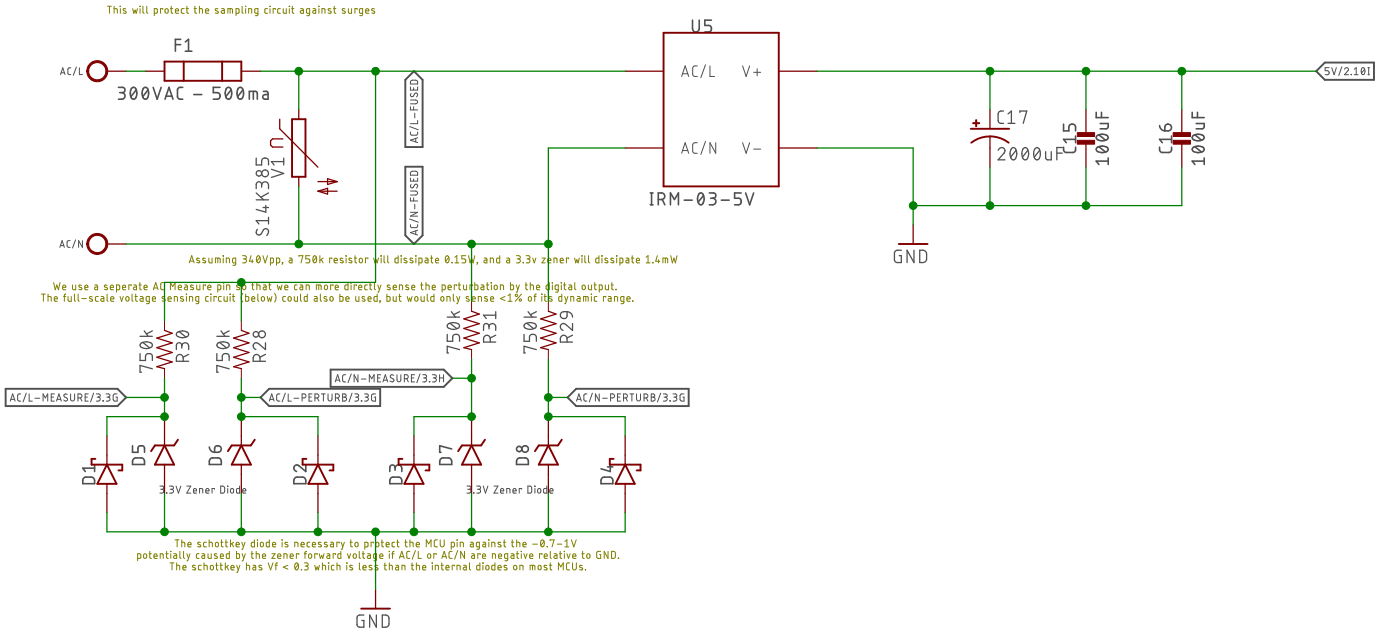
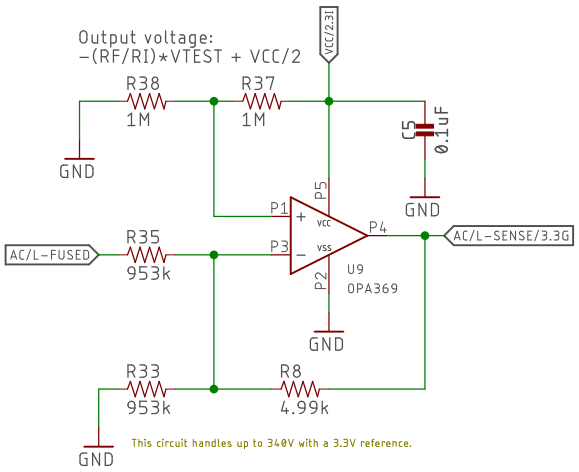
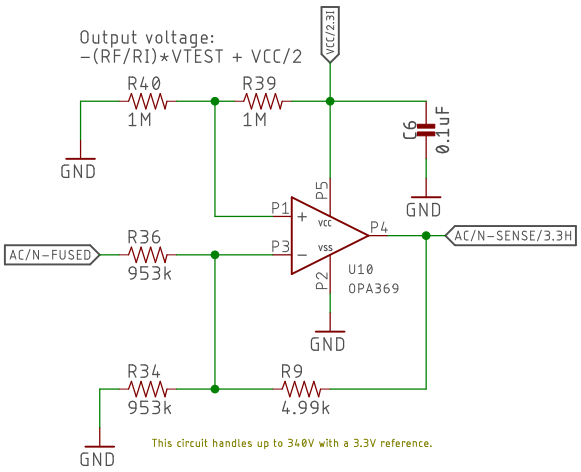
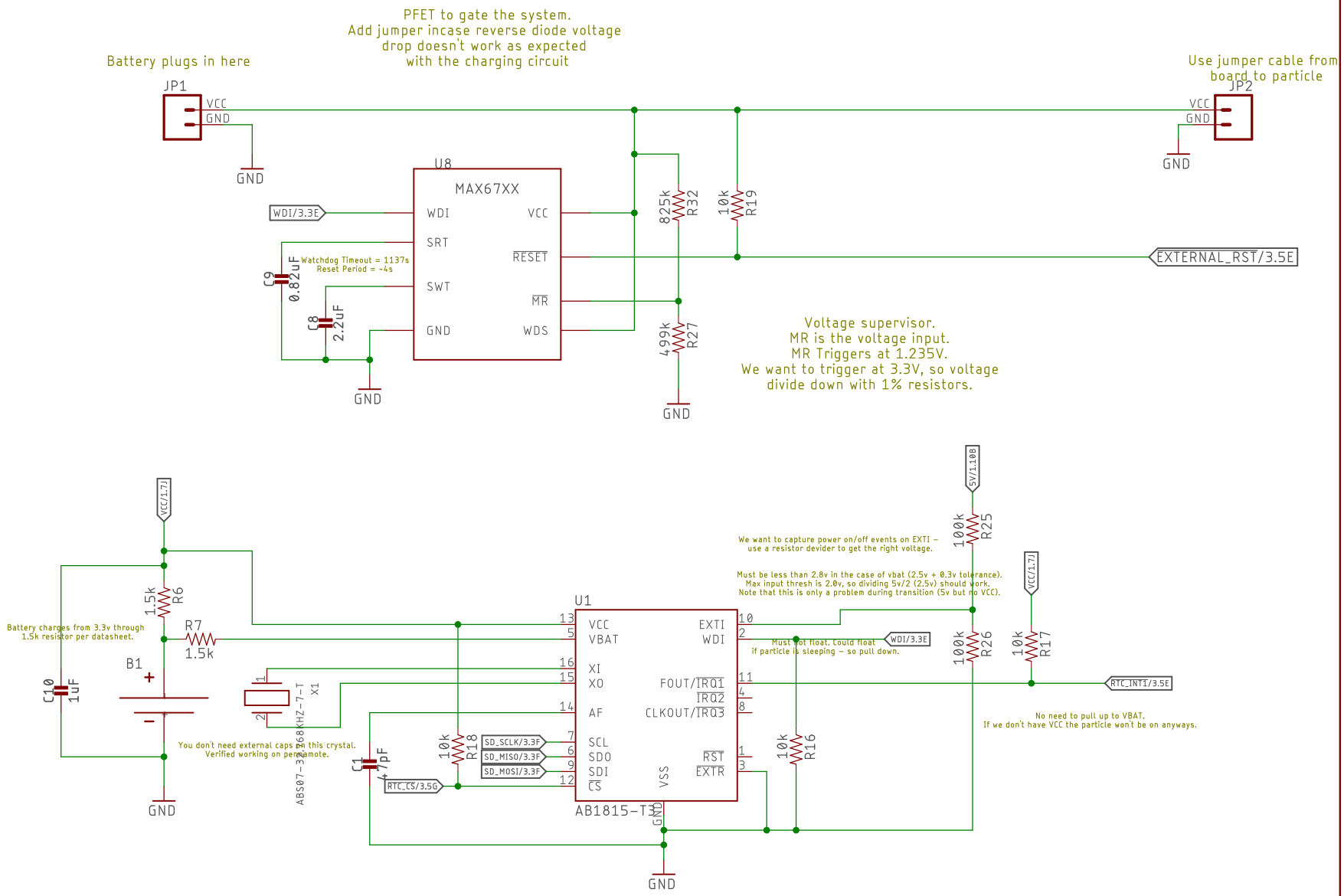
The peak power is 2A * 600uS = ~4.5mJ. We are adding 8mJ of energy buffer to be safe. 8mJ of energy with a 5V to 4V swing is about 2mF







