USER MANUAL
OPENCUBE XFREADER

Version 2.8 – April 2015

XFReader

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What's New?

The following table describes the sections updated to reflect the new and modified features in OpenCube XFReader 2.8.

In the user manual, the icon NEW ! has been added on the left margin to highlight information on new and updated features.

New features	Section	Page
Support for Quicktime (MOV) and MP4 files with the following codecs: • Video: ProRes, VC-3 / DNxHD or AVC / H.264. • Audio: PCM or AAC.	1.8.3	8
Support for AS-10.	1.8.1	6
Support for MOV and SCC in play-while-record.	1.9	9
Addition of a keyboard shortcut for the existing "Invert Field Order" option.	3.6	17
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The "Metadata" panel has been renamed "Properties".	3.7.2	19

1. Introduction

1.1 Purpose of the Application

OpenCube XFReader is an easy-to-use player that runs on Windows and enables users to play back MXF, MOV, MP4 and GXF files on a display unit or SDI Video Screen (HD-SDI option must be available).

1.2 Minimum Hardware Requirement

Depending on the video codec, the minimum hardware requirement can vary:

- DV and IMX: Intel Core 2 Duo 2.2 GHz, 2 GB RAM.
- MPEG2 HD: Intel Core i5 2GHz, 4 GB RAM.
- AVC-Intra / XAVC-Intra HD / AVC / H.264 / VC-3 / DNxHD / ProRes: Intel Core i7 3.06 GHz, 4 GB RAM.
- JPEG 2000: Intel Xeon E5 2670, 8 GB RAM (dual processor configuration is mandatory for JPEG 2000 HD files).

An nVIDIA graphic board is highly recommended.

It is also important to take the quality of the media support into consideration as HD media requires high read access performances.

To output playback through SDI, you must use one of the following SDI boards:

- Blackmagic DeckLink SDI.
- Blackmagic DeckLink SDI 4K.
- Blackmagic DeckLink 4K Extreme.
- DVS Centaurus II LT.
- DVS Atomix LT.

Note

Blackmagic DeckLink SDI 4K and 4K Extreme boards require at least 4GB of RAM and the 64-bit version of the OpenCube XFReader.

1.3 Minimum Software Requirement

OpenCube XFReader runs under the following Microsoft Windows operating systems:

- Windows XP-SP3.
- Windows Vista.
- Windows 7.
- Windows 8.

OpenCube XFReader requires DirectX 9.0c at the minimum.

OpenCube XFReader is available as a 32-bit and 64-bit application.

1.4 Installation

Note

The OpenCube Key Manager is no longer required to handle the installation of OpenCube XFReader and its components.

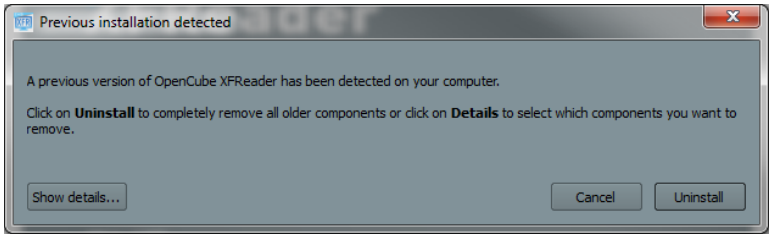
To install OpenCube XFReader, proceed as follows:

1. Run XFReader-Setup.exe from:
   - The “OCPackage\Windows” folder for a 32-bit installation.
   - The “OCPackage\Windows_win64” folder for a 64-bit installation.

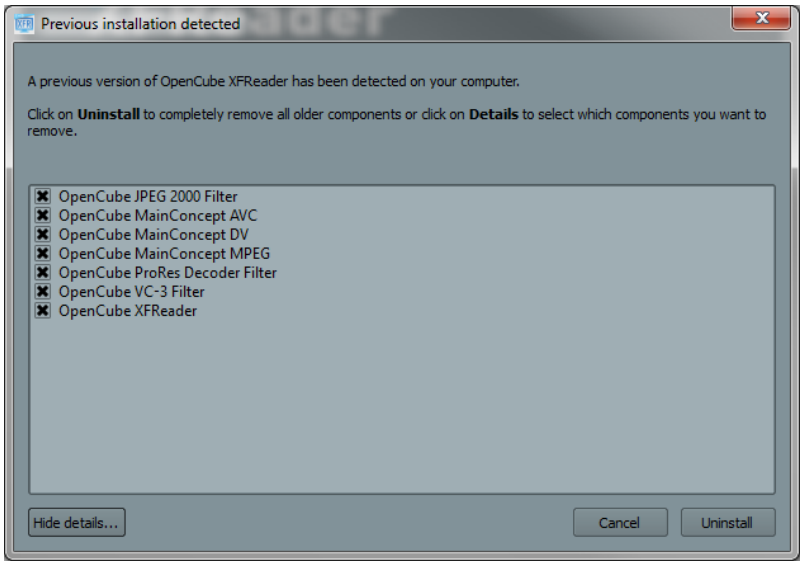
Note

We recommend you to install the 64-bit version of OpenCube XFReader under a 64-bit OS (see 1.3 - Minimum Software Requirement).

2. If a previous version of OpenCube XFReader has already been installed on your computer, the setup will ask to uninstall it before proceeding.

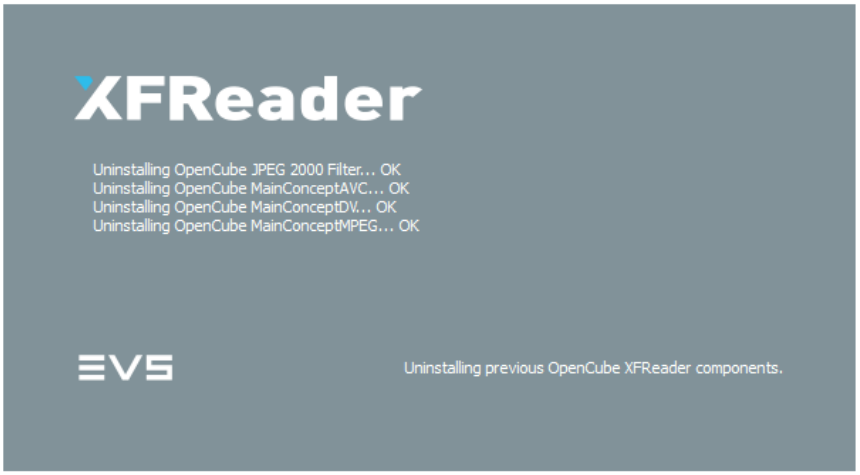


You can click the “Show details...” button to list the components that shall be uninstalled.

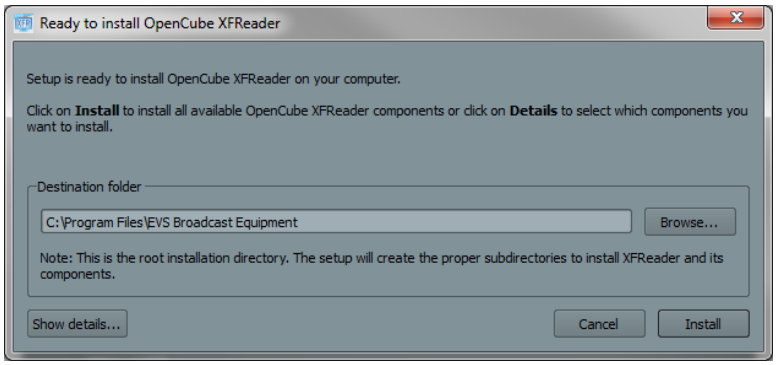


If required, you can unselect some components to prevent their uninstallation.

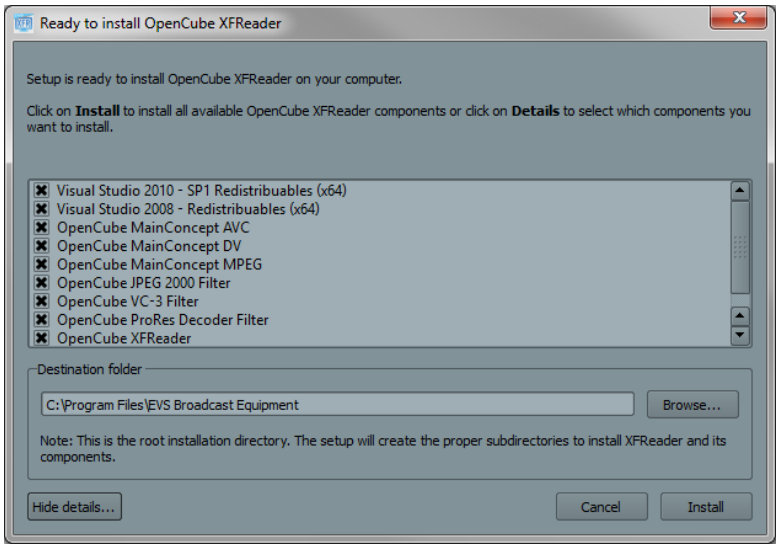
3. Click on the “Uninstall button and wait for the complete uninstallation of all the components.



