

How to test fiber optic cable connector loss



Overview

The FOA Reference For Fiber Optics Testing for loss (also called "insertion loss") requires measuring the optical power lost in a cable (including Guidelin.

Key Takeaways

Fiber optic connector loss is measured using a light source and power meter setup, comparing transmitted power through the connector to a reference to determine insertion loss. Required Tools and Equipment

- Test Source: LED or laser source appropriate for the fiber type and wavelength (e.g., 850/1300 nm for multimode, 1310/1550 nm for singlemode) .
- Optical Power Meter: Calibrated for the same wavelength as the source .
- Reference Test Cables: Known good cables of the same fiber type and connector type .
- Mating Adapters: Compatible with the connectors being tested .

• Cleaning Supplies: Lint-free wipes and alcohol to clean connectors and adapters .
Step-by-Step Procedure

- Prepare Equipment: Turn on the source and power meter, allowing them to warm up. Ensure all reference cables are tested for integrity using a single-ended loss test .
- Clean Connectors: Thoroughly clean all connectors and mating adapters to prevent contamination from affecting measurements .

- **Set Reference Power:** Connect the launch reference cable to the source and the receive reference cable to the power meter. Measure the power and set this as the 0 dB reference .
- **Connect Cable Under Test:** Attach the cable under test between the launch and receive reference cables using mating adapters. Measure the power at the meter .
- **Calculate Connector Loss:** The difference between the reference power and the measured power is the insertion loss of the connector(s) .
- **Test Both Ends:** For short patch cords, reverse the cable and repeat the measurement to determine the loss of the connector on the other end .

Additional Tips

- **Use Hybrid Adapters** if the test equipment connectors differ from the cable plant connectors .
- **Document Results:** Record the measured loss for each connector to ensure compliance with network specifications .
- **OTDR Testing:** For long cables with splices, an OTDR can verify individual splice and connector losses, though discrete connector testing is generally not required for overall link performance . By following this procedure, you can accurately measure the insertion loss of fiber optic connectors, ensuring the cable plant meets performance standards and minimizing signal degradation in the network.

Article Content

The FOA Reference For Fiber Optics

Testing for loss (also called "insertion loss") requires measuring the optical power lost in a cable (including fiber attenuation,

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Guidelines On What Loss To Expect When Testing Fiber Optic Cables To be able to judge whether a fiber optic cable plant is good,

Guidelines Corning Recommended Fiber Optic Test

important. The OTDR trace can be used for cable acceptance, splice and connector loss, documentation, troubleshooting, fault

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For insertion loss testing, this requires reference launch jumper cables to connect the test source to the fiber in the cable under test

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Generally standards prefer the 1 reference cable loss method, but it requires that the test equipment uses the same fiber optic

Field Test Procedure for Optical Fibre Link Measurements

Abstract After fiber optic cables are installed, spliced and terminated, they must be tested. For every fiber optic cable plant, you need

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