ABSTRACT

Technological advances are currently developing very rapidly. Based on the field of electromagnetic wave absorber microstrip based on Artificial Magnetic Conductor (AMC). The technique carried out in the development of electromagnetic wave absorber at AMC uses a textured surface technology that has a high surface impedance which consists of a periodic metal patch arrangement as a unit cell that uses. To be able to produce a shifting work frequency and be able to maximize the absorption of electromagnetic waves, this research was conducted by comparing chip capacitors and varactor diodes. The resulting rotation of the chip capacitors is placed between the two patches, the capacitors used are 0.5pF, 1pF, 1.5pF, 2pF, and 3pF. While the diode value is greater with the voltage values of 0V, 1V, 3V, 5V and 10V. Next to get the level of activation done with a resistor on the patch. The addition of a plain design resistor with a diode is worth 470 Ohm with a gain rate of 37.89dB, while the resistor requires a capacitor worth 510 Ohm.

The simulation results show that have been designed using 3D software when using capacitors with 0.5pF resistors can shift to a frequency of 3.16 GHz with S_{11}-20.83dB, 1pF at a frequency of 2.96 GHz with S_{11} -21.90 dB, 1.5pF at frequency of 2.76 GHz with S_{11} -22.84 dB, 2pF at a frequency of 2.58 GHz with S_{11} -18.55 dB, and 3pF at a frequency of 2.24 GHz with S11-18.67 dB. Whereas when adding a varactor diode with a voltage of 0V can shift to a frequency of 2.2 GHz with S11 -21.6 dB, 1V at a frequency of 2.46 GHz with S_{11} -19.03 dB, 3V at a frequency of 2.64 GHz with a value of S_{11} -17.7844 dB, 5V at frequencies 2.78 GHz with S_{11} -17.5039 dB, and 10V at frequencies 3.02 GHz with S_{11} -16.58 dB.

Keywords: Absorbers of Electromagnetic Waves, Artificial Magnetic Conductor (AMC), Textured surface technology (textured surface), Tuning Frequency, Varactor Diode and Capacitor