



# TDA18291HN

Low power DVB / T tuner

Rev. 01 — 28 August 2007

Product short data sheet

## 1. General description

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The TDA18291HN is a BiCMOS integrated circuit receiver intended for digital TV reception for low power applications (e.g. mobile phone and PDA).

The tuner is designed for the terrestrial digital video broadcast (DVB-T standard) and handheld DVB standard (DVB-H standard). It operates in the VHFIII and UHF band (174 MHz to 230 MHz and 470 MHz to 862 MHz) and contains all the functions needed for a whole receiver chain from (RF) input to baseband IQ outputs: LNA, quadrature mixer, channel filters and a complete RF PLL with a fully integrated VCO. The PLL can operate from a number of reference frequencies, fitting almost any mobile platform.

The tuner has been designed for low power mobile applications. Power consumption has been optimized and a dedicated on-off pin has been added to allow for fast switching, and thus reduce power, in time-sliced applications. To reduce the footprint of the application, the number of external components has been minimized and the tuner is available in a HVQFN32 package (5 mm × 5 mm).

## 2. Features

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- 150 mW power consumption in DVB-T mode
- 4 dB noise figure
- Direct conversion ZIF architecture
- 174 MHz to 230 MHz and 470 MHz to 862 MHz tuning range
- Low noise, wide dynamic receiver
- Fully integrated balanced LNA
- Fully integrated channel filters with built-in self-calibration
- Fully integrated fractional N frequency synthesizer
- Fully integrated VCO
- I<sup>2</sup>C-bus controllable
- Dedicated pin for DVB-H time slicing control
- 19.2 MHz, 26 MHz and 38.4 MHz reference frequency compliant
- HVQFN32 package (5 mm × 5 mm)

### 3. Quick reference data

Table 1. Quick reference data

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$V_{CCA}$	analog supply voltage		2.6	2.8	3.0	V
$V_{CCD}$	digital supply voltage		1.6	1.8	2.0	V
$I_{CCA}$	analog supply current	Normal mode	-	54	-	mA
$I_{CCD}$	digital supply current		-	0.6	-	mA
$V_{o(dif)(p-p)}$	peak-to-peak differential output voltage		-	1.0	1.4	V
$f_{-3dB(lpf)}$	low-pass filter cut-off frequency		3.8	4.0	4.2	MHz
$\Delta G_{AGC}$	AGC gain range		-	60	-	dB
$T_{amb}$	ambient temperature		-30	+25	+70	°C

### 4. Ordering information

Table 2. Ordering information

Type number	Package		
	Name	Description	Version
TDA18291HN/C1	HVQFN32	plastic thermal enhanced very thin quad flat package; no leads; 32 terminals; body 5 × 5 × 0.85 mm	SOT617-1

