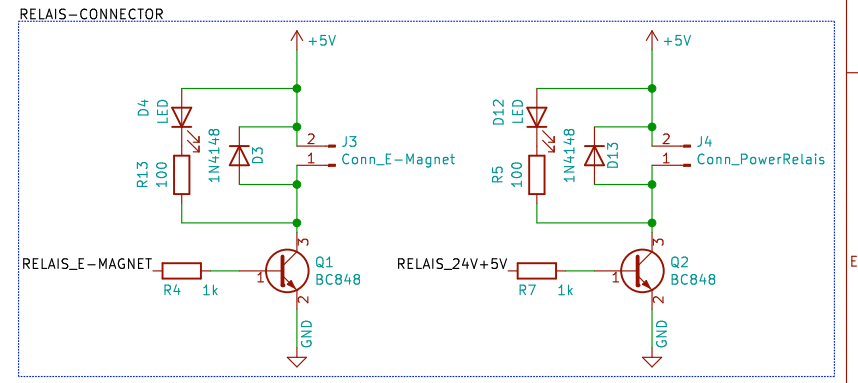
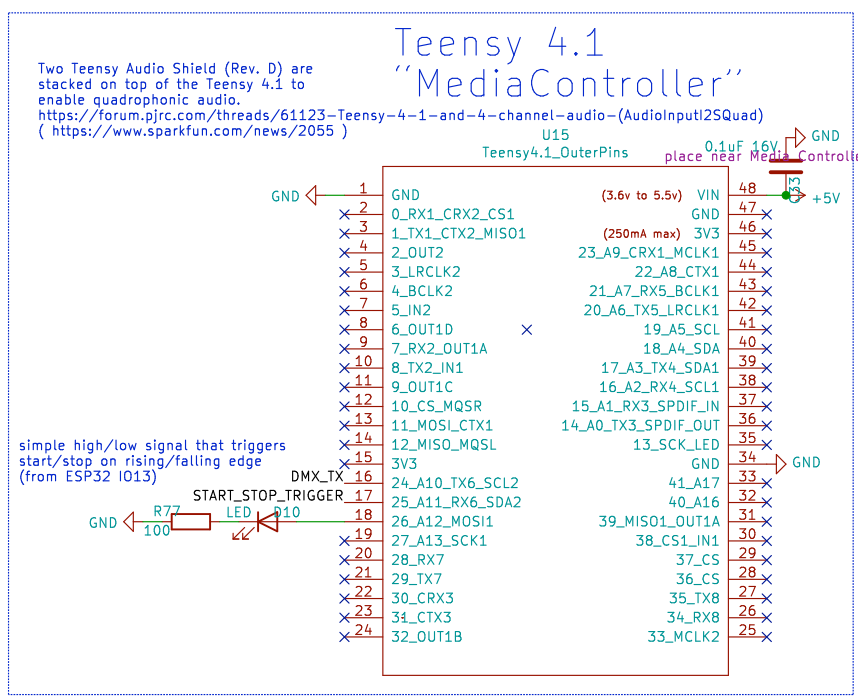
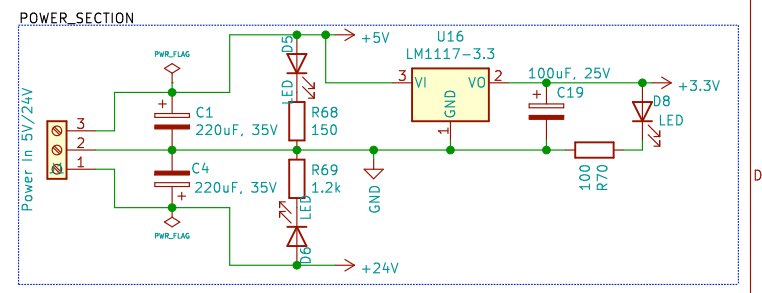
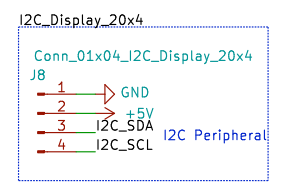
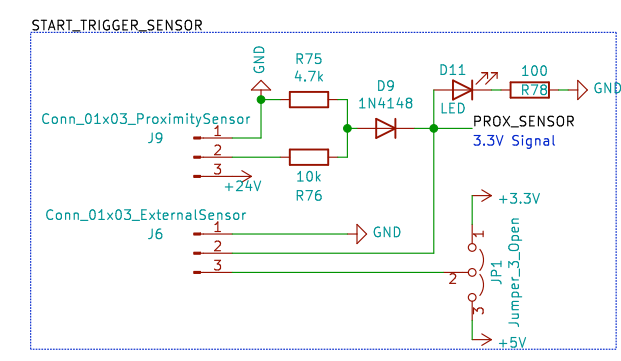
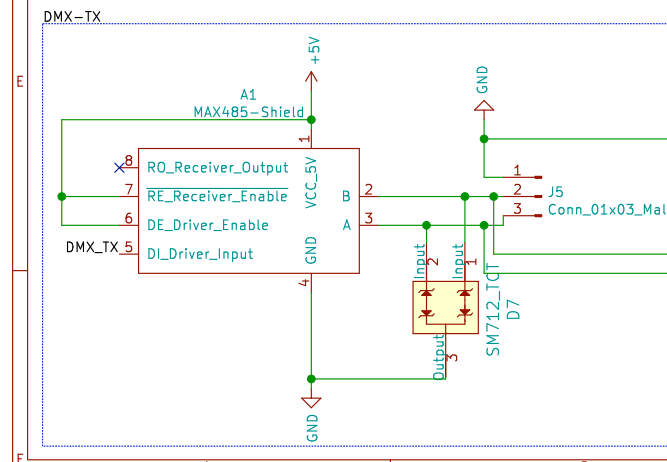
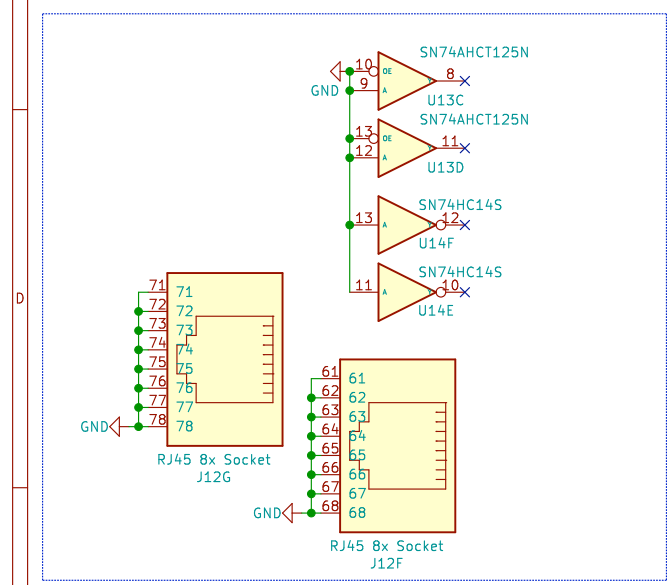
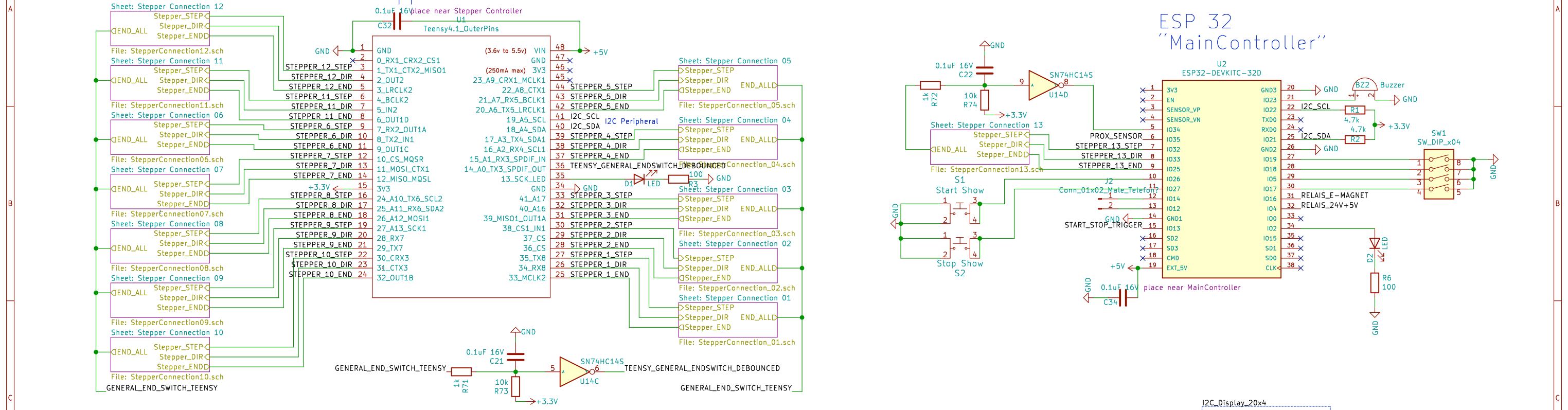


