VideoClarity

Tools for Video Analysis

ClearView Players
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1 Inside the Package
The ClearView Player product line contains four different models:

- CVP-1011
- CVP-1012
- CVP-1012-R
- CVP-3082-4K

What is inside the package depends the model purchased. You have the following items:

- AC Power – The power supply auto-senses the correct country power. We include a power cable based on US standards.
- Breakout cable(s) for models CVP-1011 and CVP-S3082-4K with analog IO.
- Two quad SMB to BNC cables for CVP-3082-4K.
- GEN10 reference generator for CVP-3082-4K.
- Mini to standard HDMI cables per connector (CVP-1011 and CVP-3082-4K).
- Printed System Guide.

1.1 Software Installed
When shipped, ClearView Player has the latest Windows updates, drivers for all of the hardware modules, all of the licenses installed, and it is ready to use.

1.2 Username and Password
ClearView Player is shipped without a username/password. It is strongly advised that you setup users and passwords to guard against unwanted use. The ClearView Player application must have super-user/Administrator privileges so all users must have these access rights.

1.3 Network Interfaces
ClearView Player includes one or two Gigabit Network Interfaces for connecting to your network. The interfaces are shipped configured for DHCP.

1.4 Anti-Virus Software
No anti-virus software has been installed on this system. It is highly recommended that you install your corporate anti-virus software and any other protective software advised by your company.

1.5 Windows Updates
The system is configured to perform automatic updates from the Windows website. It is recommended that you connect the system to the internet from time to time to allow these updates to occur. Or, if your company has some other update policy, you should implement that. Video Clarity highly recommends keeping your computer up to date with all of the latest patches and updates from Microsoft.
2 CVP Systems Start Guide

The various system model cabling connections required are depicted below. First a keyboard, mouse and desktop monitor should be connected before power cable for turn up. Appropriate video/audio input/outputs may be connected after power up.

Prior to connecting the Video I/O cables (with the exception of your Windows Desktop Display), you should first power up the system to make sure that it arrived intact.

After updating ClearView Player with any corporate IT required software, launch the ClearView Player icon on the desktop. If you receive an error message, you have made a change to the machine ID. This is ok. You simply need to copy the new machine name into an email, and send it to authorization@videoclarity.com. Detailed instructions for doing this are listed in the Licenses section.

After checking that everything is in working order connect all of the necessary Video I/O. Information on the various module I/Os can be found in the Hardware Modules section.

- Note: Recorded program audio IO is with embedded SDI audio and/or associated analog breakout only)

CVP-3082-4K, CVP-3084-4K-5 and CVP-3084-4K-10 Back Panel

Power: Variable 100 -240 VAC Auto Detect, Set Main Switch to ON --- ‘ I ‘

Windows Desktop: - via HDMI
- VGA converter cable is supplied

Broadcast Video I/O: Two quad 3G HDSDI in/out
Two analog breakouts with tri-level reference inputs
Mini-HDMI outputs (2)

Keyboard & Mouse: Connect via USB (optional PS/2 provided)

Dual GNIC for IP capture, network archive and/or file access
CVP-3082-4K Front Panel

Power On button: Push to start

Restart button

CVP-3084-4K-5 and CVP-3084-4K-10 Front Panel

Power off

Power On

CVP-2044 Back and Front Panel

Power: 100-240 Volts AC Variable Auto-Sense

Keyboard & Mouse: Connect via USB, PS/2 provided

From left to right:
-A/V Analog breakout (cable supplied)
-Mini HDMI output (cable supplied)
-Four programmable HDSDI video inputs or outputs with embedded audio (SMB to BNC cables supplied)

Single GNIC for IP stream capture and decode function

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Connect desktop monitors, keyboard and mouse before connecting power
- Push Power On button for models CVP-1011 and 1012(-R) as shown above.
- Power down is via Windows desktop, click >Lower Left Windows Icon, click >Shut down
- Power off may be also via front panel button indicated above

**CVP-1011 Back Panel**

- Power: 100-240 VAC
- Variable/Auto Sense
- Windows Desktop Monitor:
  - Connect via VGA, DVI or HDMI
  - USB for Keyboard and Mouse
- HDSDI video with embedded audio
- Mini HDMI In/Out (cables supplied)
- A/V Analog breakout (cable supplied)

**CVP-1012 Back Panel**

- Power: 100-240 VAC
- Variable/Auto Sense
- Dual GNIC for IP stream capture, network archive and/or file access
- HDSDI record or play 3G 1080p50/60
- Dual playback up to 1080i50/60

**Note:** Model CVP-1012-R incorporates a tri-level analog reference input in place of In2 pictured above.
3 Licenses

ClearView Player has 2 licenses:

- ClearView license, which enables the various hardware modules
- 3rd-party licenses for various file import features

ClearView Player was shipped fully licensed; however, changes such as machine ID, user name, firewall settings, etc. may require a refresh of the licenses.

After putting your machine on the network and updating the firewall, security settings,

- Double click on the ClearView Player icon
- If you receive a License Error, then
  - Select Start -> Programs -> Video Clarity -> ClearView Licenser.
  - A popup will appear which is named ClearView Licenser. Please copy the entire text from the grey-out box, and mail it to authorization@videoclarity.com. Note: the text should look like “Version VX.X User XXXXXXXXXXX (WinNT VX.X [Build XXXX] 0)”.
  - Go to <C>:\Program Files\Drastic\MediaReactor if running in Windows 32bit. Note: The root drive may not be <C:>, and in 64 bit mode Program Files is Program Files (x86).
  - Select/Run DTMRLicense.exe
  - Place either your or the primary users email and name in the first 2 boxes.
  - Press Generate and the Site Code will appear
  - Copy the Site Code, and mail it to authorization@videoclarity.com

It is possible that the ClearView license is correct, but the 3rd-party file import license needs to be refreshed. To check this:

- Double click on the ClearView icon
- Launch Windows Explorer
- Choose the CV Media Drive (probably the E: drive)
- Choose Clips
- Choose BMPs
- Choose SportsBMP
- Drag Sports80030.bmp onto the ClearView Desktop
- Press Load in the File Import Pane
- If you get a MediaRead License Error then
  - Go to <C>:\Program Files\Drastic\MediaReactor if running in Windows 32bit. Note: The root drive may not be <C:>, and in 64 bit mode Program Files is Program Files (x86).
  - Select/Run DTMRLicense.exe
  - Place either your or the primary users email and name in the first 2 boxes.
  - Press Generate and the Site Code will appear
  - Copy the Site Code, and mail it to authorization@videoclarity.com

ClearView supports high speed disk access using Raid 0. The captured video sequences are stored on the array in fully uncompressed format in any of the following user-selectable formats:

- Y’CbCr 8-bit
- Y’CbCr 10-bit
4 Software Quick Start Guide

Double-click on the ClearView icon on the desktop. This shortcut launches a program, which resides in \Program Files\Video Clarity\ClearView. By default

The following screen will launch for CVP-1011

Figure 1: Initial Screen 1011:
Or the following screen will launch for CVP-1012 and 3082-4K.

**Figure 2: Initial Screen 1012, -R, 2044, and 3082-4K, 3084-4K-5 and -10:**

You have several options when starting to use ClearView Player.

If you do not have any video sequences loaded, then you must load one or more:
- You can import a file
- You can capture/record from hardware I/O

After import or record you can
- Play 1 video sequence at any rate
- Play two different files of the same HD or SD format (CVP-1012 and 3082-4K only)
- Play one 4K file at any rate (CVP-3082-4K only)
The following four figures outline the general steps to do each of the above actions. Each box in the figures is thoroughly described under “User Interface Operations” below. You can hyperlink on any box to review the actions needed unless the box is double-lined. In the double-lined case, this is informational.
5 Operations
The GUI screen consists of a number of panes dedicated to specific functions. In the GUI these panes appear generally in the order of use during a typical video quality analysis session.

Figure 6: CVP-1011 GUI
The GUI allows full control over all of the engineering parameters. It consists of a number of panes, any of which can be selected in any order. (The preferred sequence is shown under “Software Quick Start Guide”.)

- **Choose Library** using the Memory/Disk pane
- **Input a File** using the File Import pane
- **Select Hardware Input Parameters** using the Record pane
- **Select Thumbnail to Play** using the Sequence Manager pane
- **Select a View Mode** using the View Mode pane
- **Adjust Clip Alignment** using the Clip Alignment pane
- **Adjust the Play Properties** using the Color Space, Split, Play Mode, and Field/Frame panes
- **Select a VTR Mode** using the VTR buttons under the View Mode pane

The sequence name of the video clip being played and analyzed is shown live in the middle of the GUI; above the VTR buttons.
5.1 Choose a Video Output
The Video Output Pane controls ClearView’s uncompressed video outputs.

Figure 8: Video Output

Table 4: Video Output Pane Descriptions

<table>
<thead>
<tr>
<th>Output Device</th>
<th>The list of Output Devices is dependent on the ClearView Player outputs that are resident on each model’s back panel.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Broadcast Output Module – display Y’CbCr or RGBA onto the Television/Monitor and display the GUI on the DVI/VGA display.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Video Format</th>
<th>The list of available resolutions and frame rates depends upon the Output module.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• The Broadcast Output Module is restricted by broadcast specifications provided by DVB and SMPTE.</td>
</tr>
</tbody>
</table>

| Analog Output          | Defines the type of analog output when using the Broadcast Output Module (i.e. Composite, S-Video or Component; there are about 20 different standards world-wide). The Output is sent out the chosen analog output and SDI/HD-SDI. |

The Broadcast output device uses the HD-SDI, SDI, Component, S-Video, or Composite output. In addition it also includes 4 stereo channels (2 in/2 out while playing and recording) of AES-EBU and 16 mono embedded channels. VANC data can be captured and played. VANC acts like a bigger raster size. The audio & VANC controls are turned on/off via the Configuration Menu.
After selecting an Output Device, a list of available video format and analog outputs for the Output Device are displayed in the Video Format pull-down menu. For example, if the Output Device is Broadcast I/O, the Video Format can be 1080i 59.94Hz, and the Analog Output should be 1080i SMPTE.

After a Video Format has been selected, the ClearView Player memory is tiled to the resolution of the selected format. Video sequences imported after this selection is made are either padded with black to the current resolution or are clipped to the current resolution. For example, if ClearView is operating in 1080i at 59.94 Hz, the resolution is 1920 x 1080 based on the industry standard. If a NTSC sized sequence is loaded, it will be centered on 1920 X 1080 and padded with black on all four sides.

The image format must be chosen next. This item is shown in the Memory-Disk Pane below. The choices are as follows:

- Y'CbCr 8-bit – this is a Broadcast I/O format
- Y'CbCr 10-bit – this is a Broadcast I/O format

Any video sequence, regardless of its actual input image format, can be loaded into any image format. After it is inputted to a specific image format it can only be outputted to a compatible display.

Note: video sequences already loaded will not play if the Output Format does not match the clip’s output format when it was originally loaded. If you want to view a video sequence that was previously loaded in a different output format, then you will need to reload it. To view the properties of any video sequence, hover the cursor over the thumbnail or view the video sequences in detail mode.

5.1.1 ClearView Player 4K: One Board Input or Output

Playing 4K out of one broadcast board is by default Board 1 on single board systems and selectable between Board 1 and Board 2 on dual board systems. All 4K systems are able to play up to 60Hz rate, and dual board systems are able to play out two sequences up to 4K resolutions up to 60Hz. (Note. Single board play or record is up 25 Hz on model CV-S3082-4K (with CV-SDI-IO-4K interfaces) dual board selectable mode is required on this model to play or record up to 60Hz). All available formats will appear when “Broadcast Output Module 1” or “Broadcast Output Module 2” is selected. The formats displayed below show a subset the formats for one board 4K playback, “4x1920x1080”.

Note: ClearView CVP-S3082-4K or CVP-2044 do not support “dual output” for 4K formats as do models CVP-3084-4K-5 and CVP-3084-4K-5.

Figure 9: Video Formats One Board 4K
The image of a broadcast board below shows the quadrant of the monitor that the system outputs to the display. These are used as inputs, outputs or both interfaces can be used for simultaneous dual sequence output functions.

**Figure 10: CVP-3084-4K-5 or CVP-8084-4K-10 back panel configuration**

| 1 = Upper Left | 1 = Upper Left |
| 2 = Upper Right | 2 = Upper Right |
| 3 = Lower Left | 3 = Lower Left |
| 4 = Lower Right | 4 = Lower Right |

**Figure 11: CVP-2044 back panel configuration**

The configuration of 4K IO for CVP-2044 is as follows…

1 = Upper Left
2 = Upper Right
3 = Lower Left
4 = Lower Right
5.1.2 ClearView Player 4K: HDTV and SDTV Input or Output
Recording or playing HDTV or SDTV formats using a 4K system:
By choosing either Broadcast Input Module 1 or Broadcast Input Module 2 under the Broadcast record tab as Single Input and also any playback function, the input/output mapping of either Board 1 or Board 2 is as follows.
SDI 1 = Input 1
SDI 2 = Input 2
SDI 3 = Output 1
SDI 4 = Output 2

5.1.3 ClearView Player 4K: Two Board Output (CV-S3082-4K model only)
Playing or recording 4K is provided up to 60Hz in early player models using two CV-SDI-IO-4K modules or “Two Boards”. The Formats displayed in dual board 4K systems are listed in the GUI pulldown as “2x2x1920x1080” to indicate that the quadrants of a 3840X2160 image format are tiled 2x2. Each tile is carried by one 3G HDSDI input or output in a shared configuration between the two interface boards.

Note: ClearView Player 4K model CV-3082-4K with early model IO (CV-SDI-IO-4K) do not support “dual sequence output” for 4K formats.

Figure 11: Video Formats Two Board 4K on model CVP-3082-4K only

The 2X2X1920x1080 Format is used in early ClearView models with CV-SDI-IO-4K in order to play or record 4K sequences from two broadcast boards for all frame rates available including 23.98, 24, 25, 29.97, 30, 50, 59.94 and 60 fps. These formats will appear when “Broadcast Output Module 1 & 2” is selected. Likewise, these formats will appear on the Broadcast tab for record functions.

When facing the back of the machine:
The lower two tiles of the 4K image come in or out of the module on the left side (Board 2), and the upper two tiles of the image come in or out of the module on the right hand side (Board 1). See figure 88 below for inputting or outputting “2X2X1920X1080”

Figure 12: Two I/O Board 4K

<table>
<thead>
<tr>
<th>In1 = Lower Left</th>
<th>In1 = Upper Left</th>
</tr>
</thead>
<tbody>
<tr>
<td>In2 = Lower Right</td>
<td>In2 = Upper Right</td>
</tr>
<tr>
<td>Out3 = Lower Left</td>
<td>Out3 = Upper Left</td>
</tr>
<tr>
<td>Out4 = Lower Right</td>
<td>Out4 = Upper Right</td>
</tr>
</tbody>
</table>
CVP-3082-4K model continued…

In order to play out of two boards simultaneously, the two boards will need a gen lock signal coming into the breakout cable inputs. This also needs to be set in the config menu in ClearView. The “Ref Source” selection needs to be set to external for both drop down menus and the check box for “Broadcast Playback Use Ref Source” needs to be checked. This can be unchecked when only using one board.

**Figure 13: Playback Using Reference Config**

Note: Make sure when using this gen locking technique that the signal’s refresh rate (Hz) coming into the system through the break-out cables is the same as the currently selected video format in ClearView, otherwise when you open ClearView you may receive errors.

**Below are the different configurations of the switches on the back of the AJA Gen10 which is the supplied device used as the sync source. Figures are taken from the Gen10 manual.**
Figure 14: AJA Gen10 Format Table

Table 1. Selection Matrix For Switches 6, 7 and 8
The following table shows the combinations of DIP switch settings required to configure various formats. To use the table, first locate the video format you want in the colored columns and then set switches as shown in the corresponding left hand gray column. 

Note: the switches numbers and labels are both shown on the chart, with the labels in parentheses (for example, switch 4 is labelled “FORMAT” and switch 8 is labelled “S3”).

<table>
<thead>
<tr>
<th>SW 4 (FORMAT)</th>
<th>59.94</th>
<th>50</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW 5 (HD FMT)</td>
<td>1080</td>
<td>720</td>
</tr>
</tbody>
</table>

SW8 (S3) · SW7 (S2) · SW6 (S1): These three switches form a binary value shown in the left hand column below. A “0” = switch LEFT, a “1” = switch RIGHT.

<table>
<thead>
<tr>
<th>SW8 SW7-SW6 (S3) (S2) (S1)</th>
<th>1080p60</th>
<th>720p59.94</th>
<th>1080p60</th>
<th>720p50</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 0 0</td>
<td>1080p60</td>
<td>720p59.94</td>
<td>1080p60</td>
<td>720p50</td>
</tr>
<tr>
<td>0 0 1</td>
<td>1080p23.98</td>
<td>720p23.98</td>
<td>1080p26</td>
<td>720p26</td>
</tr>
<tr>
<td>0 1 0</td>
<td>1080p23.98</td>
<td>720p23.98</td>
<td>1080p26</td>
<td>720p26</td>
</tr>
<tr>
<td>0 1 1</td>
<td>1080p29.97</td>
<td>202p29.97</td>
<td>1080p26</td>
<td>720p26</td>
</tr>
<tr>
<td>1 0 0</td>
<td>1080p60</td>
<td>720p60</td>
<td>1080p60</td>
<td>720p50</td>
</tr>
<tr>
<td>1 0 1</td>
<td>1080p24</td>
<td>720p24</td>
<td>1080p60</td>
<td>720p25</td>
</tr>
<tr>
<td>1 1 0</td>
<td>1080p24</td>
<td>720p24</td>
<td>1080p26</td>
<td>720p26</td>
</tr>
<tr>
<td>1 1 1</td>
<td>1080p30</td>
<td>720p30</td>
<td>1080p26</td>
<td>720p26</td>
</tr>
</tbody>
</table>

Note: for 1080p29.97 use 1080p59.94
for 1080p23.98 use 1080p60
for 1080p26 use 1080p50

You can also check the break-out input through the Xena2kRouter application on the desktop, make sure to check for both boards.

