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EC 450

Light Conductor

Our project is intended to enable the user to conduct a piece of music using light. One photoresistor controls the tempo while the other controls volume through the use of a digital potentiometer. It achieves these goals and utilizes a calibration mode to adjust to different levels of ambient light, and saves the most recent calibration settings in flash memory. In our demo, you will see the use of the on-board LEDs to indicate calibration modes and you will hear the Jeopardy Theme played at varying tempos and volumes based on the "conductor's" movements.

The change in tempo, based off of the new beat given by the user, isn't immediate, but this reflects human reaction time as if in a real orchestral setting. We ran into some issues with the mechanism for the volume level, as the digital potentiometer interacting with the ADC values from the photoresistor cause medium ADC values to sound crackly and distorted.