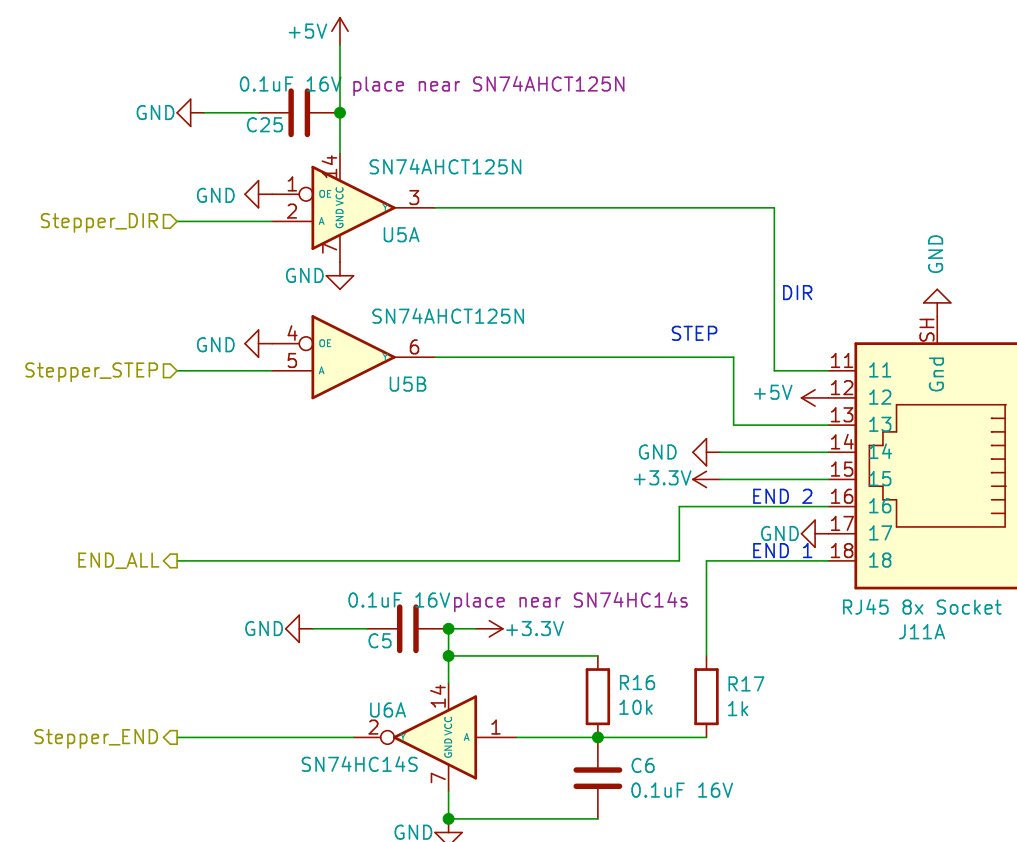
Teensy 4.1 "StepperController"

