



# 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**
- 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.

### FUNCTIONAL BLOCK DIAGRAMS

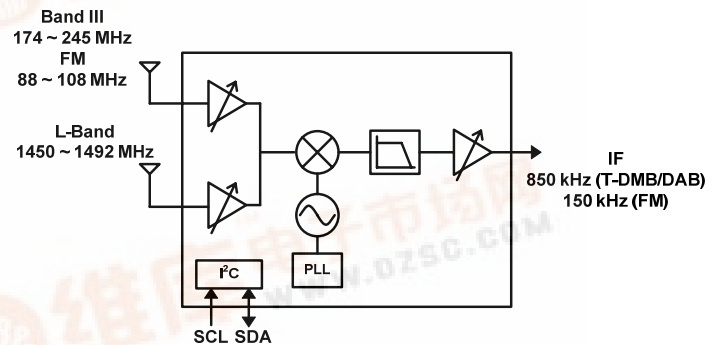


Figure 1.

### 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