

ABSTRACT

Today the need for a means of communication, information and entertainment that can be accepted and has a high performance was certainly much needed. To meet the terms of the required network that supports performansinya. For now the networks are able to provide the best performasi is the fiber optic. In Indonesia itself was increasing deployment of fiber optic cables directly to the home or called FTTH.

At perencangannya done a survei using GPS data will be developed into *Google Earth* and *Autocad*. In plannings can be data about the number of devices being estimated, specifications and position of laying the device from the STO until the position of the customer. The data it would like developed and calculation-based FTTH GPON.

On the design of network FTTH GPON obtained the result value of the *Power link budgetnya* 25, 93 dB and value *Rise time Budget* 0,2675 ns for *downlink* and *Uplink* to 0,2512 ns. While the results are obtained by direct measurement of the value of the *Power Link Budget* and *Rise time budget*, as measured at the farthest point (S 112°17'60.14 , E 7°93'19.30). This result qualified GPON Telkom the values for Power Links Budgetnya < 26 dB for design and < 28 dB for realization and value *Rise time budgetnya* 0,2917 ns with a value of 70 % from *downlink* and *Uplink* to 0,5833 ns.

Key words: Fiber Optic cables, FTTH, GPON, *Power Link Budget* and rise time budget