REVISION	DESCRIPTION	DATE	APPROVED

Overview

The Baseboard prototype in this project is a baseboard that will power a google coral SoM device

Features to be implemented in this revision:
Dual Battery Pack (Maybe Overcurrent protection, etc)
USB 2.0 port for camera input
Myo Sensor Input
Servo PWM Driver
Extra GPIOs + I2C header + SPI Header
Fan Header

Not Implemented:
Maybe Programming Header
Maybe Sensory Feedback (Buttons)

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REFERENCE DOCUMENTS
BOM:
ASSY DWG:
FAB DWG:
PCB DWG:

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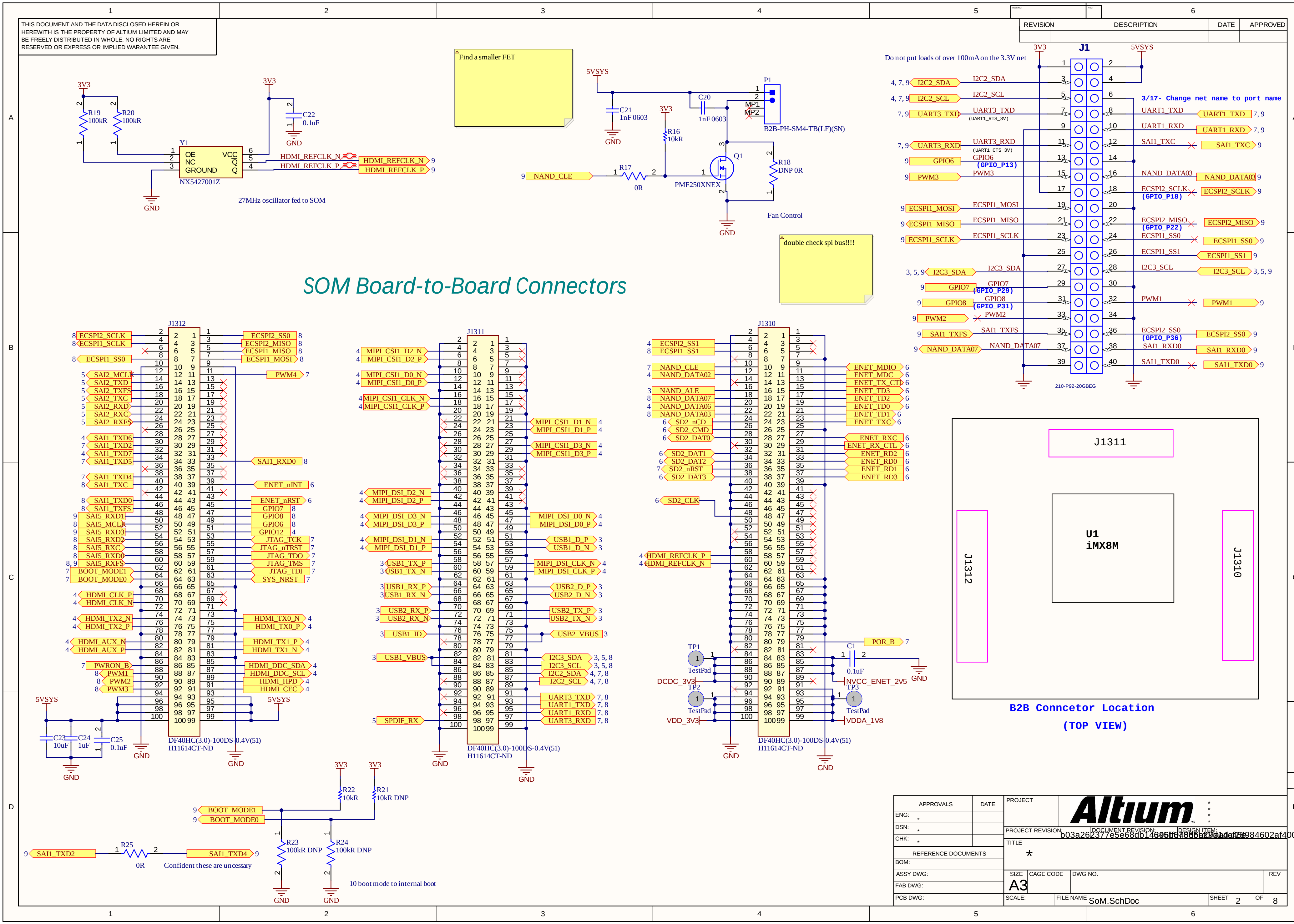
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SOM Board-to-Board Connectors
Find a smaller FET
double check spi bus!!!!
Do not put loads of over 100mA on the 3.3V net
3/17- Change net name to port name
27MHz oscillator fed to SOM
Fan Control
Confident these are uncessary
10 boot mode to internal boot
NX5427001Z
PMF250XNEX
B2B-PH-SM4-TB(LF)(SN)
210-P92-20GBEG
DF40HC(3.0)-100DS-0.4V(51)
H11614CT-ND
J1312
J1311
J1310
J1
U1
iMX8M
B2B Conncetor Location
(TOP VIEW)
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SoM.SchDoc
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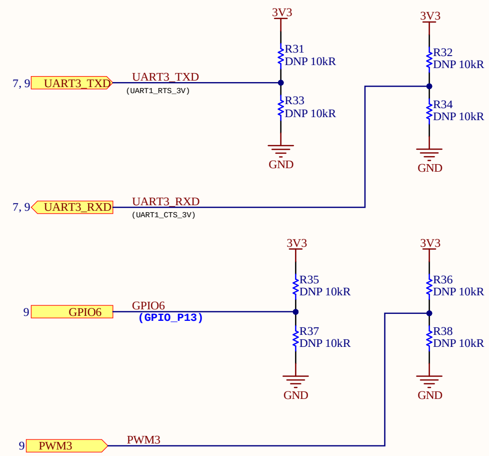