Note: The Xena2KRouter application on all current models is now called “Cables”. This application resides on the desktop to allow additional understanding of active IO in any record or playback mode your CVP system is presently in.
5.2 Choose a Library
The Memory-Disk Pane displays the Memory and Disk properties, allows the selection of image format, and lets the user control the library file system.

A library acts like a Windows directory with a few differences.

Similarities:

- Much like Windows directories, you should organize your video sequences together in a meaningful way. For example, all of the 1080i, 59.94, 8-bit video sequences for the NAB show could be placed in 1 library.
- You can copy, move, delete and sort video sequences within a library.

Differences:

- Libraries have an index file which catalogs information about the video sequences. This index file holds information like the sequence name, the resolution, the thumbnail to display, the playing frequency, the mark-in/mark-out points, etc. The file name for this catalog is “sequences”. Please do not delete this file as it will result in a loss of the video sequences in the entire library.
- Each video sequence has 3 files associated with it – the uncompressed video sequence, the uncompressed audio sequence, and a text overlay file. The text overlay file contains the text to be displayed when overlay is checked. The default name is the sequence name. Since this is a text file, it can be easily changed using any text editor.
The ClearView Player file system is configured as Raid 0. Please back up the system. As long as you restore the “sequences” catalog file, you do not need to restore the entire library if you need to conserve space.

ClearView uses its own file system to ensure playback and record integrity.

**Figure 16: Disk**

<table>
<thead>
<tr>
<th>Disk Usage</th>
<th>Library</th>
<th>Image Fmt</th>
<th>Width</th>
<th>Height</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F:\1080i60\</td>
<td>Y'CbCr 8 bpc</td>
<td>1920</td>
<td>1080</td>
</tr>
<tr>
<td>Total</td>
<td>585117 Mβ</td>
<td>147868 Frames</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Used</td>
<td>13530 Mβ</td>
<td>3420 Frames</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Free</td>
<td>571587 Mβ</td>
<td>144448 Frames</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 5: Disk Descriptions**

<table>
<thead>
<tr>
<th>Library button allows organization of the video sequences. You can change libraries by pulling down on the tab or selecting the library button. The library button starts the library manager controls like delete, move, copy, etc.</th>
</tr>
</thead>
</table>
| **Image Fmt** | Select the Image format. Choices include: Y’CbCr, RGBA, RGB, BGR, ARGB, 8-bit, 10-bit.  
The image format is described in Choose a Video Output |
| **W & H** | Width and Height are informational. These are set in the Choose a Video Output pane |
| **Memory & Disk Statistics** | These fields display the Disk and Memory statistics for informational purposes (Total, Used, Free, megabytes, number of fields) |
| Y’CbCr 8 bpc | 8 Bit Y’CbCr, 4:2:2 Sampling |
| Y’CbCr 10 bpc | 10 Bit Y’CbCr, 4:2:2 Sampling |
| RGB 8 bpc | 8 Bit RGB, 4:4:4 Sampling formatted for the DVI Output Module |
| BGR 8 bpc | 8 Bit RGB, 4:4:4 Sampling formatted for the DVI Output Module |
| ARGB 8 bpc | 8 Bit RGB, 4:4:4 Sampling formatted for the DVI Output Module |
| RGBA 8 bpc | 8 Bit RGB, 4:4:4 Sampling formatted for the Broadcast Output Module |
| RGBA 10 bpc | 10 Bit RGB, 4:4:4 Sampling formatted for the Broadcast Output Module (Dual- |
To change libraries, you can simply choose a different library from the library name pulldown or you can select Library. If you choose the Library button, the following will be displayed.

**Figure 16: Library Manager Controls**

![Library Manager Controls](image1)

**Figure 17: Create New Library**

![Create New Library](image2)
**Table 6: Library Manager Descriptions**

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>New</strong></td>
<td>Create a new library. You must&lt;br&gt;• Create the directory using standard Windows commands&lt;br&gt;• Open the directory&lt;br&gt;• Choose the sequences file and select save.</td>
</tr>
<tr>
<td></td>
<td><em>Note: Refer to Create New Library above.</em></td>
</tr>
<tr>
<td><strong>Add</strong></td>
<td>This allows ClearView to recognize a library added outside of ClearView. For example: restoring a library from tape backup or copying a library from another ClearView system.</td>
</tr>
<tr>
<td></td>
<td><em>Note: ClearView needs to reference the sequences file in each library. This command activates a sequences file.</em></td>
</tr>
<tr>
<td></td>
<td>• Select the Source Library&lt;br&gt;• Press the Add button</td>
</tr>
<tr>
<td><strong>Remove (in the upper pane)</strong></td>
<td>This removes the sequences file from an existing directory.&lt;br&gt;• Select the Source Library&lt;br&gt;• Press the Remove button</td>
</tr>
<tr>
<td><strong>Activate</strong></td>
<td>This reads the sequences file, and places the thumbnails and details in the Select Thumbnail to Play pane.&lt;br&gt;• Select the Source Library&lt;br&gt;• Press the Activate button</td>
</tr>
<tr>
<td><strong>Move</strong></td>
<td>This allows you to move a video sequence from one Library to another Library&lt;br&gt;• Select the Source Library&lt;br&gt;• Select the Destination Library&lt;br&gt;• Select the video sequence to Move&lt;br&gt;• Press the Move button</td>
</tr>
<tr>
<td><strong>Copy</strong></td>
<td>This allows you to copy (duplicate) a video sequence to another Library&lt;br&gt;• Select the Source Library&lt;br&gt;• Select the Destination Library&lt;br&gt;• Select the video sequence to Copy&lt;br&gt;• Press the Copy button</td>
</tr>
<tr>
<td><strong>Remove (in the lower pane)</strong></td>
<td>This allow you to delete a video sequence&lt;br&gt;• Select the Source Library&lt;br&gt;• Select the video sequence to Remove&lt;br&gt;• Press the Copy button</td>
</tr>
<tr>
<td><strong>OK</strong></td>
<td>Closes this dialog box and accepts the changes&lt;br&gt;<em>Note: Before choosing Ok, you must Activate a Library or the original Library will continue to be shown.</em></td>
</tr>
<tr>
<td><strong>Cancel</strong></td>
<td>Closes this dialog box and does not accept any changes made</td>
</tr>
</tbody>
</table>

### 5.3 Import a File
There are two ways to import files in ClearView

1) ClearView File Importer
2) File Import tool inside ClearView

ClearView File Importer

The ClearView File Importer is powerful video and audio decoding tool built to provide ClearView users the added benefit of several new features. ClearView File Importer is also referred to as “File Importer”. In addition, where a feature is described as “video”, it will apply to both audio and video.

5.4 ClearView File Importer Workflow
Figure 19: File Importer Workflow

Once the video file is imported, File Importer will reflect source information, which is the following:

- Compression/file type (H.264, MPEG-2, BMP, MOV, etc);
- Video height & width;
- Video Bit-depth;
- Frame rate;
- Number of frames in the file;
- Video bit-rate;
- Audio bit rate;
- Number of audio channels;
- Audio sampling frequency;
Using the 

- Audio bit depth;
- Show info for a selected SPTS in the MPTS (when applicable)

In case the MPTS file contains several SPTSs, source information will be updated with corresponding input, according to the selected SPTS.

User is able to configure output options and start the decoding process.

**Following output adjustments are available:**

- Output frame size;
- Output frame rate;
- First/last frames to import;
- De-interlace or not;
- 3:2 pull-down insertion or removal;
- Bit depth – converting 8 to 10 or 10 to 8 bits;
- Crop source (x, y, width, height) with values or interactive graphical box;
- Scale up or down to x,y/w,h;
- Color Space – convert from YUV to RGB by using either SD or HD color space;
- Import audio Yes/No;
- Output image resolution;
- Output canvas resolution;
- Truncate to legal broadcast values (Yes/No);

Two screens in the top of the File Importer window reflect the input (original) and output (maintained) preview of the source video. The output preview screen will dynamically adjust according the settings defined in the Output Sequence section.

In order to start the decoding process a ClearView Library, which is the target destination of the output file, should be selected.

A Library is defined in ClearView application and is being used as output folder for File Importer.

Having all options configured, decoding process may be started by clicking on 'Import' button.

Progress bar indicates current progress of the video-decoding process.

Once the process is finished, status bar message will indicate that Video Import has succeeded.

Decoded video and audio are stored in Library folder in separate files (Audio file’s location may be different, according to the settings in ClearView application).

Upon decoding process completion, process information is stored in the sequence index file called “sequences”. It contains the following information for each sequence in the library (folder).

- Frame-rate;
- Resolution;
- Bit-Depth;
- Number of frames;
- Audio present (or video only).

### 5.5 Settings and Adjustments
ClearView File Importer is the single-window application in which all the settings are configured on the main screen.

User is able to select MPTS program (if available) in the Import File section; set whether de-interlacing should or should not take place, change rate and Color Space coefficient in the Source Modification; apply various options regarding the resolution, positioning, scaling and audio channel usage in the Output Sequence section.

File Importer is also a standalone application and included module for a Video Clarity ClearView program system and main application, for which the video files are decoded.

Thus, File Importer has several dependencies on the main ClearView application.

5.6 ClearView Dependencies

5.6.1 Library

Libraries are the maintenance folders, used in File Importer and ClearView applications. File Importer destination folder may be used as ClearView input source.

Basically, Libraries may be considered as shared locations for File Importer and ClearView.

ClearView Library folder specification

Libraries have an index file which catalogs information about the video sequences. This index file holds information like the sequence name, the resolution, the thumbnail to display, the playing frequency, the mark-in/mark-out points, etc. The file name for this catalog is “sequences”. Please do not delete this file as it will result in a loss of the video sequences in the entire library. Each video sequences has 3 files associated with it – the uncompressed video sequence, the uncompressed audio sequence, and a text overlay file. The text overlay file contains the text to be displayed when overlay is checked. The default name is the sequence name. Since this is a text file, it can be easily changed using any text editor.

Additionally, Libraries, created in ClearView will be accessible as Output Sequence Libraries in File Importer applications.

Easily configured, Libraries will cause video and audio files decoded in File Importer application instantly available in ClearView software.

In order to create new Library location in ClearView application, please follow the steps below.

Launch ClearView application

Figure 20: ClearView application
1. Click on 'Library' folder of 'Memory/Disk' section:

**Figure 21: Memory/Disk section of ClearView**
2. Click ‘New’ button in the ‘ClearView Library Manager’ to create new Library.

**Figure 22: ClearView Library Manager**

2.1 Using Windows Explorer, navigate to the folder that will be used as the destination for File Importer output, for example ‘C:\Program Files\Video Clarity\FileImporter\Library\’ path.

**Figure 23: Added Library**

The ClearView system has no restrictions on the number of libraries that may be created. All new Libraries will be accessible in the ‘Library’ drop down list of Output Sequence section in File Importer.

5.6.2 Audio Root Usage
Decoded Video and Audio files are stored in certain destination, chosen in Library drop-down list before the Import has taken place.
ClearView application allows diversifying audio storage location, based on the ‘Use Audio Root’ option in ‘Config’ screen. Having the option checked, all Audio files from the decoded videos will be kept in the different location, unlike the video files.

**Configuration steps are described below:**

1. Within ClearView application opened, press on ‘Config’ button.
2. In the ‘Config’ screen displayed, see the ‘Record section’.
3. **Figure 24: Record’ section**

4. Check the ‘Use Audio Root’ checkbox.
5. Fill in the path for Audio files to be stored manually, or press on the browse button with three dots.
   - Select Audio root location folder using Windows Explorer.
   - Click ‘Save’ button to apply the selection.

**Note:** The logic of Audio files' placement is different from the general understanding of the per-folder file allocation diversification. In case the Audio Root usage is enabled in the ClearView Software and Audio Root destination path is defined (for example ‘D:\Audio\Library’), while FileImporter uses own Library (for example ‘D:\ClearView\Library’), video and audio files’ allocation will be the following:

- **Video File placement:** ‘D:\ClearView\Library’
- **Audio File placement:** ‘D:\ClearView\Library\D\Audio\Library’

**5.6.3 Add specific resolution**

ClearView application allows creating own set of resolutions and refresh rates that may be used in ‘Video Format’ drop-down list of File Importer, in case the ‘Output Module’ is set as ‘No Video Output Module’.

Imported video may be further decoded in any of the user-defined ‘Video Format’ applying any desired ‘Source Modification’ and ‘Output Sequence’ configurations. In order to define new resolution and refresh rate in ClearView application, please follow the steps below:

1. Launch ClearView application.
2. Expand ‘Video Format’ drop down list of ‘Video Output’ section.
3. Click on ‘<New Format…>’ in the bottom of the expandable list.

**Figure 25: New Format definition**
4. In the ‘Custom Resolution’ displayed dialog specify the following:

- **Width (Pixels)** – Horizontal amount of pixels;
- **Height (Pixels)** – Vertical amount of pixels;
- **Refresh Rate (Hertz)** – Frames per second amount.

**Figure 26: Custom Resolutions’ dialog**

5. Click ‘OK’ button to save custom resolution.
   Click ‘Cancel’ button to discard the changes made in ‘Custom Resolution’ screen.

After the new resolution is added in ClearView, it may be used in File Importer application for video decoding purposes.

**Note:** It may be needed to restart File Importer application in order to get a user-defined resolution to appear in the ‘Video Format’ drop-down list.

### 5.7 Output File Allocation

Once the video is decoded using File Importer application, following files are created, according to the ‘Sequence Name’ provided in the Output Sequence section.

**Decoded Files:**

- `<Sequence Name>` (with no extension) – Decoded Video raw data;
- `<SequenceName>.aud` – Decoded Audio raw data, may be stored either in Output Library folder, configured in FileImporter application, or in different location, according to ‘Use Audio Root’ option in ClearView application;
<FileName>.grf - Stored graph that performs decoding.
<SequenceName>.cvo - The file contains just the name of the sequence.

5.8 Using File Importer

File Importer video decoding adjustment and execution may be done in two ways:

- Using Graphical User Interface
- Using Command Line Interface

5.8.1 Graphical User Interface

File Importer GUI is the visual shell of the application. User-friendly interface is comfortable and easy to use for both new and experienced users.

Figure 27: File Importer Graphical User Interface

The whole flow, starting with the importing of the video file, adjusting source, changing output module, video/image format, scaling and shifting is intuitive and easy to understand and execute.

Below are the main aspects of File Importer application usage in GUI mode.
5.8.2 Launch Application

File Importer application may be launched the following ways:

- Double click FileImporter shortcut on the Desktop;
- Click ‘FileImporter’ in Start – All Programs – VideoClarity.
- Invoke ‘FileImporter’ executable file in C:\Program Files\Video Clarity\FileImporter folder.

Note: Default Installation path on x64 systems is: C:\Program Files (x86)\Video Clarity\FileImporter

In case the application has been installed in to the custom location, please launch FileImporter executable file from the custom installation location.

Once the application is launched, the following screen will be displayed:

Figure 28: File Importer – Application launched

[Image of the File Importer application interface]
5.8.3 Import File

In order to start working with File Importer application it is required to import a video file, which later may be decoded according to the output options specified.

Files may be imported the following way in to the File Importer application:

- **Drag and drop** – select media file you would like to use for decoding and drag it in to the File Importer screen. Once dragged, release the selected file.
- **Browse file** – Provides the ability to import files from any specific location using Windows Explorer.

In order to browse for a file, please follow the steps below:

1. Within opened FileImporter application, click on the button with three dots next to the ‘File’ drop-down list.
2. Navigate to the desired file using Windows Explorer.
3. Once the file is located, confirm the selection.

![Figure 29: Source file path](image)

File Importer is capable of importing the following files:

<table>
<thead>
<tr>
<th>Extension</th>
<th>File</th>
</tr>
</thead>
<tbody>
<tr>
<td>.264, .h4v</td>
<td>MPEG-4/AVC, H.264 video file</td>
</tr>
<tr>
<td>.264, .h4v</td>
<td>MPEG-4/AVC, H.264 video file</td>
</tr>
<tr>
<td>.afreq</td>
<td>Video Clarity aFreq parameters</td>
</tr>
<tr>
<td>.apeak</td>
<td>Video Clarity aPeak parameters</td>
</tr>
<tr>
<td>.avi</td>
<td>Video for Windows – any CODEC loaded</td>
</tr>
<tr>
<td>.cin</td>
<td>Cineon</td>
</tr>
<tr>
<td>.cyp</td>
<td>ClearView auto play list</td>
</tr>
<tr>
<td>.did</td>
<td>Device Independent Bitmap – MS Windows</td>
</tr>
<tr>
<td>.dif</td>
<td>DIF Stream</td>
</tr>
<tr>
<td>.dmos</td>
<td>MS-SSIM using the DMOS Scale parameters</td>
</tr>
<tr>
<td>.dps</td>
<td>DPS Velocity Video Editing Files</td>
</tr>
<tr>
<td>.dpx</td>
<td>DPX</td>
</tr>
<tr>
<td>.gen</td>
<td>AvidDS</td>
</tr>
<tr>
<td>.jpg</td>
<td>JPEG Still Image</td>
</tr>
<tr>
<td>.jnd</td>
<td>ClearView Samoff’s JND parameters</td>
</tr>
<tr>
<td>.js</td>
<td>Jaleo – SGI editor</td>
</tr>
<tr>
<td>.lkfs</td>
<td>Video Clarity LKFS parameters</td>
</tr>
<tr>
<td>.mpg, .mpeg, .vob, .m1v, .m2v, .m2p, .m2t</td>
<td>MPEG-2</td>
</tr>
</tbody>
</table>
After the file is imported into the application, File Importer populates all the required information and sets default adjustment configuration for Source Modification and Output Sequence sections. Immediately, the result of this maintenance is displayed in the Output Video preview screen.

5.8.4 Custom Filters

File Importer has the ability to allow the user to use different decoders than the ones provided for audio and video. This is done through creating/modifying a xml file named CustomFiltersList.xml that needs to be placed in the File Importer directory on the system. The listing below shows the contents of the CustomFiltersList.xml file that is used.

