Passenger Indicator For Driver

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Abstract— We work on the designing and application with Bluetooth or GSM (Global system for mobile communication) for Bus stop Monitoring for driver & control provided for public transportation. This system has been categorized into two modules: - In-Bus module, Bus stop module. The control panel at the bus side will give information to the drivers regarding Passenger availability at bus stop (passenger is available or not on bus stop) if the passenger is not available at bus stop then bus will directly go to next stop. GSM or Bluetooth technology can also be used to get the information about no. of passengers and also the source and destination of the passenger. PIC16f877A microcontroller is the main controlling device which controls and synchronizes all the operations. Such kind of monitoring systems can be used for various public vehicles ranging from auto rickshaws to Buses. Such types of system will assist the travelers, drivers and the Bus stand controller at the control terminals for real time monitoring of the vehicles.

Keyword- Sensors, Bluetooth Module, GSM module , RF Technology

1. INTRODUCTION

Nowadays to stop in every bus stop even when the passengers are not available is very hectic for driver. Because of this time increases and driver have to take a break unnecessarily even when the passengers are not available there or even they do not want to stop there. The driver has to face a lot of discomfort because of this cause on a survey we realize that the driver has the problem to stop everywhere and have to take a break even not required. Passenger indicating system uses GSM and wireless module for sending information, GSM is mostly used as in every system. GSM is used to inform the driver about exact source and destination of passenger.

This design strategy also allows the system hardware to be simplified and the streamlined make-up of embedded systems allow their components to be less expensive and so costs are reduced. The hardware is usually in the form of small computerized parts in larger devices which serve a general purpose and the program instructions for embedded systems run with limited computer hardware resources, little memory and a keyboard and screen. These systems do not involve the redundant programming as in other system models. They also offer high flexibility in hardware programming and can be easily reconfigured as per the requirements at a particular point of time without much change in the external circuitry raw logic gates, and any hardware can be configured into the gates.

2. LITERATURE REVIEW

Sr. No	Title of Paper	Publication Details	Methodology used and findings
1	ARM based smart bus passenger-alert system using GSM with GPS based Location Identification	Poornima.P1, V.Sriteja Reddy2	Vehicular Communication,, Traffic Congestion, Smart Cities.
2	Intelligent Traffic Signal Control System For V2V Communication using Ad-hoc Network.	Pooja.O.N, Prof. M.N.Nagraj India.	Online Job Scheduling, Traffic Signal Control, VANET Simulation
3	Vehicle to Vehicle AND Road Side Sensor Communication For Enhanced Road Saftey.	Andreas Festag Alban Hessler, Roberto Baldessari.	Vehicular Communication, Wireless Sensors Networks, Accident Preventions, Post Accident Investigation.
4	Driver Alert System For Accident Avoidence.	Nidhi Sinha, Prabhat Kumar, M.P.Singh, Jyoti Prakash Singh India.	V2I, Traffic Congestion.

3. HARDWARE DESCRIPTION

This section includes the description of the components that are going to be used in the proposed system.

A. Power Supply

Power supply is used to supply the power to other electrical and electronic circuits or devices. There are different types of power supply circuits based on the power they are used to provide for devices. For example, the micro-controller based circuits, usually the 5V DC regulated power supply circuits, are used, which can be designed using different techniques for converting the available 230V AC power to 5V DC power. Generally the converters with output voltage less than the input voltage are called as step-down converters.

B. PIC 16F877A Microcontroller

The PIC microcontroller is one of the most renowned microcontrollers in the industry. This microcontroller is very convenient to use, the coding and programming of this controller is also easier. One of the main advantage is that it can be write-erase at many times it possible because it uses FLASH MEMORY technology.
It has total number of 40 pin and there are 33 pin of input output. PIC16F877A finds its applications in a huge number of devices. It is used in remote sensors,security and safety devices, home automation and in many industrial instruments.

C. Bluetooth Module

Bluetooth is an open wireless technology standard for exchanging data over short distances from fixed and mobile devices, creating personal area networks with high levels of security. It can connect several devices, overcoming problems of synchronization. Bluetooth technology is designed for and optimized for use in mobile devices. Mobile computers, cellular handsets, network access points, printers, PDA's, desktops, keyboards, joysticks and virtually any other device can have short range Bluetooth radios operating in the free 2.4GHz Industrial-Scientific-Medical (ISM) band integrated into them (single chip).

Connections between Bluetooth enabled electronic devices allow these devices to communicate wirelessly through short-range, creating ad hoc networks commonly known as piconets. Piconets are established dynamically and automatically as Bluetooth enabled devices enter and leave radio proximity meaning that you can easily connect whenever and wherever it's convenient for you. Each device in a piconet can also simultaneously communicate with up to seven other devices within that single piconet and each device can also belong to several piconets simultaneously. This means the ways in which you can connect your Bluetooth devices is almost limitless. There are applications that even do not require a connection establishment. It may be enough if the Bluetooth device's wireless option is set to "visible" and "shown to all", because fixed positioned Bluetooth access points may detect the movement of the Bluetooth device from one AP to another AP. This technology can easily be used for measuring the traffic flow.

