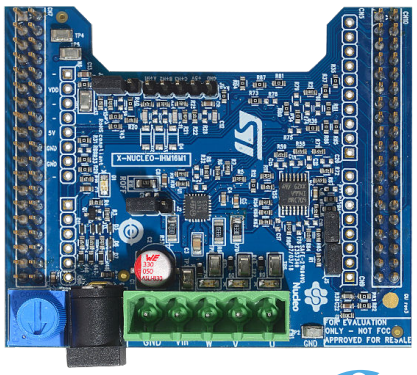
X-NUCLEO-IHM16M1

Data brief

Three-phase brushless DC motor driver expansion board based on STSPIN830 for STM32 Nucleo



Features

- Operative voltage from 7 to 45 V
- Output current up to 1.5 A_{rms}
- Supporting single shunt and three-shunt sensing
- Standby mode
- Flexible direct driving settable between 3 or 6 PWM inputs
- Current limiter with adjustable reference
- Overcurrent, short-circuit and interlocking protections
- Thermal shutdown and undervoltage lockout
- BEMF sensing circuitry
- Bus voltage and PCB temperature sensing
- Input connector for Hall effect-based sensors and encoder
- Fully compatible with STM32 Motor Control SDK (X-CUBE-MCSDK)

Description

The X-NUCLEO-IHM16M1 motor driver expansion board is based on the STSPIN830 monolithic driver for three-phase brushless motors.

It represents an affordable, easy-to-use solution for driving brushless motors in your STM32 Nucleo project, implementing single and three-shunt current sensing.

The STSPIN830 embeds a PWM current limiter with adjustable threshold together with a full set of protections.

The X-NUCLEO-IHM16M1 expansion board is compatible with the Arduino and ST morpho connectors, so it can be plugged to an STM32 Nucleo development board and stacked with additional STM32 Nucleo expansion boards.

Product summary	
Three-phase brushless DC motor driver expansion board based on STSPIN830 for STM32 Nucleo	X-NUCLEO-IHM16M1
Three-phase brushless monolithic motor driver	STSPIN830
STM32 Nucleo development board	STM32 Nucleo
STM32 Motor Control SDK	X-CUBE-MCSDK
Applications	Home and Professional Appliances PMSM/BLDC Motor Industrial Tools Drones

1 X-NUCLEO-IHM16M1 schematic diagrams

Figure 1. X-NUCLEO-IHM16M1 circuit schematic (1 of 5)

