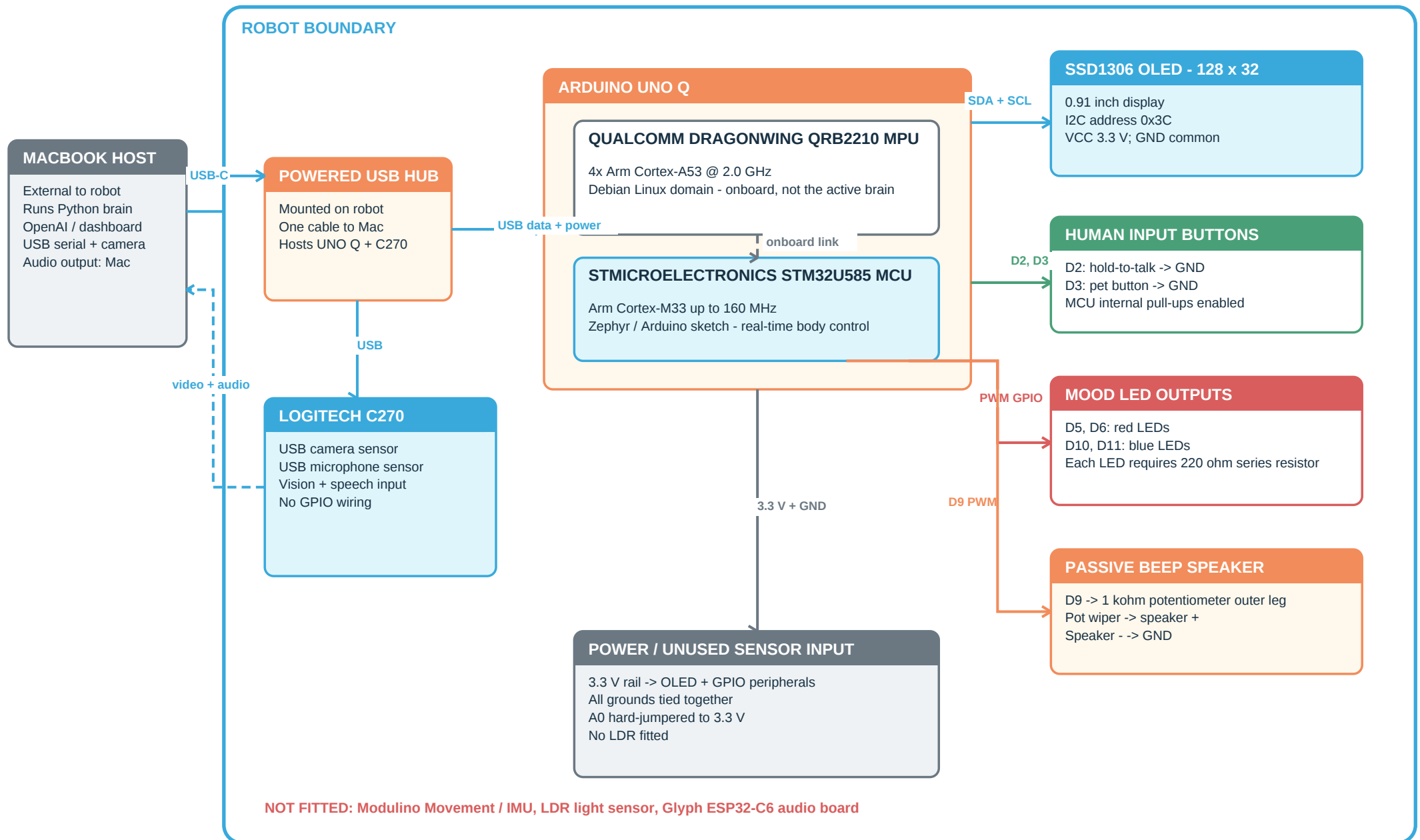




| Subsystem       | UNO Q connection                            | Power / return                                               | Purpose / implementation note                                                           |
|-----------------|---------------------------------------------|--------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| SSD1306 OLED    | Dedicated SDA and SCL header pins; I2C 0x3C | 3.3 V; GND                                                   | Primary 128 x 32 face/status display. Do not use A4/A5 as an Uno-classic substitute.    |
| Talk button     | D2 configured INPUT_PULLUP                  | Switch closes to GND                                         | Press starts recording; release generates talk_up and stops recording.                  |
| Pet button      | D3 configured INPUT_PULLUP                  | Switch closes to GND                                         | Pet interaction; rapid second press can generate pet_double.                            |
| Red mood LEDs   | D5 and D6 PWM                               | GPIO -> 220 ohm -> LED anode; cathode -> GND                 | Angry/alert effects. One resistor per LED.                                              |
| Blue mood LEDs  | D10 and D11 PWM                             | GPIO -> 220 ohm -> LED anode; cathode -> GND                 | Idle breathing and happy effects. One resistor per LED.                                 |
| Passive speaker | D9 tone/PWM output                          | D9 -> 1 kohm pot outer; wiper -> speaker +; speaker - -> GND | Local beeps only. Never bypass the potentiometer.                                       |
| A0 tie-off      | A0 analog input                             | Direct jumper to 3.3 V                                       | Prevents floating-input sleep/wake events because no LDR is installed.                  |
| Logitech C270   | No UNO GPIO connection                      | USB power from mounted hub                                   | Camera and microphone sensors connect through USB hub to the external MacBook.          |
| UNO Q USB       | Board USB data/power                        | USB hub -> MacBook                                           | MacBook runs the active Python brain and communicates with the real-time body firmware. |

## PROCESSOR OWNERSHIP

QRB2210 MPU: onboard Debian-capable application processor.  
STM32U585 MCU: executes the flashed body sketch and drives GPIO/I2C.  
MacBook: external active brain; performs vision, speech, AI and dashboard.  
The QRB2210 remains part of the UNO Q hardware but is not the active brain.

## ASSEMBLY SAFETY

Use only the UNO Q 3.3 V rail for these peripherals.  
Do not connect the OLED or GPIO circuit to 5 V.  
Do not use unlabeled Linux-domain headers; some signals are 1.8 V.  
Power down before rewiring; reset after wiring so devices are detected.

## EXPLICITLY OUT OF SCOPE / NOT FITTED

No Modulino Movement sensor or IMU.  
No LDR light sensor; A0 is tied to 3.3 V.  
No Glyph ESP32-C6 audio processor or I2S amplifier.  
No separate motor, actuator, battery, or motor driver is represented.

**Document classification: functional interconnect / wiring diagram - not a PCB fabrication schematic.**

Processor reference: Arduino UNO Q documentation - <https://docs.arduino.cc/hardware/uno-q>