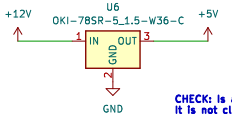
PCB is designed for the 3d printed split flap display:
https://www.printables.com/model/69464-split-flap-display

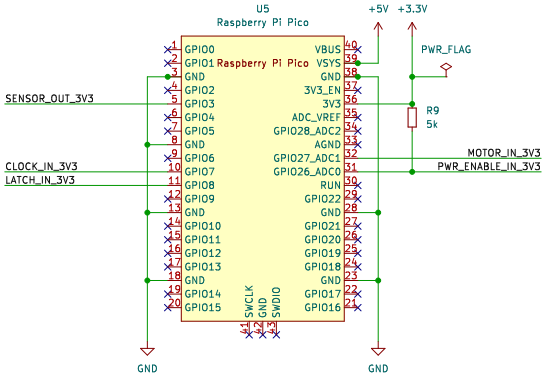
Each PCB can power four modules. Modules can be chained together to build larger displays

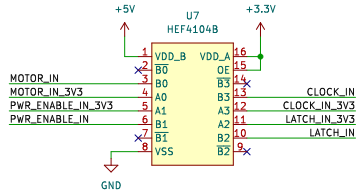
The Raspberry Pi Pico and OKI_78SR DC-DC regualtor are optional, amd should only be installed on the first module in the chain

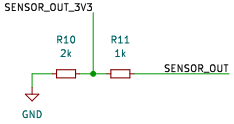


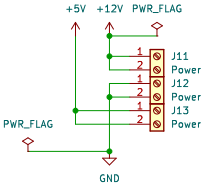
CHECK: Is a keepout zone needed near the wifi antenna? It is not clear in the Pico W datasheet.

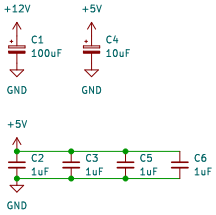
CHECK: Can the PICO be safely powered by USB when developing while VSYS is also connected?

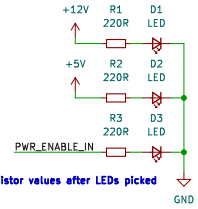




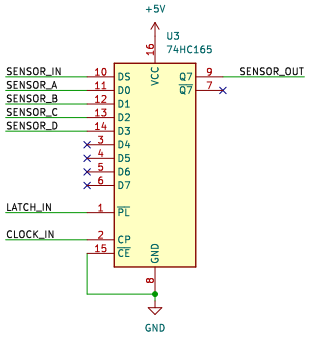


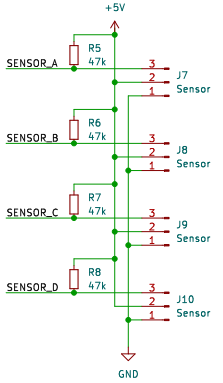


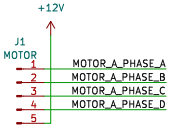


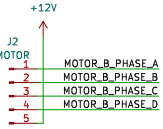


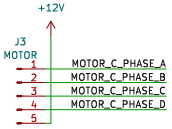
CHECK: Resistor values after LEDs picked

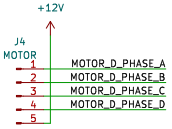






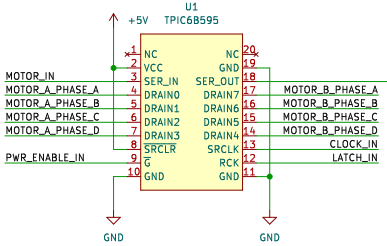


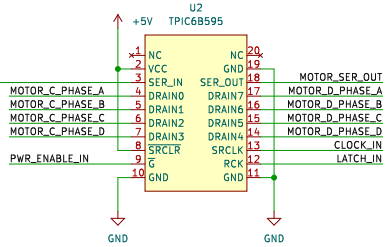


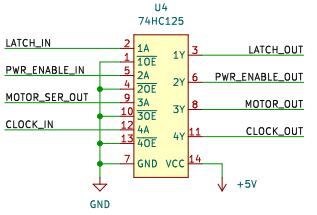


CHECK: Any recommendations on thermal vias (see Google Doc)

CHECK: Should NC pins on TPIC6B595 be connected to GND for heat transfer?



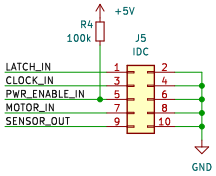


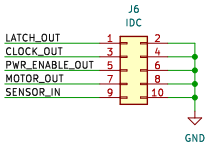


Motor data does not need to be buffered for transmission reasons (It is 1:1 from one board to the next, not bussed), but it is buffered to keep timing in sync with the buffered clock.

Serial chaining relies on narrow propagation delay > hold time margin to work, so we need to be cognizant of anything that may cause data to change sooner after the rising clock edge (reducing effective propagation delay)

Pull up on POWER_ENABLE_IN to disable the motors by default. This allows a shift register loopback test and to set the shift registers before enabling the motors.





Add a jumper on the last module. This allows a loopback test of the shift registers (TPIC6B595 and 74HC165)

CHECK: Will a jumper fit on the IDC header between pins 7 & 9. Then I don't need this 2 pin header.

Sheet: /
File: moduleDriver.kicad_sch

Title: Split Flap Module

Size: A3	Date:	Rev: 0.2
KiCad E.D.A. kicad (6.0.9-0)		Id: 1/1