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Wireless Electronic Notice Board with Bluetooth Technology

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ABSTRACT

This document deals with an innovative rather an Interesting manner of intimating the message to the people employing a wireless electronic display which is synchronized using the Bluetooth technology. This may help us en passant any message quickly with none delay just by sending a SMS which is better and more reliable than the old traditional way of passing the message on board. This proposed technology is employed in colleges many public places, malls or big buildings to reinforce the protection system and also make awareness of the emergency situations and avoid many dangers. Using Bluetooth module display the message onto the display panel.

Key words: Bluetooth module, Arduino, 16x8matrix display, microcontroller, multi terminal
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INTRODUCTION

In this world Mobile Phones and also the related technologies have become more and more prevalent. Various technical arenas within the field of Telecommunication and Embedded Systems are getting omnipresent within the people. the utilization of cell phones has rapidly increased over the last decade and a half up gradation in networking technologies has encouraged the event and growth of very dense networks. Now-a-days the final mass prefers communicating while on the move therefore landlines usage has been drastically reduced. Notice boards are one in every of the widely used ones starting from primary schools to major organizations to convey messages at large. lots of paper is been used and which is later wasted by 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 most aim of this paper is to style a SMS driven automatic board which may replace the currently used programmable electronic display and traditional notice boards. it's proposed to style to receive message in display toolkit which may be used from a certified movable. The whole process can be described from the transmitter and receiver section. The BLUETOOTH module receives a message from the authorized itinerant and also the message is extracted by the microcontroller from the BLUETOOTH module and is displayed on the MATRIX display panel. 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 during 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. By using this proposed methodology we will enhance the protection system and also make awareness of the emergency situations and avoid many dangers.

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RELATED WORK

Intimating the message to the people employing a wireless electronic board Which is synchronized using the GSM technology? this may help us en passant any message shortly with none delay just by sending a SMS which is healthier and more reliable than the old traditional way of pasting the message on board. This proposed technology are often employed in many public places, malls or big buildings to enhance the protection system and also make awareness of the emergency situations and avoid many dangers. Using various AT commands is employed to display the message onto the display. GSM technology is employed to manage the display panel and for conveying the data through a message sent from authenticateduser.

PROPOSED MODEL
DESCRIPTION OF THE PROPOSED METHOD

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 figure over 10m. I've got 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 may well 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 isused. 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's much difference within the price, and its extra versatility is also valuable within the future.

3) A means of connection. i take advantage of 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'll solder the module directly into a proto shield. during this event, it'd be wise have a jumper within the 5v line in order that Bluetooth is isolated while the code is uploaded. this could be as simple as running 1k and 2k between Tx and ground. the image shows an example, Connecting Arduino with Bluetooth.
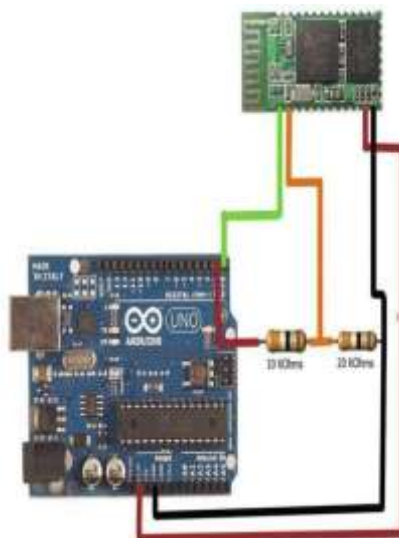

Fig. 1

The communication method and therefore the connections required: this can be all about using the quality serial protocol using hardware, using pins D0 and D1 on the Arduino, which are clearly marked for the aim. Pin D0, Rx, is that the receiver and thus connected to the Tx pin on Bluetooth. this implies D1 is connected to Rx on Bluetooth.
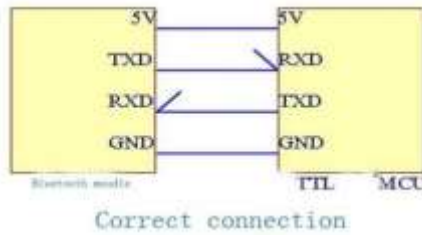
Fig. 2