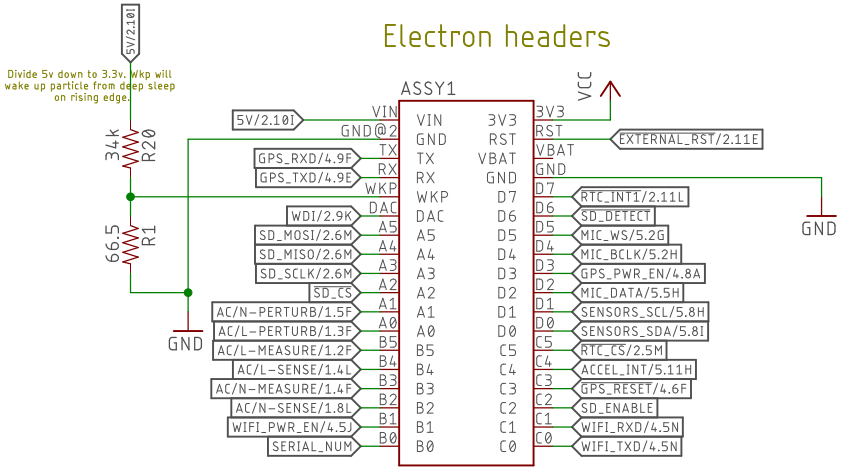
PlugWatch	REV: D
Author: Noah Klugman and Joshua Adkins	
Date: 7/9/18 11:45 PM	Sheet: 1/5

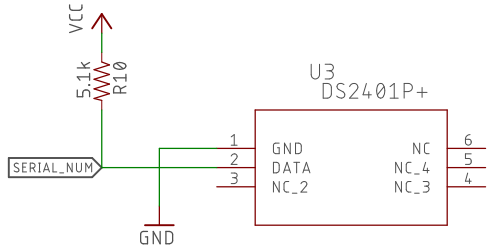


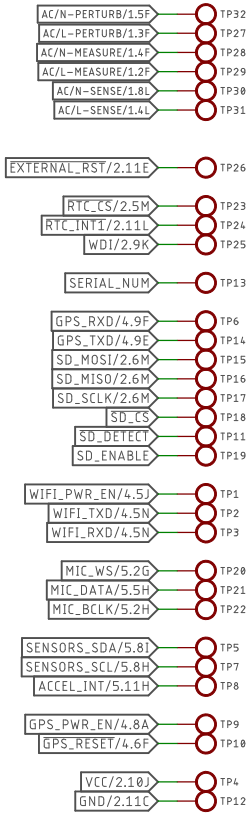
PlugWatch	REV: D
Author: Noah Klugman and Joshua Adkins	
Date: 7/9/18 11:45 PM	Sheet: 2/5

Headers

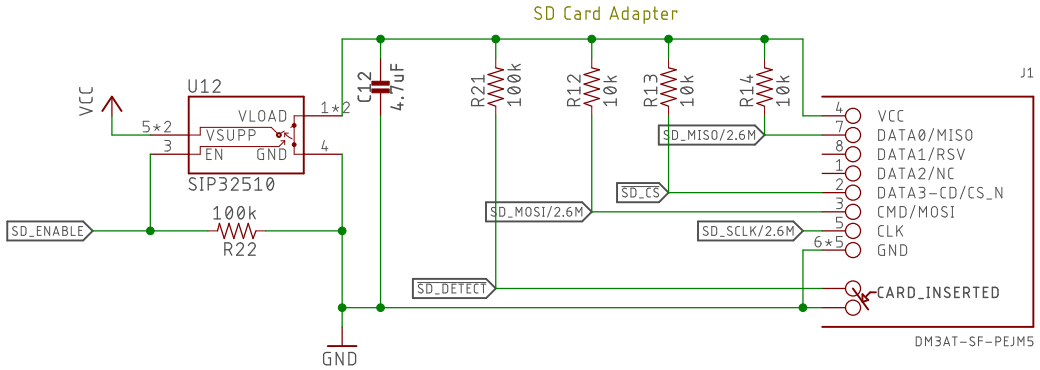
Electron headers







SD Card Adapter

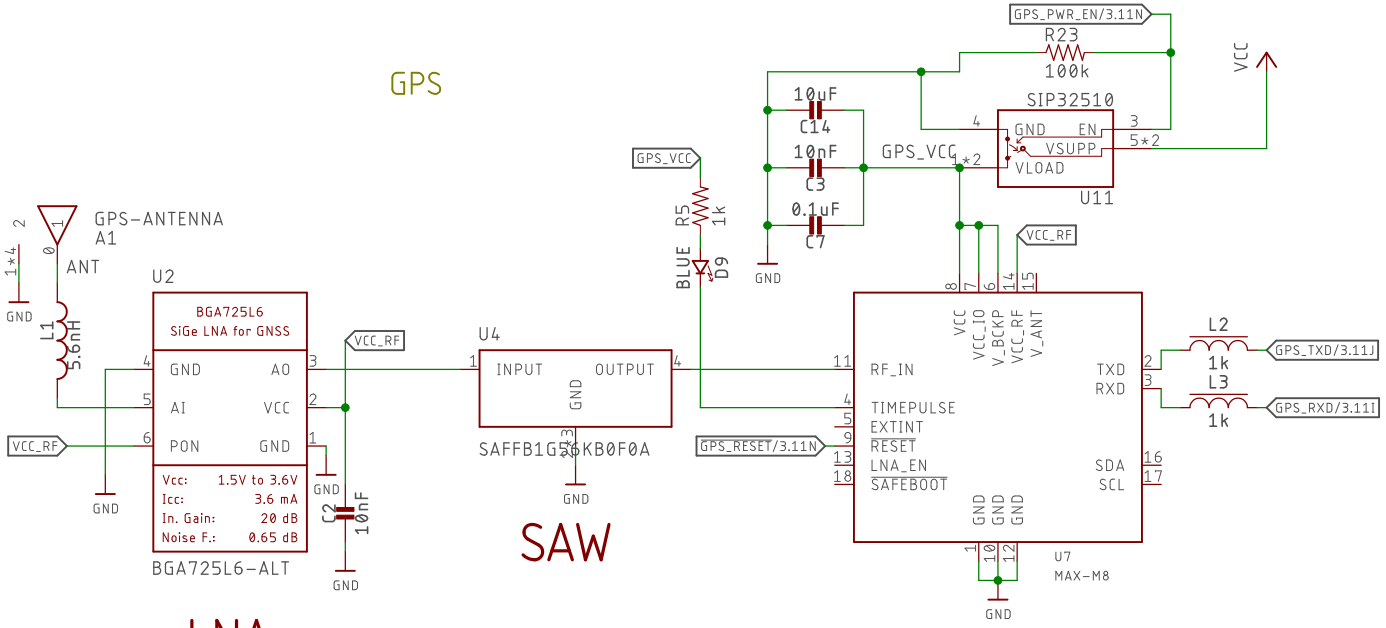


PlugWatch		REV: D
Author: Noah Klugman and Joshua Adkins		
Date: 7/9/18 11:45 PM	Sheet: 3/5	

https://www.u-blox.com/sites/default/files/MAX-8-M8-FW3_HardwareIntegrationManual_%28UBX-15030059%29.pdf

