

## ABSTRACT

*With the development of the era, the demand for high-speed services such as video streaming is increasing, so service providers need to provide greater network capacity. GPON technology with its limited speed allows it to not be enough to meet this demand. NGPON comes with a higher speed assisted by WDM-PON which allows multiplexed optical waves to transmit more data simultaneously.*

*The goal is to design a WDM-PON with NG-PON and G-PON technology using the OptiSystem simulator as well as from the plan.*

*Based on the results of the design analysis with a distance of 5 km and a distance of 10 km has an effect on the speed of the signal obtained.*

**Keywords: WDM-PON, G-PON, NG-PON, OptiSystem**