Zigbee Based Notice Board

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ABSTRACT

With the development of wireless notice board maintaining notice on notice board will become easy and error free. This will also reduce the man power which is required in traditional notice board systems. In our system, Notice message from PC is send to ARM board serially through terminal software and message is saved in EEPROM of the ARM. And this messages is display on notice board which is serially connected to ARM. The message is transmitted to serial display of SUNROM which is rolling character display. This can show up to 256 characters. After sending the message the user can disconnect the keyboard or transmitter section. At any time the user can add or remove or alter the notice message according to his requirement.

Keyword: *-ARM 7, Zigbee module.*

1. INTRODUCTION

Notice Board is primary thing in any institution/organization or public utility places like bus stations, railway stations and parks. But sticking various notices day-to-day is a difficult process. A separate person is required to take care of this notices display. This project deals about an advanced hi-tech wireless notice board. In the current scenario the notice/ advertisement boards are being managed manually. There is a long process involved in order to put up notices on the notice board. This wastes a lot of resources like paper, printer ink, man power and also brings about loss of time. In this paper we have proposed a system which will enable people to wirelessly transmit notices on a notice board using ZigBee.

2. LITERATURE SURVEY

In practice, many educational institute uses paper notice board and they appoint particular person to maintain such board. Some other commercial offices and institute also use GSM based notice board but in that system there is no provision to retrieve message after power failure and those system can display garbage message on notice board when SIM receive company's offer or wrong person's message. Everyone who knows that SIM no. can access that notice board.

3. EXISTING SYSTEM

In Existing GSM based system the system don't have provision to retrieve message. And whenever message from company or other person come on that SIM card, system display garbage message on notice board. All this drawback of existing system overcome in proposed system.

4. PROPOSED SYSTEM

In our proposed system, we proposed model of wireless notice board which uses ZigBee modules for transmit and receive notice message from PC to display board. Notice message from PC is send to ARM board serially through terminal software and message is saved in EEPROM of the ARM. And this messaged is display on notice board which is serially connected to ARM.The message is transmitted to serial display of SUNROM which is rolling character display. This can show up to 256 characters. After sending the message the user can disconnect the keyboard or transmitter section. At any time the user can add or remove or alter the notice message according to his

requirement. As the message is stored in EEPROM it can retrieved from EEPROM. Previously transmitted message can be display on notice board after power failure.
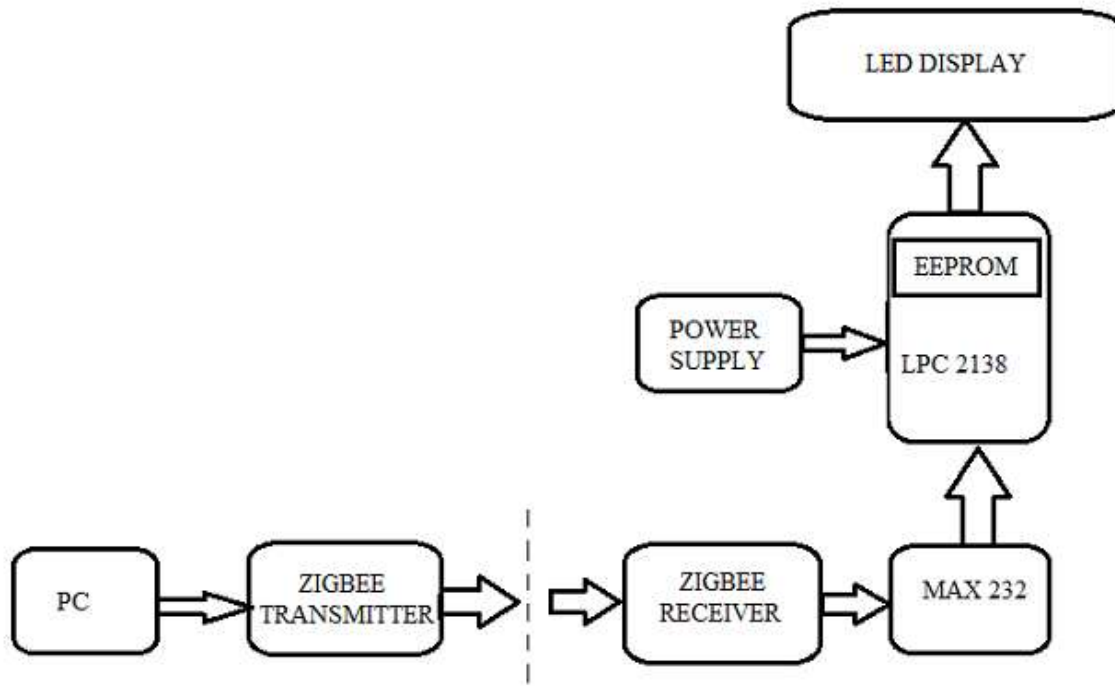
5. SYSTEM ARCHITECTURE

Fig -1: Block Diagram

The different blocks in the system are:-
1. PC: On personal computer terminal software is installed and configured and in that software desired notice message is typed and that message is passed on Zigbee transmitter which is connected to USB port.
2. Zigbee Transmitter Module: Zigbee transmitter is used to transmit message to receiver section.
3. Zigbee Receiver Module: Zigbee receiver is used to receive data from transmitter.
4. IC MAX232: The drivers provide RS-232 voltage level outputs (approx. $\pm$ 7.5 V) from a single + 5 V supply via on-chip charge pumps and external capacitors. This makes it useful for implementing RS-232 in devices that otherwise do not need any voltages outside the 0 V to + 5 V range.
5. LPC 2138 (ARM 7): These powerful yet cost-effective microcontrollers have up to 512 KB of ISP/IAP Flash and up to 32 KB of SRAM. This has EEPROM memory where notice message can be stored and retrived.LED display is also connected to this.
6. LED Display: LED display is used to display notice. This display accepts serial data. In this proposed system SUNROM LED Serial Display which has 256 rolling characters ability.

4. SYSTEM REQUIREMENT SPECIFICATION

4.1SOFTWARE REQUIREMENTS

- Operating System: Windows 7 or higher.
- Proteus Software (For Simulation)
- Protel (For making PCB)
- Keil Software (For writing Code)

- Terminal Software (To send serial data from PC)

4.2 HARDWARE REQUIREMENTS

- ARM 7 (LPC2138).
- Transformer (For suitable voltage level).
- Serial Display SUNROM (384LED's).
- ZIGBEE Transmitter.
- ZIGBEE Receiver.
- Flash magic (For downloading code).
- MAX232.

5. TECHNICAL SPECIFICATIONS

5.1 ADVANTAGES

- Wireless system.
- Text can be entered from remote place.
- Data will not lost on power failure condition.
- Only authorized person is sending Message to notice board.

5.2 APPLICATIONS

- Offices, Educational institutions.
- Railway station, Bus stand, Park and Other public utility places.

6. CONCLUSIONS

In this paper by introducing the concept of wireless technology in the field of communication we can make our communication more efficient and faster, with greater efficiency we can display the messages and with less errors and maintenance. We use the ZigBee modules for wireless communication. With the use of storage memory notice message is saved and retrieved from storage after power failure. The main objective of this is to make faster and efficient notice display system. We will continue to do this work and improve it in the future.

7. ACKNOWLEDGEMENT

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