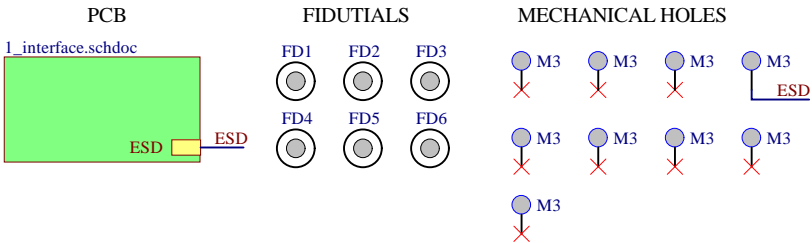


Rev	Description	Date	Author
0.1	- Initial release - Update beacon radio output - General updates for compliance with the SpaceLab hardware development standards	28-Aug-2020	Andre M. P. Mattos

Revision History



PCB Elements

EPS2 Hardware:

- Drawn by: André M. P. Mattos (updates from FloripaSat-I EPS)
- Based on FloripaSat-I OBDH designed by: Sara V. Martinez
- Reviewers: Kleber Gouveia and Yan C. Azeredo
- Support: Gabriel M. Marcelino

Project Contributions

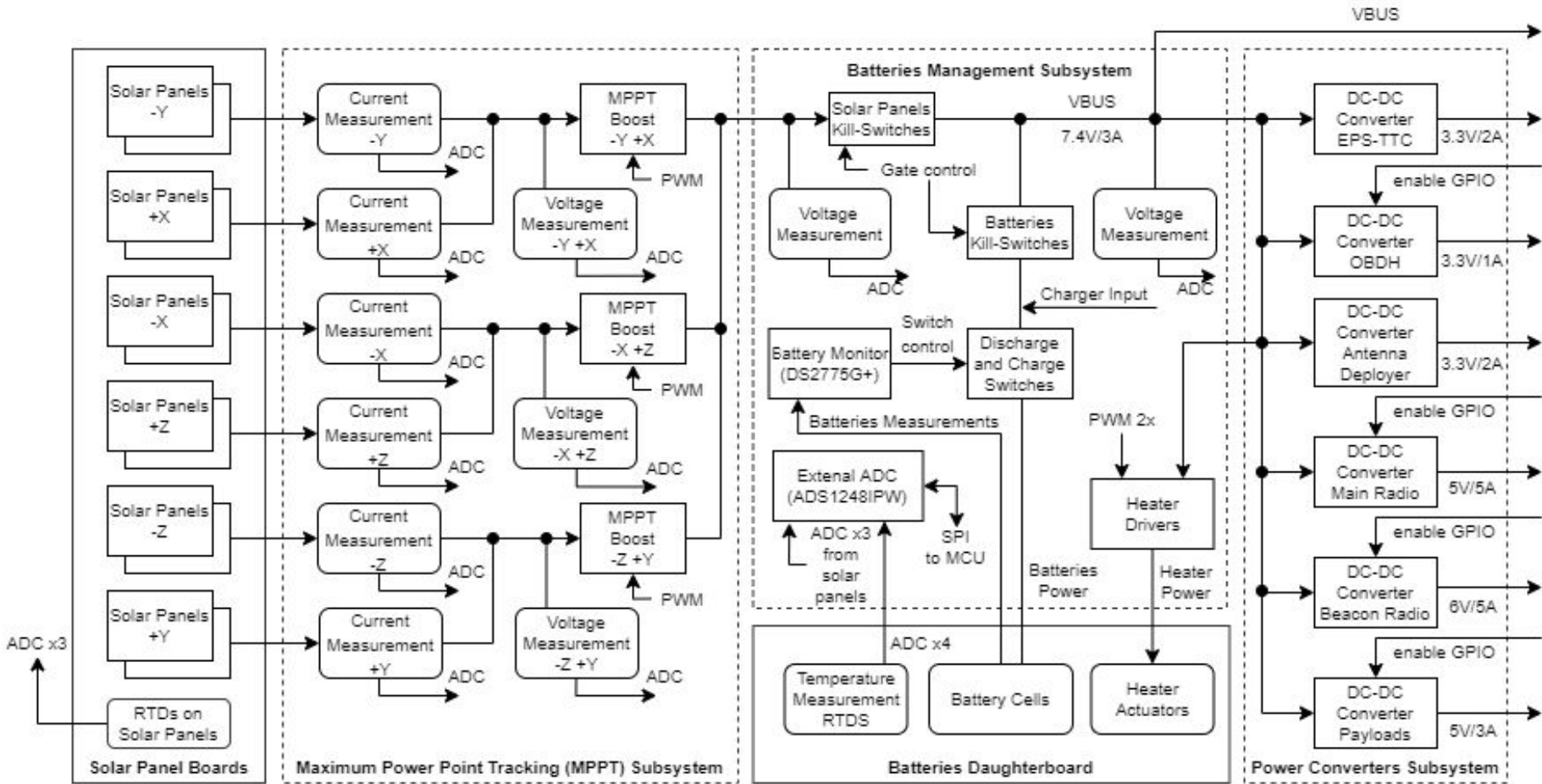
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EPS2 Hardware
Based on the FloripaSat-I EPS

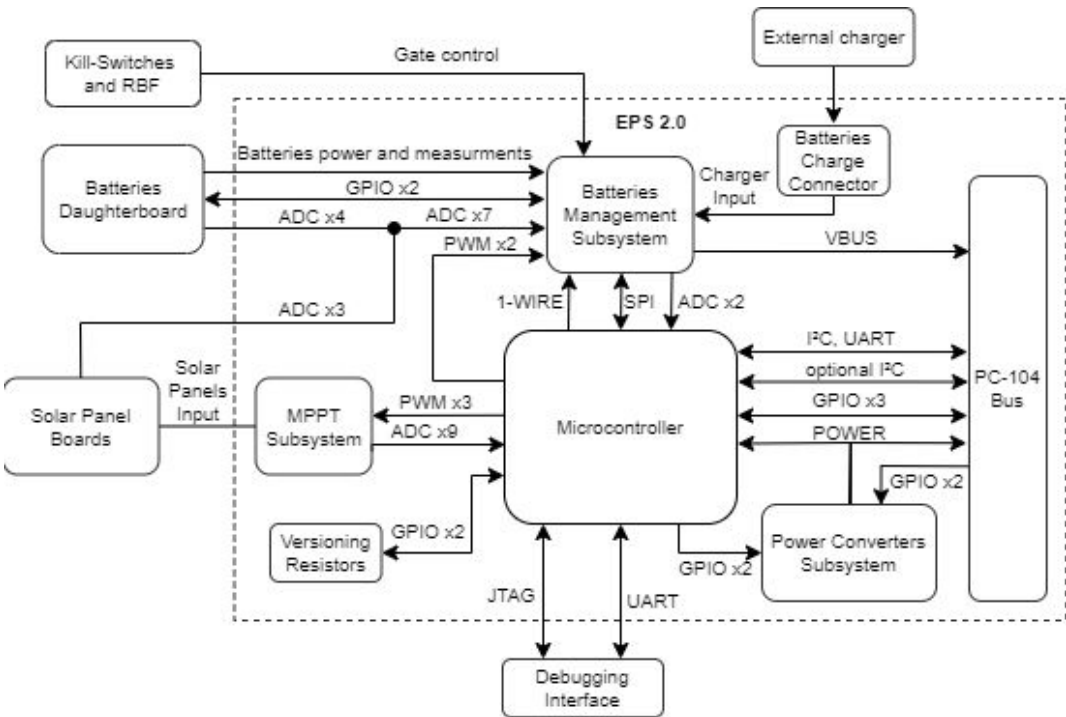
This work is licensed under the Creative Commons Attribution-ShareAlike 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-sa/4.0/>.

