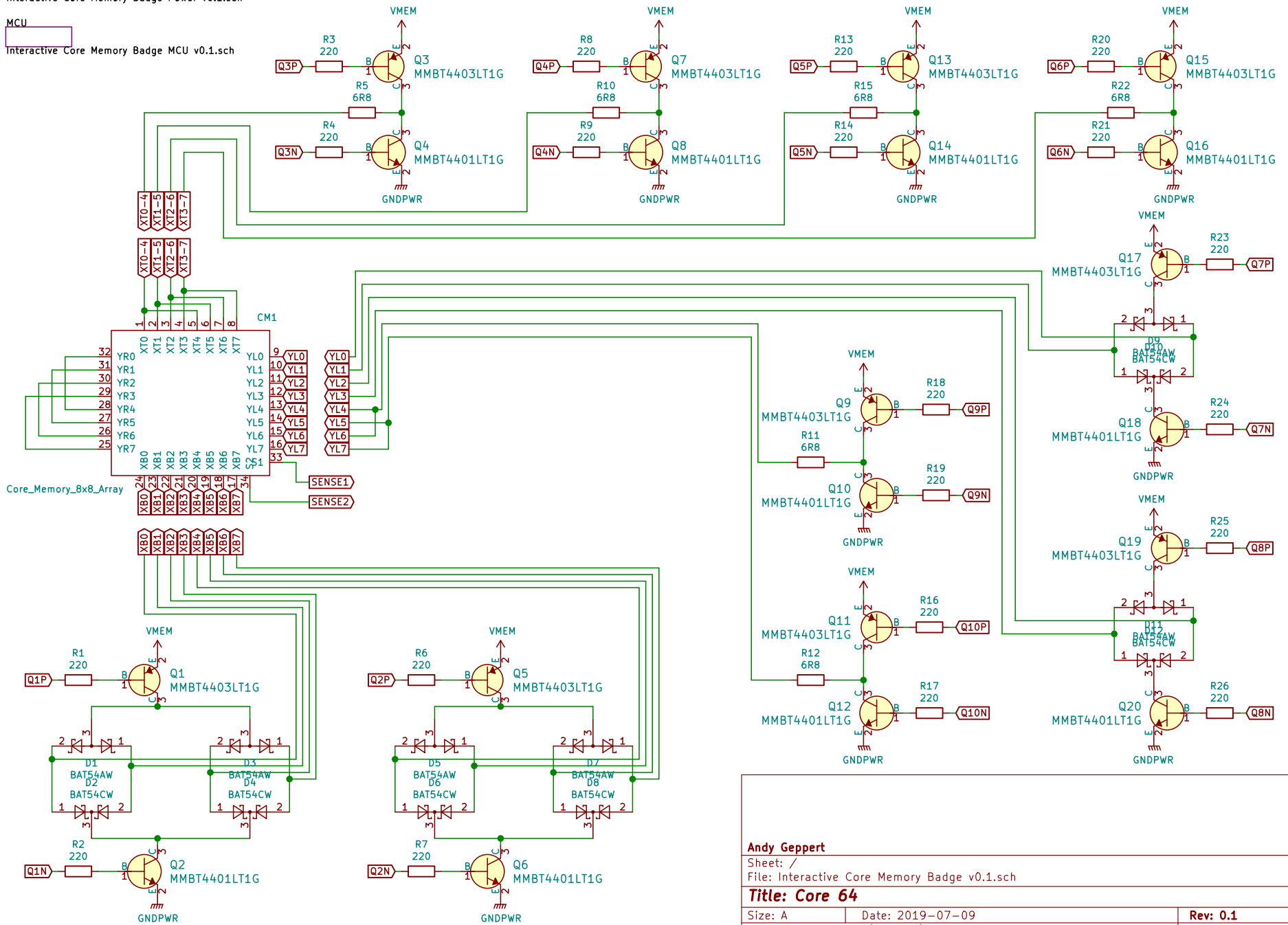


NOTE: Orientation of core array is the user view.
 The user view is the BACK COPPER of the PCB where only the core array is installed.
 The other side of the board is the FRONT COPPER PCB where all other compnents are populated, out of sight of the user.
 The PCB layout is viewed from the FRONT COPPER PCB side.

