

Understanding
AVCCAM Workflow

Editing **AVCHD** with iMovie **09'**

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THE AVCHD WORKFLOW ON APPLE COMPUTERS



Apple Intel-based Mac computers (MacBookPro Laptops, iMac or Mac Pro Towers) work really well with Panasonic AVCCAM cameras shooting AVCHD footage. Working on a Mac platform presents four editing solutions, based on your budget and the complexity of your final edit. The four editing applications are: iMovie '08 or '09, Final Cut Express 4, Final Cut Pro (v.6.05 or higher, Part of Final Cut Studio) and Adobe Premier Pro as part of CS4.



This paper will discuss a typical AVCHD workflow for editing with and outputting from iMovie'09, part of iLife'09. For detailed information on editing with iMovie please see: www.apple.com/support/imovie

EDITING & OUTPUTTING AVCHD WITH APPLE IMOVIE '09

KEY POINT #1. TO EDIT AVCHD IN IMOVIE '09 YOU MUST HAVE AN INTEL BASED MAC COMPUTER

One of the fastest and easiest ways to edit AVCHD footage on a Mac computer is with iMovie '09 software (part of the iLife '09 bundle).

Although this application is not as sophisticated as Final Cut Express 4, Final Cut Pro or Adobe CS4, for simple editing it is quite good. Like the other Apple editing tools, iMovie does not recognize AVCHD natively, it will transcode your footage using Apple's Intermediate Codec. It is quite fast, but does require additional storage on your hard drive.

TRANSFERRING AVCHD FOOTAGE TO YOUR MAC.

When you are ready to transfer your AVCHD footage from your camera to your computer, there are basically three different approaches you can take. The fastest and easiest method is to simply place your camera in PC mode and connect to MAC via USB cable. If you don't want to tie up your camera, you can remove your SDHC card from the camera and mount in on the computer using an external SDHC card reader. And finally, you can copy your footage to an external hard drive for later editing. We will look at each approach.

KEY POINT #2. WRITE PROTECT YOUR SDHC CARD PRIOR TO MOUNTING.



Your SDHC card has a small little slider on the left hand side of the card labeled Lock. Push this slider down to write protect the data on your card. This is a critical step to protect your footage before you insert the SDHC card into your Card reader, Camera, or computer SDHC Slot for mounting. Your Mac will see the SDHC card as a No Name Drive (see below) and immediately try to index the card. In indexing the card, it will try to write data to it. If you have not write protected the card, you could lose some of your footage as the Mac does this indexing. Don't risk it, just write protect the SD card before you mount it on your computer.

APPROACH #1

TRANSFERRING YOUR AVCHD FOOTAGE FROM PANASONIC AVCCAM CAMCORDERS TO YOUR MAC.

You can, as expected, transfer your AVCHD footage directly from your camera. The next few steps will show you how to do this. Unfortunately, this ties up your camera and prevents you from shooting with it while you are transferring.

Note: AVCCAM cameras do not have a IEEE1394 Fire Wire output, only USB. Since the AVCHD format is file based (not streaming oriented), there is no requirement for a Fire Wire output.

STEP #1 - CONNECT YOUR PANASONIC CAMERA VIA A USB CABLE TO YOUR COMPUTER.

Note: It is recommended to connect your camera to an AC power supply, as a low battery could damage your transferred footage. Also, write protect the card as instructed prior.

STEP #2 - TURN THE CAMERA TO THE PC ON POSITION



On the **AG-HMC70** camcorder, this is accomplished by moving the record button to PC. This puts the camera into USB device mode, making it appear as a card reader to the MAC OS. The SDHC card inside the camera will mount on the desktop as a No Name Volume.



On the **AG-HMC150** camcorder, you must push the mode button on the back of the camera. The light will change from Cam to PB for playback, push again and the PC light will turn on. This puts the camera into USB device mode, making it appear as a card reader to the MAC OS. The SDHC card inside the camera will mount on the desktop as a No Name Volume.



