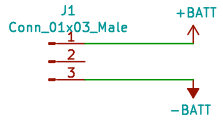
TEENSY LC OR 3.2 AND ALKALINE/NIMH BATTERY PACK
*** MUST CUT VIN-VUSB TRACE ***
THIS IS THE STANDARD MANUFACTURED KIT CONFIGURATION

TWO POWER MODES SELECTED BY DOUBLE-THROW SWITCH:

MODE 1
BUILT-IN BATTERY PACK (Keystone 2482CN) WITH 4X "AAA" ALKALINE OR NIMH CELLS
...or 3-4 "AA" alkaline/NiMh, or 1S LiPo, but the logic board does not recharge these batteries automatically from USB power.
CONNECTED TO 3 PIN input for Battery Pack
On PCB: SMT CONN, 3 TERM, HORZ, 2mm spacing, detent lock
Such as: Keystone 976, JST PA BM03B-PASS-1-TFT(LF)(SN), Adafruit 4391 (JST PH 3-pin aka STEMMA)
from KAWEEI Technology CW2001-03T-H01-BD-A,



BOTH MODES REQUIRE:
VIN must be supplied TO the Teensy and
the Core 64 Logic Board provides it here.

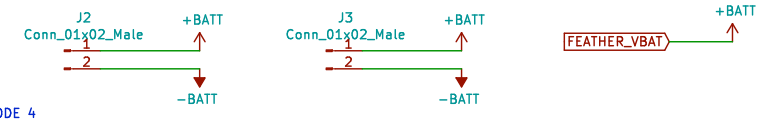
MODE 2
USB 5V through Teensy LC or 3.2
VUSB is 5V from USB cable.
VIN must be supplied TO the Teensy and Core 64 Logic Board provides it.

HACKER POWER OPTION: ADAFRUIT FEATHER WITH REQUIRED LIPO
*** MUST REMOVE ALKALINE/NIMH BATTERY PACK ***
USER MODIFICATION REQUIRED

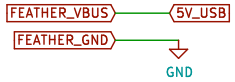
HACKER UPGRADE TO USE FEATHER REQUIRES EITHER:
A) REPLACE THE ALKALINE/NIMH BATTERY PACK WITH 1S LIPO IN THE SAME POWER PORT, OR ONE OF THE ALTERNATE PORTS
>>> ALTERNATE CONNECTOR 1 - Adafruit (1769) SMT 2-pin JST-PH (used with the Feather and similar)
>>> ALTERNATE CONNECTOR 2 - Generic SMT 2-pin .1" header option for everything else.
B) REMOVE THE ALKALINE/NIMH BATTERY PACK AND CONNECT 1S LIPO DIRECTLY TO FEATHER JST-PH BATTERY/CHARGING PORT.

TWO POWER MODES SELECTED BY DOUBLE-THROW SWITCH:

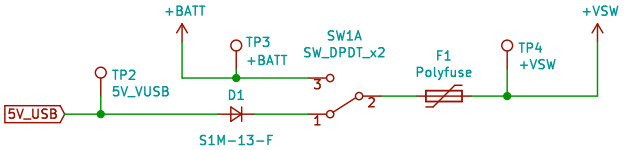
MODE 3
DIY 1S LIPO BATTERY 3-4V
THE FEATHER WILL TRY TO CHARGE THIS WHEN USB POWER IS CONNECTED.
FAILURE TO USE A 1S LIPO WILL DETROY THE CHARGER CIRCUIT.



MODE 4
USB 5V through the Feather.
Automatically recharges a connected 1s LiPo.



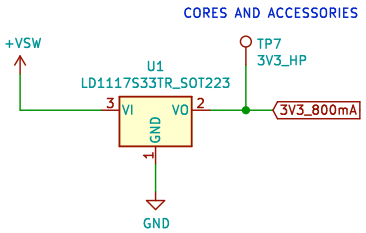
POWER SWITCH



Diode provides 1.1V drop if using USB power.
Keeps +VSW close to 4V to reduce 3.3V regulator strain.
Prevents current flow back to USB and provides additional reverse polarity protection.

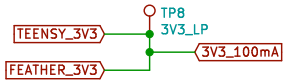
3.3V HIGH POWER SUPPLY

CORES AND ACCESSORIES

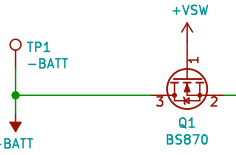


3.3V LOW POWER SUPPLY

TEENSY OR FEATHER 3.3V REGULATOR USED BY:
Analog reference, Core Sense Op-Amps, Magnetic Hall switches.

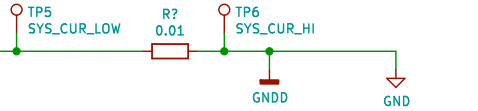


REVERSE POLARITY PROTECTION



REVERSE POLARITY DETECTION AND SYSTEM CURRENT MEASUREMENT CLOSE TO BATTERY.
STAR GROUND AS MUCH AS POSSIBLE IN SYSTEM TO GNDD AND GND.

SYSTEM CURRENT MEASUREMENT



DIGITAL LOGIC GROUND

SYSTEM GROUND

Andy Geppert - Machine Ideas, LLC

Sheet: /
File: Interactive Core Memory Badge (Logic) Power v0.3.sch

Title: Core 64 - Power Schematic

Size: A4	Date: 2020-03-15	**Rev: 0.3**
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