

基于单片机的无人机系统

摘要

伴随着信息时代的发展，无人机不仅仅适用于军事方面，基本民众对于无人机的了解更为直接，无人机在人们的日常生活有了更为重要的地位。

本文主要对于工作在 10 到 40 米低空的航拍无人机的基本工作原理和无人机的组装，其中主要涉及到 MU6050 陀螺仪的使用，对于 STM32 主控芯片对于无人机四个无刷电机的控制和采集电机转速的设计，中间包含有主控芯片对于无刷电机的输出 PWM 波的控制算法设计和，在取到 MU6050 陀螺仪的数据后进行无刷电机的转动速度的控制算法设计，拍摄摄像头的设计主要使用鹰眼 OV7725 摄像头进行空中图像采集。

关键词：无人机 航拍 算法 STM32

Abstract

With the development of the information age, UAVs need not only military understanding, but also public understanding, which plays an increasingly important role in people's daily life.

This paper focuses on the basic working principle and UAV assembly of aerial photography UAV operating at a height as low as 10-40m. which mainly involves the use of mu6050 gyroscope, the design of STM32 main control chip for the control of UAV's four brushless motors and the design of acquisition motor speed, including the control algorithm design of the main control chip for the output PWM wave of the UAV's motor and the design of After the data of u6050 gyroscope, the control algorithm of the rotation speed of the BLDCM is designed, and the eagle eye ov7725 camera is mainly used for aerial image acquisition.

Key words: UAV aerial photography algorithm stm32

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