

## ABSTRACT

In the present era the need for telecommunication, information and entertainment that can be received and have high performance is definitely needed. To accomplish this, a network is required to support its performance. For now the network that is able to provide the best performance is fiber optic. In Indonesia itself is rampant fiber optic fiber cable directly to home or called FTTH. The city of Klaten is one of the cities densely populated by special residents for Pedan District. Under these conditions, the design of FTTH networks is suitable to be implemented in this location.

In the design conducted surveys using GPS will be developed into data Google Earth and AutoCad. In the design data can be estimated about the number of devices, specifications and position laying of the device from STO to customer position. The data was to be developed along with FTTH GPON based calculation data.

In the design of FTTH GPON network obtained direct measurement results obtained value Power Link Budget -18,283 dBm for downlink (-8.248) ns for uplink at the farthest point, and Rise Time Budget, as measured at the furthest point. Rise Time Budget value <70% with value (0.363) ns for Downlink and (0.251) ns for Uplink.

**Keyword:** *Triplay play ,GPON ,Power Link Budgeted,Riae Time Budgeted*