



All hands on tech: Our guide to proper optical transceiver care

First edition

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For TXO clients, uptime and network health is critical. We also know that the fine margins count so staying on top of basics like fibre and optical transceiver cleaning ensures complicated interruptions don't arise.

Why is this important?

A dirty lens can render a perfectly compatible and functional optical transceiver useless for transmitting data at the speed of light, but performance can be remedied immediately with a quick but careful clean. Not only is this 'best practice', but you also avoid needlessly churning or returning valuable stock when an optical transceiver isn't recognised by the switch it's plugged into and appears 'faulty'.

We all like to think we run clean Electrostatic Discharge (ESD) compliant labs and test zones, but even the smallest particles can cause issues which block the lens of an optical transceiver. Any foreign particle that touches the endface can degrade the optical signal. Oils, dirt from human hands, residue from vapour in the air and coatings left behind when liquids evaporate cause the most problems. Also, when an optical transceiver is over heated or pushed to its limits, the carbon generated causes small dust particles to form across the lens.



In this guide we outline three simple ideas for maintaining the cleanliness of your optical transceivers to optimise performance and prevent damage to your network.

1. Inspection
2. Tool options
3. Storage tips



1. Inspection

Before you plug in your optical transceiver, check the lens. Sounds obvious but to avoid contamination, your first step is to properly inspect each individual module to confirm that they definitely need cleaning. Here are some tips for carrying out a safe inspection of your device:

- Ensure that the module power is off before anything
- Handle the module in a safe, ESD compliant area
- Use a scope to inspect the inside of the transceiver

If the view inside the scope appears blurry or dusty then this means the optical transceiver needs cleaning. If you're experiencing issues but the device appears to be clean after inspection, then it is likely there is an internal malfunction with the device that needs addressing.

2. Tool options

One-click cleaners

We recommend using a one-click cleaner as the best device for cleaning your optical transceivers, rather than using swabs. Occasionally swabs can push contaminants onto the end-face when in use. A one-click cleaner is a small handheld device that's roughly the size and shape of a kitchen lighter. Once inserted into the optic, it works by wiping the surface of the laser with a fine ribbon, removing any small particles like dust. Follow these steps while using a one-click cleaner:

Step 1: Remove the dust cap from the optical transceiver

Step 2: Insert the tip of the cleaner into the transceiver, push in, wait to hear an audible click and release quickly

Step 3: Repeat step 2 if needed, but no more than this

Step 4: Once clean, return the dust cap to the transceiver

Well designed one-click cleaners can last for up to 500 clicks so it's good value and cost effective cleaning - especially if you have a lot of transceivers to get through.



Air duster and lint-free swab

If the one-click cleaner isn't available, we recommend a combination of an approved air duster and a lint-free swab to dry clean your optical transceiver. The air duster is essentially a cannister of compressed air that blows away small dust particles with air. Steps to using this method are as follows:

Step 1: Remove the dust cap from the optical transceiver

Step 2: Use the air duster to blow away any small particles

Step 3: Insert an appropriately sized lint-free swab (around 1.25mm or 2.5mm) into the module and dry clean. Do not use any liquid-based swabs here

Step 4: Once clean, return the dust cap to the transceiver

3. Storage tips

Applying good storage ethics will mean that your optical transceivers are kept clean and inventorised correctly. Let's face it, the small devices are easy to misplace in the workplace so keeping track of them is crucial.

Always pair your optical transceiver with a clean jumper cable to avoid any contamination to your newly cleaned device. In addition to this, to increase the lifespan of your optical transceivers, they must be kept in a safe ESD compliant area, not on, or under your desk.

- Use anti-static ESD matting or work surfaces
- Wear anti-static wrist straps, ankle straps and/or ESD safety shoes
- Have ESD floor tiles in areas where equipment needs to be protected

By following these appropriate cleaning and maintenance techniques you can avoid damage to your device and in turn mitigate risk of network downtime.

If in doubt, don't hesitate to contact our team of experts by phone, email or [online contact form](#), we'll be happy to assist.

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