TDA18260HN

Dual cable Silicon Tuner

Rev. 2 — 14 December 2010 Preliminary data sheet

1. General description

The TDA18260HN is a dual Silicon Tuner IC designed specifically for high definition multi-tuner cable Set Top Boxes (STBs) supporting single streaming and multi-streaming PVR STBs with watch, record, video-on-demand and in-home video distribution capability.

Used in conjunction with the TDA10025HN (dual digital channel demodulator), the TDA18260HN covers all worldwide digital cable standards.

- The TDA18260HN ensures a low system cost as:
  - Costly components such as low noise amplifiers, Surface Acoustic Wave (SAW) filters and incremental crystal oscillators have been eliminated from the system Bill Of Materials (BOM)
- The TDA18260HN high performance Silicon Tuner meets today's digital cable TV reception needs with:
  - Matched performance levels for master and slave tuners
  - Low power consumption
  - High linearity
  - Low noise figure
- The TDA18260HN ensures ease of use with:
  - Easy on-board integration
  - Efficient and effective PCB design
  - Reduced external components

2. Features and benefits

- Supports up to three tuner functions (up to six individual streams) specifically aimed for gateways and STBs:
  - Two low IF outputs
  - Two RF outputs to drive slave tuners
- Integrated splitter eases and simplifies the design of dual Tuner PVR
- Integrated wideband gain control
- Extended frequency coverage up to 1002 MHz
- Single 3.3 V power supply
- Low power consumption
- Multistandard cable receptions
- Enhanced Band-pass filter to reduce in band third and fifth signal harmonics
- Enhanced RF filters to increase selectivity and adjacent channels filtering, especially enhanced immunity for MoCA coexistence

- RF Loop-Through (LT)
- Fully integrated IF selectivity, eliminates external SAW filters
- Fully integrated oscillators:
  - No external oscillator components for reduced cost
  - 16 MHz crystal oscillator output buffer for single crystal applications
- I^2C-bus provides:
  - 3.3 V microcontroller compatibility
  - Received Signal Strength Indicator (RSSI) data access
  - Die temperature sensor data access
- Lead-free (Pb) manufacturing

3. Quick reference data

Table 1. Quick reference data

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
f_{RF}	RF frequency	edge		51	-	1002	MHz
NF_{tun}	tuner noise figure	maximum gain		-	6.0	<tbd>	dB
φ_n	phase noise	RF frequency range, worst case					
		10 kHz		-	–85	-	dBc/Hz
		100 kHz		-	–107	-	dBc/Hz
$V_{L(tun-RF)}$	leakage voltage between tuner and RF	at RF input; in RF TV band		-	–10	+8	dBµV
CSO	composite second-order distortion		[1]	-	–64	<tbd>	dBc
CTB	composite triple beat		[1]	-	–60	<tbd>	dBc
P	power dissipation			-	1.6	-	W
α_{image}	image rejection	measured at IF frequency = 4 MHz		<tbd>	62	-	dB
$RSSI_{acc(abs)}$	absolute accuracy of received signal strength indicator	only one channel at RF input; channel level from –15 dBmV to +15 dBmV; calibration done at 0 dBmV		–3	-	+3	dB
$RSSI_{acc(rel)}$	relative accuracy of received signal strength indicator	only one channel at RF input; channel level from –15 dBmV to +15 dBmV		–0.5	-	+0.5	dB

[1] Channel loading assumptions: 135 channels (NTSC 135 frequency plan) at 75 dBµV.

4. Ordering information

Table 2. Ordering information

Type number	Package		
	Name	Description	Version
TDA18260HN/C1	HVQFN48	plastic thermal enhanced very thin quad flat package; no leads; 48 terminals; body 7 × 7 × 0.85 mm	SOT619-1

