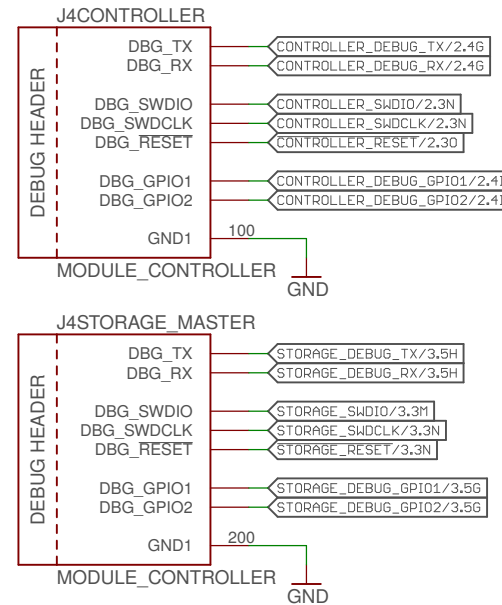
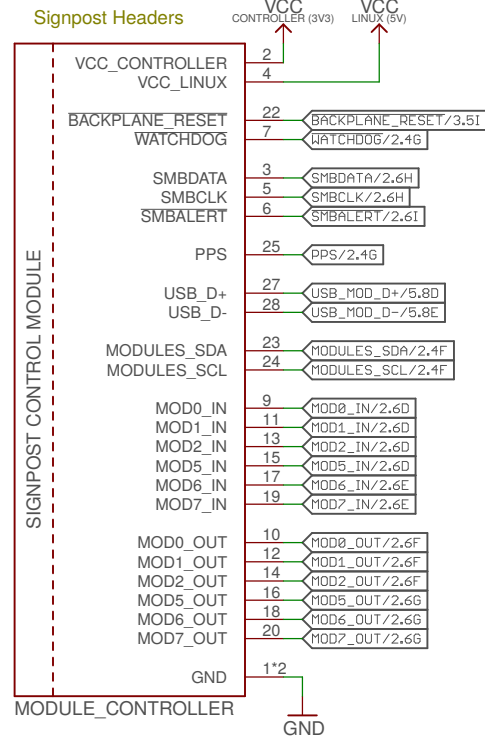
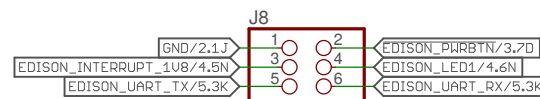
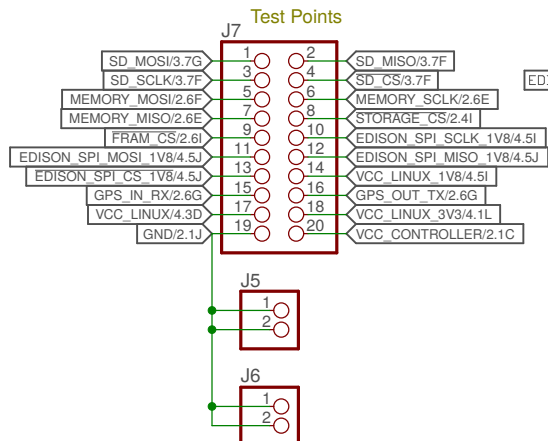
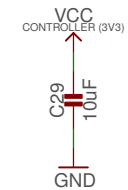


Headers



Main Decoupling Capacitor



Backplane Reset Button



M Signpost Control Module

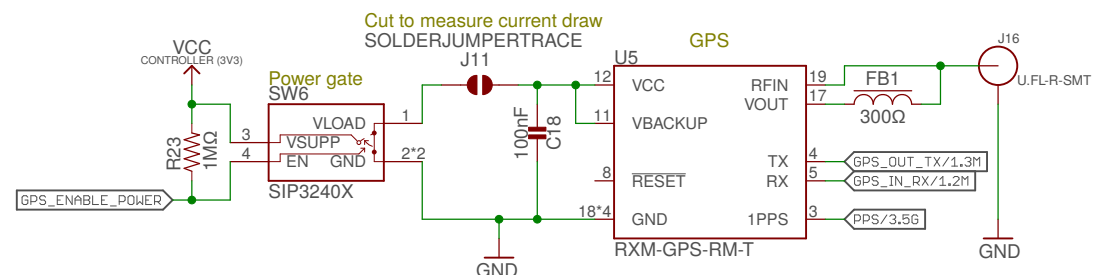
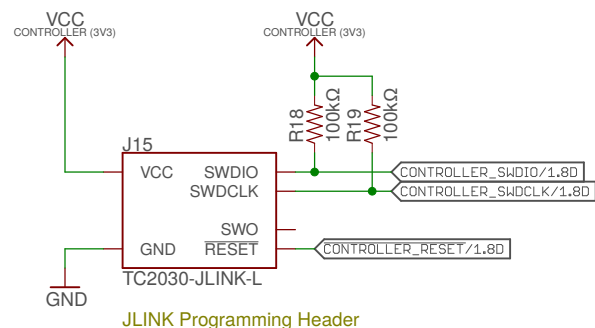
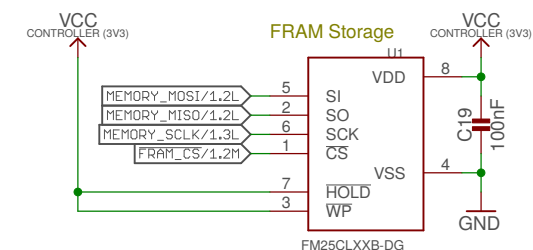
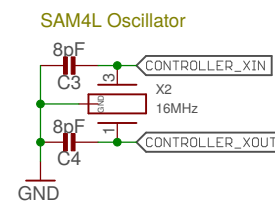
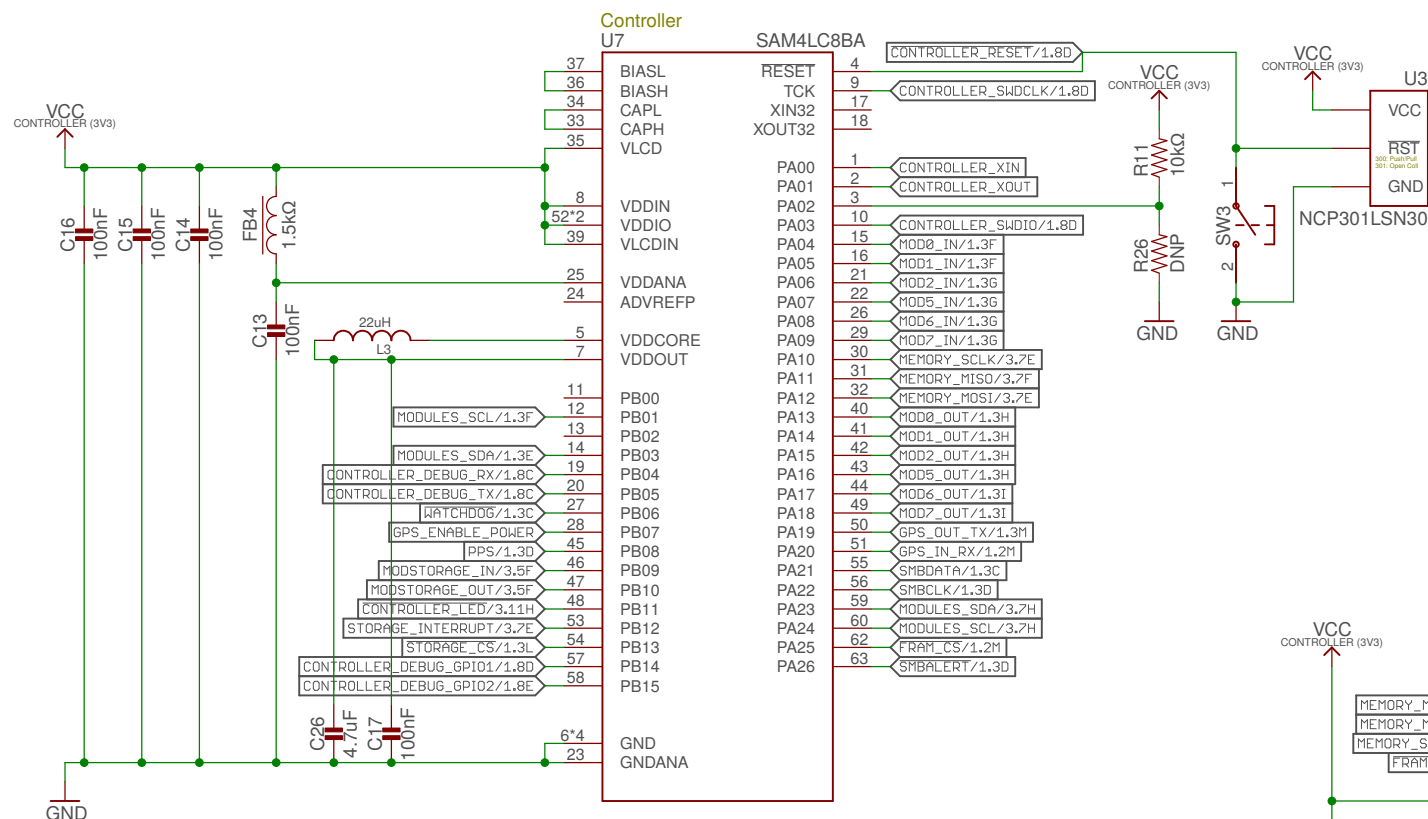
REV:
C

