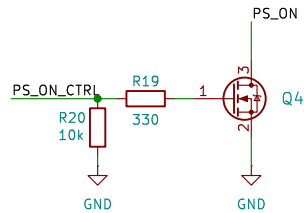
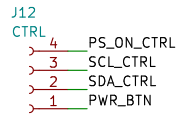
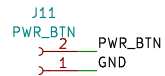
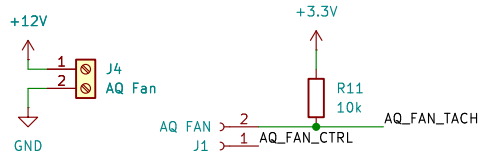


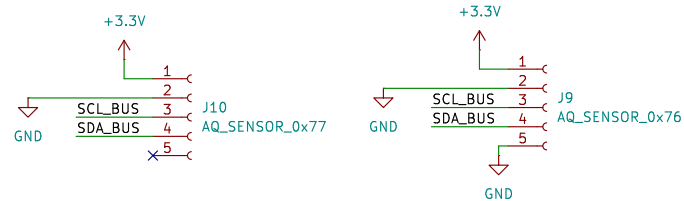
Control connectors (to be connected to the printer)



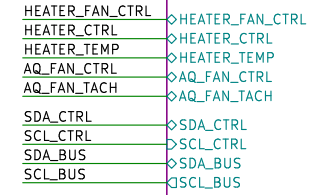
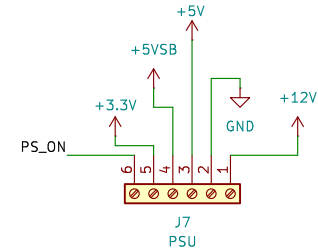
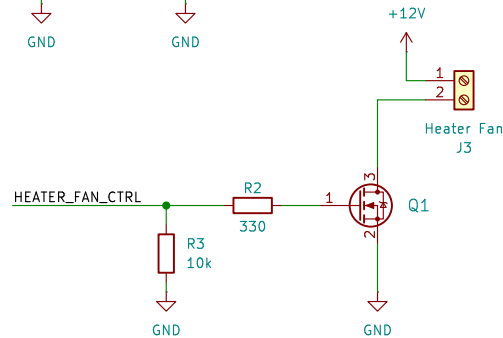
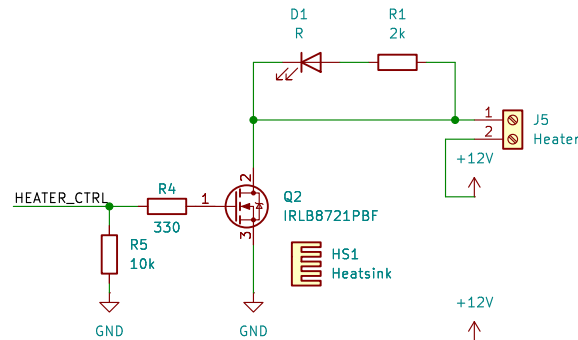
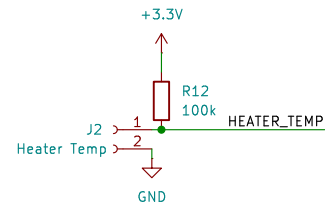
Air Filtering (12V PWM Fan – PFC0612DE)



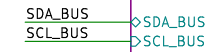
Air Quality Sensors (BME680)



Generic PTC 12V 120W Heater

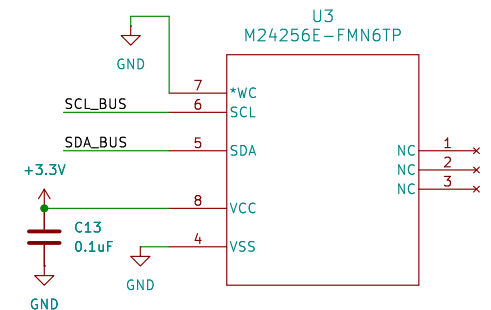


File: STM32G0B0RET6.kicad_sch
leds



File: leds.kicad_sch

EEPROM



- H1 MountingHole
- H2 MountingHole
- H3 MountingHole
- H4 MountingHole

Sheet: /
File: ambiens-scl1.kicad_sch

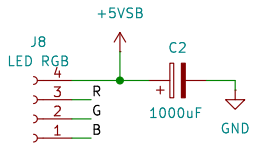
Title:

Size: A4
KiCad E.D.A. 8.0.1

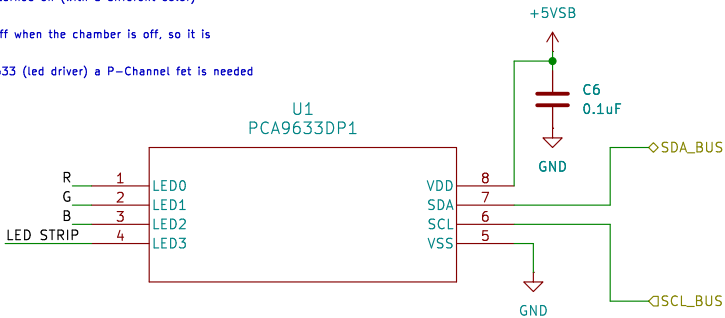
Date:

