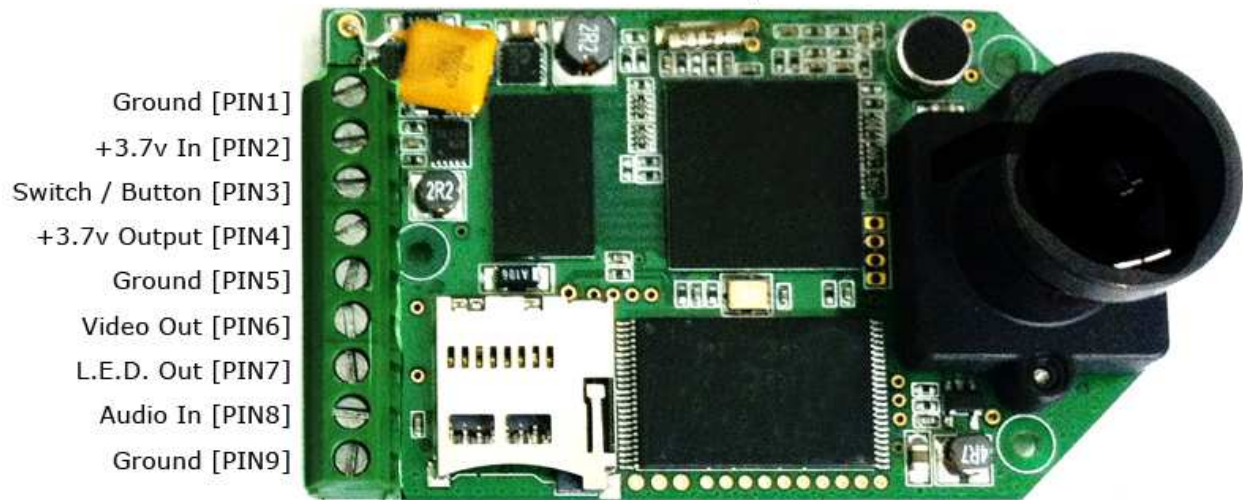


## HackHD Instruction Manual (Version 1)

### HackHD Pin Layout



Thank you for your purchase of the HackHD. It is important that you read these instructions before starting to use your camera. Since it is a hobby camera and many things can go wrong, the camera does not come with a warranty unless comes dead on arrival.

#### Precautions to prevent camera failure

1. Provide no more than 5v power. The HackHD uses 3.7v 1100mAH of power but should not get damaged as long as the voltage does not exceed 5v. If you apply more than 5V, you will break the regulator IC. (A 3.7V battery is about 4.2v fully charged). The board also works with 3 x AA 1.5V batteries.
2. Be careful not to reverse the battery polarity or plug in any of the components in the wrong screw terminal. This is very easy to do so always double check your cables before powering the board.
3. Always hold the camera by the side when it is powered on as your finger can short the camera out if placed on the board components (Especially if sweaty).
4. As with most electronics, keep away from moist as well as extreme cold and heat conditions (don't leave on the dashboard of your car on a summer day). Same goes for the LiPo battery, excessive heat can cause it to explode.
5. Be careful not to drop the HackHD, even when it's not connected to a power source.

## Setup Instructions:

We have included a starter kit with all HackHD's which includes an 1100mAh 3.7V LiPo battery, 2 male to male header pin, a tactile switch, 3 L.E.D.'s (2 are spares), a 2mm flathead screwdriver, and a 2GB microSD card. These setup instructions are assuming you are using the starter kit.

1. Connect the tactile switch to PIN3 and PIN5. The polarity does not matter.
2. Connect the long wire (positive) of the L.E.D. to PIN7 and the shorter one (ground) to PIN9. Only connect one L.E.D, the others are spares in case you blow one somehow or want a prettier color. You do not need to connect the L.E.D. for the camera to operate but it shows you the status of the camera so you should be familiar with how the camera functions before removing it. The main reason the L.E.D. is not onboard is so that it can be used as a hidden camera. (No more having to poke away at an annoying onboard L.E.D. with a screwdriver until it breaks).
3. Insert the included microSD card into the card slot. (The HackHD will support up to a 32GB microSD card)
4. Connect the 2 header pins to PIN1 and PIN2.
5. Plug the LiPo battery into the two header pins. Make sure the ground (black) is plugged into PIN1 and the positive (red) is plugged into PIN2.

## Operation Instructions:

You are now ready to record! The HackHD has two video recording modes--automode and standby.

**To record in automode**, push the switch down for under one second and release. The L.E.D. will become dim for a second, turn brighter for a few seconds and then start recording. It could take up to 8 seconds for the camera to turn on and start recording for the same reason a computer takes time to boot up. We know that a lot of important footage can be lost in 8 seconds but there was really nothing we could do to decrease the boot time. If this is an issue, you should use standby mode. **To stop recording in automode**, simply push down the switch again for under one second and release. The camera will stop recording and turn itself off. The advantages of automode are to save batteries and only fill the SD card with relevant footage if using sensors to trigger the camera.

**To record in standby mode**, push the switch down for at least 5 seconds and release. The L.E.D. will dim for one second and then become and remain solid. You will know that you booted up in automode successfully if you release the switch and the L.E.D. remains solid. If the L.E.D. is blinking, you either didn't hold the button down long enough or you accidentally released the switch and repressed it when trying to hold it down for 5 seconds. Once the L.E.D. is solid, the camera is ready to record as soon as you press the switch down for a fraction of a second. Unlike in automode, the camera will record immediately and you will not lose any footage. **To stop recording in standby mode**, push the button

down for a fraction of a second. The camera will then return to standby mode (LED will be solid). To turn off the camera in standby mode, simply hold the button down for about 3 seconds and release. The L.E.D. and camera will turn off (if you hold it down for 5 or 6 seconds it will automatically turn off without having to release the switch).

**Please note:**

You will know that the camera is recording when the L.E.D. is blinking slowly. When the battery drops below 3.6v, the camera the L.E.D. will flash faster to indicate the battery is running low. Once the voltage drops below 3.4v, the camera will save the video, stop recording, and shut down (if in automode) or remain on (if in standby mode). If the memory runs out while you are recording, the footage will be properly saved and the camera will automatically shut down.

**Troubleshooting:**

1. The L.E.D. is flashing very quickly. Causes =

- No microSD card
- Corrupt microSD card

2. You have a saved video on your microSD card but cannot open it in your computers video player. Causes =

- The power source disconnects (the camera needs a second to save the video, it cannot do this without power)
- The MicroSD card is not authentic. There are many 2GB microSD cards being sold below market price online that have 32GB printed on them. In these cases, only the first 2GB of space will actually be usable and after that, any file you add to the SD card will be corrupt.

**Tips and Facts:**

- If you are not using a L.E.D., you can verify the camera is on by feeling the top of one of the 3 microcontrollers (black) on the board. If they are hot then the camera is on (unless you just turned it off). This does not mean it is recording (could be in standby mode) so if you're unsure of the status of the camera, you should disconnect it from the battery and turn it on in the correct mode or connect the L.E.D. temporarily.

- Make sure all the screws on the pin terminal are tight and making a good connection to each component.

- The HackHD automatically saves the video when it reaches 4GB (about 45 minutes) and then creates a new video. This allows it to be used with FAT32 formatting and prevents a 32GB video from being completely destroyed if the power source mistakenly disconnects that the very end of recording.