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Preliminary

RF2053

HIGH PERFORMANCE WIDEBAND RF SYNTHESIZER WITH INTEGRATED RF MIXER

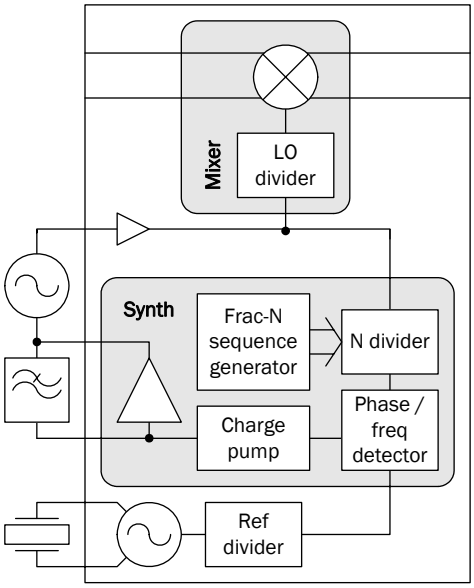
RoHS Compliant and Pb-Free Product
Package: QFN, 32-Pin, 5mmx5mm

Features

- 2.7V to 3.6V Operation
- 100MHz to 2.5GHz Frequency Range
- Fractional-N Synthesizer
- Very Fine Frequency Resolution
- On-chip Calibration
- Wide Range of Reference Frequencies
- Integrated RF Mixer
- Programmable Bias Conditions
- Three-wire Serial Control Interface

Applications

- Frequency Band Shifting
- Signal Generation
- Super-heterodyne Radios
- Satellite Communications
- Instrumentation and Test Equipment
- Wireless Infrastructure
- Wireless Repeaters
- Point-to-Point Radio Links
- PMR Systems



Functional Block Diagram

Product Description

The RF2053 is a very wideband RF frequency conversion chip with integrated local oscillator (LO) generation and an RF mixer. The RF synthesizer includes an integrated fractional-N phase locked loop that can control an external VCO to produce a low-phase noise LO signal with a very fine frequency resolution. The LO output drives the built-in RF mixer which converts the signal into the required frequency band. The bias current can be programmed to optimize the supply current/performance trade-off. The LO generation blocks have been designed to continuously cover the frequency range from 300MHz to 2400MHz. The RF mixer is very broad band and operates from 100MHz to 2500MHz at the RF ports of the device. An external crystal of between 10MHz and 52MHz or an external reference source of between 10MHz and 104MHz can be used with the RF2053 to accommodate a variety of reference frequency options.

The device is programmed using a true three-wire serial interface. The RF2053 is designed for 2.7V to 3.6V operation for compatibility with portable, battery powered devices. It is available in a plastic 32-pin, 5mmx5mm QFN package.

Optimum Technology Matching® Applied

☐ GaAs HBT	☐ SiGe BiCMOS	☐ GaAs pHEMT	☐ GaN HEMT
☐ GaAs MESFET	☐ Si BiCMOS	☑ Si CMOS	☐ RF MEMS
☐ InGaP HBT	☐ SiGe HBT	☐ Si BJT	

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