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Toll and Vehicle Rules Automation system

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Abstract - *The simple accident prevention system on turning is very useful in mountain hairpin bends and u turnings. From this project we can alert the driver through led signal know the vehicle is arriving the turn or blind spot. This project reduces the accidence and save the human life. Our society facing lot of problems. Major problem is accident. accidents are quite common in Indian roads. Safety studies have found that majority of accidents are due to driver's error or due to negligence of safety norms the statistics show that more road accidents take place at blind roads where we are not able to visualize the incoming vehicle. NFC based vehicle management system is considered as an effective method in order to alleviate traffic Congestion and jams, enhance the convenience and safety of travelers. ETC system determine whether the vehicle passing vehicle are enrolled in the program alerts enforces for those that are not and debit electronically the account or the amount in the IC card of the registered users without their stopping an architecture for collecting vehicles toll using near field communication (NFC). This project will check all the documents of the car which will about to cross. It uses a NFC tag as a carrier to identify actual vehicle path in loop road. The ETC system will toll collection without parking. It is necessary to use expressway management.*

Key Words: **Front end system. Rear end System, NFC Reader, NFC tag**

1. INTRODUCTION

Cars on the same direction in highway usually keep a safe distance one another with a similar speed. However, due to the driver's distraction, long-time driving fatigue, flake out, or even a sudden deceleration of the previous car, a serious collision accident may occur if the driver can not react in time to brake. On the other hand, drivers need the mirrors to know other approaching cars from two-side or from the rear end. Therefore, developing a front-obstacle warning system and a rear end collision avoidance system subject to all directions are important in collision avoidance. NFC is a short-wave radio communication technology that is capable of both securely reading from and writing to other radio. The NFC forum takes both a structural and pragmatic approach to give maximum assurance that this goal can be met.

1.1 The front-end sub-system

This subsystem for generating warning signals for the front-end collision avoidance is constructed by measuring the distance with SICK laser radar (LMS221-30206). The collision avoidance of the front-end car usually operated under a relatively high speed.

1.2 The rear-end sub-system:

In the other hand, the real-end collision avoidance would be inherently in shorter distance with a slow approaching speed. Besides, only passively action, which a warning signal can be generated for the approaching car drivers, can be taken. Therefore, rear-end collision avoidance warning sub-system is constructed with the available ultrasonic sensors which have been widely implemented on commercial vehicles..

2. Tools and Methodology

1) Ultrasonic sensor

With 2.5V - 5.5V power the LV-MaxSonar®- EZ1™ provides very short to long-range detection and ranging, in an incredibly small package.

Features

- **Object detection includes zero range objects**
- **2.5V to 5.5V supply with 2mA typical current draw**
- **Readings can occur up to every 50mS, (20-Hz rate)**

2) Microcontroller

The LPC2119/2129/2194/2292/2294 are based on a 16/32 bit ARM7TDMI-STM CPU with real-time emulation and embedded trace support, together with 128/256 kilobytes (kB) of embedded high speed flash memory

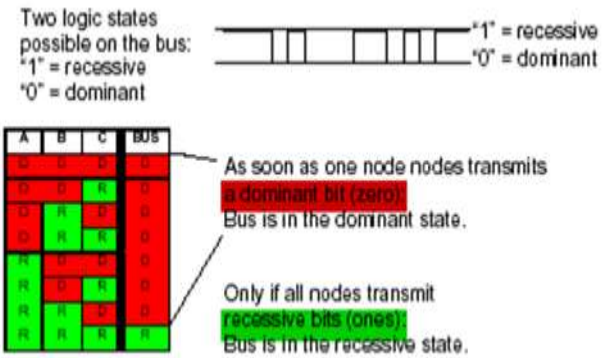
Features

• 16/32-bit ARM7TDMI-S microcontroller in a 64 or 144 pin package.

• 16 kB on-chip Static RAM

• 128/256 kB on-chip Flash Program Memory. 128-bit wide interface/accelerator enables high speed 60 MHz operation.

3) Can Protocol



Controller Area Network (CAN) is an advanced serial bus system that efficiently supports distributed control system with a very high level of security.

