



## Blue tooth based Smart Notice Board

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### ABSTRACT

*In this modern world, smart notice boards are being used in every place, with the help of which the message reaches everyone quickly and easily, like in railway station, college, hospital, and any other organization, with the help of LED board we can deliver any message very fast whenever we want, if there is any notice of the college, we can display it very easily on the smart notice board through our smart phone, so that the students can receive the message easily, We can display it directly on the notice board by typing a message on our smart phone or by recording the message by voice .*  
**Keyword:** MICROCONTROLLER PIC18F46K22, MAX 232 IC, BLUETOOTH HC05, REGULATOR 7805, CAPACITOR 1000 mF, LED, RESISTANCE 330 ohms, PIO module.

### I. Introduction

If the user wants to display any message, he can send the information by Bluetooth and thus update the LED display accordingly. As engineer's main aim is to make life simple with help of technology, this is one step to simplify advertisement boards by using electronic display digital boards instead of flex boards. 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 Up gradation in Bluetooth 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 been used and which is later wasted by the organizations.[2] 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 Bluetooth 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 Bluetooth module to Microcontroller and from microcontroller to the matrix display. And for the acknowledgement LED 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. Been user friendly, long range and faster means of conveying information are major bolsters for this application.[3] By using this proposed methodology we can enhance the security system and also make awareness of the emergency situations and avoid many dangers.

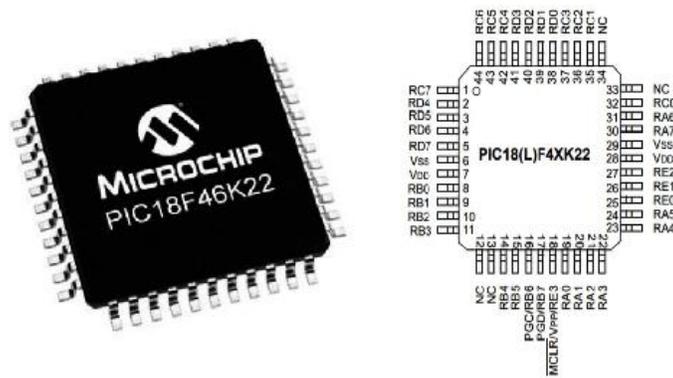
This project is aimed at developing a system that will display the message received by the cell or a modem. Microcontroller then will control the system by doing authentication and AT commands. And the messages that is been displayed depends upon the LED type used, that is if we use graphical LED we can even display the images with interfacing it with microcontroller PIC18F46K22. This system is easy, robust to use in normal life by any-one at any place. This paper consists of basic introduction, block diagram, software used and many more details on this project.



The Today's world is increasingly dominated by mobile phones and related technologies. Over the areas of communication and embedded systems, people are being exposed to a wider range of technical topics on a regular basis. Cell phone use has grown dramatically during the previous 15 years. The development of networking technologies has helped to create and grow highly dense networks. Landlines are now rarely used because the general public prefers to communicate while moving about. Many sheets of paper are utilized and then discarded by organizations. This, in turn, causes extensive deforestation, contributing to the Global Warming. Small innovations and moves on using the technology for everyday reasons would have a negative impact on the environmental challenges we are currently concerned about. This paper's proposal system has various future applications in many of the education institutions and also organizations, criminal prevention, traffic management, trains, advertisings, and so on. This application's user friendliness, extensive A wider variety and faster means of transmitting information are valuable assets. Using the presented methods, we can imperatively improve the security system.

## II. COMPONENTS USED

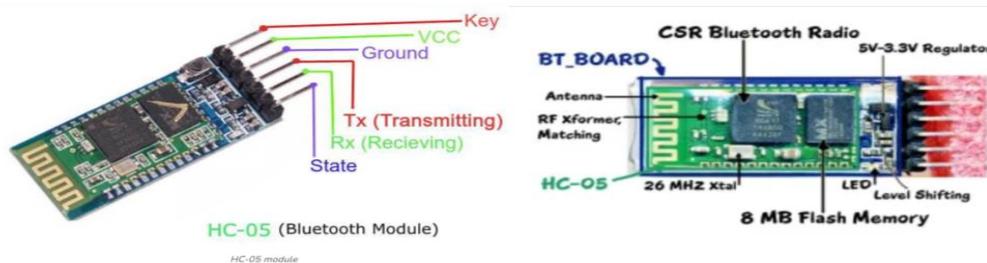
**2.1. Microcontroller 18F46K22 :** The PIC 18F46K22 is an 8-bit PICmicro microcontroller with 64KB of flash memory, 3.8KB of RAM, and 1024 bytes of EEPROM. It also has 36 I/O pins, three 8-bit timers, four 16-bit timers, and a 16 MHz internal oscillator. The PIC 18F46K22 can be programmed and debugged using the MPLAB PICkit 4 In-Circuit Debugger/Programmer.



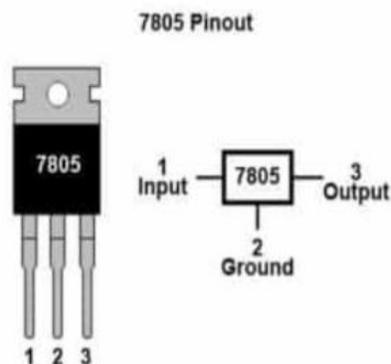
**2.2. MAX 232 IC:** The MAX232 is a 16-pin integrated circuit (IC) that converts signals from a TIA-232 (RS-232) serial port to signals that can be used in TTL-compatible digital logic circuits. It can also convert TTL signals to RS-232 signals and vice versa. The MAX232 can convert signals like RX, TX, CTS, and RTS.



**2.3. Bluetooth HC05:** Bluetooth Terminal is an Android application program that enables easy communication between an Android PDA and a Bluetooth device through a terminal interface. Therefore, the Bluetooth Terminal application program allows the Android PDA to communicate (transmit or receive) messages with connected Bluetooth devices in hexadecimal (hex) or string format. At the receiving end, the HC-05 module is interfaced with a microcontroller to store received messages and display them on an LCD screen. The HC-05 is a very capable module that can add bidirectional (full-duplex) wireless functionality. The Bluetooth module is used to wirelessly transmit data from the transmitter to the receiver. The HC-05 module operates on the same principle but performs different operations. The HC-05 Bluetooth module has four pins.



**2.4. Regulator 7805 :** A 7805 voltage regulator is an integrated circuit designed to maintain a constant output voltage despite changes in input voltage and load. Specifically, the 7805 is a positive voltage regulator that ensures a stable +5V output, making it a popular choice for powering various electronic components and circuits.



**2.5. P10 MODULE :** A P10 module, or parallel input/output module, is a memory-mapped interface between software and user-defined logic. It can also refer to Programmed Input/Output, a protocol for data transfer in computers that involves the CPU's registers. PIO mode was used by earlier IDE drives.

## 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.

Finally, we can conclude that this project application gives a very good feature and there is huge scope for further research and development for using the same with the help of advanced technology.

## 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 Farooque, Aishwarya sakhre, Balaji Bomade, Madhavi badole, Ashwini Ughade “Design and Implementation of Wireless Notice Board Display based on Arduino and Bluetooth Technology”, IOSRJEN 2019.