

ABSTRACT

DENDY GEMA ARTA KURNIAWAN. The design of monitoring stability system of Quadcopter Robot Based on MultiWii SE v2.5. Minithesis. Jakarta, Education Program Electronic Engineering, Electro Engineering Department, Faculty of Engineering, State University of Jakarta, in 2015. Supervisor 1, Drs. Jusuf Bintoro, M.T, and Drs. Pitoyo Yuliatmojo, MT.

This device was made with aims to facilitate the stability monitoring for Quadcopter Robot and devise Quadcopter Robot with HMI program which can be further developed. Researchers using the Arduino IDE software to design a Quadcopter Robot and using Processing IDE software to design a Human Machine Interface program. MultiWii SE v2.5 board has a function as controller board as researchers use as Quadcopter Robot processor. Radio Control 2.4 GHz serves as remote control quadcopter robot. Radio Telemetry 433 MHz serves as data transmission for stability Quadcopter Robot to computer which has been run by the HMI (*Human Machine Interface*) Program Quadcopter Robot.

This research conducted in the mechatronics and robotics laboratory, Electro Departement ,University of Jakarta from January to Desember 2014. The method which using in design and making this device is using research and development method. When testing this device, researcher is using bow for testing the slope of MPU6050 sensor, using the GPS to measure the range in reach of Radio Control 2.4 GHz data transmission and Radio Telemetry 433 MHz, using the Digital Tachometer to measure the RPM from every *brushless motor dc* which there in the Quadcopter Robot

From the implementation of the stability monitoring system testing Quadcopter Robot based on MultiWii SE v2.5, the results that obtained from the testing of spacing test of transmission radio control 2.4 GHz is the extent up to 200 meters and for 433 MHz radio telemetry is extent to maximum 34 meters.

Keywords : Arduino IDE, MPU6050, MultiWii SE v2.5, Processing IDE, Quadcopter Robot, Radio Control 2.4 GHz, Radio Telemetry 433 MHz, Stability Monitoring,