Listing 1: XML File Contents
<fileimporter>
  <filtertype>
    <type>videodecoder</type>
    <filter>
      <name>VideoDecoderSample</name>
      <guid>{47228545-02D3-483C-99DB-F86EE45725F4}</guid>
    </filter>
  </filtertype>
</fileimporter>
The structure uses the tags `<fileimporter>` to contain the entire list and the tag `<filtertype>` to contain the new decoder to be used. The `<type>` can be either `videodecoder` or `audiodecoder`. Within the `<filter>` tag is the information about the decoder. The `<name>` tag will be what is displayed in File Importer and the `<guid>` tag is taken from the graphedit program.

Using the Graph Edit tool you need to select “Graphs” -> “Insert Filters”, which will bring up a filters list. Looking through the list for “DirectShow Filters” and expand it (your filter may be under a different area). In this expanded list look for the filter that you will use (in this case it was AC3Filter). Click on the filter to have information displayed in the “Filter Moniker” text box. The guid is the second set of numbers which need to be added to the xml file.

**Figure 30:** The guid displayed in the Filter List
Once the file is saved to the correct location and the next time File Importer is opened, the new decoder will appear. Below is how the audio decoder shown in the above xml file would appear in File Importer.

**Figure 31: Audio Decoder drop-down list**

![Audio Decoder drop-down list](image)

### 5.8.5 MPTS Program Select

File Importer allows video files with more than one stream to be imported and used for decoding purposes. In case transport stream offers more than one program service, expanded drop-down list will reflect all program services that imported video file contains.

In case loaded file offers single program transport stream – the list will contain only default '0' value. In order to navigate through available program streams, expand ‘MPTS Program Select’ drop-down list and select desired stream for decoding.

**Figure 32: MPTS Program select drop-down list**

![MPTS Program select drop-down list](image)

After the MPTS Program is selected, File Importer will reload and populate Source File Properties section, since various streams may contain different source information.

### 5.8.6 De-Interlace Imported Video

File Importer provides ability to De-Interlace video files and decode them according to the Output Sequence options specified.

The De-Interlace checkbox will not be automatically checked for converting from interlaced to progressive video, so the user must check the box manually if they wish to De-Interlace the sequence.

When File Importer de-interlaces a progressive frame of video it combines the lines of field one and the lines of field two into single progressive frame. No interpolation or content modification takes place whatsoever.
5.8.7 Rate Change

Similar to De-Interlacing, File Importer application dynamically adjusts to the imported video file’s properties and output video format specified. In case the imported video source properties differ from the specified Video Format, ‘Rate Change’ checkbox will need to be manually checked by the user in order for frame change to occur.

Also, selecting Video Format, which has no rate change comparing to the source file’s properties will cause ‘Rate Change’ to remain unchecked (if previously not checked), or unchecked (if previously checked).

When File Importer performs a frame-rate conversion frames are either dropped or repeated. There is no inter-frame prediction or content manipulation.

5.8.8 CS Coefficient

It is possible to change Color Space Coefficient that will be applied for the source file during the decoding process.

File Importer offers the following CS Coefficients in the Source Modification section:

- BT709 1125
- SMPTE 240M

Figure 33: CS Coefficient selection

5.8.9 Source Crop

File Importer source cropping functionality provides the ability to define the area of the imported video to be used in decoding process.

Source cropping is defined in the ‘Source Modification’ section - ‘Source Crop’ adjustable fields.

The following options are available:

- L (Left)
- R (Right)
- T (Top)
- B (Bottom)

Source cropping definition is done in pixels.

Adjustable fields allow only numeric input. Being left blank, behave, as it was ‘0’ input specified.

Values, entered in the ‘Source Crop’ adjustable fields mean the amount of pixels to be cropped from the original imported video.

Once the value is entered in any of the fields, green line will be displayed on the Input Video Preview
screen, displaying the part of the source video, which will be cut.

Output Video Preview screen dynamically adjusts to the source cropping and displays the possible decoding result, according to other ‘Output Sequence’ options specified.

**Figure 34: Source Cropping – 50 pixels from each side**

![Source Cropping](image)

### 5.8.10 Sequence name

‘Sequence Name’ field identifies the file name that will be used for the decoding output. The field allows alphanumerical input with special characters.

After the decoding process is completed with certain ‘Sequence Name’ value specified, the following files will be created with provided input:

- `<Sequence Name> (with no extension)` – Decoded Video raw data;
- `<SequenceName>.aud` – Decoded Audio raw data;
- `<SequenceName>.cvo` - The file contains the name of the sequence.

**Figure 35: Defining Sequence Name**

![Defining Sequence Name](image)
5.8.11 Library

As it was already stated before, ‘Library’ identifies the location of the output files after the decoding process is completed.

‘Library’ drop-down list contains all available Libraries, created in ClearView application.

Note: Please refer to the 4.1.1 section for the information on how to define new Libraries in ClearView application.

In order to select certain ‘Library’ it is needed to expand corresponding drop-down list and click on the desired path.

Once the decoding is completed for specific imported video, output files will be stored on the location, selected as ‘Library’.

Note: Output audio files’ location may differ. Please refer to the 4.1.2 section for more information about audio files’ allocation.

5.8.12 Output Module

‘Output Module’ holds the list of the modules, that may be selected for video decoding.

By default, File Importer contains the following modules:

- No Video Output Module
- Broadcast Output Module

Figure 36: Output Module selection

To select the ‘Output module’, expand corresponding drop-down list and click on the specific module that will be used for video decoding purposes.

‘No Video Output Module’ has no restrictions on the video format. The user may add desired video formats.

Note: Please refer to the 3.1.3 section for the information on how to add specific resolution and frame rate for ‘No Video Output Module’.
'Broadcast Output Module' includes the set of resolutions and their frame rates, used by in-video devices.

5.8.13 Video Format

Video Format selection identifies resolution and frame rate in which the video will be decoded. According to 'Output Module' selected, 'Video Format' may hold two different sets of output resolutions.

Table 6: Output Format

<table>
<thead>
<tr>
<th>Output Format</th>
<th>No Video Output Module</th>
<th>Broadcast Output Module</th>
</tr>
</thead>
<tbody>
<tr>
<td>720 x 486 30 Hz;</td>
<td>525 59.94 Hz;</td>
<td></td>
</tr>
<tr>
<td>720 x 526 25 Hz;</td>
<td>625 50.00 Hz;</td>
<td></td>
</tr>
<tr>
<td>1280 x 720 25 Hz;</td>
<td>720p 50.00 Hz;</td>
<td></td>
</tr>
<tr>
<td>1280 x 720 30 Hz;</td>
<td>720p 59.94 Hz;</td>
<td></td>
</tr>
<tr>
<td>1280 x 720 50 Hz;</td>
<td>720p 60.00 Hz;</td>
<td></td>
</tr>
<tr>
<td>1280 x 720 60 Hz;</td>
<td>1080i 50.00 Hz;</td>
<td></td>
</tr>
<tr>
<td>1920 x 1080 25 Hz;</td>
<td>1080i 59.94 Hz;</td>
<td></td>
</tr>
<tr>
<td>1920 x 1080 30 Hz;</td>
<td>1080i 60.00 Hz;</td>
<td></td>
</tr>
<tr>
<td>1920 x 1080 50 Hz;</td>
<td>1080p 23.98 Hz;</td>
<td></td>
</tr>
<tr>
<td>1920 x 1080 60 Hz</td>
<td>1080p 24.00 Hz;</td>
<td></td>
</tr>
<tr>
<td><strong>Any Custom Format</strong></td>
<td><strong>1080p 25.00 Hz;</strong></td>
<td><strong>1080p 29.97 Hz;</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>1080p 30.00 Hz;</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>1080p 50.00a Hz;</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>1080p 5.94a Hz;</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>1080p 60.00a Hz;</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>1080p 50.00b Hz;</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>1080p 60.00b Hz;</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>1080psf 23.98 Hz;</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>1080psf 24.00 Hz</strong></td>
</tr>
</tbody>
</table>

Additionally, user-defined resolutions and refresh rates may be configured in ClearView’s main application.

**Note:** Please refer to the 4.1.3 section for the information on how to add specific resolution and frame rate for 'No Video Output Module'.

In order to select certain 'Video Format', please specify 'Output Module' first. Having the 'Output Module' selected, expand 'Video Format' drop down-list and click on the resolution you would like to have the video decoded in.
5.8.14 Image Format

File Importer allows applying certain Image Format to be used in output video sequence. Offered ‘Image Formats’ are:

- **Y’CbCr 8 bpc** – Broadcast I/O format
- **Y’CbCr 10 bpc** – Broadcast I/O format
- **ARGB 8 bpc** – DVI I/O format

**Figure 38: Image Format selection**

In order to select the desired Image Format, please expand corresponding drop-down list and click on the value you would like to be applied for the decoded video.
5.8.15 Frame Range

‘Frame Range’ adjustable fields identify the range of the imported video file to be used for the decoding process. The following fields are available for ‘Frame Range’ adjusting:

- **F (First)** – Number of the first frame to be used;
- **L (Last)** – Number of the last frame to be used in video decoding process.

By default, once the video is imported, ‘Frame Range’ adjustable fields are updated to hold the whole amount of frames of the video.

*Note: The first frame of the video sequence always starts with ‘0’ value.*

‘Frame Range’ adjustable fields allow only numeric values to be input. Number of the last frame cannot be greater than it is defined for the first one.

**Figure 39: Custom Frame Range definition**

5.8.16 Scale Source to

File Importer scaling functionality provides the ability to scale source video file upon per-pixel width and height adjustment within selected output Video Format. ‘Scale Source to’ adjustable fields offer the following definitions:

- **W (Width)** – per-pixel width scaling of the source file;
- **H (Height)** – per-pixel height scaling of the source file.

In order to configure source scaling, it is required to provide numerical input in to both ‘Scale Source to’ adjustable fields.

For scaling File Importer uses a 4 to 8 tap filter in the horizontal direction and a 4 tap filter in the vertical direction, where it will give a weight to each pixel being used to determine the new pixel’s value. The resulting pixel will be calculated from the 16 to 32 pixels using weighted values depending on the scaling factors. Scaling does modify the video content.
Figure 40: Scaling source of 1920X1080 to 1280x720

By default, the fields are updated with the resolution of the imported video file.

**Note:** Scaling resolution may not be greater than two times of the selected ‘Video Format’, meaning that for 720p output resolution, maximum scaling definition is 1560x1440 pixels.

5.8.17 Canvas Location

‘Canvas Location’ identifies the location of the video to be placed on the screen, in case black padding is displayed, or the video resolution exceeds ‘Video Format’ specified. Following selections are available for ‘Canvas Location’ configuration:

- **Center** (Video will be displayed in the center);
- **Top Left** (Video will be displayed in the top left corner);
- **Top Right** (Video will be displayed in the top right corner);
- **Bottom Left** (Video will be displayed in the bottom left corner);
- **Bottom Right** (Video will be displayed in the bottom right corner);
- **Use Custom Shift Values** (if selected, user will be able to specify custom shift)

In order to define ‘Canvas Location’, please expand corresponding drop-down list in Output Sequence section and select desired output video location.

Figure 41: Canvas Location set as ‘Top Left’
Note: ‘Use Custom Shift Values’ option allows defining user-specified shifting. This functionality is described in 6.1.16 section.

5.8.18 Custom Shift

By default, ‘Custom Shift’ adjustable fields are disabled for editing and display the values of current video positioning on the screen according to output Video Format specified.

In order to enable ‘Custom Shift’ it is required to select ‘Use Custom Shift Values’ in the ‘Canvas Location’ drop-down list.

Custom shifting provides the ability to define user-input positioning for the output video in case the black padding appears on the screen, or the video exceeds configured resolution.

Following adjustable fields are available for video shifting configuration:

- X (X-axis shifting);
- Y (Y-axis shifting)

Adjustable fields accept numeric input (both positive and negative).

To configure custom shifting, please input:

- The value in X field that identifies per-pixel shifting from bottom left to top left corner;
- The value in Y field that defines per-pixel shifting from bottom left to bottom right corner.

Figure 42: Custom Shifting (X:320, Y:140)
5.8.19 Truncate to Legal Broadcast Values

‘Truncate to Legal Broadcast Values’ functionality is used in YUV Luma only.

Pixel intensity values for the Y Component that are above or below the following values should be truncated to only values within this range.

In order to apply truncating, please check the corresponding checkbox before decoding the video.

Figure 43: Truncate to legal broadcast values’ checkbox checked
5.8.20 Use Audio

File Importer provides the ability of video decoding with up-to 8 audio channels.

Once the video file is imported, application loads and automatically selects all available audio channels. Unavailable audio channels will be displayed as grayed out checkboxes.

**Figure 44: 2 Audio Channels available, A2 selected**

![Audio Channels Selection](image)

In order to select/deselect audio channels that will be available in the output video sequence, simply check/uncheck corresponding checkboxes in the ‘Use Audio’ section.

5.8.21 Using Per-Frame Slider

Per-Frame Slider is located under the Video Preview section and allows navigating through the frames of the source video.

By default, slider is located on the first frame of the imported video.

**Note:** The first frame of the video sequence always starts with '0' value.

Sliding through the source video file immediately displays the selected input frame in the Input Video Preview screen and maintained (adjusted) frame in the Output Video Preview screen.

**Figure 45: Per-Frame Slider placed on 117'Th frame**
In order to use per-frame sliding, you may use arrows on the left and right sides of the slider, or put the focus anywhere on the sliding scale. Additionally, with the focus put on the sliding scale, it is possible to navigate using keyboard arrows. Current number of the frame is displayed as ‘Fr:’ next to the right slider arrow.

5.8.22 Importing Video

After all the desired adjustments made to the source input, it is possible to ‘Import’ (decode) the video file. In order to do that, simply click on ‘Import’ button in the bottom right corner of the File Importer screen. Once ‘Import’ action is initiated, ‘Progress’ bar will indicate the current progress of the decoding process.

‘Status’ bar in the bottom right corner indicates the current frame, which is being decoded. ‘Information’ bar displays approximate amount of time that has left to finish the decoding process.

Figure 46: Import in progress
After the ‘Import’ has completed, ‘Progress’ bar will turn to solid-green and ‘Status’ bar will hold ‘Import file complete’ message.

**Figure 48: Import complete**

To start maintenance of the next video file, it is needed to import it from the beginning.
5.9 GUI Examples
5.9.1 Example 1

Source:
- Interlaced file;
- MPTS program support;
- Video Format: 704x280 29.97 Hz

Required maintenance for output file:
- MPTS Program – 108;
- De-Interlace;
- Change Rate;
- CS Coefficient change – SMPTE 240M
- Library: ‘C:\Program Files\Video Clarity\FileImporter\Library’
- Video Format – 720p 60.00 Hz;
- Canvas Location – Top Right

File Importer Settings:
1. Import Source video file;
2. Expand ‘MPTS Program Select’ list and select 108 value
3. Select SMPTE 240M as ‘CS Coefficient’.
4. Select ‘Library’ path: ‘C:\Program Files\Video Clarity\FileImporter\Library’
5. Select ‘Broadcast Output Module’ as ‘Output Module’;
6. Expand ‘Video Format’ drop-down list and select 720p 60.00 Hz;
7. Set Top Right value in the ‘Canvas Location’ drop-down list.
8. Click on ‘Import’ button.

Note 1: ‘De-Interlace’ checkbox has been checked automatically, since interlaced source file is converted to Progressive (720p).

Note 2: ‘Rate Change’ checkbox has been automatically checked, since frame rate for selected Video Format is greater than source file’s.
Figure 49: Example 1 - File Importer Settings

Output Sequence
- Sequence name: mpbs_1output
- Library: G:
- Output module: Broadcast Output Module
- Video format: 720p 60.00 Hz
- Image format: ARGB 8 bpc
- Frame Rates: P: 0, I: 5394, B: 480
- Scale Source to: Width: 704, Height: 480
- Canvas location: Top Right
- Custom shift: X: 575, Y: 240

Status: Building of preview graph complete
Preview position: 0 frame.
5.9.2 Example 2

Source:
- Interlaced file;
- MPTS program support;
- Video Format: 704x280 29.97Hz

Required maintenance for output file:
- MPTS Program – 105;
- Change Rate;
- Sequence Name: 105_Import;
- Library: ‘C:\Program Files\Video Clarity\FileImporter\Library’
  - Video Format – 1080i 60.00 Hz;
  - Scale Source to – 1920x1080;
  - Canvas Location – Center.

File Importer Settings:

1. Import Source video file;
2. Expand ‘MPTS Program Select’ list and select 105 value;
3. Define 105_Import as ‘Sequence Name’;
4. Select ‘Library’ path: ‘C:\Program Files\Video Clarity\FileImporter\Library’
5. Select ‘Broadcast Output Module’ as ‘Output Module’;
6. Expand ‘Video Format’ drop-down list and select 1080i 60.00 Hz;
7. Set ‘Scale Source to’ as W:1920, H:1080;
8. Set Center value in the ‘Canvas Location’ drop-down list.
9. Click on ‘Import’ button.

