

ABSTRACT

Housing Puri Pamulang located in pamulang is a residential complex that has a range of modern amenities. PT. Innovate Indonesia initiative to provide services Fiber To The Home (FTTH) with program Ducting Bersama to all residents to be able to give a better performance in service and the beauty of the layout of the city.

In this final project calculation of the parameters of the feasibility and performance of the system design of FTTH with duct lines who want implemented on Housing Puri Pamulang. These parameters are Link Power Budget (LPB) and Rise Time Budget (RTB) for the feasibility of the system. The parameter values manually counted and compared with the results of using the software optic simulator. Besides other parameters are Bit Error Rate (BER) for the performance of the system is simulated on optic simulator.

LPB manual calculation results, the total attenuation produced for the farthest distance is 21,2238 dB for upstream and 22,02 dB for downstream. The results of calculations meet specified standards ITU-T 984 and is followed by PT. Innovate Indonesia is 28 dBm. Based on the total value of attenuation at the farthest distance value obtained acceptance of -26,7238 dBm for the upstream and -25,02 dBm downstream. While the value obtained RTB time limit is equal to 0,2814 ns for encoding RZ and 0,5027 ns for encoding NRZ. From the calculation results obtained t_{system} is 0,0626 ns for upstream and downstream. The results obtained RTB well worth it because the system is smaller than a time limit for each encoding. For the parameters that the system BER performance resulting from the simulation in optic simulator, BER values obtained for the upstream is $7,348 \times 10^{-17}$ and $2,52711 \times 10^{-9}$ to downstream. Both these values meet the minimum value specified for the optical BER, namely 10^{-9} . All the eligibility of the device is implemented into the duct path that takes 14 manhole and 4 handhole until up to the customer.

Keywords: FTTH, XGPON, Ducting