

## iPad Image Filetypes - Video

AVC / H.264

HEVC / H.265

## iPad & iPhone

(iOS 11 and above)

iPaddlers

Designed for iPad. Relevant to the iPhone also.

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**GUARDRAIL**  
Tutorials

# Video - A Series of Still Images

Usually with an accompanying sound stream

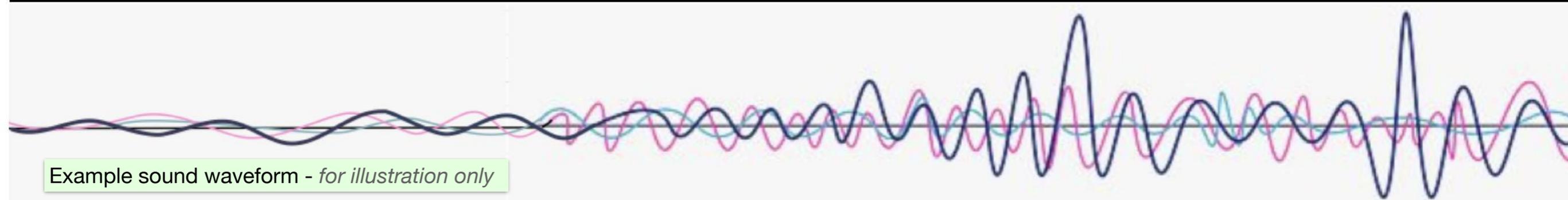
# macOS



QuickTime Player - will use either H.264 or H.265 video. Either will still use the .MOV file extension

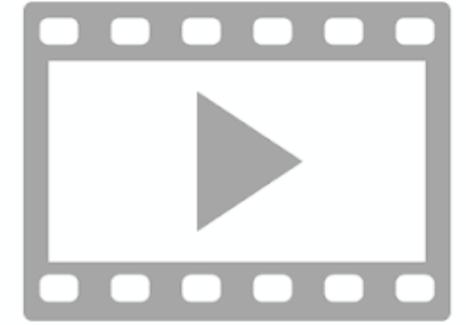
On **Apple** computers running **macOS**, video files normally open in **QuickTime Player** by default. A limited amount of editing can be done in **QuickTime**, however, for more serious editing it is better to use **iMovie**. For professional movie editing, the paid **Final Cut Pro** is available.

On the **iPad**, video will play natively in the **Photos** app. Video editing can be done in the free **iMovie** app, which can handle most common video file types (such as MPEG-4, AVC and the newer HECV)



Example sound waveform - for illustration only

# High Efficiency Video Coding (HEVC)



From iOS11 (2017) Apple implemented the **HEVC (High Efficiency Video Compression)** or **H.265 video** format. It is not a proprietary Apple invention, but rather a global standard developed by the MPEG group (which develops the standards for encoding compressed digital audio and video)

However, not all iPad and iPhone models running iOS 11 or later are capable of fully utilising this technology. The following is a list of those that are (*from support.apple.com/en-us/HT207022*):

- iPhone 7 or iPhone 7 Plus or later
- iPad (6th generation) or later
- iPad Air (3rd generation)
- iPad mini (5th generation)
- iPad Pro (10.5 inch)
- iPad Pro (11 inch)
- iPad Pro 12.9-inch (2nd generation) or later

For whichever iOS device you are using, the benefits of HECV may vary according to the video sampling hardware that comes with the device. Anyway, we are going through a transition from AVC/H.264 video, to HEVC/H.265 and the main objective of this is to provide good quality video with better compression. Frame sampling rates are also very important. This is also a big factor in determining file size. The end result is this: smaller file sizes, better use of storage media, faster processing, and quicker file transfer rates, especially over the internet.

NOTE: For the sake of simplicity, I will use the term **AVC** instead of **MPEG-4** and **H.264** video (all basically the same). The term **HEVC** will be used instead of **H.265** and **MPEG-H** (which are an improvement on the previous standard).

# Apple Apps for Managing Video

On **MacOS** (iMac, MacBook Pro etc) there are these native apps for working with video files:



**QuickTime Player** - will use either H.264 or H.265 video. Either will still use the .MOV file extension



**iMovie** - opens the usual video file types. Can export to different formats with different specifications



**Final Cut Pro** - professional movie editing app from Apple

On the iPad (and iPhone) there are the following apps:



Apple Photos



iMovie

On Apple computers and mobile devices, there are various apps for managing video files. On the **iPad** (and iPhone), the **Photos** app provides some very basic video editing capability. Now, for newer devices, there is also the free **iMovie** app for creating, editing and exporting movies by a '**Save Video**' option (probably to a QuickTime movie file **.MOV** which is essentially an **MPEG-4** or MP4 video file type).

