

## **FUNCTIONAL DESCRIPTION**

### **1. System Components**

The HMC GH System is a vehicle immobilisation and remote keyless entry (RKE) system. This system consists of a body controller module (BCM), an immobiliser antenna with corresponding transponder and a RKE transmitter.

#### **System Operation:**

The HMC GH System combines two sub-systems: an immobiliser system and a remote keyless entry system into one system that performs the functions of both modules. Remote keyless entry function is provided by the RF sub-system of the BCM and the RKE transmitter. On the other hand, the immobiliser function is provided by the LF sub-system of the BCM and the transponder located in the key. The operation of these functions are as follows:

#### **Immobiliser Operation**

The immobiliser system is a passive immobilization system. The immobiliser antenna uses a magnetic couple to read the transponder's identification code. The communication between the immobiliser and transponder is encrypted. The BCM compares the identification code received from the transponder with the identification codes stored in its non-volatile memory. If the identification code from the transponder matches one of the identification codes stored in memory, the BCM sends a "Valid Key" message and associated "rolling code" to the Engine Management System controller. If there is no match, the module sends an "Invalid Key" message to the Engine Management System controller. This causes the Engine Management System to turn off the engine.

#### **Remote keyless Entry:**

The RKE transmitter transmits at 315 MHz an ASK modulated data signal to the BCM. The RF sub-system of BCM receives this encrypted RF signal. The BCM then decrypts the signal and broadcasts the requested remote commands to the appropriate control modules in the vehicle through K-line bus. In general the following functions are provided:

- Lock the car
- Unlock the car
- Unlock the trunk of the car