T2*Vid*

T2V001 USA East
User Manual

Video Clips for

Testing and Optimisation of

Video Compression

Test*Vid*

www.testvid.com

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To find particular video clips that contain specific features/subjects that you wish to test for, it is recommended that you use the PDF version of this manual as this allows fast electronic searching for specific clip features using the "CF-words" (see section 5.2 for more information).

T2V001_USA_East User manual v1.0

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Contents

1. Overview of T2V001 USA East

2-D / 3-D	2D
Compressed/ Uncompressed	Uncompressed
Description of video	Street scenes from New York (mainly) and Florida football game
Purpose	Test an encoder to deal with HD video, with all aspects of global and local motion, slow/medium/fast motion, with panning, scrolling, zooming, smooth and erratic, high/low contrast, with limited colours/vivid colours and many common subject types
Number of clips	180 individual video clips (60 each at 1080p, 720p and 1080i resolutions)
Length of video	Total of over 1½ hours (over 32 minutes each at 1080p, 720p and 1080i resolutions)
Total size on disk	374 GBytes
Video format(s)	YUV 4:2:0 planar 8 bits per sample:
	❏ 1920x1080 progressive [original filming size, at 25 fps]
	❏ 1280x720 progressive
	❏ 1920x1080 interlaced, bottom field first
Audio format(s)	MPEG-1 Layer II stereo 384kbps CBR 16-bit 48kHz and
	WAV linear PCM uncompressed stereo 1536kbps 48kHz

2. Introduction

T2Vid and *T3Vid* are high definition (HD) video clips designed for testing video encoders and decoders.

The *T3Vid* clips are stereoscopic 3-dimensional (matched left and right images); the *T2Vid* clips are 2-D.

Both the *T2Vid* and *T3Vid* clips come in two variants: those designed to test and stress video encoders (usually in uncompressed YUV format, some of which have associated sound); and compressed video designed to test the range of options available in a standards-compliant video decoder (in compressed format such as MPEG-4/AVC/H.264 or MPEG-2, both as elementary streams and in 'wrappers' such as MPEG-2 Transport Stream).

2.1   T2Vids and T3Vids for testing encoders

Each set of clips for testing encoders contains a diverse selection of clips designed to stress a video encoder in different ways.   Typically this includes different movement types, different subjects, different lighting conditions, different camera movement - designed to encompass the majority of different types of difficult-to-encode items. In some cases the quality of filming is marginal - deliberately so, as this is often the hardest to encode. The majority of the filming was done hand-held, as is quite often the case with documentary and even film currently. However, in all cases there has been no video editing as such (unless otherwise stated for a specific clip) - all the separate video clips are direct decodes from the HD camera files, with no re-compression/re-encoding done. Where video editing has been done the re-encode is only at the transitions - the vast majority of these clips are also as per the original camera files.

These clips are provided as sets of video clips, typically 30 - 50 in a set, lasting from 15 - 20 minutes total.   These include:

- ❑ 'standard' HD of real-world subjects (1920x1080, 1280x720; e.g. in New York, San Francisco, London, Munich)

- ❑ as above but D-cinema resolutions (2K and 4K)

- ❑ as above but 'low' resolutions such as NTSC, D1 PAL, CIF, mobile, web, etc.

- ❑ synthetically generated, which has features such as precisely defined motion - ideal for checking such items as encoder motion estimation

The formats/resolutions provided vary from by clip set; as an example all the HD sets are provided at 1920x1080 progressive, 1920x1080 interlaced and 1280x720 progressive formats, in uncompressed YUV format, 16:9 aspect ratio.

All filming was done native HD.

Most clip sets are provided in 8-bits per sample; some are available at 10-bit or 14-bits per sample.

The *T2Vid* clips are straightforward 2-D clips; the *T3Vid* clips comprise matched left and right video images. The *T3Vid* clips have the 'extra dimension' of varying 3-D depth: from shallow to deep 3-D effect, into or out of the picture, with additional artefacts and difficulties that can be encountered in 3-D.

2.1.1   Audio

Sound is provided for almost all clips: in some cases this is sound recorded which is directly associated with the clips, in other cases the sound comprises appropriate background or music.

In a few cases the associated audio is one of the main reasons for recording the clip so both should be viewed together (where this is the case the notes state this for the specific clip in the manual).

2.1.2   Software

In addition to the video and audio, utility software to process the YUV video is provided as listed in section 4 and information on YUV viewers.

2.2   T2Vids and T3Vids for testing decoders

These are designed to test standards-compliant video decoders, by providing a series of video clips where the same video source material is encoded at different bit-rates with different encoder options.

Normally each clip is provided more than one format: typically MPEG-2 and MPEG-4/AVC/H.264 elementary video formats, at both 1920x1080 and 1280x720, as well as the source video in YUV format. In addition, each clip is typically encoded into one or more 'wrapper' formats such as MPEG-2 Transport Stream, with the associated audio in an appropriate format.

The associated audio is also provided as separate elementary files.

Full information on the currently available sets of *T2Vid* and *T3Vid* clips series is at www.testvid.com.

2.3   *TestVid* logo

The *TestVid* logo (or a variant of it) is usually placed in the lower left corner of the video. It is a condition of the license agreement for *TVids* that this logo is not removed or obscured.

The logo has been carefully sized and placed to coincide with the borders of a 16x16 macroblock (where this is possible) and is static throughout each sequence, in order to have minimal effect on encoders and decoders.

