DAC-200 Digital-to-Analog Converter

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The Bridge Between Digital and Analog Video PC and Mac platform video editors now have a simple, competent solution for transferring video and audio back and forth between analog tape and DV. The DAC-200 features locked audio and our own SmartDV™, which allows multiple DV devices to be attached simultaneously.

Features

- **Selectable video standard** - switch between NTSC and PAL. Convert between DV, composite and S-Video
- **Inputs & Outputs** - Firewire DV (6-pin), composite, S-Video, stereo RCA unbalanced audio (input only)
- **Selectable audio sampling rate** - switch between 12 bit (32 KHz) and 16 bit (48 KHz)
- **Adjustable audio decoding** - 32 KHz, 44.1 KHz and 48 KHz (DV quality)
- Compatible computers: PC (Windows 98, Me, 2000, XP) and Mac (OS X and earlier)
- LED indicators to display source (DV or Analog) and audio sampling rate (12 bit or 16 bit)

Front View
F.A.Q.’s

Q: Do I need to adjust the dip switches on my DAC-200?
A: Some of our earlier printed manuals stress this point, but we have found the best general setting is as follows:

Note: the circular dot represents the dip switch
These settings will work well with Macs and PCs. The changes will not be applied until you cycle the power on your converter.

Q: Can the DAC-200 be used as an audio converter?
A: The DAC-200 needs color burst from the video signal in order to start the conversion process. The DAC-200 will be unable to convert the audio signal if a video stream is not present. The only work around is to run video through the converter and later delete the video track in your system.

Q: Can the DAC-200 convert black & white video from a CCTV camera?
A: No, because it needs "color burst" in the video stream. If you need to convert video from a black & white camera, please take a look at our DAC-15.

Q: Why do I keep getting a green screen on my monitor?
A: When the DAC-200 is not actively processing a video signal it displays green. This is caused by a chip used within the converter and cannot be changed.

Q: Will the DAC-200 work with my Mac?
A: Yes, the DAC-200 works well with Macs. Imovie and the various versions of Final Cut have worked well with all of Datavideo’s converters. Datavideo is currently in the process of obtaining qualification for the DAC-200.
Q: What is the difference between the DAC-100 and DAC-200?
A: The DAC-200 replaces the discontinued DAC-100. The two converters are very similar but we have added improvements such as locked audio and Smart DV.

Q: What is Smart DV and how can I use it?
A: Smart DV is a patent-pending feature that allows monitoring of the video during a DV-to-DV capture, without any conflict. Enabling Smart DV makes the converter transparent to a non-linear editing application, while still transcoding the live DV stream in analog video. It saves time for video editors working with DV tape.

To enable Smart DV please set your dip switches as follows:

Note: the circular dot represents the dip switch.
The changes will not be applied until the power is cycled on the converter.

Q: What is the importance of locked audio?
A: Below is an excerpt of an article written by Adam Wilt, posted on the internet by "Video University". The entire article may be seen at http://videouniversity.com/dvformat.htm

"Since DV was designed as a consumer format, unlocked audio was allowed as a cost-saving measure. In unlocked audio, the audio clock is allowed some imprecision, such that there can be a variation from the locked spec of up to +/- 25 audio samples written to tape for every frame, instead of a precise and exact number.

This economy measure is simply one of allowing the audio clock to "hunt" a bit around the desired frequency; the phase-locked loop (or other slaving method) used to keep the audio sampling in sync with the video sampling can have a bit more slop in its lock-up, with the audio sampling sometimes running a bit slower, sometimes a bit faster, but always staying in sync over the long run. The total amount of sync slippage allowed in unlocked audio is +/- 1/3 frame -- not enough to really worry about.

It's the difference between walking a dog on a short leather leash, always forcing the dog to stay right by your side (locked audio), and using a long, elastic leash or one of those "retractable clothesline" leashes that allows the dog to run ahead a bit or lag behind (unlocked audio). In either case both you and the dog will get where you're going at the same time, but along the way the "unlocked" dog has a bit more freedom to deviate from your exact walking pace.

Unlocked audio should not cause audio sync to drift way from video over a long period of time. The audio clock is still linked to the video clock; it's just allowed a bit more oscillation about the desired frequency (more wow & flutter if you will) as it's trying to track the video clock. Like the dog on the springy leash, it can run a bit ahead or a bit
behind the video clock momentarily (up to 1/3 frame ahead or behind), but in the long run it'll still be pacing the video clock and on average will be right there in sync with it. I have shot one-hour continuous takes of talking heads with a consumer DV camcorder (DCR-VX1000) and experienced no drift at all between audio and video.

DV cameras and VTRs generate unlocked audio, both in 32 kHz, 12 bit and in 48 kHz, 16 bit recordings. DVCAM and DVCPRO cameras and VTRs generate locked audio in 48/16 audio format, and DVCAM can also generate locked 32/12 audio. 44.1kHz, discussed below, is never locked; it has no neat integer relationship with either 625/50 or 525/59.54 frame rates."

