

ABSTRACT

Graha Pos Indonesia is a building that located in Jln. Banda No. 30 Bandung City. This building has 17.669,37 m². Based on survey that already conducted, there is bad triple play services to serve hundreds of users. So, hopefully this survey can help Graha Pos Indonesia building to provide decent triple play service (voice, data and video) to users.

The best solution to solve the problem that the building has is to designing Fiber To The Building (FTTB) using GPON technology. This fiber o is used to serve the users of the building. High speed triple play service can be build using GPON technology. This network design will use OLT and ODC which are already inside the building and with the rack design. OLT and ODC racks is designed according to the number of the users of the building.

The result of designing downstream power link budget is -22.57632 dBm, while upstream power link budget is -10.02532 dBm. Rise time budget analysis generate 0.281 ns for downstream using NRZ encoding and 0.562 ns for upstream using NRZ encoding. From the result of the calculation, is generated the value of T_{total} in the amount of 0.25 ns for downstream and upstream. BER value for upstream is zero (0) and BER value for downstream is 5.7099×10^{-60} .

Key words: Triple play, PLB, RTB, FTTB, GPON, Voice