STEVAL-IHM017V1

100 W 3-phase inverter for BLDC sensorless motor evaluation board

Data Brief

Features

- Wide range input voltage
- Maximum power up to 100 W
- 4.4 A, 520 V power MOSFET included
- Compatible with power MOSFETs in IPAK packages
- 15 V auxiliary power supply connector
- Programming and debugging support via 10-pin ICC connector
- Three potentiometers for runtime settings
- Start/stop button
- Reset button

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Description

This evaluation board is a complete development platform for BLDC sensorless motor applications with nominal power up to 100 W.

Based on a cost effective, flexible and open design, it includes a 3-phase inverter bridge based on the STD5NK52ZD-1 power MOSFET in the IPAK package and an ST7MC 8-bit microcontroller with 16 Kbyte internal Flash memory.

The system has been designed to drive a 3-phase brushless motor with permanent magnet rotor exploiting trapezoidal sensorless control.

The STEVAL-IHM017V1 features complete hardware for developing motor control applications based on ST7MC peripherals including motor control peripheral (MTC). It uses an in-circuit communication (ICC) standard interface to connect to the host PC via in-circuit debuggers/programmers such as the inDART-STX board from SofTec Microsystems™. The board is designed to support a bus voltage of 230 Vac and up to 100 W of input power. Also included is a power supply stage with the VIPer12A-E as the buck converter to generate the voltage reference for the driver and the microcontroller.

