INTELLIGENT SEARCH DEVICE

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ABSTRACT

The objective of this project is to create an intelligent search device, which is able to search for small items such as car remote, house keys and car keys. It plays as an universal transmitter that transmit signal to each of the item that has been attached with receiver respectively and find them out through presence of sound and light. It also transmits signal with different combination of addresses that has been varied in each receiver with the aid of microcontroller PIC 16F877A. Main transmission method used for the intelligent search device is radio frequency.

The transmitter consists of encoder (HT-12E) whereas the receiver consists of decoder (HT-12D). Each encoder and decoder own 8 different addresses that must be matched with each other during transmission. For instance, if encoder transmits with "00101101", decoder will be only able to receive the signal with same combination of addresses i.e. "00101101".

It is important for the device to differentiate items that needed to be found. It can at least search three different types of items that are similarly attached with receiver. Three buttons on the intelligent device indicate three different items. For instance, when button A has been pressed, item attached with receiver A will produce sound and light to attract the user who is looking for them. Each receiver owns its specific combination of addresses that matches with the transmitter on the searching device. Hence, each item can be found correctly without interfering and distorting each other because correct combination of addresses is needed as well as same radio frequency.

On the other hand, red LED will be placed on each receiver that plays as a transmission indicator. While there is a transmission between transmitter and receiver, the red LED will light up to show that the transmission exists and can transmission of signal can be undergone anytime correctly. Otherwise, no signal can be transmitted successfully.

Lastly, LCD is implemented on the project as an extra feature which informs user about the signal generated at the instant and also guide user on using the device. It is done using programming by PIC16F877A. In conclusion, the aims and objective in this project are fully archived.

Keywords: PIC16F877A, transmitter, receiver, encoder, decoder, radio frequency