The background of the slide is a dark, moody image. It features a central silhouette of a person wearing a hooded sweatshirt, standing with their back to the viewer. The background is a deep, dark red or maroon color, with wisps of white smoke or mist rising from the bottom and sides, creating a hazy, atmospheric effect. The overall tone is mysterious and technological.

COMMUNICATION USING LASER

A Brief Overview

COMMUNICATION USING LASER

Any Microcontroller



IC 7414 – D Trigger Flip-flop



Op – Amp TL072 (Dual I/O)



2X LASER Beam for Tx & Rx



Solar Panel as Receiver



2N2222 Transistor (Pre-Amplifier)



D882 Transistor (Power Amplifier)



Logic Level Convertor (3.3V & 5V)

TRANSMITTER SECTION

RECEIVER SECTION

COMMUNICATION USING LASER

We are thinking of implementing this design as a High-Bandwidth & Long Distance Reliable Mode of Analog-Digital Conversion using pulsating LASER Beams. The transmitter will include an Arduino & the receiver can be another microcontroller like Arduino, NodeMCU or Raspberry Pi. We can transmit sensor data / preset data / user custom data and maybe multimedia content over long distances at extremely-high power efficiency & ultra-low cost margins to generate a complete IOT Network without cabling or a dedicated Networking system like WIFI.

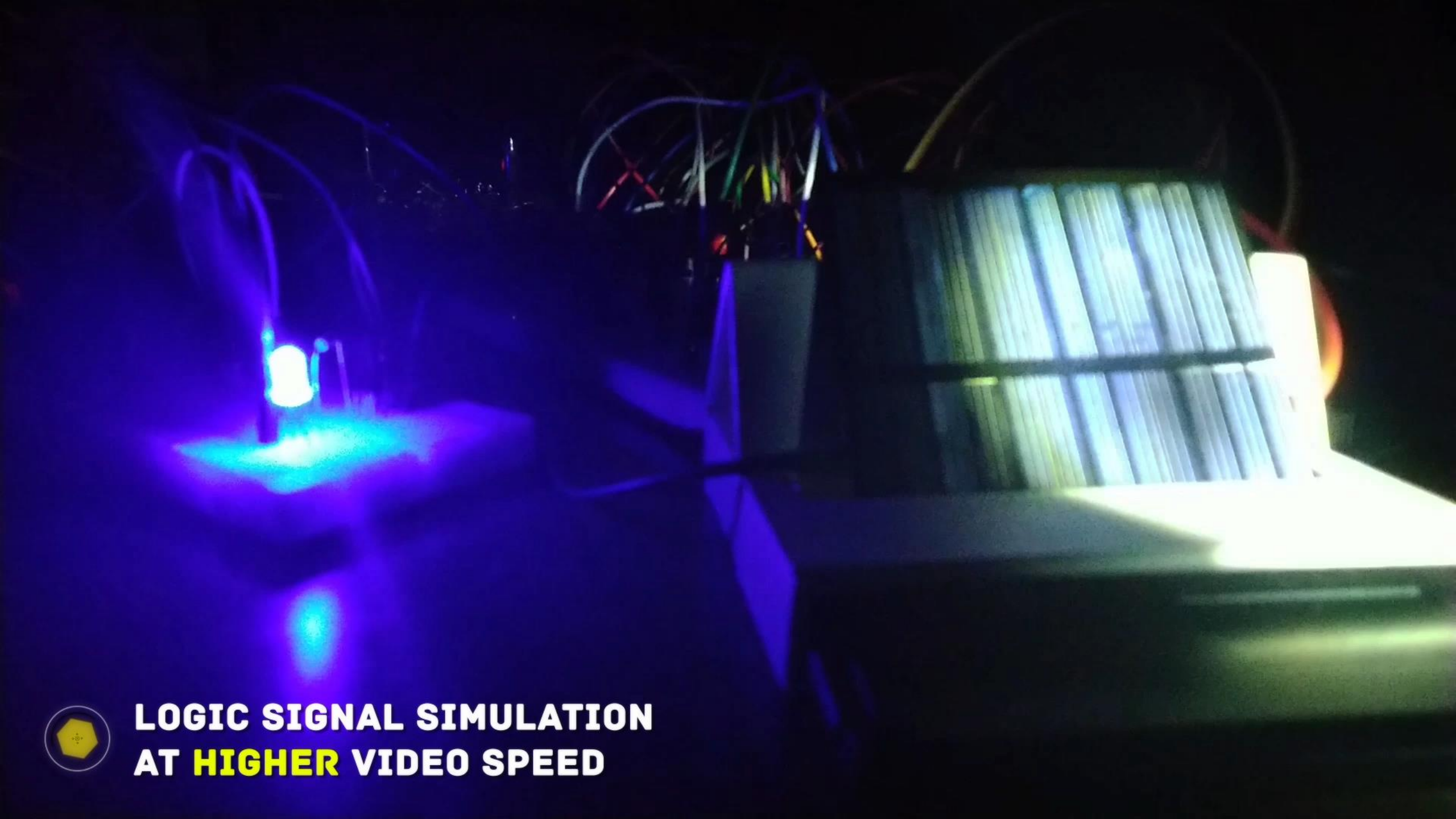
We initially thought of using an LDR in the Receiver section but the LDR is usually biased by the power supply & usually slow to react to changing intensity of light patterns so we required a more reliable approach.