Author: Branden Ghena

Date: 5/14/17 10:25 PM

Sheet: 1/5

Controller



M Signpost Control Module

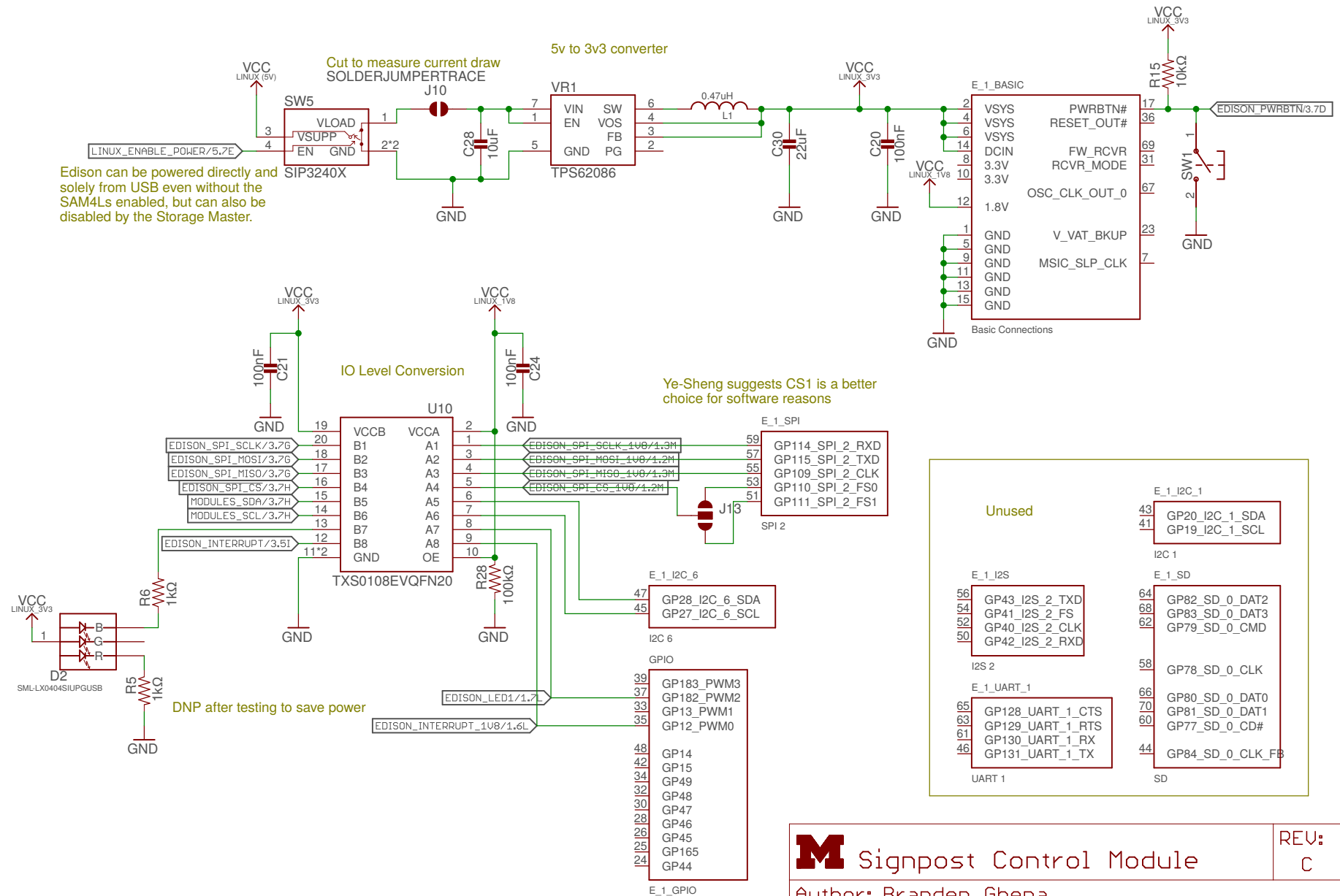
Author: Branden Ghena

Date: 5/14/17 10:25 PM

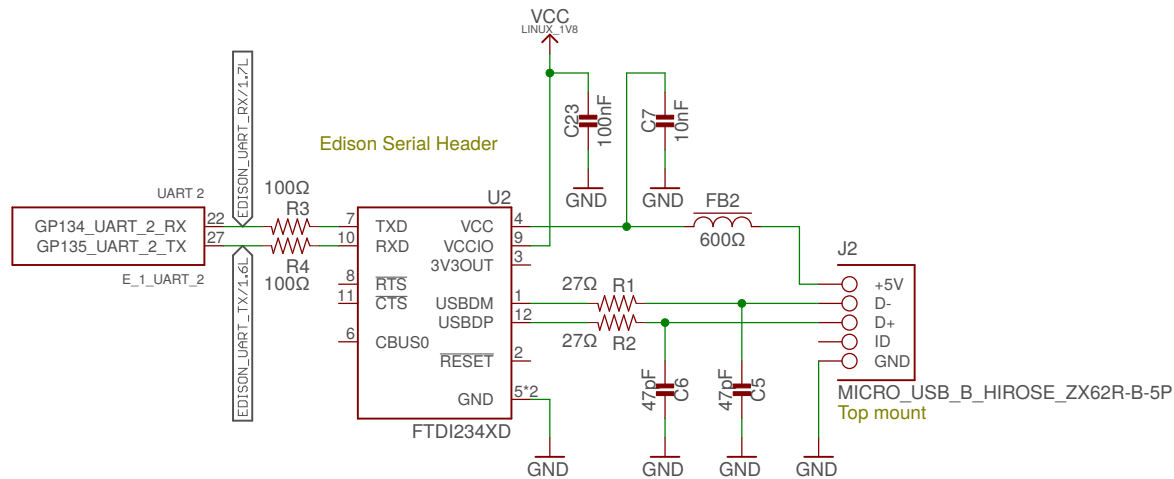
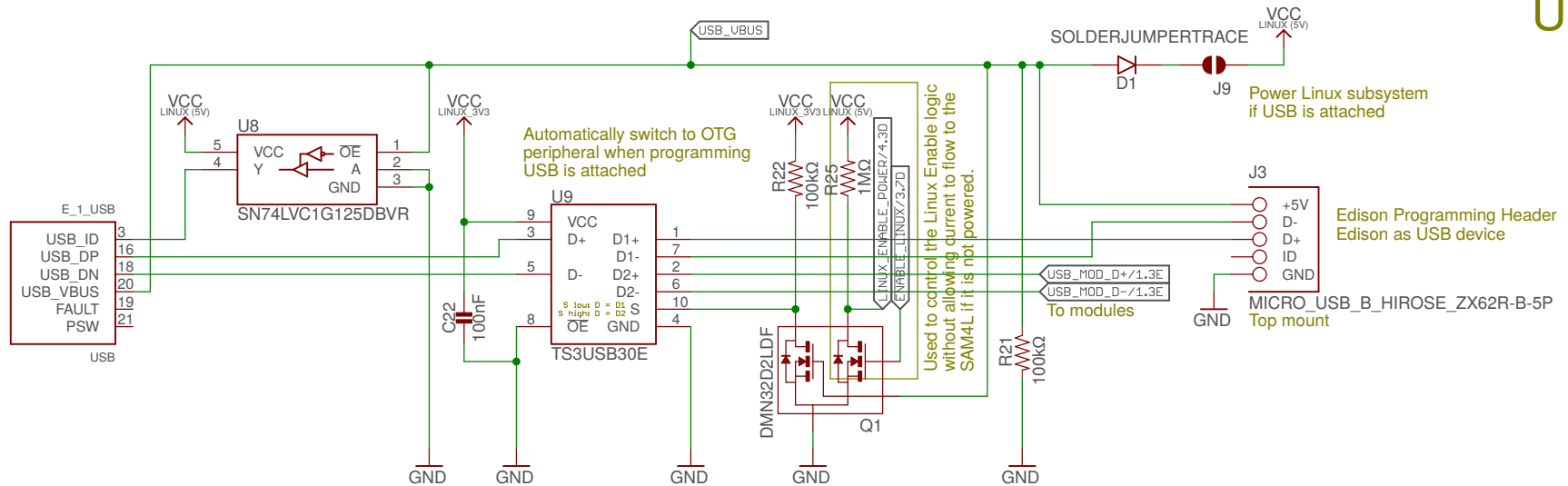
REV:	C
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Sheet: 2/5

