

Optical fiber network and simulation of the dependence of amplification characteristics of EDFA optical fiber amplifier

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Abstract: This topic aims to study and analyze the characteristics of optical fiber networks, particularly simulating the dependence between amplification characteristics in systems using Erbium-Doped Fiber Amplifiers (EDFA). The main objective of the work is to determine optimal parameters for EDFA to enhance data transmission performance. The research methodology combines theory and experimentation to build a simulation model of the reliability and efficiency of modern optical fiber systems. The expected result is to provide useful technical solutions for optimizing data transmission networks based on EDFA technology, contributing to improving the quality of communication services.

Keywords: Optical fiber network, Erbium-Doped Fiber Amplifier (EDFA), System simulation, Performance optimization