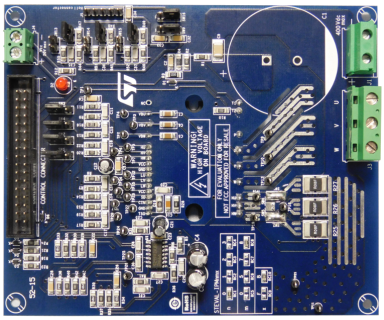
STEVAL-IPM08B

Data brief

800 W motor control power board based on STGIB8CH60TS-L SLLIMM™ 2nd series IPM



Features

- Input voltage: 125 to 400 V_{DC}
- Nominal power: up to 800 W
- Nominal current: up to 4.8 A
- Input auxiliary voltage: up to 20 V_{DC}
- Single- or three- shunt resistors for current sensing (with sensing network)
- Two options for current sensing: dedicated op-amps or through MCU
- Overcurrent hardware protection
- IPM temperature monitoring and protection
- Hall sensor or encoder input
- IGBT intelligent power module:
  - 2nd series of SLLIMM IPM (STGIB8CH60TS-L – DBC package)
- Motor control connector (32 pin) interfacing with ST MCU boards
- Universal design for further evaluation with bread board and testing pins
- Very compact size
- RoHS compliant

Product summary	
STEVAL-IPM08B compact motor drive power board	STEVAL-IPM08B
STGIB8CH60TS-L SLLIMM™ 2nd series IPM	STGIB8CH60TS-L

Description

The STEVAL-IPM08B compact motor drive power board is based on SLLIMM™ (small low-loss intelligent molded module) 2nd series module (STGIB8CH60TS-L). It provides an affordable and easy-to-use solution for driving high power motors in a wide range of applications such as power white goods, air conditioning, compressors, power fans, high-end power tools and 3-phase inverters for motor drives in general.

The IPM itself consists of short-circuit rugged IGBTs and a wide range of features like undervoltage lockout, smart shutdown, embedded temperature sensor and NTC, and overcurrent protection.

The main characteristics of this evaluation board are its small size, minimal BOM and high efficiency. It consists of an interface circuit (BUS and Vcc connectors), bootstrap capacitors, snubber capacitor, hardware short-circuit protection, fault event signal and temperature monitoring. It is designed to work in single or three shunt configuration and with dual current sensing options: using three dedicated on-board op-amps or using op-amps embedded on MCU. The Hall/Encoder part completes the circuit.

Thanks to these advanced characteristics, the system can provide the fast and accurate current feedback conditioning necessary for field oriented control (FOC). The STEVAL-IPM08B is compatible with the ST control board based on the STM32, thus providing a total platform for motor control.

