

Future Automotive Solution Testing - F.A.S.T Lab			
Title: AutonomousVehicle_MotherBoard		Variant: [No Variations]	
Page Contents: MotherBoard_Diagram.SchDoc		Checked by	
Size:	DWG NO		Revision:
Date: 7/8/2024	Designed by BitterSweet		Sheet 1 of 9

1

2

3

4

A

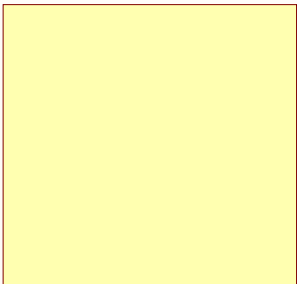
A

SYSTEM_DIAGRAM



File: MotherBoard_Diagram.SchDoc

BRAINBOARD SUPPORT



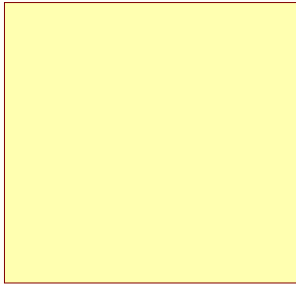
File: MotherBoard_JetsonSupport.SchDoc

STM32 NUCLEO



File: MotherBoard_NucleoF401RE.SchDoc

AUXILIARY SYSTEM

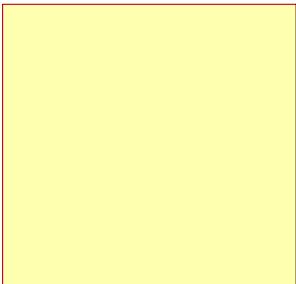


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B

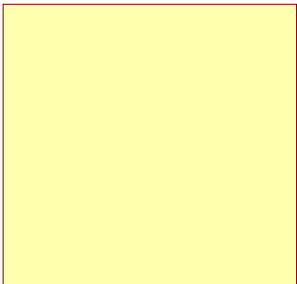
B

MOTOR_DRIVER



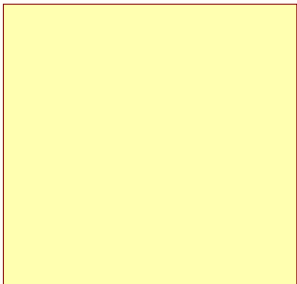
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POWER_BOARD



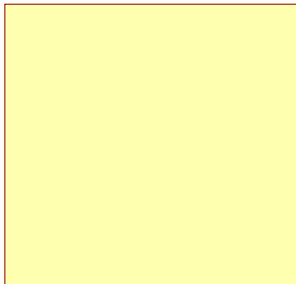
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MEASUREMENT SYSTEM