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1 Circuit schematic

Figure 1. Schematic 1/2

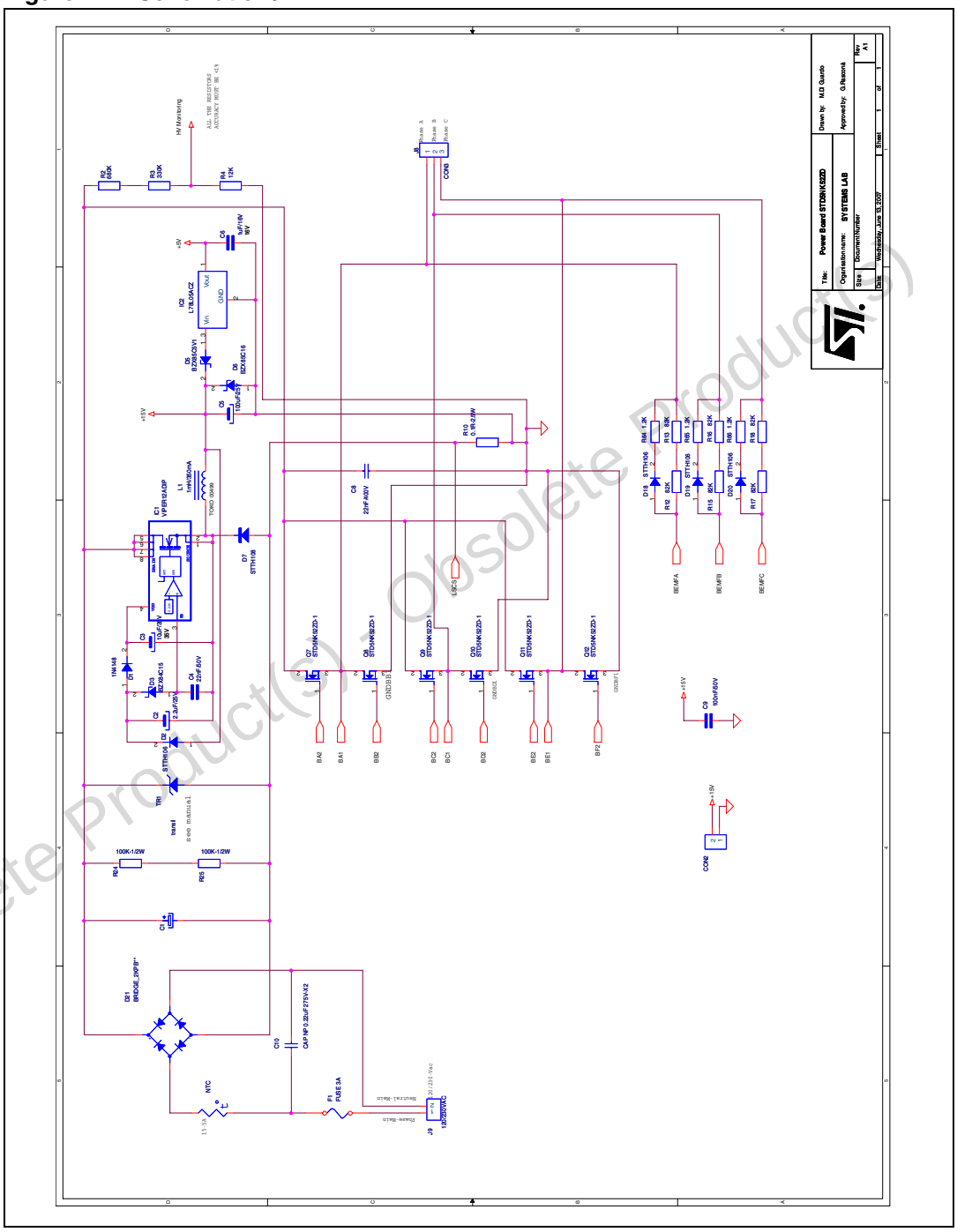

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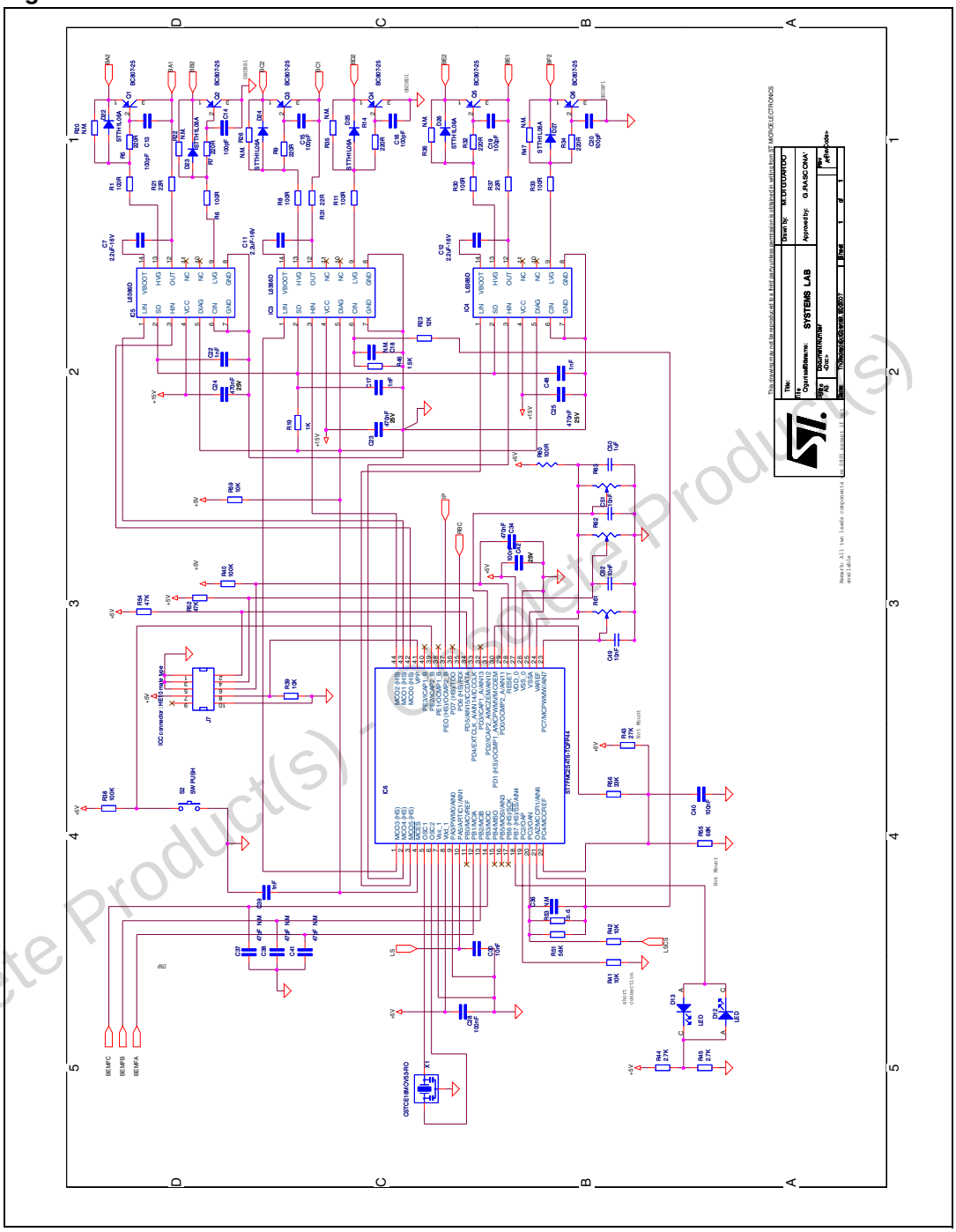
Figure 2. Schematic 2/2



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2 Revision history

Table 1. Document revision history

Date	Revision	Changes
23-Jan-2008	1	Initial release

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