



Smartplug system to measure and control AC loads based on the STM32, ST7540 PLM and STPM01

Data brief

Features

- Energy measurement by the STPM01
- Power line communication by the ST7540 up to 4.8 kbps
- USART connectivity or expansion connector
- Output with two contacts (NO/NC) and common contact for generic load
- Designed to fit a standard "503" wall box
- RoHS compliant

Description

The STEVAL-IHP002V2 demonstration board implements a PLM smartplug node which allows monitoring the energy consumption of a mains plug and controlling any kind of load in on/off mode through a relay.

The board is based on the STM32F103CB microcontroller, the ST7540 PLM module and the STPM01 mono-phase energy metering IC.

The board is designed to fit a standard "503" wall box.

The voltage, current, power, active energy and the output status can be sent to a PLM data concentrator through a power line communication network on request. Moreover, if the power consumption changes, it is sent asynchronously to the data concentrator.

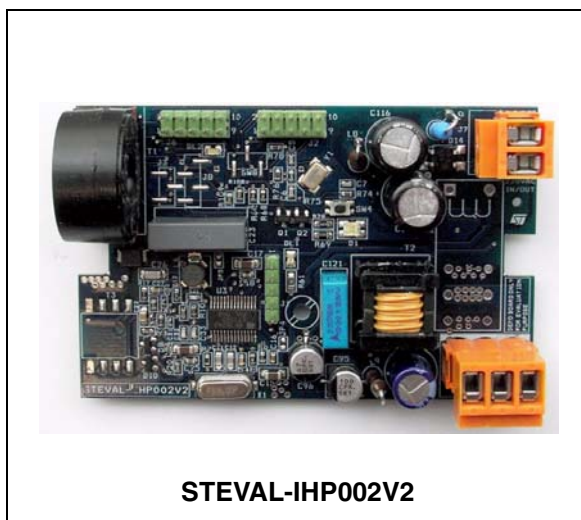


Figure 2. Power supply section

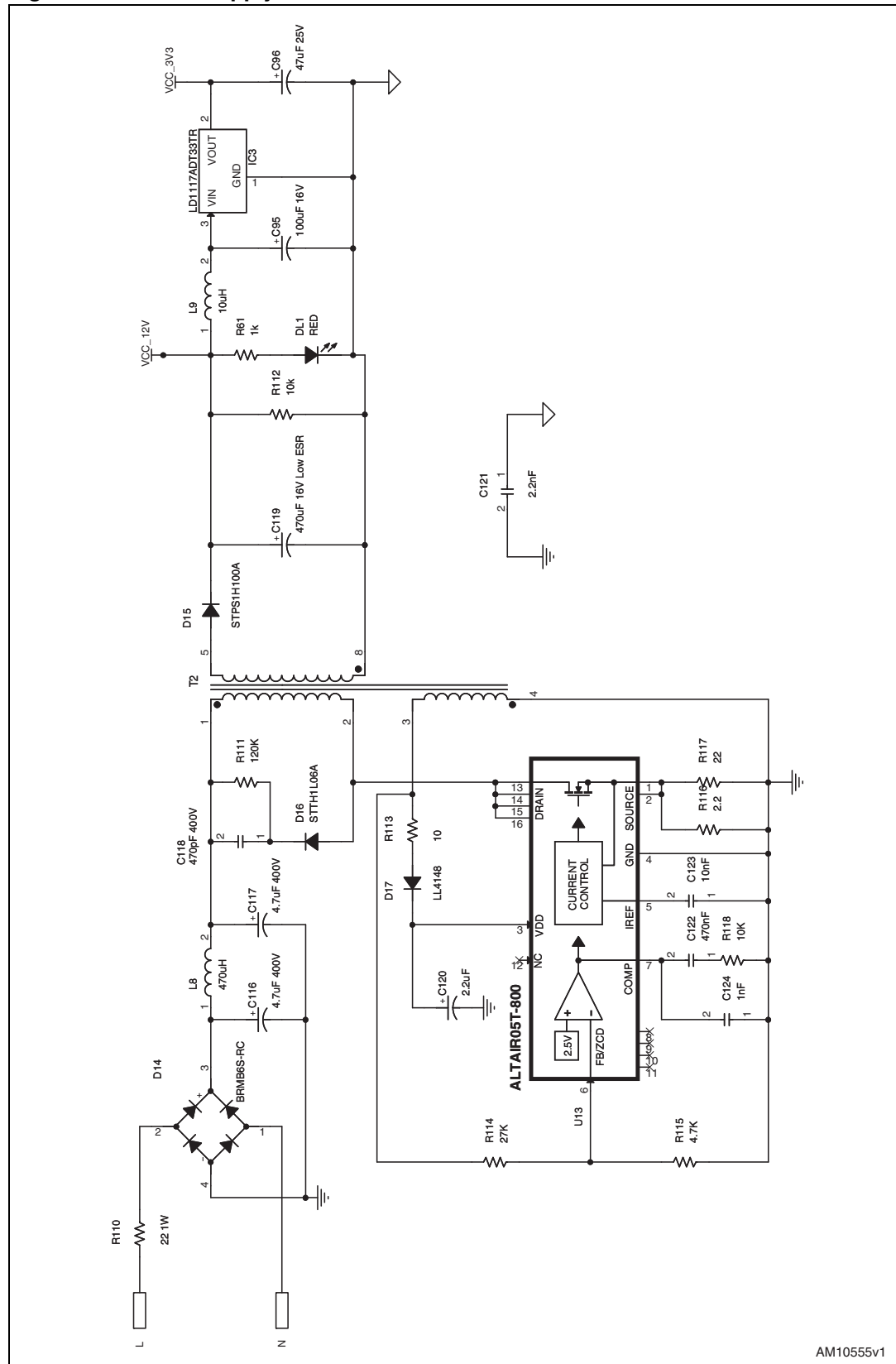


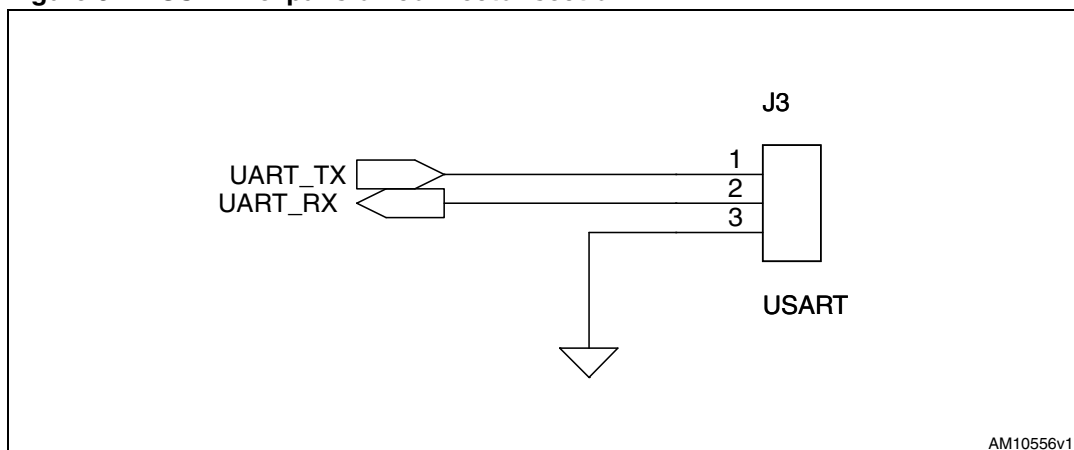
Figure 3. USART expansion connector section

