

VOICE CONTROLLED E-NOTICE BOARD USING BLUETOOTH TECHNOLOGY

Thati Sai Prasanna Lakshmi¹, Ratnam Priyanka², Tummapudi Nikhitha³, M.Venkatesh, Vuyyala Harshitanjali⁴

¹Student, Dept. Of Electronics and Communication Engineering, Vasireddy Venkatadri Institute Of Technology, Andhra Pradesh, India

² Student, Dept. Of Electronics and Communication Engineering, Vasireddy Venkatadri Institute Of Technology, Andhra Pradesh, India

³Student, Dept. Of Electronics and Communication Engineering, Vasireddy Venkatadri Institute Of Technology, Andhra Pradesh, India

⁴Student, Dept. Of Electronics and Communication Engineering, Vasireddy Venkatadri Institute Of Technology, Andhra Pradesh, India

Abstract - We come across situations where we need to urgently need to display notices on a screen. For areas like railway stations and other such busy facilities the station master/announcer need not have to type in every announcement message manually on the screen. So here we propose an innovative android based notice display system that allows the user to display notices without typing them in manually. Here the announcer/administrator may speak out the message through his/her android phone, the message is then transferred wirelessly and displayed on the screen. To demonstrate this concept we here use an LED screen to display messages. The LED is interfaced with a microcontroller. We also use a Bluetooth receiver to get the android transmitted messages, decode them and send them to the microcontroller for further processing. The microcontroller then displays the message on the LED screen. This innovative system can be used in a variety of places including railway stations, schools, colleges, offices for displaying emergency announcements on the screen instantly by just speaking out the message instead of typing it in each time. So this is how voice based notice board project is very useful in various organizations.

Key Words: Bluetooth module, Arduino, 8x8matrix display Notice board, android-application information, smart -phones.

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. Now-a-days the general mass prefer communicating while on the move therefore landlines usage has been drastically reduced. 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 being 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 main aim of this paper is to design a

SMS driven automatic display Board which can replace the currently used programmable electronic display and conventional notice boards. It is proposed to design to receive message in display toolkit which can be used from an authorized mobile phone. 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 WIFI module to Microcontroller and from microcontroller to the matrix display. And for the acknowledgement LCD display is used. This proposed system in this paper has many upcoming applications in educational institutions and organizations, crime prevention, traffic management, railways, advertisements etc. Being 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. RELATED WORK:

Intimating the message to the people using a wireless electronic display board which is synchronized using the GSM 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 pasting the message on notice board. This proposed technology can be used in many public places, malls or big buildings to enhance the security system and also make awareness of the emergency situations and avoid many dangers. Using various AT commands is used to display the message onto the display board. GSM technology is used to IRJET sample template format, Define abbreviations and acronyms the first time they are used in the text, even after they have been defined in the abstract. Abbreviations such as

control the display board and for conveying the information through a message sent from authenticated user.

3. PROPOSED MODEL:

3.1 DESCRIPTION OF THE PROPOSED METHOD:

3.1.1 USING HC-05:

A. Operating environment.

The objective is to be able to stand near the Arduino and casually acquire live data. The equipment is claimed to work over 10m. I have used it over 15m with clear line of sight. One wall of lightweight domestic construction will cut the range to about 5m maximum, and a single layer of foil building insulation can kill it stone dead. This last can mean that indoor to outdoor communication could be pretty risky.

B. Equipment used:

1) A standard Arduino Uno or Mega. Any 5volt Arduino should suffice.

2) An HC-05 or HC-06 Bluetooth module is used. The HC-06 operates as a slave only but is entirely suitable for this exercise. The HC-05 can operate as a master and thus has more commands. I don't think there is much difference in the price, and its extra versatility may be of value in the future.

3) A means of connection. I use a four-conductor cable to a header on a proto shield. A breadboard lash up would suffice, or female-male leads direct into the Arduino headers. You could solder the module directly into a proto shield. In this event, it would be wise to have a jumper in the 5v line so that Bluetooth can be isolated while the code is uploaded. This may be as simple as running 1k and 2k between Tx and ground. The picture shows an example, connecting Arduino with Bluetooth.