Edison



USB



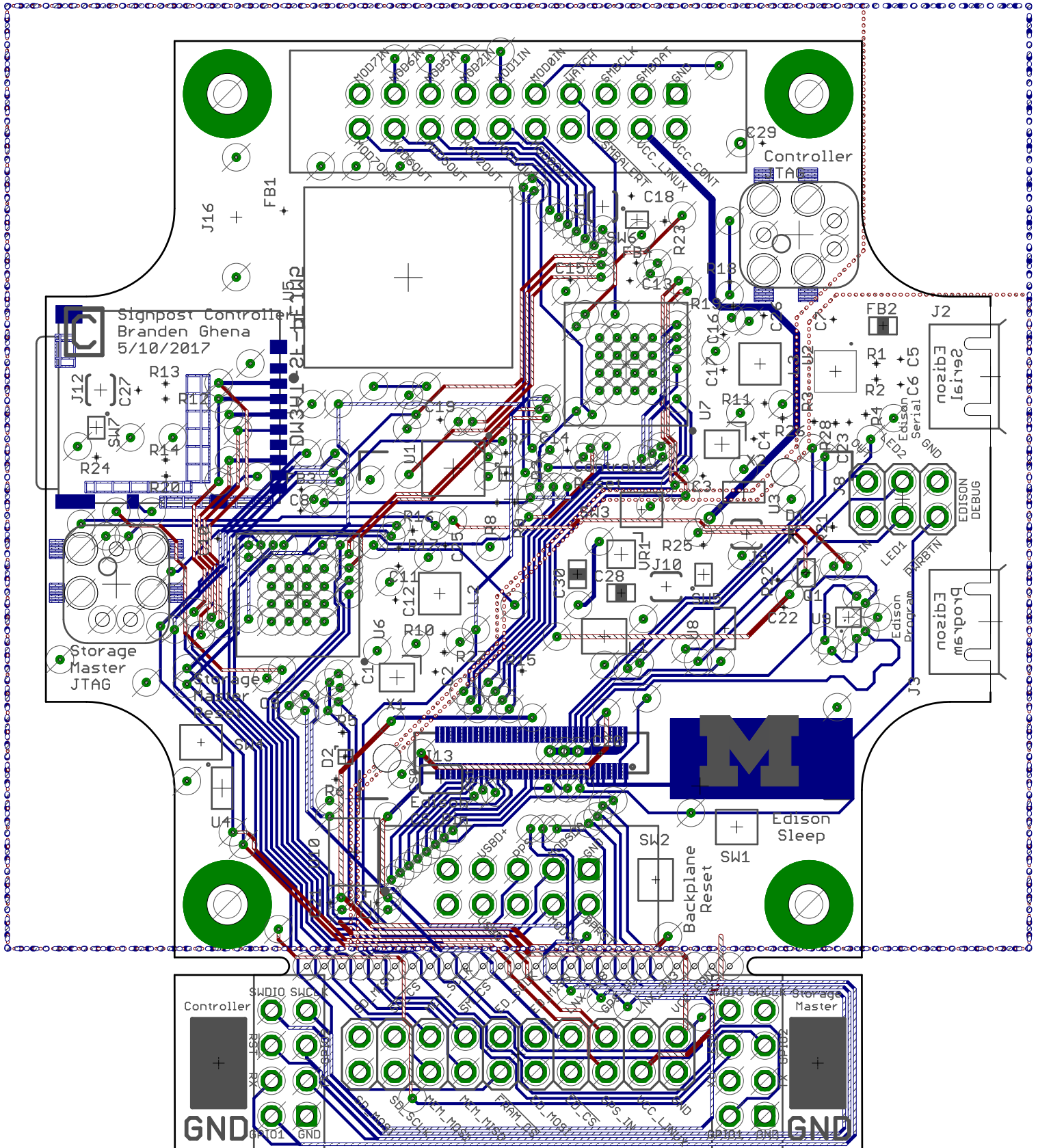
M Signpost Control Module

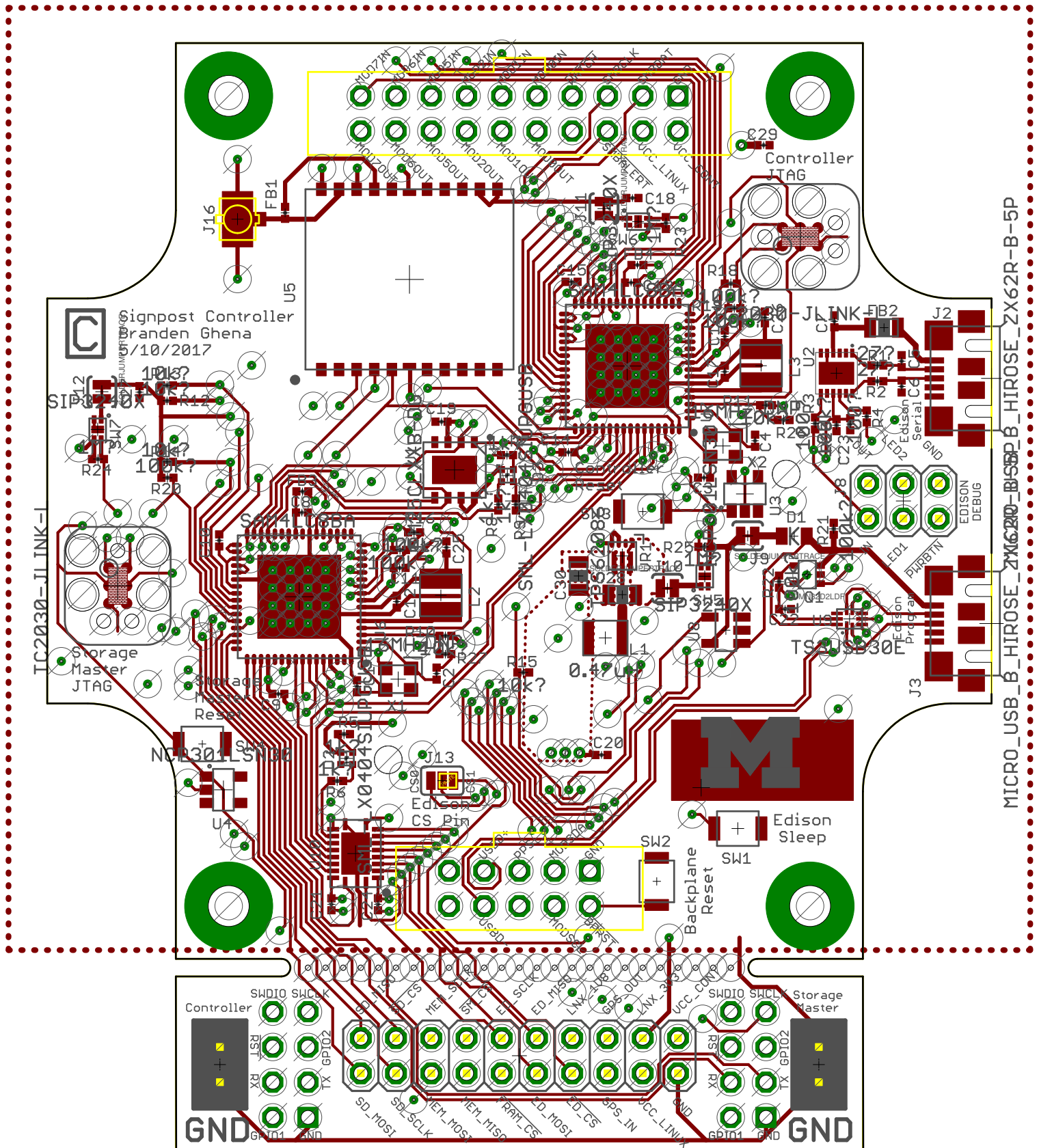
REV:
C

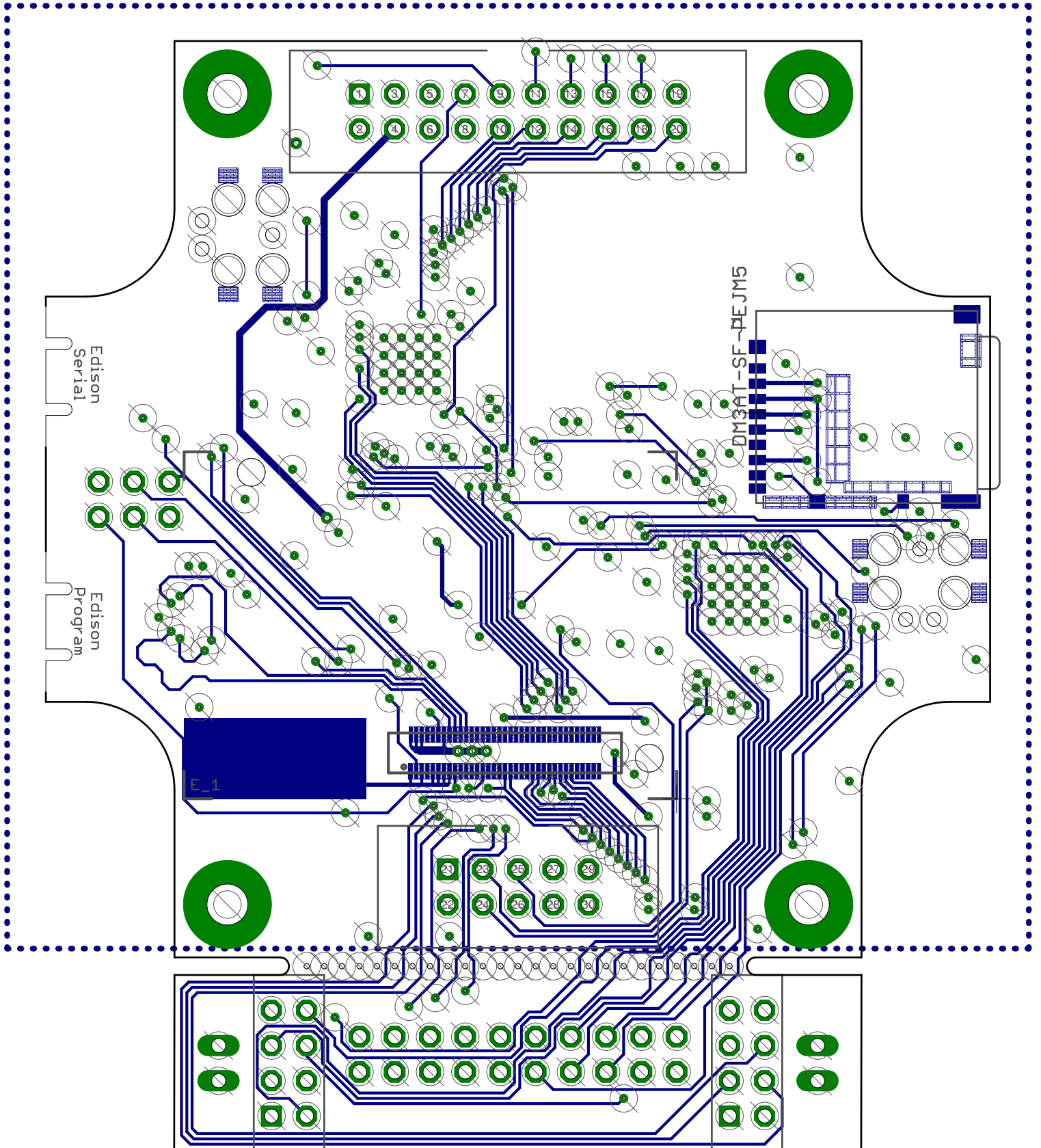
Author: Branden Ghena

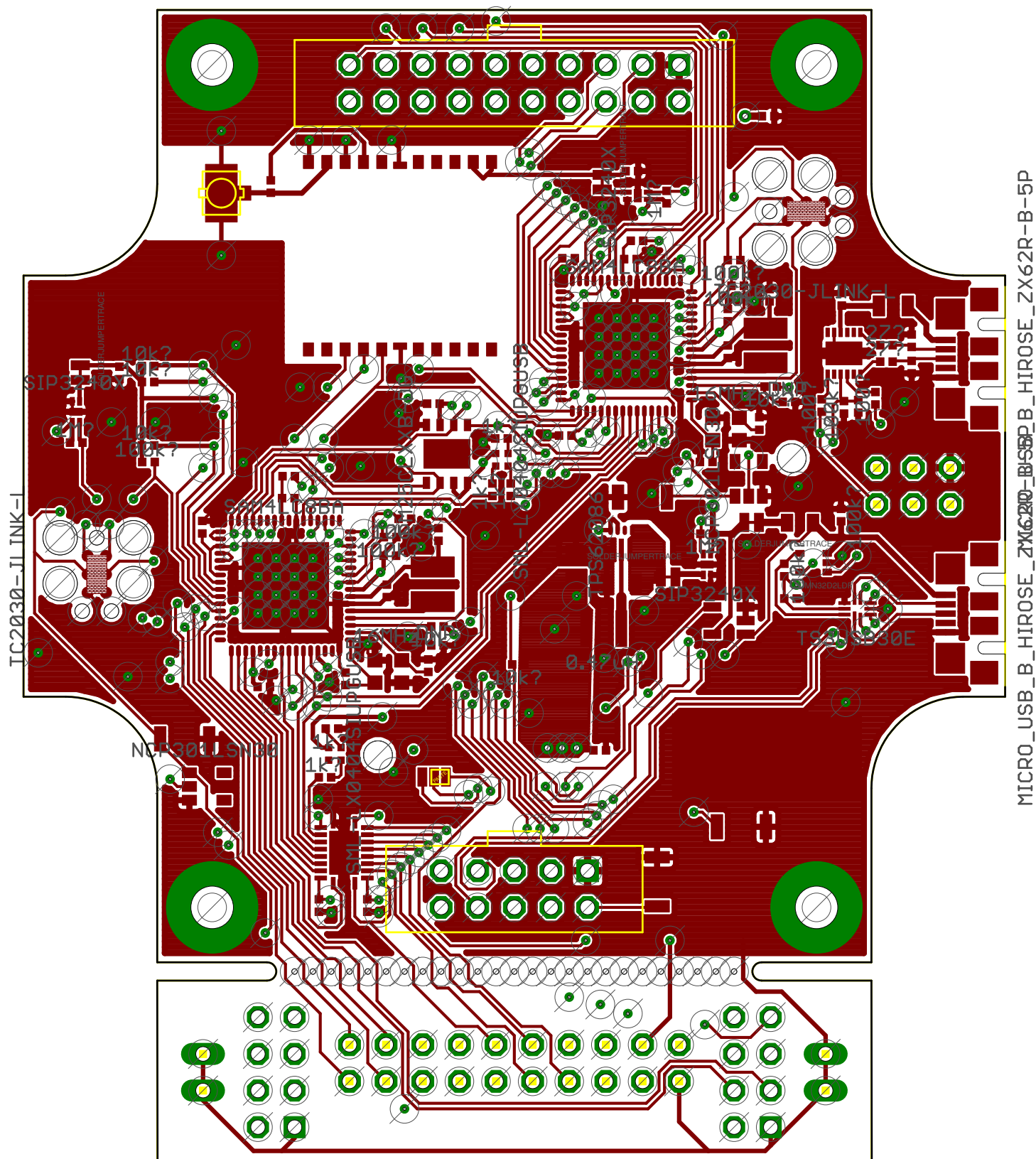
Date: 5/14/17 10:25 PM

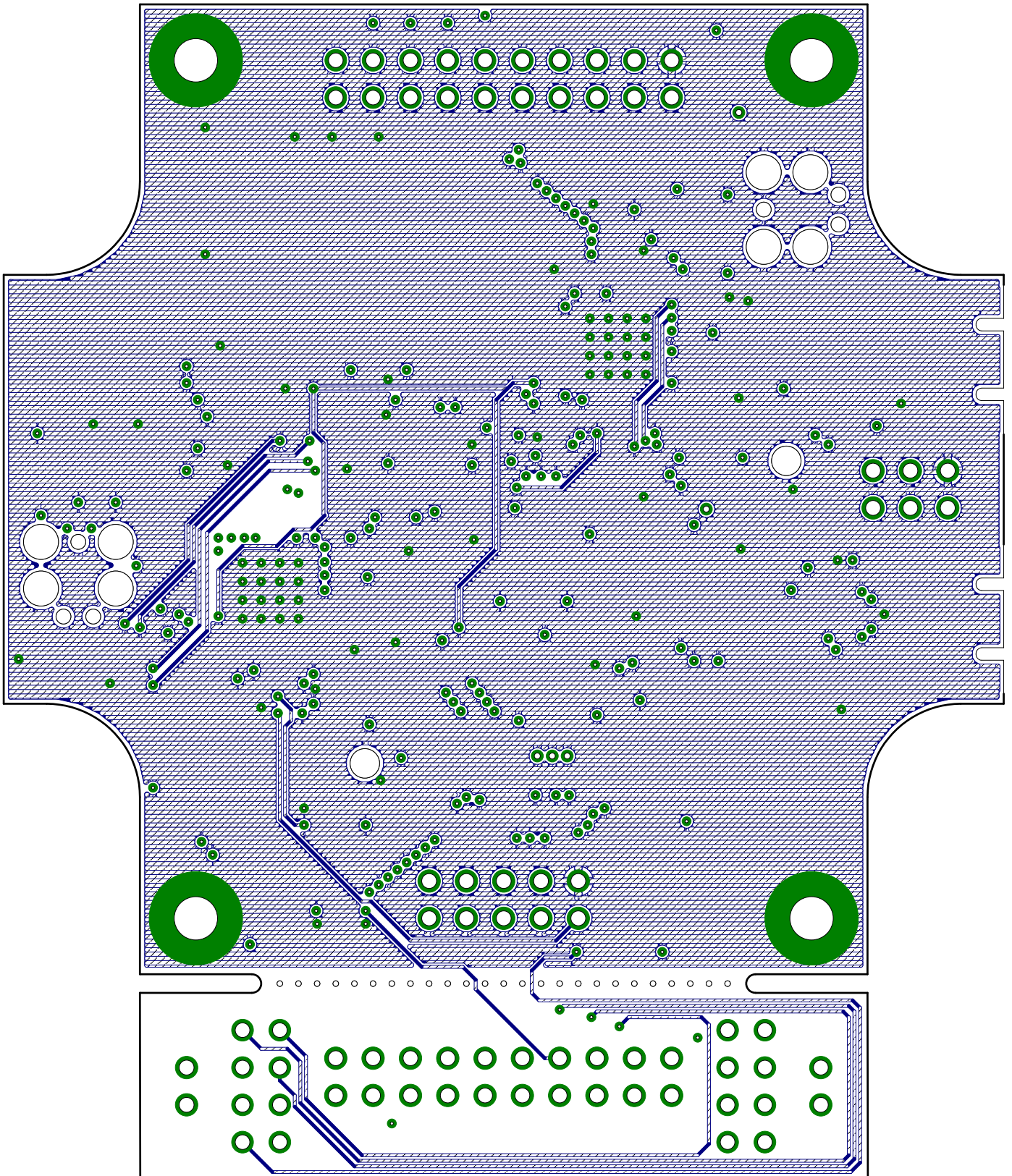
Sheet: 5/5

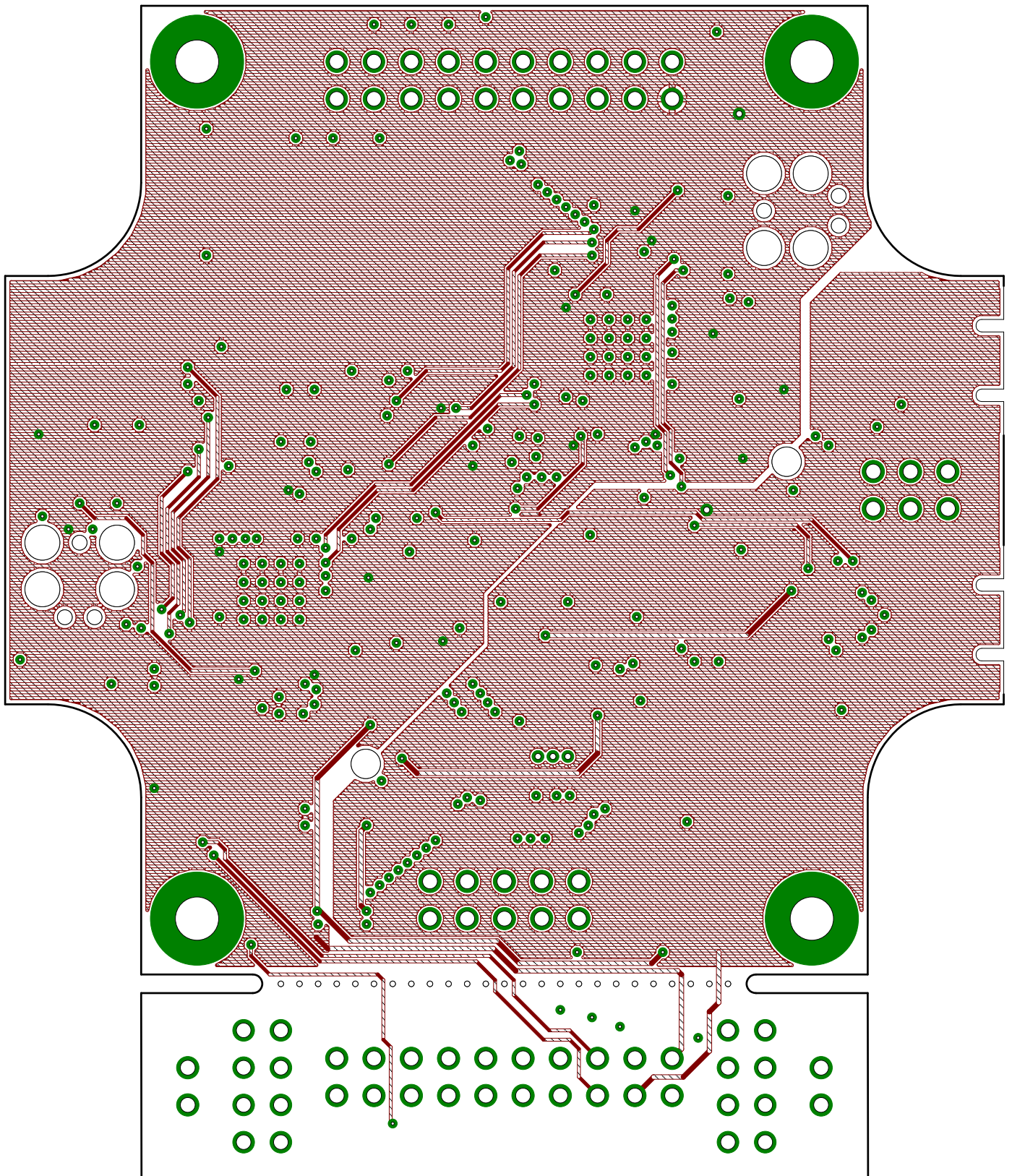




