

A

A

B

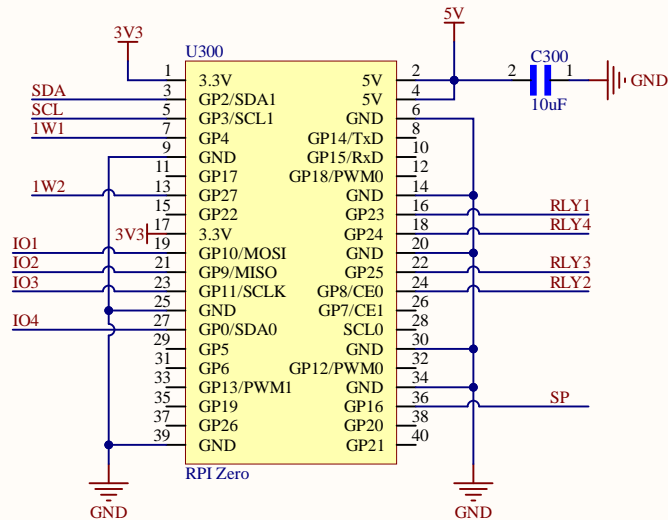
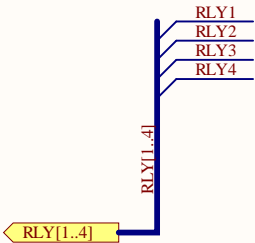
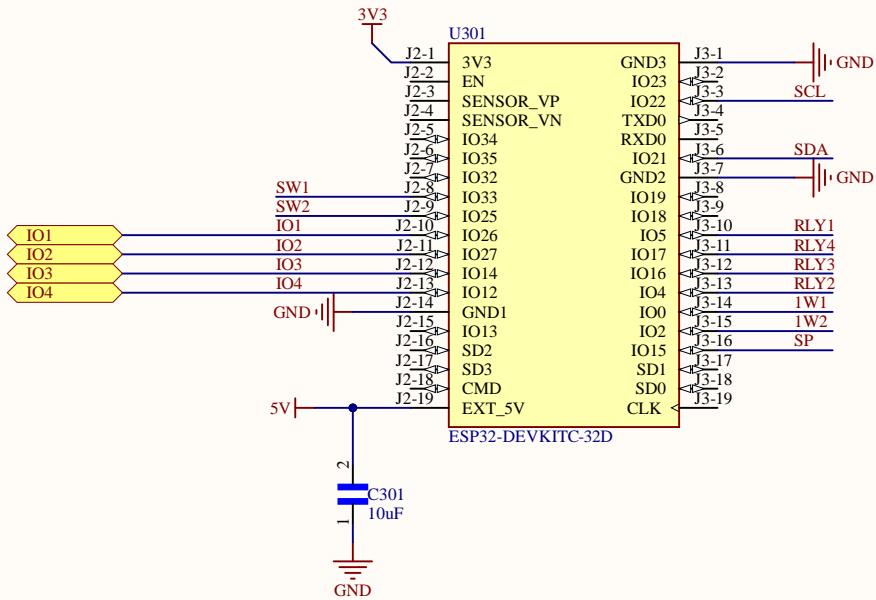
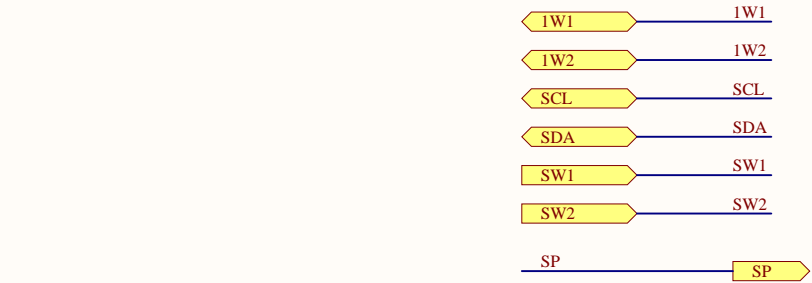
B