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PCB DWG:

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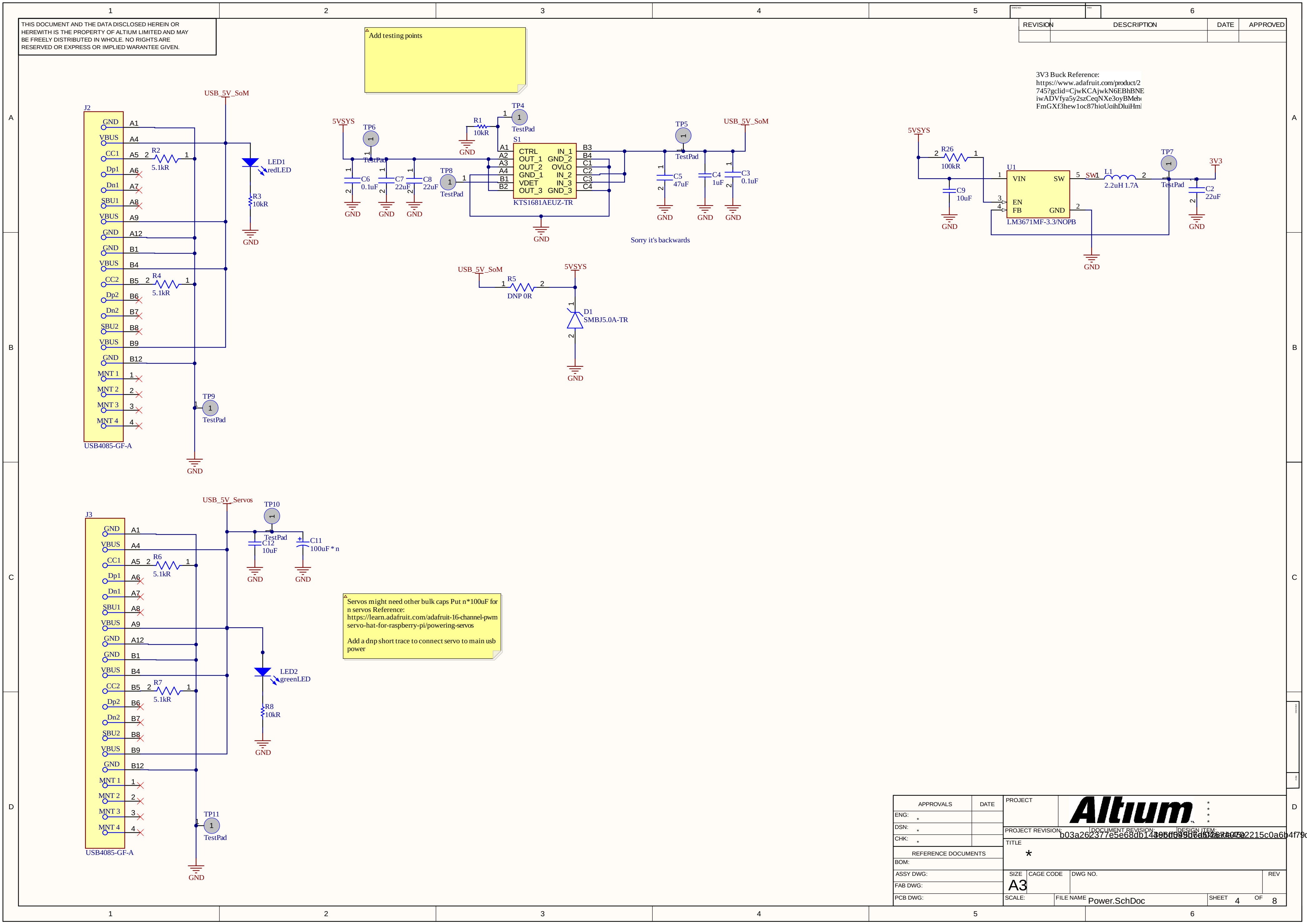
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Add testing points
3V3 Buck Reference:
https://www.adafruit.com/product/2745?gclid=CjwKCAjwkN6EBhBNEiwADVfya5y2szCeqNXe3oyBMehcFmGXf3hew1oc87hiqUqihDluiHml
J2
USB4085-GF-A
GND A1
VBUS A4
CC1 A5
Dp1 A6
Dn1 A7
SBU1 A8
VBUS A9
GND A12
GND B1
VBUS B4
CC2 B5
Dp2 B6
Dn2 B7
SBU2 B8
VBUS B9
GND B12
MNT 1
MNT 2
MNT 3
MNT 4
USB_5V_SoM
R2 5.1kR
R4 5.1kR
LED1 redLED
R3 10kR
TP9 TestPad
GND
5VSYS
TP6 TestPad
C6 0.1uF
C7 22uF
C8 22uF
TP8 TestPad
R1 10kR
TP4 TestPad
S1
KTS1681AEUZ-TR
CTRL
OUT_1
OUT_2
GND_1
VDET
OUT_3
IN_1
GND_2
OVLO
IN_2
IN_3
GND_3
A1 A2 A3 A4 B1 B2