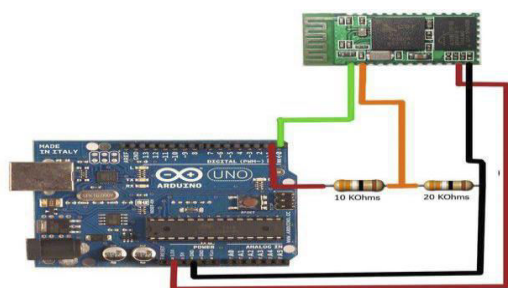
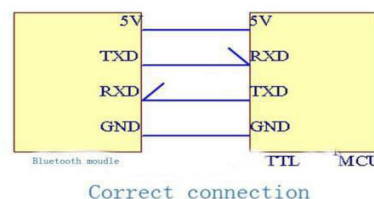


Figure-1: Arduino connection with Bluetooth

C. The communication method and the connections required:

This is all about using the standard serial protocol using hardware, using pins D0 and D1 on the Arduino, which are clearly marked for the purpose. Pin D0, Rx, is the receiver and therefore connected to the Tx pin on Bluetooth. This means D1 is connected to Rx on Bluetooth.



This is not about the alternative procedure, known as "software serial" so, if in the unlikely event that you really do have a need to use software serial for Bluetooth, read no further. The only other connections required are the standard 5v and ground. I believe all HC-05s come with six pins. You don't need the other two for this exercise. And yes, the HC-0x modules are 3.3v devices but note that the JY-MCU package level shifters on board for the power supply and is clearly labelled for 3.6 to 6v operation. Note particularly that, while Bluetooth modules come in two types, master and slave, these characteristics are entirely irrelevant to this exercise, and the words will not be mentioned again until the appendix at the end - a section that you don't need to read.

D. Notes on what the Bluetooth module is about:

The Bluetooth is a separate device between Arduino and Android. To the Arduino, it is just another serial device, indeed it is indistinguishable from the serial monitor and is used in the same way. To the Android, it is just another Bluetooth device to be paired with, and the fact that there is an Arduino connected to it is immaterial.

What this particularly means is:

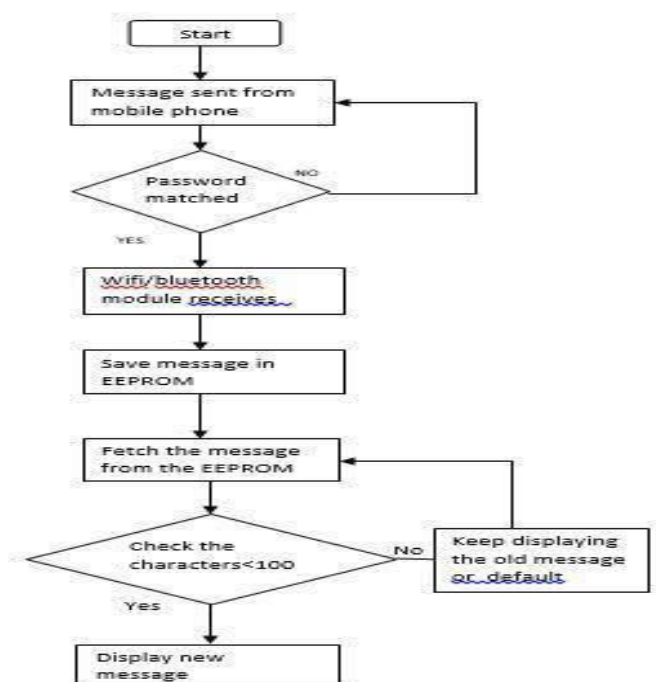
1) Arduino is not involved with the pairing. It is just providing the power and, if there was another source of power, it needn't be connected.

2) Consequently, a successful pairing is just between Bluetooth and Android, and does not guarantee successful communication with the Arduino.

