

# Engineering Specification Fibre-Optic Extender 160 Cleaning Guide

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## Introduction

This document provides information on how to clean the optical components used with the Fibre-Optic Extender 160 product. As with any fibre optic system, it is important to ensure that all the connections are kept clean and free of contamination. If this is not done, degraded signal quality can occur due to the transmission losses and misalignment problems that may occur with contamination in the optical system. In the extreme case this can prevent the system from operating correctly.

## Cleaning Systems

It is possible to obtain commercial cleaning kits for fibre optic components and these can be used. Generally all that is necessary to adequately clean components is a suitable residue-free cleaning solvent and a cleaning swab, for example cotton pads. The cleaning components should not be unduly abrasive and care should be taken not to apply undue pressure during the cleaning process. Otherwise mechanical damage, such as scratches, may occur on the optical surfaces which could degrade performance. Generally it is best to use small, circular movements during cleaning and it is important to ensure that none of the swab material is left within the fibre optic component.

## Component Handling

Prior to connection into a system, all optical components should be protected with some form of cover to prevent mechanical damage and contamination. These should be kept in place until the components are ready to be connected.

## Cleaning Components

**Optical fibre** - Remove the protective sleeve and, with a clean cotton pad soaked in cleaning solvent, carefully wipe the flat end of the fibre, taking care not to apply undue pressure which could scratch the polished end of the fibre. When this is complete, wipe around the cylindrical surface of the fibre to remove any contaminants which could either interfere with the alignment process or be transferred to the mating connector.

**Optical components** - Remove the protective end cover and, with a clean cotton pad soaked in cleaning solvent, carefully clean the inside of the connector. It is possible to obtain cotton pads and cleaning brushes of a size which will fit and slide through a ST<sup>1</sup> optical connector. Ensure that no fragments of the cleaning material are left in the connector after the cleaning process.

Once a component has been cleaned it should be left for a short interval to allow the cleaning solvent to evaporate completely, a period of five minutes should be sufficient. The component should then be connected to its mating connector as soon as possible to avoid subsequent contamination.

## Inspection

It is possible to inspect fibre optic components using a microscope to ensure that the component is clean and is free of mechanical damage. Specialist fibre optic microscopes are available and a magnification range between 50x and 300x would be suitable. Take care never to look into any optical component when it is in use.

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<sup>1</sup> ST is a registered trade mark of AT&T Inc.