TMC2209

File: tmc2209.kicad_sch

TMC51X0

File: tmc51x0.kicad_sch

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Sheet: /

File: trinamic-wiring.kicad_sch

**Title: Trinamic Wiring**

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|---|---|---|
| Size: A4 | Date: 2024-07-31 | **Rev: 0.5** |
| KiCad E.D.A. kicad 7.0.11 | | Id: 1/23 |

description

File: tmc2209-description.kicad_sch

microcontroller

File: tmc2209-microcontroller.kicad_sch

stepper-controller

File: tmc2209-stepper-controller.kicad_sch

teensy40

File: tmc2209-teensy40.kicad_sch

mega2560

File: tmc2209-mega2560.kicad_sch

uno

File: tmc2209-uno.kicad_sch

unidirectional

File: tmc2209-unidirectional.kicad_sch

unidirectional-multiple

File: tmc2209-unidirectional-multiple.kicad_sch

unidirectional-multiple-address

File: tmc2209-unidirectional-multiple-address.kicad_sch

unidirectional-multiple-uart

File: tmc2209-unidirectional-multiple-uart.kicad_sch

bidirectional-coupled

File: tmc2209-bidirectional-coupled.kicad_sch

bidirectional-coupled-multiple-address

File: tmc2209-bidirectional-coupled-multiple-address.kicad_sch

bidirectional-coupled-multiple-uart

File: tmc2209-bidirectional-coupled-multiple-uart.kicad_sch

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Sheet: /TMC2209/
File: tmc2209.kicad_sch

***Title: Trinamic Wiring***

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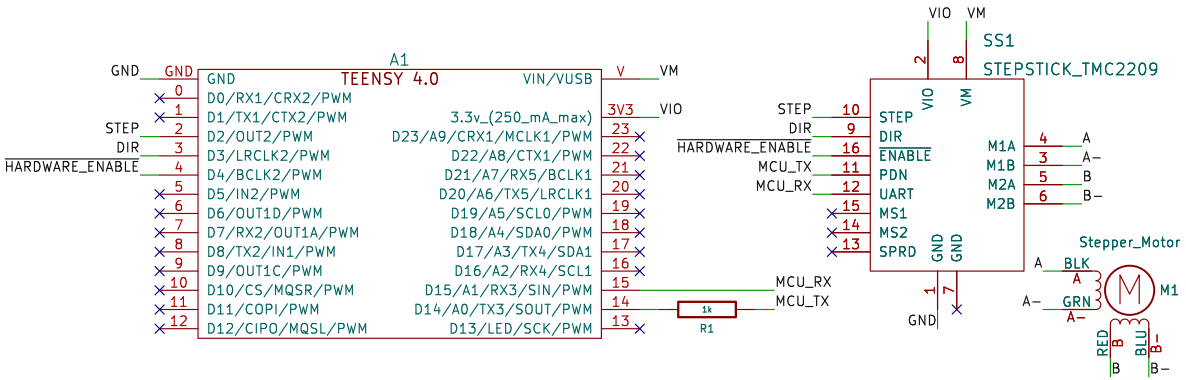
|---|---|---|
| Size: A4 | Date: 2024-07-31 | **Rev: 0.5** |
| KiCad E.D.A. kicad 7.0.11 | | Id: 2/23 |

MCU_RX and R1 are optional if only unidirectional communication is desired.




Must solder jumper pads on the SilentStepStick to connect both the UART and PDN pins to the PDN_UART line on the chip!

STEP, DIR, and HARDWARE_ENABLE are optional connections to the microcontroller.
STEP and DIR signals may be left disconnected if only moveAtVelocity method is used.
STEP and DIR signals usually come from a dedicated stepper controller, like the TMC429.
HARDWARE_ENABLE may be tied to ground if only software enable is desired.
Most examples assume STEP, DIR, and HARDWARE_ENABLE are not connected to the microcontroller and that HARDWARE_ENABLE is tied to ground on the TMC2209.

