

BLUETOOTH BASED CONTACTLESS NOTICE BOARD

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ABSTRACT: Conventional Notice Board employs manual display and monitoring with papers and ledgers. The Target users are unaware of information displayed on the notice board. The objective of the project is to display the message on the notice board from anywhere and anytime, that even provides broadcast alerts to the target users. The system was designed and developed using the Internet of Things. Arduino board [4-6] integrates the display unit, Mobile App and SMS Agent through Internet. The message to be displayed on the notice board is sent through a mobile app to the board with Arduino [4-6]. As soon as the message is displayed, SMS alert [1-3] is sent to the target users. A system of efficient Notice Board display controlled through the Internet is accomplished and presented in this paper.

Keywords: Conventional Notice Board, Arduino Board, SMS, Mobile Application, LED.

1. INTRODUCTION

The project aims at designing a LED based scrolling message display controlled from an Android mobile phone. The proposed system makes use of Bluetooth technology to communicate from Android phone to LED display board.

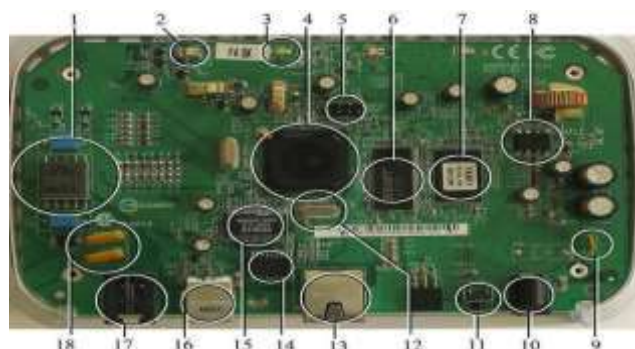
The main controlling device of the whole system is a Microcontroller [4-6]. Bluetooth modem are interfaced to Microcontroller. The message sent through predefined application from user Android [4-6] mobile phone is received by the Bluetooth modem. Bluetooth modem feeds this information to microcontroller which process it and displays it on the LED display. To perform this intelligent

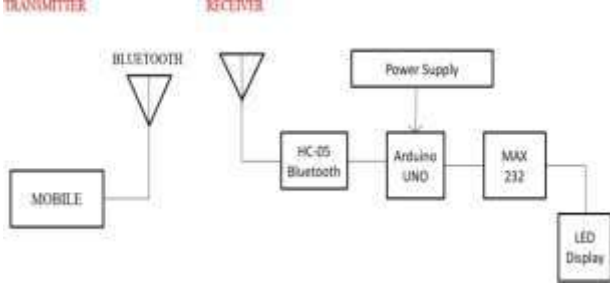
task, Microcontroller is loaded with an intelligent program written using embedded 'C' language.

2. EMBEDDED SYSTEMS

An embedded system is a computer system designed to perform one or a few dedicated functions often with real-time computing constraints. It is embedded as part of a complete device often including hardware and mechanical parts. By contrast, a general-purpose computer, such as a personal computer (PC), is designed to be flexible and to meet a wide range of end-user needs. Embedded systems control many devices in common use today.

In general, "embedded system" is not a strictly definable term, as most systems have some element of extensibility or programmability. For example, handheld computers share some elements with embedded systems such as the operating systems and microprocessors which power them, but they allow different applications to be loaded and peripherals to be connected. Moreover, even





systems which don't expose programmability as a primary feature generally need to support software updates. On a continuum from "general purpose" to "embedded", large application systems will have subcomponents at most points even if the system as a whole is "designed to perform one or a few dedicated functions", and is thus appropriate to call "embedded".

Fig .1:A modern example of embedded system

3.BLOCK DIAGRAM

In this chapter the block diagram of the project and design aspect of independent modules are considered. Block diagram is shown below.

Fig 2: Block Diagram for Implementation of Contactless Notice Board using Bluetooth

Transmitter: A signal transmitter is a device that transmits data from one place to another.

Receiver: In communication models, the receiver is any one or group that hears, reads, or observes messages that's directed to them.

The transmitter and receiver work together to emit both sound and visuals to consumers.

4.HARDWARE DESCRIPTION

LED: A light-emitting diode (LED) is a semiconductor light source. LED's are used as indicator lamps in many devices, and are increasingly used for lighting. Introduced as a practical electronic component in 1962, early LED's emitted low-intensity red light, but modern versions are available across the visible, ultraviolet and infrared wavelengths, with very high brightness. The internal structure and parts of a led are shown below.