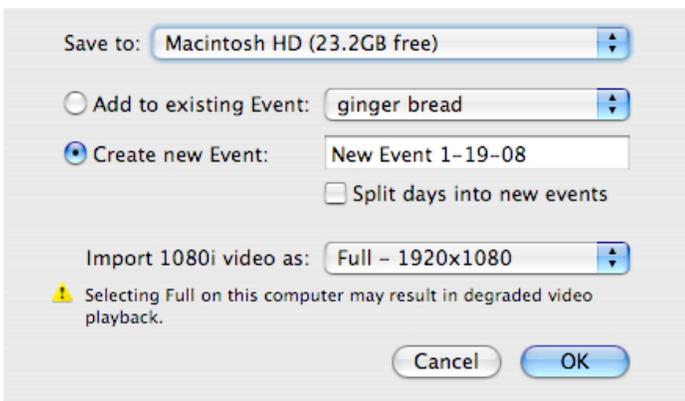
On the **AG-HMC40** camcorder, when you connect your USB cable to your computer, the LCD display on the camera will prompt you to touch either the PC or Printer Device button. Touch PC. The Printer Option here is for the still picture functionality of the camera, and has nothing to do with this video file transfer.

STEP 3 – OPEN IMOVIE '09. iMovie will automatically sense the camera and open up an import video window with thumbnails of all your clips.

You can look at any clip in the viewer window and you can choose to import all clips, by clicking import all. Alternatively, if you want to import only selected clips, you can check the clips you want and click on Import Checked.

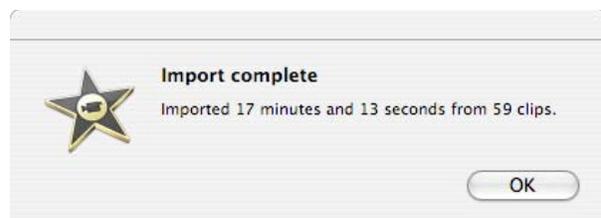


STEP 4 – DECIDE WHERE TO STORE YOUR CLIPS AND AT WHAT SIZE. A pop up window will appear and you should choose the hard drive where you want to store your video. Here you can also choose how you want to organize your imported video in the Event Library. And finally you will need to choose the size you wish to import, either Full – 1920x1080 or Large – 960x540.



Since your Panasonic AVCHD camera records in full 1920x1080, you should select Full.

STEP 5 - CLICK OK. This is the step where iMovie will transcode AVCHD to the Apple Intermediate Codec. Depending on your clips, it may take minutes or more than an hour for iMovie to import and create thumbnail images of the clips. When the import is complete you will see a message similar to this.



APPROACH #2

TRANSFERRING AVCHD FOOTAGE DIRECTLY FROM THE SDHC CARD TO YOUR MAC.



If you don't want to tie up your camera for transferring your footage, you can remove the SDHC card from the camera and mount it on your computer. Many new Macs have an SD card slot. Just insert the SDHC card in the slot.

If you are using an older Mac then you will need a SDHC-to-USB reader/writer like this one.



Just insert your SDHC card into the reader and connect it to a USB port on your Mac. It will appear as a No Name hard drive on your desktop. iMovie will detect the card and think it is a camera connected. You will now be ready to open iMovie '09 and begin editing.

APPROACH #3

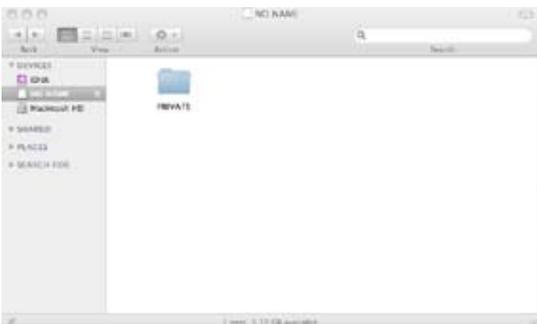
COPYING AVCHD FOOTAGE TO A HARD DRIVE

STEP #1 – MOUNT THE SDHC CARD ON YOUR COMPUTER

Many people prefer to copy their footage to a hard drive before editing. This is a good practice. Not only does this free up the SDHC card so that you can use it again after verifying that the transfer is successful, but it gives you a back up if you choose to keep the SDHC card. After you have inserted the SDHC Card into the USB reader, find the No Name Hard Drive on your desktop.



