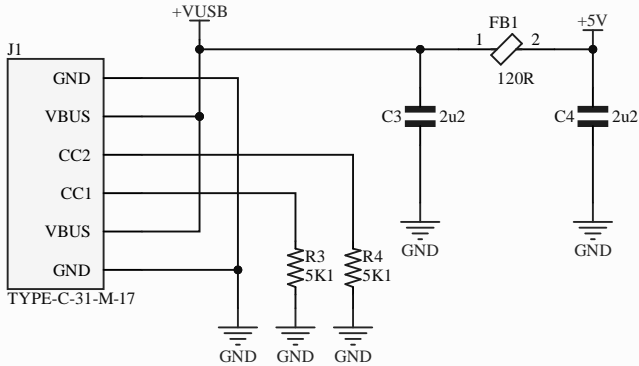


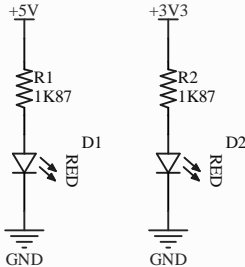
USB-C Connector

Ferrite Bead Model:
BLM18SG121TZ1D



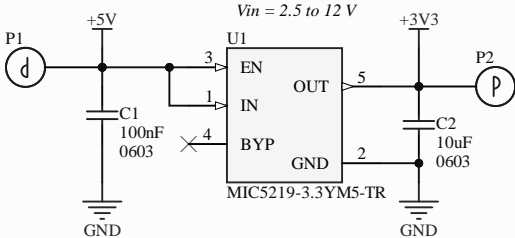
Pi filter used to filter the noise voltage coming from the USB-C connector.

Indicator LEDs

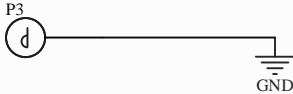


In case the level shifter doesn't work, solder wires into the MCU footprint pins to test the hardware with Arduino Mega.

+3V3 LDO



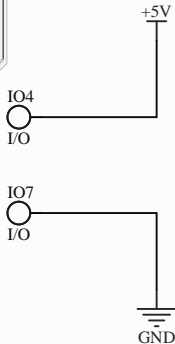
GND Pad



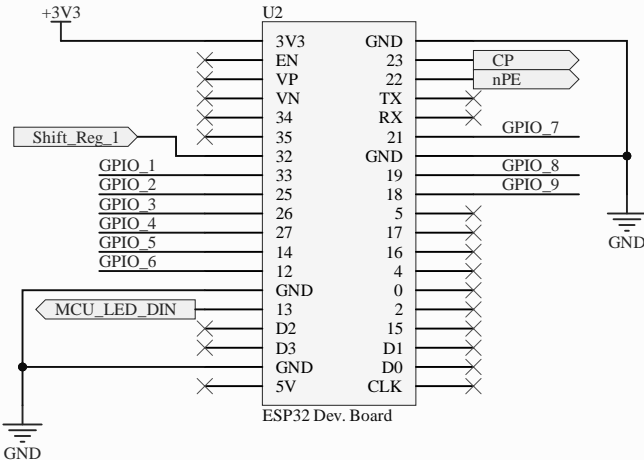
Added to simplify debugging

Power Supply

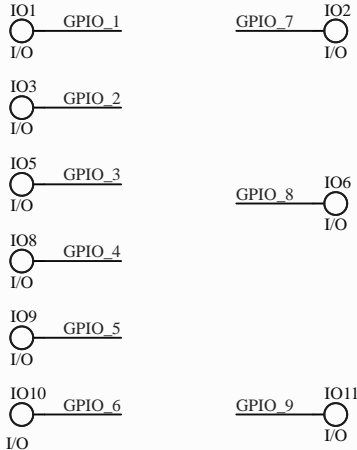
Solder two wires into the vias to be able to power the board using power supply in case the USB-C power does not work that well.



