



3D-ROBOTIC MAPPING PLATFORM

CAL STATE LONG BEACH - COMPUTER ENGINEERING

ENGINEER: LIAM GOGLEY

DRAWN BY: LIAM GOGLEY

VERIFIED BY: ROBERT DOMINICK

RELEASED BY: LIAM GOGLEY

3D-ROMAP Power Supply

SH1 - COVER

SH2 - LDO REGULATORS / POWER INPUT - OUTPUT

SH3 - SWITCHING POWER SUPPLY

TEAM MEMBERS:

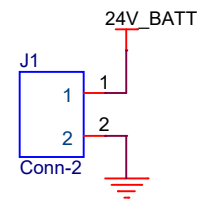
LIAM GOGLEY

ROBERT DOMINICK

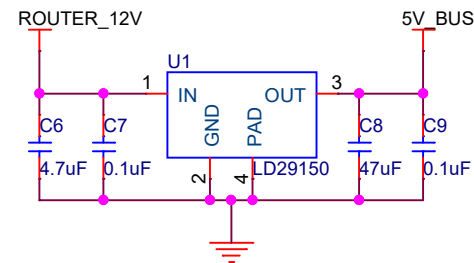
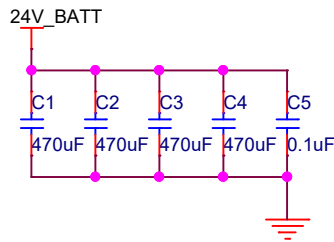
MARK MUNOZ

DANIEL TRAN

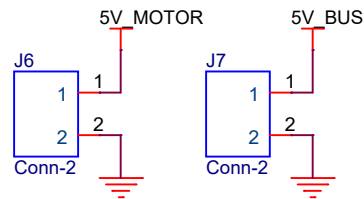
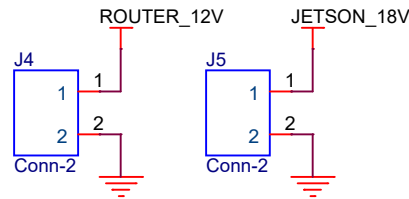
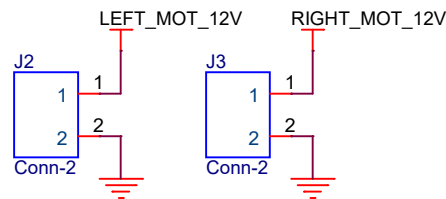
Title		
3D-ROMAP Power Supply		
Size B	Document Number 490-PSU	Rev C
Date:	Sunday, July 08, 2018	Sheet 1 of 3



