ABSTRACT

Increasing the need for data, voice and video services, enabling the Fiber To The Building (FTTB) network to be a solution for customers who need fast technology. Fiber To The Building (FTTB) is an infrastructure that booms optical fiber that can provide these services. One fiber optic network service provider is PT. Telkom Access. This study compared the two STOs using the same technology, GPON technology that was applied to the Taman Kemayoran Codominium Tower Cendana Apartment. In comparing the two STOs it produces a better distance to be applied, it can also be used to change the path if there is maintenance or cause an error at that time. This research starts with surveying locations, doing network design, determining devices and specifications, and creating networks using OptiSystem and calculating power link budget parameters, rise time budget and bit error rates. In the study, the power link budget value for GPON technology for downstream is -21.43081 dBm and upstream is -21.779645 dBm for STO Kemayoran. As for STO Cempaka Putih downstream -21,61021 dBm and for upstream -22,06945 dBm. For the rise time budget calculation for Kemayoran STO is 0.1730 ns for downstream (condition 0.28 ns) and 0.1730 ns for upstream (condition 0.56 ns), while for STO Cempaka Putih for downstream (0.1732 ns) 0.28 ns) and for upstream 0.1732 ns (condition 0.56 ns). The BER parameter for downstream is 5.18127e-114 and upstream is 5.44709e-012 for STO Kemayoran. In STO Cempaka Putih for downstream 8,34633e-110 and for upstream 2,57125e-011 (standard 10-9). Based on the results obtained from the calculation and stimulation, the power link of the best budget is obtained at Kemayoran STO.

Keyword: FTTB, GPON, Link Power Budget, Rise Time Buget and Bit Error Rate