Window Weather Monitor

"Power Input/Regulation"

"Microcontroller"

"Outputs"

DC Power In is the
DC Adapter Barrel-Jack
Plug going to the module

DC POWER IN

U1
Elegoo
3/5 V Supply
DC_IN
3V3
GND
5V

TP2
3VDC

TP3
5VDC

TP1
GND

GND

+3VDC
Display draws ~10mA

+5VDC
Need 200mA for ESP32
Need xxxmA for Motor Driver
Need 50mA for TCB418
Need 50mA for Sensors?

U3
Rain Sensor
VCC
DO
GND

R2
0

R4
NP

R5
5K

Temp/Humidity
Sensor
U2
DHT11
S.. -> P1
GND VCC
IO

R1
0

R6
4.7K

R7
4.7K

GND

"Sensor Inputs"

Rain_DO

Temp_Hum_DO

TP7
Rain

TP8
Temp/Hum

TP5
I2C SDA

TP6
I2C SCL

I2C SDA

I2C SCL

SW2
PWR DISABLE

TP9
ESP32_PWR

RST SW

C4
0.1uF

C5
22uF

GND GND

A1
USB
Adafruit_Feather_HUZZAH32_ESP32
26
EN
A12/IO13
A8/IO15
DAC2/A0
DAC1/A1
I34/A2
I39/A3
IO36/A4
IO4/A5
SCK/IO5
MOSI/IO18
MISO/IO19
IO21
SDA/IO23
SCL/IO22
GND

R10
0

R12
0

R17
0

R22
0

R14
0

R20
100

R15
0

R21
100

R16
0

R23
100

R13
0

R19
100

R11
0

R18
100

U5
Stepper
Motor IO
Control PCBA
M0
M1
M2
M3
VCC

R24
0

TP11
Motor PWR

POWER LED
D1 RED

D2
WINDOW OPEN

D3
LED_RGBK

Buzzer

GND

GND

R25
0

C6
0.1uF

C7
22uF

GND

GND

TP12
OLED PWR

DS1
3V+
FeatherWing
OLED Display
RST
SDA
SCL
GND

RST SW

I2C SDA

I2C SCL

GND

R3
0

TP4
Keypad Power

C1
0.1uF

C2
22uF

GND

GND

U4
TCAB418
Keypad
I2C
Module
VIN
SDA
SCL
RST
R3
R2
R0
R1
C0
C1
C2
C3
GND GND

K1
4x4_Matrix_Keypad
1 2 3 A
4 5 6 B
7 8 9 C
* 0 # D
R0
R1
R2
R3
C0
C1
C2
C3

I2C SDA
I2C SCL
RST SW

GND

R8
5K

R9
33K
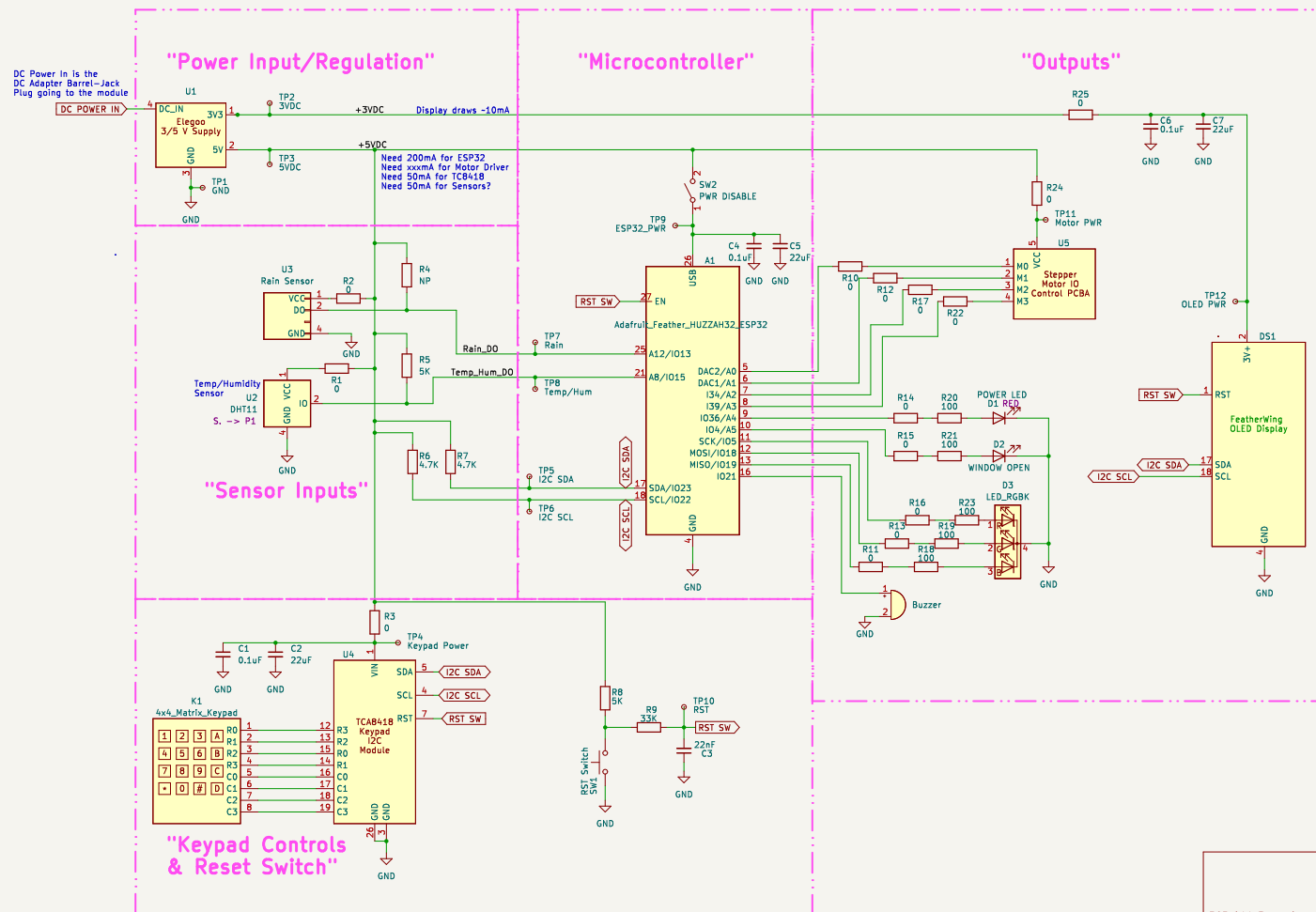
TP10
RST

RST SW

22nF
C3

RST Switch
SW1

GND

GND

"Keypad Controls
& Reset Switch"

ECE 411 Team 4
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