



STEVAL-IHC001V1

Single plate induction cooker demonstration board
based on the ST7LITE09 and STGW40NC60WD (40 A, W series)

Data Brief

Features

- Rapid conductive heat transfer
- No open flames
- Efficiency is around 90%
- Up to 2500 W as maximum working level

Description

The STEVAL-IHC001V1 induction cooking demonstration board can be used to evaluate ST components or to get started quickly with your own induction cooking development project. Induction cooking is not a radically new invention; it has been widely used all around the world. With recent improvements in technology and the consequent reduction of component costs, induction cooking equipment is now more affordable than ever. This demonstration board provides a chance to understand how an induction cooker works and to make an in depth examination of the various blocks and parts of this type of cooking application such as the driving topology, how the resonant tank works, how the pot gets hot and how to remove it safely from the cooking element. The board is entirely controlled by a simple ST7FLITE09 8-bit microcontroller, which provides the PWM driving signals, the user interface and drives the fan and relay control to the plate feedback. Conductive heat transferred to the food is very direct because the cookware is heated uniformly and from within. Induction cooking is even faster than gas cooking. There are no open flames. This reduces the chances of fire and the cold stove top is also more child safe. Heat is generated directly in the pot, while for electric and gas the efficiency is around 65% and 55% respectively due to heat transfer loss



