

Build a NeoPixel-painter remote control trigger for under \$20.

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Overview

After using my NeoPixel-painter for a while, which works perfectly by the way, I felt I needed a way of triggering the stick remotely. As my assistant was moving the stick, I wanted a way to trigger it from behind the camera. It was difficult to coordinate timing between the stick and the camera. I needed a remote to control the stick from behind the camera. I also decided it would be easier to swirl or spin the stick with a remote trigger. I finally came up with a simple, effective and inexpensive solution. If you have already built a NeoPixel-painter, then this is a "no brainer" to add this remote trigger.

Advantages:

1) Easier to spin and twirl the stick.

If the trigger is held (rather than tapped once) while painting, the image will be repeated. This can be used to create repeating patterns. Swirling or spinning the stick, while repeating a pattern can make some very cool images. BUT it is very difficult, if not impossible, to hold the trigger down while spinning the NeoPixel-painter stick. A remote allows me to make these cool abstract patterns that require twisting and spinning the NeoPixel-painter stick every which way! I can also trigger the NeoPixel-painter while an assistant twirls and spins the stick. I stay behind the camera and determine when it starts and stops.

2) Small vs. Large image/pattern file size.

This long Image (A) is simply a very short image (a), painted with the trigger held down for a long time. As long as I hold the trigger down, the image (a) is painted repeatedly. The advantage is I need only store this small image (a) on the card as opposed to the very large image (A). In this case 49 Kbytes vs. 496 Kbytes. When waiting for the NeoPixel-painter to read, i.e.: "load", 5 large images, this can be quite a difference in wait times. I can also "stop painting" by just letting up on the button, whereas with the long image (A), it must finish painting the whole image before it stops which is NOT what want. A remote allows me to stop and start as I please.

Image (A)
496KB

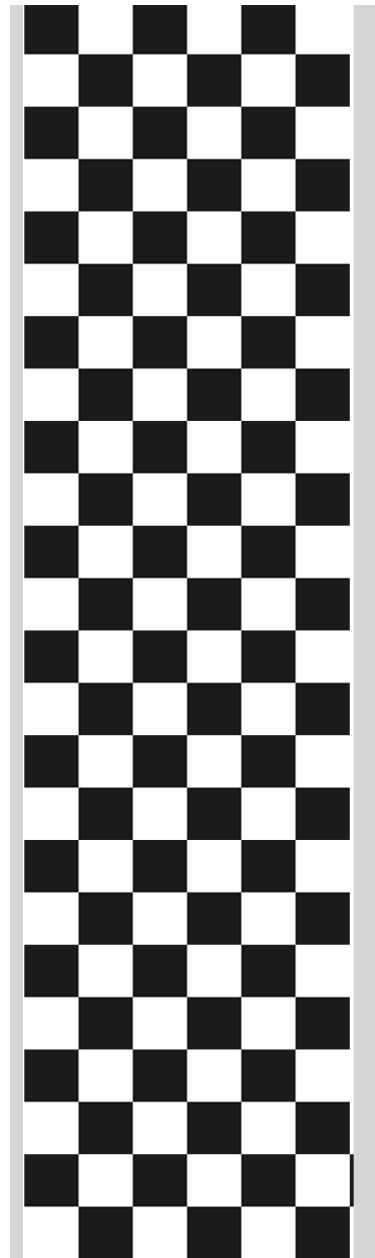
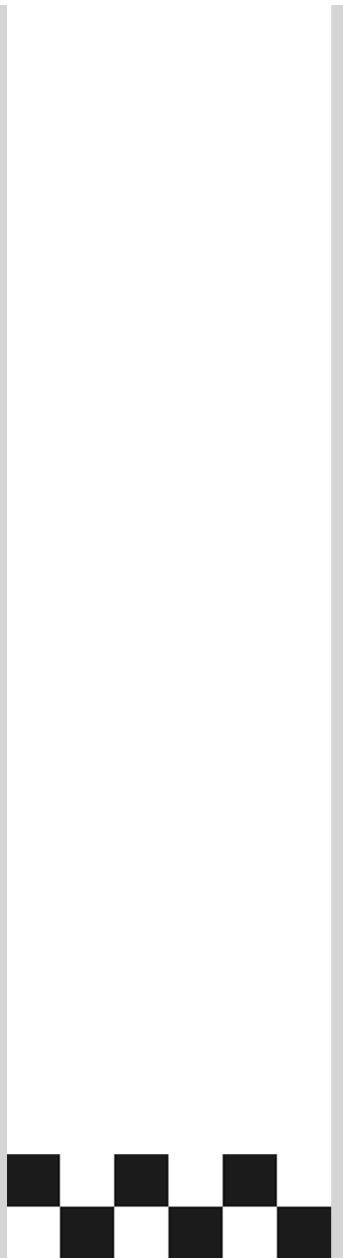
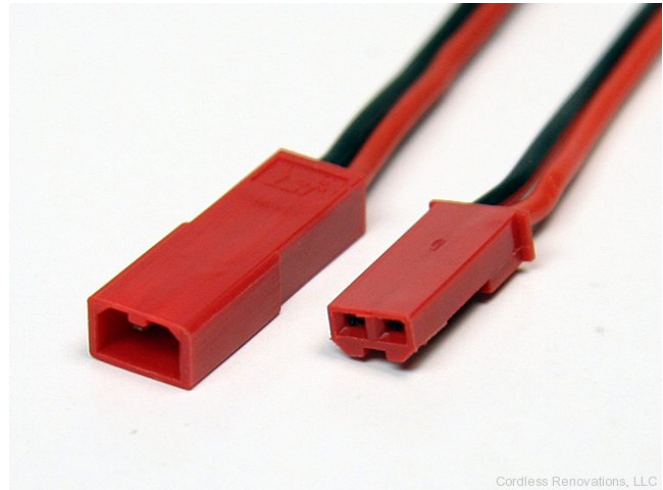


