PERFORMANCE EVALUATION OF 2 CHANNELS, 4 CHANNELS AND 8 CHANNELS OPTICAL FIBER COMMUNICATION SYSTEM AT 10GBITS PER SECOND PER CHANNEL ON DWDM STRUCTURE

MAZURA BINTI ABAS

FACULTY OF ELECTRICAL ENGINEERING
UNIVERSITY TEKNOLOGI MARA
MALAYSIA

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MAZURA BINTI ABAS

Faculty of Electrical Engineering

UNIVERSITI TEKNOLOGI MARA

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ABSTRACT

Dense Wavelength Division Multiplexing (DWDM) is an optical transmission technology that enables significant increases in the data rate that can be carried over a single optical fiber by use of multiple wavelengths, each carrying a separate channel. Multiple channel communication system utilizing fiber optics was designed and performance evaluations was measured, analyzed and reported. Performance evaluation was evaluated through measurement of bit error rate (BER), Q factor, power received and signal power by using dispersion compensating fiber (DCF) and without dispersion compensating fiber on a single mode fiber. Variations of wavelength and fiber length were used to investigate the optimum system criteria.

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