File: MotherBoard_Sensor_Communication.SchDoc

MEASUREMENT SYSTEM



File: MotherBoard_Test_Support.SchDoc

C

C

D

D

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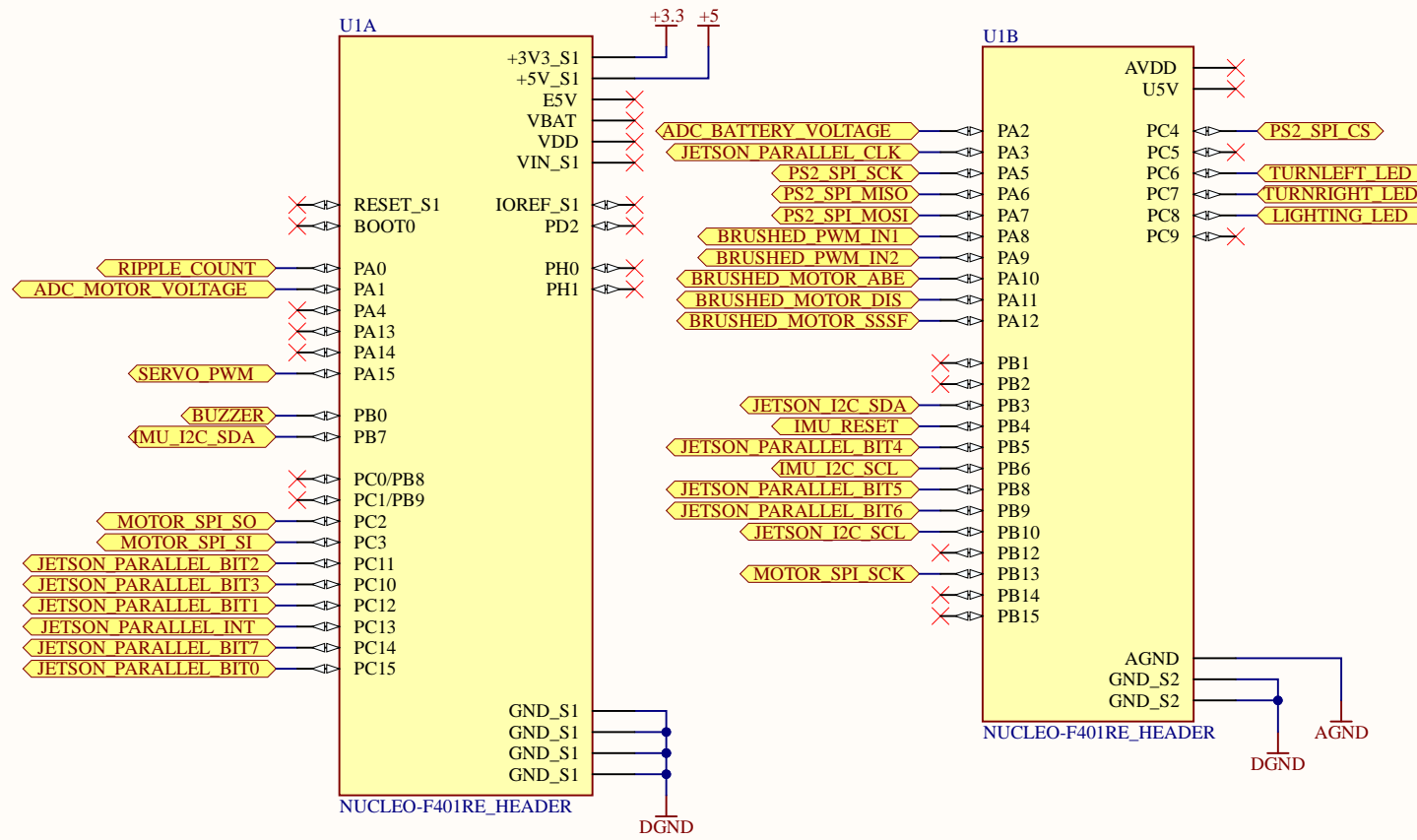
1

2

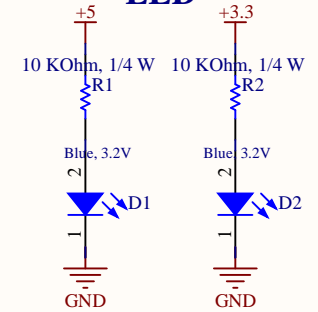
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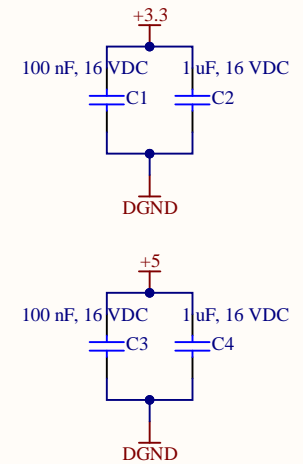
Nucleo-F401RE



