Respirator Main Board Schematic

A1 — Adafruit 6106
- 1 VIN
- 2 VU
- 3 D−
- 4 D+
- 5 GND → GND
- 6 BAT → +BATT
- 7 5V → +5V
- 8 EN

J1 — SWIM Connector
- 1 RST → RESET
- 2 GND → GND
- 3 SWIM → SWIM
- 4 3V3 → +3V3

J2 — I2C Breakout
- 1 GND → GND
- 2 3V3 → +3V3
- 3 SDA → SDA
- 4 SCL → SCL

U2 — TLV77333PDBVR
- 1 IN — +BATT
- 3 EN
- 4 NC — GND
- 5 OUT → +3V3
- 2 GND → GND
- C2 1 uF
- C1 1 uF

Decoupling
- +3V3: C17 220 nF, C18 330 nF, C19 470 nF — GND
- +5V: C13 100 nF, C14 1 uF, C15 2.2 uF, C16 4.7 uF — GND

Pull-ups
- R2 1k → +3V3, SDA
- R3 1k → +3V3, SCL

U3 — SGP40-D-R4
- 6 SCL — SCL
- 3 SDA — SDA
- 4 N/A — GND
- 1 VDD → +3V3
- 5 VDDH
- 7 EXP
- 2 VSS → GND
- C3 1 uF, R1 4.7, C4 1 uF

U1 — STM8S003F3P
- 9 VDD — +3V3
- 4 PA1
- 5 PA2
- 10 PA3
- 12 PB4 — SCL
- 11 PB5 — SDA
- 13 PC3 — ERM_MOTOR
- 14 PC4 — FAN_2_TACHO
- 15 PC5 — FAN_2
- 16 PC6 — FAN_1_TACHO
- 17 PC7 — FAN_1
- 18 PD1 — SWIM
- 19 PD2 — LED_BLUE
- 20 PD3 — LED_GREEN
- 1 PD4 — LED_RED
- 2 PD5 — BUZZER
- 3 PD6
- 4 NRST — RESET
- 8 VCAP
- 7 VSS — GND
- R7 11k → +3V3
- SW1 SW_Push
- C6 100 nF, C7 100 nF, C8 100 nF, C9 100 nF, C10 1 uF
- C11 100 nF, C5 2.2 uF
- R9 3.3k → +BATT, R8 10k

Buzzer
- R16 220, R17 10k — Q1 2N7000 — BZ1 WST-1208T — BUZZER → +3V3

Motor
- R11 220, R10 10k — Q2 2N7000 — M3 Motor_DC — D2 D_Schottky — ERM_MOTOR → +3V3

D1 — LED_ARGB
- R4 62 — LED_RED
- R5 0 — LED_GREEN
- R6 0 — LED_BLUE
- → +3V3

Fan 2
- R18 3.9k — FAN_2_TACHO
- R19 6.8k — GND
- Tacho M2 Fan_3pin → +5V
- D4 D_Schottky
- R14 220 — FAN_2 — Q4 2N7000
- R15 10k — GND

Fan 1
- R21 3.9k — FAN_1_TACHO
- R20 6.8k — GND
- Tacho M1 Fan_3pin → +5V
- D3 D_Schottky
- R12 220 — FAN_1 — Q3 2N7000
- R13 10k — GND