

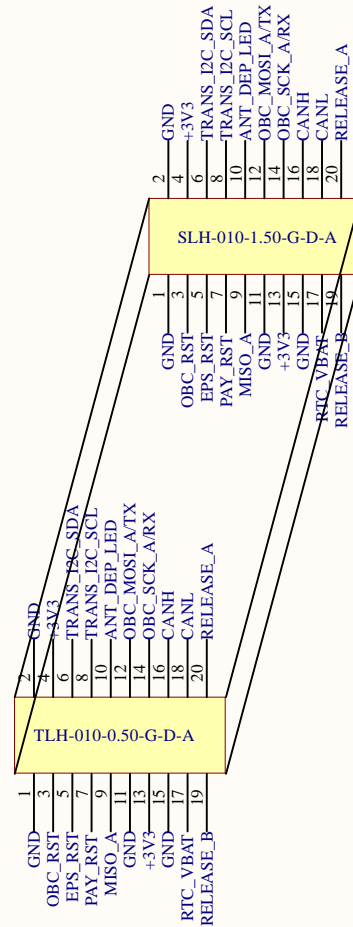
OBC PCB

View looking down through the TOP of OBC

EPS PCB

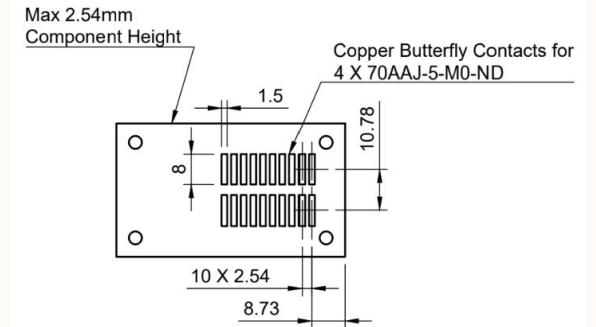
View looking from the TOP of the satellite DOWN

Satellite +Y Face



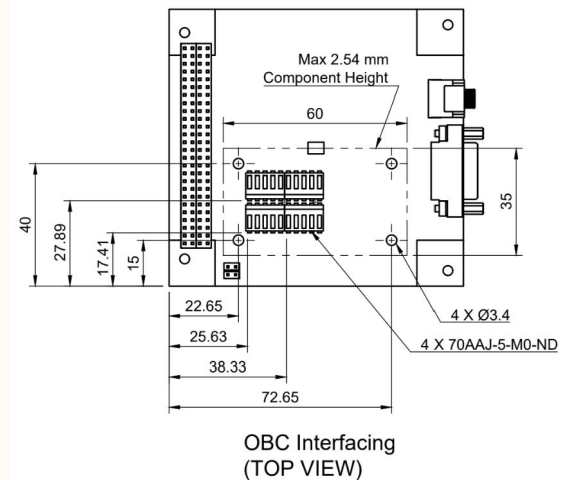
Satellite +X Face

[OLD] V2 Interface Drawings



OBC
(BOTTOM VIEW)

Butterfly Connector (70AAJ-5-M0-ND)
5x1 pins per connector, 2x2 connectors, 10x2 pins total
Note use of the 5-pin variant (4-pin is shown in datasheet)

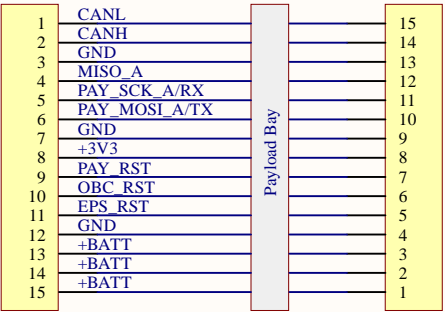


OBC Interfacing
(TOP VIEW)

Title			
EPS-OBC Interface			
Size	Number	Revision	
A4	1	v1.5	
Date:	2019-07-23	Sheet	1 of 8
File:	C:\Users\...\eps-obc.SchDoc	Drawn By:	Jaden Reimer

