

Arduino Base Low Cost Long range transmitter and receiver for UAVs



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ABSTRACT

This project aims to develop a cost-effective, long-range communication system for Unmanned Aerial Vehicles (UAVs) using Arduino microcontrollers and RF modules. Addressing the limitations of current UAV communication systems, which often struggle with range and reliability, this project proposes an affordable solution that democratizes access to advanced UAV capabilities. By extending the operational range of UAVs, this system enables a multitude of applications, including precision agriculture, environmental monitoring, security and surveillance, and disaster response. The project integrates Arduino microcontrollers for data processing and RF modules for wireless transmission, with careful consideration of regulatory compliance and environmental resilience. The proposed system will be rigorously tested and optimized for performance, ensuring robust and reliable long-range communication. This innovative approach not only addresses a critical technological challenge but also paves the way for future advancements in UAV operations, offering unprecedented accessibility and reach in unmanned aerial technology.