Assembly and Use Guide for the KAPtery Shutter Timer Kit

3D Printing Guide at KAPtery.com/guides

For spare parts: KAPtery.com   Technical support: http://kaptery.com/contact/

The KAPtery Shutter Timer is available in two versions: ready-to-fly or the build-it-yourself Shutter Timer Kit. User instructions are on the next page.

Assembly (time required about 2 hours)

Tools: soldering iron, wire cutters, pliers, small screw driver

Solder components to PCB

1. Solder the components as described in the included instruction sheet, but skip step nine so no relay is installed. Save a few of the leads snipped off the components.
2. On the underside of the PCB solder two jumper wires as shown in the photo above.
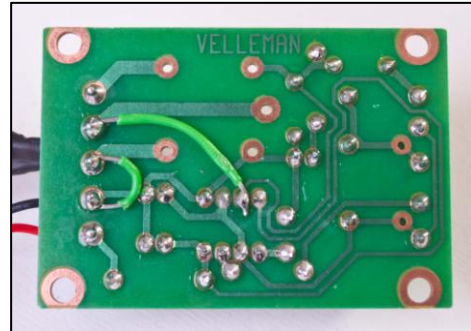
Prepare USB cables

1. Cut the large USB A connector off the USB cable (for the Titan 2 Rig your cables should be 10" to 15" long) and strip the ends of the red and black wires.
2. Solder a stiff wire about 1 cm long onto the ends of the red and black wires to strengthen them (see photo). Use pieces of the component leads that were snipped off as the timer PCB was assembled.
3. Stiffen and insulate the cable ends with heat shrink tubing.

Connect battery case and USB cables to timer

1. Pass the USB and battery cables through the ports in the 3D printed case, through a bent lock washer, and into the appropriate terminal block.
2. Battery: red wire to +12V, black wire to GND.
3. Both USB cables: red wires to COM, black wires to NO.
4. Tighten the screws to hold the wire ends firmly.
5. Squeeze the washers around the wires up against the inside of the plastic case to prevent the wires from being pulled out of the terminal blocks.
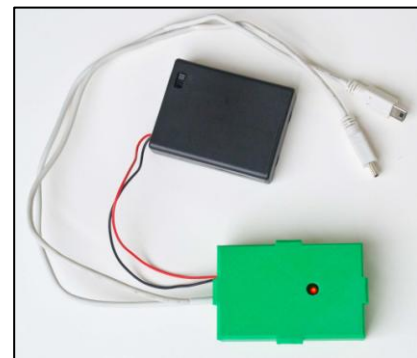
Using the timer

Set timer interval

1. Install four *fresh* **alkaline** AAA batteries in battery case and turn switch to ON.
2. Rechargeable batteries typically deliver less than 1.4 volts and will not work.
3. Batteries must be fresh (old batteries deliver less than 1.5 volts).
4. Use a small screwdriver to turn the white slots at the centers of the potentiometers ("PAUSE" and "PULSE") to set the pulse interval and length.
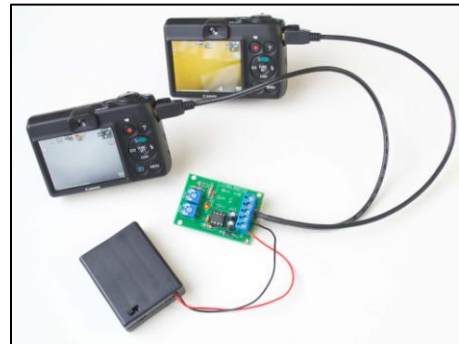
Configure CHDK

1. Canon PowerShots must be running CHDK to interpret the signals from the timer. Install CHDK on two SD cards using a program called STICK.
2. CHDK on both cameras must be configured for remote operation and for synchronization (one-push, normal).
3. Learn how to configure CHDK on your camera here.
4. At the start of the timer pulse CHDK instructs the cameras to do a "half press" of the shutter button and any automatic focusing or exposure is done. At the end of the pulse the cameras trigger their shutters immediately and in synchrony.

Mount timer on camera rig

1. Apply Velcro tape to bottoms of timer case and battery case.
2. Apply Velcro tape to top of Titan 2 Rig frame.
3. Secure cases with Velcro straps.
4. Plug USB cables into cameras.
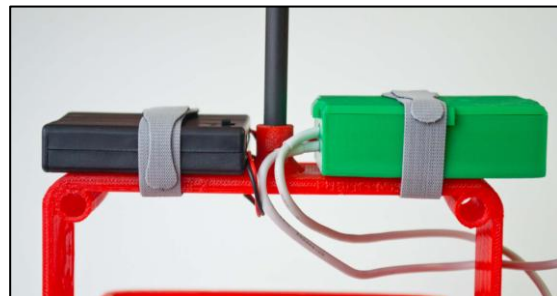
Fresh alkaline batteries will run the timer and trigger the camera shutters for many hours.