

ABSTRACT

The all-digital era, television cannot be separated, as it has changed from analog to digital, as stated in the Ministry of Communication and Informatics regulations. The digital TV broadcasting in Indonesia use the digital video broadcasting second-generation terrestrial (DVB-T2) standard. Which is operated in the frequency range of 478 - 694 MHz. Switching from analog to digital TV requires a suitable antenna that can detect the signal. The microstrip antenna used has the advantage of being compact and easy to fabricate, but has weaknesses including the resulting narrow bandwidth; therefore, in this study, using a circular patch and using the defective ground structure (DGS) method, this method is used to widen the bandwidth. A simulation software was used in this design. From the simulation results that have been obtained, the value of the return loss at a frequency of 586 MHz - 39,32, a bandwidth of 365 MHz, the lowest VSWR is 0,19, the Gain at a frequency of 586 MHz is 1,18 dBi the radiation pattern is bidirectional then, on antenna measurements, there is a slight difference, the value of the return loss at a frequency of 586 MHz -35,95, bandwidth of 288 MHz, lowest VSWR 1,032, Gain at 586 MHz 0,55 dBi and omnidirectional radiation pattern. Based on these data, the dimensions of the patch and groundplane affect the working frequency of the antenna, where the larger the patch antenna dimensions, the lower the working frequency of the antenna, and conversely, the smaller the antenna dimensions, the higher the working frequency of antenna.

Keywords : *Microstrip antena, Circular, DVB-T2, DGS, wideband.*