2.4   Safety

The *TVids* are almost invariably supplied on a USB hard drive unit. This unit may be mains powered or powered directly from the USB port.

In all cases it is imperative that you carefully read and understand the safety information provided with the unit.

2.5   Backup

As the *TVids* are almost invariably supplied on a USB hard drive unit it is highly recommended that you make an immediate backup of the whole unit, as hard drives can of course fail. (This backup copy is in addition to the 25 copies allowed by the license agreement.)

The warranty on the hard drive is 180 days, but if it does fail it would of course take some days at least to provide a replacement unit.

3. T2V001 USA East Clip set description

3.1   Set content types

This set of video clips comprise a range of subjects, motion, colours, light levels designed to test and stress video encoders by providing a varied set of conditions:

- ❑ subject types such as people, traffic, buildings, water, sky, text..
- ❑ movement types such as panning, zooming in/out, tracking, hand-held camera
- ❑ subject motion such as into, out of or across the picture, in front of and partially behind objects
- ❑ lighting conditions, from bright sunlight, dull daylight, shaded areas, indoors..
- ❑ varying camera properties such as depth of field, in/out-of-focus..
- ❑ hard to encode items such as reflections, fine lines, patterns, round objects..
- ❑ and with sound associated with some clips

In many cases the video is harder to encode than might normally be expected, as the lighting conditions are not ideal or there is significant camera movement, or the focus varies. These features are deliberately used as they often cause the most difficulty to video encoders and represent the worst case that the encoder should encounter in 'normal / real' use.

The total time of the individual clips is over 1½ hours in all (over 32 minutes in each of the formats).

3.2   Individual clips provided

180 YUV clips are provided, comprising 60 individual clips each at the following resolutions:

- ❑ 1920x1080 progressive   [original filming size]
- ❑ 1280x720 progressive: this has been generated by downsizing from 1920x1080 using a proprietary scaling algorithm (superior to bicubic interpolation)
- ❑ 1920x1080 interlaced (see sections 3.2.1 and 3.3.3), comprising alternate fields with each field at 1920x540 resolution, bottom field first

Each of these clips are:

- ❑ planar YUV 4:2:0 (i.e. a frame of Y followed by a frame of U followed by a frame of V, where the U and V are both are half the resolution of the Y plane, both horizontally and vertically)
- ❑ 8-bits (one byte) per sample
- ❑ square pixels
- ❑ 16:9 picture aspect ratio
- ❑ no headers
- ❑ top picture row first
- ❑ Y planes are unsigned nominally 16-235 but may go 0-255
- ❑ U and V planes are centred at 128 and are nominally 16-240 but may go from 0-255

All of the clips were filmed at 25 frames per second, although the YUV may be re-played / encoded at any speed (such as 24 or 29.97 fps).

3.2.1   Generation of interlaced video

All the clips were originally filmed progressive. In order to generate the correct fields representing the video data at the time between the progressive fields, in-house software has been used. Normally this has been done by calculating pixel-by-pixel motion vectors from one frame to the next in order to generate the intermediate time frame. For the many of the clips this process works well: sometimes it does not due to excessive movement or other factors.

Where there are minor artefacts in the generated frames of the video these are noted in box GN.12 of the clip description (in order to ensure that these are not interpreted as encoder errors).

For video clips where the motion vector calculations produce a large number of artefacts, the intermediate fields have been generated by blending the preceding and following frames together. Where this is the case the 1920x1080i clip has been denoted below with 'Frame blend' in box GN.12.

All the generated interlaced clips are one frame shorter than the progressive clips upon which they are based (this is a by-product of the generation process).

3.3   Format of video on disk

All the YUV video is stored in planar form, i.e. a plane of Y followed by a plane of U followed by a plane of V.

3.3.1   1080p

Byte 0 in the file is the Y data of the pixel at top left of the first frame.

One frame of Y, U and V:

Plane of Y followed by plane of U followed by plane of V

1,920 Y	960 U	960 V
1,080 high 2,073,600 bytes/ Y plane	540 high 518,400 bytes/ U plane	540 high 518,400 bytes/ V plane
1,920 bytes wide	960 bytes wide	960 bytes wide
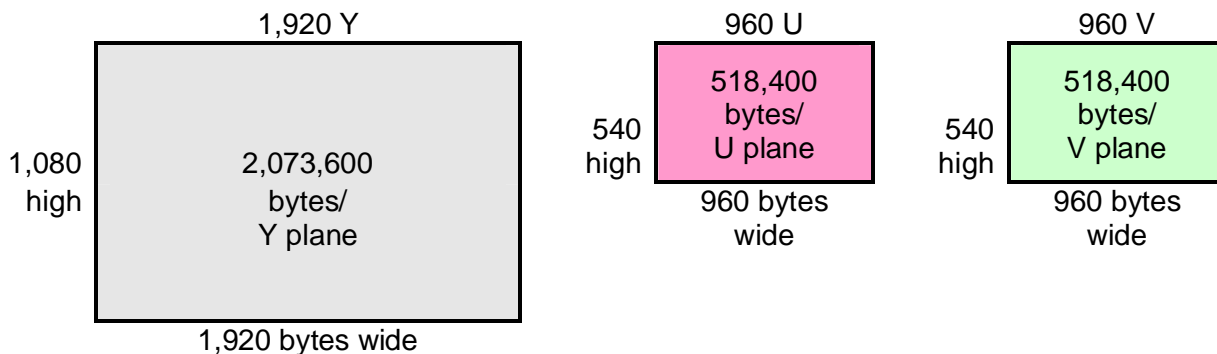
Valid video data ranges:

- ❑   Y: 16 - 235
- ❑   U and V: 16 - 240

3.3.2   720p

Byte 0 in the file is the Y data of the pixel at top left of the first frame.

