

# Product Information

## TH71111

### 868/915MHz Receiver

The TH71111 FSK/FM/ASK single-conversion super-heterodyne receiver IC is designed for applications in the European 868 MHz industrial-scientific-medical (ISM) band, according to the EN 300 220 telecommunications standard. It can also be used for any other system with carrier frequencies ranging from 800 MHz to 930 MHz (e.g. for applications according to FCC part 15).



Automotive ICs

Hall ICs

Intelligent Drivers  
and Actuators

RF&RFID

Silicon MEMS

CMOS Imaging

Bus ICs

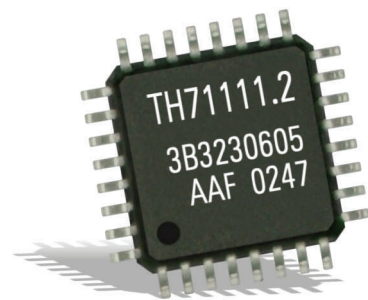
IR Temperature

## Features

- Single-conversion superhet architecture for low external component count
- FSK for digital data and FM reception for analog signal transmission
- FSK/FM demodulation with phase-coincidence demodulator
- Low current consumption in active mode and very low standby current
- Switchable LNA gain for improved dynamic range
- RSSI allows signal strength indication and ASK detection
- 32-pin Low profile Quad Flat Package (LQFP32)

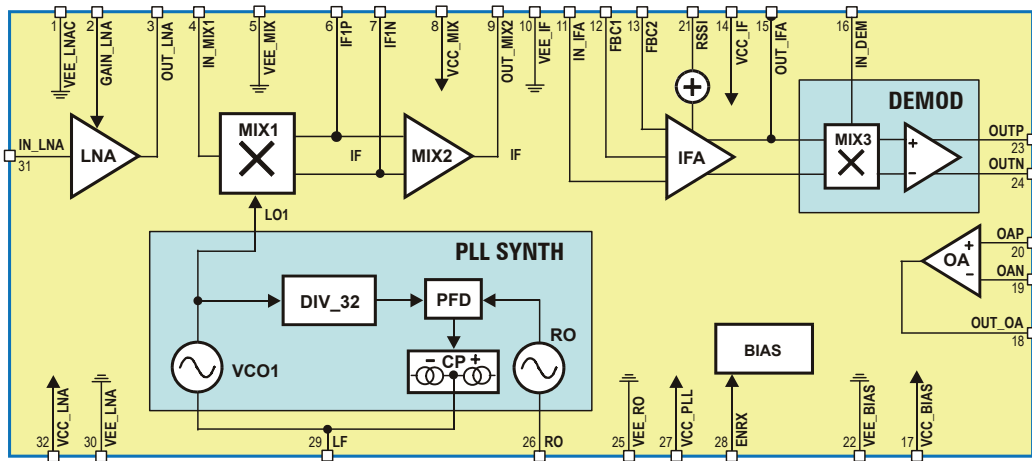
## Technical Data Overview

- Input frequency range: 800 MHz to 930 MHz
- Power supply range: 2.3 V to 5.5 V @ ASK
- Temperature range: -40 °C to +85 °C
- Standby current: 50 nA
- Operating current: 7.5 mA at low gain mode  
9.2 mA at high gain mode
- Sensitivity: -112 dBm @ ASK, 180 kHz IF filter BW  
-106 dBm @ FSK, 180 kHz IF filter BW
- Range of IF: 400 kHz to 22 MHz
- Maximum data rate: 260 kbps NRZ @ ASK  
180 kbps NRZ @ FSK
- Image rejection: > 45 dB (e.g. with SAW front-end filter and at 10.7 MHz IF)
- Maximum input level: -10 dBm at ASK  
0 dBm at FSK
- Spurious emission: < -70 dB
- Input frequency acceptance: up to ±100 kHz
- RSSI range: 70 dBm
- FM/FSK deviation range: ±2.5 kHz to ±80 kHz
- Maximum analog modulation frequency: 15 kHz



Small things make a big difference.

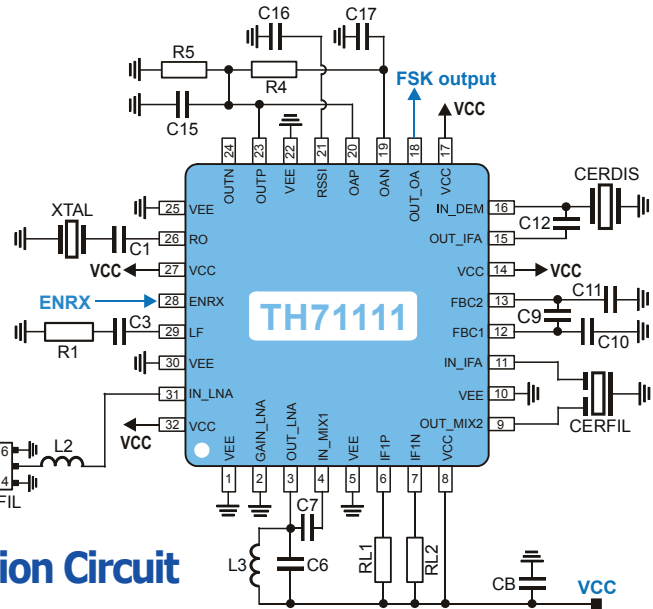
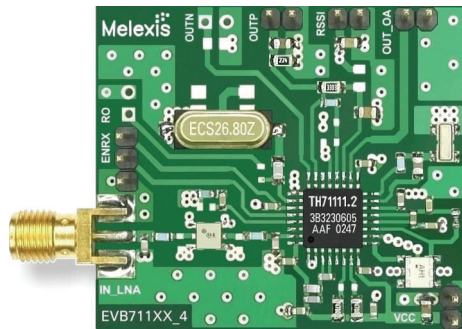
# Block Diagram



# Applications

- General digital and analog data receiving
- Tire Pressure Monitoring Systems (TPMS)
- Remote Keyless Entry (RKE)
- Wireless access control
- Low-power telemetry systems
- Home and building automation
- Alarm and security systems
- Garage door openers
- Remote controls

# Evaluation Board



# FSK Application Circuit

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