

ABSTRACT

The needs and development of the community for internet-based services today are more diverse because not only voice services are provided, they are also video and data. Braling Grand Hotel Purbalingga is one of the recommendations for the implementation of the FTTB network to support internet services for customers. This study discusses optical network access from STO to the customer's ONT and supports the design of optical network access, analyzes the results of the calculation of the power link budget and compares the results of the calculated values and the results of the conversion values. Based on the results, the calculation of the budget link obtained on the downstream side is -20.8755 dBm which is the total value from STO to ONT while for the comparative value is -23,513 dBm with a power reserve value of 2 dBm. Based on the simulation results and the difference calculation of 2.6345 dBm, this is related to the transmit power in the simulation - 0.596 dBm. The performance results of the BER and Q factor parameters were obtained from the simulation results with a BER value of 1.50001×10^{-58} for a Q value of a factor of 16,899 so that optical access planning at the Braling Grand Hotel Purbalingga was approved that had met ITU-T G987 stand

Keywords : *Power Link Budget, Bit Error Rate, Q faktor, ITU-T G987*