Rev:
Id: 1/3

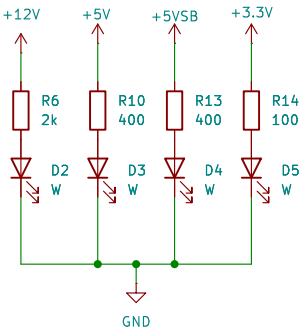
Ambiens SC1 Indicator



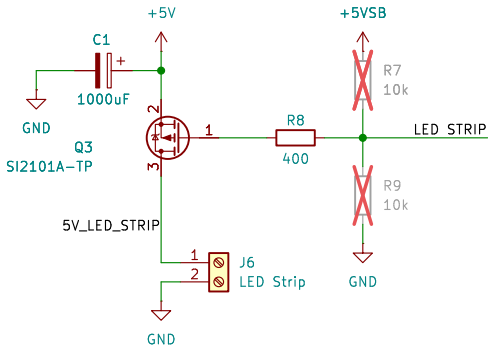
- The main LED Indicator is powered with the 5V standby source of the power supply to be able to stay turned on (with a different color) when the chamber is turned off.
- The led strip should be turned off when the chamber is off, so it is powered with the normal 5V rail.
- Due to a limitation of the PCA9633 (led driver) a P-Channel fet is needed to control the led strip.



PCB PWR Indicators



Ambiens SC1 Chamber Lightening



Sheet: /leds/
File: leds.kicad_sch

Title:

Size: A4 Date:

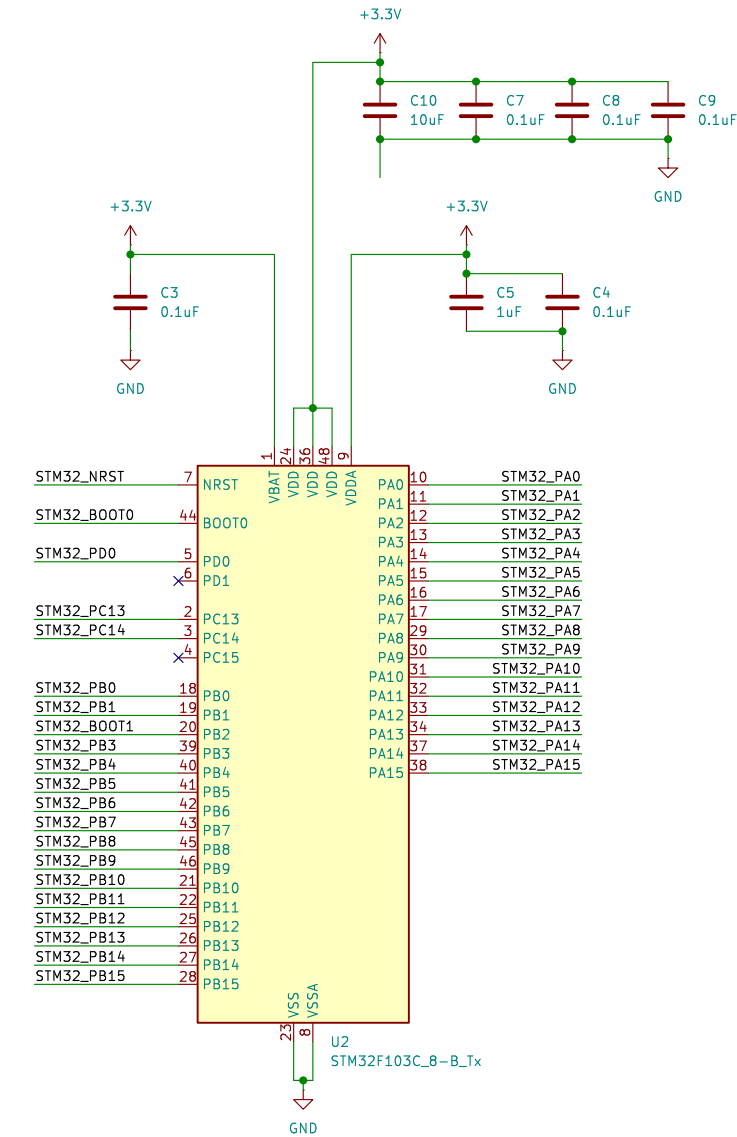
KiCad E.D.A. 8.0.1

Rev:

Id: 3/3

STM32

- Caution:
 - If the ADC is used, the VDD range is limited to 2.4 V to 3.6 V
 - If the ADC is not used, the VDD range is 2 V to 3.6 V
- The VDD pins must be connected to VDD with external stabilization capacitors (five 100 nF ceramic capacitor + one Tantalum capacitor (min. 4.7 μ F typ.10 μ F).
- The VBAT pin must be connected to the external battery (1.8 V < VBAT < 3.6 V). If no external battery is used, this pin must be connected to VDD with a 100 nF external ceramic stabilization capacitor.
- The VDDA pin must be connected to two external stabilization capacitors (10 nF ceramic + 1 μ F Tantalum).