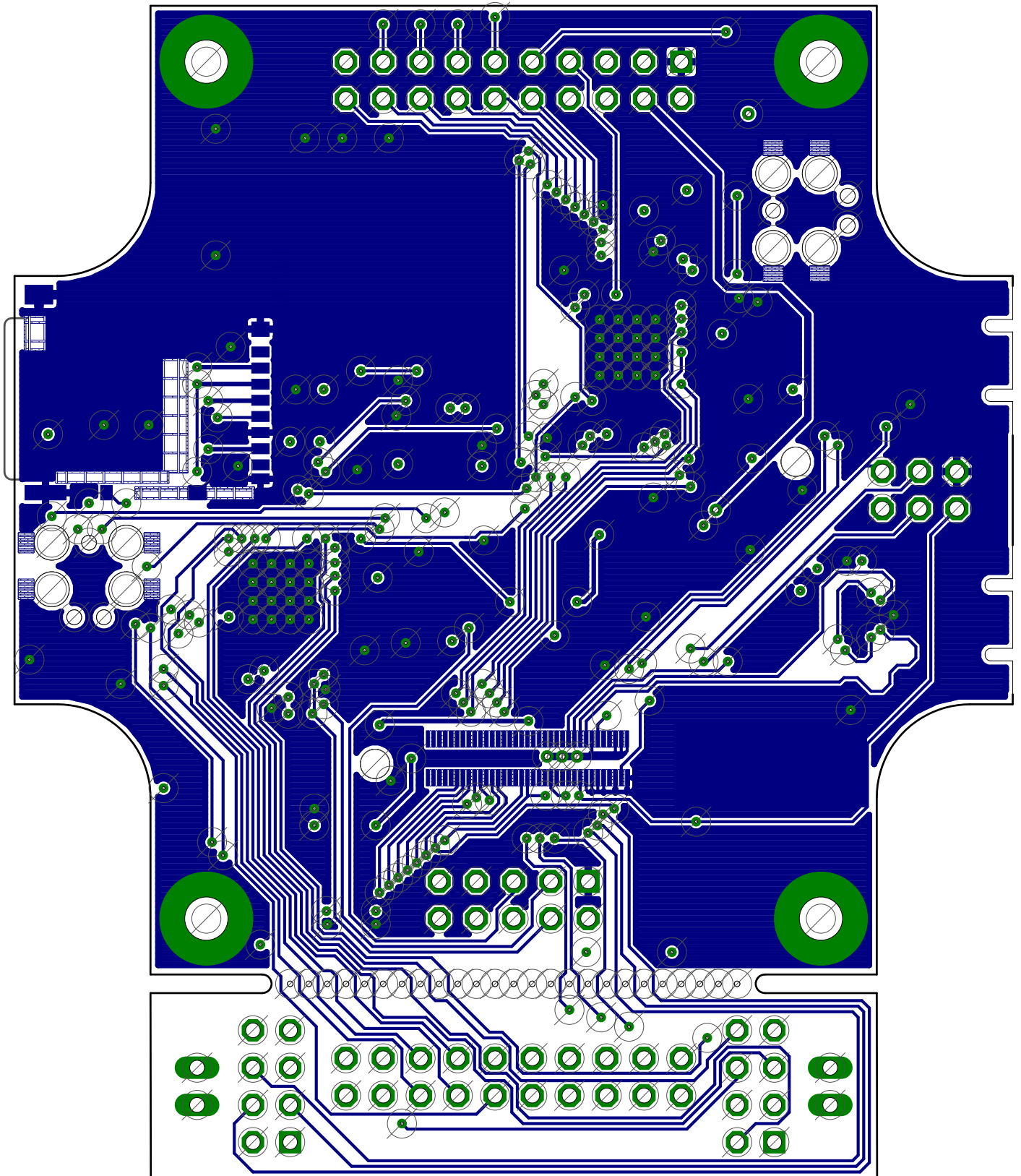




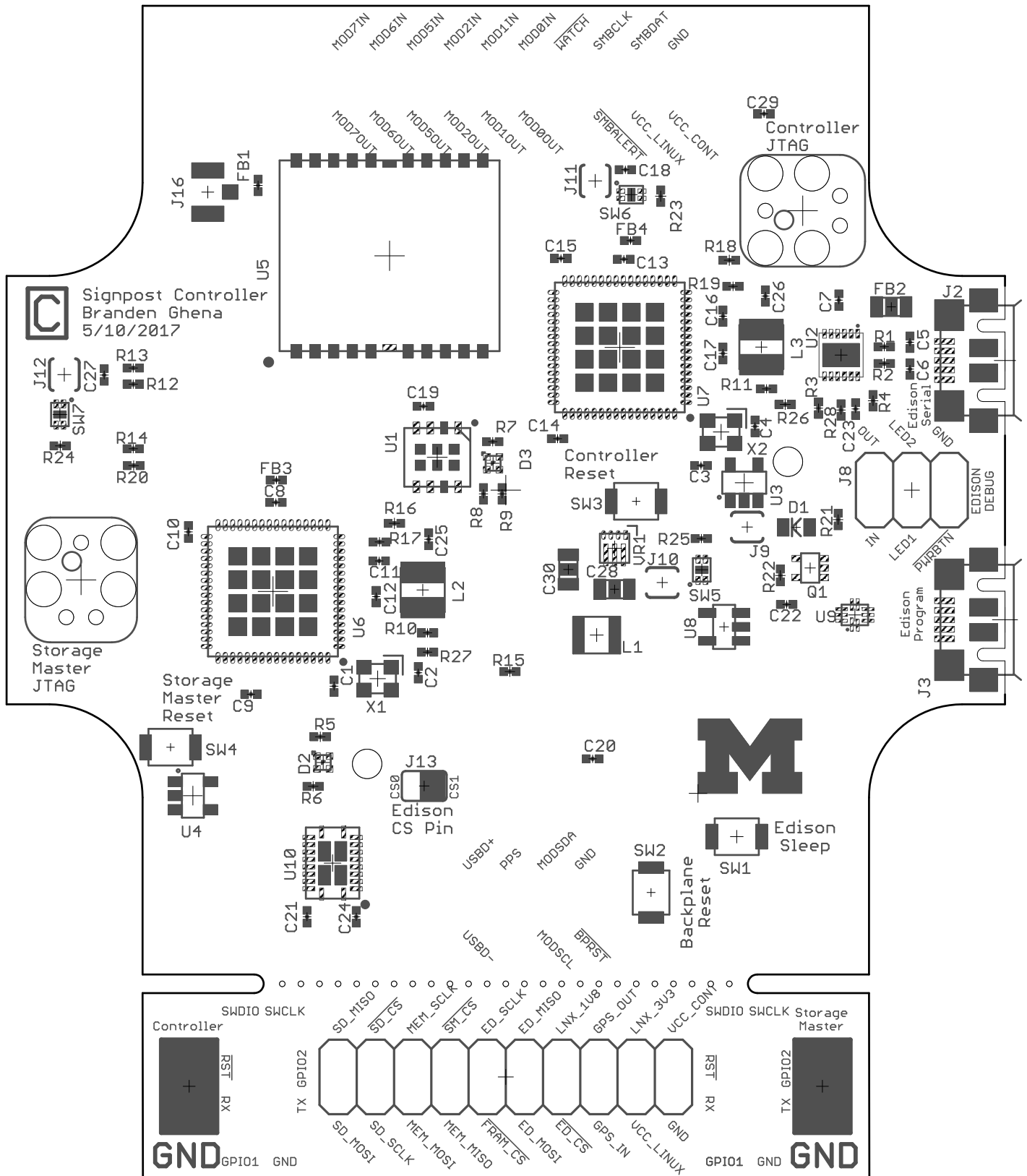


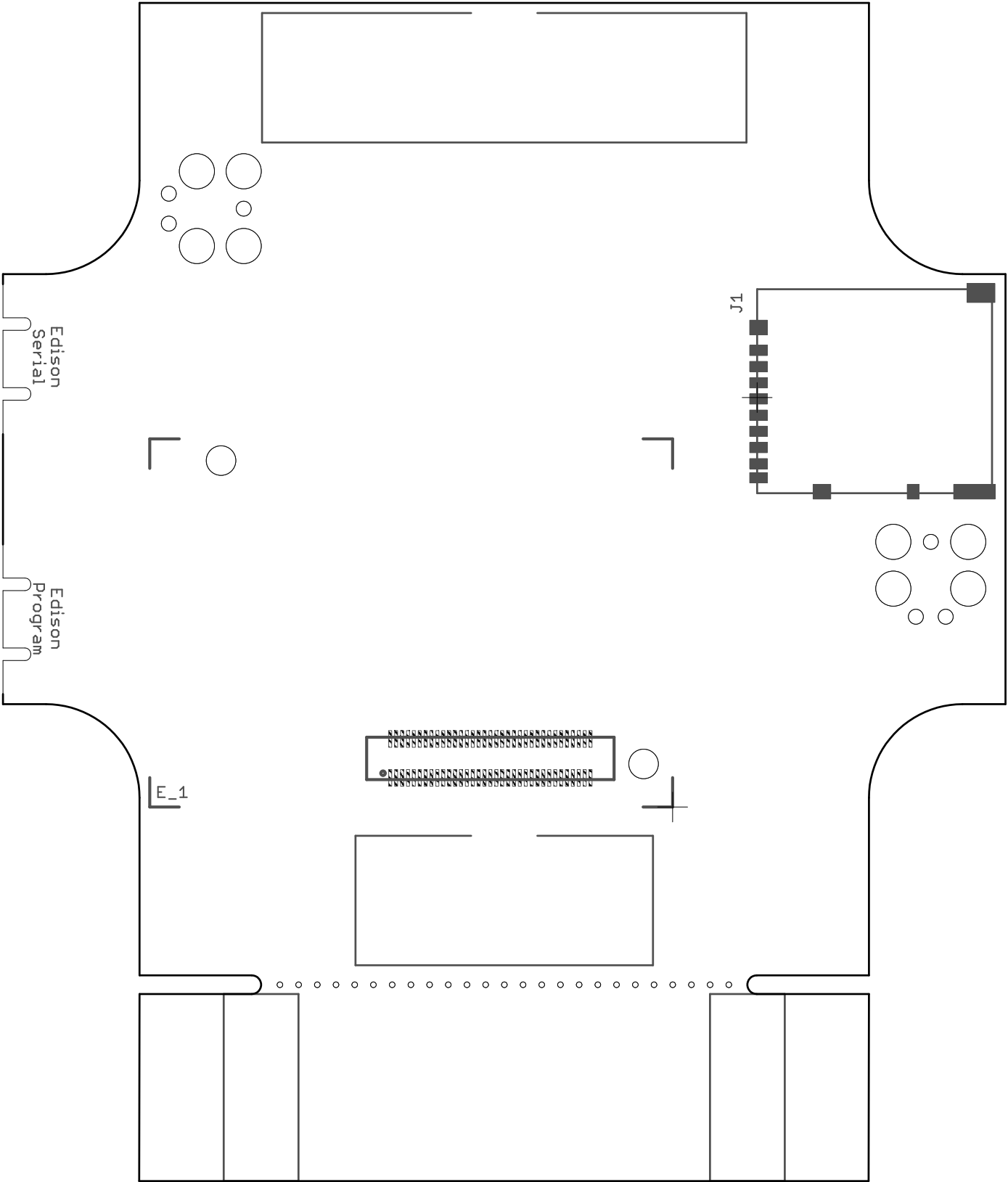


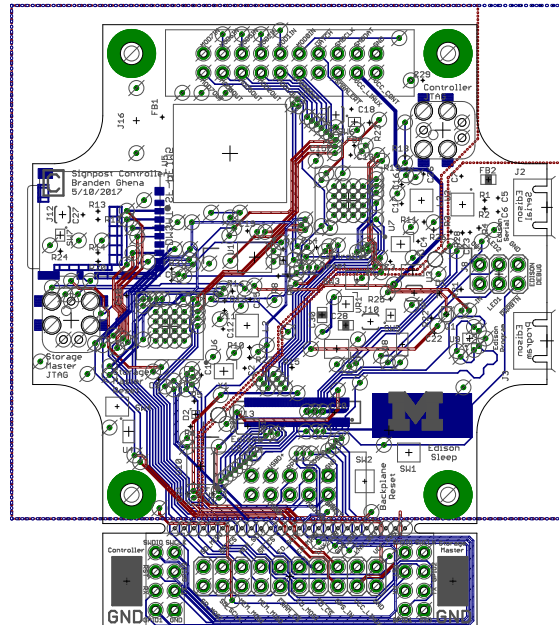
Bottom Copper Layer



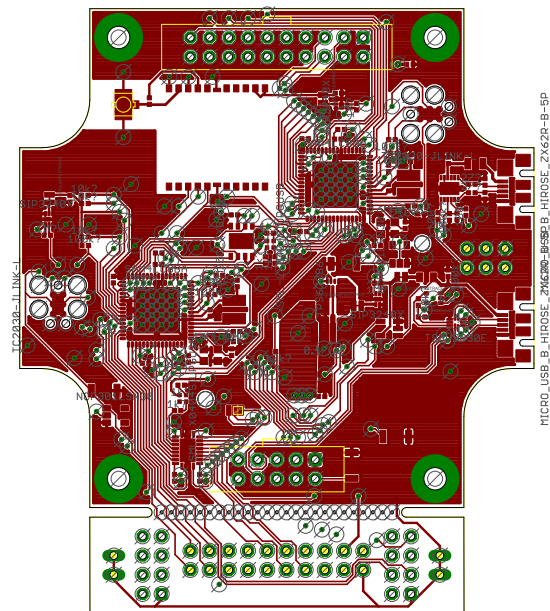
Top Paste Layer with Silkscreen

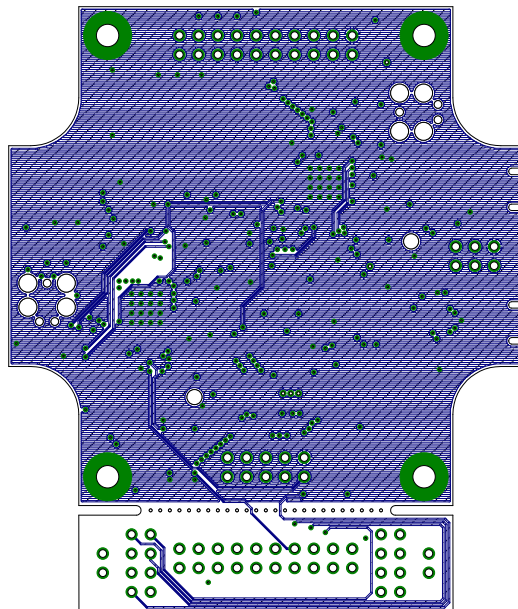


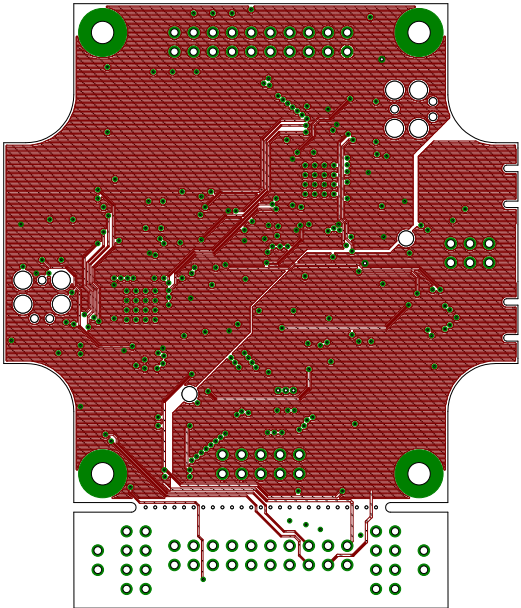