Project Information

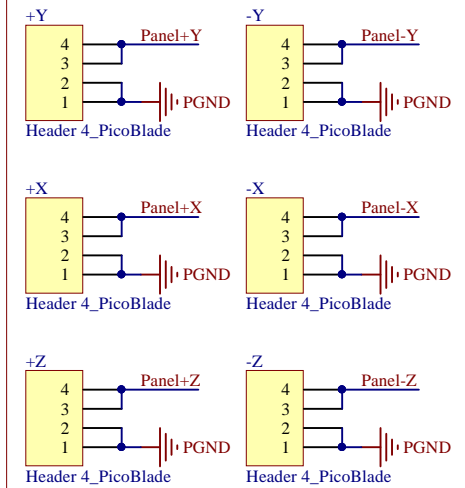
EPS 2 power diagram



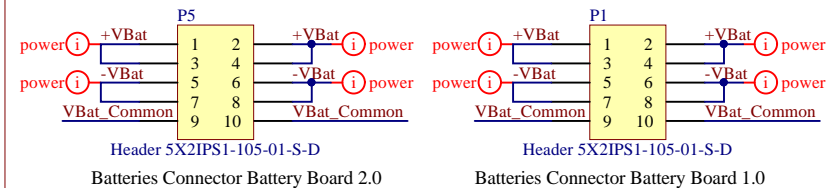
EPS 2 MCU diagram



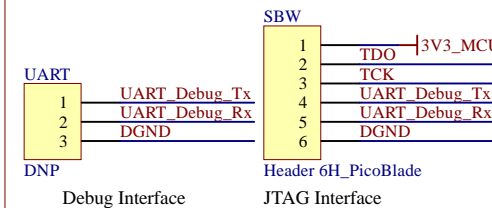
SOLAR PANNELS POWER INTERFACES



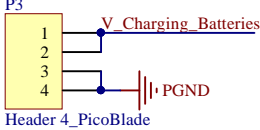
BATTERY BOARD POWER INTERFACES



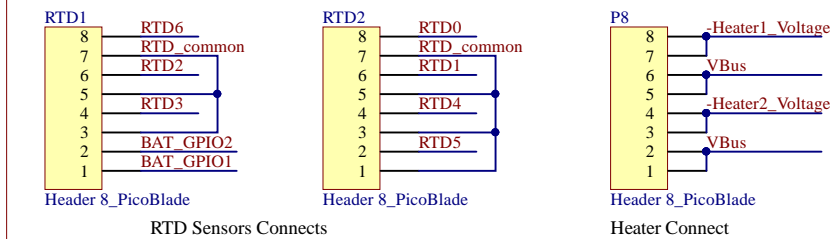
DEBUG AND PROGRAMMING INTERFACES



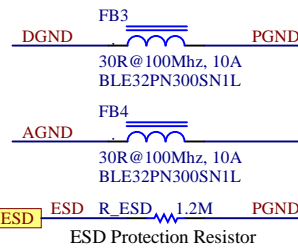
CHARGING BATTERIES CONNECTOR



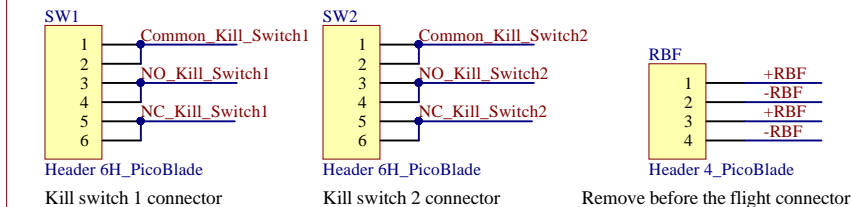
BATTERY BOARD SENSORS AND CONTROL INTERFACES



