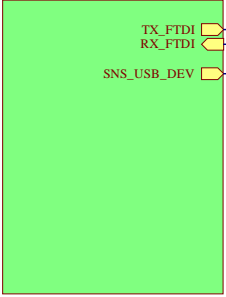
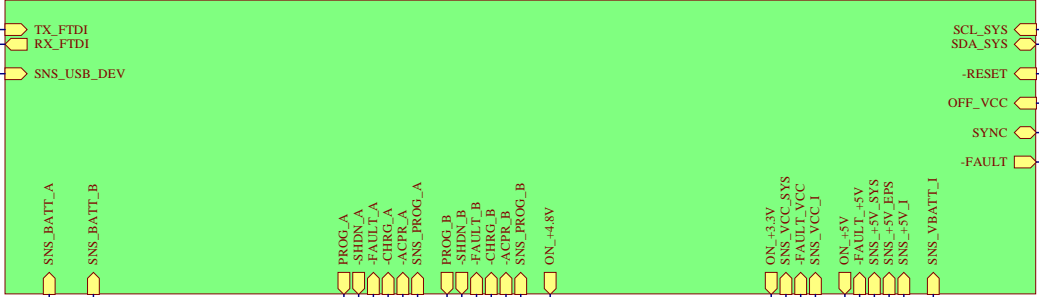


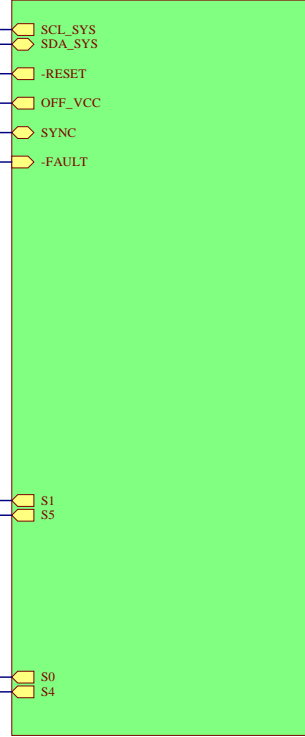
U_USB Interface
USB Interface.SchDoc



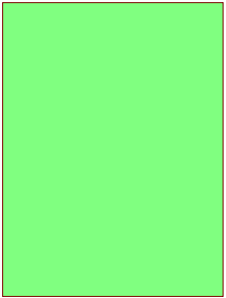
U_SupMCU
SupMCU.SchDoc



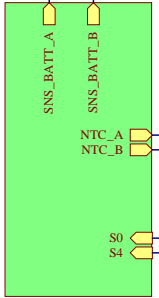
U_Bus Connectors
Bus Connectors.SchDoc



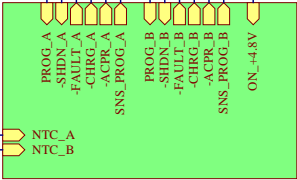
U_Linear EPS MOD
Linear EPS MOD.SchDoc



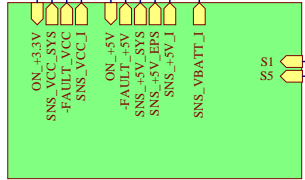
U_Battery Connections
Battery Connections.SchDoc