One frame of Y, U and V:

Plane of Y followed by plane of U followed by plane of V

1,280 Y

720
high

921,600
bytes/
Y plane

1,280 bytes wide

640 U

360
high

230,400
bytes/
U plane

640 bytes
wide

640 V

360
high

230,400
bytes/
V plane

640 bytes
wide

Valid video data ranges:

- Y: 16 - 235
- U and V: 16 - 240

3.3.3 1080i

Byte 0 in the file is the Y data of the pixel at top left of the first frame.

Note: as supplied, the 1080i video is stored on disk with alternating fields of YUV, bottom field first. If the 1080i video is required in frame format, with the alternating fields on alternating lines, the supplied utility program `yuvfieldcombine` can be used to combine the fields. See sections 4 and 4.2.3 for more information.

Each frame of Y, U and V is divided into alternating fields, bottom field first, with the YUV data as follows (each field being half the height of the frame):

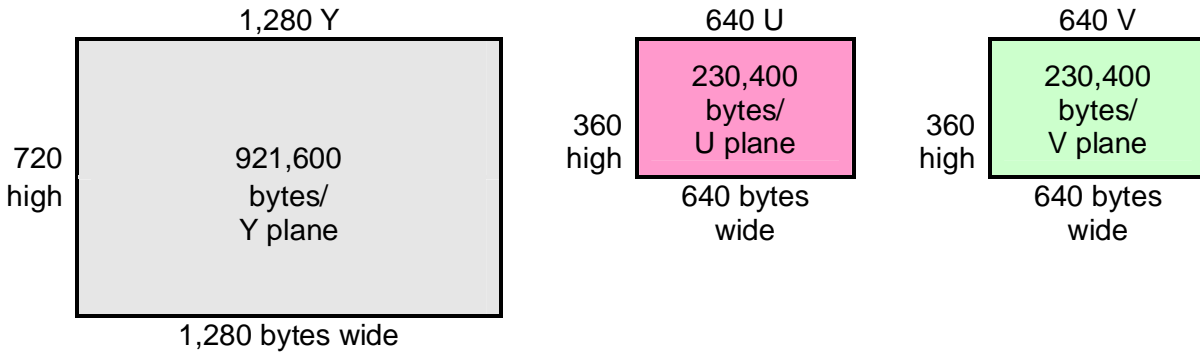| BTM field			TOP field		
Y data BTM field	U data BTM field	V data BTM field	Y data BTM field	U data BTM field	V data BTM field

For each field: plane of Y followed by plane of U followed by plane of V

BTM

1,920 Y

540
high

1,036,800
bytes/ Y plane field

1,920 bytes wide

960 U

270
high

259,200 bytes/
U plane field

960 bytes
wide

960 V

270
high

259,200 bytes/
V plane field

960 bytes
wide

followed by top field:

TOP

1,920 Y

540
high

1,036,800
bytes/ Y plane field

1,920 bytes wide

960 U

270
high

259,200 bytes/
U plane field

960 bytes
wide

960 V

270
high

259,200 bytes/
V plane field

960 bytes
wide
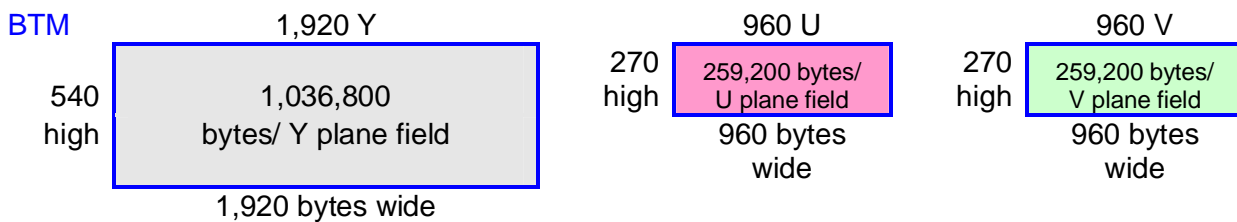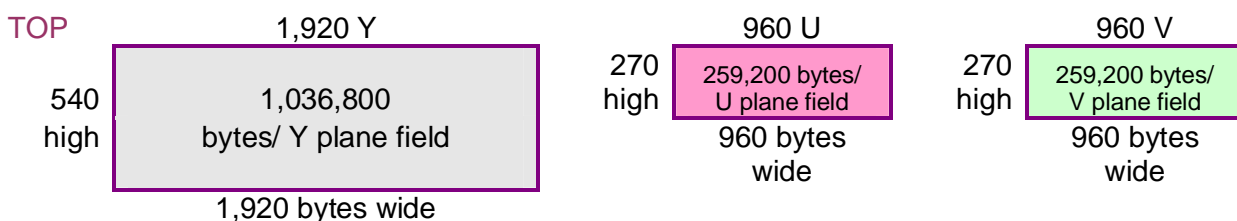
Valid video data ranges:

❑	Y:	16 - 235
❑	U and V:	16 - 240

3.4 Audio

Audio clips are provided for every video clip, matching the video length. In the vast majority of cases this was the actual audio recorded with the video.

