

ABSTRACT

The rapid development in the field of information technology and data communication requires a means of communication that has a high level of reliability and reliability. So the need for technology updates that have wide bandwidth and high data access speeds.

Next Generation Passive Optical Network (NGPON) technology using the Wavelength Division Multiplexing (WDM) system is a hybrid technology that combines the flexibility of wireless networks with optical networks. The use of modulation techniques can affect the data error rate. The digital modulation technique that has the best performance is the RZ-DPSK modulation technique.

Based on the results of the analysis carried out referring to the ITU-T standard, the NGPON-WDM technology is given a wavelength with a range of 1550 nm for the minimum distance and 1550 nm for the maximum distance, the channel spacing used is 0.8 nm. The length of each link is 10, 20, 30, 40, 50, 60, 70, 80, 90, 100 km with a network transmission power of 0 dBm.

Keywords: WDM, NGPON, RZDPSK, OPTICS