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ADVANCE INTIMATION TO THE TRAFFIC FOR EMERGENCY AMBULANCES USING GSM AND GPRS TECHNOLOGY

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ABSTRACT

The increasing of vehicle population in all the developing and developed countries are involved in a serious change within the existing traffic signalling systems. The most widely used machine-controlled system uses easy timer based mostly operation that is not sufficient for non-uniform traffic. The Advanced automation systems in testing use image process techniques or advanced communication systems in vehicles to communicate with signals and elicit routing. This may not be implemented in developing countries as they encourage be complicated and pricy. The concept projected in this paper involves use of wireless device networks to sense presence of traffic close to junctions and thus route the traffic supported traffic density within the desired direction. This system doesn't require any system in vehicles thus may be enforced in any traffic system simply. The present system uses wireless networks technology to sense the density of vehicles and a microcontroller based mostly routing formula for traffic management.

KEYWORDS—***GSM/GPRS, microcontroller, traffic signal LED***

I. INTRODUCTION

Due to increase in the population in India there is a huge raise vehicles use that which causes increase in traffic on roads causing a major problem. The increase in traffic is mainly in major cities there causes a lot of problems. Generally, traffic signs provide the driver various info for safe and economical navigation Automatic recognition of traffic signs is, therefore, important for machine-driven intelligent driving vehicle or driver assistance systems. The indication of traffic signals in the crowed are most difficult. Due to long traffic jams in major junctions causes wastage of time. As such, it is becoming terribly crucial to device economical, adaptive and efficient traffic control algorithms that facilitate and guarantee quick and sleek traffic flow that utilize new and versatile technologies. Here we are using GSM/GPRS technology for the control of traffic

II. LITERATURE REVIEW

The most prevalent traffic communication system in developing countries is that the timer based mostly system. This system consists of a predefined time setting for every road at an intersection point. While this would possibly prove effective for light-weight traffic, heavy traffic needs Associate adaptive system that can work supported the density of traffic on every road. The first system planned for adaptive communication was

supported digital image process techniques. This system works supported the captured visual input from the roads and processing them to seek out that road has dense traffic. This proposed system presents the concept for intelligent traffic routing exploitation using wireless device networks. wireless protocol is used by micro controller placed at every intersection to send info. The receiver controller receives the signal and the computes will direct the road that which lane has to be inclined the signal supported the density of traffic. The controller makes use of the discussed formula to perform the intelligent traffic routing.

III. HARDWARE DESIGN

Transmission Section:

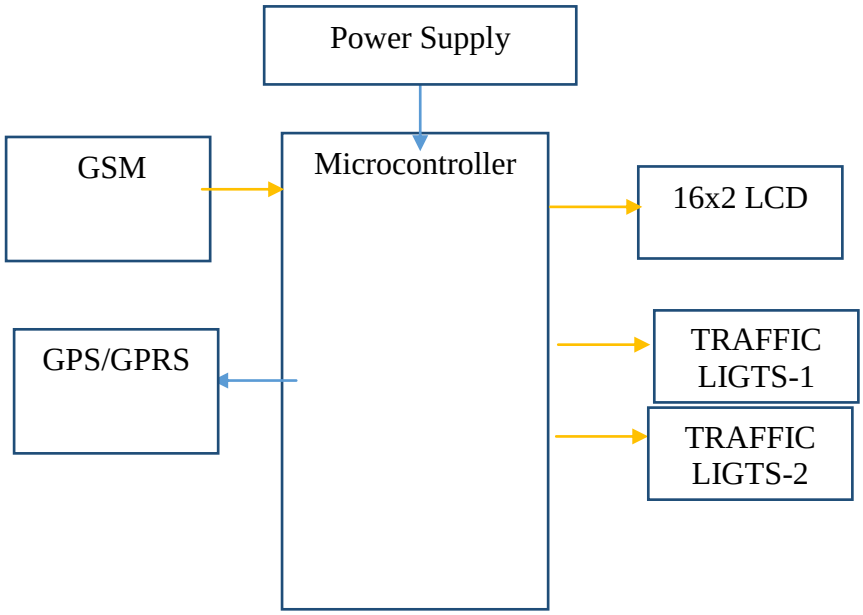

Fig 1: Block Diagram

It consists of various software and hardware modules. The above block diagram shows the evaluation of hardware components blanketed in the device.