Image (a)
49KB



Things You'll Need:

- Wireless Remote Control Shutter Release & Receiver. (Comes as a pair)
- JST connectors, power blocks, etc.
- Soldering iron and related paraphernalia
- Shrink tubing.



Some additional parts and tools may be needed, depending how you put this together. Read through to see how I built mine. These parts are not available from Adafruit. You might choose different materials or assembly techniques depending on your particular skill set and items on-hand. Improvise! Adapt! Overcome!

Shutter remote vs. Flash remote

NOTE: Make sure you understand the difference between a "Wireless Remote Camera Shutter release" and a "Wireless Remote Flash trigger". Although the Flash trigger will trigger the stick, it will only "hold the trigger down" for a very short time, as a flash unit only needs to be activated for a millisecond or so. Fine if you are painting pictures, but bad if you want to paint patterns.

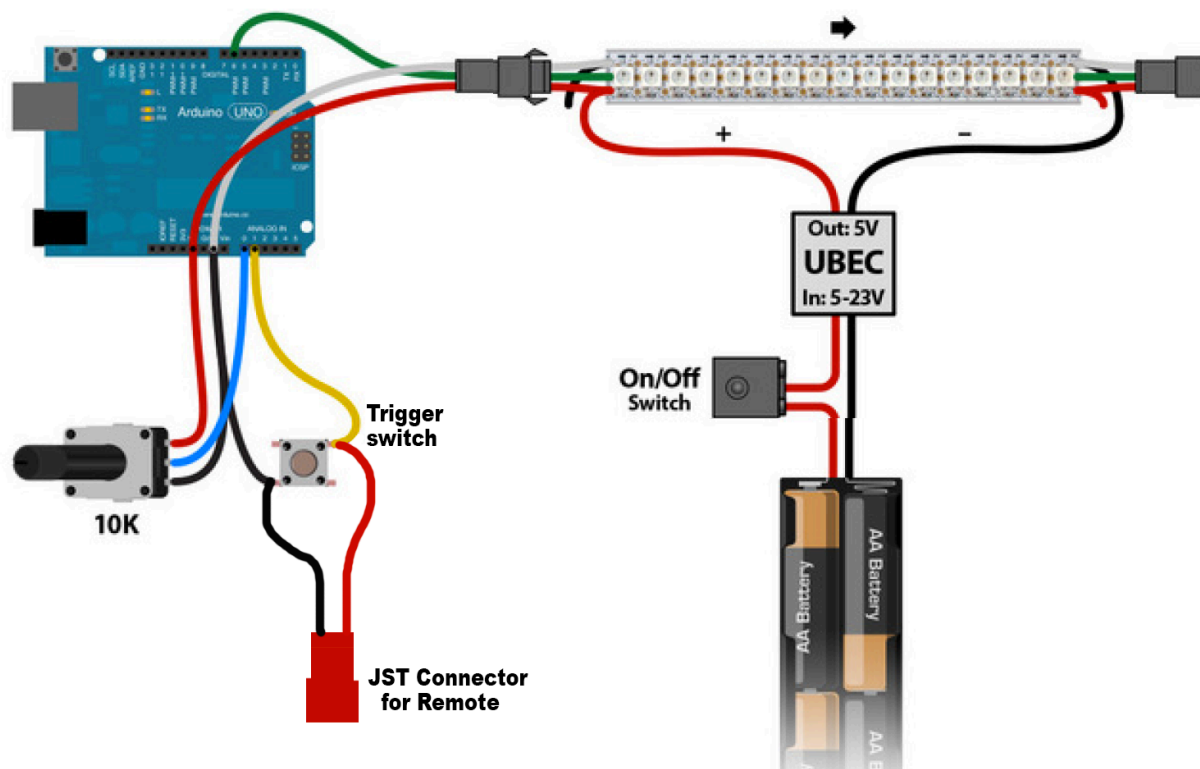
- A "Wireless Remote Camera Shutter release" - uses a hand held transmitter and is operated by the photographer pushing a button on the remote transmitter. The manual normally says something like... "complete control of camera shutter without cumbersome cable connections between the hand control units and the camera" <<GOOD!
- A "Wireless Remote Flash trigger" - uses a transmitter that attaches to the camera's hotshoe, is triggered by the camera and fires a remote flash unit. << BAD!

Just purchase a Wireless Remote Camera Shutter release and you will be fine. A "Wireless Remote Camera Shutter release" package should include both:

- One (1) Remote Shutter Receiver
- One (1) Remote Shutter Transmitter

Building the remote.