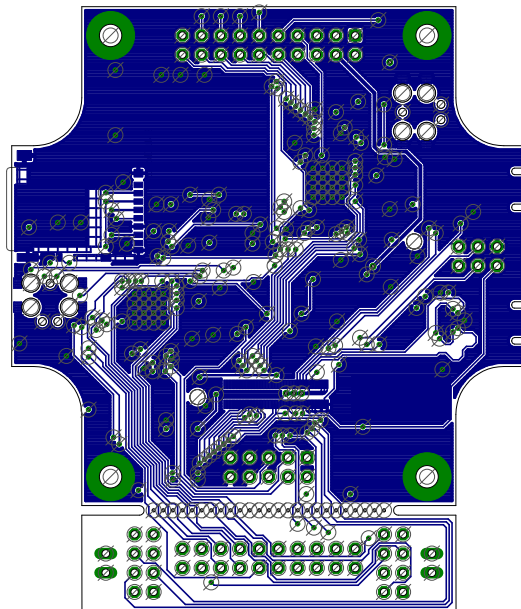
Top Layer 1:1 Scale







Bottom Copper Layer 1:1 Scale



controller_bom

Qty	Value	Device
	48pF; +/- 0.1 pF	CAPACITOR0402_CAP
	247pF	CAPACITOR0402_CAP
	110nF	CAPACITOR0402_CAP
17	100nF	CAPACITOR0402_CAP
	34.7uF	CAPACITOR0402_CAP
	110uF	CAPACITOR0805_CAP
	110uF	CAPACITOR0402_CAP
	122uF	CAPACITOR0805_CAP
	1 DIODE	SCHOTTKY DIODE
