In Vehicle Pollutionless Horn

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Abstract- **For the reduction of noise pollution, we introduce the in vehicle pollution free horn the basic principle of this horn is that it transmits a signal from one vehicle to another vehicle in the form of infrared signal (IR signal). IR signals causes no sort of disturbance to humans as humans can neither see nor hear IR signals. The IR signal is converted to a sound signal only at the receiver of other vehicles.**

Thus the 'horn signal' is only heard by the drivers of the vehicles. The pedestrians, who are far away from the trans-receiver of the signaling vehicle, don't hear the sound.

I. INTRODUCTION

Noise pollution is the emission of noise (unpleasant sound) from various sources, which disturb the activity or balance of human and animal life. Noise pollution can cause annoyance and aggression, hypertension, high stress levels, tinnitus, hearing loss, sleep disturbances and other harmful effects. Sources of noise pollution are various; however, one of the major sources of noise pollution is the horn present in all automobiles and transport systems that we use in our day to day lives. Noise pollution is a major problem in densely populated cities like Mumbai.

- *Two-level interrupt priorities*

Relay Unit: This unit provides actual switching of external device connected to the pin of relay. The voltage of the coil of the relay is 12V. That means it will energies at minimum 12 voltage on across it. After tenderization of the coil the mechanical key present inside the relay switches to its other position and vice versa. This gives a heavy induced e.m.f. which can cost the rest of circuit to burn out The traffic congetion on road may be classified into three basic scenarios for our understanding. The scenarios are as follows:

1) Only vehicles.
2) Vehicle and pedestrians.
3) Pedestrians in between vehicles.

DEVICES USED:Microcontroller IC(8051): It is the integrated circuit which makes the circuitry simple. It is responsible for all the decisions taken and is programmed in doing so. Its features include;

- 8-bit data bus-It can access 8 bits of data in one operation.

- 16-bit address bus- It can access 216 memory locations- 64 kB each of RAM and ROM.

- On-chip RAM -128 bytes("Data Memory")

- On-chip ROM-4kB("Program Memory")

- Four byte bi-directional input/output port

- UART(serial port)

- Two 16-bit Counter/timers

but this is prevented by using a diode in parallel with the coil in opposite direction.

Decoder In digital electronics, a decoder can take the form of a multiple-input, multiple-output logic circuit that converts coded inputs into coded outputs, where the input and output codes are different e.g.

n-to-2n , binary-coded decimal decoders. Decoding is necessary in applications such as data multiplexing, 7 segment display and memory address decoding.

The example decoder circuit would be an AND gate because the output of an AND gate is "High"

(1) only when all its inputs are "High." Such output is called as "active High output". If instead of AND gate, the NAND gate is connected the output will be "Low" (0) only when all its inputs are "High". Such output is called as "active low output".

A slightly more complex decoder would be the n-to-2n type binary decoders. These types of decoders are combinational circuits that convert binary information from 'n' coded inputs to a maximum of 2n unique outputs. In case the 'n' bit coded information has unused bit combinations, the decoder may have less than 2n outputs. 2-to-4 decoder, 3-to-8 decoder or 4-to-16 decoder are other examples.

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The input to a decoder is parallel binary number and it is used to detect the presence of a particular binary number at the input. The output indicates presence or absence of specific number at the decoder input.

Let us suppose that a logic network has 2 inputs A and B. They will give rise to 4 states A, A', B, B' .
The truth table for this decoder is shown below:

For any input combination only one of the outputs is low and all others are high. The low value at the output represents the state of the input.

Encoder:

An encoder is a device, circuit, transducer, software program, algorithm or person that converts information from one format or code to another. The purpose of encoder is standardization, speed, secrecy, security, or saving space by shrinking size. Encoders are combinational logic circuits and they are exactly opposite of decoders. They accept one or more inputs and generate a multibit output code.

Encoders perform exactly reverse operation than decoder. An encoder has M input and N output lines. Out of M input lines only one is activated at a time and produces equivalent code on output N lines. If a device output code has fewer bits than the input code has, the device is usually called an encoder.
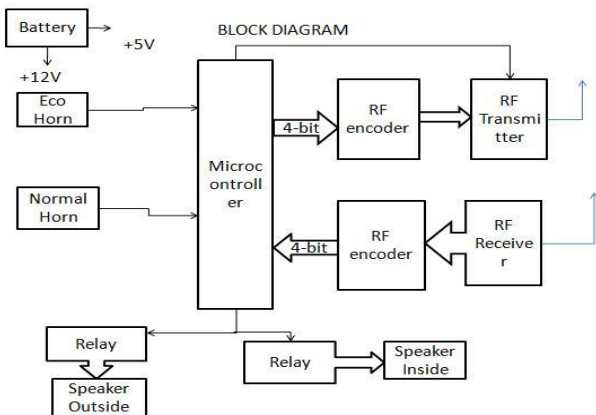
II. ADVANTAGES

1.   Reduces noise pollution.
2.   Correct channeling of horned signal.
3.   Doesn't disturb vehicles and pedestrians who are far away from the traffic or at night.
4.   Provides stereophonic effect of sound within the vehicle, thereby giving a sense of direction to the sound.
5.   Sound produced is not greater than 60 dB and hence within the safe hearing range for the human ear.
6.   Maintaining is rare, easy and feasible under a reasonable budget.
7.   Since it is electrical switch and not mechanical, it suffers less from frictional losses.

III. DISADVANTAGE

1.   High cost
2.   Difficult to installation in ordinary vehicles.
3.   Requires a number of trans-receivers for a single vehicle (2 in one vehicle)
4.   Complex circuitry compared to the ordinary horn

IV. FUTURE ASPECTS

With the advancement in the techniques and ease of designing integrated circuits, the cost of the devices which use these ICs shall come into reasonable rates. In future when the use ICs are frequent and at ease in large scale manufacturing, then the in-vehicle pollution less horn shall not only be used more commonly but we could be safe to say that the in-vehicle pollution less horn shall very well replace the ordinary horn that we use today. In air travel where the use of sound signal is not preferred, in-vehicle pollution less horns can be used to signal aircrafts. When we are using it for air transportation system we can use stronger signals that are not affected at high altitudes.

Because the IVPH has been designed keeping in mind specific applications, its applications are limited. The IVPH can be use mainly for the following two applications:

1) Used as an alternative to the sound horn in automobiles.

2) Can be used for other alerting systems in which direct transmission of sound signals are undesired.

V. CONCLUSION

Thus for the reduction of noise pollution, we introduced the In Vehicle Pollution Less Horn using principle that it transmits a signal from one vehicle to another vehicle in form of radio frequency signals. RF signals causes no sort of disturbance to humans as humans can neither see nor hear RF signals. The RF signal is converted to a sound signal only at the receiver of other vehicles. Thus the horn signal is only heard by the drivers of the vehicles.

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