D. Liquid Crystal Display

A liquid-crystal display is uses the light -modulating properties of liquid crystal. Liquid crystals do not emit light directly, instead usinga backlight or reflector to produce images in colour or monochrome. LCDs are available to display arbitrary images or fixed images with low information content, which can be displayed or hidden, such as preset words, digits, and seven segments display, as in a digital clock. They use the same basic technology, except that arbitrary images are made up of a large number of small pixels, while other displays have larger elements.

LCDs are used in a wide range of applications including LCD television, computer monitor and indoor and outdoor signage. Small LCD screens are common in portable consumer devices such as digital cameras, watches ,calculator and mobile telephones, including smart phones. LCD screens are also used on consumers electronics products.

4. BLOCK DIAGRAM

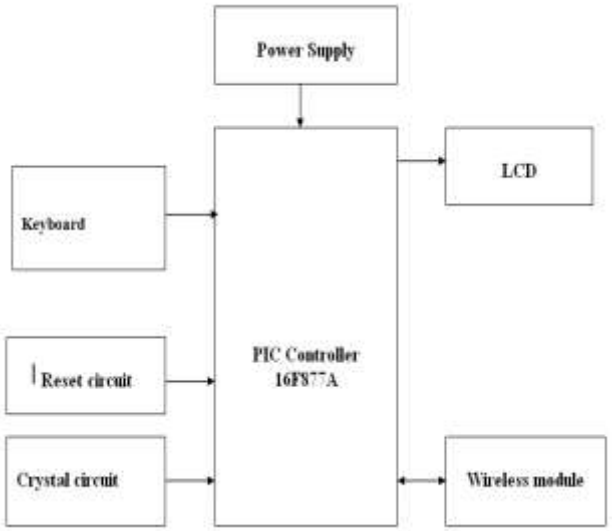
Above figure, block digram shows the block diagram for Passenger Indicator for Driver. It consist of PIC microcontroller 16F877A,reset circuit, crystal circuit, power supply.

Power supply is used to supply the power to the circuit and is used to reduced the main electricity at 240v AC down to something more usable 12v DC. The keyboard is interface with which input of the PIC microcontroller. It is also applied to the input of the PIC. The crystal oscillator is used for providing pulses to the microcontroller. Reset circuit is used for restart the circuit. The Liquid Crystal Display is used for displaying output. It is a p–n junction diode that emits light when activated. When a suitable current is applied to the leads, electrons are able to recombine with electron holes within the device, releasing energy in the form of photons.

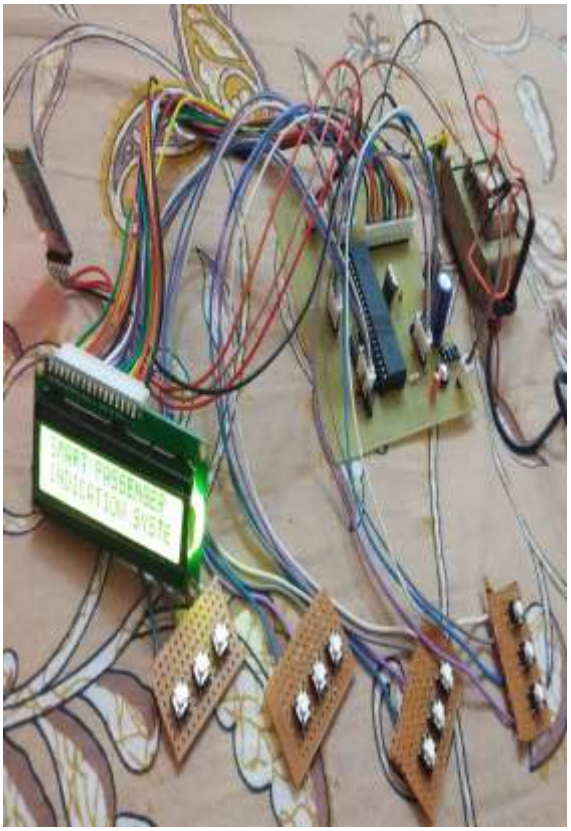
A microcontroller is a small computer on a single integrated circuit consisting internally of a relatively simple CPU, clock, timers, I/O ports, and memory. Microcontrollers are used in automatically controlled products and devices. Microcontrollers are designed for small or dedicated applications. By reducing the size and cost compared to a design that uses a separate microprocessor, memory, and input/output devices, microcontrollers make it economical to digitally control even more devices and processes.

Crystal circuit gives the required clock pulses to the microcontroller to give it the sense of the reference time.

Reset circuit gives the microcontroller the starting pulse required to start the operation from the start. Unless this pulse is given, the microcontroller doesn't start functioning.



5. RESULT



6. CONCLUSION

Our System provides a solution to enhance the bus automation and makes the system more accurate and also on time.

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