ESP 32 "MainController"

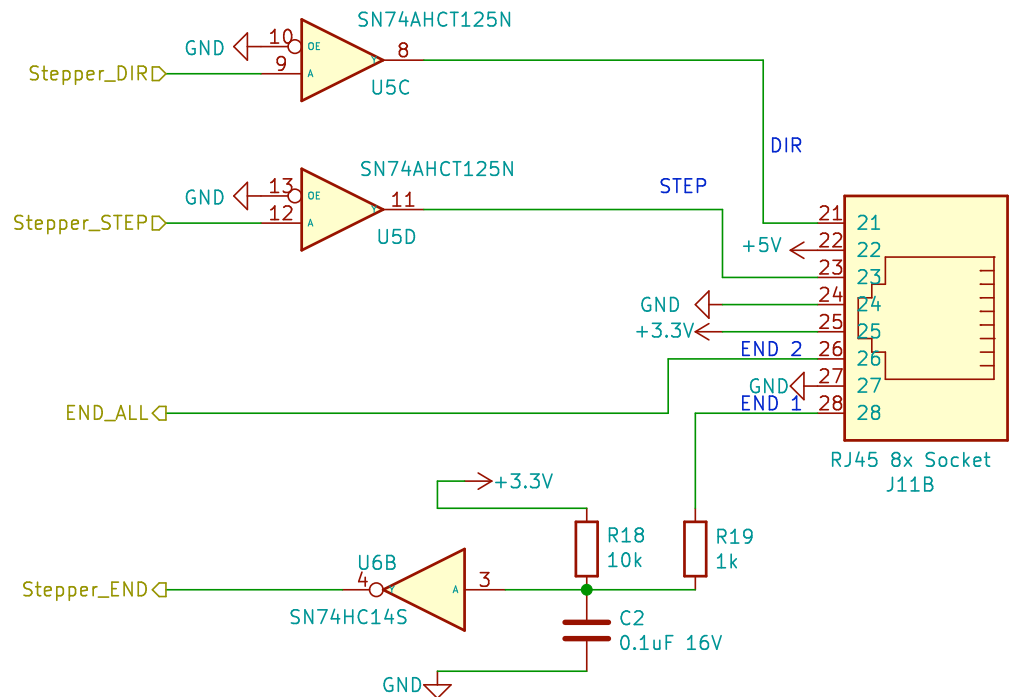


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Title: Mechanical Theatre		
Size: A3	Date: 2021-08-19	Rev: 1.2
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STEPPER_MOTOR_CONNECTION_1



