ABSTRACT

Migration of television broadcasting from analog to digital television is one of

the topics that be the focus of the government to be encouraged now. So with this

condition, the need of devices that are reliable support of them is the antenna into

components which contribute to the promotion of these governments. So, active

antennas with small dimensions and a large gain is expected to support it.

In principle, with a single patch microstrip antenna having characteristics with

narrow bandwidth. One technique to widen the bandwidth is by using an array

technique. However, it is influential in a dimension that is becoming more beser many-

fold. In this final, the techniques used to overcome these problems is to create a dual

port, with one port used for ternination and the other for the channel waves. While for a

small gain, the problem solved by by plugging directly right the power amplifier after

the element antenna. With these techniques, the antenna become more wide-bandwidth

antenna and the antenna gain is also becoming better.

In this final, active microstrip antenna designed to operate at a frequency of 700

MHz and performance analysis of the implementation of the active antenna. The

antenna is designed is expected to be implemented for the application of digital

television services (Digital Video Broadcasting Terrestrial) in the channel 43-55 band

UHF antenna with a VSWR specification of ≤ 1.7 at the desired operating frequency

and gain at least 6dBi.

Parameters measured in this thesis include VSWR, Bandwidth, Gain,

Polaradiasi, and Polarization of antenna. By comparing the results of design and

measurements in the field, it still happens difference between simulation and

measurement results directly. However, for the required specifications, antenna design

results still meet the desired standards and specifications.

Key words: Active Antenna, Amplifier, Microstrip