4. Once the previous components have been uninstalled, the setup will prompt for the destination folder of the installation.

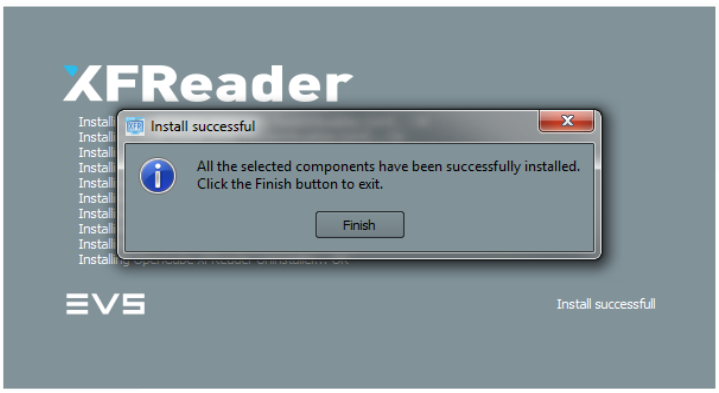


You can click the “Show details…” button to review and modify the list of components to be installed.



5. Click the “Install” button and wait while the components are being installed on your computer.

6. Once the component have been installed, click the “Finish” button to close the installer.



Note

Since OpenCube XFReader v2.6, OpenCube MXFTk® Reader is no longer required.

Note

Since OpenCube XFReader v2.7, OpenCube GXFTk® Reader is no longer required.

To playback through the SDI Output (available as an option), you have to install a compatible SDI card (see 1.2 - Minimum Hardware Requirement and 6 - SDI Board Installation Procedure). If you encounter any problem with the driver installation do not hesitate to contact the OpenCube XFReader support team (support.opencube@evs.com).

1.5 License Activation

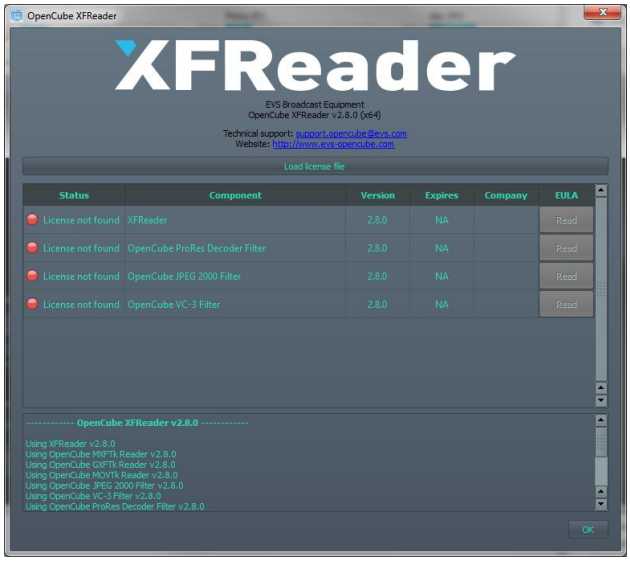
Note

Since OpenCube XFReader 2.7, the OpenCube Key Manager is no longer required to manage the OpenCube XFReader license.

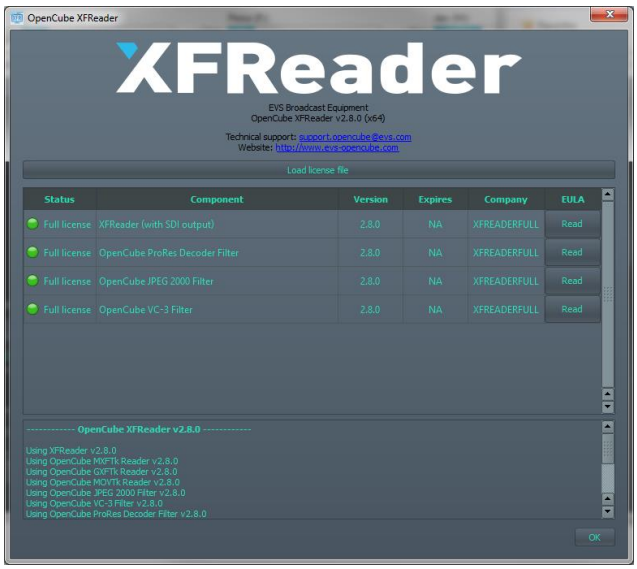
Start OpenCube XFReader from the installation location or from the start menu. If OpenCube XFReader fails to find a valid license on your computer, you will be prompted with the license installation dialog. This window can be opened anytime from the menu “? > About” of OpenCube XFReader.

From there, use the “Load license file” button to load your license file. If the license is distributed with the package, it can be found in the OCPackage\Licenses folder.

The full license must be activated over the Internet. If the computer does not have an Internet connection or uses a proxy, please contact the OpenCube XFReader support team (support.opencube@evs.com).



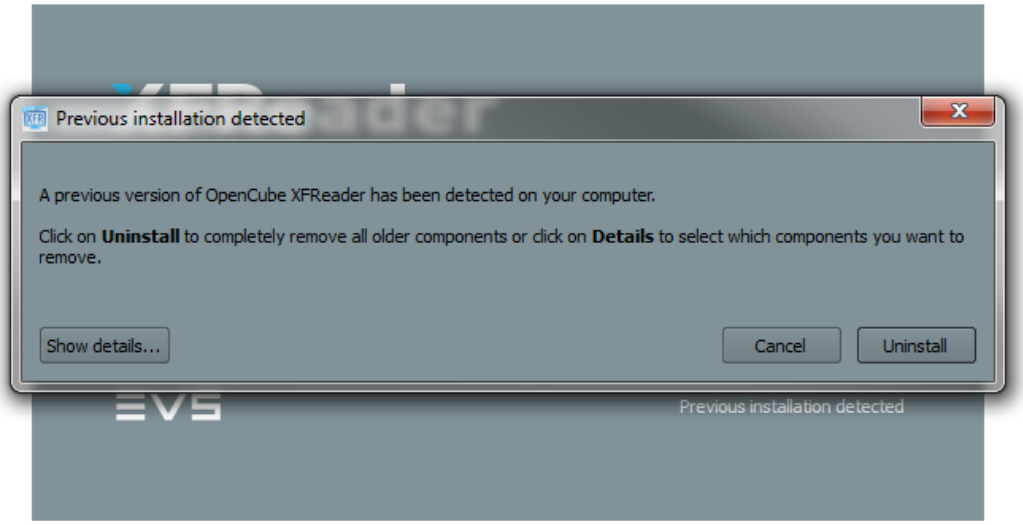
The activated products will appear in green when the license has been loaded:



1.6 Uninstallation

When you upgrade your OpenCube XFReader installation, the previous installation will automatically be uninstalled (See 1.4 - Installation).

To uninstall OpenCube XFReader, select the XFReader Uninstaller entry in the Windows start-up menu.



1.7 Transferring a License

Each OpenCube XFReader license is linked to a single computer, identified by its MAC Address.

To transfer the license to another system, you have to:

1. Uninstall OpenCube XFReader and its components.
2. Send an e-mail to support.opencube@evs.com with:
   a) The purchase order number.
   b) A print screen of the successful uninstallation of OpenCube XFReader.
   c) MAC addresses of the old and new systems.

Note

As mentioned in the EULA, the number of transfers is limited.

1.8 Supported Files

1.8.1 MXF Files

OpenCube XFReader supports the following SMPTE MXF files:

- OP-1a;

- OP-1b and OP-1b on external reference;
- OP-Atom.

OpenCube XFReader supports many constraints MXF format including:

- AS-02;
- AS-03;

NEW !

- AS-10;
- AS-11;
- Panasonic P2 OP-Atom;
- Panasonic P2 AVC-LongG;
- AVC Proxy (AFN100 and SMPTE RDD 25);
- Avid OP-Atom;
- Sony eVTR;
- Sony XDCAM DV/IMX/HD (optical and SxS);
- Sony XAVC-Intra HD;
- IMF Essence Component (video, audio and ancillary);
- DCP video and audio track file (encrypted or not).

OpenCube XFReader supports IMF Application 2 and DCP Composition Playlist:

- IMF: The CPL must contain only one segment. Each segment must contain only one Sequence. Each Sequence must contain only one resource.
- DCP: The DCP must not be encrypted. The Composition Playlist must contain only one reel.

The MXF format is a container file format. It can contain various types of audio and video essences. The following video codecs are supported by OpenCube XFReader (available as an option):

- DVCAM / DV IEC;
- DV SMPTE / DVCPro 25-50-100;
- MPEG 2 / MPEG HD;
- IMX 30-40-50;
- AVC / H.264;
- AVC-Intra Class 50-100-200;
- XAVC-Intra HD Class 50-100-200;
- JPEG 2000;
- VC-3 / DNxHD.

The following audio codecs are supported:

- Wave;
- AIFF;

- A-Law;
- AES3 / AES3-8channels;
- Dolby-E / AC-3 (pass through mode);
- AAC.

OpenCube XFReader supports up to 16 uncompressed audio channels.

Note

A small sync delay may appear after a seek operation in an AAC stream.

