**TriggerAid**

A High Speed Camera/Flash Trigger & Time-Lapse Controller.



TriggerAid is based on ATmega328, running at 16Hz. Almost everything is user-configurable via the menu driven interface. There are 6 dedicated buttons (BACK button functions also as a shortcut to a specific menu command, if pressed for more than 3 seconds).

It can safely trigger a camera or a flash unit. It has two optocouplers for optimum isolation (it uses MOC3061, that are able to trigger an old flash unit that runs up to 400V).

It has a TRS jack, so you can trigger focus and shutter on your camera, or two cameras (with focus/shutter combined), or up to two flash units etc.

**Input/Outputs**

* TRS Jack (Stereo, 3.5mm, headphones-style) for connecting Camera or Flash   
  (or whatever you want to trigger)
* Digital Sensor Input (+5V, Data, GND)
* DC Input (Center Positive, 7-18V)
* 6 Buttons (Reset, Previous/Next/Enter/Back/Shoot).

**Main Menu:**

The menu structure is the following:

* **Light Trigger**
  + On the first line, you can see the real-time reading from the light sensor from 1 to 100. In the last right character, an empty circle indicates that the trigger is not enabled, and when it’s filled black, indicates enabled triggering.
  + On the second line, you define the threshold (1..100) and the last character indicates if it will be triggered when the reading is more that the threshold (H / High) or lower (L / Low).

You can change the threshold from 1 to 100 and vise-versa using PREV/NEXT buttons. You can start the trigger with ENTER. Exit with BACK.

* **External Trigger**
  + On the first line you can see the selected trigger and if it is active or not.
  + On the second line you can see when it triggers, if it is responding HIGH or LOW (normally, a sound trigger for example will trigger HIGH when the sound is louder than the setting/threshold).

You can change from LOW to HIGH using PREV/NEXT buttons and you can start the trigger with ENTER. Exit with BACK.

* **Time Lapse**
  + On the first line you can see the remaining time for the shoot and if it’s active or not.
  + On the second line you can set the shooting interval (time between shoots) from 0 to 300 seconds.

You can change the values using PREV/NEXT buttons and you can start the trigger with ENTER. Exit with BACK.

* **Bulb Mode**
  + On the first line you can see the remaining time of the shoot and if it’s active or not.
  + On the second line you can set the exposure (bulb time) from 0 to 300 seconds.

You can change the exposure/bulb time using PREV/NEXT buttons and you can start the trigger with ENTER. Exit with BACK.

* **High Speed Burst**
  + On the first line you can see if it’s enabled or not.
  + On the second line you can set the interval (in ms / milliseconds).

You can change the interval using PREV/NEXT buttons and you can start the trigger with ENTER. Exit with BACK.

* **Setup Parameters**
  + Pre Focus. You can enable or disable the pre-focus delay. If it’s enabled, when you start a trigger mode, the TriggerAid will trigger the focus on your camera. It works only with wired camera connection.
  + Wired Triggers. You can select which trigger outputs are enabled or not. First only (usually Focus), Second only (usually Shoot), Both or None. None is used when you are using the IR connection to your camera.
  + Infrared Trigger. You can select the brand of your camera. Olympus, Pentax, Canon, Nikon, Sony, or Disable.
  + Light Trigger on HIGH/LOW. You can select the default value from HIGH to LOW.
  + External Trigger on HIGH/LOW. You can select the default value from HIGH to LOW.
  + Pre Shoot Delay. You can define a delay which executed **before** taking the shot, after trigger. In milliseconds.
  + Shutter Delay. You can define the delay which the trigger will stay enabled. A value of 250ms works with most cameras and/or flashes. Very low values may not work with your camera or flash, but you can do a trial-and-error-procedure to find out the optimal for your setup.
  + After Shot Delay. You can define a delay which is executed **after** the shot.
  + Time Lapse Exposure. You can define how much the exposure will be for the time-lapse mode. This is how the shutter/trigger will stay active on time-lapse mode.
  + Time Lapse Interval. You can define the time between shots in seconds (interval) for the time-lapse mode.
  + High Speed Delay. You can define the delay between shots/triggers. Delay is defined in ms (milliseconds).
  + High Speed Limit. You can define the maximum times that the high speed burst mode will trigger.
  + Shortcut. You can define what the BACK button will do, if pressed for more than 3 seconds.
  + Buzzer. You can enable or disable the built-in buzzer.
  + Buzzer Time: You can set the time that the buzzer will sound (in ms).
  + Button Delay. You can set the delay time when a button is pressed (in ms).
* **Information**
  + Information about the current version and memory status.
* **Factory Reset**
  + You can reset all the settings to factory defaults. You have to do that after replacing the firmware or at the first use of the TriggerAid.

**Miscellaneous information about the TriggerAid.**

TriggerAid can trigger a camera via infrared (acts as a remote control for your camera).   
When using wired connection to your camera, don’t forget to *disable* the infrared, as infrared triggered first and the result is lower speed.

To power the device you can use a 2.1mm jack (WARNING: The positive voltage must be on the center pin). Voltage can vary from 7 to 18V DC.

The current consumption is about 30mA in standby mode. When using the built-in light trigger or the time-lapse mode, the current is about 43mA. When triggered about 50-60mA. In Bulb mode the current is about 60mA (as it stays triggered for a long time). Using an external trigger the current is about the same as built-in light trigger but it depends on the trigger module.

When you do time-lapse or leaving the device powered for a long time, you can remove the LCD screen for reducing the power consumption. It goes from 30mA to 15mA in standby (LCD needs 15mA when you are using a backlit display).

Note that the consumption readings are measured by using a 8.4V battery.   
(2-cell LiPO batteries are great for long-time autonomy).

Behind the LCD is a trimmer that is controlling the contrast of the LCD.

There are two DIP switches near the TRS jack. When in ON state, they activate pull-down resistors on the trigger output (some flash units may need that feature but usually leave them both at OFF position).

Note that when connecting an external trigger, you have to double check for polarity. The polarity/pinout (+5V, Data, GND) is marked next to the input.

On the first use of the TriggerAid you have to do a *Factory Reset* (erases all memory and stores default/safe values).

Latest version of the software is located at <http://github.com/vegos/TriggerAid>.  
More information/photos/etc you can find at <http://www.facebook.com/TheTriggerAid>.

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