# Low-IF tuner IC for dual-band DAB & FM

# ITD3020

## FEATURES

- **Single chip synthesized tuner for dual-band DAB and FM receiver**
- **Low-IF single-conversion architecture which eliminates all SAW filters**
- **Covers whole band-III (174 ~ 245 MHz), L-band (1450 ~ 1592 MHz) and FM (88 ~ 108 MHz)**
- **Operating dynamic range : -102 ~ -10 dBm**
- **Ultra low power consumption: Band-III 100 mW**
  **L-band 160 mW**
- **On-chip regulators for 2.85V single supply**
- **On-chip fast switching fractional-N PLL**
- **On-chip low phase noise and wide frequency range VCO**
- **On-chip bandwidth-adjustable low pass filter**
- **Integrated IF variable gain amplifier for direct connection to digital demodulators**
- **Noise/Linearity optimization through internal RF RSSI and AGC loop**
- **Adjustable take-over point**
- **Ideal for mobile DAB receiver, FM application**
- **I²C serial bus interface**
- **Small 40-QFN package (6 × 6 mm²)**
- **Minimal external components**
- **Fully compatible with dual-band DAB and FM**

## FUNCTIONAL BLOCK DIAGRAMS

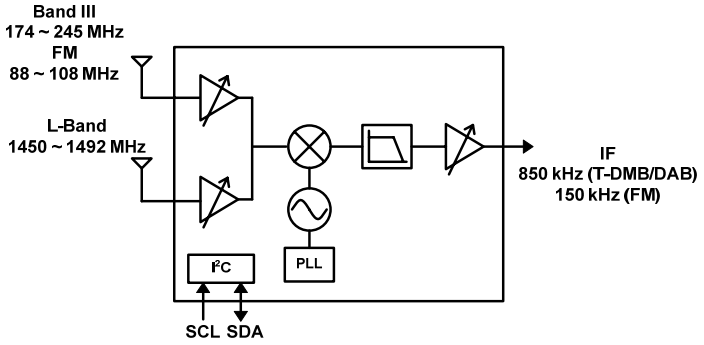



*Figure 1.*

## APPLICATIONS

- **Dual-band DAB Mobile Phone**
- **FM radio application**
- **Low Power PDA, Mobile Phone**

## GENERAL DESCRIPTION

The ITD3020 is a highly integrated CMOS single chip low-IF single-conversion tuner IC for dual-band DAB (Digital audio broadcasting) and FM. It supports Eureka-147 DAB standard along with analog FM. It includes 2 LNAs, 2 RF PGAs, 2 image-rejection down-conversion mixers, a bandwidth adjustable low pass filter, an IF variable gain amplifier, a VCO and a fractional-N PLL, etc. On-chip low phase noise VCO along with high resolution fractional-N frequency synthesizer make in-band phase noise lower than that of any other conventional tuners. The ITD3020 also includes several regulators, which make it possible to use single 2.85 V power supply.

The ITD3020 exhibits ultra low power consumption such as 100 mW. Using small leadless 6 mm × 6 mm 40-LD QFN package, the ITD3020 is the best solution for highly integrated multi-tuner system and portable application where low power consumption is critical. It has an industry standard I²C serial bus interface. Primary application of the ITD3020 is dual-band DAB/FM mobile phones and the portable DAB/FM receiver.

## PRODUCT HIGHLIGHTS

1. Single chip synthesized tuner for dual-band DAB and FM receiver
2. Low-IF single-conversion architecture which eliminates all SAW filters
3. Ultra low power consumption: 100mW

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