



TV-B-GONE HOODIE

Covertly turn off televisions with the tug of a zipper.

BY BECKY STERN

Whenever I bring my TV-B-Gone (a little wireless gadget that shuts off any TV) out to restaurants, I look suspicious using it. Mitch Altman, the device's creator, concealed his by putting it inside a hat (see *MAKE Volume 13, page 169*), but I rarely wear hats and I wanted a subtle solution.

So I bought a zippered hoodie sweatshirt from a thrift store and turned it into a wearable TV silencer. For the switch, I sewed paths of conductive thread to 2 little pads that are bridged by the metal zipper slider when it passes by, so all I have to do is zip the sweatshirt up or down to activate the TV turning-off action. It works great, and you can just unsnap the circuitry to convert it back into a normal sweatshirt for washing — or for avoiding trouble.



Build Your TV-B-Gone Hoodie

Time: 3 Hours **Complexity:** Moderate

1. Mount the circuit board onto the fabric swatch.

Assemble your TV-B-Gone according to the kit instructions, but omit the push-button switch, and mount the 4 infrared LEDs perpendicular to the printed circuit board.

Solder short wires to 2 of the 4 holes for the switch in the PCB. Pick the 2 that are visibly connected to the rest of the circuit. Strip the other ends and solder each to one half of a sewable snap. In the same way, attach 2 short wires to the board's power connections and snap halves; these will connect to the battery holder.

The fabric swatch will sandwich the circuit board to the hoodie and protect your skin from any pokey metal bits. Position the PCB in the middle of the swatch and use regular thread to stitch the 4 wired snaps along the swatch's corners and edge (Figure B).

Also stitch the wires and the board itself onto the swatch; I looped thread around component leads and through holes in the board, and reinforced the

LED leads with hot glue.

Finally, stitch 2 more snap halves onto the 2 empty corners, just for holding the other side of the swatch. Check that your TV-B-Gone still works properly by bridging the switch snaps with a piece of wire.

2. Attach the swatch and stitch the traces.

Position the TV-B-Gone swatch under the sweatshirt and use an awl to poke holes through the fabric for the 4 infrared LEDs (Figure C). Mark the positions of the 6 snaps on the inside of the sweatshirt.

Referring to the project schematic (Figure A), stitch conductive thread traces from the 2 switch snap positions to the edge of the zipper, making sure they never cross. Leave long tails of conductive thread at each end for hand-sewing the snaps and switch.

Insulated wire works better and is safer than conductive thread for supplying power, so solder 2 stranded wires to extend the length of the battery holder leads, and insulate the joints with heat-shrink tubing. Place the battery holder in the pocket (Figure D) and run the wires up to the power snap locations (Figure E). Tack the wires in place with regular thread.

Use the conductive thread to sew the 2 remaining switch snap halves in position inside the sweatshirt, matching their positions on the swatch (Figure E). Solder the 2 remaining power snap halves to the battery wires, then use regular thread to sew them into the sweatshirt.

MATERIALS

Super TV-B-Gone Kit item #MKAD4 from the Maker Shed (makershed.com), \$22

Hooded sweatshirt with metal zipper slider, non-metal zipper teeth, and front pocket

Conductive thread \$3 for 5yds from Sternlab (sternlab.org/store)

Stranded wire

Thread

Fabric swatch, about 2"×3"

Sewable metal snaps (6–8)

Heat-shrink tubing

TOOLS

Sewing needle and pins

Soldering iron and solder

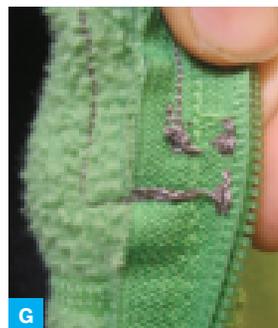
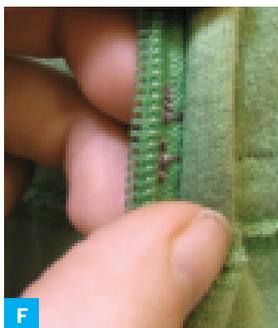
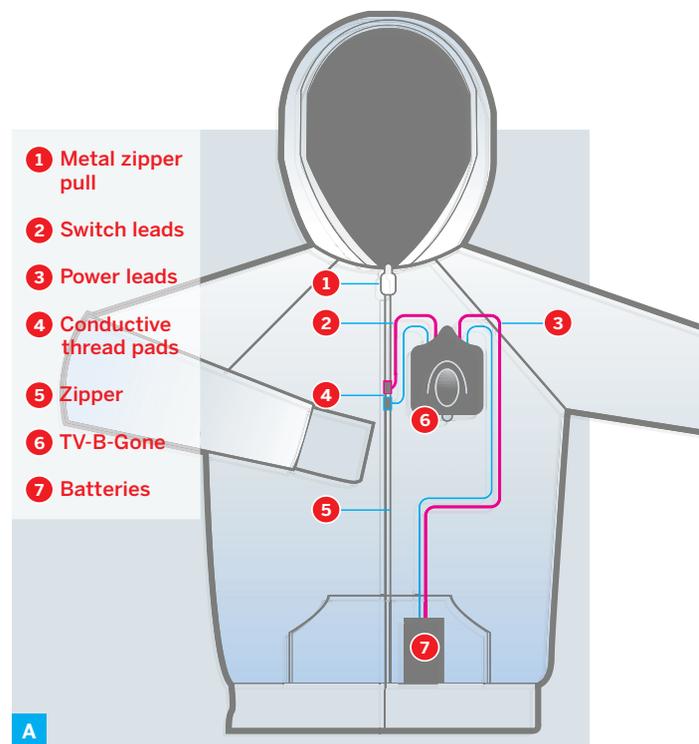
Hot glue gun and glue

Awl

Scissors

Sandpaper

Sewing machine (optional)



Finally, use regular thread to sew the last 2 unconnected snap halves at the other end of the swatch.

3. Stitch the zipper switch.

Thread your needle with the conductive thread tails near the zipper, one at a time. Stitch 2 little pads right next to the zipper, close enough to each other to be bridged by the zipper slider (Figures F and G). Sand any paint off the metal zipper slider anywhere it will come into contact with the thread (Figure H).

Power on, and turn off some TVs!

Your TV-B-Gone hoodie is machine washable; just unsnap the circuit and remove the batteries beforehand, and let it dry completely before replacing them. You could even make the battery pack removable, by connecting it with metal snaps, too.

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