ABSTRACT

Nowadays, Android-based smartphone applications are so many, but still very rare application to design telecommunication systems, including the Optical Fiber Communication Systems. Until now, designing Optical Fiber Communication Systems network is still using manual calculation.

The most important parameters in the application of Optical network design are Power Link Budget and Rise Time Budget. These parameters must be met to qualify Optical network system design depending on the Power Link Budget and Rise Time Budget. Link Power Budget Calculation and Rise Time Budget is currently still using conventional techniques, thus making the work less effective. To overcome or simplify the network designer to do Optical calculations, was made an application that integrated with smartphones based on Android. Thus, the designer will be more effective and efficient in designing optical fiber networks.

The result of testing the Power Link Budget calculations using manual calculation and Optical Network Design Calculator (ONDC) *application are acquired 98.48587% for accuracy rate, Rise Time Budget obtained 99.33812% for the accuracy. PLB deviation levels is 0.13564 and 0.00229 for RTB. Test result of Power Link Budget calculations using software "OptiSystem" and ONDC application is obtained accuracy rate of 97.75084%. To test the Power Link Budget calculation using the "Link Lost Budget Worksheet" and ONDC application is obtained 99.52524% for the accuracy rate. So, from the results obtained, the ONDC application is feasible for use in the calculation of the Power Link Budget and Rise Time Budget Optical Fiber Communication Systems.*

***Key words** : Power Link Budget, Rise Time Budget, Android*