

Tools for Video Analysis

Venue Player System Guide

Table Of Contents

Venue Player.....	6
Quick Start.....	7
Inside the Package.....	8
Software Installed	8
Username and Password.....	8
Network Interfaces.....	9
Anti-Virus Software	9
Windows Updates	9
Hardware Configuration	9
Front Panel.....	9
Back Panel/Broadcast Board	10
CVVP-1084.....	10
CVVP-1044-IP and 1084-IP	11
CVVP-1044 and 2044.....	12
CVVP-2045.....	13
CVVP-3085-4K.....	14
CVVP-3085-8K.....	15
ST 2110 and ST 2002-7 Uncompressed IP Network Set Up.....	16
Configure Windows Network IP Addresses for Inserted SFP28 SFPs	16
For NMOS Support:.....	16
Configuring Video Clarity IP 2110 System:	17
Limited Support for Video Input Connectors:	17
Setting Up ST 2110 and ST 2022-7 Output Configuration Flows:.....	18
Content Ingest.....	20
ClearView Importer	20
Supported File Types (Partial List).....	20
Video Format Import Types.....	20
Audio Import Formats Exported File Formats.....	21
Direct Render	22
Video Frames	22
Video Frame Image Formats.....	22

YCbCr 10 Bit.....	22
YCbCr 8 Bit	23
RGB 10 Bit.....	23
RGB 8 Bit.....	23
BGR 8 Bit.....	23
ARGB 8 Bit.....	23
BGRA 8 Bit.....	23
Managing Libraries Outside of Venue Player Application	24
Examples.....	24
Venue Player.....	25
Graphical User Interface.....	25
Configuration Menu	25
Libraries	26
Library Manager	26
Select Output Module Configuration	28
Clip Mapping.....	28
Cue.....	28
Playing Clips.....	28
Profiles.....	29
Command Line Interface	29
Show Controllers	29
VPClient	29
Config	29
Port	29
Path.....	29
VPClient?.....	30
Commands	30
Command Line Examples	33
Example 1	33
Example 2	33
Example 3	33
Venue Player Manager	35

Startup	35
Web Dashboards.....	35
Admin	36
Player Control	38
Player Status.....	39
Previews.....	39
ClearView Player with record function	40
Video Output	40
Disk Usage.....	41
Libraries.....	41
Library Manager.....	42
File Import	43
Recording.....	43
Record From Selected Input A/V Interface Module	43
Record 1 ST 2110 Input.....	45
Record 2 Inputs	50
Record 1 MPEG IP Input.....	52
Record 2 IP Inputs.....	54
Record 1 IP Input and 1 SDI input	55
ClearView Output Record.....	56
Sequence Selection	57
ClearView Export Menu.....	58
Playback Control	59
Configuration Menu	60
Playback.....	60
Broadcast IP Config – Legacy CV-IP-IO-HD Interface Only	61
Broadcast HDR Config.....	62
Record	63
Import.....	63
System.....	64
ClearView Player Command Line Interface	64
IPMI Control	65

Configuring BIOS.....	65
Connecting to the Remote Server	67
Using IPMIView to Connect to the Remote Server	67
Using the Browser to Connect to the Remote Server	67
To Log In to the Remote Console	68
Launch Console Redirection.....	69

Venue Player

The Venue Player with ClearView Player-Recorder is a compact, reliable, multiple output video server. Venue Players are capable of 100% uncompressed YCbCr or RGB video and may include up to sixteen channels of embedded audio, timecode, and vertical ancillary data per video.

Multiple Venue Player units can be frame-synchronized and controlled from a single management dashboard or seamlessly integrated into existing control environments.

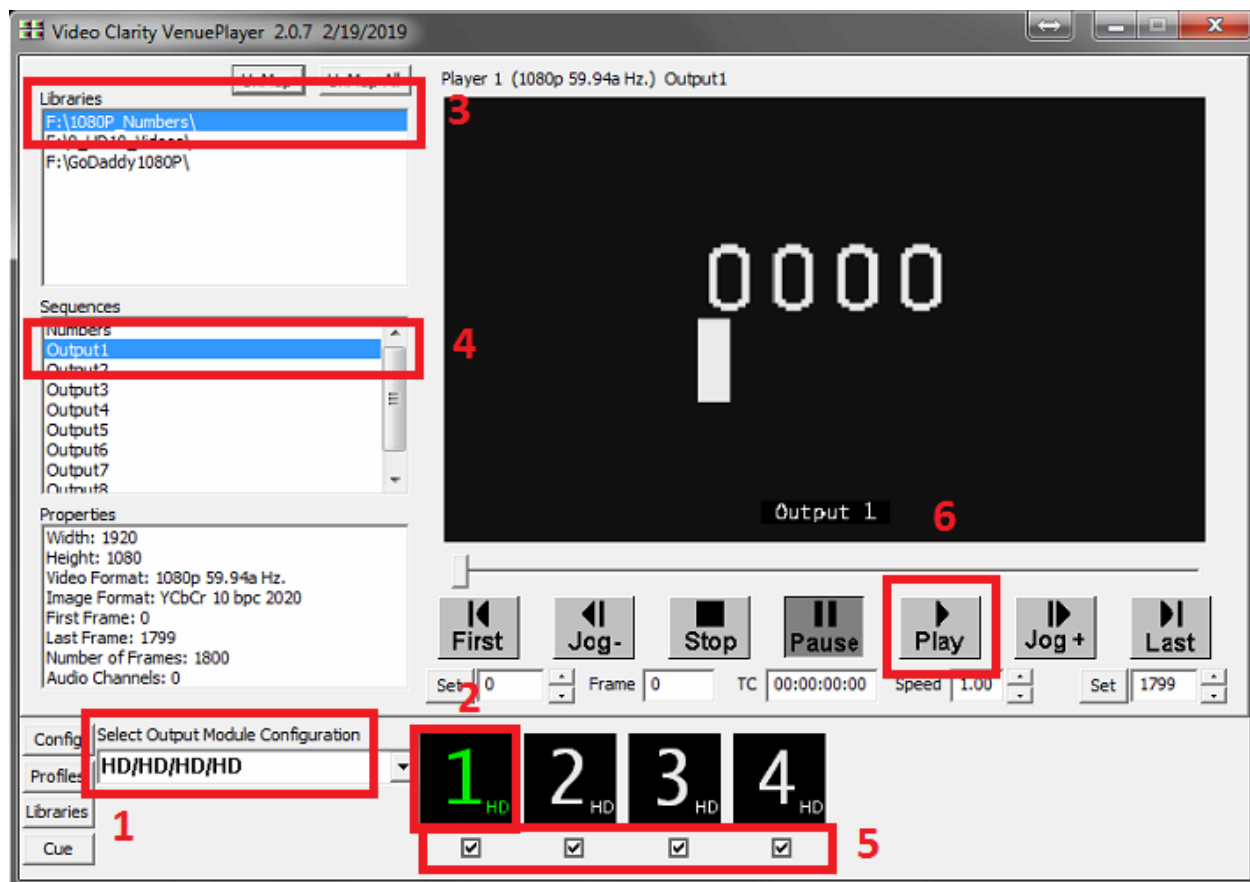
Venue Player Key Features

- Synchronized video outputs
- 3G HDSI, 12G HDSI, and Uncompressed ST 2110/2022-7 25G fiber options
- Sixteen channels of embedded audio per video
- 100% uncompressed YCbCr/4:2:2 or RGB/4:4:4 outputs
- Support for 8, 10, and 12-bit image formats
- Genlock input for multi-unit frame synchronization
- LTC input to apply timecode event triggers for multi-unit synchronization
- Two gigabit NICs for control/status redundancy
- MPEG IP network capture-decode
- Venue Player Manager browser set up, channel preview, and control
- Front panel LCD display and keypad for network setup

The included ClearView File Importer application provides decode and import of most any file format such as uncompressed BMP, DPX, QuickTime, TIFF, and compressed file formats such as J2K, H.264, H.265, or ProRes. Video import includes audio decode support for AAC, WAV, and Dolby Digital Plus.

Operational Note: All system models with Venue Player include the ClearView Player application for record operations and simple playback operations.

Quick Start



To start playing out video that has already been ingested into an existing Library folder after powering up the unit, and then launching Venue Player you can do the following:

1. Select what type of video you wish to play out. In this example the 4 HD video Output Module Configuration has been selected. (For SDI physical connectors HD and SD are interchangeable)
2. Select which player to assign a video. Player 1 has been selected in the example.
3. Select the Library that contains the Sequence you will be assigning to the selected player.
4. Single click to see the properties of any video Sequence in the Library, then double click to assign it to a player. Repeat steps two through four if you would like all players to have sequences mapped to them.
5. The checkboxes under the player numbers are for enabling or disabling each player. This will automatically check when a sequence is mapped. Note that if a player is enabled with checkbox and no video mapped to the channel it will output the Video Clarity logo. Uncheck to disable unused players and apply Unmap or UnmapAll at top of UI to clear the Sequence(s) from the player(s).
6. Begin playback of sequences mapped to players. Also apply scroll bar or any control button.

Inside the Package

The Venue Player product line contains several different models:

- CVVP-1084
- CVVP-1044-IP and 1084-IP
- CVVP-1044 and 2044
- CVVP-2045
- CVVP-3085-4K
- CVVP-3085-8K

What is inside the package depends on the model purchased as outlined below.

- A/C Power - The power supply auto-senses the correct country voltage. We include a power cable based on US standards.
- One breakout cable for models 1044 and 2044 including analog breakout connector
- One quad SMB to BNC cable for models 1044 and 2044
- One mini to standard HDMI cable for models 1044 and 2044
- Nine mini-SMB to BNC connectors for model 1084
- Six locking SMB to BNC connectors for models 3085-4K and 3085-8K
- Keyboard and Mouse for models 2044, 2043-IP, 3085-4K, 3085-8K and 3084-DP
- Printed System Guide

Software Installed

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

Username and Password

ClearView Venue Player is shipped with username/password as **user/user**. It is strongly advised that you set up a different password to guard against unwanted use. The ClearView Venue Player application must have super-user/Administrator privileges so all users must have these access rights.

Network Interfaces

Venue Player systems include one or two Gigabit Network Interfaces for connecting to your network. The interfaces are shipped configured for DHCP.

Models 3085-4K and 3085-8K have an onboard 10G network interface for connecting to your network. This port should be used for data transfer only, **not** uncompressed video as SMPTE ST 2110 and 2022-7.

Anti-Virus Software

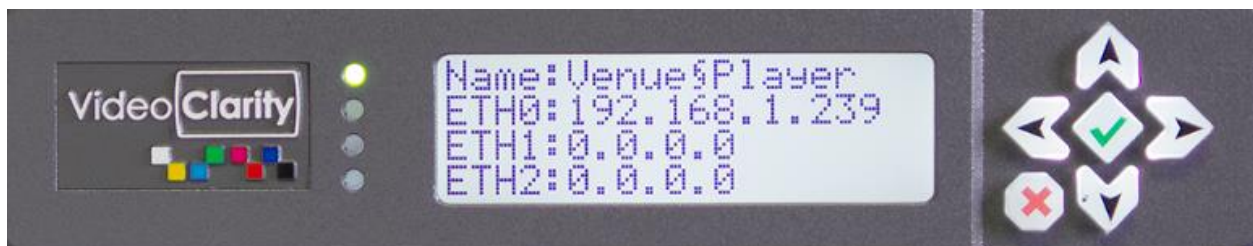
No anti-virus software has been installed on this system. It is highly recommended that you install your corporate anti-virus software and any other protective software advised by your company.

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 the latest patches and updates from Microsoft.

Hardware Configuration

Front Panel



The Front Panel can be used to power up, power down, reboot and set the hostname/IP addresses.

To power the machine on hold down the green check. To power down hold down the red X. To reboot hold down the green check.

For setting hostname/IP addresses the basic keypad is configured as follows:

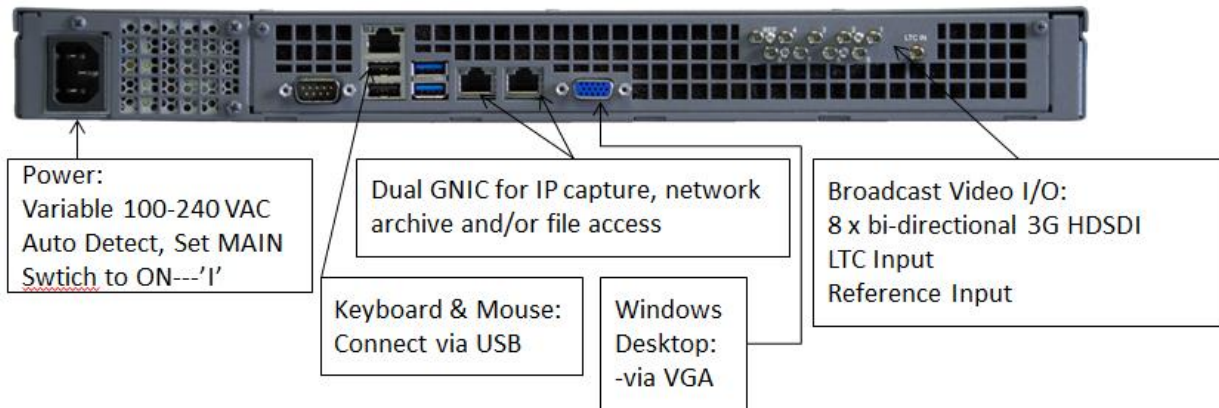
1. The center "CHECK" key selects an option or accepts a new value.
2. The "X" key returns to the parent window without making changes.
3. The "UP" and "DOWN" keys scroll options in a parent menu. A parent menu has one or more child menus.

4. Changing the first character cell in a value requires scrolling a character set. Use the "RIGHT" key to select the second character cell. Use the "LEFT" key to select the prior character cell. Use the center "CHECK" key to accept changes. This will also cause the previous menu to be selected.

NOTE: To complete a DHCP setting change, a reboot may be required.

