

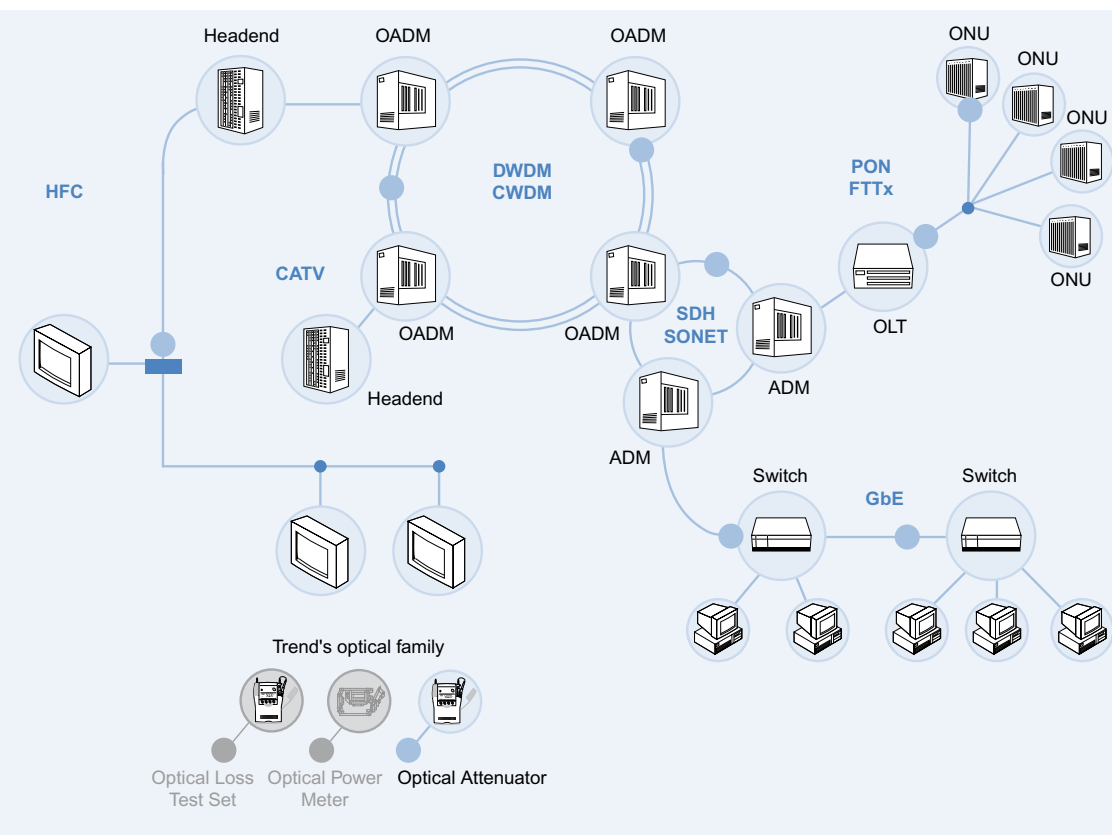
Optical Attenuator



Today, optical technology is universally used for communications applications. The bandwidth of core networks is growing thanks to Wavelength-Division Multiplexing (WDM). Gigabit Ethernet is bringing optical communications to the LAN, and optical technology seems to be very suitable for residential customers using the Fibre to the x (FTTx) access network.

Trend's family of optical testers is designed to be productive in the new age of optical communications. Easy operation, rugged design and long battery life make these testers ideal for field use.

Trend's Optical Attenuator provides configurable, precise attenuation to optical links from 2 dB to 60 dB. This is the perfect tool to complement any optical network tester; a practical add-on for link simulation and optical margin testing.



- Ergonomic and rugged design
- Protective snap-on cover for optical connectors
- Superior wavelength flatness
- Long battery life
- Field-replaceable connectors
- High accuracy and linearity
- +30 dBm input power capability
- User programmable
- Fully traceable calibration
- Insertion loss of only 2 dB
- For single mode applications
- High contrast LCD with light
- 3-year calibration cycle
- 1-meter drop tested

The Perfect Add-On

for any optical communications tester

Accuracy and Productivity to the limit

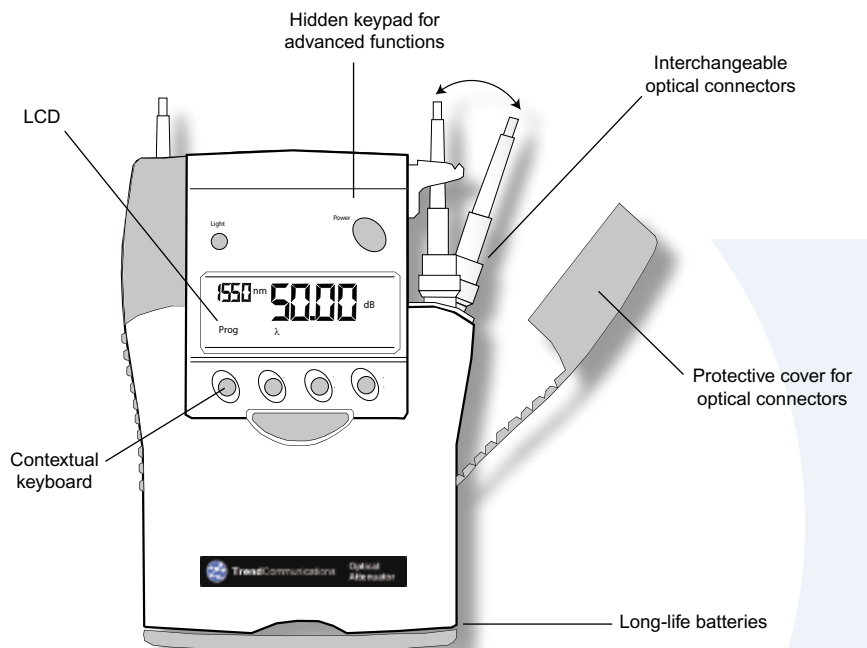
Trend's Optical Attenuator offers superior performance in terms of Optical Return Loss (ORL), Polarization Dependent Loss (PDL) and Polarisation Mode Dispersion (PMD).

