

ABSTRACT

Satellite is a technology developed in various fields to overcome various kinds of problems. Satellites have various missions, sizes and weights that can be adjusted according to need. Satellites with small size and dimensions are called nano satellites, one type of nano satellite is Cubesat having a size of 1U (10x10x10) cm^3 , 2U (20x20x20) cm^3 dan 3U (30x30x30) cm^3 orbited on Low Earth Orbit (LEO).

One mission of the satellite is a remote sensing with the camera as its payload. Data taken in remote sensing can vary, one of which is data retrieval to analyze green plants. In analyzing the green plants of the camera the most widely used is the type of multispectral camera. Multispectral cameras are expensive and large in size so they won't fit on the Cubesat satellite.

In this final project, 2 types of cameras were used, it's raspberry pi RGB camera and the raspberry pi NoIR camera to produce multispectral imaging. The prototype is able to take pictures of green plants in JPEG format with average of capacity of 4.3 MB, which is transmitted to a PC in an average of 5700 ms seconds. *Image Processing* is done through *website* open source *image sequencer* and is able to produce *output output* NDVI with an index range of -1 to 1 so that the analysis of healthy and unhealthy plants can done.

Keywords: *remote sensing, Cubesat, multispectral camera*