

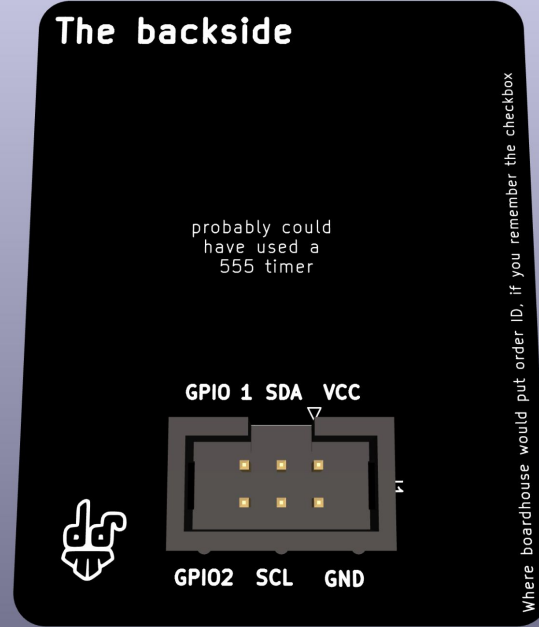
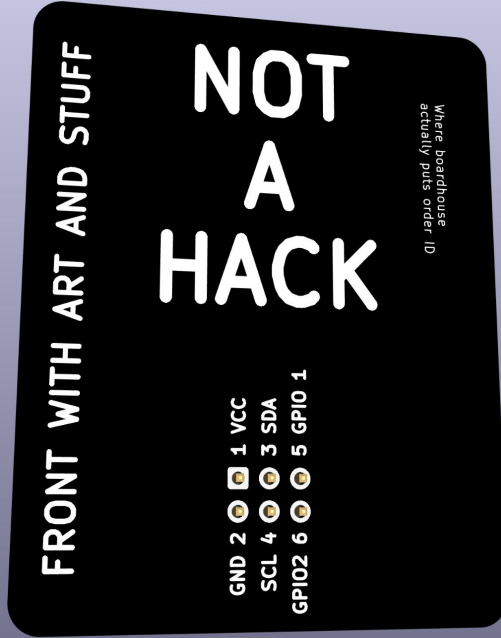
Simple Add-Ons

what they are and how to make them

**ONE DOES NOT
SIMPLY MAKE A
SIMPLE
ADD-ON**

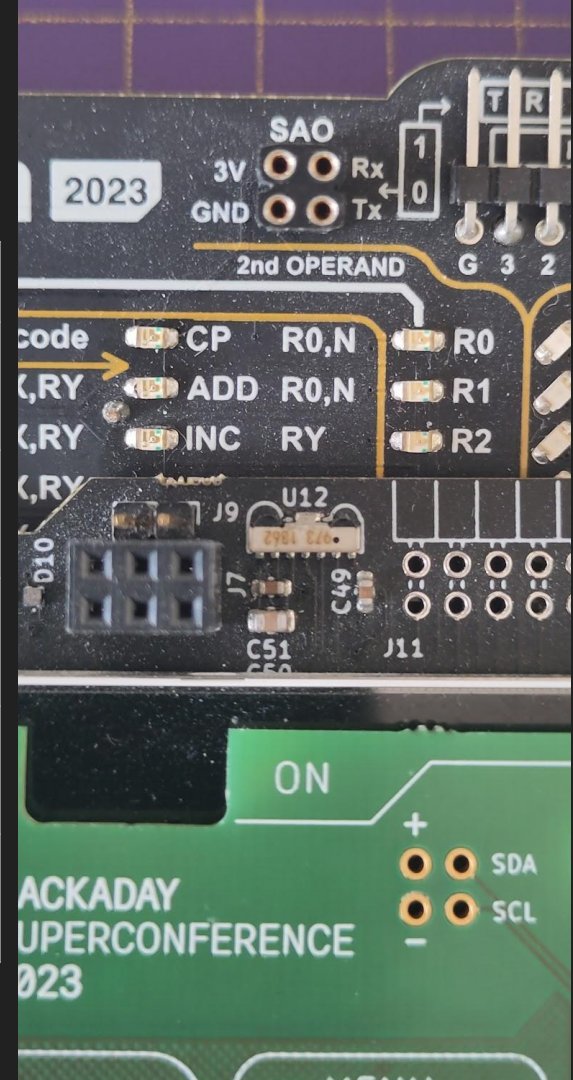


Simple Add-ons | the actual standard



the supercon add-on standard(s)