C

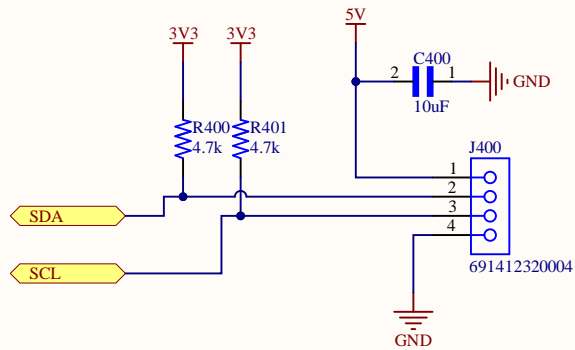
C

D

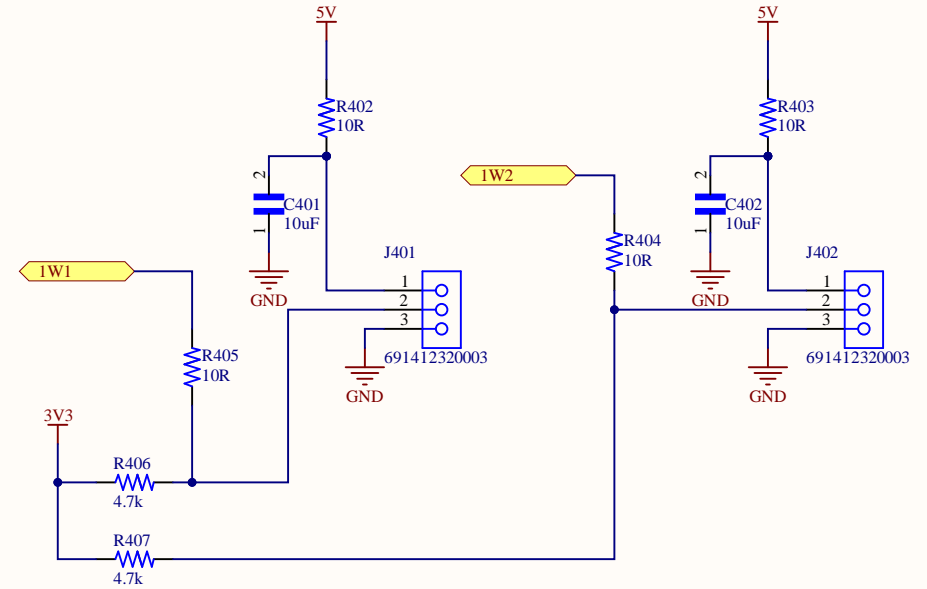
D



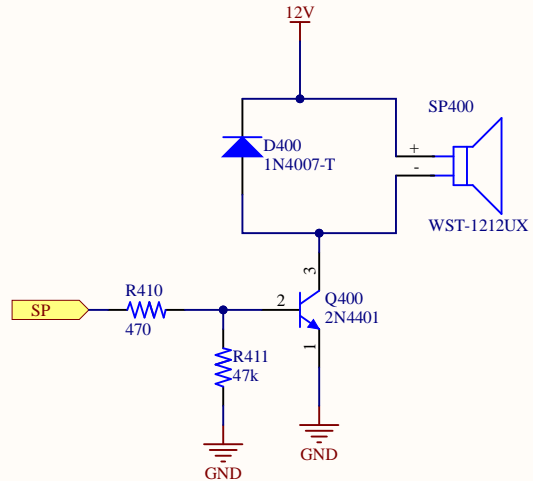
I2C Connector



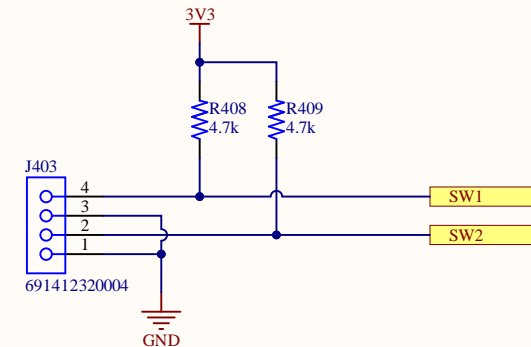
1Wire Ports



Sensor

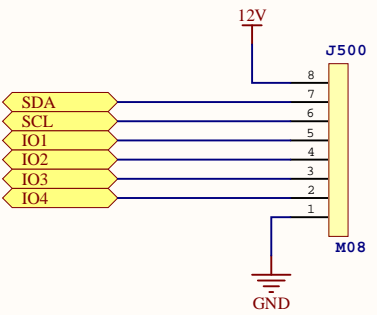


Switch Input

