

Introduction

The MSi001 and MSi002 integrated circuits are the world's first poly-band silicon tuners that address multiple analogue and digital broadcast standards. Innovative design techniques deliver ultimate tuner flexibility, enabling high performance receiver solutions for cost and size sensitive Consumer Electronics and handset applications.

Key Features

Multi-band coverage

- LW/MW/SW (150 kHz – 30 MHz)
- VHF Band II (64 – 108 MHz)
- Band III (162 – 240 MHz)
- Band IV/V (470 – 960 MHz)
- L-Band (1450 – 1675 MHz)

Very low current consumption

- <45 mA

High performance architecture

- Low Noise, high linearity receiver
- Fast-lock fractional-N synthesizer

Adaptive FlexiMode™ architecture

- Supports zero IF and low IF systems

Low external component count

- 14 external SMDs (Band 3, T-DMB)

Small footprint packages

- 6x6x0.9 mm 40 pin QFN
- WL-CSP

Industry standard control interfaces

- SPI (MSi001)
- I2C (MSi002)

Compliant with relevant broadcast standards:

- MBRAI, ETSI, ARIB etc

Fully RoHS compliant

Applications

Cellular handsets

Portable Radios

Portable Media Players (PMPs)

Notebook & Desktop PCs

Personal Digital Assistants (PDAs)

USB "TV dongle"

Key Benefits

Support for multiple broadcast standards

- DVB-H, DAB, T-DMB (& variants)
- ISDB-T (1-, 3- & 13-seg), MediaFLO
- AM, FM, DRM, HD

Enables low-cost OEM platform strategy

Performance margin to standards

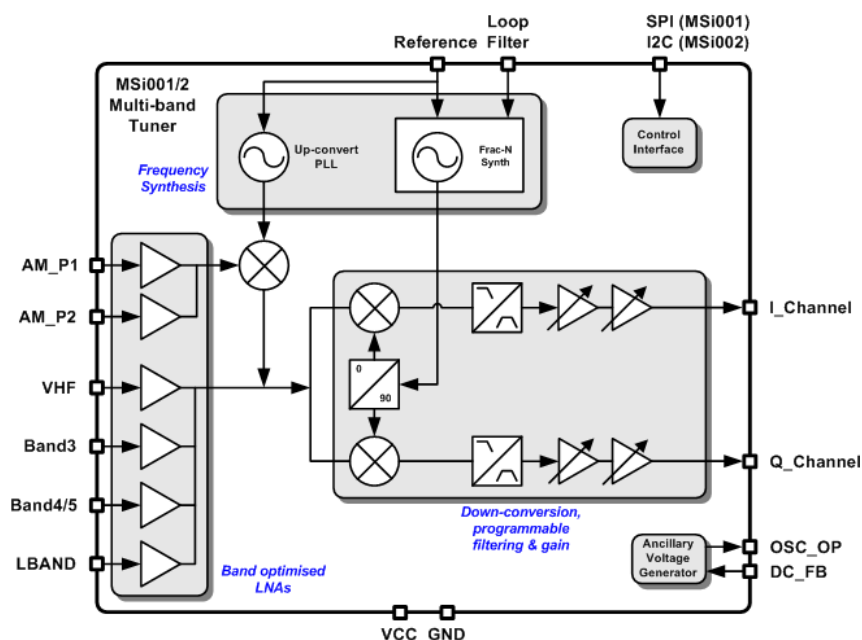
- Robust 'real world' signal reception within challenging RF environments
- End-product production tolerance

Highly integrated design

- Low BoM
- Simple system integration

Low power, small footprint enables:

- Broadcast service reception in battery powered portable CE devices



Overview

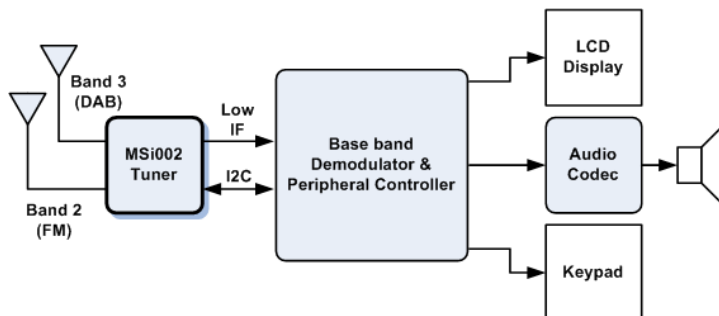
Designed in a mature, low cost SiGe process, the Mirics MSi001 and MSi002 poly-band silicon tuners offer high performance across the entire frequency spectrum from LW to L-band, and so deliver global digital and analogue terrestrial broadcast reception. The unique **FlexiMode™** architecture allows multi-band, multi-mode products to be developed, and also enables OEMs to leverage the cost benefits of a platform-based product strategy by only requiring a single tuner for multiple product applications.

The MSi001 and MSi002 tuners deliver the ultimate in RF performance across all operational bands, and feature very low noise figure, superior selectivity and high linearity. By integrating on-chip band-optimized low noise amplifiers, a fast-locking fractional-N synthesizer, programmable baseband filters and gain, and automatic self-calibration, the tuners deliver a truly

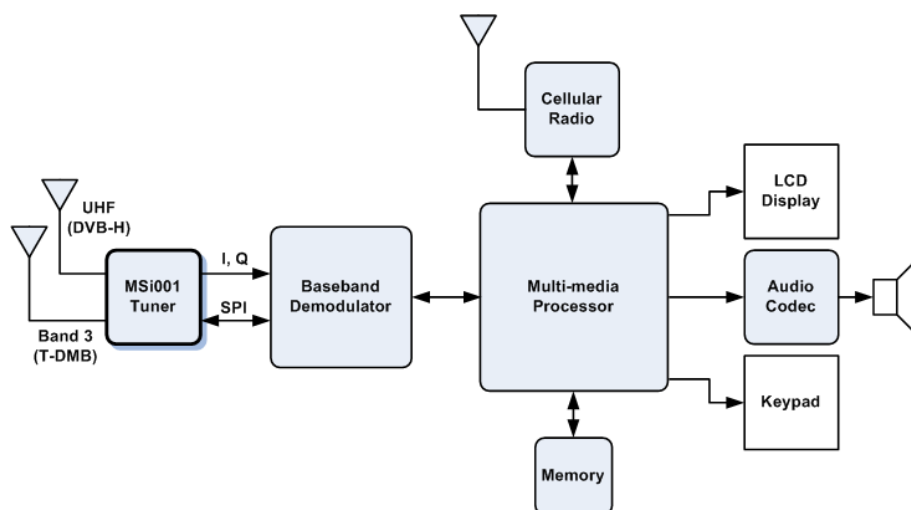
flexible high performance solution, suitable for baseband demodulators supporting both direct conversion and low IF architectures.

The innovative design techniques employed in the MSi001 and MSi002 tuners ensure that the key performance specifications of relevant broadcast standards are exceeded, thereby delivering production margin to product developers. This performance is delivered without sacrificing the key requirements for battery powered CE devices: low power consumption, small solution footprint and low solution cost.

An evaluation board and accompanying PC software is available for the MSi001 and MSi002 tuners to enable performance testing, and additionally reference designs with selected demodulators are also available for detailed system evaluation.



Example Application: DAB/FM Radio



Example Application: Cellular Handset

For more information about the MSi001 and MSi002 high performance tuner solutions, please contact Mirics.