

ABSTRACT

countries with a high level of rainfall that causes various kinds of disasters such as floods and landslides. One of the effective methods in dealing with the above problems is to make a plan that results in an anticipatory step using radar technology. In this final project, it proposes the design of an ultra wideband microstrip antenna with a rectangular shape optimized using the Defected Ground Structure (DGS) method for weather radar at a working frequency of 5625 MHz. The defected ground structure (DGS) method aims to widen the bandwidth of the designed antenna. The substrate type of the antenna to be designed is FR4-Epoxy with a dielectric constant value = 4.3, substrate thickness = 1.6 mm. With the achievement of return loss ≤ -10 dB, VSWR ≤ 2 , gain ≥ 3 dB. With the DGS method, it is expected to be able to widen the bandwidth to ≥ 500 MHz. After antenna design and simulation using CST 2019 software, the return loss value = -28,607 dB, VSWR = 1,077, gain = 3,042 dB and bandwidth = 826.7 MHz.

Keywords: Microstrip Antenna, DGS, Ultra Wideband