



MACHINECHAT - A UNIVERSAL SENSOR HUB

ROBERT NELSON - DIGI-KEY



JEDI ONE - KEY FEATURES

- Tiny 14 MB single binary with zero dependencies. Available for Raspberry Pi, BeagleBone, Windows, Mac OS and Linux. Runs locally - no cloud or subscription needed
- Ready-to-deploy with configurable dashboards for real-time and historical data, integrated rules engine, email and SMS alerts
- Easily develop and deploy proof-of-concepts with a beautiful graphical interface in minutes instead of months
- Modern browser-based graphical user interface with multi-user support that allows access to JEDI One from anywhere on your network using a web browser
- Quickly gather data from sensors and machines using integrated HTTP and TCP-based data collectors
- Custom data plug-ins allow developers to ingest data from any source or integrate their existing code or scripts
- Eliminates the time, costs and complexity of developing complex multi-threaded network communications software for communicating with multiple sensors and machines
- On prem, allowing users to eliminate data privacy issues and costly per-device, per-byte cloud-based subscription costs
- Local smart data storage gives users 100% control and ownership over the storage and management of data



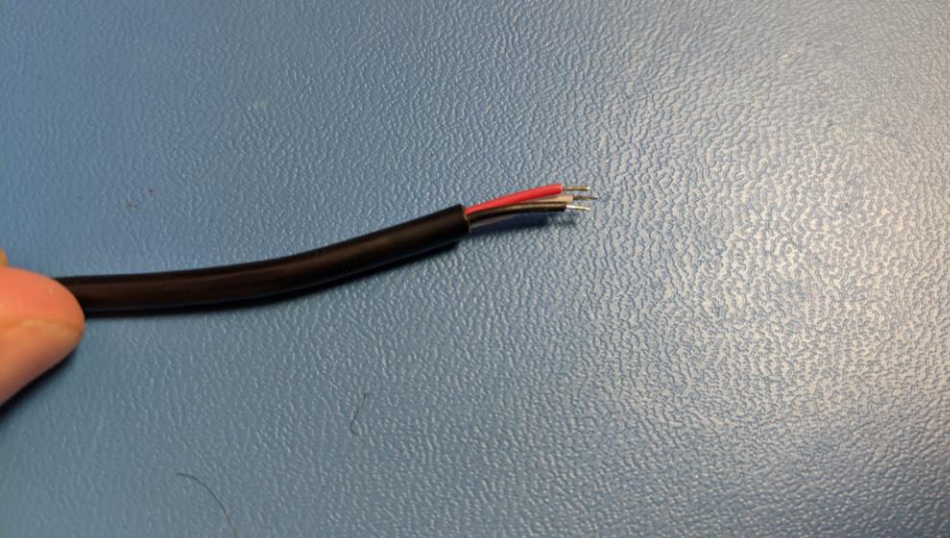
JEDI ONE: THE ALL-IN-ONE READY-TO-USE IOT SOFTWARE

Available exclusively from Digi-Key Electronics at <https://www.digikey.com/en/supplier-centers/machinechat>