1 Schematics

Figure 1. Induction cooking block diagram

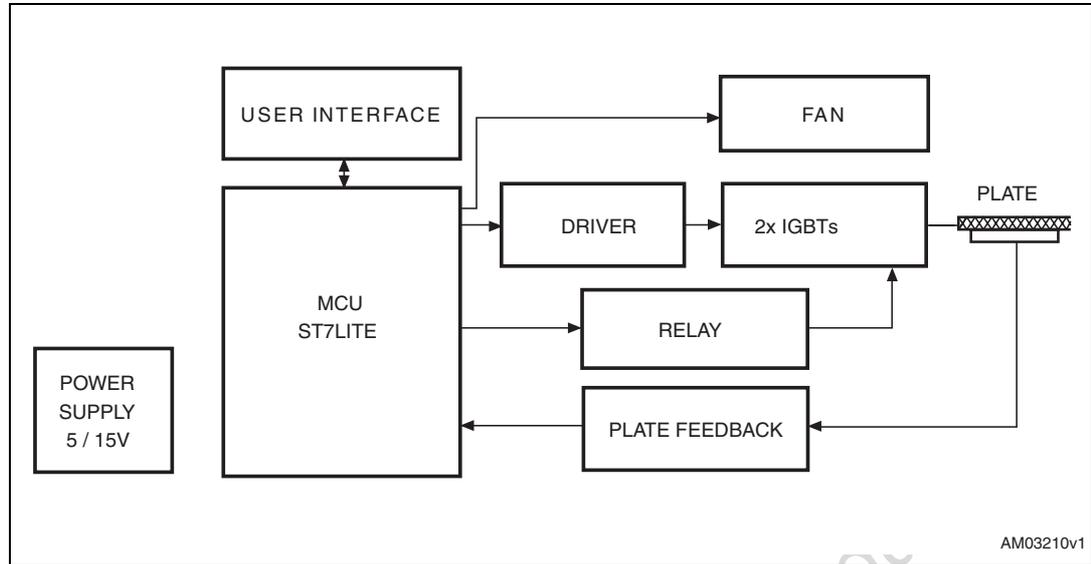


Figure 2. Mains and +325 V DC link

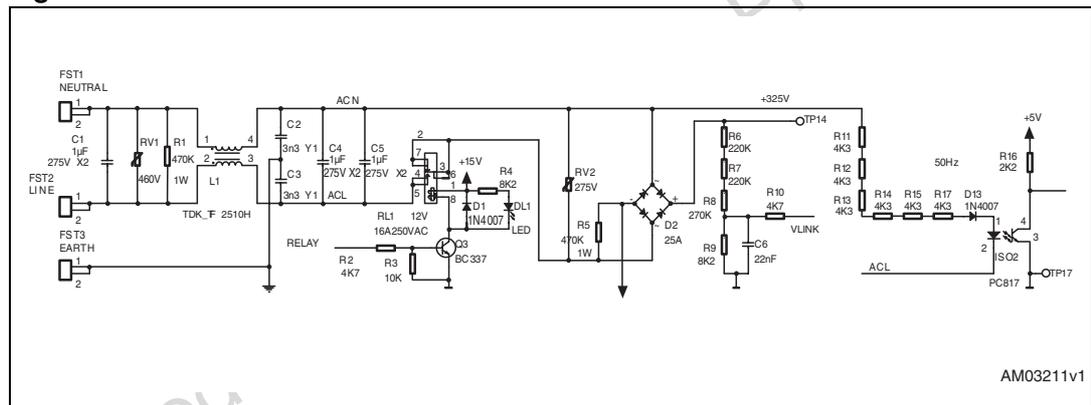


Figure 3. Isolated power supply, 5 V and 15 V