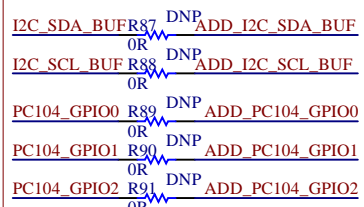
GROUNDING



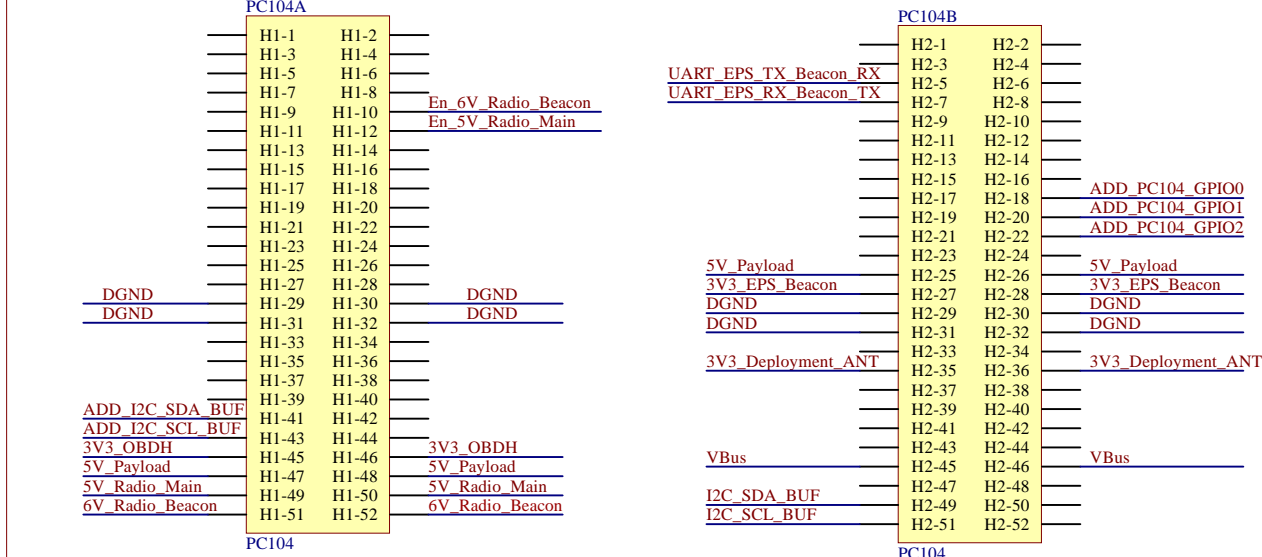
EXTERNAL SWITCHES INTERFACES



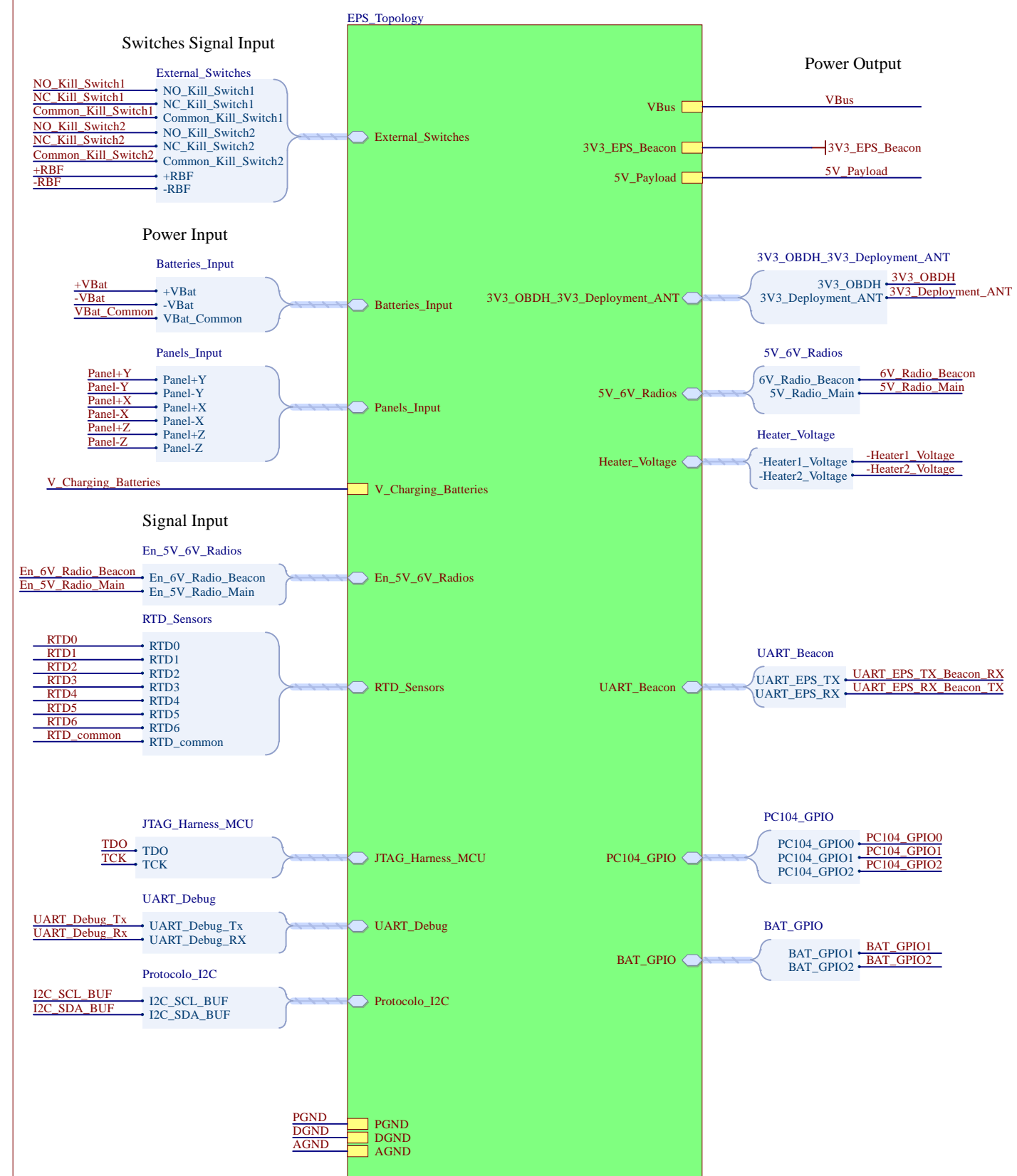
