

A

A

B

B

C

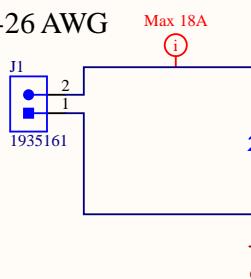
C

D

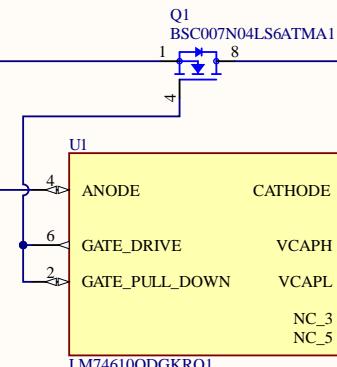
D

Battery Input (6s1p)

12-26 AWG



Ideal Diode Controller



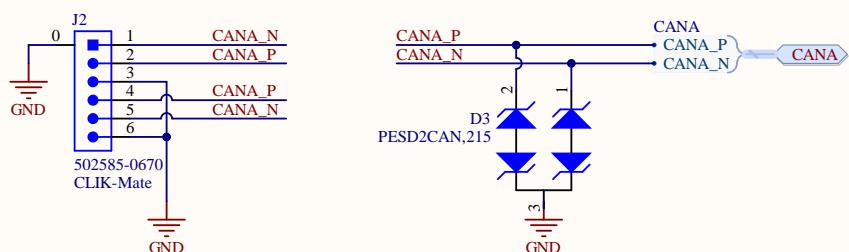
LED forward drop = 2.0V
Max VBAT = 24V
Min VBAT = 18V

Max LED current = $(24-2)/4700 = 4.7\text{mA}$
Min LED current = $(18-2)/4700 = 3.4\text{mA}$

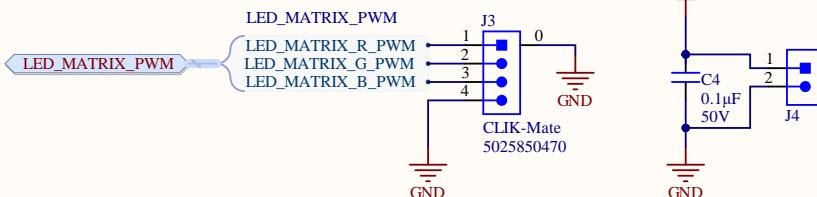
Title	Power Distribution Board Rev2 - Power	Altium Limited
Size:	Letter	Drawn By: Cindy Li
Date:	2020-11-02	Sheet of 12
File:	C:\UWRT\MarsRover2021-hardware\Projects\Power Distribution Board\Rev2\SH1 - POWER.SchDoc	Australia 2086



