ABSTRACT

Fiber optic-based telecommunication technology is of increasing rapidly. So many uses fiber optic transmission media, because in addition to having high bandwidth also has a higher speed. To optimize the optical fiber work required an optical signal propagating techniques that suit their needs. Propagation techniques multimode step-index has the advantage, in addition to numerical apertures wider tolerance is also low to the needs of fiber connectors. Maxwell's approach can be used as an analyzer tool of optical signal propagation techniques, because this approach can be proven mathematically. This propagation technique is supported by a transmission system with BPSK-modulated OFDM.

Research in this final section focuses on fiber optics in the IEEE 802.11g WLAN technology over Fiber. Simulations were performed using fiber optic BPSK-OFDM modulation on the IEEE 802.11g standard. The analysis process includes the analysis of propagation modes dandistribusi the electric field on optical fiber Single-Mode Step-Index. In the process of numerical analysis methods of analysis used Finite Difference Time Domain (FDTD) and the simulation was built using the programming language C #. The result of this final simulation shows the electric field distribution in core and cladding regions. Propagation modes, which are signals that propagate in the fiber optic Multimode Step-Index is a hybrid mode.

Key Word : Maxwell, OFDM, BPSK, Fiber Modeling, Step-Index, Multimode, FDTD.