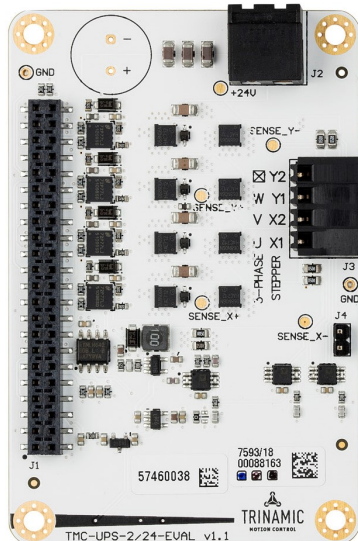


# TMC-UPS-2A24V-EVAL Evaluation Board

Document Revision V1.00 • 2018-MAY-03

The TMC-UPS-2A24V-EVAL is a universal Power Stage for usage with TMC4671-Eval and TMC4670-EVAL. It drives up to 2A of current and is tolerant to supply voltages up to 24V. It uses half bridge gate drivers and discrete MOSFETs as well as standard connectors for supply and motor connection. Current measurement is implemented by inline shunt amplifiers.



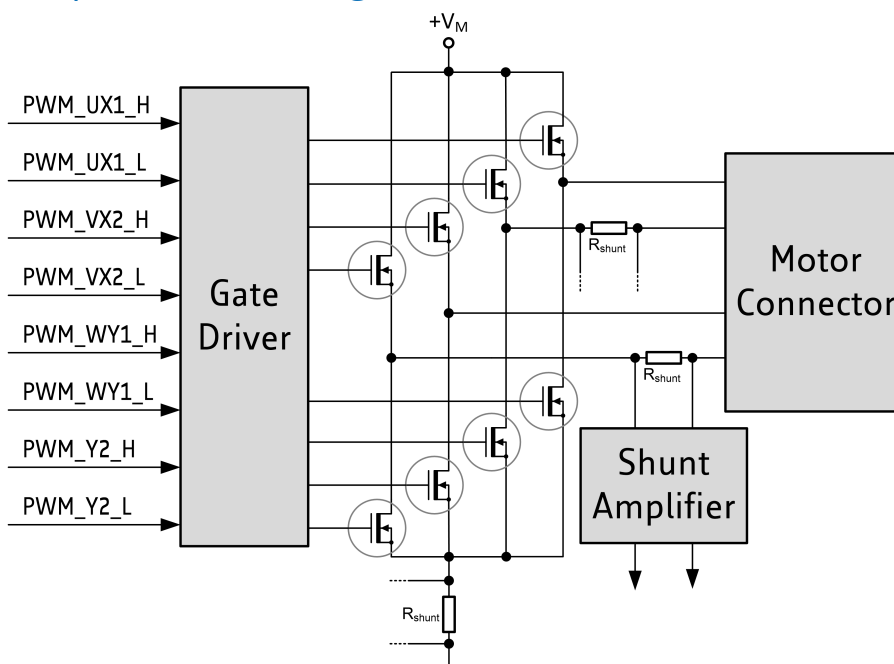
## Features

- Power Stage for the TMC4671-EVAL and the TMC4670-EVAL
- 4 independent Half-Bridges with Gate Driver and Phase Current up to 2A RMS for driving a 2-phase stepper motor, or a 3-phase BLDC or a single phase DC motor.
- Main Supply Voltage (VM) up to 24V
- 5V Supply for Gatedrivers and Shunt Amplifiers
- 2 Phase Current shunt amplifiers and one for bottom shunt with +/- 2A measurement range

## Applications

- Laboratory Automation
- Manufacturing
- Semiconductor Handling
- Robotics
- Factory Automation
- Test & Measurement
- Life Science
- Biotechnology
- Liquid Handling

## Simplified Block Diagram



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# 1 Getting Started

The TMC-UPS-2A24V-EVAL is a power stage module to be used in the TMC4671 Evaluation Kit. Please assemble all components properly according to guidelines in the respective Motion Controller Evaluation Board Manual.

# 2 Hardware Information

All design files for our evaluation boards are available for free. We offer the original ECAD files (Eagle, Altium, or PADS), Gerber data, the BOM, and PDF copies.

The files can be downloaded from the evaluation boards' website directly at <https://www.trinamic.com/support/eval-kits/>.

**Note** If files are missing on the website or something is wrong please send us a note.

## 2.1 Connectors

The TMC-UPS-2A24V-EVAL provides a motor connector, a power supply connector and a Evaluation system compliant connector to a motion controller Evaluation board. Please check silk screen for correct motor connection.

