

# **Summary**



## **Vclips VC021A Video Clips for Testing and Optimization of Video Compression**

**Encoder Series – VC021A, E-USA SD NTSC**

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## **General Safety Summary**

Use this product only as specified.

While using this product, you may need to access other parts of a larger system. Read the safety sections of the other product manuals for warnings and cautions related to their operation.

## Summary: VC-021-A E-USA SD NTSC

<b>Encoder Test Series</b>	VC-021-A E-USA SD NTSC
<b>Purpose</b>	Test encoders with all variants of movement and lighting
<b>Content</b>	Scenes from New York, San Francisco and Florida with fast/slow movement, tracking, pan, zoom, rotation, high contrast, low contrast, bright colours, dull colours, monochromatic areas, day, night, people, vehicles, talking heads, buildings
<b>Number of clips</b>	<p>56 scenes all provided at sizes:</p> <ul style="list-style-type: none"> <li>• D1 720x480 (numbered V021nn1)</li> <li>• SIF 352x240 (numbered V021nn2)</li> <li>• QSIF 176x120 (numbered V021nn3)</li> </ul> <p>i.e. total 168 clips</p>
<b>Total disk size</b>	36 GBytes
<b>Video format</b>	YUV 4:2:0 planar, 8 bits per pixel
<b>How supplied</b>	On hard disk drive unit (with USB 2.0 and Firewire/1394 interfaces)
<b>Software supplied</b>	YUV sequence viewer in folder: \Software
<b>Documentation</b>	PDF of this manual in folder: \Documentation

## 1. Introduction

This set of video sequences is designed to test and stress a video encoder by providing a diverse set of video clips which have all types of movement and lighting conditions:

- ❑ movement types such as pan, zoom, rotation, object movement in foreground and background, objects moving in/out/across, tracking movement;
- ❑ subject types such as people, vehicles, buildings, trees, sky, water;
- ❑ colours - bright to dark, high/low contrast, monochromatic areas;
- ❑ lighting conditions such as bright daylight, dull daytime, night, dusk;
- ❑ details such as fine lines, moiré patterns;
- ❑ other challenging features such as fast zooms, scene changes, rapid brightness changes, focus changes.

In many cases the lighting conditions and movement are non-ideal: for example, the picture overall is too light or too dark, or a hand-held camera is used, or the subjects are blurred or sometimes out of focus, or there are rapid brightness changes due to the use of automatic gain control on the camera.

These features are deliberately inserted/used as they can often cause the greatest difficulty to video encoders, and these represent the boundary conditions (worst case) that the encoder should encounter with 'real' video clips.

In general the scenes are quite high-brightness, as it is easier to see encoder artefacts in a bright scene.

## 2. Installation, Backup

### 2.1 Backup

These video files are provided on a hard disk unit. Although the unit has been extensively tested prior to delivery, like all hard disks it *could* fail.

***Therefore we strongly advise you to back up all the data on this hard disk unit.***

(If the drive does fail, we can provide a replacement unit at low cost, but it could still be highly inconvenient for you.)

### 2.2 Installation

The hard disk unit has both USB 2.0 and 1394/Firewire interfaces (cables for both are provided). Both these interfaces provide a data transfer speed of over 400 Mbits/sec. Providing you have the correct hardware interface on your computer, the hard disk unit should be recognised automatically, simply by plugging in the cable from the unit to your computer. (The driver disk supplied should not be required.)

### 3. Description of Clip Set

56 video scenes are provided: each of these is provided at D1 NTSC (720x480), SIF (352x240) and QSIF (176x120) resolutions (that is 168 clips in all).

All clips are provided in YUV 4:2:0 format with no header:

- ❑ planar YUV 4:2:0 sub-sampled i.e. 4 bytes of Y data for each byte of U data and each byte of Y data;
- ❑ no headers of any kind (no file or frame headers);
- ❑ one byte per sample;
- ❑ progressive scan (not interlaced);
- ❑ row raster order (top picture row first);
- ❑ Y plane values are 0-255 unsigned;
- ❑ U and V plane values are unsigned with a DC offset of 128.