GPS and WiFi Radios

GPS



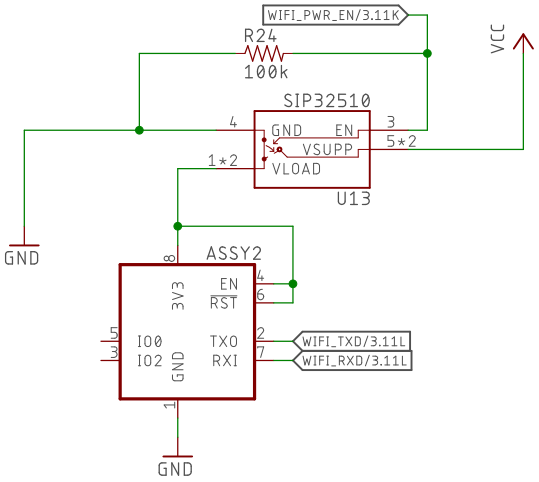
LNA

SAW

GPS

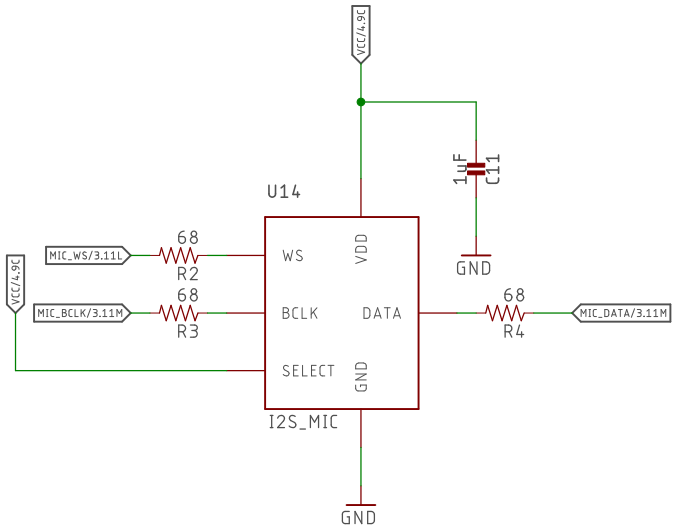
WiFi

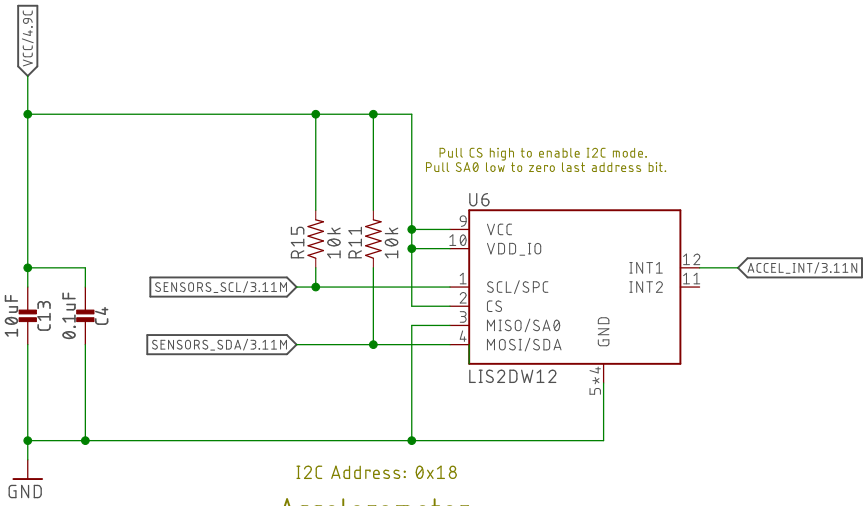
https://cdn.sparkfun.com/datasheets/Wireless/WiFi/ESP8266ModuleV1.pdf



PlugWatch		REV: D
Author: Noah Klugman and Joshua Adkins		
Date: 7/9/18 11:45 PM	Sheet: 4/5	