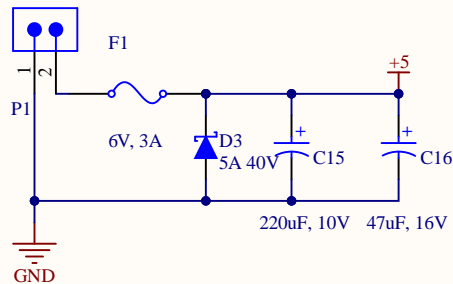
LED



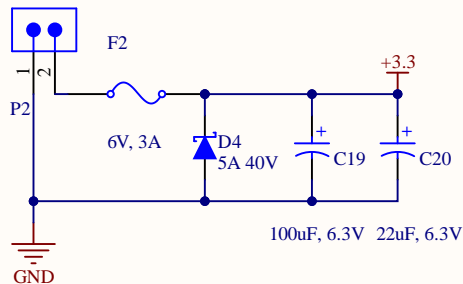
Filter



Power Supply 1



Power Supply 2



Hole



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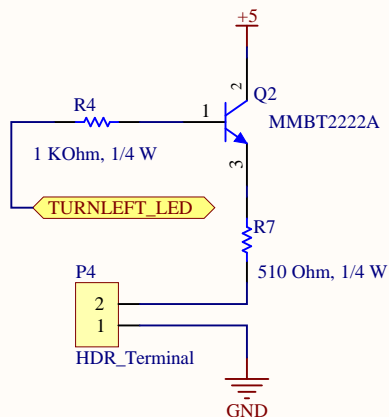
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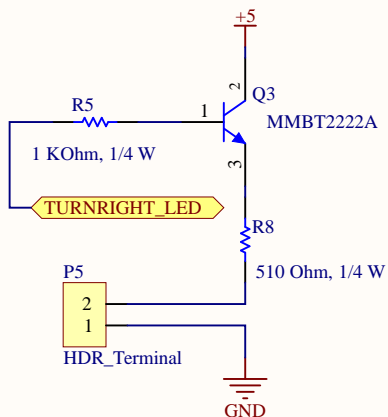
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Lighting System