SC	1	2	3	4	5	6	7	8
SAO V1 <i>angle or not?</i>	VCC	GND	SDA	SCL				
V1.69bis (2024 !!!)	VCC	GND	SDA	SCL	IO1	IO2		
2019 FPGA x-treme!	VCC	GND	SCL	SDA	IO2	IO1	DRM	IO3
2022 4-BIT Serial	BAT	GND	RX	TX				
2023 Vectorscope	BAT	GND	SDA	SCL				



Class 1A | physical support

- it does nothing, but it's looking pretty
- SAOP <https://hackaday.io/project/198497-saop>
- see deshipu's eevee badge in afterdark
https://oshpark.com/shared_projects/X7W8wMWh



Class 1B | the I2C adapter

- MOAR add-ons - make a strip
- SAO connect a nunchuck
- SAO to grove adapters
- SAO to not-so-much-SAO
- SAO to HDMI (I2C)
- SAO to coin cell pads
- SAO to QWIIC



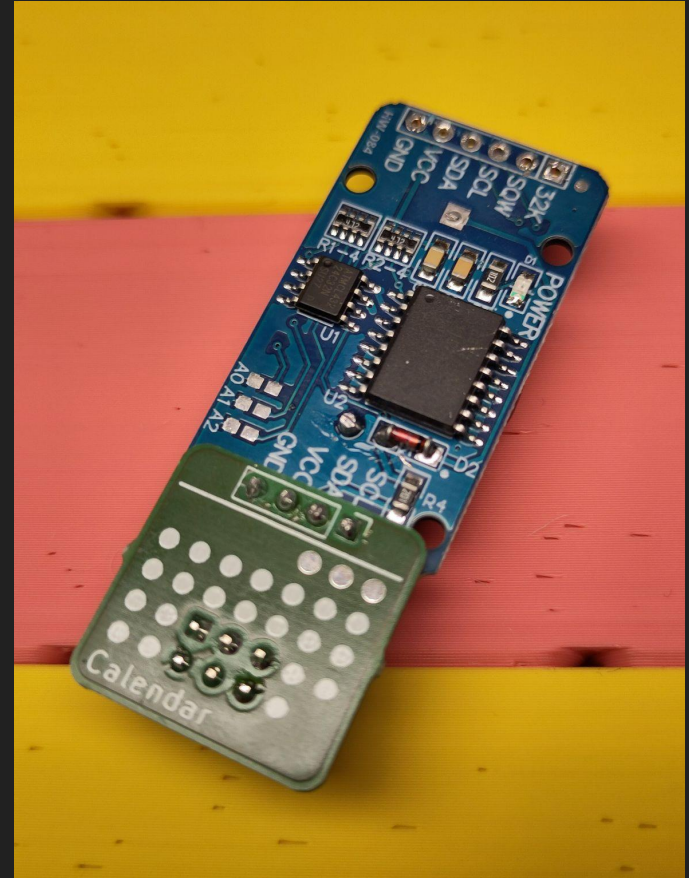
Class 2 | power plug for autonomous things

- shortest bom, no PCB: fading RGB LED (Tina)
- PCB holding LEDs that are:
 - fading slow or fast
 - blinking slow or fast
 - flickering like a candle
- 6 XP points for using a 555 timer
- 5 more if you say you should have, but using an attiny onstead
- you solder something together and it works
no programming required