1.8.2 GXF Files

OpenCube XFReader supports GXF files. The following video codecs are supported:

- DV CAM / DV IEC;
- DV SMPTE / DVCPro 25-50;
- MPEG-2 IFrame;
- IMX 30-40-50.

PCM audio stream is supported.

1.8.3 Quicktime (MOV)/MP4 Files

NEW !

OpenCube XFReader supports Quicktime self-contained (MOV) and MP4 files. The following video codecs are supported:

- VC-3 / DNxHD;
- ProRes;
- AVC / H.264.

The following audio encodings are supported:

- PCM:
  - Little and big endian;
  - Quantization: 8bps, 16bps, 24bps, 32bps (Integer);
  - Up to 16 channels.
- AAC:
  - Mono and stereo tracks.

Note

A small sync delay may appear after a seek operation in an AAC stream.

1.9 Play-while-record

NEW !

OpenCube XFReader allows for the playing of files while they are still being recorded. When a file is still recording, the following indicator is displayed beside the position bar:

OpenCube XFReader supports play-while-record with the following formats:

- MXF OP-1a;
- Self-contained Quicktime (MOV) files with VC-3 / DNxHD and ProRes;
- SCC side car file.

Note

OpenCube XFReader play-while-record capabilities may depend on the process generating the file.

For more information, please contact us at support.opencube@evs.com.

1.10 SDI Playout

1.10.1 Features/Limitations

The following features are available for all supported SDI boards:

Video raster	SD PAL/SD NTSC 1080i50/1080i59.94 720p50/720p59.94 1080p23.98
Color space	YCrCb 4:2:2
SDI audio	Yes
Timecode	Yes

Limitations and comparison between each board are shown in the following array:

	DVS Centaurus II LT	DVS Atomix LT	Blackmagic DeckLink SDI	Blackmagic DeckLink SDI 4K	Blackmagic DeckLink 4K Extreme
1080p25/1080p29.97 support	Yes	Yes	As 1080i50/1080i59.94	As 1080i50/1080i59.94	As 1080i50/1080i59.94
ATC LTC/VITC	Yes	Yes	No	On HD rasters only	On HD rasters only
DVITC	PAL: l. 19/21 NTSC: l. 14/16	PAL: l.19/21 NTSC: l. 14/16	PAL: l. 19 NTSC: l. 14	PAL: l.19/21 NTSC: l.17/19	PAL: l.19/21 NTSC: l.17/19
Max audio channels	SD: 8 HD: 16	SD: 8 HD: 16	SD/HD: 8	SD/HD: 16	SD/HD: 16
VBI line support in SD	No	PAL: 608 lines NTSC: 502 lines	Yes	Yes	Yes

Note

OpenCube XFReader inverts the field order automatically. You can force the field order display. See 4.1 - Overview.

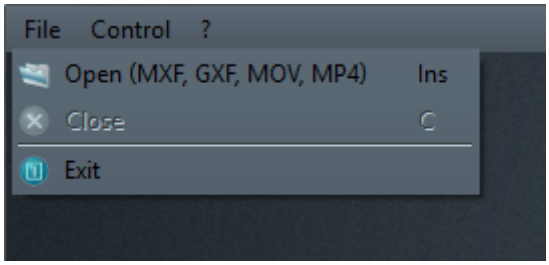
1.10.2 Ancillary Data Lines

The following array describes the line where ancillary data are present on the SDI.

Ancillary source	Ancillary kind	SDI line
External - SCC	Closed Caption	Line 12
External - MCC	All	Line 12
MPEG-2 User Data	ATSC A/53	Line 12
MPEG-2 User Data	Ancillary data	Line 14
MPEG-2 User Data	Timecode	As defined in the previous array (See 1.10.1 - Features/Limitations)
ST 436	All	Use the line number defined in SMPTE ST 436 packet

2. Using OpenCube XFReader

2.1 Opening



OpenCube XFReader allows you to open a MXF, GXF, MOV or MP4 file. Files can be opened by:

- Dropping the file in the player;
- Using the File/Open dialog box;
- Using the open shortcut (Insert is the default shortcut).

“Close” allows you to close the current file and sets the player to the initial opening state.

Note

When using SDI output, only one instance of OpenCube XFReader can be active at a time.

2.2 Playback

To play a loaded file:

- Click on the “Play” button;
- Or use the play/pause shortcut (the space bar is the default shortcut).

To stop playback:

- Click on the “Stop” button;
- Or use the stop shortcut (S is the default shortcut).

To switch the output from VGA to SDI (or vice versa):

- Pause or stop the playback;
- Then click on the SDI/VGA button or use the shortcut (D is the default shortcut).

To fast forward or fast rewind:

- Click on the fast forward/rewind button. Each time the button is clicked, the fast forward speed moves forward to the next one in the sequence.

- Or use the fast forward/rewind shortcut (+ for fast forward and - for fast rewind as the default shortcut).

Note

With MXF OP-1b MPEG LongGop, MXF OP-1b AVC LongGop and Avid OP-Atom MPEG LongGop sequences, fast play and rewind are not available.

Note

With MXF OP-1a MPEG LongGop and MOV/MP4 H.264 sequence fast play and rewind are done on IFrame; speed x2 will display one IFrame on two, x4 one IFrame on four.

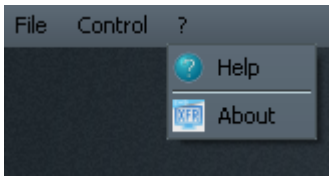
Note

AAC tracks are muted when the output is done on SDI with fast play or rewind.

2.3 Displaying Version, License, and Open Documentation

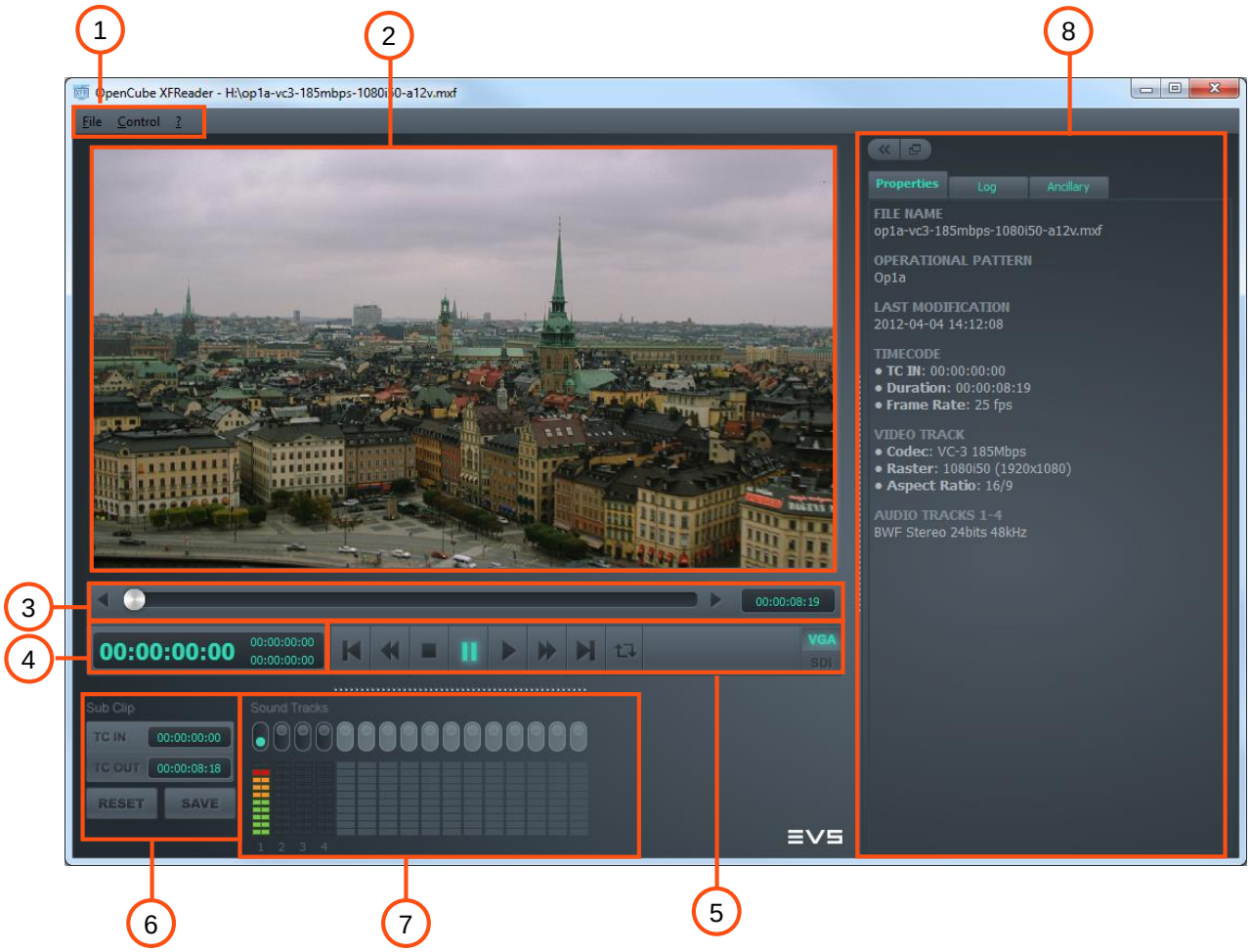
The OpenCube XFReader version and license state can be displayed by selecting “About” in the “?” pull-down menu.

