

ABSTRACT

The design of the Fiber To The Tower (FTTT) network, especially in some areas, is uneven, such as in the IKN area which will become the new capital. To meet customer needs for bandwidth, FTTT was designed with XGPON technology which has been widely used, but currently a new technology has been developed to improve the previous technology, namely NGPON. So that FTTT design was carried out using NGPON technology by comparing XGPON technology..

NGPON technology has a larger optical source output power than XGPON from the downstream and upstream sides so that the power received by the receiver side is greater using NGPON technology. For the BER value obtained by using XGPON technology, this is because XGPON has a smaller bit rate and uses a smaller wavelength than NGPON, the larger the bit rate and wavelength used, the larger the BER obtained.

In the design of this FTTT network, what is to be achieved is to get a Bit Error Rate value of 10^{-9} In addition, it is expected to get a value, a link power budget that meets the requirements, which is -28 dB. So, the FTTT XGPON and NGPON networks that are designed are feasible to implement because they meet the standards set by ITU-T.

Keyword : *Fiber To The Tower , NPON, XGPON, BER*