B3 B4 C1 C2 C3 C4
TP5 TestPad
C5 47uF
C4 1uF
C3 0.1uF
Sorry it's backwards
R5 DNP 0R
D1 SMBJ5.0A-TR
R26 100kR
C9 10uF
U1
LM3671MF-3.3/NOPB
VIN
SW
EN
FB
GND
L1 2.2uH 1.7A
TP7 TestPad
3V3
C2 22uF
J3
USB4085-GF-A
USB_5V_Servos
TP10 TestPad
C12 10uF
C11 100uF * n
R6 5.1kR
R7 5.1kR
LED2 greenLED
R8 10kR
TP11 TestPad
Servos might need other bulk caps Put n*100uF for n servos Reference:
https://learn.adafruit.com/adafruit-16-channel-pwm-servo-hat-for-raspberry-pi/powering-servos
Add a dnp short trace to connect servo to main usb power
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FAB DWG:
PCB DWG:
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Power.SchDoc
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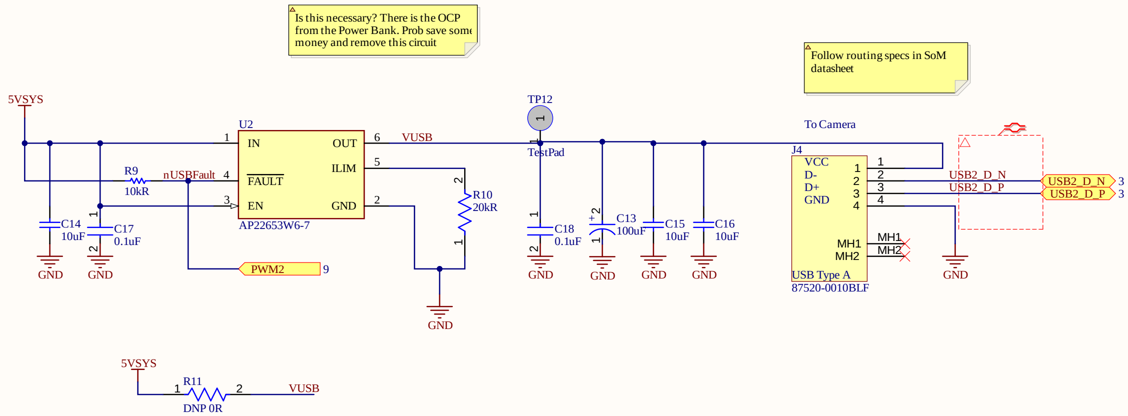

