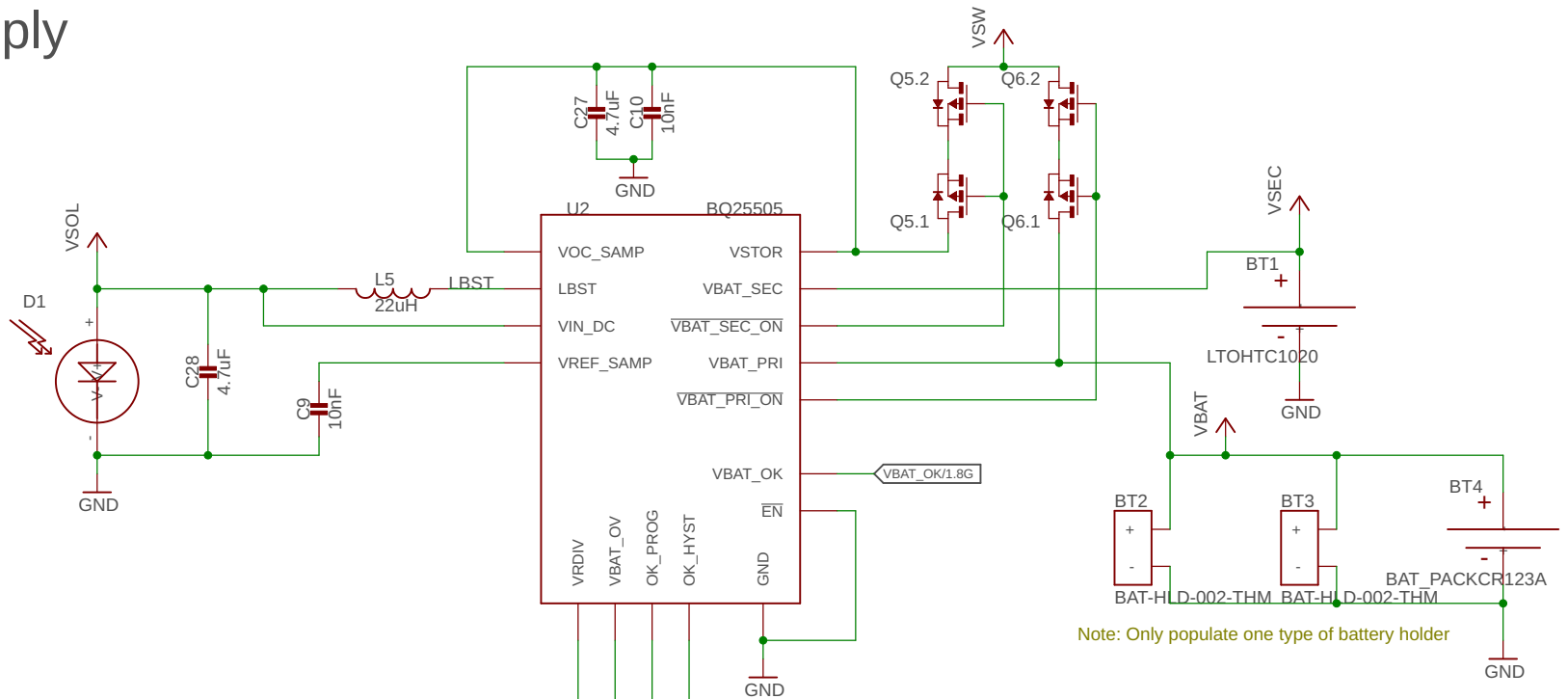


Only populate one MCU
Either populate the NRF52840
(Page 1) or NRF51822 (Page 2)



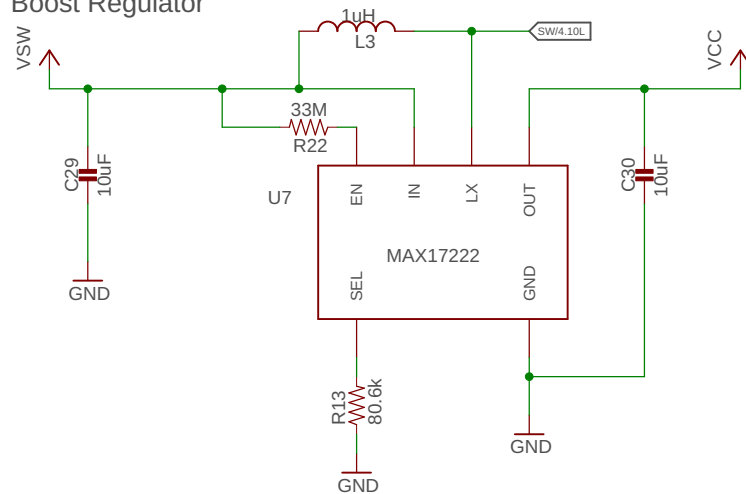
PERMAMOTE		REV: B
Author: NEAL JACKSON		
Date: 6/15/18 1:00 PM	Sheet: 1/4	

Power Supply



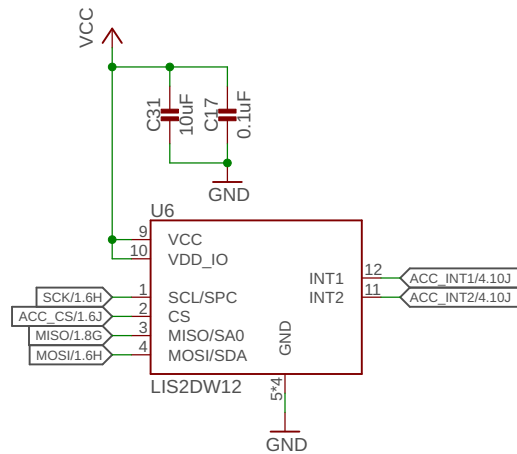
Note: Only populate one type of battery holder

