Electronic Devices and Circuit Project Proposal

Traffic Light Circuit

Motivation:

Automation is increasingly taking an important role in our daily routine. Our project, using timer, is one step in this process.

Overview:

This project aims to simulate the working of a traffic signal. These signals are designed to ensure an orderly flow of traffic,provide an opportunity for pedestrians or vehicles to cross an intersection and help reduce the number of conflicts between vehicles entering intersections from different directions.

Components Used:

- IC Timer 555 chips
- Power supply
- Leds
- Resistors
- Capacitors
- Rheostat

Description:

Traffic light circuit is designed to work with two timer ICs 555 and three LED indicators. The circuit drives three LEDs with different time delay to provide stop, wait, and go signals to the vehicles on the road.

Two timer ICs are powered by a 12 volt power supply, one timer provides output through Red LED and the other timer provides output through the yellow LED and the Green LED, here the yellow LED output is controlled by the discharge pin of that timer, Vcc supply for this timer is provided by the output and timer elements of the other timer.

By varying VR1 and VR2 that are the variable resistors connected to threshold and trigger pins of the timer-1 and timer-2 respectively, we can vary the time delay between LEDs.

Conclusion and future scope:

The use of timer chips in building up gives us the flexibility to have different time delays in between the green,red and yellow light signals. The future prospect of combining this project with appropriate traffic monitoring sensors, will provide an opportunity for varied delays in between the traffic light signals depending on the traffic conditions.Thus leading to a more efficient traffic control system.

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