

**Narrative Statement of Equipment and Theory of Operation**  
**FCC FORM 442 – VehicleSense, Inc.**  
**Application No. 0038-EX-PL-2004**

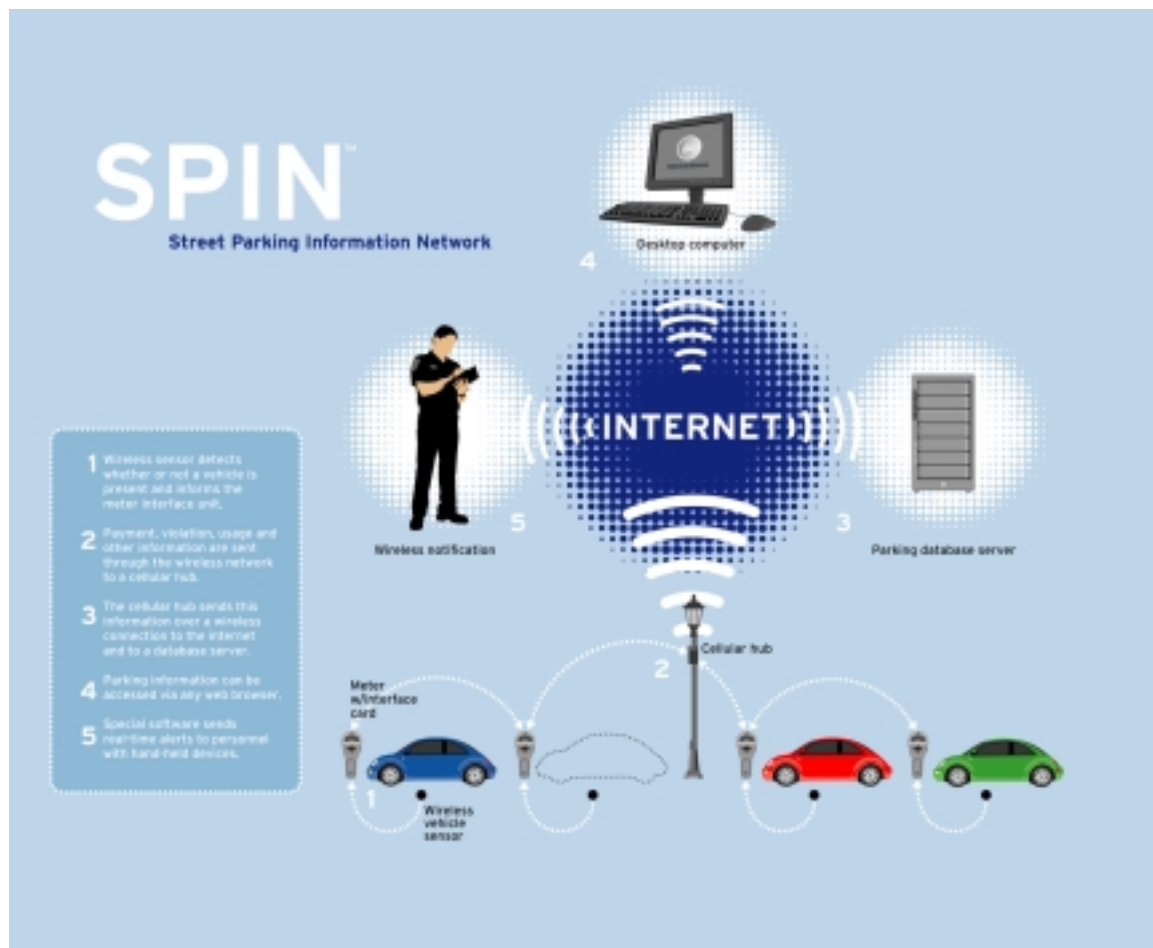
Applicant seeks this Experimental Authorization to conduct an experimental installation of the VehicleSense Street Parking Information Network (SPIN). The Applicant seeks this Experimental Authorization to conduct test bed evaluations for the assessment and improvement of system performance and to analyze transmission characteristics among components. The primary application for SPIN is for on-street, parallel or perpendicular, metered parking as an adjunct to an existing electronic meter system installation.

A SPIN installation consists of the following components (illustrated in attachment):

- Vehicle Sensors – self-powered sensors buried at each parking space that communicate with corresponding meters by radio.
- Meter Interface Units (MIU) – battery powered circuits installed in each existing meter that interface to the meter circuit and communicate with the Vehicle Sensor, with adjacent MIUs, and with a Parking Area Relay Unit by radio.
- Parking Area Relay Units – battery, solar, or locally powered devices that collect data from a pod up to 25 meters distant and relay the data via cell modem to a central server.
- Central Server – an Internet server located at a VehicleSense facility that communicates with the Parking Area Relay Units and Handhelds and that hosts a Database of space activity and serves out database queries over the Internet.
- Handheld Display – a portable display device that communicates violation and related information sent by the Central Server by cell phone modem to enforcement personnel on the street. The test installation comprises all of the above components except the Handheld Display.

The projected operators of the SPIN product, when available for commercial distribution, will be municipalities and other entities, such as universities, with extensive on-street metered parking installations. SPIN offers several benefits to municipalities and their citizens in the form of increased parking revenues to offset or reduce increases in property taxes and in improved meter maintenance and uptime. Specifically, SPIN offers

- Collection Efficiency – SPIN provides revenue enhancement by zeroing the meter whenever a vehicle leaves a space, by preventing meter feeding, and by alerting parking authorities as soon as an overstay violation occurs. Revenue enhancement is the primary objective of SPIN.
- Law Enforcement Assistance – Enforcement personnel on the street are notified immediately of violation locations.
- Public Property Maintenance – SPIN monitors cash collection at each meter and relays the information to the central server. SPIN also monitors its own health and the health of the meters, reporting problems to the central server for immediate disposition and increased uptime.
- Municipal or Campus Usage and Operational Planning – SPIN collects data on space usage during on and off-hours aiding a parking authority in modeling and usage studies and space and revenue optimization.



### Transmitter data

|                    |             |
|--------------------|-------------|
| Frequency          | 902-928 MHz |
| Max Power          | 10dbm       |
| Max antenna gain   | 5 db        |
| Modulation         | FSK         |
| Occupied bandwidth | 32 kHz      |
| Max data rate      | 9600 baud   |