



STEVAL-ISF001V1

3 kW fixed off-time PFC
based on the L6563 and STW55NM60N

Data brief

Features

- Single range input voltage from 185 V to 265 V, 50/60 Hz
- Output voltage: 400 V $\pm 5\%$
- Inductor saturation protection
- Optimized EMC input filter (in accordance with EN55014 and EN55022)
- Power factor > 0.98
- Efficiency > 95%
- THD (total harmonic distortion) below 10% starting from 1 kW
- RoHS compliant



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Description

The STEVAL-ISF001V1 demonstration board provides a compact and ready-to-use solution for the implementation of a simple PFC (power factor correction) system capable of supplying loads with a power close to the maximum delivered in most typical domestic applications.

For this power range, the use of continuous mode PFC operation becomes mandatory in order to drain a current with an RMS value not exceeding the maximum allowed by the metering system, and to minimize the size of components involved in system operation.

Normally, the use of a standard continuous mode driver chip requires a more expensive and complex driver, as well as associated passive components. However, STMicroelectronics' patented solution allows the use of a simple driver, designed for transition mode operation, in fixed off-time, variable frequency, PWM modulation.

This type of modulation provides a current on the PFC boost inductor comparable to that of traditional continuous mode modulation.

1

Figure 1. STEVAL-ISF001V1 schematic diagram



2 Revision history

Table 1. Document revision history

Date	Revision	Changes
11-Nov-2009	1	Initial release.

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