ADDITIONAL INTERFACES

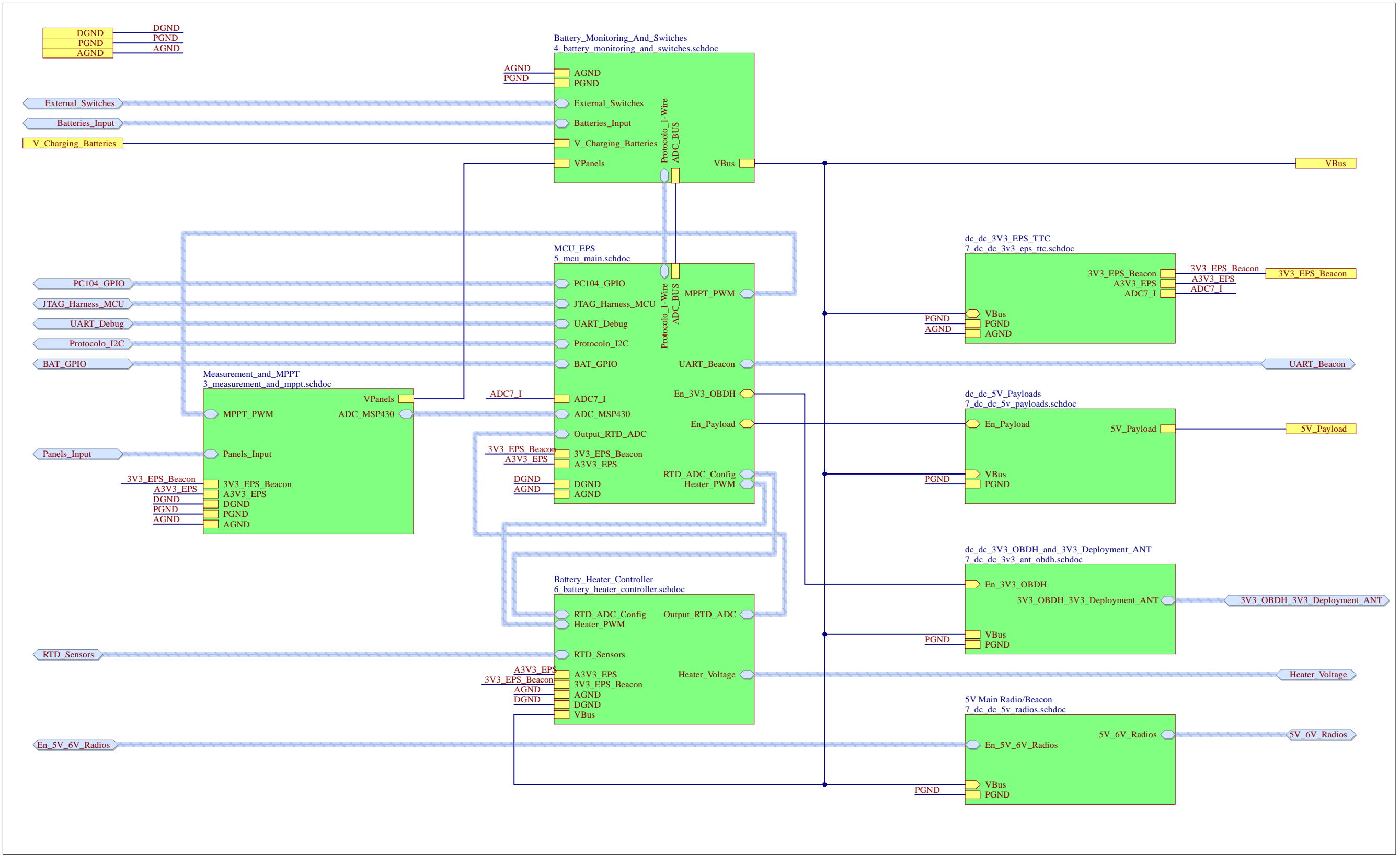


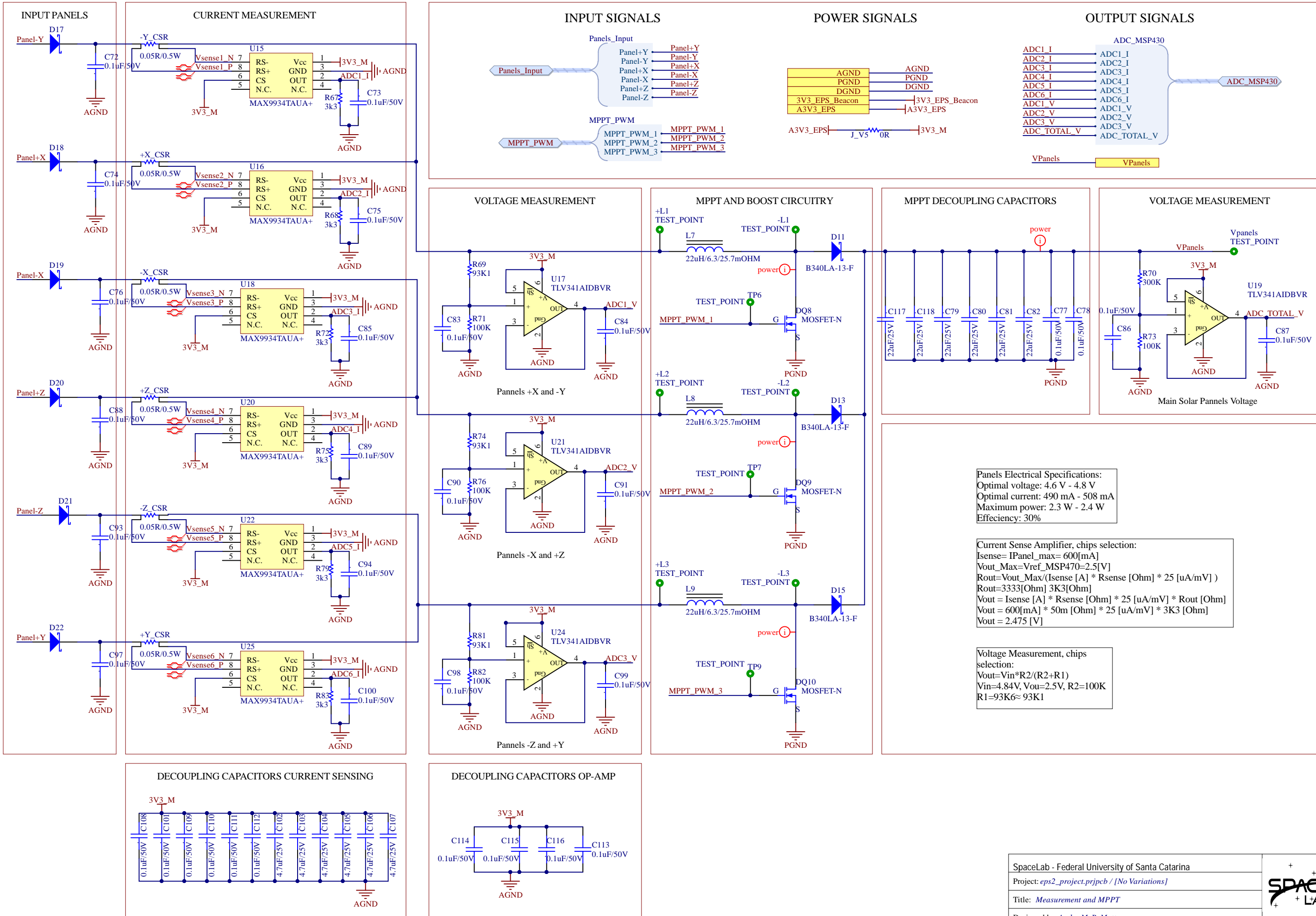
PC104 CONNECTORS

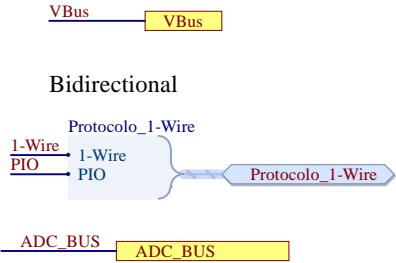