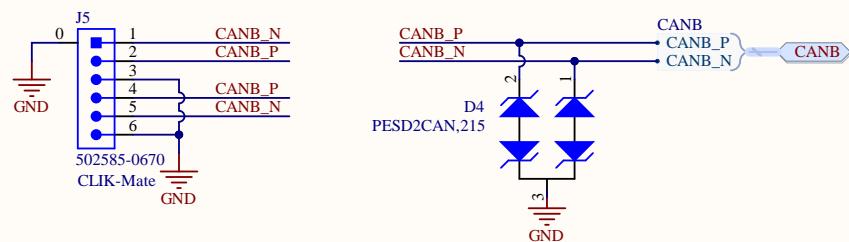
CAN BUS A



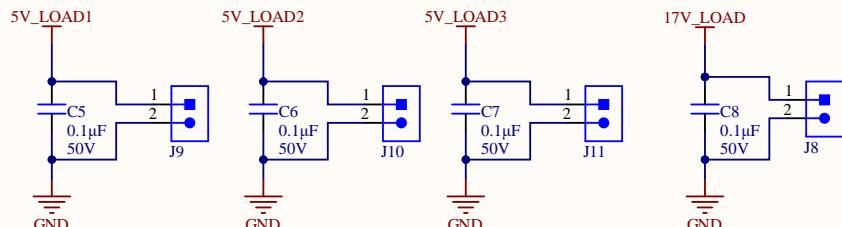
LED Matrix



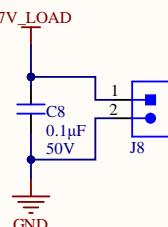
CAN BUS B



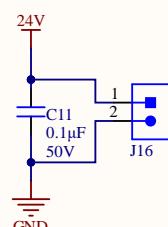
5V Output



17V Output

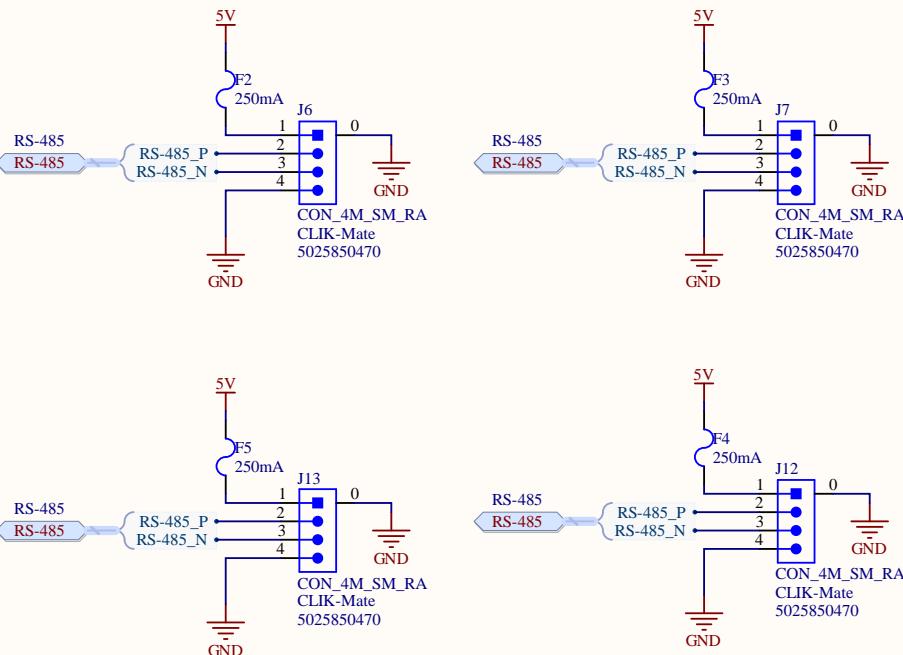