U_Chargers
Chargers.SchDoc



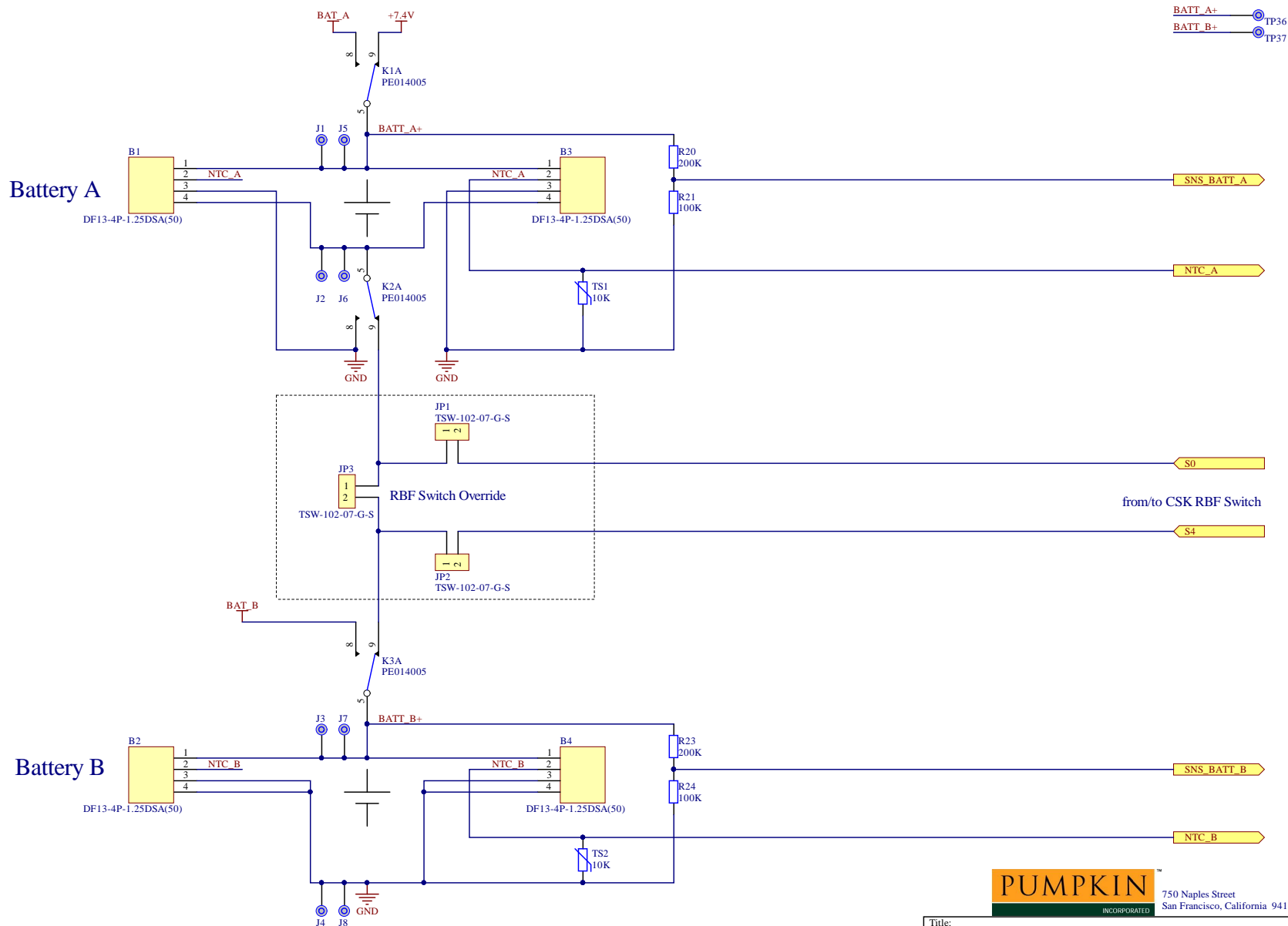
U_Converters
Converters.SchDoc



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San Francisco, California 94112

Title: CubeSat Kit Linear EPS - Top Sheet			
Part Number: 705-00337		Revision: E0	
File: Top Sheet.SchDoc		Sheet: 1 of 8	
Date: 15/11/2018	Size: B	Drawn By: DJW	