STEPPER_MOTOR_CONNECTION_2



Sheet: /Stepper Connection 02/
File: StepperConnection_02.sch

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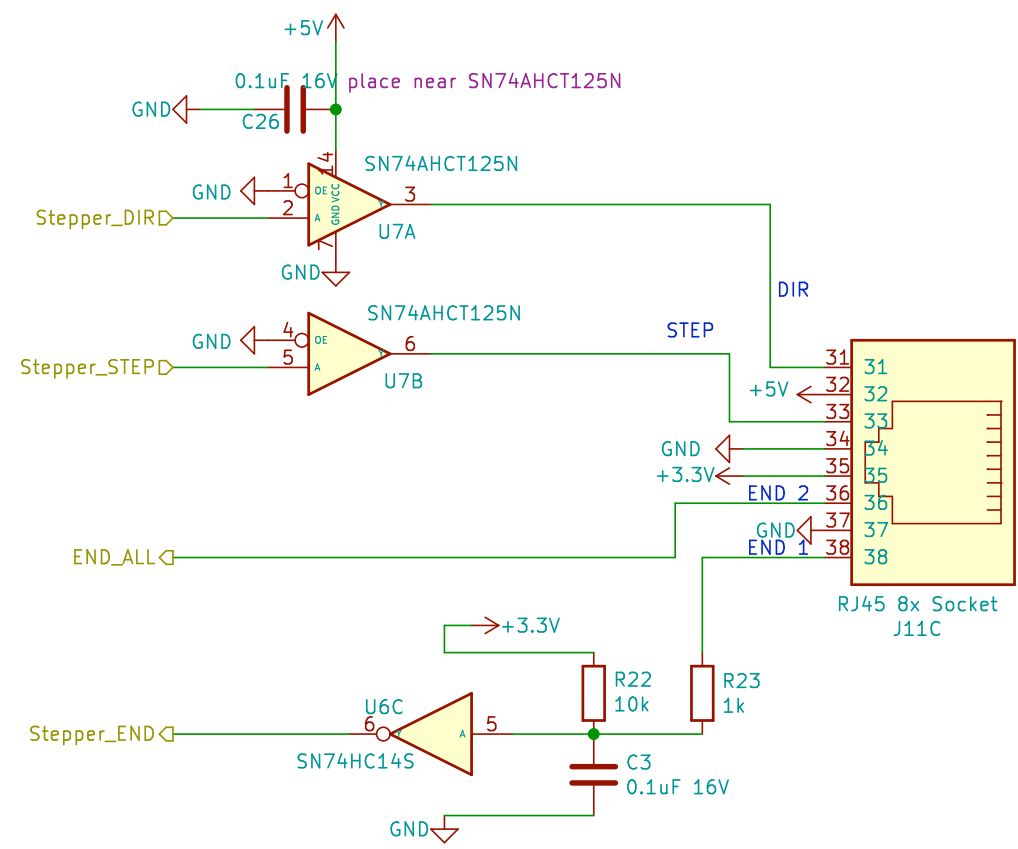
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Rev: 1.2

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Id: 3/14

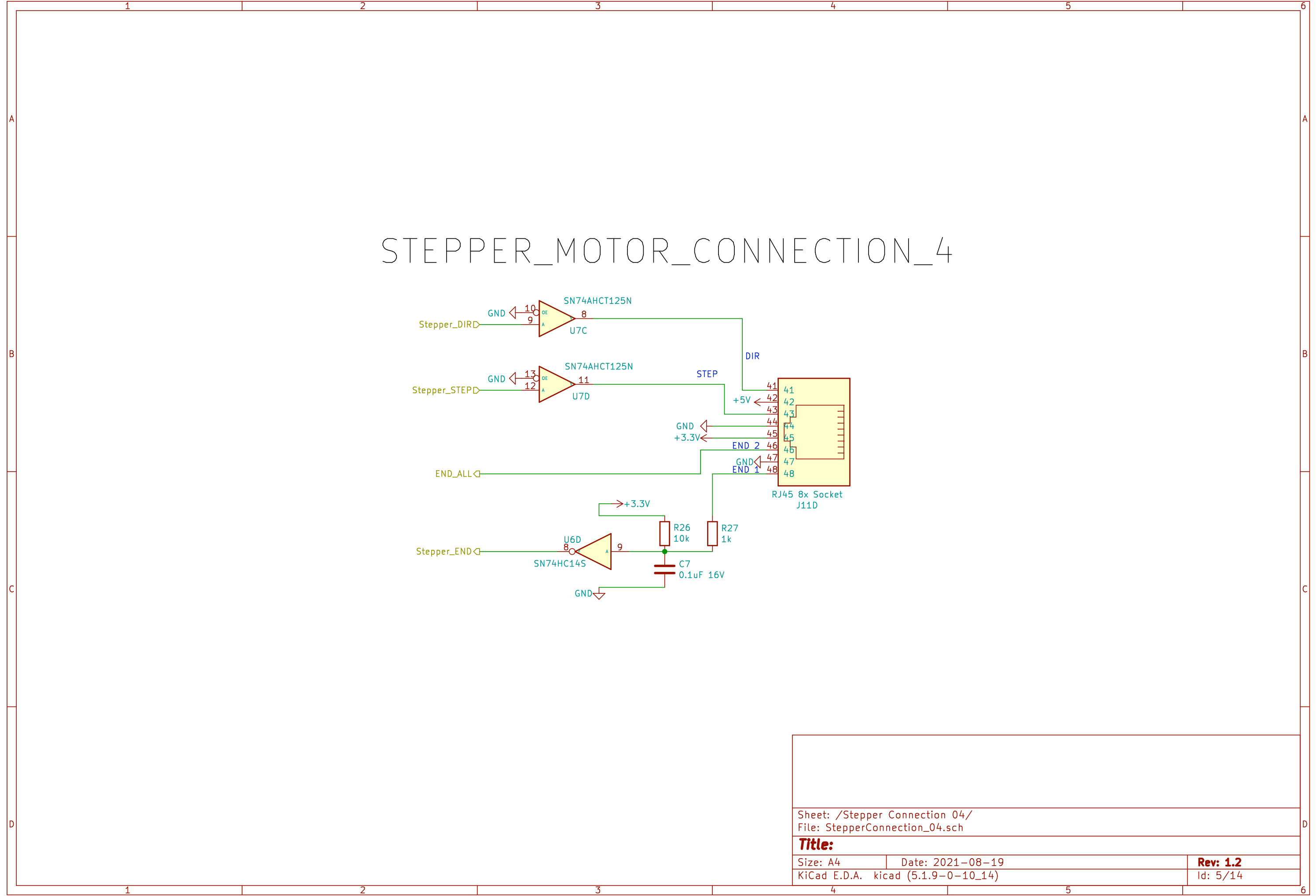
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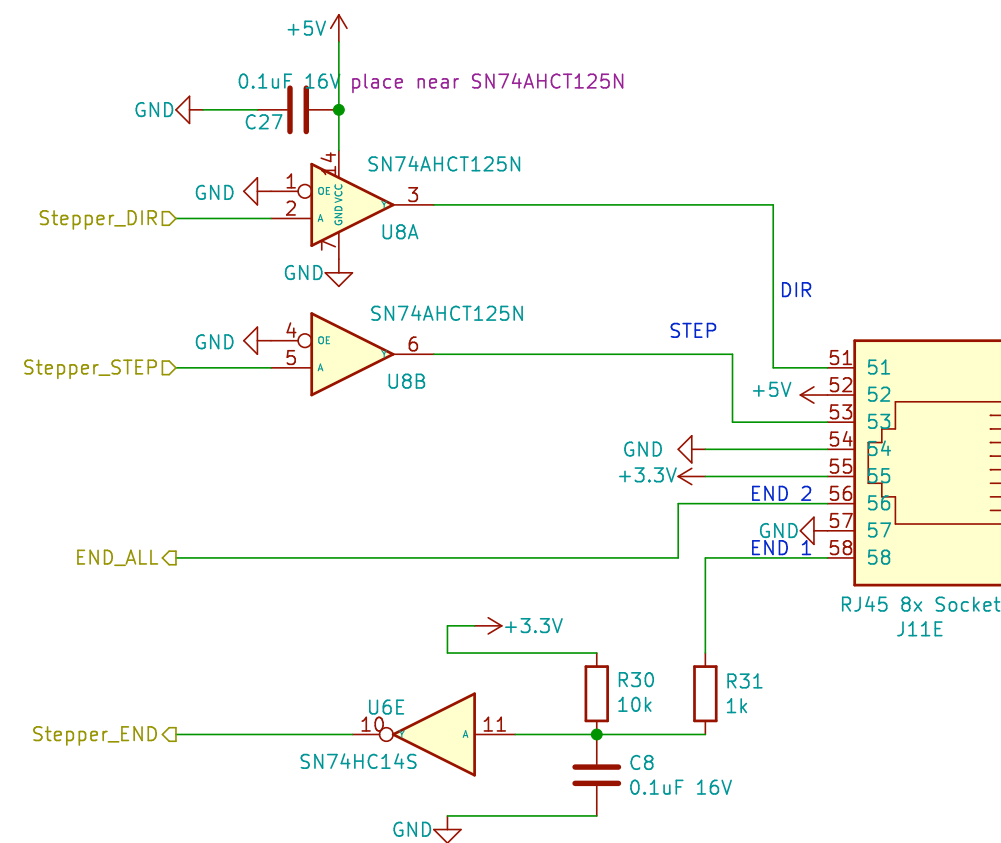
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Size: A4	Date: 2021-08-19	Rev: 1.2
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STEPPER_MOTOR_CONNECTION_5



