

ABSTRACT

The improvement of technology is growing very fast in the last 30 years, people as the user of technology want the quality of informations to be transmitted better than before. In the television broadcast, the technology that exist for now is using analog system that can be improved to digital system. With that reason, the writer has been realize the antenna that has the ability to receive the signal that using digital system so the antenna can be used for improvement technology from analog system to digital system in Indonesia.

In this final assignment, the bowtie antenna has been realized as the antenna receiver at frequency range 500 MHz – 700 MHz. The writer did the early calculation to get the dimension of the antenna. When the dimension is calculated, the optimization can be launched by using CST Microwave Studio 2012 software. In simulation, the parameters are being changed, such as the angle of bowtie antenna from 10° to 90°, reflector length from 400 mm to 490 mm, material thickness from 0.5 mm to 1.5 mm, and the length between antenna and reflector from 30 mm to 180 mm. When the optimization is reached, the antenna is ready to be realized and measured.

After the antenna has been realized and measured, the result of the antenna are VSWR value = 1.548 at frequency 500 MHz, VSWR value = 1.448 at frequency 600 MHz, and VSWR value = 1.442 at frequency 700 MHz. The gain value is 13.038 dBi. The radiation pattern is unidirectional and that means the radiation pattern is directed to one point.

Keywords: digital TV, bowtie, simulation