24V Output



Can use 12-26AWG

URM04 Ultrasonic Sensors



Title Power Distribution Board Rev2 - Connectors

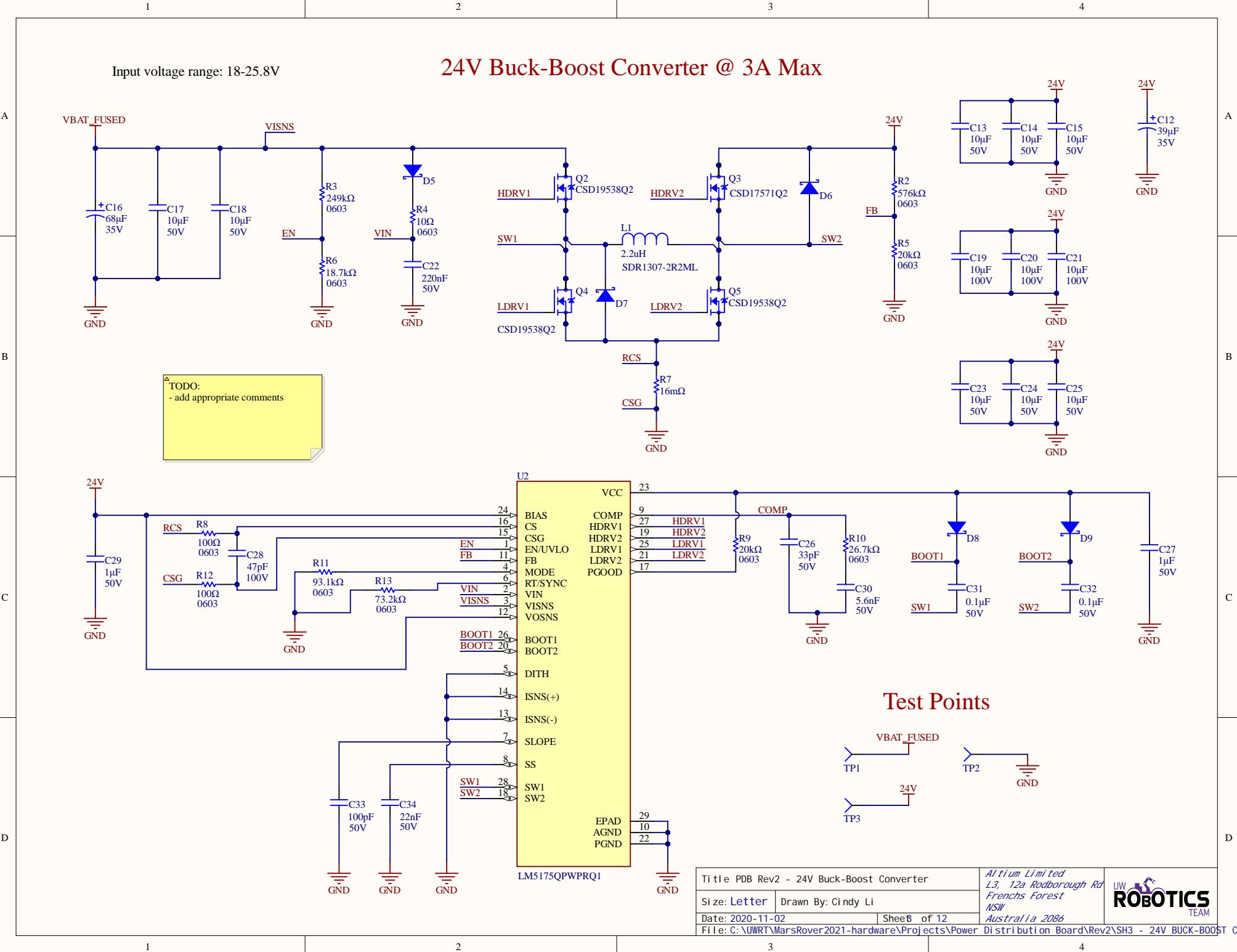
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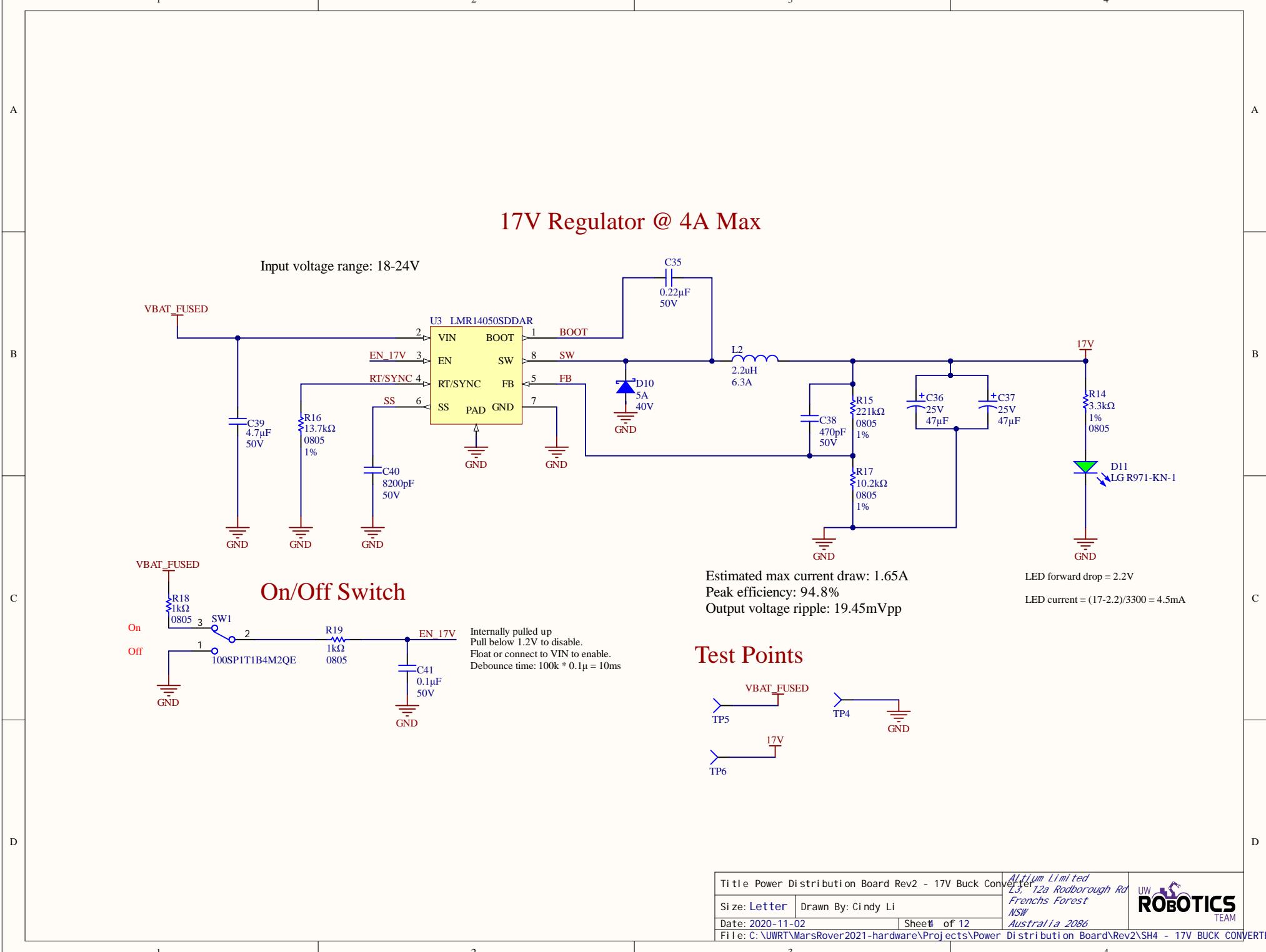
Date: 2020-11-02 Sheet 1 of 12

