Based on a revolutionary concept, the TDA827x single-chip tuner family simplifies the design of cable receivers, freeing engineers from many of the constraints of traditional tuner design.
Supporting DOCSIS, EURODOCSIS, DVB-C and OpenCable, these PAL/NTSC-compliant ICs meet the requirements of all cable modem and analog/digital TV solutions.

# TDA827x cable silicon tuner IC Single-chip 3.3 V silicon tuner IC



# **Applications**

- · Cable modem
- · Set-top box
- Cable analog TV
- Cable digital TV
- VolF
- · Cable broadband internet
- · Out-of-band tuner
- · PC-TV add-on cards
- PDA

# **Key features**

- Single-chip 3.3 V cable tuner
- Single supply voltage
- · Low power consumption
- · Supports all world Cable standards
- PAL/NTSC compliant
- · RF splitter for loop-through and out-of-band functions
- · Combination of wideband and in-band automatic gain control
- · Symmetrical IF output for direct connection to channel decoder
- · Fully integrated oscillators with no external components
- · Fully integrated selectivity
- · Crystal oscillator output buffer to drive channel decoder
- I<sup>2</sup>C bus protocol compatible with 1.8 V, 2.5 V, 3.3 V and 5 V microcontrollers
- Operating range from -40°C to +85°C for outdoor applications
- Integrated IF amplifier

Based on Philips Semiconductors' new 'Silicon Tuner' concept, the TDA827x family simplifies front-end designs for mainstream cable reception. It supports all world cable standards and is ideal for cable broadcast applications including both analog and digital TV, as well as cable modems in high speed internet devices. Delivering efficient, robust performance the TDA827x family uses a specific proprietary architecture to convert RF inputs into low IF signals for channel decoding. Patented technology and a highly innovative architecture has enabled a reduction in external components resulting in an extremely cost effective tuner solution.

The input signal is amplified in the on-chip low noise amplifier (also used as splitter) before being filtered and passed to the image rejection mixer, where the RF signal is downconverted to a low IF signal which is then filtered again (on-chip channel selectivity) before being delivered to the channel decoder. Through an optimal partitioning of functionalities within the system, there is NO need for external SAW filters and IF amplifier to ensure selectivity. The VCO is also fully integrated, with no external tank component; and does not need a high voltage to tune the oscillator. Programming the TDA827x is accomplished via an I²C bus.

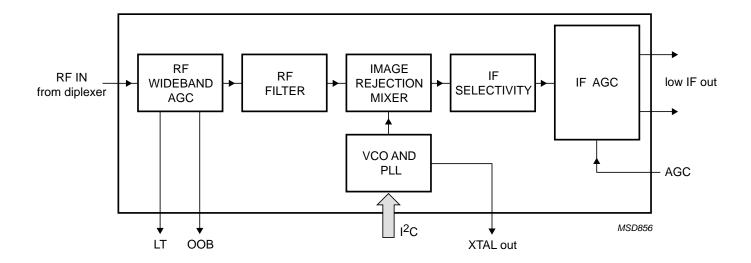
## Revolutionizing tuner design

Revolutionizing the design and implementation of front-ends in consumer equipment, the single tuner IC concept can be used in many broadcast areas. Dedicated to cable broadcast and cable modem applications, the TDA827x is the first in a series of silicon tuner devices aimed at addressing all consumer markets. This provides a 'one application for all' solution that removes the need for expensive system development usually required to match RF front-ends to specific platforms or applications.

The TDA8270 silicon tuner (6MHz, digital only for cable modems) will be followed by the TDA8271 (multi-standard, digital only for cable STB) and the TDA8272 (multi-standard, NTSC/PAL compliant for cable STB).







# **Philips Semiconductors**

Philips Semiconductors is a worldwide company with over 100 sales offices in more than 50 countries. For a complete up-to-date list of our sales offices please e-mail sales.addresses@www.semiconductors.philips.com. A complete list will be sent to you automatically.

You can also visit our website http://www.semiconductors.philips.com/sales or contact any of the following sales offices by phone or mail:

# North America

Philips Semiconductors C.R.M. Center 2800 Wells Branch Parkway Mailstop P-411 Austin, Texas 78728 United States

Tel. +1 800 234 7381 Fax +1 800 943 0087

# Europe, Africa, Middle East and South America

Philips Semiconductors International Fulfillment and Sales Support Center P.O. Box 366 2700 AJ Zoetermeer The Netherlands Fax +31 79 3685126

# Asia Pacific

Philips Semiconductors Asia Pacific Market Response Management Center P.O. Box 68115 Kowloon East Post Office Hong Kong Fax +852 2756 8271

# Japan

Philips Semiconductors Philips Building 13-37 Kohnan 2-chome Minato-ku, Tokyo 108-8507 Tel. +81 3 3740 5130 Fax +81 3 3740 5057

### © Koninklijke Philips Electronics N.V. 2002

All rights are reserved. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice. No liability will be accepted by the publisher for any consequence of its use. Publication thereof does not convey nor imply any license under patent- or other industrial or intellectual property rights.

**Printed in The Netherlands** 

Date of release: April 2002

Document order number: 9397 750 09417