Back Panel/Broadcast Board

CVVP-1084

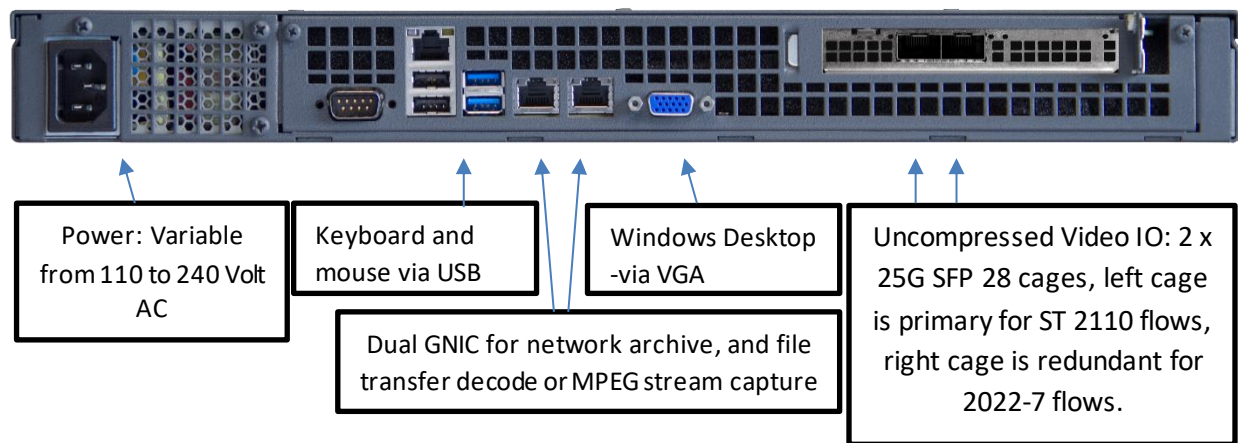


There are a total of nine possible output configurations:

Output Module Configuration	Physical 3G Connector on Module	Player number in VenuePlayer Application
4K/4K	(1,2,3,4)	1
	(5,6,7,8)	2
4K/DL/DL	(1,2,3,4)	1
	5	2
	7	3
4K/DL/HD/HD	(1,2,3,4)	1
	5	2
	7	3
	8	4
4K/HD/HD/HD/HD	(1,2,3,4)	1
	5	2
	6	3
	7	4
	8	5
DL/DL/DL/DL	1	1
	3	2
	5	3
	7	4
DL/DL/DL/HD/HD	1	1
	3	2
	5	3
	7	4
	8	5

DL/DL/HD/HD/HD/HD	1 3 5 6 7 8	1 2 3 4 5 6
DL/HD/HD/HD/HD/HD/HD	1 3 4 5 6 7 8	1 2 3 4 5 6 7
HD/HD/HD/HD/HD/HD/HD/HD	1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8

CVVP-1044-IP and 1084-IP



ST 2110 and ST 2022-7 Output Configurations for CVVP-1044-IP

Output Module Configuration	Number of IP Connectors Preset	Player number in VenuePlayer Application
4K	1	1
HD/HD/HD/HD	1 2 3 4	1 2 3 4

ST 2110 and ST 2022-7 Output Configurations for CVVP-1084-IP

Output Module Configuration	Number of IP Connectors Preset	Player number in VenuePlayer Application
4K/4K	1	1
	2	2
4K/HD/HD/HD/HD	1	1
	2	2
	3	3
	4	4
	5	5
HD/HD/HD/HD/HD/HD/HD/HD	1	1
	2	2
	3	3
	4	4
	5	5
	6	6
	7	7
	8	8

CVVP-1044 and 2044



Power:
Variable 100-240 VAC
Auto Detect

Windows
Desktop:
-via HDMI,
DP, or DVI

Dual GNIC for IP
capture, network
archive and/or file
access

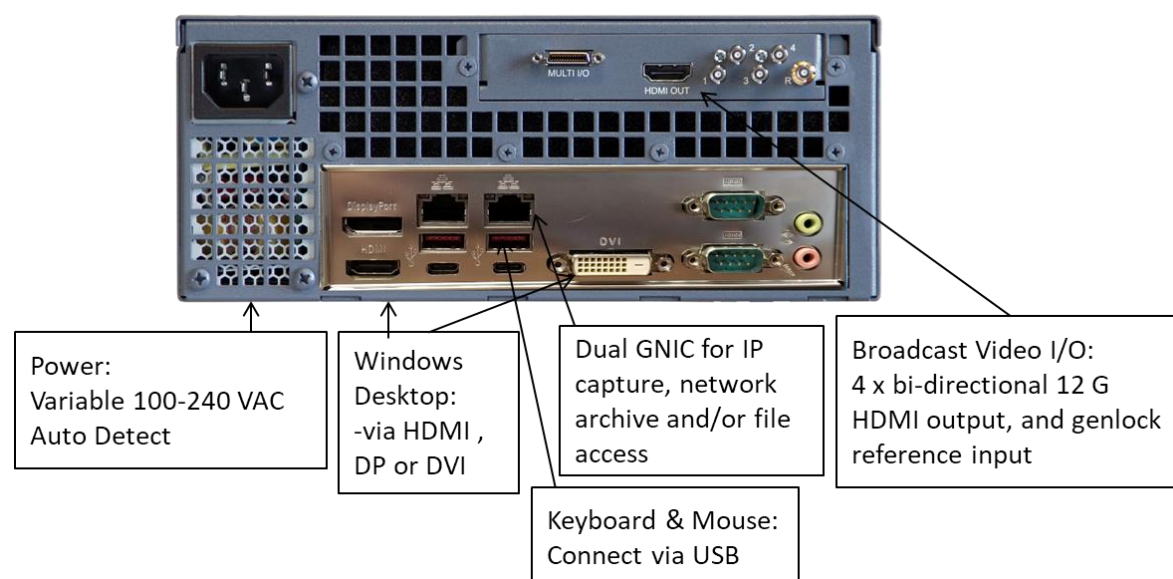
Keyboard & Mouse:
Connect via USB

Broadcast Video I/O:
4 x bi-directional 3G HDSDI
With mini-HDMI output,
Analog breakout

There are a total of four possible 3G-SDI output configurations:

Output Module Configuration	Physical 3G Connector on Module	Player number in VenuePlayer Application
4K	(1,2,3,4)	1
DL/DL	(1,2) (3,4)	1 2
DL/HD/HD	(1,2) 3 4	1 2 3
HD/HD/HD/HD	1 2 3 4	1 2 3 4

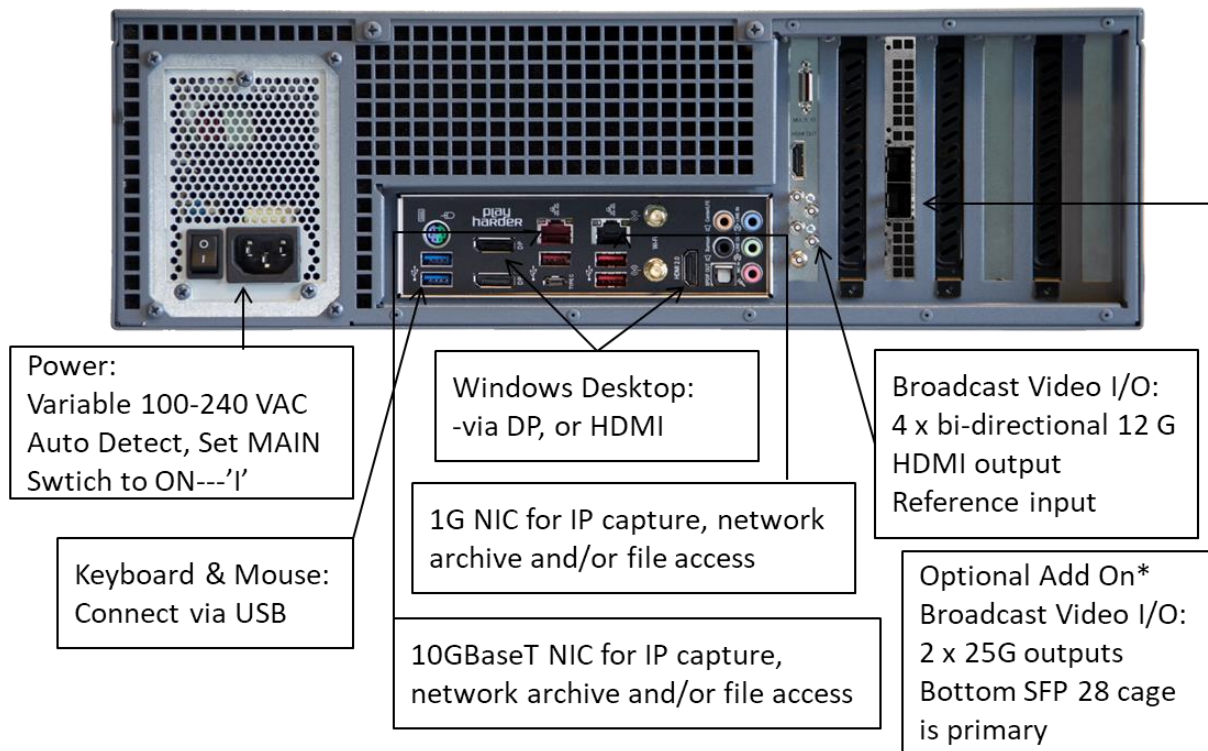
CVVP-2045



There are a total of four possible 12G-SDI output configurations for model CVVP-2045:

Output Module Configuration	Physical 12G Connector on Module	Player number in VenuePlayer Application
4K	1	1
DL/DL	1 2	1 2
DL/HD/HD	1 2 3	1 2 3
HD/HD/HD/HD	1 2 3 4	1 2 3 4

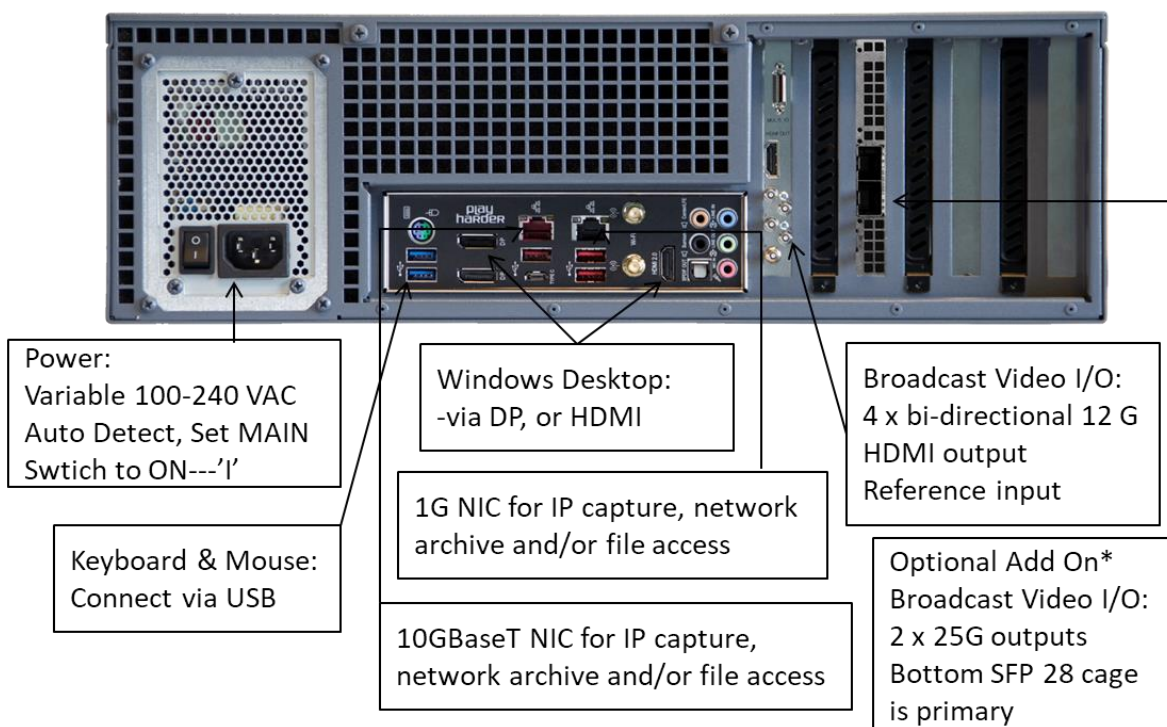
CVVP-3085-4K



12G Output Configurations for model CVVP-3085-4K

Output Module Configuration	Physical 12G Connector on Module	Player number in Venue Player Application
4K/4K	1 2	1 2
4K/DL/DL	1 2 3	1 2 3
4K/HD/HD/HD	1 2 3 4	1 2 3 4
DL/DL/DL/DL	1 2 3 4	1 2 3 4
DL/DL/HD/HD	1 2 3 4	1 2 3 4
HD/HD/HD/HD	1 2 3 4	1 2 3 4

CVVP-3085-8K



*Option: ST 2110 IP interface module CV-IP-IO-UHD

There is a total of four 12G-SDI outputs. Each output can playback 4K, UHD, 2K, HD, and SD video in YCbCr and RGB image formats. For 8K playback all four 12G-SDI outputs are used. If the optional ST 2110 interface is added, then only 4K, UHD, 2K, HD and no SD formats are supported, and the output configuration follows a similar pattern to model CVVP-1084 for ST 2110 on primary SFP28 cage and additionally for ST 2022-7 on the redundant SFP28 cage (SFPs not supplied).

ST 2110 and ST 2022-7 Output Configuration for CVVP-3085-4K and CVVP-3085-8K

Output Module Configuration	Number of IP Connectors Preset	Player number in VenuePlayer Application
4K/4K	1	1
	2	2
4K/HD/HD/HD/HD	1	1
	2	2
	3	3
	4	4
	5	5
HD/HD/HD/HD/HD/HD/HD/HD	1	1
	2	2
	3	3
	4	4
	5	5
	6	6
	7	7
	8	8

ST 2110 and ST 2002-7 Uncompressed IP Network Set Up

Initial note: Lower (for 3RU systems) or left side SFP28 cage (for 1RU systems) is the primary ST 2110 SFP28 cage. Upper or right side SFP28 cage is for redundant ST 2002-7 media flows. Insert compatible SFP28 transceivers for these media flow requirements before starting set up procedure. Contact Video Clarity Sales or Support for a list of compatible SFP28 transceivers.

Configure Windows Network IP Addresses for Inserted SFP28 SFPs

Launch Control Panel from the system's Windows desktop.

Select Network and Sharing Center.

Select Change Adapter Settings.

Select Matrox Ethernet Adapter.

Right click and select properties.

Double click on Internet Protocol 4(TCP/IPv4).

Select Use The Following IP Address.

Enter the IP address, subnet mask, and default gateway for your network.

Select OK to save changes.

If using the second SFP for ST 2002-7 redundancy, repeat the above steps for Matrox Ethernet Adapter 2 using a unique IP Address.

Note that this same information will need to match the IP 2110 Configuration information for SFP A and SFP B.

For NMOS Support:

Edit serial number json file - this is necessary for NMOS support:

There should be a file in C:\Program Files\Matrox DSX-TopologyUtils\System64 named AXXXXXX.json. AXXXXXX is the serial number of the ST 2110 IP network interface board installed in your system.

In AXXXXXX.json around line 21 if you see "enabled": false, this needs to be changed to: "enabled": true,

Around lines 22-26 you need to change host name and port to match your NMOS Registration Discovery System:

```
"fallback registration server": {  
  "api version": "auto",  
  "host name": "192.168.1.168",  
  "port": 3210  
},
```

then save the file.

Either reboot the system or just restart the mvNetworkService after editing.

Configuring Video Clarity IP 2110 System:

Launch the Video Clarity IP 2110 Configuration Setup either by running C:\Program Files (x86)\Video Clarity\Share\IP_2110_Config.exe directly or from within the Configuration menu of the ClearView or ClearView Player applications. Select Config from the main UI screen, then select either Playback or Record tabs where you will find the IP 2110 Config selection which launches the Video Clarity IP 2110 Configuration window.

The SFP A and SFP B Local IP Address, Subnet Mask and Gateway Address should match the Windows Network Adapter Settings for Matrox Ethernet Adapters.

Note that 2059 (PTP) SFP Settings must also be configured with unique IP Addresses. These are necessary for proper PTP connection. PTP is required for ST 2110 and ST 2022-7 network media flows.

Limited Support for Video Input Connectors:

Importing SDP files is supported for video inputs only. It is used for setting the video format on the input connector. This is not necessary when using NMOS for connections. It is primarily useful for RTM systems not using NMOS. ClearView, ClearView Player applications will assume the input video format is the same as its current video output format if no SDP file is selected. (Note: Input functionality for recording is not yet applied for the Venue Player application)

Setting Up ST 2110 and ST 2022-7 Output Configuration Flows:

From the main Video Clarity IP 2110 Configuration window, select Output Connector number according to the Output Module Configuration you would like to create for SFP A (ST 2110 Primary) and SFP B (ST 2022-7 Redundant) based on the above charts under your specific product model. Then select Video Output Configuration box to bring up the following windows.

ST 2110 Video Output Configuration selection window (only Primary Video Output for the #1 connector is shown)

The screenshot shows a configuration window titled "Video Clarity IP 2110 Connector Configuration - Primary Video Output 1". It contains several settings:

- ☒ Enable Flow
- ☒ Keep Alive
- Audio Mode: [Dropdown menu]
- Destination IP Address: 239 . 1 . 2 . 11
- Source UDP Port: 1011
- Destination UDP Port: 2011
- Source IP Address: [Empty field with dots]
- IGMP v3 Filter Type: [Dropdown menu]
- IGMP v3 Filter List: [Empty list box with "Remove" and "Add" buttons]
- ☐ Enable RTP Payload Filtering
- Multicast Join Type: [Dropdown menu]
- ☐ Enable SMPTE 352
- SDP File: [Empty text field]
- Buttons: Import... and Export...