Figure 4. Power line modem section

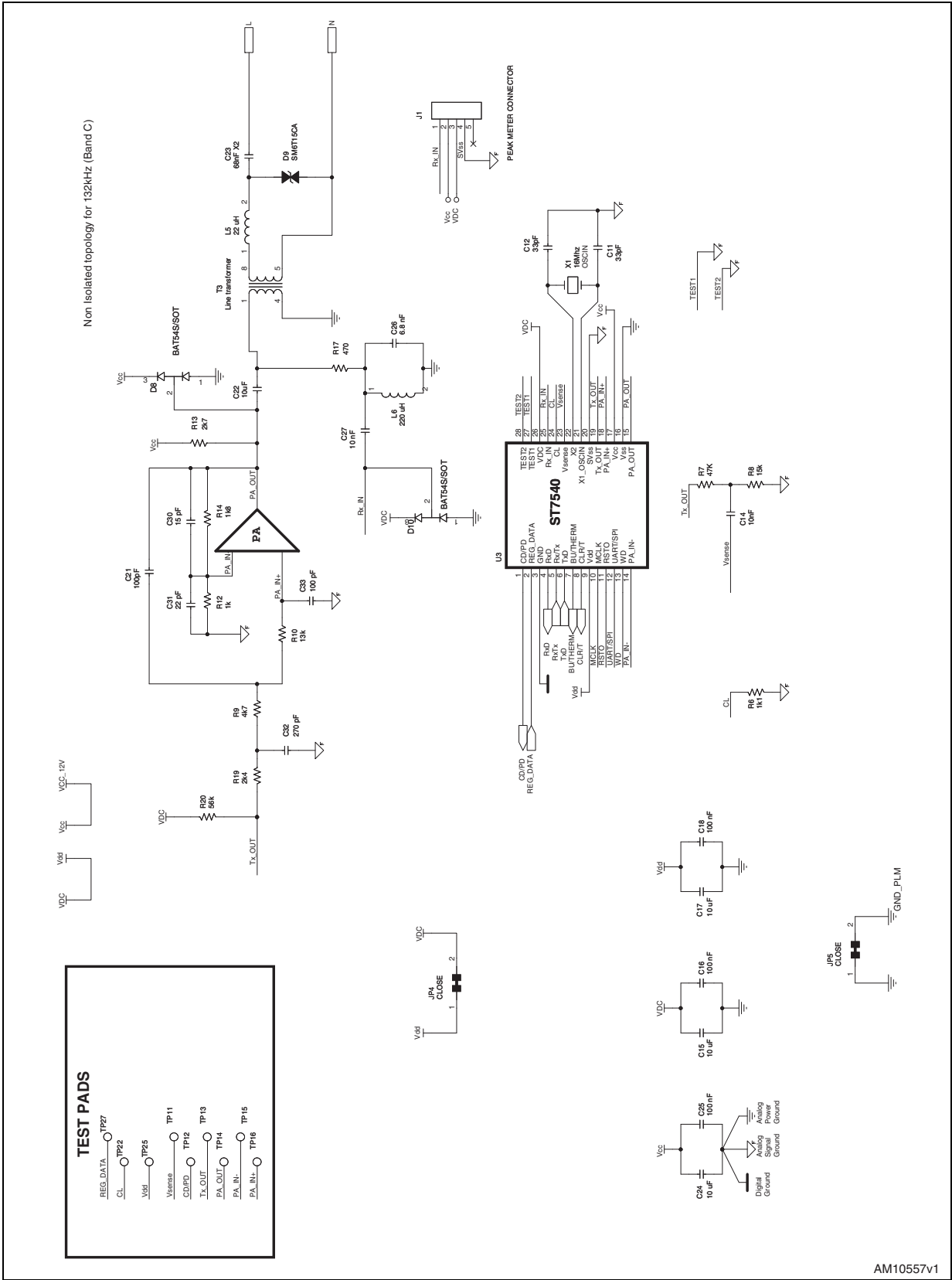


Figure 6. STPM01

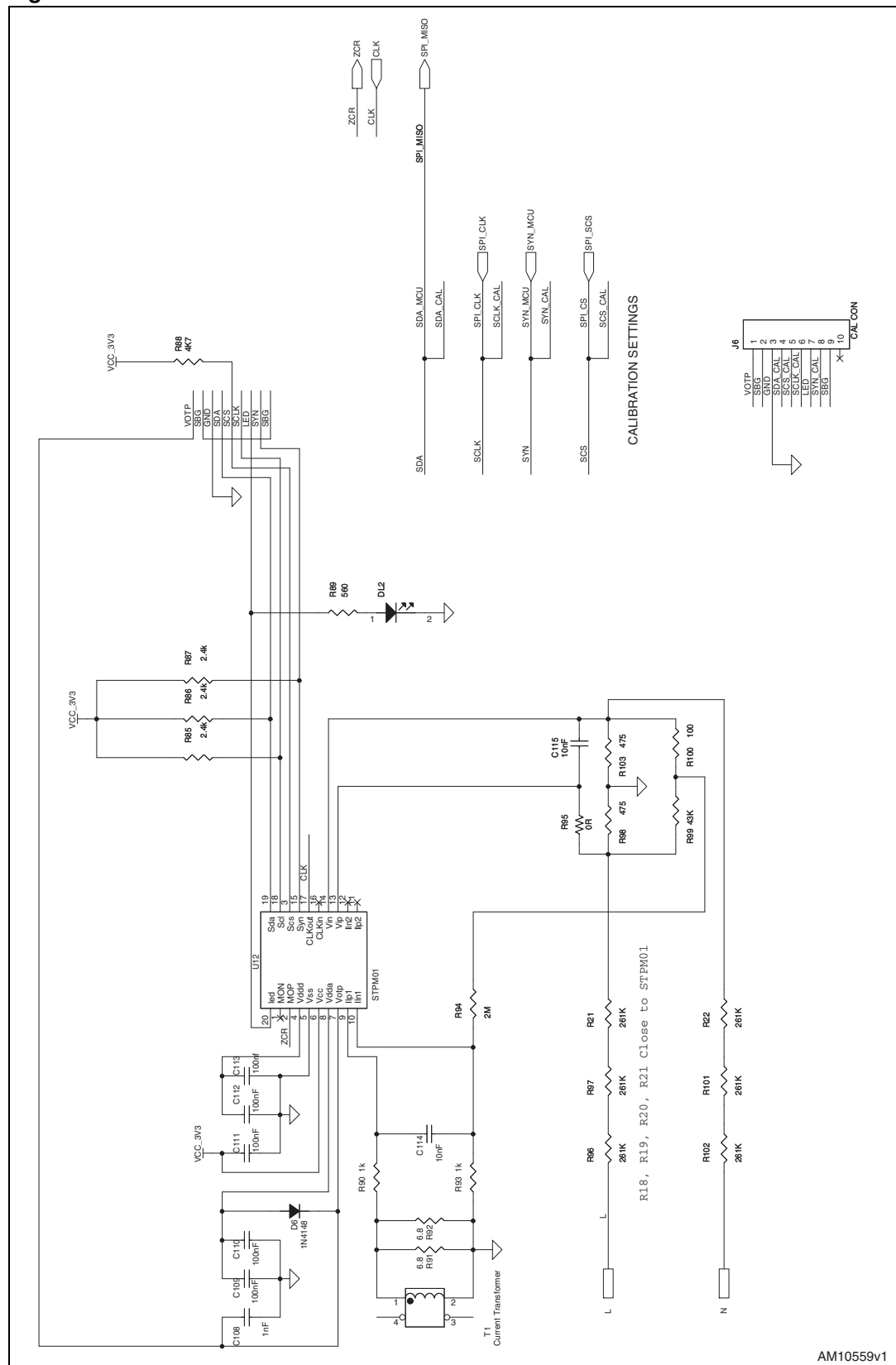
