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## How to: Record from Hardware Inputs

*Video Clarity, Inc.*

ClearView has the ability objective score the video quality, graph the result, and show you why. To begin, video sequences must get into ClearView. ClearView can either Import a file or Record from a hardware device.

### *Background*

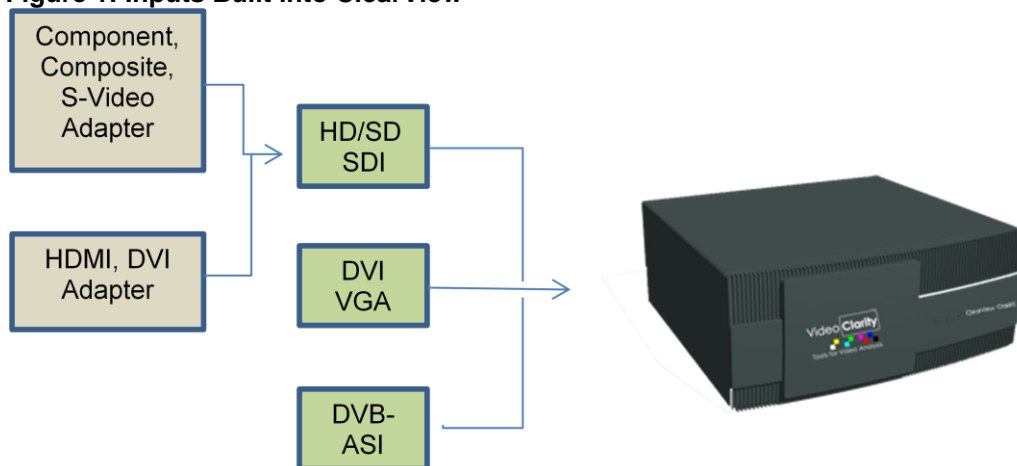
ClearView imports files and records from many hardware devices. These video sequences are decoded and stored as completely uncompressed video frames in 4:2:2 Y'CbCr or 4:4:4 RGB space. Since the video sequences are completely uncompressed, any compressed video standard can be compared to another compressed video standard.

Before performing any objective measurement, the video sequences must be completely aligned. To do this, please refer to our Align Video Sequences application note.

### *Record from a Hardware Device*

ClearView is sold in many different hardware configurations. In general, we support 3 different input modules: SD/HD-SDI, DVI/VGA, and DVB-ASI. We provide adapters that convert HDMI to HD-SDI, Component, Composite, and S-Video to SD/HD-SDI, and HDMI to DVI.

**Figure 1: Inputs Built into ClearView**



All of the records start with setting the ClearView Record tab to the correct input type:

- ClearView Output
- Broadcast Input
- DVI Input

ClearView Output allows the user to record the preview window and give it a different name. There are a couple of reasons that you may want to do this:

- Record the Compositing A-B or A, B side-by-side to a new sequence. Then you can export this or compare it to an earlier saved A-B or A, B side-by-side.
- Record a portion of the video to a different name
- Record a portion of the video and then export it as a BMP file to insert into a presentation. This is the AOI button.

**Figure 2: Video Output Pane**

Video Output

Output Device: No Video Output Module

Video Format: 1920 x 1080 30 Hz.

Analog Output: Component YUV

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Memory/Disk

Library: C:\ClearView\480 UYVY 8bit\ Library...

Image Fmt: YCbCr 10 bpc W: 1920 H: 1080

	Memory	MB	Frames	Disk	MB	Frames
Total	738		140	111094		23732
Used	0		0	2036		3052
Free	738		140	109058		20680

Memory:

Disk:

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File Import

Filename: C:\My Videos\GD\_V2M\_AM Browse...

Frames: 906 Width: 720 Height: 480

Bitdepth: 16 Codec: 2vuy (yuv2)

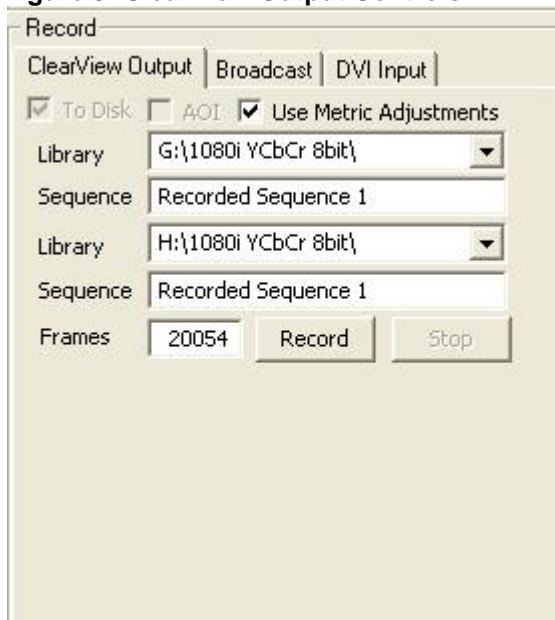
Frame Rate: 29.9700 Bit Rate: 28420624

Sequence Name: GD\_V2M\_AMP2-224K

To Disk  Fld flip First: 0 Last: 905

Load  Abort

**Figure 3: ClearView Output Controls**



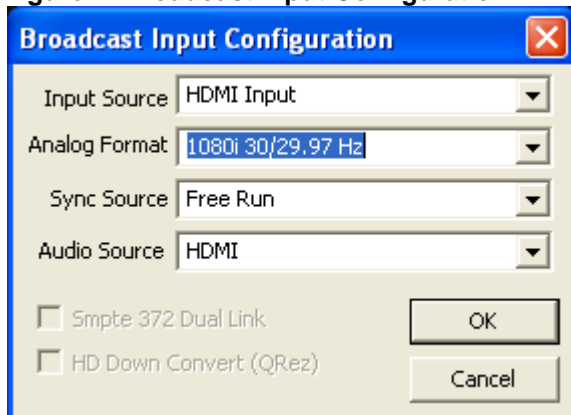
Broadcast Input includes HD/SD-SDI, Composite, Component, S-Video and HDMI. The user can do a variety of different records:

- Play out an A/V sequence while Recording
- Record 1 A/V sequence
- Record 2 A/V sequences (If you are using the [CV-SDI-IO-DL](#) restricted to 1080i/59.94 or 720P/59.94).