Select Enable Flow for Video Output for each connector being applied for primary and secondary flows needed for media playback as shown in above Primary Video Output 1 example window. Also apply Enable Flow for Audio Output, and ANC (if required) for primary and secondary flows needed as show in their respective example windows shown below.

Make sure Destination IP Address, Source UDP Port, and Destination UDP Port are all populated with the correct address information.

The Keep Alive option keeps the connector alive so that future connections will work using the same GUID. This is necessary for some discovery and management systems to be able to continue to make connections.

The audio mode in the Primary and Secondary Audio Output Configuration windows is selectable and may either be set to 16 Channels or 2x8 Channels in the Audio Mode drop down. Specifically, for the 2x8 audio channel mode, additional Audio Output must be defined for the second 8 audio channels. For example, for Audio Output 1 we also need to configure Audio Output 9 for the second 8 channels. And then for Audio Output 2, apply the second 8 channels as Audio Output #10 and so on.

Note: SDP file support is for video inputs only so is greyed on output configuration windows.

ST 2110 Audio Output Configuration selection window (only Primary Audio Output for the #1 connector is shown)

The screenshot shows a configuration window titled "Video Clarity IP 2110 Connector Configuration - Primary Audio Output 1". It contains the following fields and controls:

- ☒ Enable Flow
- ☒ Keep Alive
- Audio Mode: 16 Channels (dropdown)
- Destination IP Address: 239 . 1 . 2 . 12
- Source UDP Port: 1012
- Destination UDP Port: 2012
- Source IP Address: . . .
- IGMP v3 Filter Type: (dropdown)
- IGMP v3 Filter List: (empty list box with "Remove" and "Add" buttons)
- ☐ Enable RTP Payload Filtering
- Multicast Join Type: (dropdown)
- ☐ Enable SMPTE 352
- SDP File: (empty text box)
- Buttons: Import..., Export...

ST 2110 Ancillary Data (ANC) Output Configuration selection window (only Primary ANC Output for the #1 connector is shown)

The screenshot shows a configuration window titled "Video Clarity IP 2110 Connector Configuration - Primary ANC Output 1". It contains the following fields and controls:

- ☒ Enable Flow
- ☒ Keep Alive
- Audio Mode: (dropdown)
- Destination IP Address: 239 . 1 . 2 . 14
- Source UDP Port: 1013
- Destination UDP Port: 2013
- Source IP Address: . . .
- IGMP v3 Filter Type: (dropdown)
- IGMP v3 Filter List: (empty list box with "Remove" and "Add" buttons)
- ☐ Enable RTP Payload Filtering
- Multicast Join Type: (dropdown)
- ☐ Enable SMPTE 352
- SDP File: (empty text box)
- Buttons: Import..., Export...

Content Ingest

Before you can start using the Venue Player application you must first ingest content. This is accomplished using the record function on the ClearView Player application for baseband SDI, ST 2110, or MPEG IP network system inputs described on page 42. For media files, whether compressed or uncompressed, video content must be converted using the correct video file format definition and be known to the Venue Player application after transfer. This can be done automatically using the included ClearView Importer application which is generally how users will prepare their media files for playback. For uncompressed raw file formats, this can also be accomplished via direct render using third party tools described on page 19.

ClearView Importer

The ClearView Importer is a comprehensive decode application. The ClearView Importer application has a graphical user interface, and a command line interface. Both can be used for file importation. A complete description of the application can be found in the ClearView Importer User Guide.

Supported File Types (Partial List)

Video Format Import Types

Accom YUV CCIR 601 8 Bit
ARI Raw Bayer Pattern
AVC, AVC I-Frame, AVC-Long GOP
Avid AVR, DS HD/SD, DV (*.gen)
Avid _DNxHD
Avid Meridian &Y'CbCr
Avid OMFI (*.omf, *.omfi)
AVR, JFIF, JPED, 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-4 part 14 (.mp4)
 MPEG-H HEVC/H.265 4:2:0 Main Profile (*.h265) MPEG-H in TS, MPTS
 MXF Format (DV, DV 25, DVCPro25, DVCPro50, MPEG, IMX)
 Newtek Video Toaster (*.rtv)
 Phantom Support (cine)
 Photo CD PCD
 PhotoShopFilmStrip (*.flm)
 Photoshop PSD
 Portable anymap PNM
 Portable Bitmap Format PBM DPS
 Velocity Portable graymap 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
 Transport Stream (*.ts)
 v210Y'CbCr 10 Bit product
 VC-1 Pro, Viewstore (vsr)
 vcap, vcap10
 Windows Media (*.asf, *.wmf, *.wmv)
 XDCAM HD
 XAVC, XAVC-I class 100, XAVC-L, XAVCI-Frame
 Y'CbCr 8/10
 Y'CbCr, RGB
 YCrCb 8/RGBA

Audio Import Formats Exported File Formats

Dolby Digital Plus Professional Decoder
 MPEG-2 Layer 1 (.mp1) QuickTime with up to 16 audio channels
 MPEG-2 Layer 3 (.mp3) Microsoft AVI (*.avi), BMP
 Waveform Audio (.wav) Headerless/Raw (*.yuv, *.rgb, *.raw)
 Adaptive Multi-rate (.amr)
 Advanced Audio Coding (*.aac)
 Audio Interchange File Format (.aiff)
 Windows Media Audio (.wma)

Direct Render

For a direct render, all video files must contain uncompressed progressive video frames. The video file contains no header – all relevant file specifications (eg. width, height, frame rate, etc.) are stored in a separate “sequences” file in the same folder. This folder is called a “library” in ClearView and Venue Player. The video file in conjunction with any associated audio or timecode files comprise a sequence in the library. The video file is named the same as the sequence name. There is no file name extension.

The steps for a direct render are:

1. Create the video file using a third-party tool
2. Transfer the new video file to a library on the system
3. Edit the “sequences” file within that library so relevant specifications of new video file are known

Video Frames

Each video frame is stored consecutively in the file after the previous frame. There may be frame padding required at the end of each video frame. All video frames are aligned on 4096 byte boundaries. Each frame is padded out to a multiple of 4096 bytes if it is not already a multiple of this value. For example, a single 1920 x 1080 YCbCr 10-bit frame is 5,529,600 bytes which is an even multiple of 4096 and therefore does not require any additional padding. Note that all video frames are stored in top-down format.

Video Frame Image Formats

The following is a list of all currently supported image formats for video frames.

YCbCr 10 bit -- this is the ‘v210’ image format which is 4:2:2 10 bits per component.

YCbCr 8 bit – this is the ‘UYVY’ or ‘2vuy’ image format which is 4:2:2 8 bits per component.

RGB 10 bit – this is 4:4:4 10 bits per component.

RGB 8 bit -- this is 4:4:4 8 bits per component.

BGR 8 bit – this is 4:4:4 8 bits per component.

ARGB 8 bit -- this is 4:4:4 8 bits per component.

BGRA 8 bit -- this is 4:4:4 8 bits per component.

YCbCr 10 Bit

This is the same as the QuickTime ‘v210’ format - 6 pixels in 16 bytes.

X = bit not used (2 high order bits per 32 bits are padding)

Decreasing Address Order:

Byte 3	Byte 2	Byte 1	Byte 0
Cr 0	Y 0	Cb 0	
XX9876543210	9876543210	9876543210	9876543210
Byte 7	Byte 6	Byte 5	Byte 4
Y 2	Cb 1	Y 1	
XX9876543210	9876543210	9876543210	9876543210
Byte 11	Byte 10	Byte 9	Byte 8
Cb 2	Y 3	Cr 1	
XX9876543210	9876543210	9876543210	9876543210
Byte 15	Byte 14	Byte 13	Byte 12
Y 5	Cr 2	Y 4	
XX9876543210	9876543210	9876543210	9876543210

YCbCr 8 Bit

This is the same as the QuickTime '2vuy' format also known as 'UYVY'.

Decreasing Address Order:

Byte 3	Byte 2	Byte 1	Byte 0
Cr	Y1	Cb	Y0
7 6 5 4 3 2 1 0	7 6 5 4 3 2 1 0	7 6 5 4 3 2 1 0	7 6 5 4 3 2 1 0

RGB 10 Bit

This is 4:4:4 10 bits per component, 30 bits per pixel in 32 bits. Please note this is the standard DPX file layout, which was originally big endian, but is viewed here as little endian.

X = bit not used (2 bits per 32 bits are padding)

Decreasing Address Order:

Byte 3	Byte 2	Byte 1	Byte 0
Blue	Green Blue	Red Green	Red
5 4 3 2 1 0 X X	3 2 1 0 9 8 7 6	1 0 9 8 7 6 5 4	9 8 7 6 5 4 3 2

RGB 8 Bit

This is 4:4:4 8 bits per component, 24 bits per pixel.

Decreasing Address Order:

Byte 2	Byte 1	Byte 0
Red	Green	Blue
7 6 5 4 3 2 1 0	7 6 5 4 3 2 1 0	7 6 5 4 3 2 1 0

BGR 8 Bit

This is 4:4:4 8 bits per component, 24 bits per pixel.

Decreasing Address Order:

Byte 2	Byte 1	Byte 0
Blue	Green	Red
7 6 5 4 3 2 1 0	7 6 5 4 3 2 1 0	7 6 5 4 3 2 1 0

ARGB 8 Bit

This is 4:4:4 8 bits per component, 32 bits per pixel.

Decreasing Address Order:

Byte 3	Byte 2	Byte 1	Byte 0
Alpha	Red	Green	Blue
7 6 5 4 3 2 1 0	7 6 5 4 3 2 1 0	7 6 5 4 3 2 1 0	7 6 5 4 3 2 1 0

BGRA 8 Bit

This is 4:4:4 8 bits per component, 32 bits per pixel.

Decreasing Address Order:

Byte 3	Byte 2	Byte 1	Byte 0
Blue	Green	Red	Alpha
7 6 5 4 3 2 1 0	7 6 5 4 3 2 1 0	7 6 5 4 3 2 1 0	7 6 5 4 3 2 1 0

Managing Libraries Outside of Venue Player Application

The utility Portable Libtool should be used when rendering files outside of the ClearView Importer application. It has the ability to:

1. Create a Library
2. Add a sequence to a library
3. List the sequences in a library
4. Remove a sequence from a library

It is written in Python 3.4 and is intended to be portable between Windows and Linux. Consequently, this tool can be executed on some computer other than the Venue Player for offline batch import.

usage: libtool.py [-h] [-a NUM] [-i NAME] [-l PATH] [-n NAME] [-p NUM] [-r NAME] command

positional arguments:

command "add" | "create" | "list" | "remove"

optional arguments:

-h, --help show this help message and exit

-a NUM, --audio NUM audio mode for a new sequence: 0, 8, 16 (default=0)

-i NAME, --image NAME

 image format for a new sequence: ARGB, RGBA, D1, HD,

 RGB10, D110, HD10, RGB, BGR, UHD, UHD10

-l PATH, --library PATH

 library path

-n NAME, --name NAME name of sequence and file

-p NUM, --preview NUM

 preview mode for a new sequence (default=0)

-r NAME, --resolution NAME

 frame resolution for a new sequence, e.g, "3840x2160"

Examples

Create a library:

```
python libtool.py create -l /test_library
```

Add a clip to the library test_library:

```
python libtool.py add -l /test_library -n test_sequence -r 720x486 -i D1
```

List sequences in the library test_library:

```
python libtool.py list -l /test_library
```

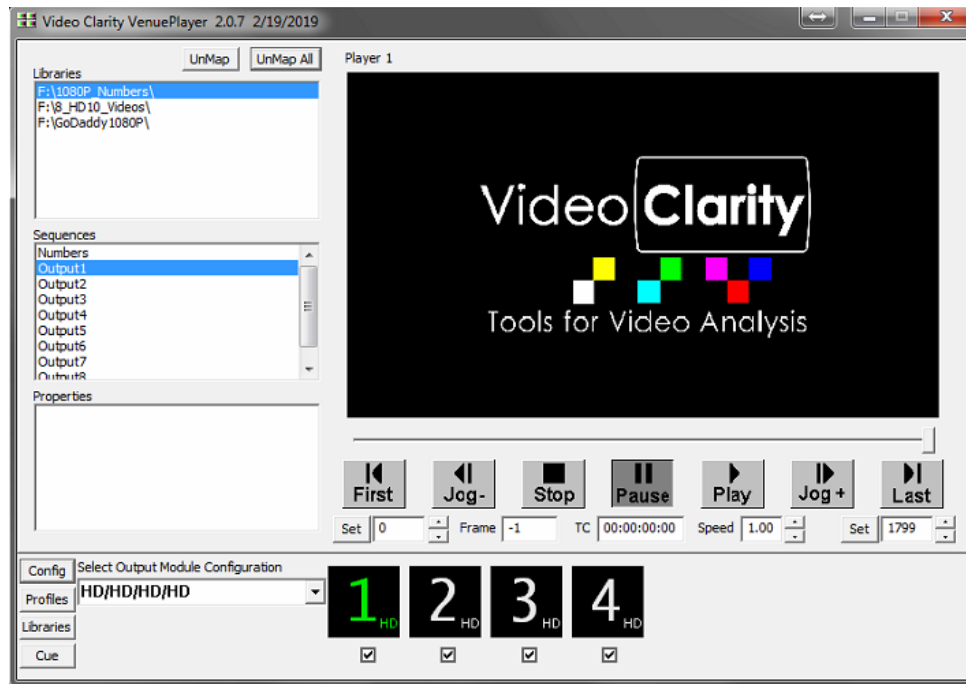
Remove the sequence test_sequence from the library test_library:

```
python libtool.py remove -l /test_library -n test_sequence
```


Venue Player

Venue Player has a graphical user interface, and a command line interface. Both can be used to control the Venue Player application.

Graphical User Interface



Configuration Menu

Config Option	Description
Lock Players	Locks players together sync'd playback
Enable Audio Playback	Enables the playback of audio if there is an associated .aud file for the mapped clip
Enable Audio Meters	Enables audio meter in preview window
Enable Previews	Enables a preview of the clip in the GUI
Enable Play Once	VenuePlayer will only play once, and not loop at the end of the clip
Enable Viewport B	Enables Side by Side playout of clips.
Enable Overlay	Enables text overlay
Enable HDMI Hight Frame Rate 4:2:0 (4K only)	For frame rates above 30 the HDMI output will decimate the frame rate in half or subsample from 4:2:2 to 4:2:0
Enable HDMI SMPTE Range	Limits HDMI output to legal broadcast color values
Reference Source	<ul style="list-style-type: none">Free Run – Uses the onboard clockExternal – Uses signal coming in from the reference input
Two Sample Interleave (4K Only)	Enables two sample interleave for 4K SDI playout (Instead of quadrant)

Libraries

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:

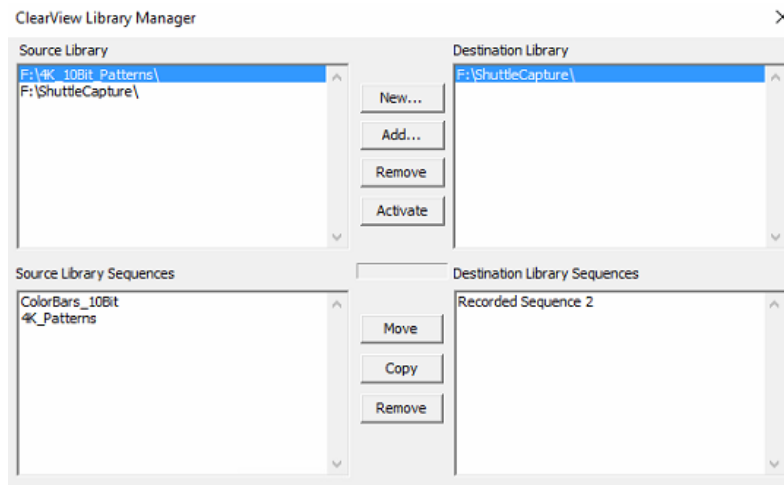
- Libraries have an index file which catalogs information about the video sequences. This index file holds information like the sequence name, the resolution, the thumbnail to display, the playing frequency, the mark-in/mark-out points, etc. The file name for this catalog is “sequences”. Please do not 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 Venue 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.

