

### 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

I<sup>2</sup>C serial bus interface

Small 40-QFN package (6 × 6 mm<sup>2</sup>)

Minimal external components

Fully compatible with dual-band DAB and FM

### 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.

#### Rev.2.5

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### FUNCTIONAL BLOCK DIAGRAMS

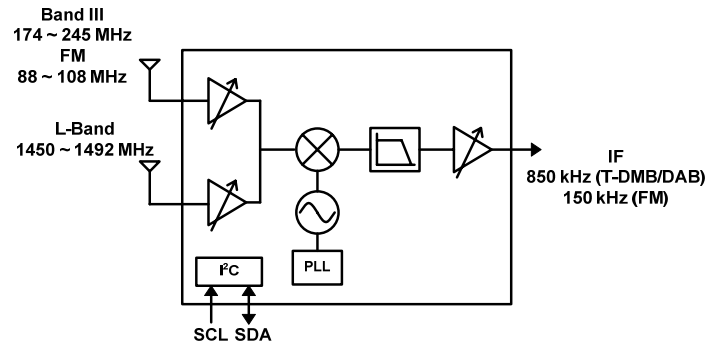


Figure 1.

### APPLICATIONS

Dual-band DAB Mobile Phone

FM radio application

Low Power PDA, Mobile Phone

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 I<sup>2</sup>C 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