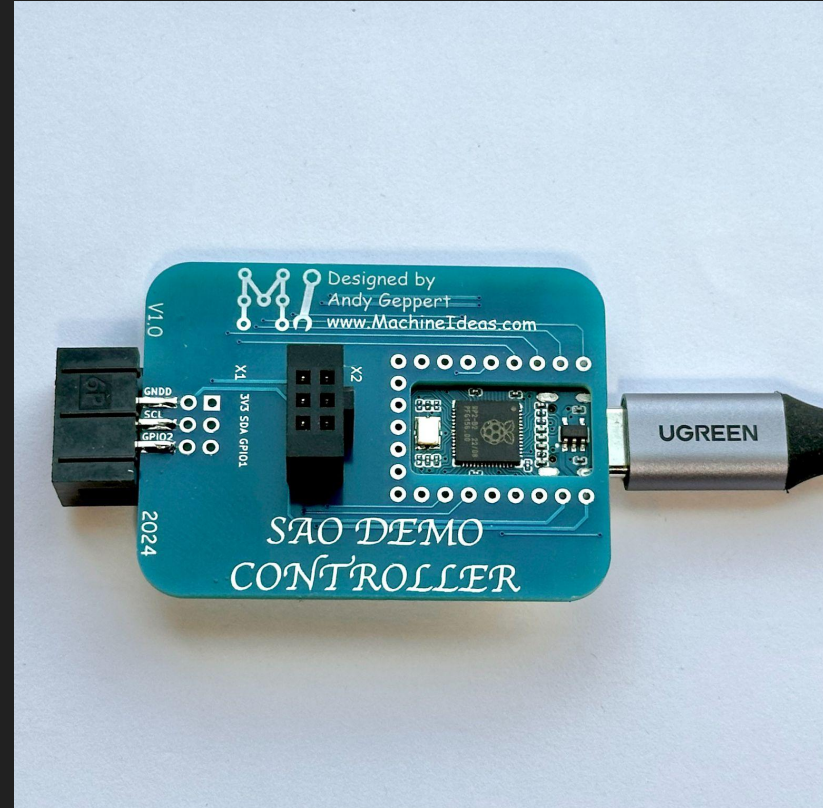
Class 3 | the I2C sensor breakout

- found a nice chip / sensor
- more buttons with io expander
- digital potentiometers
- signal generators
- thing must be on the SAO



Class 4 | the sub-processor

- you're translating from SPI to I2C
- the SAO talks to sensors
- the SAO controls displays
- makes communication easier



Class 5 | should have been a badge

- badges that are similar or higher in complexity than the badge it's sitting on
- Speak and Spell
- Digital Multimeter
- TARS badge



ART | the process

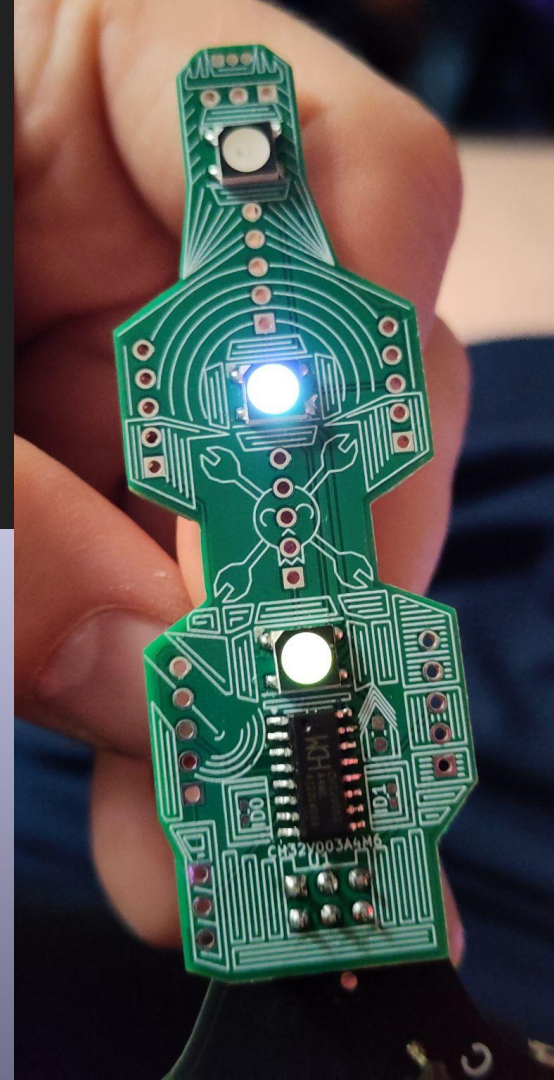
- easy to start PCB design in KiCad
 - use GIMP for posterisation effects
 - use inkscape to convert image to SVG
 - import SVG's into the layer you need
-
- UV soldermask is cheating,
but JLCPCB and PCBWAY will make them
 - they're perfect gifts and spark joy
 - list for inspiration:

<https://hackaday.io/list/165860>



Introducing Simple Add-ons Add-ons

- At least one other SAO has a SAOAO port, it's a standard now!!!
- yes, I hate myself for using a 1.27mm header
- GND - VCC - GND
 - flipped? doesn't matter
 - upside-down? doesn't matter
 - mirrored? doesn't matter



Links

<https://hackaday.io/davedarko>

<https://www.instagram.com/davedarkocom/>

<https://github.com/davedarko/Simple-Add-ons-SAO>