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A Survey on Tire Pressure Monitoring System

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ABSTRACT: The major cause of day to day increase in the rate of road accidents are tire inflammation due to low tire pressure. This system is proposed to be for the safety measures of the tire pressure. Tire pressure monitoring system is a real time electronic system which is used to monitor air pressure as well as temperature of the tire. It displays the air pressure on LCD panel or else if the level goes up or down, buzzer starts, if its applicable. Main motive of this wireless tire pressure monitoring system is to reduce car accidents monitoring durability of tire and increase life cycle of tire. The system contains arduino using embedded C programming. Using [RFID] i.e Radio frequency Identification used to on the physical interface of system. Hence, this system helps to decrease the accident and also ensures long n secured lives.

KEYWORDS: Pressure sensor, Microcontroller, RFID, Transmitter, Receiver.

I. INTRODUCTION

Tire pressure monitoring system (TPMS) is a modern Technology used to measure the air pressure and temperature of tire. At the time when the pressure decreases along a certain limit, it indicates to the user by displaying on LCD on by the aloram of buzzr. Two units are used in this system that is transmitting and receiving and unit at the transmitting side, they measures the pressure using BMP085 pressure sensor, It transmits to the receiver units and then the LCD panel display the current value of pressure and its sends to the use by sms system using GSM module.

II. LITERATURE SURVEY

In the paper entitled, “**TIRE PRESSURE MONITORING SYSTEM USING WIRELESS COMMUNICATION [1]**”, the authors Akshay vishnoi, sanju rani, decksha singhal, ashish singh, kshitij singhal. Tire pressure monitoring system using wireless communication. International journal of scientific research of management studies (IJSRMS) volume issued to page No.105-111. Tire pressure can be measured by wireless communication by using microcontroller and pressure sensor BMP085. They have two section of transmitter and receiver section. The whole concept is based on programming loaded with an intelligent C program.

In the paper entitled, “**DESIGN AND IMPLEMENTATION OF WHEEL PRESSURE MONITORING [2]**” the author V. G. vijaya, Dhanasekar J, Hameed humain J, International journal of puee and applied mathematical volume - 116, page No.40. To improve the measurement technique of tire pressure. This system utilizes advanced integration technique to provide a solution, Controlling device is used as microcontroller but zigbee module can be used. It display the output on the LCD.

In the paper entitled, “**TIRE PRESSURE MONITORING SYSTEM AND FUEL DETECTION [3]**” the author prof. Gayatri bokade Loya chandrashekhar Kumar Joshi Pranav Chaudhari hemraj Nutan maharashtra vidyapith, International journal of engineering and research application (IJERA) volume 3 issue 3. the majority of automobile driver do not adequately maintain their tyre pressure, even tire pressure goes down to a low level of pressure. To avoid



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this ,this system is proposed using zigbee module instead of microcontroller unit. Hence ,they can be easily maintains the pressure of tire by wireless module of zigbee

Table 1: Summary of literature survey.

Sr. No.	Title of paper	Name of authors	Technology used	Drawback
1.	TIRE PRESSURE MONITORING SYSTEM USING WIRELESS COMMUNICATION	Akshay vishnoi,sanju rani,decksha singhal,ashish singh,kshitij singhal	TPMS System Using only Wireless Communication.	Interference of RF Increase in this system.
2.	DESIGN AND IMPLEMENTATION OF WHEEL PRESSURE MONITORING	V.G.vijaya, Dhanasekar J,Hameed humain J,	TPMS system using microcontroller and wireless communication.	It can cause delay in displaying the manage to the receiver.
3.	TIRE PRESSURE MONITORING SYSTEM	Loya Chandrashekhar Kumar,Joshi Pranav,Chaudhary Hamraj,Prof. Gayatri Bokade.	TPMS and system using zigbee module.	Sends manage only on LCD display and not on personal device.

III.PROPOSED SYSTEM

The sensor transmits the value of pressure along with temperature to RF. Transmitting modup when it starts sensing the presser when microcontroller analyze this values, then the current pressure and temperature is displayed on LCD screen with the help of Rf transmitter and the RF receiver.By creating electromagnetic waves,the RF communication starts to work and at a partywear destination. It is able to pick up those waves. The frequency is inversely proportional to the wavelength of the electromagnetic signal that is if we increase the frequency, then the wavelength would become shortest. Then by using wiggig electrons in a proper pattern, the Rf communication uses this method to represent information.