This is not about the choice procedure, referred to as "software serial" so, if within the unlikely event that you simply really do have a desire to use software serial for Bluetooth, read no further. The only other connections required are the quality 5v and ground. i think all HC-05s include six pins. You don't need the opposite 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 ability supply and is clearly labelled for 3.6 to 6v operation. when a message is shipped within the specified format, then a series of commands are executed which might be seen in an exceedingly Hyper
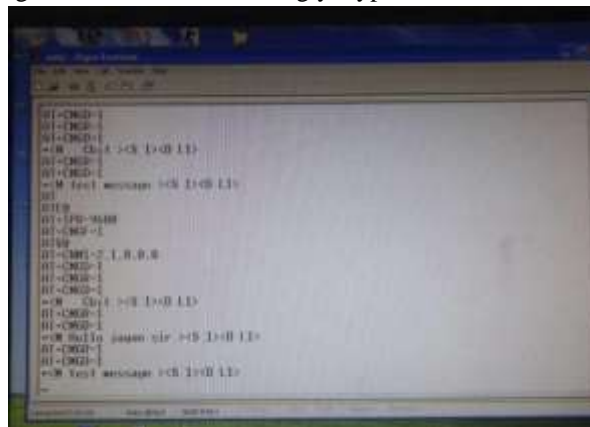

Fig. 3

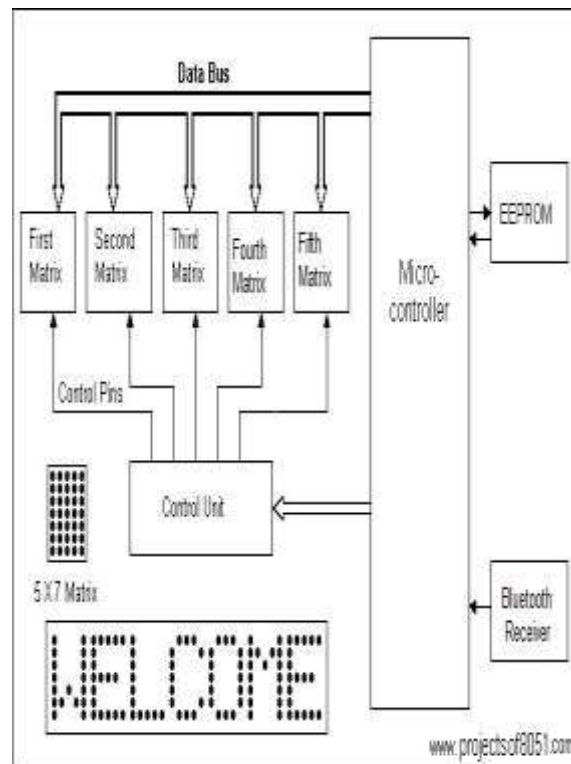Terminal when the kit is connected to the COM PORT of PC.

