

ABSTRACT

PCB yagi antenna is one type of antenna that has a directional radiation pattern. With directional antennas, the signal can be emitted in a certain direction and application of antenna is needed, can be used at the access point for data communications in Wireless-LAN network.

At the end of this task is realized and analyzed the influence of the number of elements on the PCB yagi antenna for WLAN frequency band (2400 to 2483.5) MHz. The antenna is simulated using Ansoft HFSS software. Yagi antenna is simulated PCB: PCB dipole antenna, yagi antenna element 2 PCB, PCB 4 elements yagi antenna, yagi antenna and PCB 6 element yagi antenna and the PCB is realized PCB antenna 4 element yagi for comparison.

Based on simulation results, for the PCB dipole antenna resonance frequency of 2441 MHz, the antenna has a VSWR value of 1.04 with a bandwidth of 250 MHz for $VSWR \leq 1.5$, the radiation pattern omnidireksional, and 1.792 dBi Gain. For the second antenna element yagi PCB resonant frequency 2422 MHz, the antenna has a VSWR value of 1.04 with 284 MHz bandwidth for $VSWR \leq 1.5$, the directional radiation pattern, and Gain 4.12 dBi. For PCB antenna 4 element yagi resonance frequency 2384 MHz, the antenna has a VSWR value of 1.17 with 221 MHz bandwidth for $VSWR \leq 1.5$, the directional radiation pattern, and Gain 5.28 dBi. For PCB yagi antenna element 6 2380 MHz resonance frequency, the antenna has a VSWR value of 1.17 with 246 MHz bandwidth for $VSWR \leq 1.5$, the directional radiation pattern, and 1.792 dBi Gain. Based on the measurements, the antenna 4 element yagi PCB resonance frequency of 2444 MHz, the antenna has a VSWR value of 1.17 with a bandwidth of 340 MHz for $VSWR \leq 1.5$, the directional radiation pattern, and 5.002 Gain dBd. Based on the results of simulation and measurement results of the above, the antenna can be used as an Access Point (AP) in WLAN.

Key words: *dipole antennas, yagi antennas, microstrip antennas, WLAN*