Documentation can be opened by selecting the “Help” menu.

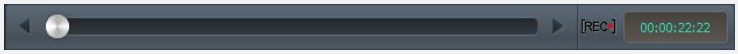


3. OpenCube XFReader User Interface

3.1 Overview

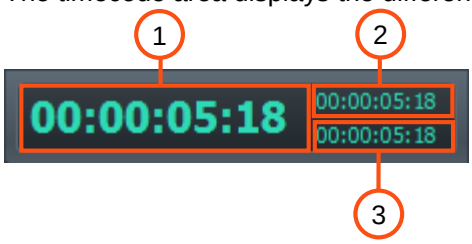


Part	Name	Description
1	Menu bar	The menu bar allows you to perform the following operations: • File: open and close MXF/MOV/MP4/GXF files and exit the application (see 2.1 - Opening). • Control: configure OpenCube XFReader (see 4 - Configuring OpenCube XFReader). • ?: display the OpenCube XFReader software version and OpenCube XFReader documentation. • JPEG 2000: configure the JPEG 2000 decoder (see 4.3 - JPEG 2000).
2	Viewer area	The viewer area displays the video of the loaded file (if it contains a video track). If you are using SDI output, the area remains empty.

Part	Name	Description
3	Position bar	The position bar displays the file duration and frame position. The cursor may be dragged to any frame. In pause mode, the left and right buttons (located at each end of the progress bar) can be used to display the next or the previous frame. The position bar also displays the AS-11 segmentation (see 3.7.5 - Metadata Panel). While the MXF or MOV file is recording, a “rec” indicator will appear and the duration bar will blink until the file is closed (see 1.9 - Play-while-record). 
4	Timecode area	This area displays the different timecodes in the file (see 3.2 - Timecode Area).
5	Command buttons	This area contains the command buttons of OpenCube XFReader (see 3.3 - Command Buttons).
6	Subclip area	This area creates a subclip on the current MXF file (see 3.4 - Subclip Area).
7	Audio track area	This area displays the peak and dbFS audio level of each track; it also allows you to commute track output (see 3.5 - Audio Track Area).
8	Side panel	The side panel contains 4 different panels (see 3.7 - Side Panel): • The properties panel; • The log panel; • The ancillary panel; • The metadata panel.

3.2 Timecode Area

The timecode area displays the different timecodes available in the file.



With MXF files, 3 timecodes are displayed:

Part	Name	Description
1	Material Package timecode	This area displays the current Material Package timecode. It is the playout timecode.

Part	Name	Description
2	Source Package timecode	This area displays the current Source Package timecode.
3	System Item timecode	This area displays the current System Item timecode.

Note

With GXF, MOV and MP4 files, only the Material Package timecode is available.

Note

When there is no timecode information in a MOV or MP4 file, the timecode displayed starts at “00:00:00:00”.

When a timecode is not available, it is displayed as “--:--:--:--“.

Timecode disabled

Timecode enabled

You can seek to a specific frame by keying-in the timecode in the material package field and pressing return to confirm. If the timecode is not valid, the seeking function will not work and the frame cannot be located. If the timecode value is after TC OUT, then playback will seek to the end.

3.3 Command Buttons

This function controls stream transmission:

Control	Description
	Go to first or last frame.
	Fast rewind or fast forward. You can increase/decrease the speed of the sequence by clicking on these buttons. Fast rewind speed: x1 x2 x4 x8 x16 x32 x64. Fast forward speed: x2 x4 x8 x16 x32 x64.
	Play or pause playback.

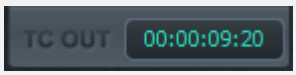
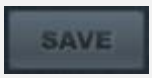
Control	Description
	Stop playback.
	Loop from start when playback reaches end.
SDI VGA	Switch output playback mode.

Note

The speeds of fast rewind and fast forward commands can be configured (see 4.2.1 - General).

3.4 Subclip Area

This area allows you to extract a subclip from the loaded file.

Control	Description
	Establishes the IN point of the subclip. Playback will use TC IN as the new starting point.
	Establishes the OUT point of the subclip. Playback will use TC OUT as the new end point.
	Resets the TC IN and TC OUT to the loaded file value.
	Starts the creation of the subclip. If you click on SAVE, the created subclip can be opened in the current window.

Note

Subclip creation is not supported for OP-Atom files (except P2), MXF with external references, MOV, MP4 and GXF files.

Note

Sidecar scc and mcc files are not subclipped.

3.5 Audio Track Area

This area displays the peak and dbFS audio level of each track; it also allows you to commute track output. Only audio channels present in the source files are active. Audio channels can be muted or unmuted by simply checking or unchecking the switch. The application will split a multichannel track to stereo tracks.

4 stereo and 4 mono tracks. All tracks are activated.

12 mono tracks. All tracks are activated.

Note

Audio splitting is not available for external reference audio tracks (OP-1b, AS-02, etc.) and AAC audio track.

Note

Splitting behavior can be configured (see 4.2.3 - Audio).

3.6 Shortcuts

Most commands can be carried out using keyboard shortcuts. The default shortcuts are:

Command description	Command key
Play/Pause toggle	Space bar
Play	P
Pause	B
Stop	S

Command description	Command key
Go to First frame	Home
Go to Last frame	End
Step forward	Right arrow
Step backward	Left arrow
Fast forward	+
Fast rewind	-
Loop toggle	L
SDI/VGA toggle	D
NEW ! Invert Field Order	F
Open	Insert
Close	C
New log	M
Set log in	I
Set log out	O
Previous log	Prior
Next Log	Next

Note

Shortcuts can be configured (see 4.2.5 - Shortcuts).

3.7 Side Panel

3.7.1 Overview

The side panel comprises by 4 panels:

- The properties panel;
- The log panel;
- The ancillary panel;
- The metadata panel.

The side panel can be:

Control	Description
	Minimized/Expanded.
	Detached: using the float button or by double clicking on the title bar.
	Moved: to the right or left side by performing a drag and drop on the right or left side of the OpenCube XFReader application.

3.7.2 Properties Panel

The properties panel displays some of the structural metadata from the file.

The following information is displayed:

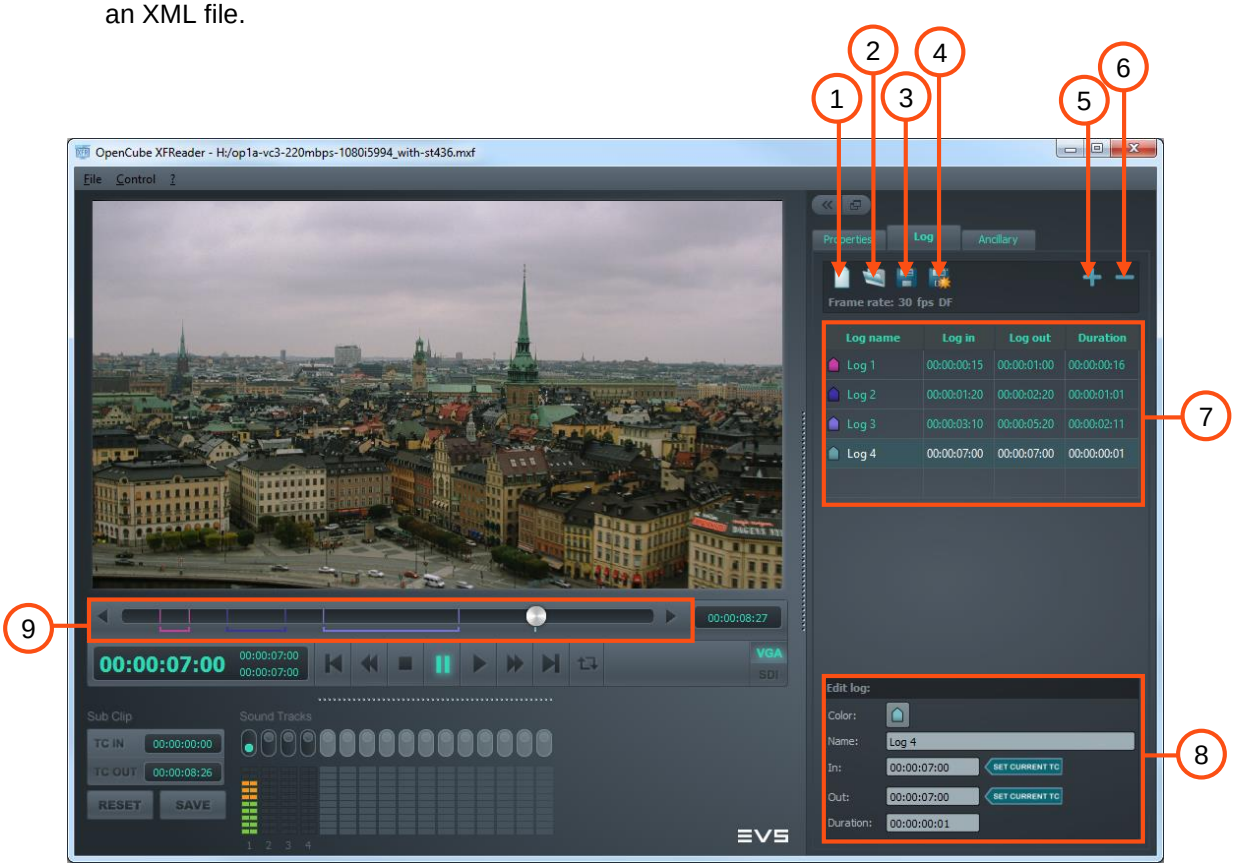
- Filename;
- Operational pattern;
- Last modification or date of creation;
- Start timecode, duration and frame rate when timecode information is present in the file;
- Video essence codec and profile, pixel layout, component depth, raster, aspect ratio, number of field per KLV (for JPEG 2000);
- Audio essence format.

