

BABY MONITORING SYSTEM

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ABSTRACT

The aim of this project is to use RF transceiver and PIC microcontroller to implement a system that can be used in crèches to monitor child and notify user whenever the child is out of the monitoring range. The child will be given a tracking device small enough to go unnoticed, and the RF reader/receiver interface with microcontroller for the control architecture of the system. The outcome of this project will look something like an external modem with the components well soldered in it.

The tracking device is a RD transmitter (Tx1) with frequency range of 433MHz communicating with the RF receiver with the same frequency range. The PIC16F877A will activate the buzzer to notify the user when the receiver is unable to receive on-off keying signal from the transmitter when the transmitter is out of range. A USB to UART converter will be included to interface the microcontroller with PC where monitoring can also be done through PC, a GUI interface will be created using VB for this purpose.

To improve the project, a voice recording and playback unit is included (Tx2). A FM wireless microphone is included into Tx2 where voice signal will be FM modulated and convert to digital signal through ADC-DAC RF Transceiver of a frequency range at 900MHz. the digital signal will be transmit and receive by the receiver and PIC16F877A will communication with ISD2560 for voice playback function.

Both tracking device without voice recording (Tx1) and tracking device c/w voice recording (Tx2) is designed and tested separately with Tx1 as the priority of the project, the range of transmit and receive is unstable after conducting the component on PCB. Regardless, Tx1 works well with the system, unfortunately, Tx2 isn't able to transmit signal to receiver. Therefore, the project is concluded to be partially successful in achieving its aim and objectives.

Keywords: PIC16F877A, RF transceiver, buzzer, USB to UART converter, ADC-DAC RF Transceiver, ISD2560, 433MHz transmitter/receiver.