Dual-Mode TV Tuner IC for Satellite and Terrestrial DMB/FM

Preliminary Technical Data

MTV330

FEATURES

- Dual mode DMB receiver which has SDMB/TDMB/FM.
- Conform to ITU-R BO.1130-4 Digital System E standard and Korean Terrestrial DMB
- Covers whole Band-III: 174 ~ 245 MHz and FM: 88 ~ 108 MHz at TDMB.
- Low-IF single-conversion architecture which eliminates all SAW filters at TDMB
- Low noise figure SDMB: 4 dB
  TDMB: 1.5 dB
- Dynamic range SDMB: -98 ~ 0 dBm
  TDMB: -102 ~ -10 dBm
- Low power consumption SDMB: 140 mW
  TDMB: 100 mW
- 20-bit sigma-delta fractional-N PLL exhibits 36 Hz fine frequency resolution.
- On-chip low phase noise VCO eliminates external tank circuits
- Ideal for portable application such as mobile phone, notebook PC, and PDA
- I²C serial bus interface
- Small 48-QFN package (6 × 6 mm²)

FUNCTIONAL BLOCK DIAGRAMS

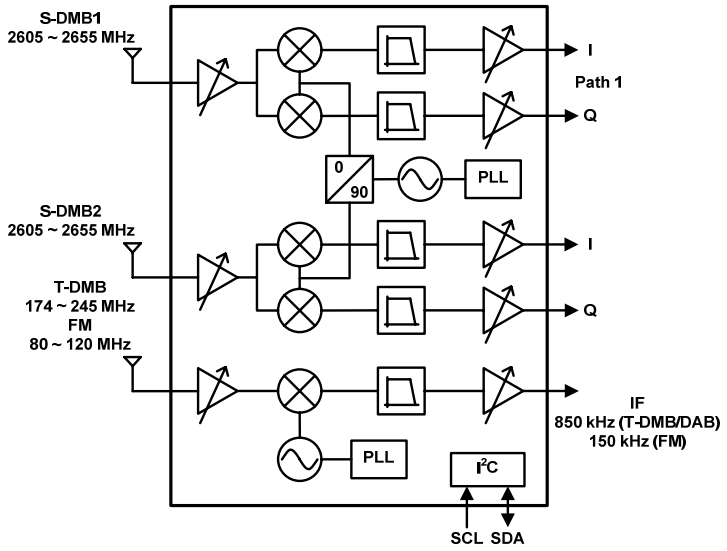

Figure 1. Block Diagram

GENERAL DESCRIPTION

The MTV330 is a dual mode TV tuner IC for SDMB and TDMB. For SDMB, MTV330 is a highly integrated zero-IF tuner for digital multimedia broadcasting (DMB) diversity receiver via satellite which conforms to ITU-R BO.1130-4 Digital System E standard. It operates from 2605 to 2655 MHz. For TDMB, MTV330 is a CMOS single chip low-IF single-conversion tuner. It supports Korean satellite/terrestrial DMB standard along with FM. It includes whole SDMB and TDMB blocks consisting of an LNA/AGC and direct or low-IF conversion down mixers. On-chip low phase noise VCO, which eliminates external tank circuits, generates In phase and Quadrature phase local oscillator. Automatic tuned baseband channel select filters are available with automatic tuning. The MTV330 also includes high dynamic range baseband variable gain amplifier. A low noise amplifier and optimized gain control scheme enable wide dynamic range operation.

The MTV330 consumes typically 140 mW with SDMB diversity path operation and consumes 100 mW with TDMB operation. Simultaneous SDMB/TDMB operation consumes 220 mW totally. Using small leadless 48-QFN package, the MTV330 is the best solution for portable DMB application especially for mobile phone, notebook PC, PDA, and etc., where low power consumption is critical. It has an industry standard I²C serial bus interface. Primary application of the MTV330 is the satellite /terrestrial digital multimedia broadcasting system.

APPLICATIONS

- Satellite/Terrestrial DMB mobile phones
- Portable SDMB/TDMB dual receivers: Notebook PC, PDA, and portable multimedia terminals
- SDMB/TDMB dual receiver for vehicular application

Rev. PrA

One Technology Way, P.O. Box 9106, Norwood, MA 02062-9106, U.S.A.
Tel: 781.329.4700 www.analog.com
Fax: 781.461.3113