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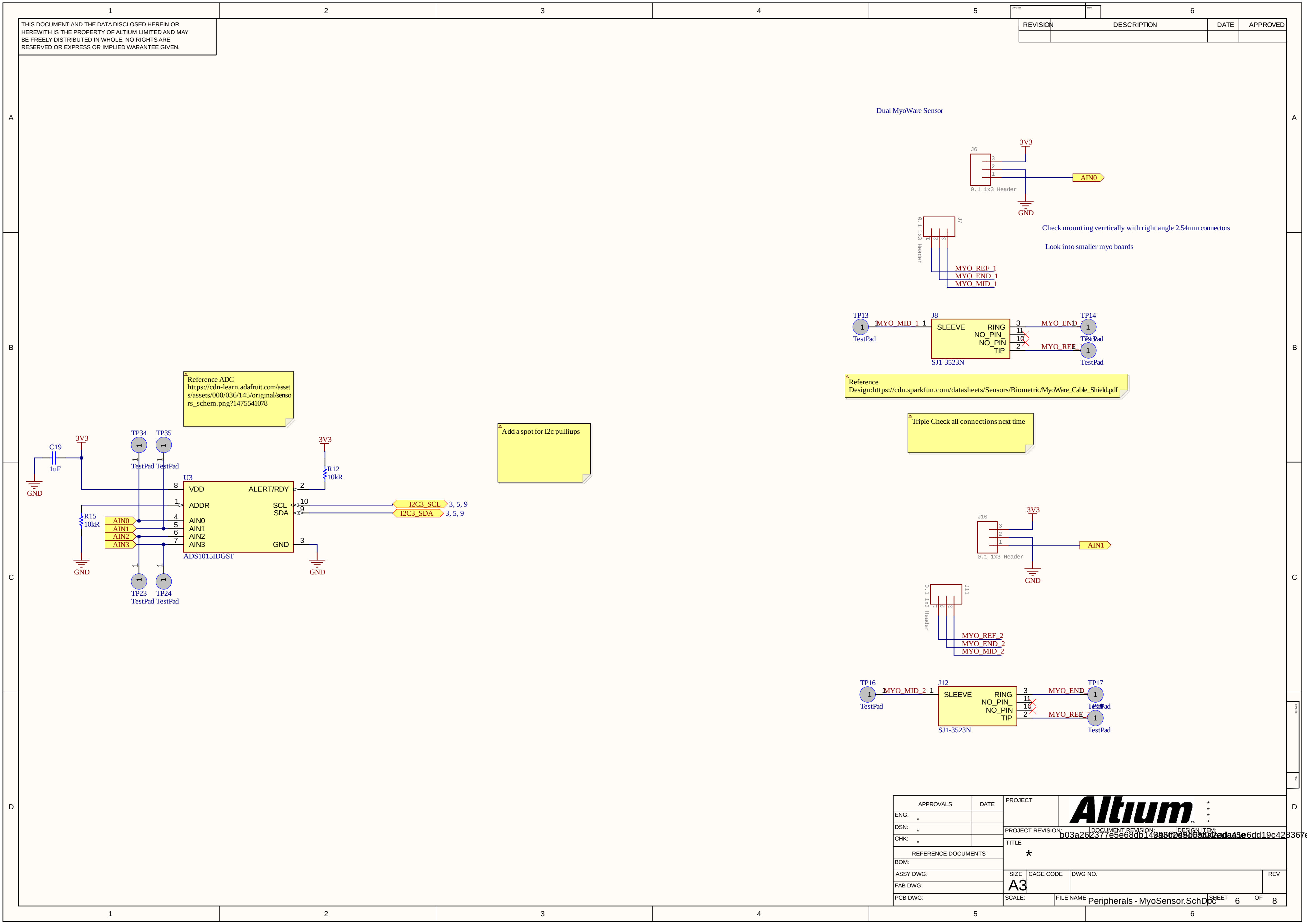

