be installed in one orientation.

**Step 3.** Slide the SFP transceiver into the slot until it clicks into place.

Connecting to Power

Make cable connections before connecting Power.

**Connecting to AC Power Source**

You can plug or remove an AC power cord through the AC socket from AC power source.

**Step 1.** Insert the AC power cord directly into the AC socket located at the front of the switch.

**Step 2.** Plug the other end of the power cord into an AC power source.

**Step 3.** Check the front-panel LEDs as the device is powered on to be sure the POWER LED is lit. If not, check that the power cable is correctly plugged in.

**Connecting to DC Power Source**

**Step 1.** Insert the DC cable plug directly into the DC terminal block located at the front of the switch.

**Step 2.** Plug the other end of the cable into an external DC power source.

**Step 3.** Check the front-panel LEDs as the device is powered on to be sure the POWER LED is lit. If not, check that the power cable is correctly plugged in.

For more information see Optional DC Power Supply on page 19.
Serial Cable Wiring (cross cable for console port not supported)

<table>
<thead>
<tr>
<th>Switch’s 8-Pin Serial Port</th>
<th>PC’s 9-Pin DTE Port</th>
</tr>
</thead>
<tbody>
<tr>
<td>CD 1</td>
<td>4 DTR</td>
</tr>
<tr>
<td>DSR 6</td>
<td>1 CD</td>
</tr>
<tr>
<td>DTR 4</td>
<td>6 DSR</td>
</tr>
<tr>
<td>RXD 2</td>
<td>3 TXD</td>
</tr>
<tr>
<td>TXD 3</td>
<td>2 RXD</td>
</tr>
<tr>
<td>GND 5</td>
<td>5 GND</td>
</tr>
<tr>
<td>RTS 7</td>
<td>8 CTS</td>
</tr>
<tr>
<td>CTS 8</td>
<td>7 RTS</td>
</tr>
<tr>
<td>Reserve 9</td>
<td>9 Reserve</td>
</tr>
</tbody>
</table>

Fiber Optic SFP Devices

An optional Gigabit SFP transceiver can be used for a backbone connection between switches, or for connecting to a high-speed server. Each single-mode fiber port requires 9/125 micron single-mode fiber optic cable with an LC connector at both ends. Each multimode fiber optic port requires 50/125 or 62.5/125 micron multimode fiber optic cabling with an LC connector at both ends.

⚠️ WARNING: This switch uses lasers to transmit signals over fiber optic cable. The lasers are inherently eye safe in normal operation. However, user should never look directly at a transmit port when it is powered on.

⚠️ WARNING: When selecting a fiber SFP device, considering safety, please make sure that it can function at a temperature that is not less than the recommended maximum operational temperature of the product. You must also use an approved Laser SFP transceiver.

Step 1. Remove and keep the LC port’s rubber plug. When not connected to a fiber cable, the rubber plug should be replaced to protect the optics.

Step 2. Check that the fiber terminators are clean. You can clean the cable plugs by wiping them gently with a clean tissue or cotton ball moistened with a little ethanol. Dirty fiber terminators on fiber optic cables will impair the quality of the light transmitted through the cable and lead to degraded performance on the port.
Step 3. Connect one end of the cable to the LC port on the switch and the other end to the LC port on the other device. Since LC connectors are keyed, the cable can be attached in only one orientation.

Step 4. As a connection is made, check the Link LED on the switch corresponding to the port to be sure that the connection is valid.

The fiber optic ports operate at 1 Gbps. The maximum length for fiber optic cable operating at Gigabit speed will depend on the fiber type as listed under “1000 Mbps Gigabit Ethernet Collision Domain”.

Connectivity Rules
When adding hubs to your network, please note that because switches break up the path for connected devices into separate collision domains, you should not include the switch or connected cabling in your calculations for cascade length involving other devices.
Troubleshooting

Most problems are caused by the following situations. Check for these items first when starting your troubleshooting:

1. Connecting to devices that have a fixed full-duplex configuration. Make sure all devices connected to the SM16TAT2DPA Switch devices are configured to auto negotiate, or are configured to connect at half duplex.
2. Faulty or loose cables. Look for loose or obviously faulty connections. If they appear to be OK, make sure the connections are snug. If that does not correct the problem, try a different cable.
3. Non-standard cables. Non-standard and miswired cables may cause network collisions and other network problems, and can seriously impair network performance. Use a new correctly-wired cable. A Category 5 cable tester is a recommended tool for every 100Base-TX and 1000Base-T network installation.
4. Improper Network Topologies. It is important to make sure you have a valid network topology. If you no longer experience the problems, the new topology is probably at fault. In addition, you should make sure that your network topology contains no data path loops.
5. Check the port configuration. A port on your Switch may not be operating as you expect because it has been put into a “blocking” state by Spanning Tree, GVRP (automatic VLANs), or LACP (automatic trunking). (Note that the normal operation of the Spanning Tree, GVRP, and LACP features may put the port in a blocking state.) Or, the port just may have been configured as disabled through software.
6. **SYS** LED is Off. Check connections between the switch, the power cord and the wall outlet. Contact Tech Support for assistance. See Contact Us below.
7. Link LED is Off. Verify that the switch and attached device are powered on. Be sure the cable is plugged into the switch and corresponding device. If the switch is installed in a rack, check the connections to the punch-down block and patch panel. Verify that the proper cable type is used and its length does not exceed specified limits. Check the adapter on the attached device and cable connections for possible defects. Replace the defective adapter or cable if necessary.
8. Contact Transition Networks Tech Support for assistance. See Contact Us below.

Related Manuals

The following manuals detail related switch aspects:

- SM24DPB Quick Start Guide, 33680
- SM24DPB Web User Guide, 33682
- SM24DPB CLI Reference, 33683
- SFP manuals (model specific)
- Release Notes (version specific)

Also, as part of the switch software, there is an online web-based help that describes the management related features.
Optional DC Power Supply

The SM24DPB provides dual power inputs on the front panel of the switch for power redundancy requirement. The SM24DPB switch has 100~240 VAC power socket for AC power Input and -36VDC ~ -48VDC power input via terminal block.

With the AC/DC Dual Power Supply, power failover occurs when power supplies are connected to different circuits for reduced network operating risk.

Several power supply models are available from Transition Networks. **Warning:** You must use an isolated power supply in order for Transition Networks to honor the warranty. The power supplies that Transition Networks makes available are:

- 25105 - Mean Well SDR-120-48
- 25131 – MEANWELL SDR-75-48

**Industrial Power Supply 25104 (Mean Well SDR-240-48)**

**INPUT:** 100-240VAC 2.6A 50/60 Hz  
**OUTPUT:** 48V - 5A  
“Use copper wire only”  
“Maximum surrounding air temperature: 60°C”  
“Instructions for installation in a pollution degree 2 environment”  
**Terminal Torque:** 7 Lb-in (DC connections at top of PS).  
**Terminal Torque:** 4.4 Lb-in (AC connections at bottom of PS).  
**+V ADJ:** access to small Phillips screw; turn clockwise to increase voltage. Adjustable, 48-55V.  
**DC OK LED:** lights to indicate a DC OK condition.

With both the AC and DC (25105) Power Supplies connected both the CLI and the web GUI show: AC Power On 11.95V ; DC Power On 11.86V. With just the DC supply connected the **ALM** (Alarm) LED lights in Red.

See the **SM24DPB Quick Start Guide** for Power Requirements, Isolation, Redundant Power Inputs, Power Connection, and/or Chassis Ground information.
25131 – Industrial DIN-rail Mount Power Supply (MEANWELL SDR-75-48)

See the online product page for more information.

Features
Auto-Negotiation
Variable AC input range
Protected against Overload, Over Voltage, and Over Temperature
Convection air cooling
DIN Rail mountable
UL 508 approved
RoHS compliant
MTBF 481.9Khrs

Specifications

Output
Output Voltage: 48VDC
Current Rating: 1.6A
Power Rating: 76.8 Watts
Ripple & Noise Max: 120mVp-p
Voltage Range: 48~55VDC
Voltage Tolerance: ±1.0%
Line Regulation: ±0.5%
Load Regulation: ±1.0%

Input
Voltage Range Switch Selectable: 88~264VAC,
124~370VDC
Frequency Range: 47~63Hz
Efficiency: 90%

Protection
Overload: 110~150%
Overvoltage: 56~65.8V

Dimensions: Width: 1.26” [32 mm] x Depth: 4.02” [102 mm] x Height: 4.93” [125.2 mm]

Environment
Operating: -30°C to +70°C
Storage: -40°C to +85°C
Humidity: 20% to 95% (non-condensing)
Weight 1.12 lbs. [0.51 kg]

Compliance
Safety: UL508, TUV EN60950-1, IEC60068-2-6 (Vibration); EN55022, CISPR22, EN61204-3 Class B, EN61000-3-2, EN61000-3-3, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11, EN55024, EN61000-6-2, EN50082-2, EN61204-3 A, IEC60068-2-6 (Vibration).