If you have already built your NeoPixel-painter, then this wiring diagram is familiar to you. We are simply going to add a connector, in parallel with the current trigger. In essence, making two triggers.



Alternatively, you could add a connector between A1 and GND directly on the Arduino board. Either way works as they both bring the Arduino's digital pin, A1, low, which starts the painting.

Let's get started.

Step1) I started off by soldering a female JST connector, to the GND and A1 pins on my Arduino. These are the same pins that the trigger switch is connected to. When these pins are connected, electrically, the NeoPixel-painter begins to paint. (See above diagram)

Step 2) Next, cut off the plug on the Receiver cable and strip the insulation back to expose the three wires.



Using a meter, set on continuity, determine which wire is GND, Autofocus and Shutter release. I used the transmitter and watched which pair went "on" when I pressed the remote button. After some trial and error, I determined the GND was white, Yellow was Autofocus and the red was Shutter release. Connect both the autofocus and shutter release wires together and solder them to one wire of the JST male connector. Solder the GND wire to the other wire of the male JST connector. This way, the NeoPixel-painter stick starts to paint as soon as you press the transmitter button ½ way, to autofocus, or press it fully to fire the shutter.



NOTE:

Each remote is different, but mine says that if I hold the shutter release down for 3-seconds or more, it "locks" in "Bulb mode". Then another press releases the shutter. This works well if the image or pattern I'm painting is quite long as it saves me from holding the button down all that time.

Finishing Touches