

## **ABSTRACT**

Fiber optic communication system is one shape of technology progression in telecommunication sector. NRZ-OOK is base format which is used in fiber optic communication system. As progression of technology, NRZ-OOK considered cannot fulfill the needs of performance and the tolerance towards linier effects and non-linier effects anymore. Many effort had been made to get any modulation format system which can fulfill the needs of data transfer that is been growing. One of the efforts is by using an external modulator of mach zehnder that can produce many modulation formats.

This modulator of mach zehnder can produce some kind of optical modulation formats. Some of the modulations can fulfill the needs of better performance on purpose to follows the rapid progression of technology. This fulfillment can be made either in data rate side or the needs of good data singnal quality.

In order to knowing the better performance of modulation formats that produced by mach zehnder, this final task examines two of the others of modulation formats that can be produced by mach zehnder. These two formats are NRZ-DPSK and RZ-DPSK. By BER as main comparator parameter, the performances of the two modulation format system being compared one of another and also compared to NRZ-OOK format. In this final task also examined the characteristic of mentioned modulation formats, and its tolerance towards linier or non-linier weakening.