ABSTRACT

Access networks have now switched to fiber optics. The switch from copper access networks to fiber optic access networks is due to better service and efficiency in the distribution of the development of optical connect to the home, known as Fiber To The Home (FTTH) which uses Gigabyte Passive Optical Network (GPON) technology. In this Final Assignment selected the Michelia Cluster as the research site.

The methods used in this study include: location overview, path and device design, and result research with power connect financial plan analysis, rise time financial plan, bill of amount and bit mistake rate. The analysis also uses Optisystem7 to compare the results of programming calculations with manual calculations.

In this research, the results obtained for the parameter values for power budget, rise time budget, *Q-Factor*, signal to noise ratio and bit error rate from the simulations and calculations carried out are in accordance with ITU-T G.984 standards and it can be concluded that the network in the Michelia Cluster is good and worth implementing.

Keywords: BER, SNR, FTTH, GPON, CLUSTER MICHELIA, Link budget.