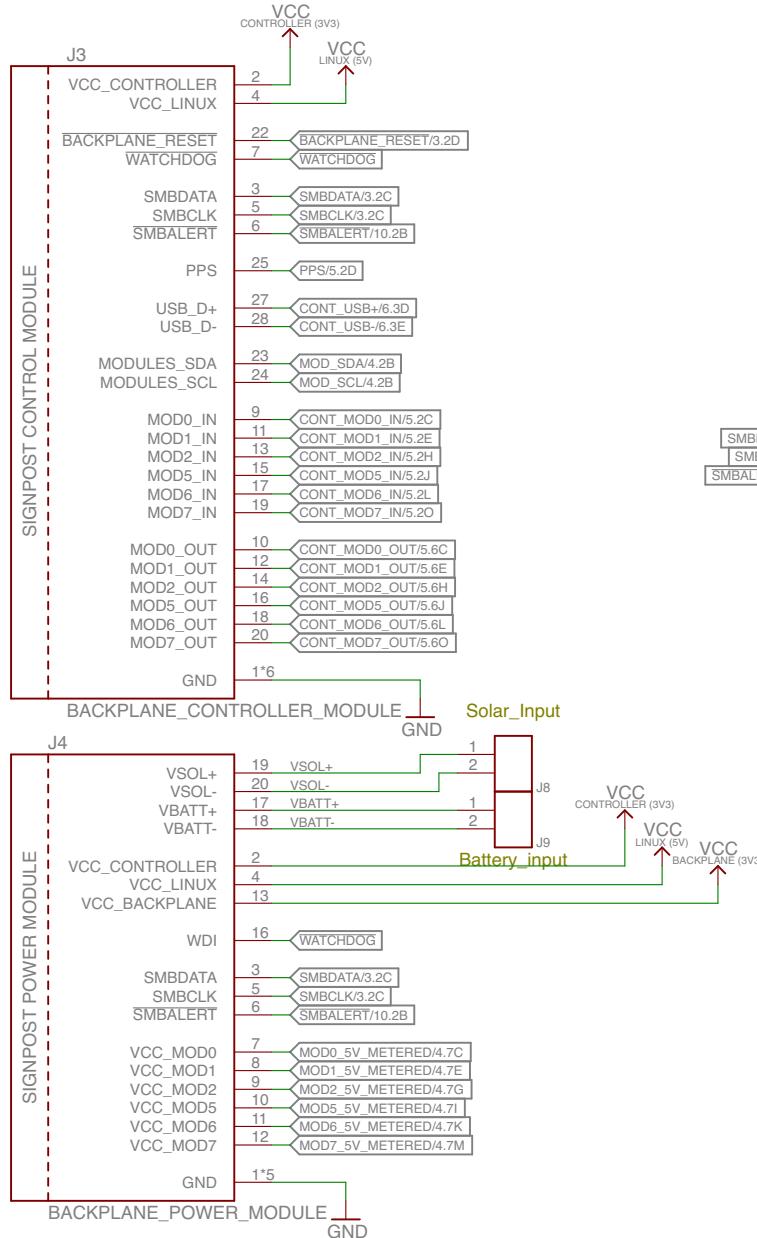
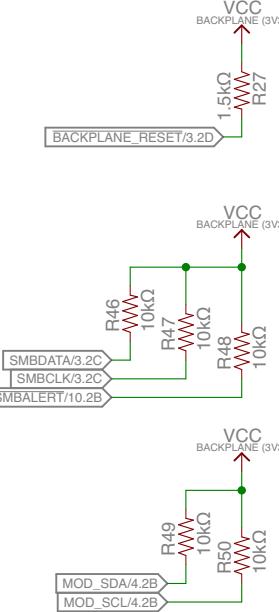
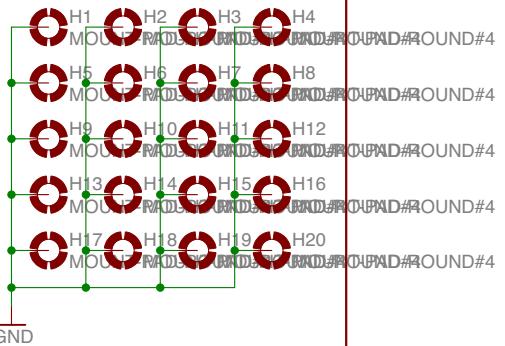


M**M****M****Pull-up/downs****Special Modules****Plated Mounting Holes****Fiducials**