1 Schematic diagrams

Figure 1. **STEVAL-IPM08B circuit schematic (1 of 6)**

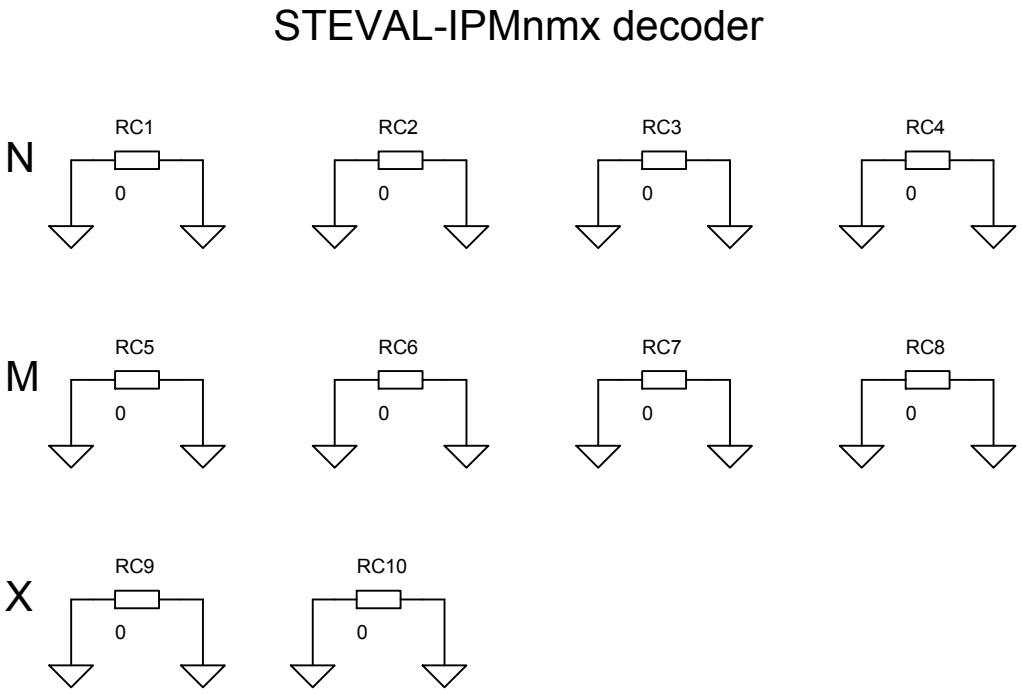


Figure 2. STEVAL-IPM08B circuit schematic (2 of 6)

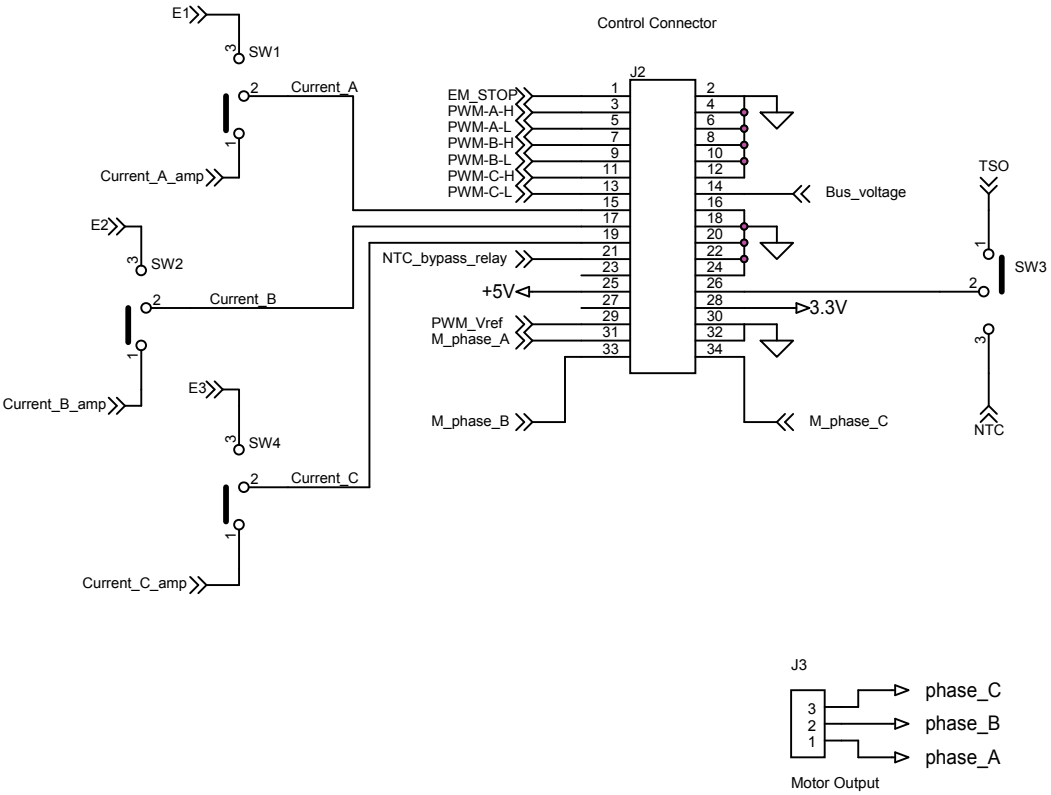


Figure 3. STEVAL-IPM08B circuit schematic (3 of 6)

