

ABSTRACT

Sirnagalih Kencana residence is one of the existing residence in the tasikmalaya which do not have access to Internet services, Phone and TV. With so many users and high level of requirement for each user then the design of fiber optic access network in residential sirnagalih kencana strategic and appropriate for the needs of users can be realized.

The method used in the design of Fiber To The Home access network is survey location, design, and research with the results of analysis (power link budget, rise time budget, BER (bit error rate) and bandwidth). The design of this final project using GE SmallWorld and Google Earth software and using Optisystem software ..

The final project design result requires Bandwidth of 2290 Mbps to meet the needs of Internet, Phone and TV service for 458 homes and requires 1 GPON slot. The result of power link budget value has the value with the longest distance of 20,986 dB from the downstream side, while at upstream distance -11,419 dBm. This value is still below the receiver sensitivity of -28 dBm and the damping value of PT.Telkom standard is 28 dB. The analysis of rise time budget obtained by 0,03708 ns for downstream and 0,0312 ns ns for upstream then the value of rise time budget is feasible because it is smaller than the time limit for each encoding. And the result of the BER value is $7,541 \times 10^{-30}$ which is below the standard value of 1×10^{-9} .

Keywords: Power Link Budget, BER, Upstream, Downstram, Rise Time Budget