Signpost Backplane

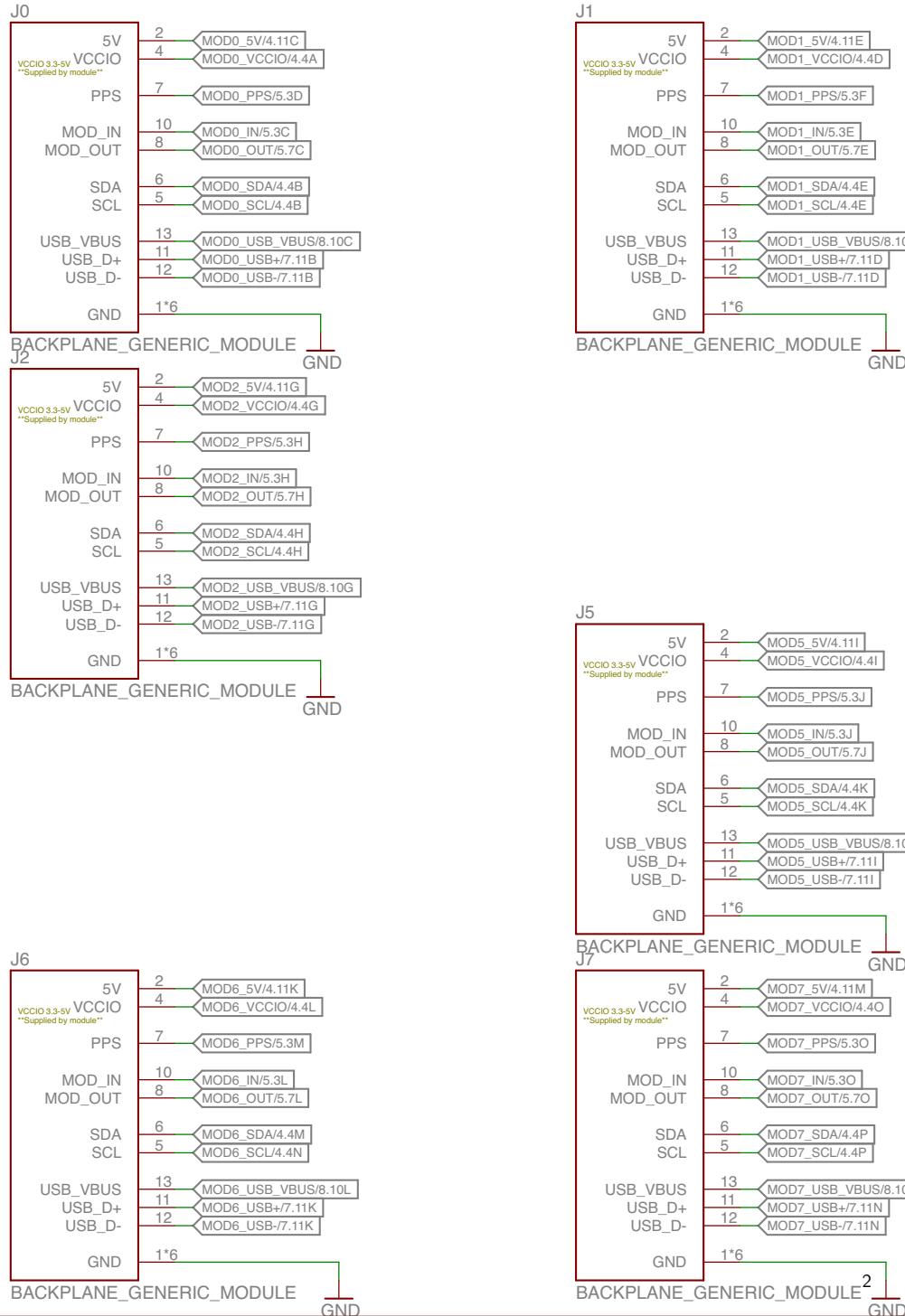
REV:
C

Author: Pat Pannuto

Date: 5/11/17 14:43

Sheet: 1/10

Generic Modules

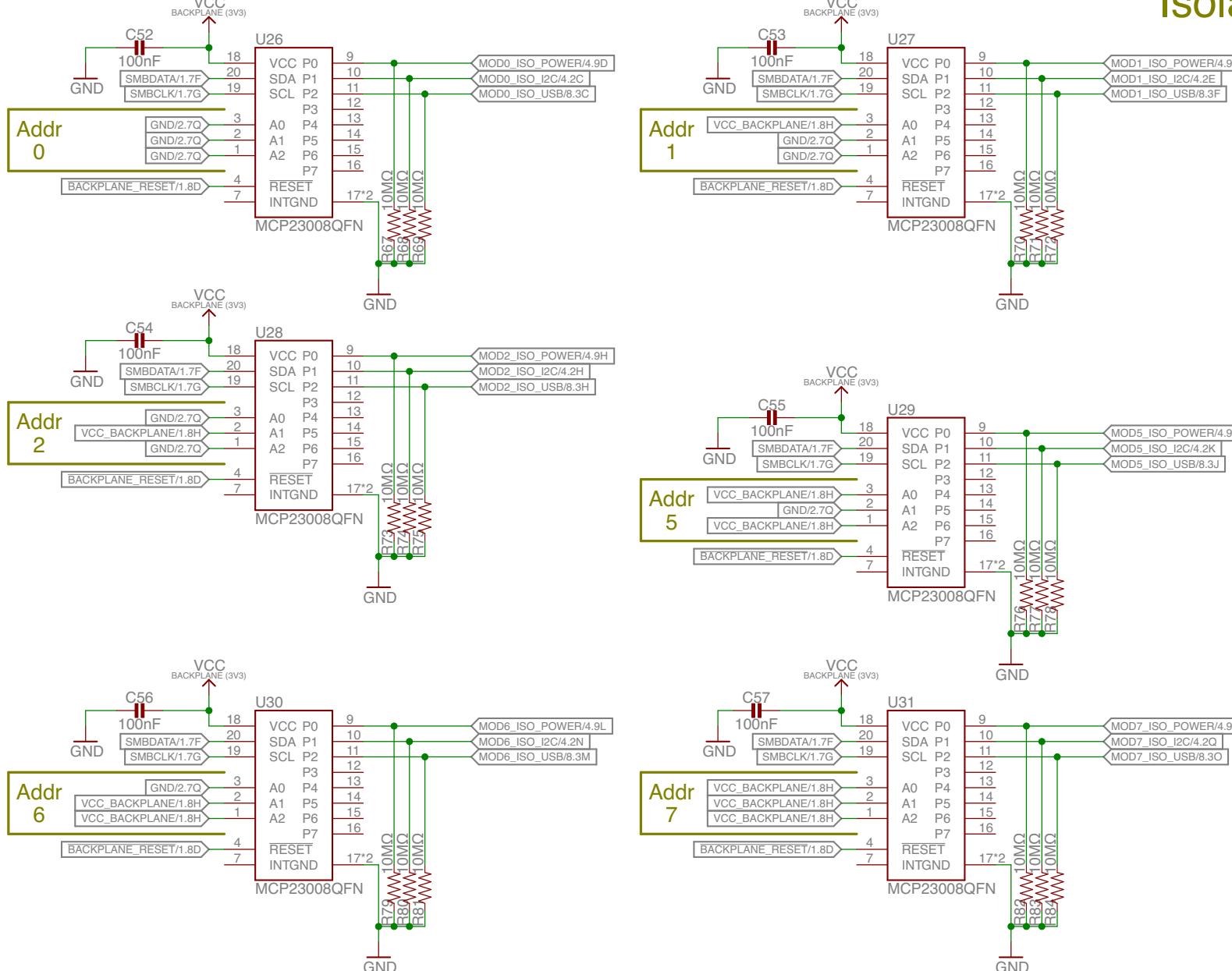


M Signpost Backplane
Author: Pat Pannuto
Date: 5/11/17 14:43

REV:
C

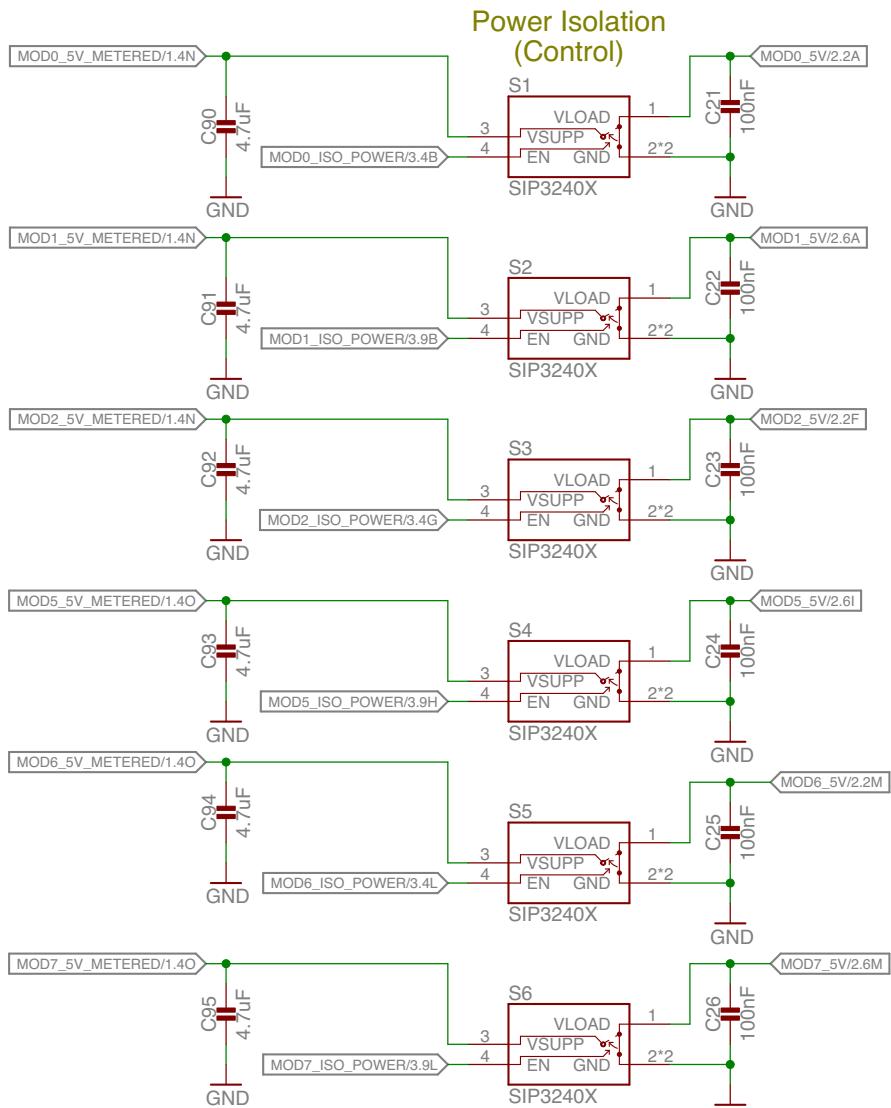
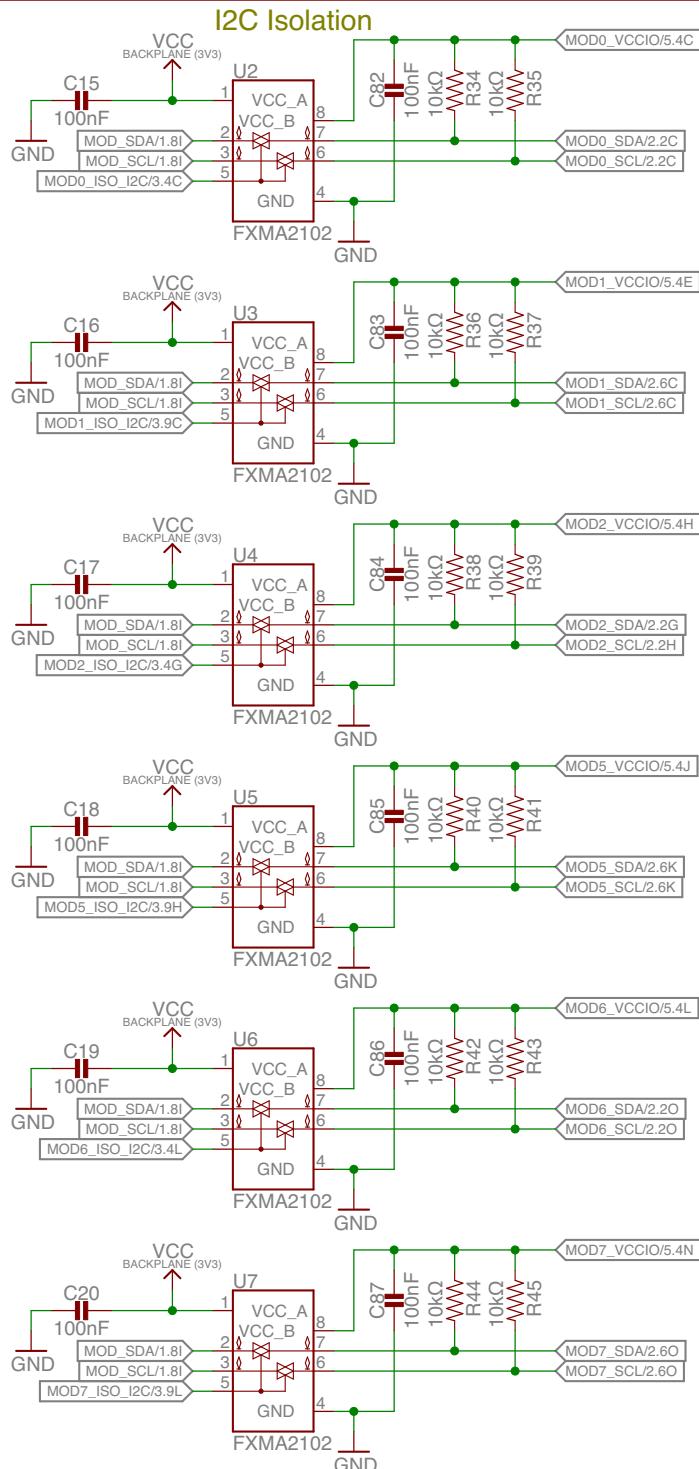
Sheet: 2/10

Isolation Control



Note:
An additional GPIO extender found on the USB sheet consumes address 3 (the controller slot) to facilitate run-time reset and monitoring of USB status