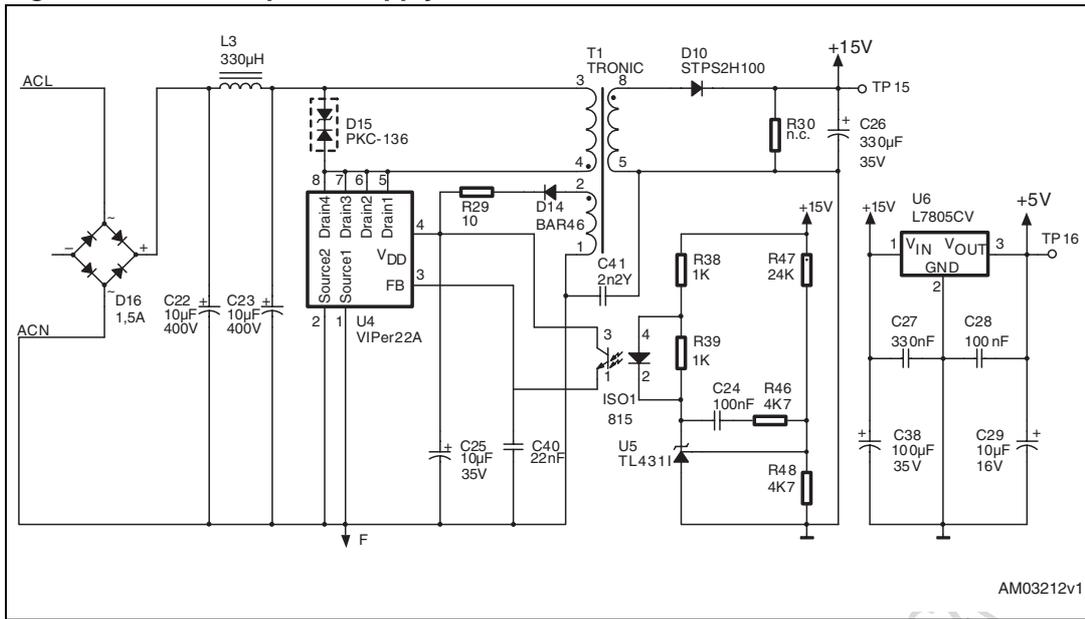


Figure 4. L6384 IGBTs driver and power stage

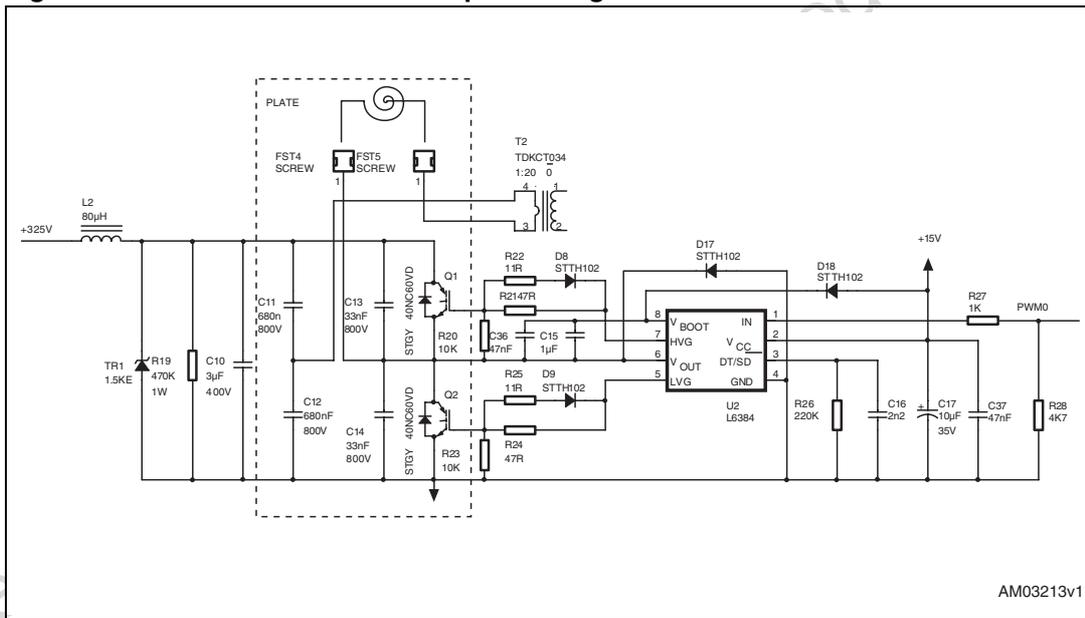


Figure 5. Current peak, current phase and alarm

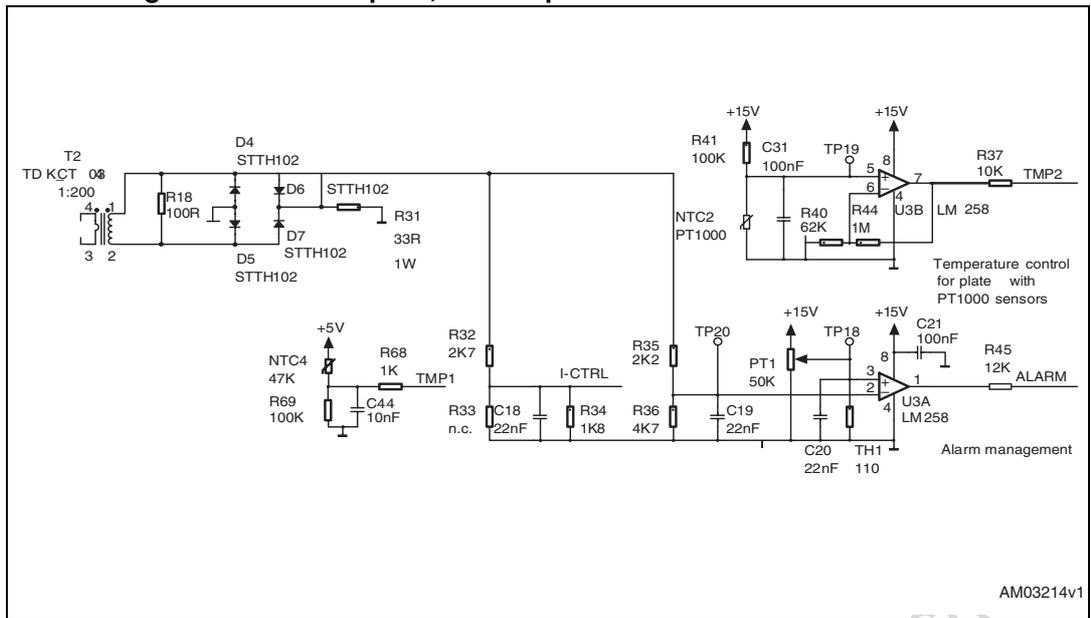
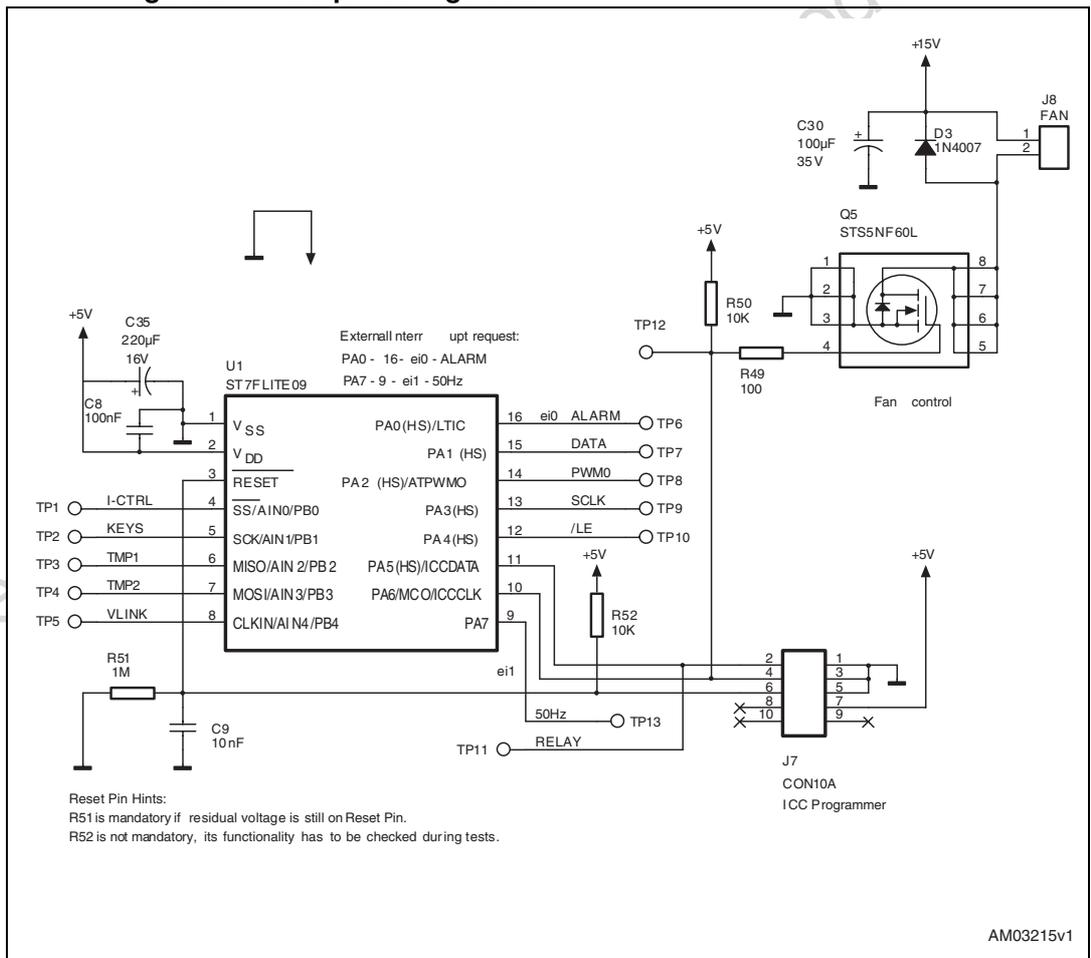


Figure 6. MCU pin configuration



2 Revision history

Table 1. Document revision history

Date	Revision	Changes
26-Nov-2008	1	Initial release.

Obsolete Product(s) - Obsolete Product(s)

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