

## ABSTRACT

Automatic Dependent Surveillance Broadcast is an air surveillance system that is used to determine aircraft position, aircraft code, altitude, and other data. ADS-B periodically transmits information and other data to other aircraft, to satellites, and to ground stations. The ADS-B system is located on aircraft operating using satellites. In a study conducted by Essa, et al, a microstrip antenna has been designed for ADS-B frequency receivers on nano satellites with circular patches [8]. In the antenna, perturbation is given in the form of cutting the patch in order to get circular polarization. In the research conducted by Reza, the ADS-B system has been designed. synchronous development [6], in this study the author designed and manufactured a 2-patch microstrip antenna using the array method.

The antenna is one of the devices that play a crucial role for ADS-B communication, signal reception is fulfilled, using the development of the antenna yang pointing to the gain and bandwidth of large yang. This antenna works at a frequency of 1090 MHz using an FR4 substrate. Rectangular patch microstrip antennas using proximity supplies will be designed simulation using 3D simulation software whose results will be realized into physical form, antenna shapes are expected to be designed using array methods, with distances that can be far apart, as a result of expanding ads-B origin capture pauses.

The measurement results obtained by this microstrip antenna show that the antenna has a bandwidth of 153 MHz and can work at a frequency of 1090 MHz with a VSWR value of 1.050, a return loss of -30 db, and a gain of 6.3 dBi. Omnidirectional polarization and vertical linear polarization. With the results of this antenna design, it can be concluded that the antenna has been designed.

**Keywords:** simulation software 3D, ADS-B, *Antenna* Mikrostrip, Aircraft