Boost Regulator

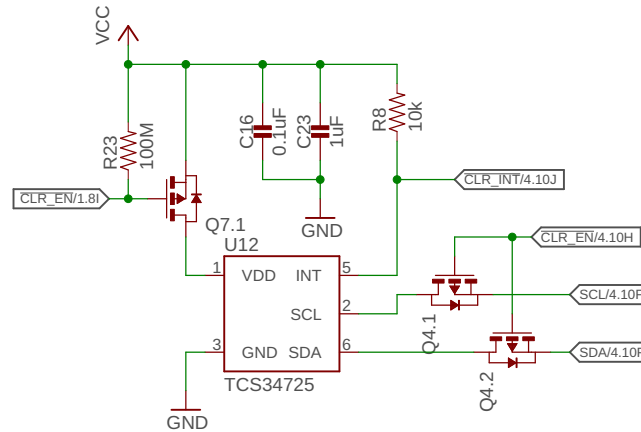


Sensors

Accelerometer

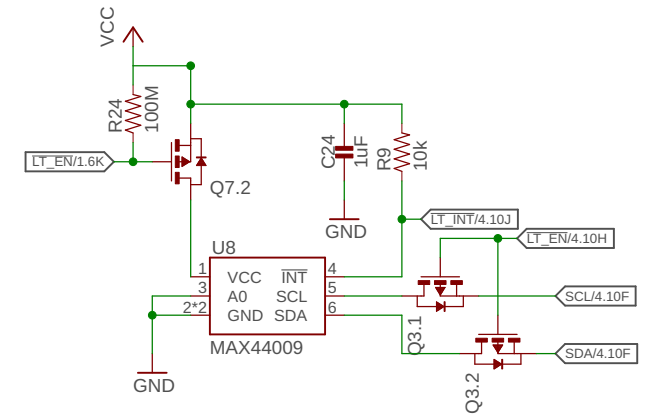


Light Color



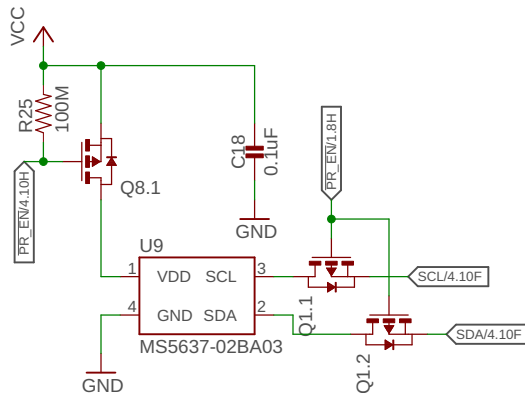
Light

Ambient Light

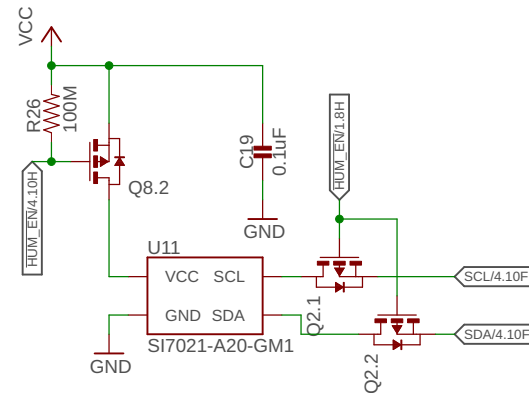


Temperature

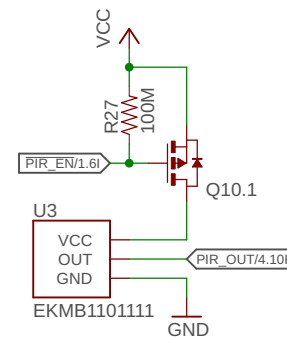
Pressure



Humidity



Occupancy



PERMAMOTE

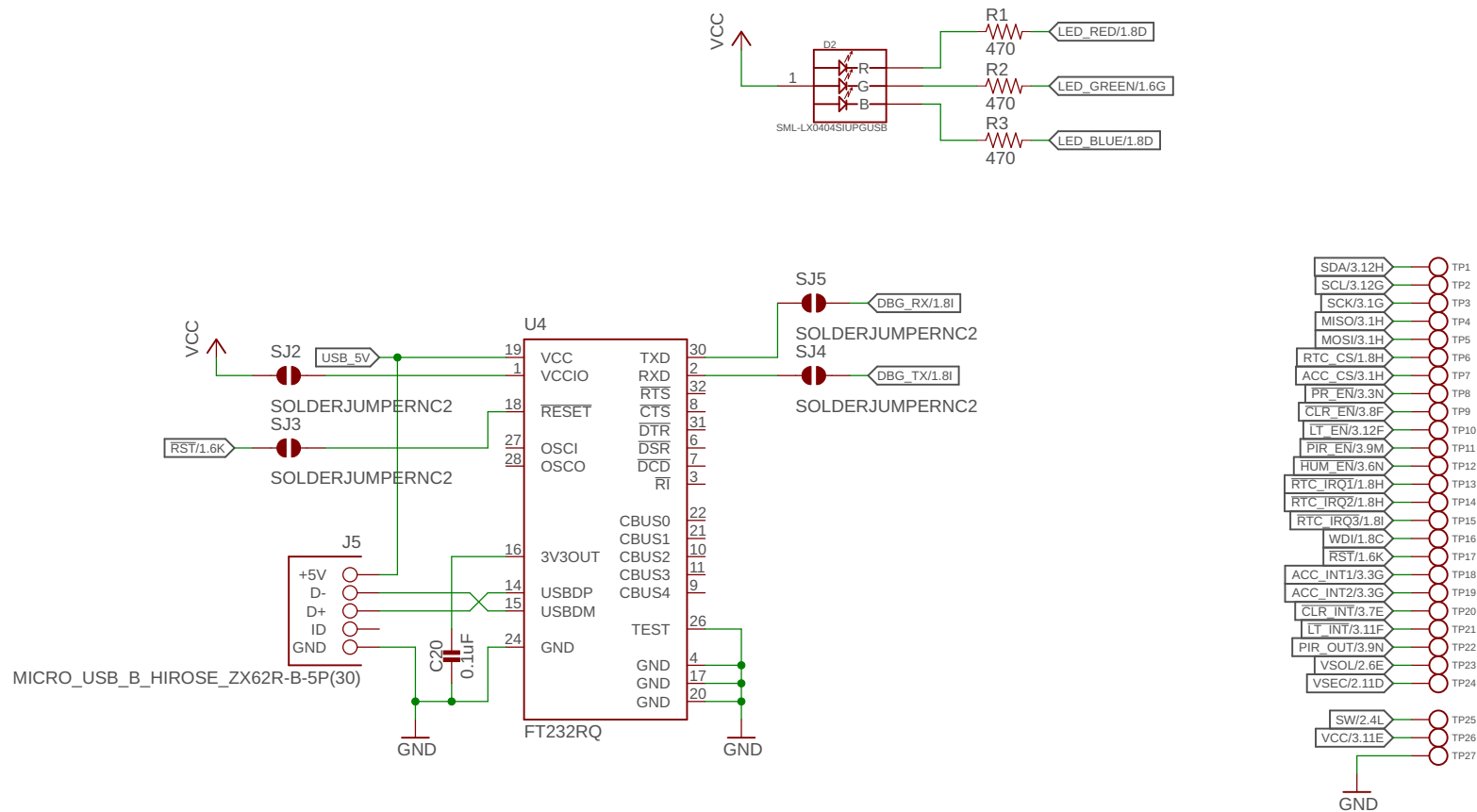
Author: NEAL JACKSON

Date: 6/15/18 1:00 PM