### 5. Block diagram

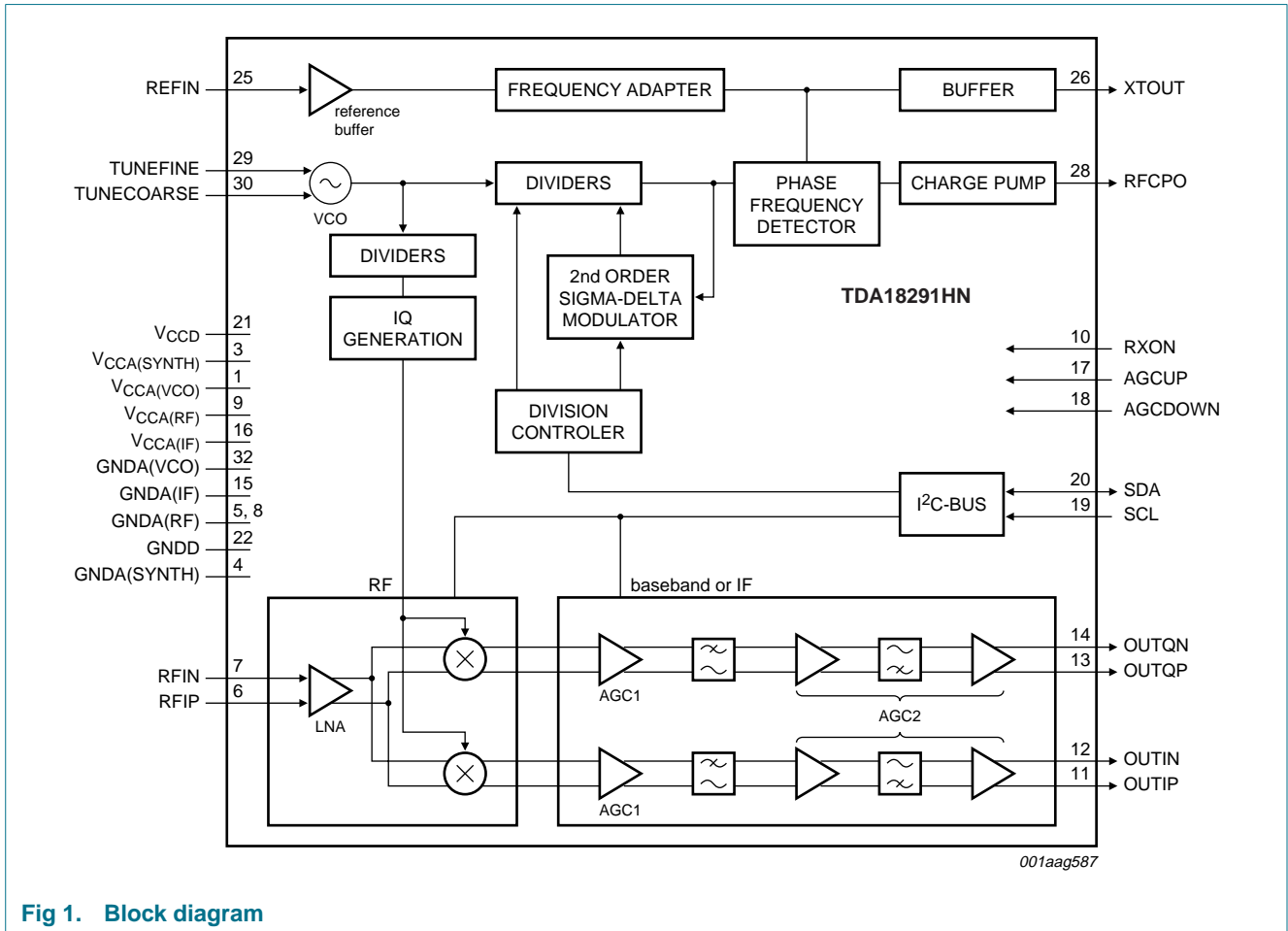


Fig 1. Block diagram

### 6. Limiting values

Table 3. Limiting values

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

Symbol	Parameter	Conditions	Min	Max	Unit	
V <sub>CCA</sub>	analog supply voltage		-	3.0	V	
V <sub>CCD</sub>	digital supply voltage		-	2.0	V	
T <sub>amb</sub>	ambient temperature		-30	+85	°C	
T <sub>stg</sub>	storage temperature		-55	+150	°C	
V <sub>esd</sub>	electrostatic discharge voltage	HBM	[1]	-	±2000	V
		MM	[2]	-	±200	V

[1] JEDEC Standard JESD22-A114E, ESD sensitivity testing Human Body Model (HBM).

[2] JEDEC Standard JESD22-A115-A, ESD sensitivity testing Machine Model (MM).

## 7. Abbreviations

**Table 4. Abbreviations**

Acronym	Description
AGC	Automatic Gain Control
BiCMOS	Bipolar Complementary Metal Oxide Semiconductor
DVB-H	Digital Video Broadcasting - Handheld
DVB-T	Digital Video Broadcasting - Terrestrial
ESD	ElectroStatic Discharge
HBM	Human Body Model
HVQFN	Heatsink Very thin Quad Flat package No leads
IQ	In-phase Quadrature
LNA	Low Noise Amplifier
MM	Machine Model
PDA	Personal Digital Assistant
PLL	Phase-Locked Loop
RF	Radio Frequency
UHF	Ultra High Frequency
VCO	Voltage Controlled Oscillator
ZIF	Zero Intermediate Frequency

## 8. Revision history

**Table 5. Revision history**

Document ID	Release date	Data sheet status	Change notice	Supersedes
TDA18291HN_1	20070828	Product short data sheet	-	-

## 9. Legal information

### 9.1 Data sheet status

Document status <sup>[1][2]</sup>	Product status <sup>[3]</sup>	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.

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

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## 11. Contents

<b>1</b>	<b>General description</b> .....	<b>1</b>
<b>2</b>	<b>Features</b> .....	<b>1</b>
<b>3</b>	<b>Quick reference data</b> .....	<b>2</b>
<b>4</b>	<b>Ordering information</b> .....	<b>2</b>
<b>5</b>	<b>Block diagram</b> .....	<b>3</b>
<b>6</b>	<b>Limiting values</b> .....	<b>3</b>
<b>7</b>	<b>Abbreviations</b> .....	<b>4</b>
<b>8</b>	<b>Revision history</b> .....	<b>4</b>
<b>9</b>	<b>Legal information</b> .....	<b>5</b>
9.1	Data sheet status .....	5
9.2	Definitions .....	5
9.3	Disclaimers .....	5
9.4	Trademarks .....	5
<b>10</b>	<b>Contact information</b> .....	<b>5</b>
<b>11</b>	<b>Contents</b> .....	<b>6</b>

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