Module Isolation



M Signpost Backplane

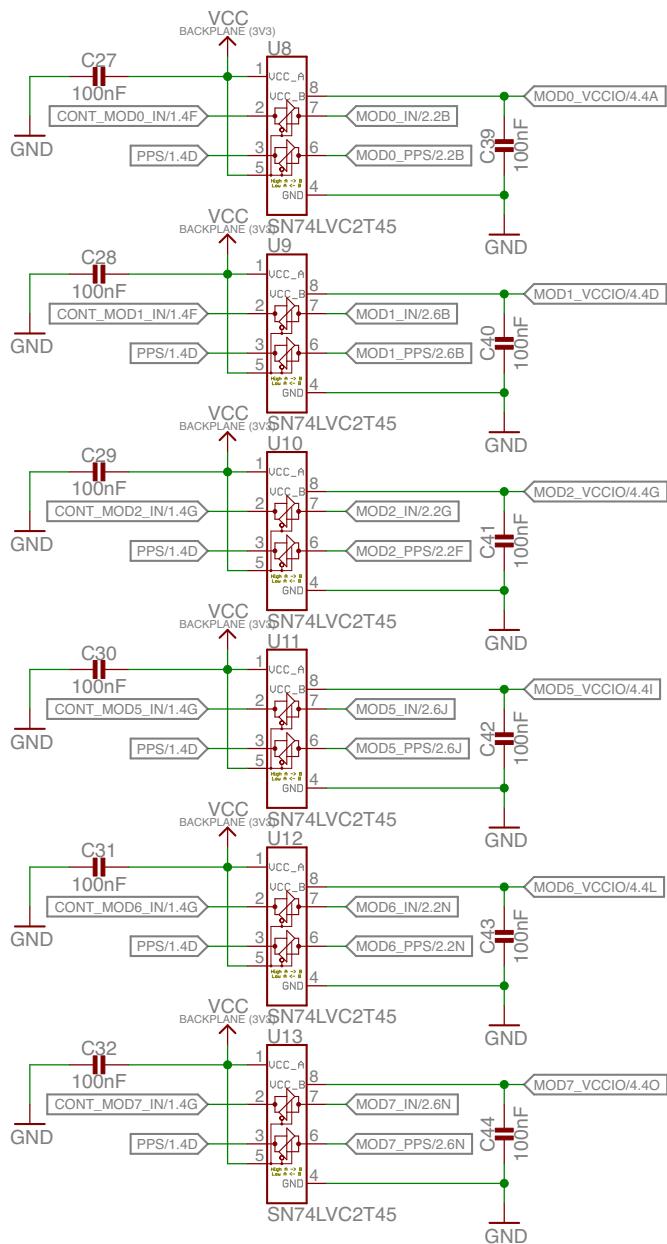
Author: Pat Pannuto

Date: 5/11/17 14:43

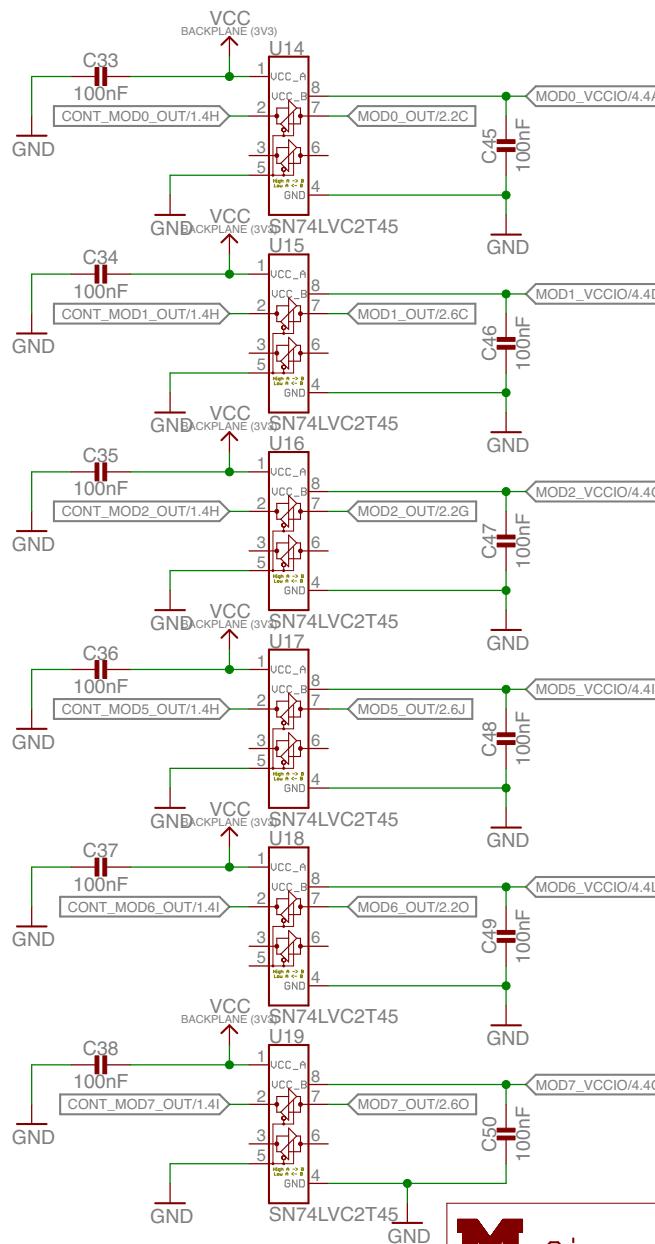
REV:
C

Module Isolation

Buffer / Level
Backplane --> Module



Buffer / Level
Backplane <-- Module

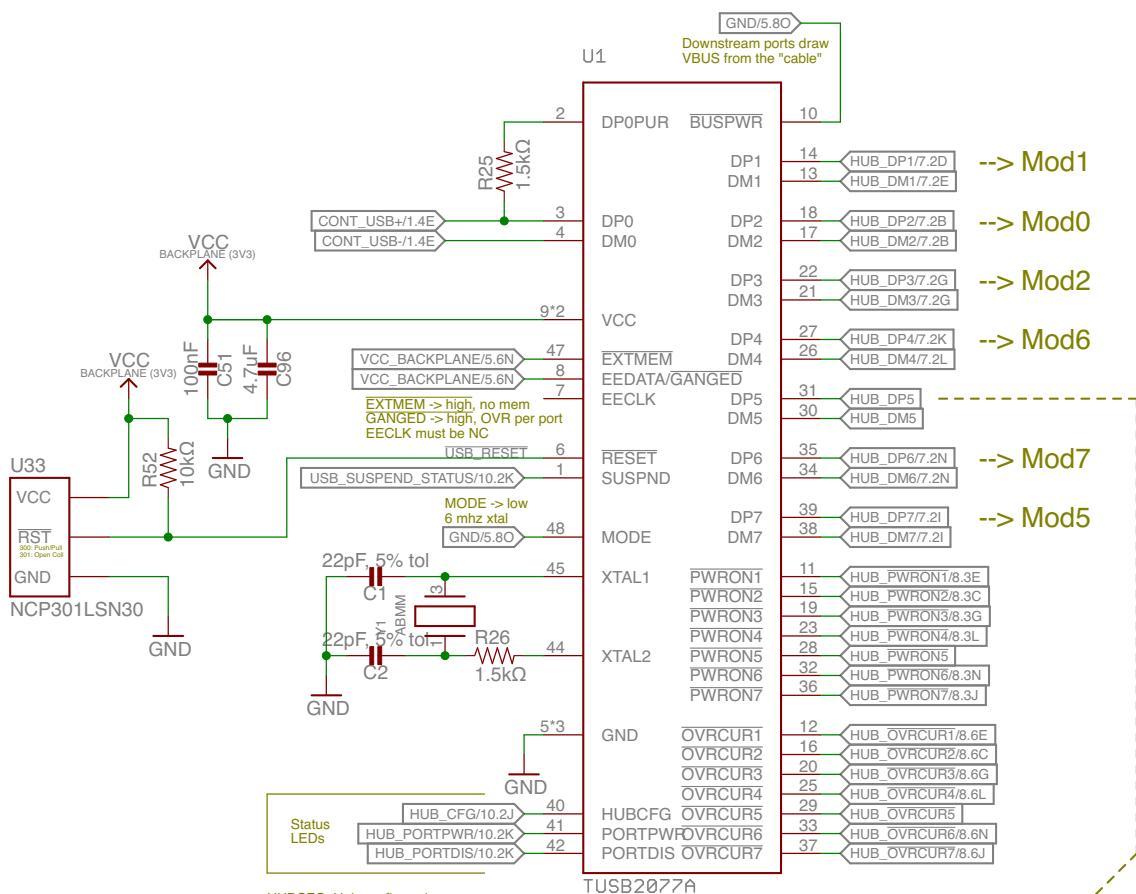


Signpost Backplane

Author: Pat Pannuto

Date: 5/11/17 14:43

REV:
C



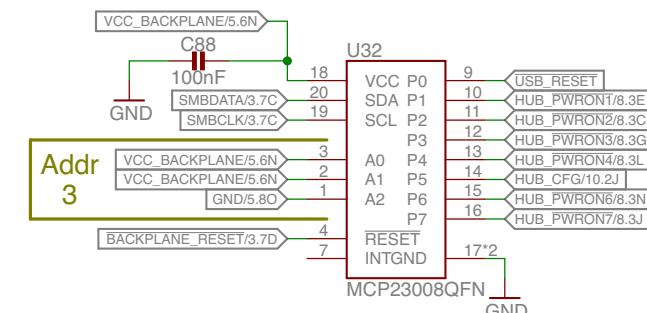
HUBCFG: Hub configured.
When the hub is configured, HUBCFG is high. When the hub is not configured, HUBCFG is low.

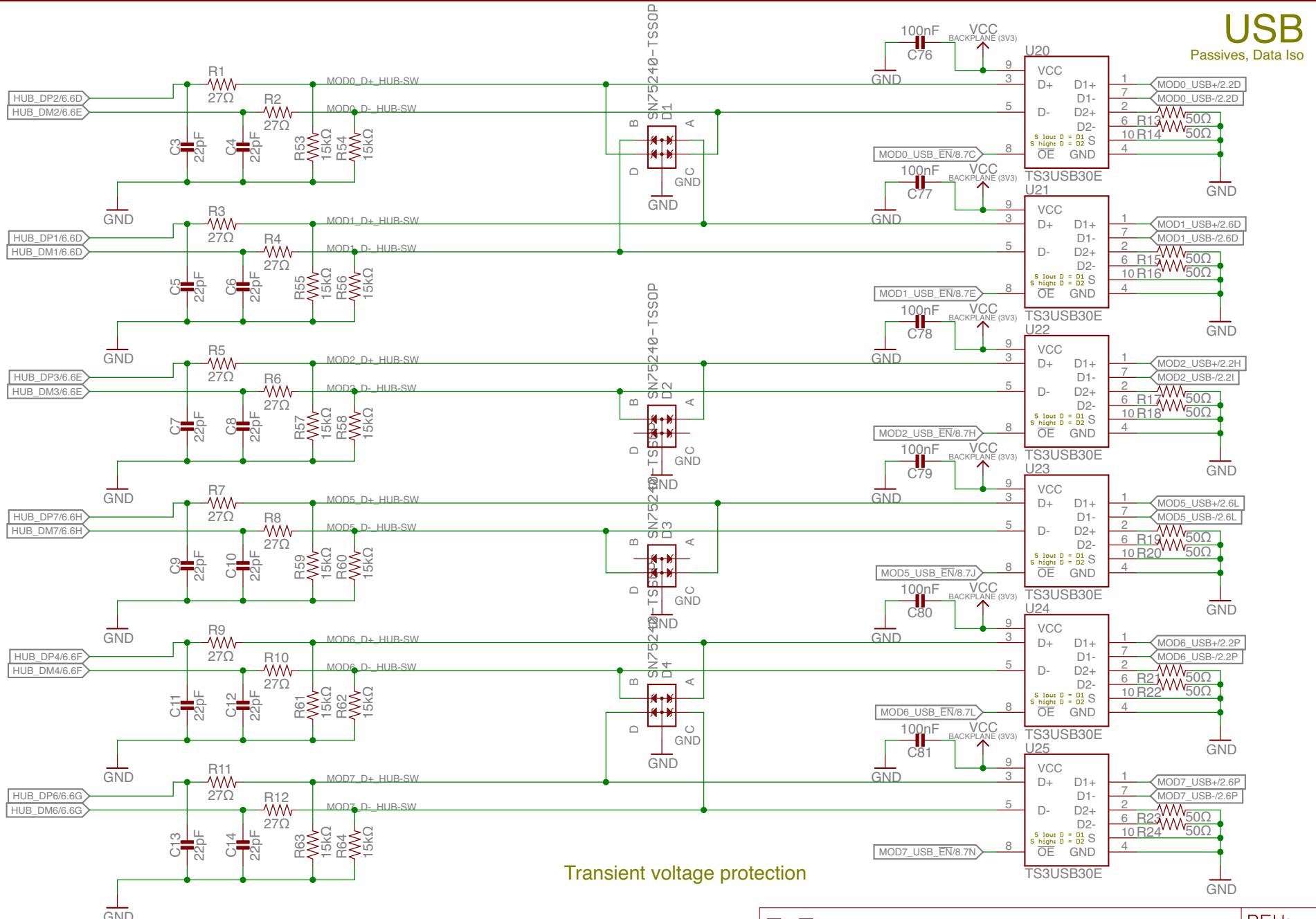
PORTPWR: Any port powered.
When any port is powered on, PORTPWR is high. When all ports are off, PORTPWR is low.

PORTDIS: LED indicator control
When no port is disabled, PORTDIS is high. When any port is disabled, PORTDIS is low.

Hub Monitoring and Reset

The PWRON signal for each used port is wired to the matching pin on the GPIO extender. The hub will automatically disable power to a port if the OVRCUR signal activates for any port. As port 5 is currently unused, the HUBCFG status line is wired to that port, however when we integrate the power module into the backplane that will likely shift to monitoring PWRON for the last port.