Power
 Interactive Core Memory Badge Power v0.1.sch

MCU
 Interactive Core Memory Badge MCU v0.1.sch



Andy Geppert

Sheet: /
 File: Interactive Core Memory Badge v0.1.sch

Title: Core 64

Size: A Date: 2019-07-09
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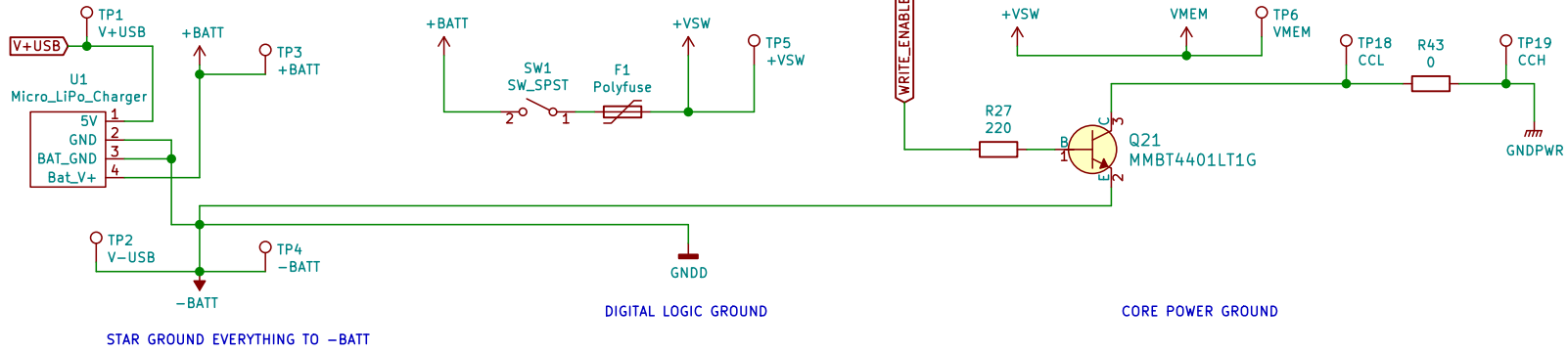
Rev: 0.1
 Id: 1/3

Charger module receives power from USB, either Micro LiPo charger or Teensy LC.
 Rest of the the system is only powered from the LiPo.
 LiPo must be connected to operate.

Adafruit LiPo Charger Module
 Has built-in connection to battery 1S Lipo
 Approx. 3-4V operating voltage supplied to WHOLE SYSTEM.

MCU, LED Array, I2C

All core power flows to ground through this resistor.
 Can this replace all of the others?
 At least it can be used to measure current.
 CCL = Core Current Lowside Measurement
 CCH = Core Current Highside Measurement



POWER FLOW:

IN: From computer USB 5V into Teensy LC module board (jumper cut on bottom of MCU onboard),
 OUT: V+USB and -BATT, and +3V3

IN: +BATT (3.7/4.2V) Battery is switched and fused
 OUT: +VSW

IN: +VSW
 OUT: VMEM to cores controlled by WRITE_ENABLE

IN: V+USB (5V) into Micro LiPo Charger circuit to charge 1S battery
 OUT: as +BATT and to onboard connector 1S battery

Sheet: /Power/		
File: Interactive Core Memory Badge Power v0.1.sch		
Title:		
Size: A4	Date:	Rev:
KiCad E.D.A. kicad (5.1.2-1)-1		Id: 2/3

