INTERNATIONAL RESEARCH JOURNAL OF INDIA

ISSN 2454-8707 **VOLUME**-I,**ISSUE**-VII, **March**-2016

ANDROID CONTROLLED WIRELESS NOTICE BOARD WITH G.P.S NAVIGATION SYSTEM

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ABSTRACT:

In this world of invention we tries to capture each and every thing on a single click, so in order to reduce manual work to create or display notice , so keep in mind such situation we develop an android app controlled wireless notice board. As we know that display Board is primary thing in any institution or public transport places like Bus stations, Railway stations etc. But sticking various notices day to day is very hectic and time consuming process. This project deals about an progress hi-tech wireless display board. The project is built around the P.I.C micro controller from Atmel. By means of Bluetooth open source protocol based on wireless interfacing can be provided to make it user friendly. This system is better to display the latest information through an android application of smart phones or tablet. Along with this we also assemble a GPS device. It provides an intellectual navigation and efficient system to track a locomotive position. This whole system works on powerful combination of mobile computing, Global System for Mobile Correspondence (GSM), Global Positioning System (GPS), Geographical Information System (GIS) advancements and programming.

KEYWORDS:

G.P.S , Bluetooth module, MAX 232, P.I.C 16F876A

INTRODUCTION:

The main purpose of the project is to display of important public messages to the masses without much manual efforts along with low cost navigation device. Notices can be displayed within fraction of seconds and these notices can be upgraded within minutes. Thus to achieve suppleness in notifications So we create an android app controlled wireless notice board with GPS navigation system that displays notices when a message is sent from the user's android application device along with this it also tracks the position of vehicles. Remote operation is obtained by any Android phone, upon a GUI (Graphical User Interface) based touch screen operation. Where the user sends the text from the Android application device, it is received by the Bluetooth module i.e. interfaced with controller through UART transmission. The microcontroller further process the received signals and transfer them serially to LED Monitor display that act as shift register. It uses PIC microcontroller to control the operation and Bluetooth wireless technology for communication. Now days for tracking and locating position of vehicle

or place GPS is widely come into existence [IV].

LITERATURE

With the improvement of cell systems in the 1970's for expanding the absence of frequencies in the radio phone administrations which thus prompt presentation of AMPS (Advanced Mobile Phone System) where the transmission was simple based. This was known not the original in cell systems. The second era depended on advanced transmission and was called with different shortened forms as GSM (Global System for Mobile correspondences), ERMES (European Radio Messaging System). Different Cordless phone models were additionally presented amid this time as it were. The third era has ascended with the amalgamation of various advances some of them which are prominently known are FPLMTS (Future Public Land Mobile Telecommunications System), UMTS (Universal Mobile Tele-correspondence System), and IMT-2000 (International Mobile correspondence). Nowadays, BLUETOOTH innovation has gotten to be a standout amongst the most very much loved medium for remote information exchange. It has a broad range and is ingenious in its work.

Android is an arrangement of programming for cell phones including Operation System, Middleware and Core Application, and another Mobile Platform of Google. It is a finished versatile stage taking into account LINUX 2.6 Kernel that gives aggregate arrangement of capable Operation System, comprehensive Library Set, ample Multimedia User Interface and Phone Application. Android stage is delivered to make new and inventive versatile application program for the engineers to make full utilization of all capacities associated with handset web. The Android stage was produced by Google later the Open Handset Alliance (OHA).

CURRENT THEORY

Currently we rely on putting up notices on the notice boards using papers. This is time consuming since we need time for preparing notices. Also there is wastage of paper. If we need to renew the notice then we have to take a new hardcopy .The interfacing of a GSM modem with a normal PC is quite simple but it is a wired connection, which is not convenient to use everywhere and for the navigation and tracking purpose of locomotive or place we need a GPS system which is often very costly.

PROPOSED WORK

While considering the above problem it will be noticeable that there exists a need of wireless notice board that enables efficient way to the user for displaying notice. By considering compactness of electronic systems, there is a need of embedding two or more systems together. This project is an implementation of the idea of wireless communication and navigation between a mobile phone and an PIC controller.

In this project work, we construct an embedded system which consists of display unit and GPS device using wireless technology. The display unit consists LED matrix pannel that can be interfaced with microcontroller.

BLOCK DIAGRAM

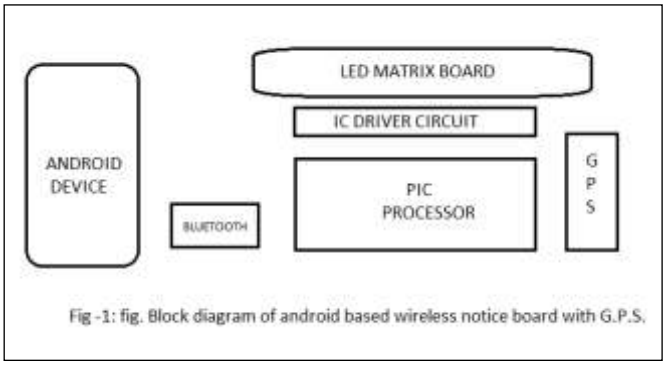


Fig -1: fig. Block diagram of android based wireless notice board with G.P.S.