Sensors

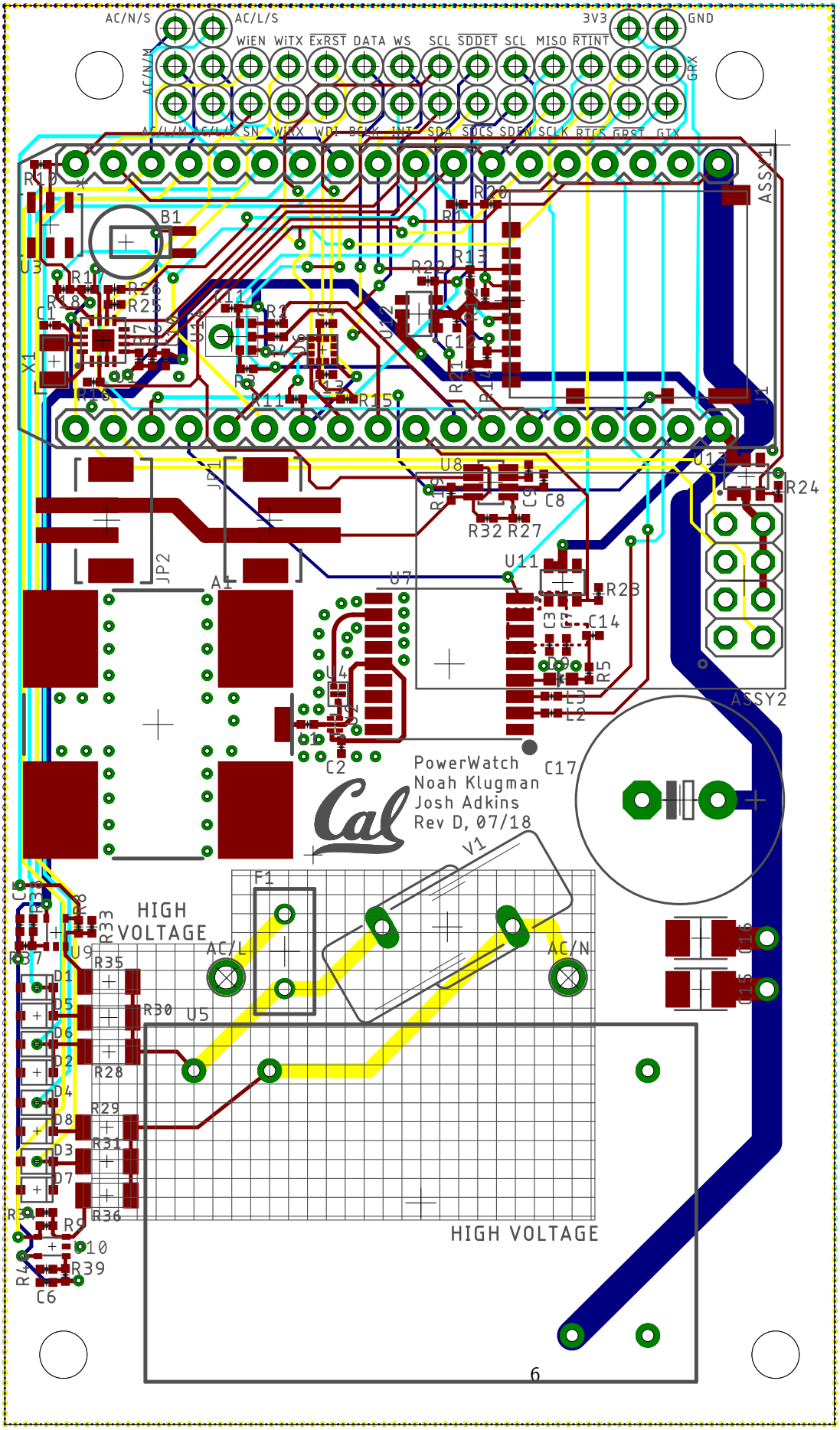




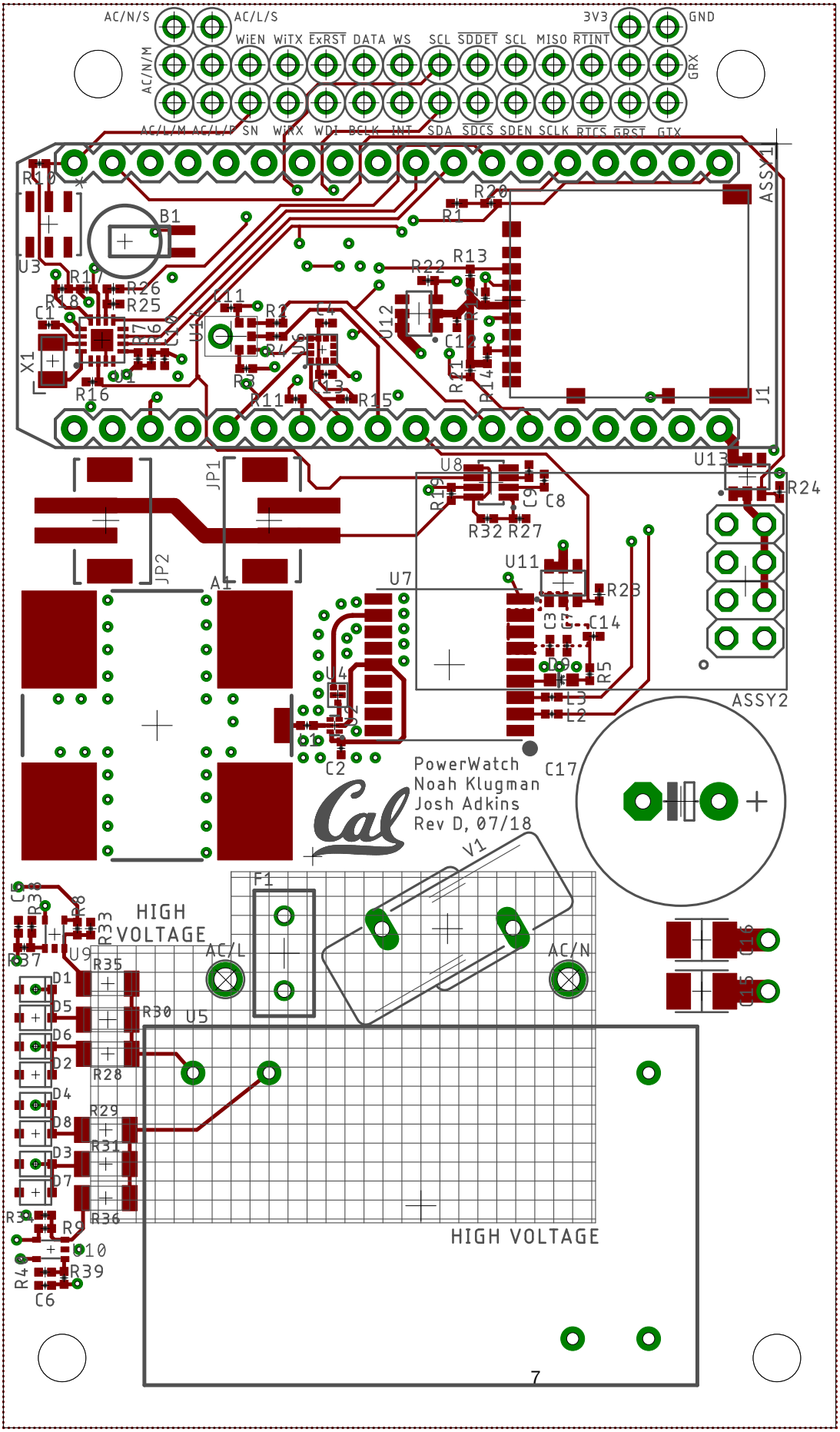
Accelerometer

PlugWatch	REV: D
Author: Noah Klugman and Joshua Adkins	
Date: 7/9/18 11:45 PM	Sheet: 5/5

