

Bluetooth Assisted Misplaced Object Finder Using DFRobot Arduino Integrated with Android Application

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Abstract. Finding lost or misplaced items can be time-consuming and frustrating. Yet, this is common and occurs to many individuals daily and globally. This paper has developed a system that allows users to locate their misplaced or lost items by leveraging the capabilities of Bluetooth technology and a microcontroller-based control system. The DFRobot Beetle BLE Arduino microcontroller is the main component for communication and control. By interfacing the microcontroller with an LED and a buzzer, the system provides visual and auditory signals to assist in locating the target device or item. The search process is initiated through an Android application, through establishing a Bluetooth connection between the microcontroller and the target device, permitting the exchange of signals for tracking purposes. When the device is within range, the LED indicator illuminates, and the buzzer produces audible alerts, guiding the user to the device's location. The application also provides an estimated distance of the object using Bluetooth signal strength. Tests carried out on the system proved its effectiveness in terms of quick response to signals and reliability in both indoor and outdoor environments.

Keywords: Bluetooth, Object Finder, DFRobot Arduino, Android Application.