Sheet: /Stepper Connection 05/
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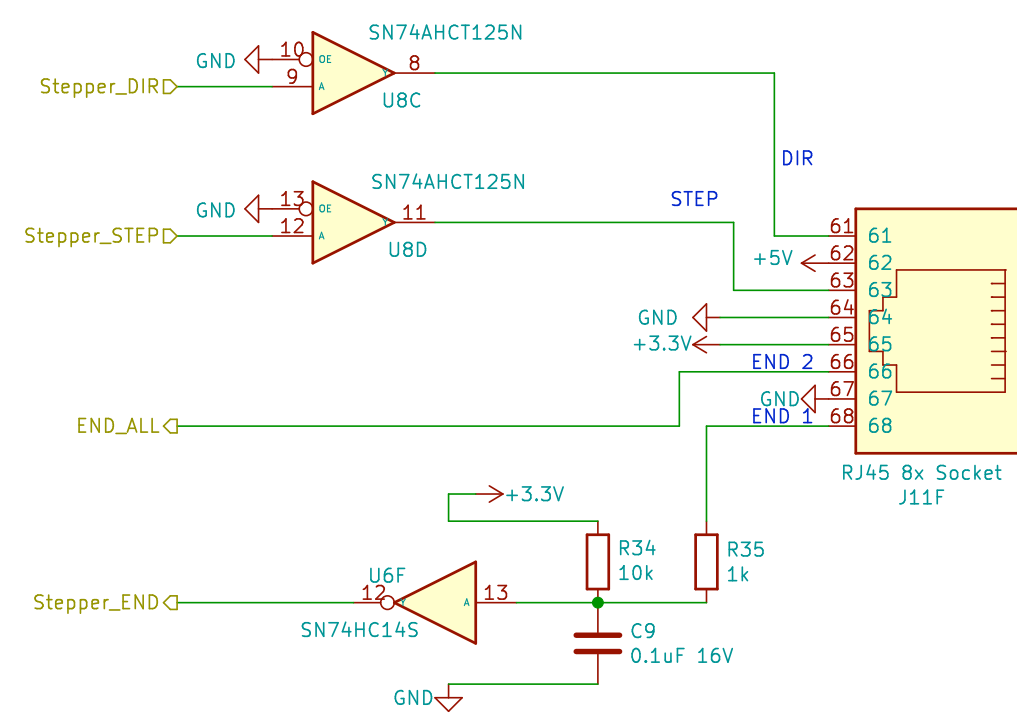
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Rev: 1.2

