

ABOUT DFM

DFM is Denmark's National Metrology Institute (NMI). DFM is a signatory to the CIPM-MRA arrangement that ensures mutual recognition of measurements worldwide

TRACEABILITY

All measurements are traceable to recognised national and international standard.

ISO CERTIFICATION

All services are covered by DFM's ISO 9001 certification

CONTACT DFM

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Optical Time-Domain Reflectometer (OTDR) calibration



Applications

The widespread adoption of optical fibre in telecommunications has produced a need to ensure the performance of optical fibre networks and the quick and efficient detection of faults. One important tool for this work is the optical time domain reflectometer (OTDR). However, the quality of the testing and the ability to correctly locate faults depend ultimately on the calibration of the OTDR. In response to this, DFM now offers accredited distance scale calibration of OTDR units, resulting in more precise fault location and lower maintenance costs.

The calibration is available to OTDRs from all the major vendors, delivering measurements of single mode optical fibres at standard telecommunications wavelengths (1310 nm and 1550 nm).

Accreditation

DFM performs OTDR distance scale calibration in accordance with ISO standard EN 61476-1 (2011) under DANAK accreditation, reg. no. 255.



CONSULTANCY SERVICES

Do you need new measurement capabilities, does a method call for a bit of scrutiny, or are you perhaps seeking to acquire new equipment? Take advantage of the consultancy services we provide in addition to our calibration services.

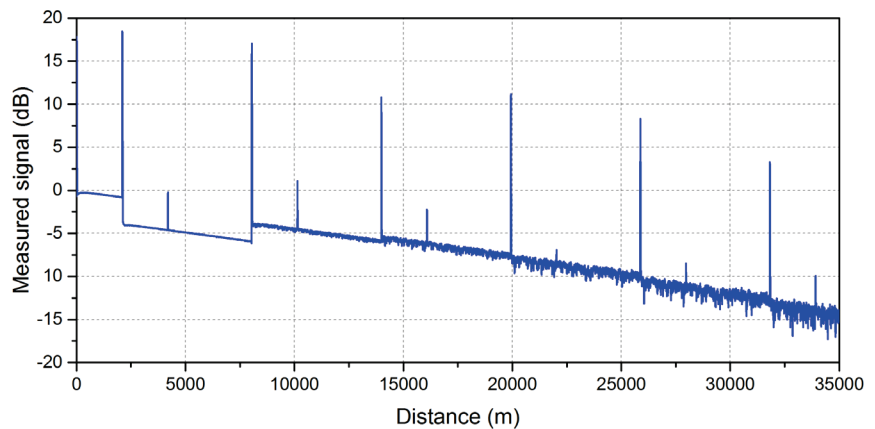
As an independent institute deeply rooted within research and metrology, DFM has gained the reputation of being an agile, solid, and valuable partner. Contact us and find out why.

Services and specifications

- K05.100 OTDR distance scale calibration, SM, at one wavelength
- K05.101 OTDR distance scale calibration, SM, per subsequent measurement or wavelength

Method

The OTDR unit is calibrated using a traceable optical fibre reference artefact that produces a series of signals that imitate typical fault signals along an optical fibre. The figure below shows an example of an OTDR measurement with a series of faults.



By analyzing the resulting signals, DFM can calibrate the OTDR distance scale over many kilometres of optical fibre and enable the location of faults to be found with high precision.

Calibration and Measurement Capabilities (CMC)

Range, lower	Range, upper	U(CMC) lower	U(CMC) upper	Method	Remarks
2237 m	21306 m	0.43 m	0.62 m	Q2KAL411	Single mode OTDR at 1310 nm
2238 m	21315 m	0.43 m	0.62 m	Q2KAL411	Single mode OTDR at 1550 nm

Traceable measurements can be provided for distances greater than those shown, but without accreditation. Please contact DFM for further details.

Examples of related services

The OTDR calibration service complements our existing test and measurement services within optical fibre technology, such as wavelength measurement of OTDR internal laser sources and calibration of optical power meters.

- K05.00x Power meter / detector calibration services for visible light
- K05.02x Power meter / detector calibration services for Near-IR
- K05.04x Linearity of detector / power meter services
- K05.090 Relative intensity noise (RIN)

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