EPS PCB

Hirose DF13 15-Pin Header:
<https://www.digikey.ca/product-detail/en/hirose-electric-co-ltd/DF13A-15-P-1.25H-21/H125988CT-ND/948972>
6

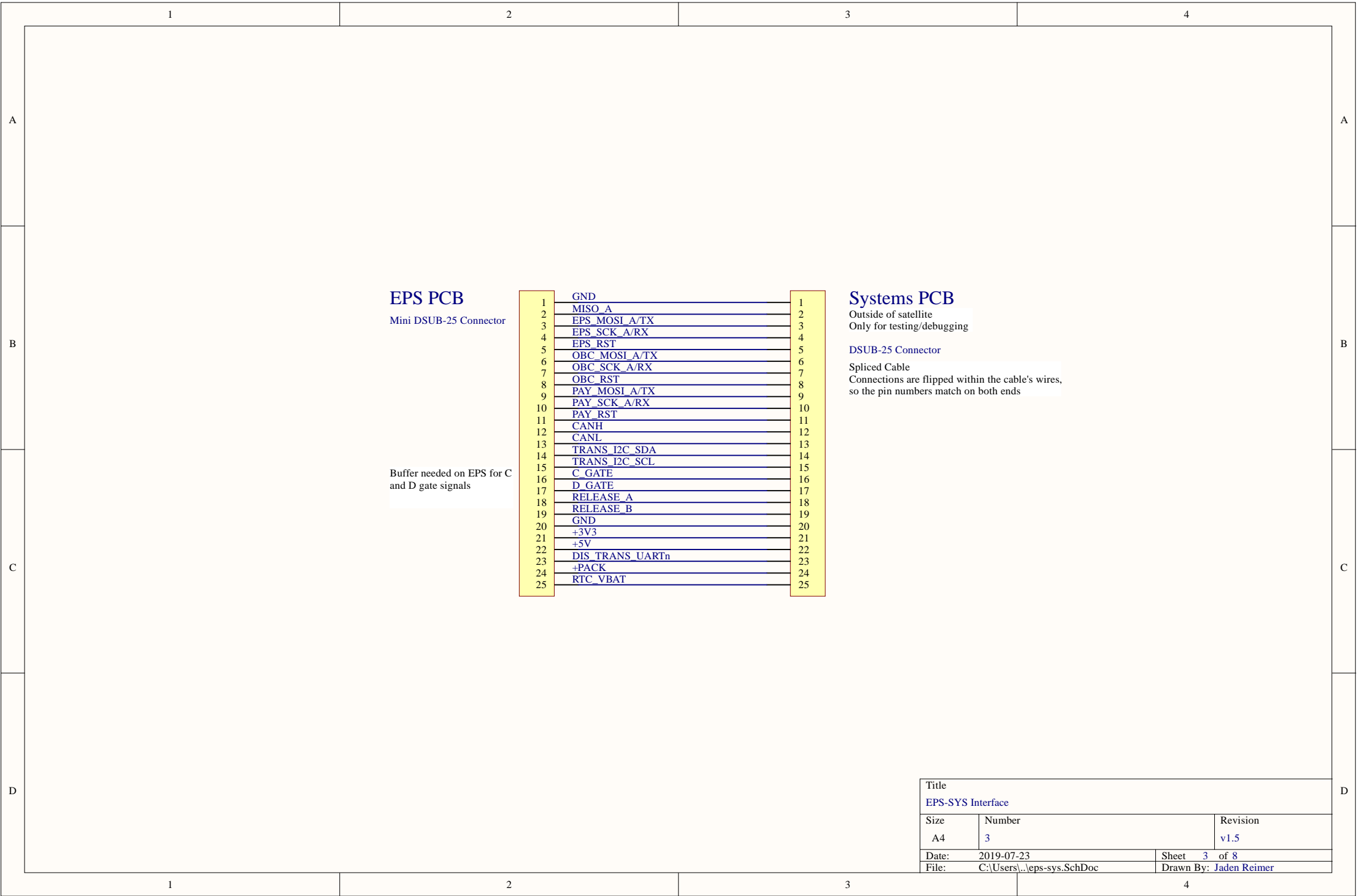


