

## ABSTRACT

Green Mansion located in West Jakarta is the concept of residential and shop houses in the town center is self-contained and modern. Green Mansion is a pilot project implementation of triple play services in Indonesia, given the prospective occupant is a professional and from businesses that require a variety of services. The initiative which began in late 2008 by the Access Division Telkom agreed to the use of FTTH (Fiber To The Home) using GPON technology (Gigabit Passive Optical Network) that can support triple play service.

GPON is an access technology using optical fiber as a medium of transport to customers. GPON has several advantages including the high bitrate, reliable protection, and already supports triple play services. Green Mansion implement FTTH (Fiber To The Home) in which optical fiber will reach into the homes of customers. This technology is suitable to be applied in the Green Mansion since customers will need a large enough bandwidth.

Test the feasibility of a link power budget and rise time budgets showed that the design meets both these standards. Largest attenuation in the design are included on customers who are on the road with Green Diamond 3 No.33 farthest distance of about 7.923 km. The total attenuation produced at the link at 22.97 dB, attenuation is still below the standard GPON according to ITU-T G.984 standard of 28 dB or incurred by Telkom by 26 dB. Test results rise time budget also produce figures which are still in the GPON network design tolerances. For the downlink direction with bitrate of 2.4 Gbps, customers farthest produce  $T_{total}$  of 0.2515 ns.  $T_{total}$  is below the value of  $T_{system}$  0.2917 ns.

Keyword : GPON, Green Mansion, Link Power Budget, Rise Time Budget