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DESCRIPTION
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Dual MyoWare Sensor
3V3
J6
0.1 1x3 Header
AIN0
GND
J7
0.1 1x3 Header
Check mounting verrtically with right angle 2.54mm connectors
Look into smaller myo boards
MYO_REF_1
MYO_END_1
MYO_MID_1
TP13
TestPad
MYO_MID_1
J8
SLEEVE
RING
NO_PIN_
NO_PIN
TIP
SJ1-3523N
MYO_END_1
MYO_REF_1
TP14
TP15
TestPad
Reference Design:https://cdn.sparkfun.com/datasheets/Sensors/Biometric/MyoWare_Cable_Shield.pdf
Triple Check all connections next time
Reference ADC https://cdn-learn.adafruit.com/assets/assets/000/036/145/original/sensors_schem.png?1475541078
Add a spot for I2c pulliups
C19
1uF
R15
10kR
R12
10kR
TP34
TP35
TP23
TP24
TestPad
U3
VDD
ADDR
AIN0
AIN1
AIN2
AIN3
ALERT/RDY
SCL
SDA
GND
ADS1015IDGST
AIN0
AIN1
AIN2
AIN3
I2C3_SCL
3, 5, 9
I2C3_SDA
3, 5, 9
J10
AIN1
J11
MYO_REF_2
MYO_END_2
MYO_MID_2
TP16
MYO_MID_2
J12
MYO_END_2
MYO_REF_2
TP17
TP18
APPROVALS
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REFERENCE DOCUMENTS
BOM:
ASSY DWG:
FAB DWG:
PCB DWG:
PROJECT
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A3
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FILE NAME
Peripherals - MyoSensor.SchDoc
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OF
8