The flat response over the whole optical transmission band is a key feature for testing Coarse Wavelength Division Multiplexing (CWDM) and Dense Wavelength Division Multiplexing (DWDM) systems.

Superb linearity, excellent accuracy and remote control software are just some of the reasons that make Trend's Optical Attenuator the best tool in its class.



- Outstanding ORL, PLD and PMD performance
- Easy to use
- Free remote control software
- 15 user-configurable programs
- Hidden keypad for advanced functions



Guaranteed Accuracy for Years

The Optical Attenuator is ruggedly designed to ensure long life. A fully traceable calibration process guarantees entirely confident testing for three years.

The Optical Attenuator is provided with all the necessary accessories to start testing in the field. These accessories include snap-on FC and SC sets, field-replaceable optical connector adaptors and a protective holster.



Easy-to-change
optical connectors

Quick and Easy

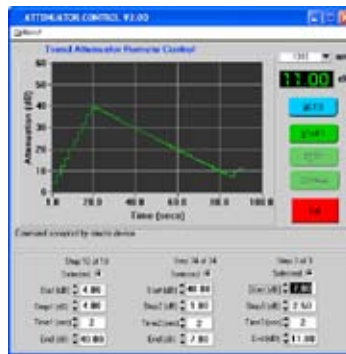
CWDM and DWDM testing

Remote Control Software

The remote management software for Trend's Optical Attenuator can be used to control the tool from a remote location. It has the following features:

- Remote sequencing and control from a PC
- Supports 3 sequences with varying times / increments
- Auto-discovery of attached instrument
- Graphical progress indicator
- Language customisation

You can use this software for remote measurement sequencing or to make your measurement processes automatic.

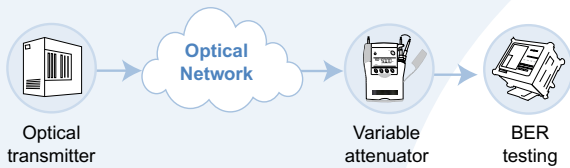


Channel Simulation

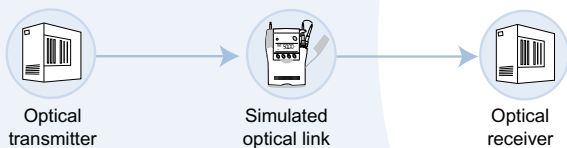
When commissioning transmission equipment, a link for testing is not always available.

Trend's Optical Attenuator can simulate an optical link with the advantage that the length of the link can be easily configured and modified.

Optical Margin Test



Optical Link Simulation



Optical Margin Measurement

The optical margin is commonly measured during installation. The margin is the amount of power that is allowed to be lost in a link and still maintain a minimum quality level.

You can use Trend's Optical Attenuator to increase the attenuation of the link in steps, measure the BER and monitor the alarm status of the network equipment.

With Trend's Optical Attenuator testing is easier, as different values of attenuation can be sequenced automatically.

Optical Attenuator

Attenuator	<p>Fibre Type: Single mode, 9.5 / 125 mm</p> <p>Range: 2 ~ 60 dB</p> <p>Resolution: 0.05 dB</p> <p>Linearity / Repeatability: 0.03 dB</p> <p>Absolute Uncertainty: 0.30 dB</p> <p>Power Capability: + 30 dBm</p> <p>Optical Return Loss (ORL): 60 dB</p> <p>Polarisation Dependent Loss (PDL): < 0.1 dB</p> <p>Polarisation Mode Dispersion (PMD): < 1 ps</p> <p>Operating I: 1200 to 1650 nm</p> <p>Calibration I: 1310 & 1550 nm</p> <p>λ dependence at up to 20 dB: < 1 dB in the range of 1300 to 1550 nm</p> <p>λ dependence factor: 0.0002 dB / D nm/dB</p> <p>Stability over temp: \pm 0.02 dB / °C</p>
Operation Modes	Manual, relative, step, program and remote control via PC
Functions	Up to 15 user programs that include I, start, step, period, stop
External Software	<p>Attenuator sequencing and control from a PC</p> <p>Real time test and long term monitoring</p> <p>Connection RS-232: 3.5 mm jack connector</p> <p>Supports sequences with varying times / increments</p> <p>Progress indicator</p>
Ergonomics	<p>Case: Polycarbonate. One meter drop tested</p> <p>Size: 190 x 130 x 70 mm</p> <p>Weight / Volume: 0.75 kg / 1012 cc</p> <p>Operating / Storage: -10 to 55 °C / -25 to 70 °C, humidity < 95%</p> <p>Hidden keypad: For setting advanced functions</p> <p>Interchangeable connectors, protected, metal free, easy cleaning for SC and FC</p>
Power	<p>External 9V DC option</p> <p>Battery: 2 alkaline 'C' cells 7.6 A/h</p> <p>Duration: up to 600 h</p> <p>Selectable auto-off</p> <p>Low battery indicator</p>
Accessories	<p>2 x SC ceramic sleeve connector adaptor</p> <p>2 x FC ceramic sleeve connector adaptor</p> <p>C cell batteries</p> <p>Traceable calibration certificates including: Power Meter, Output power & wavelength</p> <p>Carry Pouch, Carry strap, Leather protective holster, PC software with RS-232 cable</p>