STEVAL-IFN004V1

BLDC six-step motor driver based on the L6230 and STM8S105

Features

- Input range: 8 V up to 48 V (up to 35 W)
- STMicroelectronics' STM8S105 8-bit microcontroller
- DMOS fully integrated three-phase motor driver L6230 in a QFN package
- Four-layer board
- Best miniaturization vs. thermal performance ratio
- Sensorless and hall-effect sensor operation
- Current sensing mode: single-shunt resistor
- Debug connector
- SPI interface
- RoHS compliant

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Offering dedicated hardware evaluation features, the STEVAL-IFN004V1 board is designed to help developers evaluate the device and develop their own applications. The STEVAL-IFN004V1 can be used together with the STM8Sxxx three-phase BLDC motor control software library and constitutes a cost-effective complete motor control evaluation and development platform.

Description

The STEVAL-IFN004V1 demonstration board is based on STMicroelectronics' STM8S105 microcontroller and the DMOS fully integrated three-phase motor driver L6230 implementing 6-step scalar control of a BLDC motor.

The board is designed as an evaluation environment for motor control applications in the range of 8 V - 48 V of DC bus voltage and up to 35 W, exploiting the embedded features of the STM8S105. This microcontroller includes internal 2 KB SRAM and 128 KB Flash, and SWD debugging. The L6230 DMOS driver features 2.8 A output peak current, non-dissipative overcurrent detection/protection, cross-conduction protection, internal comparator used for cycle-by-cycle current limitation/regulation, thermal shutdown and undervoltage lockout.

The STEVAL-IFN004V1 is provided with a specific BEMF detection network with dynamic method selection.

1 Circuit schematic

Figure 1. Schematic (part 1)