Microcontroller



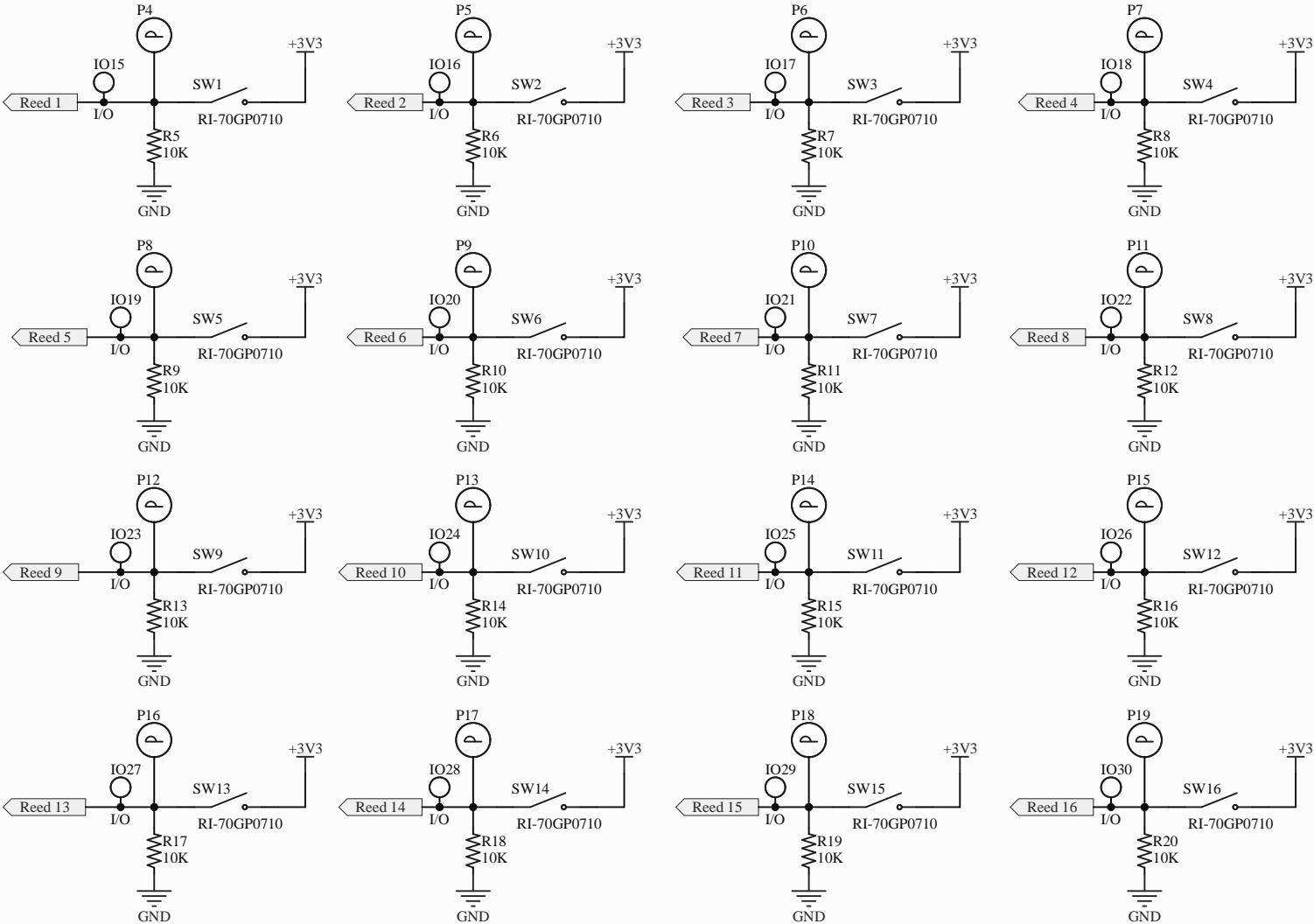
Breakout GPIO Pins



Extra GPIO pins in case something goes wrong and we want to use another pin.

| | | |
|---|-----------------------|----------|
| Title Mini Chess Board - MCU and Power Man. | | |
| Size A4 | Number | Revision |
| Date: 9-29-2024 | Sheet of | |
| File: C:\Users\...\MCU and Power Man.SchDoc | Drawn By: Rajan Patel | |

Reed Switches

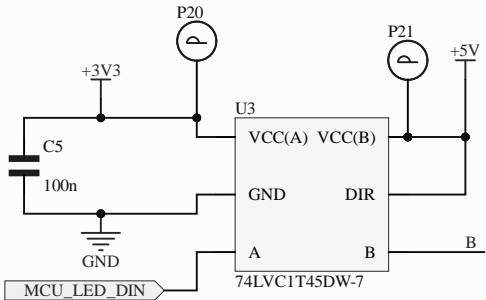


▲ Testpoints to simplify validating the output from the shift registers.

