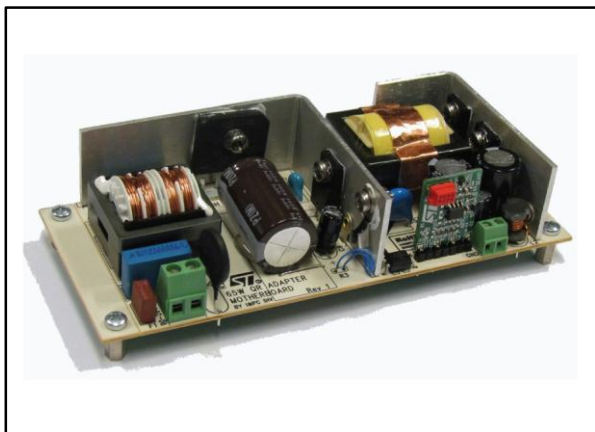


Evaluation board for the SEA01 constant voltage and current controller with online digital trimming

Data brief



Features

- Universal input mains range: 90 to 264 Vac, 45 to 66 Hz
- 65 W continuous output power
- Precise output levels:
 - CV: 19 V $\pm$ 0.1%
 - CC: 3.75 A $\pm$ 1.67%
- No load consumption < 100 mW @ 230 Vac
- Average efficiency > 89%
- Full set of protection features
- EMI: in accordance with EN55022 - class B
- Safety: in accordance with EN60950
- PCB: CEM-1, single side 35 μ m
- Board size: 58 x 121 mm, 25 mm height
- RoHS compliant

Description

The STEVAL-ISA161V1 is an evaluation board to test the performance of the SEA01 constant voltage and current controller with online digital trimming from STMicroelectronics. The board implements a 65 W adapter, targeting applications such as power supplies for high-end portable computers. The board uses the SEA01 as secondary side CV/CC controller, allowing the application to satisfy very precise output voltage and current regulations thanks to the digital trimming technique employed. The primary side PWM controller is the L6566B. This device drives a TM flyback topology, the best fit for this type of application.

The SEA01 is mounted on a small daughterboard that includes a connector to communicate, via I²C protocol, with an external trimming tool. This evaluation board can therefore be useful also as a means to test the benefits of digital trimming in a real application. The SEA01, housed in an SO8 package, is a CV/CC controller which includes 2 transconductance op-amps and 2 voltage references, digitally trimmable using an I²C interface. ST also offers an advanced trimming board (STEVAL-PCC019V1) that allows users to perform all the trimming operations (including automatic trimming) using a standard Windows®-based PC.

1 Schematic diagram

Figure 1: STEVAL-ISA161V1 circuit schematic (part 1)

