

## **PRODUCT DESCRIPTION**

The Passive Entry / Passive Start system is designed to allow hands free unlocking of the vehicle doors and engine starting with a push of a button. The PEPS system will provide the means to detect the presence of a PK/CID keyfob by driving Low Frequency (LF) antennas in the vehicle's outside door handles, at the trunk, and within the interior of the vehicle. The PK/CID keyfob will respond to the LF challenge, and the Keyless Vehicle (KV) system will determine the location of any of the fobs that are within LF range. Based on the fob's location, the base station will unlock or lock doors, open the trunk, or allow starting of the vehicle at the push of a button on the vehicle's instrument panel. A second version of the PEPS system will not have the hands free entry functions but will only support the Passive Start feature. Both versions of the PEPS systems will also act as a gateway for standard RKE functions and will receive and pass along TPMS signals.

### **Remote Function Actuator (RFA) module**

The RFA module (also known as the KVM) is a microcontroller based module that connects to the vehicle's wiring harness in order to interface with other body control modules to provide for the control of the vehicle's door locks, trunk release, engine start/stop, lights, alarms, and other functions. The RFA is a base station unit containing the driver circuits that are connected to LF antennas at the vehicle's exterior and interior for the passive entry/start functions. These LF transmission functions are activated by switches built into the outside door handles and at the trunk, and by an engine push start switch on the instrument panel. The RFA receives data via an ISO9141 bus from the separate RFR module to obtain RF responses from the PK/CID keyfobs for the passive and RKE functions. The RFA is responsible for decrypting the secure encoded messages from the PK/CID units. The RFA uses a low speed CAN interface to communicate to the vehicle bus for data and control.

There are two main versions of the RFA module:

1. Passive Entry/Start – Provides both hands free unlocking/locking of exterior doors and push button starting of the vehicle.
  2. Passive Start Only – Provides only push button starting of the vehicle.
- Both versions provide RKE functions.

The RFA modules shall both use a single version of the application software that can be programmed to the vehicle configuration. The number of doors, left or right hand drive, use of E-Latch motors, monitoring of TPMS, and other features can all be configured at the vehicle assembly plant. While a Passive Entry/Start module can be configured to work on a Passive Start Only vehicle, the opposite is not true.