iPod Batteries Li-Poly

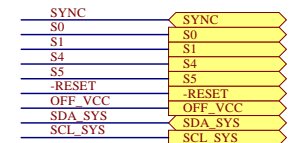
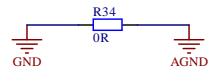
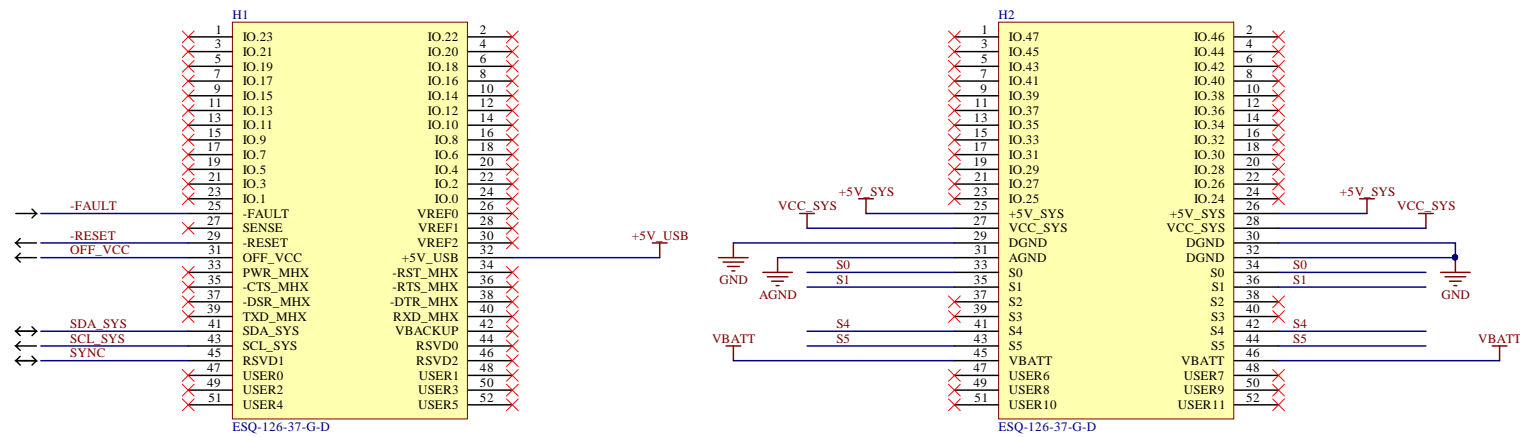


- Notes:
1. iPod Li-Poly battery: 3.7V, 1800 mAh
 2. Observe polarities when installing iPod batteries.
 3. NTCs must be in close proximity to iPod batteries.
 4. B1, B2, J1-J4 for top-side batteries.
B3, B4, J5-J8 are optional bottom-side batteries.
 5. J1-J8 are alternate solder connections for iPod batteries.



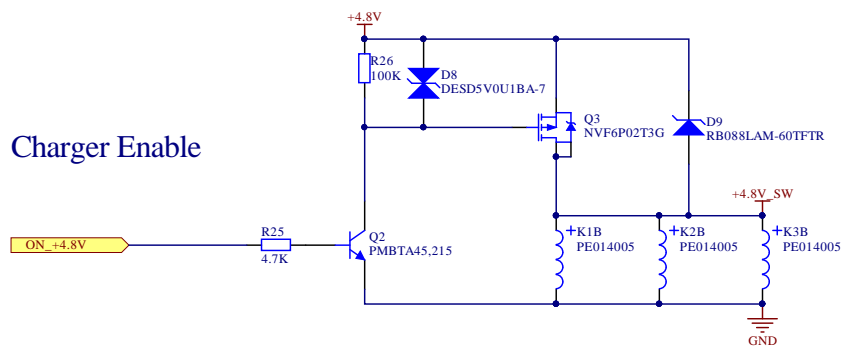
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Part Number:	705-00337	Revision:	E0
File:	Battery Connections.SchDoc	Sheet:	2 of 8
Date:	15/11/2018	Size:	B
		Drawn By:	DJW

