

ABSTRACT

The development of technology is very sophisticated and varied due to follow the need for an Opera-like data, voice, or video. These needs can be realized with the rapid communication networks and assured the kecepataannya intensity. At present in every place certainly in need access to fast communication is one example in Apartment Newton Residence, with the number of users and the level of high need for each user, the design of a fiber optic network in Apartment Newton Residence deemed strategically appropriate for the needs of users and realized as appropriate, Newton Residence Apartment Building A, located in Bandung district is the location of this Final Project.

The method used in perancangan ie site survey, design, and research results of the analysis (power link budget, rise time budget and bit error rate). This analysis is also used in addition to the manual calculation Optisystem simulation application form, then that the results were compared.

The result of the design of downstream link power budget is divided into three parts, namely on the basis of the closest distance, intermediate and farthest. results closest distance 20,53 dB, middle distance results 20,6 dB, and the results of the farthest distance 21,06 dB. Whereas the shortest distance upstream results -4,78 dBm , middle distance results -4,85 dBm and the results of the farthest distance -5,86 dBm. This value is below the sensitivity of the receiver for -28 dBm, So it is considered feasible. Rise time budget analysis obtained time limit is equal to 0.2814 ns for RZ coding and 0.5627 ns for NRZ coding. From the calculation results obtained value T_{system} is equal to 0.4251 ns for upstream and downstream. Results obtained rise time budget well worth it because T_{system} Smaller than a time limit for each encoding. For a system that BER performance parameters generated from simulations in Optisystem, BER values obtained for upstream near zero (0) and BER values to downstream 3.62955×10^{-12} . kedua nilai tersebut memenuhi nilai minimum BER yang ditentukan untuk optik, yaitu 10^{-9}

Keywords: power link budget, rise time budget, BER