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

Library Manager

The library manager is used to create new libraries, add libraries from other systems and remove libraries. You can also manage clips within the libraries from this pane



Option	Description
New	Create a new library. You must <ul style="list-style-type: none"> • Create the directory using standard Windows commands • Open the directory • Choose the sequences file and select save.
Add	This allows Venue Player to recognize a library added outside of Venue Player. For example: restoring a library from tape backup or copying a library from another Venue Player system. Note: Venue Player needs to reference the sequences file in each library. This command activates a sequences file. <ul style="list-style-type: none"> • Select the Source Library • Press the Add button
Remove (Upper Pane)	This removes the sequences file from an existing directory. <ul style="list-style-type: none"> • Select the Source Library • Press the Remove button
Activate	This reads the sequences file and places the thumbnails and details in the Select Thumbnail to Play pane. <ul style="list-style-type: none"> • Select the Source Library • Press the Activate button
Move	This allows you to move a video sequence from one Library to another Library <ul style="list-style-type: none"> • Select the Source Library • Select the Destination Library • Select the video sequence to Move • Press the Move button
Copy	This allows you to copy (duplicate) a video sequence to another Library <ul style="list-style-type: none"> • Select the Source Library • Select the Destination Library • Select the video sequence to Copy • Press the Copy button
Remove (Lower Pane)	This allow you to delete a video sequence <ul style="list-style-type: none"> • Select the Source Library • Select the video sequence to Remove • Press the Copy button

Select Output Module Configuration

Before assigning clips in VenuePlayer you must first select the Output Module Configuration you will be using. There are a total of nine options which are discussed in the Hardware Configuration section.

Clip Mapping

All clips in VenuePlayer that are assigned to different players within the app need to have compatible clock rates. For example, you can playback a 4Kp30, 1080p60 and 1080i60 clip at the same time. However, this means you cannot playback a 1080p60 clip, and 1080p50 clip at the same time.

To assign a clip to a player:

1. Select the player you want to map a clip to
2. Select the library in the upper left corner of the Venue Player UI
3. Single click on a sequence to view the properties of the clip
4. Double click to assign a clip to a player, please note:
 - a. Radio buttons at the top select viewports A or B (when enabled in the config menu)
 - b. Map sequences to viewports A and B to enable Side by Side.
5. You can un-map a clip from a player by selecting the un-map button

Cue

In order to have synchronous playback you must first cue all of the players together. Cue allows VenuePlayer to pre-read frames that are on the high-speed disk array. When you cue you are filling all 12 frame buffers on the broadcast board and filling all available software buffers.

Playing Clips

You will see a number of players at the bottom of the UI depending on the Output Module Configuration chosen. The green player is the player that is currently being controlled by the playback buttons in the UI. Select the lock button if you would like to lock all of the players together to execute playback commands at the same time for all players. You can also select the checkbox below players in order to lock them together.

When lock is enabled, the maximum number of frames played for any sequence is limited to the minimum number of frames of all mapped sequences based on the saved clip alignment values.

When lock is disabled, each sequence loops on the number of frames determined by the saved clip alignment values.

Profiles

Settings are saved to the registry as they happen. You can also save profiles to quickly switch between different Module Configurations/clip assignments.

To save a profile press the profiles button, then save.

To load a profile, press the profiles button, then restore.

Command Line Interface

Show Controllers

When connecting a show controller, you will need to configure the IP address and port of the Venue Player. The Venue Player server uses port 7 by default, but this can be changed by editing the port.txt file located in "C:\Program Files (x86)\Video Clarity\VenuePlayer" on the server. Using a show controller, you can leave the port open.

VPClient

VPClient is the command line processor client provided by Video Clarity. The client can be run locally, or remotely using another computer. There is a Windows and Linux version available. It communicates via sockets to the VenuePlayer application directly. It reads the Config and Port.txt file to find out where the Venue Player sits on the network, and which port to connect on. A list of VenuePlayer commands is in the table below.

Config

Config holds the IP address of the Venue Player server running the VenuePlayer software. It is located in "C:\Program Files (x86)\Video Clarity\Share" on the server. If you do not use a config file, you may designate the IP address in the VPClient command using '/c'. An example would be:
"VPClient /c 192.168.1.58 Play".

Port

The Venue Player client, VPClient, uses port.txt to designate the port. It needs to be located in the same directory as VPClient and is 7 by default. If you do not use a port.txt file, you may designate the port in the VPClient command using '/p'. An example would be:
"VPClient /c 192.168.1.58 /p 10000 Play".

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 VPCliant.exe, port.txt, and config reside, preferably C:\Program Files\Video Clarity\VenuePlayer (Remember to place a ';' before this new entry). Click Ok.

VPCliant?

If you need a list of commands that are available, you can type "VPCliant ?" and a list of commands will be listed.

If you would like to see how a command is used, and you do not have the CLI documentation you can type VPCliant ?<command>, an example would be: "VPCliant ? RestoreProfile"

Commands

Command	Description	Usage
Global Configuration		
AddLibrary	This command adds a new library to the library list.	AddLibrary library
EnableAudio	This command enables/disables audio playback	EnableAudio bEnable(0,1)
EnablePlayonce	This command enables/disables PlayOnce	EnablePlayOnce bEnable(0,1)
EnablePreviews	This command enables/disables application previews	EnablePreviews bEnable(0,1)
EnableTSI	Enables Two Sample Interleave playout for 4K over SDI	EnableTSI bEnable(0,1)
GetEnableAudio	This command returns whether audio playback is enabled or not	GetEnableAudio
GetEnablePlayOnce	This command returns whether play once is enable in config	GetEnablePlayOnce
GetEnablePreviews	This command returns whether application previews are enabled or not	GetEnablePreviews
GetEnableTSI	This command returns whether TSI is enabled or not	GetEnableTSI
GetReferenceSource	This command returns whether the hardware is using its internal clock or syncing to an external reference	GetReferenceSource moduleIdx(0,1)
GetReferenceTime	This command gets the current time for the output module and selected reference source	GetReferenceTime moduleIdx(0,1) refSource(0=system time, 1=External Reference Time)
GetTimeCodeSource		
ListLibraries	This command lists all libraries	ListLibraries
ListSequences	This command lists all sequences in a library	ListSequences library
RestoreProfile	This command restores saved settings from a saved .reg file	RestoreProfile profile(profile.reg)
SaveProfile	This command saves all of the current settings into a .reg file which can be used to restore these settings in the future	SaveProfile profile(profile.reg) bOverWrite(0,1)
SetReferenceSource	This command instructs the hardware to use either its internal clock or an external reference signal	SetReferenceSource moduleIdx(0,1) refSource(Free Run,External)

SetTimeCodeSource	This command instructs the hardware to use either sync to the internal clock or an external LTC input	SetTimecodeSource moduleIdx(0,1) source(clock,LTC)
Player Configuration		
GetConfiguration	This command returns current configuration	GetConfigurationmoduleIdx(0,1)
GetConfigurationString	This command returns the configuration string for the moduleIdx and configurationIdx.	GetConfigurationStringmoduleIdx(0,1) configurationIdx
GetFirstFrame	This command returns the first frame of the sequence mapped to the selected player/viewport	GetFirstFrameplayerNumber(1-8) viewportIdx(0,1)
GetLastFrame	This command returns the last frame of the sequence mapped to the selected player/viewport	GetLastFrameplayerNumber(1-8) viewportIdx(0,1)
GetLibrary	This command returns the current library for the selected player/viewport	GetLibraryplayerNumber(1-8) viewportIdx(0,1)
GetLock	Gets the current lock state.	GetLock
GetNumConfigurations	This command returns the number of possible configurations for the moduleIdx.	GetNumConfigurations
GetNumModules	This command returns then number of broadcast output modules	GetNumModules
GetSequence	This command returns the current sequence for the selected player/viewport	GetSequenceplayerNumber(1-8) viewportIdx(0,1)
GetSpeed	Gets the playback speed of the current sequence.	GetSpeed
GetVideoFormat	This command returns the video format of the sequence mapped to the selected player/viewport	GetVideoFormatplayerNumber(1-8) viewportIdx(0,1)
ReReadLibraries	This command notifies the Venue Player to re-read the libraries from the registry.	ReReadLibraries
SetConfiguration	This command sets the configuration which clears selected libraries and sequences for all players/viewports.	SetConfiguration moduleIdx(0,1) configuration(4K,DL/DL,HD/HD/HD/HD,...)
SetFirstFrame	Sequence must already be mapped to a player/viewport before using this command.	SetFirstFrame playerNumber(1-8) viewportIdx(0,1) frame(n: 0 <= n <= lastFrame)
SetLastFrame	Sequence must already be mapped to a player/viewport before using this command.	SetLastFrame playerNumber(1-8) viewportIdx(0,1) frame(n: firstFrame <= n <= (numFrames - 1))
SetLibrary	This command sets the library for the selected player/viewport.	SetLibrary playerNumber(1-8) viewportIdx(0,1) library(library name)
SetNextSequence	Prepares next sequence for CueNextSequence command.	SetNextSequence playerNumber(1-8) viewportIdx(0,1) library(library name), sequence(sequence name), repeats(-1(infinite), 1 thru X), speed(0.1 - 2.0)
SetSequence	This command sets the sequence for the selected player/viewport	Sequence playerNumber(1-8) viewportIdx(0,1) sequence(sequence name) bOverrideSeqProps(0,1)
SetSpeed	Sets the playback speed of the current sequence.	SetSpeed [playerNumberList(eg. 135 means 1, 3 and 5)] viewportIdx(0,1) speed(0.01 - 4.0)
SetVideoFormat	Changes the video format of a clip. Sequence must already be mapped to a player/viewport before using this command	VideoFormatplayerNumber(1-8) viewportIdx(0,1) videoFormat(1080i 59.94 Hz. / 720p 59.94 Hz. / 1080p 60

		Hz. / 4x1920x1080p 59.94 Hz. ...)
UnMap	This command unmaps the selected players. You can also type 'UnMap' to unmap all players.	UnMap playerNumberList(eg. 135 means 1, 3 and 5)
Transport Control		
Cue	This command initializes and preloads a player (or all players when locked) with video and audio in preparation for immediate playback upon a start event	Cue [playerNumber(1-8)]
CueAtTime	This command sets a time in the future to cue all players and then cues all players at that time.	CueAtTime time(HH:MM:SS:FF)
CueNextSequence	This command cues a sequence to a player that is currently in use for playback	CueNextSequence playerNumberList(eg. 135 means 1, 3 and 5) when(ASAP,EOS,HH:MM:SS::FF,GPIO-GPI7) start(0,1) block(0,1)
First	This command pauses a player (or all players when locked) and skips to the first frame	First [playerNumber(1-8)]
GoTo	This command pauses a player (or all players when locked) and skips to the selected frame	GotoviewportIdx(0,1) frame(n: firstFrame<= n <= lastFrame) [playerNumber(1-8)]
JogFwd	This command pauses a player (or all players when locked) and skips to the next frame	JogFwd [playerNumber(1-8)]
JogRev	This command pauses a player (or all players when locked) and skips to the previous frame	JogRev [playerNumber(1-8)]
Last	This command pauses a player (or all players when locked) and skips to the last frame	Last [playerNumber(1-8)]
Lock	This command locks/unlocks all players. When locked all players are synchronized and start/stop/etc. together. Note: frame rate is also important – the player with the shortest time period between first and last frames of each sequence is the master. All other players will loop when this one does.	Lock bLock(0,1)
Pause	This command pauses a player (or all players when locked)	Pause [playerNumber(1-8)]
Play	This command cues and starts a player (or all players when locked)	Play [playerNumber(1-8)]
PlayAtTime	This command sets a time in the future to start all players and then starts all players at that time.	PlayAtTime time(HH:MM:SS:FF) [block(0,1)]
Stop	This command stops a player (or all players when locked)	Stop [playerNumber(1-8)]
Status		
GetBoardTemperature	This command returns the board temperature for the selected output module index	GetBoardTemperature moduleIdx(0,1)
ManagerStatus	This command returns status for all players	ManagerStatus
WaitInterval	This command delays the following command until the waitInterval has been achieved	WaitIntervalInSeconds(n)

Command Line Examples

Example 1

On a management system save the profile to a network location from Unit_A, then load that profile from network to Unit_B

IP Address of Unit_A – 192.168.1.254

IP Address of Unit_B – 192.168.1.58

Command Line Input:

```
vpClient /c 192.168.1.254 SaveProfile O:\Profiles\Master_Profile.reg 1
```

```
vpClient /c 192.168.1.58 RestoreProfile O:\Profiles\Master_Profile.reg
```

Example 2

On the Venue Player system set the configuration to 4K/4K, load up two clips, cue, and then play.

Command Line Input:

```
vpClient SetConfiguration 0 4K/4K
```

```
vpClient lock 0
```

```
vpClient setLibrary 1 0 F:\4K10Bit_Videos
```

```
vpClient setLibrary 2 0 F:\4K10Bit_Videos
```

```
vpClient setSequence 1 0 BB_A 0
```

```
vpClient setSequence 2 0 BB_B 0
```

```
vpClient cue 12
```

```
vpClient setspeed 12 0 1.00
```

```
vpClient play 12
```

Example 3

On player 1 have the venue player switch back and forth between clips when GPIO port 3 is triggered

Command Line Input:

```
vpClient SetConfiguration 0 HD/HD/HD/HD/HD/HD/HD/HD
```

```
vpClient Lock 0
```

```
vpClient EnableAudio 0
```

```
vpClient setLibrary 1 0 F:\1080P_Numbers
```

vpClient setSequence 1 0 Output1 0

vpClient cue 1

vpclient SetSpeed 1 0 1.00

vpClient play 1

:CueLoop

vpClient SetNextSequence 1 0 F:\GoDaddy1080P Video1 1 1

vpClient CueNextSequence 1 GPI3 1 1

vpClient SetNextSequence 1 0 F:\1080P_Numbers Output1 1 1

vpClient CueNextSequence 1 GPI3 1 1

goto CueLoop

Venue Player Manager

The Venue Player product line has a centralized management solution, Venue Player Manager. The Venue Player Manager can run on one Venue Player unit and connect to others via a network connection.

Startup

To start up the connections between the Venue Player units and the Manager you will need to run the following. We recommend adding these files to the system's startup folder.