CAN has the following properties:

• Prioritization of messages.

• Guarantee of latency times.

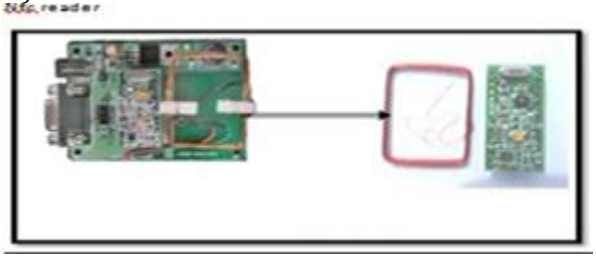
• Configuration flexibility.

• Multicast reception with time synchronization.

• System wide data consistency.

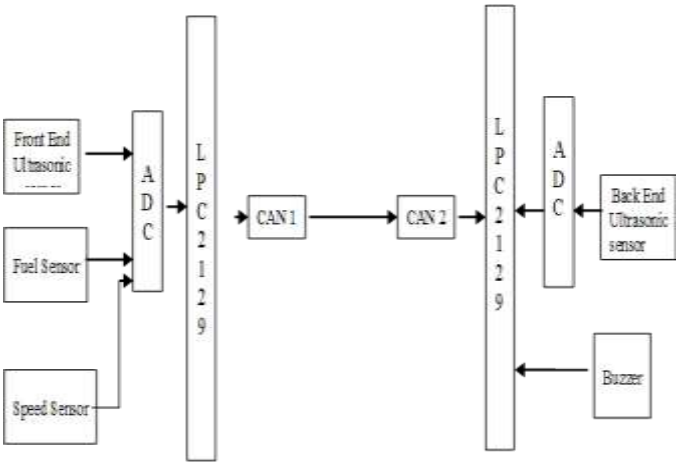
• Error detection and error signaling

4) NFC Reader



The NFC Reader is based on NFC Technology. It Operates AT 13.56 Mega Hertz Frequency With Victinity Card Standards. The NFC Reader Has on Road Antenna And It can be used Enable Existing Electronics Systems. NFC Reader Scan the NFC tag on the Vehicles and Gives Information To the Software System.

5) Methodology



The block diagram of system which includes sensor, ADC, LCD, LPC2129, buzzer, fuel sensor and speed sensor is as shown in fig the system mainly consists of front-end-sub-system and rear-end-sub-system.

The ADC0808, ADC0809 data acquisition component is a monolithic CMOS device with an 8-bit analog-to-digital converter, 8-channel multiplexer and microprocessor compatible control logic. The 8-bit A/D converter shown in fig.

Features

• Easy interface to all microprocessors

• Operates ratio metrically or with 5 VDC or a span adjusted voltage reference

• No zero or full-scale adjust required

• 8-channel multiplexer with address logic

• 0V to 5V input range with single 5V power supply

3. CONCLUSION

This Project is CAN Based Accident Avoidance System Intended for Secure and Smooth Journey. The Car/Vehicle Itself Is Aware of Its Movement. If the Driver Himself Is Not Concentrating on driving which may cause damage the vehicles as well as life will warn the driver the danger ahead. And the main thing is human life is more than any other,

REFERENCES

[1] G. Eason, B. Noble, and I. N. Sneddon, "On certain integrals of Lipschitz-Hankel type involving products of Bessel functions," Phil. Trans. Roy. Soc. London, vol. A247, pp. 529–551, April 1955.

[2] J. Clerk Maxwell, A Treatise on Electricity and Magnetism, 3rd ed., vol. 2. Oxford: Clarendon, 1892, pp.68–73.

[3] I. S. Jacobs and C. P. Bean, "Fine particles, thin films and exchange anisotropy," in Magnetism, vol. III, G. T. Rado and H. Suhl, Eds. New York: Academic, 1963, pp. 271–350.

[4] K. Elissa, "Title of paper if known," unpublished

[5] R. Nicole, "Title of paper with only first word capitalized," J. Name Stand. Abbrev., in press.