

Advanced Flash Sound Trigger

Instruction sheets

Introduction

A sound trigger is an electronic circuit that fires a flash unit in response to a sound or noise. This allows to capture high speed events like an exploding balloon, the breaking of glass or splashing objects.

A camera (compact or DSLR) is too slow in these situations: the delay between the shoot command (pressing the button or via any electronic way) and when the photo is taken is very high (with the fastest cameras the delay is around 10-20 msec).

A flash unit, instead, is very fast, and lights up almost immediately when it's triggered. An other benefit of the flash is the ability (with the modern flashes) to set up the power of the light. Reducing the power means that the light is emitted for a shorter time than at the full power, so, in this way, we can “freeze” the fastest movements. With some models we could take a photo with an equivalent shutter speed of 1/41000 sec (circa) setting up the flash at 1/128 of the standard power.

Preparation

To take advantage of capturing images using the flash light, we need to operate in a completely dark, or barely illuminated, room. The camera must be set in bulb mode and manual focus. A tripod and a remote control are required. Prepare the scene and focus on the desired area. Turn off the light and take one picture to check the exposition. If needed change the aperture and/or the flash power to get the correct exposure.

Using the trigger

With all circuits powered off connect the trigger to the flash. Connect the battery to the trigger and then switch on the flash. Turn off the light and then, with the flash ready to fire, press and hold the shutter button of the camera. Press and release the “start” button of the sound trigger. From that moment for two seconds the microphone is still deactivated, so you can move away your hand from the circuit without triggering it. After these two seconds the microphone is active and any little noise will trigger the flash. When the flash fires, the controller deactivates the microphone until the user enables it pressing the start button again. After the flashlight release the shutter button immediately.

Time delay

Several factors influence the time delay between the moment of the event and the flash trigger. These include the intensity of the sound, the sensitivity of the trigger, and the position of the trigger in relation to the event. Changing the position is a good way to fine tune the time delay, since the sound travels about 345 m/s in air. Moving the circuit 35cm far away from the object a time delay of 1 msec will occur (70 cm = 2 msec etc).

Technical details

- Built-in microphone
- Extremely high sensitivity
- Sensitivity control not needed (available on request)
- Monitoring led (useful to check if a very slight sound is enough to activate the trigger and if the whole circuit is powered and working)
- Powered by a 9V battery or by any 8-12 Vdc power supply
- “Start” button to avoid unwanted flash triggers
- Single flash trigger per event
- 3.5mm female jack for flash connection
- Power consumption : 0.8 mA in standby, 6 mA in “ready to fire” status
- Dimensions : 22 x 92 mm approx. Thickness : 25 mm, 40 mm maximum (the push button)

Contacts

For requests or info see : www.bigmike.it/advsoundtrigger

