

## ***ABSTRACT***

*Automatic Dependent Surveillance-Broadcast (ADS-B) is a signal containing flight data that is sent by the aircraft transponder automatically every time, this flight data contains position information, altitude, flight code and other important information from an aircraft. Terrestrial ADS-B signal receiving equipment cannot cover a wide area due to the geographical condition of the earth which has a larger water area than land. The use of satellites as ADS-B signal receivers is carried out to optimize the ADS-B function. The existence of this satellite-based ADS-B signal receiving technology is very helpful for officers Air Traffic Control (ATC) in monitoring air traffic because the information contained is more complete and real-time.*

*In this final project research is designed and realized a payload prototype with the mission of receiving ADS-B signal on a cube satellite. The modules used are Eval-TTSC1 B as a receiver signal ADS-B which is integrated with an ARM Cortex-M3 microcontroller as the main payload computer, in order to get optimal load performance, module is added Low Noise Amplifier (LNA) as a purifier and a low received signal level threshold, a temperature sensor to determine the temperature around the load, as well as the use of additional memory to store data that has been received and processed. This satellite payload will be physically on the Printed Circuit Board PCI04(PCB) which is placed on a 1U cube satellite.*

*The result of this research is, the prototype that has been designed can be realized and the payload can carry out its function as a receiver and store ADS-B data, the data obtained will be stored into the payload system in the form of a .txt file extension format. From the results of the payload test, it was found that the presentation of the payload success rate was 100% and the payload accuracy rate was 97.73%, with a time decoding data of 1050 ms/message.*

**Key words:** *ADS-B, Cubesat, payload, prototype*