ABSTRACT

Electromagnetic wave absorber is used to reduce the interference of electromagnetic waves. Metamaterial-based absorbers show near-perfect absorptivity, albeit with a thin thickness. Most electromagnetic wave absorbers have been realized on a hard substrate so that their use is limited only in planar surface planes, whereas electromagnetic wave absorbers are required with a variety of field shapes. Therefore it is necessary to use electromagnetic wave absorber that is wearable based on Artificial Magnetic Conductor (AMC) so that it can be used in surface of field with non planar shape. In addition, the frequency and absorption rate can also be manipulated according to the required requirements. The AMC absorber is realized using textured surface technology at ISM-Band frequency.

The simulation results show that the absorber works very well at a frequency of 2.45 GHz with a value of S11 at -29.961 dB and uses an 800 ohm resistor. In absorbing electromagnetic waves realized to obtain $S11_{absorber}$ value is used de-embedding technique to separate $S11_{absorber}$ with $S11_{total}$. The realized absorbent has a pretty good result even though the frequency is shifting. The return loss value is -21.32 dB with frequency at 2.41 GHz and the bandwidth is 50 MHz. The thickness of a thin electromagnetic wave absorber at 0.6 mm to keep the absorber still has wearable properties.

Keywords: Absorbers of Electromagnetic Waves, Metamaterials, Artificial Magnetic Conductor (AMC), Textured surface technology (textured surface)