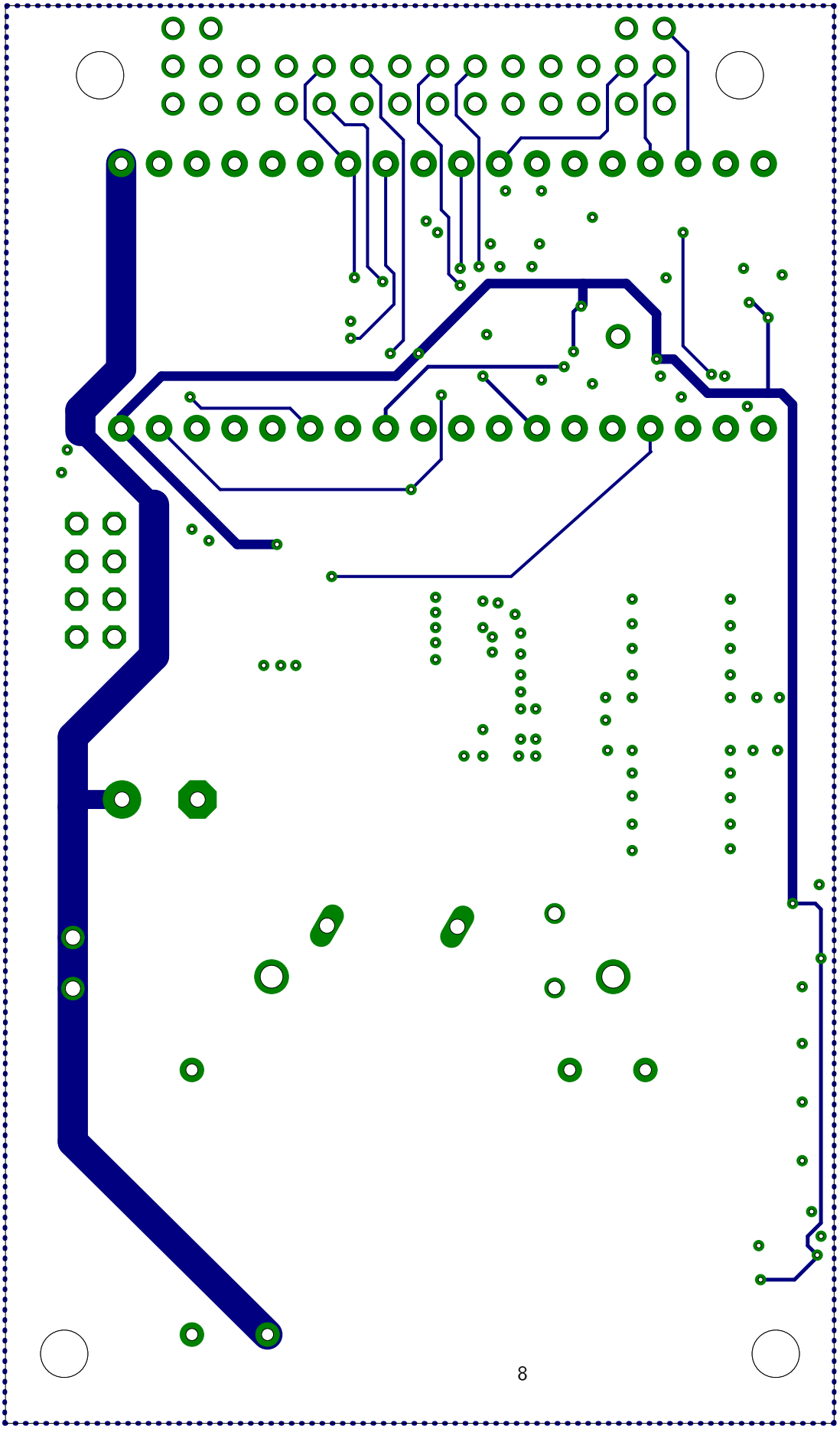
Top and Bottom Layers



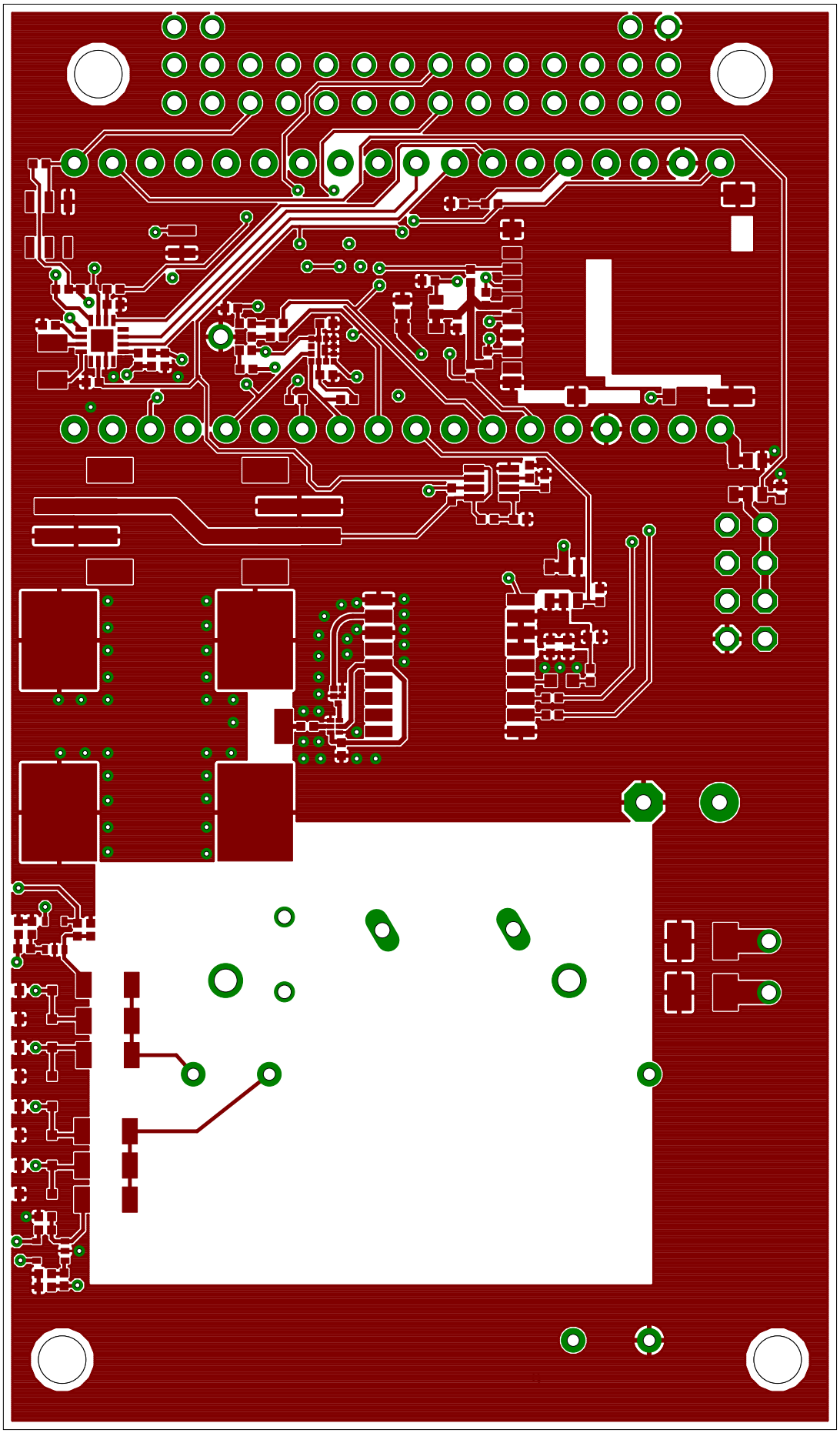
Top Layer


AC/N/S
AC/L/S
3V3
GND
WiEN WiTX ExRST DATA WS SCL SDDET SCL MISO RTINT
AC/N/M
GRX
AC/L/M AC/L/P SN WiRX WDI BCLK INT SDA SDCS SDEN SCLK RTCS GRST GTX
ASSY1
J1
ASSY2
PowerWatch
Noah Klugman
Josh Adkins
Rev D, 07/18
HIGH VOLTAGE
AC/L
AC/N
HIGH VOLTAGE
7

