

FLOOD INTIMATION IN RAILWAYS USING ZIGBEE AND GSM

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Abstract

Rail accidents have been increased due to the flood flowing across the Railway tracks. We are proposing a flood detection system to overcome such accidents. Here, whenever we detect that there is a overflow over tracks, we will send a signal to the train through zigbee which will automatically stop the train and also send messages to higher authorities of south central railway. An embedded system can be defined as a computing device that does a specific focused job. Appliances such as the air- meet the specific requirement of the application along with the embedded software that is executed by the processor for meeting that specific requirement. The embedded software is also called "firm ware". The desktop/laptop computer is a general purpose computer. You can use it for a variety of applications such as playing games, word processing, accounting, software development and so on. In contrast, the software in the embedded systems is always fixed.

Index Terms: Atmel89S52,Max 232C,Zigbee,Level sensor, gsm, voltage regulator ,lcd

1.INTRODUCTION:-

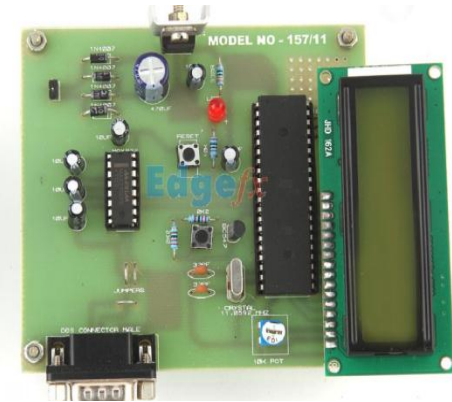
An embedded system can be defined as a computing device that does a specific focused job. Appliances such as the air-conditioner, VCD player, DVD player, printer, fax machine, mobile phone etc. are examples of embedded systems. Each of these appliances will have a processor and special hardware to

Embedded systems do a very specific task, they cannot be programmed to do different things. Embedded systems have very limited resources, particularly the memory. Generally, they do not have secondary storage devices such as the CDROM or the floppy disk. Embedded systems have to work against some deadlines. A specific job has to be completed within a specific time. In some embedded systems, called real-time systems, the deadlines are stringent. Missing a deadline may cause a catastrophe-loss of life or damage to property.

Embedded systems are constrained for power. As many embedded systems operate through a battery, the power consumption has to be very low. Some embedded systems have to operate in extreme environmental conditions such as very high temperatures and humidity.

2.Overview :-

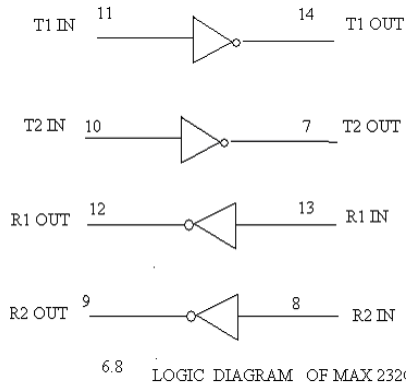
High water level detector interfaced to micro controller that outputs a signal to a GSM modem for sending an SMS to the station master through GSM by user programmable number upon a missed call to direct the train driver to stop the train.



3.Introduction to components:-

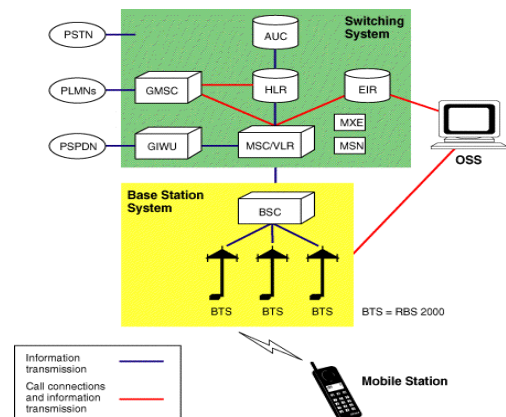
3.1.MAX 232C:

The TTL signals output by a USART are not suitable for transmission over long distances, so these signals are converted to some other form to be transmitted. With a jumper between the points numbered 7 and 8, a high on the TxD output of the 8251A produces a high on the base of the transistor, which turns it off. with points numbered 9 and 10 jumpered, the CR TX line will then be pulled to -12V, which is a legal high or marking condition for RS-232C. A low on the TxD output of the 8251A will turn on the transistor and pull the CR TX line to +5V, which is legal low or space condition for RS- 232C.

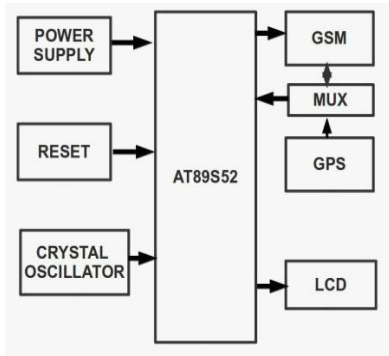


3.2.GSM modem:-

Global system for mobile communication (GSM) is a globally accepted standard for digital cellular communication. GSM is the name of a standardization group established in 1982 to create a common European mobile telephone standard that would formulate specifications for a pan-European mobile cellular radio system operating at 900 MHz.