STEP #2 – OPEN THE NO NAME HARD DRIVE



When you open No Name, you will see a folder named "Private." You will want to copy this folder to your hard drive. Do not try to copy from any other folder within the "private" folder, as the structure of folders inside is important. Create a destination folder that you have named with an easily recognizable identifier, such as the project and the date. It is highly recommended to verify the integrity of the copy before re-formatting your SDHC cards. Also, consider your backup strategy as you begin to accumulate larger numbers of folders and projects. The more planning up front, the easier your life will be when you decide to re-visit material for different sessions (re-purposing content).

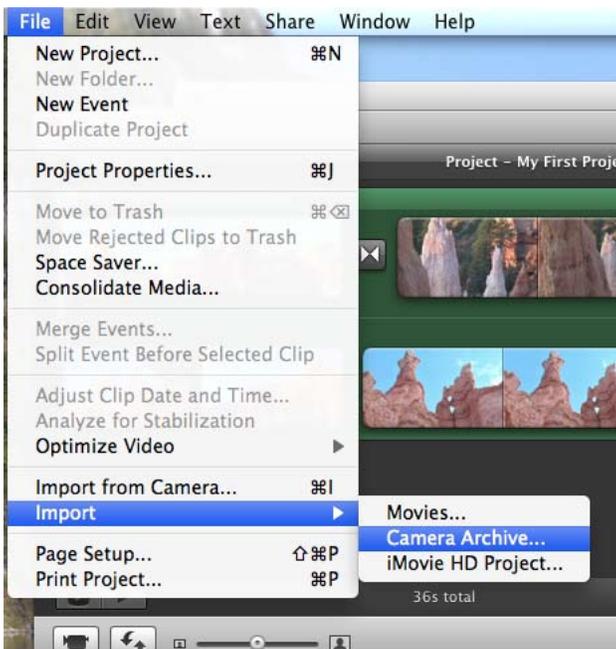
Note: Panasonic recommends 3rd party applications such as Shot Put Pro from Imagine Products for copy and verification. Shot Put Pro provides a safe backup to up to 3 simultaneous target locations (such as hard drives or Blu-ray burners) with validation of the copy. Please see www.imagineproducts.com for more information.

TRANSFERRING AVCHD CAMERA ARCHIVED FOOTAGE TO YOUR MAC

If you have transferred your footage to an external hard drive, you can still get your footage into iMovie. Connect the hard drive to your computer.

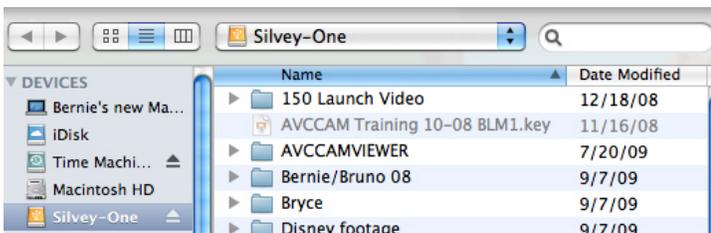
STEP #1 – OPEN IMOVIE.

Click File>Import>Camera Archive.



This will open a navigation window.

STEP #2 – FIND YOUR FOLDER.



Click on the folder that contains your footage, in this example select “Bryce” and it will appear in the import window of iMovie.

STEP #3 – IMPORT CLIPS.

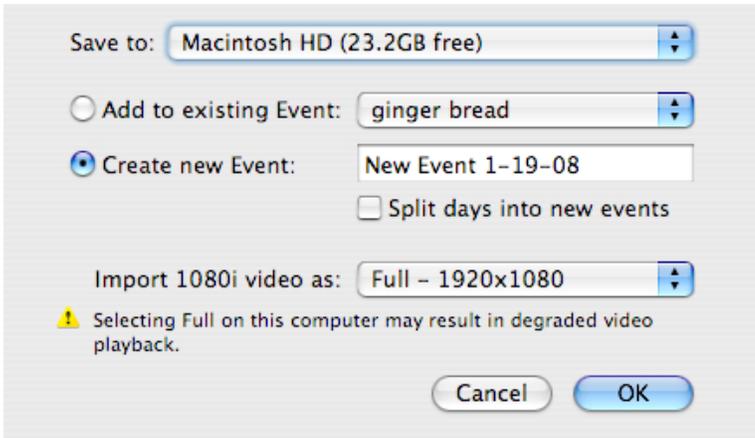
iMovie will automatically sense the camera and open up an import video window with thumbnails of all your clips.