Solar panel was the best candidate, since it was extremely accurate & it generates voltage on its own when excited by charged photons. We just amplified that little current it generated just from a simple laser beam (we used a Focussed Torch since we have damaged our Laser Beam) using 2 High Gain and 2 Power Transistors to create a fast-accurate signal. With little calibration with capacitors, shunt resistances and signal diodes, we could isolate noise from the circuit as well.

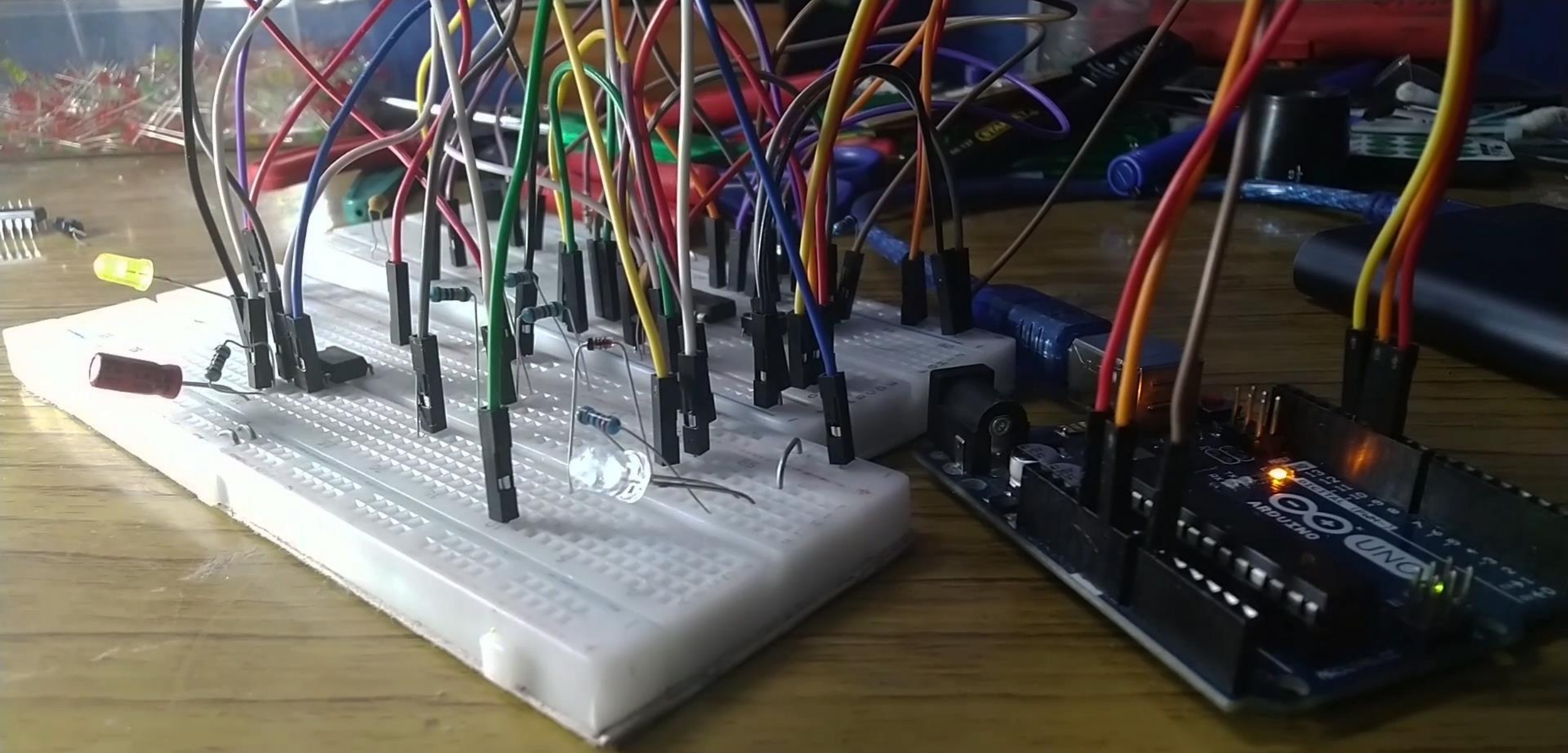
A dark red, textured background with a central silhouette of a person wearing a hoodie. The person is facing forward, and the silhouette is dark against the lighter red background.

