

## **ABSTRACT**

*This final project discusses the analysis and design of the Fiber to The Building (FTTB) working system intended in the Rusun Lokbin Rawa Buaya. The parameters used to analyse the advisability of the system are using the Power Link Budget. These Parameters were analysed through manual calculations and the results will compare with the simulation results obtained by OptiSystem software.*

*The manual calculations of Power Link Budget result taking by data samples from varying distance which is nearest, medium-range and farthest ODP location. The value of manual calculation is -18.104 dBm for nearest distance ODP, -18.110 dBm for medium-range ODP and -18.114 dBm for the farthest distance ODP. On the other hand, the simulation results that conducted by OptiSystem, indicate value of -19.777 dBm for the nearest ODP, -19.782 dBm the medium-range ODP and -19.787 dBm for the farthest ODP.*

*Based on these two calculation results, the results compatible with the sensitivity attenuation standard established by ITU-T which the acceptable power requirements must not exceed -28 dBm. As a result, the design system is suitable for transmitting data.*

**Keyword:** FTTB, GPON, Power Link Budget, Software OptiSystem