iPadOS

## Capturing Video - iPad OS

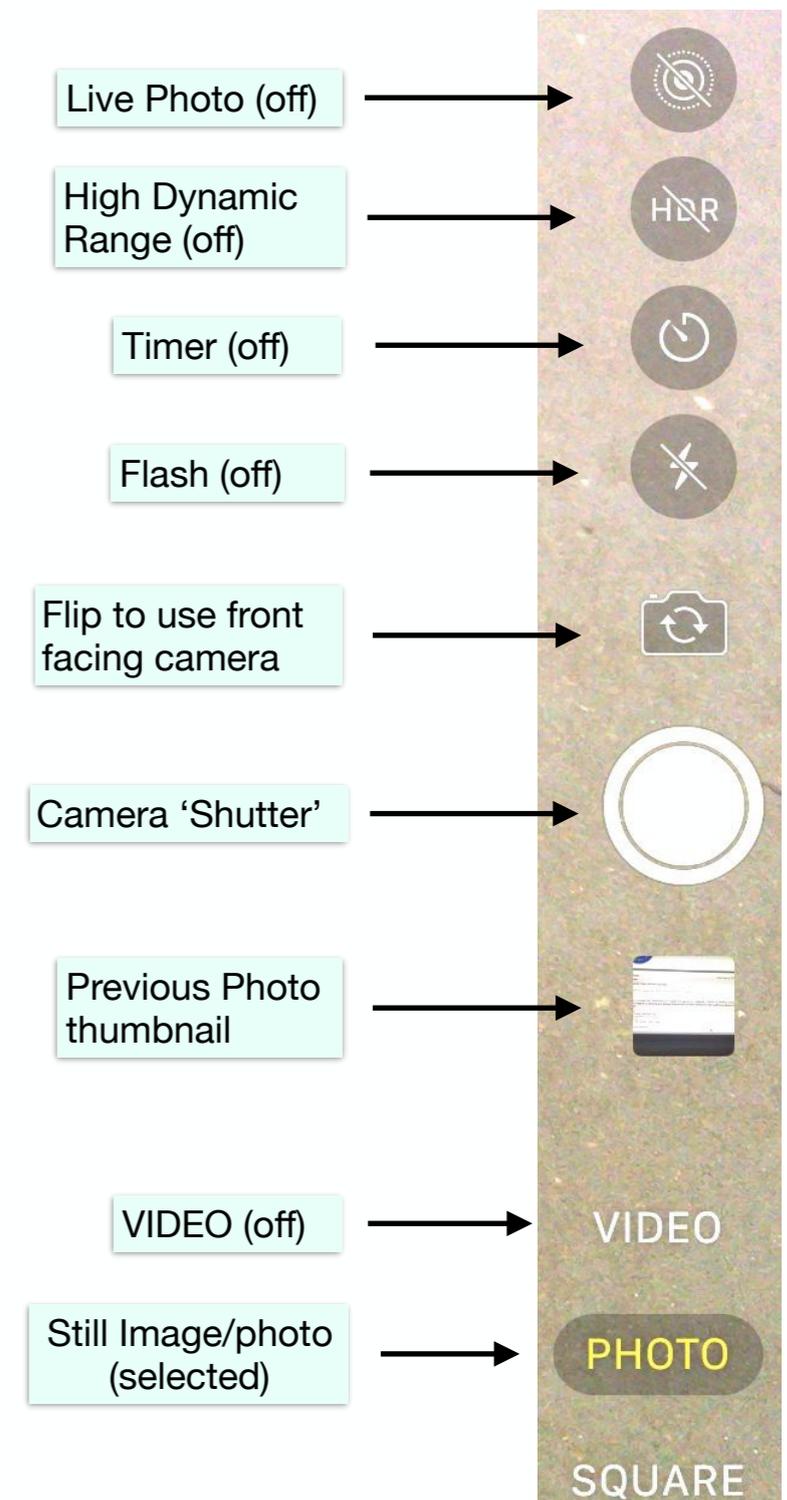
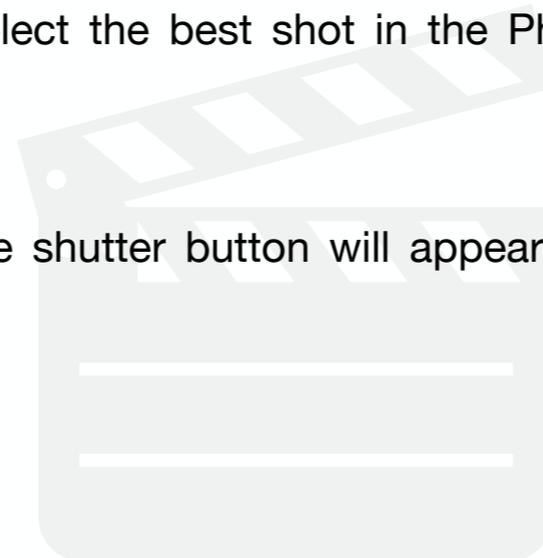


When you open the **Camera** app on any newer iPad, you will see the PHOTO option selected (by default). You can switch to VIDEO by tapping that particular option.

On newer devices (with iOS11 or later), when you film in video mode, the video is saved to the **Photos** app as a video file (HECV). Some simple editing can be done on the video within the Photos app, such as cropping (and not much else).