Note

GXF information is not displayed in the properties panel.

3.7.3 Log Panel

The log panel allows you to put logs on a file. The log list can be exported or imported as an XML file.

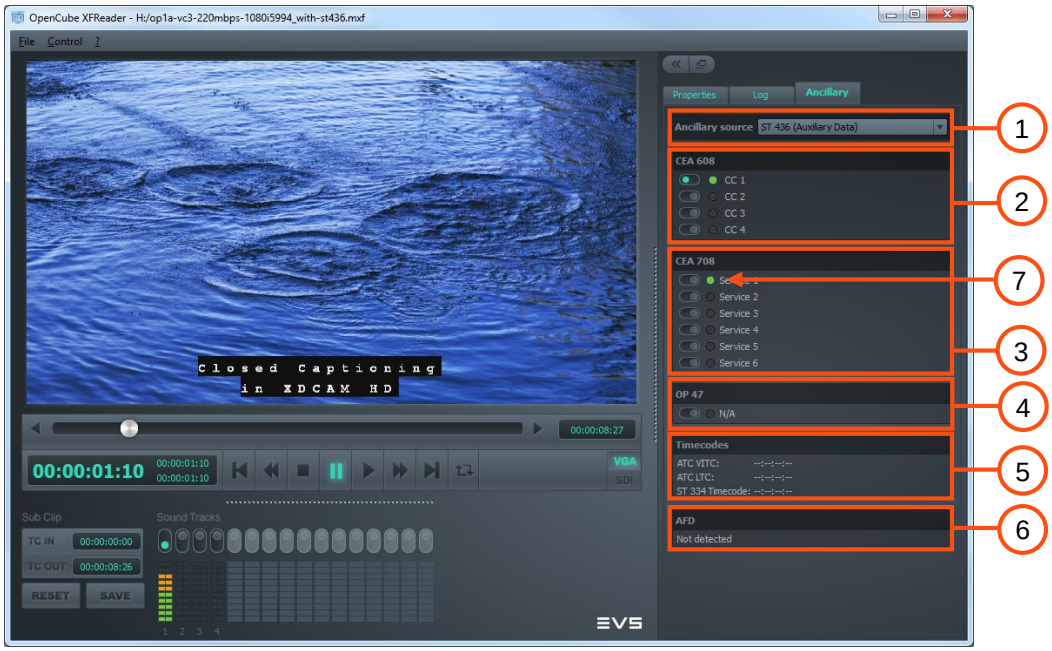


Part	Name	Description
1	New log	To create a new log.
2	Open log	To open an existing log. A log file can also be opened by drag'n'dropping it in the Log panel.
3	Save	To save the log to the current file.
4	Save as	To save the log to a selected file.
5	New log	To add a log at the end of the log. By default, the log is created with the current TC of the file.
6	Delete log	To delete the selected log.
7	Log list	An array which contains all the logs of the file. By selecting a log, you can edit it.

Part	Name	Description
8	Edit log	To edit the current log selected into the list. You can modify: • The log color; • The log name; • The TC in of the log; • The TC out of the log.
9	Position bar	Logs are displayed in the position bar.

3.7.4 Ancillary Panel

The ancillary panel allows you to select the ancillary source that is handled during playback. It also displays some indicators showing if closed captions are present or not in the stream.



Part	Name	Description

1	Ancillary source	This drop-down box allows you to select the ancillary source available in the file. There are 5 values:
		• None: OpenCube XFReader does not use an ancillary source.
		• ST 436: OpenCube XFReader uses the SMPTE ST 436 track available in the MXF file.
		• MPEG-2 User data: OpenCube XFReader uses:
		  ○ The ATSC A/53 available in the MPEG-2 video essence as a closed caption source;
		  ○ The SMPTE ST 328 timecode available in the MPEG-2 User data.
		• External: OpenCube XFReader supports the following sidecar files:
		  ○ SCC: OpenCube XFReader handles the CEA608 present in a scc sidecar file.
		  ○ MCC: OpenCube XFReader handles the CEA708 and CEA608 present in a mcc sidecar file.
		Note
		OpenCube XFReader does not handle the line and field number information available in MCC v2 file format.
		• VBI: The VBI present in the essence (D10) is sent to the SDI.
		Note
		OpenCube XFReader reloads the file when the ancillary source is changed.

2	CEA 608	This field shows if there are CEA608 channels available in the ancillary source selected. CEA608 is detected in: • The CDP of a SMPTE ST 436 track (DID=0x61/SDID=0x01); • A SCC sidecar file; • A MCC sidecar file; • ATSC A/53 in MPEG-2 video essence.
3	CEA 708	This field shows if there are CEA 708 services available in the ancillary source selected. CEA708 is detected in: • The CDP of a SMPTE ST 436 track (DID=0x61/SDID=0x01); • A MCC sidecar file; • ATSC A/53 in MPEG-2 video essence.

Part	Name	Description
4	OP47	This field shows if there are OP47 pages available in the SMPTE ST 436 track (DID=0x43/SDID=0x02). OpenCube XFReader will add automatically detected pages in this field.

5	Timecodes	This field shows the timecodes available in the ancillary data. Depending the ancillary source selected by the user, the following timecodes are displayed:
		• ST 436:
		  ○ ATC VITC: Displays VITC timecode embedded in the DID=0x60/SDID=0x60;
		  ○ ATC LTC: Displays LTC timecode embedded in the DID=0x60/SDID=0x60;
		  ○ ST 334 Timecode: Displays the timecode embedded in the CDP of a SMPTE ST 436 track (DID=0x61/SDID=0x01).
		• MPEG-2 User data:
		  ○ ATC VITC: Displays VITC timecode embedded in the SMPTE ST 328 of MPEG-2 video essence;
		  ○ ATC LTC: Displays LTC timecode embedded in the SMPTE ST 328 of MPEG-2 video essence.

6	AFD	This field displays the Active Format Description (AFD, ST 2016-3) available in a SMPTE ST 436 track (DID=0x41/SDID=0x05).
7	Select overlay caption	This radio button enables the decoding and the display of the current caption. This applies to VGA and SDI output.

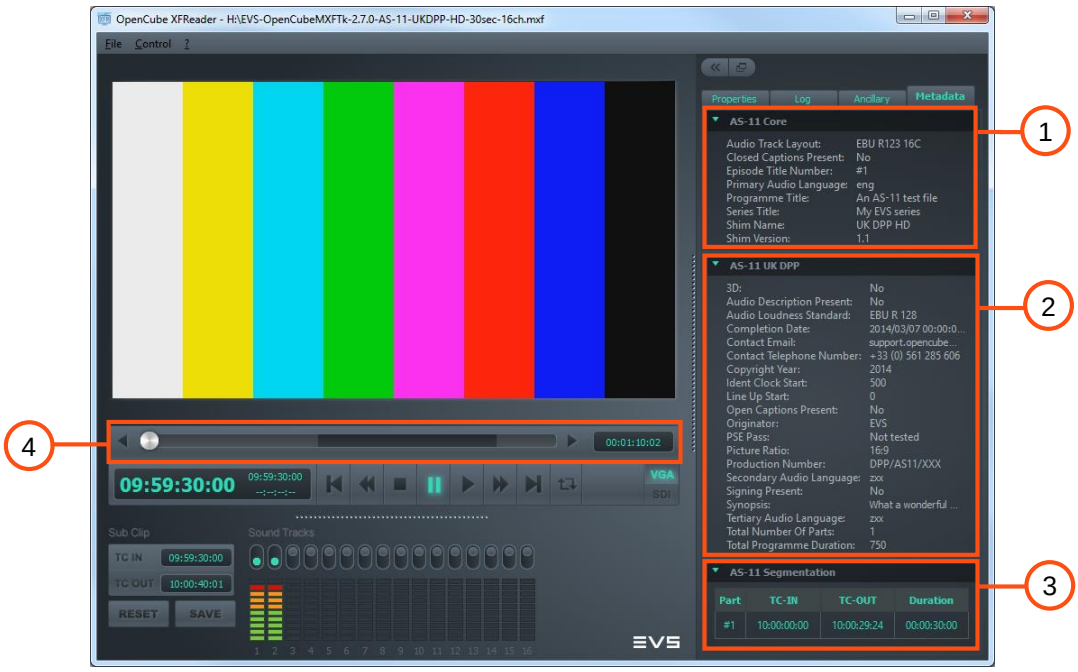
Note

You can change the default ancillary source. See 4.2.4 - Ancillary.