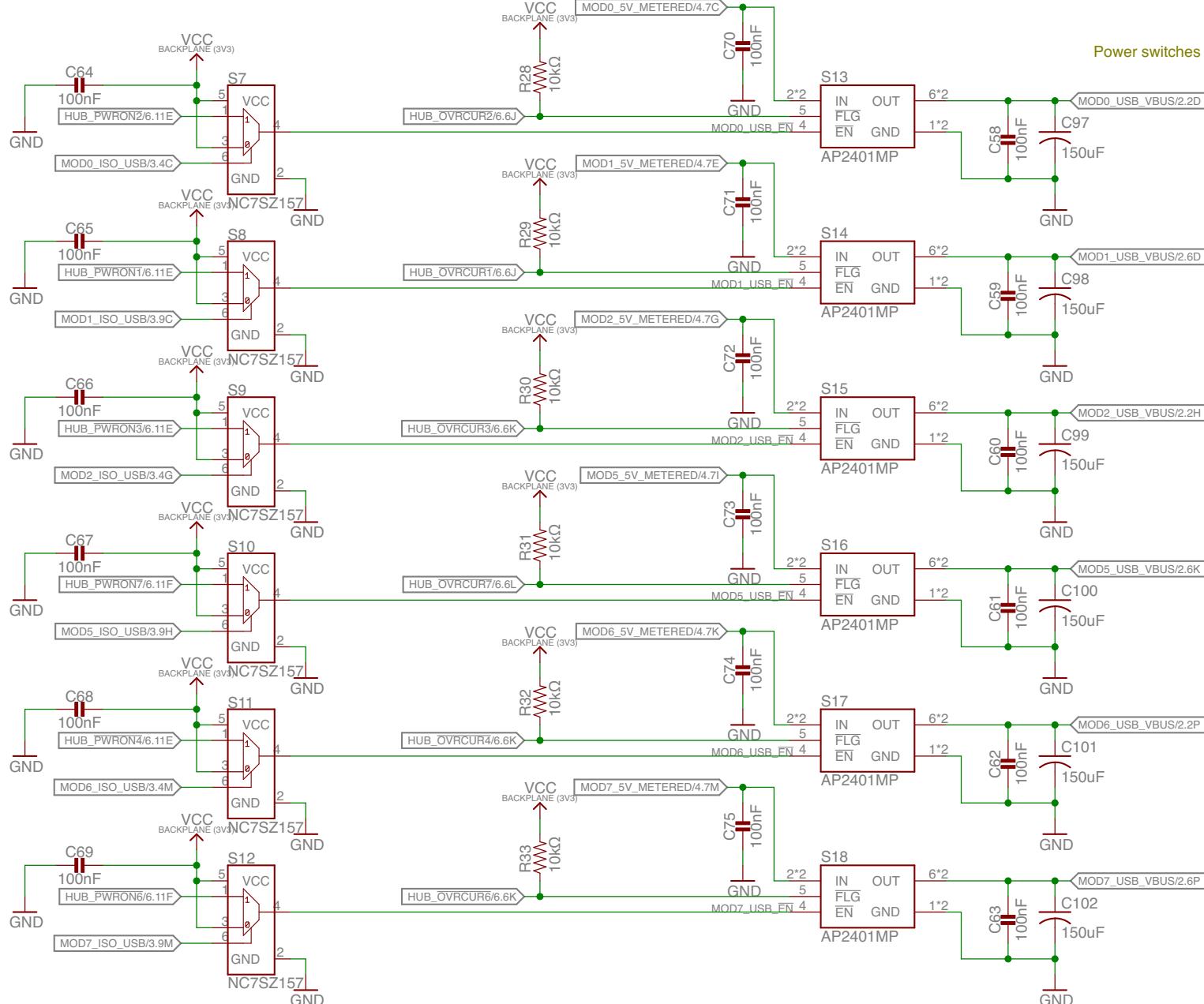


M Signpost Backplane

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Date: 5/11/17 14:43

REV:
C



Signpost Backplane

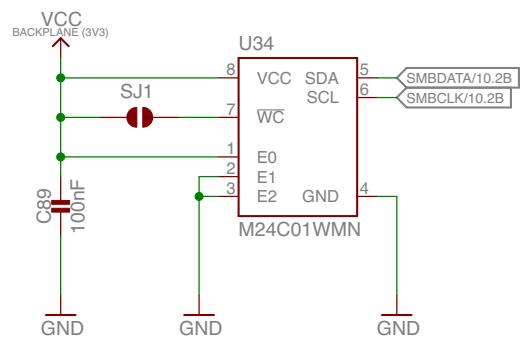
REV:
C

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EEPROM ID



Signpost Backplane

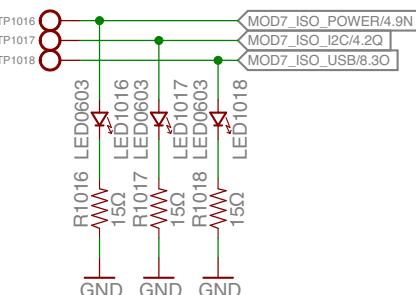
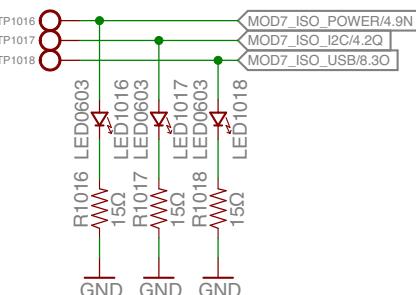
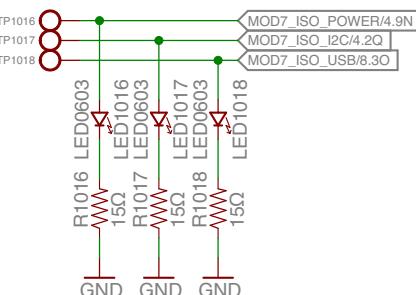
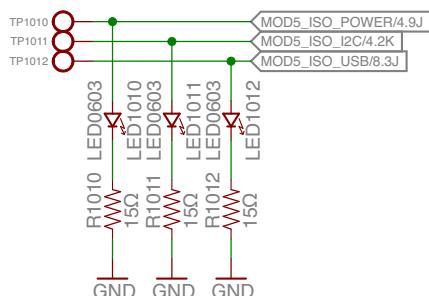
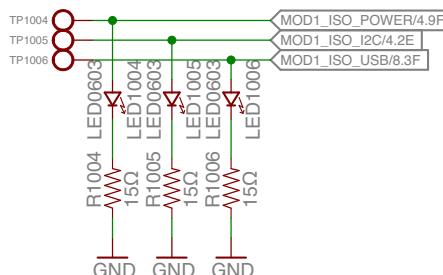
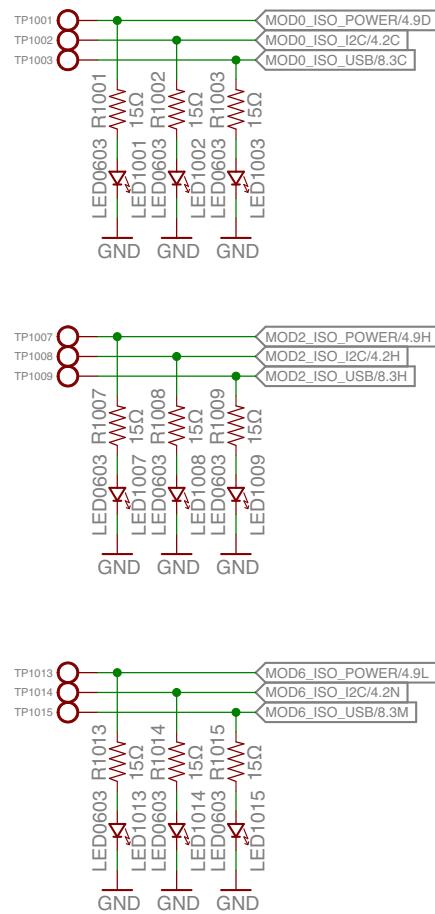
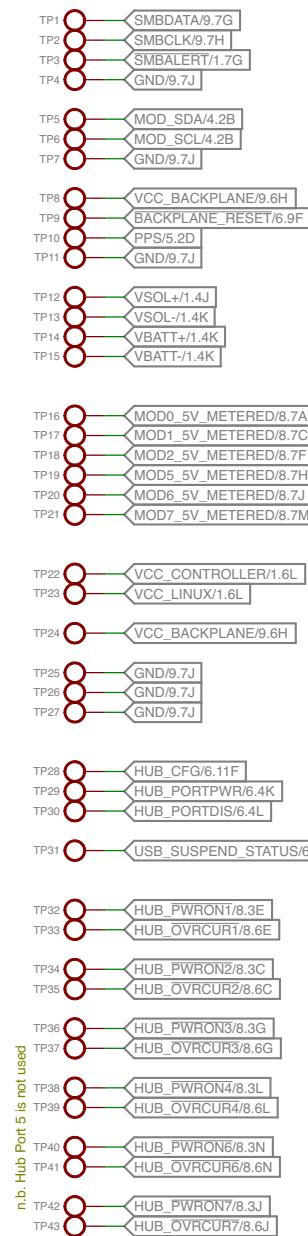
REV:
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Author: Pat Pannuto