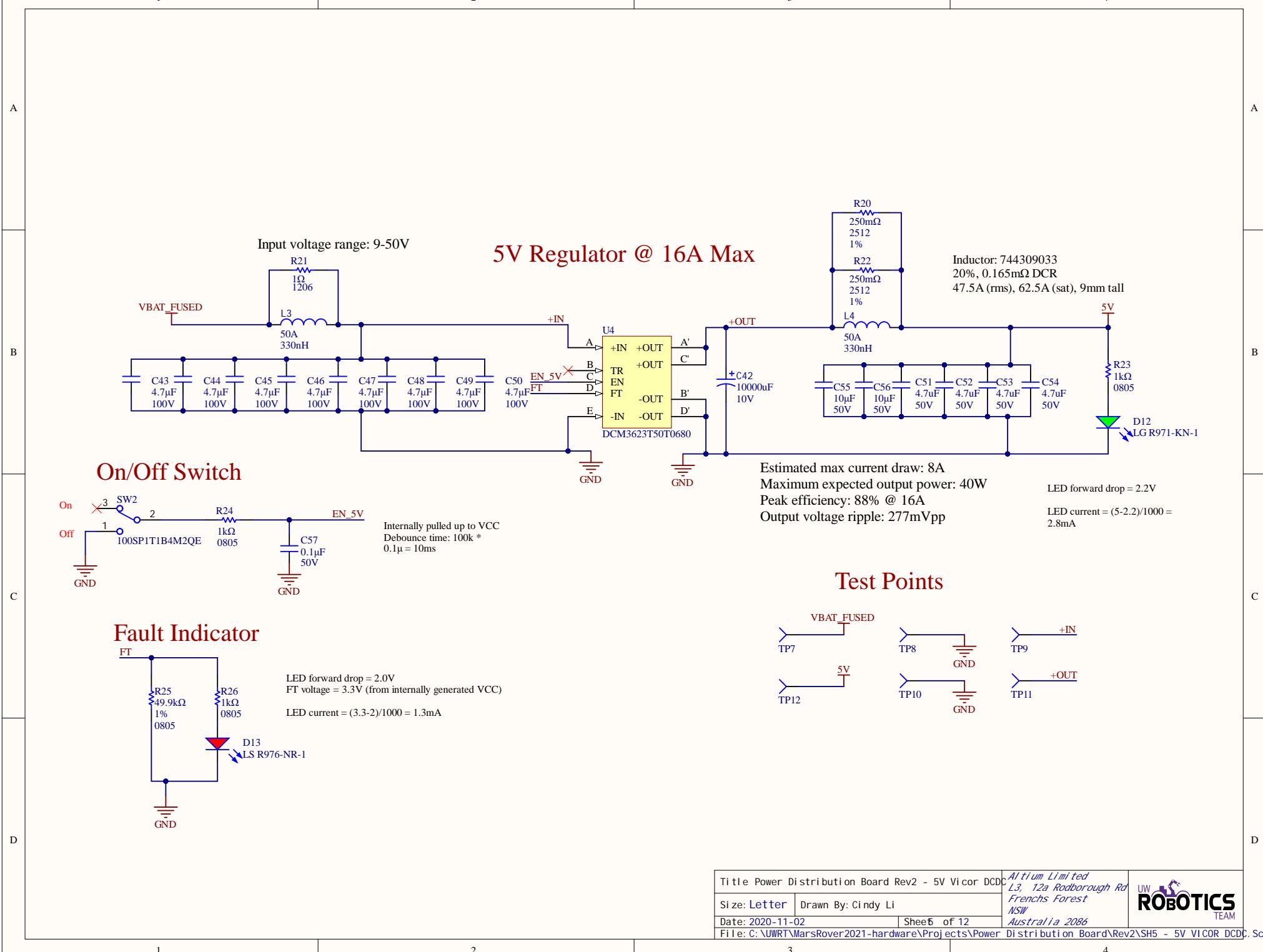
File: C:\UWRT\MarsRover2021-hardware\Projects\Power Distribution Board\Rev2\SH2 - CONNECTORS.SchDoc