You can look at any clip in the viewer window and you can choose to import all clips, by clicking import all. Alternatively, if you want to import only selected clips, move the slider on the bottom left to Manual. Now you can check the clips you want and then click on “Import Checked.”

STEP #4 – DECIDE WHERE TO STORE YOUR CLIPS AND AT WHAT SIZE.

A pop up window will appear and you should choose the hard drive where you want to store your video.

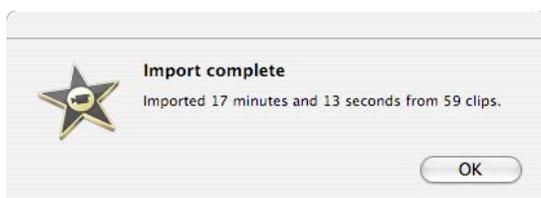


Here you can also choose how you want to organize your imported video in the Event Library. And finally you will need to choose the size you wish to import. Either Full – 1920x1080 or Large – 960x540.

Since your Panasonic AVCHD camera records in full 1920x1080, you should select Full.

STEP #5 - CLICK OK.

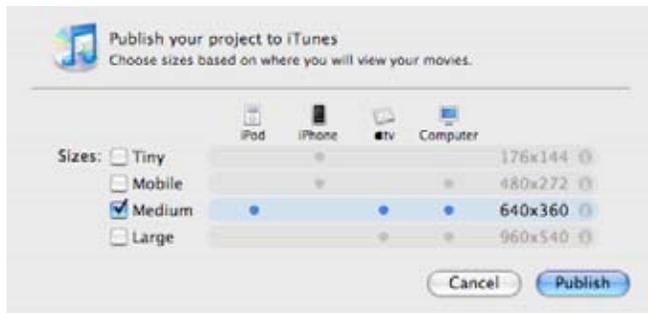
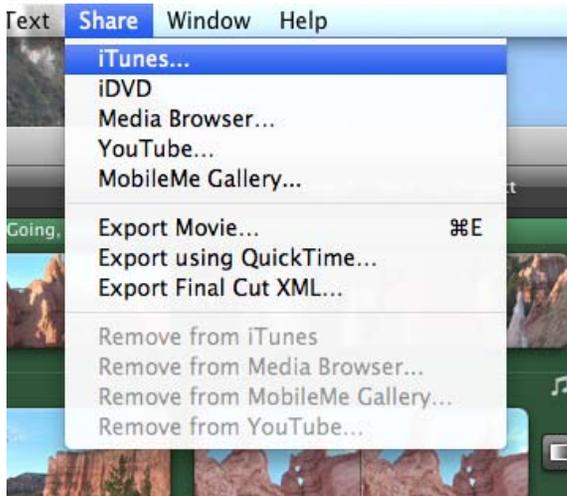
This is the step where iMovie will transcode AVCHD to the Apple Intermediate Codec. Depending on your clips, it may take minutes or more than an hour for iMovie to import and create thumbnail images of the clips. When the import is complete you will see a message similar to this.



No matter which approach you use to get your AVCHD footage into iMovie, you are now ready to begin the creative fun of editing. From this point on, you edit your AVCHD footage (which has now been converted to Apple Intermediate Codec) just like you edit any other footage in iMovie '09. For more information on editing with iMovie '09, please visit: www.apple.com/support/imovie

OUTPUTTING TO IPOD

It is very easy to export your AVCHD iMOVIE to a video iPOD. When you have finished your movie, click on Share and then on iTunes.