Note 1: ‘Rate Change’ checkbox has been automatically checked, since frame rate for selected Video Format is greater than the source file’s.
Figure 50: Example 2 - File Importer Settings

![Screenshot of the File Importer settings window.](image-url)

**Source File Properties**
- **File type**: MPEG TS
- **Resolution**: 704x480
- **Bit depth**: 12
- **Color Space**: YUV
- **Sampled**: 4:2:0
- **Frame rate**: 29.97 fps, Interlaced
- **Number of frames**: 5395

**Output Sequence**
- **Sequence name**: 105_import
- **Library**: G:\
- **Output module**: Broadcast Output Module
- **Video format**: 1080i 60.00 Hz
- **Image format**: ARGB 8 bpc
- **Frame Range**: P: 0, L: 5394
- **Scale source to**: W: 1920, H: 1080
- **Canvas location**: Center
- **Custom shift**: X: 0, Y: 0

**Status**: Building of preview graph complete

**Preview position**: 0 frame.
5.9.3 Example 3

Source:
- Progressive file;
- Video Format: 1280x720 22.21 Hz

Required maintenance for output file:
- Change Rate;
- Source Crop: L:50; R:50; T:20; B:20;
- Library: 'C:\Program Files\Video Clarity\FileImporter\Library'
- Output Module – No Video Output Module;
- Video Format – 1920x180 25 Hz;
- Image Format – YCbCr 10 bpc;
- Frame Range – F:20; L:250
- Custom Shift – X:140; Y:200;
- Truncate to legal broadcast values – checked;
- Use Audio: A1

File Importer Settings:

1. Import Source video file;
2. Set Source Crop: L:50; R:50; T:20; B:20;
3. Select ‘Library’ path: ‘C:\Program Files\Video Clarity\FileImporter\Library’
4. Select ‘No Video Output Module’ as ‘Output Module’;
5. Expand ‘Video Format’ drop-down list and select 1920x180 25 Hz;
6. Set YCbCr 10 bpc as ‘Image Format’;
7. Define F:20; L:250 in ‘Frame Range’ adjustable fields;
8. Set Use Custom Shift Values value in the ‘Canvas Location’ drop-down list.
9. Set Custom Shift as X:140; Y:200;
10. Check ‘Truncate to legal broadcast values’ checkbox.
11. Uncheck A2 checkbox in ‘Use Audio’.
12. Click on ‘Import’ button.

Note 1: ‘Rate Change’ checkbox has been automatically checked, since frame rate for selected Video Format is greater than the source file’s.
5.10 Command Line interface

ClearView File Importer provides the ability for the video to be decoded using a Command Line input.

All settings, available in Graphical User Interface mode are also configurable with specific input commands using the Command Line Interface.

It is possible to adjust the Source Modification and Output Sequence options for the videos and decode the files behind the scene.
Command Line supports batch video maintenance of the source files located both on the local workstation and on a network location.

Table 7: Command Line Input Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
<th>Supported value / type</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;fp&quot;</td>
<td>Input file path</td>
<td>File path</td>
<td>&quot;&quot; (empty)</td>
</tr>
<tr>
<td>&quot;pid&quot;</td>
<td>Program ID</td>
<td>Number</td>
<td>&quot;-1&quot; (not specified)</td>
</tr>
<tr>
<td>&quot;de&quot;</td>
<td>De-interlace</td>
<td>&quot;0&quot; / &quot;1&quot;</td>
<td>&quot;0&quot;</td>
</tr>
<tr>
<td>&quot;chr&quot;</td>
<td>Change frame rate</td>
<td>&quot;0&quot; / &quot;1&quot;</td>
<td>&quot;1&quot;</td>
</tr>
<tr>
<td>&quot;pd&quot;</td>
<td>3:2 Pooldown</td>
<td></td>
<td>Not implemented</td>
</tr>
<tr>
<td>&quot;cs&quot;</td>
<td>CS Coefficients</td>
<td>&quot;BT709 1125&quot;</td>
<td>&quot;BT709 1125&quot;</td>
</tr>
<tr>
<td>&quot;cl&quot;</td>
<td>Crop left value</td>
<td>Number</td>
<td>&quot;0&quot;</td>
</tr>
<tr>
<td>&quot;cr&quot;</td>
<td>Crop right value</td>
<td>Number</td>
<td>&quot;0&quot;</td>
</tr>
<tr>
<td>&quot;ct&quot;</td>
<td>Crop top value</td>
<td>Number</td>
<td>&quot;0&quot;</td>
</tr>
<tr>
<td>&quot;cb&quot;</td>
<td>Crop bottom value</td>
<td>Number</td>
<td>&quot;0&quot;</td>
</tr>
<tr>
<td>&quot;sn&quot;</td>
<td>Sequence name</td>
<td>Name</td>
<td>&quot;&quot; (empty)</td>
</tr>
<tr>
<td>&quot;lp&quot;</td>
<td>library path</td>
<td>Folder path</td>
<td></td>
</tr>
<tr>
<td>&quot;om&quot;</td>
<td>Output Module</td>
<td>- &quot;No Video Output Module&quot;</td>
<td></td>
</tr>
<tr>
<td>&quot;vf&quot;</td>
<td>Video format</td>
<td>Broadcast Output Module:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- &quot;525 59.94 Hz&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- &quot;625 50.00 Hz&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- &quot;720p 50.00 Hz&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- &quot;720p 59.94 Hz&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- &quot;720p 60.00 Hz&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- &quot;1080i 50.00 Hz&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- &quot;1080i 59.94 Hz&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- &quot;1080i 60.00 Hz&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- &quot;1080p 23.98 Hz&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- &quot;1080p 24.00 Hz&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- &quot;1080p 25.00 Hz&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- &quot;1080p 29.97 Hz&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- &quot;1080p 30.00 Hz&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- &quot;1080p 50.00a Hz&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- &quot;1080p 59.94a Hz&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- &quot;1080p 60.00a Hz&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- &quot;1080p 59.94b Hz&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- &quot;1080p 60.00b Hz&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- &quot;1080psf 23.98 Hz&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- &quot;1080psf 24.00 Hz&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>No Video Output Module:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>[width] x [height] [rate] Hz</td>
<td></td>
</tr>
<tr>
<td>&quot;if&quot;</td>
<td>Image format</td>
<td>- &quot;YCbCr 8 bpc&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- &quot;YCbCr 10 bpc&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- &quot;ARGB 8 bpc&quot;</td>
<td></td>
</tr>
<tr>
<td>&quot;fbf&quot;</td>
<td>Frame Bound First</td>
<td>Number</td>
<td>&quot;0&quot;</td>
</tr>
<tr>
<td>&quot;fbl&quot;</td>
<td>Frame Bound Last</td>
<td>Number</td>
<td>&quot;-1&quot; (last one)</td>
</tr>
<tr>
<td>&quot;ssw&quot;</td>
<td>Scale Source Width</td>
<td>Number</td>
<td>&quot;-1&quot; (use input width)</td>
</tr>
<tr>
<td>&quot;ssh&quot;</td>
<td>Scale Source Height</td>
<td>Number</td>
<td>&quot;-1&quot; (use input height)</td>
</tr>
<tr>
<td>&quot;cal&quot;</td>
<td>Canvas Location</td>
<td>&quot;Center&quot;</td>
<td>&quot;Center&quot;</td>
</tr>
</tbody>
</table>
5.11 Command Line Examples
5.11.1 Example 1

Source:
- Interlaced file;
- MPTS program support;
- Video Format: 704x280 29.97 Hz

Required maintenance for output file:
- MPTS Program – 108;
- De-Interlace;
- Change Rate;
- CS Coefficient change – SMPTE 240M
- Library: ‘C:\Program Files\Video Clarity\FileImporter\Library’
- Video Format – 720p 60.00 Hz;
- Canvas Location – Top Right

Command Line input:
```
-fp "F:\video\Video005.mp4" -pid "108" -lp "C:\Program Files\Video Clarity\FileImporter\Library\" -cal "Top Right " -cs " SMPTE 240M " -dbg 1 -om "Broadcast Output Module" -vf "720p 60.00 Hz" -de 1 -chr1
```
- MPTS program support;
- Video Format: 704x280 29.97Hz

**Required maintenance for output file:**
- MPTS Program – 105;
- Change Rate;
- Sequence Name: 105_Import;
- Library: 'C:\Program Files\Video Clarity\FileImporter\Library\'
  - Video Format – 1080i 60.00 Hz;
  - Scale Source to – 1920x1080;
  - Canvas Location – Center.

**Command Line input:**

```bash
-fp "F:\video\Video005.mp4" -pid "105" -sn "105_Import" -lp "C:\Program Files\Video Clarity\FileImporter\Library\" -cal " Center " -dbg 1 -om "Broadcast Output Module" -vf "1080i 60.00 Hz"-chr 1 -ssw "1920" -ssh "1080"
```

### 5.11.3 Example 3

**Source:**
- Progressive file;
- Video Format: 1280x720 22.21 Hz

**Required maintenance for output file:**
- Change Rate;
- Source Crop: L:50; R:50; T:20; B:20;
- Library: 'C:\Program Files\Video Clarity\FileImporter\Library\'
  - Output Module – No Video Output Module;
  - Video Format – 1920x180 25 Hz;
  - Image Format – YCbCr 10 bpc;
  - Frame Range – F:20; L:250
  - Custom Shift – X:140; Y:200;
  - Truncate to legal broadcast values – checked;
  - Use Audio: A1

**Command Line input:**

```bash
-fp "F:\video\Video005.mp4" -cl "50" -cr "20" -ct "20" -cb "20" -lp "C:\Program Files\Video Clarity\FileImporter\Library\"-cal " Use Custom Shift Values " -dbg 1 -om "No Video Output Module" -vf "1920x1080 25 Hz" -if "YcbCr 10 bpc" -chr 1 -fbf "20" -fbl "250" -shx "140" -shy "200" -tr 1 -a1 1
```

### 5.12 ClearView File Importer Problem Solving

This section reflects potential issues that may be faced during the ClearView File Importer application's execution and possible resolution.

<table>
<thead>
<tr>
<th>#</th>
<th>Issue</th>
<th>Resolving Suggestion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>MPTS-supporting files take more time to be imported, than other file formats.</td>
<td>Since the MPTS-supporting files contain various streams, File Importer has to spend more time, loading particular file. It is related to the Imported files' properties.</td>
</tr>
<tr>
<td>2.</td>
<td>Black line appears on the Output Video Preview screen in case 'YCbCr 10 bpc' image format is applied to '720p' video format.</td>
<td>Please set 'Scale Source To' as 'W:1296' in order to resolve the issue.</td>
</tr>
</tbody>
</table>
3. Some files do not support seeking. | There’s no way to resolve this issue.
4. Video Import has failed. | Try again re-importing the same file. In case the issue is still reproduced, File Importer may not support the source file’s format.
5. Output audio files are not created. | Please check ‘Use Audio Root’ option in ClearView and whether the Audio channels are selected before importing the video.

5.13 File Import tool in ClearView

The ClearView File Import pane is a continued feature used to import/ingest video sequences into ClearView in addition to the ClearView File Importer application though the ClearView File Importer tool should always be used first. ClearView can open almost any file-based video sequence known to the video industry. While importing the file, ClearView will do the following steps:
- Convert it to the chosen output format,
- Convert it to the chosen image format,
- Store the uncompressed video sequence on the file system or in memory, and
- Update the catalog information about this file.

ClearView not only imports video sequences; it also imports a list of video sequences, loads Objective Metric parameters, and creates a playlist of files already loaded into ClearView. Two ways exist to import files – you can open them using the file import controls or you can drop a file directly onto the desktop (drag & drop).

If audio is turned on using the ClearView Configuration Menu and audio is included within the program wrapper, then ClearView will import the audio as well. Supported program wrappers include:
- MPEG-2 TS – with MPEG-2 Video and MPEG-1 Audio
- AVI
- WMV
- QuickTime
- MPEG-2 PS – with MPEG-2 Video and MPEG-1 Audio

The Audio formats supported are as follows
- MPEG-2 Layer 1
- AAC
- AMR
- WMA
- WAV
- AIFF
- MP3

Note: ClearView deciphers the file based on the file extension. You must use the correct extension. ClearView supports the extensions listed below.

<table>
<thead>
<tr>
<th>Table 8: Supported File Extensions (also supported by ClearView File Importer)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extension</td>
</tr>
<tr>
<td>.264, .h264</td>
</tr>
<tr>
<td>.aac</td>
</tr>
<tr>
<td>.afreq</td>
</tr>
<tr>
<td>.aiff</td>
</tr>
<tr>
<td>.amr</td>
</tr>
<tr>
<td>.avi</td>
</tr>
</tbody>
</table>
### Extension | File
---|---
.bmp | Bitmap
.cin | Cineon
.cvp | ClearView auto play list
.dib | Device Independent Bitmap – MS Windows
.dif | DIF Stream
.dmos | MS-SSIM using the DMOS Scale parameters
.dps | DPS Velocity Video Editing Files
.dpx | DPX
.gen | AvidDS
.icb | TGA Still Image Variant
.jpg | JPEG Still Image
.jnd | ClearView Sarnoff’s JND parameters
.js | Jaleo – SGI editor
.mpg, .mpeg, .vob, .m1v, .m2v, .m2p, .m2t, .mpv | MPEG-2
.mpg, .mpeg, .m1v | MPEG-1
.mp1, .mp3 | MPEG, audio layer 1, and layer 3
.m4v, .dat | MPEG-4 video part 2
.mov | QuickTime Video – any CODEC loaded
.mp4 | MPEG-4 part 2 file; then H.264 file
.omf, .omfi | AVID file – any CODEC loaded
.peaq | Video Clarity PEAK parameters
.pbm | Portable Bitmap
.pcx | Paintbrush Image
.pgm | Portable Gray map
.pic, .pct | Picture Still Image File
.pnm | Portable Any map Still Image
.ppm | Portable Pixel map Still Format
.psd | Photoshop
.psnr | ClearView PSNR parameters
.ras | Sun Microsystems Raster
.rgb | Raw RGB image file
rgba | Raw RGB image with Alpha
.rt | Video Toaster
.sgi | SGI still image
.spatial | ClearView SPATIAL parameters
.sun | Sun Raster Image
.temporal | ClearView TEMPORAL parameters
.tga | Targa Still
.tif | Tagged Image Format
.txt | ClearView auto load list
.vda | TGA Image Variant
.vst | Targa Vista Image Format
.wav | Waveform audio file format
.wma | Windows media audio
.xmb, .xpm | X Windows
.yuv | Raw YUV image
.yuv10 | Raw YUV 10-bit format

To import a file, either
- Browse to the file location using the Browse button in the File Import Pane
- Drag and Drop a file onto the ClearView GUI
Figure 52: File Import Controls

<table>
<thead>
<tr>
<th>Filename</th>
<th>C:\My Videos\GD_V2M_AM</th>
<th>Browse...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frames</td>
<td>300</td>
<td>Width</td>
</tr>
<tr>
<td>Bitdepth</td>
<td>16</td>
<td>Codec</td>
</tr>
<tr>
<td>Frame Rate</td>
<td>29.3700</td>
<td>Bit Rate</td>
</tr>
<tr>
<td>Sequence Name</td>
<td>GD_V2M AMP2-224K</td>
<td>To Disk</td>
</tr>
<tr>
<td>Load</td>
<td>Initiate the load process. This converts the video sequence, and loads it to the file system or memory.</td>
<td></td>
</tr>
<tr>
<td>Abort</td>
<td>Aborts a load in process. You must re-browse after an abort. You cannot change parameters and then click Load again.</td>
<td></td>
</tr>
</tbody>
</table>

Table 8: File Import Descriptions

<table>
<thead>
<tr>
<th>Filename</th>
<th>This is the name of the file to be input.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frames</td>
<td>Total number of still files found in folder or the total number of frames found in a streaming media file. This is automatically filled in after reading the header of the selected file.</td>
</tr>
<tr>
<td>Note: if the header does not state the number of frames, then ClearView will calculate this number based on the size of the file and the bit-rate.</td>
<td></td>
</tr>
<tr>
<td>Width</td>
<td>Width of the image (X-axis). This is automatically filled in after reading the header of the selected file.</td>
</tr>
<tr>
<td>Height</td>
<td>Height of the image (Y-axis). This is automatically filled in after reading the header of the selected file.</td>
</tr>
<tr>
<td>Bit depth</td>
<td>Depth of the image in bits. This is automatically filled in after reading the header of the selected file.</td>
</tr>
<tr>
<td>Codec</td>
<td>CODEC used to decipher this video sequence. Listed below under Color Format. This is automatically filled in after reading the header of the selected file.</td>
</tr>
<tr>
<td>Frame Rate</td>
<td>This is the frame rate of the video sequence if known (ex: if the frame rate is unknown, 0 is displayed). This is automatically filled in after reading the header of the selected file.</td>
</tr>
<tr>
<td>Bit Rate</td>
<td>This is the bit rate of the video sequence if known (ex: in the football sequence shown, the bit rate recorded was 1,194,393,600 / uncompressed HD). This is automatically filled in after reading the header of the selected file.</td>
</tr>
<tr>
<td>Sequence Name</td>
<td>This is the name of the video sequence that will appear in Play Mode and if a .CVO (ClearView Overlay) file does not already exist, it will be created with this text.</td>
</tr>
<tr>
<td>To Disk</td>
<td>When checked, import to the File System. When unchecked, import to Memory. Note: Audio is not currently written to Memory.</td>
</tr>
<tr>
<td>Filed flip</td>
<td>Reverse (flip) the top and bottom fields during import.</td>
</tr>
<tr>
<td>First</td>
<td>The first frame to be loaded from a sequence of files. You can use this to import part of the video sequence.</td>
</tr>
<tr>
<td>Last</td>
<td>The last frame to be loaded from a sequence of files. You can use this to import part of the video sequence.</td>
</tr>
<tr>
<td>Load</td>
<td>Initiates the load process. This converts the video sequence, and loads it to the file system or memory.</td>
</tr>
</tbody>
</table>

The procedure to import a file differs slightly depending on the source. The following are possible scenarios.
5.13.1 Auto Load a sequence of files from an external source
When ClearView sees .TXT, it knows that this is a tab-delimited file which tells it to load many video sequences. Otherwise, it tries to figure out what type of video sequence is in the file. In this case the user is batch loading many video clips. The video clips may be stored in one or many directories, and this one file will go out and bring them all into ClearView. Each video clip might be MPEG, BMP, RAW, etc.

Note: There are many examples under www.videoclarity.com/Support (Miscellaneous Support Files). The fields in the .TXT file are as follows.