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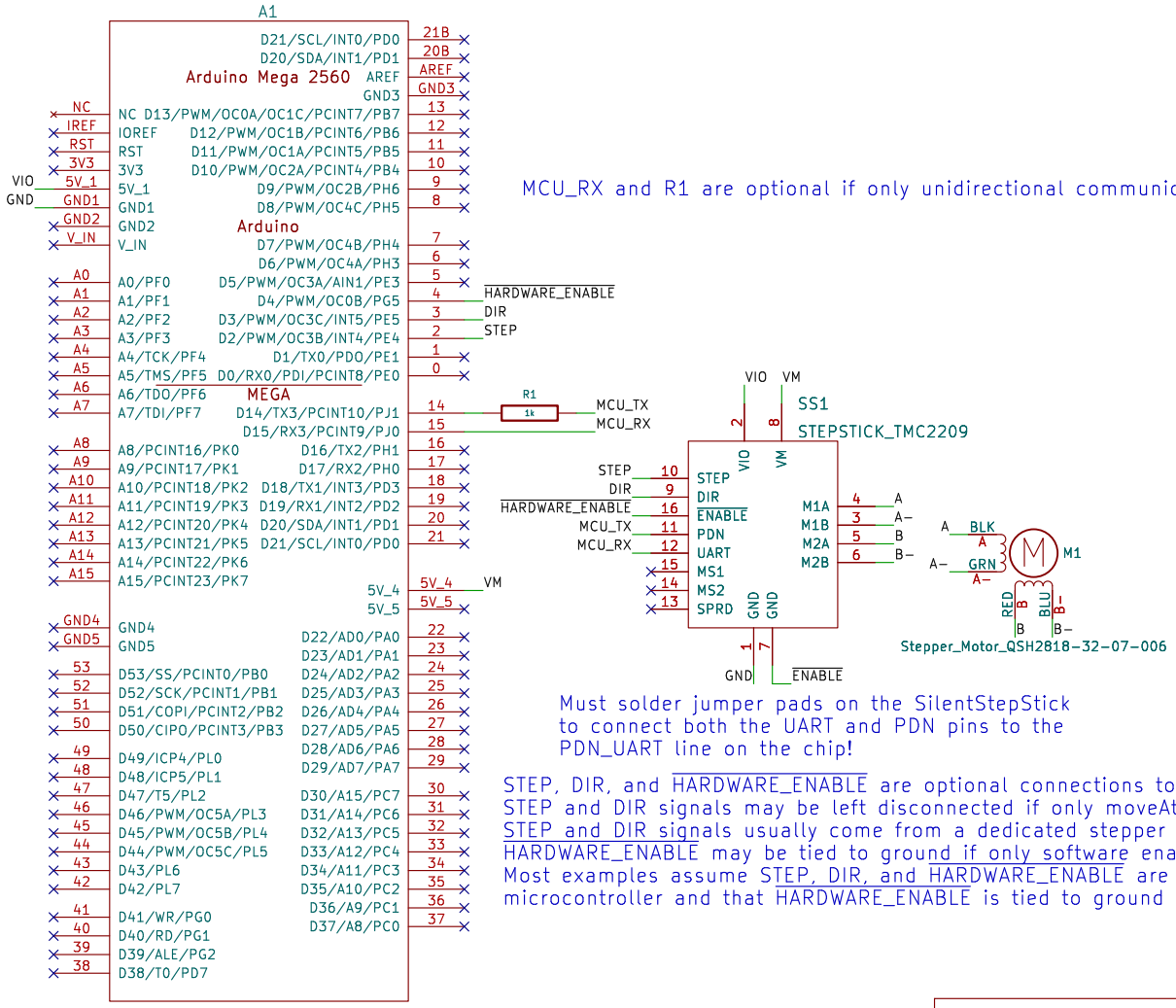
Sheet: /TMC2209/teensy40/
File: tmc2209-teensy40.kicad_sch

***Title: Trinamic Wiring***

| Size: A4 | Date: 2024-07-31 | **Rev: 0.5** |
|---|---|---|
| KiCad E.D.A. kicad 7.0.11 | | Id: 3/23 |




MCU_RX and R1 are optional if only unidirectional communication is desired.

Must solder jumper pads on the SilentStepStick to connect both the UART and PDN pins to the PDN_UART line on the chip!