WORKING

The whole circuit is works on wireless communication standard that connects devices together over a certain distance. Here we uses Bluetooth technology for transmission of data from android phone to controller, it works on radio waves. Basically Bluetooth is an open wireless protocol for exchanging data over short distances creating Personal Area Networks (PANs). Before transmission, two Bluetooth devices need to pair first up. For setting up the communication between two device it uses adhoc networks known as piconet.

When a network is recognized, one device takes the function of the master while all the other devices act as slaves, in this way Bluetooth will receive the signal sent by the Android application device (mobile phone), and then send this signal to the microcontroller. The PIC controller will process that data and send it to the display unit. All the transmission and reception will be done through serial communication, Further display unit will display the message. and we can also see the current position of trains via GPS on digital notice board.

SIMULATIONS

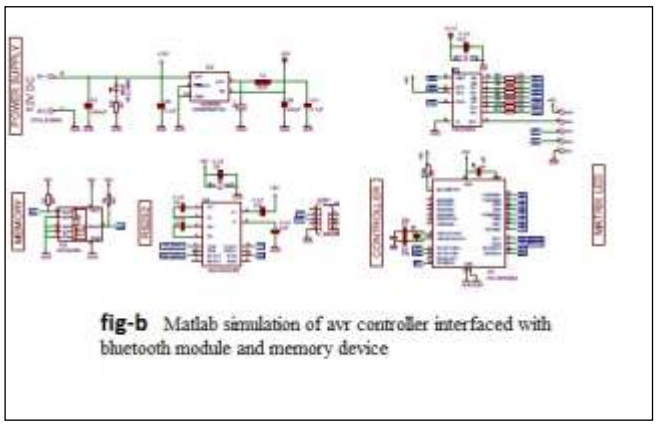


fig-b Matlab simulation of avr controller interfaced with bluetooth module and memory device

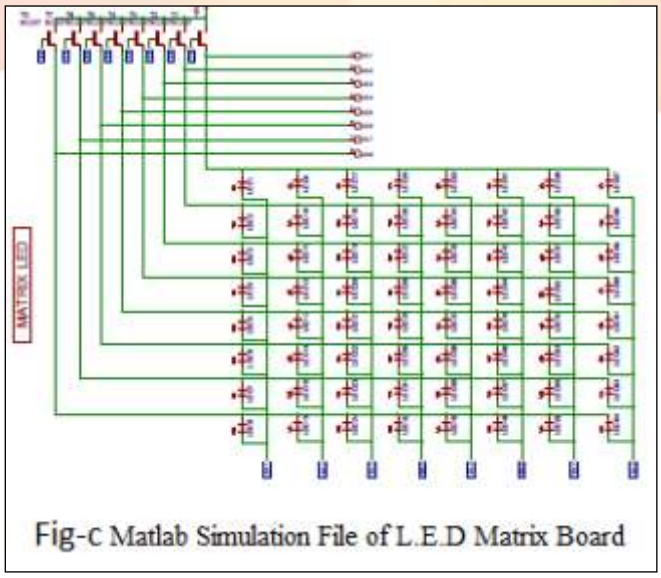
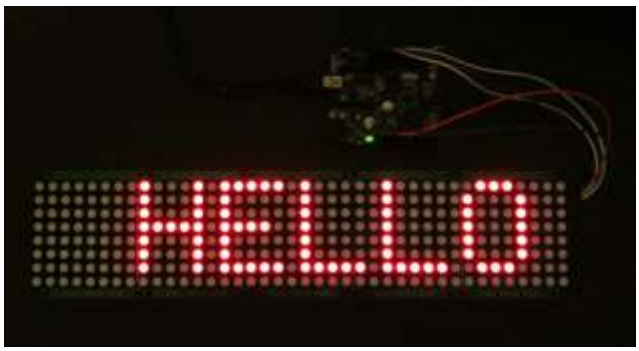


Fig-c Matlab Simulation File of L.E.D Matrix Board

RESULT



FUTURE SCOPE

By interfacing raspberry pie we can provide internet facility in order to display Temperature and weather information. We can also display local language. News and live updates of weather report. The Bluetooth printing has been implemented successfully with android phone and outputs have been verified.

CONCLUSION

Thus we can conclude that display board are major communication medium for mass media. It is an idea to make use of Bluetooth in communications to next level. Further this project also serve as a cost efficient GPS device.

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