3.3. ATMEL89S52:



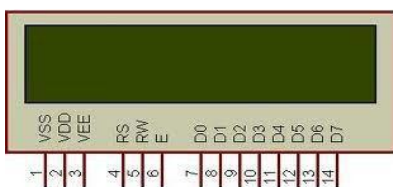
The AT89S52 is a low-power, high performance CMOS 8-bit microcontroller with 8K bytes of in-system programmable Flash memory. The device is manufactured using Atmel’s high-density nonvolatile memory technology and is compatible with the industry standard 80C51 and 80C52 instruction set and pin out. The on-chip Flash allows the program memory to be reprogrammed in-system or by a conventional nonvolatile memory programmer. By combining a versatile 8-bit CPU with in-system programmable Flash on a monolithic chip, the Atmel AT89S52 is a powerful micro-controller which provides a highly-flexible and cost-effective solution to many embedded control applications.

Features of the microcontroller:

1. It is a 8-bit microcontroller.
2. 8K Bytes of In-System Programmable (ISP) Flash Memory.
 - a. -Endurance: 1000 Write/Erase Cycles
3. Fully Static Operation: 0 Hz to 33 MHz
4. 256 x 8-bit Internal RAM.
6. Three 16-bit Timer/Counters.
7. Eight Interrupt Sources.
8. Full Duplex UART Serial Channel.

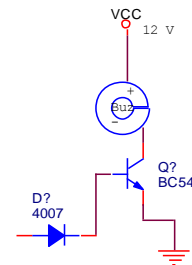
3.4.LCD display:-

1. Interface with either 4-bit or 8-bit microprocessor.
2. Display data RAM.
3. 80x8 bits (80 characters).
4. Character generator ROM and RAM.
5. 160 different 5x7 dot-matrix character patterns.

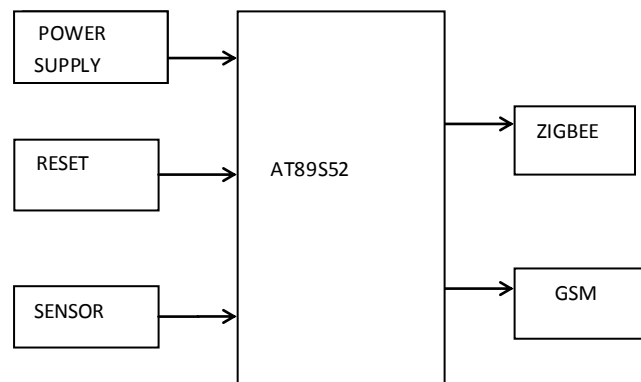


3.5.BUZZER:-

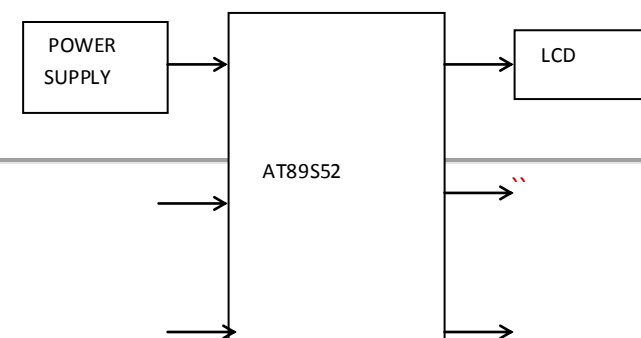
A buzzer or beeper is a signaling device, usually electronic, typically used in automobiles, household appliances such as a microwave oven, or game shows. It most commonly consists of a number of switches or sensors connected to a control unit that determines if and which button was pushed or a preset time has lapsed, and usually illuminates a light on the appropriate button or control panel, and sounds a warning in the form of a continuous or intermittent buzzing or beeping sound.

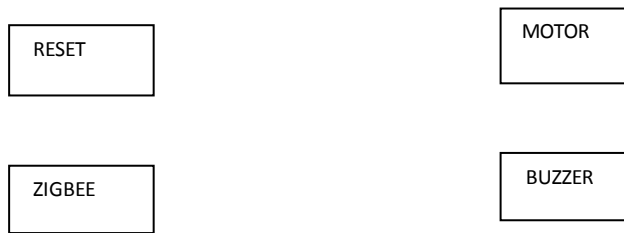


4.TRANSMITTER CIRCUIT:

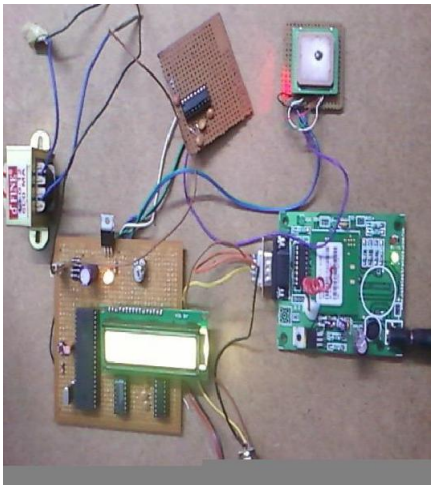


5.RECEIVER CIRCUIT:-





6.OUTPUT AND CONCLUSION:-



This method of tracking a vehicle is enormous and very applicable. It is even advantageous for rail tracking to know the accurate position of the train. We can upgrade it for touch screen system which is already running in the railways. We can

implement very widely so that every passenger can know about the train status being anywhere and he/she can be in time there.

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BIO DATA



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