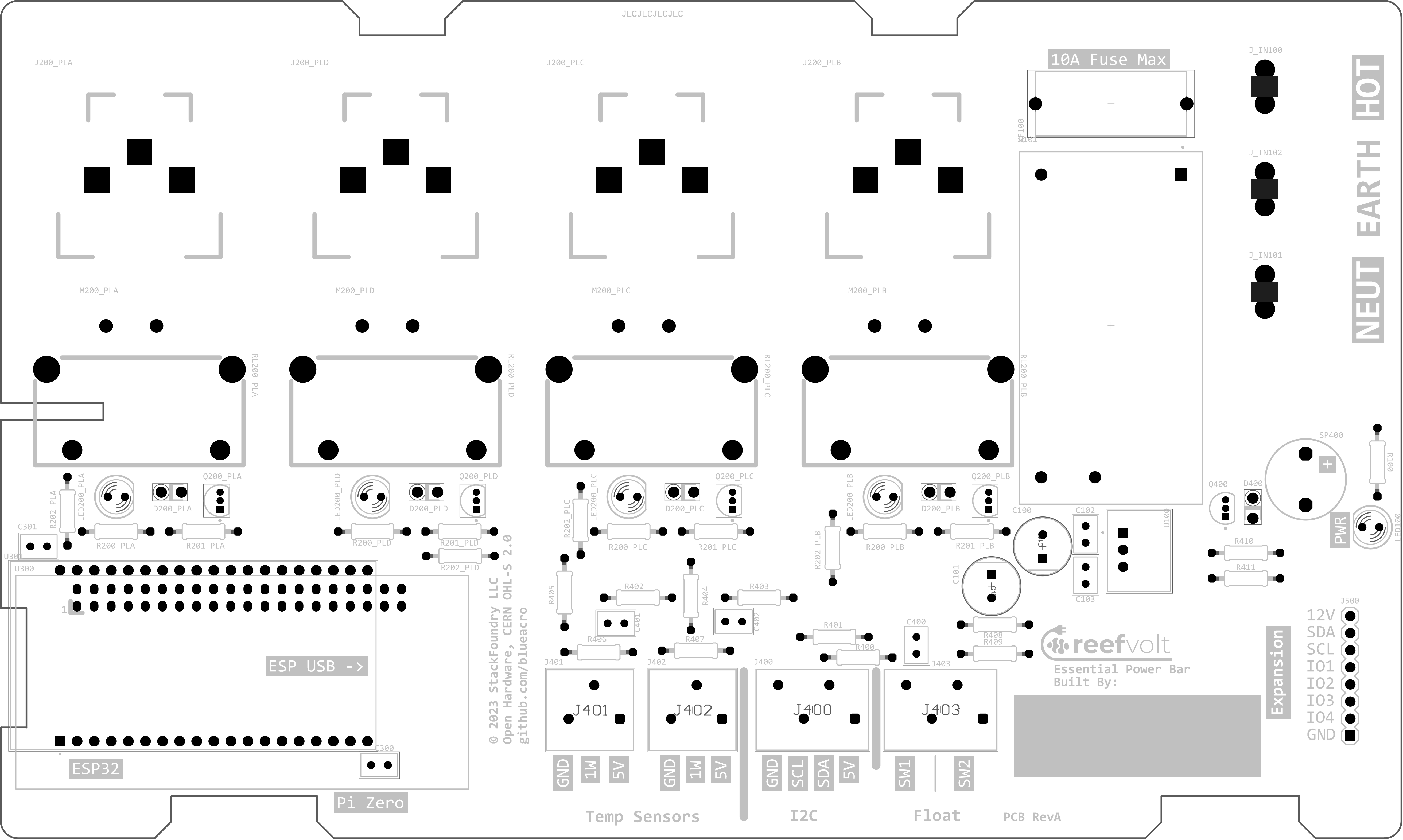
Title ***RV Essential: Sensors and IO***Size: **A4**Number: **4**Revision: **A**Date: **7/31/2023**Time: **10:05:47 PM** Sheet **4** of **5**File: **rv_pwr_es_sensor.SchDoc**

© 2023 StackFoundry LLC. All Rights Reserved.