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Id: 6/14

STEPPER_MOTOR_CONNECTION_6



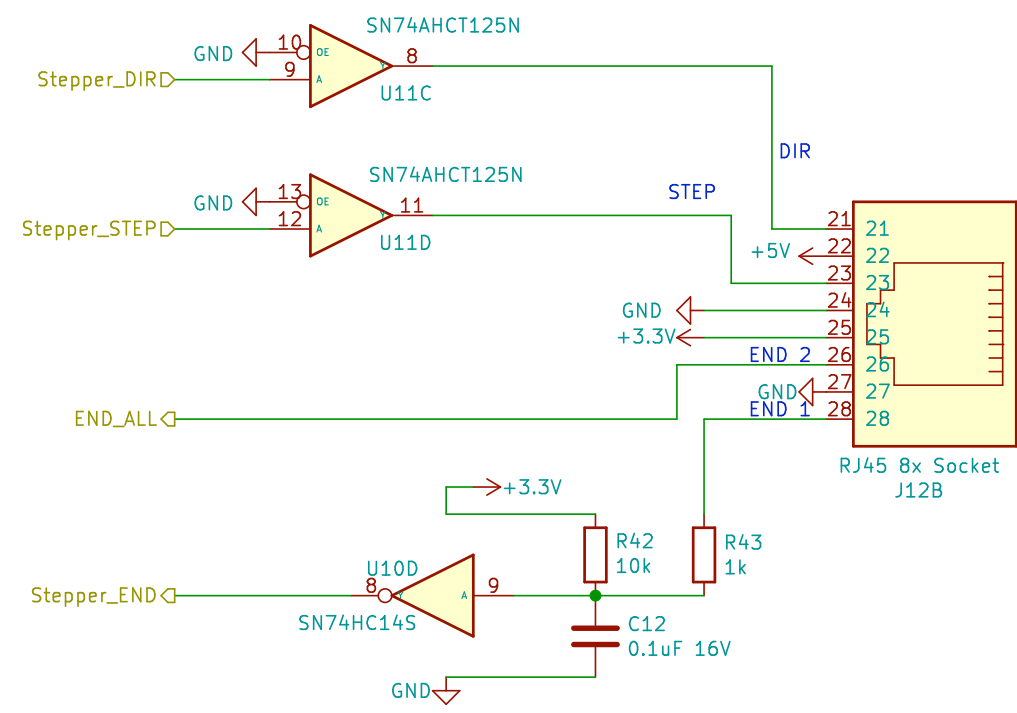
The diagram illustrates the electrical interface for a stepper motor driver. It features three input signals: **Stepper_DIR**, **Stepper_STEP**, and **Stepper_END**. These signals are processed by three integrated circuits:

- U9A (SN74AHCT125N)**: A 1-to-2 buffer. Its input (pin 2) is **Stepper_DIR**. Its output (pin 3) is **DIR**.
- U9B (SN74AHCT125N)**: A 1-to-2 buffer. Its input (pin 5) is **Stepper_STEP**. Its output (pin 6) is **STEP**.
- U10A (SN74HC14S)**: A hex inverter. Its input (pin 2) is **Stepper_END**. Its output (pin 1) is **END_1**.

The circuit is powered by a **+5V** supply and a derived **+3.3V** supply. The **+3.3V** is generated using a voltage divider consisting of resistors **R38** (10k) and **R39** (1k), connected to the **+5V** line. A decoupling capacitor **C11** (0.1uF, 16V) is placed across the **+3.3V** supply. The **END_2** signal is connected to pin 76 of the **RJ45 8x Socket J11G**.