Where the audio provided was not recorded with the video, similar/appropriate audio is provided, matched in time-length. This is denoted by '_sim_' in the audio filename (instead of '_act_', denoting actual audio recorded at the time).

Clearly the main point of the *Tvids* is video testing, so the audio supplied is intended to be used to check timing/correlation during the encode process rather than to be particularly useful as standalone audio. Consequently, this audio has not been cleaned up or normalised and nor was much time spent in ensuring good audio recording during filming.

All the audio clips are provided in two formats:

❑ MPEG-1 Layer II stereo 384kbps CBR 16-bit 48kHz and

❑ WAV linear PCM uncompressed stereo 1536kbps 16-bit 48kHz

4. Software to view & process YUV video

4.1 Viewing the YUV video

There are a number of software programs for viewing YUV files: a current list is maintained on the **TestVid** website under Support at:

http://www.testvid.com/yuvviewers.html

Links are provided to the pages where the YUV viewers can be downloaded.

TestVid accepts no responsibility or liability for download or use of any of the programs listed; the user should carefully examine the license agreement that applies to the software concerned.

4.2 Software tools provided

The following software is provided:

Software tool	Purpose
yuvmake1088	Add extra lines at the top/bottom of a 1920x1080 YUV file to make it 1920x1088
yuvfieldcombine	Combine interlaced fields which are stored in alternating format (bottom field followed by top field, each half-height) into frames where alternate lines contain alternate fields

Note

1. The software tools are provided solely for the use of the purchaser of the license to use this set of video clips and may not be used with other video or provided to other persons/organisations.

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4.2.2 yuvmake1088

This is a command line program for adding 8 additional lines to 1080 vertical resolution video, to make it 1088 vertically i.e. an integer multiple of 16.

All the lines added are greyscale, set to one grey colour.

Usage:

```
yuvmake1088 <filename.yuv> <p> <n> <c>
```

where

- `<filename.yuv>` is the input filename which is 1080 lines vertically (must have extension `.yuv`)

- `<p>` = progressive or interlaced input file, set to 'p' or 'i'

- `<n>` = the number of the 8 lines to add at the top of each frame (0, 2, 3, 6 or 8). '0' means add zero lines at the top i.e. at 8 lines at the bottom; '8' means add 8 lines at the top and zero at the bottom; '4' means add 4 at top and bottom, etc.

- `<c>` = greyscale colour to add, number 16-235. 16=black; 235=white. Numbers less than 16 will be set to 16; greater than 235 will be set to 235.

The filename for the output file, with the extra 8 lines added, will be

```
inputfile_1088.yuv
```
(the '_1088' is added by `yuvmake1088`)

The output file is put in the same folder as the input file.

4.2.3 yuvfieldcombine

This is a command line program for combining interlaced fields which are stored in alternating format (bottom field followed by top field, each half-height) into frames where alternate lines contain alternate fields.

It is assumed that the video data is stored bottom field first.

Usage:

```
yuvfieldcombine <filename.yuv> <xsize> <ysize> <nnn>
```

where

- `<filename.yuv>` is the input filename (must have extension `.yuv`)

- `<xsize>` = horizontal resolution of the input file (must be multiple of 2)

- `<ysize>` = vertical resolution of **frame** of the input file, e.g. set to 1080 for 1920x1080i; set to 480 to 720x480i (must be multiple of 4)

- `<nnn>` = number of video frames to process. Set to 0 to process all frames. If `<nnn>` is greater than the number of frames then all frames will be processed

The filename for the output file, with the fields combined will be

```
inputfile_FLDCMB.yuv
```
(the '_FLDCMB' is added by `yuvfieldcombine`)

The output file is put in the same folder as the input file.

5. Clips summary

5.1 Clips summary

❑ Total time of clips at each resolution (at 25 fps): **32 mins 47 secs 21 frames**

Clip number(s)	Name	Principal purposes	Duration (mins:secs: frames) at 25fps	First frame	Last frame
T2V001001, T2V001101, T2V001201	Bars_countdown	HD colour bars with countdown and introduction slate	00:50:00		
T2V001002, T2V001102, T2V001202	Stars_n_Stripes	Motion vectors of large areas moving rapidly and whole frame moving	00:24:20		
T2V001003, T2V001103, T2V001203	Times_Square	Global motion of frame to the right with some fast-moving objects in opposite direction	00:29:14		
T2V001004, T2V001104, T2V001204	Chrysler_building	Global zoom of low-contrast complex scene with many fine lines and detail	00:38:13		
T2V001005, T2V001105, T2V001205	Display	Rapidly changing scene on display, with high-contrast	00:21:10		
T2V001006, T2V001106, T2V001206	Smiling	Compression of faces, some in and some out of focus	00:19:17		
T2V001007, T2V001107, T2V001207	Traffic_duty	Compression of people with many movements and some obscuration	00:32:19		
T2V001008, T2V001108, T2V001208	Empire_State	Global motion scrolling up with fine lines, patterns and angles	00:57:17		
T2V001009, T2V001109, T2V001209	FDNY	Compression of objects heavily out of focus, resolving to in-focus	00:35:23		
T2V001010, T2V001110, T2V001210	Checked_caps	Motion vectors of multiple people moving semi-randomly with some obscuration and out-of-focus	00:21:19		
T2V001011, T2V001111, T2V001211	Gold_statue	Compression of water and largely monochromatic object but which has round and other patterns	00:49:07		
T2V001012, T2V001112, T2V001212	Eyewitness_news	Compression of rapidly moving text	00:13:06		

