

ABSTRACT

Automatic Dependent Surveillance Broadcasting (ADS-B) is an air traffic surveillance technology that automatically and regularly broadcasts air flight information, such as identification number, location, speed and destination during all stages of flight, to avoid collisions. Future radar systems will be equipped or even replaced by ADS-B ground stations, but the range of ADS-B receiving ground stations is still limited.

It is expected that the payload of the ADS-B signal receiver on nano satellite payload can reach airspace that cannot be reached by the ground station. This final project focuses on the design and realization of a microstrip antenna that functions as a commercial aircraft ADS-B data transmitter which has been processed by a nano-satellite computer payload to a ground station to be collected and sent to the Air Traffic Controller (ATC).

This antenna is designed with a substrate material, namely FR-4. Uses circular patches and uses coaxial probe feedings. The result of the realization on the FR-4 substrate was obtained value of return loss at a frequency of 5.8 Ghz of -9,99 dB, VSWR of 1,9 bandwidth of 165 MHz, antenna gain of 2,78 dBi and beamwidth of 60,7°.

Keyword : ADS-B, Microstrip, ATC