ABSTRACT

Along with the development of technology and information which is rapidly increasing, the increasing need for people will be efficient and reliable data speeds. One of the technologies that is currently developing is NG-PON2. NG-PON2 is expected to be able to channel data transmission more efficiently and reliably. NG-PON2 is one of the technologies developed by ITU-T. NG-PON2 is expected to be able to provide broadband services that are increasingly developing in the future to serve customer needs that are increasing both in data, voice and video services.

In this study the author wants to develop research by analyzing the performance of the effect of splitters on NG-PON2 systems using a distance of 60 km. From the simulation results, a system analysis is carried out with measurement parameters of link power budget, Q factor, and BER and refers to the ITU-T standard. This study will use optical simulation software to simplify the data analysis process.

Based on the simulation, 2 ONU, 4 ONU, 8 ONU, dan 16 ONU have eligibility because they have met the operational feasibility standard but for 16 ONU has the best feasibility with Q-Factor = 7,4844 and Power Received = -28,190 dBm and BER = $3{,}4131\text{x}10^{-14}$ on the downstream side and Q-Factor = 6,4450 and Power Received = -28,342 dBm and BER = $5{,}3161\text{x}10^{-11}$ on the upstream side.

Keywords: NG-PON2, *splitter*, *Link Power Budget*, *Q-Factor*, BER.