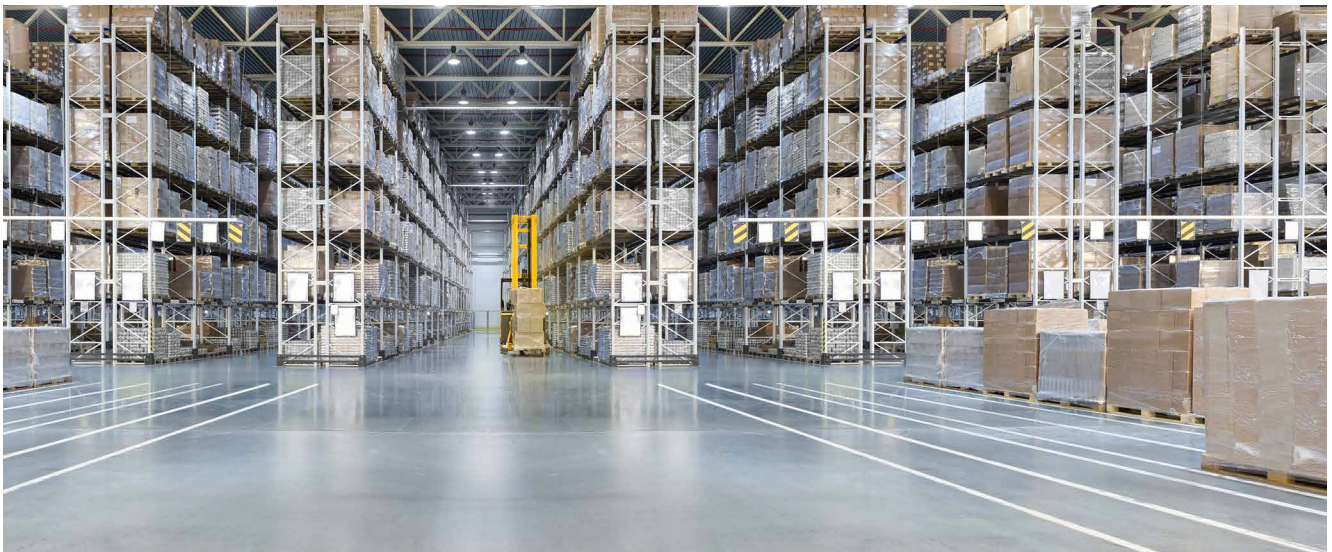


OL2361 Sigfox Transmitter Modem IC



The OL2361 is a high performance single chip embedded Sub GHz RF transmitter with up to +12 dBm output power for Sigfox applications requiring RF transmitter. The embedded microcontroller and memory are reserved for specific Sigfox binaries provided by NXP.

The provided firmware image is dedicated for NXP's Sigfox modem that will run the Sigfox firmware with the application on a host microcontroller such as NXP's Kinetis, LPC or MCX MCU families. The connection between host and OL2361 is established via SPI.

The on-chip UHF transmitter requires no external components to operate from 868 MHz to 928 MHz except for a single 27.6 MHz reference crystal and the loop antenna matching circuitry.

The OL2361 provides 2 kByte of Ultra Low Power Serial EEPROM with access control as defined by the application, 1 kByte of RAM and up to 16 kByte EROM (FLASH like) for the application code.

The device comes in a tiny 24 pin HVQFN package that consumes only 16 mm² of board space enabling ultracompact designs.

OL2361 has a quiescent current of typically 50nA allowing for tags with few Sigfox messages per day to operate for multiple years.