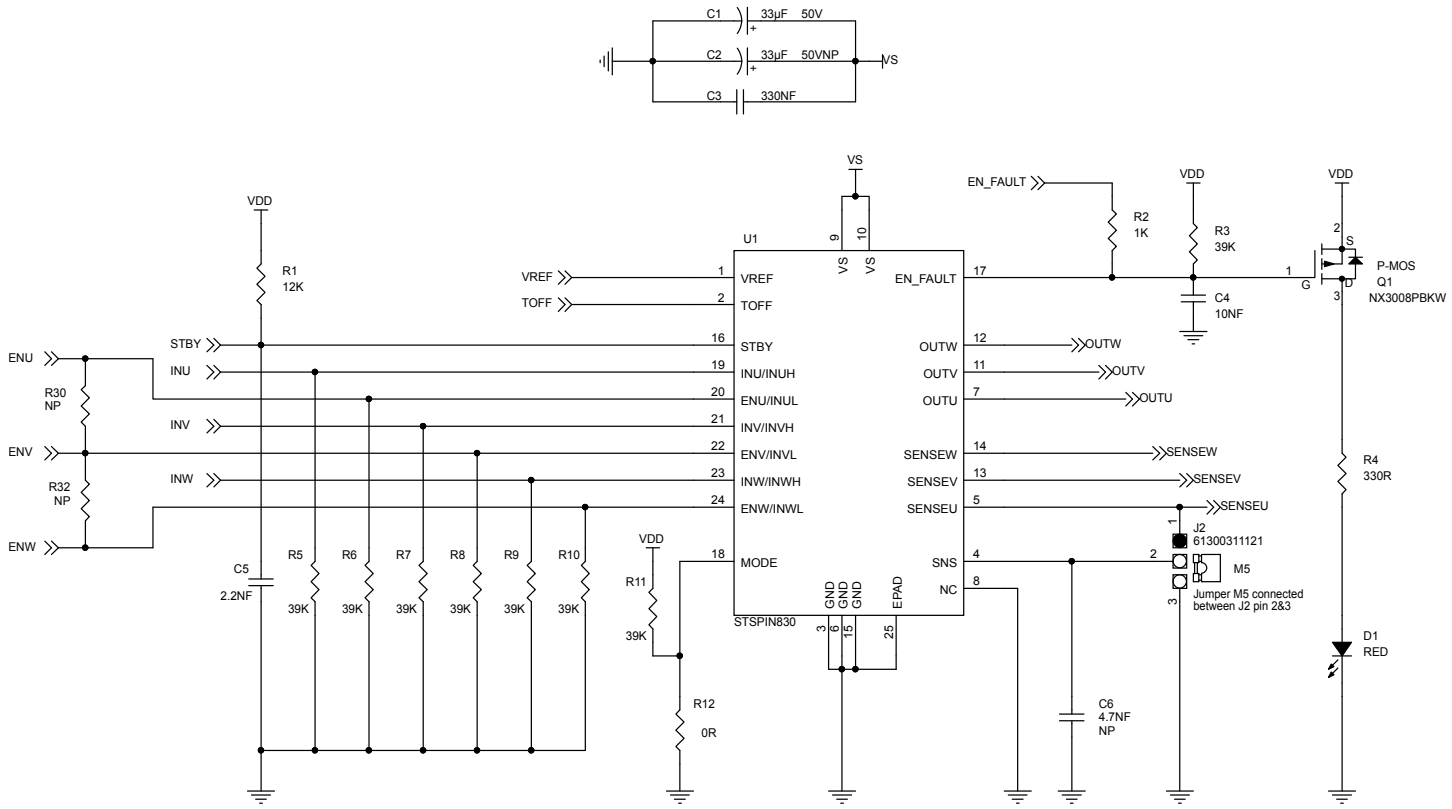


Figure 2. X-NUCLEO-IHM16M1 circuit schematic (2 of 5)