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Sheet: /TMC2209/mega2560/
File: tmc2209-mega2560.kicad_sch

***Title: Trinamic Wiring***

| Size: A4 | Date: 2024-07-31 | **Rev: 0.5** |
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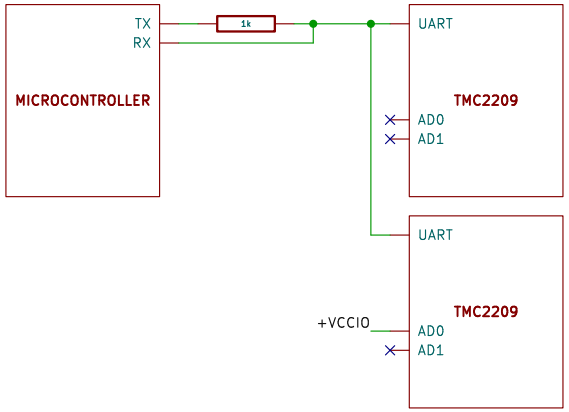
| KiCad E.D.A. kicad 7.0.11 | | Id: 4/23 |

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Sheet: /TMC2209/bidirectional-coupled-multiple-address/

File: tmc2209-bidirectional-coupled-multiple-address.kicad_sch

**Title: Trinamic Wiring**

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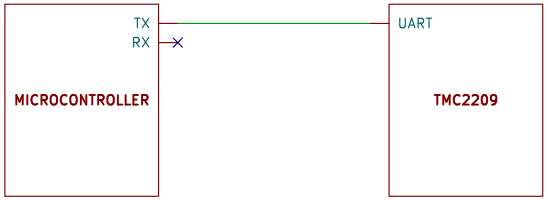
| KiCad E.D.A. kicad 7.0.11 | | Id: 5/23 |

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Sheet: /TMC2209/unidirectional/

File: tmc2209-unidirectional.kicad_sch

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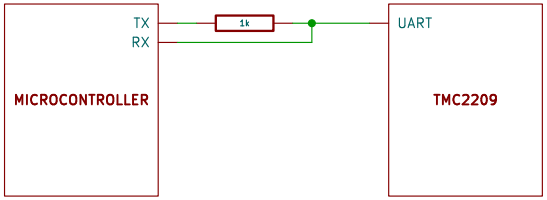


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Sheet: /TMC2209/bidirectional-coupled/

File: tmc2209-bidirectional-coupled.kicad_sch

**Title: Trinamic Wiring**

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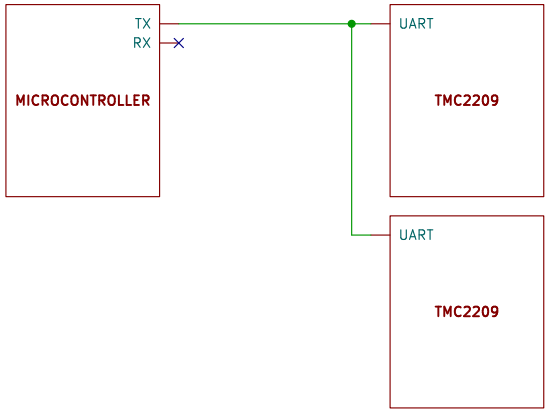
| Size: A4 | Date: 2024-07-31 | **Rev: 0.5** |
| KiCad E.D.A. kicad 7.0.11 | | Id: 7/23 |

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Sheet: /TMC2209/unidirectional-multiple/
File: tmc2209-unidirectional-multiple.kicad_sch

**Title: Trinamic Wiring**

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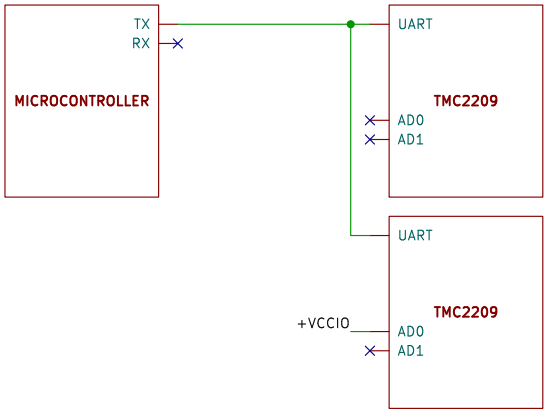
| Size: A4 | Date: 2024-07-31 | **Rev: 0.5** |
| KiCad E.D.A. kicad 7.0.11 | | Id: 8/23 |