▲ Added vias in case the connections to shift registers from reed switch outputs is not in the correct order.

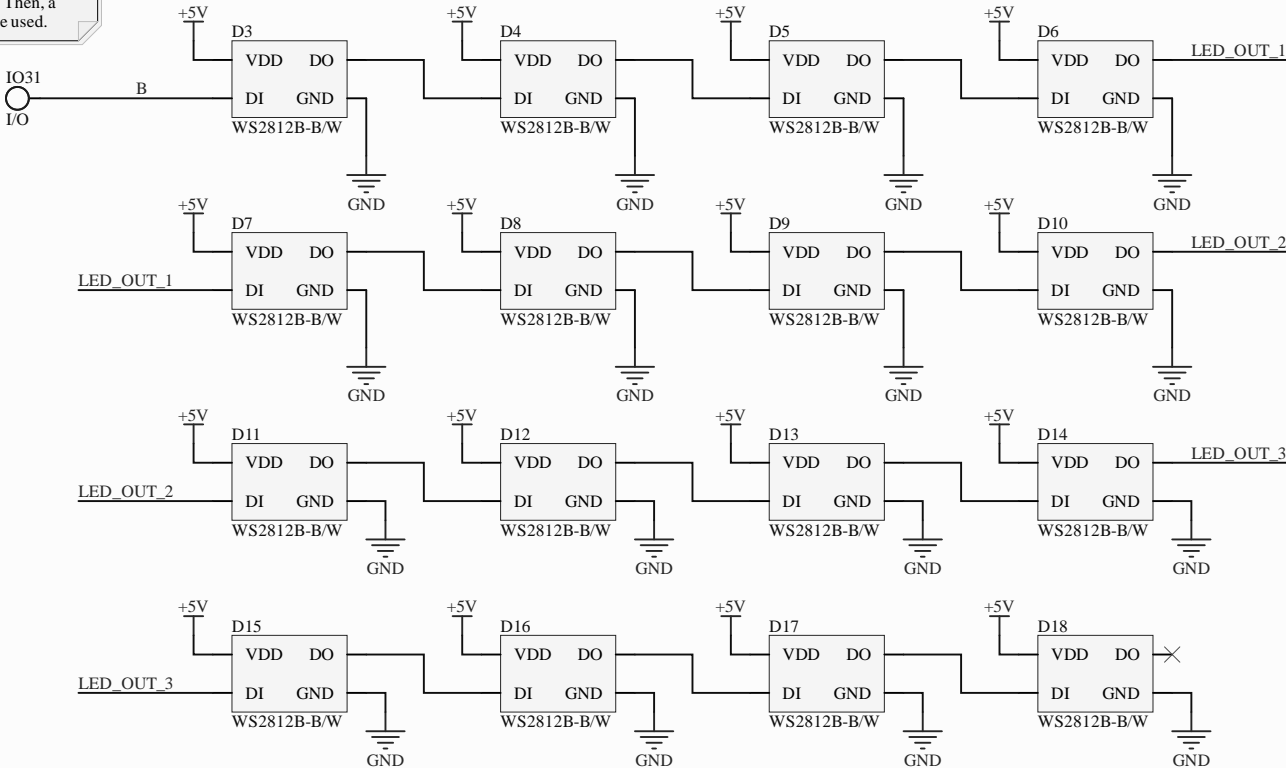
| | | |
|---|-----------|-------------|
| Title Mini Chess Board - Reed Switches | | |
| Size A4 | Number | Revision |
| Date: 9-29-2024 | Sheet of | |
| File: C:\Users\...\Reed Switches.SchDoc | Drawn By: | Rajan Patel |

Level Shifter



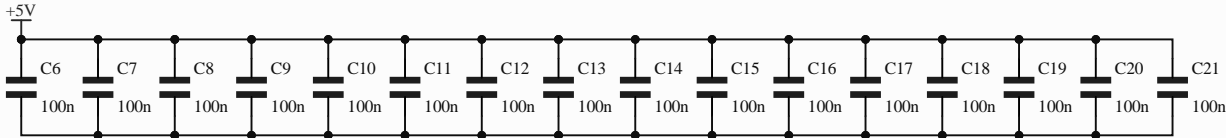
I/O pin added in case level shifter doesn't work. Then, a Arduino Mega can be used.

