

The GoPro series includes a time lapse mode. In this mode the unit will take a series of photos at a preset interval, such as every half a second. You can then take those photos and compile them together to make a video time-lapse.

Alternatively, this mode is ideal when you want to simply have photos of/during an event, but don't know when the moment of action will come (or won't be in a position to press record). For example, you might be mountain biking downhill and want to easily capture photos along the way (instead of video). Just plop it in time lapse mode and it'll capture photos at the defined interval.

Why use this instead of video (and then take a screenshot)? Well, the resolution is substantially higher with photos over video. Further, you tend to get crisper photos this way.

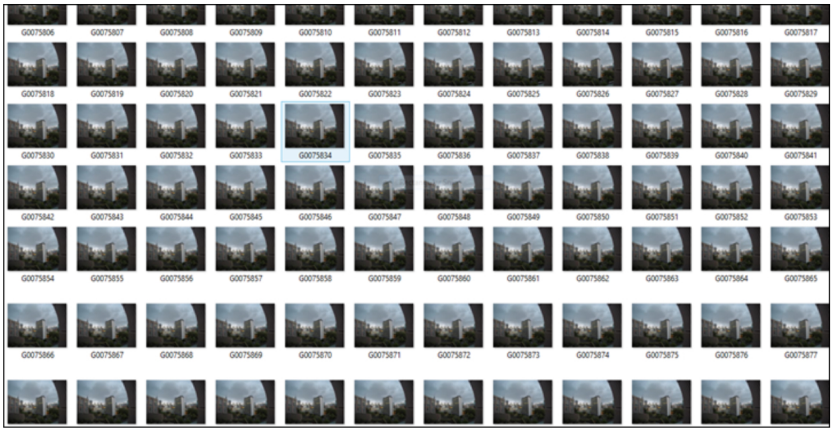
The GoPro series supports different intervals depending on the model. Here's the run-down for the 2014 series:

> *GoPro Hero4 Black: 0.5,1,2,5,10,30,60s*
> *GoPro Hero4 Silver: 0.5,1,2,5,10,30,60s*
> *GoPro Hero (base): .5s only*

You can configure this via the settings option on either the app or the camera itself (Black/Silver only).



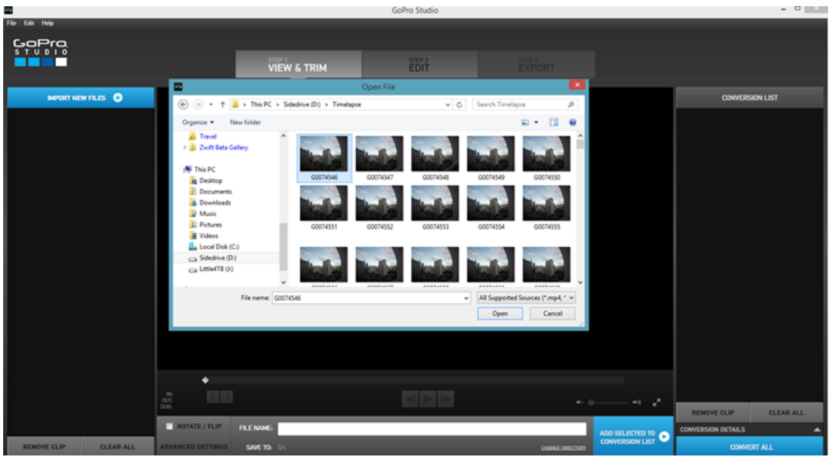
After you take a time-lapse series you'll end up with a gigantic pile of photos. Seriously, potentially thousands of photos:



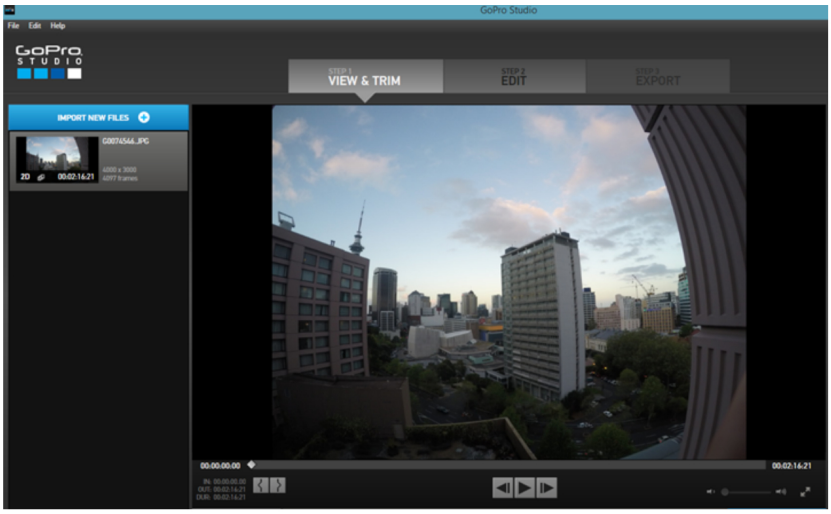
Next, you'll need some software to turn these all into a pretty video. Of course, if you don't want a video, then you're just done as-is.

