

ABSTRACT

This thesis discusses the design and implementation of a flight control system for FPV (First Person View) drones through the integration of the ExpressLRS HappyModel EP-1 receiver module. The goal of this capstone project is to design a control system that is relatively efficient, lightweight, and reliable in signal transmission performance at a frequency of 2.4 GHz. The development of this system is intended as an alternative solution for drones that do not support plug and play systems, with configuration done using the Betaflight configurator. In addition, the communication between the flight controller and the receiver is done through the TX-RX (transmit-receive) serial transmission line. Test results show that the system is capable of providing precise and responsive control responses in various FPV flight scenarios. It is hoped that the preparation of this report can support the development of open-source-based technology that is more affordable and accessible, and make a positive contribution to the advancement of FPV drones, especially within the framework of RA ATAP.

Keywords: FPV Drone, Betaflight configurator, ExpressLRS