ABSTRACT

Digital television is a tool used to capture digital television broadcast. The purpose of organizing digital television broadcasting is to contain in Article 2 of The Ministry of Communication and Information Regulation No. 39/PER/Kominfo/10/2009 *concerning the implementation of Terrestrial Digital Television Broadcasting Unpaid Fixed Reception (Free to Air) is to increase the efficiency of the use of radio spectrum for broadcasting operations. Television antennas are commonly used in everyday life, namely: yagi or dish antenna that has a high gain value.*

The Final Project will focus on making microstrips antennas with flat reflectors that will be connected to set top boxes to convert analog signals to digital. Flat reflector functions to increase gain so that the antenna can capture the frequency of digital television broadcasting. The Minister of Communication and Information of the Republic of Indonesia stipulates that terrestrial digital television broadcasting has a frequency band of 478-694 MHz.

In this Final Project, a microstrip antenna was realized which was influenced by different reflector materials, namely: aluminum plate, harmonic wire, and gauze with dimensions of 1 x 1-meter reflector. The results of the simulation of the three materials obtained bandwidth ± 80%, average return loss ± -16dB, average VSWR ± 1.3, average gain ± 8dB, and directional radiation patterns (directional). While the microstrip antenna measurement results obtained input impedance at a frequency of 550MHz = 48.787 Ω + j18.930 pF, bandwidth = 65 %, average return loss = -14.990 dB, average VSWR = 1.508, and omnidirectional radiation patterns.

Keywords: Digital Television, Set-Top Box, Microstrip, Flat Reflectors, Aluminum Plate, Harmonic Wire, Gauze