#### **Interlace**

These video scenes were all originally filmed in Interlaced format (as is standard).

This means that the larger format video clips, such as D1 NTSC (size 720x480) have Interlace effects within them, which the encoder must deal with. (As would be the case with 'real world' video sequences.)

Clips which are SIF (352x240) and QSIF (176x120) have been processed to remove the Interlace. (Again, this is usually the case with clips of this size.)

### 4. Software supplied

The following software is supplied:

- ❑ YUV sequence viewer.

#### 3.1 YUV sequence viewer

This program is called: `YUVSequenceViewer.exe`  
and is located in the folder: `\Software`

To run it, double-click on it – it does not need to be installed.

Once it has been run once, it associates files with an extension of `.yuv` so that after this double-clicking on a file with this extension will automatically open the YUV file in the sequence viewer.

YUVSequenceViewer tries to work out the size of the video frames from the filename (if it is given in the filename): if there are no clues from the filename then the user must enter the size of the frames.

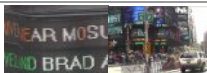


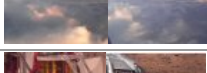

On the 'Tool' menu there is an option to subtract two YUV sequences, to look for differences between two files. A zero difference results in a constant grey image. To make these differences more visible, select the menu 'View' then 'Options' then enter a number into the 'Subtraction scale' box: the larger the number, the more the differences are multiplied.

## 5. Information supplied

The following pages describe in considerable detail each video sequence (source data, contents of the scene).

Clip Number(s)	Title	Main purposes	Duration (mins: secs: frames)	D1 file size (MB)	Begin : End
V021011,2,3	Golden Gate zoom	Slow zoom in, passing movement, text, bright image, fine detail	1:19:19	1,237.4	
V021021,2,3	NYPD	Crowds (many people moving in different directions)	1:06:03	1,027.0	
V021031,2,3	Times Square 360°	Rotation pan, fine detail, movement, text	0:36:29	574.4	
V021041,2,3	Scuba Do	Reflections on water, zoom out	0:30:02	467.1	
V021051,2,3	Times Square NYC	Text, lines, zoom out	0:17:22	275.3	
V021061,2,3	Real Thing	Graphics-type images, moiré patterns, bright colours	0:35:19	553.7	
V021071,2,3	Liberty mural	Monochromatic, texture, text	0:13:22	213.6	
V021081,2,3	Rigging red	Slow zoom in, many fine lines in foreground and background	0:17:04	265.9	
V021091,2,3	Central Park jog	People passing left & right, white-out	1:13:17	1,143.1	
V021101,2,3	Space shuttle	Circular object, fine lines	0:38:26	603.9	
V021111,2,3	Speedboat trip	Fast global camera movement and subject movement, water, colours	0:44:21	694.7	
V021121,2,3	Washington Circle	Reflections, fast zooms in/out	0:19:24	307.4	
V021131,2,3	Row boat	Slow movement left, water, bright	0:07:22	120.3	
V021141,2,3	Razzle dazzle	Rotate pan right, fine detail	0:29:26	464.0	
V021151,2,3	Old sail boat	Slow movement right, water, camera shake	0:37:13	581.6	
V021161,2,3	Yes they are	Text, fine details, bright colours	0:29:07	454.1	
V021171,2,3	Out to sea	Global movement right, monochromatic areas	0:13:15	210.0	
V021181,2,3	Blue car	Vehicles moving quickly foreground and back-ground, static subject	0:43:18	677.5	
V021191,2,3	Mangroves	Very many fine lines, two colour, water reflections	0:45:14	706.6	
V021201,2,3	Sunset	Sunset on water	0:11:13	177.8	