T2V001013, T2V001113, T2V001213	West_Side_Story	Dealing with rapid global zooms in/out and slow-motion effects (with text)	00:13:20		
T2V001014, T2V001114, T2V001214	Madison_Ave	Motion vectors of many objects and people, in and out of focus	00:23:13		
T2V001015, T2V001115, T2V001215	Central_Park_west	Compression of gradual scene change and largely monochrome sky but details in trees and water	00:12:20		
T2V001016, T2V001116, T2V001216	Buggy_ride	Tracking of large object in foreground moving across detailed background	00:40:00		
T2V001017, T2V001117, T2V001217	Couple_talking	Efficiency check dealing with scene with low movement but fine-detailed background	01:00:09		
T2V001018, T2V001118, T2V001218	Walking_on_water	Efficiency check where virtually no movement then large rapid obscuration and brightness change	01:03:17		
T2V001019, T2V001119, T2V001219	Benches	Compression of curved objects and detailed objects (trees etc.)	00:34:12		
T2V001020, T2V001120, T2V001220	86th_floor	Global motion of pseudo-random movement of whole scene, then global zoom out in addition	00:35:21		
T2V001021, T2V001121, T2V001221	Hudson_river	Global zoom out from water to detailed scene	00:34:07		
T2V001022, T2V001122, T2V001222	Please_tell	Compression of screen dots/potentially moiré fringing	00:36:16		
T2V001023, T2V001123, T2V001223	Traffic_twds	Motion vectors of multiple objects growing larger	00:12:16		
T2V001024, T2V001124, T2V001224	Coming_at_you	Motion vectors of multiple objects moving across the image	00:21:23		
T2V001025, T2V001125, T2V001225	Traffic_away	Motion vectors of multiple objects getting smaller	00:22:18		
T2V001026, T2V001126, T2V001226	Fast_slo_mo	Compression of slow-motion effect with objects crossing the image	00:20:14		
T2V001027, T2V001127, T2V001227	NY_rant	Efficient compression of talking head foreground and multiple objects moving in background	00:53:08		

T2V001028, T2V001128, T2V001228	Grey_buildings	Compression of patterns and lines in visually flat areas (test ringing artefacts around lines)	00:30:03		
T2V001029, T2V001129, T2V001229	Pedicab	Slow tracking of large bright foreground object with much detail in background	00:34:12		
T2V001030, T2V001130, T2V001230	Winter_jog	Fast tracking of dark object (person in dark clothes) in foreground, with rapid global movement and detailed background	00:39:02		
T2V001031, T2V001131, T2V001231	Skating_lesson	High contrast compression on largely white background	00:50:04		
T2V001032, T2V001132, T2V001232	Blue_coat	Efficieny of talking heads compression with movement and increasing size	00:24:13		
T2V001033, T2V001133, T2V001233	People_crossing	Motion vectors of many objects and people of different sizes moving in different directions	00:35:18		
T2V001034, T2V001134, T2V001234	Fire_engines	High contrast compression and non-smooth pan to right	00:19:24		
T2V001035, T2V001135, T2V001235	Pan_left	Tracking of large object filling image then across detailed scene including text then tracking multiple objects (people)	00:31:23		
T2V001036, T2V001136, T2V001236	Washington_Circle	Circular global motion of high contrast but largely monochromatic objects with patterns	00:18:16		
T2V001037, T2V001137, T2V001237	26_mile_warmup	Compression of people moving reasonably rapidly, with text and signs	00:27:10		
T2V001038, T2V001138, T2V001238	Running_backwards	Compression of scene played backwards	00:25:05		
T2V001039, T2V001139, T2V001239	Rippling_water	Efficiency of compression and motion vectors where almost all areas look the same	00:20:17		
T2V001040, T2V001140, T2V001240	Brass_world	Compression of circular objects with fine lines and multiple highlights	01:02:18		
T2V001041, T2V001141, T2V001241	Ped_xing	Compression of people with strong but largely obscured background pattern	00:31:10		

T2V001042, T2V001142, T2V001242	Following	Compression of highly random movement with highlights on large dark area	00:24:23		
T2V001043, T2V001143, T2V001243	Cab_focus	Efficiency in compressing image with high grain (particularly at end)	00:23:04		
T2V001044, T2V001144, T2V001244	Times_Sq_night	High contrast with mutliple very dark areas and very bright areas	00:26:11		
T2V001045, T2V001145, T2V001245	Night_chat	Non-realistic colouring of faces, but to be accurately reproduced	00:18:24		
T2V001046, T2V001146, T2V001246	Evening_cabs	Night-time scene with many reflective objects mainly getting smaller	00:43:11		
T2V001047, T2V001147, T2V001247	Broadway	Complex night-time scene with text, patterns and many objects & people moving in all directions	00:43:02		
T2V001048, T2V001148, T2V001248	Football_game	Motion vectors of objects (people) moving in random directions with pattern and detail (grass) behind	00:56:22		
T2V001049, T2V001149, T2V001249	UCF_knights	Banding compression test (scoreboard black background) and text, moiré patterns	00:24:19		
T2V001050, T2V001150, T2V001250	Big_band	Global motion (non-smooth scroll down/pan right) with large number of motion vectors moving together	00:22:03		
T2V001051, T2V001151, T2V001251	Tubas	Motion vectors of reflective objects frequently obscured with random movement	00:29:20		
T2V001052, T2V001152, T2V001252	Just_waiting	Efficiency of low-movement scene but with non-regular small global motion	00:19:10		
T2V001053, T2V001153, T2V001253	Coney_Island	Text compression and tracking of object (man) in busy scene with largely monochromatic but detailed area (sand)	00:32:21		
T2V001054, T2V001154, T2V001254	Hazy_crowd	Motion vectors of very large number of objects (people) in low-contrast scene	00:31:08		
T2V001055, T2V001155, T2V001255	Wonder_wheel	Compression of many high-contrast fine lines, moving almost randomly	00:55:18		
T2V001056, T2V001156, T2V001256	Dizzy_dragons	Compression of large high contrast rapidly moving areas (mainly monochromatic), with frequent obscuration	01:05:21		

