ABSTRACT

Antennas that have microstrip patches have made it easier for humans to reduce the size of the antenna, which involves reducing the size of the communication device. The effect on the microstrip antenna has a number of disadvantages such as low gain and efficiency, narrow bandwidth and surface waves that affect the radiation pattern. In addition, the directivity will affect the resulting radiation pattern and the greater the gain.

In this final project, we discuss about strengthening the gain of a circular microstrip antenna using an Artificial Magnetic Conductor (AMC). Making the AMC dimension design is the main part to increase the gain in this final project. The use of the AMC structure is used to obtain a high level of absorption site that can work at the desired frequency. The AMC structure is implemented on a circular microstrip antenna which is realized around the patch antenna which is used at a 5G frequency of 3.5 GHz. For validation purposes, the antenna needs to be designed with a prototype and can be calculated as a comparison with the simulation results.

The result of this final project is a curvylinear circular antenna with additional AMC structure around the patch and using FR-4 substrate to produce gain gain according to the designed and implemented antenna. The curvylinear circular antenna produces vswr 1.254 and the best gain gain at 3.5 GHz is 5.213 dBi.

Keywords: curvylinear circular, gain, vswr, Artificial Magnetic Conductor, 5G.