PAY-SSM PCB

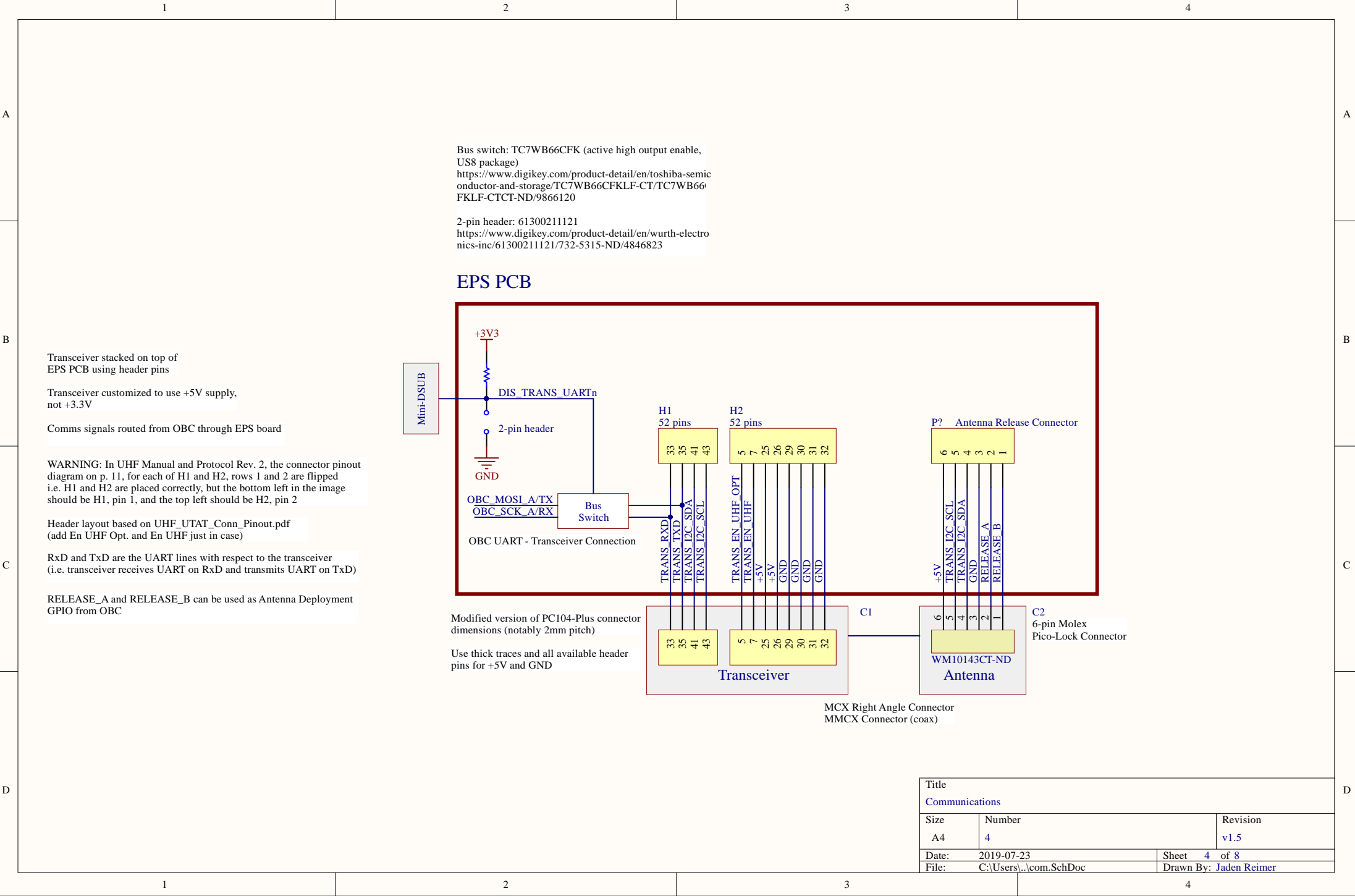
Hermetic connector (15 pins, Glenair 177-705H or 177-706H)
<https://www.datasheets360.com/pdf/2123725778547446062>