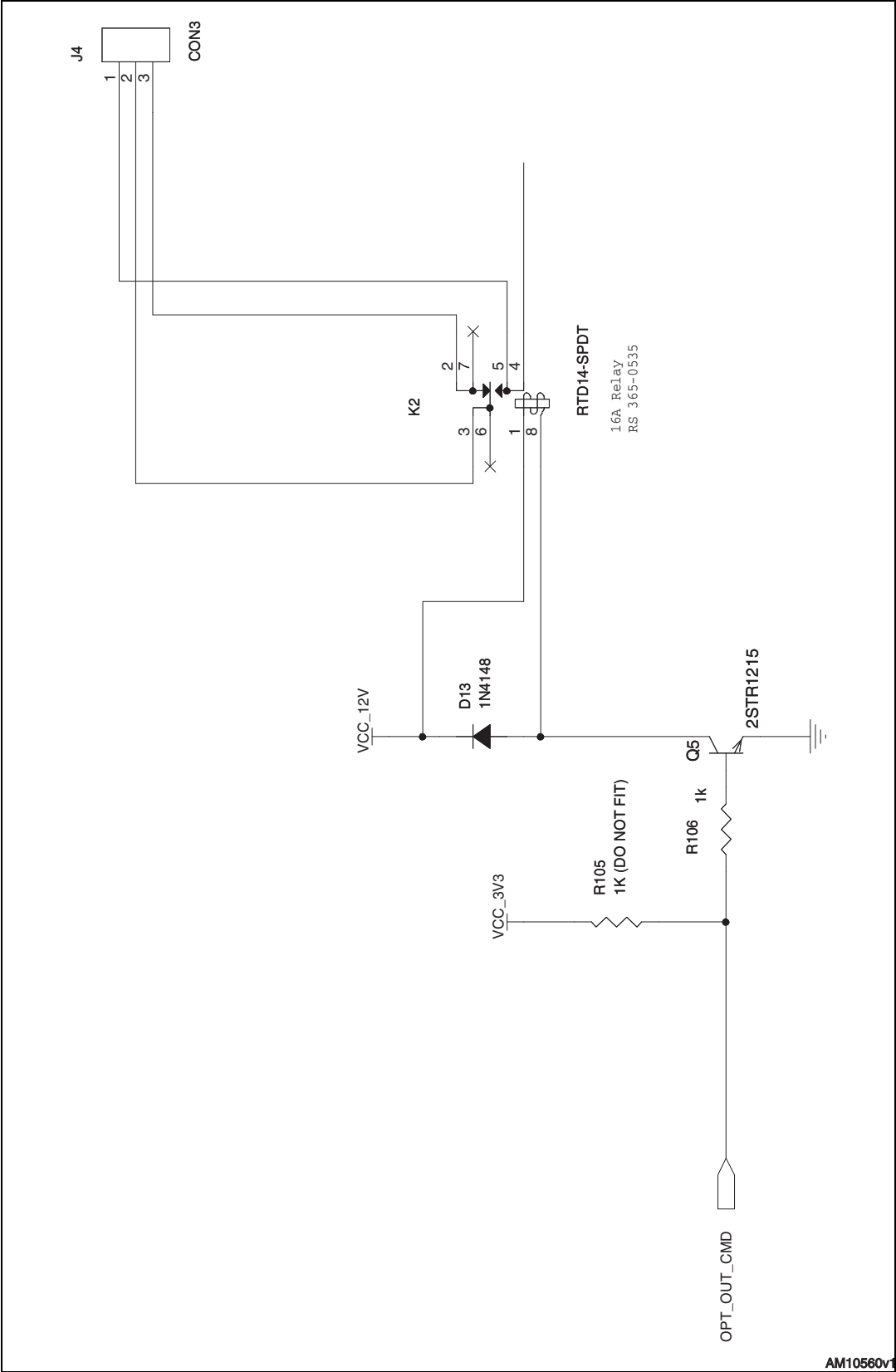


Figure 7. Output drivers



AM10560v1

2 Revision history

Table 1. Document revision history

Date	Revision	Changes
13-Mar-2012	1	Initial release.

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