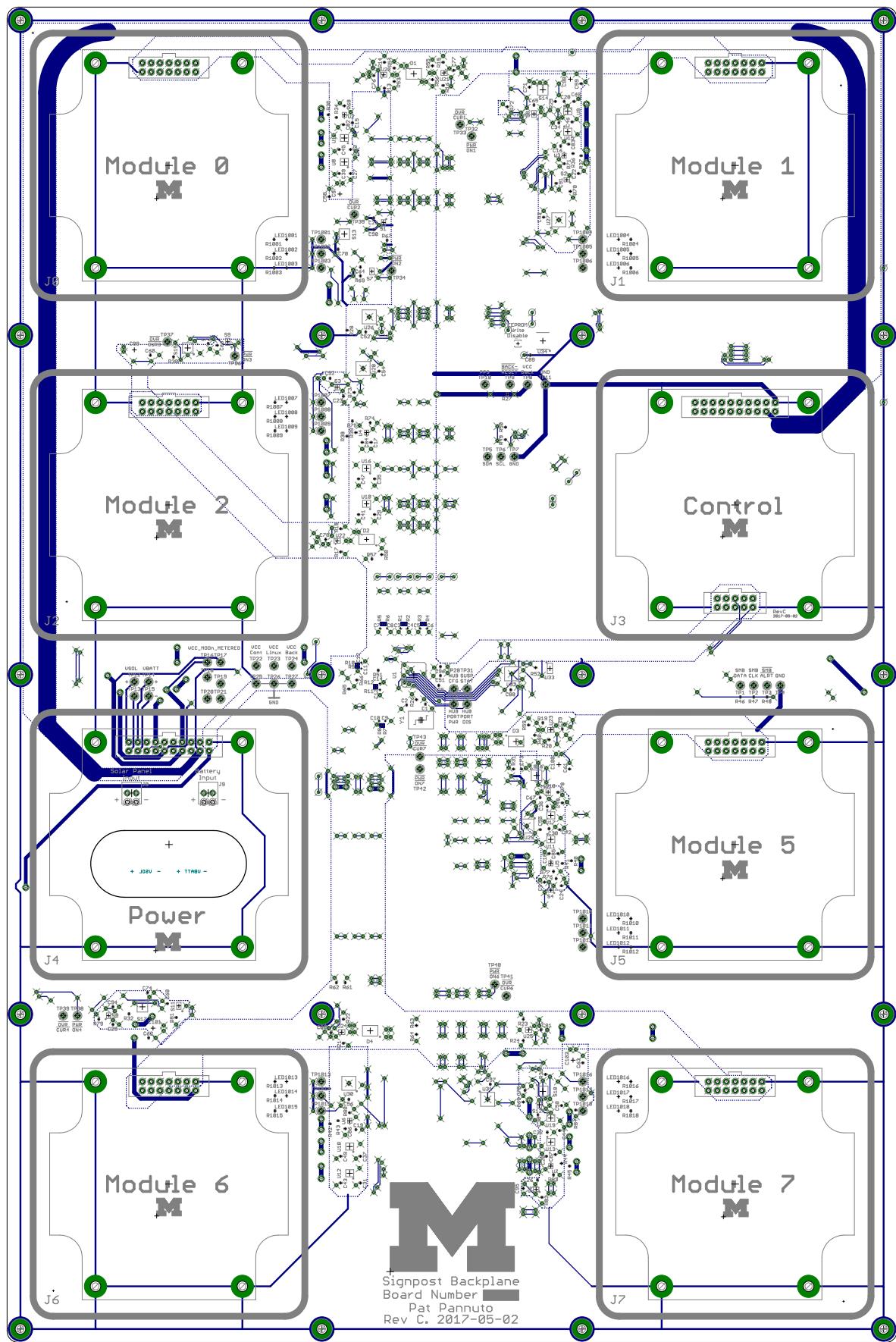
Date: 5/11/17 14:43

Sheet: 9/10

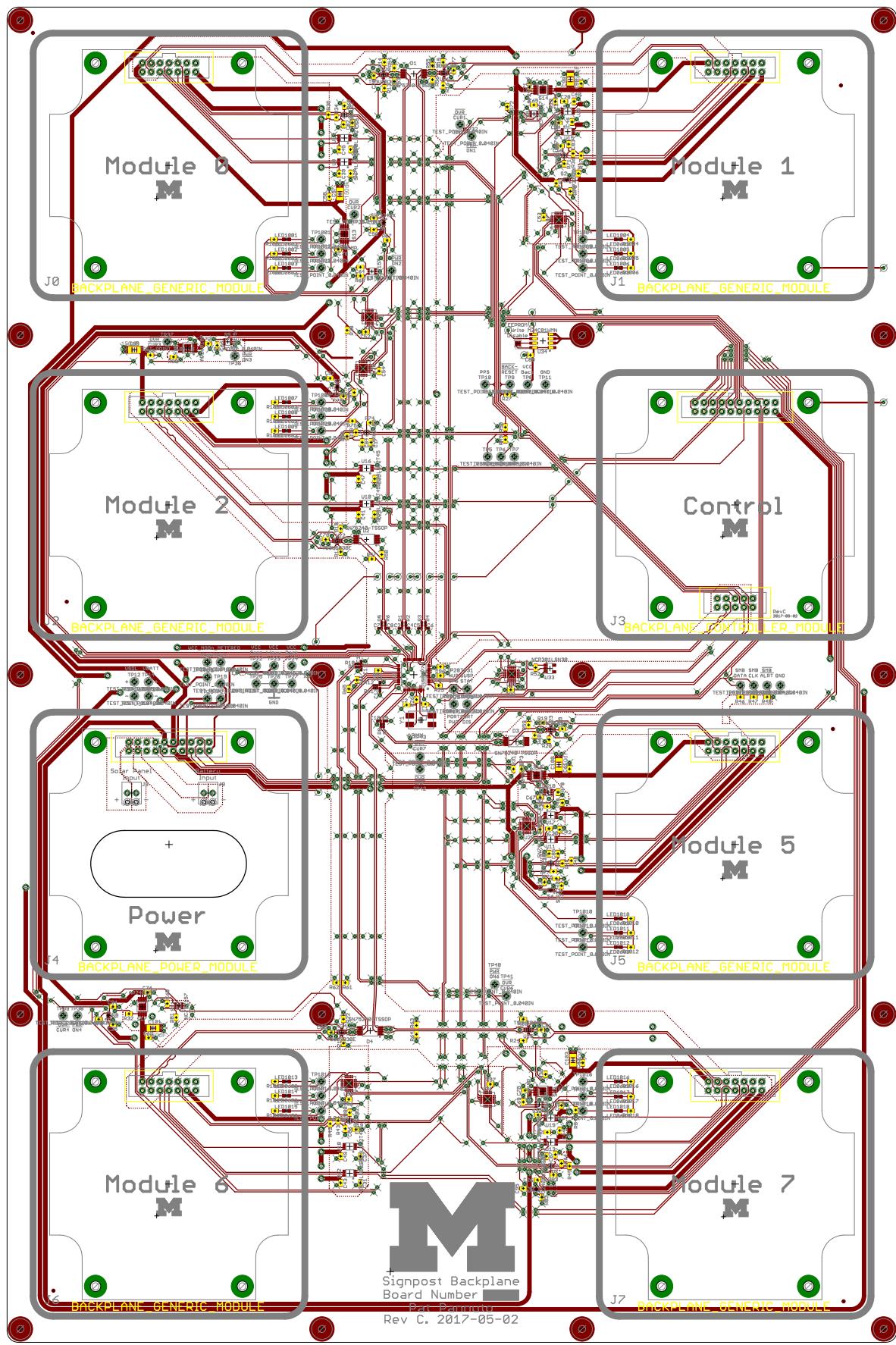
Debugging



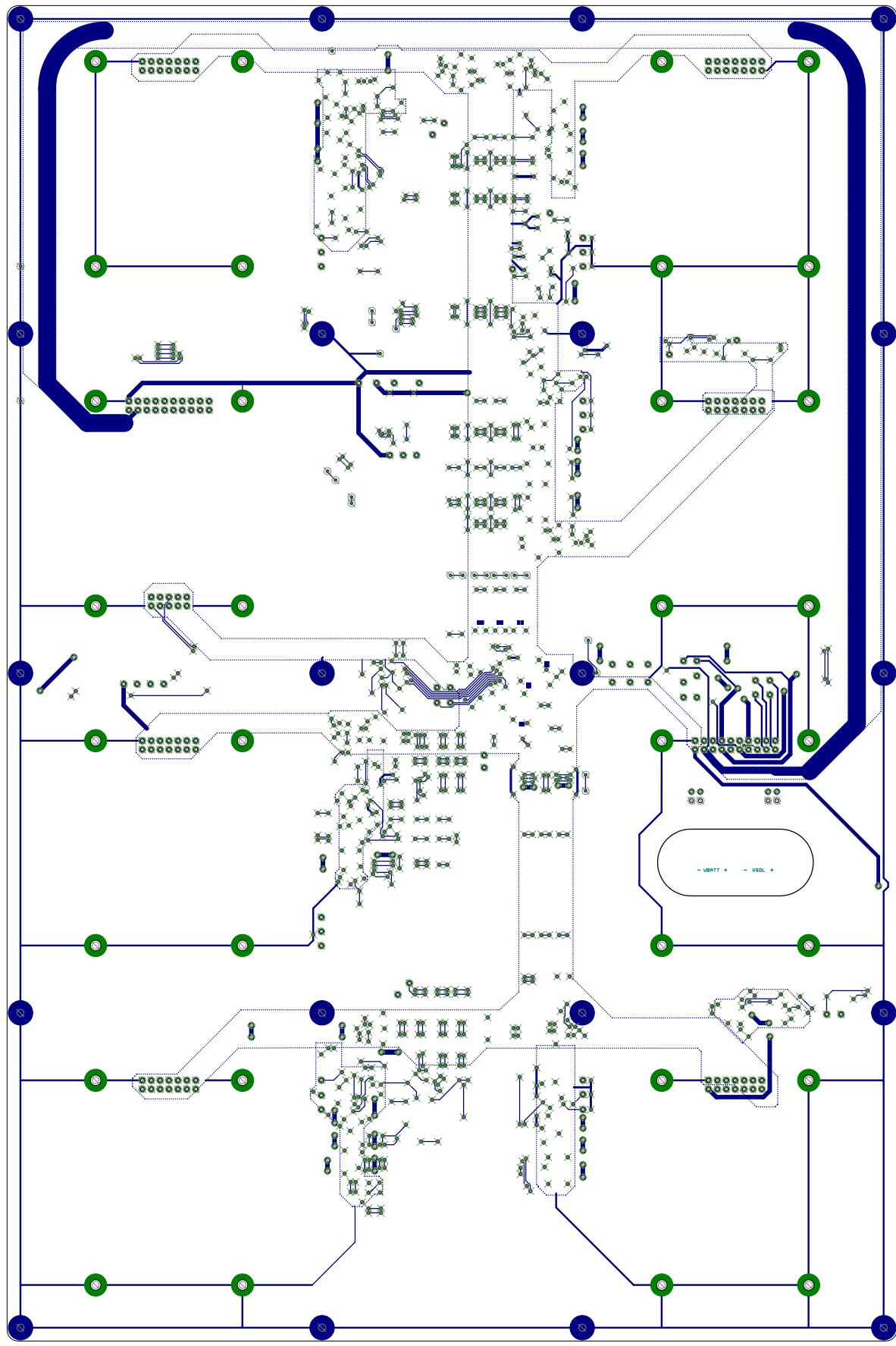
Top and Bottom Layers



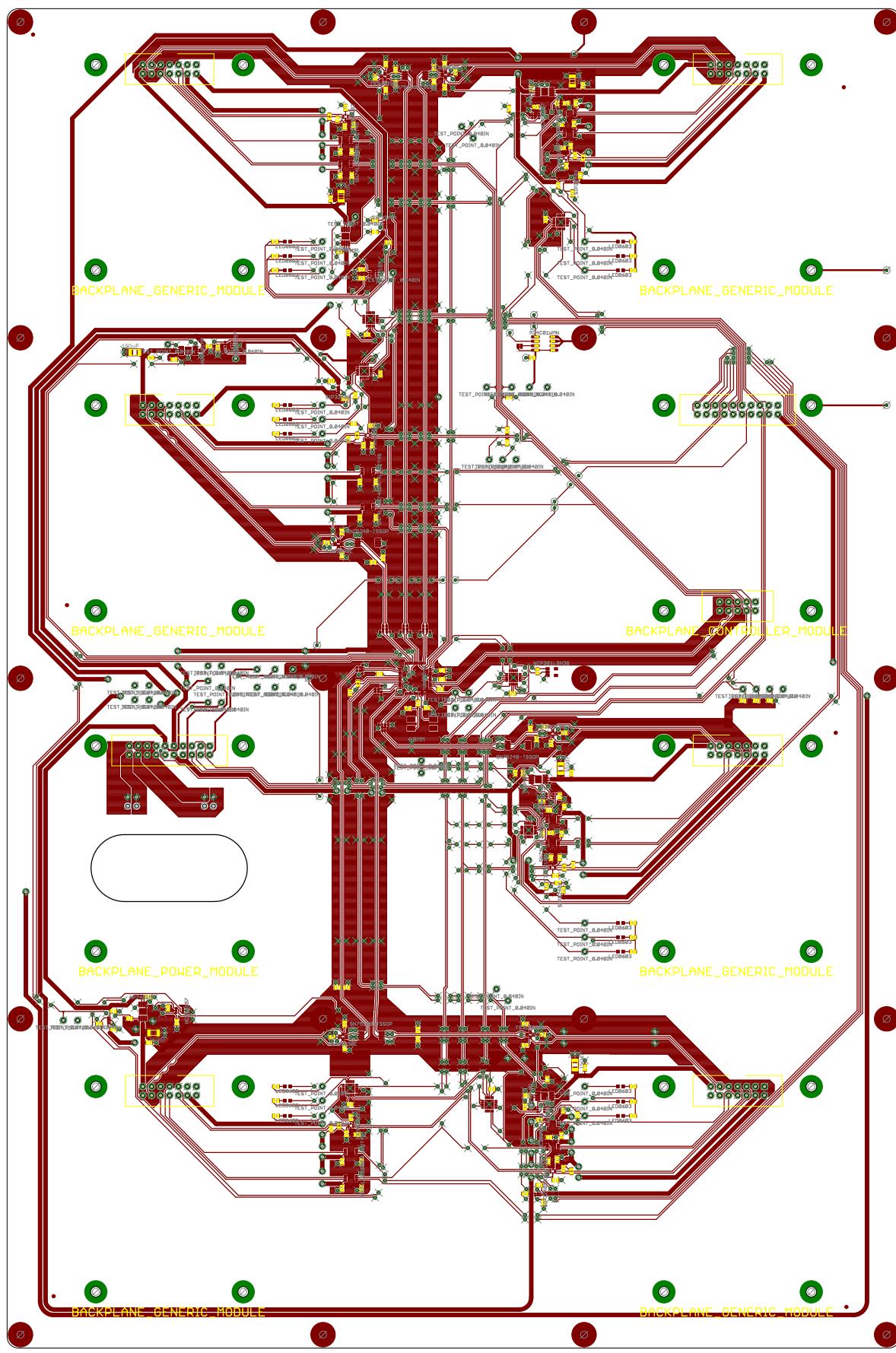
Top Layer



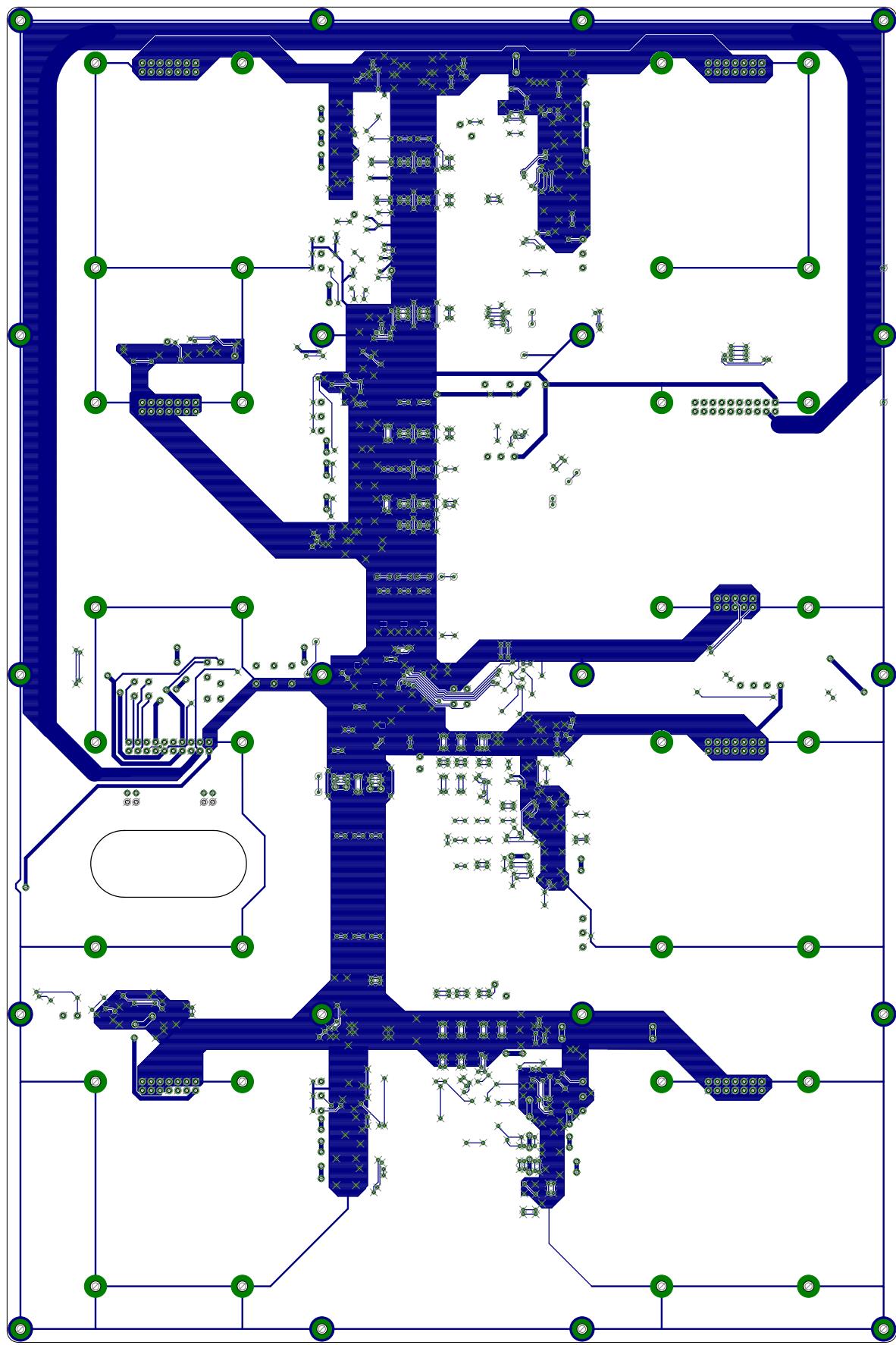
Bottom Layer



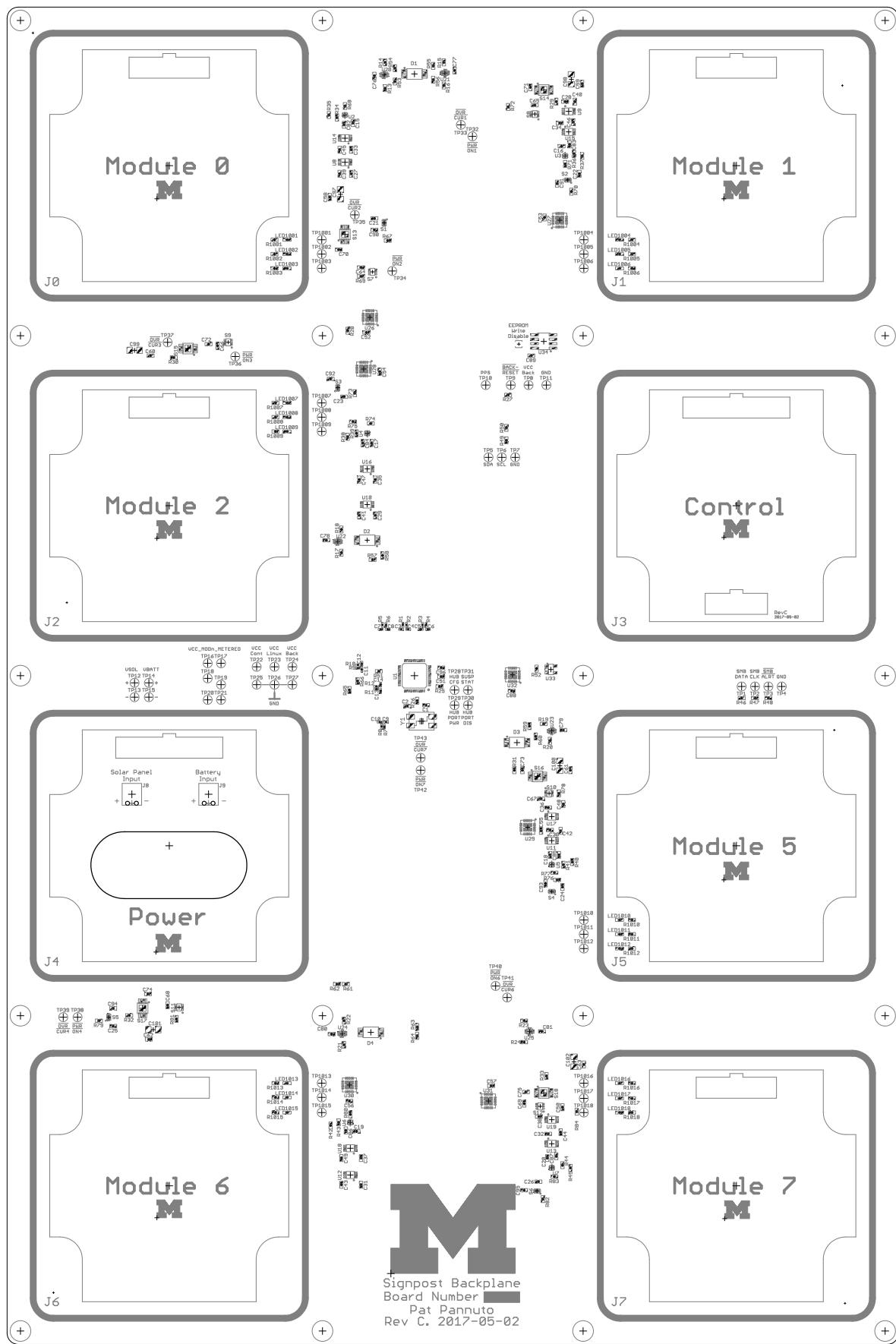
Top Copper Layer



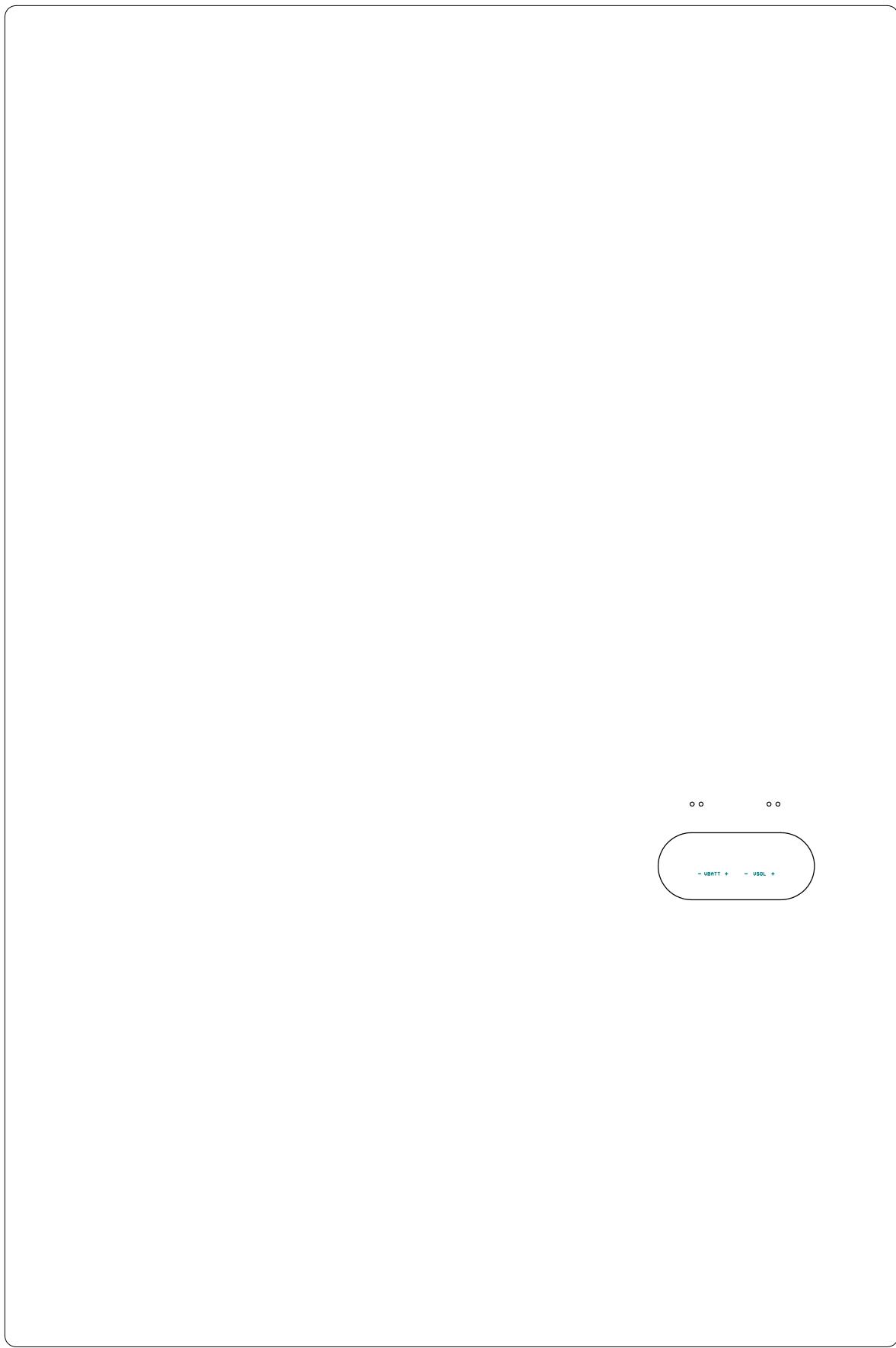
Bottom Copper Layer

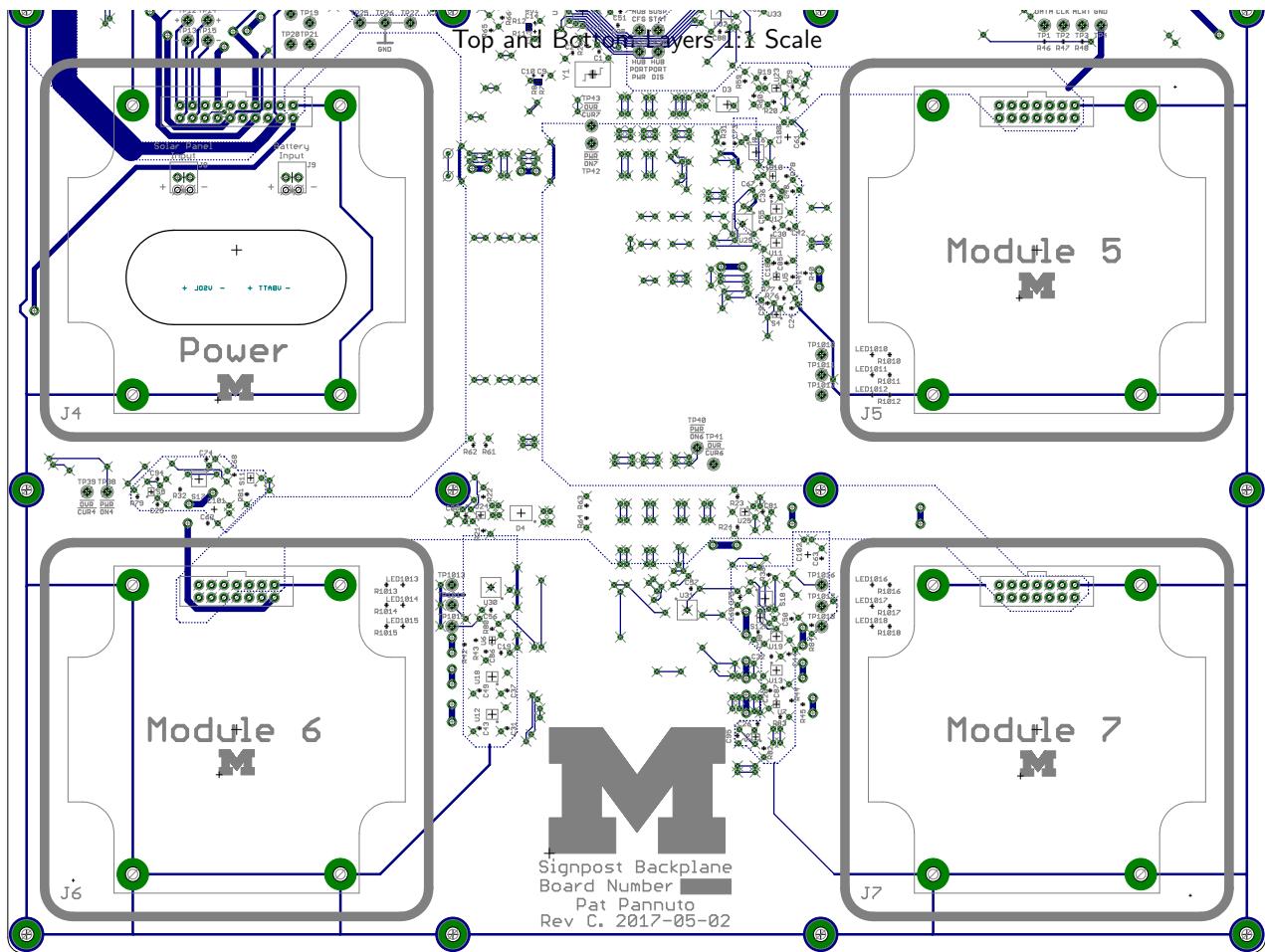


Top Paste Layer with Silkscreen

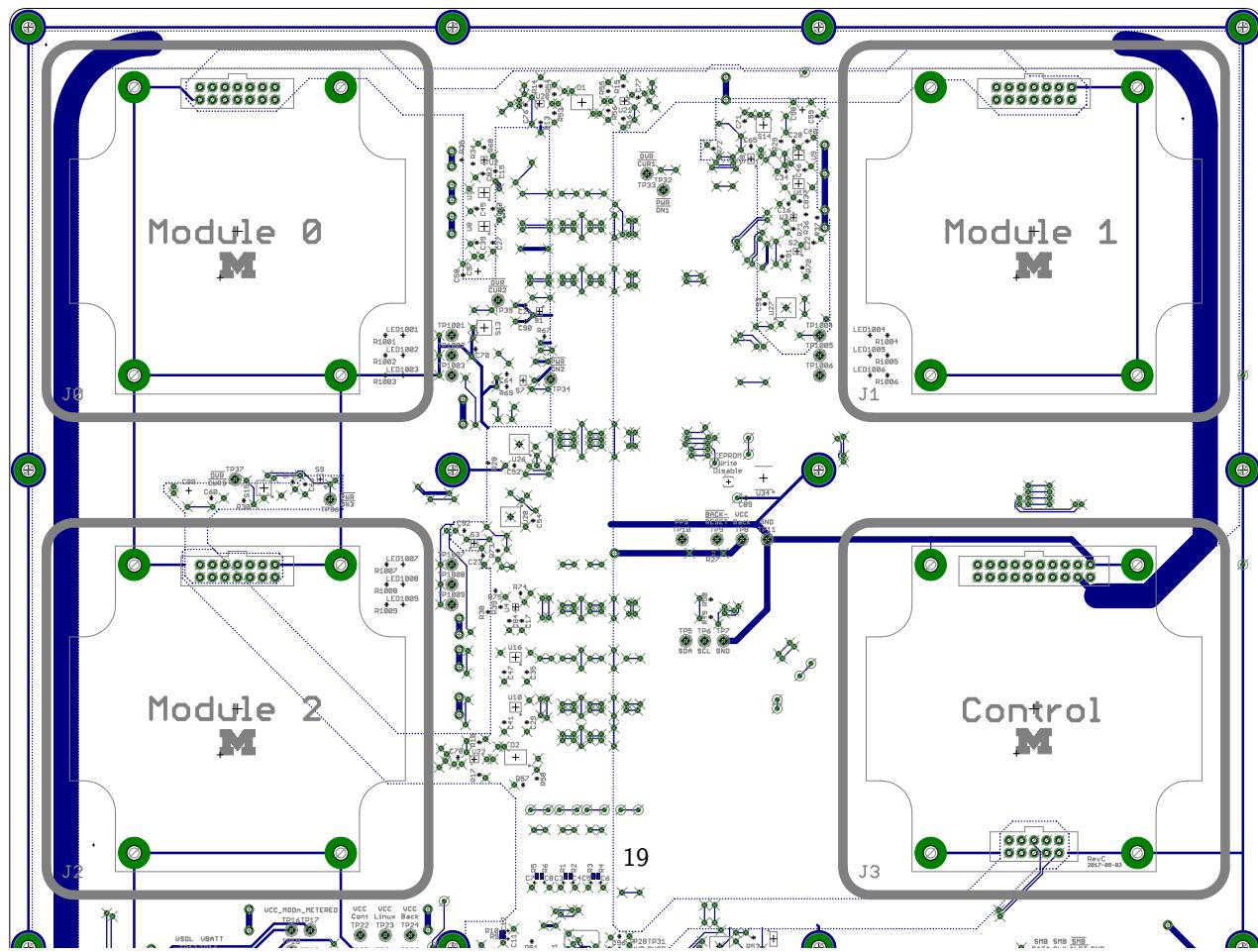


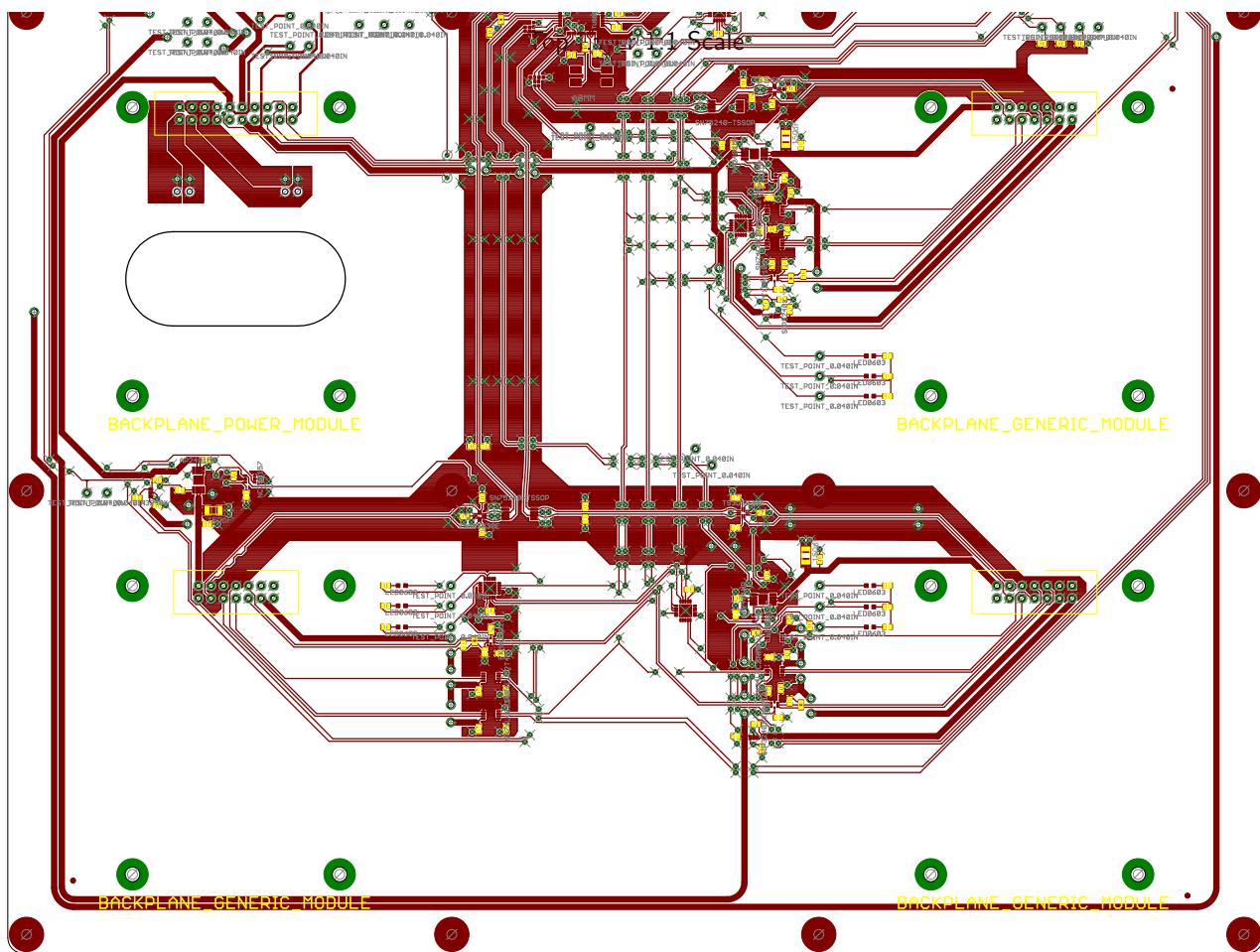
Bottom Paste Layer with Silkscreen



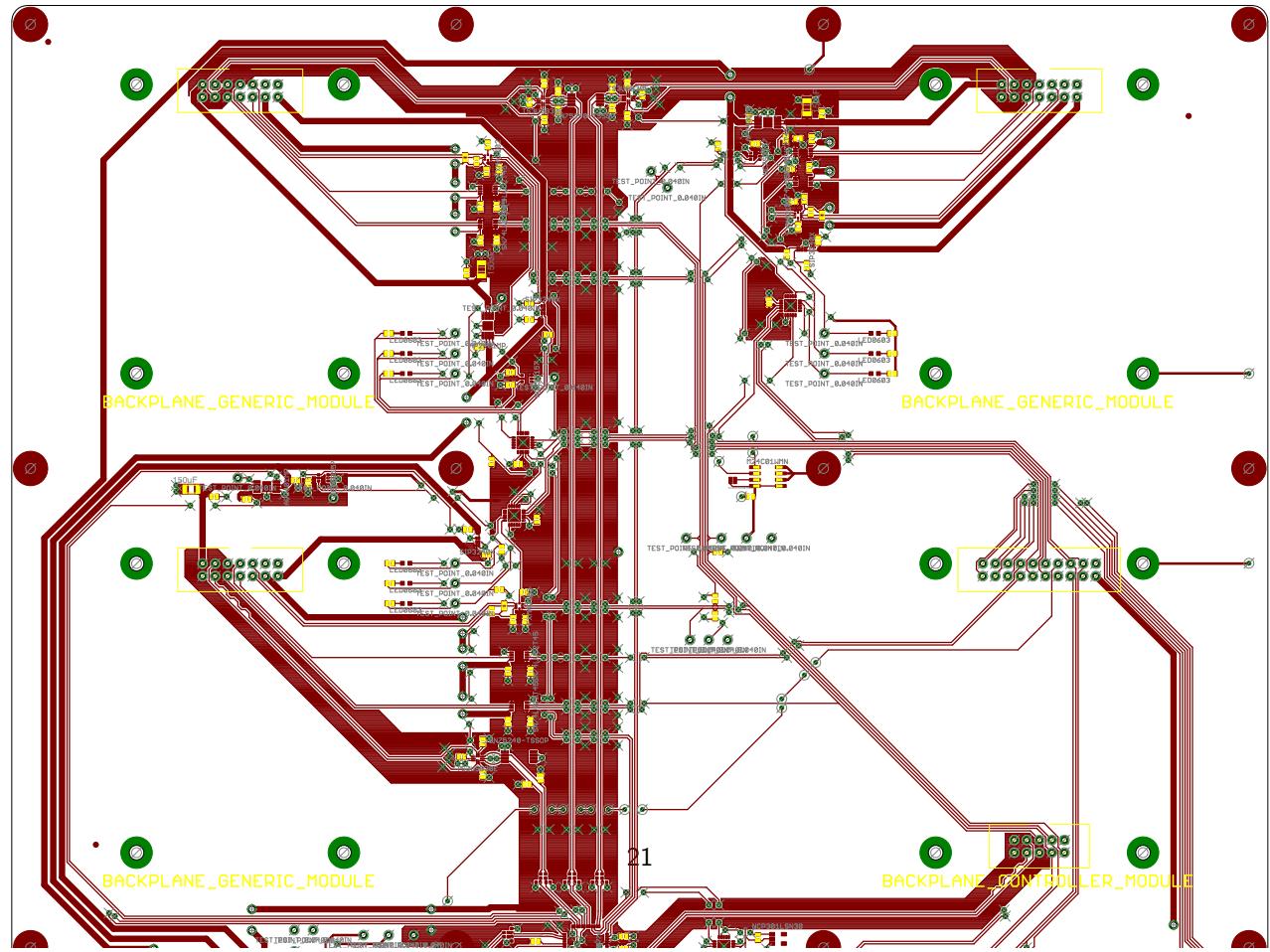


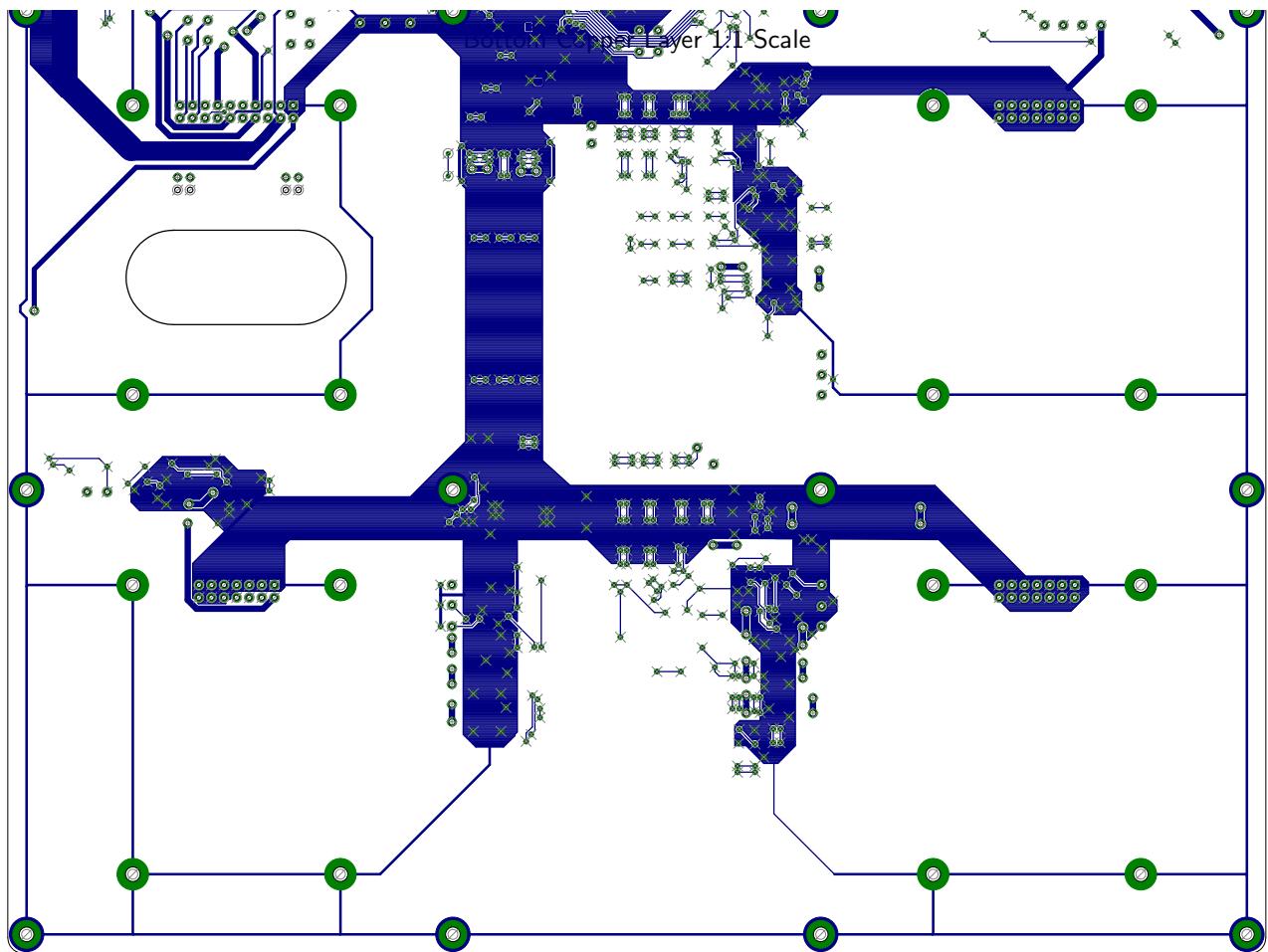
Top and Bottom Layers 1:1 Scale



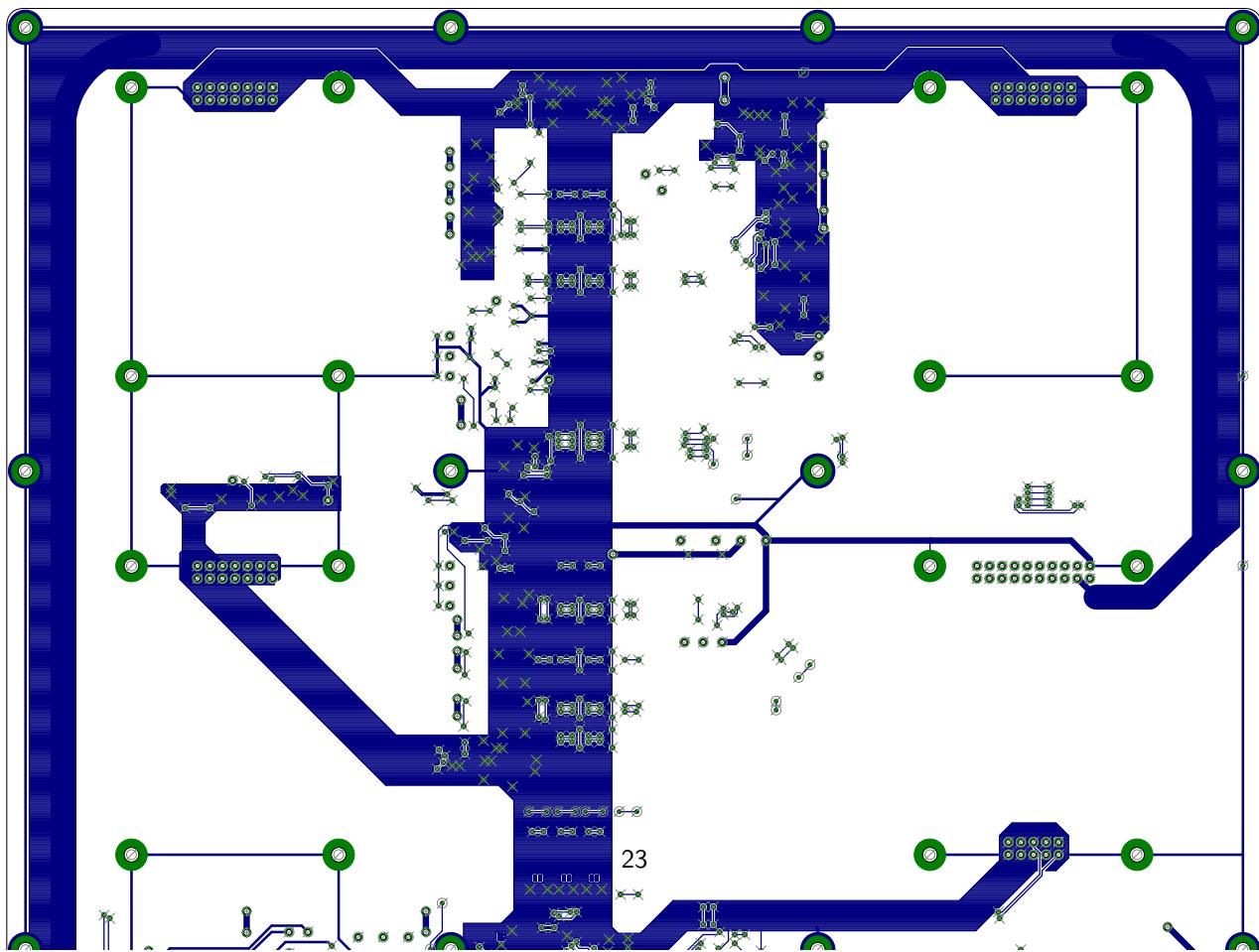


Top Layer 1:1 Scale





Bottom Copper Layer 1:1 Scale