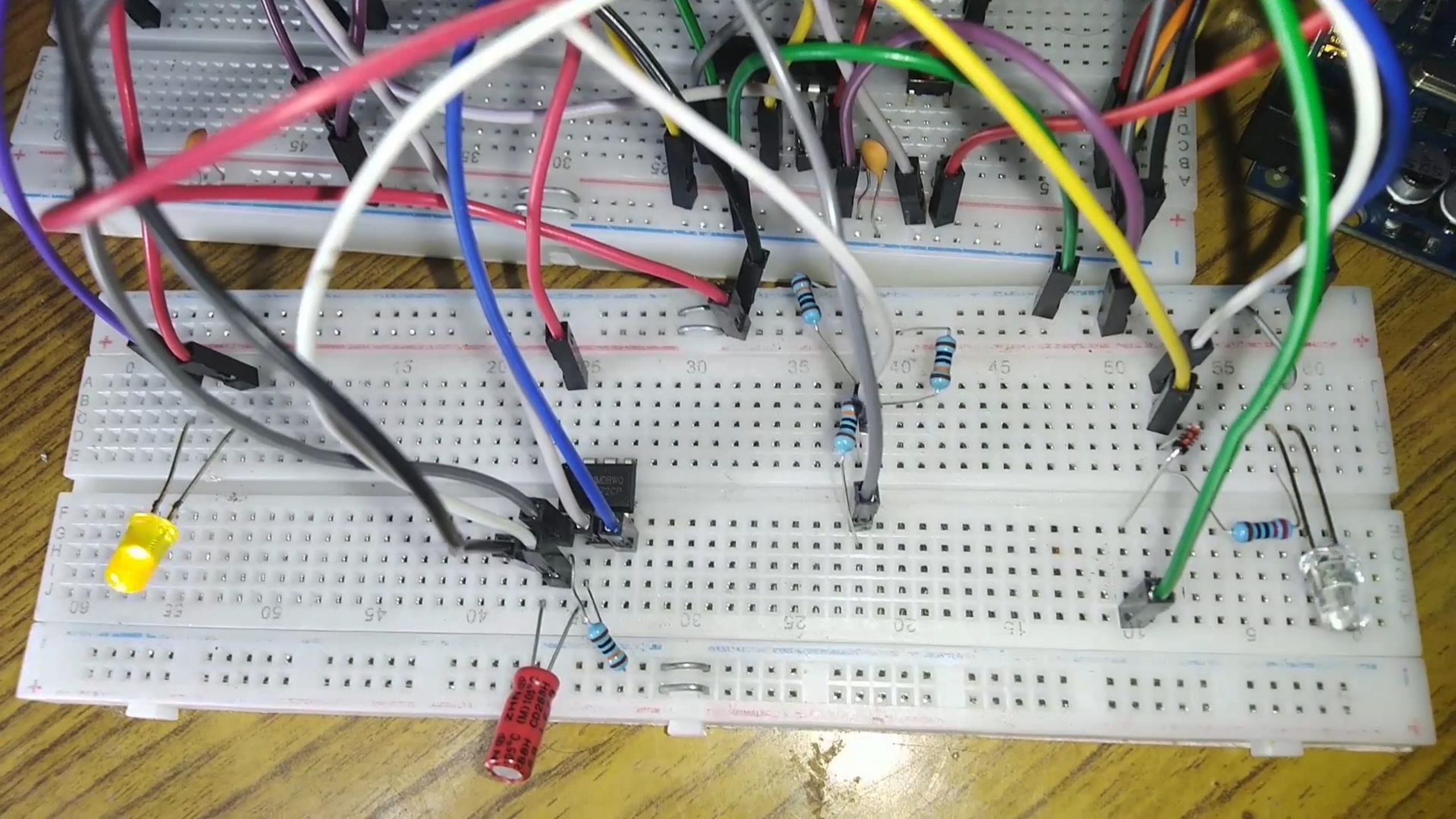
TINKERCAD TO REALITY