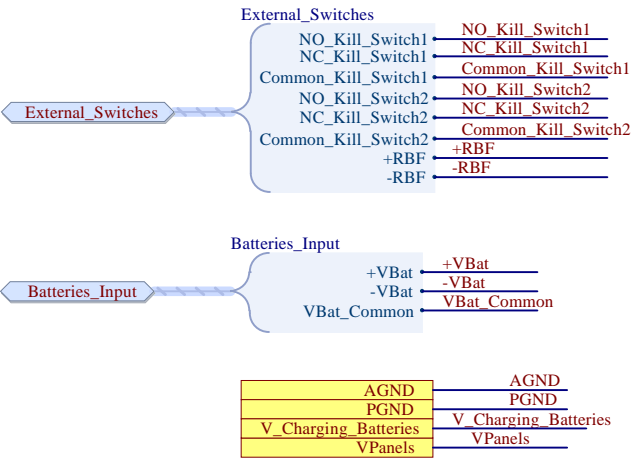
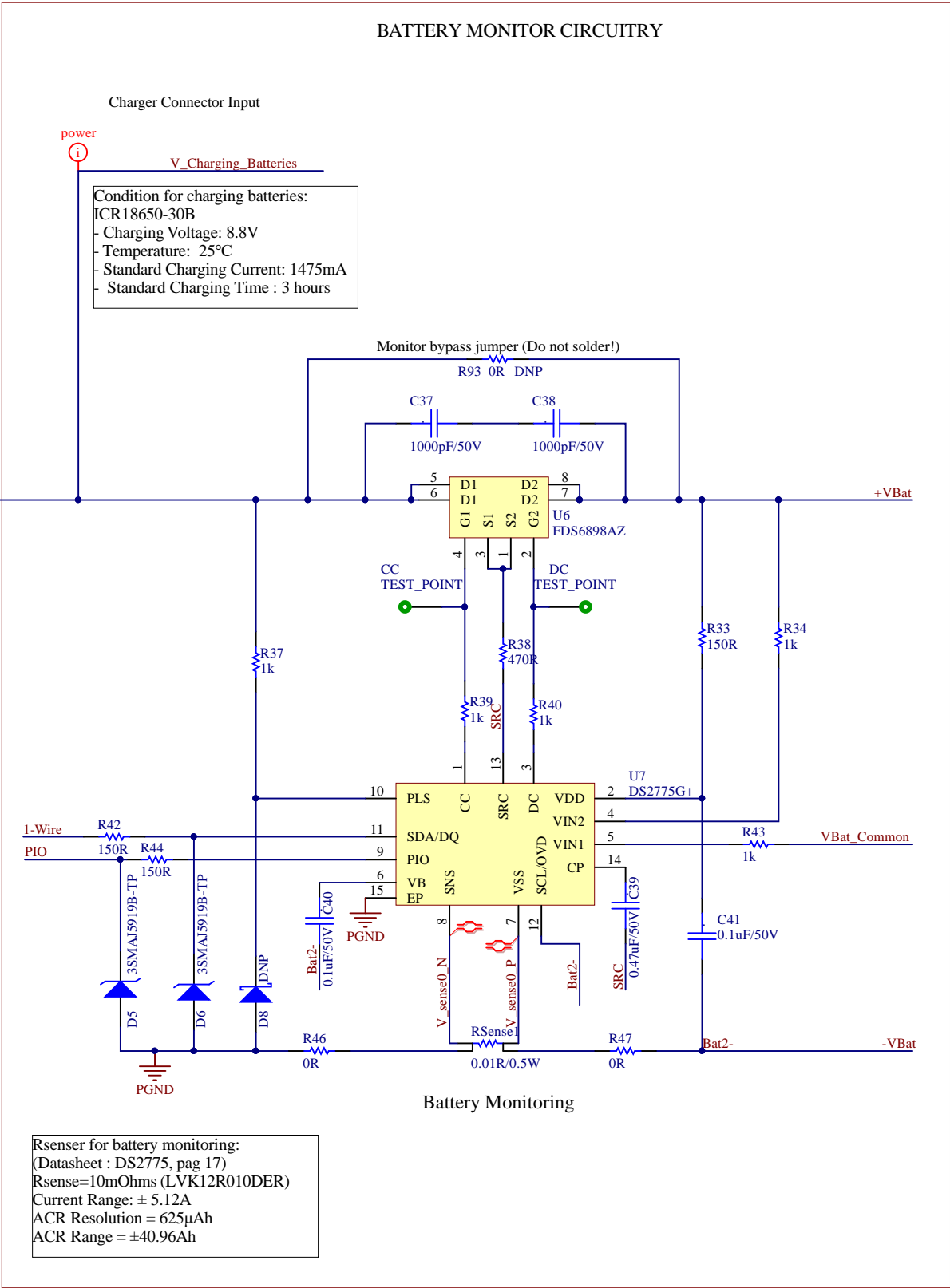
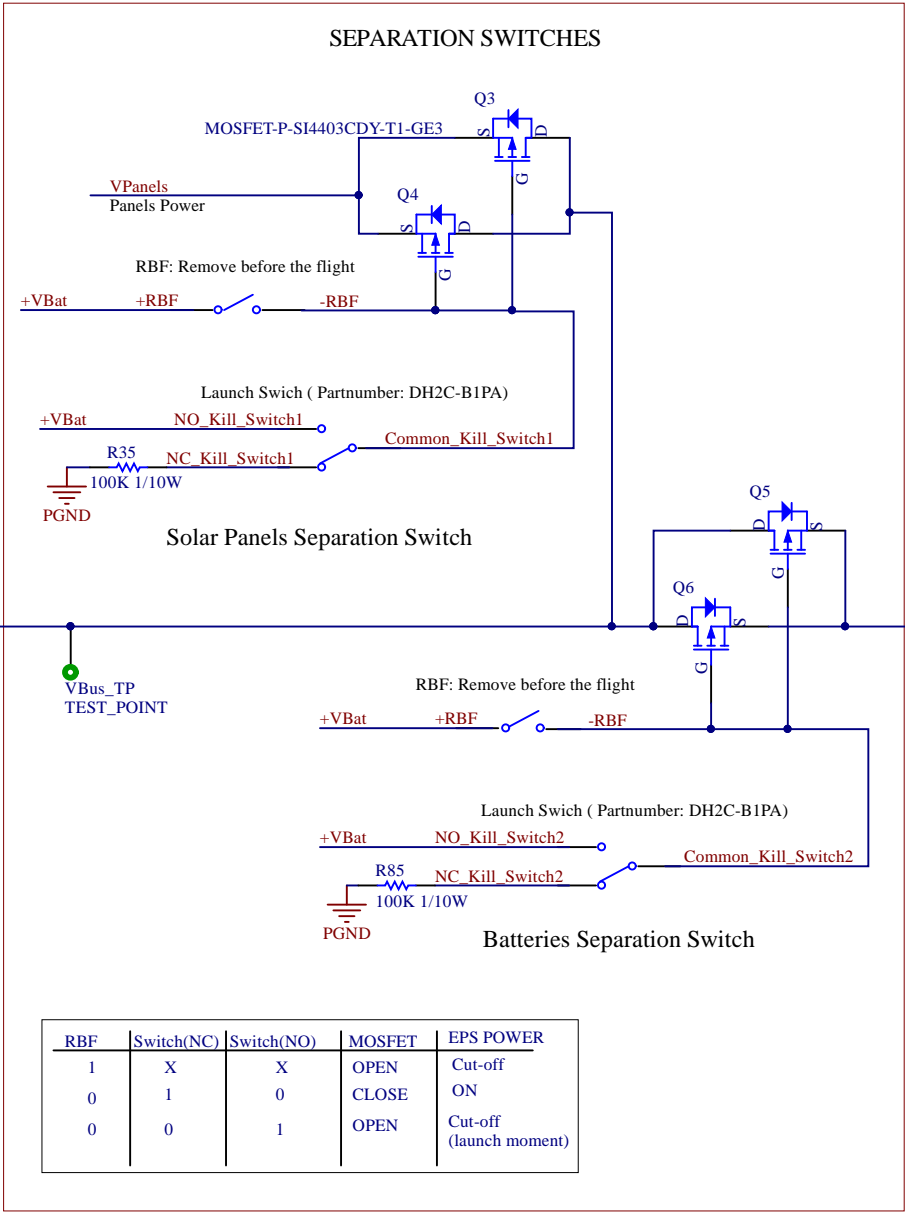
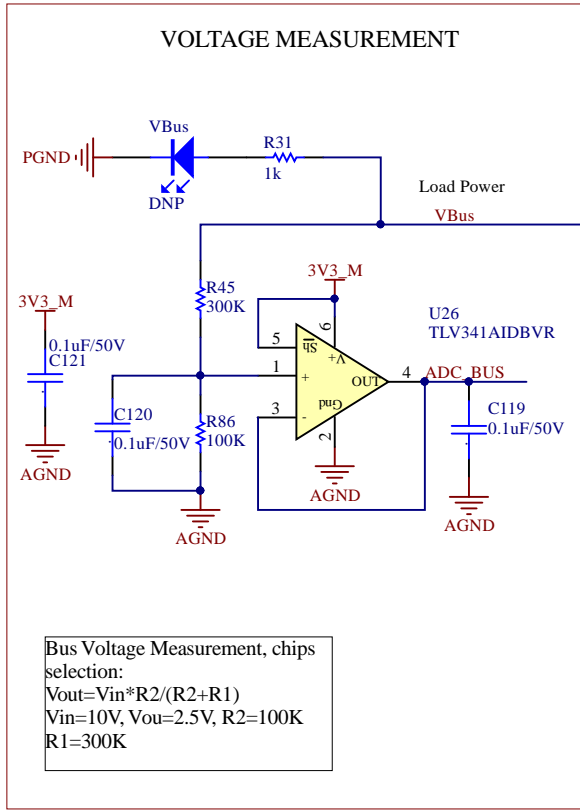