REV:
B

Sheet: 3/4

Debugging



PERMAMOTE

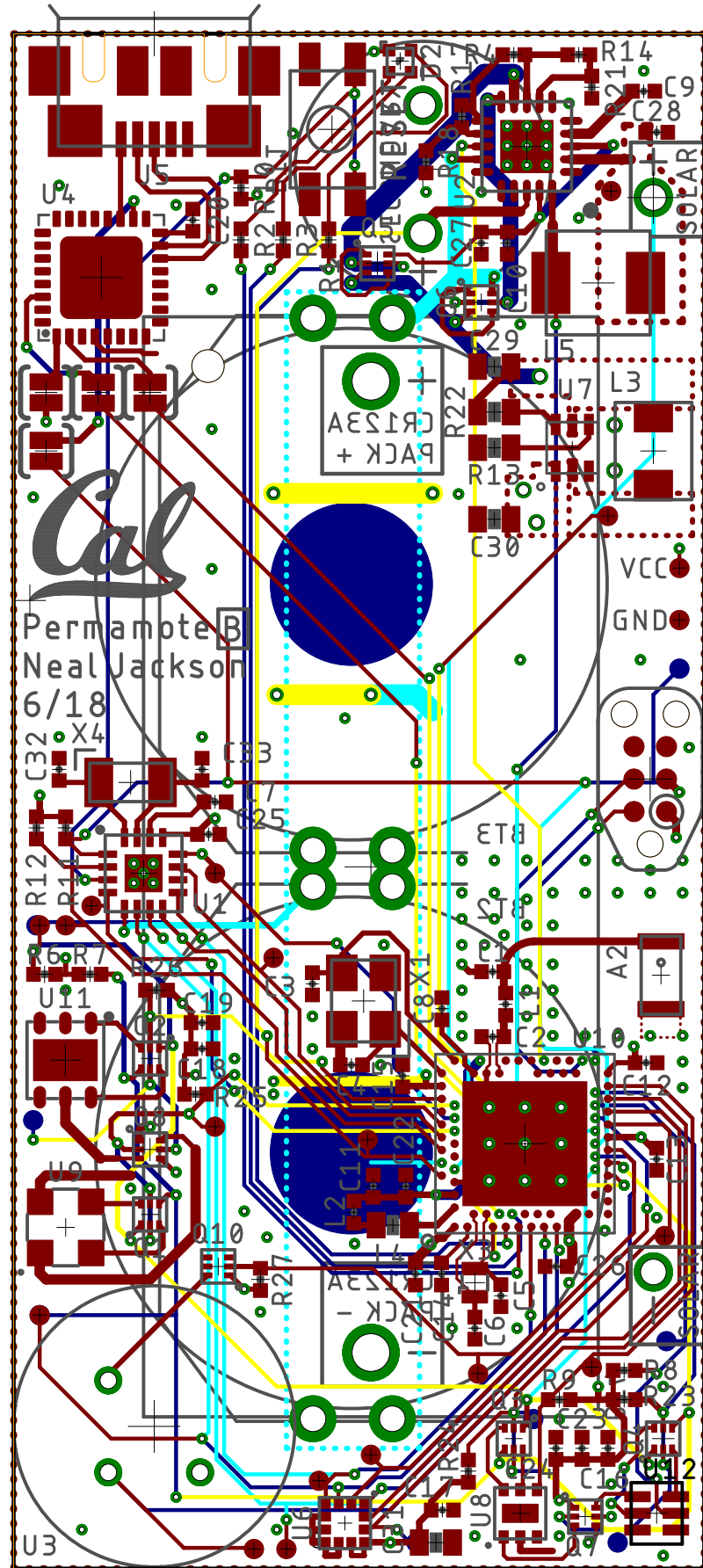
Author: NEAL JACKSON

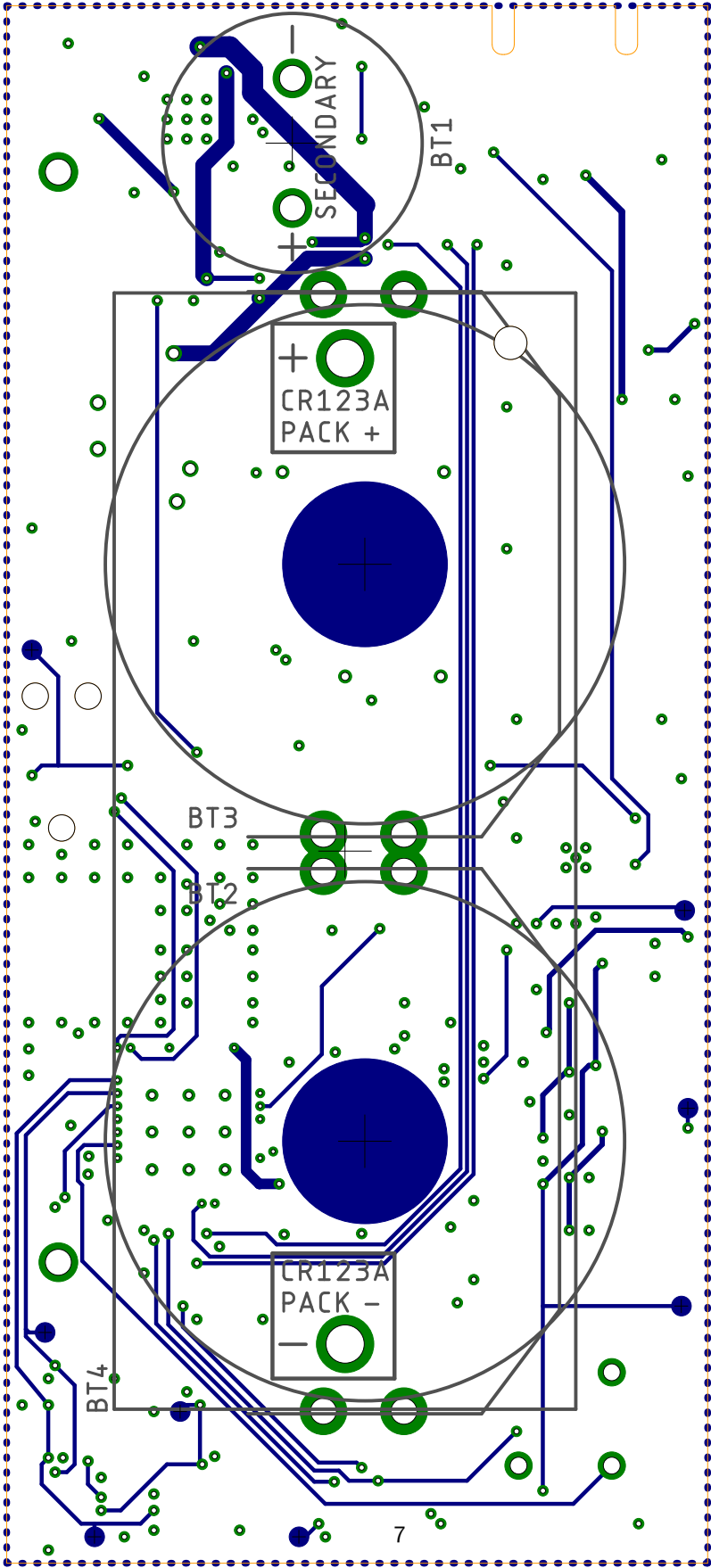
Date: 6/15/18 1:00 PM

REV:
B

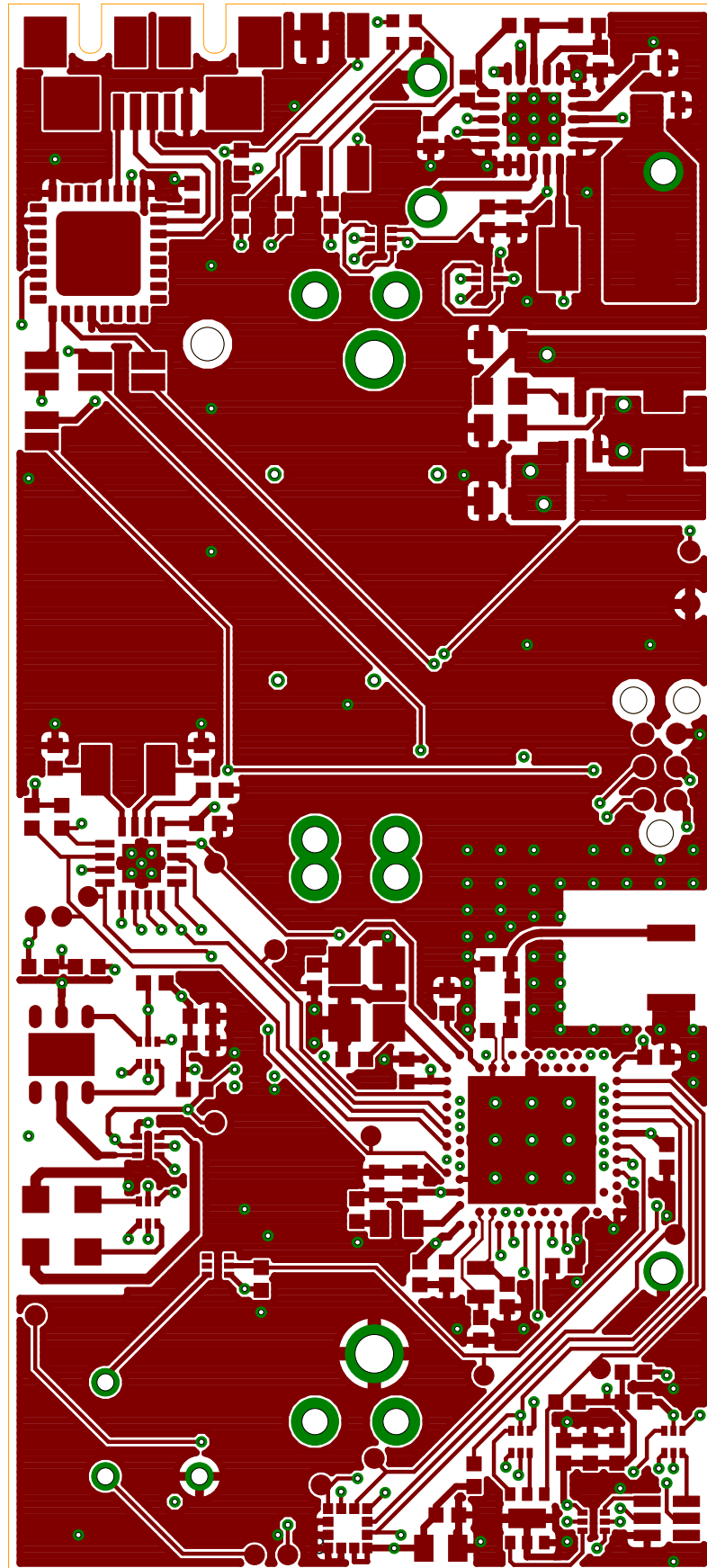
Sheet: 4/4

Top and Bottom Layers

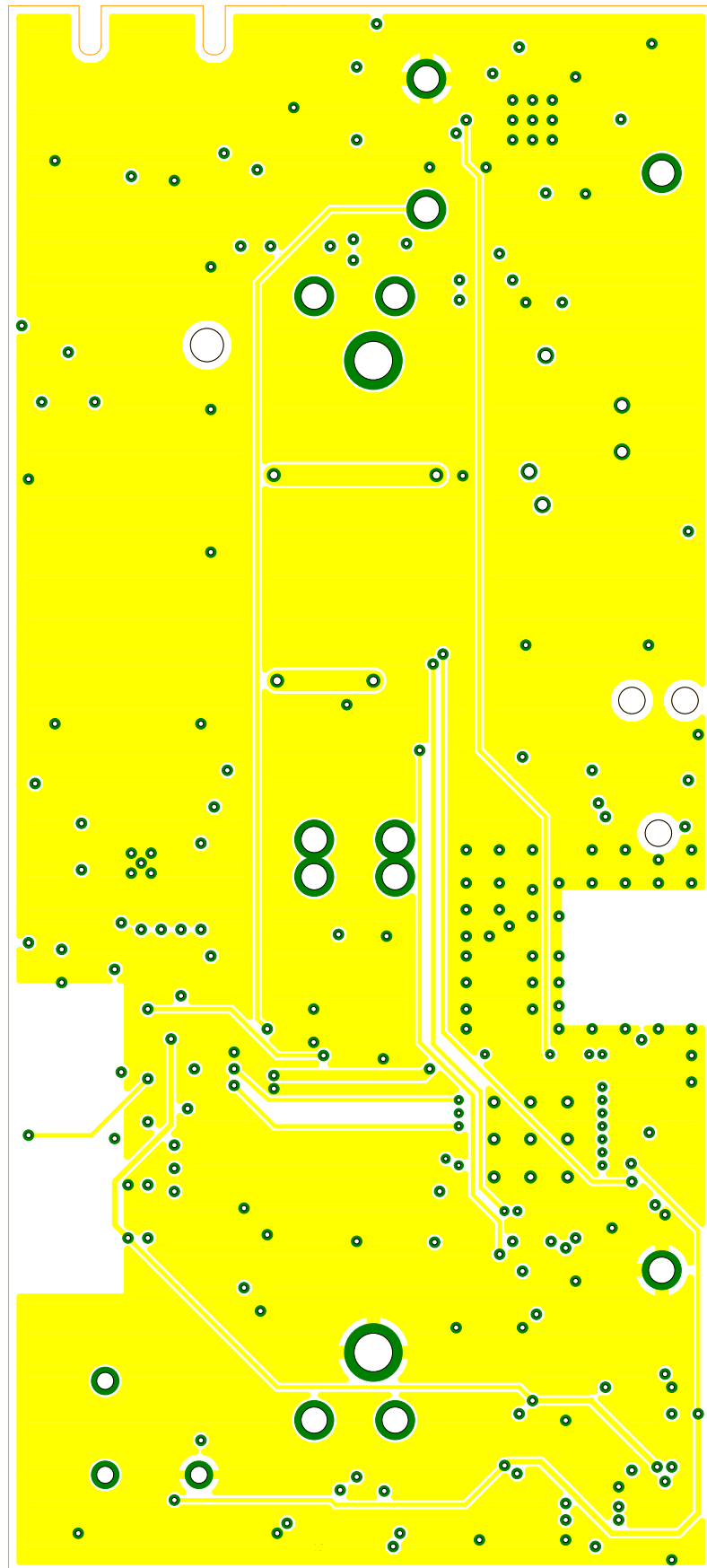




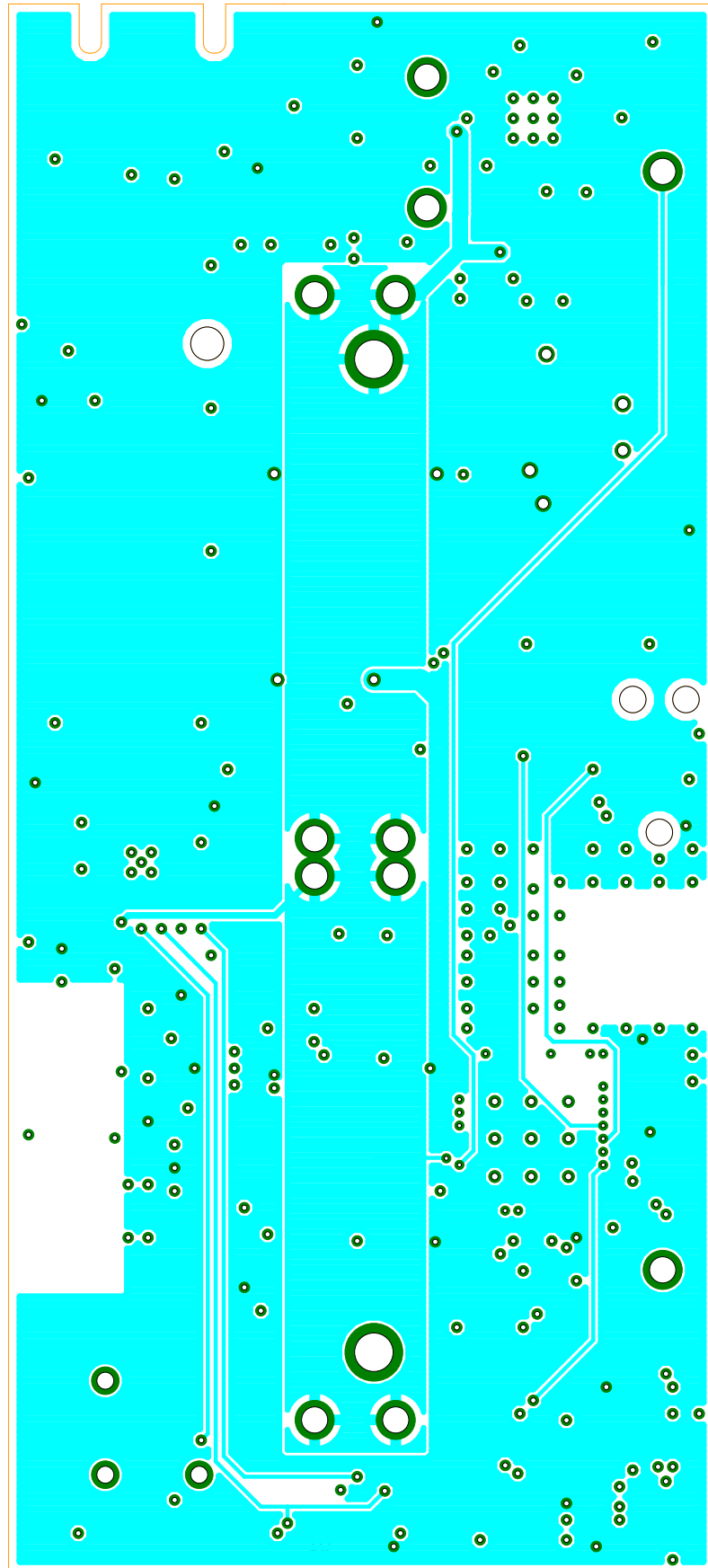
Top Copper Layer



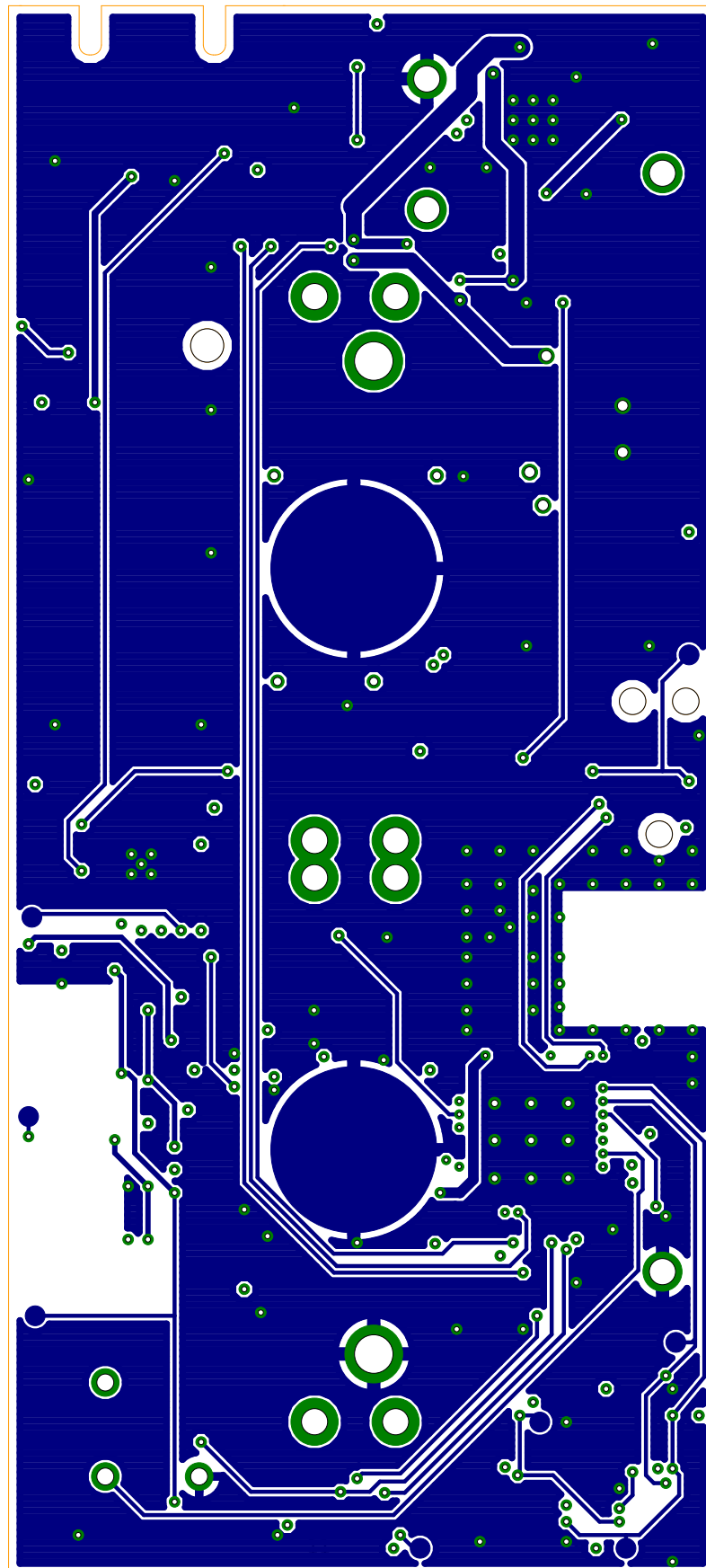
Layer 2 Copper