The most important thing to remember is that ClearView has a record and play buffer (2 buffers, but restricted to 1080i/59.94, 720P/59.94 for the CV-SDI-IO-DL)

- Record buffer #1
- Record buffer #1 and Record buffer #2 (only with the CV-SDI-IO-DL)
- Play buffer #1 and Play buffer #2 (only with the CV-SDI-IO-DL)
- Play 1080P/60 (uses buffer #1 and buffer #2 for the CV-SDI-IO-DL – dual link)
- Record 1080P/60 (uses buffer #1 and buffer #2 for the CV-SDI-IO-DL – dual link)

**Figure 4: Broadcast Input Configuration**



The Input Source in the above example is HDMI (CV-SDI-IO-LHI). The audio is embedded in the HDMI. The Sync Source is free run, which means run at the onboard oscillators rate.

The Memory/Disk pane defines the image format as Y'CbCr 10-bit.

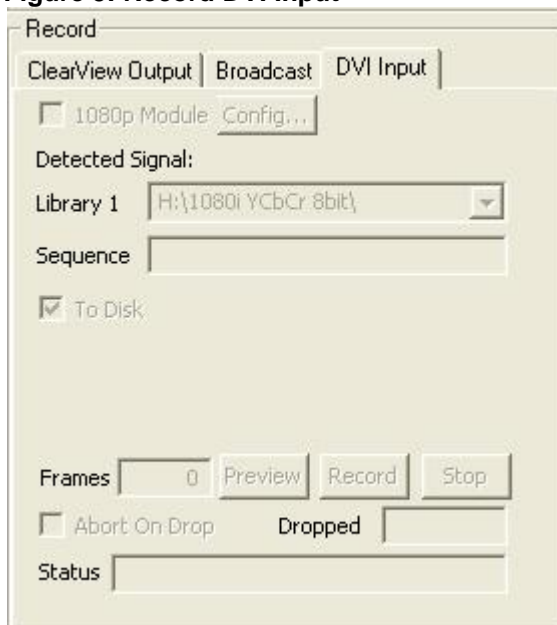
*Note: Care must be taken. There is no conversion done so you must know the image format of your input.*

The Video Output pane defines a canvas. This is ignored. The video format is sensed and recorded at its native resolution.

*Note: The concept of canvas, as shown in the [Application Note: File Import](#) is not done with record. This is because record is real-time.*

DVI Input includes DVI, VGA and HDMI. The user can record up to 1080P/60Hz. Play and Record is not possible due to bandwidth restrictions. RGB is 2x more data than YUV.

**Figure 5: Record DVI Input**



This is a little bit complicated by the fact that 1080P/60Hz requires setting up 3 simultaneous captures – R, G, and B – and then combining them back together. You need to set the 1080p Module button above. When you hit config, you will be asked to detect the VESA type and to agree to follow common EDiD rules.

**Figure 6: DVI Configuration: say ok**

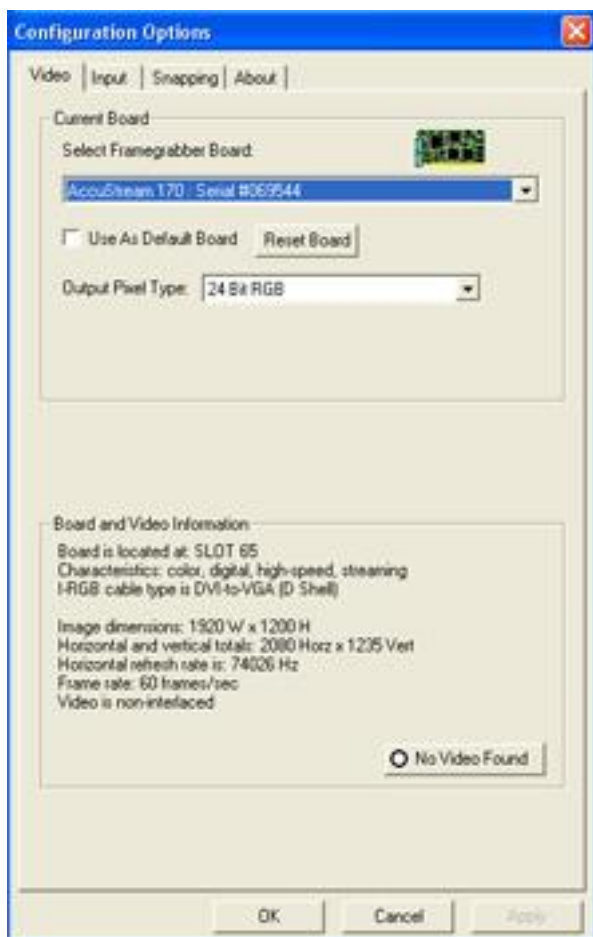


Figure 7: DVI Configuration: say start

