ABSTRACT

Buy a quality tire with the proper size and with a well-known brands in the store or authorized dealer of tire is important to ensure the safety, tire life and the satisfaction or comfort of driving. However, it was only a beginning in the care of your vehicle tire. There are still important things in the care of the tire to get the optimum performance and longer of tire's life. One of them is to check the tire pressure. Proper air pressure is the most important thing in tire's care. That is, the tire air pressure must be given in accordance with the standards set by the manufacturer. Tires that have less wind pressure will be easily damaged in the sidewall due caused by the heat, decrease of load carrying capacity of the tire, and also resulted in a wasteful vehicle fuel. Filling up to the maximum wind pressure as indicated on the tire sidewall will increase tire life and can save on vehicle fuel consumption.

In this Final Project is realized a prototype of tire pressure monitoring device. This device consists of 2 blocks, the transmitter block which is placed on a tire and the receiver which is placed on vehicle's body. In the transmitter block, there are a pneumatic sensor MPX5500 with 0-72,5 psi range, AVR microcontroller ATmega8 as data processor, RF Transceiver YS-1020UA as transmitter. While on the receiver block, RF Transceiver YS-1020UA as receiver, AVR microcontroller ATmega8535 as data processor, and the LCD as a display.

This device can be used to monitor the air pressure in the tire of vehicle, and it can give information to the driver on LCD. The indicator green LED will be on if the pressure of tire between 30 – 35 psi, and the red LED will be on if pressure of tire less than 30 psi or more than 35 psi, so it can give a convenience to the driver and minimize the occurrence of unwanted things.

Keywords: Pneumatic sensor, RF Transceiver, AVR, LCD.