ABSTRACT

The most advanced technology for the next-generation passive 10-gigabit optical network, also known as XGPON, is known as GPON. It has the capacity to increase the speed and consistency of data flow. However, sluggish data transmission and jittery transmission can result in more serious problems with dispersion. This sistem connects to OLT via an access network in the pusat warehouse. Multi-channel fiber optic has a data rate of 10 Gbps and an 80 kilometer range. To evaluate the sistem that has been selected, the Optisystem 7.0 evaluation tool is used. Bit Error Rate (BER), Quality Factor (factor-Q), and Matrix Diagram are the main focus points of the evaluation. In general, the 10-Gigabit Passive Optical Network (GPON), also known as XGPON, is the form of optical communication technology that has advanced the most in the succeeding generations. This technology accelerates data transport speed and consistency.

Keywords: 10-Gigabit passive optical network (XGPON), wavelength division multiplexing (WDM), radio over fiber (RoF).