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STEPPER_MOTOR_CONNECTION_10

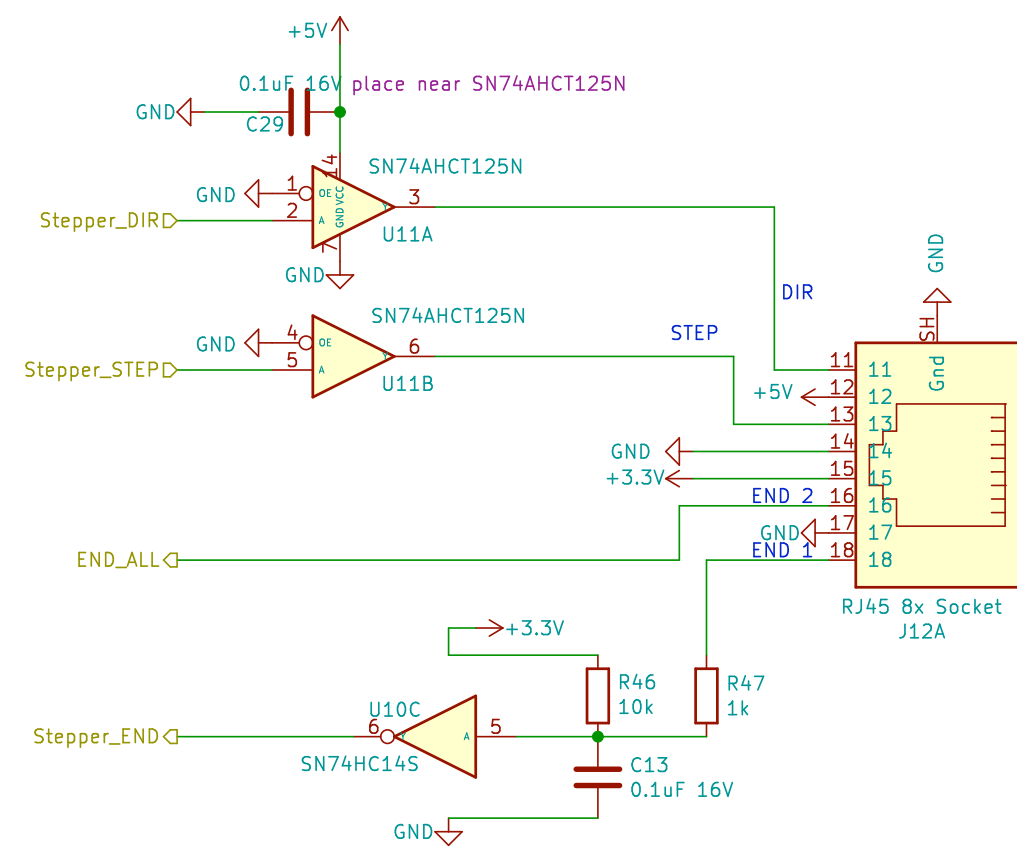


Sheet: /Stepper Connection 10/
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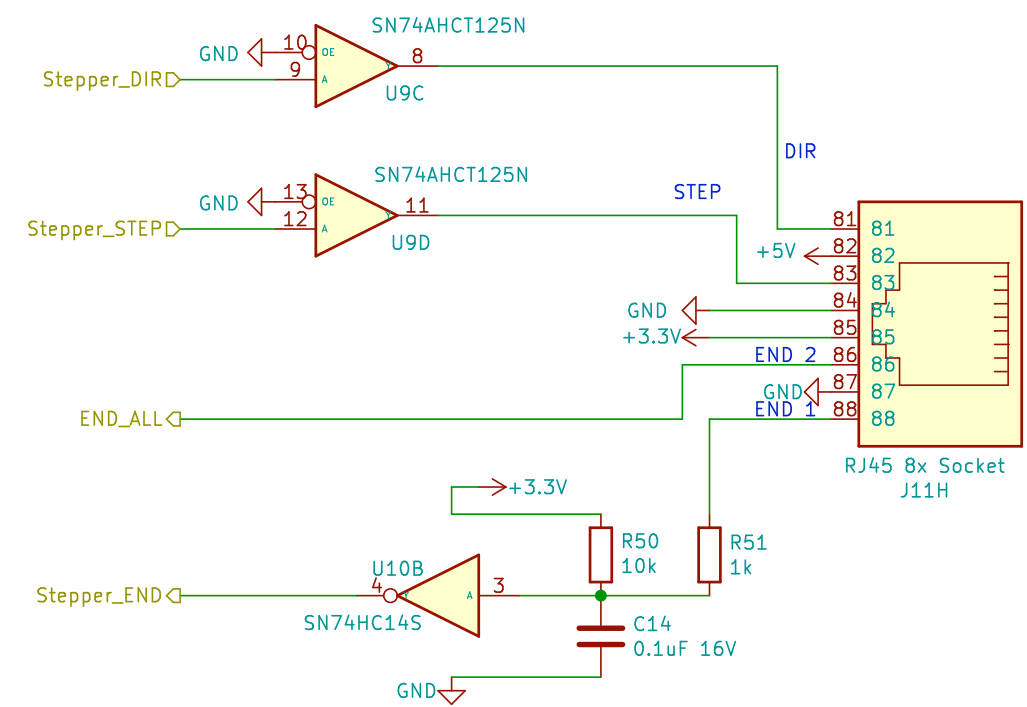
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STEPPER_MOTOR_CONNECTION_9