Altium Limited
L3, 12a Rodborough Rd
Frenchs Forest
NSW Australia 2086

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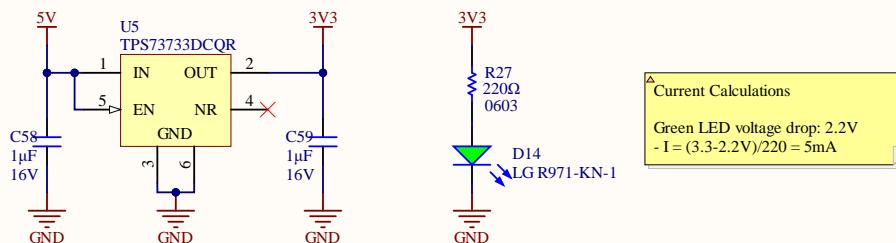
A

A

B

B

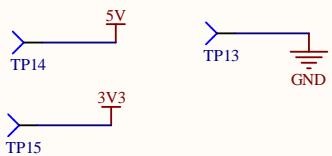
5V to 3.3V LDO



C

C

Test Points

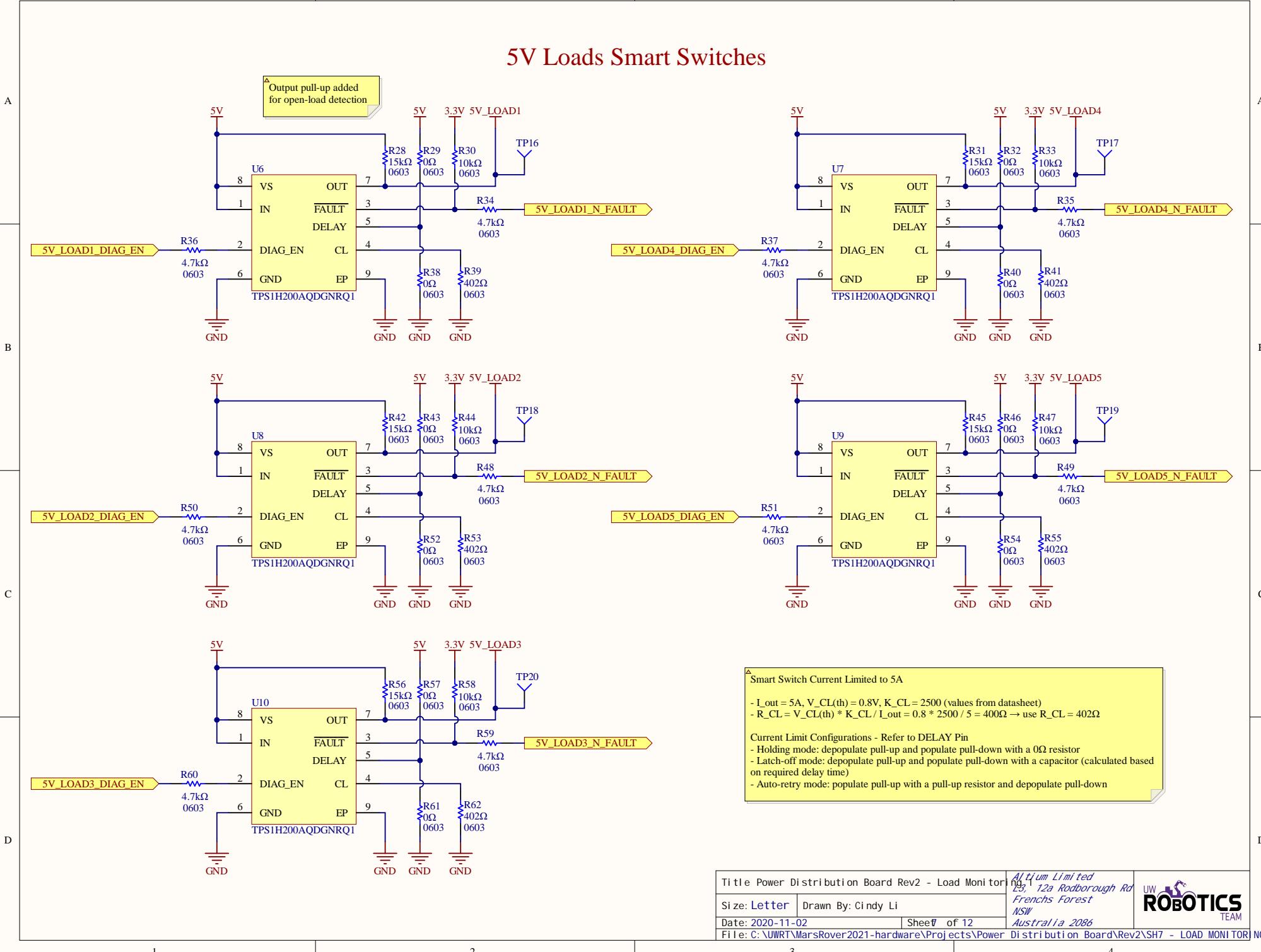


D

D

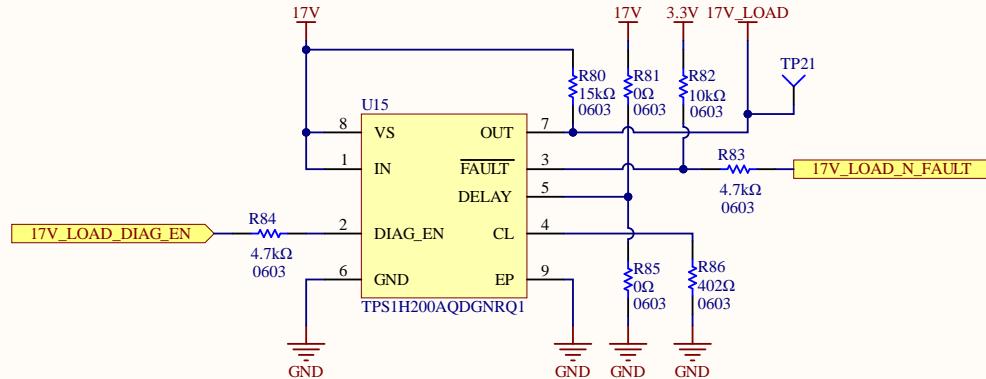
Title Power Distribution Board Rev2 - 3.3V Linear		Altium Limited 23/728 Rodborough Rd Frenchs Forest NSW Australia 2086
Size: Letter	Drawn By: Cindy Li	
Date: 2020-11-02	Sheet 6 of 12	
File: C:\UWRT\MarsRover2021-hardware\Projects\Power Distribution Board\Rev2\SH6 - 3.3V LINEAR REGULATOR.SchDoc		UW ROBOTICS TEAM

5V Loads Smart Switches



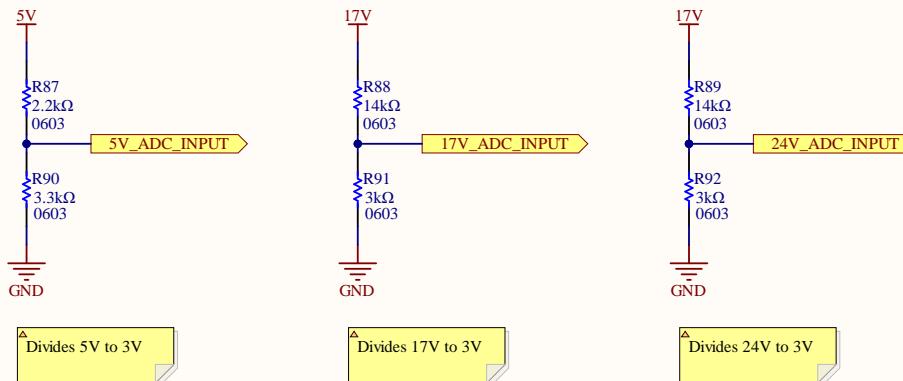
A

17V Load Smart Switch



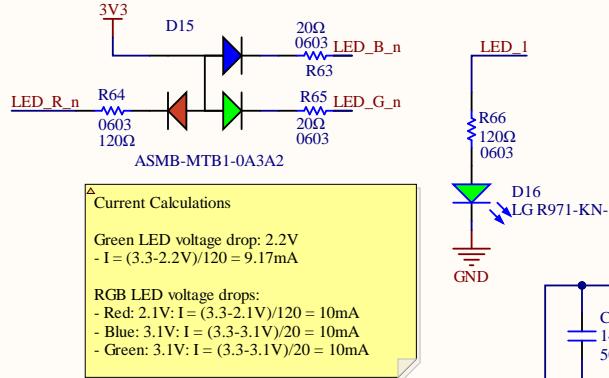
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Power Rail Voltage Monitoring

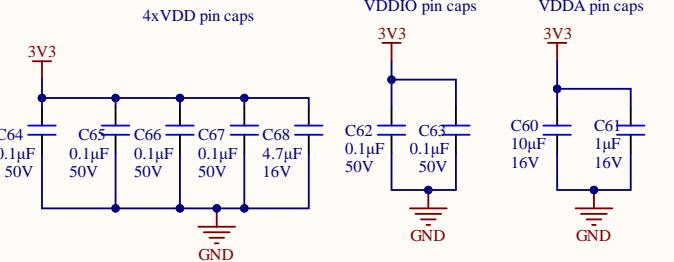


D

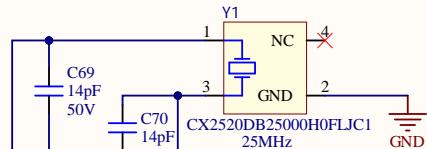
Status/Debug LEDs



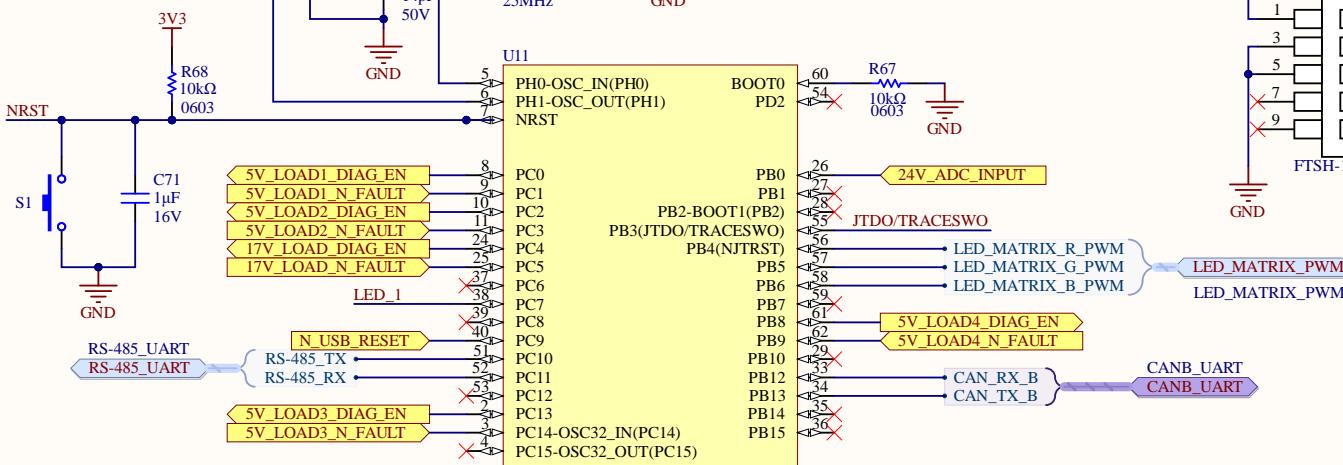
Decoupling Caps



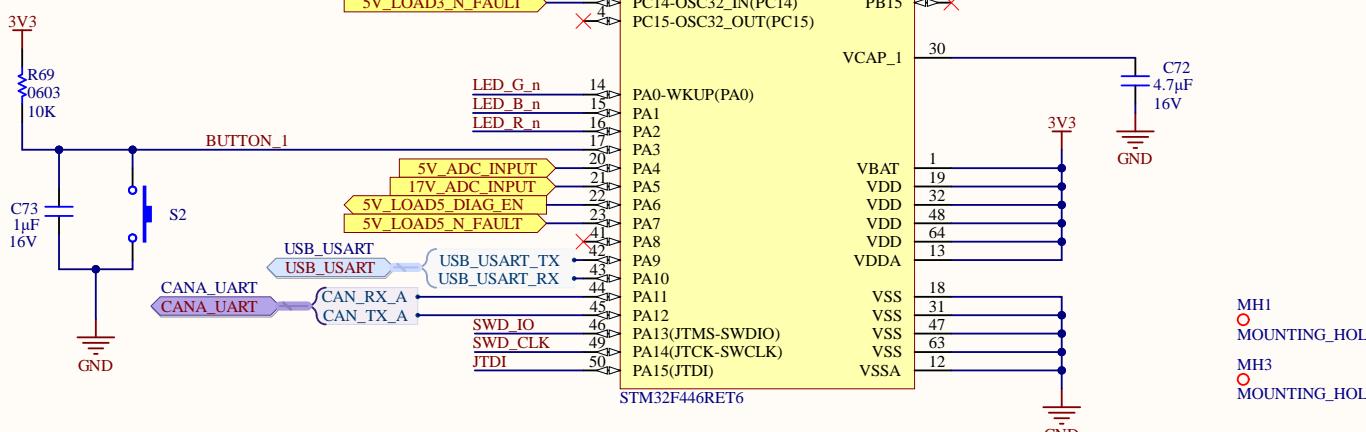
STM32F446RET6



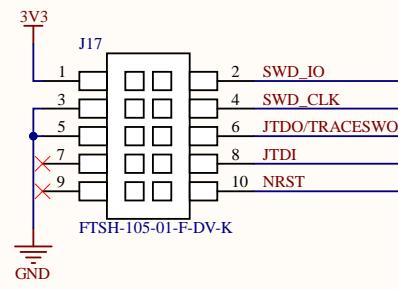
B



C



Debug/Programming



B

C

D

Title Power Distribution Board Rev2 - MCU

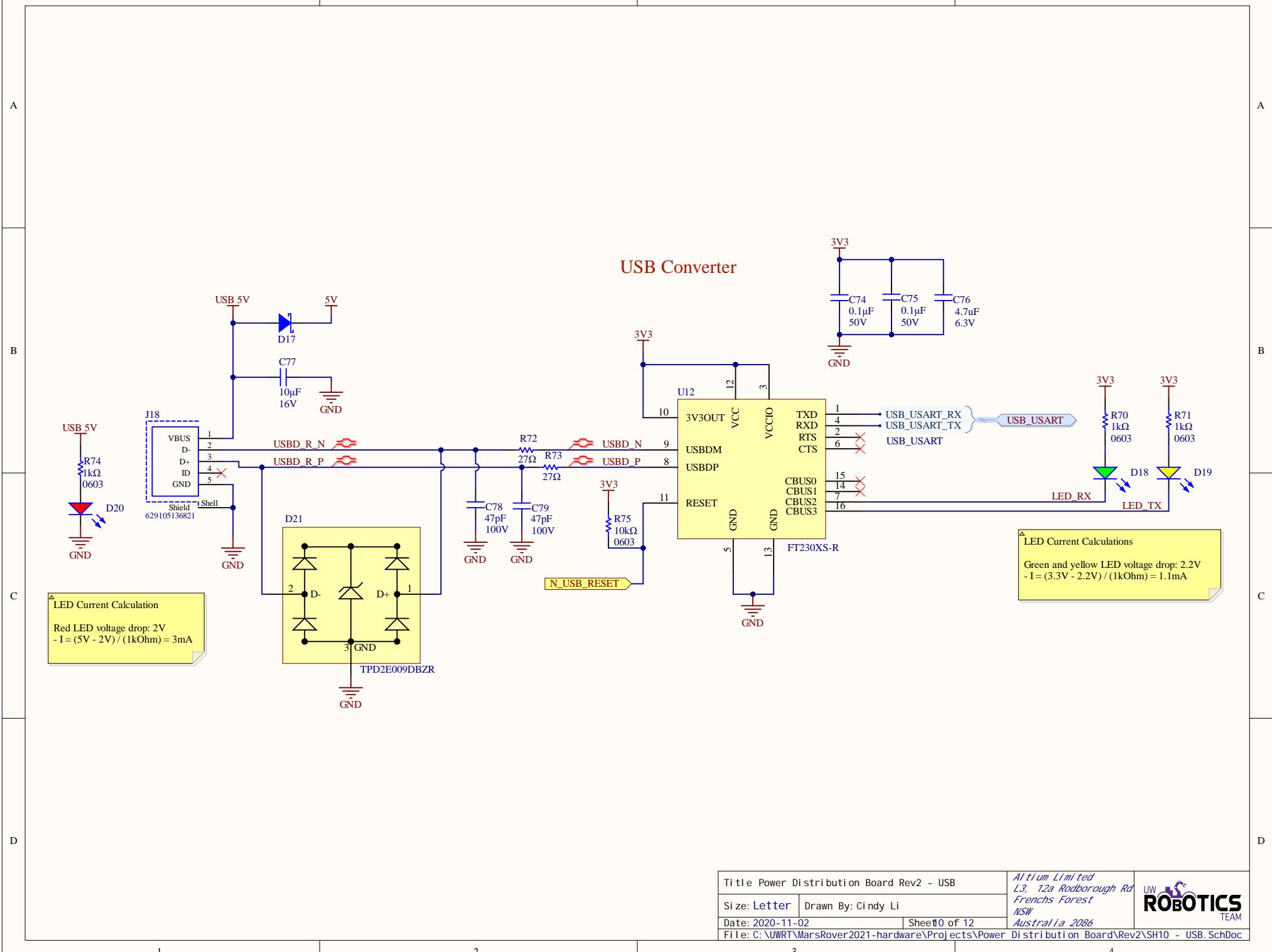
Size: Letter Drawn By: Cindy Li

Date: 2020-11-02 Sheet 9 of 12

File: C:\UWRT\MarsRover2021-hardware\Projects\Power Distribution Board\Rev2\SH9 - MICROCONTROLLER.schDoc