T2V001057, T2V001157, T2V001257	On_the_boardwalk	Motion vectors of people moving away/towards the camera	00:26:00		
T2V001058, T2V001158, T2V001258	School_bus	Low movement but many highly similar areas, with reflective objects and text	00:25:11		
T2V001059, T2V001159, T2V001259	Orange_hair	Several high-contrast areas with fine hard-to-compress detail of unusual colour (oragnge hair)	00:12:03		
T2V001060, T2V001160, T2V001260	Turnpike	Motion vectors of small objects moving fast, diagonally, where intermediate frames have been removed	00:52:11		

5.2   List of 'CF' ('clip features') words used

The PDF of the user manual may be searched to find clips that match the given CF-words ('CF'= Clip Feature).

CF-bright_sunlight	CF-bright_daylight	CF-dull_daylight
CF-indoors_bright	CF-sunrise_sunset	CF-twilight
CF-night		
CF-light_picture	CF-dark_areas	CF-brightness_change
CF-high_contrast	CF-low_contrast	CF-rapid_changes
CF-bright_colours	CF-dull_colours	CF-highlights
CF-large_monochromatic	CF-monochromatic	CF-white_background
CF-scene_change	CF-transition	CF-subjects_behind_foreground
CF-movement_in	CF-movement_out	CF-movement_across
CF-rapid_movement	CF-random_movement	CF-low_movement
CF-slow_motion	CF-diagonal_movement	CF-coordinated_movement
CF-hand_held	CF-angled	
CF-zoom_in	CF-zoom_out	CF-rapid_zoom
CF-panning	CF-scroll	CF-from_above
CF-tracking	CF-tracking_following	
CF-out_of_focus		
CF-people	CF-faces	CF-crowd
CF-talking_head	CF-round	CF-vehicles
CF-text	CF-moving_text	
CF-water	CF-reflections	CF-trees
CF-patterns	CF-fine_details	CF-lines
CF-moire		
CF-sky	CF-light_sky	CF-sports
CF-complex_scene	CF-graininess	CF-animals
CF-banding		
CF-sound_talking		

6. Detailed information on individual clips

The following pages provide detailed information on the clips in this set.

6.1   Detailed description of each clip

This section contains detailed descriptions of each video clip, and the associated audio.

70 features are listed for each clip: the purpose of providing these descriptions is to make it easier to select specific clips for specific features.

Therefore even if a characteristic does occur in a particular clip, this is not necessarily listed where it is not a prominent feature and/or where it is believed that the clip would not be selected for this particular feature. (As an example, clip T2V001010_Checked_caps does include a reasonable amount of text - on the billboards etc. above the people – but it is felt that this clip would not be selected for the text so is not listed.)

Clearly to some extent these descriptions and selections are subjective, and the user is likely to come to their own conclusions as to which are most relevant to their particular codec / situation: the descriptions provided are intended to be an appropriate starting point.

Bars_countdown

GN.01	Filenames	T2V001001_Bars_countdown_1920x1080p.yuv T2V001101_Bars_countdown_1280x720p.yuv T2V001201_Bars_countdown_1920x1080i.yuv
GN.02	Horizontal x vertical size(s)	1920x1080; 1280x720
GN.03	Progressive / Interlaced	'p' file suffix = progressive; 'i' file suffix = interlaced
GN.04	Video format	YUV planar 4:2:0
GN.05	Bits per sample	8 (for each of Y, U, V)
GN.06	Video description	HD colour bars and countdown with title slate, black segment and audio tone & pips
GN.07	Principal purposes	Monitor set up; text
GN.08	Duration (mins:secs:frames) at 25 fps *	00:50:00
GN.09	No. of frames (1080i 1 less *)	1250
GN.10	1080i generation / artefacts	Motion tracking
GN.11	Original video format	1080p25; 720p25
GN.12	File size(s) on disk (MB)	3,888 : 1,729: 3,882
GN.13	CF words	CF-text, CF-dark_picture, CF-patterns, CF-black_background, CF-round_objects, CF-transitions, CF-large_monochromatic
GN.14	Associated audio types	MPEG1 Layer II 48kHz 16bit stereo 384kbps Constant Bit Rate 16bit uncompressed 48kHz stereo WAV
GN.15	Associated audio filenames	T2a001x01_Bars_countdown_act_MP1LII.mpa T2a001y01_Bars_countdown_act_unc.wav
GN.16	Associated audio description	1kHz audio tone and pips on countdown
GN.17	Audio duration	Same as video (video played at 25fps)