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Sheet: /TMC2209/unidirectional-multiple-address/

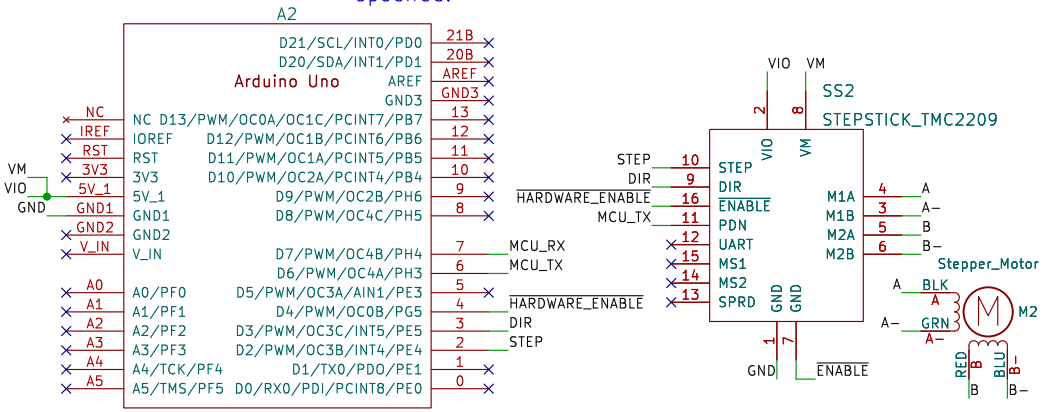
File: tmc2209-unidirectional-multiple-address.kicad_sch

**Title: Trinamic Wiring**

| Size: A4 | Date: 2024-07-31 | **Rev: 0.5** |
|---|---|---|
| KiCad E.D.A. kicad 7.0.11 | | Id: 9/23 |

RX and TX pins must be changed in the SoftwareSerial example:
const uint8_t RX_PIN = 7;
const uint8_t TX_PIN = 6;

Arduino Uno is only capable of unidirectional communication, so only TX is connected and used, but the SoftwareSerial library requires that the RX pin must be reserved and specifed.

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Sheet: /TMC2209/uno/
File: tmc2209-uno.kicad_sch

***Title: Trinamic Wiring***

| Size: A4 | Date: 2024-07-31 | **Rev: 0.5** |
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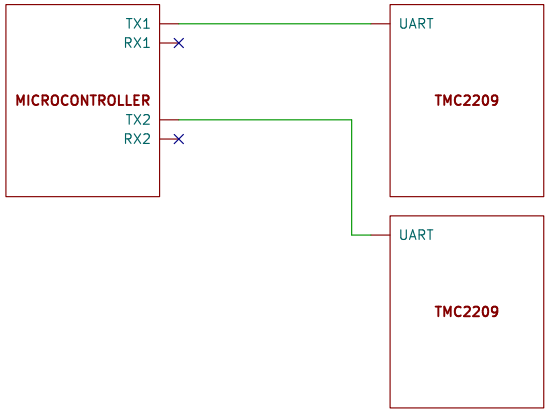
| KiCad E.D.A. kicad 7.0.11 | | Id: 10/23 |

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Sheet: /TMC2209/unidirectional-multiple-uart/
File: tmc2209-unidirectional-multiple-uart.kicad_sch