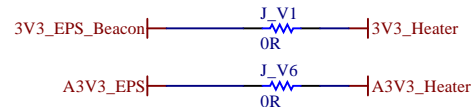
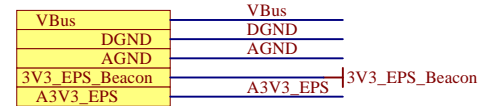
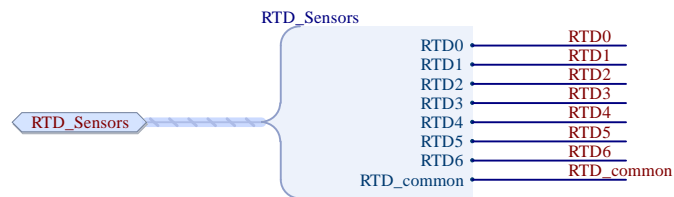
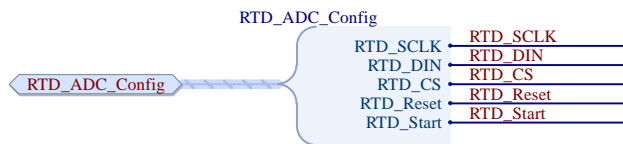
ELECTRICAL POWER SYSTEM TOPOLOGY INTERFACES



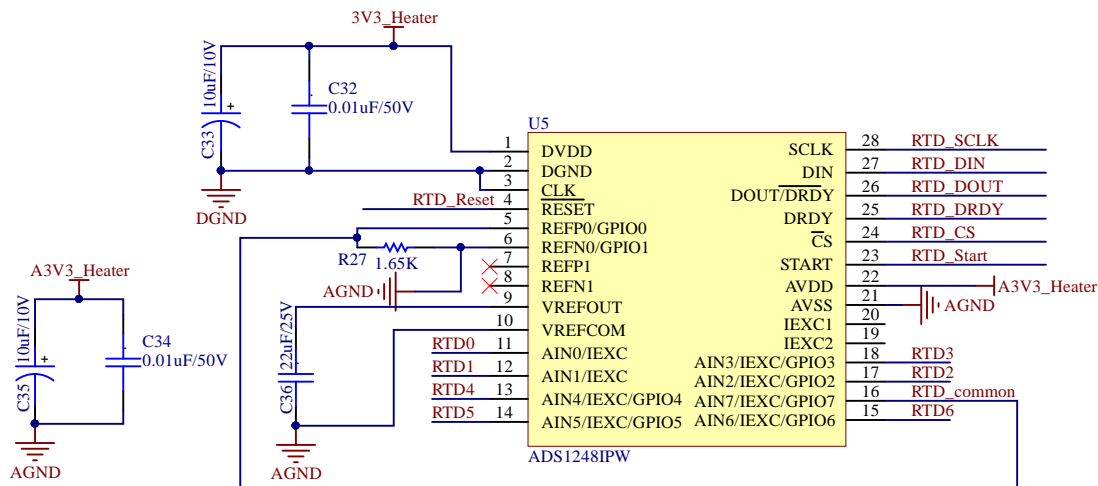








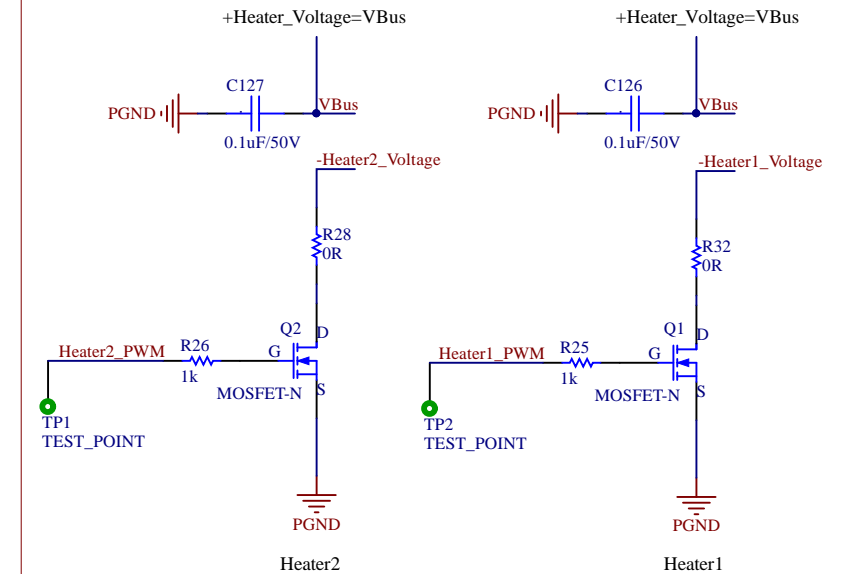
HEATERS SENSORS (RTD)



Decoupling capacitors

Analog-to-Digital Converter (for temperature acquisition through external thermocouples)

HEATERS ACTUATORS (PWM)



SpaceLab - Federal University of Santa Catarina

Project: *eps2_project.pripcb* / [No Variations]

