

## Motor control connector expansion board for STM32 Nucleo

Data brief



### Description

The X-NUCLEO-IHM09M1 is a motor control connector expansion board for STM32 Nucleo. It provides an easy way to evaluate motor control solutions for three-phase motors by adapting the STM32 Nucleo board with an external ST motor control power board, thanks to ST morpho and motor control connector. The 34-pin motor control connector is compatible with all major ST motor control power boards, requiring an external digital section (MCU) to drive a three-phase motor. The DAC connector supports user code development and testing with easy access to the MCU peripherals. An LED is available for fault condition signaling or status indication.

### Features

- ST motor control connector (34 pins) compatible with major ST motor control power boards
- STM32 Nucleo support, thanks to ST morpho connectors
- Compatible with six-step and FOC motor control firmware library by ST
- Debug connector for DAC, GPIOs, etc.
- Fully populated board conception with test points
- LED for fault signaling or status indication
- Potentiometer available (i.e. for speed reference)
- RoHS compliant

# 1 Schematic diagram

Figure 1: X-NUCLEO-IHM09M1 schematic: PWM

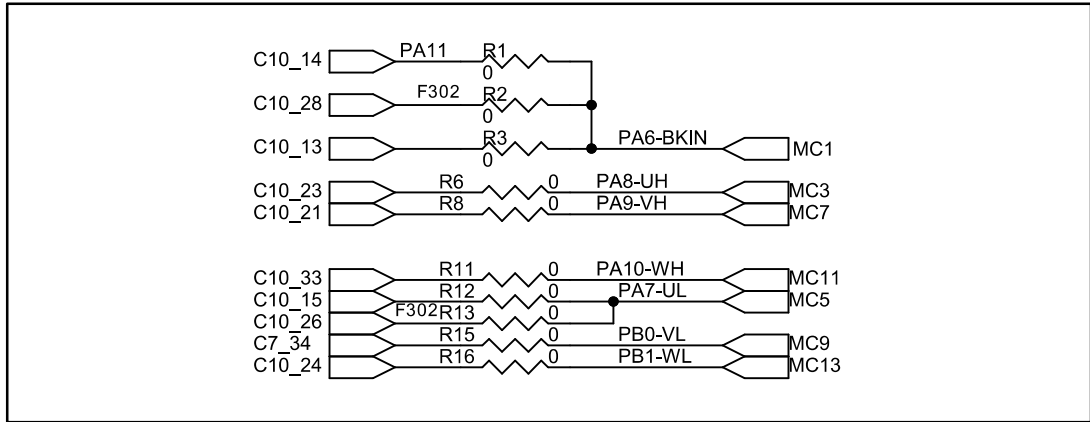


Figure 2: X-NUCLEO-IHM09M1 schematic: Hall/encoder sensor

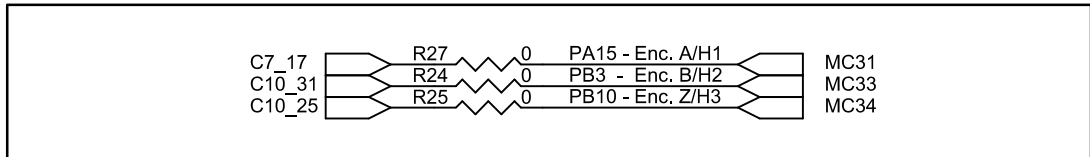


Figure 3: X-NUCLEO-IHM09M1 schematic: currents