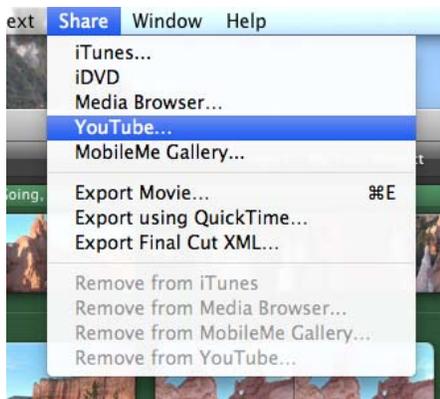


Pick your destination: iPod, iPhone, Apple TV or computer. Pick Medium Size for iPod.

Your movie will be exported to iTunes in the format that iPod understands. All you need to do is sync your iPOD with iTunes and your video will be transferred to your iPOD.

OUTPUTTING TO YOUTUBE

Publishing your AVCHD iMovie on YouTube is just as easy. Click on Share, then on You Tube. Note: you must have a You Tube account.



Pick your category, give your video a description and pick the size you wish to publish.

YouTube Publish your project to YouTube

Account: [dropdown] Add... Remove

Password: [text field]

Category: Travel & Events [dropdown]

Title: My First Project

Description: Inside Bryce Canyon

Tags: AVCHD, AVCCAM, Panasonic, Bryce Canyon, HMC40

Size to publish:

Size to publish	iPhone	tv	Computer	YouTube	Resolution
Mobile	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	480x272
Medium	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	640x360
Large	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	960x540
HD	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1280x720

Make this movie personal

Cancel Next

Now the world can see your AVCHD footage.

OUTPUTTING TO BLU-RAY

Unfortunately, iMovie does not support the creation of Blu-ray discs. In order to make a Blu-ray disc, you will need to transfer your movie to a third party Blu-ray burning software, such as Roxio Toast Titanium 10 Pro or Adobe Encore (part of Adobe CS3).

OUTPUTTING TO AVCHD DISC



You can also burn an AVCHD disc (which is a duration-limited Blu-ray image on standard DVD media, using the Mac's internal DVD / Super Drive). You are limited to 20 minutes of AVCHD footage on a DVD-5 disc and 40 minutes on a DVD-9 disc. The AVCHD disc will play High Definition in a Blu-ray player. Software such as Roxio Toast Titanium 10 Pro will allow you to drag your native AVCHD files and copy them, and even add a menu. See www.roxio.com for more detail.

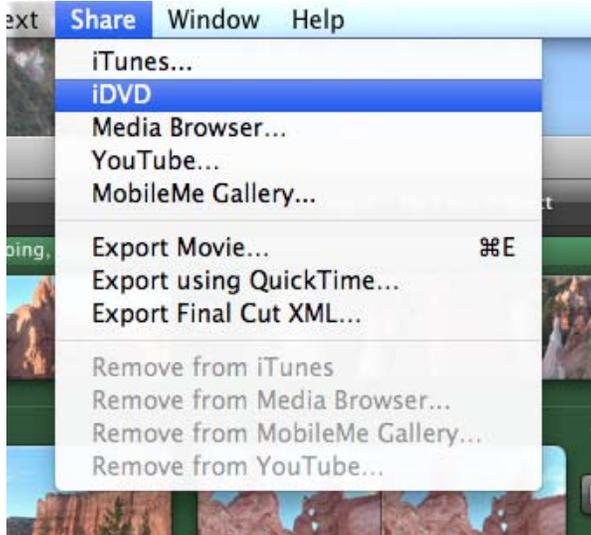
The AVCHD disc will only play in a Blu-ray player.

OUTPUTTING TO STANDARD DEFINITION DVD

Even though you have shot your material on high definition and edited it in HD, you may still need to downconvert it to standard definition to show your movie. AVCHD footage will make dazzling standard definition DVDs.

STEP #1 – SHARE TO iDVD.

To do this, first click on Share > iDVD.



This will open iDVD.



