

200 W power supply based on STNRG011 digital combo controller for LED TV



Features

- STNRG011 digital controller:
 - TM PFC with resonant HB-LLC converter
- Input voltage range: 90 – 264 V_{AC}
- 12 V/4 A, 65 V/2.3 A output voltage
- Full load power: 200 W continuous operation
- Full load efficiency greater than 91% at 115 and 230 V_{AC}
- No load mains consumption: less than 120 mW
- Full set of programmable parameters
- High flexibility thanks to the configurable NVM
- Black box functionality with the embedded EEPROM

Description

The STEVAL-NRG011TV is a 200 W LED TV SMPS providing 12 V regulated output voltage (for MCU supply and audio system applications) and 65 V output voltage for LED back lighting.

The design is based on the STNRG011 IC digital combo controller that controls a two-stage AC/DC SMPS.

The front-end is a transition mode PFC pre-regulator and the second stage is an LLC HB resonant converter.

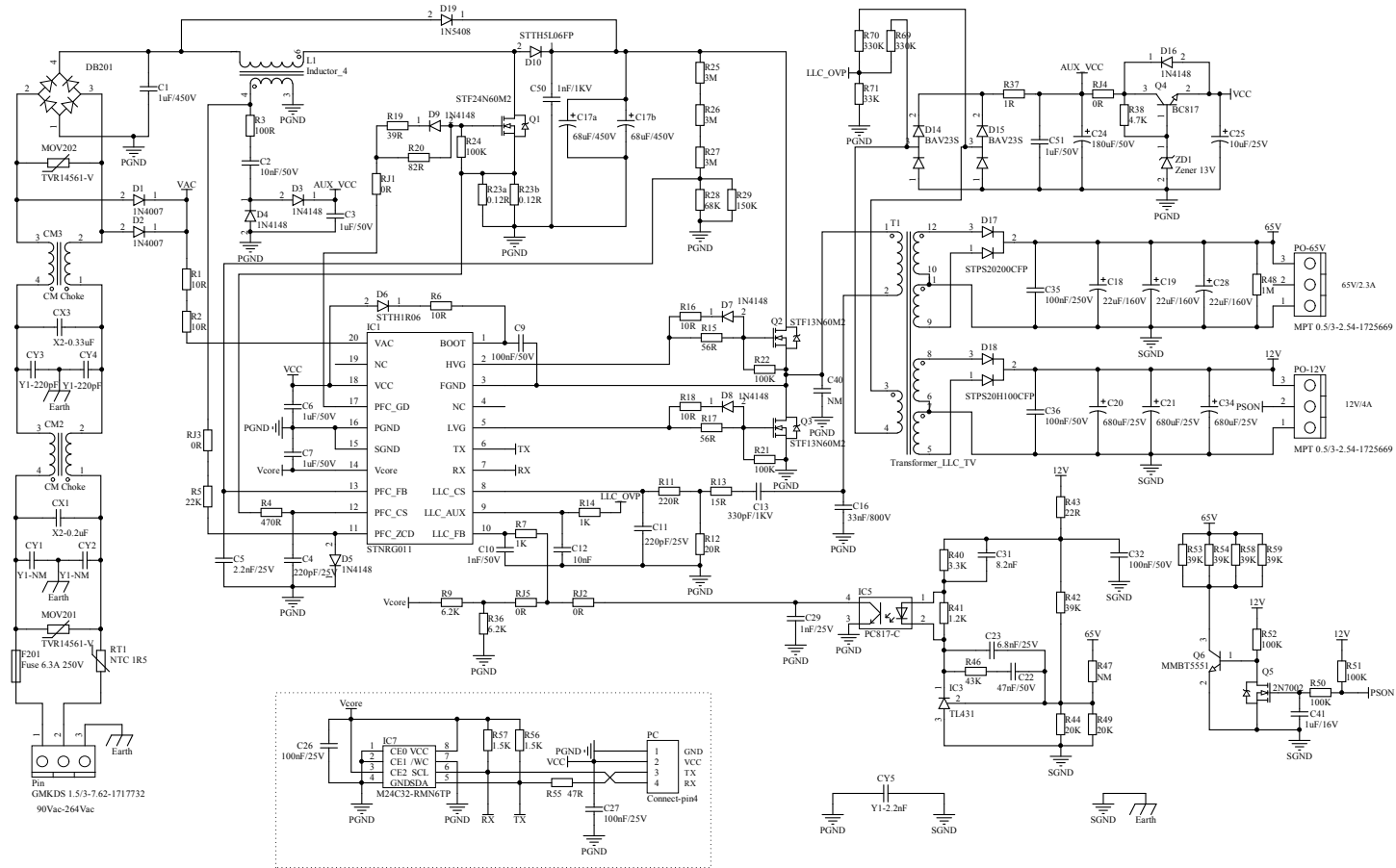
Thanks to the STNRG011 IC, the user can take full advantage of digital implementation without the need of writing code.

A complete set of parameters, stored in the controller non-volatile memory (NVM), allows the configuration and fine tuning of the application.

Product summary	
200 W power supply based on STNRG011 digital combo controller for LED TV	STEVAL-NRG011TV
Digital combo controller multi-mode PFC and time-shift LLC resonant controller	STNRG011
Applications	LED / OLED TV

1 Schematic diagrams

Figure 1. STEVAL-NRG011TV circuit schematic



Revision history

Table 1. Document revision history

Date	Version	Changes
14-May-2021	1	Initial release.
16-June-201	2	Updated deescription. Updated product summary

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