

AUTOMATIC RAILWAY GATE CONTROL SYSTEM

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ABSTRACT:

The goal of this paper is to give a programmed railroad door at a level intersection supplanting the entryways worked by the guardian. It manages two things. Firstly, it manages the lessening of time for which the entryway is being kept shut. What's more, besides, to give security to the street clients by lessening the mishaps. By the right away existing framework once the train leaves the station, the station master advises the guardian about the entry of the train through the phone. Once the guardian gets the data, he shuts the entryway relying upon the timing at which the train arrives. Thus, if the train is late because of specific reasons, then entryway stay shut for quite a while bringing about movement close to the doors. By utilizing the programmed railroad entryway control at the level intersection the landing of the train is distinguished by the sensor set close to the door. Henceforth, the ideal opportunity for which it is shut is less contrasted with the physically worked doors furthermore lessens the human work. This kind of entryways can be utilized in an unmanned level intersection where the odds of mischances are higher and dependable operation is required. Following, the operation is programmed; blunder because of manual operation is counteracted. Programmed railroad entryway control is very temperate microcontroller based course of action, intended for use

KEYWORDS:

Framework, Microcontroller, Dependable Operation, Blunder.

INTRODUCTION:

The point of the venture is to add to an effective train checking and insurance framework. An order of mischances by their effects(consequences); e.g., head-on crashes, backside impacts, crashes. Head on crash; one sort of train mishap is when two trains impact front face with one another or train crashing on the same track from inverse closures called head on impact. Backside crash; the other kind is the point at which a train crashes into the other that is before it, called a backside impact. Crashes plain track; a train might wreck on a basically straight track that might bring about the train mishap. Bends; crash of a train is more regular when there is a bend on the track bringing about a mischance. Intersections; a train might likewise get crashed on an intersection, which is the spot where two tracks unite into one, or one wanders into two. Mishap donors, for example, train perceivability advance signs, dynamic cautioning, driver conduct, driver diversion and hazard taking have been recognized as normal human components patrons to vehicle train grade crossing mischance. Element incorporates thruway and railroad trademark are contributing variable to mishap at RLC. The ecological variables are snow, overwhelming rain, haze, or blowing snow, which impact the train. The three



primary variables adding to mischances at RLC is essential security building contemplates, human element, designing element, and environment element. The scientific classification of railroad crossing point mischance donors was made to create theories and reasoning about particular cases and normal examples of mishap givers. The Microcontroller based railroad door control framework utilizing AT89S52 Microcontroller is a select undertaking that can control the railroad entryway as per the directions given by the above said microcontroller.

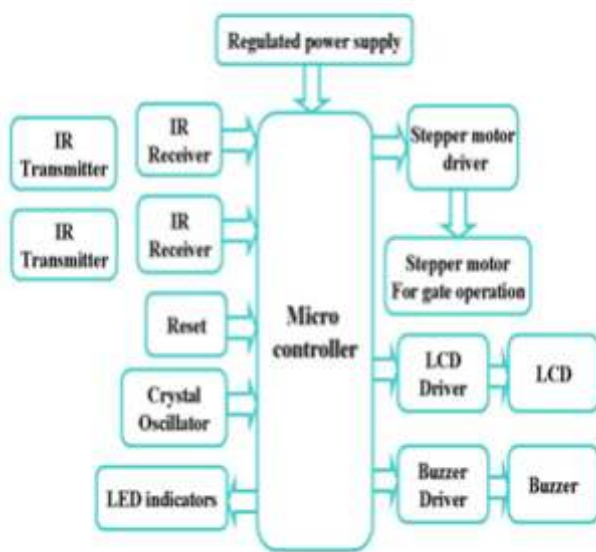
I. PROBLEM FORMULATION

Additional time required when it is not worked consequently

Not more exact

II. BLOCK DIAGRAM AND EXPLANATION

Automatic railway gate control using microcontroller



Microcontroller

The Microcontroller based railroad door control framework utilizing AT89S52 Microcontroller is a unique venture that can control the railroad entryway as indicated by the directions given by the above said microcontroller. The AT89S52 is an elite CMOS 8-bit microcontroller, low-power, with 8K bytes of EPROM. These are components of AT89S52

microcontroller: 256 bytes of RAM, 8K bytes of Flash, 32 information/yield pines, three 16-bit clock/counters, Watchdog clock, two information pointers, six hinder of two level structural engineering, serial port, oscillator . the AT 89C52 is intense MC which gives an adaptable and modest result to numerous implanted framework applications.

LCD (Liquid Crystal Display) –

LCD which is typically known as Liquid Crystal Display and Alphanumeric Presentation it implies that it can demonstrate Letters, Amounts and also diverse codes accordingly LCD is a client merciful Show system which can be utilized for indicating numerous interchanges distinctive seven segment show which can demonstrate just amounts and a percentage of the letters

GSM (Global System for Mobile)-

GSM is an additional gathering cell normal progressed to give assessment offices and records exchange by arithmetical intonation.