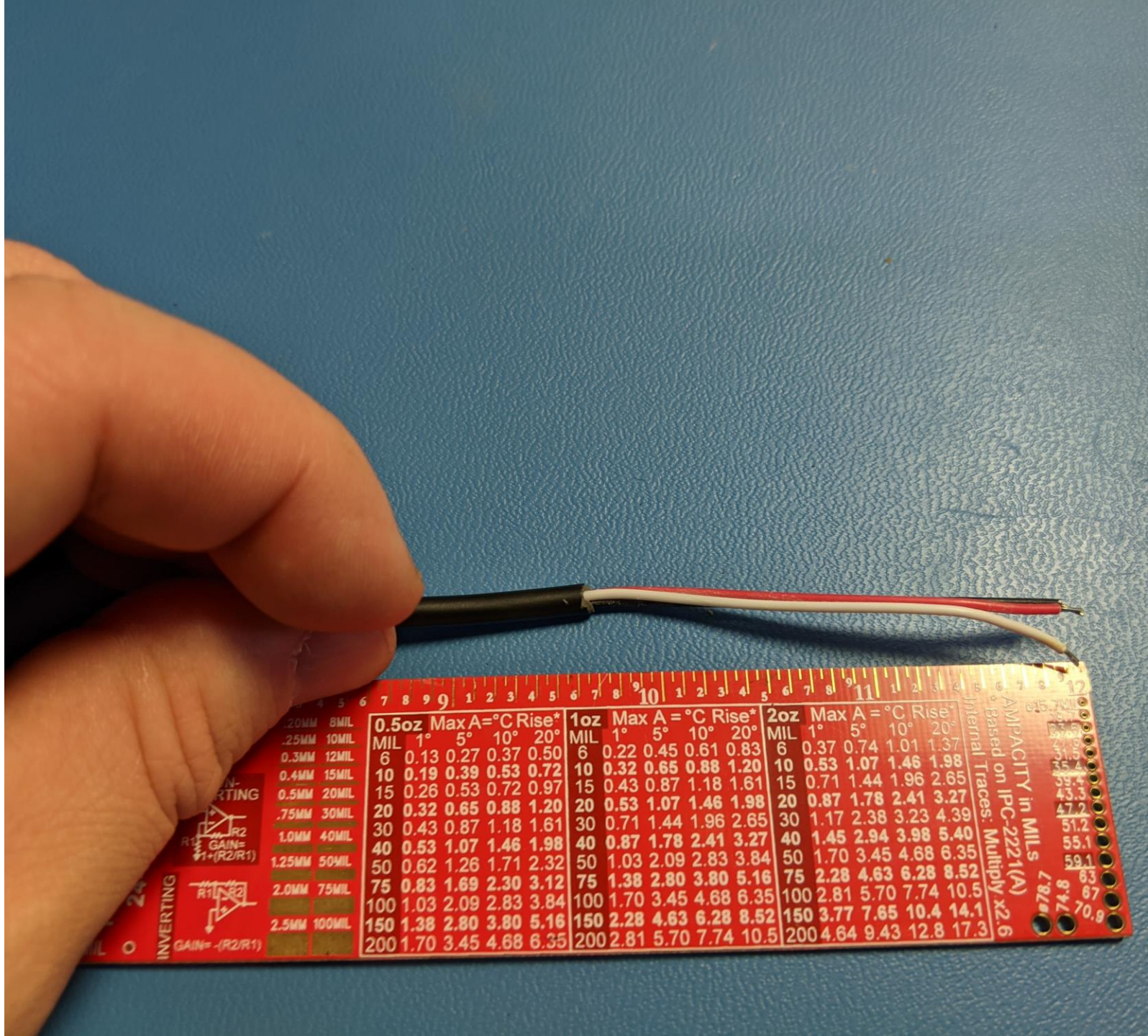


HARDWARE SETUP

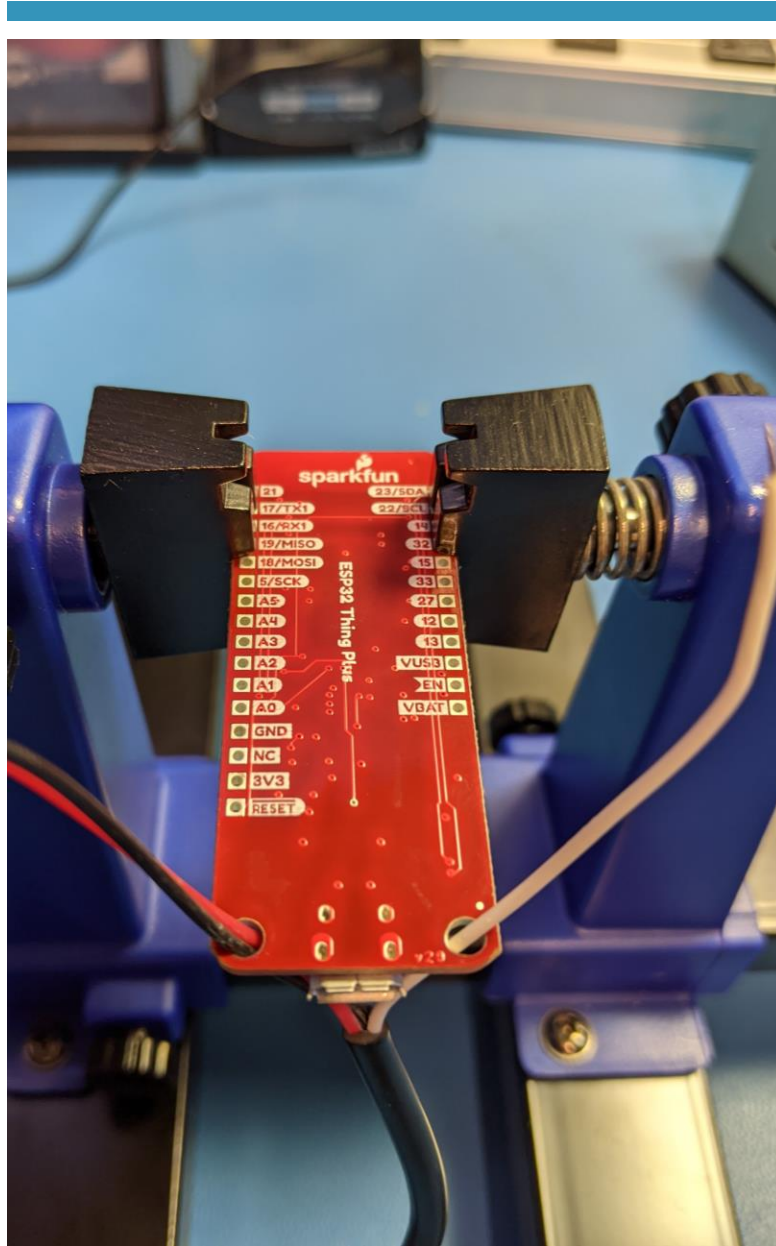
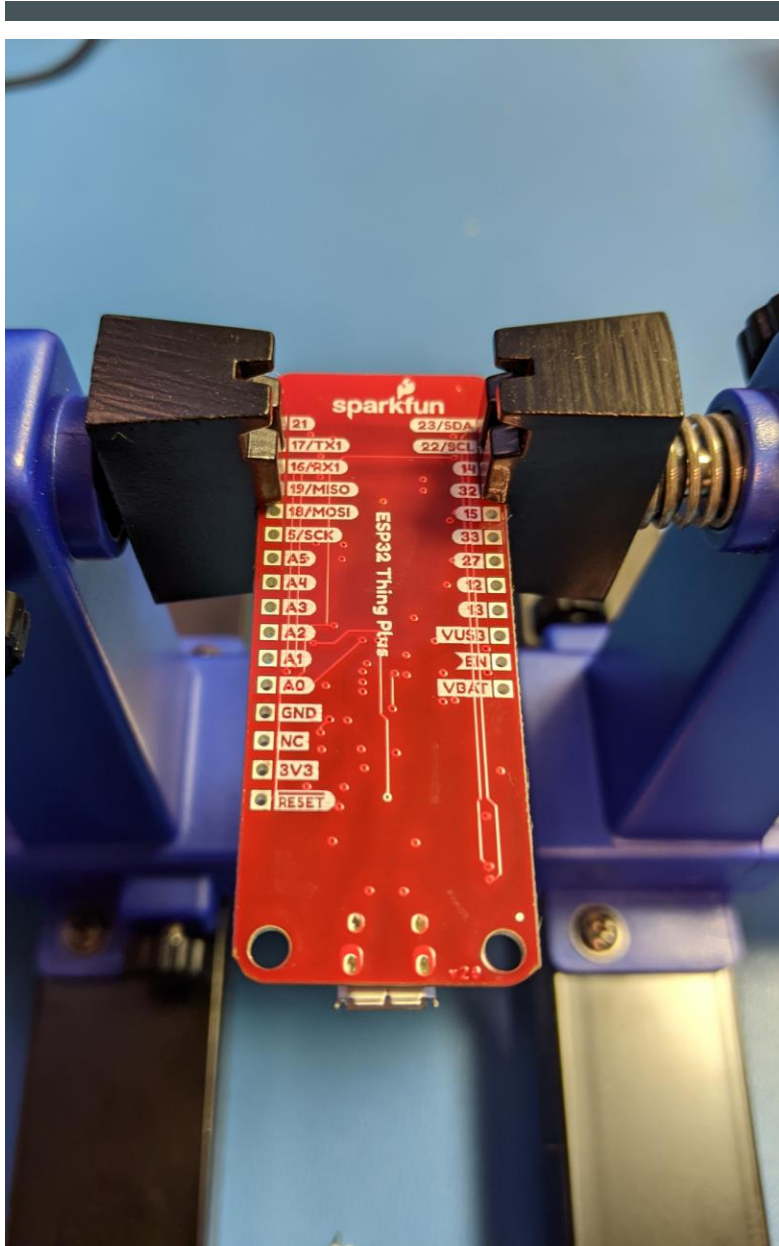




