ABSTRACT

EDF (Electric ducted fan) Rocket to launch need monitoring system, tracking and control so that the rocket can glide well. One of the important components of the rocket is OBDH (On-Board Data Handling) which functions as a media to carry out the command and data processing. However, needed TTC (Telemetry, Tracking, and Command) which is useful for communication between GCS (Ground Control Station) with OBDH on the EDF rocket.

In designing an OBDH integrated controller is a microcontroller, to know the attitude of the rocket used IMU (Inertial Measurement Unit) sensor which consists of a 3-axis gyroscope sensor and 3-axis accelerometer. To perform tracking used GPS, compass sensor for direction toward the rocket, and as the reference angle on the z-axis gyroscope sensor result of processing and barometer sensors used to measure the altitude of the rocket at launch. The data can be known in real-time by sending data via radio module at a frequency of 2.4 GHz using the XBee-Pro S2B to GCS.

Keywords: OBDH, EDF Rocket, IMU Sensor, GPS, XBee-PRO S2B, GCS.