Bluetooth Based Wireless Notice Board using Arduino

Sakshi Gaikwad[1], Tushar Ghodake[2], Sonali Patil[3], Riyaj Pathan[4], Amrut Kulkarni[5]
[1,2,3,4] *Student, Electrical Engineering Department, RIT Sakharale, Dist. Sangli, (*MS) *415414*
[5] *Lecturer, Electrical Engineering Department, RIT Sakharale, Dist. Sangli, (MS) 415414*

Abstract **- Bluetooth based wireless notice board using Arduino will help us in passing any message almost immediately without any delay just by sending a SMS which is better and more reliable than the old traditional way of passing the message on notice board. This proposed technology can be used in colleges, many public places, to enhance the security system and also make awareness of the emergency situations and avoid many dangers. For this purpose, Android based application programs for Bluetooth and Wi-Fi communication between Android based personal digital assistant devices and remote wireless display board are used Using the developed system, two different applications for displaying messages on a remote digital notice board and wireless person calling has been implemented. It also helps in saving the time and the cost for paper and printing hardware.**

Index Terms **- Bluetooth module, Arduino, 160*320mm matrix display, Microcontroller.**

1.INTRODUCTION

In this world Mobile Phones and the related technologies are becoming more and more prevalent. Various technical arenas in the field of Telecommunication and Embedded Systems are becoming omnipresent in the people. The use of cell phones has rapidly increased over the last decade and a half Upgradation in networking technologies has encouraged the development and growth of very dense networks. Notice boards are one of the widely used ones ranging from primary schools to major organizations to convey messages at large. A lot of paper is been used and which is later wasted by the organizations. This in turn leads to a lot of deforestation thus leading to global warming. Small innovative steps in making use of technology for regular purposes would have an adverse effect on the environment issues which we are presently concerned about.

The whole process can be described from the transmitter and receiver section. The Bluetooth module receives a message from the authorized mobile phone and the message is extracted by the microcontroller from the Bluetooth module and is displayed on the matrix display board. Serial to parallel communication is used for the entire process from Bluetooth module to Microcontroller and from microcontroller to the matrix display. And for the acknowledgement LCD display is used. The proposed system "Bluetooth based Wireless Notice Board using Arduino" is cheap, quick reliable and secured for any organization that requires to circulate notice regularly and reduce physical efforts. We are using Bluetooth technology. We can send notice from any location.

This proposed system in this project has many upcoming applications in educational institutions and organizations, crime prevention, traffic management, railways, advertisements etc. Been user friendly, long range and faster means of conveying information are major bolsters for this application. By using this proposed methodology, we can enhance the security system and also make awareness of the emergency situations and avoid many dangers.

2. LITERATURE SURVEY

[1] Ramya R, Bavithra N, Priyanka M, "Wireless E-notice board using Bluetooth technology" This paper explains E-notice board with the help of Bluetooth technology.

This document deals with an innovative rather an interesting manner of intimating the message to the people using a wireless electronic display board which is synchronized using the Bluetooth technology. This will help us in passing any message almost immediately without any delay just by sending a SMS which is better and more reliable than the old traditional way of passing the message on notice board. This proposed technology can be used in

colleges many public places, malls or big buildings to enhance the security system and also make awareness of the emergency situations and avoid many dangers.

[2] Dharmendra Kumar Sharma, Vineet Tiwari, "Small and medium range wireless electronic noticeboard using Bluetooth and ZigBee" this paper introduces Notice Board using Bluetooth and ZigBee technology.
When information exchange occurs between people via a network, then authentication and security of data have more priority. This paper introduces a low cost, handheld, wireless electronic notice board by using Atmel's ATmega32 microcontroller and different wireless technologies (Bluetooth and ZigBee) and their performance analysis based on the parameter such as range, BER (bit error rate), RSSI (Received signal strength indicator), signal attenuation and power consumption. The notice board receives serial data from wireless module receiver and displays it on the graphical liquid crystal display. We have realized a common communication receiver hardware for notice board having compatibility with both wireless modules i.e., Bluetooth and ZigBee. We used KS0108 based 128x64 graphical LCD as display element.

[3] M. Abila Mary, B. Pavithra, R. Sangeetha, Prof.T.C. Subbu Lakshmi, "GSM based wireless noticeboard using Arduino" In this paper built a Noticeboard using GSM technology.
The GSM based notice board is aimed at the colleges and universities for displaying day-to-day information continuously or at regular intervals during the working hours. Being GSM-based system, it offers flexibility to display flash news or announcements faster than the programmable system.

- To develop a GSM based notice board whose contents can be updated through an SMS which realized through an embedded system with microcontroller.
- To design a project simple, easy to install, user friendly system, which may receive and display notice in a very specific manner.
- SMS based notice board incorporating the widely used GSM to facilitate the communication of displaying message on notice board via user's mobile phone.
- SIM 800 GSM modem with a SIM card is interfaced to the ports of the Arduino with the help of AT commands.

[4] Pallavi M. Banait, Nikita P. Bakale, Mayuri S. Dhakulkar, Bhushan S. Rakhonde, "Cost effective Android based wireless notice board" IJETER International Journal of Emerging Technologies in Engineering Research.
In the day-to-day life, smart phone is gaining a wide range of importance in its usage and is portable. Thus, an android smart phone can be for the purpose. An android application is installed in the user's smart phone which permits the transmission. At receiver end, a low-cost microcontroller board (Arduino Uno) is programmed to receive and display messages in any of the above communication mode. Using the developed system, two different applications for displaying messages on a remote digital notice board and wireless person calling has been implemented. The developed system will therefore aim in wirelessly sharing the information with intended users and also helps in saving the time and the cost for paper and printing hardware.

