

WAF - High Power RFC-RF-14

Installation Guide

The WAF (Wireless Automated Fueling) Unit is a transmitter that in conjunction with the Vehicle Identification Sox (VIS) enables to identify the vehicle automatically on the fuel Island. The single antenna RF module is connected to the antenna via short COAX cable and to the CPU via RS-485 with a Separate ground connection



General description

The EUT is a Medium power 24dBm Output FHSS transceiver module operating at the ISM frequency band 902-928 Mhz And utilize a master transmitter in a master-slave network.

The modem has an External antenna.

The modem is being used as a master in a station controller. The environment is a fuel station.



Technical description

The device is a complete RF transceiver, it has its own reference oscillator and permanently attached antenna. The only connectors are RJ-45 for data signal and power feed and Grounding terminal. The data inputs are buffered.

The EUT operates with DC voltage of 9 to 30 Vdc. Current consumption is maximum 150 mA.

When the transceiver transmits a frame with different frequency every 380 mSEC, the frequency is changed on a predetermined, pseudo random pattern. There are 51 different frequencies. The occupancy time on any frequency is 380 mSEC. The cycle period is $51 \times 380 \text{ msec}$ which is 19.38 second.

The transmission frame is divided to 19 time slots 20 mSEC each. The second and the last slot are not used. The first time slot is used for one beacon transmission of 5.8 mSEC and a command of up to 7 mSEC. The other active time slots contain only the beacon and leave the slot open for the response. This means that the maximum Tx on time is $17 \times 5.8 + 7 = 106 \text{ mSEC}$, which is 28% duty cycle.

The user may send data to the module only during the last time slot. The module signals this time slot by outputting low level at the TXFLAG output.

The data is transferred to or from the transceiver by serial communication with baud rate of 28800.

The transceiver includes a CPU. The CPU is a buffer for the data inputs. It receives the data from the user at any time and sends it at the correct time slot to the transceiver.

The module transceiver has its own RF shield and cable dipole antenna without connector. The output power is constant 24 dBm.



FCC Compliance Statement:

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to FCC Part 15, sub-part C of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in residential installations.

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 and television reception.

However, there is no guarantee that interference will not occur in a particular installation.

If this device does cause such interference, which can be verified by turning the device off and on, the user is encouraged to eliminate the interference by one or more of the following measures:

- Re-orient or re-locate the receiving antenna.
- Increase the distance between the device and the receiver.
- Connect the device to an outlet on a circuit different from the one that supplies power to the receiver.
- Consult the dealer or an experienced radio/TV technician.

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

This equipment complies with the FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator and any part of human body.



INSTALLATION REMARKS:

- The WAF unit with the Antenna must be installed more than 2m (80") above the ground.
- The WAF unit must be installed at list 1m (40") from any metal material.
- The WAF unit can be installed in any plastic enclosure, the Antenna must be placed in a vertical position, fixed with plastic holders:



