

## 300 to 930MHz FSK/ASK Receiver MLX71120/MLX71121



### Features

- ◆ Dual RF input for antenna space and frequency diversity, LNA cascading or differential feeding
- ◆ Fully integrated PLL-based synthesizer
- ◆ 2<sup>nd</sup> mixer with image rejection
- ◆ Reception of ASK or FSK modulated signals
- ◆ External IF Filter 10.7MHz/455KHz (MLX71120)
- ◆ Internal IF filter (MLX71121)
- ◆ Wide operating voltage and temperature ranges
- ◆ Very low standby current consumption
- ◆ Low operating current consumption
- ◆ Internal FSK demodulator
- ◆ Average or peak detection data slicer mode
- ◆ RSSI output with high dynamic range for RF level indication
- ◆ Output noise cancellation filter
- ◆ MCU clock output
- ◆ High over-all frequency accuracy
- ◆ 32-pin Quad Flat No-Lead Package (QFN)

### General Technical Data Overview

- ◆ Input frequency ranges: 300MHz to 470MHz  
 610MHz to 930MHz
- ◆ Power supply range: 2.1 to 5.5V
- ◆ Temperature range: -40 to +125°C
- ◆ Shutdown current: 50 nA
- ◆ Maximum data rate: 50kps RZ (bi-phase) code, 100kps NRZ
- ◆ Image rejection: 65dB 1<sup>st</sup> IF (with external RF front-end filter)  
 25dB 2<sup>nd</sup> IF (internal image rejection)
- ◆ MCU clock frequency: 2.0 to 3.4MHz
- ◆ Crystal reference frequency: 16 to 27MHz



### Special Technical Data Overview

#### MLX71120

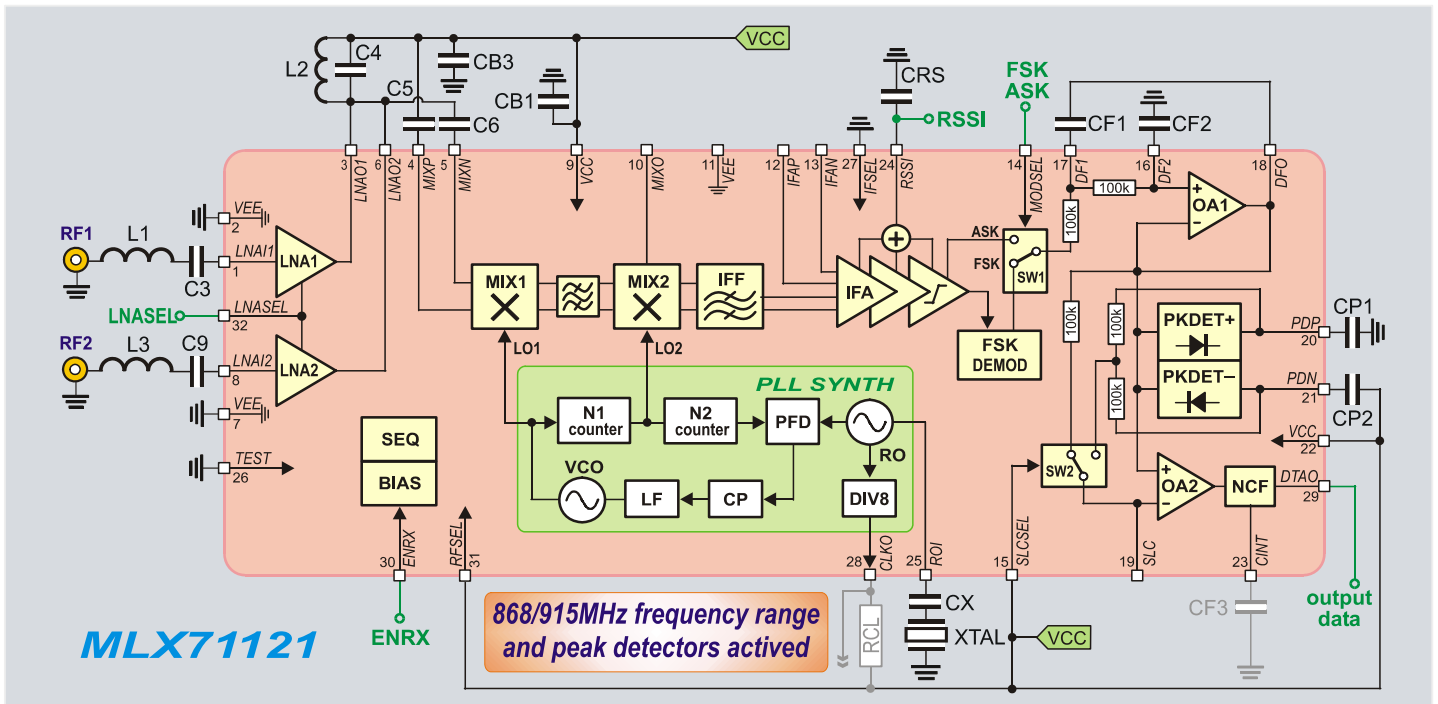
- ◆ Operating current: 6.5 to 8.1mA
- ◆ FSK input sensitivity: -108dBm\* (WB, 433MHz)  
 -112dBm\* (NB, 433MHz)
- ◆ ASK input sensitivity: -113dBm\* (WB, 433MHz)
- ◆ Selectable IF2 frequency: 10.7MHz or 455kHz
- ◆ FSK deviation range: ±10kHz to ±100kHz (WB)  
 ±2kHz to ±10kHz (NB)
- ◆ Spurious emission: < -54dBm
- ◆ Linear RSSI range: > 70dB

#### MLX71121

- ◆ Operating current: 10.0 to 11.1mA
- ◆ FSK input sensitivity: -107dBm\* (433MHz)
- ◆ ASK input sensitivity: -112dBm\* (433MHz)
- ◆ Internal IF: 1.8MHz with 300kHz 3dB bandwidth
- ◆ FM/FSK deviation range: ±10kHz to ±100kHz
- ◆ Spurious emission: < -54dBm
- ◆ Linear RSSI range: > 60dB

\* at 4kbps NRZ, BER = 3 × 10<sup>-3</sup>, without SAW front-end-filter loss

# Block Diagrams with external Components



## Evaluation Board Dual-Channel Applications

- ◆ For antenna-diversity applications
- ◆ For frequency-diversity applications