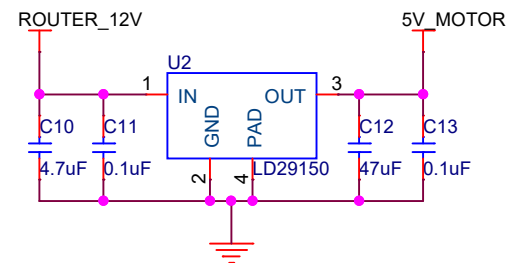
INPUT PWR FROM BATTERY



5V Power to Tiva C Launchpad VBUS & LiDAR

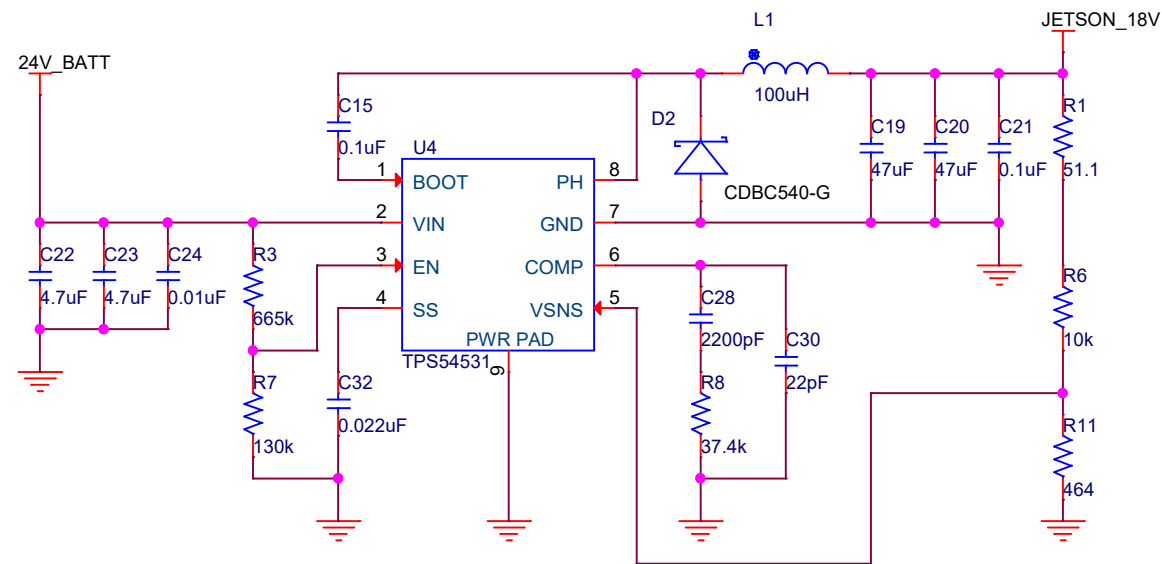


OUTPUT PWR FROM REG



5V Power to LiDAR Stepper Motor

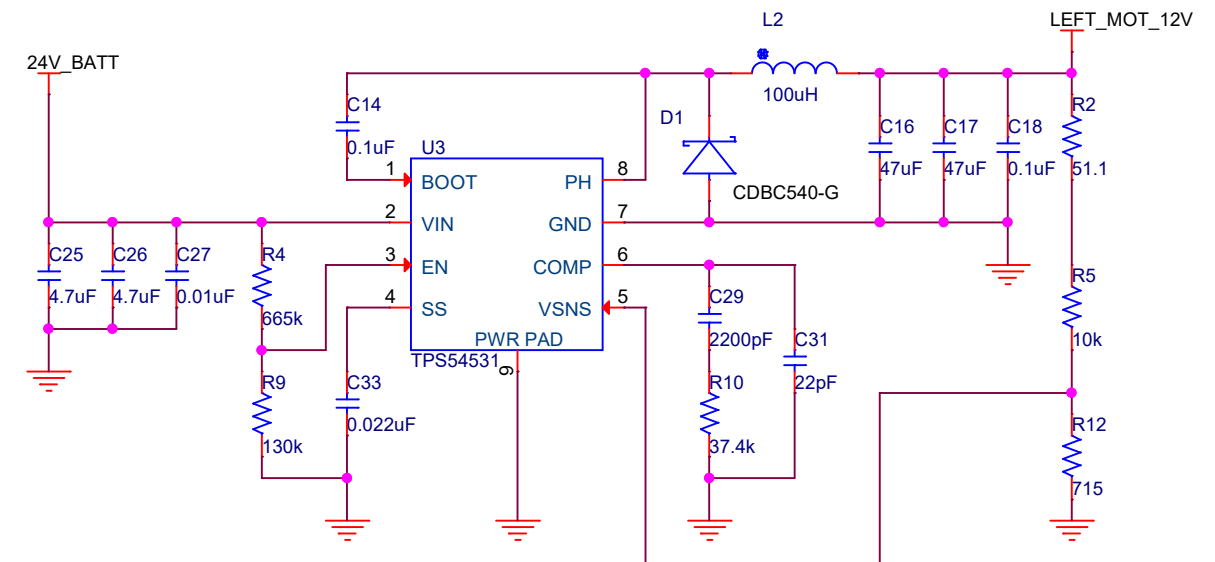
Title		
3D-ROMAP Power Supply		
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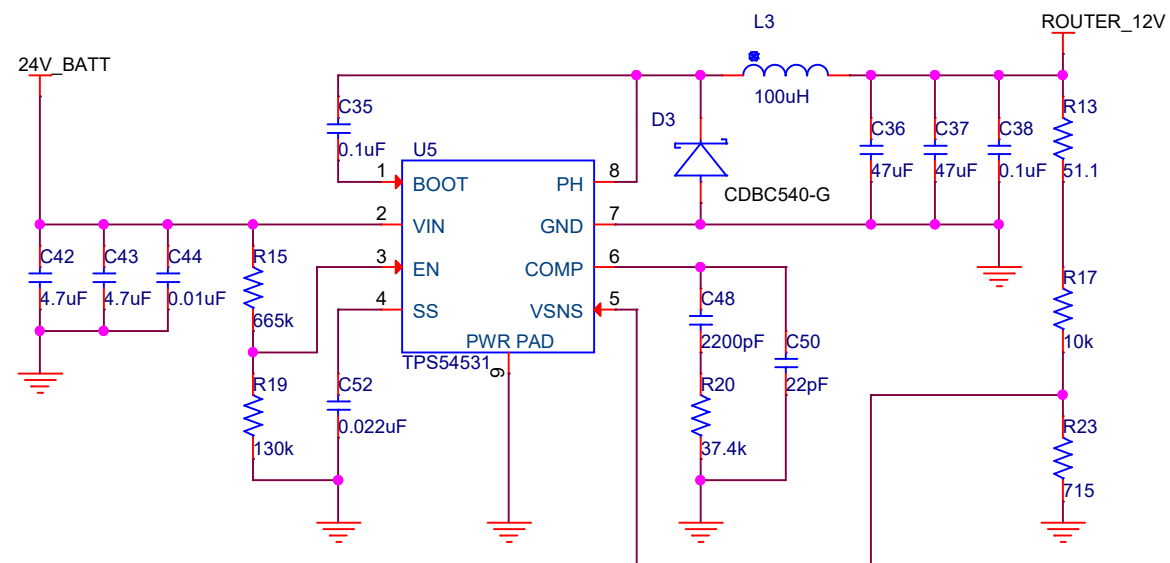
18V Power to Jetson TX1