For the video, GoPro Studio enables you to drag the photos into the software and it'll compile it into a video. There's

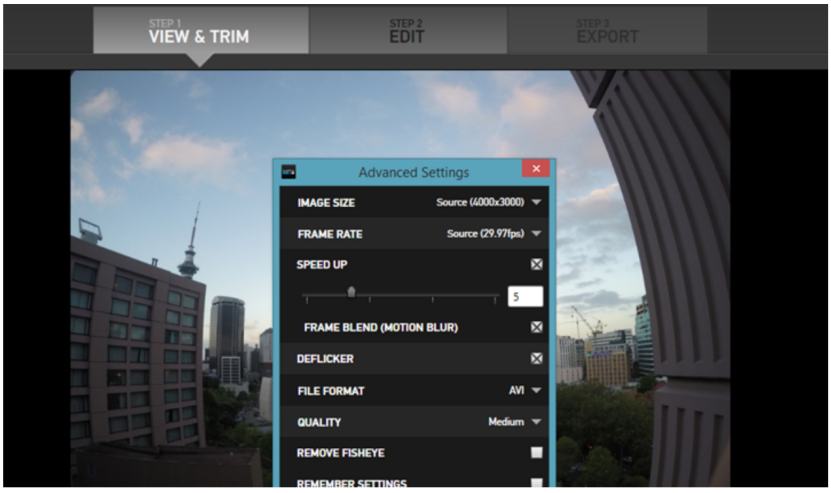
For the video, GoPro Studio enables you to drag the photos into the software and it'll compile it into a video. There's two ways of doing this. The first is to just drag the first photo in the series into GoPro studio (and it'll do the rest automatically). Or, you can manually put them all in a folder and then drag the folder in. Whatever floats your boat:



It'll automatically compile the clips together and show you the estimated video length.



With that, you can then adjust how fast playback will be. At this point you'll need to do a bit of mental math on how long you want the video to be. In general, most times you'll playback video at 24 or 30FPS. In my case, I sped it up 5 times, as the original length was going to be 2 minutes and 20 seconds, which is an eternity sitting watching a single view out my hotel window. So, 1/5th of that seemed appropriate.



Now some of this you'll want to think through before you even start shooting, adjusted on the camera itself. By default the unit will shoot at .5sec increments. You'll need to figure out how long you want your completed time-lapse for to determine which settings you'll use.





Once that's set you can then export it all out into one pretty video, such as below:



Now, while this is quite functional – it can be a bit complex for the beginner. This is one area that I prefer Garmin's method with the VIRB. In their case they just build the video for you on the device itself. So as it records each image it automatically compiles it. You can see examples of this in my review within the VIRB In-Depth Review time lapse section.

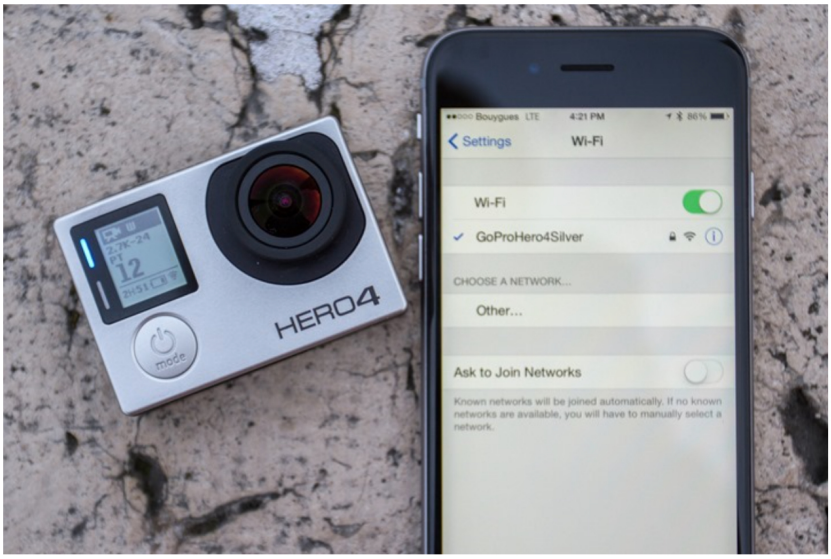
Of course, there are pros and cons to each option. With the GoPro method you can take these super-high resolution time lapses and then crop portions for more advanced video editing. Whereas with the Garmin option it's already a 1080p video when things are done. And of course, the VIRB also supports the stand-alone still photo interval method as well.