Qty	Parts	Value	Package	Description	DIGIKEY	DIGIKEY2	MOUSER	NEWARK
2	C1, C2	22pF, 5% tol	0603_CAP	SMD Capacitor	1276-1023-1-ND			
12	C3, C4, C5, C6, C7, C8, C9, C10, C22pF		0402_CAP	SMD Capacitor	490-5868-1-ND			
75	C15, C16, C17, C18, C19, C20, C2100nF		0603_CAP	SMD Capacitor	490-1524-1-ND			
7	C90, C91, C92, C93, C94, C95, C94.7uF		0603_CAP	SMD Capacitor	1276-3367-1-ND			
6	C97, C98, C99, C100, C101, C102150uF		C1206	CAPACITOR, American symbol	490-13969-1-ND			
4	D1, D2, D3, D4	SN75240-TSSOP	TSSOP-8	TVS Diodes [suggested for TI USB296-6596-1-ND]				
6	J0, J1, J2, J5, J6, J7	BACKPLANE_GENERIC_MBACKPLANE_MODULE_14PB	Signpost generic module recepticle	S9195-ND				
1	J3	BACKPLANE_CONTROLLEBACKPLANE_MODULE_20PSign	controller recepticle	S9197-ND		S9194-ND		
1	J4	BACKPLANE_POWER_MBACKPLANE_MODULE_20PB	Signpost power module recepticle	S9197-ND				