Table 9: Auto Load Descriptions (.txt file)
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filename</td>
<td>You can drop a file from the desktop, type in the full path and filename, or select Browse to find the file</td>
</tr>
<tr>
<td>Sequence Name</td>
<td>This is the name of the sequence that will appear in Play Mode (up to 35 characters)</td>
</tr>
<tr>
<td>Image Type</td>
<td>Unused, but must be present</td>
</tr>
<tr>
<td>First</td>
<td>The first frame to be loaded from a sequence of files or the first frame to be loaded from a streaming media file. (-1: means first)</td>
</tr>
<tr>
<td>Last</td>
<td>The last frame to be loaded from a sequence of files or the last frame to be loaded from a streaming media file. (-1: means last)</td>
</tr>
<tr>
<td>To Disk</td>
<td>When 1, import to the File System. When 0, import to Memory. Note: Audio is not currently written to Memory.</td>
</tr>
</tbody>
</table>

5.13.2 Play a list of Video Sequences
When ClearView sees the .CVP, it knows that this is a tab-delimited file, which tells it how to playback many files.

Note: Please remember that to play files you must already have loaded the video sequences into ClearView.

The fields in the .CVP file are as follows.

Table 10: Play List Descriptions (.cvp file)
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sequence Name</td>
<td>This is the name of the sequence that will appear in Play Mode</td>
</tr>
<tr>
<td>First</td>
<td>The first frame to be loaded from a sequence of files or the first frame to be loaded from a streaming media file. (-1: means first)</td>
</tr>
<tr>
<td>Last</td>
<td>The last frame to be loaded from a sequence of files or the last frame to be loaded from a streaming media file. (-1: means last)</td>
</tr>
<tr>
<td>Repeat</td>
<td>Play this sequence X number of times.</td>
</tr>
</tbody>
</table>

5.13.3 Import Objective Metric Log File
The objective metric log file includes:
- Objective Metrics – AFREQ, APEAK, DMOS, JND, LKFS, PEAQ, PSNR, SPATIAL, or TEMPORAL
- Clip Alignment Parameters
- Image and Video formats
- Video Sequence names and Library locations
- Default parameters used when calculating the metrics

If the library, video sequences, etc. exist, then
- the video sequences will be loaded,
- the clip alignment will be set, and
- the objective metrics will be restored (no need to recalculate).

Note: We store the DMOS, JND, PSNR, SPATIAL, and TEMPORAL data in different files

The fields in the .DMOS, .JND, .PSNR, .SPATIAL, and .TEMPORAL files are as follows.

Table 11: Objective Metric Log File Description
<table>
<thead>
<tr>
<th>Log File Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Library A</td>
<td>Library B</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------</td>
</tr>
<tr>
<td>These are the locations where the Video Sequences are stored</td>
<td></td>
</tr>
</tbody>
</table>

*Note: if the Library does not exist, then an error message will be posted*

<table>
<thead>
<tr>
<th>Sequence A</th>
<th>Sequence B</th>
</tr>
</thead>
<tbody>
<tr>
<td>These are the Video Sequences to load.</td>
<td></td>
</tr>
</tbody>
</table>

*Note: if they are not in the Library, then an error message will be posted*

| First Frame A, Last Frame A, Speed A, First Frame B, Last Frame B, Speed B |
| These are the Clip Alignment Parameters for each sequence. |

*Note: if the first and last frame are not within the range, then an error message will be posted*

| Frame, Y, Chroma, Fail Y, Fail Chroma |
| This is the header for the DMOS & JND data. The data for each frame is recorded as Y values and the Chroma (CbCr combined) values. The last 2 columns are pass/fail against the threshold. |

| This is the header for everything that is not DMOS & JND. It consists of the frame number and 12 more columns. The first set of 3 values are for Viewport A (if the data is No Reference), the second set of 3 values are for Viewport B (if the data is No Reference), the third set of 3 values are for the results (in No Reference this would be the subtraction; in PSNR, this would be the data), the fourth set of 3 values are pass/fail against a threshold. |

### 5.13.4 Load a series of files with the same extension

ClearView will search the folder for all files with sequential file names. The file names must have at least 4 digits and must be sequential. An example is listed below that has 5 digits.

**Figure 53: Choose the first of a sequence of BMP files**

![Image of file selection interface](image-url)

*Note: the File Import pane will display information about the file or files that have been selected. In this example, .bmp files are imported. However, this behavior is the same for any file type.*

### 5.13.5 Load Headerless files
ClearView needs to know more about these files to load them correctly. Header files have been defined to help ClearView to understand this data. The description of the file is defined in File Import Descriptions below:

- .hdr – this is used when all of the headerless data is in 1 file
- In the case of 1 frame per file no header file is needed

**Note 1:** Many YUV formats can be loaded directly by ClearView. If ClearView cannot load the file properly, then you will need to create a .hdr

**Note 2:** You can either double click (or drag & drop the headerless file to load).

The .hdr file contains the following data. Some of the data is marked as Optional, and can be omitted. Regardless, you must start with % and the name.

*Note: There are many examples under [www.videoclarity.com/Support](http://www.videoclarity.com/Support) (Miscellaneous Support Files).*

---

**Table 12: Raw File Import Descriptions**

<table>
<thead>
<tr>
<th>%Color Format</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>YUV420</td>
<td>Planar YCbCr in YUV/I420 order (ST/Thompson/MPEG Groups)</td>
</tr>
<tr>
<td>YV12</td>
<td>Planar YCbCr in YV12 order</td>
</tr>
<tr>
<td>YUV422P</td>
<td>Planar YCbCr with 4:2:2 sub sampling (Sony)</td>
</tr>
<tr>
<td>YVU422P</td>
<td>Planar YCbCr with 4:2:2 sub sampling (chroma inverted)</td>
</tr>
<tr>
<td>YUV422_10</td>
<td>Interleaved 10 Bit YCbCr v210 format (standard Quick Clip 10 Bit YCbCr)</td>
</tr>
<tr>
<td>YUV4224_10</td>
<td>Interleaved 10 Bit YCbCr v210 format with alpha/key channel</td>
</tr>
<tr>
<td>YUV4224</td>
<td>Interleaved 8 Bit YCbCr yuv2/UYVY format with alpha/key channel</td>
</tr>
<tr>
<td>YUV422_fields</td>
<td>Separate fields of 4:2:2 YCbCr (Crescent)</td>
</tr>
<tr>
<td>YUV422</td>
<td>Interleaved 8 Bit YCbCr UYVY format (standard Quick Clip 8 Bit YCbCr)</td>
</tr>
<tr>
<td>UYVY422</td>
<td>YUV 4:2:2 interleaved 8 bit packed as U Y V Y U Y V Y ...</td>
</tr>
<tr>
<td>YUY2</td>
<td>YUV 4:2:2 interleaved 8 bit packed as Y U Y V Y U Y V ...</td>
</tr>
<tr>
<td>DPXRGBLEFILL</td>
<td>DPX 10 bit RGB, little endian, filled</td>
</tr>
<tr>
<td>DPXRGBLE</td>
<td>DPX 10 bit RGB, little endian, padded</td>
</tr>
<tr>
<td>DPXRGBFILL</td>
<td>DPX 10 bit RGB, big endian, filled</td>
</tr>
<tr>
<td>DPXRGB</td>
<td>DPX 10 bit RGB, big endian, padded</td>
</tr>
<tr>
<td>DPXABGRLEFILL</td>
<td>DPX 10 bit ABGR, little endian, filled</td>
</tr>
<tr>
<td>DPXABGRLE</td>
<td>DPX 10 bit ABGR, little endian, padded</td>
</tr>
<tr>
<td>DPXABGRFILL</td>
<td>DPX 10 bit ABGR, big endian, filled</td>
</tr>
<tr>
<td>DPXABGR</td>
<td>DPX 10 bit ABGR, big endian, padded</td>
</tr>
<tr>
<td>RGBA</td>
<td>32 Bit Interleaved RGB (TIFF)</td>
</tr>
<tr>
<td>ARGB</td>
<td>32 Bit Interleaved RGB (Mac)</td>
</tr>
<tr>
<td>BGRA</td>
<td>32 Bit Interleaved RGB (Windows BMP/TGA)</td>
</tr>
<tr>
<td>BGR</td>
<td>24 Bit Interleaved RGB (Windows BMP/TGA)</td>
</tr>
<tr>
<td>TIFF24</td>
<td>24 Bit Interleaved RGB TIFF ordering</td>
</tr>
<tr>
<td>TIFF32</td>
<td>32 Bit TIFF (same as RGBA)</td>
</tr>
<tr>
<td>PRGB</td>
<td>8 bit x 3 Planar RGB</td>
</tr>
<tr>
<td>PRGBA</td>
<td>8 bit x 4 Planar RGB</td>
</tr>
<tr>
<td>PBGR</td>
<td>8 bit x 3 Planar BGR</td>
</tr>
<tr>
<td>PABGR</td>
<td>8 bit x 4 Planar ABGR</td>
</tr>
<tr>
<td>PBGRA</td>
<td>8 bit x 4 Planar BGRA</td>
</tr>
<tr>
<td>PARGB</td>
<td>8 bit x 4 Planar ARGB</td>
</tr>
<tr>
<td>-------</td>
<td>------------------------</td>
</tr>
<tr>
<td>FULLDUAL</td>
<td>10 bit dual frame YCbCr (stereo)</td>
</tr>
<tr>
<td>STEREO8</td>
<td>Dual 8 bit YCbCr interleaved streams (one after another)</td>
</tr>
<tr>
<td>STEREO10</td>
<td>Dual 10 bit YCbCr interleaved streams (one after another)</td>
</tr>
<tr>
<td>DV25</td>
<td>DV25 ‘dv/dif’ stream 4:2:0 or 4:1:1 8 bit SD</td>
</tr>
<tr>
<td>DV50</td>
<td>DVCPro 50 stream 4:2:2 8 bit SD</td>
</tr>
<tr>
<td>DV100</td>
<td>DVCPro HD/DV-100 stream 4:2:2 8 bit HD</td>
</tr>
<tr>
<td>IMX30</td>
<td>Sony IMX MPEG 30 Mbit stream 4:2:2 8 bit</td>
</tr>
<tr>
<td>IMX40</td>
<td>Sony IMX MPEG 40 Mbit stream 4:2:2 8 bit</td>
</tr>
<tr>
<td>IMX50</td>
<td>Sony IMX MPEG 50 Mbit stream 4:2:2 8 bit</td>
</tr>
<tr>
<td>ARRIBAYERDLRAW12</td>
<td>ARRI dual link raw 12 bit layer packed into YCbCr 10 Grey - 8 bit grey/grey plane of video data</td>
</tr>
</tbody>
</table>

%Image Size

"Number of Rows" "Number of Columns" (ex: 486 720; note the 'x' cannot be used)

%Number of Fields per Image
This should be ‘1’ unless you want us to take 2 images and interlace them together.

%Number of Images
This number is calculated based on the number of video sequences within the folder. If you use a small number, then less will be read into memory, so set this number high. (Optional).

%Frames per second
23 (23.98),
24 (Standard film ),
25 (PAL/25p/50i),
29 (29.97 - NTSC/29.97p/59.94i),
30 (NTSC NDF/30p/60i),
50 (50p),
59 (59.94p - for 720p),
60 (60p - for 720p)

%Header Offset
If there is a header on the file, then place the number of bytes into the file where the video starts/size of the header (Optional)

%Video Offset
If there is an additional offset before the start of the video that is not a header, then place the size of it in bytes here. (Optional)

%Video Alignment
To speed up disk access, the files are padded to the nearest block size. This is normally set to 512 for Windows. (Optional)

%Video Name
This is the name of the first still image. The 000 must be present. If an extension is not named, then it will search for .raw, .yuv, and .bin, in that order, before returning an error. (Optional)

Note: The name of the first frame must contain "000" (e.g., VideoSequence000) and the second frame "001" (e.g., VideoSequence001), etc. This is because the software sorts the frames before loading them, and in Windows, the ordering would be 000, 001, 002, 003, 004, 005, 006, 007, 008, 009, 010 (in other words "1" would actually be loaded as frame 100). Of course, you could use 0000 (4 zeros) if you have more than 999 frames.

%AUDIO NAME
This is the name of the .wav or .aiff file associated with the video.

%Timecode
This is the time code for the first video frame. It will run continuously from here. Given as hrs:min:sec:frames (Optional)

%User bits
A query of the value of the user bits will return this value for all frames. (Optional; ClearView does not currently extract the user bits.)

%Start Frame
This indicates the frame number of the first frame in the video file. It is normally 0, unless you are using some type of circular file as input. (Optional)

CAUTION: If you were writing the file when you asked ClearView to start importing it, then you may create a situation where the pointers formed a circle (used the same disk space over and over). This is very dangerous, as ClearView may read too fast or too slow, and it is asynchronous.
5.14 Select Hardware Input Parameters
The Record pane allows you to record the current ClearView sequences, or to record from the Broadcast Input. The list of Input Sources (input devices) is dependent on the ClearView Player input modules installed. While recording from the video source, ClearView Player will do the following:

- Capture based on the sensed video format.
- Store the uncompressed video sequence on the file system.
- Create the detailed and thumbnail information.

5.14.1 Record ClearView Output
The ClearView Output tab allows the user to record the video sequences currently playing in the Viewport (or both Viewport A and Viewport B with CVP-1012). Two reasons exist to do this:

- Re-record video sequences so that they can be exported later for offline analysis/viewing
- Record a portion of the video sequence to create a shorter duration.

![Figure 54: Record ClearView Output](image)

5.14.2 Record 1 SDI Input
The Broadcast tab – Record Mode Single Input records the video sequence as sensed on the SDI input. The SDI can be either SDI Input #1 or SDI Input #2 (as set by Config CVP-1012 only).

![Figure 55: Record 1 SDI Input](image)
<table>
<thead>
<tr>
<th>Input</th>
<th>ClearView supports the following Inputs if the Modules have been purchased</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• ClearView Output: records the video sequences currently playing in the</td>
</tr>
<tr>
<td></td>
<td>preview window as a new Video Sequence. \textit{Note: This is useful if you</td>
</tr>
<tr>
<td></td>
<td>want to export a Split AB image or re-record after spatial alignment/normalization.}</td>
</tr>
<tr>
<td></td>
<td>• Broadcast Input: records the video sequence from the Broadcast I/O Module (i.e. SDI, HD-SDI, 3G-SDI, HDMI, Component, S-Video, and Composite).</td>
</tr>
<tr>
<td>Config</td>
<td>Configure is different depending on the Input Source</td>
</tr>
<tr>
<td></td>
<td>• ClearView Output: No meaning; thus, it is disabled.</td>
</tr>
<tr>
<td></td>
<td>• Broadcast Input: Select the Input and Analog format</td>
</tr>
<tr>
<td>Record Mode</td>
<td>This only applies to the Broadcast Input Module</td>
</tr>
<tr>
<td></td>
<td>• Input/Output – this allows you to simultaneously record and play up to 1080i</td>
</tr>
<tr>
<td></td>
<td>• Single Input – this allows you to record 1 channel</td>
</tr>
<tr>
<td></td>
<td>• Dual Input – this allows you to record up to 2 channels up to 1080i</td>
</tr>
<tr>
<td>Library</td>
<td>This lets you set the library for recording so that you can change it from the</td>
</tr>
<tr>
<td></td>
<td>library used for playing</td>
</tr>
<tr>
<td>To Disk</td>
<td>Checking this button records the input to the file system</td>
</tr>
<tr>
<td></td>
<td>Unchecking records the input to Memory</td>
</tr>
<tr>
<td></td>
<td>\textit{Note: Audio is not currently written to Memory.}</td>
</tr>
<tr>
<td>AOI</td>
<td>If you have zoomed and panned to a particular area. You can record the video</td>
</tr>
<tr>
<td></td>
<td>sequence in 1 of 2 ways:</td>
</tr>
<tr>
<td></td>
<td>• AOI checked: Record the video sequence with pixel replication turned off,</td>
</tr>
<tr>
<td></td>
<td>but only record the pixels shown on the preview window. (i.e. with zoom 2x</td>
</tr>
<tr>
<td></td>
<td>and a 1920x1080 video sequence, this will record a video sequence with</td>
</tr>
<tr>
<td></td>
<td>the size 960x540).</td>
</tr>
<tr>
<td></td>
<td>• AOI unchecked: Record the video sequence as it is displayed in the</td>
</tr>
<tr>
<td></td>
<td>preview window. Possibly with pixels replicated.</td>
</tr>
<tr>
<td></td>
<td>\textit{Note: to play a reduced size video sequence, you can use no video output</td>
</tr>
<tr>
<td></td>
<td>mode.}</td>
</tr>
<tr>
<td>Use Metric Adjust</td>
<td>Checking this box will start the process of re-recording the 2 video sequences</td>
</tr>
<tr>
<td></td>
<td>associated with Viewport A and Viewport B. The video sequences are re-</td>
</tr>
<tr>
<td></td>
<td>recorded after apply spatial alignment, normalization, and windowing.</td>
</tr>
<tr>
<td></td>
<td>\textit{Note 1: for spatial alignment, the alignment must be an even number to avoid</td>
</tr>
<tr>
<td></td>
<td>color shifts in Y'CbCr space and/or flipped fields in interlaced modes.}</td>
</tr>
<tr>
<td></td>
<td>\textit{Note 2: for spatial alignment, both sequences are moved and centered while</td>
</tr>
<tr>
<td></td>
<td>performing the adjustment.}</td>
</tr>
<tr>
<td>Sequence</td>
<td>This is the name that is displayed in the thumbnail.</td>
</tr>
<tr>
<td></td>
<td>\textit{Note: this can be renamed later.}</td>
</tr>
</tbody>
</table>
Frames
Select the number of frames to record in the Record Pane. The number of frames defaults to the maximum number of frames available in memory or on the disk.

Abort on Drop
Checking this aborts the record on the first dropped frame
Unchecking this allows the system to keep recording albeit with the error frame.

Status
This simply says previewing, recording, or nothing.

Drop
This increments the number of frames that have been dropped.

Out enable
If you are using the CV-SDI-IO-DL or CV-SDI-IO-LHI module, then this button will be active. It allows the operator to capture and playout simultaneously.

- Playout must be connected to SDI out #1
- Input must be connected to SDI in #2
- Genlock will free run unless you connect a Genlock device

*Note 1: Dual Link will not work.*
*Note 2: Input is connected to SDI In #2.*

Preview
Press this button to preview the record from Broadcast to make sure that something is connected to the input.

