Abstracts

Single-Mode Fiber OTDR: Experiment and Theory

D.L. Philen, I.A. White, J.F. Kuhl and S.C. Mettler. "Single-Mode Fiber OTDR: Experiment and Theory." 1982 Transactions on Microwave Theory and Techniques 30.10 (Oct. 1982 [T-MTT] (Special Issue on Optical Guided Wave Technology)): 1487-1496.

An OTDR measurement technique with an end detection dynamic range of 63 dB is described for use with single-mode fibers. A theoretical analysis of single-mode fiber backscattering is presented which predicts loss penalties in single-mode OTDR'S compared with multimode fibers. The prediction of the critical power levels of about 3 - 4 W for the onset of nonlinear effects in fibers is shown to be in good agreement with experiment. Fusion welded splices do not demonstrate significant backscattered power.

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