Features
- Input voltage $V_{in} = 4\text{ V to 18 V}$
- Output voltage $V_{out} = 3.3\text{ V}$
- Maximum output current: 3 A
- Switching frequency: 800 kHz
- Short-circuit protected
- RoHS compliant

Description
The STEVAL-ISA082V1, based on the ST1S40IPHR, is an internally compensated 800 kHz fixed-frequency PWM synchronous stepdown converter evaluation board.

The ST1S40 operates from 4.0 V to 18.0 V input, while it regulates an output voltage as low as 0.8 V and up to VIN (100% duty cycle).

The ST1S40 integrates a 95 mΩ high-side switch and a 69 mΩ synchronous rectifier allowing very high efficiency with very low output voltage.

The peak current mode control with internal compensation delivers a very compact solution with a minimum component count.

The ST1S40 is protected through cycle-by-cycle current limiting in case of overload and is also protected by a current foldback function with frequency reduction in case of short-circuit.

The device is available with an enable on/off function.
1  Schematic diagram

Figure 1: Circuit schematic

VIN (12V) → Cin_a (0.1 – 1 µF) → ST1S40 (EN/PG) → SW → VOUT (3.3V)

Cin_sw (10 µF) → L (3.3µH) → Cout (22µF)

VIN (12V) → VINA → VINSW

GSPG1410151545SG
## Revision history

Table 1: Document revision history

<table>
<thead>
<tr>
<th>Date</th>
<th>Version</th>
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<tbody>
<tr>
<td>27-Sep-2011</td>
<td>1</td>
<td>Initial release.</td>
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