***Title: Trinamic Wiring***

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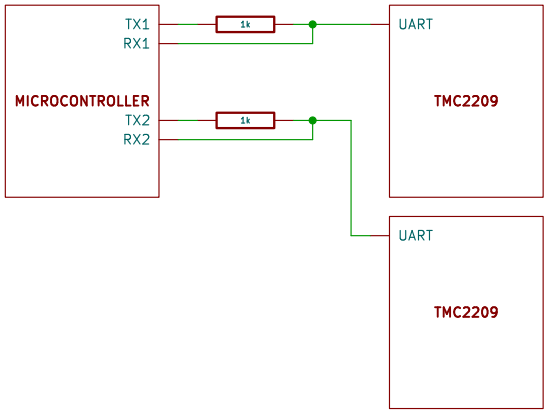
| Size: A4 | Date: 2024-07-31 | **Rev: 0.5** |
| KiCad E.D.A. kicad 7.0.11 | | Id: 11/23 |

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Sheet: /TMC2209/bidirectional-coupled-multiple-uart/

File: tmc2209-bidirectional-coupled-multiple-uart.kicad_sch

**Title: Trinamic Wiring**

| Size: A4 | Date: 2024-07-31 | **Rev: 0.5** |
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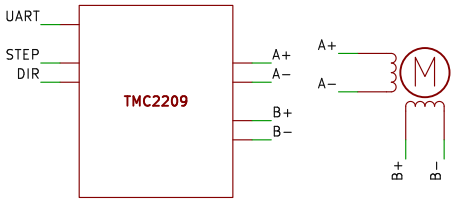


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Sheet: /TMC2209/description/

File: tmc2209-description.kicad_sch

**Title: Trinamic Wiring**

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| Size: A4 | Date: 2024-07-31 | **Rev: 0.5** |
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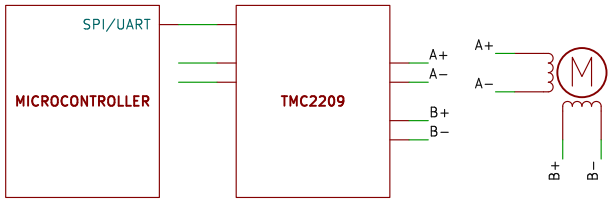


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Sheet: /TMC2209/microcontroller/

File: tmc2209-microcontroller.kicad_sch

**Title: Trinamic Wiring**

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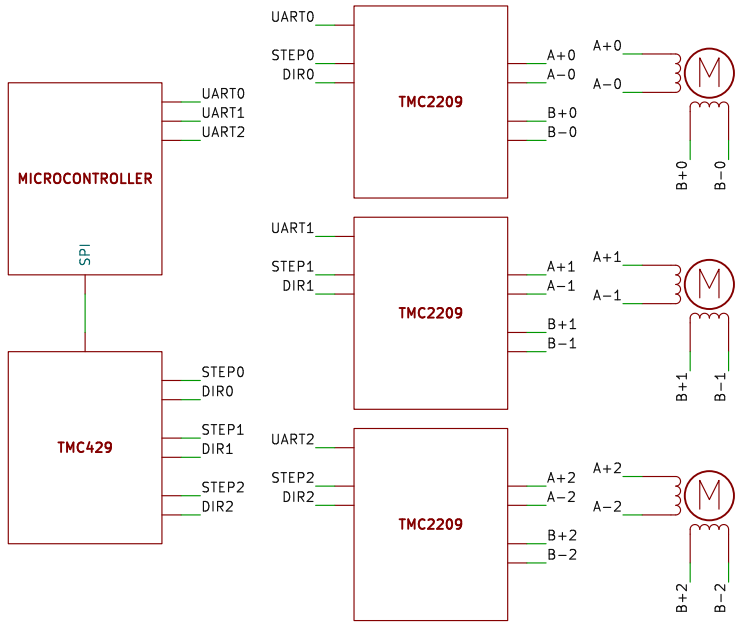