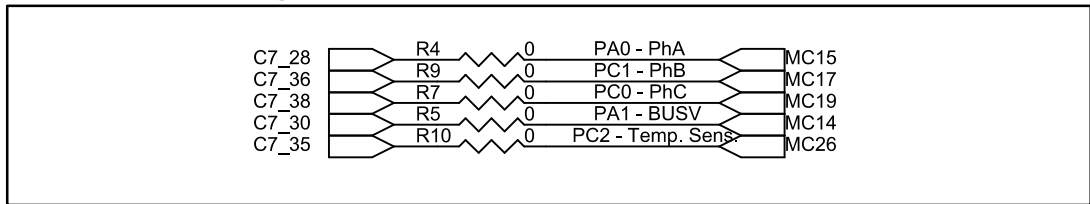


Figure 4: X-NUCLEO-IHM09M1 schematic: DAC

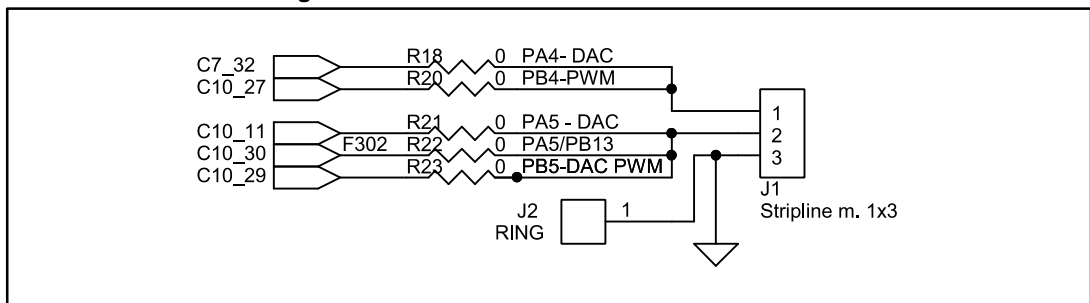


Figure 5: X-NUCLEO-IHM09M1 schematic: user interface

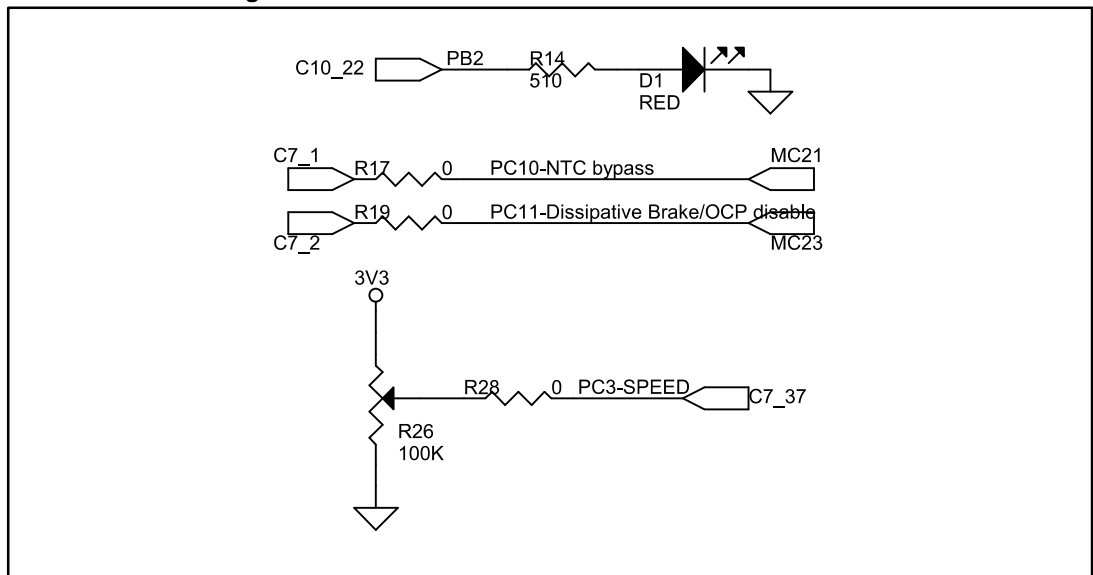


Figure 6: X-NUCLEO-IHM09M1 schematic: motor control connector

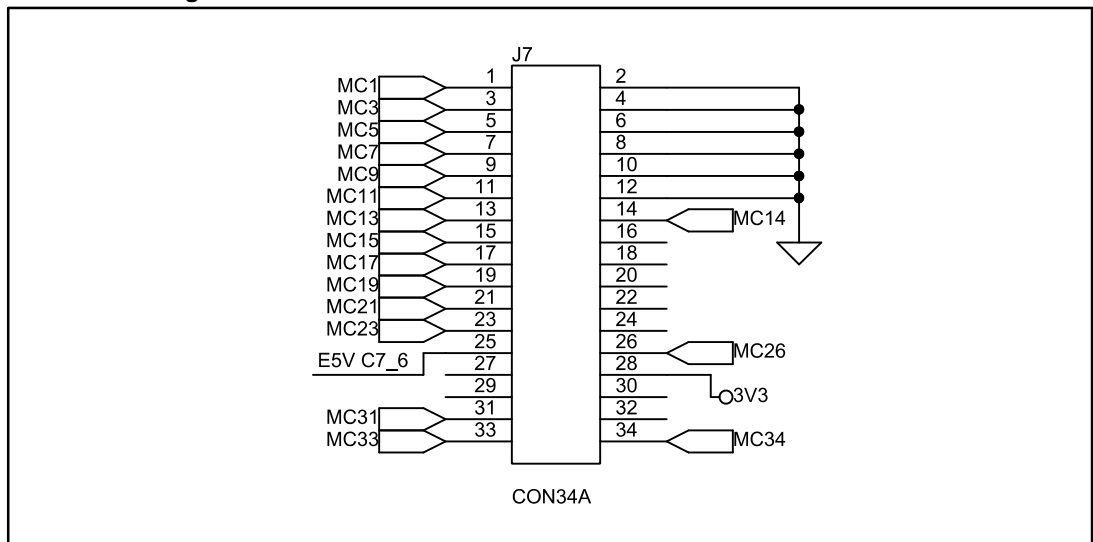
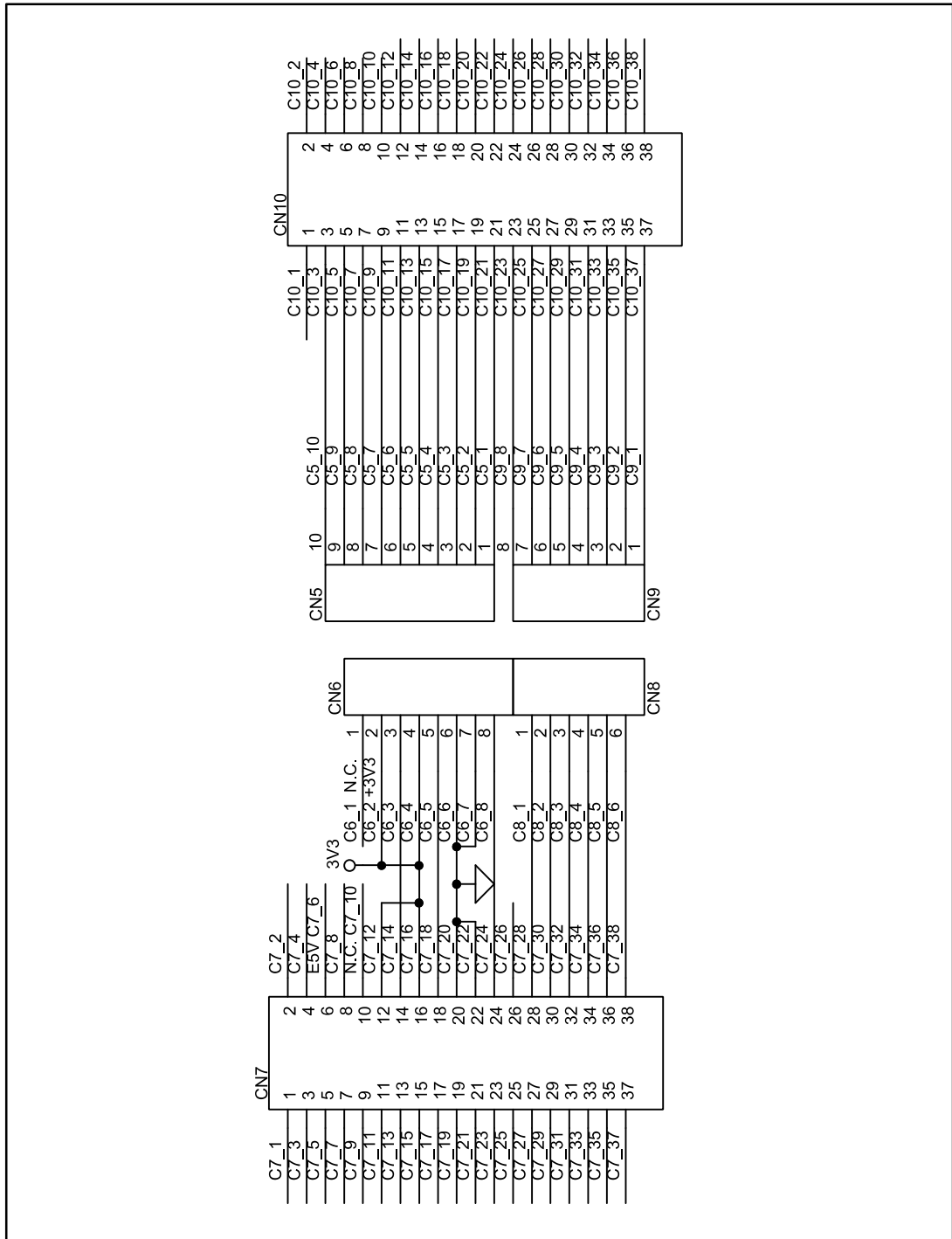


Figure 7: X-NUCLEO-IHM09M1 schematic: Arduino UNO R3/ST morpho connector



## 2 Revision history

Table 1: Document revision history

| Date        | Version | Changes          |
|-------------|---------|------------------|
| 23-Oct-2015 | 1       | Initial release. |

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