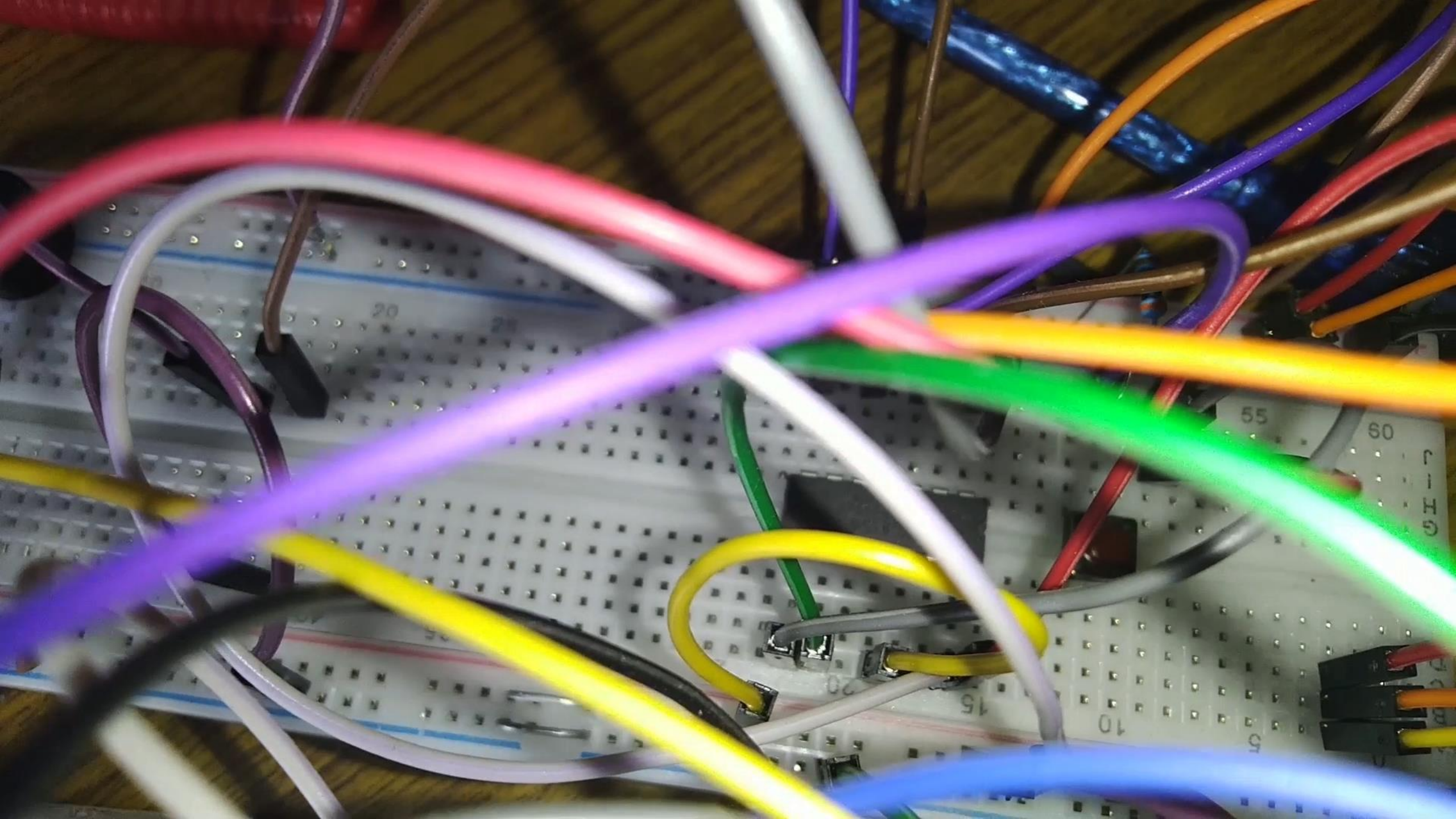
Some Shots of the
Alpha Build