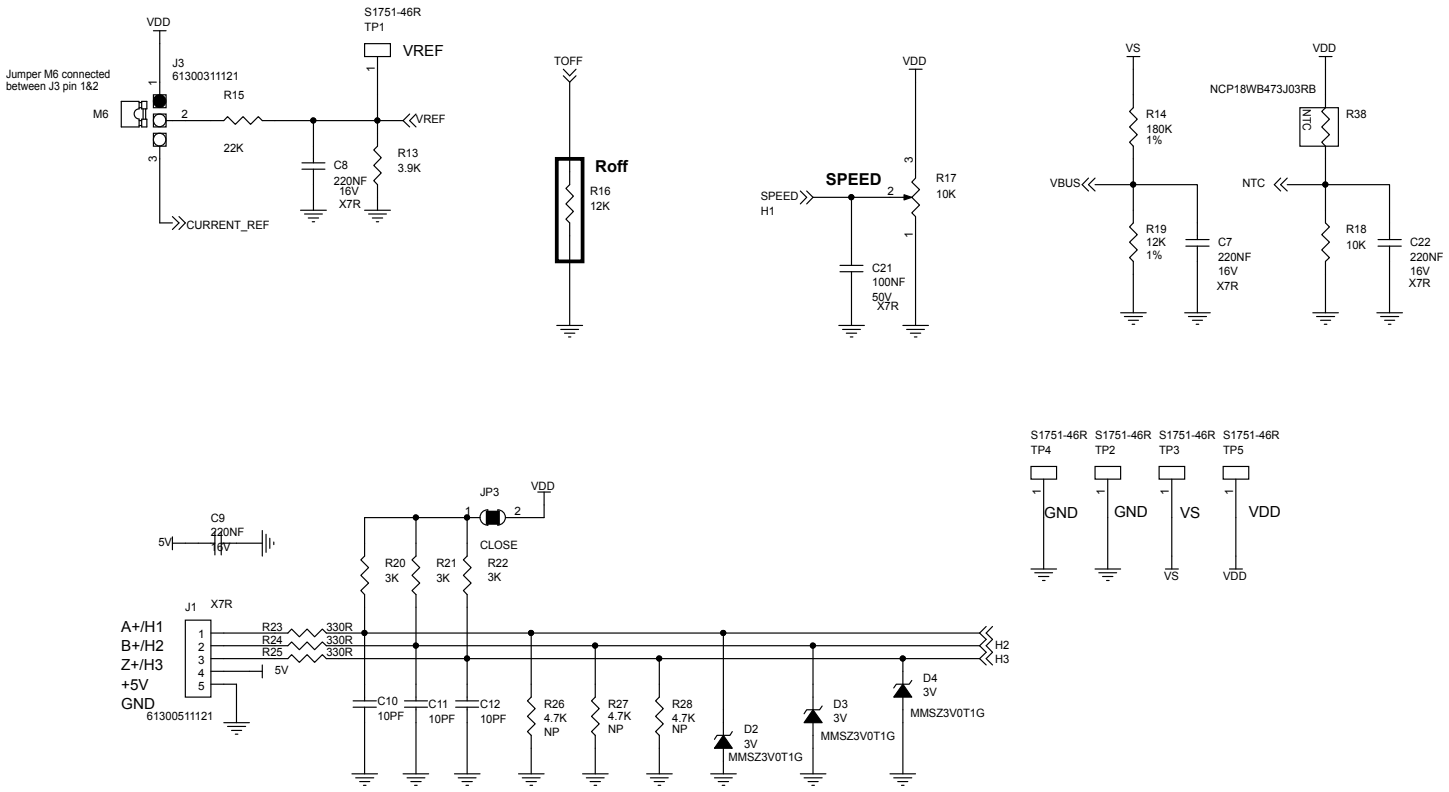


Figure 3. X-NUCLEO-IHM16M1 circuit schematic (3 of 5)