LEDs



Decoupling Capacitors for LEDs

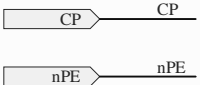
Decoupling caps for LEDs are DNP



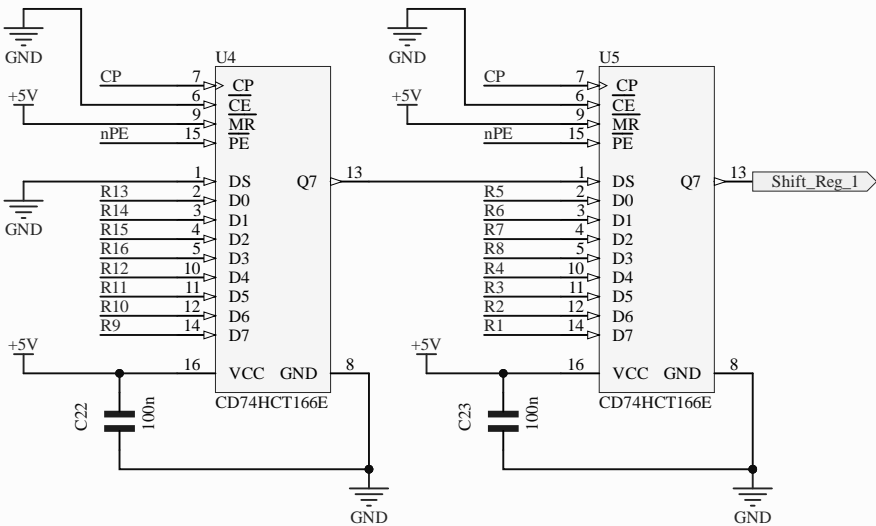
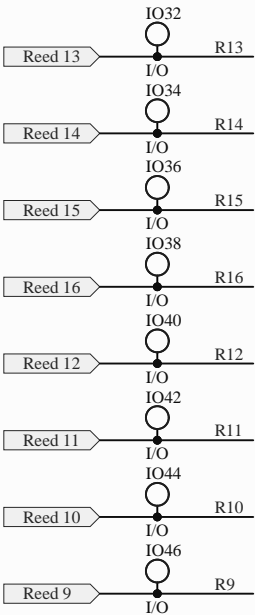
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| Title Mini Chess Board - WS2818B | | |
| Size A4 | Number | Revision |
| Date: 9-29-2024 | Sheet of | |
| File: C:\Users\...\WS2818B.SchDoc | Drawn By: | Rajan Patel |

Shift Registers

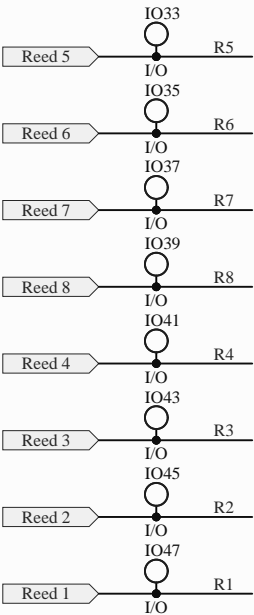
△ CP: Clock Pulse
nPE: Parallel Enable



△ Added vias so that if the ordering from the reed switch output with respect to the parallel inputs of the shift register is not correct, the ordering can be fixed by soldering wires.



Note: According to the datasheet, for the proper functioning of the shift registers, all the pins must be set HIGH or LOW.



| | | |
|---|-----------|-------------|
| Title Mini Chess Board - Shift Registers | | |
| Size A4 | Number | Revision |
| Date: 9-29-2024 | Sheet of | |
| File: C:\Users\...\Shift Registers.SchDoc | Drawn By: | Rajan Patel |