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HDV Video Format Explained

About a year ago JVC introduced the world's first HDV format camcorder—the GR-HD1U. This camcorder represented a big development in the history of video as it was the first high definition camcorder for consumers, while maintaining the DV compatibility. JVC chose to use 720p and a single CCD Camcorder for their initial offering which has sold poorly. The pictures from this camcorder are exceptional in a talking head situation, but the pictures become unacceptable in environments with lots of detail and motion.

JVC and Sony have teamed up together to advance this HDV video format. Licensing must be obtained by these two companies to produce products in this format. Last month, Sony started delivering their first HDV camcorder and it is a massive improvement from JVC's initial HDV offering. Sony chose to use 3 Widescreen (16X9) CCDs with a resolution of 1080i and 25Mbps, which is the same data rate as DV and DVCAM. JVC's camcorder uses 19.7 Mbps, which is less data. The most significant difference between the Sony and JVC camcorders is that Sony's camcorders shoot in 1080i and JVC at 720p. We have had several occasions to rent the HDRFX1 and all the users have said that they really like the camcorder.

Just as camcorders have evolved from analogue to digital now the evolution is from Standard Definition (SDTV) DV Digital to High Definition (HDTV) Digital. The events are unfolding at a comfortable pace and the new technology in this case is fully compatible with the existing technology. This controlled evolution is good as it takes time to change and people want to see that things work before they rush out and purchase equipment.

The initial launch by JVC and now by Sony have produced camcorders for the consumer market which will be followed by a professional model. Sony is taking the launch to the next step a little differently as they are also introducing the HVRM10U HDV Video Cassette Recorder/Player at the same time they release the HVRZIU Professional HDV format camcorder.

Once you have this new format, how will you edit? Existing video editing systems do not seem to be able to handle this new format. As such most manufacturers of

video editing equipment have announced plans to have a HDV compatible system by upgrade or by introducing new systems. What is becoming apparent is that most of these video editing systems are providing real time preview in DV and they must render the effects and edits. While today's computer processors are fast, it still takes time and is difficult to perform with customers and producers demanding time lines. Some of the bigger names to announce HDV compatible editing systems include Adobe Premiere Pro, Avid Xpress Pro HD, Canopus Edius, Apple Final Cut Pro HD with the Lumiere HD software add-on, Sony Vegas and MacroSystem Casablanca Solitaire.

Canopus is shipping their Edius SP for HDV and their Edius NX for HDV. What also makes Canopus stand out is their hardware and software solution, which enables you to edit HDV in real time. I do not believe anybody else can make this claim. The Edius is a PC solution for HDV editing.

A list of some the companies which are committed to HDV are as follows:

Adobe Systems Inc.
Ahead Software
Apple
Avid technology
Canopus Co. Ltd.
Cineform
Cinegy
CyberLink
Datavideo
FA System Engineering
Focus Enhancements
Hamamatsu Photonics
IBE
IGA
JVC
KDDI R & D Laboratories
Keisoku giken
Lumiere
MacroSystem
Magix
MainConcept
Manzanita
Matrox
Miranda
NewSoft Technology
NTT
PC DTV Technologies
Pegasys
Pinnacle

Pixela
Pleora
Roland
Sigma Designs
Sobey Digital Technology
Sony Pictures
Ulead
XOS Technologies

The list is growing!

What types of displays are available for 720p or 1080i video signals? Because the camcorders down convert the 720p or 1080i in real time, existing video monitors can be used to display the pictures from these products, but if you wish to take advantage of the real picture quality then there are many choices available today to display the HDV picture. There are CRT Televisions and Monitors, Plasma Panels, LCD Panels and DLP and LCD Projectors. The drawback is that most of these items, except some of the CRT Televisions are expensive, but these display devices show you the great video that you just shot with this camcorder.

Support equipment will soon follow from Datavideo and others. There needs to be a large infrastructure of Routers, Switchers, Distribution Amplifiers and so on which support this format.

In 2005, I keep reading about the Sony supported Blu-Ray and Microsoft supported HD-DVD coming out. These are DVD sized discs, but are capable of storing massive amounts of data need for high definition movies, videos and films. Blue-Ray from Sony seems to be better positioned to take the lead. These Blu-Ray HDTV DVD Recorders have been selling in Japan and England for the last year at a price of about \$5, 0000.00. When they hit the mass market the price will drop quickly as it has with all optical formats in the past.

HDV can use the standard DV or DVCAM tape and there will be new tapes specifically for this format. It is good that the widely used and low cost DV tapes will work for this format.

The Sony HDRFX1 outputs a variety of signals including composite, S-Video, Component and I-Link (Firewire to Apple). For many displays, the analogue component output is usable for a 1080i. I am not aware of any monitors which have HDV compatible I-Link connections, so analogue component is the connection for now. If you wish to dub to a HDV editing station or another camcorder, you would use the I-Link port. Because this technology has a real time down conversion engine, you can shoot in 1080i and edit on a standard DV editing system. In the future you can redo the project in high definition for added value.

The benefits of this new HDV Video Format are many with increased picture quality as being on the top. The new features on the camcorders add to the ease of use, versatility and overall improved production quality. The widescreen monitor is newly positioned on the Sony HDV camcorders for better comfort and the setup storage buttons make the camcorder setup really easy. The improved picture quality elevates the effectiveness of video communications and makes your company look better to the client. The HDV format is relatively low cost and high quality. In closing, this format is state of the art and an exceptional value. It is hard to imagine any serious negative reviews or responses. I believe this format is the next video wave. Get one today!

ProVision sells and rents the Sony HDRFX1 and we are going to be marketing the Canopus Edius products.

Written by Stephen Melvin
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