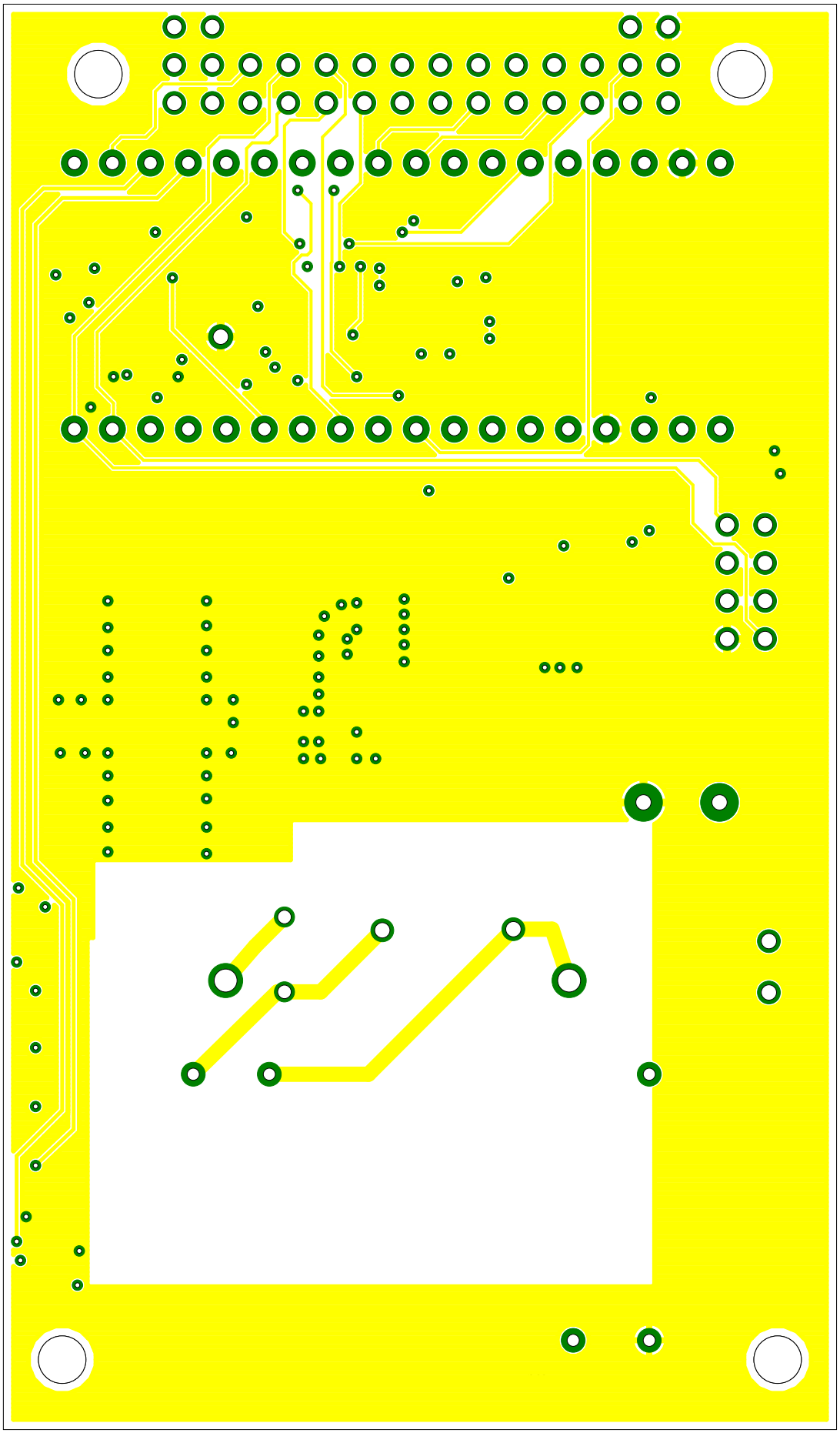
Bottom Layer



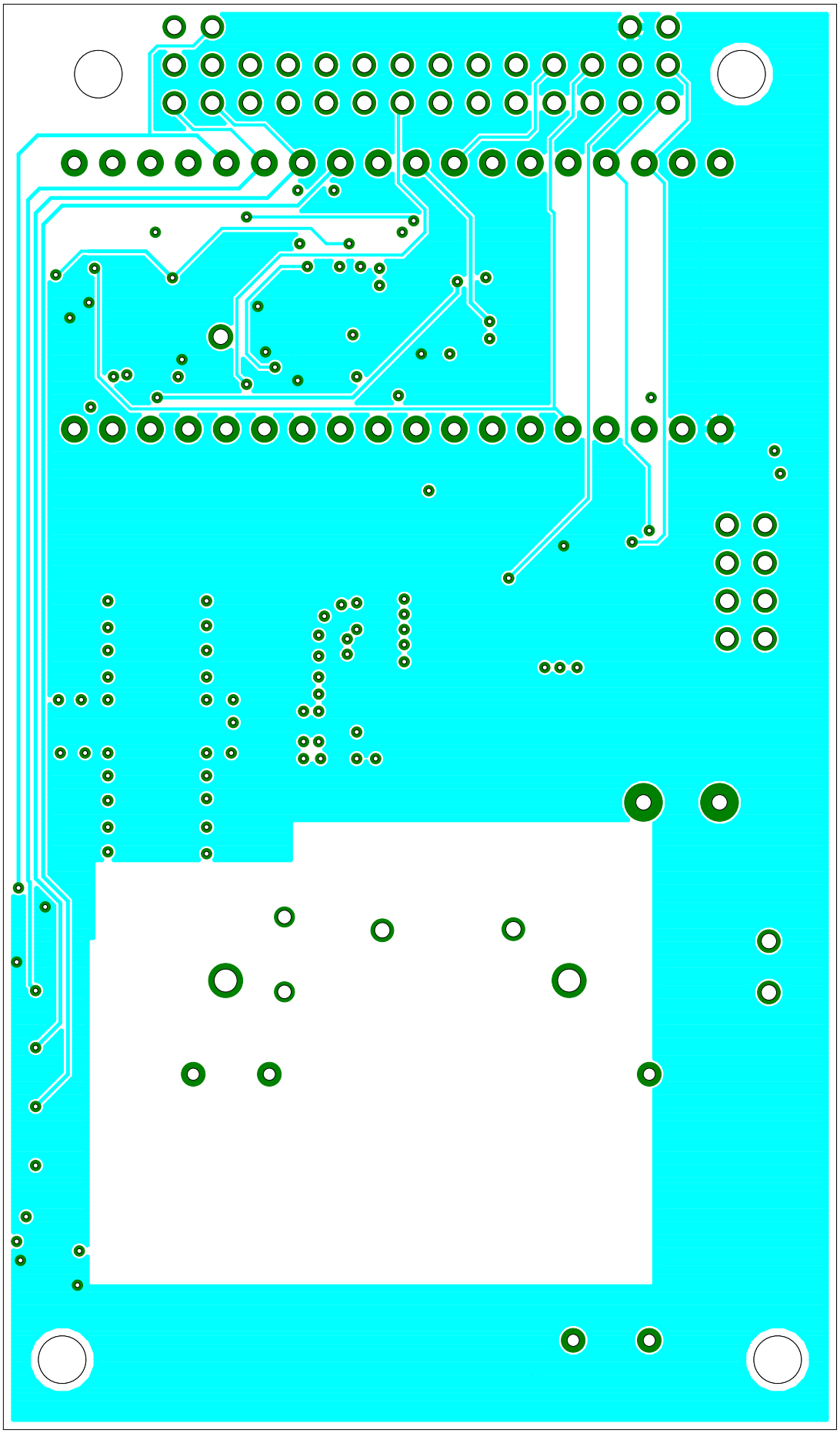
Top Copper Layer



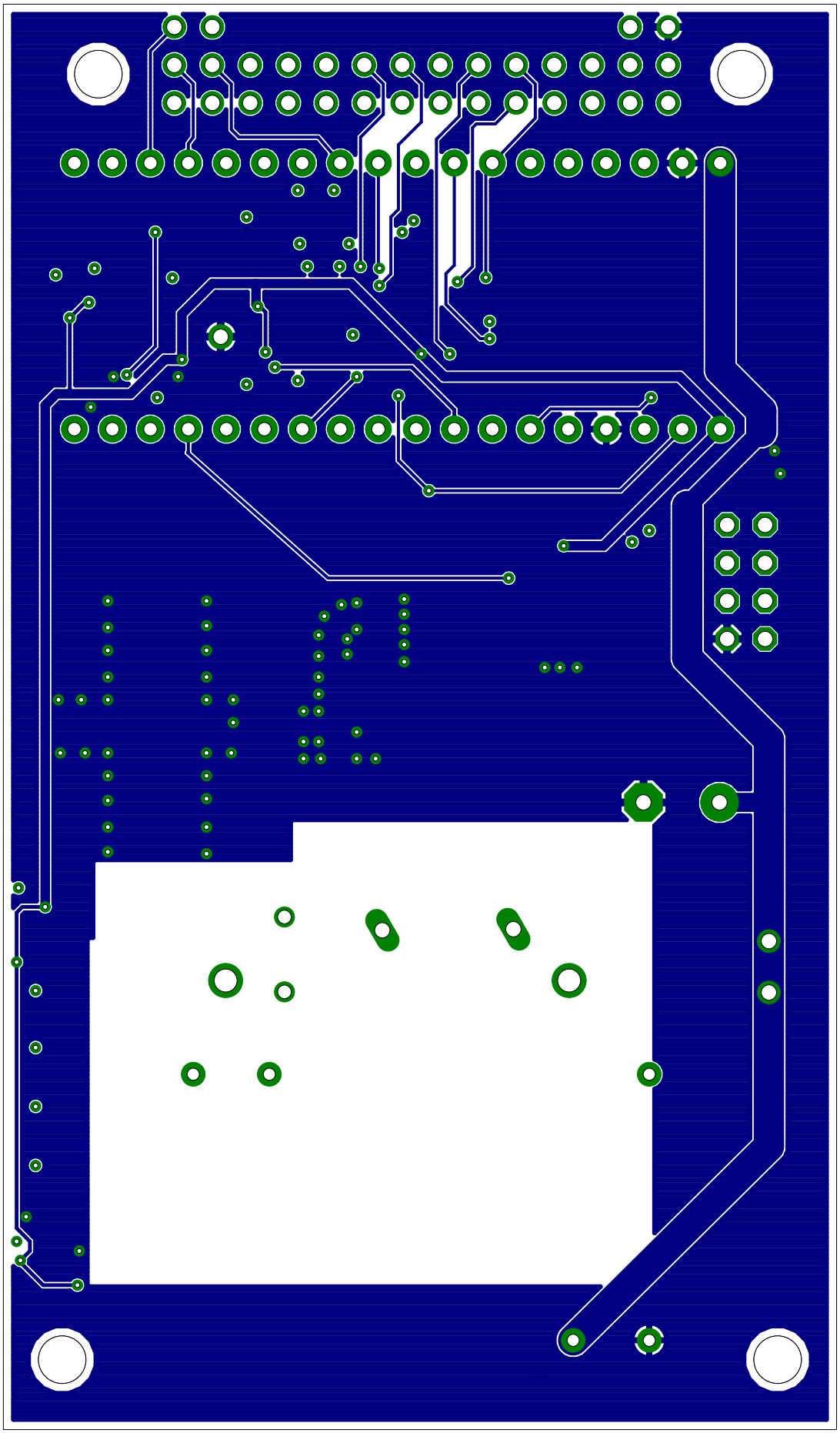
Layer 2 Copper



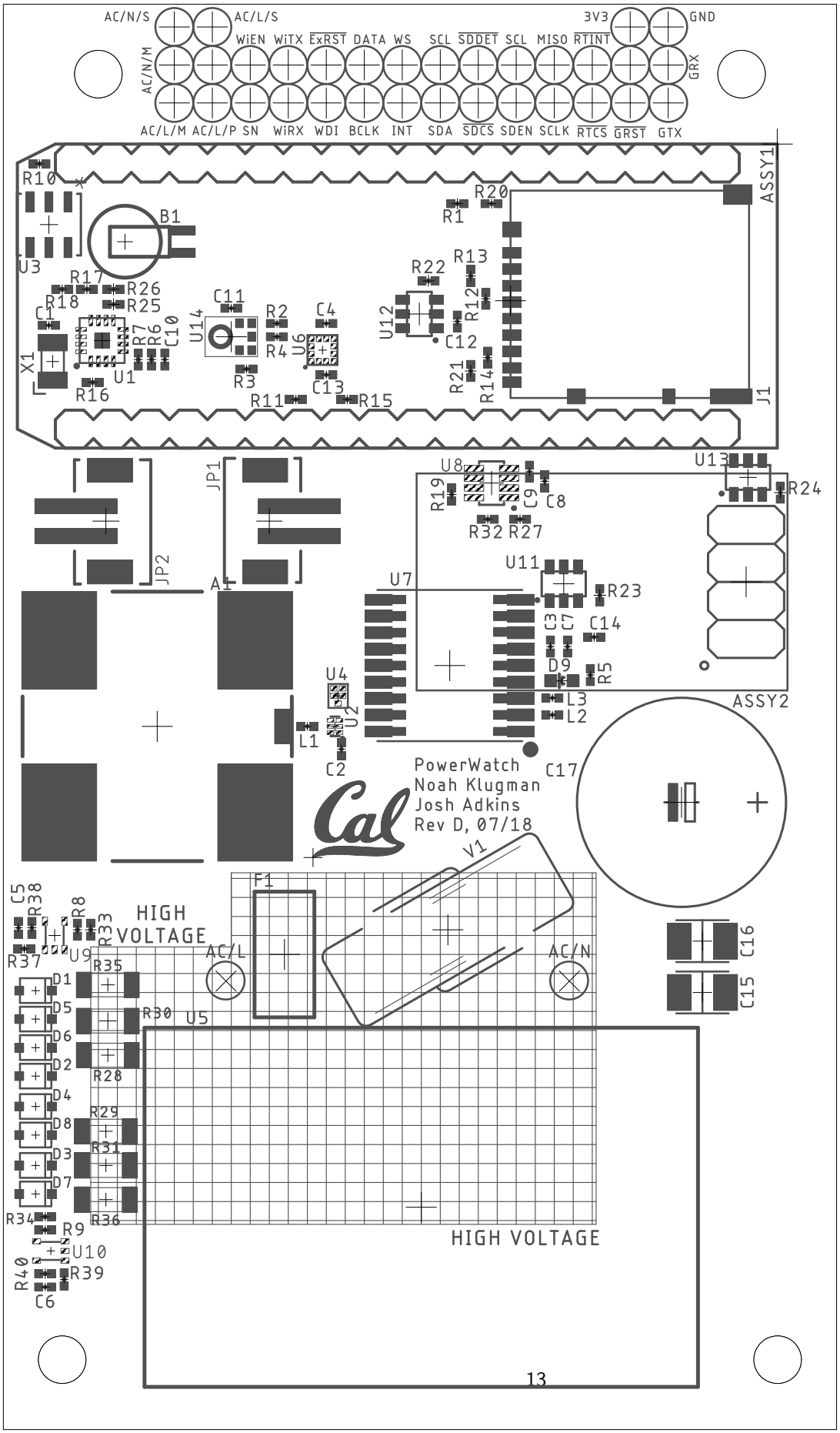
Layer 3 Copper