Fig. 4

MATRIX DISPLAY

Connecting matrix LED Display with microcontroller: An LED Matrix consists of an array of LED' s which are interconnected such the positive terminal (anode) of each LED within the same column are connected together and therefore the negative terminal (cathode) of every LED within the same row are connected together. Note that this might be the opposite way around additionally, with the positive terminals connected to the rows and therefore the negative terminals connected to the columns.8x8 LED Matrix Schematic An LED matrix display ("dot" refers to the circular lenses ahead of the LEDs) can even include multiple LEDs of varying colors behind each dot within the matrix. as an example, the matrix employed in this project includes a Red, Green and Blue LED behind each dot within the 16x8 grid. A configuration with multiple LEDs behind each dot adds another control pin to each column (positive terminal) for every additional color of LED, while the rows (negative terminals) are still all connected together. Therefore an RGB Matrix has32 control pins compared to the 16 pins. Controlling the LED Matrix Since all of the individual LED's during a matrix share their negative and positive terminals in each row and column, it's inconceivable to regulate each individual LED at the identical time. Instead, the matrix is controlled by cycling through each row very quickly while triggering the right column pins to light the specified LED's for that individual row. 16 x 8 matrix led reference to microcontroller. If the switching is finished at a fast enough rate, there'll be no visible flicker and also the LED matrix display will appear to own each LED turned on at the identical time. This works due to the principle referred to as Persistence of Vision, which is that the theory that the retina of the human eye retains a picture for a couple of tenth of a second. Thus an LED matrix must be very precisely controlled, with the Rows being scanned through sequentially at a rate greater than about 40Hz (to be safe) while sending out the column data at the precise same rate. this type of control is most easily accomplished with the aid of a microcontroller, plus some additional components. Programming the Microcontroller Note particularly that, while Bluetooth modules are available in two types, master and slave, these characteristics are entirely irrelevant to the present exercise, and the words will not be mentioned again until the appendix at the end - a bit that you just don't have to read. D. Notes on what the bluetooth module is about: The bluetooth could be a separate device between Arduino and Android. To the Arduino, it's just another serial device, indeed it is indistinguishable from the serial monitor and is utilized in the identical way. To the Android, it's just another Bluetooth device to be paired with, and also the indisputable fact that there's an Arduino connected thereto is immaterial. What this particularly means is:

1) Arduino isn't attached the pairing. it's just providing the facility 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 doesn't guarantee successful communication with the Arduino.

3) Similarly, the serial communication between Bluetooth and Arduino doesn't guarantee successful communication with Android. Note that there's no way of checking communication from Arduino to Bluetooth aside from getting the signal all the thanks to Android.

4) All the procedure for pairing and establishing connection is finished at the Android end. Processing and storage capability that permits 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 meant 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 figure under all operating conditions, and requires no external RF parts. there's an almost limitless fountain of data available for the ESP8266, all of which has been provided by amazing community support. within the Documents section below you may find many resources to help you in using the ESP8266. In or RXI. The RX line on any device is there to receive data. this could be connected to the TX line of the device with which you'd prefer to communicate. COM Port (Serial Port)- Each device you connect to your computer are assigned a selected port number. This helps to spot each device connected. Once a tool encompasses a port assigned thereto, that port are going to be used on every occasion that device is plugged into the pc. Note that Mac and Linux COM ports have a special naming convention.

ADVANTAGES

The planned system shows to be advantageous because:
✓   It is a power effective device.
✓   It saves the user efficient about the system.
✓   The device is portable hence it can be used in remote locations.
✓   The device is cost effective and energy efficient.

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✓   The display system is powered by solar energy.

APPLICATIONS

The proposed system finds its applications in:
✓   Educational Institutions and Organizations.
✓   Crime Prevention.
✓   Managing Traffic.
✓   Advertisement.
✓   Railway Station.

RESULT

The projected system is a control efficient system of showing messages wirelessly using a solar energy as the power cradle. This system is a movable device and is made cost real so that it can be used in society and productive to the market.

CONCLUSION

The exhibition boards are one of the major communications middle for mass media. Local language can be extra as a difference in this project. This can be did by using different software's and graphics. This practice saves time, energy and chances also. Material can be agreed to a great figure of people from our fingertips. The project helps in dropping the cost and the components used are very simple and easily understandable and available in the market. We believe that our project can become commercial and can be used in places such as colleges, banks railway station village areas etc. Thus this project existence extensively recycled GSM and arduino skill has scope for future growth and research and can be adapted according to its applications used by the people.

FUTURE SCOPE

Any disruption saving electricity and energy. To contrivance this system in remote locations where barely electricity is found. Moreover, using this system in highways in order to display messages without involving

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