

ABSTRACT

This study aims to increase the attenuation efficiency in fiber-optic communication systems connecting the Optical Distribution Cabinet (ODC) and the Optical Distribution Point (ODP) in the Kahayan Permai Housing Complex, Central Kalimantan. Data collection is carried out by analyzing the performance of the fiber optic communication system. This can be done through the use of a Power Meter, Optical Time Domain Reflectometer (OTDR), and a Link Power Budget approach. These tools are useful for measuring and identifying attenuation that may occur along fiber optic cables. This study uses an Optical Power Meter (OPM) measuring instrument and the application of calculations using the Link Power Budget method to optimize fiber optic attenuation. The goal is to achieve a better attenuation level in the fiber optic communication system and calculate the total cost required for the fiber optic network structure in the Kahayan Permai Housing Complex, Central Kalimantan. The measurement results show that the highest attenuation occurs in the 8th core for the 03FH distribution at Optical Distribution Point (ODP) 35, with an average attenuation. of 18.80 dB. The fiber optic splicing factor is one of the causes of the attenuation. Theoretical results show that the highest attenuation occurs in the 03FH distribution with a total loss of 19.06 dB, caused by the number of splices in the fiber optic cable calculated using the Link Power Budget method, and it is found that the highest attenuation or total loss occurs in the 03FH distribution with a value of 26.59 dB. Even so, this value is still below the maximum limit determined by the ITU-T, namely 28 dB. Based on these results, it can be concluded that the performance of the fiber optic communication system in the Kahayan Permai Housing Complex is running normally and operates effectively with the optical fiber attenuation that has been optimized through this research.

Keywords: ODC, ODP, Power Link Budget