LPC2148 Microcontroller:

The LPC2148 micro controller belongs to ARM 7 family. In the LPC2148 the LPC is defined as Low Power consumption. The Lpc2148 board is based on a thirty two-bit ARM7TDMI-S with real-time emulation. It consists of 8 kilobytes to 40 kilobytes of on-chip static RAM and 32 kB to 512 kB of on-chip flash memory; 128-bit huge interface allows high-pace 60 MHz operation, In- system Programming (ISP), 32-bit timers external event counters PWM unit and watchdog, Low strength Real-Time Clock (RTC), it consists of more serial interfaces which includes two UARTs, rapid I2C-bus (400kbit/s), SPI and SSP with buffering and variable information length competencies

GSM-Module:

GSM (international device for cellular communications) is a cell network, which means that that cell telephones connect with it via way of searching for cells in the immediately place. GSM networks feature in four specific frequency levels. Maximum GSM networks feature within the 900 MHz or 1800 MHz bands. A few

international locations in the Americas use the 850 MHz had been already allotted. Different bands are assigned in a few worldwide places, wherein those frequencies were previously used for first-era structures.

Fig 4: GSM module

GPRS:

The General Packet Radio Services (**GPRS**) is the only fully functional Global Navigation Satellite System (GNSS). The GPS was used for the constellation between Earth Orbit satellites. That transmits microwave signals, which enable GPS receivers to determine their location, speed. General Packet Radio Services (**GPRS**) is an earth-orbiting-satellite based system that provides signals available anywhere on or above the earth. In this project the transmitter at the critical zone and receiver to the vehicle. When the vehicle enters into the critical zone the speed of the vehicle automatically reduces.

IV. SOFTWARE DESIGN

In this proposed project, we are using LPC2148 microcontroller and we need to use the following software equipment to program for it.

1. Keil uVision
2. Flash Magic

The Keil micro Vision is an IDE for Embedded c programming language. In this IDE, we need to import required utilities and libraries according to the controller. This IDE is very less difficult and in user friendly way to apply. It consists of all the C/C++ compilers, assemblers, and debuggers in it. Here we need to generate a hex file to run the microcontroller. The hex file consists of only binary numbers which is dumped in to the microcontroller. The flash magic is a programming software. The C/C++ software is written in IDE may be processed into Hex document i.e. hex file. By using the hex file we will dump the file into microcontroller and perform the task with respective application.

V. WORKING DESCRIPTION

The present project describes that the problems raised in Traffic and the overcome of the existing system. In this project we are using the wireless communication technology i.e Zigbee communication. By using sensor nodes at the traffic junction we can detect the maximum level density of traffic in a particular area.IR sensors are placed on either sides of the road these sensors are used for detecting the traffic density level at junction point. When the IR is detected the signal is sent through Zigbee communication to the control room and then a required signal is given to the junction point. This communication is used around hundred meters at the signal point. It is the cheapest technology compare to other wireless technologies.