2	J8, J9	SCREW-TERMINAL_2_0_CONN_BLOCK_2		2x 0.100 in screw terminal block	277-1273-ND			
18	LED1001, LED1002, LED1003, LEIDNP	LED-0603	LED	DNP				
12	R1, R2, R3, R4, R5, R6, R7, R8, R27Ω	0402_RES-HIGH_SPEED	Resistor	RHM27CECT-ND				
12	R13, R14, R15, R16, R17, R18, R50Ω	0603-RES	Resistor	RHM49.9CFCT-ND				
3	R25, R26, R27	1.5kΩ	0603-RES	Resistor	RHM1.50KHCT-ND			
25	R28, R29, R30, R31, R32, R33, R10kΩ	0603-RES	Resistor	RHM10.0KHCT-ND				
14	R53, R54, R55, R56, R57, R58, R15kΩ	0603-RES	Resistor	RHM15.0KCFT-ND				
18	R67, R68, R69, R70, R71, R72, R10MΩ	0603-RES	Resistor	RHM10MDCT-ND				
18	R1001, R1002, R1003, R1004, R:DNP	0603-RES	Resistor	DNP				
6	S1, S2, S3, S4, S5, S6	SIP3240X	TDFN4	High power (2.4 A) high-side switch	SIP32402ADNP-T1GE4CT-ND			
6	S13, S14, S15, S16, S17, S18	AP2401MP	MSOP-8EP	USB Power Switch	AP2401MP-13DICT-ND			