STEPPER_MOTOR_CONNECTION_8



Sheet: /Stepper Connection 08/
File: StepperConnection08.sch

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Size: A4

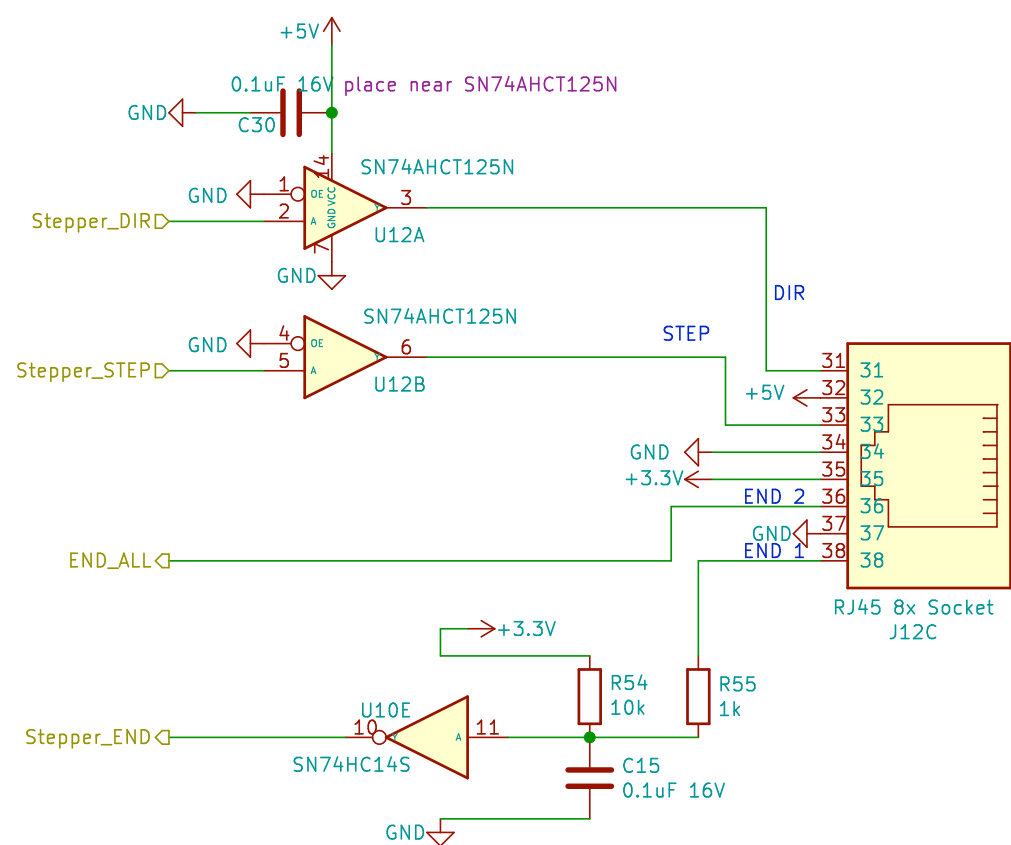
Date: 2021-08-19

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Id: 11/14

STEPPER_MOTOR_CONNECTION_11



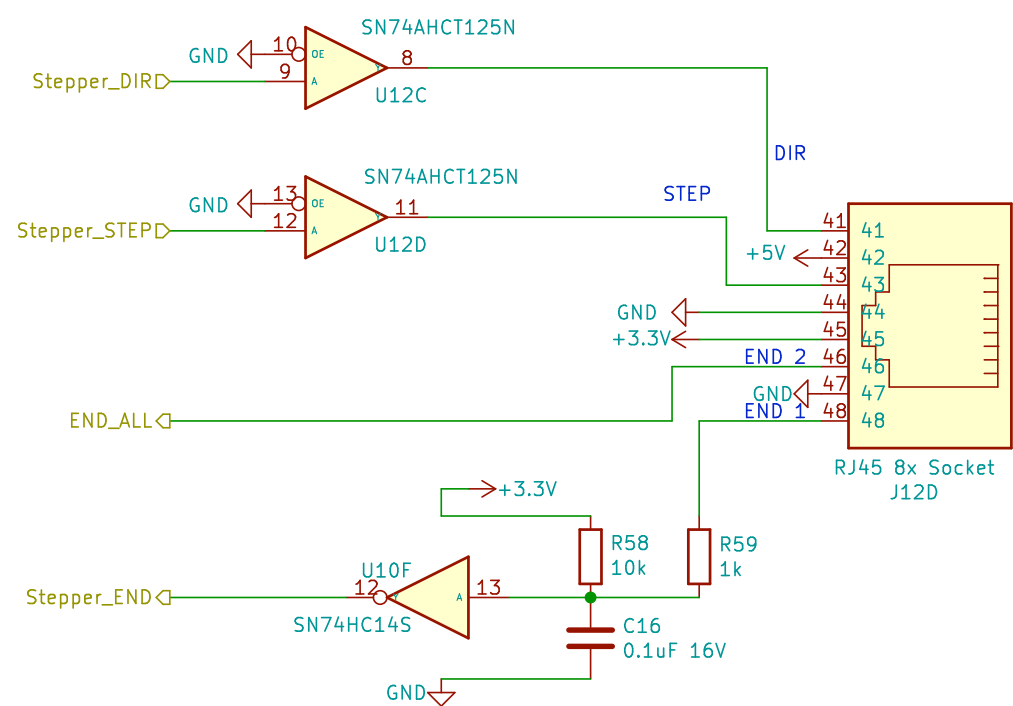
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Size: A4 Date: 2021-08-19
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Rev: 1.2
Id: 12/14

STEPPER_MOTOR_CONNECTION_12



Sheet: /Stepper Connection 12/
File: StepperConnection12.sch

Title:

Size: A4 Date: 2021-08-19

Rev: 1.2

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The diagram shows a circuit for a stepper motor driver. It features two SN74AHCT125N buffers (U13A and U13B) and one SN74HC14S inverter (U14A). The circuit is powered by a 5V supply and a 3.3V supply. A 0.1uF 16V capacitor (C31) is placed near the SN74AHCT125N, and another 0.1uF 16V capacitor (C17) is placed near the SN74HC14S. The circuit is connected to an RJ45 8x Socket J12E. The output signals are DIR, STEP, END 2, and END 1.

1. *Journal of the American Medical Association*, 2000; 283: 2689-2693.