



## **IMPORTANT NOTICE**

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*As a result, the following changes are applicable to the attached document.*

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*If you have any questions related to the document, please contact our nearest sales office.*

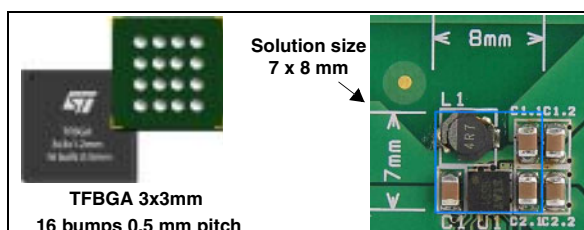
*Thank you for your cooperation and understanding.*

## Single-coil dual-output step-down DC/DC converter for digital base band and multimedia processor supply

Data Brief

### Features

- Single coil dual output switching converter for digital core supply & digital I/Os supply
  - Digital I/O supply:  $V_{OUT1}$  @ 200 mA
  - CPU CORE supply:  $V_{OUT2}$  @ 400 mA
- Wide range of fixed output voltage configurations available
- High efficiency synchronous step down converter with up to 92 % for the entire device
- Size and cost optimized application board (7x8 mm, height 1.2mm) three capacitors and only one inductor necessary for both outputs
- 2.7 V to 5.5 V battery input range
- $\pm 100\text{mV}$  output voltage accuracy full range in PWM (Including Line and Load Transients)
- 900 kHz fixed frequency PWM operation
- PFM mode operation at light load current
- PWM/PFM switch can be done automatically or forced by setting external pins (AUTO and MODE/SYNC)
- MODE/SYNC input pin for external clock synchronization from 600 kHz to 1.5 MHz
- VSEL input pin for  $V_{OUT2}/V_{OUT2(\text{red.})}$  selection
- Ultra low shutdown current ( $I_{q} < 1 \mu\text{A}$ )
- Short circuit and thermal shutdown protections



### Applications

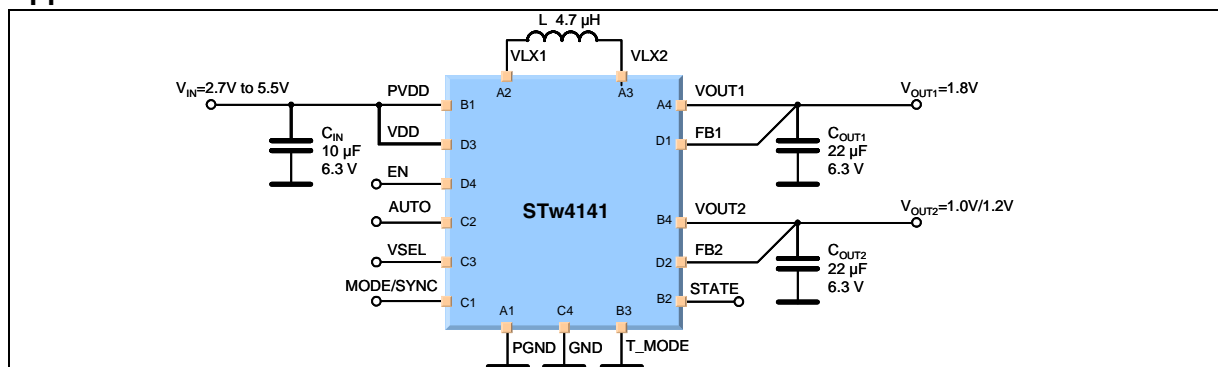
- Mobile phones
- PDAs and hand held terminals
- Portable media players
- Digital still camera
- WLAN and Bluetooth applications

### Description

The STw4141 is a single coil dual output synchronous step down DC/DC converter that requires only four standard external components. It operates at a fixed 900 kHz switching frequency in PWM mode. The device can operate in PFM mode to maintain high efficiency over the full range of output currents.

The STw4141 application requires a very small PCB area and offers a very efficient, accurate, space and cost saving solution to fulfill the requirements of digital baseband or multimedia processor supply (CORE & I/O).

### Application test circuit



# 1 Ordering information

**Table 1. STw4141 order codes**

Part number	Package	Package marking	Output voltage options <sup>(1)</sup>			Packing
			V <sub>OUT1</sub> <sup>(2)</sup> (I/O)	V <sub>OUT2</sub> (CORE)	V <sub>OUT2reduced</sub> (CORE)	
STw41411	TFBGA 3x3x1.2 16 balls	STA1	1.8 V	1.2 V	1.0 V	Tray
STw41411/T		STA1	1.8 V	1.2 V	1.0 V	Tape and reel
STw41412		STA2	1.8 V	1.3 V	1.0 V	Tray
STw41412/T		STA2	1.8 V	1.3 V	1.0 V	Tape and reel
STw41413		STA3	1.8 V	1.4 V	1.2 V	Tray
STw41413/T		STA3	1.8 V	1.4 V	1.2 V	Tape and reel
STw41414		STA4	1.8 V	1.5 V	1.3 V	Tray
STw41414/T		STA4	1.8 V	1.5 V	1.3 V	Tape and reel
STw41415		STA5	1.8 V	1.25 V	1.0 V	Tray
STw41415/T		STA5	1.8 V	1.25 V	1.0 V	Tape and reel
STw41416		STA6	1.8 V	1.35 V	1.0 V	Tray
STw41416/T		STA6	1.8 V	1.35 V	1.0 V	Tape and reel
STw41417		STA7	1.5 V	1.3 V	1.0 V	Tray
STw41417/T		STA7	1.5 V	1.3 V	1.0 V	Tape and reel

1. The output configuration which will be introduced in production will be only those related to customer design-in.

2.  $V_{OUT1} \geq V_{OUT2}$  **THIS CONDITION MUST BE ALWAYS VALID.**

## 2 Revision history

**Table 2. Document revision history**

Date	Revision	Changes
24-Jan-2006	1	Initial release.
24-May-2006	2	Updates in <a href="#">Table 1: STw4141 order codes</a> .

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