*Note: In Broadcast Input, preview is not active on the preview window once you select the record button.*

Record
Start the record process. It will automatically end when the frame count is reached

Stop
Stop recording

<table>
<thead>
<tr>
<th>Frames</th>
<th>Select the number of frames to record in the Record Pane. The number of frames defaults to the maximum number of frames available in memory or on the disk.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abort on Drop</td>
<td>Checking this aborts the record on the first dropped frame Unchecking this allows the system to keep recording albeit with the error frame.</td>
</tr>
<tr>
<td>Status</td>
<td>This simply says previewing, recording, or nothing.</td>
</tr>
<tr>
<td>Drop</td>
<td>This increments the number of frames that have been dropped.</td>
</tr>
<tr>
<td>Out enable</td>
<td>If you are using the CV-SDI-IO-DL or CV-SDI-IO-LHI module, then this button will be active. It allows the operator to capture and playout simultaneously.</td>
</tr>
<tr>
<td>Preview</td>
<td>Press this button to preview the record from Broadcast to make sure that something is connected to the input.</td>
</tr>
<tr>
<td>Record</td>
<td>Start the record process. It will automatically end when the frame count is reached</td>
</tr>
<tr>
<td>Stop</td>
<td>Stop recording</td>
</tr>
</tbody>
</table>

To record the current ClearView sequence, jog to the desired frame. In the Clip Alignment pane, set the first frame. To record a number of frames, you can either set the last frame in the Clip Alignment pane or you can select a number of frames in the Record pane.

You would want to record the output of ClearView if you intended to:

- Export the video sequences as they are playing to an AVI file (or BMP, Raw, etc.)
- Export the video sequence as a smaller version (just looking at the spokes of the wheel as opposed to the whole car).
- Create 2 new video sequences after the spatial alignment and normalization has adjusted the 2 video sequences relative to each other.

*Note 1: that if you simply want to hit play and then record, you do not need to set the Clip Alignment. If you want to record just from frame n to frame m, and give it a new name, etc., you need to use a combination of the clip alignment and the record function.*
Note 2: Please be in Stop mode before starting the record or you will record more than 1 first frame. (Of course, you can edit these out, using the Clip Alignment pane.) This is because in pause mode, ClearView is displaying the same frame over and over. If you hit record while ClearView is doing this, then it will record that same frame over and over. In Stop mode, ClearView is not displaying, but the last frame that was played stays on the screen. The confusing part is that when you hit play, it will not start at this frame. It starts at the frame number given by the “clip alignment first frame” (probably frame 0).

To record from Broadcast connect your source.

- In Broadcast input mode, ClearView auto senses the video format. To make sure that it has selected the correct format, select the Config button.

**Figure 56: Configure Broadcast Input Module**

<table>
<thead>
<tr>
<th>Input Source</th>
<th>HDMI Input</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analog Format</td>
<td>1080i 30/29.97 Hz</td>
</tr>
<tr>
<td>Sync Source</td>
<td>Free Run</td>
</tr>
<tr>
<td>Audio Source</td>
<td>HDMI</td>
</tr>
<tr>
<td></td>
<td>[ ] SMPTE 372 Dual Link</td>
</tr>
<tr>
<td></td>
<td>[ ] HD Down Convert (QRez)</td>
</tr>
</tbody>
</table>

**Table 12: Configure Broadcast Pane Description**

<table>
<thead>
<tr>
<th>Input Source</th>
<th>Chose among HDMI, Analog, SDI if you have a CV-SDI-IO-LHI module in CVP-1011.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analog Format</td>
<td>Chose among various 525 (486i), 625 (576i), 720P, and 1080i analog input standards for CVP-1011.</td>
</tr>
<tr>
<td>Sync Source</td>
<td>Chose among SDI#1, SDI#2, External or Free Run (no source)</td>
</tr>
<tr>
<td>Audio Source</td>
<td>Chose among embedded HDMI, embedded SDI, Analog, and AES if you have a CVP-1011 module (Use embedded SDI if you have a CVP-1012 module).</td>
</tr>
<tr>
<td>HD Down Convert</td>
<td>Not Available</td>
</tr>
<tr>
<td>(QRez)</td>
<td></td>
</tr>
</tbody>
</table>
5.14.3 ClearView Player 4K: Broadcast Input

4K ClearView Player systems can record up to 60Hz when using “Broadcast Output Module 1” or “Broadcast Output Module 2”. Model CVP-3082-4K can record in up to 25 Hz when using either and up to 60Hz when using “Broadcast Output Module 1 & 2”. The image below shows how the signals will appear.

Figure 57: Record Broadcast Input 4K

This will display what each input module is seeing, with 1 being the top most input of the broadcast board and 2 being the one below that.

5.14.4 ClearView Player 4K: HDTV or SDTV formats Input or Output Mapping

Recording or playing HDTV or SDTV formats using a 4K system:

By choosing either Broadcast Input Module 1 or Broadcast Input Module 2 under the Broadcast record tab as Single Input and also any playback function, the input/output mapping of either Board 1 or Board 2 is as follows.

SDI 1 = Input 1
SDI 2 = Input 2
SDI 3 = Output 1
SDI 4 = Output 2

Map of input and output for 4K quadrants

<table>
<thead>
<tr>
<th>Figure 58:</th>
<th>Figure 89:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Module on LEFT (Board 2)</td>
<td>Module on RIGHT (Board 1)</td>
</tr>
<tr>
<td>In1 = Lower Left</td>
<td>In1 = Upper Left</td>
</tr>
<tr>
<td>In2 = Lower Right</td>
<td>In2 = Upper Right</td>
</tr>
<tr>
<td>Out3 = Lower Left</td>
<td>Out3 = Upper Left</td>
</tr>
<tr>
<td>1 = Upper Left</td>
<td></td>
</tr>
<tr>
<td>2 = Upper Right</td>
<td></td>
</tr>
<tr>
<td>3 = Lower Left</td>
<td></td>
</tr>
</tbody>
</table>
5.15 Select Thumbnail to Play or Export
The Sequence Manager pane displays thumbnails (or details) of the video sequences currently loaded into the current ClearView library. One (CVP-1011) or two (CVP-1012) video sequences can be loaded at any time. Each video sequence is assigned a Viewport. After a file is imported or a video sequence is recorded via hardware inputs, the first video sequence is mapped to Viewport A. The second sequence loaded is mapped to Viewport B. (CVP-1012 only)

Note: Please remember that the sequence to be displayed must have the same bit depth (8, 10-bit), color space (4:4:4, 4:2:2), and resolution (1080i, PAL, NTSC) as the current video output format (specified in the Video Output pane). Hovering the mouse over a sequence thumbnail will display the property information about the selected sequence.

Figure 59: Sequence Manager Controls

This figure shows the pop-up display of video clip properties when the mouse cursor hovers over the thumbnail.

- Drag and drop a video sequence onto the Viewport (open window with Video Clarity logo)
- CVP-1011 has a single Viewport and therefore A & B Viewport information doesn’t apply
- In A-only mode, the video sequence will be assigned to Viewport A (CVP-1012)
- In B-only mode, the video sequence will be assigned to Viewport B (CVP-1012)
As the following figure shows, right-clicking on a sequence thumbnail allows you to change the Viewport assignment, to unload video sequences from disk, to see the details, or to export the video sequence to a file.

Renaming the video sequence can be done by left clicking on the sequence name in Details or Thumbnails modes.

Sorting the Sequence Manager Pane can be done in Details or Thumbnails modes.

In Thumbnails mode:
- Grab a sequence with the mouse, and drop it where you would like to move it. Note: you cannot move the sequence to the first position. To move it to the first position, you need to move the sequence to the second position, and then move the first sequence to the second position.

In Details mode:
- Sort based on any of the file type headers: Name, File Size, etc.

**Figure 60: Sequence Manager Drop Down Menu**

**Table 15: Sequence Manager Descriptions**

<table>
<thead>
<tr>
<th>Viewport A</th>
<th>Assigns the video sequence to Viewport A (left or top window).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viewport B</td>
<td>Assigns the video sequence to Viewport B (right or bottom window).</td>
</tr>
<tr>
<td>Viewport Off</td>
<td>De-Assigns the video sequence from both Viewport A and Viewport B</td>
</tr>
<tr>
<td>Unload</td>
<td>Removes the video sequence from ClearView (unloads memory or erases from disk)</td>
</tr>
<tr>
<td>Thumbnails</td>
<td>Sets the video sequence viewing mode to Thumbnails</td>
</tr>
<tr>
<td>Details</td>
<td>Sets the video sequence viewing mode to Details</td>
</tr>
<tr>
<td>Export</td>
<td>Exports the video sequence to disk.</td>
</tr>
</tbody>
</table>

Choosing Export opens the following dialog box:
Figure 61: Sequence Manager Export Controls

Table 13: Sequence Manager Export Descriptions

<table>
<thead>
<tr>
<th>Sequence Properties</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selected Sequence, Image Type, First Frame, Last Frame are informational only. They cannot be changed</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>File Type</th>
<th>The video sequence can be exported as a BMP, RAW or AVI file</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>Checking this box exports all of the frames.</td>
</tr>
<tr>
<td></td>
<td>Unchecking this box allows you to set the first and last frame to output.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>File Name</th>
<th>You can type in the full path and filename or select Browse to find the file</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>First frame to be exported.</td>
</tr>
<tr>
<td>Last</td>
<td>Last frame to be exported</td>
</tr>
<tr>
<td>Browse</td>
<td>Navigate to the filename</td>
</tr>
<tr>
<td>Stop</td>
<td>Stop exporting</td>
</tr>
<tr>
<td>Export</td>
<td>Start exporting</td>
</tr>
<tr>
<td>Exit</td>
<td>Close this window</td>
</tr>
</tbody>
</table>

Note: You can output one video sequence to multiple files by exporting a list of frames (first frame/last frame) to multiple files (i.e. choose a File Name and press Export; then change the first frame/last frame and choose the next File Name and press Export).
5.16 Select a View Mode
The View Mode pane allows you to select the current viewing mode. Model CVP-1011 with single output does not have View Mode control selections. Once a library is selected and a sequence thumbnail is put in to the Viewport CVP-1011, VTR controls are then utilized. See Figure 24.

Figure 62: View Mode Controls - CVP-1012

![View Mode Controls - CVP-1012]

Table 17: View Mode Descriptions – CVP-1012

<table>
<thead>
<tr>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Only</td>
</tr>
<tr>
<td>B Only</td>
</tr>
</tbody>
</table>

Note: Model CVP-3082-4K will only play one 4K sequence at a time.

5.17 Select VTR Mode
The VTR Control pane functions similar to a VCR allowing full temporal control of the sequence(s) being viewed. For each clip, the currently mapped sequence and currently displayed frame number are displayed in the next to the labels in the main Viewport (model CVP-1011) or via selection of Viewport A or Viewport B with model CVP-1012 and CVP-3082-4K.

Figure 63: CVP-1011 VTR Controls

![CVP-1011 VTR Controls]

Table 18: VTR Control Descriptions

<table>
<thead>
<tr>
<th>Viewport A, Viewport B</th>
<th>This is an information message. It is the name of the sequence(s) playing and the current frame number.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Note 1: The frame number does not increment smoothly while playing. This is because GUI updates (refreshes) are a low priority to keep the video playing well.</td>
</tr>
<tr>
<td></td>
<td>Note 2: The disk array drive letter is displayed to help when multiple disk arrays are present in 1 system.</td>
</tr>
<tr>
<td>Command</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>First</td>
<td>Move to the first frame.</td>
</tr>
<tr>
<td>Jog-</td>
<td>Jog backwards one frame.</td>
</tr>
<tr>
<td>Play-</td>
<td>Play backwards at the chosen rate. Rate is chosen in the Clip Alignment pane</td>
</tr>
<tr>
<td>Stop</td>
<td>Do not process any more data. Stop.</td>
</tr>
<tr>
<td>Pause</td>
<td>Continue to process the current frame at the displayed rate.</td>
</tr>
<tr>
<td>Play+</td>
<td>Play forwards at the chosen rate. Rate is chosen in the Clip Alignment pane.</td>
</tr>
<tr>
<td>Jog+</td>
<td>Jog forward one frame.</td>
</tr>
<tr>
<td>Last</td>
<td>Move to the last frame.</td>
</tr>
<tr>
<td>Slider Bar</td>
<td>Move to a specific frame. The frame number is displayed above the VTR</td>
</tr>
<tr>
<td></td>
<td>controls; next to the Viewport video sequence name.</td>
</tr>
</tbody>
</table>

*Note: the slide bar does not move when the file is playing*
5.18 Overlay
This puts the overlay text over the video sequence. The overlay is a text file which has the same name as the sequence name with a .cvo extension. An overlay file is automatically created with the sequence name inside when you import or record a video sequence. The maximum length of the overlay is 35 characters.

Figure 64: Overlay Display

5.19 Configuration Menu

5.19.1 Available configuration settings
The Configuration Settings menu (pictured on the next page) holds several items applicable for payback or record in the ClearView Player. Items applicable to ClearView Player controls are a subset of the ClearView A/V Analyzers and therefore those settings that are not applicable to ClearView Player features are grayed out.
**Table 19: Configuration Setting Descriptions**

| Playback                                                                 | These are the default playback parameters for both broadcast and DVI. You may want to change the default broadcast audio playback (turning it on or off if you have audio), broadcast playback/record with VANC (turning it on or off if you want to include the VANC which is a bigger raster than without VANC, default DVI format which is the native format that the DVI monitor accepts so that it can be restored if the EDID codes are not acknowledged, and Playback using spatial offsets (turning this on automatically shifts the image during playback to show you the offsets as you adjust them or as you allow the automatic algorithm to work).

*Note: The others items in this group should be checked only after talking to Video Clarity customer support.*

| Record                                                                   | You can change the default broadcast audio record setting (turning it on or off |
during record) and you can place the audio in a different directory than the default library where the audio is placed. You may need to change the default directory if instructed by a video clarity customer support professional.

<table>
<thead>
<tr>
<th>Import</th>
<th>This lets you import audio. It should be on by default.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>It changes where we place the video sequence if the raster size is larger than the video sequence.</td>
</tr>
<tr>
<td></td>
<td>It changes where we start the video sequences if the raster size is smaller than the video sequences.</td>
</tr>
</tbody>
</table>

*Note: The others items in this group should be checked only after talking to Video Clarity customer support.*
6 Hardware Modules

Table 20: Hardware Modules

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVP-1011-Videol/O</td>
<td></td>
</tr>
<tr>
<td>CVP-1012and-R-Videol/O</td>
<td></td>
</tr>
<tr>
<td>CVP-4K-Models Videol/O</td>
<td></td>
</tr>
</tbody>
</table>

6.1 CVP-1011 video IO, module CV-SDI-IO-LHI

Figure 66: CV-SDI-IO-LHI Broadcast I/O Module.

The CV-SDI-IO-LHI module records and plays HD/SD videos. It is capable of 1080P/60Hz record and/or playback. ClearView stores the video data as 100% uncompressed 8/10-bit 4:2:2 Y'CbCr. The inputs and outputs are any of HDMI, HD-SDI, Component, Composite, or S-Video.

6.1.1 Capture & Playback Standards

Digital Video Inputs & Outputs

- 259/292/296/424/425a/425b
- 8 or 10 bits per component
- 2-channel v-1.3a HDMI I/O
- 3G, HD-SDI, SD-SDI I/O

Analog Video Inputs & Outputs

- 12-bit HD Analog Component I/O
- 12-bit SD Analog Component/Composite/S-Video I/O

Digital Video Inputs & Outputs

- 2-ch Balanced XLR AES I/O, 24-bit 48KHz
- 8-ch SDI Embedded Audio I/O, 20-bit 48KHz
- 2-ch HDMI Embedded Audio I/O, 20-bit 48KHz

Analog Audio Inputs & Outputs

- 2-ch Balanced XLR Analog Audio I/O, 24-bit 48KHz
6.1.2 CV-SDI-IO-LHI I/O Formats

Standard Definition (SD)
- 525i 59.94 Hz
- 625i 50 Hz

High Definition (HD)
- 720p: 50Hz, 59.94Hz, 60Hz
- 1080i: 50Hz, 59.94Hz, 60Hz
- 1080psf: 23.98Hz, 24Hz
- 1080p: 23.98Hz, 24Hz, 25Hz, 29.97Hz, 30Hz, 50Hz, 59.94Hz, 60Hz

6.2 Video I/O on CVP model 1012 and 1012-R

Figure 67: CVP-1012 HDSDI I/O

The CVP-1012 and 1012-R models have full size BNC connections and are featured to record from one video input or play from one or two outputs with embedded audio. It is capable of single record or play up to 1080p/60Hz. It is capable of dual program output up to 1080i/60Hz on each output interface. ClearView stores the video data as 100% uncompressed 8/10-bit 4:2:2 YCbCr.

6.2.1 Capture & Playback Standards

Serial Digital Video Inputs & Outputs:
SMPTE-259/292/296/424
8 or 10 bits per component
3G, HD-SDI, SD-SDI I/O

Digital Audio Inputs & Outputs:
8-ch SDI Embedded Audio I/O, 20-bit 48 KHz

6.2.2 CVP-1012 and 1012-R I/O Formats

Standard Definition (SD)
- 525i 59.94 Hz
- 625i 50 Hz

High Definition (HD)
- 720p: 50Hz, 59.94Hz, 60Hz
- 1080i: 50Hz, 59.94Hz, 60Hz
- 1080psf: 23.98Hz, 24Hz
- 1080p: 23.98Hz, 24Hz, 25Hz, 29.97Hz, 30Hz, 50Hz, 59.94Hz, 60Hz
6.3 Video I/O on CVP-4K models

Figure 68: Dual Quad/HDSDI I/O, HDMI output and analog breakout

The ClearView Player 4K models record and play HD/SD and 4K resolution video with embedded audio. For 4K formats, one module is capable of progressive frame rates of 23.98, 24, 25, 29.97, 30, 50, 59.94 and 60. For model CV-3082 with an early version CV-SDI-IO-4K IO module, playback configurations require a reference signal be fed to each CV-SDI-IO-4K by using a tri-level sync generator via the reference input on both of the supplied breakout cables connected to the supplied GEN10 reference generator and each 4K interface Breakout connector.

