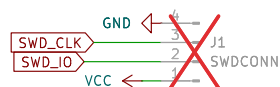
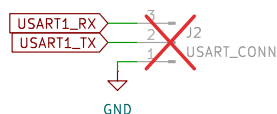


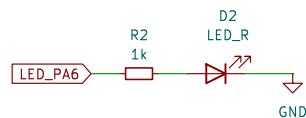
## SWD PROG HEADER:



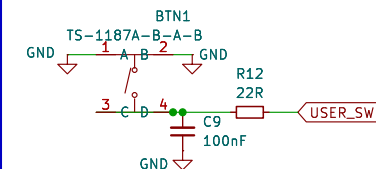
## UART header (USART1):



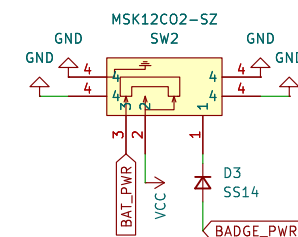
## DEBUG LED:



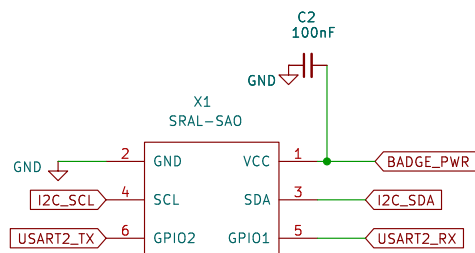
## BTN:



## PWR SWITCH:



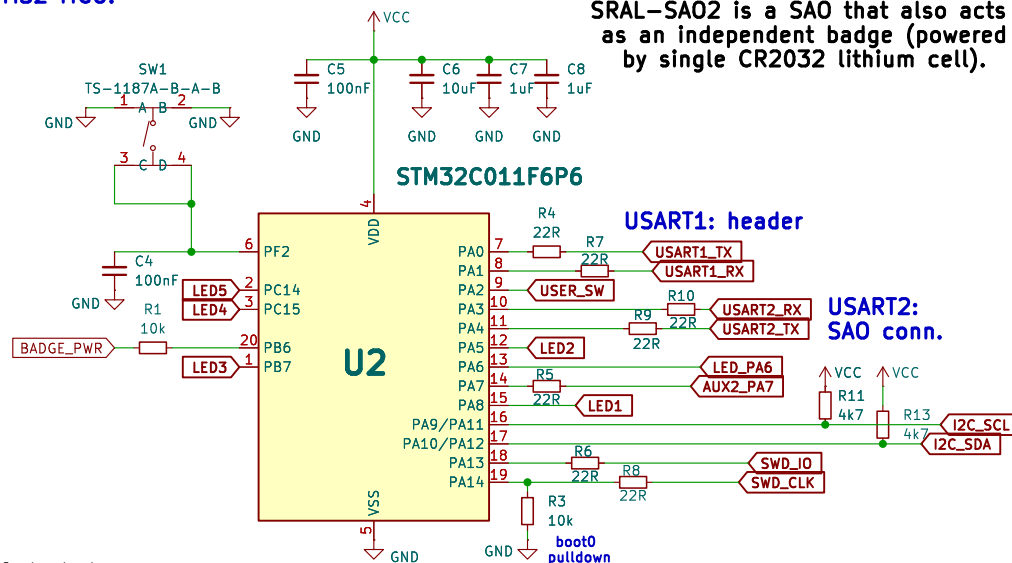
## SAO connector:



USART2 at SAO connector:  
TX from SAO to BADGE  
RX from BADGE to SAO

I2C:  
4k7 pull-ups on this board.

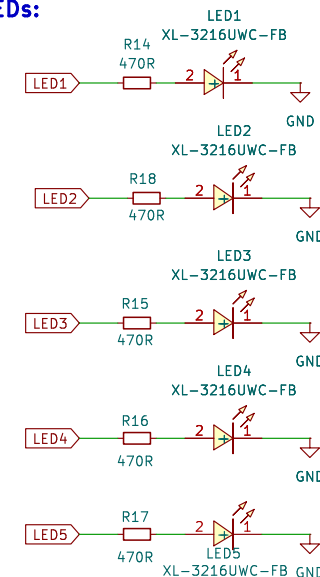
## STM32 MCU:



SRAL-SA02 is a SAO that also acts as an independent badge (powered by single CR2032 lithium cell).

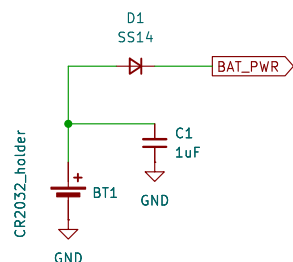
SAO standard:  
<https://badge.team/docs/standards/sao/>  
<https://hackaday.io/project/52950-shitty-add-ons/log/159806-introducing-the-shitty-add-on-v169bis-standard>

## LEDs:

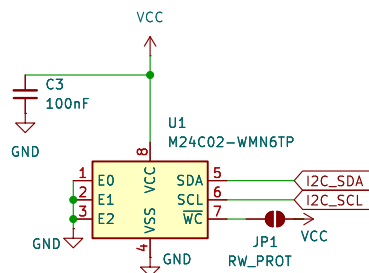


LED PWM channels (TIM1 adv. PWM):  
LED1: PA8 TIM3\_CH4 / TIM1\_CH2N  
LED2: PA5 TIM1\_CH1  
LED3: PB7 TIM3\_CH1 / TIM1\_CH4  
LED4: PC15 TIM3\_CH3  
LED5: PC14 TIM3\_CH2

## CR2032 BATTERY:

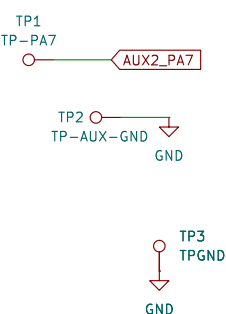


## 24C02 EEPROM:



EEPROM R/W protect:  
short !WC to VCC

## TEST PADS:



## HOLES:



# SRAL-SA02, rev. B

by Lasse OH3HZB, review & comments by Ismo OH2FTG

Sheet: /  
File: SRAL-SA02.kicad\_sch

Title: SRAL-SA02

Size: A4

Date:

KiCad E.D.A. 9.0.6

Rev: B

Id: 1/1