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STEVAL-ILH001V1

250 W electronic ballast demonstration board
for metal halide lamps based on the L6562 and STF7LITE39F2

Data Brief

Features

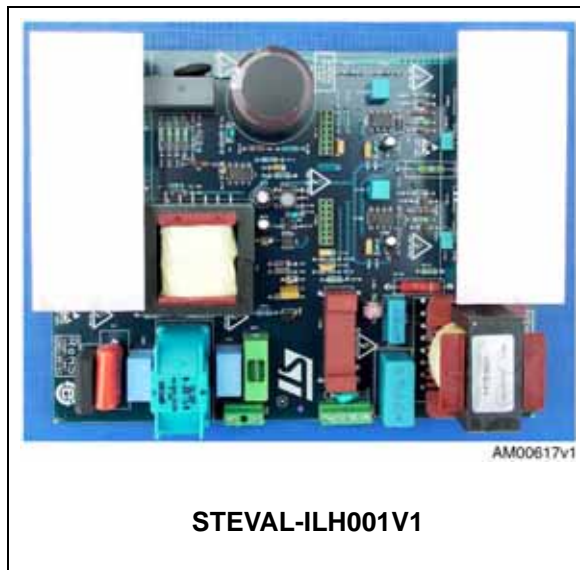
- Input voltage: 90 to 265 Vac, 50 - 60 Hz
- P_{OUT} : 250 W
- Power factor: ≥ 0.94 at 230 Vac
- Full-bridge for output stage working at low frequency to avoid acoustic resonance
- PFC (power factor correction) implemented using the L6562 PFC controller
- Total system efficiency up to 94%
- Current control during warm-up phase
- Power control during steady state

Description

The STEVAL-ILH001V1 demonstration board implements a two-stage electronic ballast for 250 W, HID (high-intensity discharge) metal halide lamps.

The ballast features a boost converter (PFC controller) working in fixed OFF-time, and a full-bridge inverter to drive a lamp using a low frequency square wave.

The design of the STEVAL-ILH001V1 takes advantage of STMicroelectronics' very large product portfolio. ST components used in the design include: PFC drivers, an inverter driver microcontroller, auxiliary power supply, voltage reference, logic part, amplifier, comparators, and power devices such as power MOSFETs, IGBTs, and fast diodes.



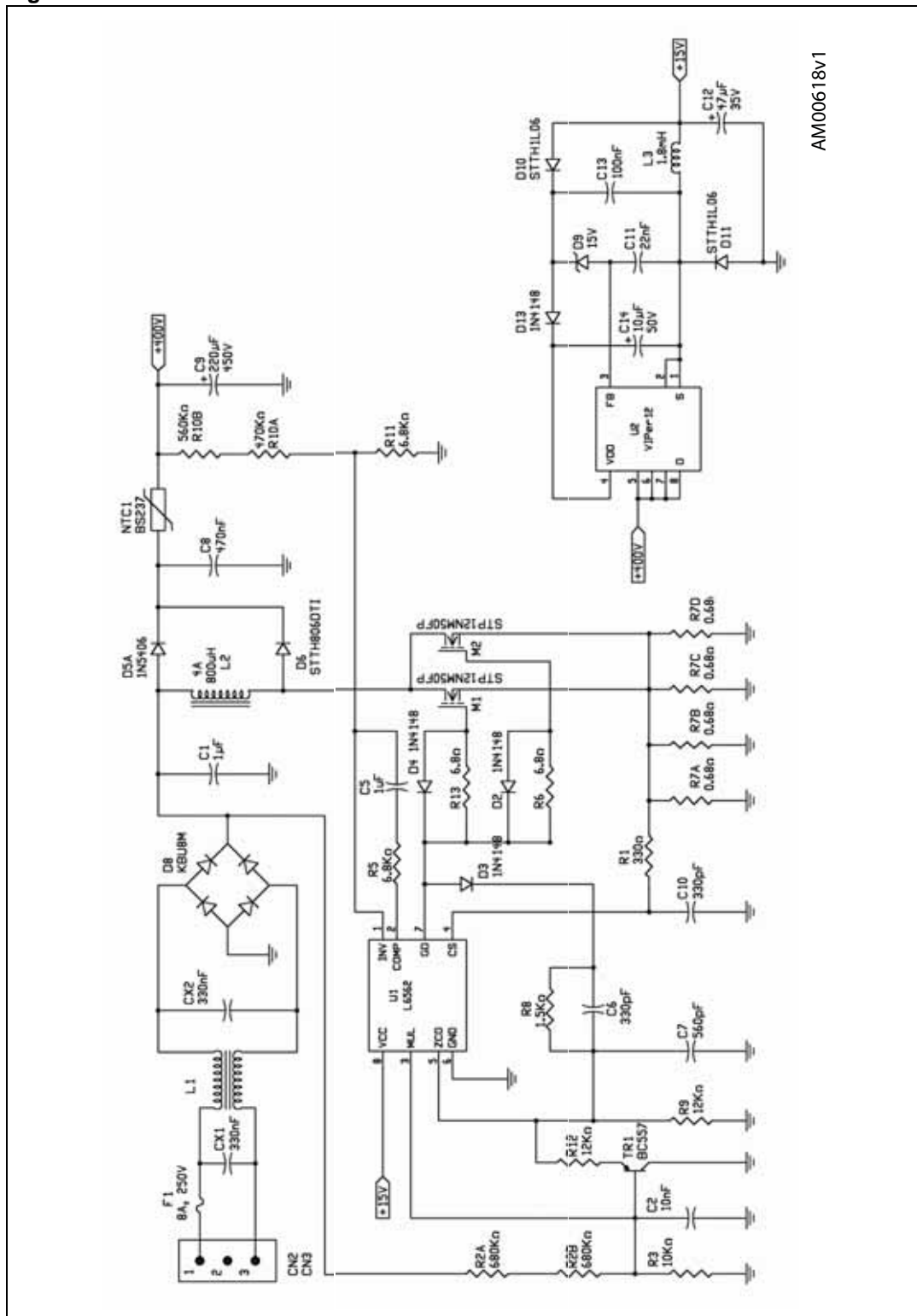
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Circuit schematic

