

**Siti Fauziah Toha  
Iskandar Al-Thani Mahmood  
Asan Gani Abdul Muthalif**

**MECHATRONICS  
ENGINEERING  
PROJECTS**  

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**Theory and Applications**

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# **MECHATRONICS ENGINEERING PROJECTS: THEORY AND APPLICATIONS**

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## **Editors**

Siti Fauziah Toha

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## 2. DEVELOPMENT OF DATA ACQUISITION SYSTEM FOR AUTONOMOUS UNMANNED AERIAL VEHICLE (UAV)

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### ABSTRACT

This chapter focuses on the development of data acquisition system for the autonomous UAV and reports on its implementation to allow autonomous navigation of the glider. There are two types of sensors will be used in this data acquisition system, magnetic compass sensor and radio frequency distance sensor. There are two microcontrollers used, PIC16F819 and PIC16F877. PIC16F819 is a slave microcontroller used to program the radio frequency distance sensor. While, main microcontroller, PIC16F877 which is on-board the glider will be used to control the data acquisition system and the actuator. The electronic system was mounted as such that the glider performance will not be affected. Experiment did include experiment to find the centre of gravity of the glider to determine the best point to mount the electronic system. Then, a test has been performed on certain flight path in order to measure the data acquisition system performance.

**Keywords:** Autonomous unmanned aerial vehicle. Data acquisition system, glider, flight path