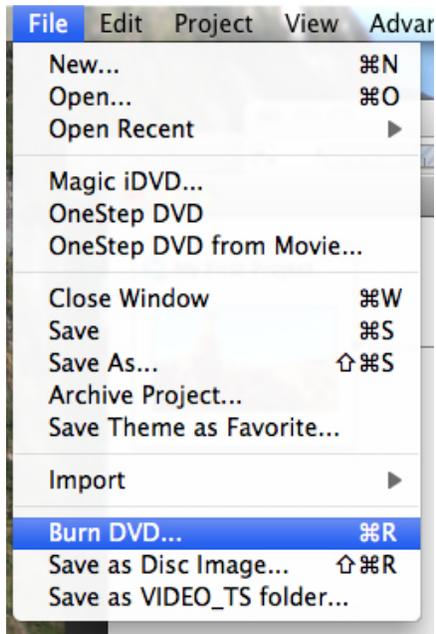
STEP #2 – ADD MENUS, BUTTONS, INTERACTIVITY.

Here you can create menus, buttons and add as much interactivity as you want.

STEP #3 – BURN YOUR DVD.

When your project is finished click on File>Burn DVD. Insert a blank DVD into your Mac and press Burn.

For more information on iDVD features please see www.apple.com/support/iddvd/



THE AVCHD WORKFLOW – ARCHIVING

Once your project is finished, you will want to archive your High Definition AVCHD footage (not just your Apple Intermediate Codec footage). There are a number of options available at this time depending on your budget and how long you want to keep the footage. How long you want to keep your footage is a very important question when dealing with Archiving. The answer to “How Long You Want To Keep It?” will determine what media you store it on today. If you want to keep your data for 1-10 years, you have many options, but if you must keep your material for 20 years or longer, then your options decrease. And regardless of the media you choose today, be prepared to move your data as new improved storage becomes available.

KEY POINT #4. THE SECRET TO SUCCESSFUL ARCHIVING OF ANY FILE BASED MEDIA IS REDUNDANCY AND MIGRATION. Make multiple copies and move your data as technology advances.

ARCHIVING TO HARD DRIVE (SHORT TERM STORAGE)

The quickest and least expensive way to archive your AVCHD footage is to copy your files to a hard drive. Note: This is Short Term Storage. This is accomplished in the same way as copying any other data to a hard drive. Copy the Private Folder of your AVCHD to your drive. There are a number of manufacturers who make inexpensive USB hard drives. I suggest copying to two different hard drives, be redundant. Also these hard drives should not be considered permanent long-term storage. Create a regular schedule to move your data to newer hard drives. Migrate your data.

ARCHIVING TO BLU-RAY DISC (MID-TERM STORAGE)

To archive to a Blu-ray, you will basically be making a Blu-ray Rom data disc. To do this you will need a Blu-ray burner, Blu-ray media, specific Blu-ray burning software, such as Roxio Toast 10 or Adobe Encore (part of CS4 suite). Remember in order to retrieve your data from this archive in the future, you will need a Blu-ray drive. Keep your eye on how technology advances and migrate your data to new storage technology as needed.

ARCHIVING TO STANDARD DVD DISCS (MID-TERM STORAGE)

Although DVD-R media is technically not specified as archival media, you can archive your data onto standard DVD discs. Since these discs do not hold high amounts of data, this is very time consuming and requires a lot of discs. Remember, in order to retrieve your data from this archive in the future, you will need a DVD drive.

ARCHIVING TO DLT OR LTO TAPE (LONGEST TERM STORAGE)

If you have to store your footage for a very long time and want absolute confidence in your archival media, do what financial and medical institutions have been doing for years, back up your data on either DLT (Digital Linear Tape) or the newer LTO (Linear Tape Open). These are more expensive options than those listed above, but they are time tested. A number of companies, such as Quantum (www.quantum.com), Cache-A, (<http://cache-a.com/products.php>) and others make DLT and LTO tape drives and media. (See WWW.LTO.org for more info)

SIMPLE, QUICK, FLEXIBLE AND INEXPENSIVE! THAT IS THE AVCHD PRO EDITING WORKFLOW.

Please see the AVCHD WORKFLOW ACQUISITION White Paper. You will find that shooting and transferring AVCHD material is again simple, quick, and inexpensive.

ABOUT THE AUTHOR:

Bernie Mitchell is President of Silver Platter Productions, Inc. an Emmy nominated Producer/Director, a Multimedia Person of the Year and member of the DVD Association Hall of Fame. Bernie is the Panasonic AVCHD Evangelist and a paid consultant to Panasonic.