# STNRG011A

# Digital combo multimode PFC and time-shift LLC resonant controller

## High level of integration including a digital engine, full configurability and advanced overload protection management feature

This upgraded version of the successful STNRG011 offers an advanced overload protection management feature that uses a new algorithm to guarantee a more accurate output voltage.

An ideal controller for 90 to 300 W power converters, the STNRG011A complies with the most stringent energy-saving requirements.

### KEY FEATURES & BENEFITS

- Multi-mode PFC and LLC resonant half-bridge converter
- Advanced overload protection management feature
- 800 V startup generator and X-capacitor discharge function
- PFC and half-bridge gate drivers
- 2-pin UART for external monitoring (black box) and software updates
- Key parameters stored in NVM for improved configurability and calibration
- Enhanced burst mode at low load for fast activity restart
- Low pin count with SO20 package

### KEY APPLICATIONS

- Power adapters for laptops and desk PCs
- TV power supplies
- SMPS for LED lighting


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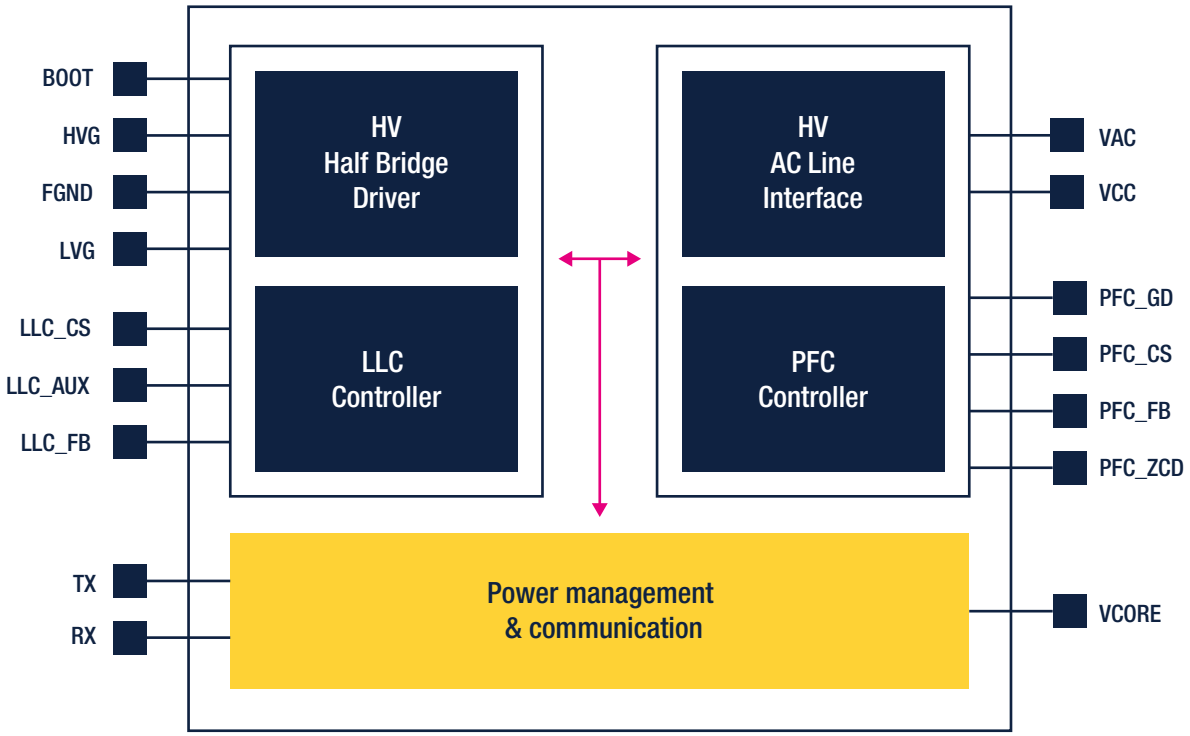
Designed to ensure efficient conversion and highly regulated output across all loads, the STNRG011A features a multiple (transition and discontinuous conduction) mode PFC controller, a high-voltage double-ended time shift controller for LLC resonant half-bridge converter, an 800 V start-up generator, and an X-capacitor discharge circuit as well as power factor correction (PFC) and half-bridge gate drivers.

The main benefit of this upgraded version of the STNRG011 is that overload protection can now be managed using an innovative algorithm that increases the frequency for a more accurate output voltage or still by without increasing the frequency (same as the STNRG011).

The STNRG011A embeds an 8-bit core with dedicated peripherals for managing the logic engines stored in internal ROM as well as key parameters stored in NVM that can be fully programmed during the production phase for maximum configurability and flexibility. A 2-wire UART interface is also available for software updates, test modes, and monitoring purposes including access to black box data.

Highly competitive in terms of time to market and overall costs, the STNRG011A offers power supply designers with customizable performance and operation, along with the opportunity to deliver more compact solutions with lower BoM counts and less complexity.




| Order code | Package | Packing | Description | Evaluation board | Documentation |
|---|---|---|---|---|---|
| **STNRG011ATR** | SO-20 | Tape & Reel | Digital combo multi-mode PFC and time-shift LLC resonant controller | EVL011A150ADP | UM3012, UM3002 |