

Summary



Vclips VC002A Video Clips for Testing and Optimization of Video Compression

Encoder Series – VC002A, E-Traffic

Copyright ©Tektronix. All rights reserved. Licensed software products are owned by Tektronix or its suppliers, and are protected by United States copyright laws and international treaty provisions.

Tektronix products are covered by U.S. and foreign patents, issued and pending. Information in this publication supersedes that in all previously published material. Specifications and price change privileges reserved.

TEKTRONIX and TEK are registered trademarks of Tektronix, Inc.

Contacting Tektronix

Tektronix, Inc.
14200 SW Karl Braun Drive
P.O. Box 500
Beaverton, OR 97077
USA

For product information, sales, service, and technical support:

- In North America, call 1-800-833-9200.
- Worldwide, visit www.tektronix.com to find contacts in your area.

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-002-A E-Traffic

Encoder Test Series	VC-002-A E-Traffic
Purpose	Test encoders with many different sizes of video
Content	Single scene – traffic moving into, out of and across picture 500 frames
Number of clips	50 sequences at various sizes, mainly from CIF to D1 with a few smaller and a few larger, including many 'unusual' sizes
Total disk size	7.4 GBytes
Video format	YUV 4:2:0 planar, 8 bits per pixel
How supplied	2 computer DVDs
Software supplied	YUV sequence viewer in folder: \Software on disk 1
Documentation	PDF of this manual in folder: \Documentation on disk 1

1. Introduction

This set of video sequences is designed to test a video encoder by providing many different sizes of video to encode:

- ❑ most clips are in the range CIF to D1 in size (i.e. X and/or Y dimensions are within the range 352x288 to 704x576);
- ❑ a few smaller clips (QCIF, plus 'unusual' sizes between QCIF and CIF);
- ❑ a few larger clips (720x576, plus 'unusual' sizes between D1 and 720x576);
- ❑ many 'unusual' sizes – square; tall and thin (e.g. 36x576); short and wide (e.g. 704x72).

The scene 'Traffic' incorporates many hard-to-encode elements, such as movement in, movement out, movement across, high contrasts, dark areas, shadow, fine texture, trees, reflections, large monochromatic areas.

2. Description of Clip Set

50 video sequences are provided: the size of the sequence is given in the filename, e.g. `v00232_E-Traffic_488x378.yuv` is 488 pixels wide and 378 pixels high.

The first 6 digits (e.g. `v00232`) are the sequence number.

All sequences 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

This video scene was originally filmed in Interlaced format (as is standard).

This means that the larger format video sequences, such as D1 size (704x576) have Interlace effects within them, which the encoder must deal with. (As would be the case with 'real world' video sequences.)

Sequences which are very close to D1 in size (i.e. near to 704x576) have the Interlace still within them; all other sequences have been processed to remove the Interlace.

This has been done as this represents the most common use of Interlace.

Where a sequence is not interlaced, it is marked as 'Progressive' in the table in section 4 below.

3. Software supplied

The following software is supplied:

- YUV sequence viewer

3.1 YUV sequence viewer

This program is called: `YUVSequenceViewer.exe`
and is located on disk 1 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.

4. Information supplied

The following pages:

- list all the sequences with their sequence number, size, use of Interlace or Progressive scanning, and file size on disk (see section 4.1);
- subsequently, the 'keywords' used in the Traffic sequence are listed (as per other Vclips sequences) (see section 4.2);
- finally, the features of the Traffic sequence are described in detail (scene content, movement, etc.) (see section 4.3).