3.7.5 Metadata Panel

NEW !

The Metadata panel shows the descriptive metadata available in an AS-11 or AS-10 MXF file.

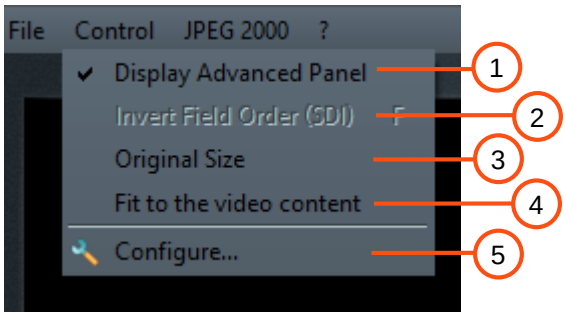


Part	Name	Description
1	Core metadata	This section displays the AS-11 or AS-10 Core metadata when present in the file.
2	AS-11 UK	This section displays the AS-11 UK DPP metadata when present in the file.
3	AS-11 Segmentation	This sections displays the AS-11 segmentation when present in the file.
4	Segmentation parts in the position bar	When segmentation parts are presents, they are displayed in the position bar. The “Next Log” configuration of the “Go to First/Last Frame” property (see 4.2.1) can be used to seek to the beginning/end of each segment.

4. Configuring OpenCube XFReader

4.1 Overview

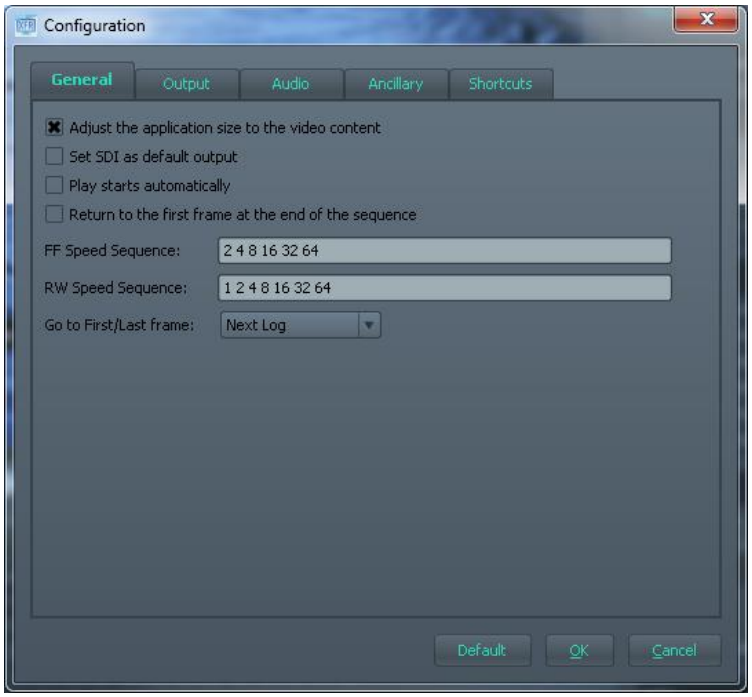
The Control menu allows you to configure the different OpenCube XFReader actions.



Part	Name	Description
1	Display Advanced Panel	If the box is unchecked, the audio track and subclip areas are hidden.
2	Invert Field Order (SDI)	This option is available only in the SDI output configuration. It allows you to invert the field order (bottom or top field first).
3	Original Size	This option resizes the application window to the video's original dimension (limited by the screen resolution). **Note** This option is not available in OpenCube XFReader ActiveX.
4	Fit to the video content	This option resizes the application window to best fit the viewer video content. **Note** This option is not available in OpenCube XFReader ActiveX.
5	Configure	This menu allows you to configure the behavior of OpenCube XFReader (see 4.2 - Configure option).
6	JPEG 2000	This menu configures the quality of the JPEG 2000 decoding (see 4.3 - JPEG 2000 Menu).

4.2 Configure option

4.2.1 General

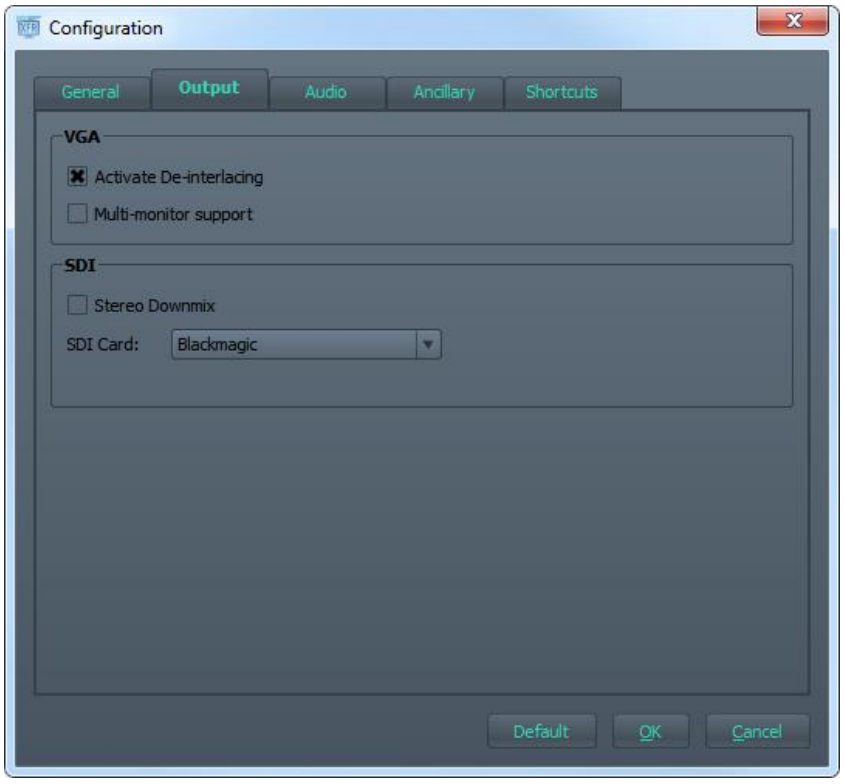


Option	Description
Adjust the application size to the video content	When checked, OpenCube XFReader will adjust the viewer area to best fit to the video content after a file is loaded (this removes the empty space around the video content). **Note** This option is not available in OpenCube XFReader ActiveX.
Set SDI as default output	This configures SDI to be the default output. If checked, the output is done on SDI when a file is loaded (the output mode can still be changed by clicking on the “output” button).
Play starts automatically	If the box is checked, OpenCube XFReader automatically starts the playback when a file is loaded.
Return to the first frame at the end of the sequence	If the box is checked, OpenCube XFReader returns to the first frame when it reaches the end of the file. If the box is unchecked, playback remains on the last displayed frame.
FF/RW speed sequence	You can define the speed sequence for fast forward and fast rewind. Only positive base 2 values are authorized.

Option	Description
Go to First/Last Frame	This option configures the behavior of the “Go to First Frame” and “Go to Last Frame” button. It can take one of the following 3 values: • Media In/Out: The “Go to First Frame”/”Go to Last Frame” button seek to the beginning/end of the file. • Next Log: The “Go to First Frame”/”Go to Last Frame” button seeks to each timecode in and timecode out of the log or segmentation part. • Next Log (In only): The “Go to First Frame”/”Go to Last Frame” button seeks to each timecode in of the log or segmentation part.

4.2.2 Output

Overview



VGA

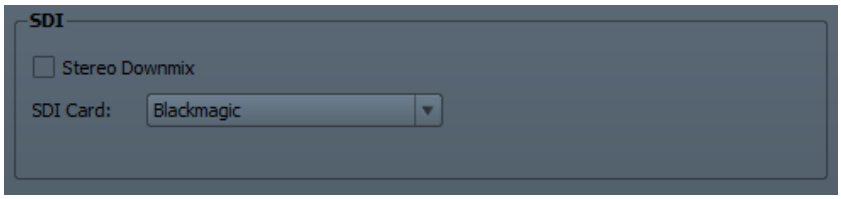
If the box “Activate De-interlacing” is unchecked, the deinterlacing on the VGA output will be disabled.

If you check the “Multi-monitor support” option, you can move the OpenCube XFReader window from one monitor to another without having to restart the playout or OpenCube XFReader.

Note

If a network is not connected to the Internet, it may take longer to open a file using this mode.

