Cut Lines: Using the AVCHD Format in Final Cut Pro

By Joe McManus  -  Posted Jan 31, 2009

This month we’ll look at the AVCHD format and how it fits into your Final Cut Pro workflow. This relatively new, H.264-based video format is showing up on many new cameras, so chances are you will come in contact with it in the future—if you haven’t already. To work with AVCHD, you will need Final Cut Studio 2 or the latest version of iMovie. We will look at how to capture footage in both. Since the footage is already on a hard drive or memory card, this process is more like a hard drive transfer than a traditional tape-based capture.

One issue with AVCHD is that (like HDV) it’s based on a codec that is not really built for editing in the way that DV is. DV is an intraframe codec, which means that each frame of video is compressed using redundancies within the frame itself, and thus can be reconstructed and interpreted by your computer’s processor without having to refer to other frames in the video stream to gather the necessary image information. HDV, being MPEG-2-based, and AVCHD, being H.264-based, use both intraframe and interframe compression, which means most of the frames in your video stream need to be referred to other frames to gather all the image information that constitutes the frame. Because all this cross-referencing is so processor- and memory-intensive, it can really slow down your editing. So Apple converts AVCHD footage to one of two intermediate codecs—ProRes 422 or Apple Intermediate Codec (AIC)—when ingesting the video. More on these codecs and how they affect your video and your workflow later.

The first thing you might notice about AVCHD cameras is the lack of a FireWire port. Depending on the camera you are using, you will most likely be connecting to the computer with a USB cable. On one camera we tested, we needed to activate USB transfer mode on the camera before Final Cut would recognize the camera. In order to work with AVCHD in Final Cut Pro, you will need an Intel-based Mac.

You might ask yourself why you would want to be familiar with the AVCHD format. I have found an increase in inquiries lately from people who have purchased hard drive-based cameras who find themselves with a full memory-intensive, it can really slow down your studio and pay you to convert and return their footage in whatever medium they like, creating a nice new income stream for you. A recent client of mine wanted DVDs of her footage plus a digital copy to archive, and was quick and easy for me to create this for her. This kind of job doesn't really require much input from the client apart from the initial drag and drop into the Capture window and then taking those clips and dropping them into Compressor. Taking the ProRes clips to SD DVD produces a very nice image for those who are having trouble getting their HD footage to look nice in the SD format. You might even want to switch to ProRes rendering in your HD projects. Our company did this recently, and we are very pleased with the results.

Last year, our company purchased an AVCHD camera, the Panasonic HDC-SD5, that uses SDHC cards rather than an internal hard drive, but the process is pretty much the same. Instead of hooking the camera directly to the computer, I remove the memory card and place it into an adapter (which came with the camera) that plugs into the USB 2.0 slot on my Mac. Final Cut and iMovie see this card reader as an external drive in the same way that they see still cameras (in fact, many of these AVCHD cameras are also still cameras and will launch iPhoto when connected).

While used mostly as an emergency backup (our Sony Z1s remain our main production cameras), we do sometimes use them as a third camera for tricky angles in places where putting a larger camera might not be possible. The footage is nowhere near as good as what you would get from a Z1—even though our particular model has 3 CCDs, unlike a lot of consumer-oriented AVCHD cameras—but the SD5 does produce decent images in good light. I haven't tried some of the more professional models (such as the Panasonic AG-HMC70 or the HMC150) that get good reviews online and might be worth a look if you are looking for a tapeless option.

Step 1: Open the Log and Transfer Window

Once the camera is connected, you need to open the Log and Transfer window. To find Log and Transfer, go...
into your File menu, look just below Log and Capture, and select it, as shown on the left in Figure 1. The Log and Transfer window displays the inventory of clips in the camera’s memory, as shown on the right in Figure 1 (below).

Step 2: Disable the Perian QuickTime Plug-in (if Necessary)

One thing that might happen here is that your computer might unexpectedly quit. This happened to me, and I had to search the Apple support forums for the answer, but it is a relatively simple fix.

You may have the Perian QuickTime plug-in installed. Perian is a free plug-in that extends QuickTime’s capabilities and allows it to play some additional formats such as AVI and DivX. You will need to disable this plug-in if you want to transfer your footage.

To disable the plug-in, go to System Preferences, and there should be a Perian icon (Figure 2, below, left). Clicking on this brings up another window that gives you the option to remove the plug-in (Figure 2, below, right). You can reinstall Perian at any time from the same screen.

Step 3: Drag Footage Into the Log and Transfer Window

Back in Final Cut, the next step is to get the footage onto your Mac. You’ll notice that each time you stopped the camera while shooting, a new clip was created. This makes it easy to prescreen your footage before you even import it. You can drag the clips you want to import into the lower-left part of the Log and Transfer window (there is even a helpful Drag Media Here prompt), as shown in Figure 3 (below).
Step 4: Capture the Footage to ProRes 422

Media is captured using an intermediate codec called ProRes 422. ProRes is a high-definition format that uses less hard drive space than uncompressed video but provides very high-quality images.

The benefit of using an intermediate codec—as explained earlier—is that it is designed for editing, and it maintains more image-preview quality during editing. **Figure 4 (below)** shows the captured footage in the Clip Information window.

Step 5: Or Capture Using iMovie

There is another way to get your footage onto your computer for use in Final Cut, especially if you haven’t upgraded to Final Cut Pro 6/Final Cut Studio 2: You can capture it using iMovie. The most recent version of iMovie has everything you need to transfer your footage.

Note that iMovie uses the Apple Intermediate Codec instead of ProRes. This saves you disk space if that is a concern.
concern, and the quality difference will not be very noticeable. My clip, which is 6 minutes and 18 seconds, used up 5.51GB of space using ProRes and 4.49GB using the Apple Intermediate Codec.

The capture interface is a little different from the one in Final Cut, but the idea is the same. A progress bar underneath each clip selected for import tells you how much time is left before the transfer is done (Figure 5, below).

Any footage captured in iMovie can be imported into Final Cut, and you can even combine different codecs on the same timeline. (Final Cut will render the clips to match the sequence settings.) Another helpful thing that Final Cut will do is prompt you if you want to change the sequence settings to match the footage you are inserting into the timeline.

iMovie lets you specify which folder to import your clips to, so make sure you select something that will be easy for you to find when you go to import it into Final Cut. You can also specify in the Log and Transfer window in Final Cut which of these two codecs you wish to use. Because 1TB drives are so cheap these days, I’ve chosen to use ProRes most of the time.

**Step 6: Transcode to Your Delivery Format**

The final step is to use Compressor to turn your ProRes or AIC movies into MPEG-2, HDV, or whatever format you need. You can also mix the footage in with your other formats and let Final Cut do the work, depending on your project.

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