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| **Janelia Research Campus** | | |
| Sheet: /TMC2209/stepper−controller/ | | |
| File: tmc2209−stepper−controller.kicad_sch | | |
| ***Title: Trinamic Wiring*** | | |
| Size: A4 | Date: 2024−07−31 | **Rev: 0.5** |
| KiCad E.D.A. kicad 7.0.11 | | Id: 15/23 |

description

File: tmc51x0-description.kicad_sch

microcontroller

File: tmc51x0-microcontroller.kicad_sch

tmc51x0-bob

File: tmc51x0-bob.kicad_sch

tmc51x0-eval

File: tmc51x0-eval.kicad_sch

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Sheet: /TMC51X0/

File: tmc51x0.kicad_sch

**Title: Trinamic Wiring**

| Size: A4 | Date: 2024-07-31 | **Rev: 0.5** |
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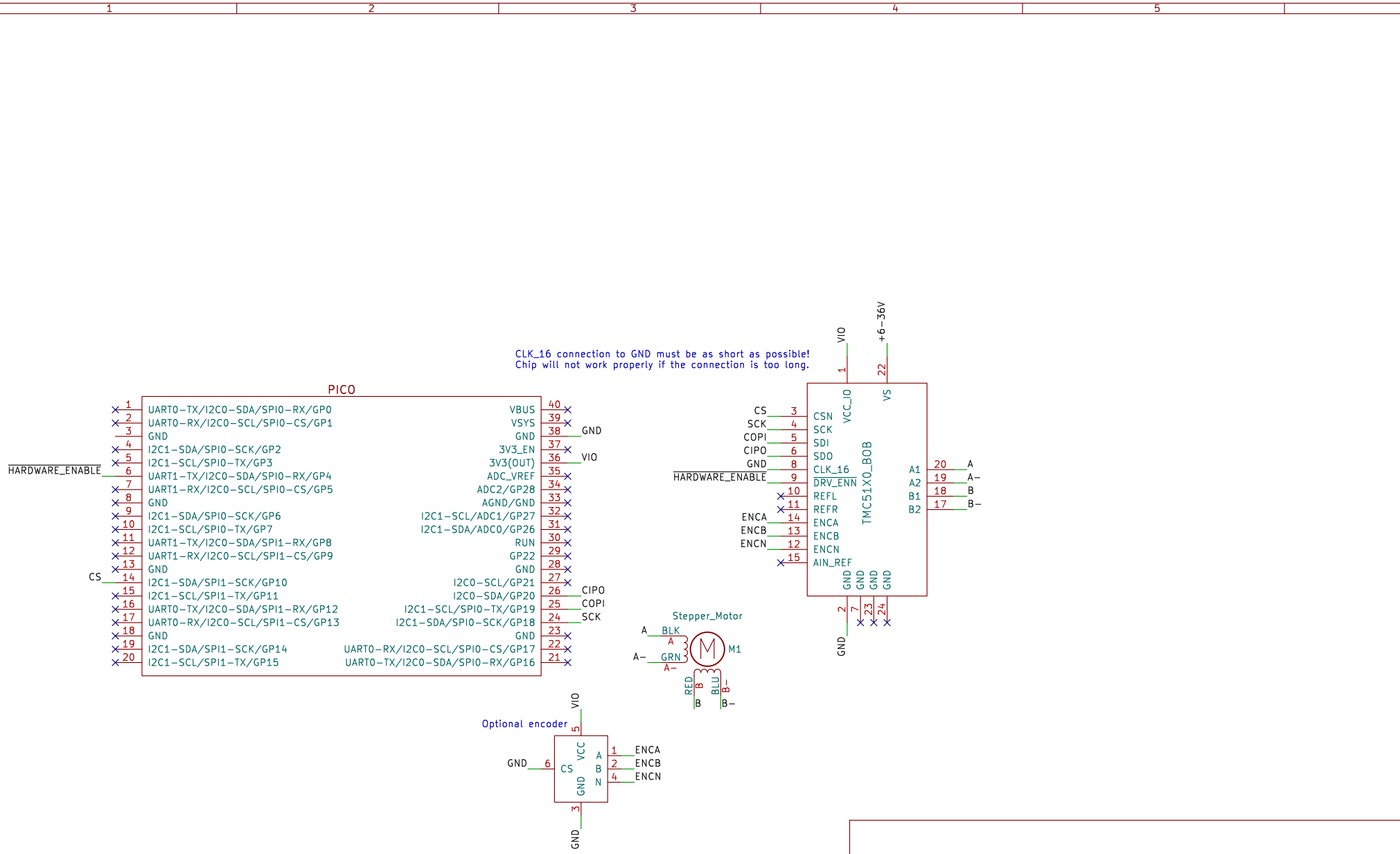