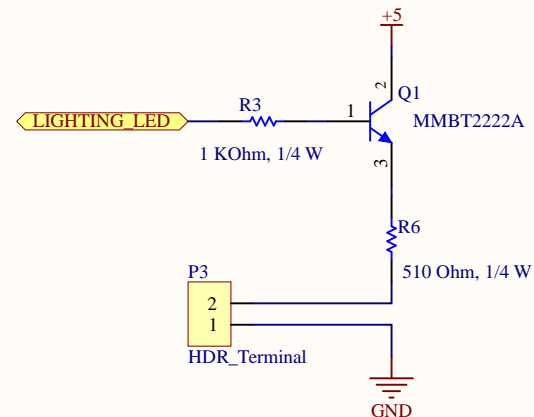
Turn Left Indicator Light



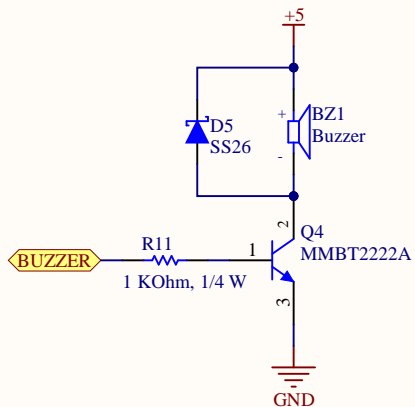
Turn Right Indicator Light



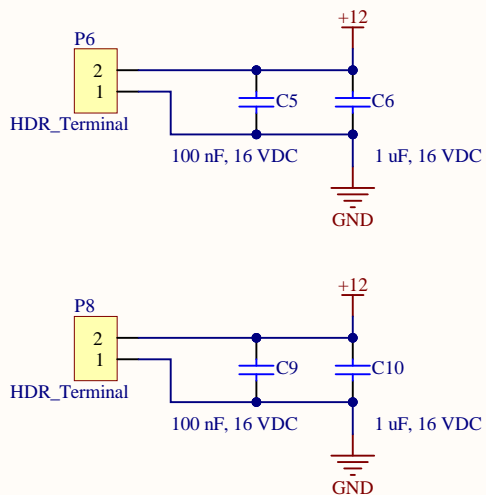
Illumination



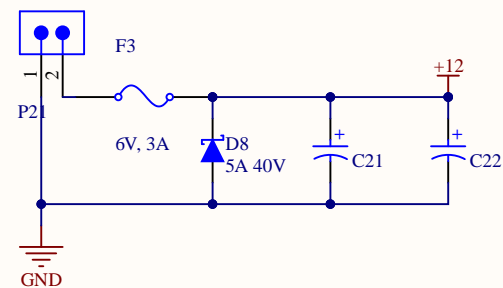
Buzzer



Fan



Power Supply



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A

A

B

B

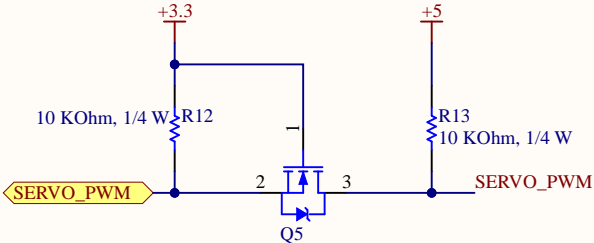
C

C

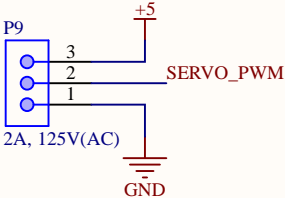
D

D

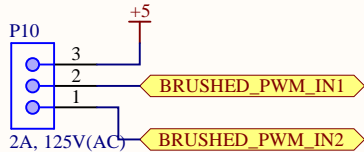
Servo Motor Control



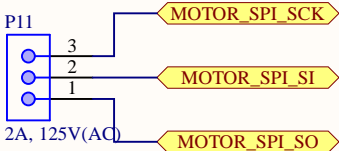
Servo Output



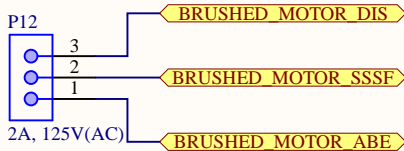
Brushed Motor Control



SPI Diagnosis



GPIO TLE8209



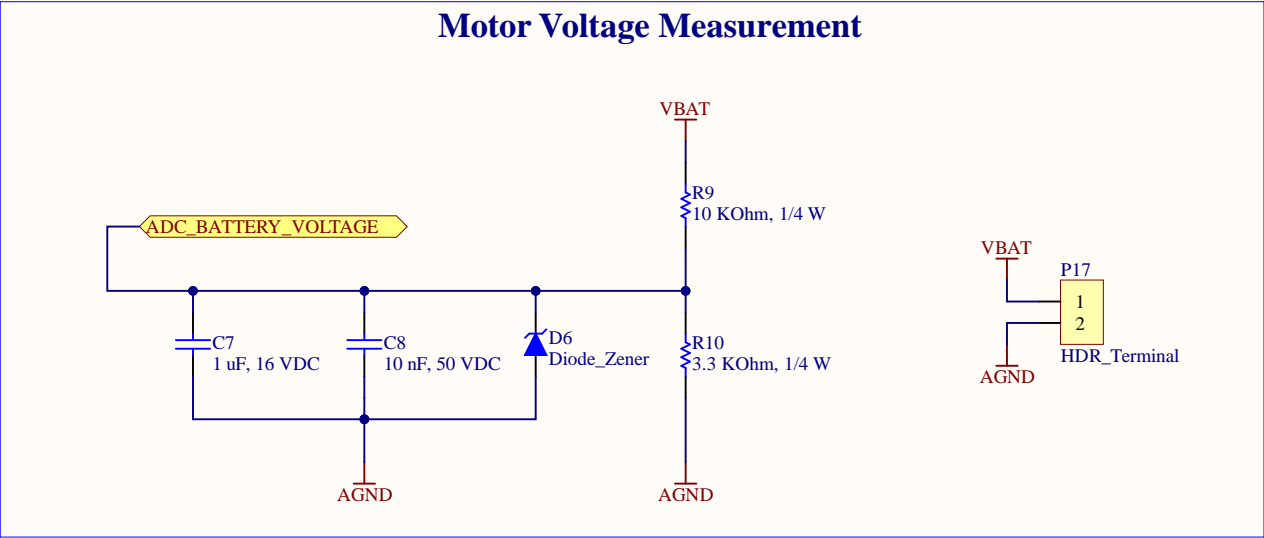
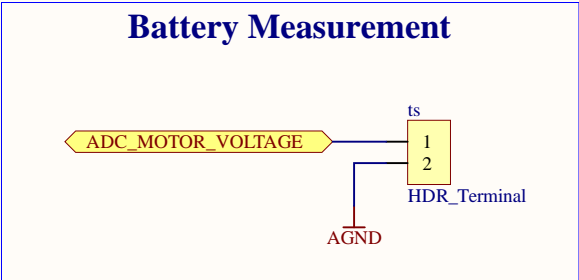
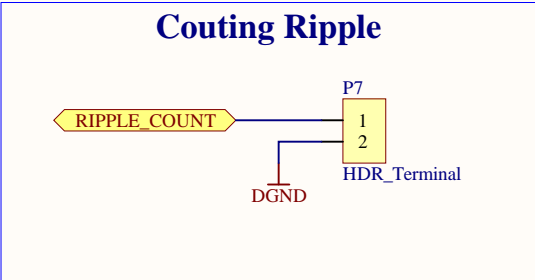
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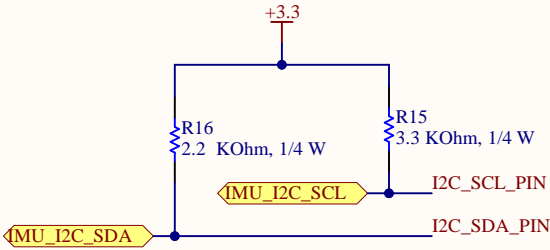
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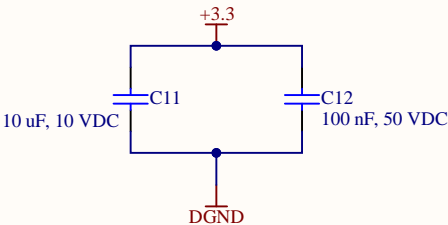