Note: There is no Analog 4K output or input format, so the analog breakout is generally only used for its reference input. Analog IO may be used to alternatively input or output supported SD and HD formats as required. ClearView Player stores and plays video data as 100% uncompressed 8 or 10-bit 4:2:2 Y'CbCr.

6.3.1 Capture & Playback Standards

Digital Video Inputs & Outputs
- 4 BNC input/output programmable for 259/292/296/424/425a/425b and 4K/Quad HD
- 8 or 10 bits per component
- 1 channel 2.0b HDMI output (2160p60Hz 4:2:0 8 or 10 bit) per interface
  - On model CVP-3082-4K the HDMI output is v-1.4 HDMI output (1080p60Hz limited)
- 3G, HD-SDI, SD-SDI I/O

Analog Video Outputs (on supplied breakout cable)
- 12-bit HD Analog Component I/O
- 12-bit SD Analog Component/Composite/S-Video I/O

Digital Audio Inputs & Outputs
- 16-ch SDI Embedded Audio I/O, 20-bit 48KHz
- 16-ch HDMI Embedded Audio Output, 20-bit 48KHz

6.3.2 I/O Formats

Standard Definition (SD)
- 525i 59.94 Hz
- 625i 50 Hz

High Definition (HD) and Ultra High Definition (UHD)
- 720p: 50Hz, 59.94Hz, 60Hz
- 1080i: 50Hz, 59.94Hz, 60Hz
- 1080psf: 23.98Hz, 24Hz
- 1080p: 23.98Hz, 24Hz, 25Hz, 29.97Hz, 30Hz, 50Hz, 59.94Hz, 60Hz
- 3840X2160p: 23.98Hz, 24Hz, 25Hz, 29.97Hz, 30Hz, 50Hz, 59.94Hz, 60Hz
7 File Format Import Types

Accom YUV CCIR 601 8 Bit
ARI Raw Bayer Pattern
Avid AVR, DS HD/SD, DV (*.gen)
Avid _DNxHD
Avid Meridian & Y'CbCr
Avid OMFI (*.omf, *.omfi)
AVR, JFIF, JPEG, Meridian, RGB, Y'CbCr
Cineon (CIN)
CineWave
Digital Negative (.dng)
DPX RGB 8, RGB 10, Y'CbCr 4:2:2
DV Movies (*.dv, *.dif)
DVS Direct File Format (*.dvs)
DVSD, DV25, DV50, MPEG-I, MJPEG DigiSuite
H.261, H.263, H.264, H.265
HDV
Headerless/Raw (*.hdr, *.yuv, *.rgb, *.raw)
HiCon SLB32 RFB format (*.slb)
Image (gif, jpg, png)
Jaleo Direct Format (*.js)
JPEG
JPEG2000
Media 100 MJPEG
Microsoft BMP, DIB Files (*.dps)
Microsoft AVI (*.avi)
MJPEG
MPEG-1 4:2:0 (*.mpg, *.mpeg)
MPEG-2 Elem. Stream, (4:2:0/4:2:2)
MPEG-2 (*.m2v)
MPEG-2 Program Stream, (4:2:0/4:2:2)
MPEG 2/4 in Transport Stream (4:2:0/4:2:2)
MPEG-2 in TS, MPTS (4:2:0/4:2:2)
MPEG-4 Part 2
MPEG-4 /AVC Elementary Stream
(4:2:0/4:2:2), (*.h264)
MPEG-4 /AVC in TS, MPTS
(4:2:0/4:2:2), (H.264)4:2:0/4:2:2,
(*.h264)
MPEG-4 (*.m4v)
MPEG-H HEVC/H.265 4:2:0 Main Profile (*h.265)
MPEG-H in TS, MPTS
MXF Format (DV, DVCPro50, MPEG, IMX)
Newtek Video Toaster (*.rtv)
Phantom Support (cine)
Photo CD PCD
PhotoShop FilmStrip (*.flm)
Photoshop PSD
Portable anymap PNM
Portable Bitmap Format PBM DPS
Velocity Portable grayscale PGM
Portable pixmap PPM
Profile GXF Format/SMPTE-360 (*.gxf)
QuickTime Movies (*.mov)
QuickTime Formats with proper codec, ProRes, etc.
RealVideo (*.ra, *.rm, *.ram)

Red Camera Stream (*.r3d)
Run-Length encoding (rle)
SGI Movie Format (*.mv)
Silicon Image Bayer (siv)
Sun Raster
Sun Raster (*.ras)
SGI RGB
Targa TGA, ICB, VDA, VST
Targa 3000, Pinnacle
TIFF, TIF
TS
v210 Y'CbCr 10 Bit product
VC-1 Pro
Viewstore (*.vsr)
Windows Media (*.asf, *.wmf, *.wmv)
Y'CbCr 8/10
Y'CbCr, RGB
YCrCb 8/RGGA
<table>
<thead>
<tr>
<th>Audio Import Formats</th>
<th>Exported File Formats</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPEG-2 Layer 1 (.mp1)</td>
<td>QuickTime with up to 8 audio channels</td>
</tr>
<tr>
<td>MPEG-2 Layer 3 (.mp3)</td>
<td>Microsoft AVI (*.avi), BMP</td>
</tr>
<tr>
<td>Waveform Audio (.wav)</td>
<td>Headerless/Raw (*.yuv, *.rgb, *.raw)</td>
</tr>
<tr>
<td>Adaptive Multi-rate (.amr)</td>
<td></td>
</tr>
<tr>
<td>Audio Interchange File Format (.aiff)</td>
<td></td>
</tr>
<tr>
<td>Windows Media Audio (.wma)</td>
<td></td>
</tr>
<tr>
<td>Advanced Audio Coding (.aac)</td>
<td></td>
</tr>
</tbody>
</table>
ClearView Player
Command Line Interface
9 Introduction

9.1 Setup
The command line interface consists of 3 files that must be loaded before starting:
- CVServer
- CV
- Config

9.2 CVServer
CVServer resides on the machine running the ClearView software. It converts the CV commands to appropriate messages to start ClearView. CVServer must be activated before you can run a CV command. It is preferred to place CVServer in C:\Program Files\VideoClarity\ClearView since the path is already set.

When running CVServer from the command line there needs to be a port number and timeout. CVServer communicates through port 7. The command line should look like “cvserver<space>7<space>5”.

9.3 CV
CV is the command line processor. It communicates via sockets to CVServer. It reads the Config file to find out where the ClearView machine sits on the network. A list of CV commands is in the table of contents above. Each command is detailed below.
It is preferred to place CV in C:\Program Files\VideoClarity\ClearView.

9.4 Config
Config holds the IP address of the machine running ClearView software. This file should be placed in C:\Program Files\VideoClarity\ClearView.

9.5 Path
The system path is a list of folders, separated by a semicolon, which identifies the folders that the system should search when looking for files that are called from the Run dialog box, command line, or other processes. Normal program installation changes this path to include the program’s installation path. To manually change the system path, perform these steps:
- Start the System Control Panel applet (Start → Settings → Control Panel → System).
- Select the Advanced tab.
- Click the Environment Variables button.
- Under System Variables, select Path, then click Edit.
- Add the folder in which CV/CVServer and config reside, preferably C:\Program Files\VideoClarity\ClearView. (Remember to place a “;” before this new entry) Click OK.

9.6 CV ? Command
If you ever need a list of commands that are available in cvserver one can type “cv ?” and a list of commands will be listed.

If you would like to see how a command is used and do not have the CLI Documentation handy one can type cv ? <command>, example: cv ? configjnd.
10 Commands

The Video Clarity Clear View Player Command Line Interface allows the user to control any ClearView machine, which can be seen (open socket call). This command set is specifically edited for the functionality of ClearView Player. The general command structure is as follows: CV CommandName CommandArguments. The command is echo-ed back to the console timestamped, and the results of the command are displayed (timestamped) on the next line.

10.1 Global

10.1.1 reset

**Description:** Reset will perform the same actions as pressing “Reset” on the Clear View Graphical User Interface. All sequences will be removed and Clear View will be reset to the start up state.

**Syntax:** reset

**Input:** NONE

**Output:** Received: Success

Received: Failure

**Example:** cv reset

**Notes:** none

10.1.2 freeFrames

**Description:** FreeFrames returns the total number of frames that are free based on the current video format.

**Syntax:** FreeFrames <bMemory>

**Input:** bMemory 0 – Returns free frames on disk

1 – Returns free frames on memory

**Output:** Received: Success: Free Frames = <number of free frames>

Received: Failure

**Example:** cv freeframes 1

**Notes:** none
### 10.1.3 videoFormat

**Description:** VideoFormat will change the video format of the currently selected output device

**Syntax:**

```
VideoFormat <cFormat>
```

**Input:**

<table>
<thead>
<tr>
<th>cFormat</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>525</td>
<td>525 59.95Hz</td>
</tr>
<tr>
<td>625</td>
<td>625 50.00 Hz</td>
</tr>
<tr>
<td>1080i50</td>
<td>1080i 50.00 Hz</td>
</tr>
<tr>
<td>1080i59</td>
<td>1080i 59.94 Hz</td>
</tr>
<tr>
<td>1080i60</td>
<td>1080i 60.00 Hz</td>
</tr>
<tr>
<td>720p23</td>
<td>720p 23.98 Hz</td>
</tr>
<tr>
<td>720p50</td>
<td>720p 50.00 Hz</td>
</tr>
<tr>
<td>720p59</td>
<td>720p 59.94 Hz</td>
</tr>
<tr>
<td>720p60</td>
<td>720p 60.00 Hz</td>
</tr>
<tr>
<td>1080p23</td>
<td>1080p 23.98 Hz</td>
</tr>
<tr>
<td>1080p24</td>
<td>1080p 24.00 Hz</td>
</tr>
<tr>
<td>1080p25</td>
<td>1080p 25.00 Hz</td>
</tr>
<tr>
<td>1080p29</td>
<td>1080p 29.97 Hz</td>
</tr>
<tr>
<td>1080p30</td>
<td>1080p 30.00 Hz</td>
</tr>
<tr>
<td>1080p50</td>
<td>1080p 50.00 Hz</td>
</tr>
<tr>
<td>1080p59</td>
<td>1080p 59.94 Hz</td>
</tr>
<tr>
<td>1080p60</td>
<td>1080p 60.00 Hz</td>
</tr>
<tr>
<td>1080psf23</td>
<td>1080psf 23.98 Hz</td>
</tr>
<tr>
<td>1080psf24</td>
<td>1080psf 24.00 Hz</td>
</tr>
<tr>
<td>1080p2k23</td>
<td>1080p 2K 23.98 Hz</td>
</tr>
<tr>
<td>1080p2k24</td>
<td>1080p 2K 24.00 Hz</td>
</tr>
<tr>
<td>1080psf2k23</td>
<td>1080psf 2K 23.98 Hz</td>
</tr>
<tr>
<td>1556psf2k14</td>
<td>1556psf 2K 14.98 Hz</td>
</tr>
<tr>
<td>1556psf2k15</td>
<td>1556psf 2K 15.00 Hz</td>
</tr>
<tr>
<td>1556psf2k14</td>
<td>1556psf 2K 14.98 Hz</td>
</tr>
<tr>
<td>1556psf2k15</td>
<td>1556psf 2K 15.00 Hz</td>
</tr>
<tr>
<td>1556psf2k23</td>
<td>1556psf 2K 23.98 Hz</td>
</tr>
<tr>
<td>1556psf2k24</td>
<td>1556psf 2K 24.00 Hz</td>
</tr>
</tbody>
</table>

**Output:**

- Received: Success
- Received: Failure

**Example:**

```
cv VideoFormat 1080i59
```

**Notes:** none
10.1.4 analogFormat

**Description:** AnalogFormat will change the analog video format of the currently selected output device

**Syntax:** AnalogFormat <cFormat>

**Input:**
- **cFormat**
  - 525ComponentRGB – 525 Component RGB
  - 525ComponentUS – 525 Component US
  - 525ComponentBetaUS – 525 Component Beta US
  - 525ComponentBetaJapan – 525 Component Beta Japan
  - 525CompositeUS – 525 Composite US
  - 525CompositeJapan – 525 Composite Japan
  - 625ComponentRGB – 625 Component RGB
  - 625ComponentSMPTE – 625 Component SMPTE
  - 625Composite – 625 Composite
  - 1080iRGB – 1080i RGB
  - 1080psfRGB – 1080psf RGB
  - 720pRGB – 720p RGB
  - 1080iSMPTE – 1080i SMPTE
  - 1080psfSMPTE – 1080i psf SMPTE
  - 1080iXVGA – 1080i XVGA
  - 1080psfXVGA – 1080psf XVGA
  - 720pXVGA – 720p XVGA

**Output:**
- Received: Success
- Received: Failure

**Example:** cv VideoFormat 1080iRGB

**Notes:** none

10.1.5 imageFormat

**Description:** ImageFormat will change the image format of the video

**Syntax:** ImageFormat <cFormat>

**Input:**
- **cFormat**
  - YCbCr8 – YCbCr 8bpc
  - YCbCr10 – YCbCr 10bpc
  - ARGB – ARGB 8bpc
  - RGBA – RGBA 8bpc
  - RGB8 – RGB 8bpc
  - BGR8 – BGR 8bpc
  - RGB10 – RGB 10bpc

**Output:**
- Received: Success
- Received: Failure

**Example:** cv ImageFormat YCbCr10

**Notes:** none
10.1.6 inOut
Description: InOut can be used to both change the first/last frame of a sequence loaded or to give the first/last frames of the sequence loaded.
Syntax: InOut <eViewport> <iFirst> <iLast>
Input:
  eViewport 0 – Viewport A
  1 – Viewport B
  iFirst
  iLast
Output: Received: Success
       Received: Failure
       Received: Success: Viewport = <viewport>: First = <First>, Last = <Last>
Example:
cv inout 0  10 80; sets Viewport A, first frame = 10, last frame = 80
Notes:
  If <iFirst> AND <iLast> are omitted then the current frame set for first and last will be returned for the corresponding viewport, if <iFirst> AND <iLast> are used the first/last frame used for the corresponding viewport will be changed.

10.1.7 overlay
Description: turns off/on overlay
Syntax: Overlay <bOverlay>
Input: bOverlay 1 – On
       0 – Off
Output: Received: Success
       Received: Failure
Example: cv overlay 1
Notes: none

10.1.8 File Movement
10.1.9 import
Description: Import will import the given files, playlists or logs.
Syntax: Import <cSrcPathFile> <cSequenceName> <bToMemory> <iFirst> <iLast>
Input:
cScrPathFile Any file path, including file name
    cSequenceName Any sequence name that conforms to Clear View sequence naming rules
    bToMemory 1 – record to memory
               0 – record to disk
    iFirst OPTIONAL – fist frame to import
    iLast OPTIONAL – last frame to import
Output: Received: Success
        Received: Failure
Example: cv Import “E:\Clips\football\YCbCr 8-bit Football 8Mbps 1080 YCbCr 8-bit.avi” MyImport
        cv Import “E:\List\Test.psnr”
Notes:
  There are two different syntaxes for Import. The syntax for playlists and logs does not have any more parameters than the location of the file. The syntax for files includes where to load the file as well as first/last frame to import.
  Path must be from root, i.e. C:\My Clips\Image.avi not \Image.avi
  If the source path or sequence name has spaces they need to be enclosed by double quotes
  If the first and last frame parameter are omitted all frames will be imported
  The first frame must be less than or equal to the last frame.
10.1.10 configExport
Description: configExport will configure the export functionality
Syntax: Export <cType> <framerate> <b16Bit> <bMultiframeFile> <b420> <bPlanar>
Input: cType: BMP = BMP
AVI = AVI
RAW = RAW
iFrameRate: OPTIONAL - Only needed for AVI
b16Bit: 0 = off, use current bit format
1 = on, pad out to 16 bits
bMultiframeFile: 0 = off, single file per frame
1 = on, single file for all frames
b420: 0 = off, 4:2:2
1 = on, 4:2:0
bPlanar: 0 = off, interleaved format
1 = on, planar format
Output: Received: Success
Received: Failure
Example: cv configExport AVI 60
          cv configExport RAW 0 0 1 1 0
Notes: iFormat is used for AVI and when bMultiframeFile is set
       B16Bit, bMultiframeFile, b420 and bPlanar are only applicable to RAW exports
       If b16Bit is set one cannot set bMultiframeFile, b420 or bPlanar
       bPlanar can only be set if exporting b420

10.1.11 export
Description: Export will export the given sequence
Syntax: Export <cSequenceName> <iFirst> <iLast> <cDestFile>
Input: cSequenceName: Any sequence name that conforms to Clear View sequence
       naming rules
iFirst: First frame to be exported
iLast: Last frame to be exported
cDestFile: Full path and name of file to be created
Output: Received: Success
Received: Failure
Example: cv export "Impairments 1080 YCbCr 8-bit" 0 149 C:\Output\MyFile.avi
Notes: Export path must be from root, i.e. C:\My Clips\Image.avi not \Image.avi
       If the source path or sequence name has spaces they need to be enclosed by double quotes
10.1.12 libraryActivate
Description: LibraryActivate changes the current active library
Syntax: LibraryActivate <cPath>
Input: cPath File path to a valid existing Clear View library
Output: Received: Success
Received: Failure
Example: cv libraryActivate “E:\720p YCbCr 8bpc”
Notes: Path must be from root, i.e. E:\My Clips\ not \My Clips
If the path has spaces the path needs to be enclosed by double quotes
One should not include the “\”

10.1.13 seqDelete
Description: seqDelete will delete a sequence from the library manager
Syntax: SeqDelete <cLibrary> <cSequenceName>
Input: cScrPathFile Any Library Path
cSequenceName Any sequence name that conforms to Clear View sequence naming rules
Output: Received: Success
Received: Failure
Example: cv seqDelete “F:\1080i YCbCr” YCbCr 8-bit Football 8Mbps 1080 YCbCr 8-bit
Notes: Path must be from root
If the source path or sequence name has spaces they need to be enclosed by double quotes

