

BATTERY-OPERATED FULLY INTEGRATED FM TUNER

DATA BRIEF

1 Main Features

- SINGLE-CHIP FM TUNER FOR LOW-VOLTAGE/ LOW POWER APPLICATIONS
- INTEGRATED LNA (WITH AGC) AND IMAGE REJECTION MIXER
- LOW-IF ARCHITECTURE WITH ON-CHIP CHANNEL SELECTION FILTER
- VCO WITH ON-CHIP VARACTOR
- INTEGRATED TUNING PLL WITH AUTO STATION SEARCH FUNCTION
- ANALOG AND DIGITAL SIGNAL STRENGTH INDICATION
- FULLY INTEGRATED FM DEMODULATOR AND ADJUSTMENT-FREE STEREO DECODER
- PROGRAMMABLE AUTOMATIC STEREO BLEND AND SOFT MUTE
- I²C/SPI-BUS CONTROLLED
- LOW POWER CONSUMPTION
- HIGH SENSITIVITY
- HIGH AUDIO QUALITY

2 Description

TDA7701 is a single-chip FM Tuner specifically designed in mixed Bipolar-CMOS technology for low-voltage/low-power applications, where the minimization of external component count and PCB size and complexity are mandatory: typical examples are mobile phones and portable multimedia equipment.

Housed in a small TFBGA40 package (5x5 mm), it features the full FM signal processing chain from antenna to stereo audio output: RF front-end processing, IF processing, demodulation and stereo

Figure 1. Package

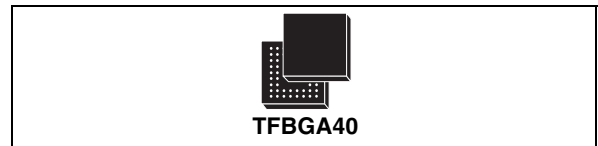


Table 1. Order Codes

| Part Number | Package |
|-------------|---------|
| TDA7701 | TFBGA40 |

decoding, I²C/SPI-controlled tuning with station detection.

Its low-IF architecture highly integrated RF/IF sections include a low-noise preamplifier with Automatic Gain Control, an image rejection mixer and on-chip high-Q channel selection filters that bring to a minimum the external component count and PCB complexity while guaranteeing good selectivity and image-rejection performances. Thanks to its on-chip varactor, the tuning-PLL controlled VCO needs just one external inductor for low phase-noise oscillation.

FM demodulation is performed by means of a fully integrated circuit that eliminates the need for an external LC tank while maximizing linearity.

The FM stereo signal is decoded through a fully integrated, adjustment-free dedicated PLL; automatic signal-dependent stereo blend and soft-mute functions are provided.

A single external reference frequency is needed for IC operation, and can be selected among those commonly used in GSM applications (13/19.2/26/38.4 MHz + 32768Hz real-time/sleep clock).

Figure 2. Functional Block Diagram

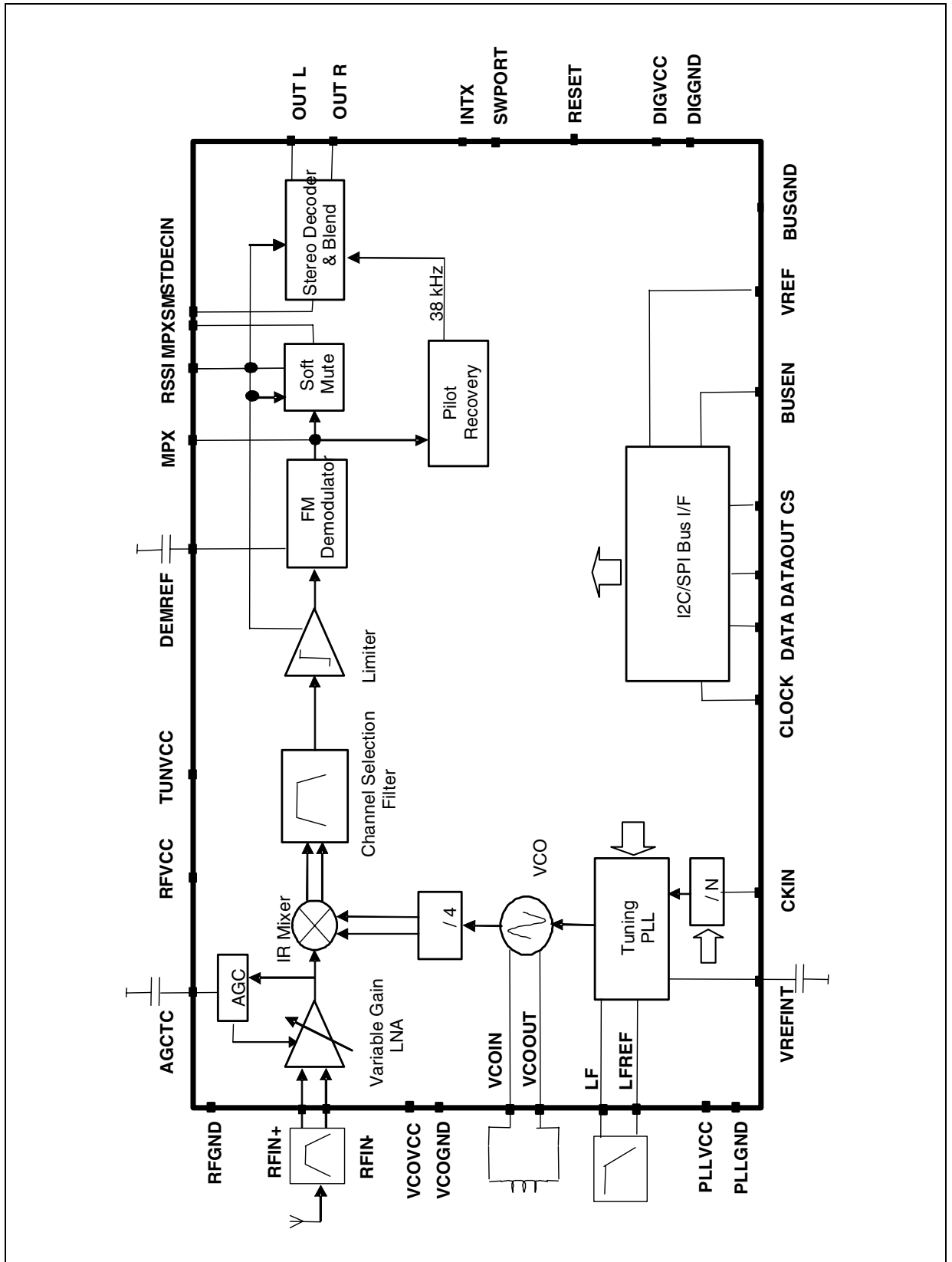


Table 2. Revision History

| Date | Revision | Description of Changes |
|---------------|----------|------------------------|
| February 2005 | 1 | First Issue |

Information furnished is believed to be accurate and reliable. However, STMicroelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of STMicroelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. STMicroelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of STMicroelectronics.

The ST logo is a registered trademark of STMicroelectronics.
All other names are the property of their respective owners

© 2005 STMicroelectronics - All rights reserved

STMicroelectronics group of companies

Australia - Belgium - Brazil - Canada - China - Czech Republic - Finland - France - Germany - Hong Kong - India - Israel - Italy - Japan -
Malaysia - Malta - Morocco - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States of America

www.st.com