## STEVAL-ISA141V1



#### Data brief

# 2 A, 2 MHz, Vout = 3.3 V, high-efficiency dual-mode buck-boost DC-DC converter based on the STBB3J

DEMO BOARD FOR EVALUATION PURPOSE ONLY STEVAL-ISA141VI

#### **Features**

- Input voltage range from 1.8 V to 5.5 V
- 2 A output current at 3.3 V in buck mode (V<sub>IN</sub> = 3.6 V to 5.5 V)
- 800 mA output current at 3.3 V in boost mode (V<sub>IN</sub> 2.0 V)
- Typical efficiency higher than 94%
- ±2% DC feedback voltage tolerance
- Automatic transition between step-down and boost mode
- Adjustable output voltage from 1.2 V to 5.5 V
- Power save mode (PS) at light load
- 2.0 MHz fixed switching frequency
- Adjustable switching frequency up to 2.4 MHz (external synchronous square signal)
- Device quiescent current less than 50 µA
- Load disconnect during shutdown
- Shutdown and soft-start functions
- Shutdown current <1 A</li>
- Available in Flip-Chip 20, pitch = 0.4 mm
- RoHS compliant

## **Description**

The STEVAL-ISA141V1 evaluation board is based on the STBB3J fixed-frequency, high-efficiency, buck-boost DC-DC converter providing 1.2 to 5.5 V output voltages starting from a 1.8 to 5.5 V input voltage.

The device can operate with input voltages higher than, equal to, or lower than the output voltage making the product suitable for cell lithium-ion applications where the output voltage is within the battery voltage range.

The MODE pin allows selecting between auto mode and forced PWM mode, taking advantage of either a lower power consumption or the best dynamic performance.

Product summary table		
Evaluation board based on the STBB3J A, 2 MHz, Vout = 3.3 V, high-efficiency dual-mode buck- boost DC-DC converter	STEVAL-ISA141V1	
2 A, 2 MHz, high efficiency dual mode buck-boost DC-DC converter	STBB3J	
Applications	Building Safety and Security	
	Residential HVAC	
	Smart City	
	Industrial Tools	
	Buck-Boost Converter	

## 1 Schematic diagram

57



## **Revision history**

### Table 1. Document revision history

Date	Revision	Changes
09-Apr-2014	1	Initial release.
21-Dec-2020	2	Updated Section 1 Schematic diagram.

#### IMPORTANT NOTICE - PLEASE READ CAREFULLY

STMicroelectronics NV and its subsidiaries ("ST") reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice. Purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST's terms and conditions of sale in place at the time of order acknowledgement.

Purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of Purchasers' products.

No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

ST and the ST logo are trademarks of ST. For additional information about ST trademarks, please refer to www.st.com/trademarks. All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously supplied in any prior versions of this document.

© 2020 STMicroelectronics - All rights reserved

## **Mouser Electronics**

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

STMicroelectronics: STEVAL-ISA141V1