Functional Description

The Wireless Ignition Node (WIN) is an integrated ignition switch, immobilizer, and RF receiver module. In particular, it provides the following functions :

1. Vehicle Ignition status via the CAN C bus
2. FOBIK Validation and Vehicle Immobilization
3. Remote Keyless Entry (RKE) including remote start
4. Tire Pressure Monitoring (TPM)
5. Brake Shift Interlock control
6. ELV (Electronic Column Lock) control
7. Real Time Clock

The WIN has an integrated 4 position (Lock/Off, Accessory, Run/Start, Start) ignition switch and reports the ignition status to the rest of the vehicle on the CAN C bus. A hard-wired redundant Run/Start feed is provided to the TIPM (Totally Integrated Power Module). Rotation of the ignition switch to the Lock/Off position is inhibited if the vehicle is out of Park.

The Immobilization function is performed via LF (125kHz) communications between the FOBIK and WIN and CAN C communications between the WIN and the engine controller.

The RKE and TPM functions are performed via RF (433.92MHz US/EU & 315MHz Japan) communications between the FOBIK and the WIN, or the TPM sensor and the WIN. 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 WIN also communicates with the LF trigger modules via the LIN bus.

The WIN provides a switched battery source to the ELV Lock Motor (unlock only) when the FOBIK is inserted. This output is only required for vehicles equipped with manual transmissions and those vehicles built to meet THATCHAM requirements. The WIN communicates with the ELV module over the LIN bus.

The WIN controls the Brake Transmission Shift Interlock (BTSI) feature. This feature prevents the vehicle transmission from exiting Park unless the brake pedal is pressed, the ignition switch is not in the Lock position and a valid FOBIK is in the ignition.

The WIN maintains a real time clock while battery voltage is applied to it. The WIN transmits the clock information on the CAN C bus.

Short Circuit Protection

The WIN module is protected against input/load shorts as follows:

Circuit	Protection Method	Maximum Current
Battery/GND	External fuse	20A
LIN bus	SS protected bus transceiver	20mA
CAN C bus	SS protected bus transceiver	100mA
Run/Start output	Internal Polyfuse	20A
BTSI output	SS protected HS driver	2A
ELV output	SS protected HS driver	20A
Brake Switch input	Limiting resistor	20mA
Gated Park input	Limiting resistor	20mA