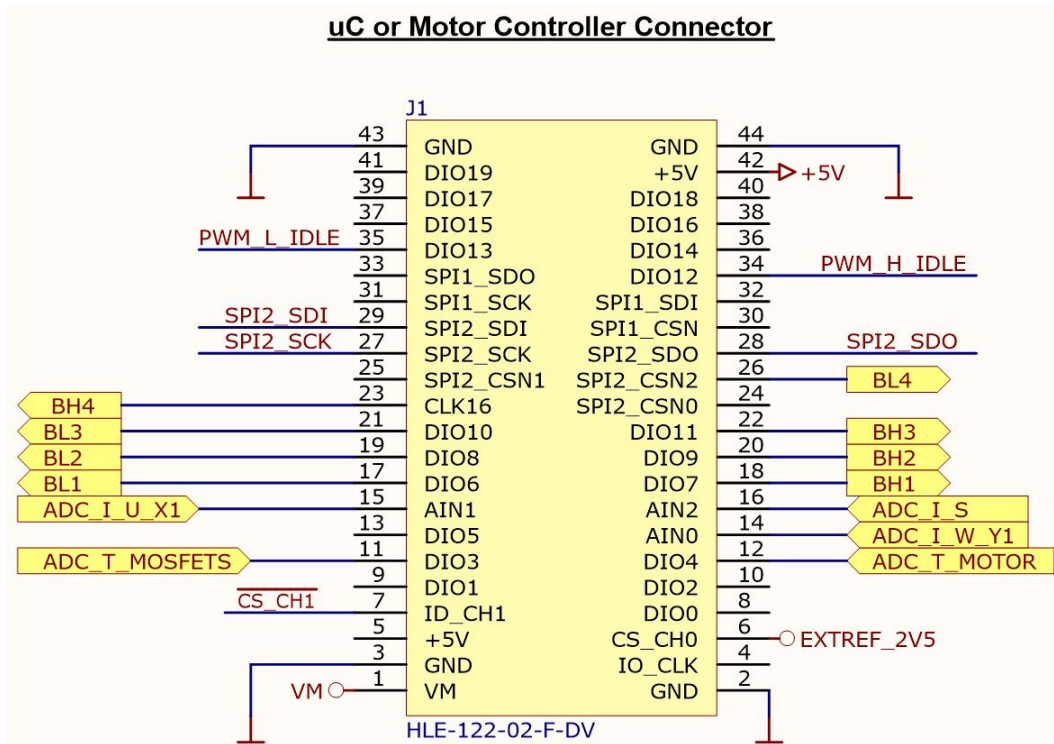
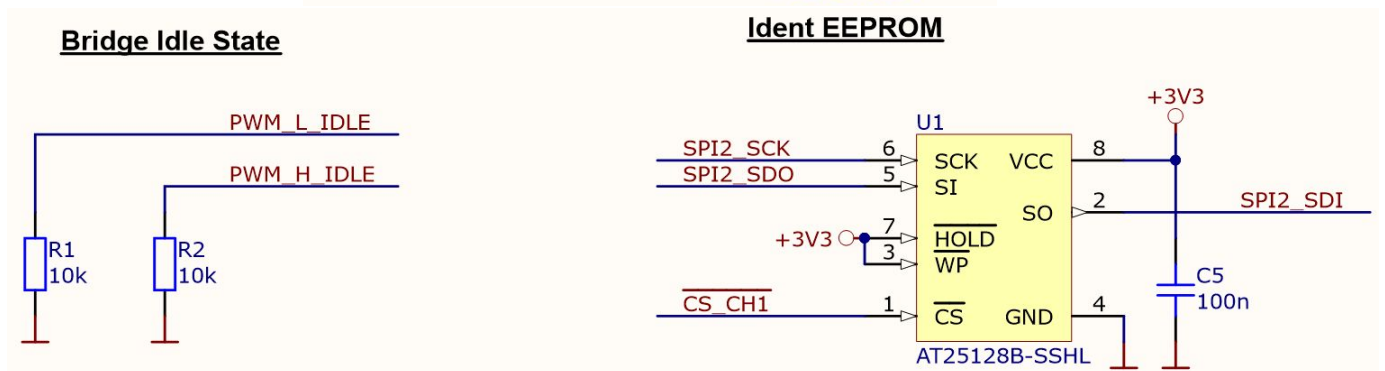
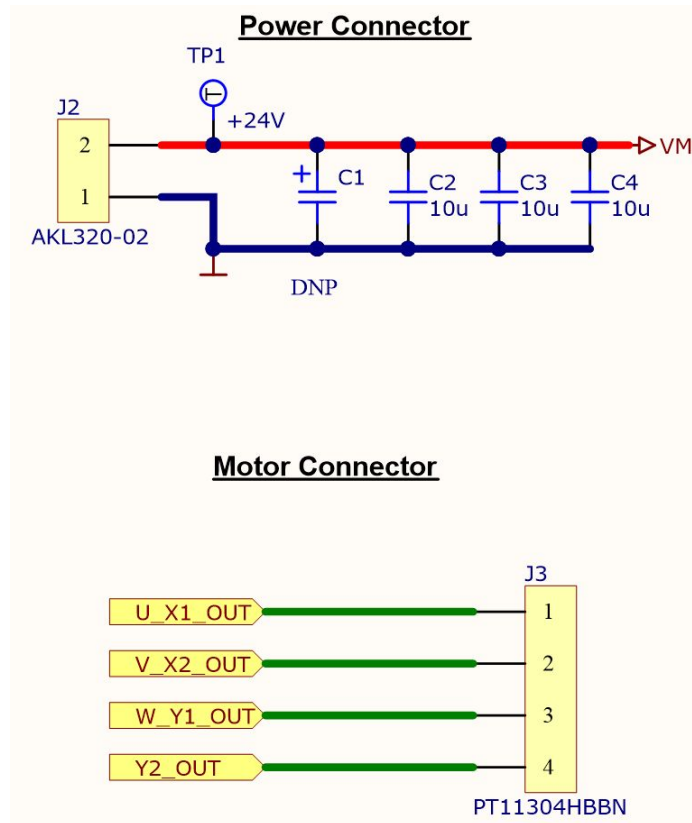


Figure 1: 44 pin Motor Controller Connector





The evaluation board can be automatically recognized when Ident EEPROM is properly configured. This part is only needed on an Evaluation board for user convenience.

### 3 Usage with own Motion Controller

The TMC-UPS-2A24V-EVAL can be used with third party motor controller. In that case 5V needs to be supplied via the Motor Controller connector. SPI signals are not needed.



## 4 Revision History

### 4.1 Document Revision

| Version | Date        | Author | Description      |
|---------|-------------|--------|------------------|
| 1.00    | 2018-MAY-03 | OM     | Initial release. |

*Table 1: Document Revision*