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1 Circuit schematic

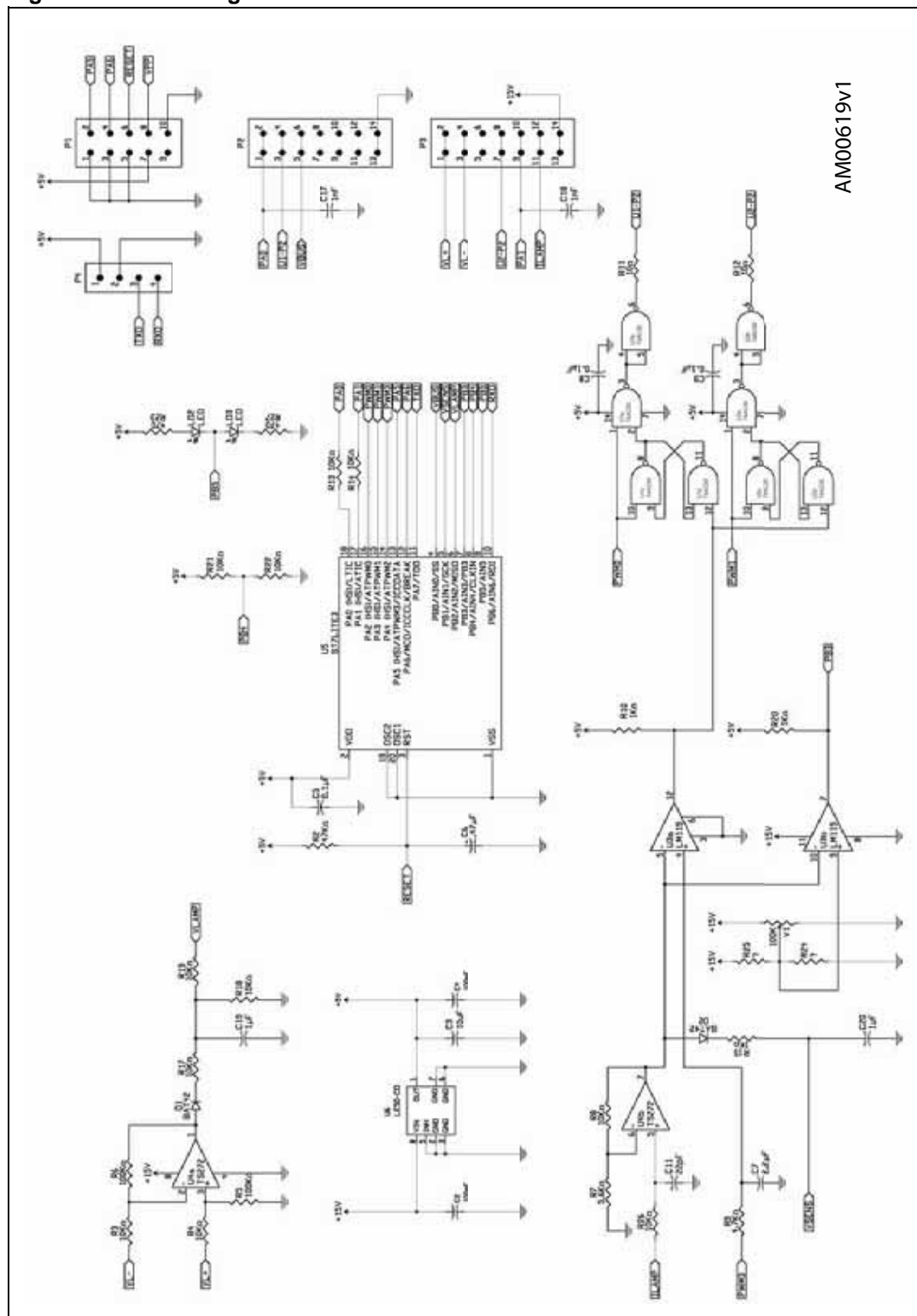
Figure 1. PFC electrical schematic



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Circuit schematic

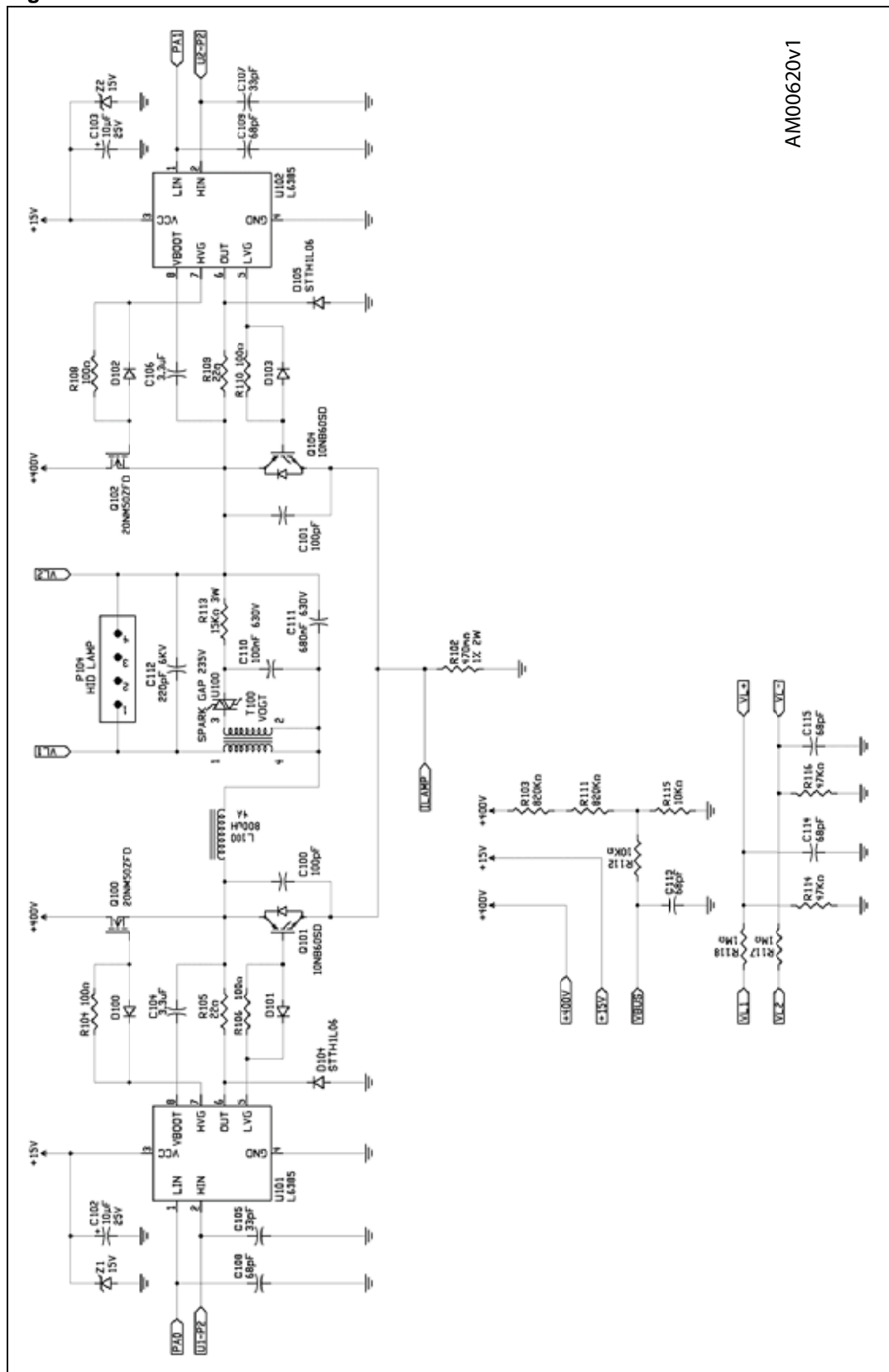
Figure 2. Full bridge electrical scheme



Circuit schematic

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Figure 3. Electrical schematic



2 Revision history

Table 1. Document revision history

Date	Revision	Changes
05-Jun-2008	1	Initial release.

STEVAL-ILH001V1

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