3. DESIGN & DEVELOPMENT

As shown in figure, Block diagram of Bluetooth based wireless notice board.

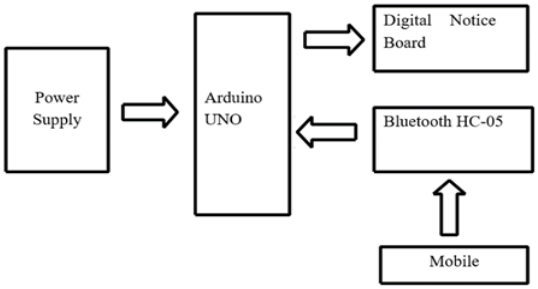

Fig. 1. Block Dig.

4. WORKING

In our project we use power supply, Arduino UNO, LED module, Bluetooth HC-05 and mobile application. After uploading the program in Arduino UNO, we will give them external power supply. Due to that all functions of equipment's are on. At that time, we will pass the notice/SMS which we want using mobile. Then this notice/SMS will receive by

Bluetooth. And by using Arduino this notice/SMS will display on digital notice board.

5. CIRCUIT DIAGRAM

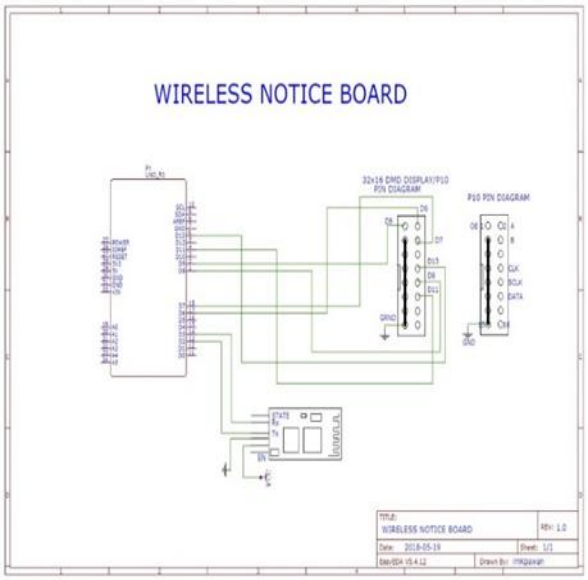

Fig. 2. Circuit Dig.

As per the circuit diagram we built the circuit connection. After that we upload the program in Arduino then all functions start to run with program.

After uploading the program, we will give the external power supply to the Arduino. then we send notice/SMS from mobile then this notice/SMS will receive Bluetooth and display on LED module.

This proposed system used for many upcoming applications in educational institutions and organizations, crime prevention, traffic management, railways, advertisements etc.

6. APPLICATIONS

1. In Industry
2. In Offices
3. In college
4. In Hotel

7. FUTURE SCOPE

1. This proposed system has many upcoming applications in educational institutions and organizations, crime prevention, traffic management, railways, advertisements etc.
2. By Using this proposed methodology, we can enhance the security system and also make awareness of the emergency situations and avoid. Latency involved in using of papers in displaying of notices is avoided and the information can be updated by the authorized persons.

8. RESULT

Fig. 3. Result

9. CONCLUSION

As the technology is advancing every day the display board systems are moving from Normal handwriting display to digital display. Further to Wireless display units. This project develops a wireless notice board system with Bluetooth connected to it, which displays the desired message of the user through an SMS in a most populated or crowded places.

Here by introducing the concept of wireless technology in the Field of the communication. We can make our communication more efficient and faster, with greater efficiency. We can display the messages and with less errors and maintenance.

10. ACKNOWLEDGEMENT

We take this opportunity to thanks all those who have contributed in successful completion of this Capstone-project work. I sincerely wish to express gratitude to our Project Guide “Mr. A.V. Kulkarni” for full support, expert guidance, and encouragement and kind

cooperation throughout the micro- project work. I am greatly indebted to her for his help throughout Capstone-project work.

REFERENCES

[1] Ramya R, Bavithra N, Priyanka M "Wireless E-notice board using Bluetooth technology", IJERT 2018.
[2] Dharmendra Kumar Sharma, Vineet Tiwari, Krishnan Kumar, et.al, "Small and Medium Range Wireless Electronics Notice Board using Bluetooth and Zig Bee", IEEE INDICON 2015.
[3] M. Abila Mary, B. Pavithra, R. Sangeetha, Prof.T.C. Subbu Lakshmi "GSM based wireless noticeboards using Arduino", IJARTET 2019.
[4] Pooja Pawar, Suvarna Langade, Mohini Bandgar "IOT Based Digital Notice Board using Arduino ATMega328", IRJET 2019.
[5] Pallavi M. Banait, Nikita P. Bakale, Mayuri S. Dhakulkar, Bhushan S. Rakhonde "Cost effective Android based wireless notice board", IJETER 2018.
[6] Gaurav Bhardwaj, Gunjan Sahu, Rajan Kumar Mishra "IOT based smart notice board", IJERT 2020.
[7] M. Arun, P. Monika, G. Lavanya 2016 "Raspberry Pi Controlled Smart e-Notice board using Arduino", IJCAT 2016.
[8] Aliya Farooquie, Aishwarya sakhre, Balaji Bomade, Madhavi badole, Ashwini Ughade "Design and Implementation of Wireless Notice Board Display based on Arduino and Bluetooth Technology", IOSRJEN 2019.