

VDU Data Unit – description of circuitry and theory of operation (North American version)

The VDU Data Unit comprise the parts of the Coencorp fleet management system. The VDUs are mounted on vehicles and collect the odometer, hour meter and some other data retrieved from vehicle interface. Data Collector is mounted on a fixed installation and serves as an RF modem linking VDUs to SiteController computer. In the North American version the VDU communication uses fixed channels in 915 MHz ISM band.

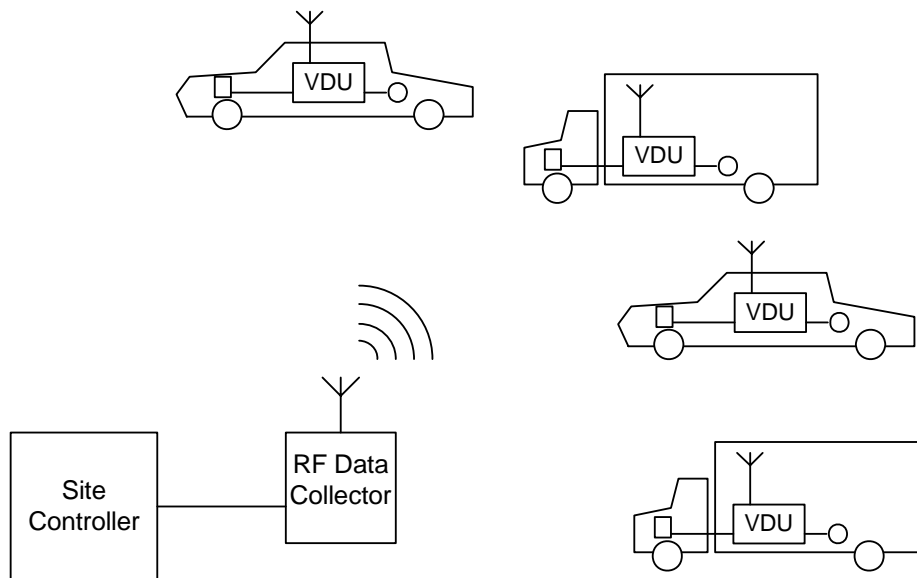


Figure 1. Coencorp fleetzone site

The VDU Data Unit use the same circuit board packaged in two different enclosures. The VDU enclosure is an ABS box approx. 1.5"x2.5"x4.5" with side flanges, while the Data Collector is packaged in a standard electrical PVC box 5"x9"x9". Portable Data Collector (used for field tests) may use the same box as VDU.

The VDU also has an RFID interface running on low frequency 125 kHz used for pump nozzle tag identification in the automated fueling procedure.

The VDU Data Unit card circuitry consists of three principal sections: Interface section, RFID section and RF section.

The interface section includes the two shapers/Schmitt triggers for the discrete vehicle interface signals – VSS and RPM/Ignition.

The Main microcontroller is also located in the Interface section. In the VDU it controls the RF and RFID transceivers and processes the data interface signals (serial and pulse VSS/RPM). In the Data Collector the serial interface is used to communicate with the SiteController computer, discrete signal processing and RFID interface are disabled in the firmware.

FCC STATEMENT

1. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits For a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference In a residential installation. This equipment generates, uses and can radiate Radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

--Reorient or relocate the receiving antenna.--Increase the separation between the equipment and receiver.

--Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

--Consult the dealer or an experienced radio/TV technician for help.

FCC Exposure Statement

1. This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This module is designed to comply with FCC statement. FCC ID is: VY3-VDU-915
The host system using this module, should have label in a visible area indicated the following texts: "Contains FCC ID:VY3-VDU-915".

2. This equipment must not be co-located or operating in conjunction with any other antenna or transmitter.