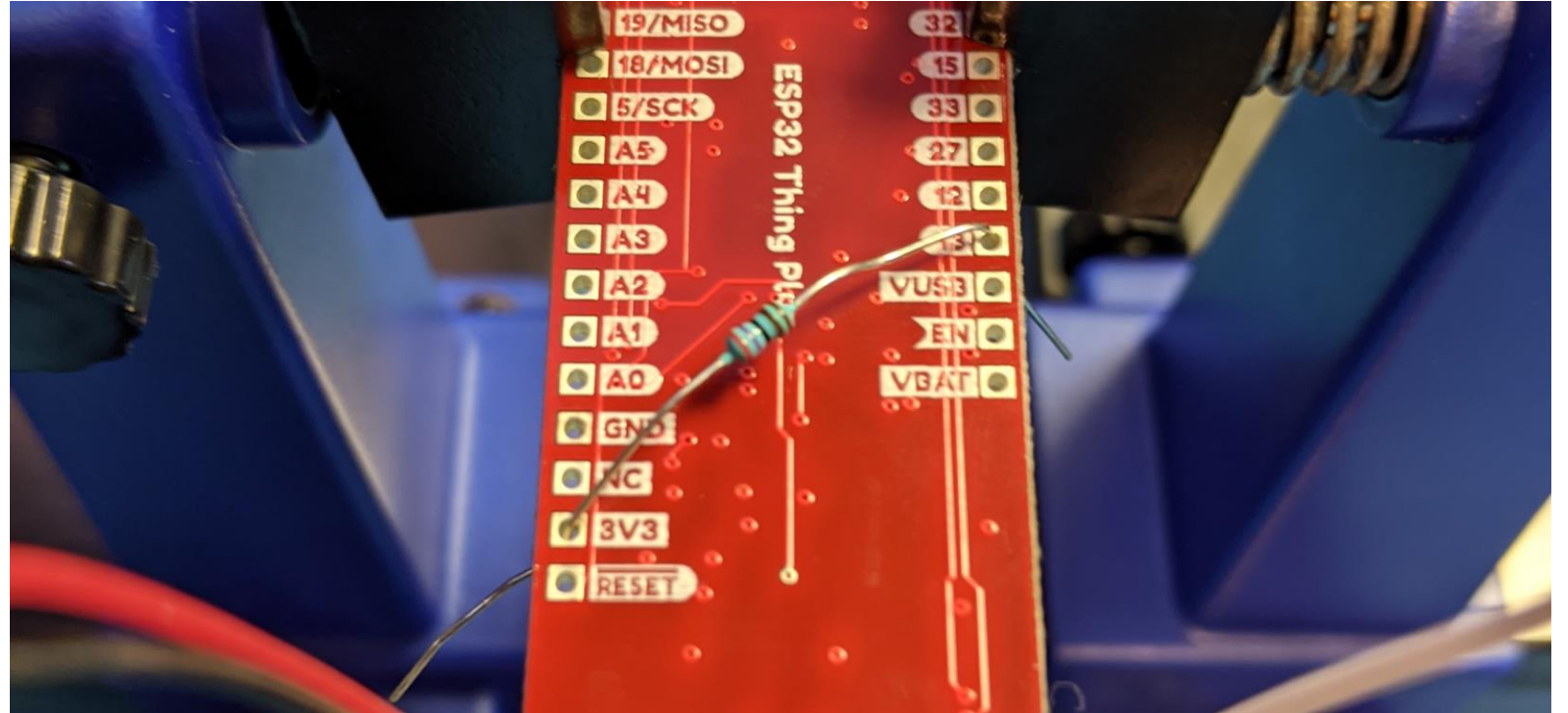
STRIP ABOUT 2
INCHES



		0.5oz Max A = °C Rise*				1oz Max A = °C Rise*				2oz Max A = °C Rise*				Internal Traces: Multiply x2.6		
		MIL	1°	5°	10°	20°	MIL	1°	5°	10°	20°	MIL	1°		5°	10°
0.20MM	8MIL	6	0.13	0.27	0.37	0.50	6	0.22	0.45	0.61	0.83	6	0.37	0.74	1.01	1.37
0.25MM	10MIL	10	0.19	0.39	0.53	0.72	10	0.32	0.65	0.88	1.20	10	0.53	1.07	1.46	1.98
0.3MM	12MIL	15	0.26	0.53	0.72	0.97	15	0.43	0.87	1.18	1.61	15	0.71	1.44	1.96	2.65
0.4MM	15MIL	20	0.32	0.65	0.88	1.20	20	0.53	1.07	1.46	1.98	20	0.87	1.78	2.41	3.27
0.5MM	20MIL	30	0.43	0.87	1.18	1.61	30	0.71	1.44	1.96	2.65	30	1.17	2.38	3.23	4.39
0.75MM	30MIL	40	0.53	1.07	1.46	1.98	40	0.87	1.78	2.41	3.27	40	1.45	2.94	3.98	5.40
1.0MM	40MIL	50	0.62	1.26	1.71	2.32	50	1.03	2.09	2.83	3.84	50	1.70	3.45	4.68	6.35
1.25MM	50MIL	75	0.83	1.69	2.30	3.12	75	1.38	2.80	3.80	5.16	75	2.28	4.63	6.28	8.52
2.0MM	75MIL	100	1.03	2.09	2.83	3.84	100	1.70	3.45	4.68	6.35	100	2.81	5.70	7.74	10.5
2.5MM	100MIL	150	1.38	2.80	3.80	5.16	150	2.28	4.63	6.28	8.52	150	3.77	7.65	10.4	14.1
		200	1.70	3.45	4.68	6.35	200	2.81	5.70	7.74	10.5	200	4.64	9.43	12.8	17.3