4.1 List of Sequences

Sequence Number)	Size (horizontal x vertical)	Description	Interlaced/ progressive	Duration (secs: frames)	File size (MB)
V00201	176x144	Standard QCIF	Progressive	20:00	19.0
V00202	352x288	Standard CIF	Progressive	20:00	76.0
V00203	704x576	Standard D1	<i>Interlaced</i>	20:00	304.1
V00204	720x576	D1 wide	<i>Interlaced</i>	20:00	311.0
V00205	352x352	CIF square	Progressive	20:00	92.9
V00206	352x450	CIF tall	Progressive	20:00	118.8
V00207	352x482	CIF taller	Progressive	20:00	127.2
V00208	352x576	CIF wide x D1 high	Progressive	20:00	152.1
V00209	288x288	CIF narrow square	Progressive	20:00	62.2
V00210	400x288	CIF+ wide	Progressive	20:00	86.4
V00211	440x288	CIF++ wide	Progressive	20:00	95.0
V00212	502x288	CIF+++ wide	Progressive	20:00	108.4
V00213	720x288	720 wide CIF high	Progressive	20:00	155.5
V00214	704x288	D1 wide CIF high	Progressive	20:00	152.1
V00215	704x348	D1 wide CIF+ high	Progressive	20:00	183.7
V00216	704x408	D1 wide CIF++ high	Progressive	20:00	215.4
V00217	704x480	D1 wide VGA high	<i>Interlaced</i>	20:00	253.4
V00218	704x502	D1 wide VGA+ high	<i>Interlaced</i>	20:00	265.1
V00219	704x540	D1 wide VGA++ high	<i>Interlaced</i>	20:00	285.1
V00220	698x576	D1 narrow	<i>Interlaced</i>	20:00	301.5
V00221	660x576	D1 narrow-	<i>Interlaced</i>	20:00	285.1
Sequence Number)	Size (horizontal x vertical)	Description	Interlaced/ progressive	Duration (secs: frames)	File size (MB)

Vclips

V00222	600x576	D1 narrow--	<i>Interlaced</i>	20:00	259.2
V00223	576x576	D1 small square	Progressive	20:00	248.8
V00224	496x576	496 wide D1 high	Progressive	20:00	214.3
V00225	650x550	Near D1	Progressive	20:00	268.1
V00226	604x498	D1 reduced 1	Progressive	20:00	225.6
V00227	584x478	D1 reduced 2	Progressive	20:00	209.4
V00228	564x458	D1 reduced 3	Progressive	20:00	193.7
V00229	544x438	D1 reduced 4	Progressive	20:00	178.7
V00230	524x418	D1 reduced 5	Progressive	20:00	164.3
V00231	504x398	D1 reduced 5	Progressive	20:00	150.4
V00232	488x378	D1 reduced 5	Progressive	20:00	138.3
V00233	640x576	VGA wide D1 high	<i>Interlaced</i>	20:00	276.5
V00234	640x480	VGA	Progressive	20:00	230.4
V00235	640x288	VGA wide CIF high	Progressive	20:00	138.2
V00236	640x240	½ VGA	Progressive	20:00	115.2
V00237	500x500	500 square	Progressive	20:00	187.5
V00238	400x400	400 square	Progressive	20:00	120.0
V00239	300x300	300 square	Progressive	20:00	67.5
V00240	200x200	200 square	Progressive	20:00	30.0
V00241	320x240	QVGA	Progressive	20:00	57.6
V00242	198x510	Odd size 1	Progressive	20:00	75.7
V00243	302x506	Odd size 2	Progressive	20:00	114.6
V00244	704x144	D1 wide QCIF high	Progressive	20:00	76.0
Sequence Number)	Size (horizontal x vertical)	Description	Interlaced/ progressive	Duration (secs: frames)	File size (MB)

V00245	704x72	D1 wide ½ QCIF high	Progressive	20:00	38.0
V00246	352x72	CIF wide ½ QCIF high	Progressive	20:00	19.0
V00247	352x36	CIF wide ¼ QCIF high (banner)	Progressive	20:00	9.5
V00248	144x576	144 wide D1 high (wide poster)	Progressive	20:00	62.2
V00249	72x576	72 wide D1 high (poster)	Progressive	20:00	31.1
V00250	36x576	36 wide D1 high (narrow poster)	Progressive	20:00	15.6