

## ABSTRACT

*In general, the manufacture of antennas requires metal materials that must be printed first, with a complicated manufacturing process. By utilizing canned materials, antennas can be designed more easily and in an environmentally friendly manner. The use of canned material as an antenna has been widely applied and proven by research. In this final project, a cantenna characterization process was carried out with different placement and conditions of monopoles in order to determine the character of cantenna and to use it with the most optimal specifications.*

*In this project, the use of used cans is made into components commonly known as cantenna. Cantenna is an antenna made of open tin metal that can transmit and receive electromagnetic waves. The cantenna design process is carried out by selecting the cans that you want to be the object of research, then measuring the dimensions of the cans that will be used, then simulating several times with different conditions and placement of the monopoles. In this final project, a design with different can apertures is carried out to determine the effect on the results of the antenna parameters. The process of designing and simulating cantenna using CST Studio Suite 2020 software.*

*This cantenna design produces the most optimal antenna specifications at a monopole distance of 2 cm from the base of the cantenna with a monopole height of 1 cm. In the large aperture cantenna, the return loss value is -44.18848 dB with a bandwidth value of 4.56 GHz. With a small aperture cantenna, the return loss value is -31.5276 dB with a bandwidth value of 4.70 GHz. The design of this cantenna can be concluded that changes in monopole length affect the antenna specifications. The longer the monopole used, the more varied the changes in the resonance frequency obtained. In addition, the difference in the dimensions of the aperture cantenna does not significantly affect the results of the antenna parameters*

*Keywords: Cantenna, Monopole, Characterization, Cans*