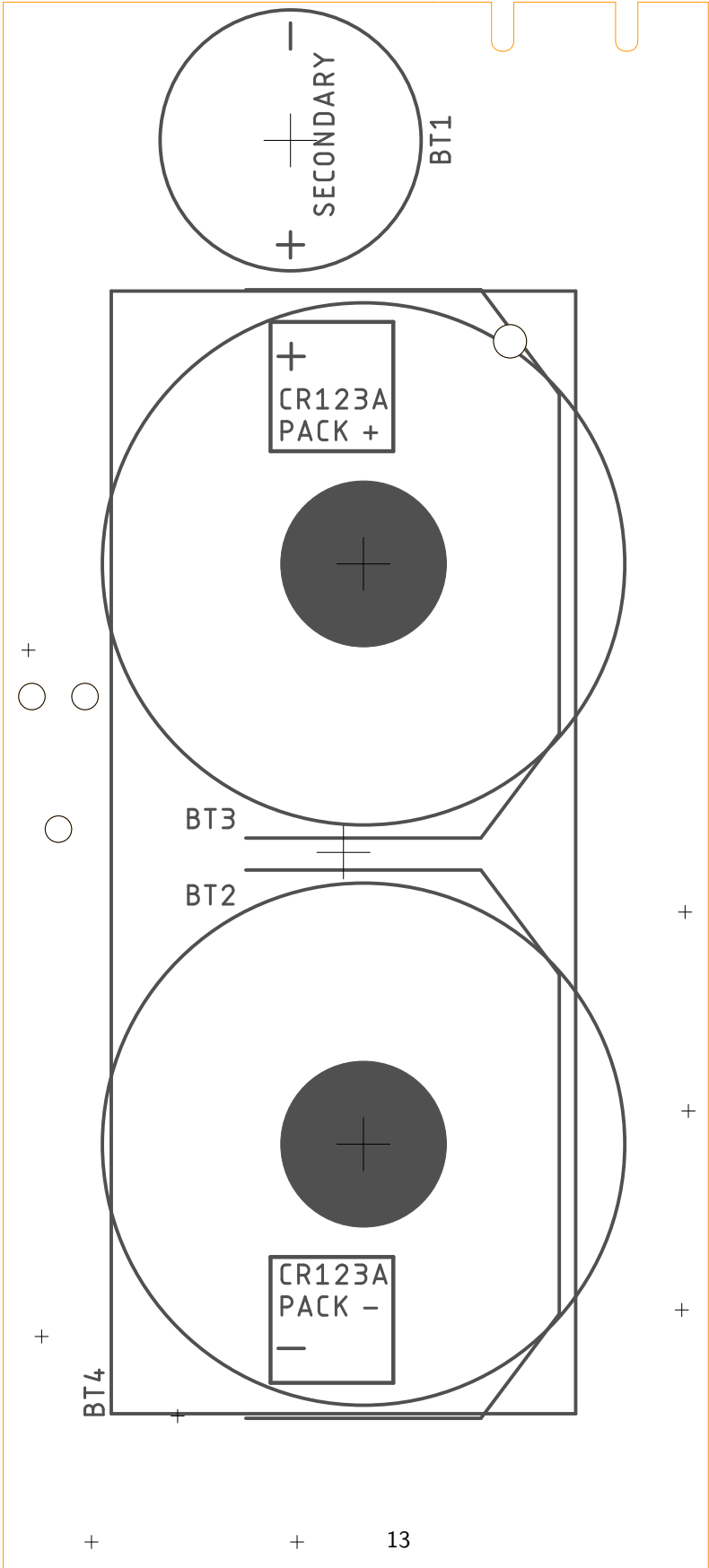


Layer 3 Copper

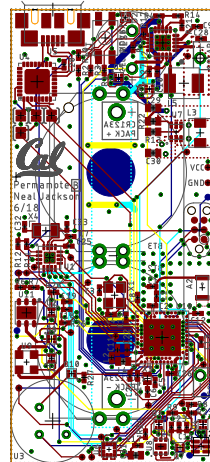


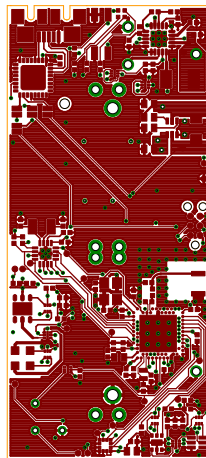
Bottom Copper Layer

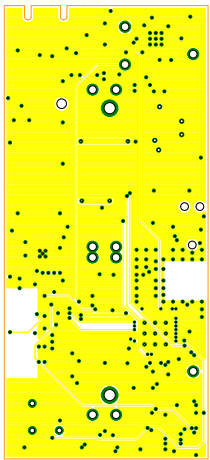


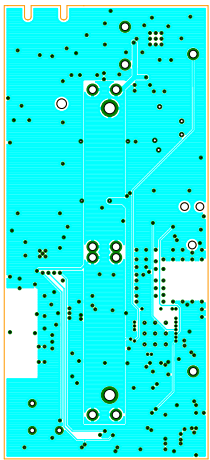


Top and Bottom Layers 1:1 Scale

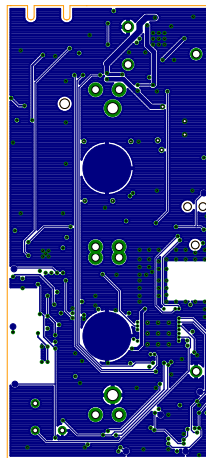








Bottom Copper Layer 1:1 Scale



permamote_bom

Qty	Value	Device
	9 0.1uF	CAPACITOR0402_CAP