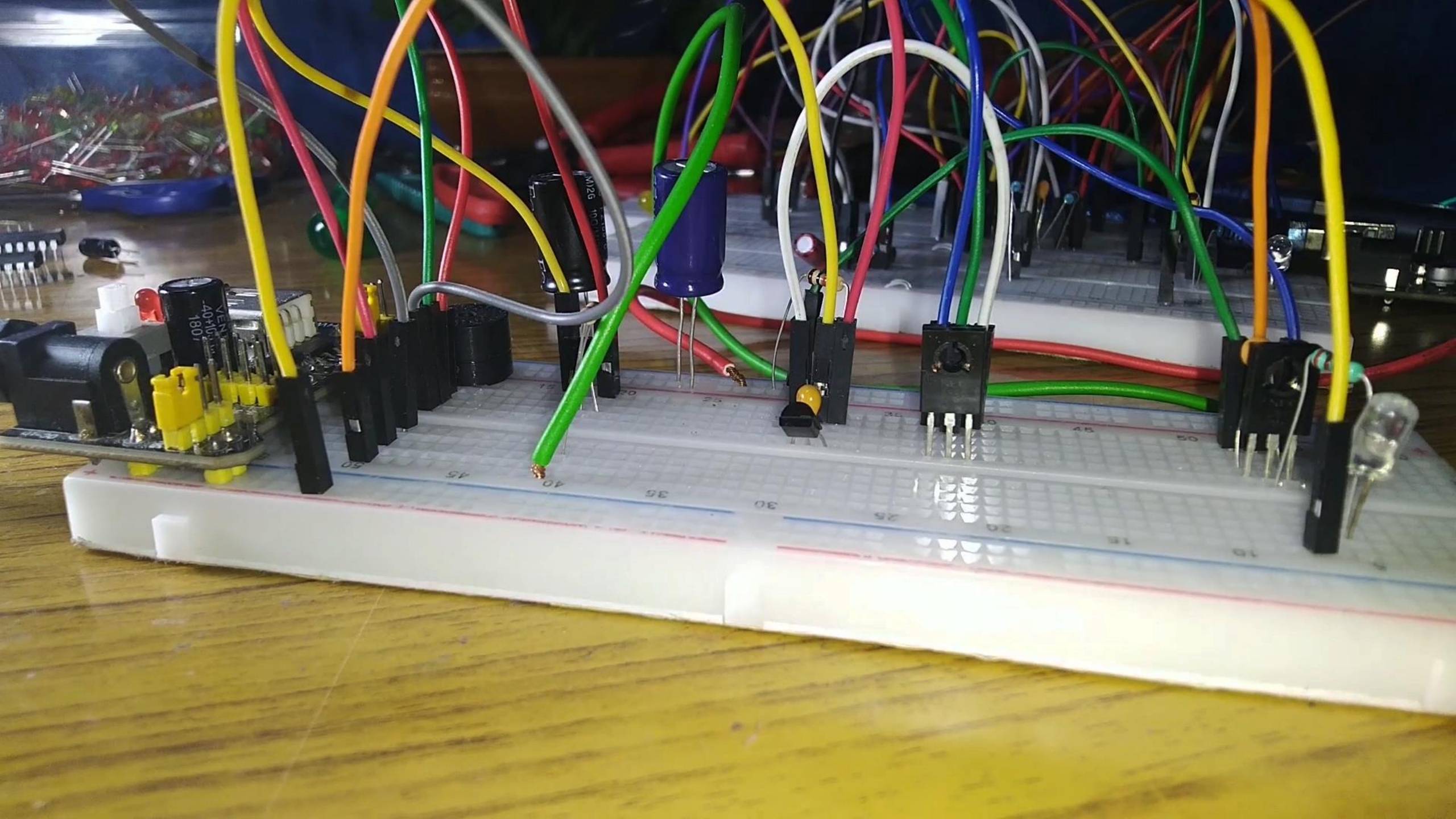


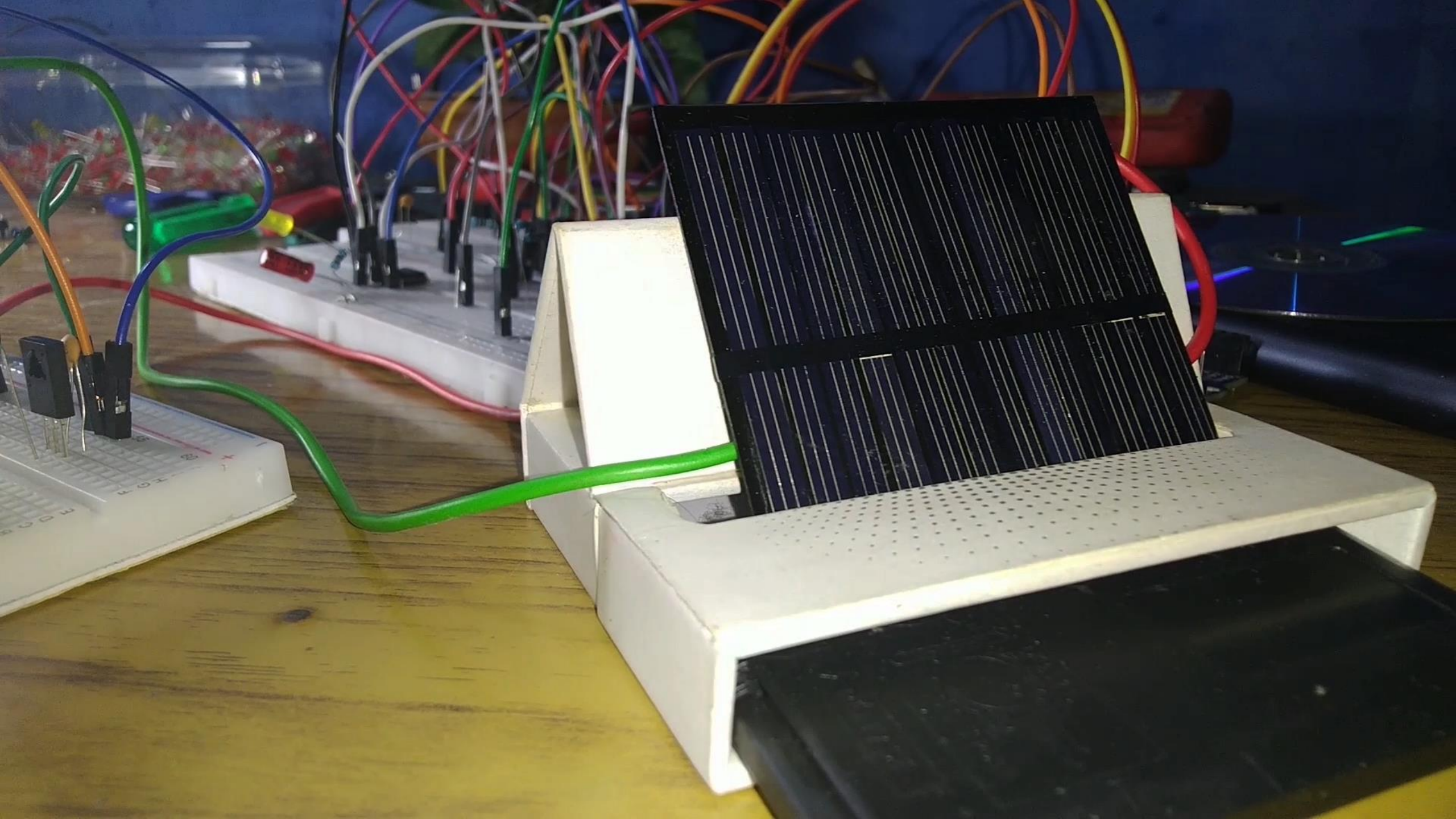
**LOGIC SIGNAL SIMULATION
AT **HIGHER** VIDEO SPEED**

