

1. SYSTEM OVERVIEW

The tire pressure monitoring system (referred as TG for Tire Guard) consists of the following units :

- Tire guard wheel unit type S120092001 which includes an integrated pressure, temperature and acceleration sensor and a 315 MHz RF transmitter.
- RF receiver unit which includes a 315 MHz receiver (not described in this document).

The TG monitors a vehicle's tire pressure whilst driving or stationary. An electronic unit (wheel unit) inside each tire, mounted to the valve stem, periodically measures the actual tire pressure. By means of RF communication, this pressure information is transmitted to the RF receiver/decoder.

In stationary mode, the pressure, temperature and acceleration are measured about every minute and emission of RF frames occurs only if pressure variation, higher than a threshold, is detected (leakage detection).

When the vehicle starts moving, the TG wheel unit enters the driving mode. It measures and transmits RF burst 3 times per minute (with 18 s then 18 s and 24 s interframe = 1minute) up to 30 bursts. After this period the wheel unit measures and transmits data every minute. The wheel unit will remain in driving mode for a period of 15 minutes after the vehicle is stopped. After this period has elapsed the wheel unit returns to stationary mode.

If, during any measurement period in driving mode, the current pressure sample is different by +/- 68.5 mbar from the last transmitted pressure value, a re-measure will occur after 6s taking in account the latest pressure value emitted as reference value. If the pressure continues changing, an additional transmission will be sent.

The circuit within the wheel unit monitors the battery every time a pressure measurement is taken. A "Low Battery" function code will be sent when the battery voltage within the wheel unit is below a pre-selected level.