	1 0.5pF	CAPACITOR0402_CAP
	1 0.8pF	CAPACITOR0402_CAP
	5 100M	RESISTOR0402_RES
	1 100pF	CAPACITOR0402_CAP
	5 10k	RESISTOR0402_RES
	2 10nF	CAPACITOR0402_CAP
	3 10uF	CAPACITOR0603_CAP
	1 10uH	INDUCTOR0603
	4 12pF	CAPACITOR0402_CAP
	1 15nH	INDUCTOR0402
	5 1uF	CAPACITOR0402_CAP
	1 1uH	INDUCTOR1HL
	1 22uH	INDUCTOR74437324220
	1 3.3nH	INDUCTOR0402
	1 3.9M	RESISTOR0402_RES
	1 32.768kHz	ABS05-32.768KHZ-9-T
	1 32MHz	7V-32.000MAHV-T
	1 33M	RESISTOR0603_RES
	3 4.7uF	CAPACITOR0402_CAP
	3	470 RESISTOR0402_RES
	1 47nF	CAPACITOR0402_CAP
	1 47pF	CAPACITOR0402_CAP
	1 6.04k	RESISTOR0402_RES
	1 6.2M	RESISTOR0402_RES
	1 6.8M	RESISTOR0402_RES
	1 80.6k	RESISTOR0603_RES
	1 9.1M	RESISTOR0402_RES
	1 AB1815-T3	AB1815-T3
	1 ABS07-32.768KHZ-7-T	ABS07-32.768KHZ-7-T
	1 ANT3216A063R2400A	ANT3216A063R2400A
	2 BAT-HLD-002-THM	BAT-HLD-002-THM
	1 BAT_PACKCR123A	BAT_PACKCR123A
	1 BQ25505	BQ25505
	2 DNP	CAPACITOR0402_CAP
	2 DNP	RESISTOR0402_RES
	1 EKMB1101111	EKMB1101111
	1 EVQP2	EVQP2
	1 FT232RQ	FT232RQ
	1 LIS2DW12	LIS2DW12
	1 LTOHTC1020	LTOHTC1020
	1 MAX17222	MAX17222
	1 MAX44009	MAX44009
	1 MICRO_USB_B_HIROSE_ZX62R-B-5P(30)	MICRO_USB_B_HIROSE_ZX62R-B-5P(30)
	1 MS5637-02BA03	MS5637-02BA03
	1 NRF52840	NRF52840
	9 PMDXB950UPEL	PMDXB950UPEL
	1 SI7021-A20-GM1	SI7021-A20-GM1
	1 SML-LX0404SIUPGUSB	SML-LX0404SIUPGUSB