2	SML-LX0404SIUPGUSB	SML-LX0404SIUPGUSB
1	EDISON_CONNECTOR_SEGMENTED	EDISON_CONNECTOR_SEGMENTED
1	300Ohm	FERRITE_BEAD0402
1	600Ohm	FERRITE_BEAD0805
2	1.5kOhm	FERRITE_BEAD0402
1	DM3AT-SF-PEJM5	DM3AT-SF-PEJM5
2	MICRO_USB_B_HIROSE_ZX62R-B-5P	MICRO_USB_B_HIROSE_ZX62R-B-5P
1	MODULE_CONTROLLER	MODULE_CONTROLLER
2		PINHD-1X2
1		PINHD-2X10
1		PINHD-2X3
1	U.FL-R-SMT	U.FL-R-SMT
1	0.47uH	INDUCTORDFE322512C
2	22uH	LHQ3NP
1	DMN32D2LDF	DMN32D2LDF
2	270Ohm	RESISTOR0402_RES
2	100Ohm	RESISTOR0402_RES
5	1kOhm	RESISTOR0402_RES
6	10kOhm	RESISTOR0402_RES
7	100kOhm	RESISTOR0402_RES
3	1M0hm	RESISTOR0402_RES
2	DNP	RESISTOR0402_RES
4	B3U-1000P	B3U-1000P
3	SIP3240X	SIP3240X
1	FM25CLXXB-DG	FM25CLXXB-DG
1	FTDI234XD	FTDI234XD