Premade wires (15 pins, 28 AWG)
Similar to <https://www.digikey.ca/short/j037h5>
Connections not flipped within cable's wires
Needs to be hand-crimped on the payload bay side for the hermic connector

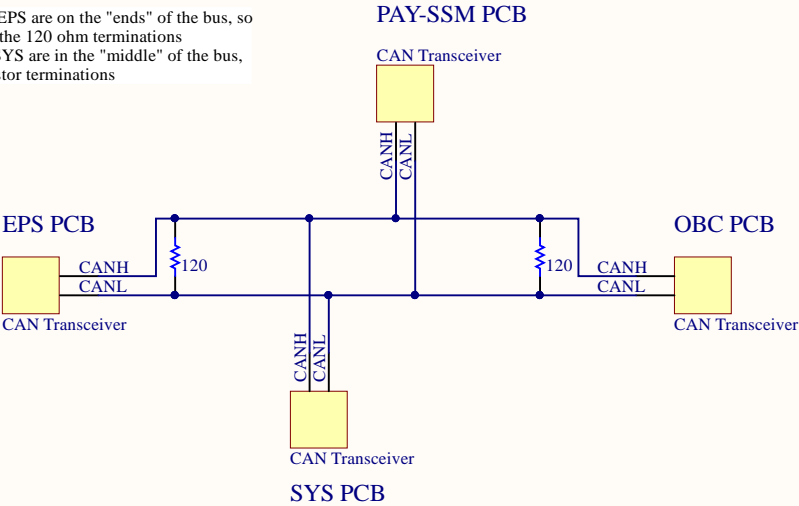
Title			
EPS-PAY Interface			
Size	Number		Revision
A4	2		v1.5
Date:	2019-07-23		Sheet 2 of 8
File:	C:\Users\...\eps-pay.SchDoc		Drawn By: Jaden Reimer



Title		
EPS-SYS Interface		
Size	Number	Revision
A4	3	v1.5
Date:	2019-07-23	Sheet 3 of 8
File:	C:\Users\...\eps-sys.SchDoc	Drawn By: Jaden Reimer



OBC and EPS are on the "ends" of the bus, so they have the 120 ohm terminations
PAY and SYS are in the "middle" of the bus, so no resistor terminations



Title		
CAN Bus		
Size	Number	Revision
A4	5	v1.5
Date:	2019-07-23	Sheet 5 of 8
File:	C:\Users\...\can.SchDoc	Drawn By: Jaden Reimer

2-Pos Right Angle Battery Connector
Samtec SAM9552-ND:
<https://www.digikey.ca/products/en?keywords=sam9552-nd>

Flight model connectors should have gold mating finish

Load switch: TPS22959DNYT

Trace width calculator:
<https://www.4pcb.com/trace-width-calculator.html>

+BATT is the raw voltage across the battery pack
(ignoring connection to EPS)