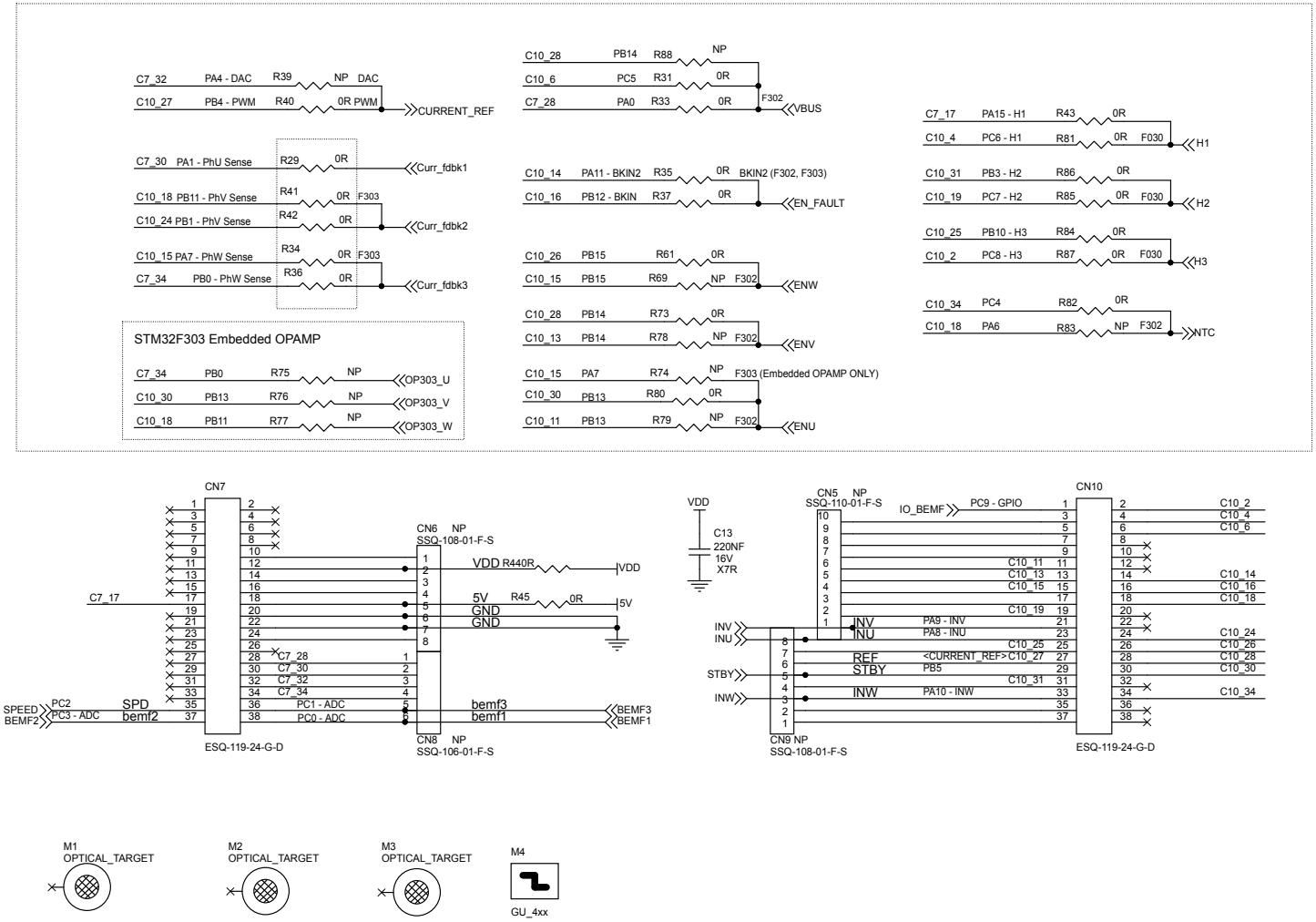


Figure 4. X-NUCLEO-IHM16M1 circuit schematic (4 of 5)