SDI

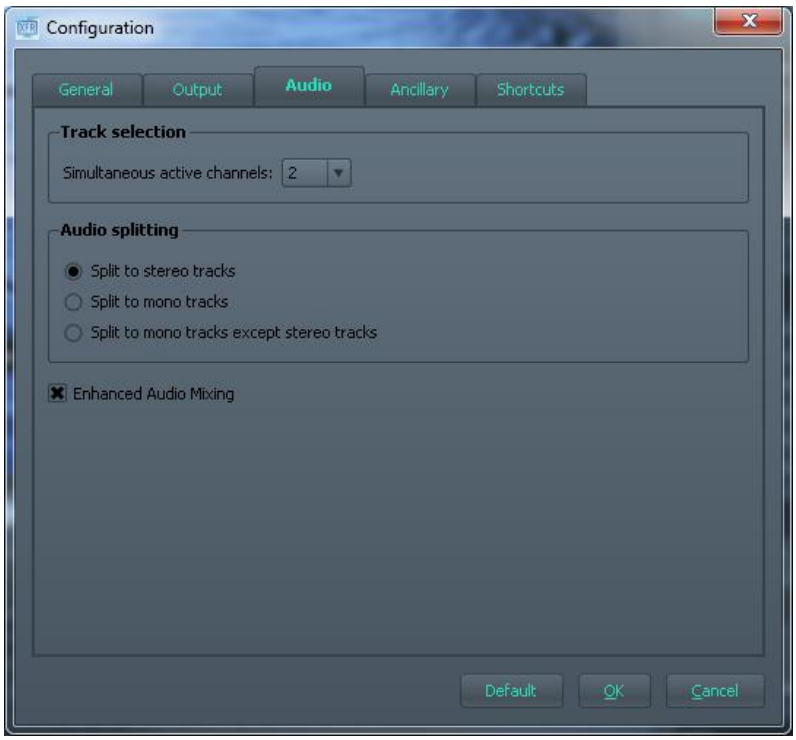


“Stereo Downmix” allows you to enable or disable the stereo downmix on the SDI output.

The “SDI Card” combo box allows you to select the SDI output card. If you change this option, you will have to restart OpenCube XFReader.

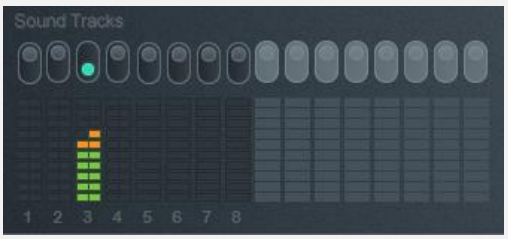
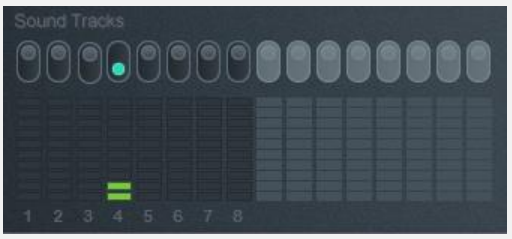
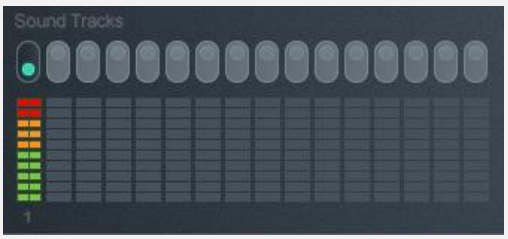
4.2.3 Audio

Overview

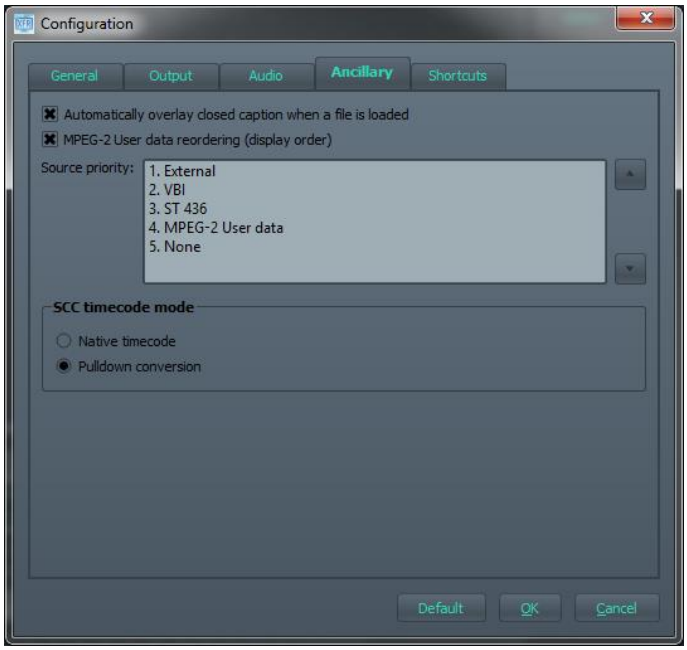


Part	Name	Description
1	Track selection	You can select the number of simultaneous audio channels: • 'All' allows you to activate numerous tracks. • One or two allows you to activate one or two channels at the same time.
2	Audio splitting	You can define how OpenCube XFReader will split multichannel audio track. By default, OpenCube XFReader splits multichannel audio tracks to stereo tracks.
3	Enhanced Audio Mixing	The "Enhanced Audio Mixing" checkbox allows you to choose between basic and enhanced audio mixing modes. The basic mixing mode averages out audio samples from each track. The enhanced mixing mode takes each track level into account, which means the output level will not be lowered because of blank audio tracks.

Track Selection and Audio Splitting Examples

Name	Description
Simultaneous active channels is set to two. User activates track 3. The track is stereo, so 2 channels are activated.	
Simultaneous active channels is set to two. User activates track 6. Tracks are mono, so track 5 and 6 are activated (2 channels).	
Simultaneous active channels is set to one. User activates track 4.	
Simultaneous active channels is set to one. User activates track 1; as the channels are dependent, two channels are activated.	
Simultaneous active channels is set to all. All audio tracks are activated.	

4.2.4 Ancillary



NEW ! If you check the “Automatically overlay closed caption when a file is loaded” box, the decoded closed captions will be displayed above the video while it is playing.

NEW ! If you check the “MPEG2 User Data reordering (display order)”, the closed captions stored inside the MPEG2 User Data will be reordered using the frame display order.

The “Source priority” option configures the ancillary source priority that will be used by OpenCube XFReader when it opens a file. See 3.7.4 - Ancillary Panel for a description of each possible value.

NEW ! The “SCC timecode mode” option changes the way SCC side car files are handled for a 23.98 video frame rate:

- The “Native timecode” mode will consider that the SCC timecode matches the video frame rate. XFReader will raise an error if it detects an incompatible timecode between the SCC and the video frame rate.
- The “Pulldown conversion” mode converts the SCC timecode frame rate (30NDF) to the video frame rate by applying a technique similar to a video pulldown conversion.

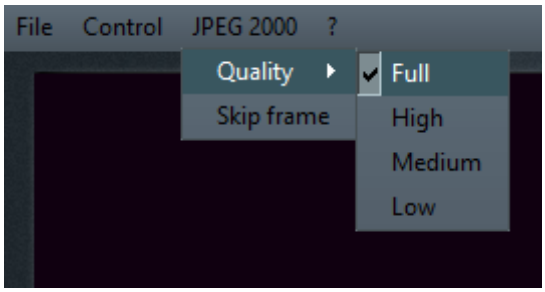
4.2.5 Shortcuts

Keyboard command shortcuts can be changed. Simply select the command you want to modify and then press the key to bind.

A key shortcut can only be assigned to one command. If you assign a new shortcut to a command, it will unbind it from the previous assigned command.

4.3 JPEG 2000 Menu

This menu entry is available only when you are playing JPEG 2000 MXF files.



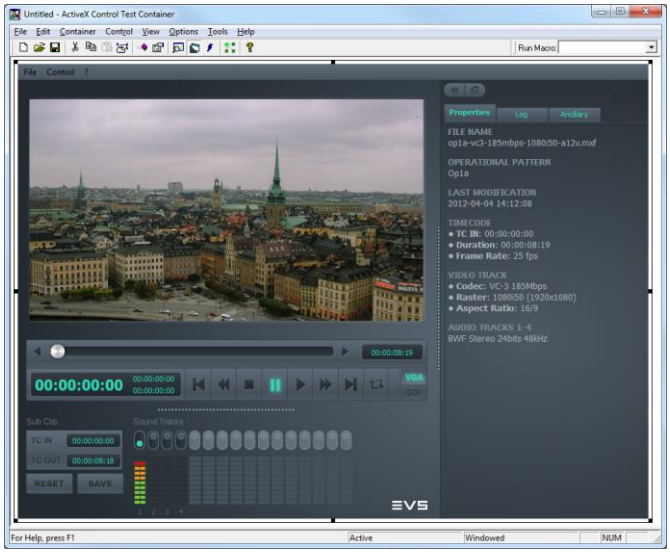
Name	Description
Quality	This menu allows you to lower the decoding quality of the JPEG 2000 stream. It is useful when you have a stream that cannot be decoded in real time. **Note** When rendering on SDI output, the quality will be set to “Full” and cannot be changed. Lowering the quality reduces the output resolution and results in SDI card incompatibility (it refuses the stream because the raster generated is not standard).
Skip frame	When checked, this option allows you to drop frames from the decoder when the rendered frame rate is lower than real time. **Note** This option is not available in SDI output mode.