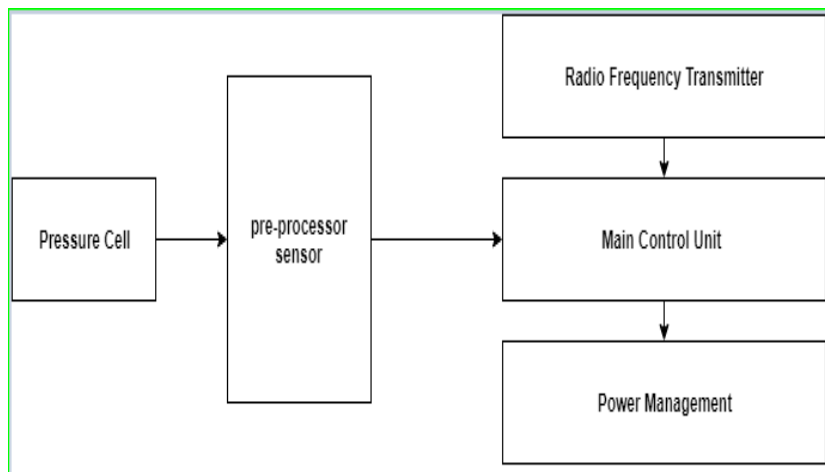
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Transmitting Unit:



Receiving Unit:

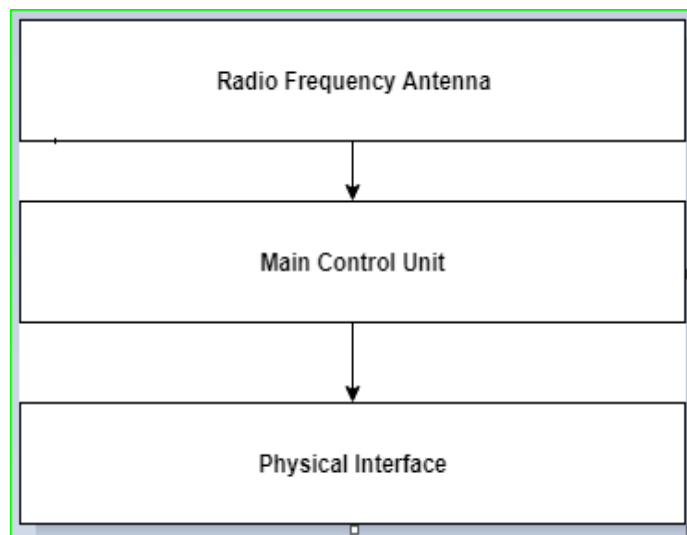


Fig.1 Proposed System Model



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IV. FLOW CHART

The complete flowchart of the system and flowchart of table section to be implemented is as shown in the figures given below.

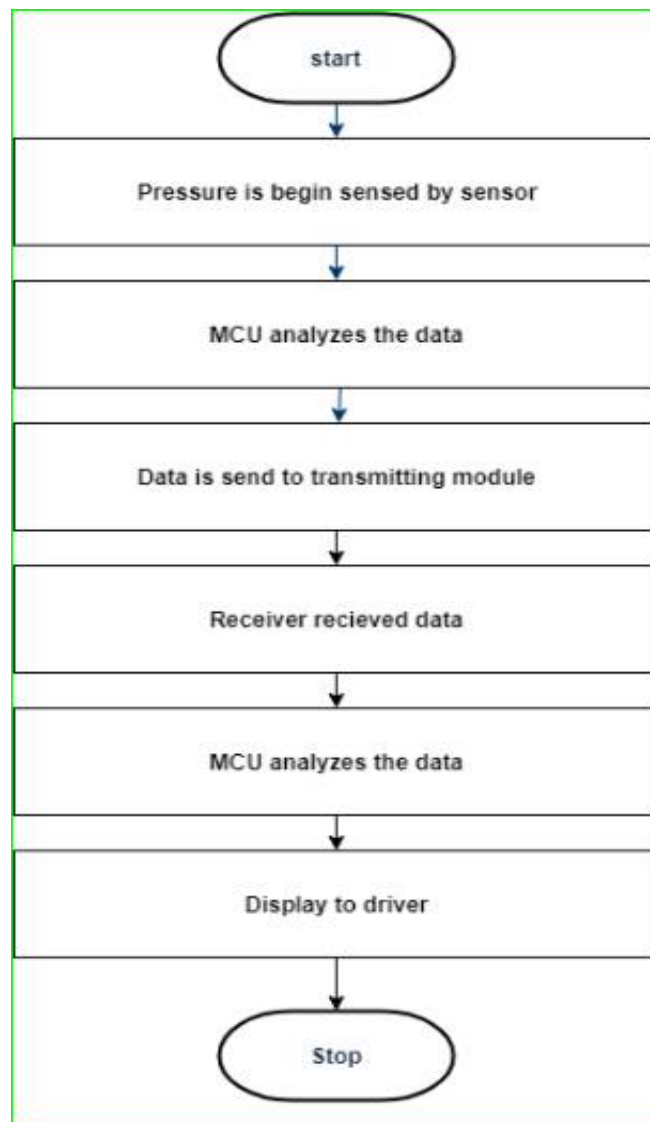


Fig. 2 Flowchart of the proposed system



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V.CONCLUSION

This project apply combination of technique to implement a solution to measure time to time tire pressure and also provide the air pressure data to driver through LCD display. The system ensures measured tire pressure which is important for preventing the problems such as under-inflated tires. Decrease tire life,blowout etc

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