

Theory of Operation

The device is a complete RF transmitter, it has its own reference oscillator and permanently attached antenna. The device has internal power supply battery of 3.6VDC.

When fueling process begins the WNR start the transmission from a random channel between 1 that indicates transmission frequency low of 2.401 GHz to channel 16 that indicates transmission frequency high of 2.478 GHz.

Channel transmission last for 5 ms and another 5ms wait for answer which gives a total of 10 ms. Multiply by 16 channels equals 160ms (if no answer from RFU occur).

This transmission happens for 3 retrials equals 480 ms maximum of transmission.

If no answer yet the WNR wait for 5 sec and check again if the vehicle is in the area to start transmission again.

If answer occurs the next transmission will be in 12 sec or until end of the fueling transmission.

The opposite side is the RFU, who changes every 2 sec its receiver channel/frequency in order to avoid noisy or bad channel.

Current consumption at standby mode (standby mode) is 2-3 uA AVG.

Current consumption at work mode (vehicle is in the station) is 12-15 uA AVG.