Altium Limited
L3, 12a Rodborough Rd
Frenchs Forest
NSW Australia 2086

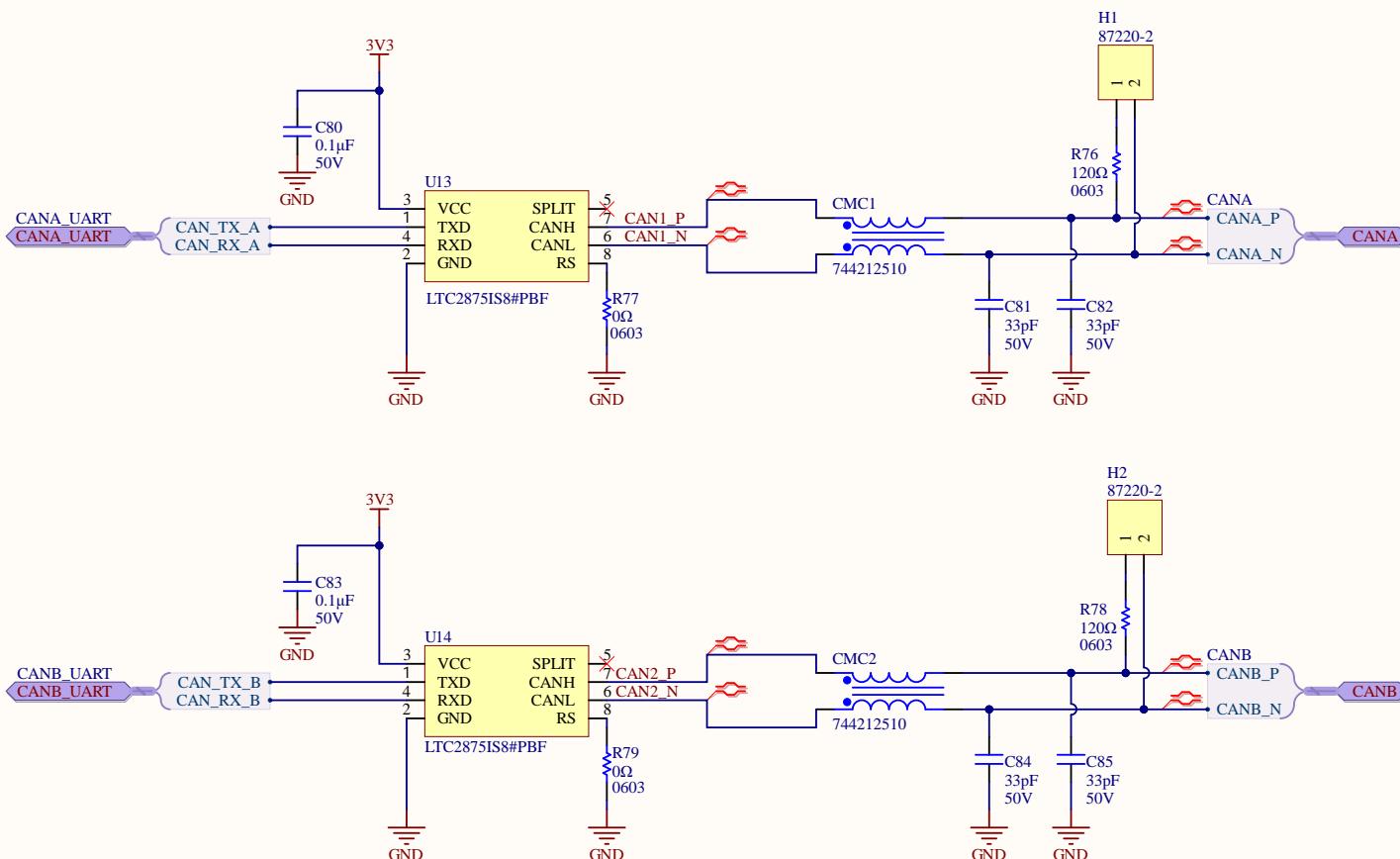
UW ROBOTICS TEAM



A

A

CAN Transceivers



Title: Power Distribution Board Rev2 - CAN Transceivers		Altium Limited 13/12a Rodborough Rd Frenchs Forest NSW Australia 2086
Size: Letter	Drawn By: Cindy Li	
Date: 2020-11-02	Sheet 1 of 12	
File: C:\UWRT\MarsRover2021-hardware\Projects\Power Distribution Board\Rev2\SH11 - CAN.SchDoc		



A

A

B

B

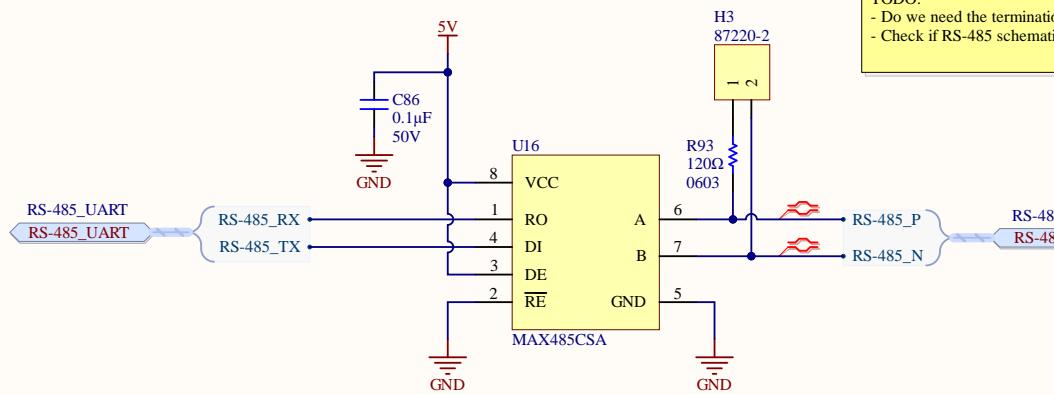
C

C

D

D

RS-485 Transceiver



Title Power Distribution Board Rev2 - RS-485		Altium Limited L3, 12a Rodborough Rd Frenchs Forest NSW Australia 2086
Size: Letter	Drawn By: Cindy Li	
Date: 2020-11-02	Sheet 12 of 12	
File: C:\UWRT\MarsRover2021-hardware\Projects\Power Distribution Board\Rev2\SH12 - RS-485.SchDoc		UW ROBOTICS TEAM

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