CubeSat System Bus

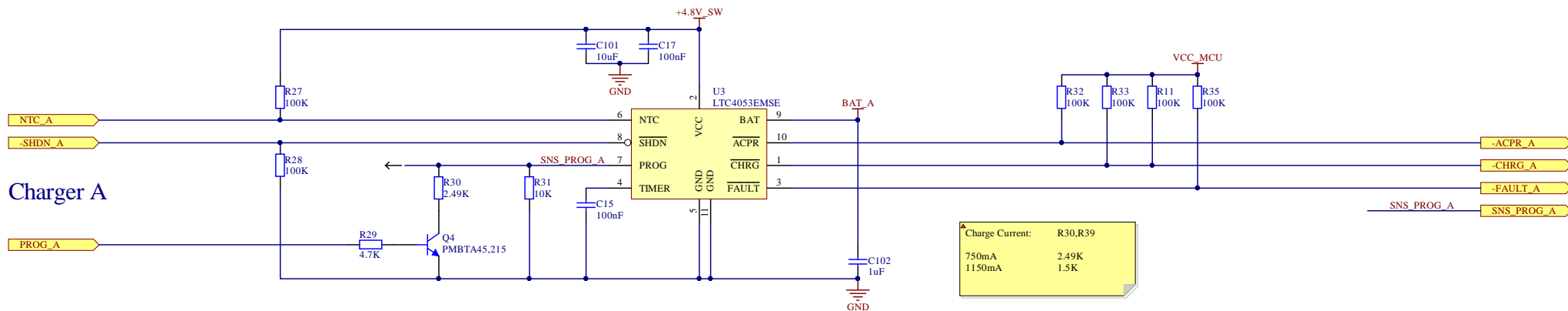


Title: CubeSat Kit Linear EPS - Bus Connectors			
Part Number:	705-00337	Revision:	E0
File:	Bus Connectors.SchDoc	Sheet:	3 of 8
Date:	15/11/2018	Size:	B
(C) 2001-2018 Pumpkin, Inc.		Drawn By:	DJW