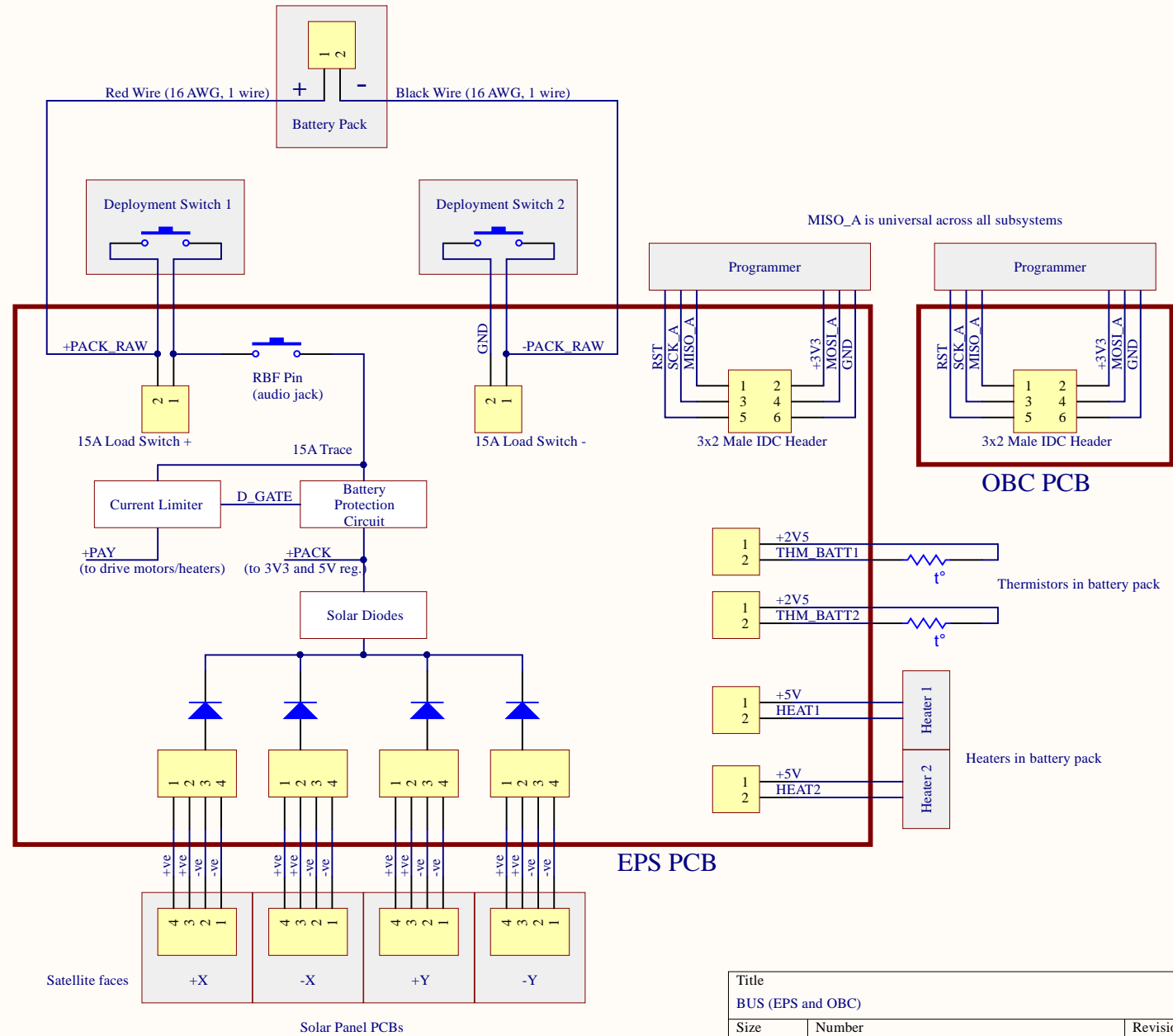
+PACK is the voltage from the battery pack to the EPS
board (after deployment switches and RBF pin)

If the battery pack is connected to the EPS electronics
(i.e. DS1, DS2, RBF all connected), +PACK = +BATT

If the battery pack is disconnected from the EPS
electronics (i.e. one or more of DS1, DS2, RBF
disconnected), +PACK = 0

Protection Circuit Limits:
Max charge = 4.190V, Charge release = 4.090V
Max discharge = 2.70V, Discharge release = 3.00V

