

## **ABSTRACT**

*Unmanned Aerial Vehicle (UAV) is an aircraft without crew that control inside which has many function, it can be used to taking picture, recording video, monitoring and covering on an object from the air using camera that mounted on the aircraft. To make such all function it requires a line of communication that connect UAV to the ground station with a large data rate transfer and far enough distance range. Commonly the aircraft that used to covering was on higher place than ground station and module transmitter relatively had a small power transmit, however using a dipole antenna on the transmitter that has an omnidirectional of radiation pattern deemed less effective.*

*Therefore in this final project will be designed and realized rectangular microstrip antenna to produce an unidirectional of radiation pattern so it will be effective to using power on module transmitter that located on UAV. Design of antenna radiation uses microstripline technique. The design method in this final project is the calculation using the equation to find the dimensions of the antenna, the results obtained from the calculations are inputs for the simulation process and the best results of the optimization process will be used as the value in the manufacture of the antenna. In this final project also researched the antenna parameters such as VSWR, bandwidth, radiation pattern, gain, return loss and total impedance.*

*After designed and realized, from the simulation results by using CST software obtained bandwidth 300MHz on  $VSWR \leq 2$  and gain 3.39 dBi. On the measurement results obtained bandwidth 300MHz on  $VSWR \leq 1.5$  and gain 3.17dBi. The radiation pattern generated both simulation or measurement shaped unidirectional. According results of antenna measurement results can be applied to wireless AV transmitter module on UAV because compliance with system specifications.*

*Keywords : UAV(Unmanned Aerial Vehicle), mikrostrip antenna, unidirectional.*