



RFicient®

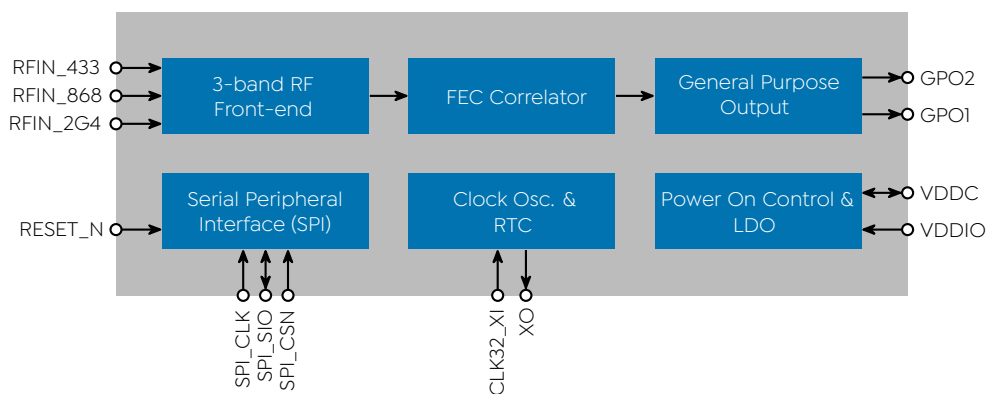
Ultra-low power wake-up receiver FH101RF

Features

- Continuous monitoring of the wireless channel
- Tri-band Wake-Up and Data Reception
- 433 MHz, 868 MHz or 915 MHz and 2.4 GHz SRD frequency bands
- Selective Wake-Up with 16 Bit ID via built-in Address Decoder
- Recognition of two separate wake-up patterns
- Operates with micro-controller in deep sleep mode
- Very low operating current consumption < 3.5 µA
- Response Time only 32 ms
- Receiver Sensitivity typically -75 dBm
- Separate RF single-ended inputs
- Adjustable Receiver Data Rate
- SPI Slave Interface to Host
- Fault-tolerant data decoding
- Tolerates co-channel interferers with bit-error-rates up to 16 %.
- Operating Temperature Range TA = -20 to +85°C
- Very Small Package and Footprint

Applications

- Smart home and building automation
- Remote keyless operations
- Industrial condition monitoring
- Remote wireless control
- Wireless sensor networks
- Body area networks
- Ambient assisted living
- Fitness monitoring
- Asset tracking / Indoor localization
- Telematics
- Vehicle Monitoring



Description

The FH101RF RFicient® Ultra-low Power Wake-Up Receiver is a tri-band receiver for simultaneous reception of OOK modulated signals in the SRD frequency bands 433 MHz, 868 MHz or 915 MHz and 2.4 GHz. It achieves a receiver sensitivity of typically -75 dBm.

RFicient® receiver technology enables continuous monitoring of a radio channel at microwatt power consumption and responds in milliseconds. This allows mobile applications to operate with 24/7 connectivity and extended lifetime up to 10 years on very small batteries.

The integrated ULP receiver RFicient® operates without the use of a micro-controller and recognizes two separate wake-up patterns. After receiving a specific wake-up pattern, a digital control signal is generated to activate any application hardware like a MCU. Hence, individual RF modules can be addressed directly without the need of a wireless sensor network. Moreover, addressing groups is also available.

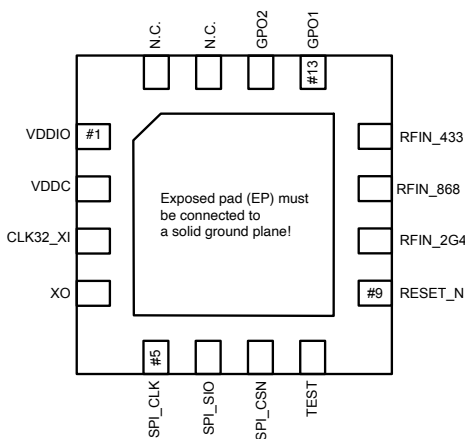
Data packets can be received by the RFicient® receiver and stored in three built-in FIFO buffers. All of these data events can trigger an IRQ signal for external circuitry in order to indicate available data. Thus, peripheral components can be run in deepsleep operating modes and achieve ultra-low values of the total power consumption.

The RFicient® communication uses binary correlators to detect predefined 31-bit preambles. Applying appropriate sequences with excellent autocorrelation and cross-correlation attributes, the preamble detection can tolerate strong co-channel interferers with bit-error-rates up to 16 %. PART NUMBER PACKAGE BODY SIZE (NOM) FH101RF QFN-16 3,00 mm × 3,00 mm.

Ordering Information

- QFN-16L Package – Operating Range [-20 to +85°C]
- PB Free, halogen free, RoHS/WEEE compliant product

Part Number	Package	Body Size (NOM)
FH101RF	QFN-16	3,00 x 3,00 mm



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EBV Chips

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RFicient® Ultra-low power wake-up receiver FH101RF production and qualification is managed by RoodMicrotec GmbH – www.roodmicrotec.com

Disclaimer

The RFicient® devices are not designed for to be used in any direct or indirect life supporting electronics or any application endanger human life or cause a risk of bodily injuries or catastrophic property damage could occur, even in case of system or device malfunctions. This document provides only high level product information and does not replace the product datasheet.