DV CODEC / SIGNAL FLOW

Planet of-tunes

www.planetoftunes.com

A to D convertor
Converts electrical pressure soundwaves into digital audio data

Soundwave
(air pressure)

Stereo microphone

Soundwave
(electrical pressure)

Digital stereo audio signal
48Khz, 16-bit. 10Mb per minute.

Lightwave

Camera lens

CCD (Charged coupled device) Converts light into digital data

Digital video signal
24Mb per second. 1.4Gb per minute. Too big for current desktop computers to store and process.

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DV (hardware) DSP / Codec
(compression / decompression algorithm). This is a piece of software and processing chip dedicated to compressing digital video from a CCD into a manageable size

DV digital video signal
3.6Mb per second. 216Mb per minute. Small enough for current desktop computers to store and process.

Mini DV tape
Stores 60 minutes of video and audio.

FireWire connection
(Sony call it iLink.)
Transfers DV clips to hard drive — and carries Device Control signals from editing software.

DV editing software sends instructions to the CPU/codec to retrieve the DV data from disc, decompress it, perform the edit, re-compress it, and then save it back to disc as a new Render file.

QuickTime DV (software) codec on computer CPU
This version of the DV codec runs on the computer's CPU, uncompressing the video ready for editing and re-compressing it when an edit has been performed. The computer's CPU is not powerful enough to simultaneously decompress AND display DV data in full quality on the screen. so it produces lower quality previews during editing.

DV editing software

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Low quality preview video signal
... is sent to the editing software.

DV digital video signal
3.6Mb per second. 216Mb per minute. Small enough for current desktop computers to store and process.

Computer Hard Disc Drive
Stores DV clips captured from camcorder, and edited Render files.