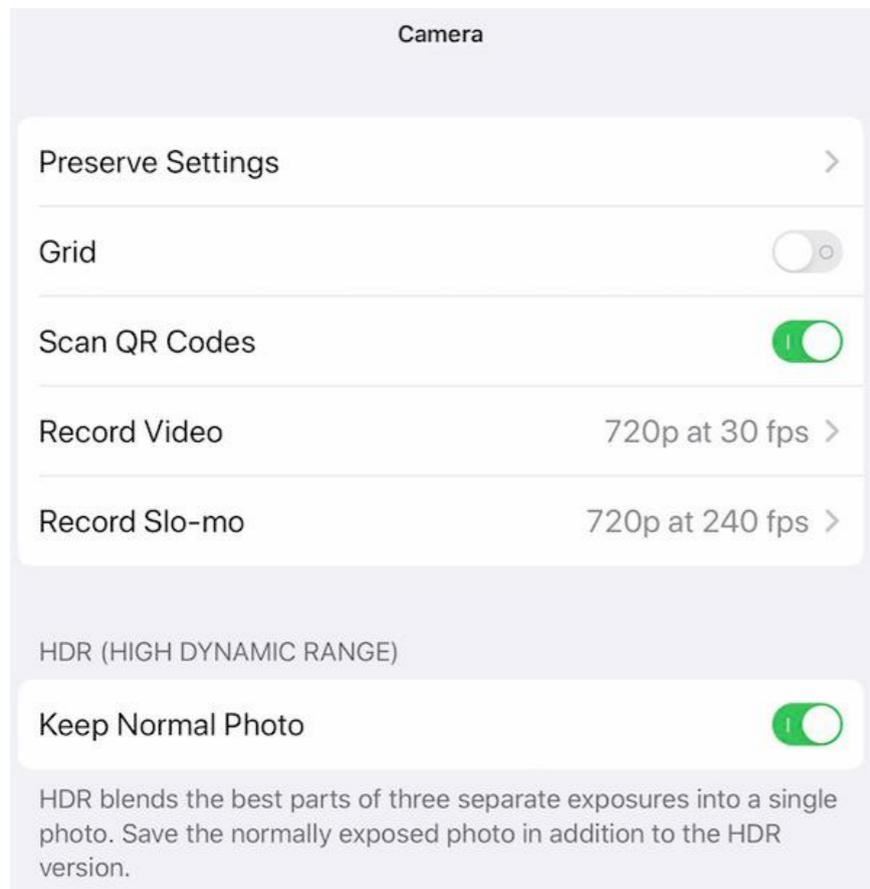
- **Live Photo** apparently captures 1.5 seconds of video before and after the shutter is pressed, to capture roughly 45 frames of movement at 15 frames per second. It will capture sound also (in the default setting) like normal video
- **HDR High Dynamic Range** (when turned on) captures 3 images, at different exposures, and blends them together into an optimised still image (not video)
- **Burst Photos** - By holding down the camera 'shutter' button (in PHOTO mode), a **photo burst** will be captured. This will be a series of still images proportional to how long you hold down the shutter. You can select the best shot in the Photos app using Edit mode.

When using the **Camera** in VIDEO mode, the shutter button will appear red (as opposed to white for still images).



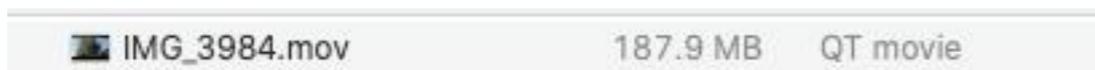
## HEVC / H.265

iPad Pro 9.7" (since iOS11) - an example



iPad Pro 9.7" iOS13 - Settings > Camera

On an iPad running iPadOS 13 the Camera options are a little different to the iPhone. You have the option to change the resolution and frame rates for video recording. These can be changed later, if need be, by using video editing software such as iMovie. If you AirDrop the video file to your Mac you will notice that it is a .MOV file type (QT movie) and will open in QuickTime by default (*see screenshot below*).



iPad Pro 9.7" iOS13 - Settings > Camera > Record Video



iPad Pro 9.7" iOS13 - Settings > Camera > Record Slo-mo

# Summary - Video File Types on iPad

## iPad since iOS11

- **VIDEO** is simply just a series of still images played in succession, usually with an accompanying sound track
- **HEVC or H.265** - Apple implemented this new standard to allow for greater file size reduction and retention of image quality
- **HEVC (H.265)** with better compression succeeds the older **AVC (H.264)** standard commonly used in Blue-ray technology
- **MPEG - Motion Picture Engineers Group** develops the standards for video file compression
- **QuickTime Player** on Apple Mac computers uses the file extension **.MOV** for both **AVC (H.264)** and **HEVC (H.265)** video files
- Since **iOS11**, Apple has implemented **HEVC (H.265)**, but only the newest devices fully support it (since about mid 2016)
- **QuickTime Player, iMovie** and **Final Cut Pro** are video apps on macOS computers (such as the iMac and MacBook)
- **iMovie** can be used for video editing on **iOS** and **iPadOS** devices
- The **Photos** app has limited editing capability - cropping, light and colour balance adjustment
- **Resolution, frame rate** and **degree of compression** largely determine file size