FOA Standard FOA-4

OTDR Testing of Fiber Optic Cable Plants

OTDR testing creates a snapshot of a fiber optic cable. This test is commonly used to verify the quality of the installation and troubleshoot problems. OTDR testing requires interpretation of the data acquired, called the trace or signature, by a skilled operator.

Equipment Needed To Perform This Test

1. OTDR with modules appropriate for the cable plant (e.g. multimode: 850 and/or 1300nm, singlemode, 1310, 1550 and/or 1625nm.)
2. Launch and/or receive reference cables of the same fiber type and size as the cable plant and with connectors compatible to those on the cable plant.
3. Cleaning supplies

Test Procedure

1. Turn on OTDR and allow time to warm-up
2. Set parameters on OTDR appropriate for the cable plant being tested (range, wavelength, number of averages, etc.)
3. Clean all connectors and mating adapters.
4. Attach launch reference cable to OTDR and to cable plant under test.
5. Attach optional receive cable to far end of cable under test.
6. Acquire trace and analyze.

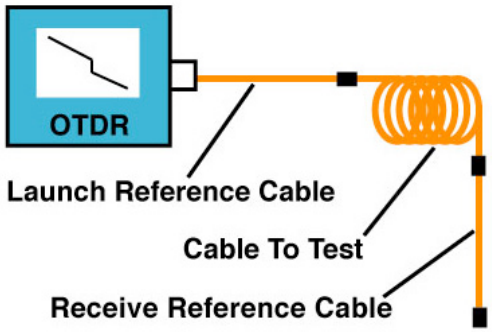
Options For Testing

1. Use of the receive reference cable is optional, it is required if the far end connector loss is to be measured and included in total cable plant loss
2. Testing at more than one wavelength may be required. Longer wavelength testing is often used to find stress related to installation problems. Traces may be compared for analysis.

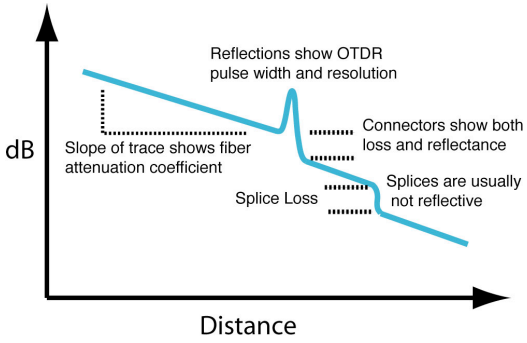
Documentation

Record the date of the test, operator, test equipment used, cable and fiber identification, test wavelength(s) and all traces for the fiber under test.

Test Diagram



Information In OTDR Traces



Notes

1. Insertion loss testing of the cable plant is recommended for acceptance testing.
2. Not all cable plants are long enough for OTDR testing. Ensure the OTDR has sufficient resolution for the cables being tested.
3. Always use a launch cable long enough to allow the OTDR to recover from test pulse overload and permit proper testing of the cable plant.
4. Do not use the OTDR automatic cable analysis until a skilled technician analyzes a trace and confirms it is appropriate for the cable plant under test.