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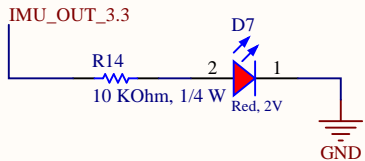
IMU BNO055 - I2C



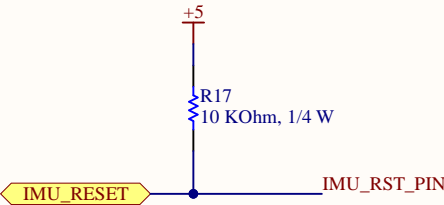
IMU BNO055 - Filter



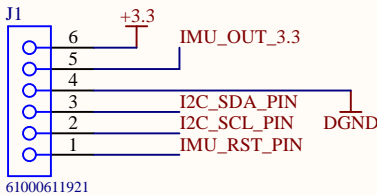
LED



IMU BNO055 - RESET



IMU BNO055 - Connector



Important Note: Try to keep high frequency lines/wires away from the BNO055!

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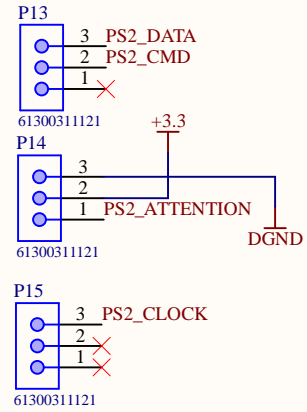
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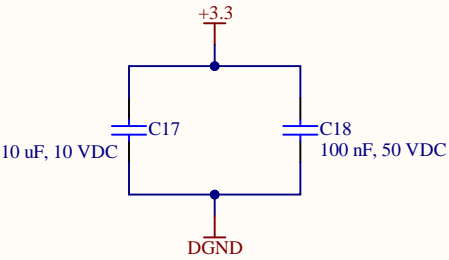
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PS2 Connector



Power Supply



Communication



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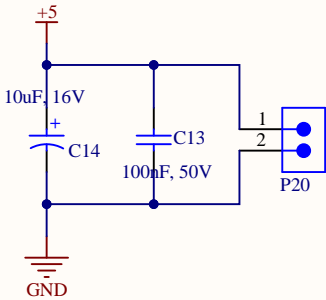
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1	2	3	4
A	<div>Hole</div> <div>Filter</div> <div>Communication Option 1</div>		
B	<div>Net Tie</div> <div>Communication Option 2</div> <div>Test Point</div>		
C			
D	<div></div> <div></div> <div></div> <div></div>		
1	2	3	4

