Tyre Pressure Monitoring

The SosaleyTPMS system is designed to be a scalable solution for Tyre Pressure Monitoring System. Planned for the OEM market, the SosaleyTPMS can be configured for both LCVs as well as large trailer trucks containing 18 wheels or more. The system can be integrated in any way the customer needs. The system is planned to be built around ultra-low power sensors that can last up to 10 years.

Features

- Pressure and temperature measurements
- Accurate tyre pressure measurement with direct exposure of the sensor to air pressure
- Wireless operation for communication between sensor and main unit
- Possible battery monitoring
- Configurable beacon interval
- Alters on min/max, and abrupt pressure and temperature variations
- Optional GPS information

Display Options

Depending upon the requirements, the tyre information can be sent to one or multiple endpoints.

A TPMS display system for heavy vehicles showing over pressure on a tyre with the tyre blinking.

- The SosaleyTPMS can be integrated through J1939 and Can bus to the ECU/OBD system. This would need an ECU unit existing on the vehicle.
- Through simple wiring, the SosaleyTPMS can be linked to a small TFT monitor that is mounted in the dashboard. The system will display the status of each and every tyre through symbols defined in ISO 2575.
- Through Bluetooth, the SosaleyTPMS can send data to a smartphone. A smartphone application can be developed to analyse the incoming data and provide information, alerts, and analysis.
- Through on-board GPRS, SosaleyTPMS can send data to the cloud. It must be understood that cloud-based system is only for analysis and cannot be used for instant alerts nor as a means to rectifying hazardous situations.
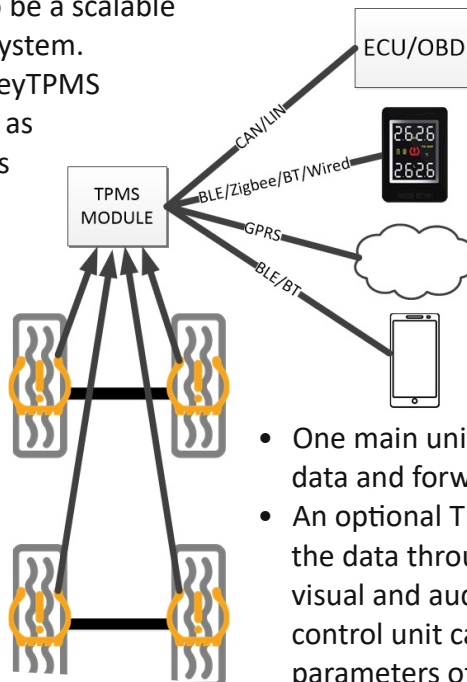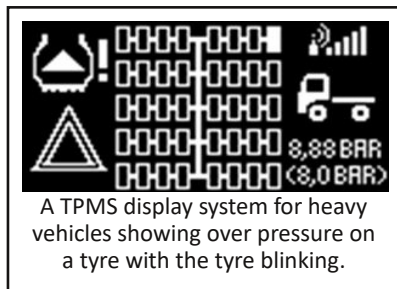
Hardware Configuration

Depending upon the display choice, the SosaleyTPMS will consist of several components:

- Multiple battery powered sensor modules mounted on each wheel. This module senses the air pressure and temperature of each wheel and sends that data to the main module through RF communication.
- One main unit that receives the data, processes the data and forwards the data to the driver or others.
- An optional TFT display and control unit that displays the data through a pre-defined UI. It will also deliver visual and auditory warnings when needed. The control unit can be used to define the operational parameters of the SosaleyTPMS.

Communication Protocols

The communication between the main unit and all other units will be as per the 'tyre' message in SAE J1929 CAN protocol. Appropriate application and translators will be defined as APIs at the other ends of the communication. This makes it easy to configure the SosaleyTPMS as per customer's choice.

SosaleyTPMS Main Unit

The main unit will be based on the Sosaley Master Controller that already has been tested and proven for both sensor interface as well as communication protocols. The main unit of SosaleyTPMS will be minimum four layered and of the smallest size possible. It also has to be housed in an enclosure such as IP5K2 for protection against dust and water.

Analytics

The data that comes from SosaleyTPMS can be used for analytics such as tyre performance, load distribution, tyre mileage, etc. The system comes with a data export facility. Each line of data will be date and time stamped and exported as a de-limited file.

Standards

The SosaleyTPMS will follow international standards defined by ISO and SAE. The standards will be implemented across design, coding, hardware, testing and packaging.