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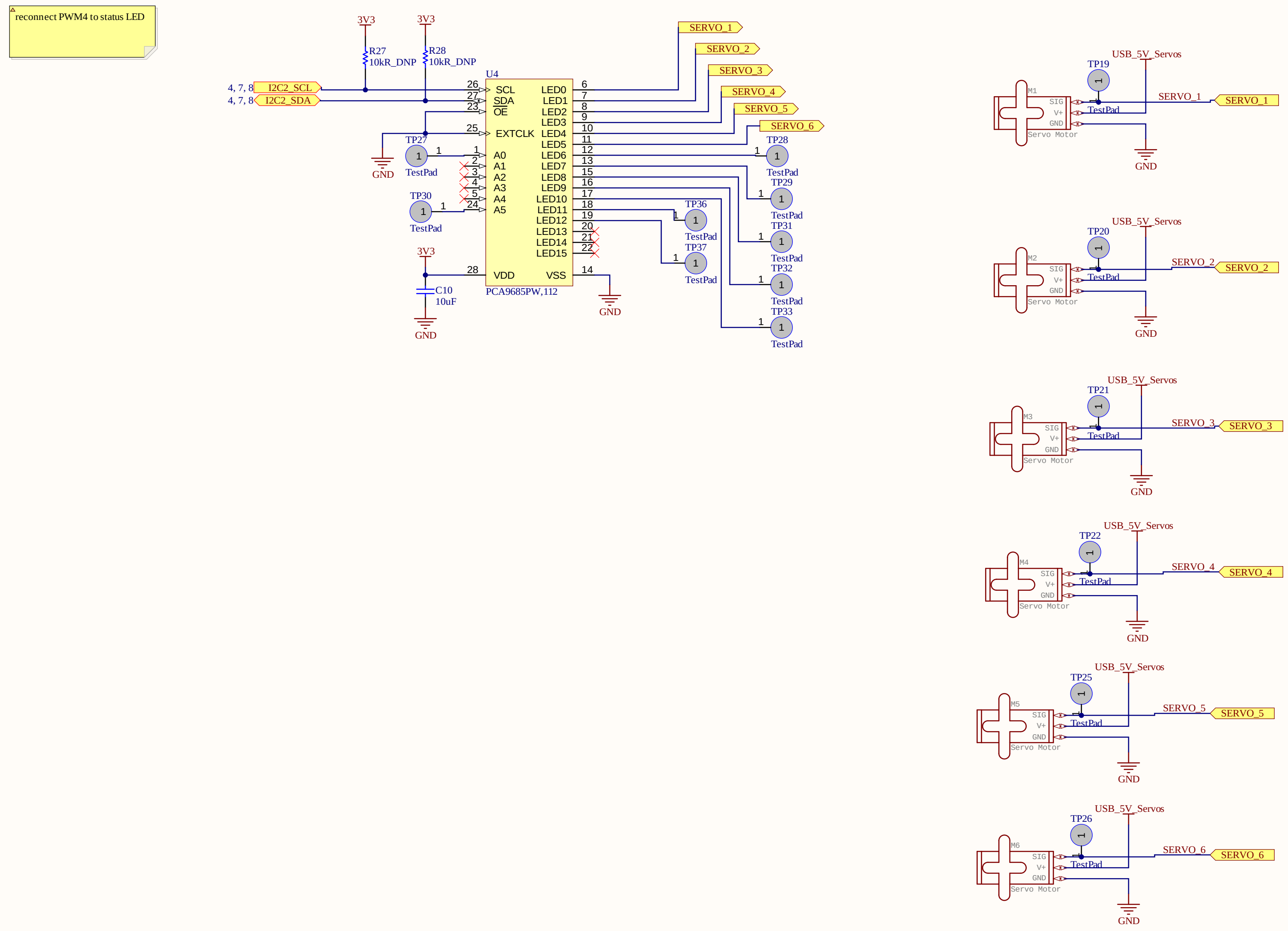

