SCHEMATIC EXPLANATION

There are three transmitting units of different frequencies. LM555 timer is used in astable multivibrator mode to get the desired frequency range. Depending upon the RC network, the output frequency of the 555 timer IC varies. In this project, LM555 is constructed to produce three different frequencies 500HZ, 1000Hz, 1500HZ using proper resistance and capacitance calculator.

In the receiver unit, the heart of the circuit is AT89c51 IC, where port3 is used as input ports. Port0 is used as input from the IR led transmitter and receiver and port2 is used as input from the IR receiver array. The IR sensor is connected to port2.0 to port 2.2. IR LED receiver is connected to port0.0 and to indicate the speed limit 4 color LED's are used, where green represent 25%, blue represent 50%, white represent 75%, and red represent the full speed of the vehicle.

Once the vehicle crosses the speed post , the IR receiver in the vehicle receive the frequency range emitted from that particular IR transmitter and it is given to tone decoder LM567 of the receiving unit, where the tone decoder with the respective pass band receives the frequency range and gives an enable output. Depending upon the output value given from the tone decoder , the speed of the motor is varied by the microcontroller. In order to guide the vehicle to follow the post in the prototype model IR sensor array is used.

THE FLOW OF PROJECT IN BRIEF:

The speed of the servos if read and the speed of the transmitter servos A, C is also read. If the speed of each A, C is set to 'x' speed set the LED to 'Umber Color'. If the speed of each A, C is set to 'y' speed set the LED to 'Umber Color'. If the speed of each A, C is set to 'z' speed set the LED to 'Umber Color'. The color can to set to desired color. After it set a free run. Check if the direction need to change then st the servo single value to '0' with respect to change in direction to left to right. Set a free run. Then, check the current servos speed. If the speed of each A, C is set to 'y' speed set the LED to 'Umber Color'. If the speed of each A, C is set to 'z' speed set the LED to 'Umber Color'. The flow of the loop continue.

PROJECT OBJECTIVE:

A speed limiter is a governor used to limit the top speed of a vehicle. There are two units in this system , one is transmitting unit which is put on the speed limit post and the second one is receiving unit is interfaced in a vehicle. In transmitting section, Timer 555 IC along with IR LED transmitter is used. The Timer 555 Ic is used as a multivibrator circuit which produces oscillation in the desired frequency and it is given to the IR LED transmitter. In the receiver section, the IR LED receiver receives the modulated light emitted from the transmitter section and it is given to the tone decoder corresponding to the frequency received from the tone decoder gets enabled and gives high output. Here, three 567 tone decoder IC is used and hence 8 conditions can be set and the output is given to the microcontroller. According to the input(condition) given. The microcontroller varies the speed of the vehicle.