

ABSTRACT

Optical fiber technology is one of technologies that can provide large bandwidth and transmit bits of information over of Giga bits per second, much larger if it compared with copper wires that can transmit bits over Mega bits per second. It is provide an increased bandwidth capacity to the customer. Hopely, this communication system improves the quality of telecommunication services so that can be transmitted within one channel of voice, data and video.

GPON (Gigabit Passive Optical Network) is one of the optical fiber access network technologies. This technology has many advantages including the application which is support triple play services, has a downstream speed of 2.488 Gbps and 1.244 Gbps for Upstream, also has reliable protection. This technology is very suitable to be applied on Gedangan Solo Baru area because Solo Baru is an area that has rapidly developed in various sectors and the territory which is not too large.

Feasibility test results on the design of this system shows that the link power budget and rise time budget have fullfill. The greatest attenuation in design of FTTx GPON network is 21.99 dB, which is still below the standards established in accordance GPON ITU-T G.984 which is 28 dB. Similarly, the test results of rise time budget is produced figures that is still in the design tolerance GPON network. For the downstream direction with bitrate of 2.488 Gbps, the farthest customers is produce T_{total} of 0.2656 ns. T_{total} is below the value T_{system} which is 0.28 ns.

Keywords: GPON, Gedangan, Link Power Budget, Rise Time Budget