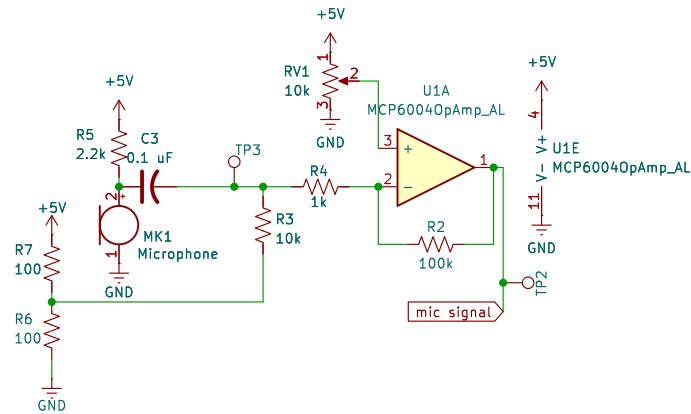
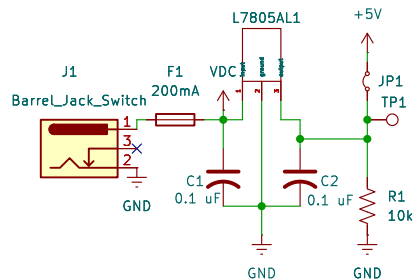


## Microphone with amplifier



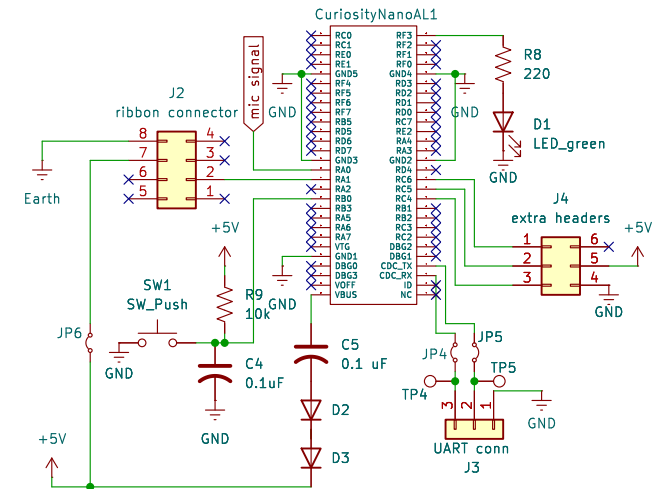
The microphone (MK1) converts sound into a small AC voltage, which is amplified by the op-amp (UA1) and biased via RV1. The amplified output (mic signal) is sent to the microcontroller, which detects when the sound level rises above a set threshold to send a signal to the input/output board.

## Power



Power is supplied to the system via a barrel jack and an external power supply. While the system is designed to operate on only 5 volts, more than 5 volts may be supplied by the external power supply. The fuse (F1) and the voltage regulator (L7805AL) ensure that only 5 volts runs through the circuit.

## Microcontroller



The microcontroller receives the amplified mic signal for processing. A push button (SW1) provides an option for manual control, while an LED serves as a debugger. The UART connector (J3) enables serial communication with other devices. Extra headers are provided in case changes need to be made. Decoupling capacitors (C4, C5) stabilize the 5 V supply, and diodes (D2, D3) provide voltage protection.

Arianna Lazaritt team 205

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File: individual subsystem.kicad\_sch

**Title: Individual audio sensor subsystem**

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