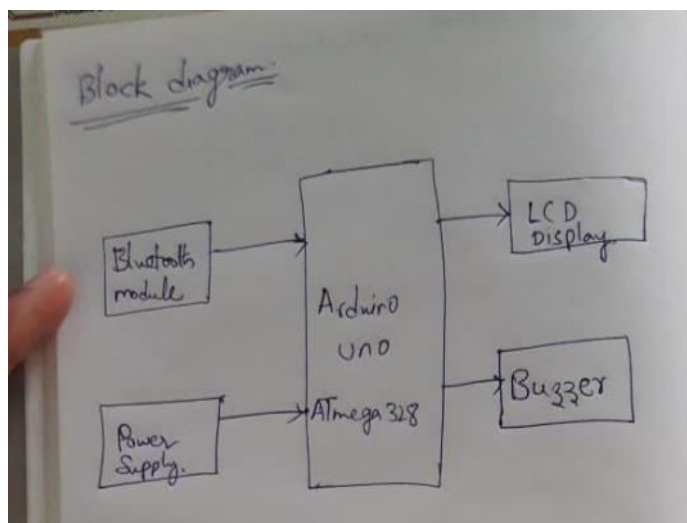
3) Similarly, the serial communication between Bluetooth and Arduino does not guarantee successful communication with Android. Note that there is no way of checking communication from Arduino to Bluetooth other than getting the signal all the way to Android.

4) All the procedure for pairing and establishing connection is done at the Android end. Processing and storage capability that allows it to be integrated with the sensors and other application specific devices through its GPIOs with minimal development up-front and minimal loading during runtime. Its high degree of on-chip integration allows for minimal external circuitry, including the front-end module, is designed to occupy minimal PCB area. The ESP8266 supports APSD for VoIP applications and Bluetooth coexistence interfaces; it contains a self-calibrated RF allowing it to work under all operating conditions, and requires no external RF parts. There is an almost limitless amount of information available for the ESP8266, all of which has been provided by amazing community support.

4. FLOW CHART:



5.BLOCK DIAGRAM:



6. OUTPUT:



7. CONCLUSION:

The progress in science & technology is a non-stop process. New things and new technology are being invented. As the technology grows day by day, we can imagine about the future in which thing we may occupy every place.

The proposed system based on Arduino controller is found to be more compact, user friendly and less complex, which can readily be used in order to perform. Several tedious and repetitive tasks. Though it is designed keeping in mind about the need for industry, it can extended for other purposes such as commercial & research applications. Due to the probability of high technology (Arduino controller) used this "VOICE CONTROLLED E-NOTICE BOARD USING BLUETOOTH TECHNOLOGY" is fully software controlled with less hardware circuit. The feature makes this system is the base for future systems.

The principle of the development of science is that "nothing is impossible". So we shall look forward to a bright & sophisticated world.

REFERENCES

- [1] Muhammad Ali Mazidi, Janice G. Mazidi, Rolin D. McKinlay, The 8051 microcontroller and embedded systems using assembly and C, edition 01-Sep-2007, Pearson Education India.
- [2] SMS And MMS Interworking In Mobile Networks Arnaud Henry- Labordère, Artech House mobile communications, 2004 - Technology & Engineering.
- [3] Ayala, Kenneth J. (1996), The 8051 Microcontroller-Architecture, Programming and Applications, Delmar Publishers, Inc. India Reprint.
- [4] GSM tele communication standards, June 2000 Second edition, European Telecommunications Standards Institute.
- [5] M Samiullah, NS Qureshi, "SMS Repository and Control System using GSM-SMS Technology," European journal of scientific research, 2012. www.wikipedia.org
- [6] "RS232 Tutorial on Data Interface and cables". ARC Electronics. 2010. Retrieved 28 July 2011.
- [7] C. H. Papadimitriou and K. Steiglitz, "Combinatorial : Algorithms and Complexity", vol.1, no.2, pp.1104-1108, 1982.