Title: *Batteries Heater Controller*

Designed by: *Andre M. P. Mattos*

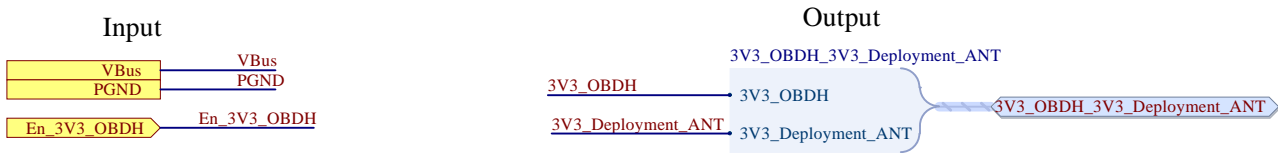
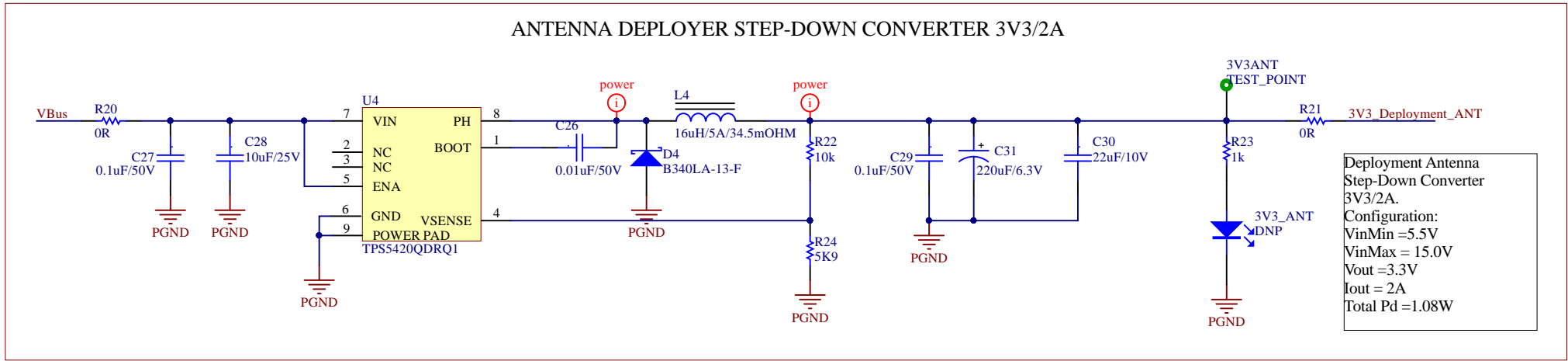
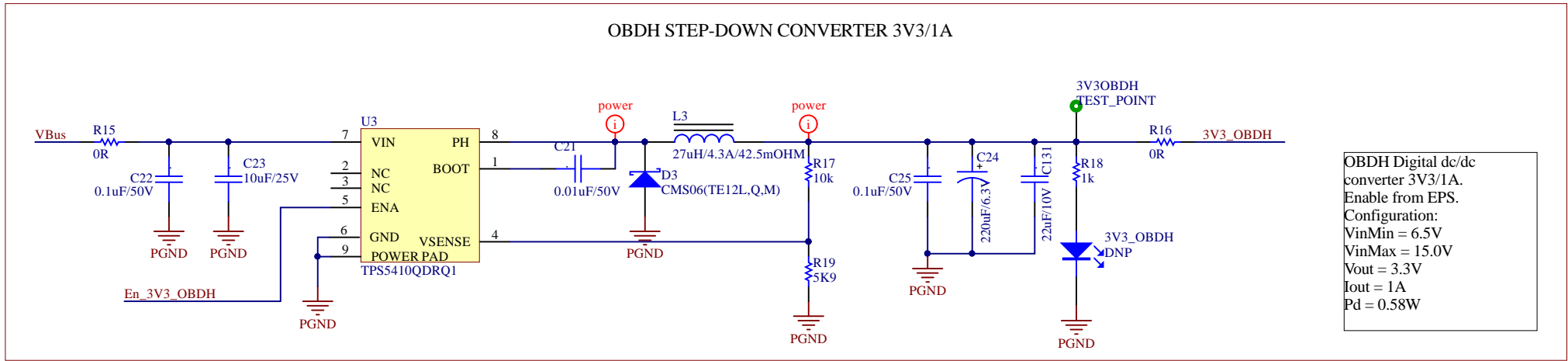
Date: 06/09/2020


Version: v0.1

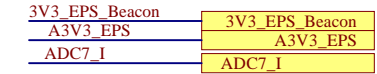
Sheet 7 of 11

Size: A4

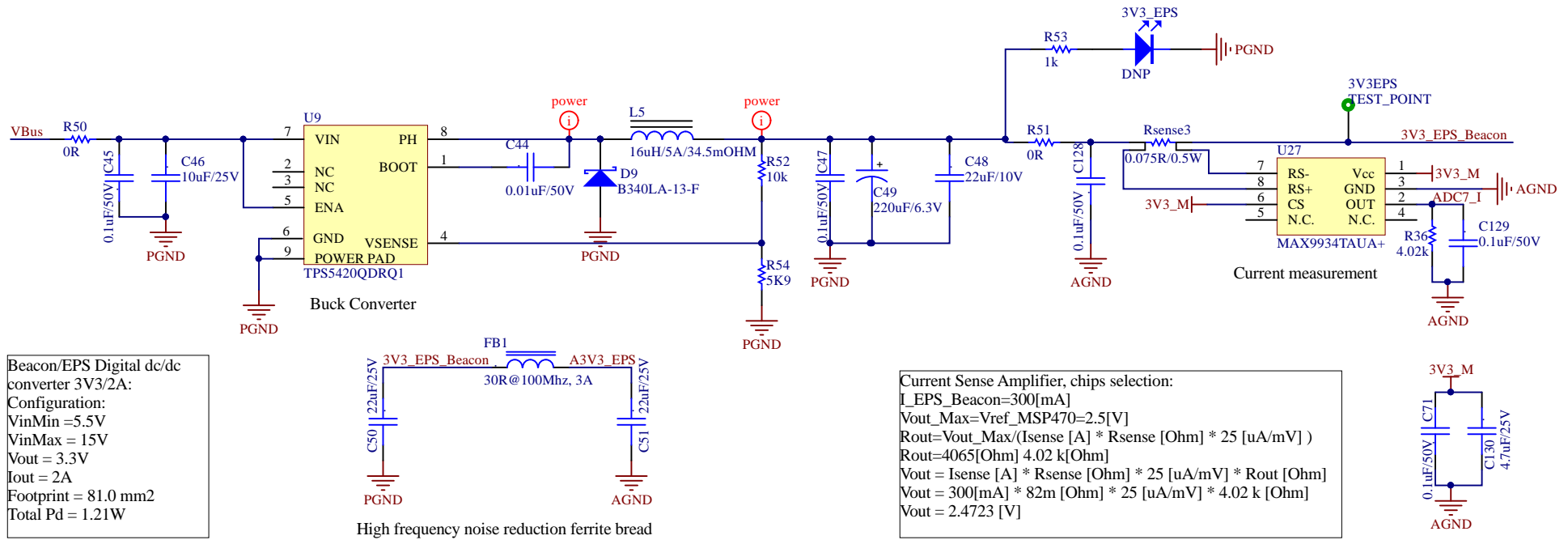




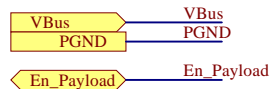
SpaceLab - Federal University of Santa Catarina			
Project: <i>eps2_project.prjpcb</i> / [No Variations]			
Title: <i>OBDH Step-Down 3V3/1A/2A</i>			
Designed by: <i>Andre M. P. Mattos</i>			
Date: 06/09/2020	Version: <i>v0.1</i>	Sheet <i>8</i> of <i>11</i>	Size: <i>A4</i>