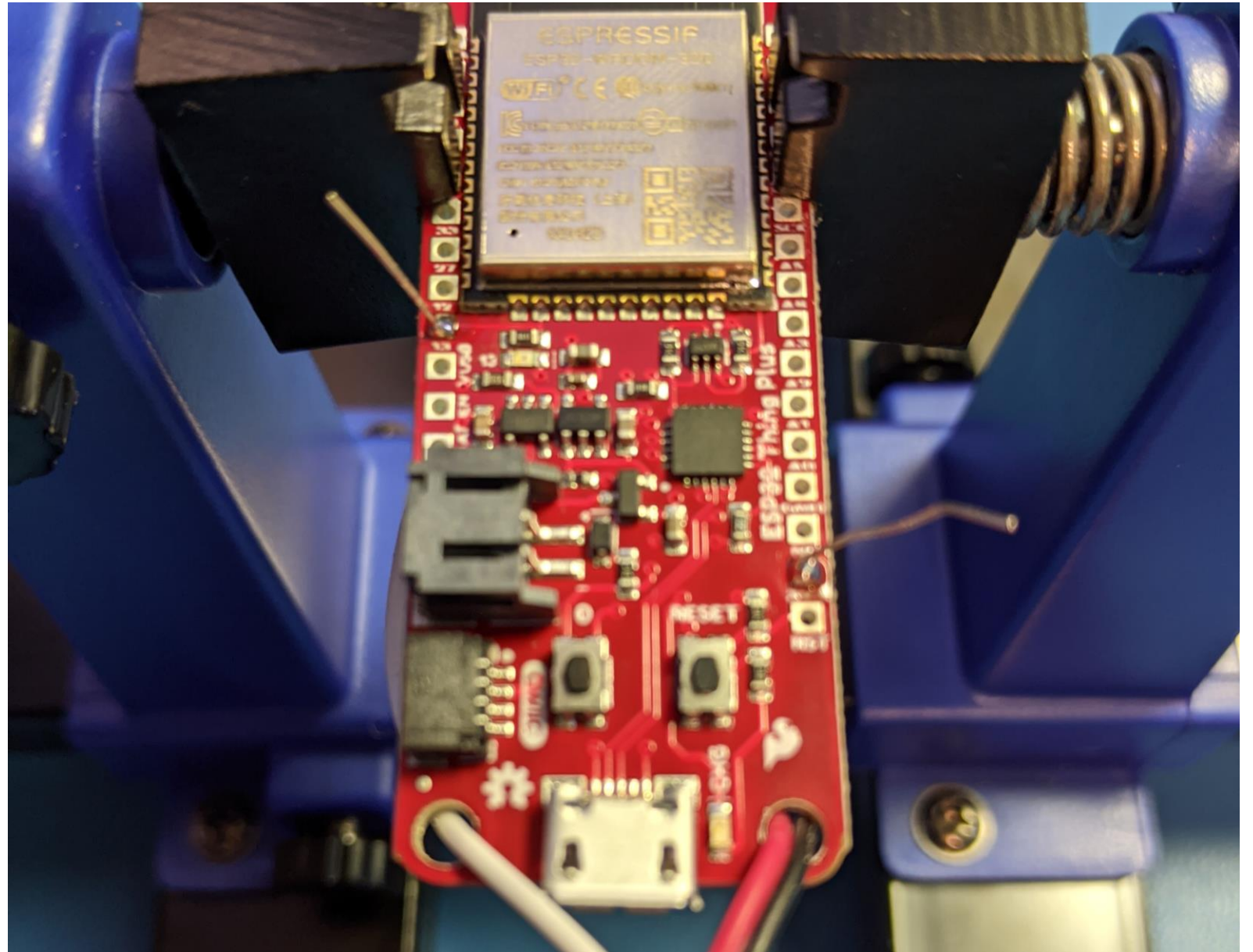
LOOP WIRES THRU HOLES

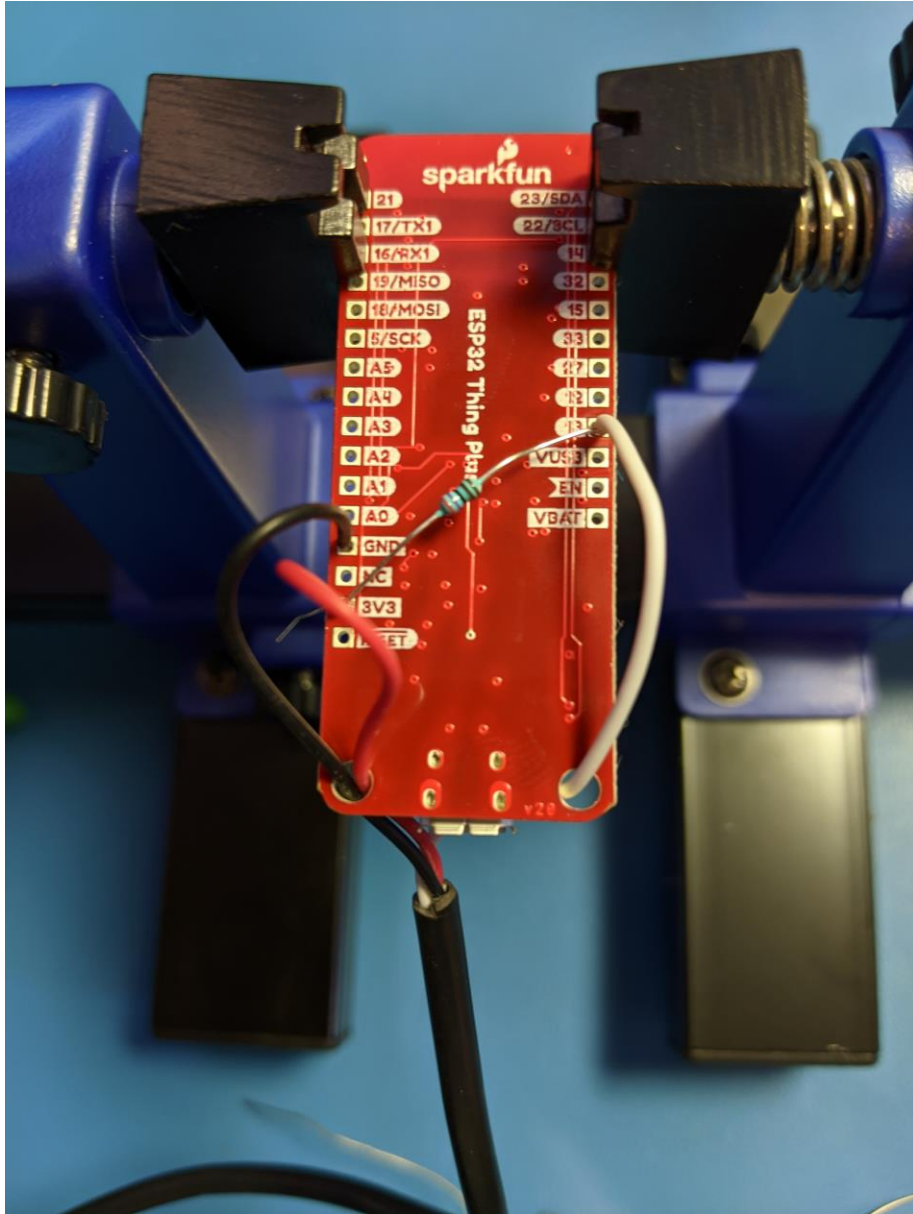


CONNECT RESISTOR TO PINS 13 & 3V3

FORCE RED AND WHITE CABLES IN SAME HOLES

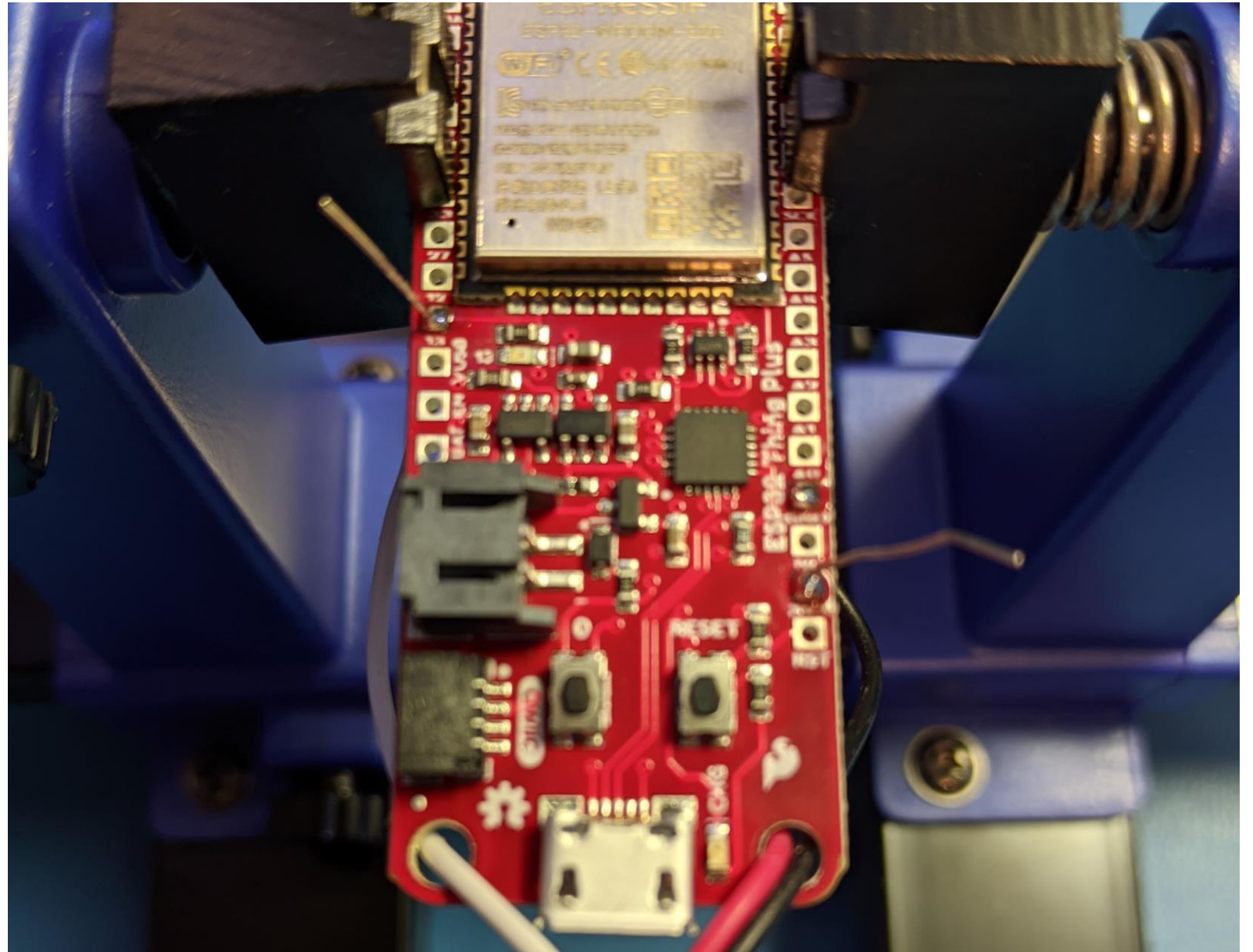
FLIP AND SOLDER

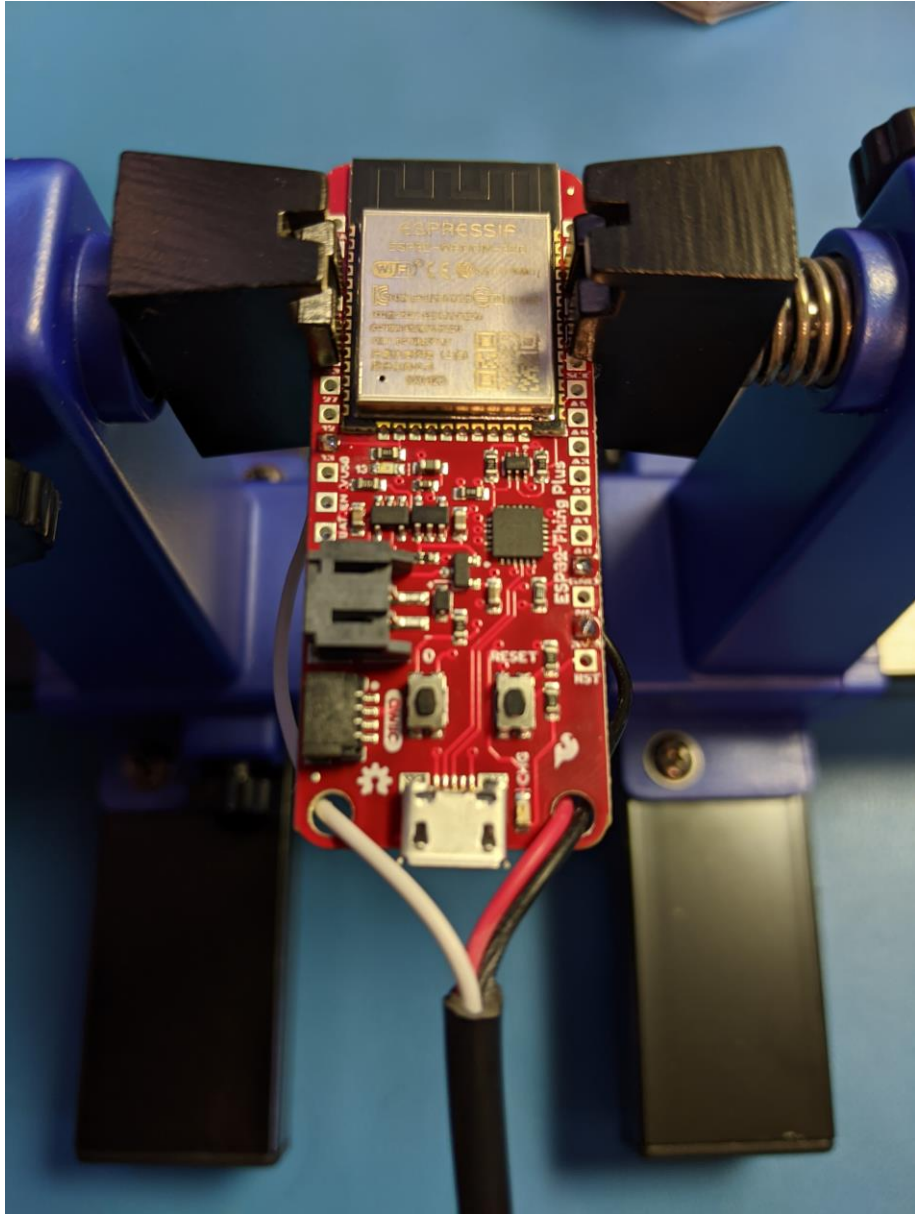




FLIP AND ADD BLACK WIRE
TO GND

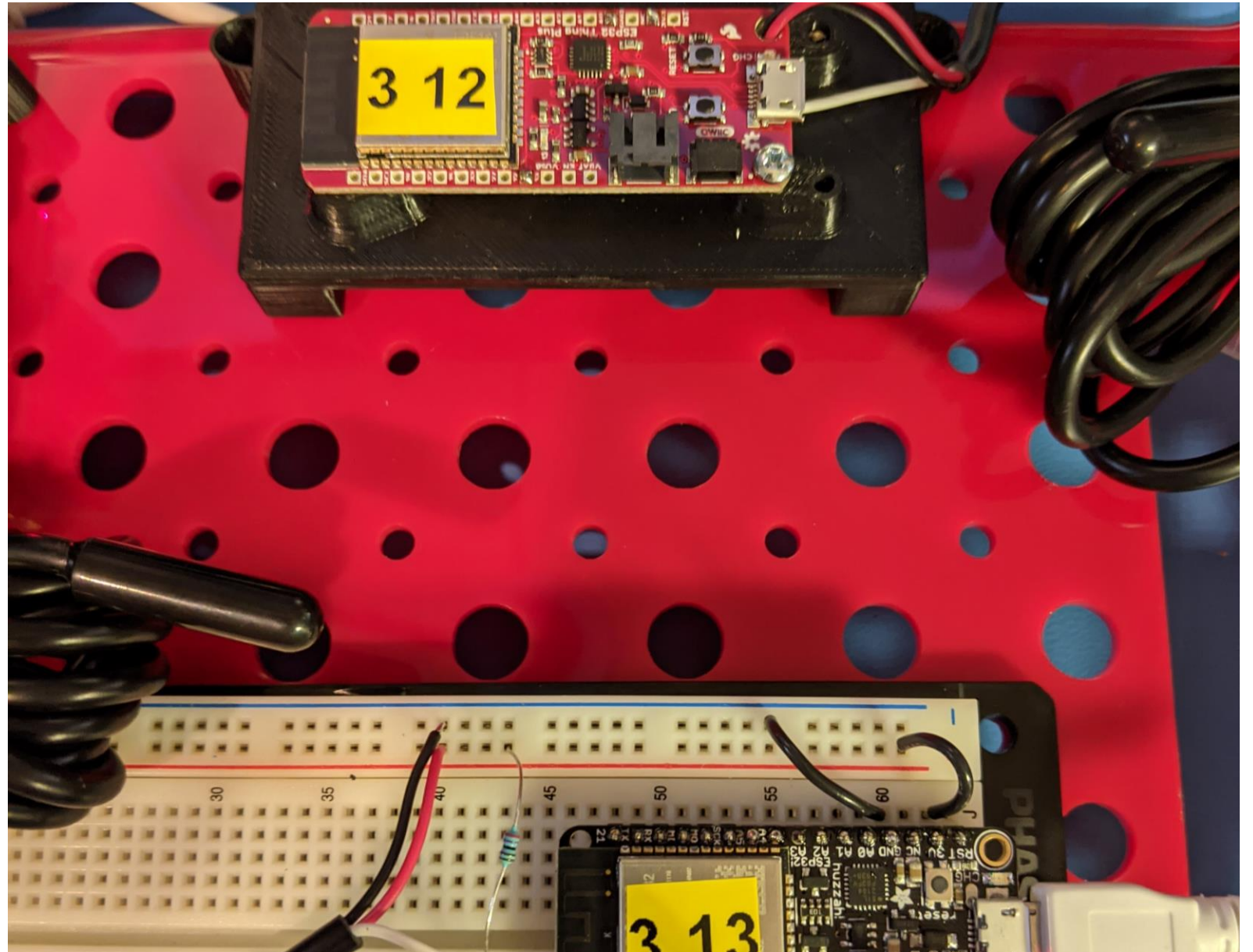
FLIP AND SOLDER





TRIM

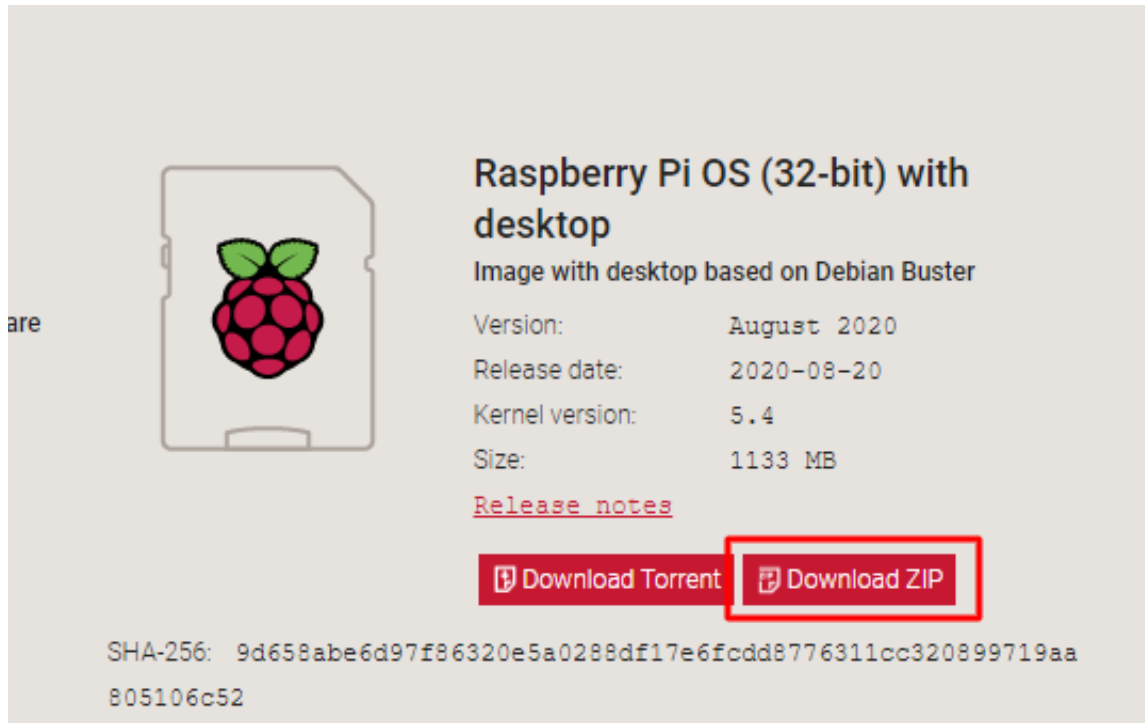
SOLDERING DONE



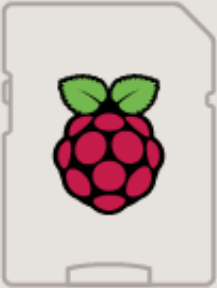


SOFTWARE SETUP





are



Raspberry Pi OS (32-bit) with desktop

Image with desktop based on Debian Buster