Clip features		Details		SCENE SUBJECTS		
LIGHT CONDITIONS				SS.01	People	-
LC.01	Bright sunlight	-		SS.02	Faces	-
LC.02	Bright daylight	-		SS.03	Vehicles	-
LC.03	Dull daylight	-		SS.04	Buildings	-
LC.04	Shaded areas	-		SS.05	Trees	-
LC.05	Indoors bright	-		SS.06	Text	Some
LC.06	Indoors dark	-		SS.07	Talking head	-
LC.07	Twilight	-		SS.08	Water	-
LC.08	Sunrise/sunset	-		SS.09	Leaves/grass	-
LC.09	Night	-		SS.10	Sky	-
LC.10	Backlighting	-		SS.11	Clouds	-
LC.11	Large brightness change	Some		SS.12	Patterns	Some

TestVid

SS.13	Round objects	One

SCENE PROPERTIES

SP.01	Depth of field	-
SP.02	Out-of-focus	-
SP.03	Fine lines / moiré patterns	-
SP.04	Reflections	-
SP.05	Scene change	4
SP.06	Fades	-
SP.07	Transitions	4
SP.08	Slow/fast motion	-

COLOURS & CONTRAST

CC.01	Light picture	Most
CC.02	Dark picture	Black
CC.03	Bright colours	Some
CC.04	Dull colours	-
CC.05	Fine detail/moiré patterns	-
CC.06	High contrast areas	Some
CC.07	Large monochromatic areas	Some
CC.08	Graininess	-
CC.09	Black background	10 seconds
CC.10	White background	-

GLOBAL MOTION

GM.01	Fast track/pan	-
GM.02	Tracking in/out	-
GM.03	Tracking	-
GM.04	Panning	-
GM.05	Tracking (following)	-
GM.06	Fast scroll	-
GM.07	Scroll	-
GM.08	Angled	-
GM.09	Zoom in	-
GM.10	Zoom out	-
GM.11	Hand-held camera	-

SUBJECT MOTION

SM.01	Movement out of picture	-
SM.02	Movement into picture	-
SM.03	Movement across picture	-
SM.04	Movement up/down	-
SM.05	Diagonal movement	-
SM.06	Subjects behind foreground objects	-
SM.07	Low movement	Yes

SOUND CONTENT

SC.01	Talking	-
SC.02	Movement	-
SC.03	Vehicles	-
SC.04	Wind	-
SC.05	Music	-
SC.06	Background	-
SC.07	Other	1kHz tone

SOUND CHARACTERISTICS

SH.01	Mono/ stereo	Stereo
SH.02	Average volume	Mid
SH.03	Level changes	-
SH.04	Clear/ distorted	-

Stars_n_Stripes

GN.01	Filenames	T2V001002_Stars_n_Stripes_1920x1080p.yuv
		T2V001102_Stars_n_Stripes_1280x720p.yuv
		T2V001202_Stars_n_Stripes_1920x1080i.yuv
GN.02	Horizontal x vertical size(s)	1920x1080; 1280x720
GN.03	Progressive / Interlaced	'p' file suffix = progressive; 'i' file suffix = interlaced
GN.04	Video format	YUV planar 4:2:0
GN.05	Bits per sample	8 (for each of Y, U, V)
GN.06	Video description	US flag flapping in the breeze; close-up
GN.07	Principal purposes	Motion vectors of large areas moving rapidly and whole frame moving
GN.08	Duration (mins:secs:frames) at 25 fps *	00:24:20
GN.09	No. of frames (1080i 1 less *)	620
GN.10	1080i generation / artefacts	Frame blend
GN.11	Original video format	1080p25
GN.12	File size(s) on disk (MB)	1,928 : 857 : 1,928
GN.13	CF words	CF-bright colours, CF-large_monochromatic, CF-movement_across
GN.14	Associated audio types	MPEG1 Layer II 48kHz 16bit stereo 384kbps Constant Bit Rate 16bit uncompressed 48kHz stereo WAV
GN.15	Associated audio filenames	T2a001x02_Stars_n_Stripes_act_MP1LII.mpa
		T2a001y02_Stars_n_Stripes_act_unc.wav
GN.16	Associated audio description	Actual audio recorded with video
GN.17	Audio duration	Same as video (video played at 25fps)

Clip features	Details		SCENE SUBJECTS		
LIGHT CONDITIONS			SS.01	People	-
LC.01	Bright sunlight	-	SS.02	Faces	-
LC.02	Bright daylight	All	SS.03	Vehicles	-
LC.03	Dull daylight	-	SS.04	Buildings	-
LC.04	Shaded areas	-	SS.05	Trees	-
LC.05	Indoors bright	-	SS.06	Text	-
LC.06	Indoors dark	-	SS.07	Talking head	-
LC.07	Twilight	-	SS.08	Water	-
LC.08	Sunrise/sunset	-	SS.09	Leaves/grass	-
LC.09	Night	-	SS.10	Sky	White
LC.10	Backlighting	-	SS.11	Clouds	-
LC.11	Large brightness change	-	SS.12	Patterns	-

TestVid

SS.13	Round objects	-

SCENE PROPERTIES

SP.01	Depth of field	Shallow
SP.02	Out-of-focus	Some
SP.03	Fine lines / moiré patterns	-
SP.04	Reflections	-
SP.05	Scene change	-
SP.06	Fades	-
SP.07	Transitions	-
SP.08	Slow/fast motion	-

COLOURS & CONTRAST

CC.01	Light picture	-
CC.02	Dark picture	-
CC.03	Bright colours	All
CC.04	Dull colours	-
CC.05	Fine detail/moiré patterns	-
CC.06	High contrast areas	Several
CC.07	Large monochromatic areas	All
CC.08	Graininess	-
CC.09	Black background	-
CC.10	White background	-