Key features

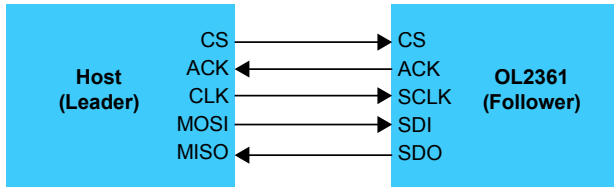
- Single chip embedded RF transmitter with Fractional PLL synthesizer in small package
- On-chip UHF transmitter 868 MHz to 915 MHz
- Up to +12 dBm output power
- Up to 2 kByte EEPROM for user data storage
- HVQFN24 (4 mm x 4 mm)

Target Sigfox applications

- Sensors nodes
- Tagging
- Tracking
- Monitoring

Host interface

A 5-wire SPI connection is defined between the OL2361 and a host microcontroller, whereby the host is leading the SPI communication defining the OL2361 as a follower. For easy setup and portability NXP provides example SPI driver software in the form of source code for NXP's MKL43Z and K32S family of microcontrollers.



LSBF = 0, CLKPHA = 1, CLKPOL = 0, BR = Up to 2 Mbps

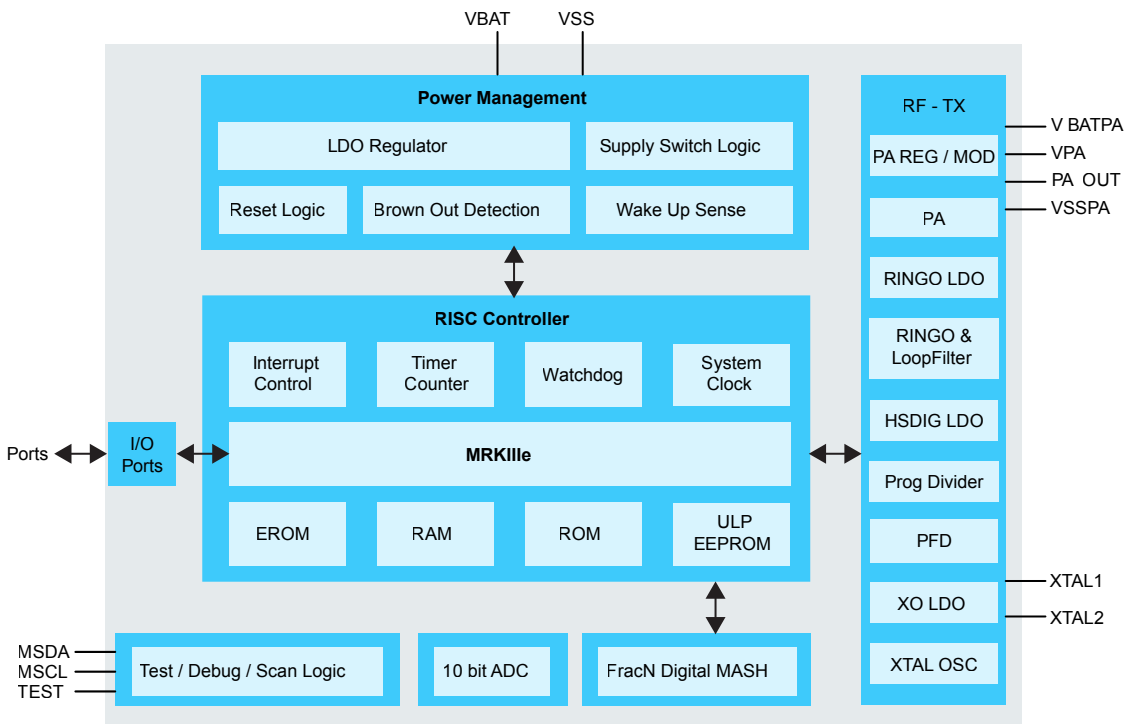
TX: Data out @ rising SCLK, OL2385 latches data @ falling slope

RX: OL2385 data out @ rising SCLK, SPI in latches data @ falling slope

Sigfox library

The Sigfox firmware provided is based on library version 2.11.0 and supports all regions, RC1 through to RC7. Given the maximum output power this results depending matching and antenna choice a class 0 or class 1 device in all regions with an EIRP of +16dbm, and a class 2 or class 3 device where the maximum output power follows FCC guidelines.

OL2361 Block Diagram



Visit www.nxp.com/OL2361

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