5. OpenCube XFReader ActiveX

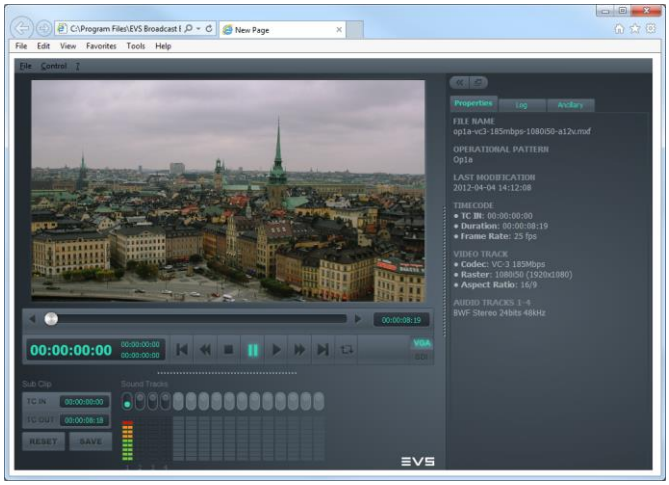
5.1 Overview

OpenCube XFReader ActiveX is an ActiveX object. An API allows the application to control the playout and obtain information on the current player status.

In the Microsoft TestContainer application:



In Internet Explorer 10:



5.2 Software Requirement

The ActiveX version of OpenCube XFReader can be embedded in any application that supports ActiveX Com Server Object.

Internet Explorer version 9.0 is recommended.

5.3 How to Use OpenCube XFReader ActiveX

Note

OpenCube XFReader ActiveX is part of the OpenCube XFReader package.

You have to load the OpenCube XFReader license file in the About windows.

To create the com server object, you have to:

1. Use the **xfreader.tlb** located in bin (in the installation folder);
2. Use the **CLSID** f2d6f312-b0f6-11d0-94ab-0080c74c7e99. The object name is UIXFReader.

The following array lists the functions available in OpenCube XFReader ActiveX.

Action	Description
Open a file	• VARIANT_BOOL SetFileName([in] BSTR p_qsFile) *Allow to load a new file* • BSTR GetFileName() Return the current filename
Control the playout	• VARIANT_BOOL Play() • VARIANT_BOOL Pause() • VARIANT_BOOL Stop() • VARIANT_BOOL Next() • VARIANT_BOOL Previous() • VARIANT_BOOL FastForward() *Each time the function is called, the fast forward speed moves forward to the next one in the sequence* • VARIANT_BOOL FastReverse() *Each time the function is called, the fast forward speed moves forward to the next one in the sequence* • VARIANT_BOOL First() • VARIANT_BOOL Last() • VARIANT_BOOL SeekTC([in] BSTR *p_qsCurrentTC) *Request a seek to specified timecode* • BSTR GetCurrentTC2()) *Return current timecode* • void GetCurrentTC([in,out] BSTR *p_qsCurrentTC) *Deprecated. Get current timecode. Some language does not support out parameter. Prefer using GetCurrentTC2()*

Action	Description
Select the output	• VARIANT_BOOL ActivatedSDI() *Switch to SDI output (if available)* • VARIANT_BOOL ActivatedVGA() *Switch to VGA output (if available)*

6. SDI Board Installation Procedure

6.1 Install the Card Driver

6.1.1 Blackmagic

To install the SDI card driver, proceed as follows:

1. Get the Blackmagic Desktop Video package from the card package or from the Blackmagic website (http://www.blackmagicdesign.com).

Note

The recommended driver version is 10.1.1.

2. Extract, and run the installer.
3. Follow the on-screen instructions.

6.1.2 DVS

To install the DVS driver, proceed as follows:

1. Download the DVS SDI card driver using the provided link. Once that is done, extract the download package in the final destination.

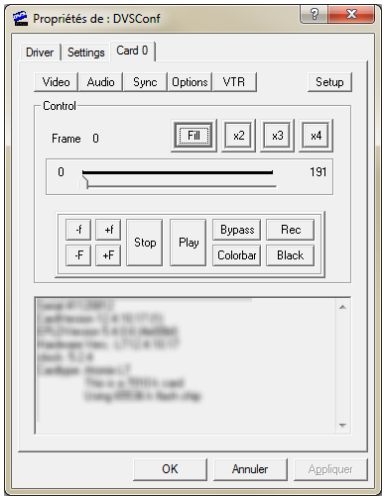
Note

The recommended driver version is 4.3.5.8.

2. Windows 32-bits: Run the dvsconf.exe application located in the win32\bin subfolder.
   Windows 64-bits: Run the dvsconf.exe application located in the win64\bin subfolder.

3. Use the browse button to select the driver corresponding to your DVS Card (Centaurus II LT or Atomix LT).
4. Click the Install button.

5. A new tab is now available named Card 0. If not, there may be an issue with the DVS SDI card hardware installation.



6.2 Install the Card License

6.2.1 Blackmagic

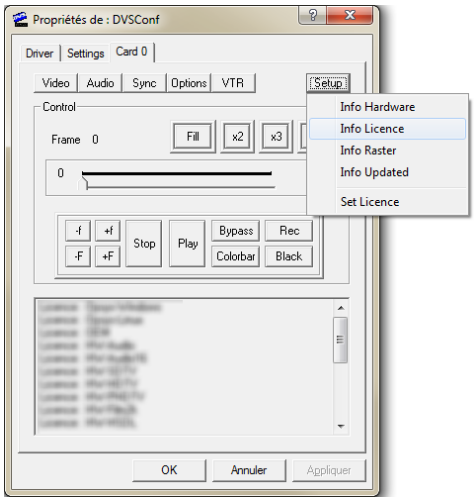
The Blackmagic SDI board does not require any licenses.

6.2.2 DVS

The DVS board may have the license pre-installed.

To check the license, proceed as follows:

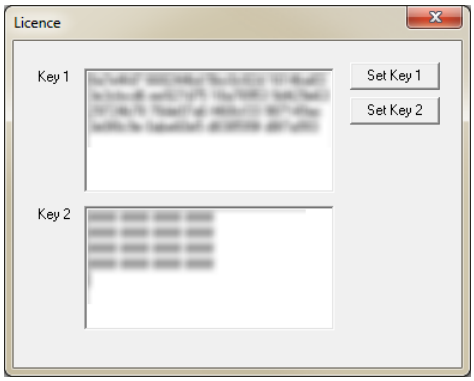
1. Use the Setup menu button.
2. Select “Info License”.
   a) If the status area displays license information, then the license is already installed:



   b) If not, you have to install the license.

To install the license, proceed as follows:

1. Use the Setup menu button, and select “Set Licence”.
2. Enter the license information provided with the DVS board in the field named “Key 1”, then click Set Key 1.



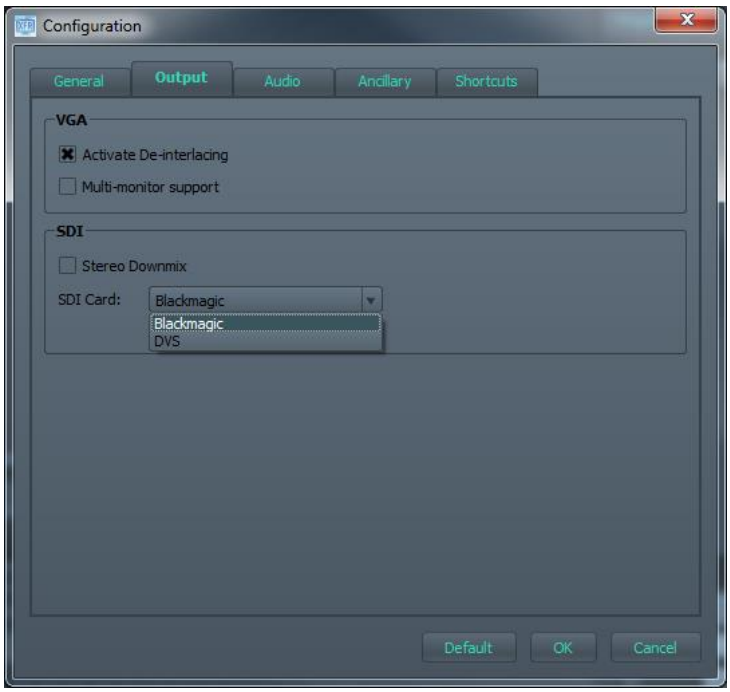
Note

The number of the “Key” entry may be different.

6.3 Configure OpenCube XFReader

To configure OpenCube XFReader to use the Blackmagic or DVS board, proceed as follows:

1. Run OpenCube XFReader, open the configuration dialog box (Menu Control>Configure). Select the “Output” tab.



2. In the “SDI Card” dropdown box, select the right SDI board. Click OK, then quit and restart OpenCube XFReader to apply.

3. You can now switch the output to the SDI card by clicking on the SDI Button.

Corporate
+32 4 361 7000

North & Latin America
+1 973 575 7811

EVS Headquarters
Liège Science Park
16, rue Bois St Jean
B-4102 Seraing
Belgium

Asia & Pacific
+852 2914 2501

Other regional offices
www.evs.com/contact

To learn more about EVS go to **www.evs.com**