

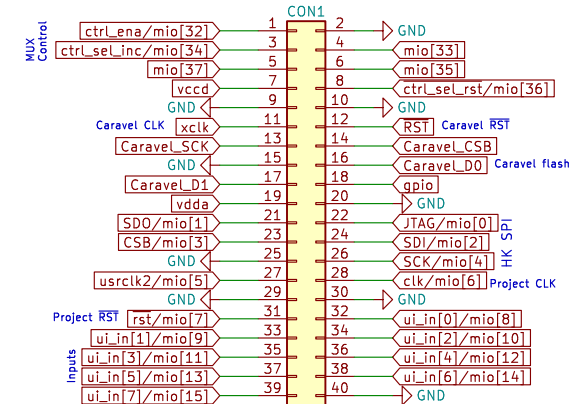
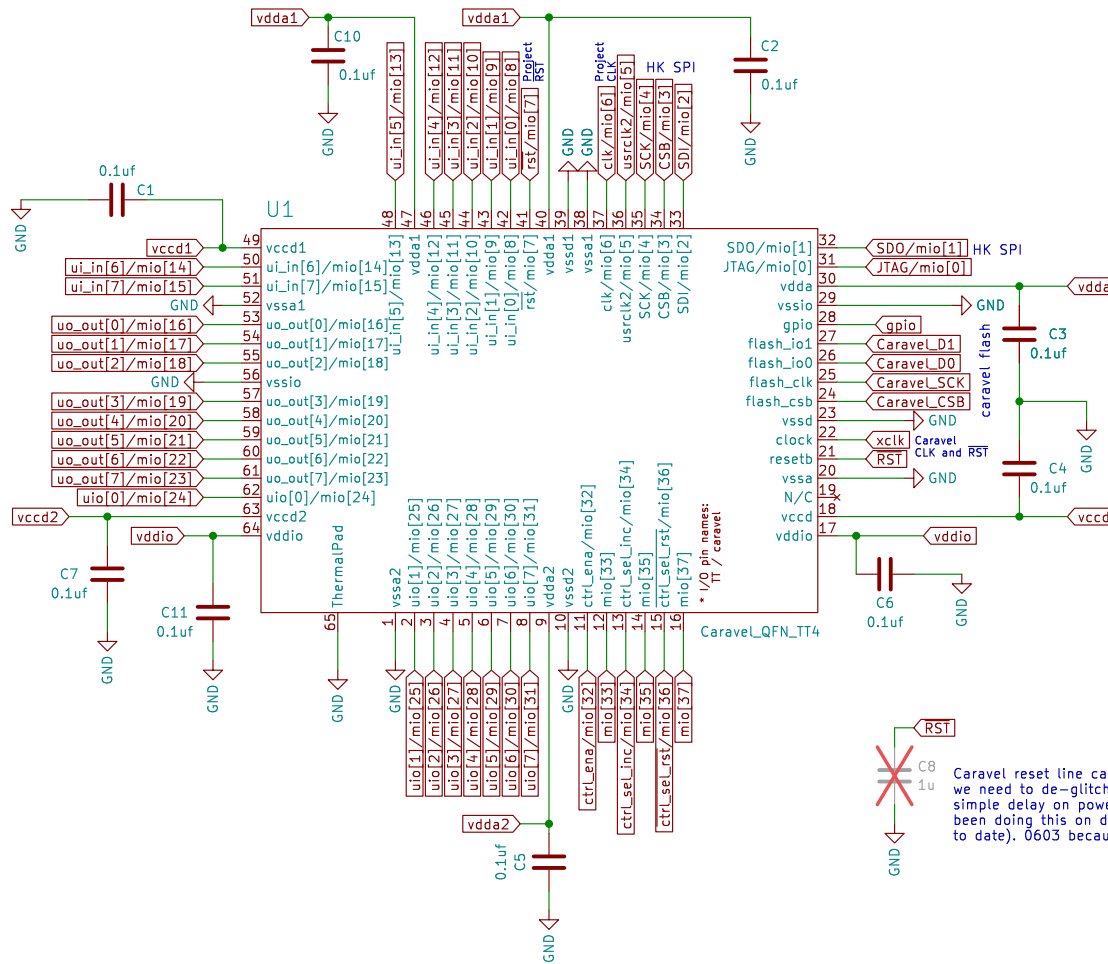
# Caravel QFN Breakout For TinyTapeout

This version of the Caravel breakout board is optimized for use with TinyTapeout version 4 and beyond.

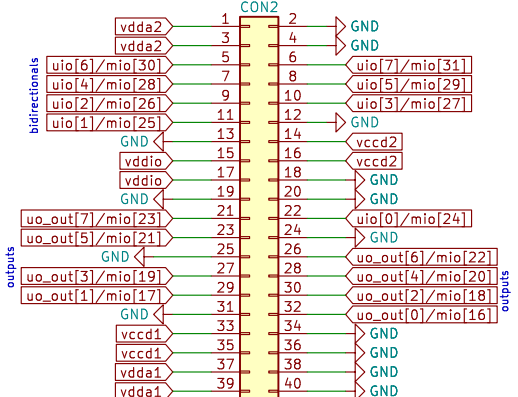
It uses the Caravel\_QFN\_TT4 symbol, which has naming that—while preserving the original caravel information (mproj\_io[xx] is abbreviated m[xx])—focuses on the tinytapeout-specific uses for the various I/O.

The pin headers for the breakout have been re-arranged to improve EMC and noise immunity, and simplify routing, both at the level of this breakout and in eventual demo and project PCBs.

Though the PCB itself has retained the same form-factor, elements included have been re-arranged since prior versions of the breakout board (a breaking change) to allow for objectives above and to provide more room for the eventual FPGA test system.  
The pin headers have been placed a sane/easy-to-remember and replicate distance apart on the PCB: 36 millimeters, center-to-center horizontally and at the same height.  
As of v3.2, we've moved to standard top-entry 100 mil headers, meaning they must be assembled on the underside of the PCB. Any standard pin socket should do, but guide post holes are to support the inexpensive Liansheng FH-00148



CON1, CON2: Place on bottom



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Sheet: /

File: caravel-breakout-qfn.kicad\_sch

Title: Caravel QFN Breakout

Size: A Date: 2024-03-22

KiCad E.D.A. 8.0.1

Rev: 3.2

Id: 1/1

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FID2 FIDUCIAL  
FID3 FIDUCIAL