EPS/BEACON STEP-DOWN CONVERTER 3V3/2A



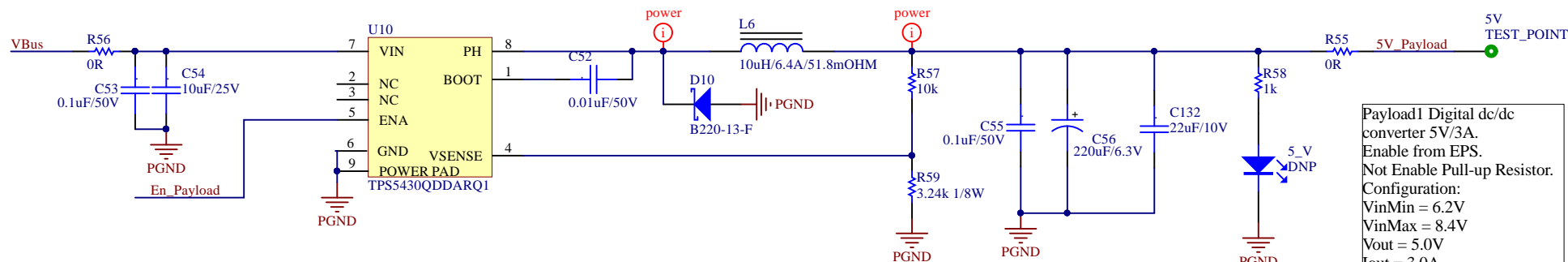
Input



Output



PAYLOAD STEP-DOWN CONVERTER 5V/3A



Payload1 Digital dc/dc converter 5V/3A.
Enable from EPS.
Not Enable Pull-up Resistor.
Configuration:
VinMin = 6.2V
VinMax = 8.4V
Vout = 5.0V
Iout = 3.0A
Total Pd = 1.83W

SpaceLab - Federal University of Santa Catarina

Project: *eps2_project.prjpcb* / [No Variations]

Title: *Payloads Step-Down Converters 5V/3A*

Designed by: *Andre M. P. Mattos*

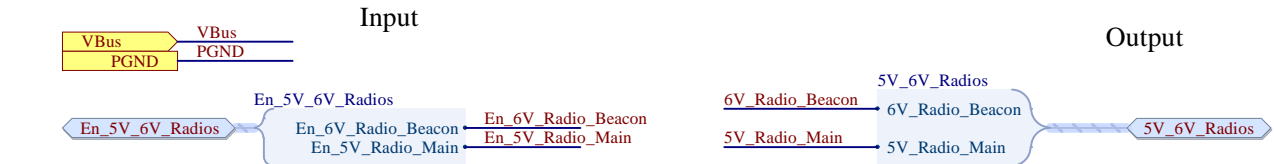
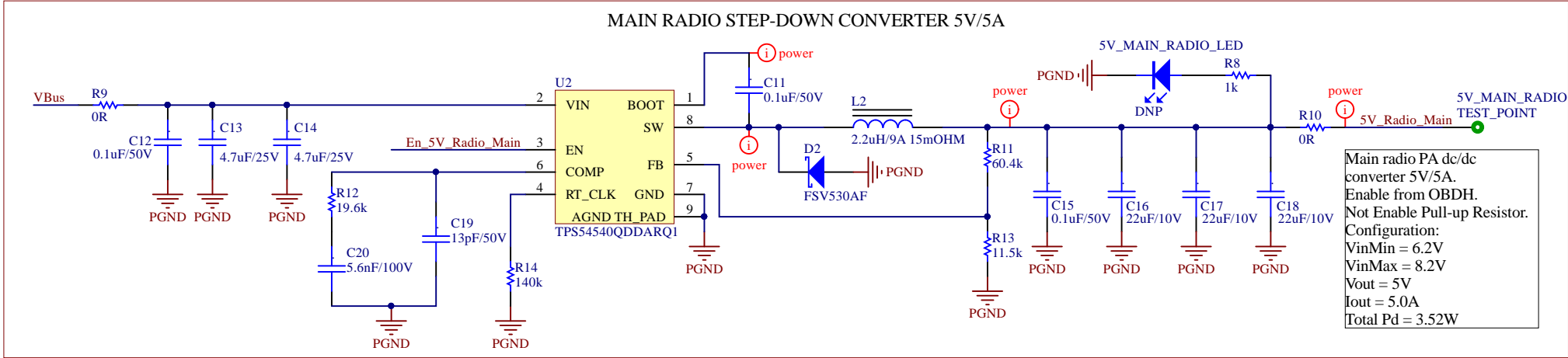
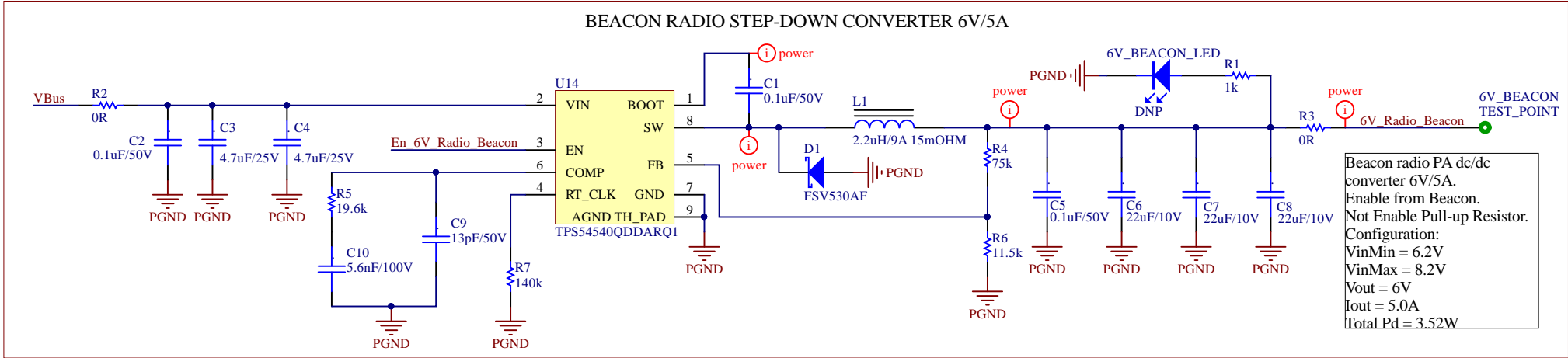
Date: 06/09/2020


Version: v0.1

Sheet 10 of 11



Size: A4



SpaceLab - Federal University of Santa Catarina			
Project: <i>eps2_project.pripcb / [No Variations]</i>			
Title: <i>Radios Step-Down Converters 5V/3A</i>			
Designed by: <i>Andre M. P. Mattos</i>			
Date: <i>06/09/2020</i>	Version: <i>*</i>	Sheet <i>11</i> of <i>11</i>	Size: <i>A4</i>