

## **ABSTRACT**

*Automatic Dependent Surveillance-Broadcast (ADS-B) is part of the technology that is able to show the location of the aircraft using the Global Navigation Satellite System (GNSS) which allows the aircraft to transmit the aircraft's accurate location and flight data in the form of altitude, position, identity and speed to the nearest aircraft or Ground Station (GS) on the ground. Antenna that can work is needed to receive ADS-B signals at a frequency of 1090 MHz and must meet the standards in the satellite.*

*Microstrip antennas have a light mass and small dimensions that can be applied to satellites, especially nano satellites. In this undergraduate thesis, the design of a microstrip antenna for receiving ADS-B signals on nano satellites with circular patches was carried out, the addition of the superstrate method with 3D Printing support and the truncated technique to obtain circular polarization. The substrate material used is RT Duroid 3006 with a dielectric constant of 6.15 and a substrate thickness of 1.27 mm.*

*The microstrip antenna simulation has a gain of 4,946 dBi, unidirectional radiation pattern, VSWR 1,246, bandwidth of 27.5 MHz and circular polarization. After measuring the antenna has a gain of 4,505 dBi, unidirectional pattern, VSWR 1,256, bandwidth 23 MHz and circular polarization. This final project uses the superstrate method to produce high gain with the feed used is coaxial feed.*

**Keywords:** *ADS-B, Nano Satellite, Superstrate, Truncated, Microstrip.*