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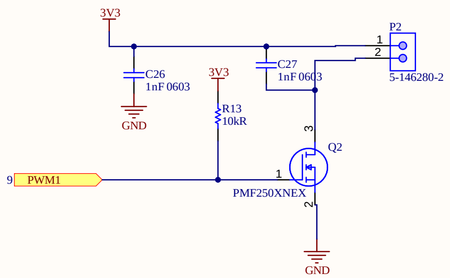

Vibration Motor Driver

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CAGE CODE
DWG NO.
REV
SCALE:
FILE NAME Peripherals - Feature Creep.SchDoc
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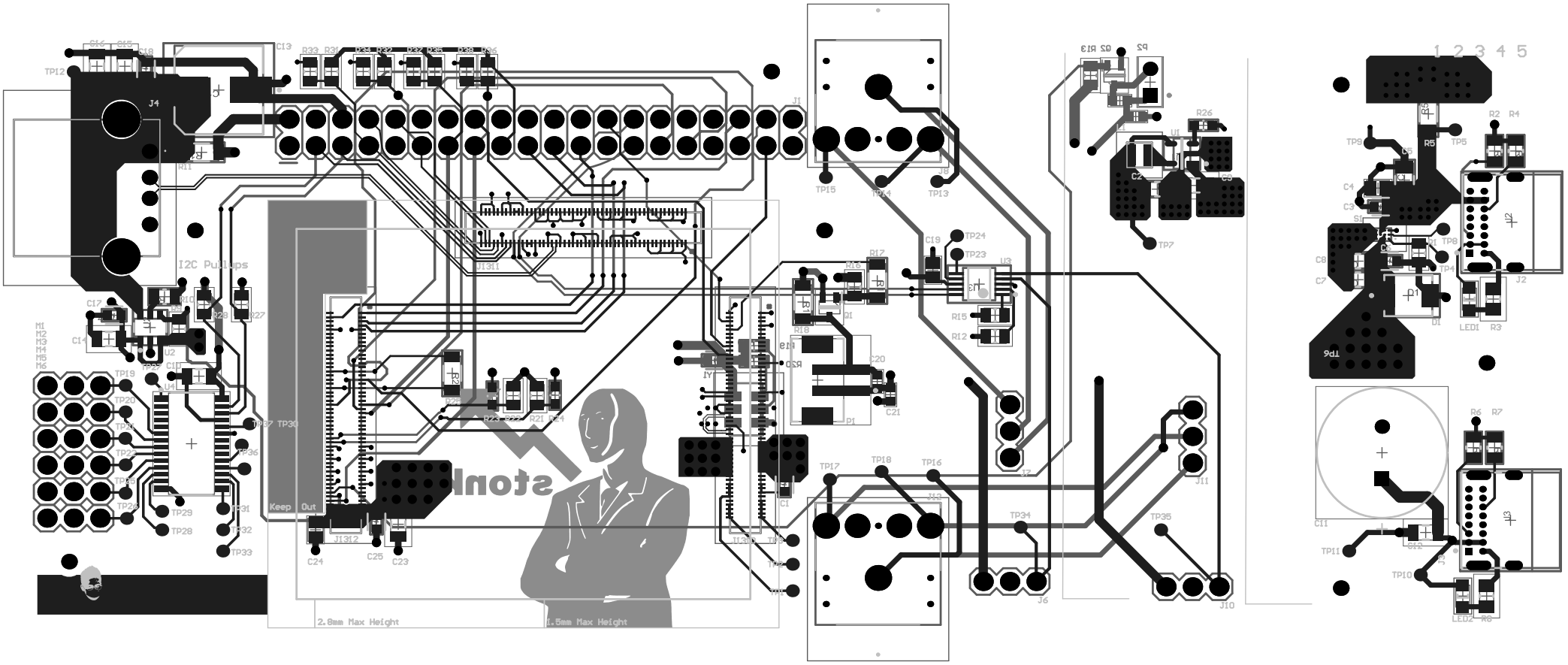
I2C Pullups
Keep Out
2.8mm Max Height
1.5mm Max Height