Product Information

MLX71122

300 to 930MHz FSK/FM/ASK Receiver

The MLX71122 is a multi-channel receiver IC based on a double-conversion super-heterodyne architecture. It is designed to receive FSK and ASK modulated RF signals either in 8 pre-defined frequency channels or frequency programmable via a 3-wire serial programming interface (SPI).

The IC is designed for a variety of applications, for example in the European bands at 433MHz and 868MHz or for the use in North America or Asia, e.g. at 315MHz, 447MHz or 915MHz.

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Features

- Programmable PLL synthesizer
- 8-channel pre-configured or fully programmable SPI mode
- Double super-heterodyne receiver with 2nd mixer as image rejection mixer
- Reception of FSK, FM and ASK modulated signals
- Low shut-down and operating currents
- AFC – automatic frequency control

- AGC – automatic gain control
- On-chip IF filter
- Fully integrated FSK/FM demodulator
- RSSI for level indication and ASK detection
- 2nd order low-pass data filter
- Positive and negative peak detectors
- Data slicer (with averaging or peak-detector adaptive threshold)
- 32 pin Quad Flat No-Lead (QFN 5x5 Quad)

Technical Data Overview

- Input frequency range: 300 MHz to 930 MHz
- Power supply range: 3.0 V to 5.5 V
- Temperature range: -40 °C to +105 °C
- Standby current: 50 nA
- Operating current: 12.5 mA (typ.)
- FSK sensitivity: -107 dBm (typ.)
- ASK sensitivity: -112 dBm (typ.)
- Internal IF: 2 MHz with 230 kHz 3dB bandwidth
- Minimum frequency resolution: 10 kHz
- Maximum data rate: 100 kbps NRZ, 50 kbps bi-phase code
- Total image rejection: > 65 dB (with external RF front-end filter)
- FM/FSK deviation range: ±10 kHz to ±50 kHz
- Spurious emission: < -70 dBm
- Linear RSSI range: > 50 dB
- FSK Input frequency acceptance range: 170 kHz (3dB)
- Crystal reference frequency: 10 MHz

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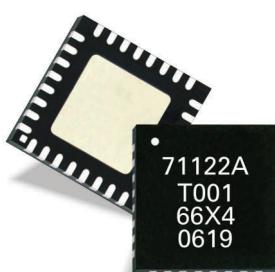
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CMOS Imaging

Bus ICs

IR Temperature

Block Diagram
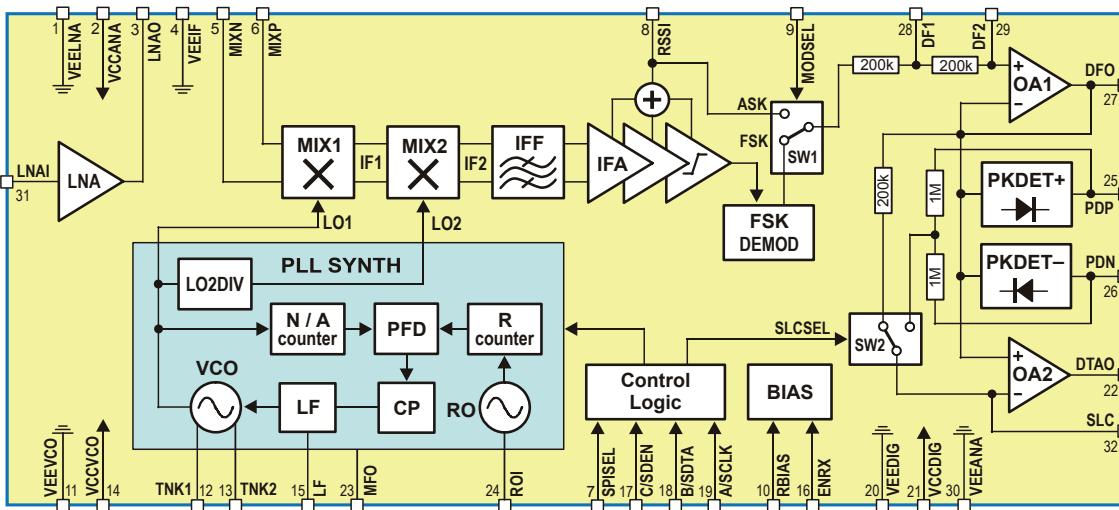
Applications

- 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
- Active RFID tags

Evaluation Board
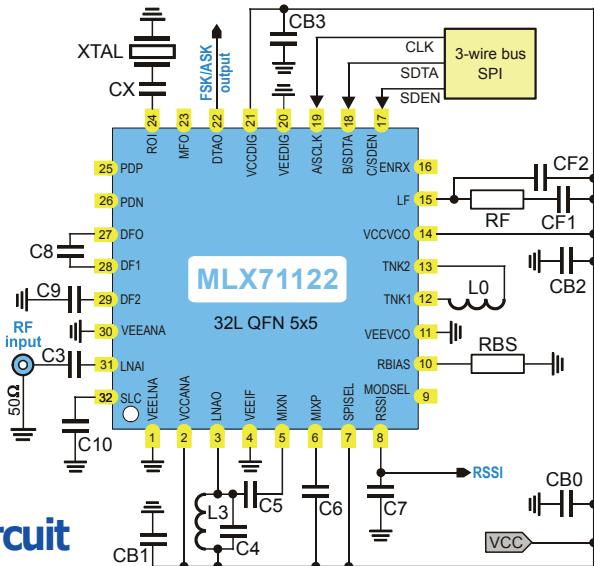
FSK/ASK Application Circuit

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