

## ABSTRACT

Bandung Technoplex Living Apartement is a building with high rise building category characterized by height exceeding 20 meters and more than six floors are still under construction. To deploy an internet network in the building, a design that can serve thousands of subscribers will be available, bandwidth that matches the target customers and can meet the parameters of the technology used.

This final project is Fiber to The Building network design as the solution of Internet network in Bandung Technoplex Living Apartement. In the design of the network will be made OLT and ODC in the building with a rack system design. OLT and ODC racks will be designed according to the number of customers that will occupy the building. Fiber optic network design that will be made will use google earth software as determinant coordinate of design location and optisystem as simulator of optical communication system design.

Based on the design of the network made, provided the bandwidth with the number of device needs with respect to the standard parameters of optical communication systems ITU-T G.984 and PT Telkom Access. Total units of 2017 units served with 80 ODP at 8.202 Gbps bandwidth are also based on upstream power link power parameter analysis with -9.398 dBm and downstream value of -26.4784 dBm, rise time budget upstream downstream meets non-return to zero 70% and  $1.509 \times 10^{-30}$  bit error rate stated that the design of fiber to the building network in high rise building in Bandung Technoplex Living Apartement is feasible to use.

**Keywords:** high rise building, optisystem, power link budget, rise time budget, bit error rate