

May 14, 2006

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RE: Certification for TRW TPM '05 Highline Receiver
with Initiator

Highline Receiver Model #: 95800-26000

Initiator Model #: 95800-3E300

FCC ID: GQ4-39R

Canada IC: 1470A-11R

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 shall directly illuminate the display with discrete light emitting diode (LED) drivers. 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.

The initiator is part of the system used to detect the tire pressure sensors of the tires in a vehicle. Four initiators are used in each vehicle, one for each tire. They are located in or near the wheel well and are connected by wire harness to the central receiver. This central receiver sends a 125KHz waveform over the wire harness to the initiator where it is converted to a magnetic field that is broadcast to a sensor in the tire.

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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. The receiver illuminates the LEDs with LED driver circuitry.