RF Hub Description of Operation

The RF Hub is an integrated receiver (basestation) in the vehicle that interfaces with the Remote Keyless Entry (RKE) FOBIK using both RF and LF. The RF Hub contains the controlling logic for the Passive Entry Keyless Go (PEKG) feature, Electronic Steering Column Lock (ESCL) module (if so equipped) and the Keyless Ignition Node (KIN) lighting. The RF Hub communicates on the CAN C vehicle communication bus and on a dedicated KIN line with the KIN. The RF HUB also interfaces with the vehicle's door handles, trunk/Liftgate (as equipped) and multiple LF antennas for purposes of providing PEKG functionality.

The RF- HUB module provides the following functions :

1. Vehicle Ignition status via the CAN bus
2. Chrysler Key FOB Validation and Vehicle Immobilization
3. Remote Keyless Entry (RKE) including remote start
4. ESCL (Electronic Security Column Lock) control
5. Passive authentication for entry
6. Passive authentication for operation

The Passive authentication starts when the ignition switch is pressed or when as the user's hand approaches the unlocking switch (IGN, Door handle or Trunk handle) then the LF communication is activated at 125kHz between the RF – HUB module and the Chrysler Key FOB, after this if the FOB is located within a defined, controller and limited range of the request switch, this transmit the CID information at 315 MHz or 433 MHZ to the RF – HUB and if the authentication is correct the module shall grant entry or start the vehicle.

The RKE and TPM functions are performed via RF (315 MHz / 433 MHZ) communications between the Chrysler Key FOB and the RF - HUB, or the TPM sensor and the RF - HUB. RKE activation requests are sent over the CAN C bus to the BCM. TPM data is sent over the CAN C bus the display modules (cluster or overhead console).

The RF - HUB provides a switched battery source to the ESCL actuator (lock and unlock steering column) when the conditions are meet. This output is only required for vehicles equipped with manual transmissions and those vehicles built to meet THATCHAM requirements. The RF – HUB communicates with the ESCL module over the LIN bus. The RF Hub shall drive the ESCL motor to the LOCK position when the Ignition is in Off status (and Gated park is valid).

The RFHub has a high side output denoted “Ignition Run/Start” which is asserted whenever the Ignition Switch Status is in the “IGN_RUN” or “IGN_CRANK” states (as reported by the CAN-C signal VehStartCustIgn_IgnitionPosition). The only consumer of this signal is the CBC.