GLOBAL MOTION

GM.01	Fast track/pan	-
GM.02	Tracking in/out	-
GM.03	Tracking	-
GM.04	Panning	-
GM.05	Tracking (following)	-
GM.06	Fast scroll	-
GM.07	Scroll	-
GM.08	Angled	-
GM.09	Zoom in	-
GM.10	Zoom out	-
GM.11	Hand-held camera	Smooth

SUBJECT MOTION

SM.01	Movement out of picture	-
SM.02	Movement into picture	-
SM.03	Movement across picture	Lots, fast
SM.04	Movement up/down	-
SM.05	Diagonal movement	-
SM.06	Subjects behind foreground objects	-
SM.07	Low movement	-

SOUND CONTENT

SC.01	Talking	Background noise
SC.02	Movement	-
SC.03	Vehicles	Traffic
SC.04	Wind	-
SC.05	Music	Some
SC.06	Background	-
SC.07	Other	-

SOUND CHARACTERISTICS

SH.01	Mono/ stereo	Stereo
SH.02	Average volume	Mid
SH.03	Level changes	-
SH.04	Clear/ distorted	-

Times_Square

GN.01	Filenames	T2V001003_Times_Square_1920x1080p.yuv
		T2V001103_Times_Square_1280x720p.yuv
		T2V001203_Times_Square_1920x1080i.yuv
GN.02	Horizontal x vertical size(s)	1920x1080; 1280x720
GN.03	Progressive / Interlaced	'p' file suffix = progressive; 'i' file suffix = interlaced
GN.04	Video format	YUV planar 4:2:0
GN.05	Bits per sample	8 (for each of Y, U, V)
GN.06	Video description	Somewhat irregular pan to the right, around Times Square
GN.07	Principal purposes	Global motion of frame to the right with some fast-moving objects in opposite direction
GN.08	Duration (mins:secs:frames) at 25 fps *	00:29:14
GN.09	No. of frames (1080i 1 less *)	739
GN.10	1080i generation / artefacts	Frame blend
GN.11	Original video format	1080p25
GN.12	File size(s) on disk (MB)	2,299 : 1,022 : 2,299
GN.13	CF words	CF-panning, CF-complex_scene
GN.14	Associated audio types	MPEG1 Layer II 48kHz 16bit stereo 384kbps Constant Bit Rate 16bit uncompressed 48kHz stereo WAV
GN.15	Associated audio filenames	T2a001x03_Times_Square_act_MP1LII.mpa
		T2a001y03_Times_Square_act_unc.wav
GN.16	Associated audio description	Actual audio recorded with video
GN.17	Audio duration	Same as video (video played at 25fps)

	Clip features	Details		SCENE SUBJECTS	
LIGHT CONDITIONS			SS.01	People	Many
LC.01	Bright sunlight	-	SS.02	Faces	Few
LC.02	Bright daylight	-	SS.03	Vehicles	Cars
LC.03	Dull daylight	All	SS.04	Buildings	Many
LC.04	Shaded areas	-	SS.05	Trees	-
LC.05	Indoors bright	-	SS.06	Text	Some
LC.06	Indoors dark	-	SS.07	Talking head	-
LC.07	Twilight	-	SS.08	Water	-
LC.08	Sunrise/sunset	-	SS.09	Leaves/grass	-
LC.09	Night	-	SS.10	Sky	White
LC.10	Backlighting	-	SS.11	Clouds	-
LC.11	Large brightness change	-	SS.12	Patterns	Some

SS.13	Round objects	-

SCENE PROPERTIES

SP.01	Depth of field	Deep
SP.02	Out-of-focus	-
SP.03	Fine lines / moiré patterns	-
SP.04	Reflections	Glass - some
SP.05	Scene change	-
SP.06	Fades	-
SP.07	Transitions	-
SP.08	Slow/fast motion	-

COLOURS & CONTRAST

CC.01	Light picture	-
CC.02	Dark picture	-
CC.03	Bright colours	Areas
CC.04	Dull colours	-
CC.05	Fine detail/moiré patterns	-
CC.06	High contrast areas	Several
CC.07	Large monochromatic areas	-
CC.08	Graininess	-
CC.09	Black background	-
CC.10	White background	-

GLOBAL MOTION

GM.01	Fast track/pan	-
GM.02	Tracking in/out	-
GM.03	Tracking	-
GM.04	Panning	Slow right
GM.05	Tracking (following)	-
GM.06	Fast scroll	-
GM.07	Scroll	-
GM.08	Angled	-
GM.09	Zoom in	-
GM.10	Zoom out	-
GM.11	Hand-held camera	-

SUBJECT MOTION

SM.01	Movement out of picture	Some, fast
SM.02	Movement into picture	Some, fast
SM.03	Movement across picture	Some, fast
SM.04	Movement up/down	-
SM.05	Diagonal movement	-
SM.06	Subjects behind foreground objects	Few
SM.07	Low movement	-

SOUND CONTENT

SC.01	Talking	Very quiet
SC.02	Movement	-
SC.03	Vehicles	Traffic
SC.04	Wind	-
SC.05	Music	-
SC.06	Background	Traffic
SC.07	Other	-

SOUND CHARACTERISTICS

SH.01	Mono/ stereo	Stereo
SH.02	Average volume	Mid
SH.03	Level changes	-
SH.04	Clear/ distorted	-