On each managed Venue Player:

`C:\Program Files (x86)\Video Clarity\VenuePlayer Manager Proxy\StartVenuePlayerManagerProxy.bat`

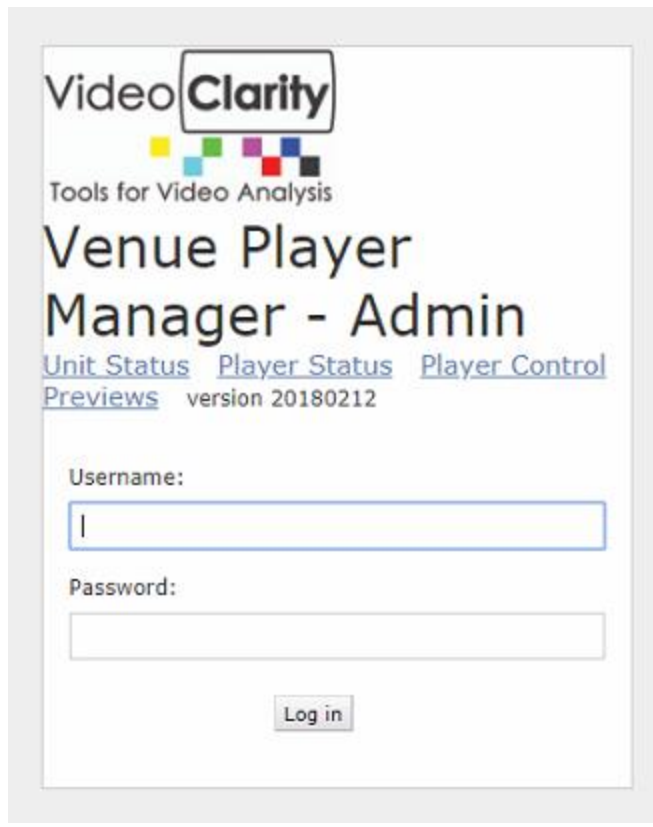
On the Venue Player running the Management software:

`C:\Program Files (x86)\Video Clarity\VenuePlayer Manager\StartVenuePlayerManager.bat`

Web Dashboards

By default, the web dashboard will not automatically launch when starting up the manager. You will have to open up Google Chrome and go to:

`127.0.0.1/admin`



Video Clarity
Tools for Video Analysis

Venue Player Manager - Admin

[Unit Status](#) [Player Status](#) [Player Control](#)
[Previews](#) version 20180212

Username:

Password:

admin

Admin

The default login credentials are admin/admin

From the admin page you can add Venue Player units and create users for the server. Once you have configured the users, and added venue players select the 'Venue Players' button to enter the VenuePlayer admin control page as seen below

VideoClarity Venue Player Manager - Admin

Tools for Video Analysis [Unit Status](#) [Player Status](#) [Player Control](#)
[Previews](#) version 20180212

✓ The Venue Player "VenuePlayer" was added successfully.

Add Venue Player +

Action: Go 0 of 1 selected

	Version	Configuration	Locked	Audio	Preview	Monitor	Action	Result
<input type="checkbox"/> Name <input checked="" type="checkbox"/> Ven 1 Venue			✓	✓	✓	✓		

- Cue selected players
- Disable audio playback
- Disable play once
- Disable previews
- Disable TSI
- Enable audio playback
- Enable play once
- Enable previews
- Enable TSI
- External reference
- Internal reference
- Lock selected players
- Monitor selected players
- Reboot selected players
- Relaunch selected players
- Remove selected players
- Set module index 0
- Set module index 1
- Shutdown selected players

There are a number of admin control options. To send a control command select a unit, select an option from the drop down, then press 'Go'.

Control Option	Description
Cue Selected Players	This command initializes and preloads a player (or all players when locked) with video and audio in preparation for immediate playback upon a start event
Disable Audio Playback	Disables audio for selected units
Disable Play Once	Disables play once, video will loop
Disable Previews	Disables preview on the local unit's GUI
Disable TSI	Disables Two Sample Interleave for 4K Playback. The default is Quad 4K.
Enable Audio Playback	Enables audio playback for selected units
Enable Play Once	Enables play once, video will stop when sequence ends
Enable Previews	Enables preview on the local unit's GUI
Enable TSI	Enables Two Sample Interleave for 4K Playback. The default is Quad 4K.
External Reference	Instructs the hardware to use an external reference clock
Internal Reference	Instructs the hardware to use an internal reference clock
Lock Selected Players	Locks the virtual players within the Venue Player together
Monitor Selected Players	Monitors selected units, and displays status on other Manager Pages
Reboot Selected Players	Reboots selected units
Remove Selected Players	Removes selected units from admin page
Set Module Index 0	Sets board 0 to be the reference
Set Module Index 1	Sets board 1 to be the reference
Shutdown Selected Players	Shuts down selected units
Unlock Selected Players	Unlocks virtual players for individual control
Unmonitor Selected Players	Removes unit from other Manager Pages
Update Selected Players	Updates software on remote unit using software loaded onto the management unit

Player Control

This page is used to control individual players for the different managed Venue Players



VenuePlayer Manager - Control

[Player Status](#) [Previews](#) [Unit Status](#) [Admin](#)

version 20180212 (RTM2)

Unit	Locked	Player 1	Player 2	Player 3	Player 4	Player 5	Player 6	Player 7	Player 8
VenuePlayer	Yes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				



Speed:

Map sequence:

Add library:

Configure:


Seek to frame:

Seek to timecode HH:MM:SS:FF:

Play at timecode HH:MM:SS:FF:

Cue at timecode HH:MM:SS:FF:

Player Status

Video  VenuePlayer Manager - Unit Status

[Previews](#) [Player Status](#) [Player Control](#) [Admin](#)

Tools for Video Analysis version 20180212 (RTM2)

Unit	Players	Configuration	Lock	Audio	Reference Source	Reference Format	Reference Time	CPU Temp	System Temp	Board 1 Temp	Board 2 Temp	Fan 1 Speed	Fan 2 Speed	Fan 3 Speed	Fan 4 Speed	Fan 5 Speed
VenuePlayer	4	HD/HD/HD/HD	Locked	Enabled	Free Run	1920 x 1080 59.94 Hz.	12:59:18:00	0.0	57.9	61.5	0.0					

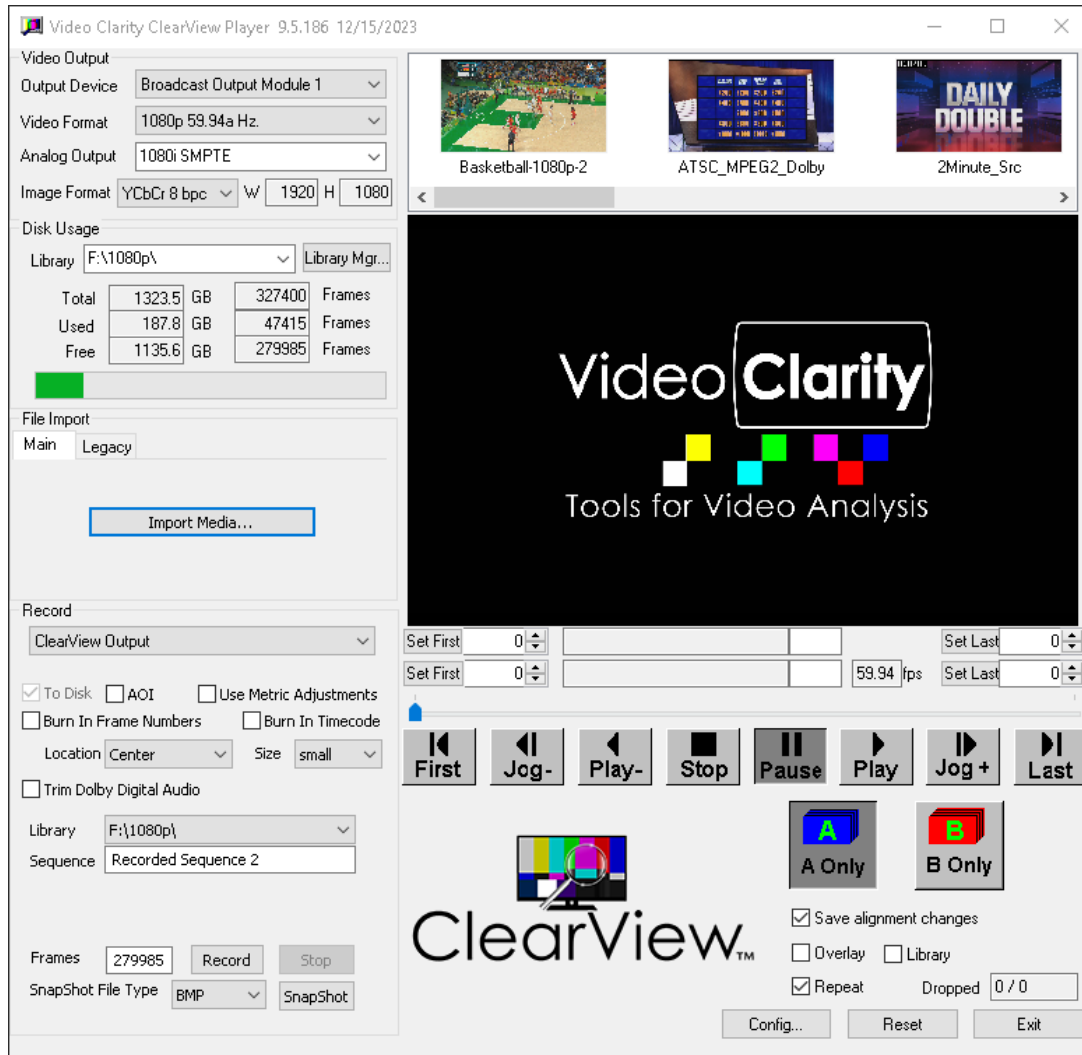
For each managed Venue Player, the Manager will gather information about the system status.

Previews

A thumbnail is displayed for each of the active players. This can be used as a quick reference to ensure everything is running correctly

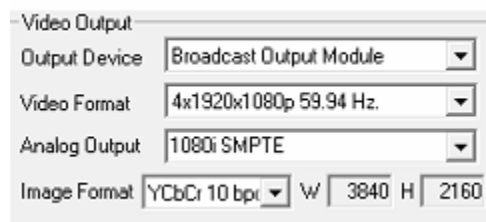
ClearView Player with record function

The ClearView Player screen consists of several panes dedicated to specific functions. The GUI panes typically appear in order of use during a typical playback session.



Video Output

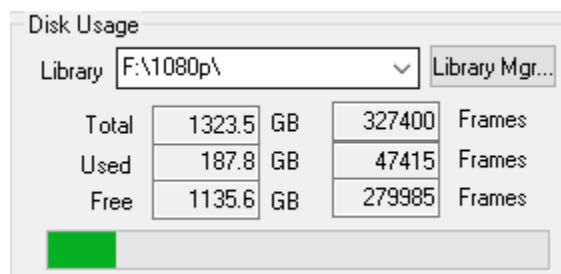
The Video Output Pane controls ClearView Player's uncompressed video outputs.



Option	Description
Output Device	The list of Output Devices is dependent on the ClearView Player outputs that are resident on each model's back panel <ul style="list-style-type: none"> Broadcast Output Module – display Y'CbCr or RGBA onto the Television/Monitor and display the GUI on the HDMI/DP/VGA display. Display Port Output – Displays RGB onto the Monitor and displays the GUI on the HDMI/DP/VGA Display
Video Format	The list of available resolutions and frame rates which depends upon the output module.
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.
Image Format	Sets the image format of the application

Disk Usage

The disk usage pane shows the amount of storage being used and the amount of storage available on the F:\ drive.



Libraries

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.

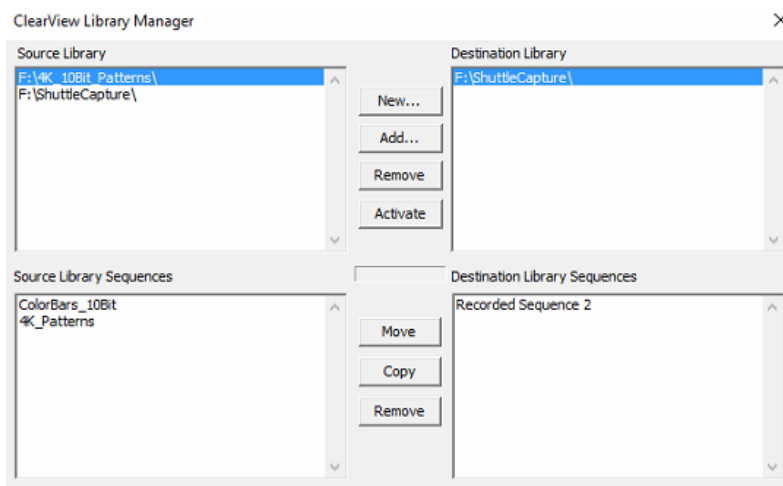
- Each video sequence has 3 files associated with it – the uncompressed video sequence, the uncompressed audio sequence, and a text overlay file. The text overlay file contains the text to be displayed when overlay is checked. The default name is the sequence name. Since this is a text file, it can be 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.

Library Manager

The library manager is used to create new libraries, add libraries from other systems and remove libraries. You can also manage clips within the libraries from this pane



Option	Description
New	Create a new library. You must <ul style="list-style-type: none"> • Create the directory using standard Windows commands • Open the directory • Choose the sequences file and select save.
Add	This allows ClearView Player to recognize a library added outside of ClearView Player. For example: restoring a library from tape backup or copying a library from another ClearView system. Note: ClearView needs to reference the sequences file in each library. This command activates a sequences file. <ul style="list-style-type: none"> • Select the Source Library • Press the Add button
Remove (Upper Pane)	This removes the sequences file from an existing directory. <ul style="list-style-type: none"> • Select the Source Library • Press the Remove button
Activate	This reads the sequences file and places the thumbnails and details in the Select Thumbnail to Play pane. <ul style="list-style-type: none"> • Select the Source Library • Press the Activate button

Move	This allows you to move a video sequence from one Library to another Library <ul style="list-style-type: none"> • Select the Source Library • Select the Destination Library • Select the video sequence to Move • Press the Move button
Copy	This allows you to copy (duplicate) a video sequence to another Library <ul style="list-style-type: none"> • Select the Source Library • Select the Destination Library • Select the video sequence to Copy • Press the Copy button
Remove (Lower Pane)	This allow you to delete a video sequence <ul style="list-style-type: none"> • Select the Source Library • Select the video sequence to Remove • Press the Copy button

File Import

As described on page 17, the ClearView Importer is a comprehensive decode application. The ClearView Importer application has a graphical user interface, and a command line interface. Both can be used for file importation. A complete description of the application can be found in the **ClearView Importer User Guide**.

Recording

The record pane allows you to record from an SDI, ST 2110 IP, or MPEG IP network input and it also allows a re-record the current ClearView Player sequence applied to the Viewport by selecting ClearView Output, most likely to add frame numbers, time code, or shorten the sequence length. The list of Input Sources (input devices) is dependent on the installed input modules.

- SDI – Allows selection of recording from one or more broadcast input modules installed having SDI or HDMI inputs. This can be with or without VANC selected in the Config menu.
- ST 2110 IP Input – Allows selection of recording from ST2110 media flows to the capacity of the system being used for HD or UHD video with audio and ancillary data
- MPEG IP (or GNIC IP) – Records/decodes compressed IP streams from the motherboard's 1G network interface (RJ45) and in the case of 3RU systems a 10G NIC.
- ClearView Output – Creates a new copy of whatever is currently loaded in the application's viewport

Record From Selected Input A/V Interface Module

1RU system models with ClearView Player installed will have one input A/V interface module installed while the 3RU models may have up to three. Make sure the source is connected before previewing and ClearView will auto sense the video format. To make sure that it has selected the correct format, select the Config button which is displayed below.

Record Mode Single SDI Input records the video sequence as sensed on the SDI input. The SDI can be either SDI Input #1 or SDI Input #2 selectable in Config.