MOBILE APP (BLACK/SILVER ONLY):



The Hero4 Black and Silver carry through the capability of being able to control and transfer data from the camera to the phone. This allows you to use your phone as a secondary display for the camera, or, just a quick way to get photos up to share with friends via social media. Note, this is not compatible with the 2014 GoPro Hero base unit.

To begin, you'll need to enable WiFi on your Hero4. Just hold down the left side button until the blue light blinks on the front of the GoPro. Then, on your mobile device connect to the WiFi network.



You'll need to go through a setup of pairing steps before moving forward. They're fairly straight forward and ensure that you have a unique name for each unit, and unique password.

Once that's done you can go ahead and open up the GoPro app and then click "Connect & Control" to start the connectivity to the GoPro.



It'll start on the preview screen, which shows you the exact same view as that of the camera. You can rotate the phone as well to get a cleaner view.



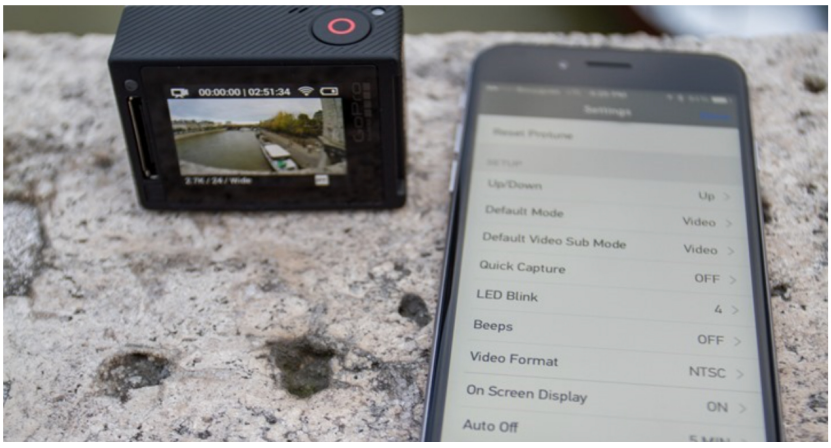


Along the bottom you can start a recording via the big red button, as well as change the mode.



If you click the little tool icon, you can go into the settings and tweak every camera mode and overall camera settings quickly and easily. This is great when you are taking iterative shots at different resolutions or frame rates and don't want to mess with the camera or touch it physically.







Next, you can transfer both photos and videos. To do this within the GoPro app you'll tell it to enumerate the files. It may take a few seconds. Or, in the event you have a time lapse pile of photos – it may never actually complete at all (as I learned). Thus, I wouldn't recommend trying to enumerate it if you just took a few thousand photos.

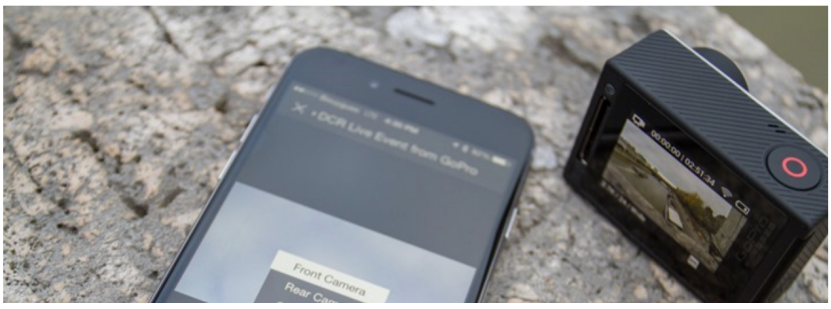


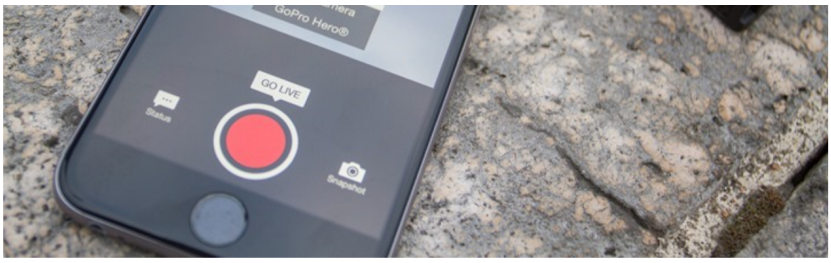
In any event, you can select a given photo and then copy it straight to your local phone album. The same is true of videos as well.



Overall, while seemingly straight forward and potentially simple, the phone app capability on the GoPro app is actually exactly one of the best (if not the best) out there from an action cam perspective. Some other action cams don't allow live preview while recording, for example. Or, they don't permit you to transfer files. Or, the apps are just poorly coded.

LIVE STREAMING FUNCTIONALITY (BLACK/SILVER ONLY):





The same week that GoPro announced the Hero4 lineup, they in conjunction with Livestream announced the ability to stream your GoPro recordings live to the internet via the Livestream service. This would require the use of your mobile phone, which connected to the GoPro via the GoPro WiFi network, and then streamed the data out via your cellular data connection.