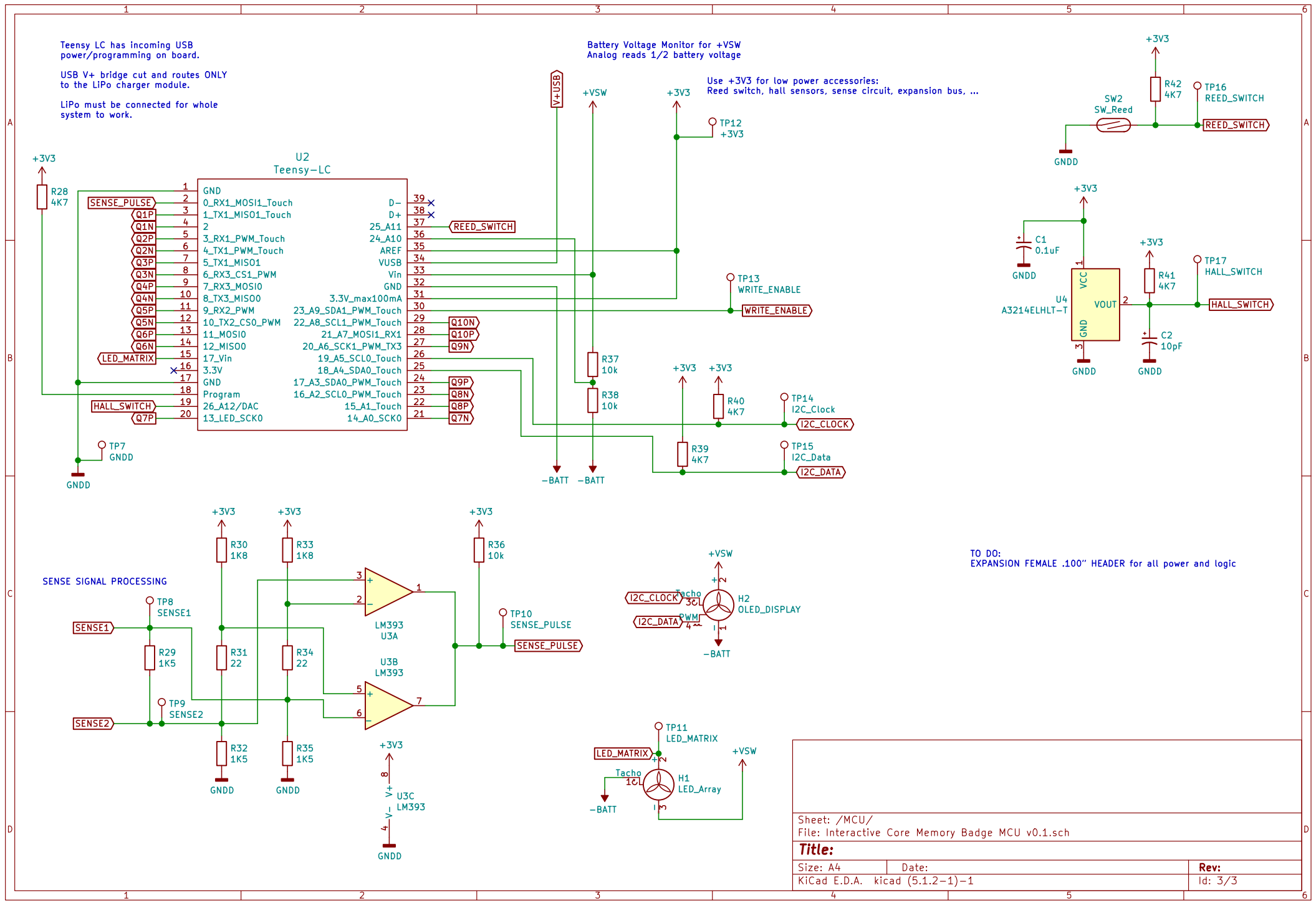
Teensy LC has incoming USB power/programming on board.

USB V+ bridge cut and routes ONLY to the LiPo charger module.

LiPo must be connected for whole system to work.

Battery Voltage Monitor for +VSW
Analog reads 1/2 battery voltage

Use +3V3 for low power accessories:
Reed switch, hall sensors, sense circuit, expansion bus, ...



TO DO:
EXPANSION FEMALE .100" HEADER for all power and logic

Sheet: /MCU/		File: Interactive Core Memory Badge MCU v0.1.sch	
Title:			
Size: A4	Date:	Rev:	
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