

May 23, 2006

TRW Automotive U.S. LLC  
d.b.a TRW Automotive Electronics  
24175 Research Drive  
Farmington Hills, MI 48335  
Tel: 248.478.7210  
Fax: 248.478.7241



---

RE: Certification for TRW TPM '07 Sensor  
Model #: 42607-0C030 (20 degree)  
          42607-0C040 (40 degree)  
FCC ID: GQ4-32T  
Canada IC: 1470A-13T

## PRINCIPLES OF CIRCUIT OPERATION

The sensor incorporates an ASIC to measure the parameters within the tire. The ASIC outputs the measured data in digital pulses. The digital data gates on and off a power amplifier which couples the RF carrier to the antenna. The transmitted signal uses Frequency Shift Keying (FSK). The carrier frequency of the sensor is 315MHz typically. The worst case frequency shift of the carrier is 314.77MHz for the low frequency and 315.15MHz for the high frequency shift. The receiver bandwidth must be wide enough to pass the transmitter worst case frequency shifts. Reference block diagram in Figure 2.