Unfortunately, as of this writing GoPro and Livestream omitted one minor detail: It doesn't actually work on the Hero4 lineup yet. Instead, it only works on the Hero3 lineup as of this time. Livestream says an update is coming shortly to the app, but it's unclear if that'll be this afternoon, this year, or next year. Still in order to give you a feel for how it works in the meantime, here's some experiments I did on the Hero3 – which according to Livestream should work identical to that of the Hero4. You can view those experiments here.

Once this functions on the Hero4, I'll come back and update this section accordingly. Note though that the resolution is highly limited here, as in, 1995 AOL download time limited. It makes even the most pixelated leaked celebrity sex videos look brilliant. So don't expect too much here unfortunately.

PORTS & CONNECTIVITY (HDMI/AUDIO/USB):



The Hero4 Black and Silver include ports that you can use to stream both audio and video off of the device. The ports are standardized, which means it's fairly easy to utilize them (in comparison to some action cameras that have funky proprietary connections).

The first port you'll find is the mini-USB port. The primary use for most people will be charging the GoPro as well as transferring photos/videos to a computer. Those are both fairly straight forward scenarios in that the GoPro will simply show up now as an imaging device on your computer (this is actually a change from previous lines, where it enumerated as a standard USB device):





But the mini-USB port is also capable of transmitting and consuming non-digital audio and video to other devices. For example, you can connect the 3.5mm stereo audio connector cable to it, and then plug a microphone to it.

Note on the audio connector, that this is only supported on the Hero4 Black/Silver (and older Hero3/3+ units). Additionally there are some microphones that are only supported on the Hero4 Black Edition. So you'll want to double-check their compatibility list if you're using a separate mic.

Alternatively, you can utilize one of two different composite video cables. One that includes the 3.5mm mic input, and one without it. In either case, quite frankly most people won't be doing this as it's pretty crazy low resolution these days.

Lastly for the mini-USB, it can actually be used by some remote viewing systems directly. For example, on the First Person View (FPV) system I have for my DJI Phantom2 unit, it plugs straight into the mini-USB port and transmits that video, no HDMI required (Note: At the moment, with the standard Zenmuse H3-3D system, this doesn't quite work yet due to a bug on the Hero4 and/or Zenmuse).

Next, we've got the micro-HDMI port. This port enables you to playback video and photos straight to a TV using an HDMI cable. Note though that your regular HDMI cable likely won't work here, since most HDMI cables you have around the house are standard HDMI connectors are both ends. The micro-HDMI connector is on the GoPro end of the equation and much smaller. You tend to see this also used in some tablets, such as the Microsoft Surface's and some Android tablets.

The use of the HDMI cable method is commonly done to feed a live external monitor during production as well, for those doing a bit more work from a videography standpoint.

When you connect the HDMI cable, you'll see additional options on your TV as well, a bit of a user interface if you will. This allows you to then navigate the videos/photos and more easily play them back or otherwise check that you got the shot.

PROTUNE FUNCTIONALITY (BLACK/SILVER ONLY)



There's a fundamental reason why you see Hollywood shoot with the GoPro, and the core of that reason is ProTune and the flexibility offered within it. ProTune is one such feature that has long been leveraged in GoPro units to offer more flexibility in editing afterwards. It's sorta similar (though not exactly) to the way that higher end photographers primarily shoot RAW photos for the ability to better tweak photos afterwards, people also shoot GoPro video with ProTune so they can easily tweak it afterwards. When I talk to 'tweaking' I'm referring to the ability to drive change easily in things such as White Balance, ISO, Sharpness and more.

For example, virtually all of the photos you see here on the blog (not just in this post, but all posts) I shoot with higher end cameras in dual JPG/RAW formats. This allows me to clean them up in Lightroom and make any color/lighting corrections as required. The same applies here with GoPro cameras using ProTune with the GoPro Studio.

Now this doesn't actually just apply to video in the case of GoPro, but also to photos. So you have that same power there too.

Now, GoPro notes there's no downside to enabling ProTune. It won't make your images/video 'require' additional tuning. So you might as well enable it and then decide later if you need it in post production.

A better question is whether or not having (or not having) ProTune is a deciding factor. Ultimately, the thing here to keep in mind is ask yourself whether or not you plan to pour through your videos and spend hours (many hours) editing them. If not, then I wouldn't let ProTune be a deciding factor in camera selection. If you are spending time in Adobe Premier Pro or Final Cut Pro, then you're more likely to be aligned to the group of individuals that would utilize such details. For me personally, I sit on the border. While I live and die by RAW photos in photography around here, I don't spend quite as much time cleaning up videos since I'm not a terribly great video editor.