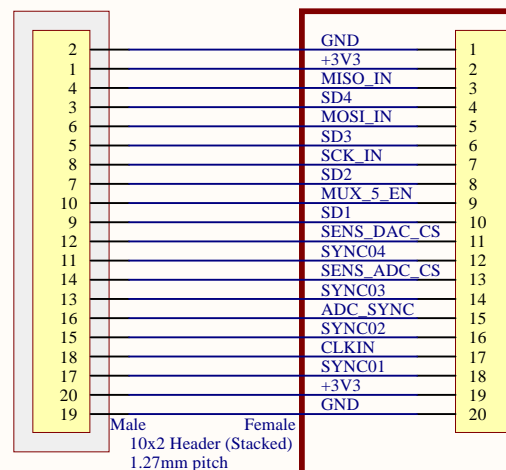
Absolute Maximum Battery Voltage Range: 2.5V-4.2V



Title BUS (EPS and OBC)			
Size A4	Number 6	Revision v1.5	
Date: 2019-07-23	Sheet 6 of 8		
File: C:\Users\...\bus.SchDoc	Drawn By: Jaden Reimer		

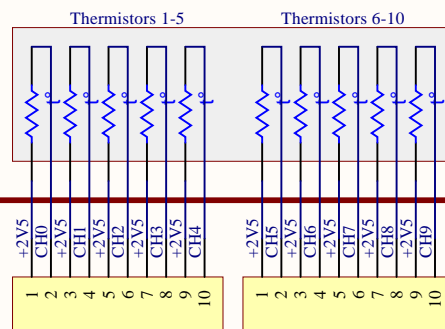
PAY-Optical PCB

(stacked on top of PAY-SSM)

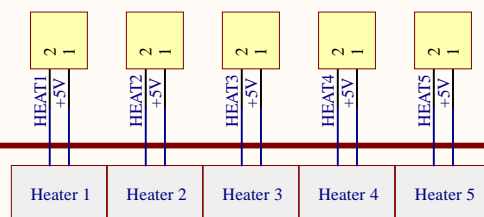


Start thermistor numbering from 0
to match ADC channel numbering

Thermistors (in microfluidics chips)

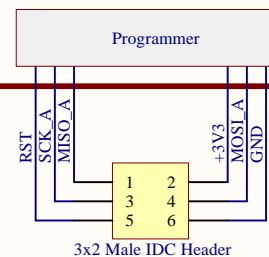


PAY-SSM PCB

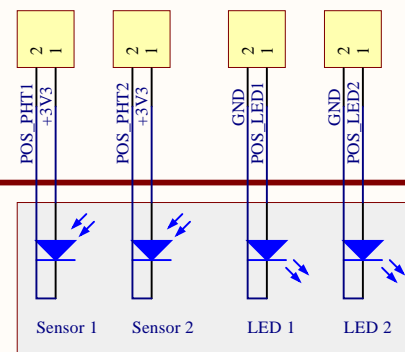
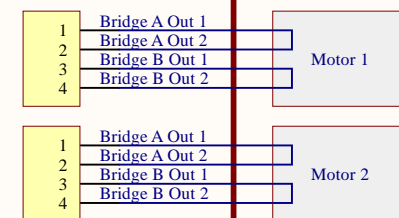
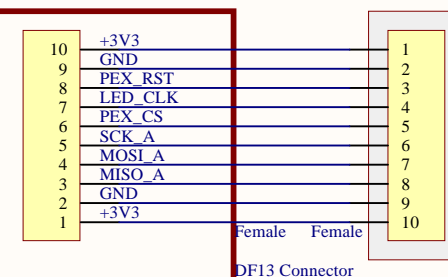


2-pin DF13 connector:
<https://www.digikey.ca/product-detail/en/hirose-electric-co-ltd/DF13A-2P-1.25H-21/H125743CT-ND/8594822>