Made available under the
CERN OHL v2.0
blueacro.com
github.com/blueacro



Title <i>RV Essential: Expansion</i>			* * * *	Made available under the CERN OHL v2.0 blueacro.com github.com/blueacro
Size: A4	Number: 1	Revision: A		
Date: 7/31/2023	Time: 10:05:48 PM	Sheet 5 of 5		
File: rv_pwr_addon.SchDoc				
© 2023 StackFoundry LLC. All Rights Reserved.				



J200_PLA

J200_PLD

J200_PLB

J200_PLB

10A Fuse Max

J_IN100

HOT

EARTH

NEUT

M200_PLA

M200_PLD

M200_PLB

M200_PLB

J_IN102

J_IN101

RL200_PLA

RL200_PLD

RL200_PLB

RL200_PLB

Q200_PLA

Q200_PLD

Q200_PLB

Q200_PLB

SP400

R100

PWR

LED100

C301

R202_PLA

LED200_PLA

D200_PLA

R200_PLA

R201_PLA

LED200_PLD

D200_PLD

R200_PLD

R201_PLD

R202_PLD

LED200_PLB

D200_PLB

R200_PLB

R201_PLB

LED200_PLB

D200_PLB

R200_PLB

R201_PLB

C100

C102

C103

Q400

D400

R410

R411

ESP32

ESP USB ->

Pi Zero

© 2023 StackFoundry LLC
Open Hardware, CERN OHL-S 2.0
github.com/blueacro

J401

J402

J400

J403

reefvolt

Essential Power Bar
Built By:

Expansion

12V
SDA
SCL
IO1
IO2
IO3
IO4
GND

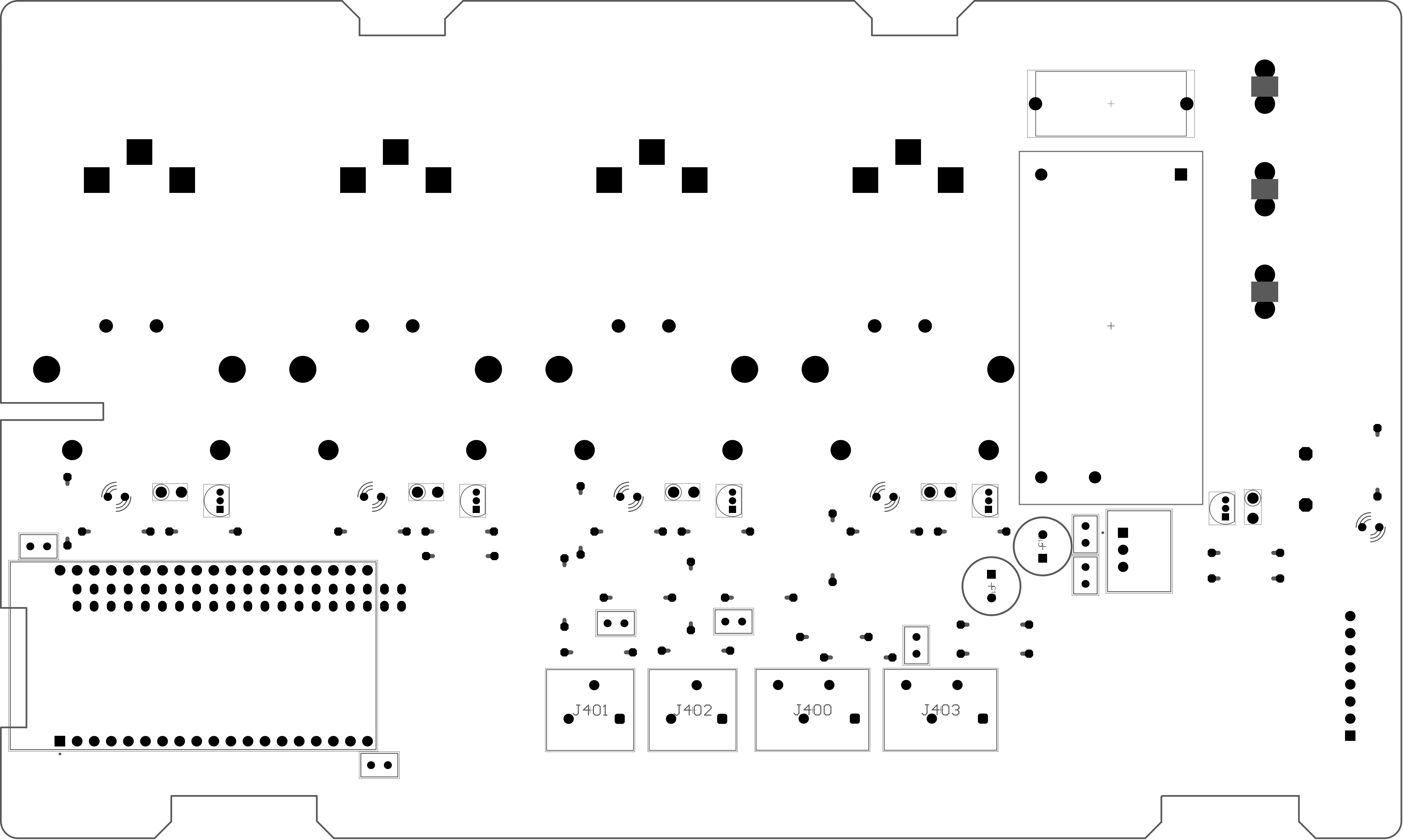
J500

Temp Sensors

I2C

Float

PCB RevA



Line #	Name	Description	Designator	Quantity	Manufacturer 1	Manufacturer Part Number 1	Manufacturer Lifecycle 1	Supplier 1	Supplier Part Number 1	Supplier Unit Price 1	Supplier Subtotal 1
1	CAP 100uf 25V Aluminum 8mm Through Hole	Cap Aluminum 100uf 25V 20% (R X 11.5mm) Radial 3.5mm 500mA 2000 hr 125°C Bulk	C100, C101	2	Panasonic	EEUTA1E101	Volume Production	Digi-Key	P19501-ND	0.91	1.82
2	CAP 10uf 25V TH X7R	FG Series 10 uF 25 V ±10% Tolerance X7R Radial Multilayer Ceramic Capacitor	C102, C103, C300, C301, C400, C401, C402	7	TDK	FG16X7R1E106KRT06	Volume Production	Digi-Key	445-173156-1-ND	0.67	4.69
3	1N4007-T	VR-1000V IF-1A 8pF	D200_PLA, D200_PLB, D200_PLC, D200_PLD, D400	5	Diodes	1N4007-T	Volume Production	Digi-Key	1N4007DICT-ND	0.2	1
4	3-213598-2		D200_PLA, J200_PLB, J200_PLC, J200_PLD	4	TE Connectivity	3-213598-2	Volume Production	Digi-Key	3-213598-2-ND	2.7	10.8
5	691412320004	1b, Wire To Brd, 4Way, 16Awg Rohs Compliant: Yes Wurth Elektronik 691412320004	J400, J403	2	Wurth Electronics	691412320004	Unknown	Digi-Key	732-11129-ND	1.3	2.6
6	691412320003	1b, Wire To Brd, 3Way, 16Awg Rohs Compliant: Yes Wurth Elektronik 691412320003	J401, J402	2	Wurth Electronics	691412320003	Unknown	Digi-Key	732-11128-ND	1.39	2.78
7	M08		J500	1							
8	TAB_QUICKCON	Molex 0197054203	J_IN100, J_IN101, J_IN102	3	Molex	19705-4203	Volume Production	Digi-Key	WM3984CT-ND	0.14	0.42
9			LED100, LED200_PLA, LED200_PLB, LED200_PLC, LED200_PLD	5	Cree	C5038-RCN-CW020AA2	Volume Production	Digi-Key	C5038-RCN-CW020AA2CT-ND	0.18	0.9
10	GMOV		M200_PLA, M200_PLB, M200_PLC, M200_PLD	4	Bourns	GMOV-14D301K	Unknown	Digi-Key	GMOV-14D301K-ND	1.84	7.36
11	2N4401	Transistor NPN Silicon 40V IC=600ma TO-92 Case General Purpose Amplifier And Switch	Q200_PLA, Q200_PLB, Q200_PLC, Q200_PLD, Q400	5	ON Semiconductor / Fairchild	2N4401TA	Volume Production	Digi-Key	2N4401TAFSCT-ND	0.37	1.85
