

ABSTRAK

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Perancangan Jaringan Komunikasi *Fiber to the Building* (FTTB) Menggunakan GPON di Universitas Sultan Ageng Tirtayasa

UNTIRTA mempunyai visi *integrated smart and green (it's green)*. Banyaknya menggunakan internet wifi menyebabkan terjadinya penurunan kinerja wifi. Selain itu wifi memiliki keterbatasan penyaluran gelombang tidak konsisten di beberapa area. Tujuannya merancang FTTB menggunakan teknologi GPON di 5 titik wilayah kampus UNTIRTA yaitu Pandean, Ciwaru, Serang, Sindangsari, Cilegon. Metode *PLB* dan *RTB* membantu menganalisis kelayakan jaringan FTTB. Hasil simulasi dan perhitungan menunjukkan redaman setiap gedung UNTIRTA dikatakan layak, karena memenuhi standar PT.TELKOM Indonesia yaitu -28 dBm. Hasil *RTB downstream* menunjukkan layak, karena tidak melebihi 0,281 ns, untuk perhitungan *RTB upstream* menunjukkan hasil layak, karena tidak melebihi 0,56 ns.

Kata kunci : FTTB, *PLB*, serat optik, *RTB*

ABSTRACT

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Designing a Fiber to the Building (FTTB) Communication Network Using GPON
at Sultan Ageng Tirtayasa University

UNTIRA has a vision of integrated smart and green (it's green). Because the large number of uses of wifi internet causes a decrease in wifi performance. In addition, wifi has limited inconsistent wave distribution in several areas. The goal is to design FTTB using GPON technology in 5 points of the UNTIRTA campus area, namely Pandean, Ciwaru, Serang, Sindangsari, Cilegon. With the PLB and RTB methods help to analyze the feasibility of the FTTB network. The simulation and calculation results show that the damping of each UNTIRTA building is said to be feasible, because it meets the standards of PT. TELKOM Indonesia is -28 dBm. Downstream RTB results show feasible, as they do not exceed 0.281 ns, for upstream RTB calculations show decent results, as they do not exceed 0.56 ns.

Keywords : FTTB, PLB, fiber optics, RTB