

Abstract

Optical fiber optic that develop very quickly now has problem itself. In optical fiber network know a lot of multiplexer, one of lot that multiplexer is Coarse Wavelength Division Multiplexing (CWDM). In Indonesia CWDM will planned in city area network because CWDM has wide range bandwidth but, has short effectiveness range. CWDM uses because has lower operational budget than other multiplexer.

In optical fiber network has nonlinear effect that has influence condition of the network itself. Nonlinier effect itself has 3 kind of it, there are SPM, XPM and FWM. In this final project research has objectives to knowing influence from nonlinear effect to CWDM network. Wavelength that use In this research there are from S-band, C-band and L-band that is from 1460 nm until 1625 nm with wavelength space 20 nm. When signal reduced at certain kilometer, then optical network system will added EDFA as repeater.

Final result from this research is nonlinear effect that compare in CWDM network with CWDM network without nonlinear effect has many result. CWDM without nonlinear effect has better result than CWDM with nonlinear effect. The result of comparison is 0.685 % without EDFA and 0.36% with EDFA.