Bluetooth: Bluetooth is an open standard specification for

a radio frequency (RF)- based, short-range connectivity technology that promises to change the face of computing and wireless communication. It is designed to be an inexpensive, wireless networking system for all classes of portable devices, such as laptops, PDAs (personal digital assistants), and mobile phones. It also will enable wireless connections for desktop computers, making connections between monitors, printers, keyboards, and the CPU cable-free.

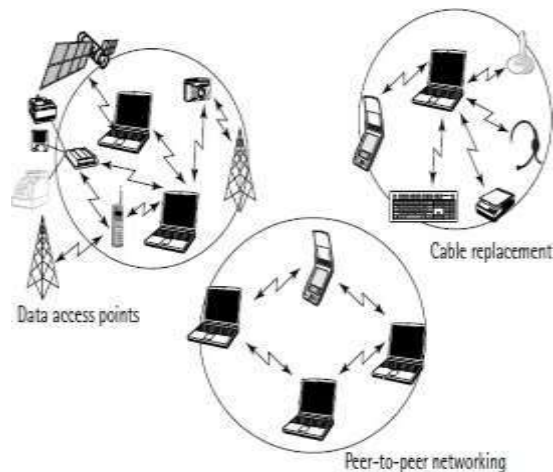


Fig 3: Connecting with Bluetooth

5.SOFTWARE DESCRIPION

is the most popular and widely used programming language. The C Programming Language provided low level memory access using an uncomplicated compiler (a software that converts programs to machine code) and achieved efficient mapping to machine instructions.

6.ADVANTAGES AND DISADVANTAGES

1. Controlling of LED Notice board operations is through a Android mobile.
2. Wireless communication using Bluetooth technology.
3. No need of training.
4. Efficient design.
5. Life time is more compared to existing devices. Low power consumption.
6. The electronic notice board is wireless and no need for wires for displaying the information on the LCD display.
7. It is very easy to operate and consumes less power
8. The circuit of the wireless notice board is portable.

9. An authenticated user can send the message/notice from anywhere

10. This system will reduce the manpower as well as the human work.

1. Dealing with Bluetooth is sensitive.

2. Distance of Communication between Bluetooth and mobile is 3 meters.

7. APPLICATIONS

1 Gardens – Helps in displaying the temperature and pollution levels in the surroundings.

2 Banks – Enables customers to make informed decision regarding products and services of the bank and be aware of their rights as also the obligations of the bank to provide certain essential services.

3 Railway stations – To display the arrival and departure time of various trains including their numbers.



4 Bus stands – To display the places at which the bus is going to stop.

5 Colleges – Helps in displaying the upcoming events and updates.

6 Hospitals – Helps in displaying important notices and to call the patients in a serial order.

7 Industries – Notice boards can be used to display

individual or company certifications and accomplishments, thus helping to boost the morale of employees in an organization.

Fig 4: Implementation of Contactless Notice Board using Bluetooth

9. RESULT



Fig.5: Result

8. CONCLUSION AND FUTURE SCOPE

Each block present in it has been reasoned and justified. The project is very cost efficient and marketable and the components used are very simple and easily available in the market. We believe that our project can become commercial and can be used in places such as colleges, banks railway station etc. Finally we conclude that this project being based on the widely used GSM technology [1-3] has further scope for future development and research and can be modified according to its application

Our project “**Implementation of Contactless Notice Board Using Bluetooth**” is mainly intended to operate a LED Notice board using a Bluetooth eliminating

the use of generally used input peripherals like Wires, PC's. This project has a Buzzer and LED Notice board to the micro controller wirelessly using Bluetooth technology. In future we can provide secrete code for Bluetooth to operate from selected mobile phone. this is have high security in school LED Notice board.

Notices can be displayed in the form of word document, power point, video clips by uploading them directly. This can be doneby using a suitable operating system, program files, drivers, players so as to make them more eye-catching. Such notices can be displayed by using a webpage and giving an access to authorized users. The best way isthe use of an INTERNET. An IP address can be used to achieve this. The IP will enablethe user to upload any notice and from anywhere in the world. More over cloud can be used to dump the past notices and keep record of them.

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Print ISBN: 978-1-4577-1561-7

Vol. 71, Issue. 01, No.03, January-March: 2022