

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



### Features

- Input voltage range from 1.8 V to 5.5 V
- 2 A output current at 3.3 V in buck mode ( $V_{IN} = 3.6 \text{ V to } 5.5 \text{ V}$ )
- 800 mA output current at 3.3 V in boost mode ( $V_{IN} 2.0 \text{ V}$ )
- Typical efficiency higher than 94%
- $\pm 2\%$  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  $\mu\text{A}$
- Load disconnect during shutdown
- Shutdown and soft-start functions
- Shutdown current  $< 1 \text{ A}$
- 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.

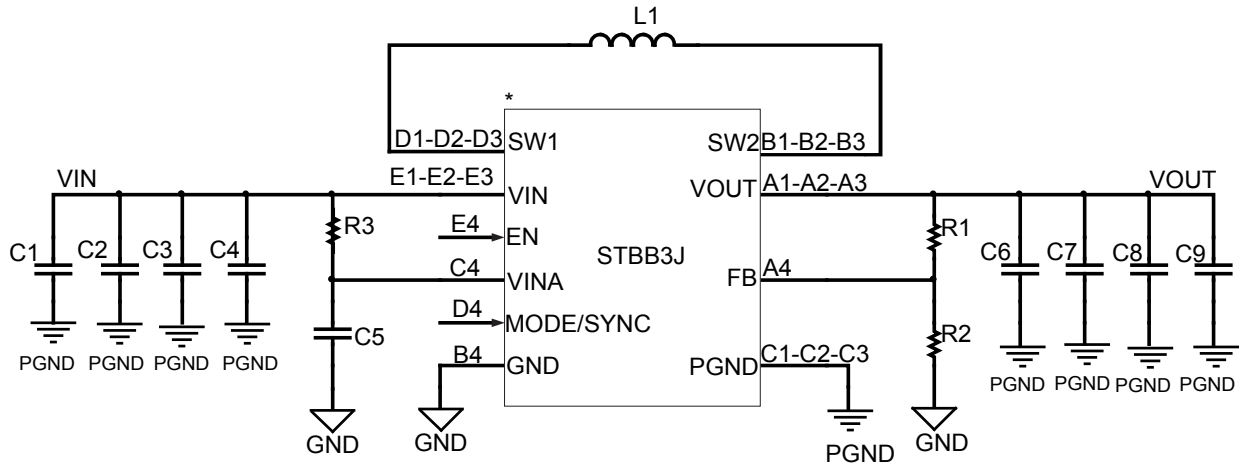
The device can operate with input voltages higher than, equal to, or lower than the output voltage making the product suitable for cell lithium-ion applications where the output voltage is within the battery voltage range.

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

Figure 1. STEVAL-ISA141V1 circuit schematic



## 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.

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