

ANALYSIS AND DESIGN OF FIBER OPTIC NETWORK FOR TIARA CITRA YOGYAKARTA HOUSING AREA USING OPTISYSTEM

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ABSTRACT

Fiber To The Home (FTTH) is a form of data information transmission that utilizes light and fiber optics. In the construction of FTTH, a feasibility study is needed to obtain optimal network quality based on the feasibility of FTTH network parameters. In this study, an analysis was conducted on the design of a fiber optic network in the Tiara Citra Yogyakarta Housing area. The simulation process uses the optisystem application to test the feasibility of the network with link power budget and bit error rate (BER) parameters. The study was conducted by conducting a location survey, making sketches, conducting simulations and obtaining the parameter values sought. Based on the simulation results using the optisystem application, the link power budget value was obtained at -20.211 dBm for the nearest Optical Network Terminal (ONT) and -20.229 dBm for the farthest ONT. The simulation results also show the BER value at the nearest ONT, which is 7.64486×10^{-11} and 1.94567×10^{-10} for the farthest ONGT. This means that this design has met the ONT power reception standard requirements, which are -28 dBm and a BER value of 10^{-9} .

Keywords: *Optisystem, Fiber Optic, Link Power Budget, Bit Error Rate*