

ABSTRACT

The development of information and communication technology has changed the way we live our daily lives. The internet has become a basic need, and quality, fast and reliable internet access is very important. One solution to meet this need is through the design and implementation of an FTTH (Fiber to the Home) network.

In this Final Project, FTTH network planning was carried out at Kerta Mulya Residence Housing, Sindangagung District, Kuningan Regency NO. 35 West Java. This design was carried out starting from designing the FTTH network using AutoCAD and Google Earth software. Then a simulation is carried out using the help of Optisystem software. Then the power link budget calculation is carried out to determine the feasibility parameters of the FTTH network which has been created to comply with the ITU-T G.984 standard and PT Telkom Access regulations.

Based on the results of calculations and simulations that have been carried out for the downstream and upstream directions, the received power results meet ITU-T G.984 standards and PT Telkom Access regulations, namely not exceeding the detector sensitivity of -28 dBm. The power link budget value for the furthest and closest distance is -20 dBm. The value obtained is below the simulation time limit value in the Optisystem software for the downstream direction of -19,812 dBm and the upstream direction of -4,704 dBm. From the results of calculations and simulations, it is concluded that the FTTH network that has been created can be said to be feasible and has good transmission quality.

Keywords: *Fiber To The Home (FTTH), Fiber Optic Network, Power Link Budget.*