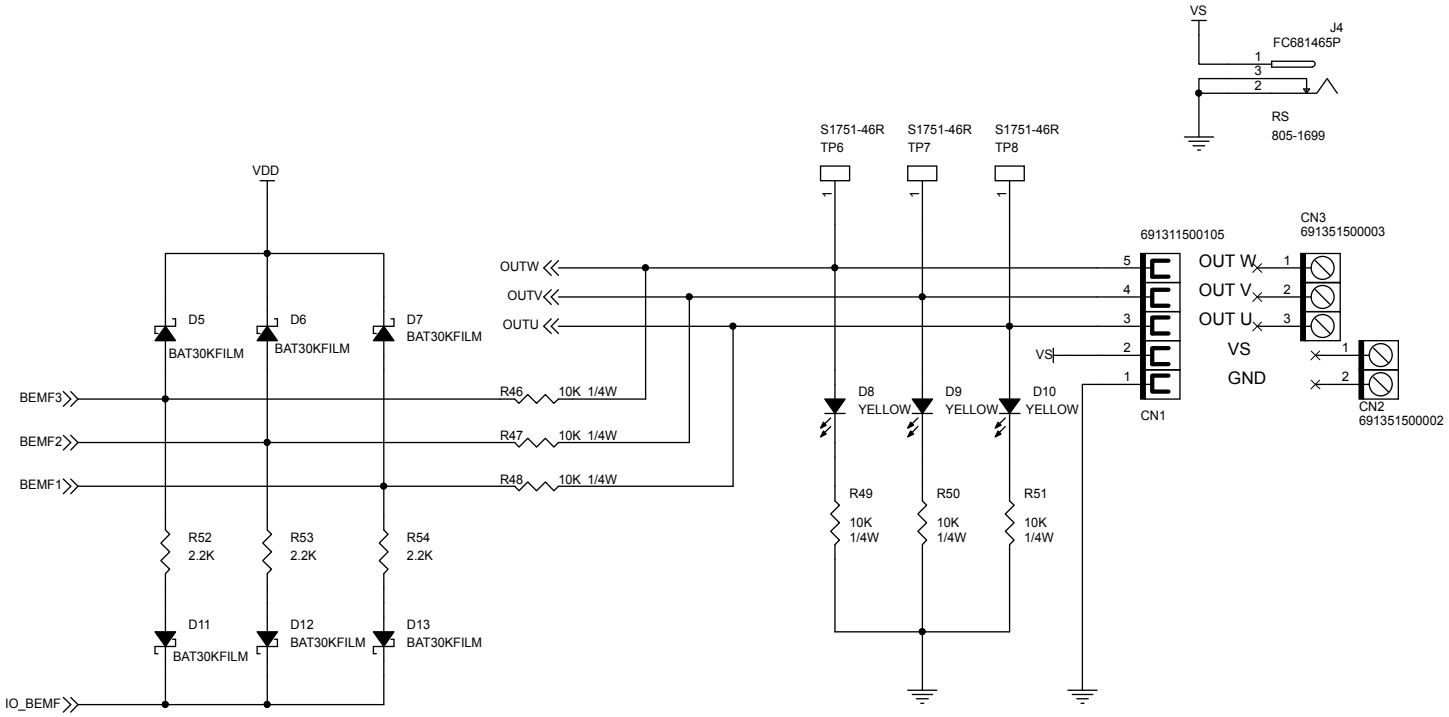
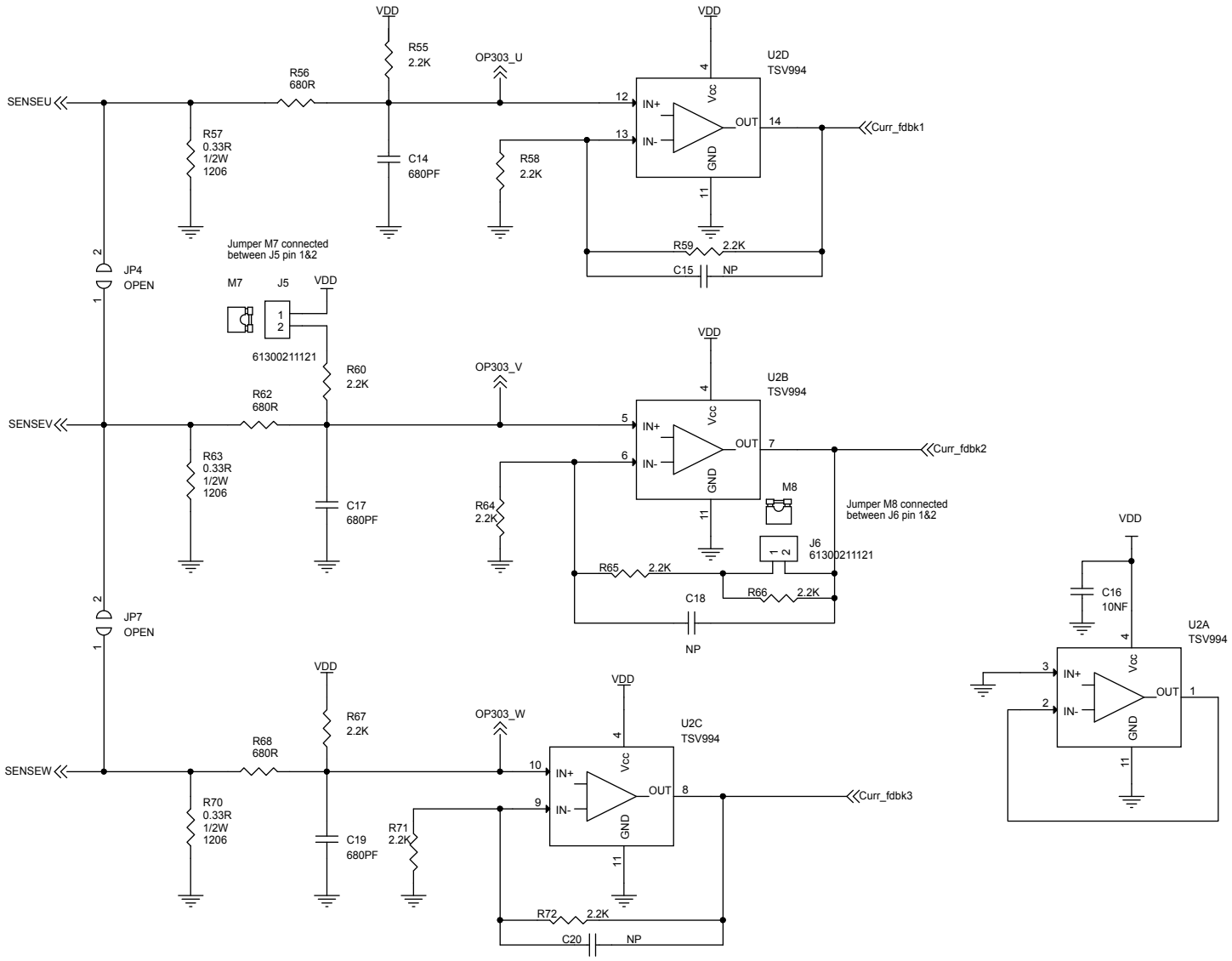


Figure 5. X-NUCLEO-IHM16M1 circuit schematic (5 of 5)



Revision history

Table 1. **Document revision history**

Date	Version	Changes
15-May-2018	1	Initial release.
20-Jul-2021	2	Updated cover page features and product summary table.
21-Feb-2024	3	Updated cover page features and product summary table.