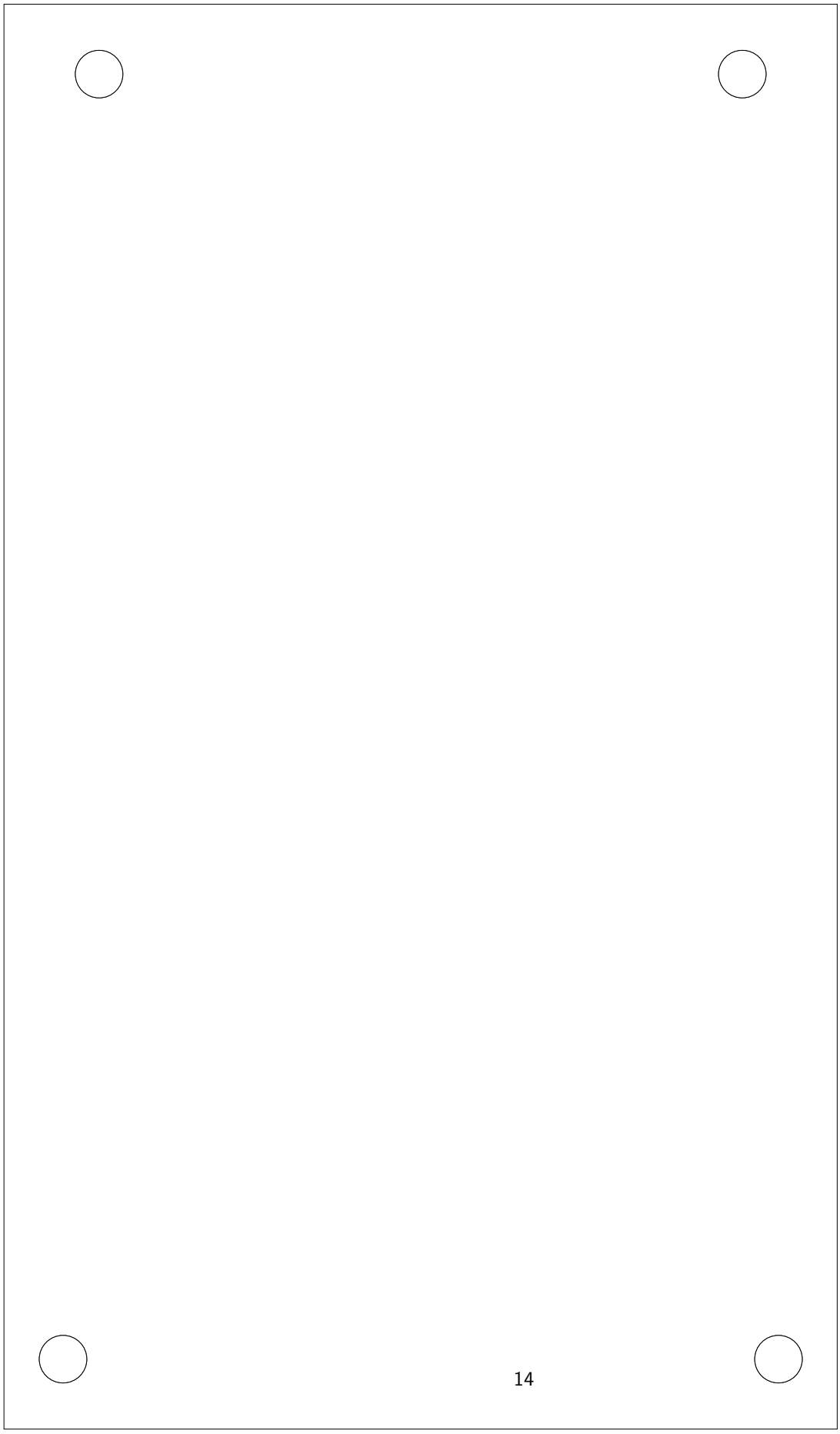
Bottom Copper Layer



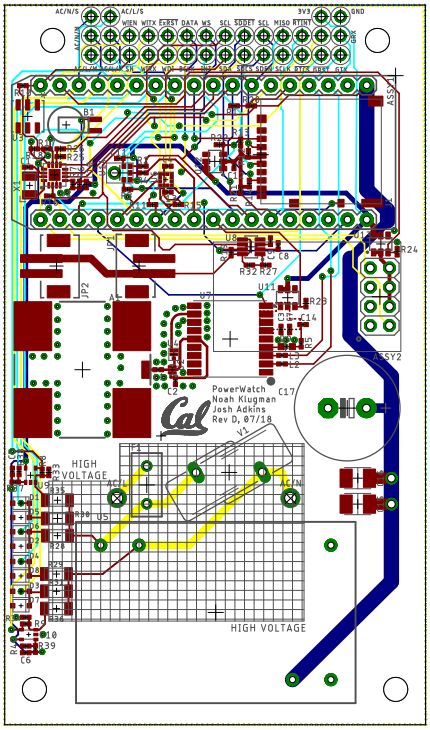
Top Paste Layer with Silkscreen



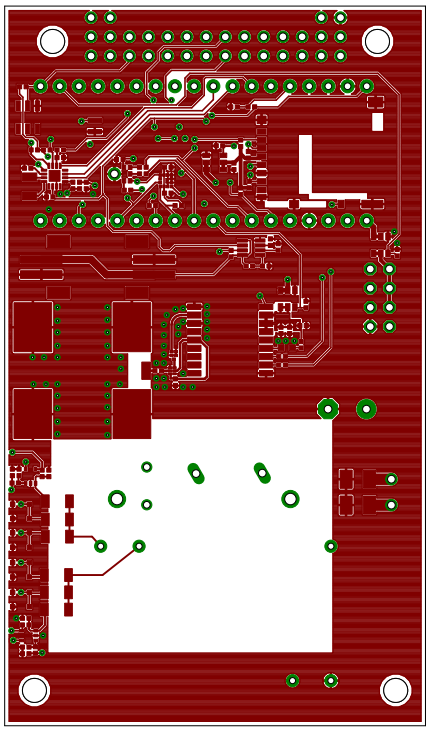
Bottom Paste Layer with Silkscreen



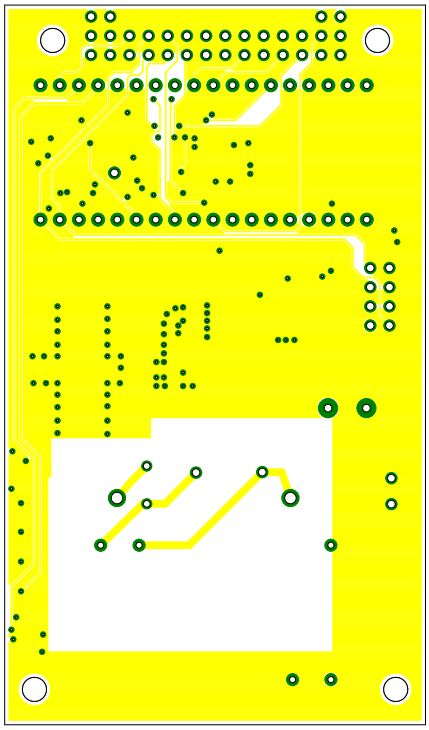
