

## ABSTRACT

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*Fiber-optic network is a transmission medium that is widely used for the Internet network to support communications in sending and receiving data. In the transmission media still needed a security system to prevent eavesdropping on such information.*

*In this final project, the writer used optical encryption to prevent interception of information in optical communication systems. In this case, encryption perform optical path so that data security can not be intercepted, optical encryption method can be applied to optisystem. Optisystem has complete range of design software that allows users to plan and simulate tests optic link in the transmission layer optical networks. Optical encryption method also measures Loss and BER.*

*From the test results of this final project shows that the optical encryption method has an influence on the fiber optic network security to prevent eavesdropping and secures the data transmission.*

*Keywords: Fiber optic, optisystem, optical encryption, mach zender interferometer, mach zender interferometer*