

# **The SmarTire Tire Pressure Monitor Tool (TPMT) Operation**

## ***Overview***

The SmarTire TPMT transmits and receives RF signals with automotive components. These functions are anticipated to be performed in automotive repair shops and tire changing facilities.

## ***Function***

The TPMT transmits at one frequency: 125kHz. The TPMT can additionally receive one frequency: 433MHz. The TPMT also has two different clock sources.

### **125kHz Transmission**

The 125kHz transmission can be generated as a pulsed signal or as a continuous wave signal. In other words it can create a 125kHz signal that is turned on and off at a rate of 4kHz with a variable duty cycle. It can also create a higher powered continuous wave signal.

### **433MHz Receptions**

The SmarTire TPMT is capable of receiving this frequency in either FSK or ASK styles.

### **Clock Sources**

The SmarTire TPMT utilizes a 4MHz ceramic resonator for the microcontroller, which in turn uses a PLL to generate an 8MHz internal use clock signal. The high frequency receiver makes use of a crystal at the 13.225MHz frequency.

### **Power Source**

3 “C” cell alkaline batteries power the TPMT.

## ***Testing***

The operation of the SmarTire TPMT during test will be dependent upon suggests provided by ITS on the best way to accurately test the SmarTire TPMT.