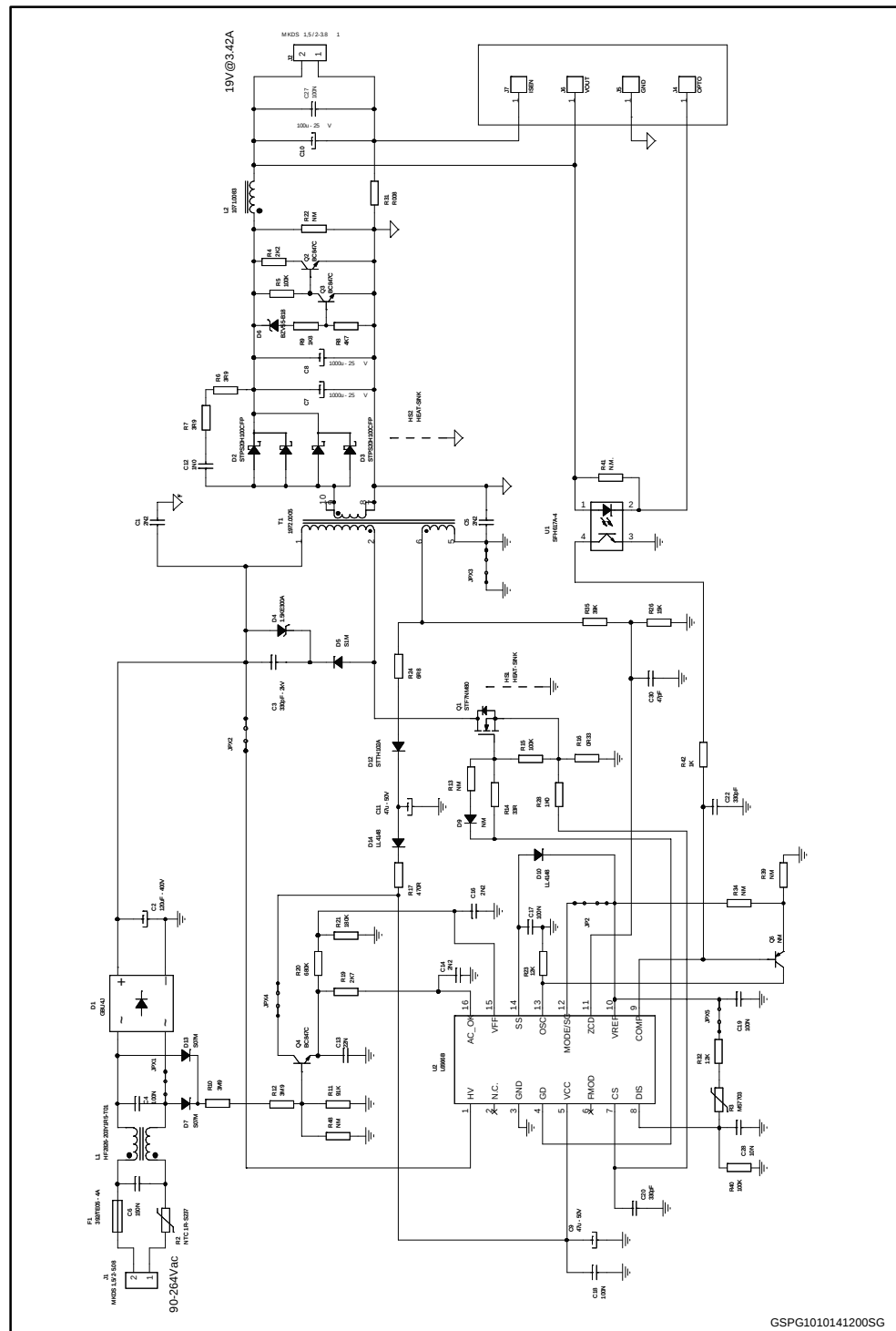
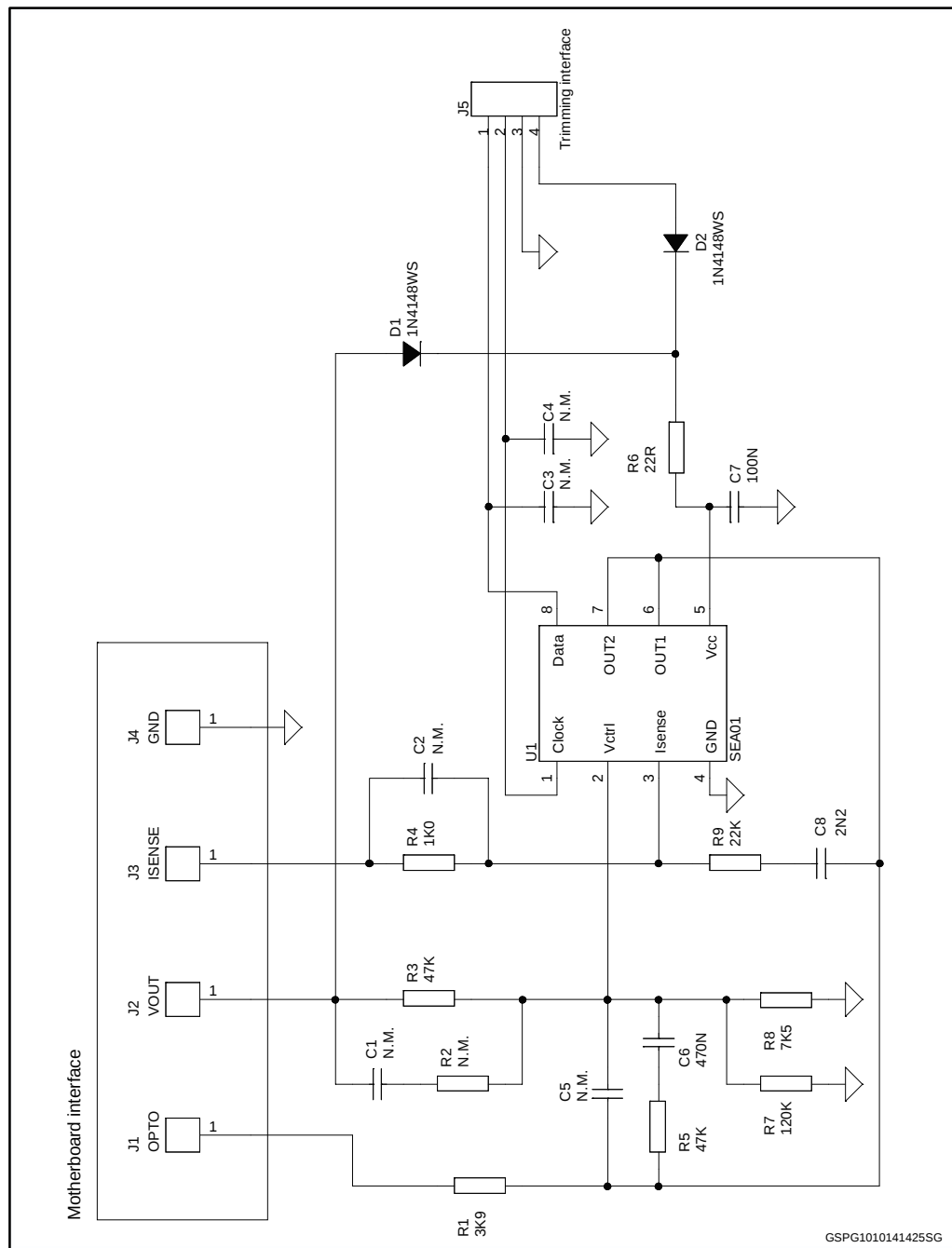


Figure 2: STEVAL-ISA161V1 circuit schematic (part 2)



2 Revision history

Table 1: Document revision history

Date	Rev	Changes
22-Oct-2014	1	First release.
06-Nov-2014	2	Updated titles in figure 1 and figure 2.

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