$$465 = (10k * 0v8) / (18v - 0v8)$$

$$79uH = (18V * (24V - 18V)) / (24V * 0.2 * 0.5A * 570KHz)$$



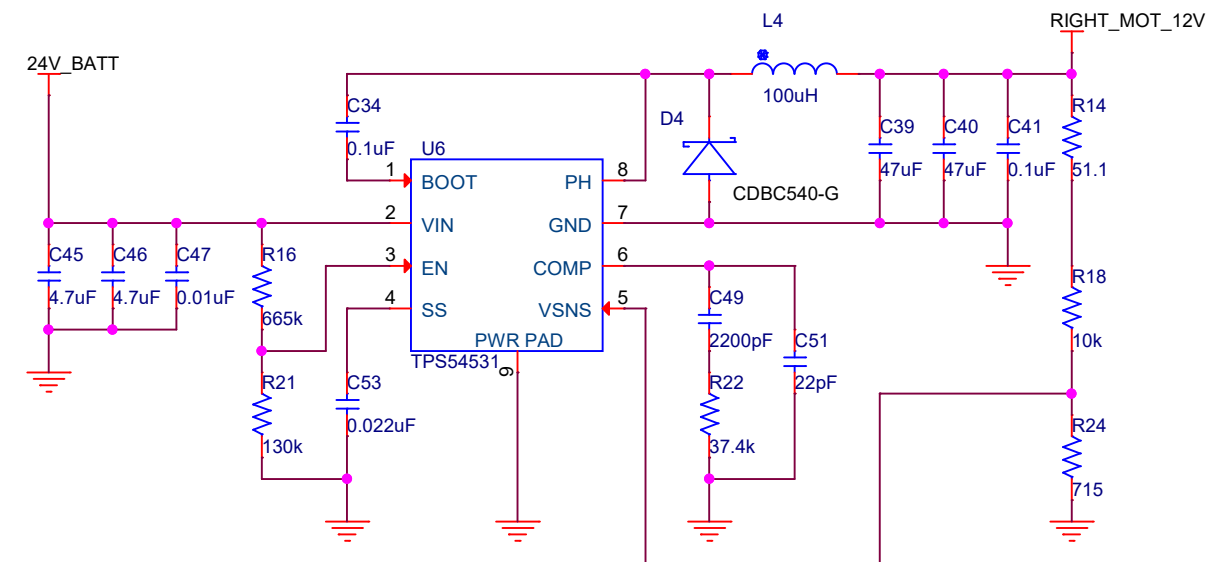
12V Power to Back Left Drive Motor



12V Power to WiFi Router

$$714 = (10k * 0v8) / (12v - 0v8)$$

$$88uH = (12V * (24V - 12V)) / (24V * 0.2 * 0.4A * 570KHz)$$



12V Power to Back Right Drive Motor

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