Warranty: Lifetime
DC Power Supply Wiring

Declaration of Conformity

**EU Declaration of Conformity**

**SM24DPB**

Transition Networks, Inc.
10900 Red Circle Drive, Minnetonka, Minnesota 55343 U.S.A.

This declaration of conformity is issued under the sole responsibility of the manufacturer.

**SM24DPB** is in conformity with the relevant Union harmonisation legislation:


And hereby is declared compliant and carries the CE marking.

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

[Signature]

Stephen Anderson
Vice President of Engineering
Contact Us

Technical Support
Technical support is available 24-hours a day
US and Canada: 1-800-260-1312
International: 00-1-952-941-7600

Main Office
tel: +1.952.941.7600 | toll free: 1.800.526.9267 | fax: 952.941.2322
sales@transition.com | techsupport@transition.com | customerservice@transition.com

Address
Transition Networks
10900 Red Circle Drive
Minnetonka, MN 55343, U.S.A.

Web: https://www.transition.com

Warranty

Limited Lifetime Warranty
Effective for Products Shipped May 1, 1999 and After. Every Transition Networks labeled product purchased after May 1, 1999, and not covered by a fixed-duration warranty will be free from defects in material and workmanship for its lifetime. This warranty covers the original user only and is not transferable.

This warranty does not cover damage from accident, acts of God, neglect, contamination, misuse or abnormal conditions of operation or handling, including over-voltage failures caused by use outside of the product’s specified rating, or normal wear and tear of mechanical components.

Transition Networks will, at its option:
• Repair the defective product to functional specification at no charge
• Replace the product with an equivalent functional product
• Refund a portion of purchase price based on a depreciated value

To return a defective product for warranty coverage, contact Transition Networks’ Customer Support for a return authorization number.

Send the defective product postage and insurance prepaid to the following address:
Transition Networks, Inc.
10900 Red Circle Drive
Minnetonka, MN 55343
USA
Attn: RETURNS DEPT: CRA/RMA # __________

Failure to properly protect the product during shipping may void this warranty. The return authorization number must be written on the outside of the carton to ensure its acceptance. We cannot accept delivery of any equipment that is sent to us without a CRA or RMA number.

CRA’s are valid for 60 days from the date of issuance. An invoice will be generated for payment on any unit(s) not returned within 60 days.

Upon completion of a demo/evaluation test period, units must be returned or purchased within 30 days. An
invoice will be generated for payment on any unit(s) not returned within 30 days after the demo/evaluation period has expired.

The customer must pay for the non-compliant product(s) return transportation costs to Transition Networks for evaluation of said product(s) for repair or replacement. Transition Networks will pay for the shipping of the repaired or replaced in-warranty product(s) back to the customer (any and all customs charges, tariffs, or/and taxes are the customer’s responsibility).

Before making any non-warranty repair, Transition Networks requires a $200.00 charge plus actual shipping costs to and from the customer. If the repair is greater than $200.00, an estimate is issued to the customer for authorization of repair. If no authorization is obtained, or the product is deemed not repairable, Transition Networks will retain the $200.00 service charge and return the product to the customer not repaired. Non-warranted products that are repaired by Transition Networks for a fee will carry a 180-day limited warranty. All warranty claims are subject to the restrictions and conventions set forth by this document.

Transition Networks reserves the right to charge a $50 fee for all testing and shipping incurred, if after testing, a return is classified as “No Problem Found.”

THIS WARRANTY IS YOUR ONLY REMEDY. NO OTHER WARRANTIES, SUCH AS FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSED OR IMPLIED. TRANSITION NETWORKS IS NOT LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LOSSES, INCLUDING LOSS OF DATA, ARISING FROM ANY CAUSE OR THEORY. AUTHORIZED RESELLERS ARE NOT AUTHORIZED TO EXTEND ANY DIFFERENT WARRANTY ON TRANSITION NETWORKS’S BEHALF.