Clip Number(s)	Title	Main purposes	Duration (mins: secs: frames)	D1 file size (MB)	Begin   End
V021211,2,3	Saturn V engines	Circular objects, zoom out, fine lines, global movement	0:30:06	469.2	
V021221,2,3	Power walkers	Tracking pan of people towards and across camera	0:45:20	709.7	
V021231,2,3	Sky signs	Slow pan down of graphic-like images, high contrast	0:48:14	753.2	
V021241,2,3	Flying saucers	In and out of focus of traffic at night	0:44:08	687.9	
V021251,2,3	Fountain	Random movement, two colour, low contrast, dark background	0:34:05	530.8	
V021261,2,3	Tower down up	Reflections off glass, fine lines, moiré patters	0:42:00	652.7	
V021271,2,3	Ocean Diver	Bright coloured reflections and fast zooms in/out	0:14:17	226.5	
V021281,2,3	Helicopter takeoff	Tracking pan/rotate/zoom of stationary then fast-moving object	0:20:16	318.8	
V021291,2,3	Helicopter landing	Tracking pan/rotate of object through monochrome area	0:43:18	677.5	
V021301,2,3	Eighth Ave	Close-up of many people moving (mainly away from camera)	0:38:26	603.9	
V021311,2,3	Panorama TS	Fast 360 degree rotational pan, fine details, traffic, people, text	0:28:23	446.9	
V021321,2,3	Rigging building	Zoom out of fine lines in foreground and background	0:22:05	344.2	
V021331,2,3	Fractal water	Fine dot pattern, zoom out, very slow movement	0:39:24	618.5	
V021341,2,3	Apollo plaques	Circular objects, text, rotation and pan, bright areas	0:36:02	560.4	
V021351,2,3	Traffic junction	Traffic towards camera	0:12:14	193.9	
V021361,2,3	Passing mangroves	Fast pan across two colour area with fine detail	0:46:29	729.9	
V021371,2,3	Washington rotate	Left & right rotation, buildings	0:18:29	294.5	
V021381,2,3	Times Square people	People in foreground and background, with some traffic	0:38:02	591.5	
V021391,2,3	Bridge traffic	Evening traffic with lens flare, zoom out, high contrast	1:0:03	933.6	
V021401,2,3	Duck	Bright water reflections, animal, fine detail	0:13:00	202.2	
V021411,2,3	Pleasure boat	Tracking pan of object	0:18:20	289.8	
V021421,2,3	Statue	Texture, zoom out, text, fine detail	0:26:02	404.9	
Clip Number(s)	Title	Main purposes	Duration (mins: secs: frames)	D1 file size (MB)	Begin   End

V021431,2,3	Scrolling text	Text scrolling left, zoom out, fine details	0:23:13	363.9	
V021441,2,3	GG sunset	Pan right, high contrast (large dark light areas), fine lines	0:20:21	321.4	
V021451,2,3	Tower down	Building with geometric patterns, reflections	0:25:29	403.3	
V021461,2,3	U-turn	Traffic junction, fast foreground and background movement, lines	0:50:10	781.7	
V021471,2,3	Water weed	Very low contrast, global fast pan up/left	0:13:02	203.2	
V021481,2,3	Yellow cabs	Vehicles moving towards camera, background detail	0:25:17	397.1	
V021491,2,3	Rigging zooms	Fast repeated zooms in/out of fine lines in monochromatic background	0:34:0	528.2	
V021501,2,3	Tricycle	Tracking pan	0:02:01	31.6	
V021511,2,3	Launchpad	Global camera shake, fast-moving foreground partly obscures subject	0:29:02	451.5	
V021521,2,3	Dinghy	Tracking pan left, global movement	0:10:06	158.6	
V021531,2,3	Big Caddy	Zoom out of vehicle parts, texture, pan up, high contrast	0:52:13	814.4	
V021541,2,3	Clouds	Low contrast, random soft-edged shapes	0:27:29	434.4	
V021551,2,3	Mars lander	Linear and natural-shape objects, bright areas and low contrast areas	0:30:18	475.4	
V021561,2,3	Neon signs	Pan up while foreground objects move independently	0:29:25	463.4	