

3D - Printed Proton Pack – Part 2



Adding Electronics:

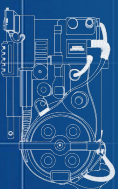
So you've got the shell of your proton pack built. It's sanded, primed, textured — a thing of beauty. But it doesn't *do* anything... yet. Now it's time to bring it to life. In this part of the build, I add the electronics — the lights, sounds, switches, and power system — that transform it from a static prop into a piece of functional fan gear. It lights up. It hums. It cycles. It feels *real.*

Materials List

- Pre-built Cyclotron Lighting Kit – Because coding your own LED pattern is cool, but this is cooler and plug-and-play: <https://bit.ly/43vYeh9>
- Transparent Red Filament: <https://amzn.to/4kvNXrt>
- Lighting Gel – For that screen-accurate red glow. <https://amzn.to/4kNFNdW>
- Superglue - Because nothing says permanence like glue that bonds like a ghost trap latch. <https://amzn.to/3ZklCvH>
- 5-Minute Epoxy – Fast drying, strong hold. For gluing parts that need to stay put through ghost-chasing and Comic-Cons. <https://amzn.to/3ZGKBsY>
- Ion Arm Switch STL from Right Coast Props – Just like Phoebe's in Ghostbusters: Afterlife. Screen-accurate and clever! www.rightcoastprops.com
- 12V Battery Pack (TallentCell): <https://amzn.to/45IXOFy>
- Voltage Converter – To power everything safely and cleanly, converting to 9V and 5V as needed: <https://amzn.to/43QZTgk>
- MP3 Audio Board – Because your pack needs to growl, whirr, and buzz like the real deal: <https://amzn.to/3Tc8KnD>
- Speakers – Small but mighty, so your pack doesn't just light up — it *roars.*: <https://amzn.to/4457j0z>

Tools & Workshop Gear

- 3M Hex Screws + Hex Screwdriver – Essential for reinforcing your assembly. Get a range of sizes. <https://amzn.to/3Z8SLdH> & <https://amzn.to/4jnoO0x>
- Power Drill & Tapping Bit – For reaming out tight screw holes and threading where needed. Trust me, you'll thank yourself later. <https://amzn.to/43mBwlk> & <https://amzn.to/4kHVB1h>
- Small Screwdrivers – For those maddening tight spaces you can't reach with a full-size driver. <https://amzn.to/4dZFD0h>
- Clamps – To hold awkward parts while glue cures. <https://amzn.to/43ysE0V>
- Sandpaper – Various grits (start around 100–150 and go up to 220+ for finishing). <https://amzn.to/44WzEHn>
- Scraping Tools or Deburring Tool – To clean up edges and catch stray striations. <https://amzn.to/43TN2ej>
- Tongue Depressors – For applying glue <https://amzn.to/4kqO9bs>



Build Steps – Let's Bring It to Life

Step 1: Install the Cyclotron LEDs

- Fit the LED module into your 3D printed lens holders.
- If the holders don't fit the lenses perfectly, grab your soldering iron and reshape the plastic just a little.
- I layered in red gel + sanded filament for that beautiful glow.
- Once it all fits? Glue gels with super glue, and lens holders with hot glue

Step 2: Mount the Bar Graph

- Place the LED bar into the housing (q-Pack 3d file) again use a soldering iron to reshape where needed for a snug fit.
- Cut a blue gel custom lens for the bar graph to go over the top.
- If the cutouts in the shell are rough, use a knife or a bit of heat to clean the edges.

Step 3: Wire the Switch

- This is the red switch seen on Phoebe's pack in *Ghostbusters: Afterlife*. So cool.
- The STL is free from Right Shore Props — it's designed to fit a switch from Amazon (rightshoreprops.com)
- I wired this directly to the internal power control — so when the switch is off, nothing's drawing power.

Step 4: Setup the Power Flow

- Power from the 12V pack goes into a step-down transformer (set to 9V).
- From there, it splits to:
 - The lighting kit (cyclotron + bar graph)
 - The amp/MP3 combo via USB terminal board
- *Important:* Test all your voltages with a multimeter before plugging things in. Learn from my mistakes. 😊

Step 5: Install the Audio System (see diagram on page 4)

- The MP3 soundboard is USB-powered and feeds directly into a mini amp.
- That amp then connects to two small speakers, which I placed inside the shell.
- I ran sound tests outside the pack first — you'll want to troubleshoot before everything's glued in.



Build Steps – Let's Bring It to Life

Step 6: Clean Up & Secure Everything

- I used hot glue and terminal strips to hold down wires and make it all serviceable later.
- Double-check your LED sequences and make sure they rotate clockwise (like in the '84 movie).
- Secure your speakers, mount the motherboard, and bolt on the Alice frame.

Boom. You're done. This pack is now *alive*.

Pro Tips:

- If your amp buzzes or distorts, it's probably overvolted. Drop it to 9V or use a better step-down.
- Label your wires with tape. Seriously, you'll thank yourself.
- Secure with hot glue only after testing. Dry runs = fewer regrets.