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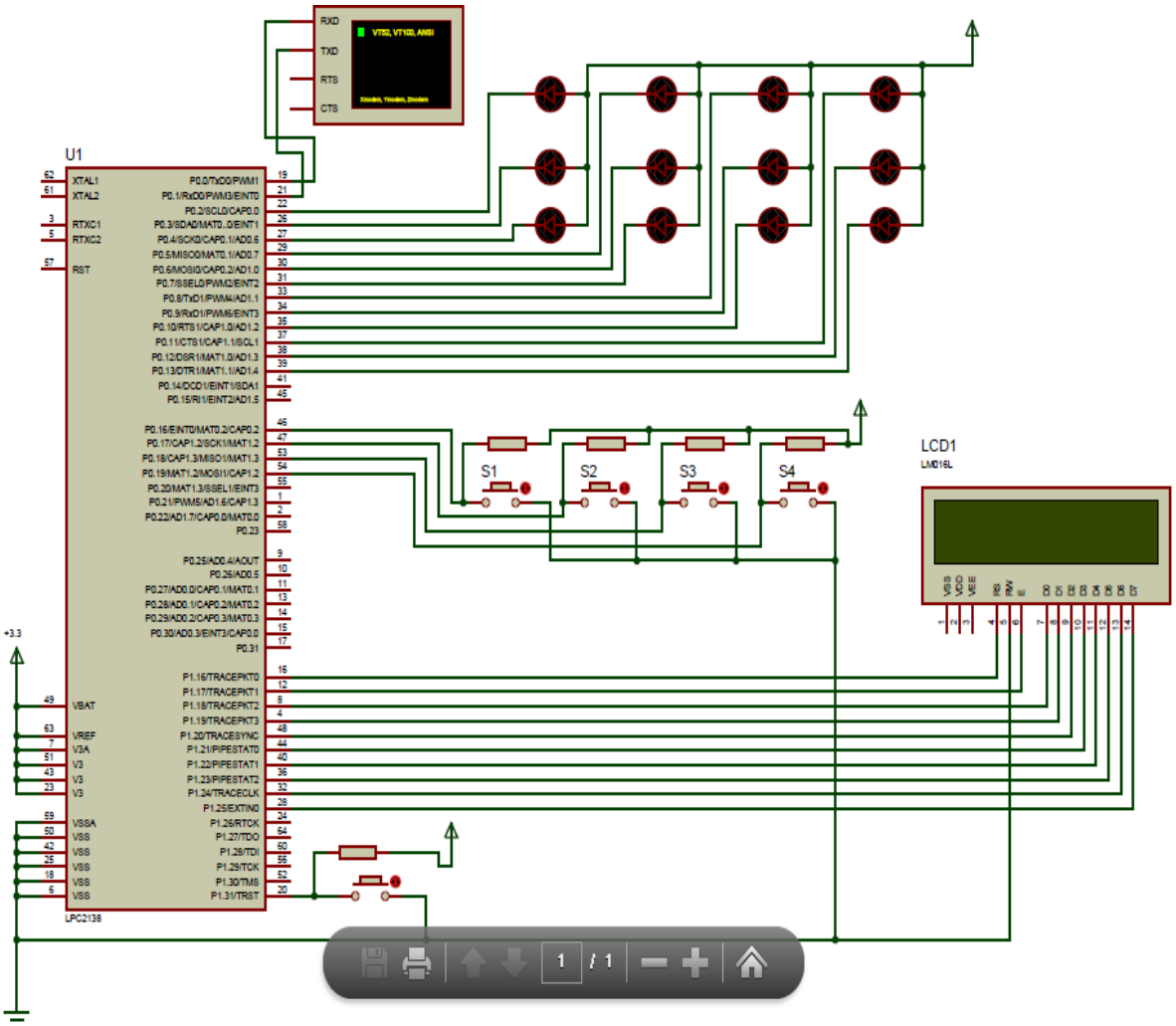
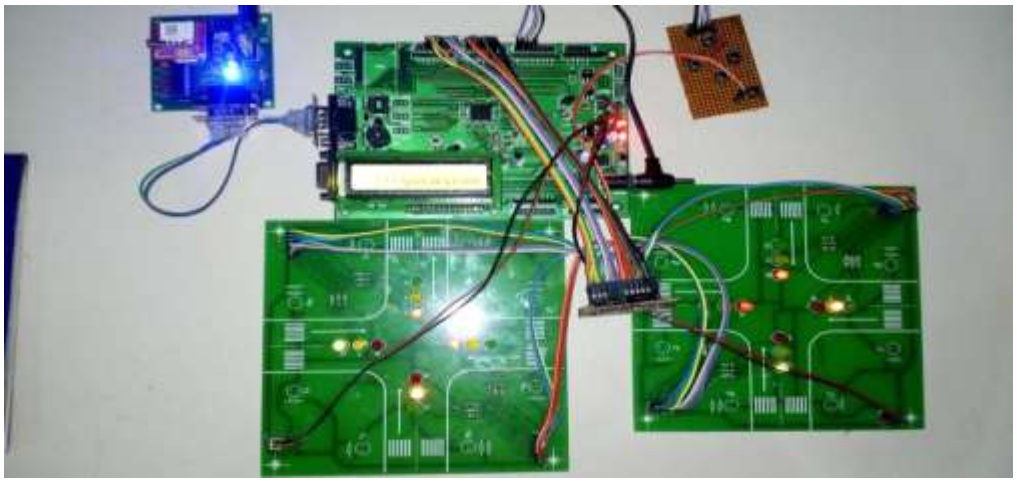
Schematic diagram:



VI. RESULTS

The sensors connected to circuit or controller will be initialized and will be read out from various sensors connected to the controller and sends the same data to authorized PC through ZigBee communication. It is placed in traffic at the major junctions.



VII. CONCLUSION

The present planned system for machine-controlled traffic signal routing using Wireless detector Networks is an advanced version to many existing systems. The wireless sensors nodes create a stable system at each intersection and creating directly implementing in the intersections where having heavy density of vehicles. It is also cheaper and the use of varied systems of sensor nodes are often altered based on the necessity of the traffic. This project can be extended to next level by implementing priority based vehicles moving in the traffic.

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