Q: Can the DAC-200 convert a PAL signal to NTSC or vice versa?
A: The DAC-200 has the ability to work with either PAL video or NTSC video, but it cannot convert one video standard to another. A systems converter is needed to convert video standards. Please take look at the Datavideo STC-100.

Q: What kind of product support does Datavideo provide for the DAC-200?
A: We provide setup guides for most of the common video editing applications. They provide basic directions for connecting the converter to your video source and general capture/export directions for common editing applications. Datavideo support cannot offer training for specific editing applications. Datavideo support is also available via email to assist you with product questions.

Q: How long is the DAC-200 warranty?
A: The DAC-200 comes with a 1 year limited warranty from the original date of purchase. Please refer to your DAC-200 manual for specific warranty details.

Q: I have made changes to the dip switches on my DAC-200, but it did not solve the problem.
A: Once a dip switch has been changed, it will not take effect until the unit is rebooted. To reboot your converter power it off, wait a couple of seconds, then power it back on.

Q: I have connected S-Video out to my recording device and I can see video, but I am unable to hear sound?
A: S-Video, or Y/C as it is sometimes referred to, does not carry an audio signal. When using S-Video out from the converter, you must use a stereo RCA cable from the converter's output to your recording device's input.

Q: I am exporting video from my timeline and converting it from DV to analog but I am unable to see video output on my VCR, is the DAC-200 defective?
A: There are numerous reasons why video might not display correctly from your VCR. VCRs usually have many inputs, usually one in the front and several on the rear panel. They usually do not auto-detect the active line input, so it is usually necessary to set the correct line input from your remote control of your VCR or the MENU system within the VCR.
Q: I have set the correct line input in my VCR but I still cannot see video. How can I determine the cause of the problem?
A: The best way to troubleshoot any problem is to isolate the devices that are involved. If you are exporting from the computer to the DAC-200, check to make sure that the DAC-200 is sending out a video signal. To do this connect the Audio/Video outputs directly to the input of a monitor or TV. If you can see your video in the TV then the DAC-200 is exporting the video correctly. Reconnect your VCR and check to see if you can see video passing through your VCR.

Q: What is included with the converter?
A: One 6-pin to 6-pin FireWire cable, one power supply, one S-Video cable, one composite RCA cable with L+R audio and one instruction manual.

Q: Does the DAC-200 come with software for editing?
A: No. The DAC-200 is a bridge to allow you to capture or export your video from or to your non-linear editing software.

Q: Can I "Monitor" or "Preview" my video captures from the output of the DAC-200?
A: Yes. The composite (RCA) video output from the DAC-200 can be plugged into your monitor or TV to preview your video while capturing. If you are using your composite port then the S-Video port can be used instead.

Q: Can the DAC-200 control my VCR via Firewire?
A: No, you will need to manually press play or record on your VCR during capturing or exporting.

Q: Is it necessary to connect a TV or video monitor to preview my video?
A: It is recommended to verify the presence of a video signal. If a TV or video monitor is not used you will be unable to confirm the presence of a video signal during the video capture or export process.

Q: I am trying to export from Final Cut Pro, but I am not getting any video output. How do I correct this?
A: Please check to make sure that that video output is enabled under "View". Go to: "View > External Video > All Frames" and make sure there is a check mark next to "All Frames". Also verify that the converter is set to "DV" as the input source, since the file playback is from the computer which in this case is a DV source.

Q: When capturing video into my software, dropped frames are detected and sometimes capturing will stop, what could be causing this?
A: There are a number of possible causes for dropped frames, for example: hard drive data transfer rates might be too slow, video tapes with bad sync, multi-tasking with other applications on your computer while capturing. If you believe the issue is not tape related, try substituting to a non-tape based source such as a DVD player or analog output from a camera (take a live feed from the
camera). If the dropped frames go away, then the dropped frames are probably related to your video tape.

Q: I am playing video from my timeline and the converter is losing the video for a second or two and then comes back, what is causing this?
A: The DAC-200 has dip switches that control the clocking frequency when it is converting video. Dip switches 4 and 5 control the clocking frequency, if the dip switches are not configured for your operating system or type of device, a loss in video can occur.

Please refer to the default dip switches below and make sure that your DAC-200 is setup correctly:

![Dip Switch Diagram]

Note: The circular dot represents the dip switch.

The changes will not be applied until the power is cycled on the converter.

Q: Does the DAC-200 show up as a device on my Mac OS desktop?
A: No, but it will be added to the list of firewire devices in the System Profiler. If your editing application does not detect the converter check the System Profiler to make sure the Mac is able to detect the converter. If the System Profiler does detect the DAC-200, then it should be functioning correctly. Otherwise, try changing firewire ports on the converter and on your Mac (if available) and restart the computer.

If you are still unable to see the DAC-200 in the system profiler then there could be a problem with the DAC-200, please visit our technical support page for further assistance.

Q: Will the DAC-200 transfer timecode from my tape source?
A: No, timecode will not be converted.

Documentation

- Product Manual
- Quick Start Guide for Windows PC and Mac OS
- Windows Movie Maker guide