In ClearView Record 1 SDI Input:

- After selecting SDI for recording, select Single Input for Record Mode
- Input 1: Broadcast Input Module 1 will be the default selection for systems with one video interface module. Select Broadcast Module 2 or 3 if recording single input from another SDI interface
- Select Config button to decide target input connector, either SDI Input 1 or 2
- See Table 14 below for Configure SDI Input Pane Descriptions
- Decide the Library for recording location
- Name the Sequence or apply the system default name that automatically appears
- Set a number of Frames for recording or leave the capacity number shown to allow a free run record
- Select Preview, you should see video in the Viewport, select Record
- Recording will stop automatically for set number of frames, otherwise select Stop to halt recording
- To Disk and Abort on Drop selections should be left as default settings

Record 1 SDI Input

Configure SDI Input

Table 14: Configure SDI Input Pane Description

Input Source	Choose among SDI Input 1 or Input 2, these are generally the connectors labeled #1 and #2 on today's SDI interface modules
Analog Format	This field is only applicable if you have a CV-SDI-IO-LHI legacy module installed. Choose among 525 (486i), 625 (576i), 720P, and 1080i analog input standards,
Sync Source	Choose among SDI#1, SDI#2, External if external reference is being fed to the Ref In connector on the SDI interface, or Free Run (no external sync source)
Audio Source	Choose Embedded if recording audio channels from the SDI input. AES or Analog audio selections are only available via an optional multi-

	connector input applied to the interface in a 3RU system.
SMPTE 372 Dual Link	If you are using both inputs in Dual Link mode, then check this box . Many times, this check box will be required if 3G-SDI or 12G-SDI signals are Level B.
SMPTE 425 Quad Link	Select if you want to record from all four 3G-SDI ports on a CV-SDI-IO-4K2, or CV-SDI-IO-3G interface module.
SMPTE 425 Interleave	Select in addition to SMPTE 425 Quad Link if the incoming four 3G-SDI feeds are 2SI and not Quad 3G-SDI

Record 1 ST 2110 Input

Systems equipped with ST 2110 interface modules can record one or two uncompressed video inputs with audio and ancillary data up to 4Kp60Hz 4:2:2 10-bit video formats. The image on the next page shows how the input will appear when selecting ST 2110 from the initial drop-down menu under Record.

Record 1 ST 2110 Input

Record

ST 2110

Record Mode Single Input ☐ Sync Bcast Input

Input 1 Config...

Library 1 F:\UHD\

Sequence Recorded Sequence 11

Frames 11027 Preview Record Stop

☒ To Disk ☒ Abort On Drop Dropped

In Record 1 ST 2110 Input:

- After selecting ST 2110 for recording, select Single input for Record Mode
- Input 1 shown will default to the installed CV-IP-IO-UHD module for ST 2110
- Select Config button to apply input stream network address and media stream input parameters

ST 2110 Main Configuration Menu

The screenshot displays the 'Video Clarity IP 2110 Configuration' window. It is divided into several sections for configuring SFP A (Primary bottom SFP) and SFP B (Redundant top SFP).

SFP A (Primary bottom SFP) Settings:

- Local IP Address: 192 . 168 . 39 . 111
- Subnet Mask: 255 . 255 . 255 . 0
- Gateway Address: 192 . 168 . 39 . 1
- ☒ Enable VLAN
- ☐ VLAN Tag DEI
- VLAN Tag VID: 2

SFP B (Redundant top SFP) Settings:

- Local IP Address: 192 . 168 . 39 . 112
- Subnet Mask: 255 . 255 . 255 . 0
- Gateway Address: 192 . 168 . 39 . 1
- ☒ Enable VLAN
- ☐ VLAN Tag DEI
- VLAN Tag VID: 2

SMPTE 2059 Best GM Selection: SFP A

2059 SFP A (Primary bottom SFP) Settings:

- Local IP Address: 192 . 168 . 39 . 113
- Subnet Mask: 255 . 255 . 255 . 0
- Gateway Address: 192 . 168 . 39 . 1
- ☒ Enable DHCP
- Master Clock Domain: 0
- Multicast Join Type: IGMP v2
- IGMP v3 Filter Type: Include
- IGMP v3 Filter List: (Empty list with 'Remove' and 'Add' buttons)

2059 SFP B (Redundant top SFP) Settings:

- Local IP Address: 192 . 168 . 39 . 114
- Subnet Mask: 255 . 255 . 255 . 0
- Gateway Address: 192 . 168 . 39 . 1
- ☒ Enable DHCP
- Master Clock Domain: 0
- Multicast Join Type: IGMP v2
- IGMP v3 Filter Type: Include
- IGMP v3 Filter List: (Empty list with 'Remove' and 'Add' buttons)

Connectors SFP A (Primary bottom SFP):

- Input Connector: 1
- Output Connector: 1
- Video Input Configuration: ...
- Video Output Configuration: ...
- Audio Input Configuration: ...
- Audio Output Configuration: ...
- ANC Input Configuration: ...
- ANC Output Configuration: ...

Connectors SFP B (Redundant top SFP):

- Input Connector: 1
- Output Connector: 1
- Video Input Configuration: ...
- Video Output Configuration: ...
- Audio Input Configuration: ...
- Audio Output Configuration: ...
- ANC Input Configuration: ...
- ANC Output Configuration: ...

ClearView Main Configuration Menu Set up:

- For SFP A (Primary is the bottom SFP in 3RU systems and the right side SFP in 1RU and 2RU systems) - Enter Local IP address, Subnet Mask, and Gateway Address
- Enable VLAN or VLAN Tag DEI and enter VLAN Tag VID
- SMPTE 2059 apply Best Grand Master Selection for PTP as Auto, SFP A, or SFP B
- 2059 SFP A settings for PTP are Local IP Address, Subnet Mask and Gateway Address and either enable DHCP or leave unchecked
- Master Clock Domain number range = 0 - 127
- Multicast Join Type which can be None, IGMPv2, or IGMPv3
- IGMPv3 Filter Type can set to be Include or Exclude the Filter List
- IGMP v3 Filter List allows up to four Destination IP addresses to be only ones used if Included or ignored if Exclude command is applied in Filter Type

Set up for Connectors SFP A (Primary bottom SFP) to record one stream input:

- Select Input Connector 1 for single input recording
- Select Video Input Configuration box to reveal menu as shown in Figure 50a below

The screenshot shows a configuration window titled "Video Clarity IP 2110 Connector Configuration - Primary Video Input 1". It contains several settings:

- ☒ Enable Flow
- ☒ Keep Alive
- Audio Mode: [Dropdown menu]
- Destination IP Address: 239 . 1 . 1 . 11
- Source UDP Port: 1011
- Destination UDP Port: 2011
- Source IP Address: 192 . 168 . 39 . 54
- IGMP v3 Filter Type: Exclude [Dropdown menu]
- IGMP v3 Filter List: [Empty list box] with a Remove button to its right.
- [Empty input box] with an Add button to its right.
- ☐ Enable RTP Payload Filtering
- Multicast Join Type: IGMP v2 [Dropdown menu]
- ☐ Enable SMPTE 352
- SDP File: C:\Users\user\Documents\videoInput1_1080p_5994.sdp
- Buttons: Import... and Export...

- Select Enable Flow at the top of the configuration window
- Enter the Destination IP Address as the multicast or unicast address of the stream
- Enter the Source UDP Port if required for matching
- Name the Destination UDP Port for the stream
- Enter Source IP Address of the source device if required for matching
- Decide IGMP v3 Filter type and list filtered address in the Filter List using the Add window
- If listed addresses need to be deleted select them and use the Remove button
- Enable or leave blank the Enable RTP Payload Filtering – Normally Video is Payload ID 97, Audio is 96, and Anc is 100, filtering the input using these values can be applied as well.
- Apply Multicast Join Type which can be None, IGMPv2, or IGMPv3
- Enable SMPTE 352 for an SDI payload identifier if required
- Close dialog window

Notes: Generally, the Keep Alive is left unchecked since receivers and senders will be dynamically enabled with commands such as record, stop, and play when flow is enabled within this dialog. If your registration and discovery management require these connections to remain active, you will need to check the Keep Alive option.

Make sure output format selected in the ClearView Player GUI matches what is being input via ST 2110 stream otherwise use SDP File window to select an SDP file which describes the incoming video format.

Set up Connectors SFP A (Primary bottom SFP) for recording one stream input continued:

- Select Primary Audio Input Configuration box to reveal menu as shown in Figure 50b below

The screenshot shows a configuration window titled "Video Clarity IP 2110 Connector Configuration - Primary Audio Input 1". It contains several settings:

- ☒ Enable Flow
- ☒ Keep Alive
- Audio Mode: 16 Channels (dropdown)
- Destination IP Address: 239 . 1 . 1 . 12
- Source UDP Port: 1012
- Destination UDP Port: 2012
- Source IP Address: 192 . 168 . 39 . 54
- IGMP v3 Filter Type: Exclude (dropdown)
- IGMP v3 Filter List: A list box with a "Remove" button and an "Add" button below it.
- ☐ Enable RTP Payload Filtering
- Multicast Join Type: IGMP v2 (dropdown)
- ☐ Enable SMPTE 352
- Buttons: Import... and Export...
- SDP File: A text input field.

- Select Enable Flow at the top of the configuration window
- Enter the Destination IP Address as the multicast or unicast address of the stream
- Enter the Source UDP Port if required for matching
- Name the Destination UDP Port for the stream
- Enter Source IP Address of the source device if required for matching
- Decide IGMP v3 Filter type and list filtered address in the Filter List using the Add window
- If Listed addresses need to be deleted select them and use the Remove button
- Enable or leave blank the Enable RTP Payload Filtering – Normally Video is Payload ID 97, Audio is 96, and Anc is 100, filtering the input using these values can be applied as well.
- Apply Multicast Join Type which can be None, IGMPv2, or IGMPv3
- Enable SMPTE 352 for an SDI payload identifier if required
- Close dialog window

Note: SDP File window currently has no application for Audio Input.

Set up Connectors SFP A (Primary bottom SFP) for recording one stream input continued:

- Select Primary ANC Input Configuration box to reveal menu as shown in Figure 50c below

The screenshot shows a configuration window titled "Video Clarity IP 2110 Connector Configuration - Primary ANC Input 1". It contains several settings:

- ☒ Enable Flow
- ☒ Keep Alive
- Audio Mode: [Dropdown menu]
- Destination IP Address: 239 . 1 . 1 . 13
- Source UDP Port: 1013
- Destination UDP Port: 2013
- Source IP Address: 0 . 0 . 0 . 0
- IGMP v3 Filter Type: Include [Dropdown menu]
- IGMP v3 Filter List: [Empty list box with "Remove" and "Add" buttons]
- ☐ Enable RTP Payload Filtering
- Multicast Join Type: IGMP v2 [Dropdown menu]
- ☐ Enable SMPTE 352
- SDP File: [Empty text box]
- Buttons: Import..., Export...

- Select Enable Flow at the top of the configuration window
- Enter the Destination IP Address as the multicast or unicast address of the stream
- Enter the Source UDP Port if required for matching
- Name the Destination UDP Port for the stream
- Enter Source IP Address of the source device if required for matching
- Decide IGMP v3 Filter type and list filtered address in the Filter List using the Add window
- If Listed addresses need to be deleted select them and use the Remove button
- Enable or leave blank the Enable RTP Payload Filtering – Normally Video is Payload ID 97, Audio is 96, and Anc is 100, filtering the input using these values can be applied as well.
- Apply Multicast Join Type which can be None, IGMPv2, or IGMPv3
- Enable SMPTE 352 for an SDI payload identifier if required
- Close dialog window

Note: SDP File window currently has no application for Audio Input.

After closing the above dialog window recheck the Main Configuration menu to see that every entry is correct. You may now close the ST 2110 Configuration Window.

Now back on the ClearView Record section (see Record ST 2110 Input 1) on next page:

- Name the destination library in F: (or, if you have renamed F:, utilize a correct path to a currently set up Library folder destination in the system's fast disk array).
- Name the Sequence. A default name is populated there with incrementing numbers that can be replaced with your preferred name choice.
- Apply either the number of frames to record or leave the current frame capacity to free run.
- Select Preview. This will provide a preview of the incoming media stream in the Viewport.
- Select Record. If a number below the frame capacity number was entered the system will stop automatically.
- If free running, select Stop when desired.
- "To Disk" and "Abort on Drop" are selected by default. Frames Dropped, if any, will be reported.

After recording has been stopped you should see the video sequence with the name chosen in the upper ClearView thumbnail section. If several sequences are already recorded in this library, you may need to move the scroll bar to the right to see the last recorded sequence thumbnail.

At that point you may either start a new recording or select this thumbnail for playback.

Record 2 Inputs

When selecting Dual Input for Record Mode the video sequences are sensed on SDI inputs. For ST 2110 inputs the system will record the stream in the address and Configuration set up parameters.

Each video can be set up to go to the same library or may go to different libraries.

Dual Input configuration set up procedures are similar for Single Input recording as shown starting on page 45.

SDI systems that have two modules may record to the same Broadcast Input Module 1 or apply Broadcast Input Module 2 for Input 2 where the layout of inputs is generally the same. The #1 connector is input 1 and #2 connector is input 2. Select the video input with signal applied in the configuration for

each module selected using Config... button, select other input parameters shown (page 28) then select OK to close the SDI configuration window. Proceed with recording by selecting existing Libraries for Input 1 and Input 2, enter Sequence names, number of frames or leave capacity number shown for free run recording, select Preview then Record. Select the Stop button at chosen record end point when free run recording, as shown on the next page.

Systems with ST 2110 interface are set up similarly to “Record 1 ST 2110 Input” starting on page 45. However, when applying set up parameters for Connectors SFP A (Primary bottom SFP) apply input configuration settings for Input Connector #2 in the Main Configuration Window in addition to configuration setting for Input Connector #1. As in the above example, after setting up IP network configurations on both Input Connector 1 and 2 for ST 2110, apply existing Library folder on F:, apply both Sequence names or use the default name shown, apply number of frames to record or leave the default capacity number shown for a free run recording, select Preview, then Record. Stop recording at the desired point when free run recording to create an end to the recording procedure.

Record 2 SDI Inputs

The screenshot shows the 'Record' window with the following settings:

- Record Mode:** Dual Input (selected), Sync IP Input (unchecked).
- Input 1:** Broadcast Input Module 1 (selected), Config... button. Detected Signal: 1920 x 1080 59.94 Hz.
- Library 1:** F:\1080iYCbCr8\ (selected).
- Sequence:** Recorded Sequence 5 (entered).
- Input 2:** Broadcast Input Module 2 (selected), Config... button. Detected Signal: None.
- Library 2:** F:\1080iYCbCr8\ (selected).
- Sequence:** Recorded Sequence 6 (entered).
- Frames:** 21263 (entered).
- Buttons:** Preview, Record, Stop.
- Checkboxes:** To Disk (checked), Abort On Drop (checked).
- Dropped:** (empty field).

Record 2 ST 2110 inputs

The dialog box is titled "Record" and contains the following elements:

- A dropdown menu labeled "Record" with "ST 2110" selected.
- Record Mode: "Dual Input" (selected) and "Sync Bcast Input" (unchecked).
- Input 1 section: A "Config..." button, a "Library 1" dropdown set to "F:\UHD\", and a "Sequence" text box containing "Recorded Sequence 1".
- Input 2 section: A "Config..." button, a "Library 2" dropdown set to "F:\UHD\", and a "Sequence" text box containing "Recorded Sequence 2".
- Frames: A text box showing "5513".
- Buttons: "Preview", "Record", and "Stop".
- Checkboxes: "To Disk" (checked), "Abort On Drop" (checked), and "Dropped" (empty text box).

Record 1 MPEG IP Input

In IP input mode, a configuration option will pop up as shown below. The video format needs to be set in the main ClearView window under Video Output.

Record 1 IP Input

The dialog box is titled "Record" and contains the following elements:

- A dropdown menu labeled "Record" with "MPEG IP (or GNIC IP)" selected.
- Record Mode: "Single Input" (selected) and "Sync Bcast Input" (unchecked).
- Input 1 section: A "Config..." button, a signal specification "Signal: 1920 x 1080 29.97 Hz.", a "Library 1" dropdown set to "F:\1080iYCbCr8\", and a "Sequence" text box containing "Recorded Sequence 8".
- Frames: A text box showing "42526".
- Buttons: "Preview", "Record", and "Stop".
- Checkboxes: "To Disk" (checked), "Abort On Drop" (checked), and "Dropped" (empty text box).

