

ABSTRAC

The need for speed of information, communication, and multimedia services in this era of openness requires the connection of information in all circles, in all conditions and in every location. Connection no longer belongs to business circles or only limited learning environments, information connection is also required in residential areas as a means of learning , work and entertainment. Combining information, communications and multimedia services together is a perceived service to fulfill those needs. To answer those needs PT. Telkom Indonesia makes 3P or Triple Play services by combining internet, IP tv, and cable service into Indiehome services. By working with PT. Bayur Jaya in developing and building Fiber to the Home access network (FTTH) in Kalideres permai housing which is doing the construction of the first phase (design stage).

In accordance with PON technology GPON which is the evolution has a working principle where when information is sent from the OLT side with a single optical fiber, the information will be distributed with a splitter that allows information to be divided into multiple branches.

In this design at the furthest distance of 4,468 km on distribution 3, where the determination of jumlah device obtained by survey which will be made RAB by partner as partner offer to PT Telkom. By using 3dB power on the downstream side obtained a total attenuation of 22.4938dB, receiving power of 19.4938 dB and power margin sebesar 2,5062 dB whereas with a power of 0.5 dB on the upstream side obtained the total damping results of 7 , 4254 dB, receiving power of - 6.94628 dB and power margin of 15,0372 dB indicating perancangan still meet the eligibility requirements.

Keywords: GPON, FTTH, PLB, RTB, BER, RAB.