Version: August 2020
Release date: 2020-08-20
Kernel version: 5.4
Size: 1133 MB

[Release notes](#)

[Download Torrent](#) [Download ZIP](#)

SHA-256: 9d658abe6d97f86320e5a0288df17e6fcdd8776311cc320899719aa805106c52

Index of /workshops/remoticon_2020

<u>Name</u>	<u>Last modified</u>	<u>Size</u>	<u>Description</u>
 Parent Directory			
 2020-08-20-raspios-buster-armhf.zip	2020-08-20 05:59	1.1G	PI -
 arduino-1.8.13-linuxarm.tar.xz	2020-06-16 05:39	92M	
 balenaEtcher/	2020-11-03 09:35	-	

Apache/2.4.38 (Debian) Server at rcn-ee.net Port 443

Windows, Mac, Linux Flasher Software

GRAB PROJECT FILES:

https://rcn-ee.net/workshops/remoticon_2020/



BOOTING PI



Index of /workshops/remoticon_2020

<u>Name</u>	<u>Last modified</u>	<u>Size</u>	<u>Description</u>
 Parent Directory		-	
 2020-08-20-raspios-buster-armhf.zip	2020-08-20 05:59	1.1G	
 arduino-1.8.13-linuxarm.tar.xz	2020-06-16 05:39	92M	
 balenaEtcher/	2020-11-03 09:35	-	

Arduino for PI

Apache/2.4.38 (Debian) Server at rcn-ee.net Port 443

GRAB PROJECT FILES:

[HTTPS://RCN-EE.NET/WORKSHOPS/REMOTICON_2020/](https://rcn-ee.net/workshops/remoticon_2020/)

ADD ESP32 SUPPORT:

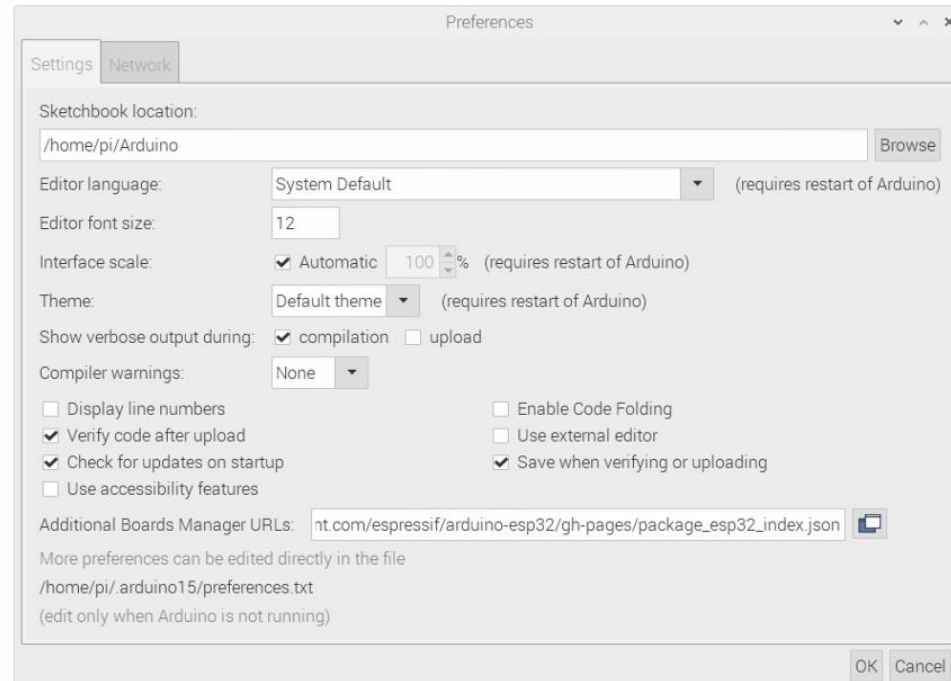
ARDUINO-ESP32

i@raspberrypi: ~/ar... sketch_nov07a | Ardu...

sketch_nov07a | Arduino 1.8.13

here, to run once:

here, to run repeatedly:

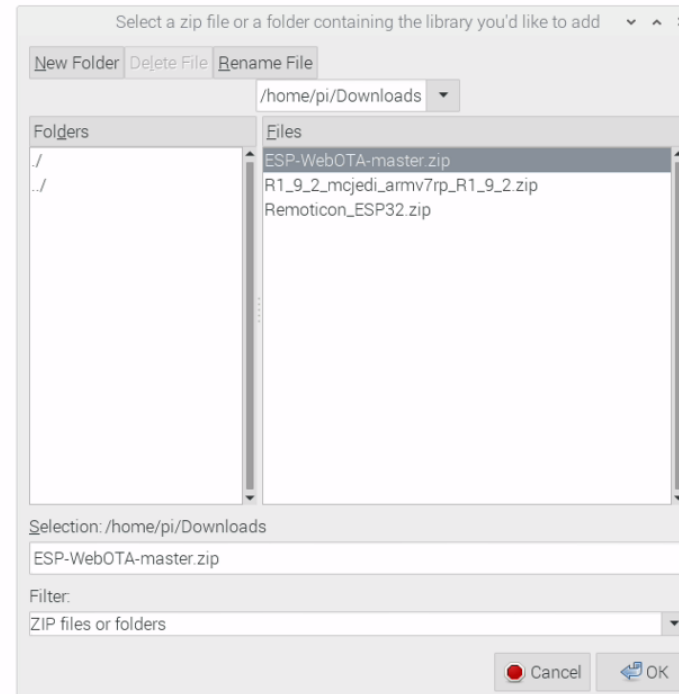


ADD ESP OTA SUPPORT:

@raspberrypi: ~/ar... Index of /workshops/... links.txt - Mousepad sketch_nov07a | Ardu...
sketch_nov07a | Arduino 1.8.13

here, to run once:

here, to run repeatedly:

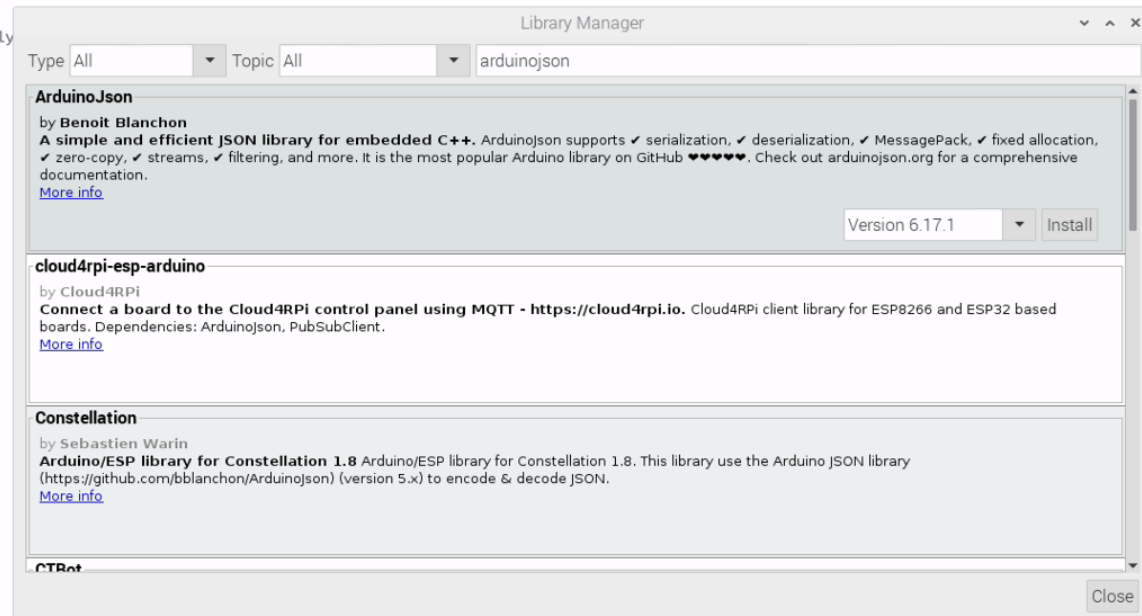


ADD ARDUINOJSON

@raspberrypi: ~/ar... Index of /workshops/... links.txt - Mousepad sketch_nov07a | Ardu...
sketch_nov07a | Arduino 1.8.13