Configure IP Input

Libcvi Input Config

☐ File Input Source
 ☒ IP Stream Input Source

Input Source: ...

Programs:

Video Streams:

Audio Streams:

☐ TS Record
 TS Record Fifo Duration Seconds

Target Output Module:

Target Video Format:
☐ Scale
 ☐ Deinterlace

☐ Dolby Audio Stereo Downmix

Table 15: Configure IP Input Description

Protocol	Choose among the three protocols of the incoming stream: <ul style="list-style-type: none"> • RTP • UDP • RTSP
Address	The address that the stream is located
Port	The port number to find the stream
Stream Name	When using RTSP Protocol, specify the stream name
Transport Type	The transport type of the stream: <ul style="list-style-type: none"> • Mpeg2 TS AVP/UDP Unicast • Mpeg2 TS AVP/UDP Multicast • Mpeg2 TS AVP/TCP Unicast • Unicast RTP over UDP • Multicast RTP over UDP • Multicast Raw over UDP • Interleaving • Unicast Raw over UDP • Unicast Raw over TCP
Timeout	The timeout value for the current stream
Program	Choose the MPTS to Import

V. Decoder	Chose the video decoder to use
A. Decoder	Chose the audio decoder to use
Announcement	Display SAP announcement on the network
Output Sequence Pane	<i>See Description in ClearView Importer Manual</i>
Transformation	In order to modify the Transformation values, check the use transform box <i>See Description in ClearView Importer Manual</i>

Note: In order for the stream setting to appear, first input the settings for the stream and click ok then Preview in the ClearView GUI. Stop the preview and reopen the configuration menu to have the setting appear.

The IP Input tab – Record Mode Single Input records the video sequence as sensed at the multicast address and port specified from within the configuration menu.

Record 2 IP Inputs

The IP Input tab – Record Mode Dual Input records the video sequences as sensed on two separate multicast addresses and ports specified from within the configuration menus. Each video must go to a different Library, and both may have the same or different sequence names.

Record 2 IP Inputs

The screenshot shows the 'Record' dialog box with the following settings:

- Record Mode:** Dual Input (selected), with an unchecked checkbox for 'Sync Bcast Input'.
- Input 1:**
 - Signal: 1920 x 1080 29.97 Hz.
 - Library 1: F:\1080iYCbCr8\
 - Sequence: Recorded Sequence 4
 - Config... button
- Input 2:**
 - Signal: 1920 x 1080 29.97 Hz.
 - Library 2: F:\1080iYCbCr8\
 - Sequence: Recorded Sequence 6
 - Config... button
- Frames:** 21263
- Buttons:** Preview (highlighted), Record, Stop
- Checkboxes:** To Disk (checked), Abort On Drop (checked), Dropped (unchecked)

Record 1 IP Input and 1 SDI input

Set the Record drop down menu selection to MPEG IP, set the Record Mode to Single Input, select Sync Bcast Input check box. Apply configuration as described in Record 1 IP Input section above. Apply Library path and name. Then set the Record menu to SDI and Record Mode to Single Input and select Sync Bcast Input check box (this command allows Preview and Record commands to be applied to both inputs at the same time). Each video must go to a different Library and both sequences may have the same name or different names.

Record 1 IP Input

The screenshot shows the 'Record 1 IP Input' configuration window. At the top, the 'Record' dropdown is set to 'MPEG IP (or GNIC IP)'. Below it, 'Record Mode' is 'Single Input' and the 'Sync Bcast Input' checkbox is checked. The 'Input 1' section shows a 'Signal: 1920 x 1080 30.00 Hz.' and a 'Config...' button. The 'Library 1' dropdown is set to 'F:\1080p\' and the 'Sequence' text box contains 'Processed-1'. At the bottom, there are buttons for 'Frames' (89164), 'Preview', 'Record', and 'Stop'. Below these are checkboxes for 'To Disk' (checked), 'Abort On Drop' (checked), and a 'Dropped' counter box.

Record 1 SDI Input

The screenshot shows the 'Record 1 SDI Input' configuration window. The 'Record' dropdown is set to 'SDI'. 'Record Mode' is 'Single Input' and the 'Sync IP Input' checkbox is checked. The 'Input 1' section shows 'Broadcast Input Module 1' with a 'Config...' button. Below it, the text says 'Detected Signal: None.'. The 'Library 1' dropdown is set to 'F:\1080i Sources\' and the 'Sequence' text box contains 'Processed-1'. At the bottom, there are buttons for 'Frames' (89164), 'Preview', 'Record', and 'Stop'. Below these are checkboxes for 'To Disk' (checked), 'Abort On Drop' (checked), and a 'Dropped' counter box.

ClearView Output Record

ClearView Output record mode creates a new copy of whatever is currently loaded in the application's viewport. The main purpose of this in the player application is to burn in frame numbers, burn in timecode, or trim clips with Dolby audio so they loop seamlessly on Dolby packed boundaries.

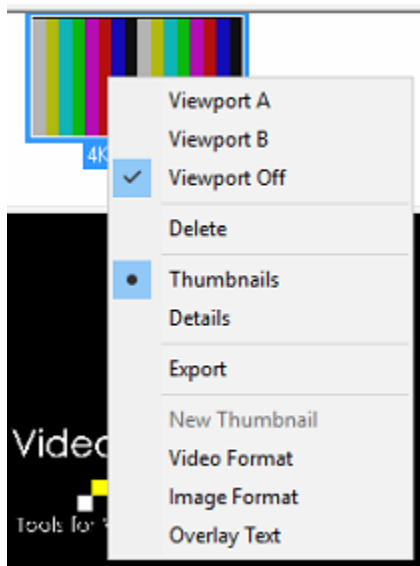
The screenshot shows a 'Record' dialog box with the following controls:

- A dropdown menu set to 'ClearView Output'.
- Checkboxes for 'To Disk' (checked), 'AOI' (unchecked), and 'Use Metric Adjustments' (unchecked).
- Checkboxes for 'Burn In Frame Numbers' (unchecked) and 'Burn In Timecode' (unchecked).
- 'Location' dropdown set to 'Center' and 'Size' dropdown set to 'small'.
- A checkbox for 'Trim Dolby Digital Audio' (unchecked).
- 'Library' dropdown set to 'F:\1080iYCbCr8\'.
- 'Sequence' text field containing 'Recorded Sequence 10'.
- 'Frames' text field containing '42526'.
- 'Record' and 'Stop' buttons.
- 'Snapshot File Type' dropdown set to 'BMP'.
- 'Snapshot' button.

Option	Description
AOI	Not available in ClearView Player
Use Metric Adjust	Not available in ClearView Player
Burn In Frame Numbers	This feature allows you to create a new sequence with frame numbers burned in. Enable this before creating your CV Output recording.
Location	Designates the location of the frame numbers
Size	Designates the size of the frame numbers
Burn in Timecode	This feature allows you to burn in timecode
Trim Dolby Digital Audio	If you have a clip saved with compressed audio, then this feature allows you to create a new sequence that will loop perfectly on Dolby packet boundaries. It will trip the sequence down the highest frame multiple allowed according to the frame rate.
Library	Library you will be recording to
Sequence	Name of your recording
Frames	Number of frames to record.
Record	Starts the recording
Stop	Stops the recording
Snapshot	Press this button to export the current frame in the preview screen as a BMP to the Library that is selected in the ClearView Output Tab. This can now be done with a single click – no need to do a record/export sequence.

Sequence Selection

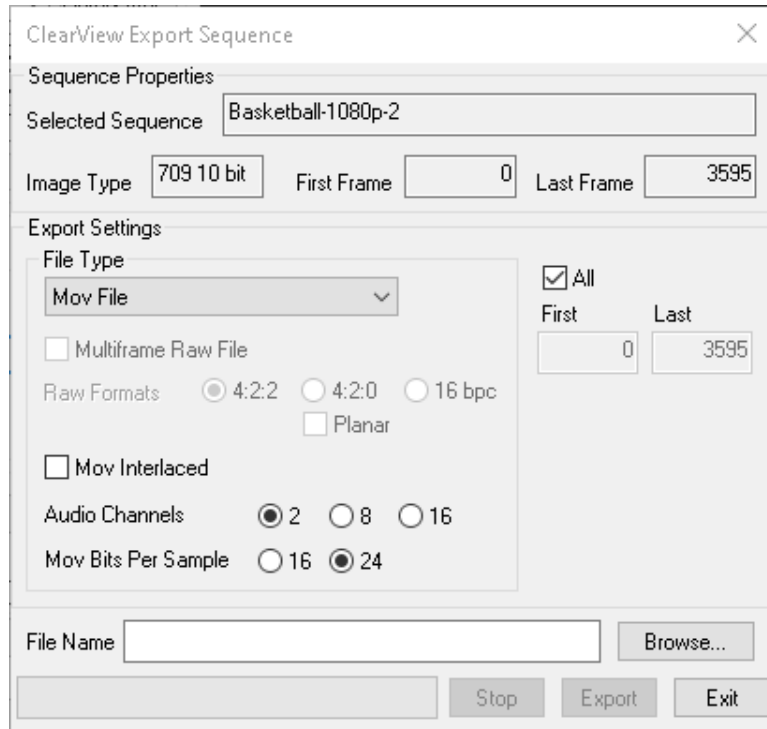
Sequences can be edited by right clicking



Option	Description
Viewport A	Assigns the video sequence to Viewport A (left or top window).
Viewport B	Assigns the video sequence to Viewport B (right or bottom window).
Viewport Off	De-Assigns the video sequence from both Viewport A and Viewport B
Delete	Removes the video sequence from ClearView (unloads memory or erases from disk)
Thumbnails	Sets the video sequence viewing mode to Thumbnails
Details	Sets the video sequence viewing mode to Details
Export	Exports the video sequence to disk.
New Thumbnail	Creates a new thumbnail based on the currently mapped frame
Video Format	Changes the video format of the selected sequence so that a clip can be played back at different frame rates
Image Format	Sets the color space conversion rec of the clip
Overlay Text	Allows the user to edit the overlay description

ClearView Export Menu

After right clicking on a sequence and selecting Export you will see the following menu



Option	Description
Sequence Properties	SelectedSequence, Image Type, First Frame, Last Frame are informational only. They cannot be changed
File Type	The video sequence can be exported as a BMP, RAW, MOV, AIFF or AVI file
All	Checking this box exports all of the frames. Unchecking this box allows you to set the first and last frame to output.
File Name	You can type in the full path and filename or select Browse to find the file
First	First frame to be exported.
Last	Last frame to be exported
Browse	Navigate to the filename
Stop	Stop exporting
Export	Start exporting
Exit	Close this window

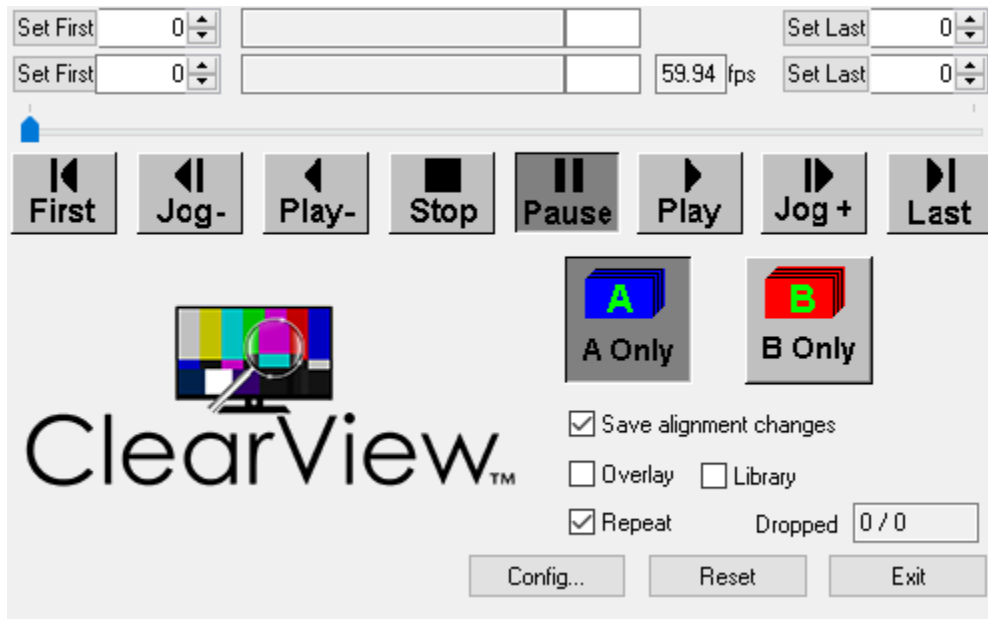
Note 1: You can output one video sequence to multiple files by exporting a list of frames (first frame/last frame) to multiple files (i.e. choose a File Name and press Export; then change the first frame/last frame and choose the next File Name and press Export).

Note 2: When exporting an AVI file, it cannot be larger than 2 GB.

Note 3: When exporting BMP files it will be converted to RGB format.

Playback Control

Once a sequence has been mapped to a viewport it is ready for playback. Playback descriptions are below



Option	Description
Set First	Sets the first frame for looping
Set Last	Sets the last frame for looping
Frist	Jumps to first frame
Jog Back	Jogs 1 frame backwards
Play Backwards	Plays backwards
Stop	Stops the video
Pause	Pauses the video
Play	Plays the video forward
Jog Forward	Jogs 1 frame forward
Last	Jumps to last frame
A Only	Displays the sequence mapped to viewport A
B Only	Displays the sequence mapped to Viewport B
Save Alignment Changes	Save changes made to in/out points
Overlay	Enables text overlay
Repeat	Repeats the video, if unchecked the video will only play once
Config...	Opens the configuration menu
Dropped	Dropped frame counter
Reset	Resets the application
Exit	Exits out of the application

