

April 15, 2004

TRW Automotive Electronics
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RE: Certification for TRW TPM '05 Receiver
TRW Model #: 211646
FCC ID: GQ4-32R
Canada IC: 1470A-4R

GENERAL DESCRIPTION

The TPM receiver is used to demodulate and decode information transmitted from the wheel-mounted sensors. This information is then sent to a display unit. The receiver communicates tire status to the vehicle via a high speed CAN bus. The receiver can initiate the transmitter to send configuration data or pressure and temperature data by activating the low frequency initiator mounted in the wheel well. This activation can also be used to determine if a new transmitter has been placed in the TPM. The receiver shall be able to do diagnostics on the system to determine if the system needs to be serviced.

The receiver can also place the transmitter in a low current mode when the ignition is off to prolong the battery life of the transmitter. When the ignition is turned on, the receiver should put the transmitter in to a high update rate mode and immediately get the tire and pressure information from the transmitter. Activating the transmitter with the low frequency initiator does the mode changes.

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PRINCIPLES OF CIRCUIT OPERATION

The receiver contains a microprocessor and firmware that control the entire TPM system. The microprocessor sends low frequency (125KHz) amplitude-shift-keying data to the initiator via a signal conditioning circuit and wire harness. The initiator, which is located in the wheel well, amplifies this signal and transmits data to the tire pressure sensor located in the wheel. The sensor responds with data modulated at 315MHz. The receiver demodulates this 315MHz signal to receive the data sent from the pressure sensor. Tire pressure problems are reported to the driver via light emitting diodes on the dashboard. A separate system will illuminate the LED's. Tire information is sent to this separate system using a high speed CAN bus.