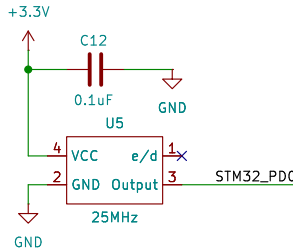


Mappings

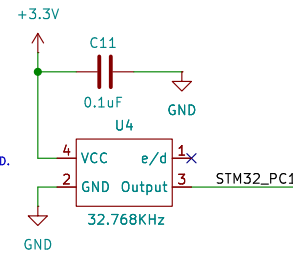
- STM32_PB9 \rightarrow SDA_BUS
- STM32_PB8 \rightarrow SCL_BUS
- STM32_PB11 \rightarrow SDA_CTRL
- STM32_PB10 \rightarrow SCL_CTRL
- STM32_PA6 \rightarrow HEATER_FAN_CTRL
- STM32_PA7 \rightarrow HEATER_CTRL
- STM32_PA0 \rightarrow HEATER_TEMP
- STM32_PA3 \rightarrow AQ_FAN_CTRL
- STM32_PA2 \rightarrow AQ_FAN_TACH
- STM32_PA13 \rightarrow PROG_SW
- STM32_PA14 \rightarrow PROG_SCLK
- STM32_PB6 \rightarrow USART1_TX
- STM32_PB7 \rightarrow USART1_RX

Oscillators

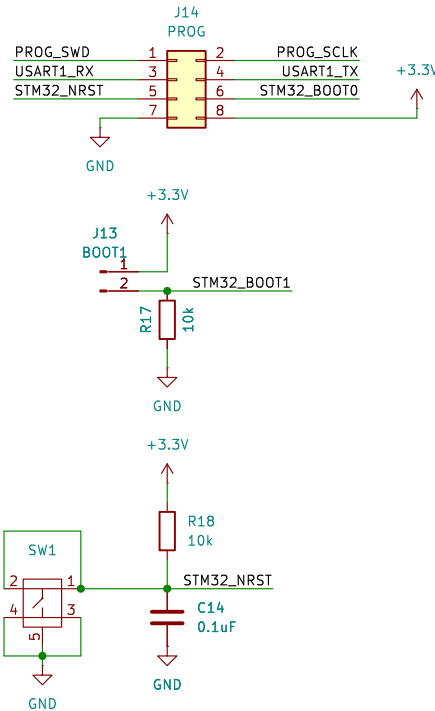
f_{HSE_ext}: User external clock source frequency with a range of 1 to 25 MHz.
V_{HSEH}: OSC_{IN} input pin high-level voltage, specified as 0.7V_{DD} minimum to V_{DD} maximum.
V_{HSEL}: OSC_{IN} input pin low-level voltage, ranging from V_{SS} to 0.3V_{DD}.
t_W(HSE): OSC_{IN} high or low time, with a minimum of 5 ns.
t_r(HSE): OSC_{IN} rise time, with a maximum of 20 ns.
t_f(HSE): OSC_{IN} fall time, also with a maximum of 20 ns.
C_{in}(HSE): OSC_{IN} input capacitance, typically 5 pF.
Duty(HSE): Duty cycle of the oscillator, ranging from 45% to 55%.
I_L: OSC_{IN} input leakage current, from -1 to +1 μ A, under the condition that V_{SS} \leq V_{IN} \leq V_{DD}.



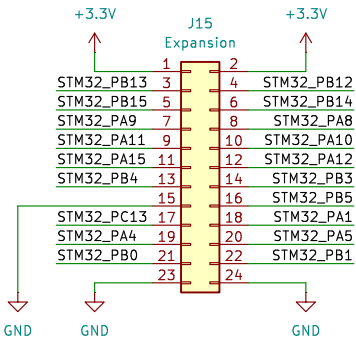
f_{LSE_ext}: User external clock source frequency, ranging from 32.768 kHz to 1000 kHz.
V_{LSEH}: OSC_{IN} input pin high-level voltage, specified as 0.7V_{DD} minimum to V_{DD} maximum.
V_{LSEL}: OSC_{IN} input pin low-level voltage, ranging from V_{SS} to 0.3V_{DD}.
t_W(LSE): OSC_{IN} high or low time, with a minimum of 450 ns.
t_r(LSE): OSC_{IN} rise or fall time, with a maximum of 50 ns.
C_{in}(LSE): OSC_{IN} input capacitance, typically 5 pF.
Duty(LSE): Duty cycle, ranging from 30% to 70%.
I_L: OSC_{IN} input leakage current, from -1 to +1 μ A, under the condition that V_{SS} \leq V_{IN} \leq V_{DD}.



Control Interface



Expansion



I2C Bus

