ABSTRACT

This final project report summaries the design, realization, and measurement of rectangular printed monopole antenna with parasitic plane which operates at frequency 2.4 GHz and 5.8 GHz. In this design, rectangular monopole with microstrip feedline creates a resonant frequency at 2.4 GHz. Furthermore, a parasitic plane is added on the side of ground plane to optimize resonant frequency at upper band to be 5.8 GHz. The rectangular printed monopole antenna with parasitic plane is aimed to be used by WLAN applications with possibility to be used by other application. This antena has advantages of simple structure, low-cost, light-weight, portable, omnidirectional radiation pattern, and be easelly integratable.

From measurement test, the VSWR value at 2400-2483.5 MHz equal to 1.2 and at 5725-5825 MHz equal to 1.1. Bandwidth of the lower frequency equal to 1039 MHz at 1973-3012 MHz and bandwidth of the upper frequency equal to 1654 MHz at 4938-6592 MHz with limited VSWR ≤ 1.5. Radiation pattern is close to omnidirectional at 2.4 GHz. Its gain equal to 2.373dBi at 2.4 GHz. From antena characteristics at 2.4 GHz, the antena enable to integrated with 2.4 GHz wireless adapter to improve signal level on receiver.

Keywords: *Wireless LAN, printed monopole antenna, parasitic plane*