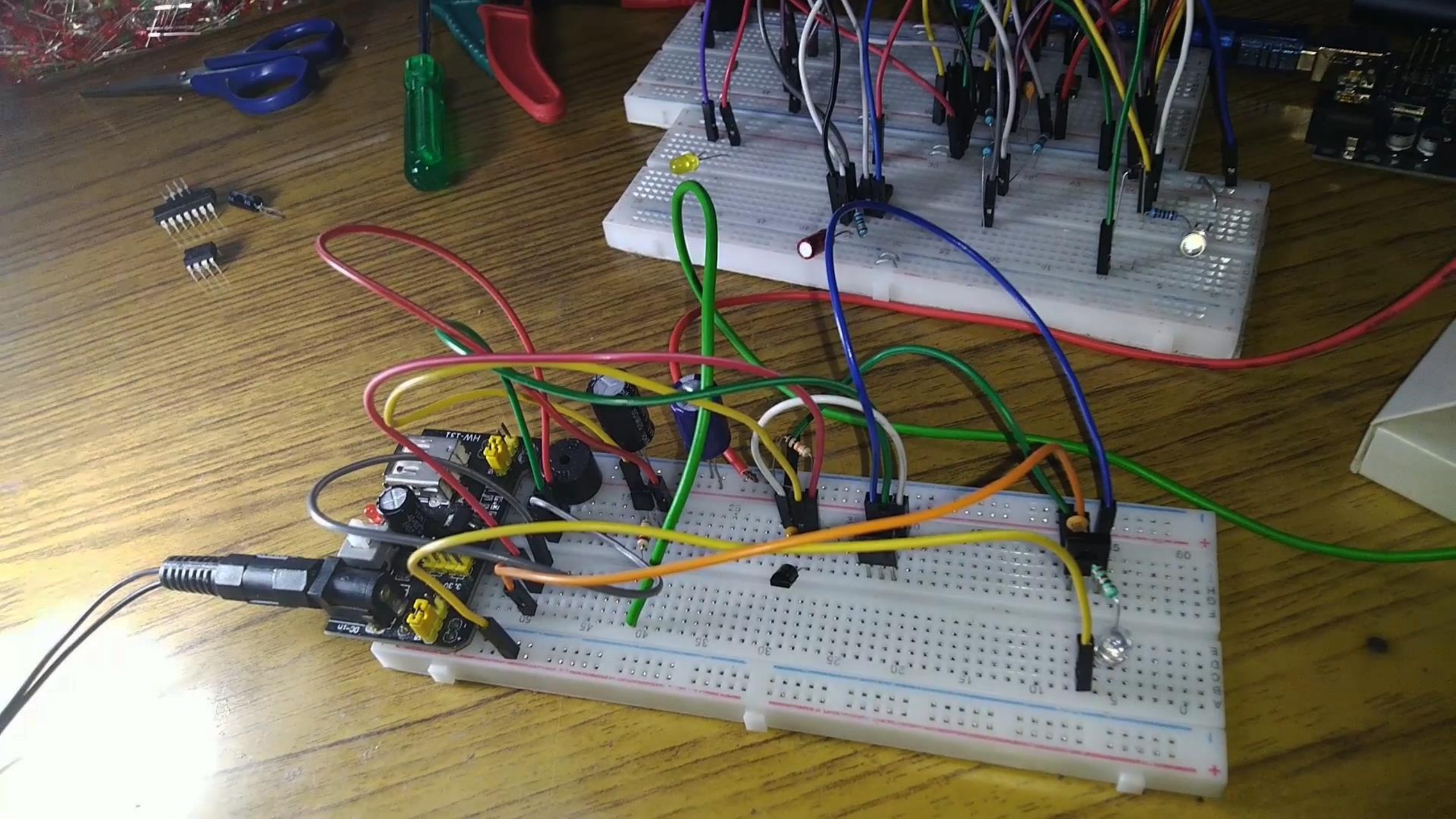












Section : C

CSE (C6)

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THANK YOU