Top and Bottom Layers 1:1 Scale



Top Layer 1:1 Scale



Layer 2 Copper 1:1 Scale



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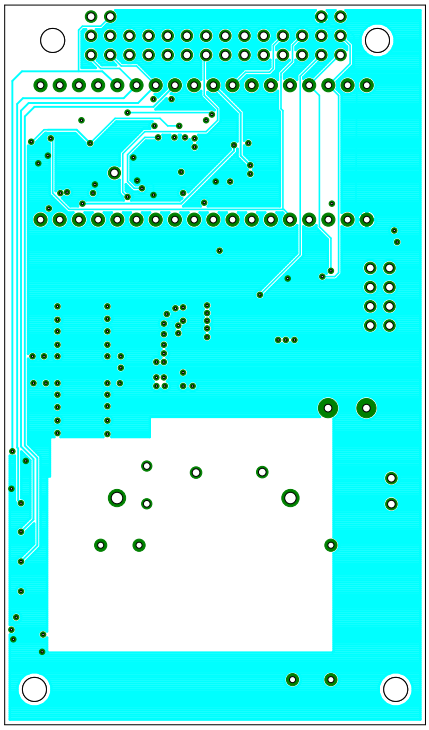
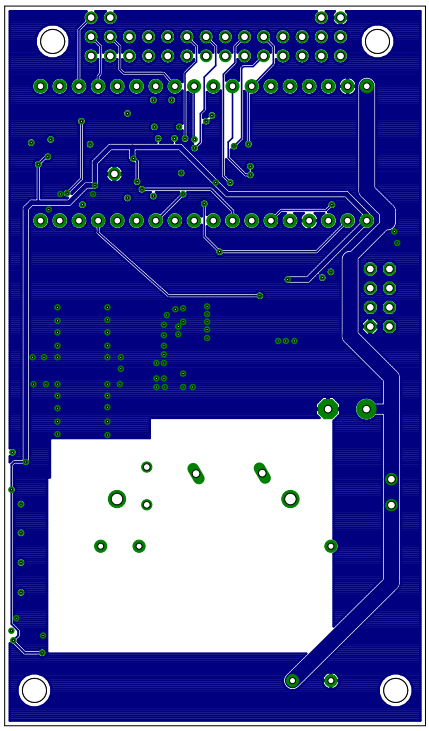
Bottom Copper Layer 1:1 Scale