GSM Specifications-1RF Spectrum

GSM 900

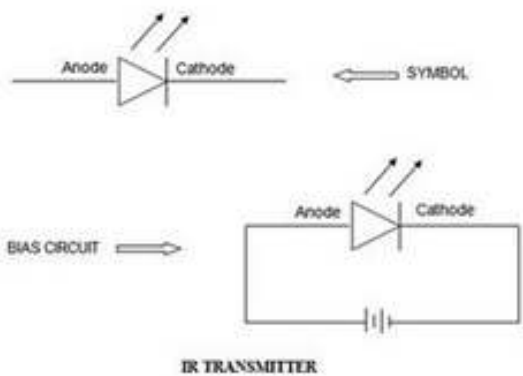
Portable to BTS (uplink): 890-915 MHZ

BTS to Mobile (downlink):935-960 MHZ

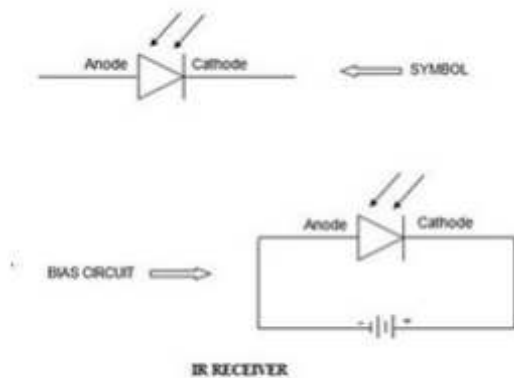
Data transfer capacity : 2* 25 MHZ

IR transmitter:

An electroluminescent IR LED is an item which requires care being used. IR LED's are created from limited band hetero structures with vitality hole from 0.25 to 0.4 eV. Infra red transmitter emanates IR beams in planar wave front way. Despite the fact that infra red beams spread in all bearings, it proliferates along straight line in forward course. IR beams have the qualities of creating auxiliary wavelets when it slams into any impediments in its way. This property of IR is utilized here.



IR receiver:

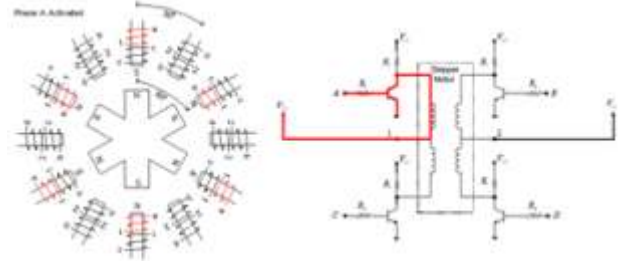


Infrared photograph recipient is a two terminal PN intersection gadget, which works in a converse predisposition. It has a little straightforward window, which permits light to strike the PN intersection. A photodiode is a sort of photograph finder fit for changing over light into either current or voltage, contingent on the method of operation. Most photodiodes will appear to be like a light transmitting diode. They will have two leads, or wires, originating from the base. The shorter end of the two is the cathode, while the more drawn out end is the anode.

Stepper engine:

A stepper engine (or step engine) is a brushless, synchronous electric engine that can partition a full pivot into an extensive number of steps. The engine's position can be controlled definitely with no input component (see Open-circle controller), the length of the engine is precisely

measured to the application. Stepper engines are like exchanged hesitance engines (which are vast venturing engines with a decreased shaft check, and for the most part are shut circle commutated.)



Stepper engine inside circuit graph

Stepper engine qualities

1. Stepper engines are steady power gadgets.
2. As engine speed builds, torque diminishes.
3. The torque bend might be reached out by utilizing ebb and flow restricting drivers and expanding the driving voltage.
4. Steppers show more vibration than other engine sorts, as the discrete step tends to snap the rotor starting with one position then onto the next.
5. This vibration can turn out to be terrible at a few speeds and can bring about the engine to lose torque.
6. The impact can be relieved by quickening rapidly through the issue speeds range, physically damping the framework, or utilizing a miniaturized scale venturing driver.
7. Motors with a more noteworthy number of stages likewise display smoother operation than those with less stages.

Precious stone Circuit

This precious stone circuit gives the required clock heartbeats to the microcontroller to give it the feeling of the reference time

Reset Circuit

This circuit gives the microcontroller the beginning heartbeat required to begin the operation from the begin. Unless this heartbeat is given, the microcontroller doesn't begin working

Control supply

The A.C. 230 information is given to rectifier

circuit and Output get from the rectifier is a throbbing D.C voltage. The yield from the rectifier is given to a channel circuit to channel A.C segments present steady later than amendment. Presently, this voltage nourished to voltage controller to unadulterated steady D.C voltage get.

STEPPER MOTOR DRIVER ULN2803

The eight NPN Darlington joined transistors in this group of exhibits are in a perfect world suited for interfacing between low rationale level advanced hardware, (for example, TTL, CMOS or PMOS/NMOS) and the higher current/voltage necessities of lights, transfers, printer hammers or other comparative burdens for an expansive scope of PC, mechanical, and purchaser applications. All gadgets highlight open-collector yields and free wheeling brace diodes for transient concealment. The ULN2803 is intended to be good with standard TTL families while the ULN2804 is advanced for 6 to 15 volt abnormal state CMOS or PMOS.

BUZZER



An electric loop is twisted on a plastic bobbin, the last having a focal sleeve inside of which an attractive center is slide capably situated. One end of the sleeve is shut and extends past the curl. A reversed glass formed lodging encompasses the curl and bobbin and has a focal opening through which the shut end of the sleeve ventures.

SOFTWARE DESCRIPTION

This undertaking is executed utilizing taking after software's:

- 1.Express PCB – for planning circuit
- 2.PIC C compiler - for gathering part
- 3.Proteus 7 (Embedded C) – for recreation part.

Favorable circumstances:

1. Automatic opening and shutting of railroad door.
2. Automatic detecting of entry and takeoff of train.
3. Efficient and minimal effort plan.

Low power utilization

APPLICATIONS:

This framework can be utilized as a part of continuous to control any entryway openings and entryway opening frameworks.

I. Result



CONCLUSION:

Coordinating elements of all the equipment parts utilized have been produced as a part of it. Vicinity of each module has been contemplated out and put precisely, in this way adding to the best working of the unit. Furthermore, utilizing exceedingly propelled IC's with the assistance of developing innovation, the undertaking has been effectively actualized. Along these lines the task has been effectively composed and tried.

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