Charger Enable

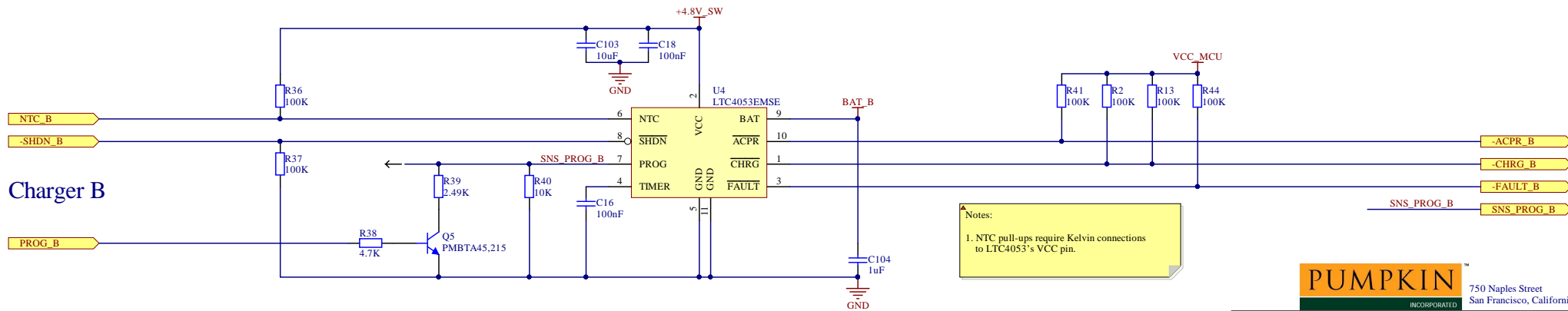


Charger A



Charge Current:	R30,R39
750mA	2.49K
1150mA	1.5K

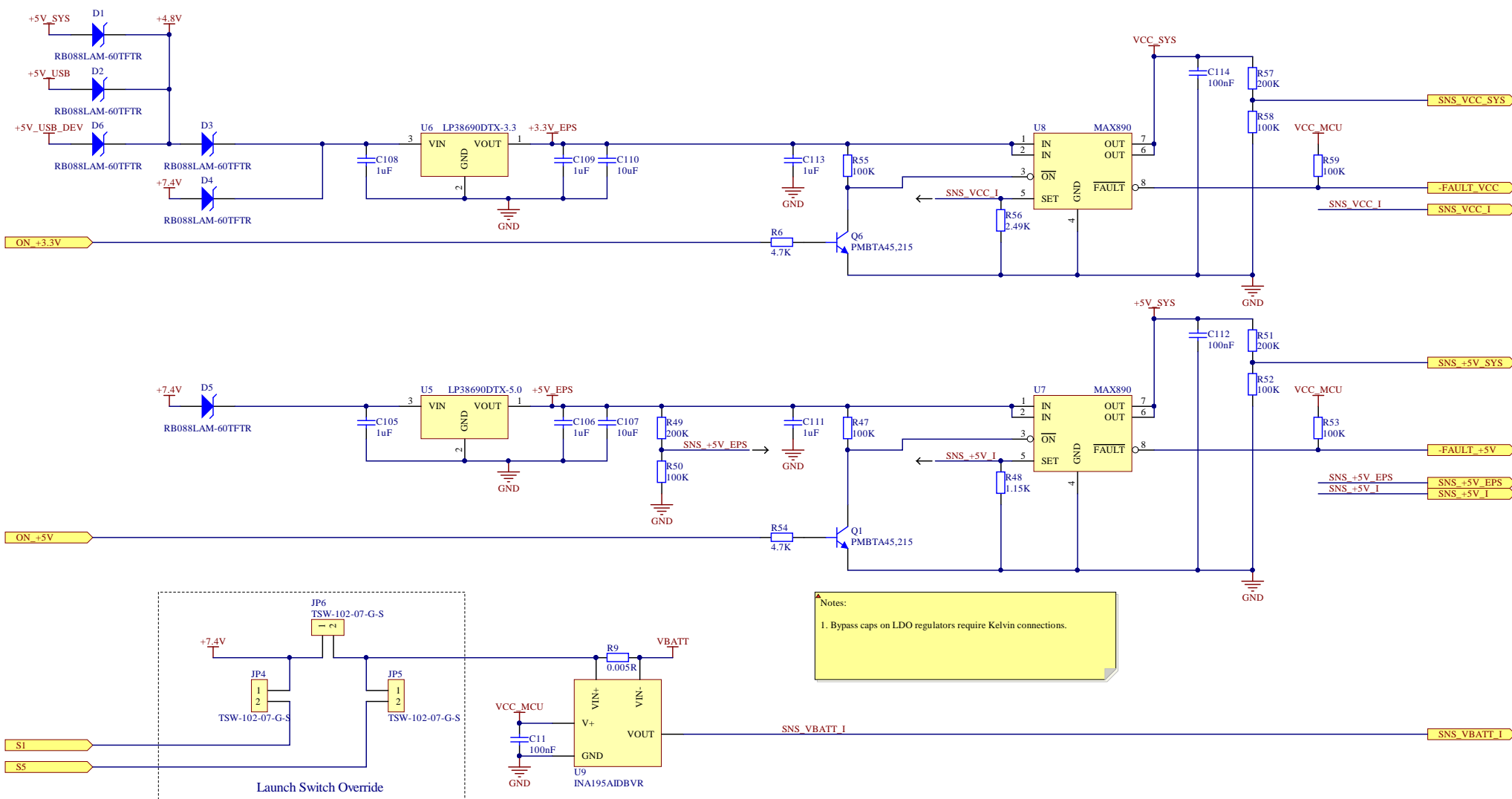
Charger B

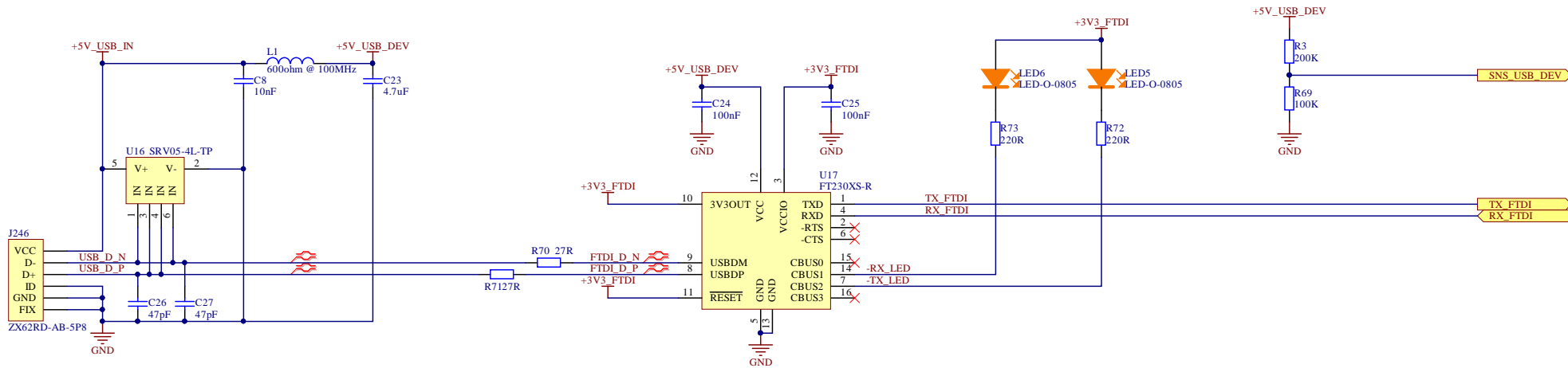


Notes:
1. NTC pull-ups require Kelvin connections to LTC4053's VCC pin.



Title: CubeSat Kit Linear EPS - Battery Chargers			
Part Number:	705-00337	Revision:	E0
File:	Chargers.SchDoc	Sheet:	4 of 8
Date:	15/11/2018	Size:	B
		Drawn By:	DJW





Title: CubeSat Kit Linear EPS - USB Interface			
Part Number: 705-00337		Revision: E0	
File: USB Interface.SchDoc		Sheet: 7 of 8	
Date: 15/11/2018	Size: B	Drawn By: DJW	

ASSY Configuration Codes (Binary OR)

Bit	Value	0 case	1 case
0	1	R65 is placed to allow OFFVCC to shutdown the SupMCU;	R65 is not placed, protecting the SupMCU from OFFVCC;
1	2	R19 is placed, allowing -RESET to reset to SupMCU;	R19 is not placed, protecting the SupMCU from -RESET;
2	4	R4 is not placed, separating CLK0 for CLKOUT;	R4 is placed connecting CLK0 and CLKOUT;
3	8	Not bus flight switches;	Using bus flight switches, place JP1, JP2, JP4, JP5;
4	16	Not bypassing flight switches;	Bypassing flight switches, place JP3 and JP6;
5	32	Using External Thermistors DNP TS1 and TS2;	Using PCB mount thermistors, place TS1 and TS2;
