

ABSTRACT

Nowadays, increment of life quality, as an effect of massive technology growth, has triggered demand of information service with more complex and sophisticated kind and level of service. In order to fulfill those demands, high reliability and high capacity transmission system is needed. Referring those needs, optical fiber became a selection because it has some excesses. But, in the implementation, optical fiber run through attenuations until some optimum and robust transmission method, which could send information with high speed, high capacity, secure and could give better services is needed.

Aim to produce some optimum system, some linier or non-linier effect tolerant modulation format is necessary with the result of low BER value. NRZ (Non-Return-to-Zero), the nowadays often used modulation format is considered less tolerance to effects inside of optical fiber, so the need of some new modulation format that could overcome this problem is urgent.

Together with this Final Task, some modulation formats performances inside of optical communication system will be discussed, those are *Non-Return-to-Zero*(NRZ), *Return-to-Zero* (RZ) and *Carrier-Suppressed Return-to-Zero* (CS-RZ). After that, each modulation format performance (in this case it's BER value) will be analyzed and compared. Some modulation format which can show better performance for anticipating the necessity leap of some telecommunication system quality is expected to be seen from the result of that analysis.

Keywords : Modulation format, Bit Error Rate