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| **Janelia Research Campus** | | |
| Sheet: /TMC51X0/tmc51x0-bob/pico/ | | |
| File: tmc51x0-tmc51x0-bob-pico.kicad_sch | | |
| ***Title: Trinamic Wiring*** | | |
| Size: A4 | Date: 2024-07-31 | **Rev: 0.5** |
| KiCad E.D.A. kicad 7.0.11 | | Id: 17/23 |

pico

File: tmc51x0-tmc51x0-eval-pico.kicad_sch

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Sheet: /TMC51X0/tmc51x0-eval/

File: tmc51x0-eval.kicad_sch

**Title: Trinamic Wiring**

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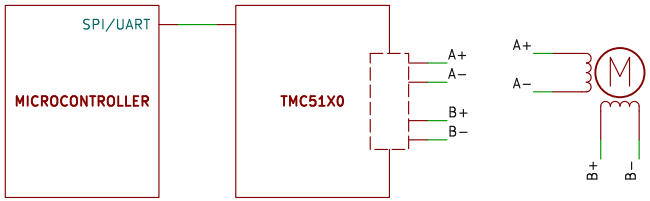


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Sheet: /TMC51X0/microcontroller/

File: tmc51x0-microcontroller.kicad_sch

**Title: Trinamic Wiring**

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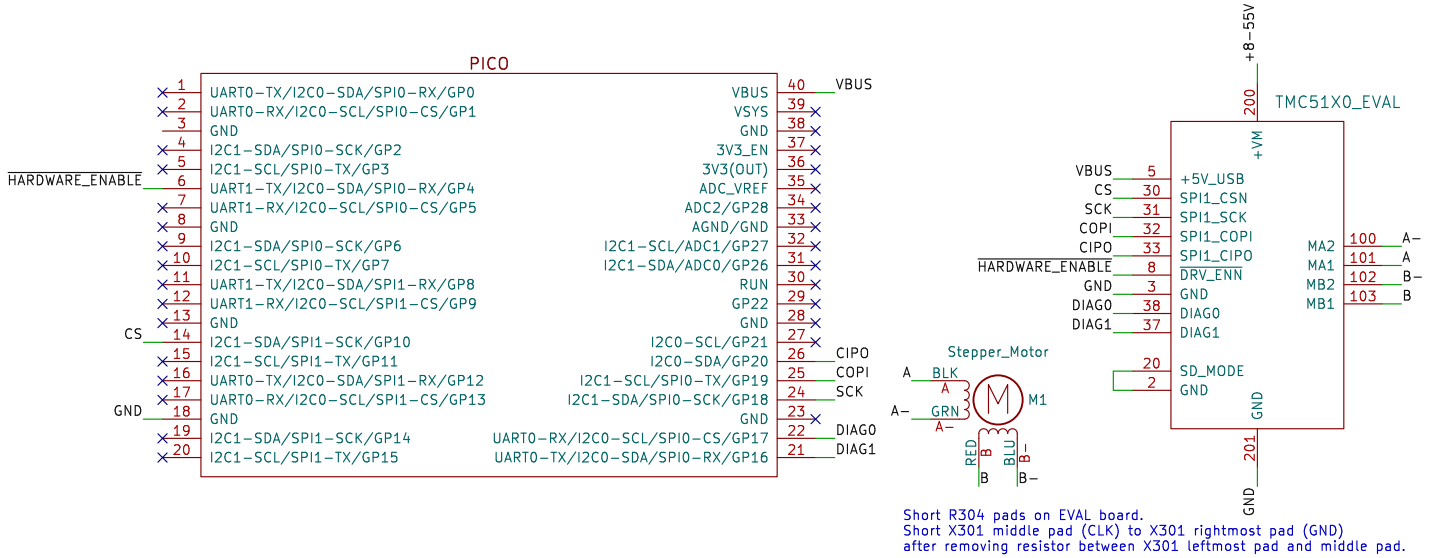


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Sheet: /TMC51X0/tmc51x0-eval/pico/