Hole



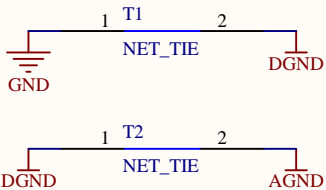
Filter



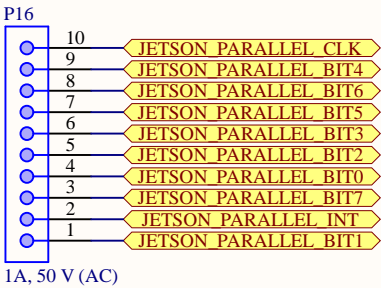
Communication Option 1



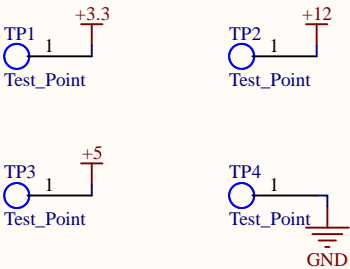
Net Tie



Communication Option 2



Test Point



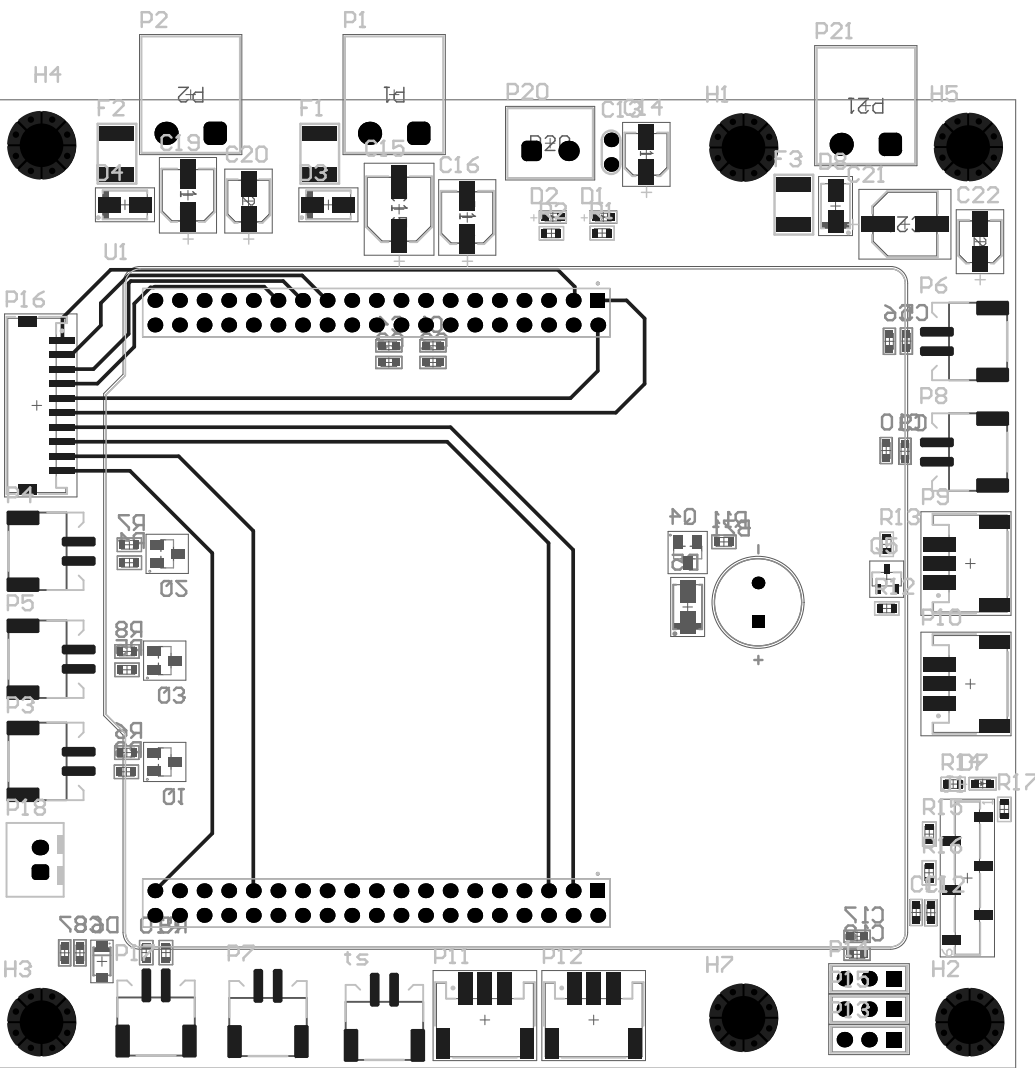
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Board Stack Report