controller_bom

2 NCP301LSN30	NCP301LSN30
1 RXM-GPS-RM-T	RXM-GPS-RM-T
2 SAM4LC8BA	SAM4LC8BA
1 SN74LVC1G125DBVR	SN74LVC1G125DBVR
1 TS3USB30E	TS3USB30E
1 TXS0108EVQFN20	TXS0108EVQFN20
1 TPS62086	TPS62086
2 16MHz	FH1600015

controller_bom

Package	Parts
0402_CAP	C1, C2, C3, C4
0402_CAP	C5, C6
0402_CAP	C7
	C8, C9, C10, C11, C12, C13, C14,
	C15, C16, C17, C18, C19, C20, C21,
0402_CAP	C22, C23, C24
0402_CAP	C25, C26, C27
0805_CAP	C28
0402_CAP	C29
0805_CAP	C30
0805_DIODE	D1
1MM_SQ_4PAD	D2, D3
EDISON_DAUGHTER	E_1
0402_CAP	FB1
0805_CAP	FB2
0402_CAP	FB3, FB4
DM3AT-SF-PEJM5	J1
USB_MICRO_B-HIROSE-ZX62R-B-5P	J2, J3
MODULE_CONTROLLER	J4
1X02	J5, J6
2X10	J7
2X03	J8
U.FL_SMT	J16
DFE322512C	L1
1212	L2, L3
SOT353	Q1
0402_RES	R1, R2
0402_RES	R3, R4
0402_RES	R5, R6, R7, R8, R9
0402_RES	R10, R11, R12, R13, R14, R15
0402_RES	R16, R17, R18, R19, R20, R21, R22
0402_RES	R23, R24, R25
0402_RES	R26, R27
B3U-1000P	SW1, SW2, SW3, SW4
TDFN4	SW5, SW6, SW7
TDFN-8	U1
DFN-12/3MM	U2

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SOT23-5	U3, U4
RXM-GPS-RM-T	U5
QFN-64-9MM	U6, U7
SOT-23-5	U8
UQFN-10	U9
R-PVQFN-N20	U10
RLT0007A	VR1
FHXXX	X1, X2

Description	Do Not Insert
Capacitor	
Capacitor	
Capacitor	
Capacitor	
Capacitor	
Capacitor	
Capacitor	
Capacitor	
1mm^2 RGB LED	
CONN MICRO SD R/A PUSH-PUSH SMD	
USB Micro B Connector	
Controller module for signpost	
PIN HEADER	
PIN HEADER	
PIN HEADER	
U.FL-R-SMT Antenna Connector	
A very specific inductor	
LHQ3NP Inductor	
Common source dual n-channel mosfet	
Resistor	
Resistor	
Resistor	
Resistor	
Resistor	
Resistor	
Resistor	
Resistor	X
Switch	
High power (2.4 A) high-side switch	
Cypress FRAM	
FTDI234XD USB to UART Bridge in 3x3 DFN Package	

controller_bom

Power-on-reset. LSN30 -> Fixed 3V (for 90% of 3.3V) detector. Fixed ~100us power_on -> deassert reset. 301 -> Open Collector !RST.

The RM Series GPS receiver module is a

SAM4L Microcontroller. 64QFN Package. 512 Flash.

Single Bus Buffer Gate with 3-state output

USB Mux with OE control and ESD

TXS0108E 8-Bit Bi-directional Voltage Translator

Buck Switching Regulator IC Positive Fixed 3.3V 1 Output 3A 7-VFDFN

Pericom Type FH 16 MHz 2.5 x 2.0 mm

controller_bom

Can Substitute?	Manufacturer Part Number	Manufacturer
Y	GRM1555C1H8R0BA01D	Murata
Y	GRM1555C1H470FA01D	Murata
Y	GRM155R61A103KA01D	Murata
Y	GRM155R71A104JA01D	Murata
Y	ZRB15XR61A475KE01D	Murata
N	GRM21BR71A106ME51L	Murata
Y	GRM155R60J106ME44D	Murata
N	GRM21BR60J226ME39L	Murata
Y	SD0805S020S1R0	AVX
N	SML-LX0404SIUPGUSB	Lumex Opto/Components
N	DF40HC(3.0)-70DS-0.4V(51)	Hirose
Y	ACML-0402-301-T	Abracon
Y	MI0805K601R-10	Laird Signal Integrity Products
Y	CIM05J152NC	Samsung
Y	DM3AT-SF-PEJM5	Hirose
Y	ZX62R-B-5P(30)	Hirose
Y	SBH11-PBPC-D10-ST-BK, SBH11-PBPC-D05-ST-BK, PRPC004DFBN-RC, PRPC004DFBN-RC	Sullins
Y	5-146261-1	TE Connectivity
Y	9-146261-0-10	TE Connectivity
Y	5-146261-3	TE Connectivity
Y	U.FL-R-SMT-1(01)	Hirose
N	1277AS-H-R47M=P2	Murata
N	LQH3NPN220MJ0L	Murata
Y	DMN32D2LDF-7	Diodes Incorporated
Y	RC1005F270CS	Samsung
Y	RC1005F101CS	Samsung
Y	RC1005F102CS	Samsung
Y	RC1005F103CS	Samsung
Y	RC1005F104CS	Samsung
Y	RC1005F105CS	Samsung
-	RC1005F103CS	Samsung
N	B3U-1000P	Omron
N	SIP32402ADNP-T1GE4	Vishay
N	FM25CL64B-DG	Cypress
N	FT234XD-R	FTDI

controller_bom

Y		0 On Semiconductor
N	RXM-GPS-RM-T	Linx Technologies
N	ATSAM4LC8BA-MUR	Microchip Technology
N	SN74LVC1G125DBVR	Texas Instruments
N	TS3USB30ERSWR	Texas Instruments
N	TXS0108ERGYR	Texas Instruments
N	TPS62086RLTR	Texas Instruments
N	FH1600015	Diodes Incorporated

Note: Any part marked "Can Substitutue" can be substituted for any equal size/value parts

Distributor	Digikey Part Number
Digikey	490-8230-1-ND
Digikey	490-6241-1-ND
Digikey	490-6296-1-ND
Digikey	490-10777-1-ND
Digikey	490-13252-1-ND
Digikey	490-8316-1-ND
Digikey	490-13811-1-ND
Digikey	490-1719-1-ND
Digikey	478-7800-1-ND
Digikey	67-2125-1-ND
Mouser	
Digikey	ACML-0402-301-TCT-ND
Digikey	240-2390-1-ND
Digikey	1276-6395-1-ND
Digikey	HR1964CT-ND
Digikey	H125274CT-ND
Digikey	S9172-ND , S9169-ND , S2221EC-04-ND , S2221EC-04-ND
Digikey	5-146261-1
Digikey	A34268-10-ND
Digikey	A121473-ND
Digikey	H122041-ND
Digikey	490-10596-1-ND
Digikey	490-5350-1-ND
Digikey	DMN32D2LDF-7DICT-ND
Digikey	1276-3907-1-ND
Digikey	1276-3429-1-ND
Digikey	1276-3430-1-ND
Digikey	1276-3431-1-ND
Digikey	1276-3432-1-ND
Digikey	1276-3433-1-ND
Digikey	1276-3431-1-ND
Digikey	SW1020CT-ND
Digikey	SIP32402ADNP-T1GE4CT-ND
Digikey	FM25CL64B-DGRA-ND
Digikey	768-1178-1-ND

controller_bom

Digikey	NCP301LSN30T1GOSCT-ND
Digikey	RXM-GPS-RM-TCT-ND
Digikey	ATSAM4LC8BA-MURCT-ND
Digikey	296-11603-1-nd
Digikey	296-24684-1-ND
Digikey	296-24806-1-ND
Digikey	296-40831-1-ND
Digikey	FH1600015CT-ND

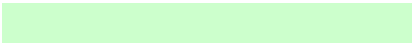
Mouser Part Number

798-DF40HC3070DS4V51

81-1277AS-H-R47MP2

895-FT234XD-R

controller_bom



Notes

Must be +/- 0.1 pF or better

Forward Voltage (Max) must be 450mV or less at 1A

J4 is four physical parts

controller_bom

Power-on-Reset with Open Collector output - 2.9-3.1V threshold okay