File: tmc51x0-tmc51x0-eval-pico.kicad_sch

***Title: Trinamic Wiring***

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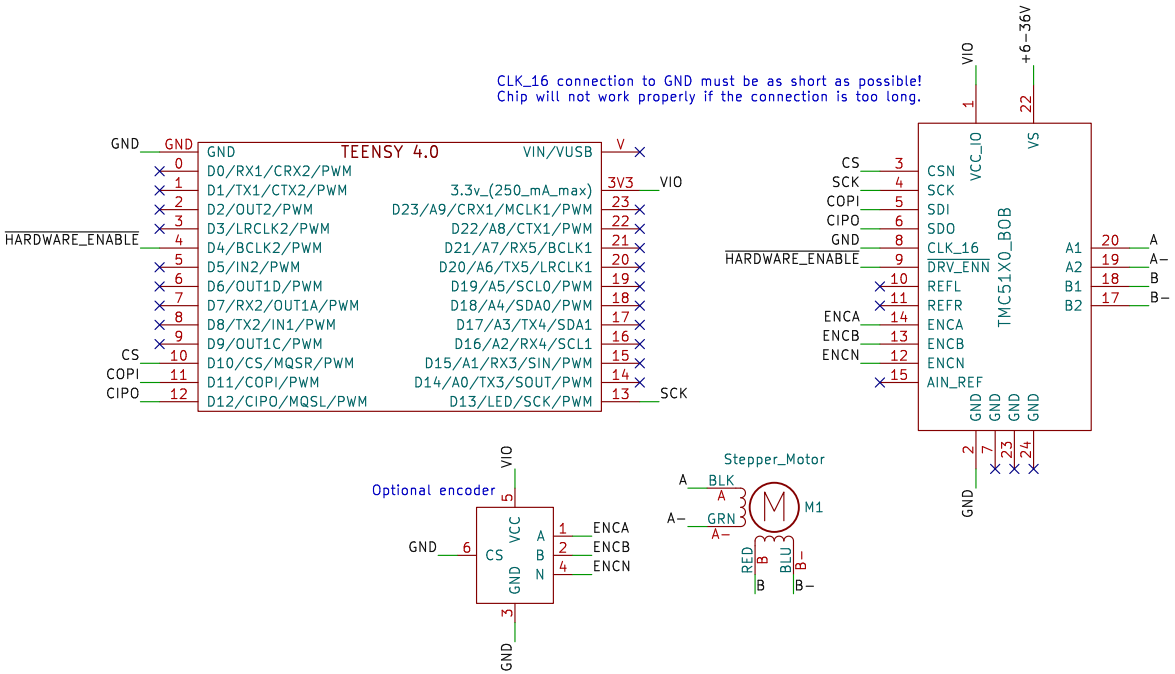


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| **Janelia Research Campus** | | |
| Sheet: /TMC51X0/tmc51x0-bob/teensy40/ | | |
| File: tmc51x0-tmc51x0-bob-teensy40.kicad_sch | | |
| ***Title: Trinamic Wiring*** | | |
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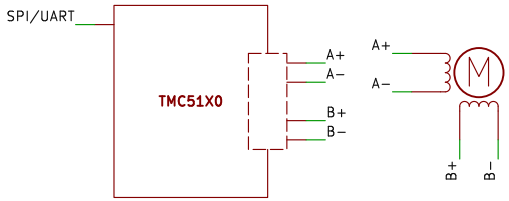


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Sheet: /TMC51X0/description/

File: tmc51x0-description.kicad_sch

**Title: Trinamic Wiring**

| Size: A4 | Date: 2024-07-31 | **Rev: 0.5** |
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| KiCad E.D.A. kicad 7.0.11 | | Id: 29/23 |

teensy40

File: tmc51x0-tmc51x0-bob-teensy40.kicad_sch

pico

File: tmc51x0-tmc51x0-bob-pico.kicad_sch

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Sheet: /TMC51X0/tmc51x0-bob/
File: tmc51x0-bob.kicad_sch

***Title: Trinamic Wiring***

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| Size: A4 | Date: 2024-07-31 | **Rev: 0.5** |
| KiCad E.D.A. kicad 7.0.11 | | Id: 30/23 |