Flight model connectors should have gold mating finish



PAY-LED PCB (x2)



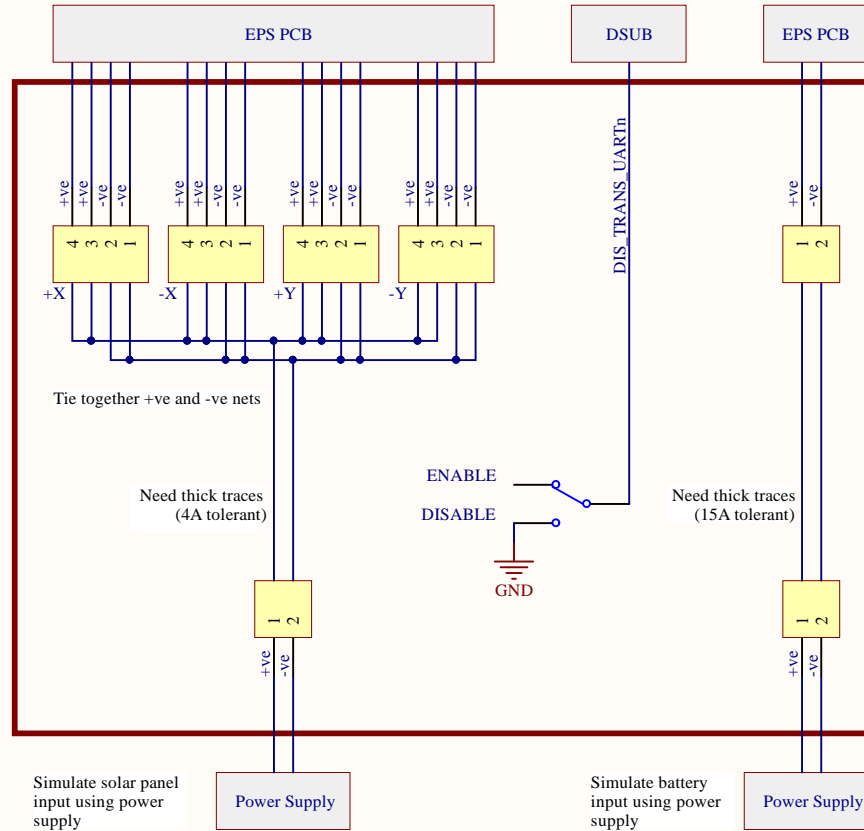
Title			
Payload			
Size	Number		Revision
A4	7		v1.5
Date:	2019-07-23		Sheet 7 of 8
File:	C:\Users\...\pay.SchDoc		Drawn By: Jaden Reimer

DF13 Connector: DF13A-4P-1.25H(21)
<https://www.digikey.ca/product-detail/en/hirose-electric-co-ltd/DF13A-4P-1.25H-21/H125082-CT-ND/5638961>

Flight model connectors should have gold mating finish

Screw terminal connector: 732-2028-ND
<https://www.digikey.ca/product-detail/en/wurth-electronics-inc/691102710002/732-2028-ND/2060524>

Physical UART disconnect switch: JS202011AQN (only need to connect 2 of its pins)
<https://www.digikey.ca/products/en?keywords=JS202011AQN>



Samtec IPBT Power Mate (16AWG power connector)
<https://www.digikey.ca/product-detail/en/samtec-inc/IPBT-102-H1-T-S-RA-K/SAM9552-ND/6678289>

Flight model connectors should have gold mating finish

Screw terminal connector: 732-2028-ND
<https://www.digikey.ca/product-detail/en/wurth-electronics-inc/691102710002/732-2028-ND/2060524>

Systems PCB

Title			
Systems (Debugging)			
Size	Number		Revision
A4	8		v1.5
Date:	2019-07-23		Sheet 8 of 8
File:	C:\Users\...\sys.SchDoc		Drawn By: Jaden Reimer