12	1k TH 0207 5% 0.25W	Res Carbon Film 1K Ohm 5% 1/4W -500ppm/°C to 350ppm/°C Conformal AXL Thru-Hole Paper T/R	R100, R200_PLA, R200_PLB, R200_PLC, R200_PLD	5	Yageo	CFR-25JR-52-1K	Volume Production	Digi-Key	13-CFR-25JR-52-1KCT-ND	0.1	0.5
13	470 TH 0207 5% 0.25W	Res Carbon Film 470 Ohm 5% 1/4W - 500ppm/°C to 350ppm/°C Conformal AXL Thru-Hole Paper T/R	R201_PLA, R201_PLB, R201_PLC, R201_PLD, R410	5	Yageo	CFR-25JR-52-470R	Volume Production	Digi-Key	13-CFR-25JR-52-470RCT-ND	0.1	0.5
14	47k TH 0207 5% 1/4W	Res Carbon Film 47K Ohm 5% 1/4W - 500ppm/°C to 350ppm/°C Conformal AXL Thru-Hole Paper T/R	R202_PLA, R202_PLB, R202_PLC, R202_PLD, R411	5	Yageo	CFR-25JR-52-47K	Volume Production	Digi-Key	13-CFR-25JR-52-47KCT-ND	0.1	0.5
15	4.7k TH 0207 5% 1/4W	Res Carbon Film 4.7K Ohm 5% 1/4W - 500ppm/°C to 350ppm/°C Conformal AXL Thru-Hole Paper T/R	R400, R401, R406, R407, R408, R409	6	Yageo	CFR-25JR-52-4K7	Volume Production	Digi-Key	13-CFR-25JR-52-4K7CT-ND	0.1	0.6
16	10R TH 0207 5% 1/4W	Res Carbon Film 10 Ohm 5% 1/4W -500ppm/°C to 350ppm/°C Conformal AXL Thru-Hole Paper T/R	R402, R403, R404, R405	4	Yageo	CFR-25JR-52-10R	Volume Production	Digi-Key	13-CFR-25JR-52-10RCT-ND	0.1	0.4
17	RelaySPST		RL200_PLA, RL200_PLB, RL200_PLC, RL200_PLD	4	Omron	G6OE-1A-DC12	Unknown	Digi-Key	Z11676-ND	6.99	27.96
18	WST-1212UX	Audio Magnetic Xdr 9-15V Th	SP400	1	Sobertron	WST-1212UX	Volume Production	Digi-Key	433-1049-ND	1.42	1.42
19	P7805-2000-S	Module DC-DC 24VIN 1-OUT 5V 2A 10W 3-Pin SIP Module Tube	U100	1	CUI	P78E05-1000	Unknown	Digi-Key	102-5018-ND	3.09	3.09
20	IRM-20-12	Single Output Encapsulated Type, 12 V, 1.8 A, 21.6 W, -40 to 85 degC, 4-Pin THD, RoHS	U101	1	Mean Well	IRM-20-12	Volume Production	Digi-Key	1866-3038-ND	11.05	11.05
21	RPI Zero		U300	1							
	ESP32-DEVKITC-32D	WiFi Development Tools (802.11) ESP32 General Development Kit, ESP32-WROOM- 32D on the board	U301	1	Espressif Systems	ESP32-DEVKITC-32E	Unknown	Digi-Key	1965-ESP32-DEVKITC-32E-ND	9.8	9.8
22	696103201002	WR-FSH Fuse Holder Blocks Fuse Holder Blocks Clip Cover for PCB - THR Version	XF100	1	Wurth Electronics	696103201002	Unknown	Digi-Key	732-11372-ND	1.26	1.26