

Eye Blink Sensed Communication Media for Paralyzed Person Using Embedded System

Ankita Chowdhury*

ankuappua@gmail.com

Abstract – Nowadays the paralyzed patients are facing lot of problems to inform their basic needs to others and the patient attendee also feel difficult to understand the requirements of the patient. This project solves the above problem.

In this project eyeblink sensor and Microcontroller plays a major role. Eyeblink sensor senses the number of eyeblinks. It gives output depends upon number of blinks.

The output of sensor is an analog value, which is not suitable for the microcontroller. So ADC (analog to digital converter) is used between sensor and microcontroller, which converts analog value into digital value. Microcontroller is programmed in such a way that to display the requirements in LCD unit and to control voice synthesizer. If the nurse is not in the ICU, information is sent to the Doctor's room using Zigbee technology.

1. INTRODUCTION

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2. BLOCK DIAGRAM

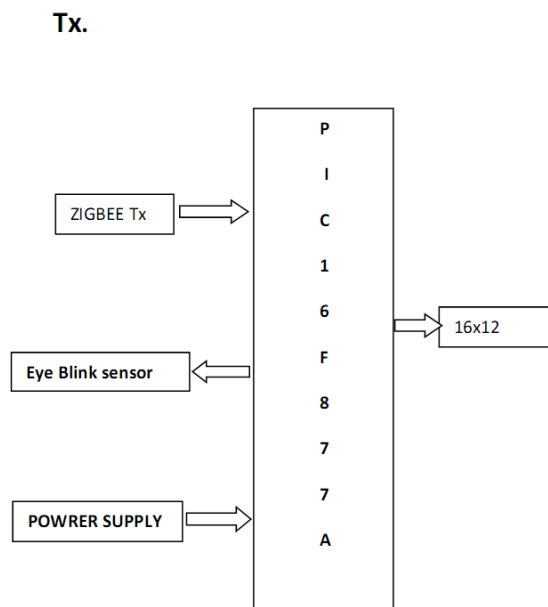


Fig 1: Transmitter

Rx.

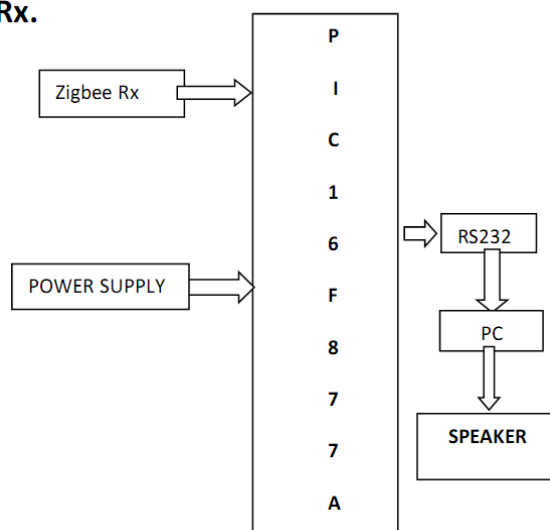


Fig 2: Receiver

3. ABOUT THE PROJECT

This Project contains two modules. The transmitter unit is connected to the patient in the ICU. The receiver unit is placed in the ICU. The receiver unit is placed in the Doctor or nurse room. The requirement of the patient is conveyed by the number of Eye Blinks using the sensor unit. Here the patient requirement is pre-programmed in the microcontroller. Then the data is transmitted from the microcontroller via Zigbee Transmitter and also displayed on LCD. The Zigbee Receiver in the nurse or Doctor's room receives the data. The received data is then sent to microcontroller. This signal is given to the speaker.

So in this way this project tells the requirement of the paralyzed person to attendee as per their number of eye blinks.

4. TECHNOLOGY USED

Zigbee

5. HARDWARE USED

- 1- PIC16F877A
- 2- RS232
- 3- 7805
- 4- 16X2 LCD
- 5- Eye Ball sensor
- 6- Zigbee Tx
- 7- Zigbee Rx

6. PROJECT RISK MANAGEMENT

Every project has a certain amount of risk involved. As per the standard principles, the risk of project failure is high at the beginning and it reduces as the project progresses. However, ineffective risk management may lead to the surprises and project failures. It should be ensured properly that all the required components of the project must work properly.

7. CONCLUSION

For the successful implementation of this project approach must be important. It should be checked whether the components are in a good condition or not. Before doing the project we must consider the future aspects.

8. REFERENCES

Better Embedded system software by **Philip Koopman** (shelved 4 times as embedded system).

An Embedded Software Primer by **David E.Simon**

Corresponding Author

Ankita Chowdhury*

Author Designation

E-Mail – ankuappua@gmail.com

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