

Ethernet Over Fiber Products Troubleshooting

The Rancent Media Converters and Ethernet Switches are available with most transmission applications using multimode or singlemode optical fibers. Please be certain that the correct type of SFP module and the fiber are being used for the particular model.

Also be certain that the attenuation and bandwidth of the fiber optic cable being used is within the range of the system's loss budget specifications.

General Troubleshooting

If the Media Converters and Ethernet Switches are not functioning properly, ensure that these units were set up according to the instruction manual.

Issue:

The per port LED does not illuminate.

Solution:

Check the cable connection and try swapping out a cable.

Issue:

Performance is poor.

Solution:

Check the speed duplex mode of the partner device. The Media Converter or Ethernet Switch is run in autonegotiation mode and if the partner is set to half duplex, then the performance will be poor.

Issue:

The per port LED illuminates, but the traffic is irregular.

Solution:

Ensure that the attached device is not set to dedicated full duplex. Some devices use a physical or software switch to change duplex modes. Autonegotiation may not recognize this type of full-duplex setting.

Issue:

The Media Converter /Ethernet switch doesn't connect to the network.

Solution:

Check the per port LED and/or try another port on the Ethernet switch. Ensure that the cable is installed properly and is the correct type. Turn off the power and then, after a while, turn on the power again.

Diagnosing Problems

The switch LEDs provide troubleshooting information about the switch. They show boot fast failures, port-connectivity problems, and overall switch performance. For managed switches, you can also get statistics from web management platform. Please check the port LEDs information when troubleshooting the switch. See LEDs for a description of the LED colors and their meanings.

Ethernet and Fiber-Optic Cables

Always examine the cable for marginal damage or failure. A cable might be just good enough to connect at the physical layer, but it could corrupt packets as a result of subtle damage to the wiring or connectors. You can identify this problem because the port has many packet errors or it constantly flaps (loses and regains link).

- Exchange the copper or fiber-optic cable with a known good cable.
- Look for broken or missing pins on cable connectors.
- Rule out any bad patch panel connections or media converters between the source and the destination. If possible, bypass the patch panel, or eliminate media converters (fiber-optic-to-copper).
- Try the cable in another port to see if the problem follows the cable.

Make sure that you have the correct cable:

- For Ethernet, Use either Category 5/5e/6 UTP for 10/100/1000 Mb/s, and PoE connections.
- Verify that you have the correct fiber-optic cable for the distance and port type. Make sure that the connected device ports match and use the same type encoding, optical frequency, and fiber type.
- Determine if a copper crossover cable was used when a straight-through was required or the reverse.

Link Status

Verify that both sides have a link. A broken wire or a shutdown port can cause one side to show a link even though the other side does not have a link. A port LED that is on does not guarantee that the cable is functional. It might have encountered physical stress, causing it to function at a marginal level. If the port LED does not turn on:

- Connect the cable from the switch to a known good device.
- Make sure that both ends of the cable are connected to the correct ports.
- Verify that both devices have power.
- Verify that you are using the correct cable type. See Cables for information.
- Look for loose connections. Sometimes a cable appears to be seated but is not. Disconnect the cable, and then reconnect it.