

ABSTRACT

In a wireless communications system, antenna is very important role, namely to radiate electromagnetic waves. Therefore, we need a receiver antenna that can operate as a receiver and the release of electromagnetic energy that is involved in Wi-Fi technology. Bowtie antenna is one type of biconical antenna developments that often used as a receiving antenna on the television. This antenna has bidirectional radiation pattern. With the reflectors, the radiation pattern of the bowtie antenna will be limited so as not to emit widened backward, but the power will be strengthened in the opposite direction so that we will get a large enough gain in the transmit pattern is more directional and transmit further distances.

Process on Final Project begins with the determination of bowtie antenna dimensions, and then the simulation results of the bowtie antenna is added with corner reflector. Large angles is simulated at an angle of 180° , 90° , 60° , 45° , 36° and 30° and for each angle in space made up to 1.5λ to 0.25λ with interval about 0.25λ on the different dimensions of the reflector (h) there are 1.2 times the length of bowtie antenna, 1.35 times the length of bowtie antenna and 1.5 times the length of bowtie antenna.

Antenna that has been realized is bowtie antenna with a reflector on the corner of 90° by using plate copper on the bowtie antenna and plate aluminum for the reflector. VSWR that obtained from measurement at center frequency is 1.298 with the change of radiation pattern from bidirectional to unidirectional and an increase gain about 10,104 dBi (from 3.316 dBi to be 13,42 dBi) and to decrease bandwidth about 14.742% with linear polarization. Antenna has been realized had to be applied as a receiving antenna on the wireless network.

Key Word : Wi-Fi, Bowtie, Unidirectional, Gain, Bandwidth.