permamote_bom

1 SOLARCELLHOLES
1 TCS34725

SOLARCELLHOLES
TCS34725

permamote_bom

Package	Parts
0402_CAP	C12, C13, C14, C15, C16, C17, C18, C19, C20
0402_CAP	C1
0402_CAP	C2
0402_RES	R23, R24, R25, R26, R27
0402_CAP	C8
0402_RES	R8, R9, R10, R11, R12
0402_CAP	C9, C10
0603_CAP	C29, C30, C31
0603_CAP	L4
0402_CAP	C3, C4, C5, C6
0402_CAP	L2
0402_CAP	C21, C22, C23, C24, C25
IHL-1212BZ-11	L3
	74437324220 L5
0402_CAP	L1
0402_RES	R14
ABS05	X3
TXC-7V	X1
0603-RES	R22
0402_CAP	C26, C27, C28
0402_RES	R1, R2, R3
0402_CAP	C11
0402_CAP	C7
0402_RES	R4
0402_RES	R17
0402_RES	R18
0603-RES	R13
0402_RES	R21
QFN-16-3MM	U1
2-SMD	X4
ANT3216A063R2400A	A2
BAT-HLD-002-THM	BT2, BT3
BH123A	BT4
S-PVQFN-N20-RGR	U2
0402_CAP	C32, C33
0402_RES	R6, R7
AMN2	U3
EVQP2	S1
QFN32	U4
LGA-12	U6
	1020 BT1
UDFN-6-MAXIM	U7
UDFN-6-EXPOSED	U8
MICRO_USB_B_HIROSE_ZX62R-B-5P(30)	J5
4-SMD	U9
AQFN73	U10
XDFN-6	Q1, Q2, Q3, Q4, Q5, Q6, Q7, Q8, Q10
DFN-6/3MM	U11
1MM_SQ_4PAD	D2

permamote_bom

SOLAR_HOLES
FN-6

D1
U12

permamote_bom

Description

SMD Capacitor
SMD Capacitor
SMD Capacitor
Resistor
SMD Capacitor
Resistor
SMD Capacitor
SMD Capacitor
A very specific inductor
SMD Capacitor
A very specific inductor
SMD Capacitor
A very specific inductor
A very specific inductor
A very specific inductor
Resistor
32.768kHz Crystal
TXC CRYSTAL SMD
Resistor
SMD Capacitor
Resistor
SMD Capacitor
SMD Capacitor
Resistor
Resistor
Resistor
Resistor
Resistor
Ultra-low current RTC. 55nA quiescent @ 3V. 1.5-3.6V input.
32.768kHz Crystal
Yageo 2.4GHz
RETAINER BATT CR2016 PC PINS
collection of battery footprints
EH front end for switching between primary and secondary cells
SMD Capacitor
Resistor
Passive infrared human detection sensor with built-in amp.
SWITCH TACTILE SPST-NO 0.02A 15V
Source: http://www.ftdichip.com/Documents/DataSheets/DS_FT232R_v104.pdf
ultra low power 3 axis accelerometer

Very high efficiency, very low power boost converter suitable for EH applications
low power ambient light sensor
USB Micro B Connector
low power pressure sensor
ultra-low power 2.4 GHz wireless system on chip (SoC) integrating a multiprotocol 2.4 GHz transceiver, an ARM® Cortex®-M
20 V 500mA, dual P-channel Trench MOSFET
IC TEMP SENSOR RH 2% DFN
1mm^2 RGB LED

permamote_bom

Generic solar cell

Color Light-to-Digital Converter with IR Filter

permamote_bom

DIGIKEY	MANUFACTURER	MOUSER	MPN
490-6328-1-ND			GRM155R71C104KA88J
490-6264-1-ND			GRM1555C1HR50WA01D
490-6269-1-ND			GRM1555C1HR80BA01D
541-100MAHCT-ND			HMC0402JT100M
490-5922-1-ND			GRM1555C1H101JA01D
311-10KJRCT-ND			RC0402JR-0710KL
490-4516-1-ND			GRM155R71H103KA88D
490-3896-1-ND			GRM188R60J106ME47D
490-4025-1-ND			LQM18FN100M00D
490-6197-1-ND			GRM1555C1H120GA01D
587-1521-1-ND			HK100515NJ-T
490-7195-1-ND			GRM155R70G105KA12D
541-1319-1-ND	Vishay Dale		IHLP1212BZER1R0M11
732-3340-1-ND			74437324220
535-10426-1-ND			AISC-0402-3N3J-T
YAG3301CT-ND			RC0402JR-073M9L
535-11897-1-ND	Abracon		ABS05-32.768KHZ-9-T
887-2568-1-ND	TXC CORPORATION		7M-32.000MAHV-T
HMC0603JT33M0CT-ND			HMC0603JT33M0
445-5947-1-ND			C1005X5R0J475K050BC
311-470JRCT-ND			RC0402JR-07470RL
445-1264-1-ND			C1005X7R1C473K050BC
490-5942-1-ND			GRM1555C1H470JA01D
YAG2293CT-ND			RC0402FR-076K04L
YAG3309CT-ND			RC0402JR-076M2L
YAG3310CT-ND			RC0402JR-076M8L
311-80.6KHRCT-ND			RC0603FR-0780K6L
YAG3322CT-ND			RC0402JR-079M1L
535-11936-1-ND	Abracon		AB1815-T3
535-9543-1-ND	ABRACON		ABS07-32.768KHZ-7-T
311-1542-1-ND	YAGEO		ANT3216A063R2400A
BAT-HLD-001-THM-ND		712-BAT-HLD-001-THM	BAT-HLD-001-THM
BH123A-ND	MPD		BH123A
296-37078-1-ND	TI		BQ25505RGRR
311-10KJRCT-ND			RC0402JR-0710KL
255-3065-ND	PANASONIC		EKMB1101111
P11084SCT-ND			EVQ-P2K02Q
	STMicroelectronics	511-LIS2DW12TR	FT232RQ
			LIS2DW12TR
MAX17222ELT+TCT-ND	MAXIM INTEGRATED		MAX17222ELT+T
MAX44009EDT+TCT-ND	MAXIM		MAX44009EDT+T
H125274CT-ND		798-ZX62R-B-5P30	ZX62R-B-5P(30)
223-1199-1-ND	TE CONNECTIVITY		MS563702BA03-50
1490-1071-1-ND	NORIDIC SEMICONDUCTOR		NRF52840
1727-2601-1-ND	NEXPERIA		PMDXB950UPELZ
336-3141-ND		634-SI7021-A20-GM1	SI7021-A20-GM1
67-2125-1-ND	Lumex Opto		SML-LX0404SIUPGUSB

permamote_bom

869-1001-ND
TCS34725FNCT-ND

AM-1454CA
TCS34725FN

permamote_bom

NEWARK OC_FARNELL OC_NEWARK Notes

Do Not Populate

Do Not Populate
Do Not Populate

1146033 91K9919

Do Not Populate

84Y6712

permamote_bom

Do Not Populate