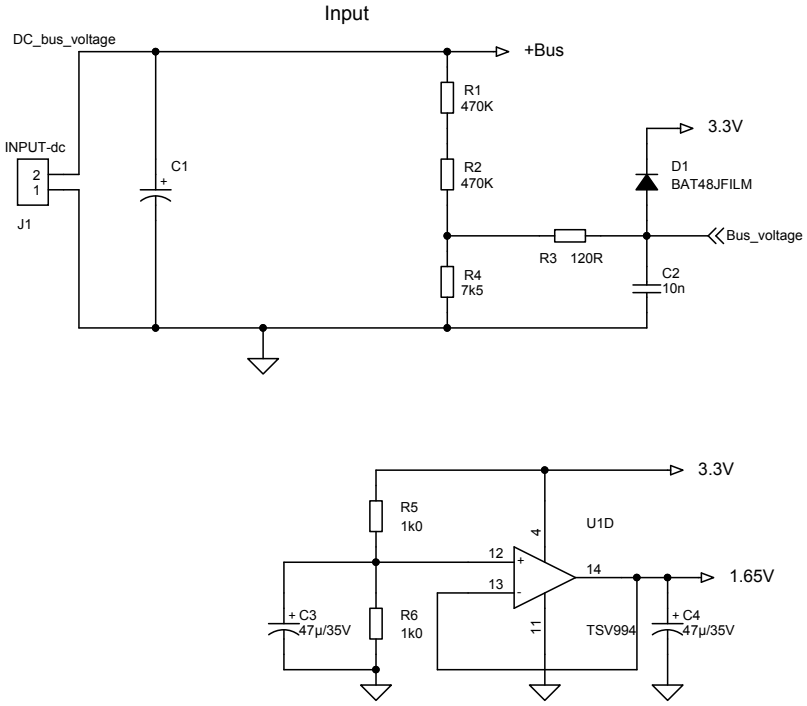


Figure 4. **STEVAL-IPM08B circuit schematic (4 of 6)**

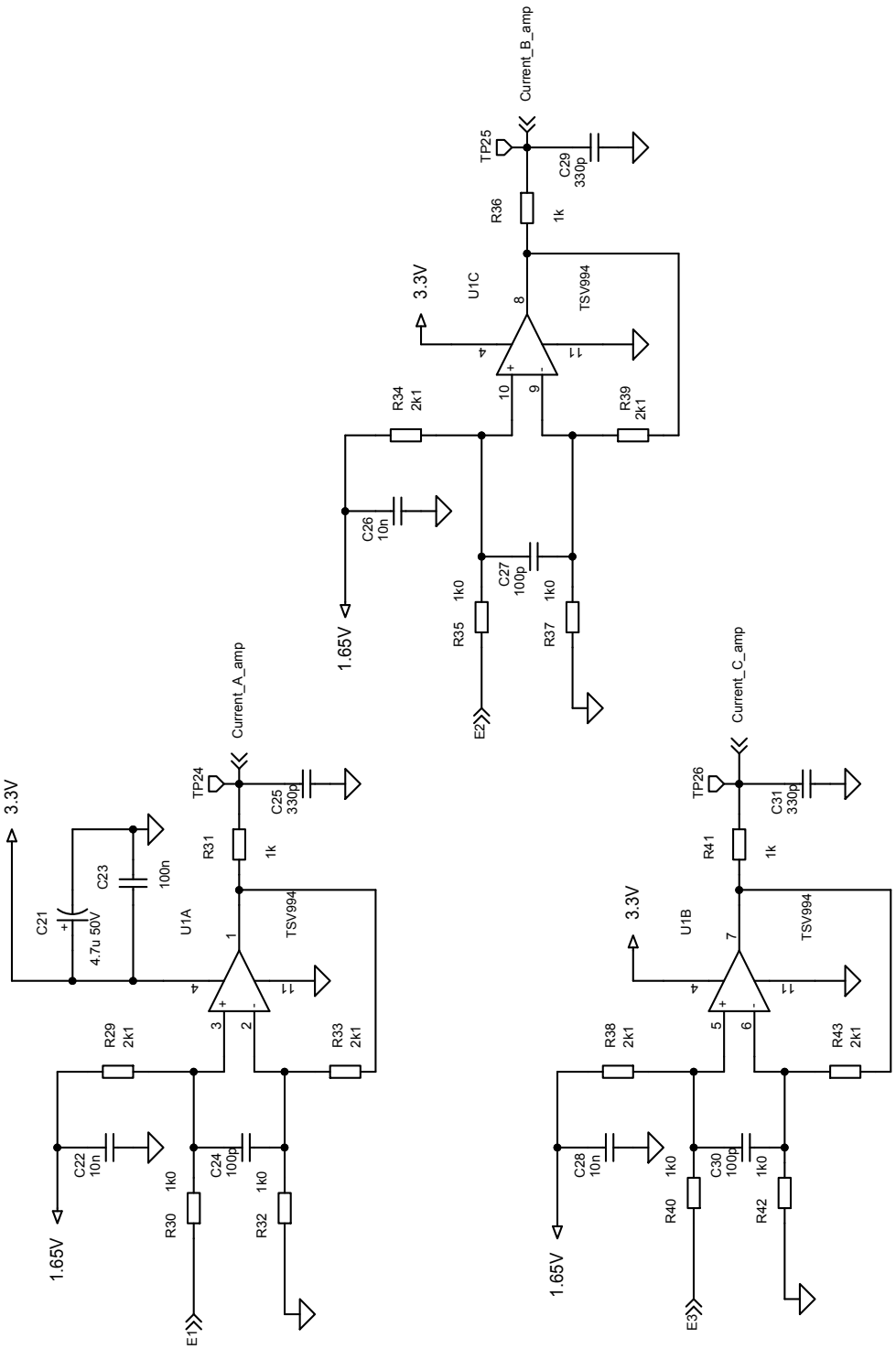


Figure 5. **STEVAL-IPM08B circuit schematic (5 of 6)**

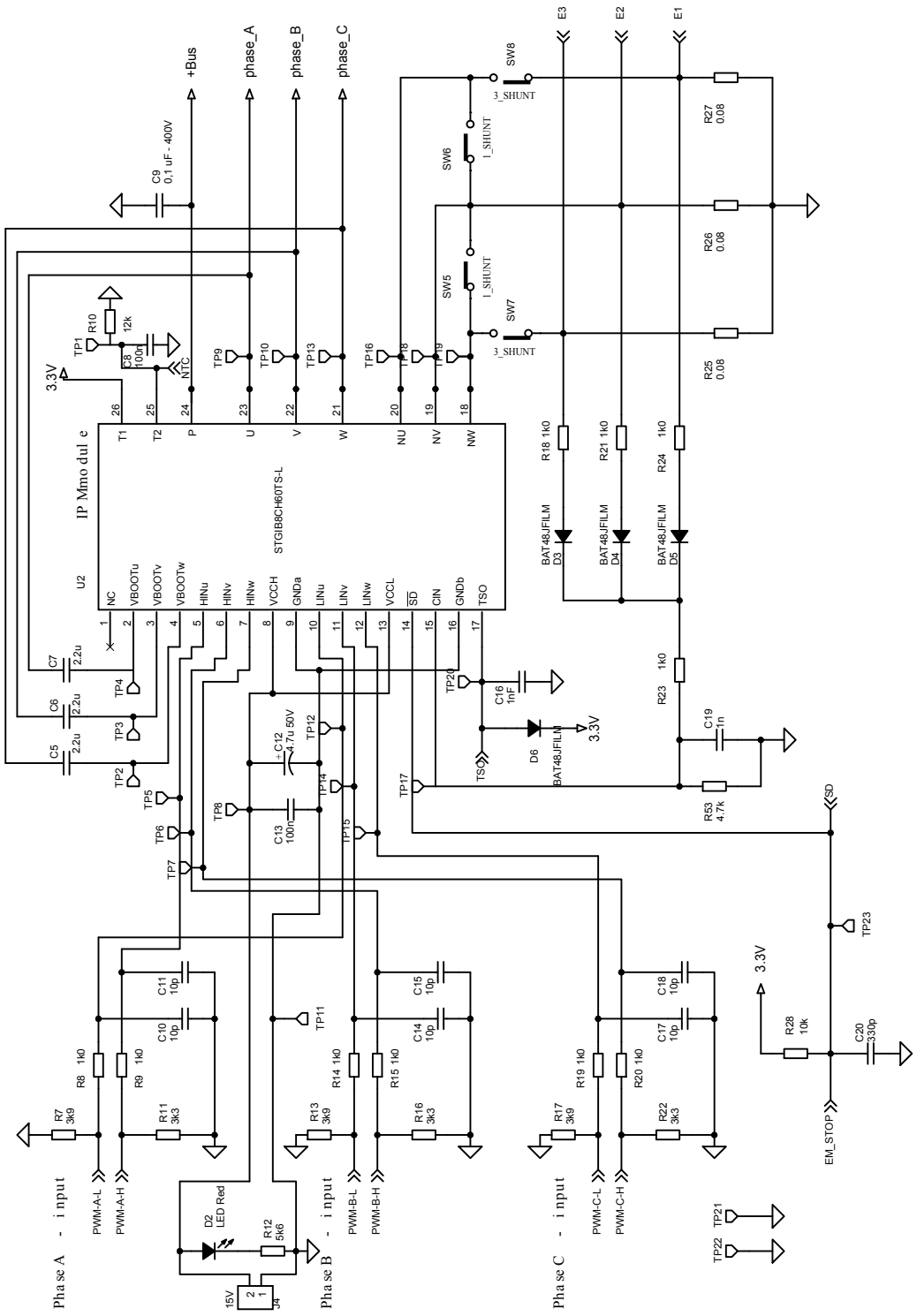