10.1.14 VANC
Description: VANC will turn on/off the VANC option
Syntax: VANC <bOn>
Input: bOn 1 = On
0 = Off
Output: Received: Success
Received: Failure
Example: cv VANC 1
Notes: none
10.2 View Modes

10.2.1 viewmode

Description: Viewmode will change the current viewmode that Clear View is in
Syntax: viewmode <cMode>
Input: cMode A A Only
       B B only
Output: Received: Success

Example: cv viewmode Mirror
Notes: none

10.3 Playback

10.3.1 mapA

Description: MapA places a sequence into Viewport A
Syntax: mapA <cSequence> <iFirst> <iLast> <bForceFormatChange>
Input: cSequence Any sequence name that is the currently selected library
       iFirst Set First frame
       iLast Set Last Frame
       bForceFormatChange 0 – Return error if video standard and image format do not match
                          1 – force ClearView to change to match video standard and image format
Output: Received: Success
       Received: Failure

Example: cv mapA "Impairments 1080 YCbCr 8-bit" 0 22 0
Notes: If one omits the first AND last frame, the previous set first/last frame will be used
       -1 in place of the first frame will set the first frame to 0
       -1 in place of the last frame will set the last frame to the last frame in the sequence
       If the sequence name has spaces the sequence name needs to be enclosed by double quotes

10.3.2 mapB (Dual Output model only)

Description: MapB places a sequence into Viewport B
Syntax: mapB <cSequence> <iFirst> <iLast> <bForceFormatChange>
Input: cSequence Any sequence name that is the currently selected library
       iFirst Set First frame
       iLast Set Last Frame
       bForceFormatChange 0 – Return error if video standard and image format do not match
                          1 – force ClearView to change to match video standard and image format
Output: Received: Success
       Received: Failure

Example: cv mapB "Impairments 1080 YCbCr 8-bit" -1 -1 1
Notes: If one omits the first AND last frame, the previous set first/last frame will be used
       -1 in place of the first frame will set the first frame to 0
       -1 in place of the last frame will set the last frame to the last frame in the sequence
       If the sequence name has spaces the sequence name needs to be enclosed by double quotes
10.3.4 playmode
Description: Playmode allows the user to change the play modes
Syntax: Playmode <cMode>
Input: cMode
- Once – Play Once
- Repeat – Repeat (Loop)
- Ping – Ping (fwd/bkwd)
- Alternate – Alternate A/B
Output: Received: Success
Received: Failure
Example: cv playmode ping
Notes: none

10.3.5 speed
Description: Speed changes the speed of the sequence on either of the viewports
Syntax: Speed <eViewport> <dSpeed>
Input: eViewport
- 0 – Viewport A
- 1 – Viewport B
  dSpeed
- 0.00 to 2.00
Output: Received: Success
Received: Failure
Example: cv speed 2 1.50
Notes: none

10.3.6 stop
Description: Stop will stop Clear View output
Syntax: Stop
Input: NONE
Output: Received: Success
Received: Failure
Example: cv stop
Notes: none

10.3.7 play
Description: Play will begin playing Clear View output
Syntax: Play
Input: NONE
Output: Received: Success
Received: Failure
Example: cv play
Notes: none

10.3.8 pause
Description: Pause will pause Clear View output
Syntax: Pause
Input: NONE
Output: Received: Success
Received: Failure
Example: cv pause
Notes: none
10.3.9  jogFwd
Description: JogFwd will jog forward a single frame on Clear View output
Syntax: JogFwd
Input: NONE
Output: Received: Success
       Received: Failure
Example: cv jogFwd
Notes: none

10.3.10 jogRev
Description: JogFwd will jog backwards a single frame on Clear View output
Syntax: JogFwd
Input: NONE
Output: Received: Success
       Received: Failure
Example: cv jogRev
Notes: none

10.3.11 first
Description: First moves the current frame of Clear View output to the first frame of both sequences
Syntax: First
Input: NONE
Output: Received: Success
       Received: Failure
Example: cv first
Notes: none

10.3.12 last
Description: Last moves the current frame of Clear View to the last frame of both sequences
Syntax: Last
Input: NONE
Output: Received: Success
       Received: Failure
Example: cv last
Notes: none
10.3.13 goto
Description: GoTo will change the current position of the frame shown
Syntax: GoTo <eViewport> <iFrame>
Input:
- eViewport 0 – Viewport A
- 1 – Viewport B
- iFrame Any number that is within the total number of frames in the sequence
Output: Received: Success
- Received: Failure
Example: cv goto 1 10
Notes: Goto is much like moving the slider bar. That is if there is one file in Viewport A that goes from frame 0 – 100 and one in Viewport B that goes from frame 22 – 122 and one changes Viewport A to frame 20 (cv goto 20), Viewport B will change the current frame to 42, so that they both line up.

10.4 Output
10.4.1 videoOutput
Description: VideoOutput will change the output device to the device specified
Syntax: VideoOutput <cOutputDevice>
Input:
- cOutputDevice DVI – DVI Output Module
- broadcast – Broadcast Output Module
- broadcast2 – Broadcast Output Module 2
- none – No Video Output Module
Output: Received: Success
- Received: Failure
Example: cv VideoOutput broadcast
Notes: none

10.4.2 customVideoFormat
Description: CustomVideoFormat sets custom formats for DVI input
Syntax: CustomVideoFormat <iWidth> <iHeight> <iRate>
Input:
- iWidth Any width of a resolution already created
- iHeight Any height of a resolution already created
- iRate Any rate of a resolution already created
Output: Received: Success
- Received: Failure
Example: cv customVideoFormat 720 480 60
Notes: none
10.4.3 outputWidth
Description:  Returns the output width
Syntax:  outputWidth
Input:  NONE
Output:  Received: Success
         Received: Failure
Example:  cv outputWidth
Notes:  none

10.4.4 outputHeight
Description:  Returns the output height
Syntax:  outputHeight
Input:  NONE
Output:  Received: Success
         Received: Failure
Example:  cv outputHeight
Notes:  none

10.4.5 outputRefresh
Description:  Returns the output refresh rate
Syntax:  outputRefresh
Input:  NONE
Output:  Received: Success
         Received: Failure
Example:  cv outputRefresh
Notes:  none
10.5 Capture
10.5.1 videoInput

Description: VideoInput sets the input device to record

Syntax: `videoInput <cInputDevice> <cRecordMode> <eInput> <eInputBoard> <cSourceFormat> <cAudioInput> <cSyncSource>`

Input:
- **cInputDevice**: `broadcast` – Broadcast Input module
  `clearView` – ClearView Output
- **cRecordMode**: `single` – record a single input stream
  `dual` – record two input streams
- **eInput**: `0` – logical input 0
  `1` – logical input 1
- **eInputBoard**: `0` – input board 0
  `1` – input board 1
- **cSourceFormat**: `SDI Input Options`
  `SDI` – SDI Input 1
  `SDI2` – SDI Input 2
  `HDMI` – HDMI (For single link configuration only)
  `Analog Input Options` (Only for LH Configuration)
  `525ComponentBetaUS` – 525 Component Beta US
  `525ComponentSMPTeUS` – 525 Component SMPTE US
  `525S-VideoUS` – 525 S-Video US
  `525CompositeUS` – 525 Composite US
  `525ComponentBetaJapan` – 525 Component Beta Japan
  `525S-VideoJapan` – 525 S-Video Japan
  `525CompositeJapan` – 525 Composite Japan
  `625ComponentBeta` – 625 Component Beta
  `625ComponentSMPTe` – 625 Component SMPTE
  `625S-Video` – 625 S-Video
  `625Composite`
  `720p60` – 720p 60
  `1080i30` – 1080i 30
  `720p50` – 720p 50
  `1080i25` – 1080i 25
- **cAudioInput**: `SDI` – SDI
  `HDMI` – HDMI (For single link configuration only)
  `AES` – AES
  `Analog` – Analog
  `None` – None
- **cSyncSource**: `OPTIONAL` `Ext` – External
  `SDI` – SDI Input1
  `SDI2` – SDI Input 2
  `HDMI` – HDMI (For single link configuration only)
  `FREE` – Free Run

Output: Received: Success
Received: Failure

Example: `cv videoInput clearview`
`cv videoInput broadcast single 0 0 SDI None`
`cv videoInput broadcast dual 0 0 SDI2 None`
`cv videoInput DVI`

Notes: Analog Options can only be used with the LH board
When doing a dual record you must run videoInput twice, first setting logical input 0 then logical input 1
The logical input should always be 0, except when doing a dual input. It is important to note that the logical input is not the same as the SDI input. Go to the broadcast tab, if you are inout mode there is only Input 1 shown (logical input 0). If you go to dual input you have Input 1 (logical input 0) as well as Input 2 (logical input 1). When doing a dual input you will need to run cv videoinput broadcast twice, once configuring logical input 0 and a second time configuring logical input 1.

10.5.2 record
Description: Record will begin to record for the current input source. (There are two options for this command)
Syntax: Record <cLibrary> <cSeqName> <iNumFrames> <bAbortOnDrop> <btoMemory>
Record <cLibrary> <cSeqName> <cLibrary> <cSeqName> <iNumFrames> <bAbortOnDrop>
Input: Library path to record to
A sequence name
The number of frames you want to record
0 – Off, no notification of a dropped frame
1 – On, notification of a dropped frame
Save to disk
0 – On, save to memory
Output: Received: Success
Received: Failure
Example: cv record "F:\Gold" "Football Gold" 100 1 0
cv record "F:\Encoder1" BasketballHD1 "F:\Encoder2" BasketballHD2 100 0
Notes: If the sequence name has spaces the sequence name needs to be enclosed by double quotes
There are two record commands the first one listed as well as the first example is an example if doing a single input. The second one listed and second example is if doing a dual input.

10.5.3 inputWidth
Description: Returns the input width
Syntax: inputWidth
Input: NONE
Output: Received: Success
Received: Failure
Example: cv inputWidth
Notes: none
10.5.4 inputHeight
Description: Returns the input height
Syntax: inputHeight
Input: NONE
Output: Received: Success
         Received: Failure
Example: cv inputHeight
Notes: none

10.5.5 inputRefresh
Description: Returns the input refresh rate
Syntax: inputRefresh
Input: NONE
Output: Received: Success
         Received: Failure
Example: cv inputRefresh
Notes: none
11 Errors
11.1 Not recognized command
Error: ‘cv’ is not recognized as an internal or external command, operable program or batch file
Reason: This occurs as cv is not located in the system’s path
Fix:  1. Add Clear View to the path (see Setup)
     2. Run the cv command from the Clear View folder
11.2 connect() failed
Error: connect() failed: 10061
Reason: This occurs when CVServer is not running
Fix:  Open a second dos window and run “CVServer 7”, this will open a connection between
CVServer and Clear View which passes command through port 7 of the machine. Assure that you run
CVServer, while it is your systems path or from C:\Program Files\Video Clarity\ClearView\.
11.3 Error opening config file
Error: error opening config file for read access.connect() failed: 10060
Reason: This occurs when the config file is missing or not correct
Fix:  Assure there is a config file located at C:\Program Files\Video Clarity\ClearView\. This is a text
file without an extension. The contents of this file should be your ip address, 192.168.1.1.
ClearView Player Raw File Support
12 STILLS

The “.stills” file is a text file that describes a single frame of a raw video file that is normally part of a set of files/frames that creates a video sequence in ClearView memory. In a directory, there will be a minimum of 2 files, normally with the same base name:

E:\TestRecord\Test.stills
E:\TestRecord\Test.raw

In some cases, there will be a number of files:

E:\TestRecord\Test.stills
E:\TestRecord\Test0000.raw
E:\TestRecord\Test0001.raw
E:\TestRecord\Test0002.raw
E:\TestRecord\Test0003.raw

The basic format of the stills file consists of a series of settings, each taking two lines of text. The first line is the label and is always preceded by a percentage sign (%) and the second line is the value of the setting. For example:

% Image Size (This line describes what the next line specifies)
486   720   (in this case, NTSC, 720 x 486)
13 Settings
The following settings have been defined.

% Color Format

YUV420

This setting describes the format of the video within the frames. The current possible formats are:

YUV420 Planar YCbCr in YV12/i420 order (ST/Thompson/MPEG Groups)
YUV12 Planar YCbCr in YV12 order
YUV422P Planar YCbCr with 4:2:2 sub sampling (Sony)
YVU422P Planar YCbCr with 4:2:2 sub sampling (chroma inverted)
YUV422_10 Interleaved 10 Bit YCbCr v210 format (standard Quick Clip 10 Bit YCbCr)
YUV422_10 Interleaved 10 Bit YCbCr v210 format with alpha/key channel
YUV424 Interleaved 8 Bit YCbCr yuv2/UYVY format with alpha/key channel
YUV422_fields Separate fields of 4:2:2 YCbCr (Crescent)
YUV422 Interleaved 8 Bit YCbCr UYVY format (standard Quick Clip 8 Bit YCbCr)
UYVY422 YUV 4:2:2 interleaved 8 bit packed as U Y V Y U Y V Y ...
YUY2 YUV 4:2:2 interleaved 8 bit packed as Y U Y V Y U Y V ...
DPXRGBLEFILL DPX 10 bit RGB, little endian, filled
DPXRGBLE DPX 10 bit RGB, little endian, padded
DPXRGFBFILL DPX 10 bit RGB, big endian, filled
DPXRGB DPX 10 bit RGB, big endian, padded
DPXABGRLEFILL DPX 10 bit ABGR, little endian, filled
DPXABGRLE DPX 10 bit ABGR, little endian, padded
DPXABGRFILL  DPX 10 bit ABGR, big endian, filled
DPXABGR  DPX 10 bit ABGR, big endian, padded
RGBA  32 Bit Interleaved RGB (TIFF)
ARGB  32 Bit Interleaved RGB (Mac)
BGRA  32 Bit Interleaved RGB (Windows BMP/TGA)
BGR  24 Bit Interleaved RGB (Windows BMP/TGA)
TIFF24  24 Bit Interleaved RGB TIFF ordering
TIFF32  32 Bit TIFF (same as RGBA)
PRGB  8 bit x 3 Planar RGB
PRGBA 8 bit x 4 Planar RGBA
PBGR  8 bit x 3 Planar BGR
PABGR  8 bit x 4 Planar ABGR
PBGRA  8 bit x 4 Planar BGRA
PARGB  8 bit x 4 Planar ARGB
FULLDUAL  10 bit dual frame YCbCr (stereo)
STEREO8  Dual 8 bit YCbCr interleaved streams (one after another)
STEREO10 Dual 10 bit YCbCr interleaved streams (one after another)
DV25  DV25 'dv/dif' stream 4:2:0 or 4:1:1 8 bit SD
DV50  DVCPro 50 stream 4:2:2 8 bit SD
DV100 DVCPro HD/DV-100 stream 4:2:2 8 bit HD
IMX30  Sony IMX MPEG 30 Mbit stream 4:2:2 8 bit
IMX40  Sony IMX MPEG 40 Mbit stream 4:2:2 8 bit
IMX50  Sony IMX MPEG 50 Mbit stream 4:2:2 8 bit
ARRIBAYERDLRAW12  ARRI dual link raw 12 bit bayer packed into YCbCr 10
Grey  8 bit grey/gray plane of video data
% Image Size (NbRows,NbCols)
486    720

The vertical and horizontal size of the video frames. Can be any size, but the following sizes are normal: 480x640, 480x704, 480x720, 486x720, 512x720, 576x704, 576x720, 608x720, 720x1280, 1080x1920, 1088x1920 (please note, the ‘x’ between the height and width is not supported. there must be a space between the X and Y values.

% Number of Fields per Image (optional)
2

Number of separate images that make up a field. For most images this would be 1 indicating 1 full size plane with progressive or interleaved lines. If there are two separate images that need to be interleaved, this would be set to 2. This value does not affect the Image Size above, that is always the absolute number of pixels vertically and horizontally. Please note: this is the correct interpretation of this value, previously we ignored this and recommended 2 where it should have been 1.

% Number of Image (optional)
1800

The number of individual frames in a file. If this value is larger then the actual number of frames available, it will be corrected, so if you are unsure set it to a very large value (e.g. 4000000)
% Frames per Second (optional)

29

The frame rate of the video frames. This may be any value, but some values have special meanings:

23 - Means 23.98
24 - Standard film
25 - PAL/25p/50i
29 - Means 29.97 - NTSC/29.97p/59.94i
30 - NTSC NDF/30p/60i
50 - 50p
59 - Means 59.94p (for 720p)
60 - Means 60p (for 720p)

% Header Offset (optional)

512

The number of bytes to skip at the beginning of each .raw file. If this line is not present, a zero size header is assumed.

% Video Alignment (optional)

512

Alignment of each frame within the stream. If the frames are back to back this value will be 1. It is normal to pad each frame to align it to a disk sector for higher speed reads and writes. This value is normally either 0 (which indicates 1), 512 (windows), 4096 (sgi), 16384 (js)
% Video Offset (optional)

0

How far into each frame, from the calculated start, the actual video starts

% Video Name (optional)

ThisFile.YUV

This is the name of the video file/stream associated with this header. Normally the video file has the same name as the hdr file, but with a .yuv extension. This allows the video name to be overridden to any file name.

% Audio Name (optional)

ThisFile.Wav

This is the name of an associated audio file. Normally QuickClip/MediaReactor look for side bar wave or aiff files with the same name as the header file. This allows the audio file to be specified.

% Timecode (optional)

01:00:00:00

This is the time code value of the first frame. The time is assumes to run contiguously from this point.
% Userbits (optional)

BAADF00D

This is the user bits returned for this stream. It is assumed it is the same for all video frames.

% Start Frame (optional)

100

This specifies the first video frame of the stream. By default, this is 0, but in a circular file the last frame written may not be the last frame of the file. In the case above, if start frame is 100, the last frame written was 99. The reader will read from 100->end of file and then 0->99 automatically.