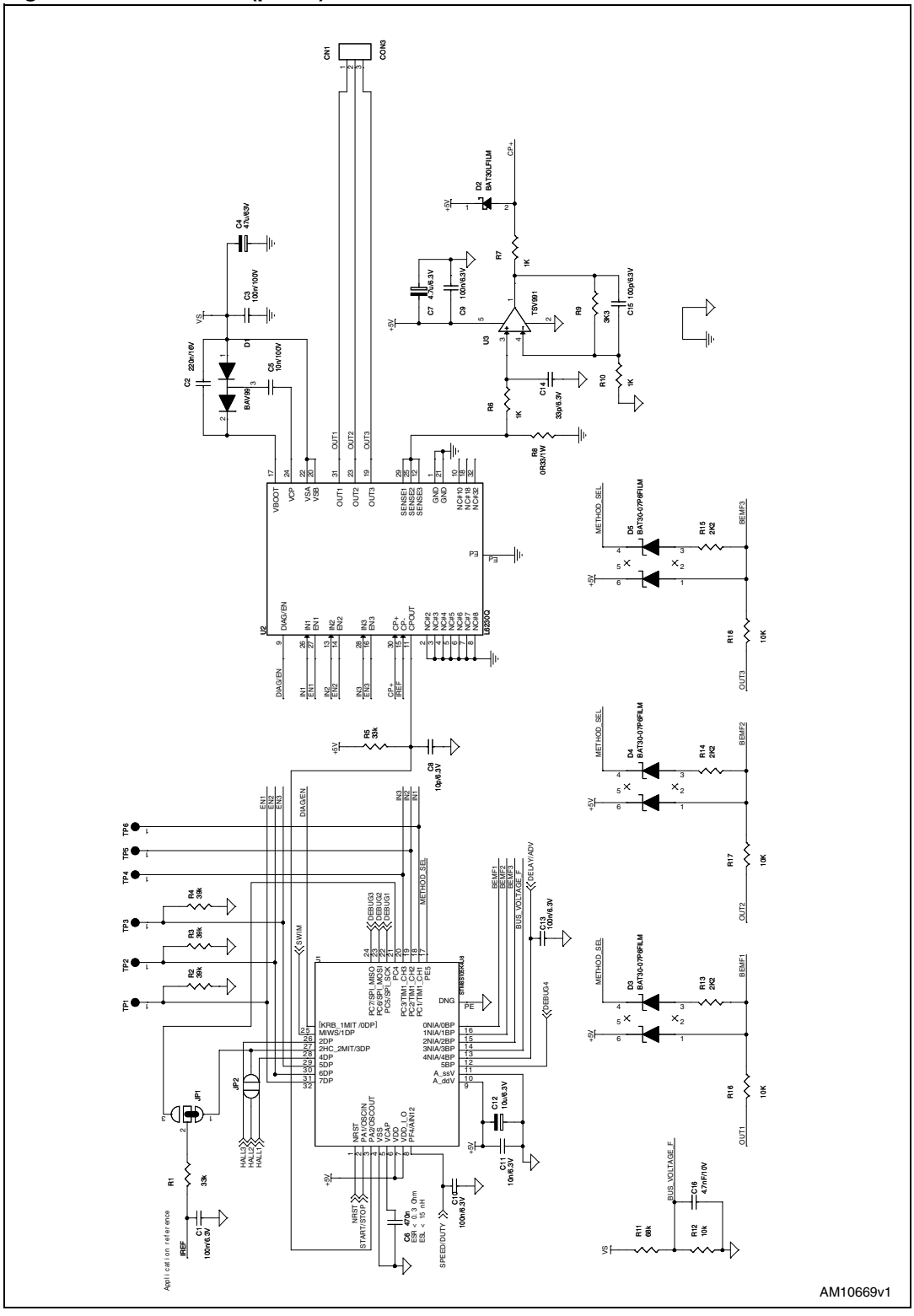
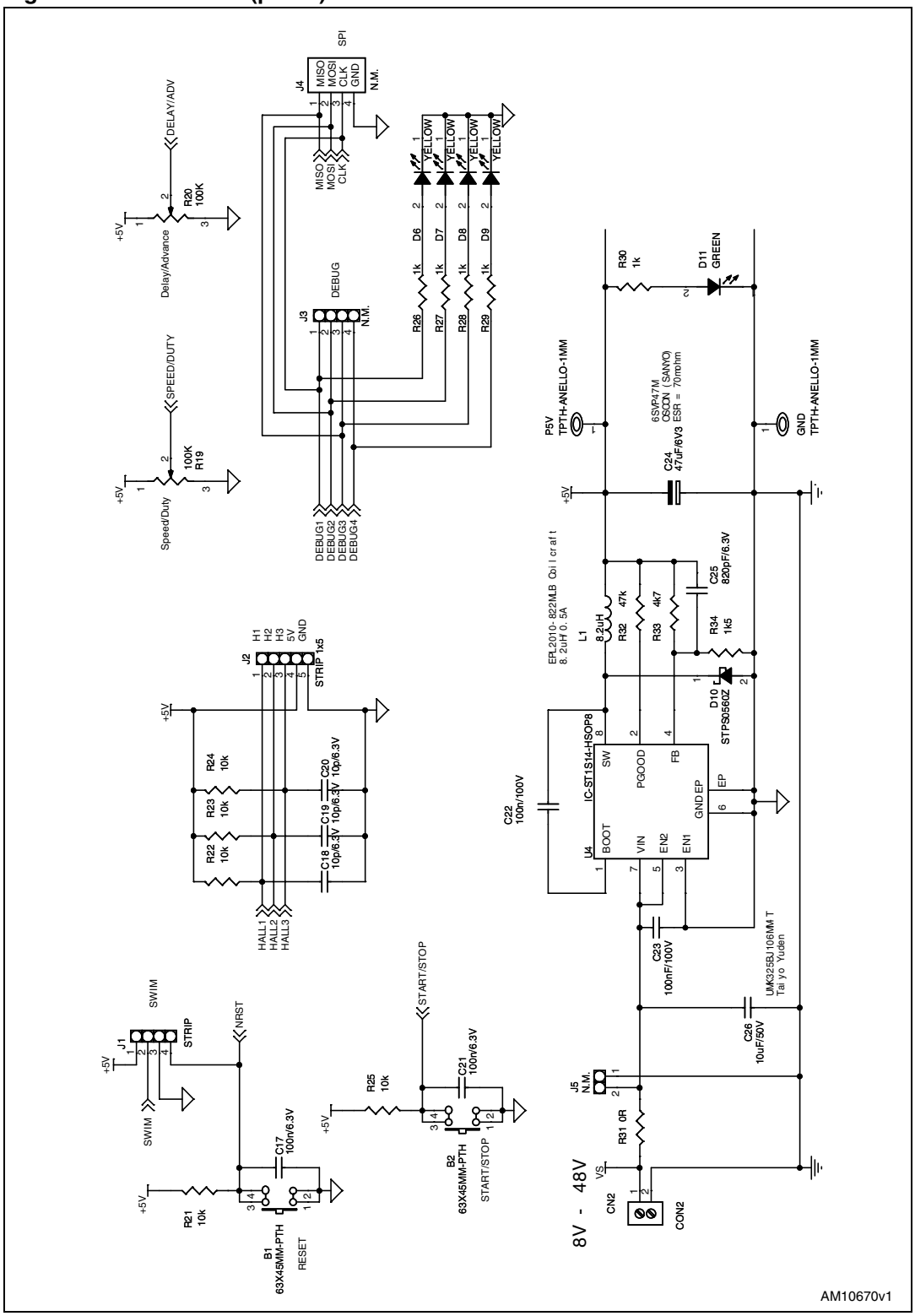


Figure 2. Schematic (part 2)



2 Revision history

Table 1. Document revision history

Date	Revision	Changes
20-Oct-2011	1	Initial release.

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