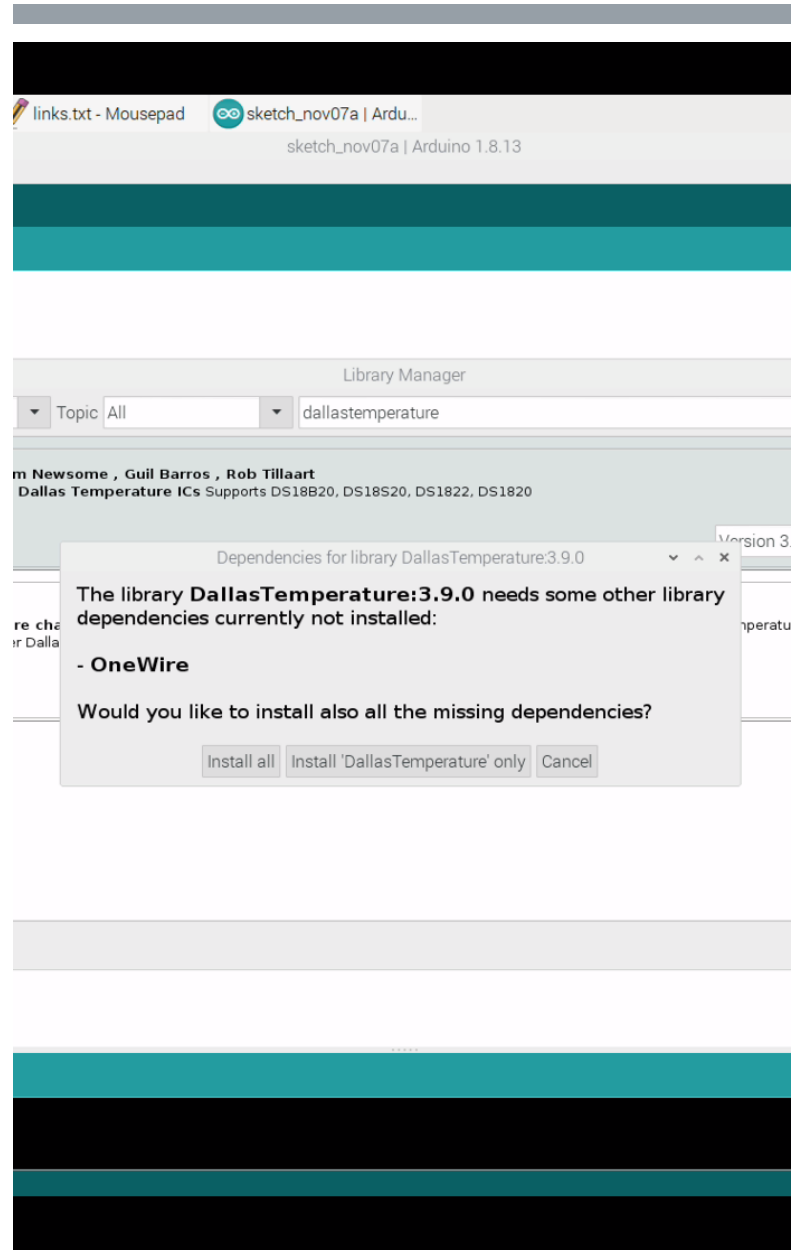
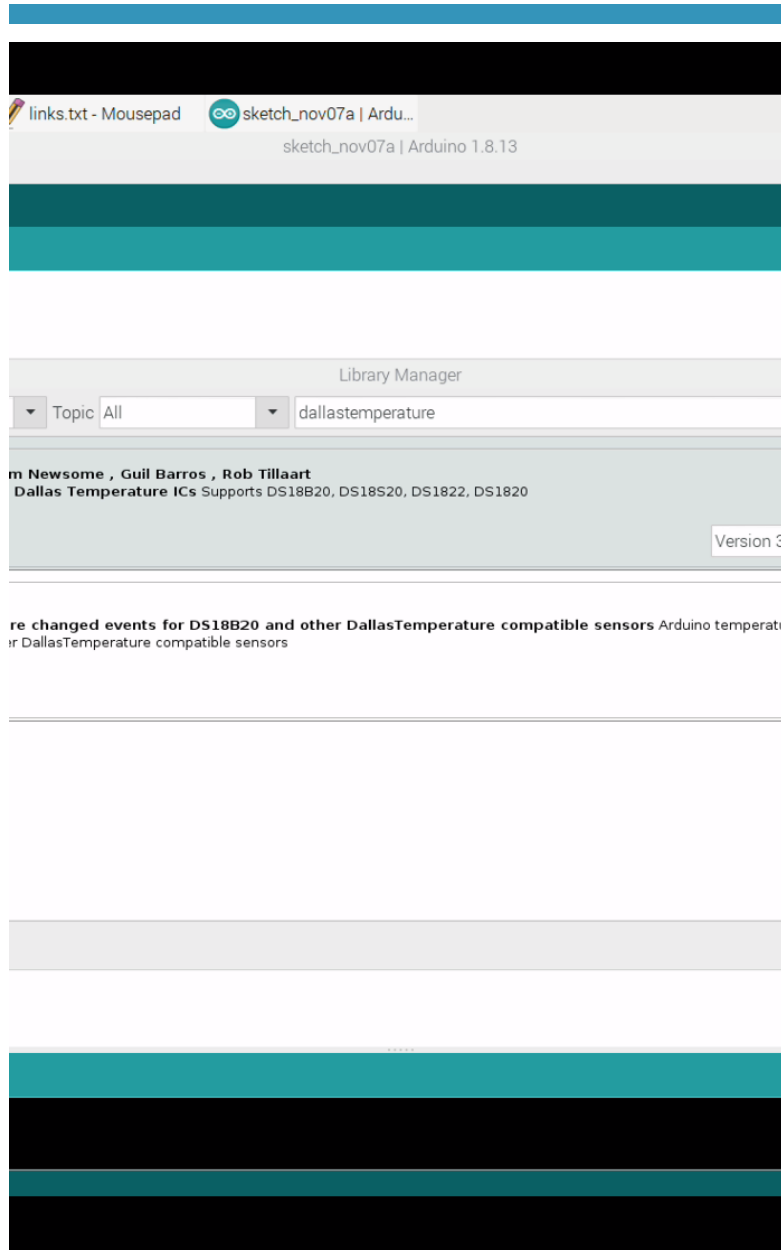
here, to run once:

here, to run repeatedly:



Check "Include library" menu

ADD DALLAS TEMPERATURE 3.9.0 AND ONEWIRE





SETUP MACHINECHAT



Setup Machinechat

```
wget https://cdn.hackaday.io/files/1750857490836640/R1\_9\_2\_mcjedi\_armv7rp\_R1\_9\_2.zip
```

```
unzip R1_9_2_mcjedi_armv7rp_R1_9_2.zip
```

```
sudo ./mcjedi.bin -service install
```

```
sudo ./mcjedi.bin -service start
```

```
http://localhost:9123/login
```




MACHINECHAT CREATE FIRST USER





DOWNLOAD LABS



LAB 1

- OTA Update

LAB2

- OTA Update
- Internal Temperature

LAB 1

- OTA Update

LAB3

- OTA Update
- Internal Temperature
- OneWire Temperature

LAB4

- OTA Update
- Internal Temperature
- OneWire Temperature
- Generate JSON

LAB5

- OTA Update
- Internal Temperature
- OneWire Temperature
- Generate JSON
- Send JSON to machinechat



WORKING THRU
MACHINECHAT GUI...



- 
- robert.nelson@digikey.com
 - <https://forum.digikey.com>
 - <https://eewiki.net>
 - [Today's Labs on GitHub](#)

QUESTIONS?



THANKYOU