6	64	750mA charging current, place R30 and R39 as 2.49K resistors;	1150mA charging current, place R30 and R39 as 1.5K resistors;
7	128	AGND connection is not made;	AGND connection is made, place R34;
8	256	No Through-hole components are placed;	Place Through-hole components B1-4, H1-2, J253, K1-3, J1;

Test Point List

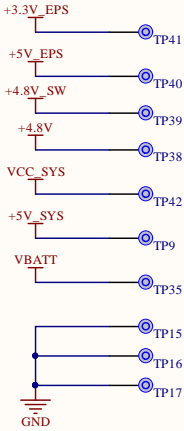
Number	Net	Function
TP8	-RST	Reset Input to the SupMCU
TP9	+5V_SYS	System 5V Supply
TP15	GND	System Ground
TP16	GND	System Ground
TP17	GND	System Ground
TP35	VBATT	System Battery Voltage Supply
TP36	BATT_A+	Positive terminal of Battery A
TP37	BATT_B+	Positive terminal of Battery B
TP38	+4.8V	Module 4.8V Supply Voltage
TP39	+4.8V_SW	Battery Charging Supply Voltage
TP40	+5V_EPS	Module 5V Regulated Supply
TP41	+3.3V_EPS	Module 3.3V Regulated Supply
TP42	VCC_SYS	System 3.3V Supply

ECO List

MOD Level	Number	Action Summary

Changes from REVD0

Designed in Altium
Changed to PIC24 based SupMCU architecture
Added better current measurement
Changed thermistor/heater connections
Simplified SupMCU Bus interface to I2C only
Added USB FTDI functionality



Title: CubeSat Kit Linear EPS - Modification Information			
Part Number: 705-00337		Revision: E0	
File: Linear EPS MOD.SchDoc		Sheet: 8 of 8	
Date: 15/11/2018	Size: B	Drawn By: DJW	