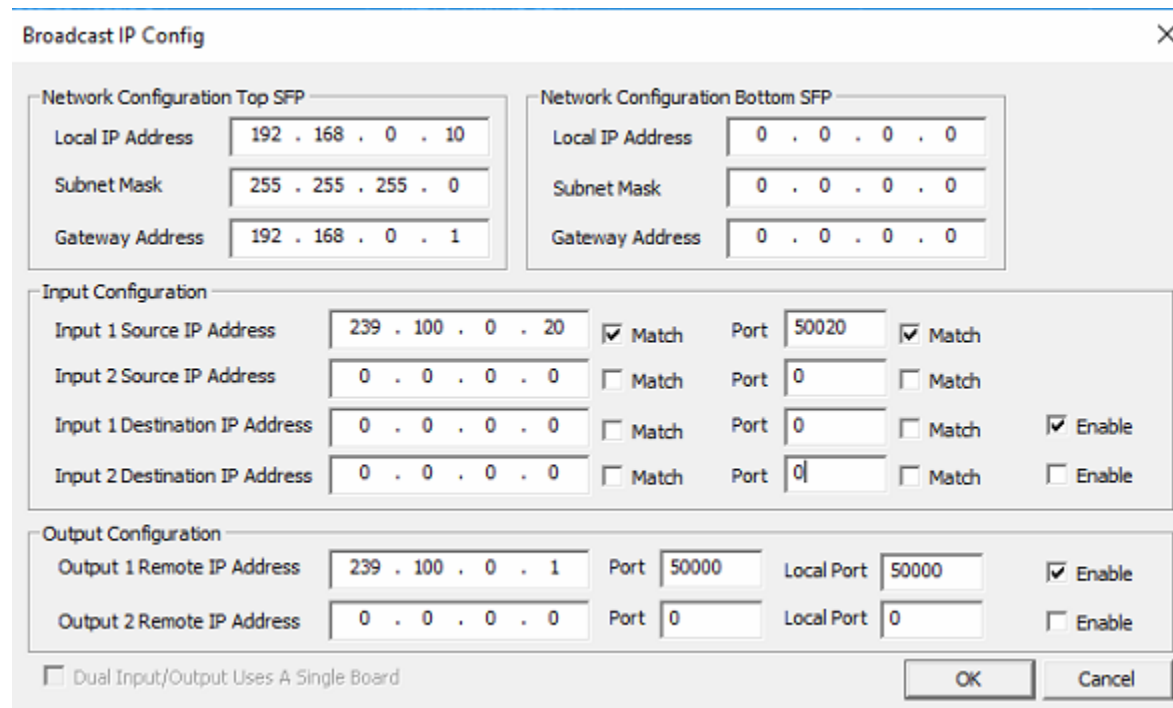
Configuration Menu

Playback

Option	Description
Enable Broadcast/Desktop Output Modules Audio Playback	Enables audio playback
Enable Audio Meter Preview Overlay	Enables audio meters in preview window
Enable Broadcast Input/Output modules 16 audio channel mode	Enables 16 audio channel mode, default is 8
Enable Broadcast Input/Output Modules / Import Timecode	Enables timecode
Timecode Start Time	Sets timecode start time
Enable Broadcast Output Module Playback Reference Source	Genlocks output to external reference
Ref Source Module	Sets reference source
Enable Broadcast Input/Output Module VANC	Enables VANC
Default Taller VANC	Enables Tall VANC (additional lines in active video area)
Enable Broadcast output Module 4K HDMI Output Full Frame Rate 4:2:0	Only applies to CVVP-2044. The HDMI output is not 2.0. If playing back UHD 60 10-bit video, then the HDMI output will be decimated
Broadcast Level B Output uses 2xSDI	Enables Level B signaling over HDSDI
Enable SMPTE 425 Interleave	Enables two sample interleave for 4 x 3G HDSDI output
4K Audio On First Quad Only	Only plays back audio on first quadrant of 4 X 3G HDSDI video
Do Not Switch From Desktop Output Module When Loading Metric Logs	Setting does not apply to ClearView Player

Broadcast IP Config – Legacy CV-IP-IO-HD Interface Only

The legacy broadcast IP configuration menu is for setting up audio/video flows for SMPTE 2022-6 streams. For 2110 configuration the user must use the NTV2Watcher application located in the directory C:\Program Files\AJA\bin. Please contact support@videoclarity.com if you need help.



The image shows a 'Broadcast IP Config' dialog box with a close button (X) in the top right corner. The dialog is divided into several sections:

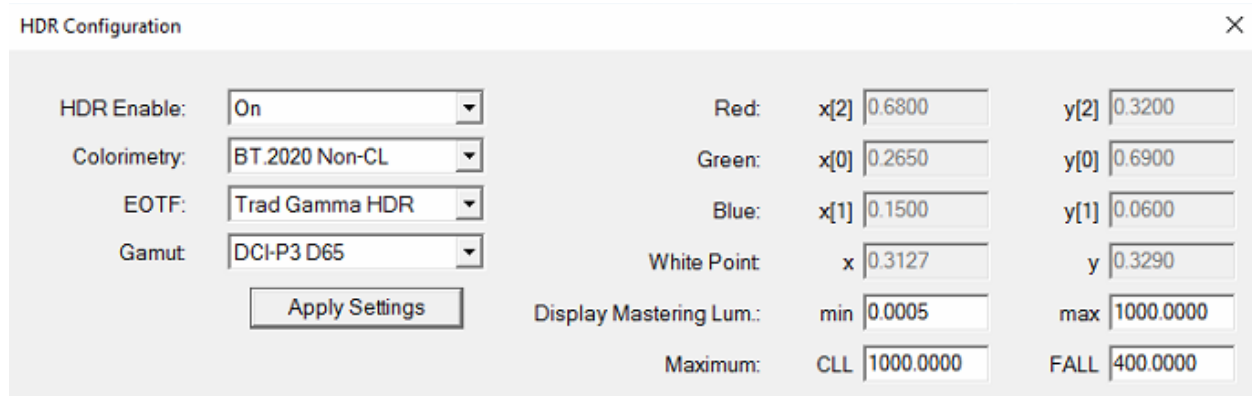
- Network Configuration Top SFP:** Contains three input fields: 'Local IP Address' (192 . 168 . 0 . 10), 'Subnet Mask' (255 . 255 . 255 . 0), and 'Gateway Address' (192 . 168 . 0 . 1).
- Network Configuration Bottom SFP:** Contains three input fields: 'Local IP Address' (0 . 0 . 0 . 0), 'Subnet Mask' (0 . 0 . 0 . 0), and 'Gateway Address' (0 . 0 . 0 . 0).
- Input Configuration:** A table-like structure with four rows and four columns.

	Source IP Address	Match	Port	Match	Enable
Input 1	239 . 100 . 0 . 20	<input checked="" type="checkbox"/>	50020	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Input 2	0 . 0 . 0 . 0	<input type="checkbox"/>	0	<input type="checkbox"/>	<input type="checkbox"/>
Input 1	0 . 0 . 0 . 0	<input type="checkbox"/>	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Input 2	0 . 0 . 0 . 0	<input type="checkbox"/>	0	<input type="checkbox"/>	<input type="checkbox"/>
- Output Configuration:** A table-like structure with two rows and four columns.

	Remote IP Address	Port	Local Port	Enable
Output 1	239 . 100 . 0 . 1	50000	50000	<input checked="" type="checkbox"/>
Output 2	0 . 0 . 0 . 0	0	0	<input type="checkbox"/>
- Footer:** A checkbox labeled 'Dual Input/Output Uses A Single Board' is on the left. On the right are 'OK' and 'Cancel' buttons.

Broadcast HDR Config

The HDR menu provides a mechanism to inform an HDMI sink device (such as a TV or monitor) that the video content is HDR encoded. This includes generation of the Dynamic Range and Mastering Infoframe and the static metadata descriptors as defined in CTA-861.3 and HDMI v2.0a. This tab includes pre-canned primaries values for BT.2020 and DCI P3 color gamuts. The Apply Setting button will transfer all settings to the HDMI transmitter.



Setting	Value
HDR Enable	On
Colorimetry	BT.2020 Non-CL
EOTF	Trad Gamma HDR
Gamut	DCI-P3 D65
Red: x[2]	0.6800
Red: y[2]	0.3200
Green: x[0]	0.2650
Green: y[0]	0.6900
Blue: x[1]	0.1500
Blue: y[1]	0.0600
White Point: x	0.3127
White Point: y	0.3290
Display Mastering Lum.: min	0.0005
Display Mastering Lum.: max	1000.0000
Maximum: CLL	1000.0000
Maximum: FALL	400.0000

HDR Enable

Choose Off or On to determine whether HDR metadata is generated.

- Off - HDR metadata is not generated, although colorimetry is still getting signaled downstream.
- On - HDR metadata is generated.

EOTF

Electro-Optical Transfer Function (EOTF) sets the transfer function serving to convert between non-linear data space and linear light space.

Choose from the following:

- Trad Gamma SDR
- Trad Gamma HDR
- ST 2084 (SMPTE ST 2084)
- Hybrid Log-Gamma
- Reserved [4], not yet defined
- Reserved [5], not yet defined
- Reserved [6], not yet defined
- Reserved [7], not yet defined

Gamut

Gamut defines locations for the three vertices of the color primaries, as well as the white point within the x-y plane of the CIE 1931 color space and SMPTE ST 2086 color volume (in the case of HDR).

Choose from the following:

- DCI-P3 D65 (preset values per DCI-P3 Cinema)
- BT.2020 (preset values per ITU BT.2020)

- BT.709 (preset values per ITU BT.709)
- Custom (allows for defining specific custom coordinates)

Display Mastering Luminance

Represents the minimum and maximum Display Mastering Luminance.

- Minimum: Defines the floor of the SMPTE ST 2086 color volume (in the case of HDR) and is determined by the mastering environment.
- Range: 0.00000 cd/m² to 1.00000 cd/m²
- Step size: 0.00002 cd/m²
- Maximum: Defines the ceiling of the SMPTE ST 2086 color volume (in the case of HDR) and is determined by the mastering environment.
- Range: 1 cd/m² to 65535 cd/m²
- Step size: 1 cd/m²

Maximum Content Light Level

Represents the highest-value pixel component in an entire scene. It is determined by analyzing each frame of video, and can be determined in the post environment.

- Range: 1 cd/m² to 65535 cd/m²
- Step size: 1 cd/m²

Maximum Frame Average Light Level (FALL)

Represents the maximum of frame-based average light levels taken over an entire scene, and can be determined in the post environment.

- Range: 1 cd/m² to 65535 cd/m²
- Step size: 1 cd/m²

Record

Option	Description
Enable Audio for Broadcast/IP/ClearView Output Recording	Enables audio recording
Enable Audio Root	Legacy feature not used by ClearView Player
Reset Playback to First Frame for In/Out recording	Feature not used by ClearView Player
Enable Dolby Digital Audio Decoding SDI Input 1/Import	Enables Dolby decoding on SDI input 1
Enable Dolby Digital Audio Decoding SDI Input 2	Enables Dolby decoding on SDI input 2
DDP Audio Within SDI Audio First Audio Channel	First channel of incoming Dolby audio

Import

Option	Description
Enable Import Audio	Enables importing of audio when using the legacy file importer built into the application
Enable Clipping of YCbCr Values to Legal Broadcast Values	Clips colors to legal broadcast values
Color Space Conversion Rec	Sets the color space conversion rec

Import Clipping Strategy	Clips lines if resolution is greater than raster size
Import Add Lines	Adds lines if resolution is less than raster size
Import Enable MediaRead	Enables the DTMediaRead decoder
Enable 3:2 Pull Up/Down	Enables Pull Up/Down

System

Option	Description
Delete Files To Recycle Bin	Deletes files to recycling bin
Confirm Delete Current	Prompts user to confirm a clip should be deleted

ClearView Player Command Line Interface

A description on how to use the command line interface can be found in a separate user guide called "CV Command-Line Interface". Please contact support@videoclarity.com for a copy of the user guide.

IPMI Control

The Intelligent Platform Management Interface (IPMI) provides remote access to multiple users at different locations for networking. It also allows a system administrator to monitor system health and manage computer events remotely. IPMI control is only available on the CVVP-1084 and CVVP-1084-DP model.

Configuring BIOS

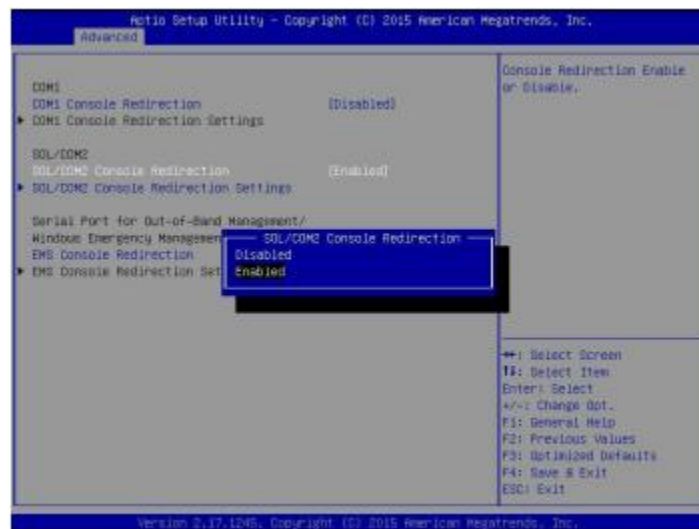
Before configuring IPMI, follow the instructions below to configure the system BIOS settings.

1. Entering and Using the BIOS:

- During the system bootup, press the key to enter the BIOS.
- To navigate in the BIOS, use your arrow keys and press <Enter>. To go back to previous screens, press <Esc>.

2 . Enabling the COM port for SOL (IPMI)

- Select the Advanced tab.
- Select Serial Port Console Redirection and press <Enter>.
- Highlight SOL/COM2 Console Redirection, press <Enter> and select [Enabled].



3. Configuring IP Address Using the BIOS

- Select the IPMI tab.
- Select BMC Network Configuration and press <Enter>.

- Highlight Update IPMI LAN Configuration, press <Enter> and select [Yes].
- Highlight Configuration Address Source and select [Static].



- Once the Configuration Address Source is set to [Static], the Station IP Address, Subnet Mask and Gateway IP Address fields should be 0.0.0.0, which is activated for changing. Select each of the three items and enter the values. Press <Enter> when finished.



Connecting to the Remote Server

Using IPMIView to Connect to the Remote Server

1. Connect a LAN cable to the onboard LAN1 port or the dedicated IPMI LAN port.
2. Choose a computer that is connected to the same network and open the IPMIView utility.
3. Go to File>New>System. Enter the System Name, IP Address of LAN1 (or the dedicated LAN, and the Description in the appropriate fields, and press <Enter>.
4. Select the system from the IPMI Domain. Enter the Login ID and Password in the appropriate fields to log in to the IPMIView utility.

Using the Browser to Connect to the Remote Server

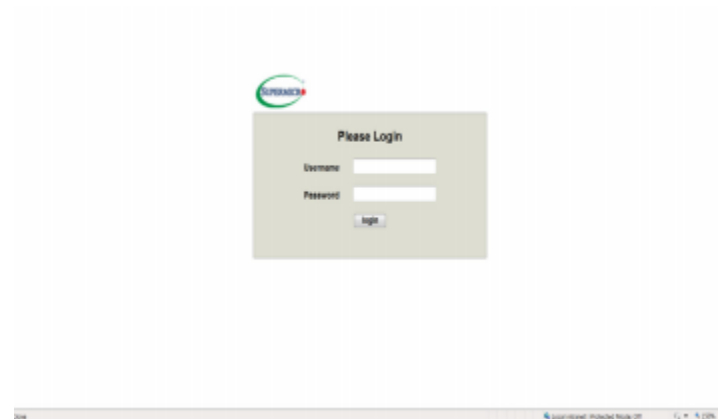
1. Connect a LAN cable to the onboard LAN1 port or the IPMI LAN port.
2. Choose a computer that is connected to the same network and open the browser.
3. Enter the IP address of each server that you want to connect to in the address bar of your browser.
4. Once the connection is made, the Login screen as shown on the next page will display.

Notes:

- The default network setting is "Failover", which will allow the IPMI to connect to the network through a shared LAN port (onboard LAN Port 1 or 0) or through the IPMI Dedicated LAN Port. If the IPMI must be connected through a specific port, please change the LAN configuration setting under the Network Settings.
- For IPMI to work properly, please enable all onboard USB ports and the COM port designated for SOL (IPMI) on the motherboard. All USB ports and the COM port for IPMI are enabled in the system BIOS by default. The COM port for IPMI is marked with "*" in the BIOS. It is usually listed as COM2 or COM3 in the BIOS.

To Log In to the Remote Console

Once you are connected to the remote server via IPMI Console Redirection, the following IPMI Login screen will display.



1. Enter your username in the Username box.

- The manufacturer default username and password are ADMIN/ADMIN. Once you have logged into the BMC using the manufacturer default password, be sure to change your password for security purposes.

2. Enter your password in the Password box and click on <Login>.

3. The home page will display as shown on the next page.

- To use the IPMIView utility for Console Redirection, please refer to the IPMIView User's Guide for instructions.
- The Administrator account cannot be deleted.

Launch Console Redirection

This feature allows you to launch Console Redirection via IKVM (keyboard, video/ monitor, mouse) support. When you click on Console Redirection in the Options window, the following screen will display:



1. Click on the Console Redirection screen to launch the remote console via Java (for the Internet Explorer). You need to have Java installed in your system to launch the console.
2. A dialog box will display to indicate that Java is launching
3. Click on to launch the remote console.
4. Click on to display the Help menu for the Console Redirection page.