

Description of Operation

The T6 BCM (Body Control Module) contains an electronic board embedded with a Junction Box PCB power board which controls the main Body Electronics functionalities of the car line platform created for Ford Motor Company's brands; Ford of Australia.

Moreover, the BCM performs the RKE (Remote Keyless Entry) and TPMS (Tire Pressure Monitoring System) RF functionality by means of an integrated receiver. This receiver is responsible to pick up the RF frame and decode it in order to perform the locking & unlocking of the vehicle doors for RKE and monitor the tire pressure for the TPMS.

The Remote keyless entry receiver has a Frequency- Shift Keying (FSK) modulation scheme. On the other hand, the TPMS has both FSK and ASK modulation scheme. The receiver operates at 433.92 MHz center frequency and a deviation of 40KHz. The receiver will be configured by the microcontroller in self polling mode. In this mode the receiver wakes up periodically in order to look for RF activity 433.92MHz (Note that it is multi channel for RKE and only single channel for TPMS). If no RF activity, it will go to sleep mode to save current consumption. If RF activity, the receiver will decode the incoming frames only if it is from the paired RKE fob and TPM Sensor. Then, the receiver interrupts the microcontroller. The microcontroller reads the internal memory of the receiver IC, where the data is stored, by means of the SPI bus. After the communication process is performed, the microcontroller decrypts the received data and validates it to make sure that it corresponds to the associated Key fobulator/TPMS.