5. Block diagram

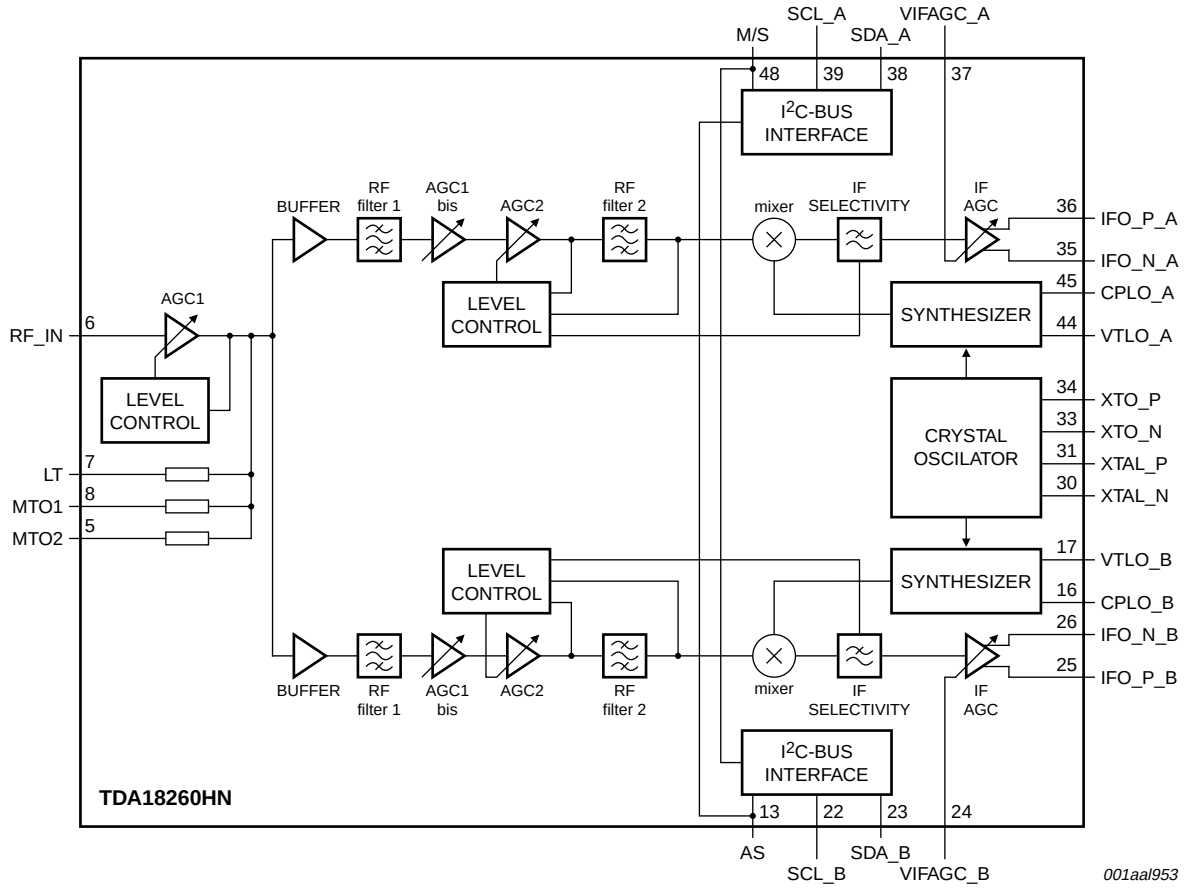

Fig 1. Block diagram

6. Limiting values

Table 3. Limiting values

In accordance with the Absolute Maximum Rating System (IEC 60134).

Symbol	Parameter	Conditions	Min	Max	Unit
V_{CC}	supply voltage		–0.3	+3.6	V
V_I	input voltage	V_{CC} < 3.3 V	–0.3	V_{CC} + 0.3	V
		V_{CC} > 3.3 V	–0.3	+3.6	V
T_{stg}	storage temperature		–40	+150	°C
T_j	junction temperature		-	+120	°C
V_{ESD}	electrostatic discharge voltage	EIA/JESD22-A114 (HBM)	2.5	-	kV
		EIA/JESD22-C101-C (FCDM) [1]	1.5	-	kV

[1] It withstands class IV of JEDEC standard.

7. Abbreviations

Table 4. Abbreviations

Acronym	Description
AGC	Automatic Gain Control
FCDM	Field-Induced Charged-Device Model
HBM	Human Body Model
IC	Integrated Circuit
IF	Intermediate Frequency
MoCA	Multimedia over Coax Alliance
NTSC	National Television System Committee
PCB	Printed Circuit Board
PVR	Personal Video Recorder
RF	Radio Frequency
SAW	Surface Acoustic Wave

8. Revision history

Table 5. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
TDA18260HN_SDS v.2 [1]	20101214	Preliminary data sheet	-	-

[1] SDS Revision 1 is not available.

9. Legal information

9.1 Data sheet status

Document status[1][2]	Product status[3]	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
Preliminary [short] data sheet	Qualification	This document contains data from the preliminary specification.
Product [short] data sheet	Production	This document contains the product specification.

[1] Please consult the most recently issued document before initiating or completing a design.

[2] The term 'short data sheet' is explained in section "Definitions".

[3] The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the Internet at URL http://www.nxp.com.

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