Connected Vehicle Roadside Unit

Roadside Unit

The Connected Vehicle Roadside Unit provides wireless communications from roadside infrastructure to vehicle On Board Units.

The Roadside Unit operates on the 5.9 GHz Direct Short Range Communications (DSRC) band compatible with vehicle systems to provide very low latency required for high speed events, such as crash avoidance.

The Roadside Unit is packaged in a ruggedized weatherproof enclosure suitable for outdoor installation in all weather, including a standard power over Ethernet connection to the traffic signal controller requiring only a single CAT-5 or CAT-6 outdoor Ethernet cable for power and communications.

The Roadside Unit meets the U.S. Department of Transportation FHWA fourth generation specifications including communications to vehicles, data security and Global Positioning System (GPS) reception for time of day and location.

In addition to USDOT requirements, the Roadside Unit includes a local Wi-Fi hot spot to access the signal controller and an optional LTE cellular backhaul for data upload / download.

The Roadside Unit also includes internal data storage for intersection map geometry without need to replace controllers.

As an option, the Roadside Unit can be ordered with software to manage a number of Roadside Units from a central location using area maps.

Key Features

- Meets USDOT FHWA fourth generation Roadside Unit specifications.
- Hi-speed, low-latency Direct Short Range Communications (DSRC) to vehicle On Board units
- DSRC communications compatible with mandated new vehicle safety systems
- Compact, pole-mounting for limited space requirements
- Power over Ethernet connection to signal controller or cabinet network switch (Siemens ruggedized power over Ethernet injector available separately)
- GPS receiver for location and time of day
- Local Wi-Fi hot spot to access signal controller and for communications to vehicles from nearby smart devices such as laptops, tablets and smart phones for pedestrian and cyclist safety applications
- Optional LTE cellular radio for long distance backhaul to central system
- Optional software to manage multiple Roadside Units from a central system
- Includes all antennas and mounting hardware.

SIEMENS

Roadside Unit

Specifications

- Dimensions: 5" H x 7" W x 2" D
                13 H x 18 W x 5 D cm
- RSU Shell: Cast Aluminum
- RSU Finish: Anodized
- Input Power: 48 V PoE
- Housing: Sealed, NEMA 4X

Technical Details

- IEEE 802.11p 5.9 GHz DSRC to vehicles
- IEEE 1609.2 and IEEE 1609.3 security
- 2.4 GHz Wi-Fi hot spot to smart devices
- GPS receiver for time and location
- Power over Ethernet to signal controller or network switch
- Cellular backhaul (plan not included)
- Meets USDOT FHWA Version 4 Roadside Unit specification
- Sealed weatherproof enclosure
- Internal storage for MAP geometries
- Translates proposed NTCIP Signal Phase and Timing (SPaT) objects to SAE J2735 SPaT wireless message to vehicles.
- Optional GIS based maps for central management of RSU functions.
- 1000 ft (300 meter) range, open-field, line-of-sight