Altronix P1SM10

Altronix P1SM10 SFP Transceiver User Manual

SINGLE-MODE SFP 10KM 1.25GBPS

1. Introduction

The Altronix P1SM10 is a high-performance Small Form-Factor Pluggable (SFP) transceiver module designed for single-mode fiber optic communication. It provides a 1.25 Gigabit per second (Gbps) data rate over distances up to 10 kilometers, utilizing a 1310nm wavelength. This module is compliant with industry standards, including CE, FC, and RoHS, ensuring reliable and environmentally responsible operation. It is primarily used in networking equipment such as switches, routers, and network interface cards to enable long-distance fiber optic connections.

2. Product Overview



Figure 1: Altronix P1SM10 SFP Transceiver Module. This image displays the compact, metallic SFP module with a blue pull-tab. The label on the module clearly shows "Altronix P1SM10", "SFP-LX 1310nm 10km DOM", and compliance marks like "CE FC ROHS". A barcode with the serial number "CSGLXH71035" is also visible.

The P1SM10 module is a hot-pluggable device, meaning it can be inserted or removed from compatible networking equipment without powering down the system. Its compact design allows for high-density installations in network devices. The module features an LC duplex connector for fiber optic cable attachment.

3. Setup and Installation

Before installation, ensure that the host device (e.g., network switch, router) is compatible with SFP modules and specifically supports the P1SM10's specifications (single-mode, 1.25Gbps, 1310nm). Always handle the SFP module with care to prevent electrostatic discharge (ESD) damage.

1. **Safety Precautions:** Wear an anti-static wrist strap and work on an ESD-safe surface. Avoid touching the electrical contacts of the SFP module.
2. **Identify SFP Port:** Locate an available SFP port on your networking equipment. These ports are typically labeled "SFP" or "Gigabit Ethernet SFP".
3. **Insert SFP Module:** Gently slide the Altronix P1SM10 module into the SFP port until it clicks into place. Ensure the module is oriented correctly; the blue pull-tab should typically face upwards or outwards, depending on the equipment's design. Do not force the module.
4. **Connect Fiber Optic Cable:** Remove the dust caps from both the SFP module's optical interface and the LC fiber optic cable connectors. Insert the LC duplex fiber optic cable into the SFP module's ports. Ensure a secure connection.
5. **Verify Connection:** Once connected, check the link status indicators on your networking equipment. A solid green or amber LED typically indicates a successful link. Refer to your equipment's manual for specific LED interpretations.

4. Operating Instructions

The Altronix P1SM10 SFP module operates automatically once properly installed and connected to a compatible fiber optic network. It functions as a media converter, translating electrical signals from the host device into optical signals for transmission over fiber, and vice-versa.

- **Data Transmission:** The module facilitates full-duplex data transmission at 1.25 Gbps over single-mode fiber.
- **Hot-Pluggable:** The P1SM10 supports hot-plugging, allowing for module replacement or installation without interrupting the operation of other ports on the host device.
- **Digital Diagnostic Monitoring (DOM):** The module supports DOM functions, which allow for real-time monitoring of parameters such as transceiver temperature, laser bias current, transmitted optical power, received optical power, and transceiver supply voltage. This data can be accessed via the host device's management interface.

5. Maintenance

Proper maintenance ensures the longevity and optimal performance of your Altronix P1SM10 SFP module.

- **Cleaning Fiber Connectors:** Always keep the optical connectors clean. Use only approved fiber optic cleaning tools and methods to clean the LC connectors on both the SFP module and the fiber optic cable. Dust and contaminants can significantly degrade optical performance.
- **Dust Caps:** When the SFP module or fiber optic cable is not in use, always replace the protective dust caps to prevent contamination of the optical interfaces.
- **Environmental Conditions:** Operate the module within its specified environmental ranges (temperature, humidity). Avoid exposing the module to extreme temperatures, direct sunlight, or excessive moisture.
- **Handling:** Handle the SFP module by its metal casing. Avoid touching the optical ports or electrical contacts.

6. Troubleshooting

If you encounter issues with your Altronix P1SM10 SFP module, consider the following troubleshooting steps:

- **No Link Light:**
  - Ensure the SFP module is fully seated in the host port. Remove and reinsert it firmly.
  - Verify that the fiber optic cable is correctly connected to both the SFP module and the remote device.
  - Check the fiber optic cable for damage (kinks, breaks).
  - Clean the fiber optic connectors on both ends.
  - Confirm that the remote device's SFP module or fiber port is operational and compatible.
  - Check the host device's configuration to ensure the port is enabled and configured correctly.
- **Intermittent Connection:**
  - Inspect fiber optic cables for damage or loose connections.
  - Clean all fiber optic connectors.
  - Check for excessive bending radius in fiber cables.
  - Monitor the DOM parameters (if accessible) for abnormal values (e.g., low received power).
- **Compatibility Issues:**
  - Ensure the host device's firmware is up to date.

- Verify that the host device supports generic SFP modules or specifically lists the Altronix P1SM10 as compatible.

If problems persist after performing these checks, consult the documentation for your networking equipment or contact Altronix technical support.

7. Specifications

Model Number	P1SM10
Brand	Altronix
Product Type	SFP (Small Form-Factor Pluggable) Transceiver
Data Rate	1.25 Gbps
Fiber Type	Single-Mode Fiber (SMF)
Wavelength	1310 nm
Max Distance	10 km (6.2 miles)
Connector Type	LC Duplex
Dimensions (L x W x H)	2.25 x 0.62 x 0.5 inches (57.15 x 15.75 x 12.7 mm)
Weight	0.16 ounces (4.5 grams)
Compliance	CE, FC, RoHS, 21 CFRUS Class 1
ASIN	B077GHWXJ2
Manufacturer	Altronix
Date First Available	February 23, 2018

8. Warranty and Support

For specific warranty information regarding your Altronix P1SM10 SFP module, please refer to the documentation provided at the time of purchase or visit the official Altronix website. Warranty terms and conditions may vary depending on the region and reseller.
For technical assistance, product inquiries, or further support, please contact Altronix customer service or your authorized Altronix distributor. Contact information can typically be found on the Altronix official website (www.altronix.com).

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