6	S7, S8, S9, S10, S11, S12	NC7SZ157	SC70-6	MUX	NC7SZ157P6XCT-ND			
61	TP1, TP2, TP3, TP4, TP5, TP6, TP TEST POINT_0.040IN	TESTPOINT_0.040IN	0.040in Test Point	5001K-ND				
1	U1	TUSB2077A	LQFP-48	Full Speed USB Hub - 7 Port	296-37871-1-ND			
6	U2, U3, U4, U5, U6, U7	FXMA2102	UMLP-8	Dual Supply, 2-Bit Voltage Transl	FXMA2102UMXCT-ND			
6	U20, U21, U22, U23, U24, U25	TS3USB30E	UQFN-10	USB Mux with OE control and ES	E296-24684-1-ND			
7	U26, U27, U28, U29, U30, U31, MCP23008QFN	MCP23008-E/ML-ND	QFN-20-4MM	GPIO Extender via I2C - 8 Pin				
1	U33	NCP301LSN30	SOT23-5	Power-on-reset. LSN30 -> Fixed 3	NCP301LSN30T1GOSCT-ND			
1	U34	M24C01WMN	SOIC-8	1K I2C™ Serial EEPROM	497-8631-1-ND			
12	U8, U9, U10, U11, U12, U13, U15N74LVC2T45	VFSOP-8		Bidirectional Buffer / Level Conve	296-17014-1-ND			
1	Y1	ABMM	ABMM	Low-Profile SMD crystal	535-10156-1-ND			