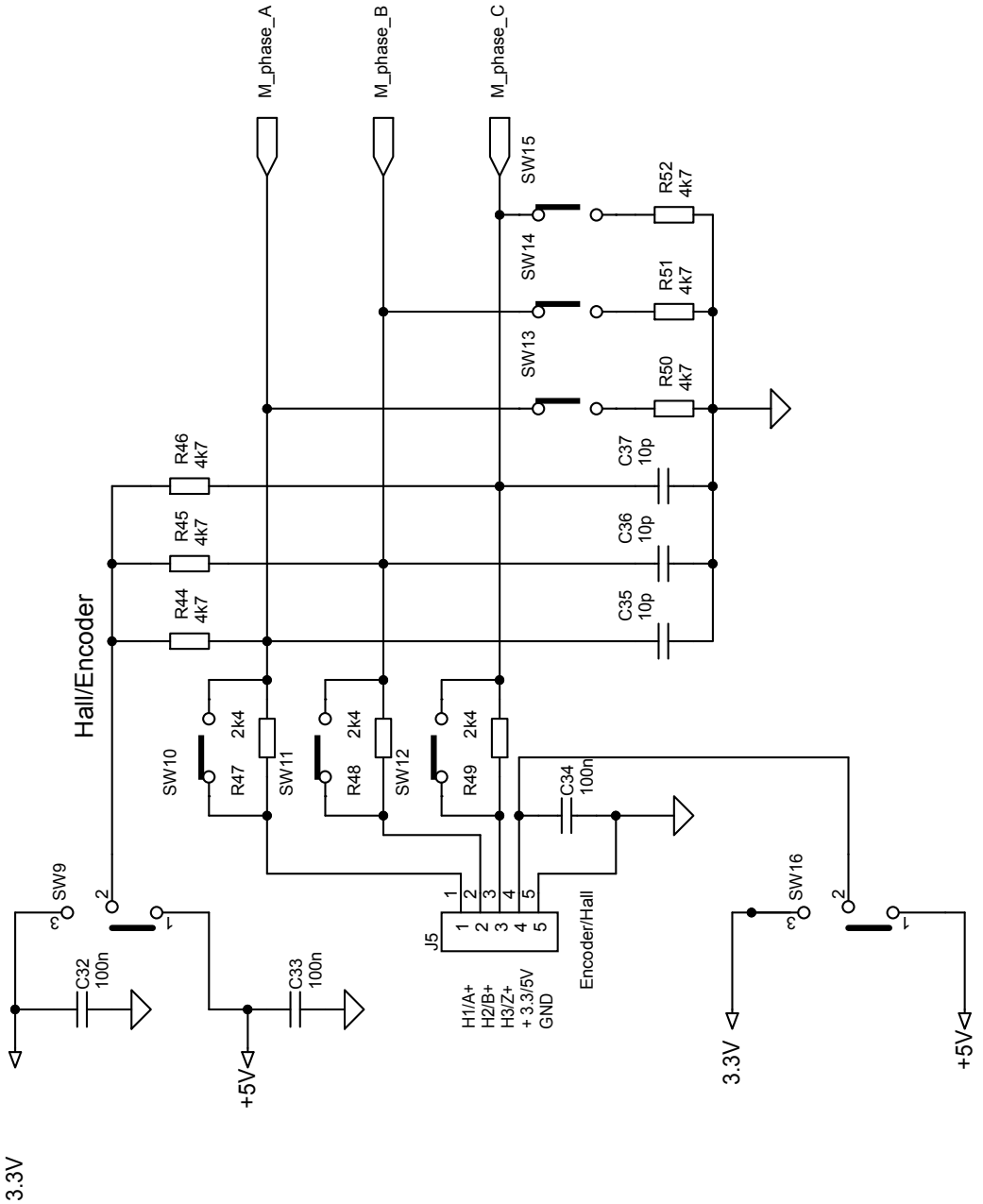


Figure 6. **STEVAL-IPM08B circuit schematic (6 of 6)**



Revision history

Table 1. Document revision history

Date	Version	Changes
06-Jun-2017	1	Initial release.
19-Sep-2017	2	Updated cover page features. Updated DocID number.
04-Apr-2018	3	Updated title.
13-Sep-2019	4	Updates: Figure 3. STEVAL-IPM08B circuit schematic (3 of 6)Figure 4. STEVAL-IPM08B circuit schematic (4 of 6)

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