

MediaReactor Workstation User Guide



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Parts of this manual that describe optional soft - or hardware modules do usually contain a corresponding note. A lack of this note does not mean any commitment from the point of Drastic Technologies Ltd.

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# Introduction

This manual is for MediaReactor Workstation version 5.x software from Drastic Technologies, Ltd.

# Conventions

This manual assumes the following:

That the user knows how to operate a mouse and keyboard and perform the basic functions of Microsoft Windows, OS-X or Linux operating system.

That the user is familiar with the video editing software in use.

That the user has access to technicians capable of placing the device on the network and setting up any SAN systems if necessary.

The name of a control or display present on the interface will be displayed in **bold** text.

Where a portion of the manual is referred to the name of section mentioned will be displayed in italics.

Certain images in this document may have been grayed out where it is useful or necessary to place indicator marks to show specific controls or displays above a darker background.

# **About MediaReactor Workstation Software**

MediaReactor Workstation software provides plugin components to allow various third party applications to access supported file types in real time without a transcoding step. There is also a user directed interface called MR Lite, and there are command line components.

**MediaReactor Workstation** is a direct plug-in version of Drastic's MediaReactor file translation system. Rather than having to use a separate translation step, the artist can work with incoming footage directly in their preferred creative software. MediaReactor Workstation is available on Windows (XP, Vista, 7 - 32/64) and MacIntosh OS-X Intel (10.5+), and Linux x64. It provides plugins for Assimilate Scratch/Lab, Final Cut Pro 7/Suite 3, Avid Media Composer, Adobe products, Autodesk Flame/Flare/Lustre, QuickTime and DirectShow. Many other applications that utilize the QuickTime and DirectShow interfaces are also supported.

Contemporary production workflows are able to access an ever increasing choice of acquisition, production, mezzanine and output devices and formats. Unfortunately, the proprietary nature of these media tools often leads to time consuming and potentially lossy translations of content, simply to allow other creative tools to access them.

MediaReactor Workstation was designed to alleviate this problem. MediaReactor Workstation provides access to the widest range of file formats of any single plugin package. It specializes in high quality conversion on the fly, on everything from ancient OMF JPEG to the latest camera acquisition formats from Weisscam, Phantom and Arri. Coupled with its incredible range of file and codec support, MediaReactor Workstation provides a group of plugins that make the content directly compatible with most major editing and creative software on Mac and Windows systems.

More detailed information on MediaReactor Workstation, including related products and links to demo downloads, can be found on the product page:

#### www.mediareactor.ws

Streamlined versions for Adobe, and for Avid, are also available.

If you are editing with Adobe products, MediaReactor Lite for Adobe provides a targeted set of the most commonly requested read and write formats for products such as Premiere, Prelude, Media Encoder and After Effects. Check the product page:

#### MediaReactor Lite for Adobe

If you are editing with Avid products, MediaReactor Lite for Avid provides a targeted set of the most commonly requested read and write formats for products such as Media Composer, NewsCutter and Symphony. Check the product page:

#### MediaReactor Lite for Avid

# **System Requirements**

### **Recommended Environment**

MediaReactor Workstation software must be installed on a system at least as powerful as the configurations listed below.

### **Minimum Hardware Platform**

Post 2000 multi core processor capable of running the host application.

#### **Recommended Hardware Platform**

Recommend hardware from the host application vendor. Multi cores and OpenCL, Cuda and shader GPUs will be used if available, but are not absolutely required.

Demo downloads of MediaReactor Workstation software are available for the user to test their application and to confirm their workflow. Faster and more powerful hardware will provide better performance. In some cases, specific hardware will be required in order to enable resource-intensive, advanced or optional features.

# **Supported Operating Systems**

MediaReactor Workstation provides support for the three major operating systems that have well defined plugin systems (for Linux, please contract Drastic for available options). The primary plugin interfaces on Mac OS-X, Windows 32 bit and Windows 64 are:

- Autodesk Flame/Flare/Lustre import
- Assimilate Scratch and Scratch Lab SPA plugin
- Avid Media Composer AMA access plugin
- Adobe file import and export plugins
- Final Cut Pro 7/Suite 3 real time access and rendered file export

The Final Cut Pro 7/Suite 3 plugin is OS-X specific, but Avid and Adobe are available on both platforms allowing seamless access to content with platform independence. Drastic is dedicated to supporting as many file formats as possible on all three major operating systems and supporting all major production tools that provide a plugin interface.

### Mac OS-X

MediaReactor's primary plugins under OS-X are Apple's QuickTime layer and Adobe's import and export plug-ins. MediaReactor Workstation connects to QuickTime at multiple levels. It provides codecs for encoding and decoding video frames, image importers and exporters, movie importers and exporters and low level data handlers. The result is that all QuickTime enabled applications can access media as easily as a native QuickTime movie including still formats like DPX, Cineon, ARI and DNG sequences. This includes metadata, multitrack audio, multitrack video, time code, closed captioning and other tracks. All supported formats, including IPB MPEG transport streams and series of stills (that would normally require conversion) are directly available for editing in Apple, Adobe and many other third party products.

### Windows 32

MediaReactor Workstation supports all four primary Windows' audio/video layers, which are: VFW (Video For Windows), DirectX/DirectShow, Apple QuickTime for Windows and Adobe import/export plugins for older Adobe products (CS5+ uses the Windows 64 version). Quick-Time is the most standardized platform for media access on 32 bit Windows, and the MediaReactor Workstation connects to QuickTime on multiple levels. It provides codecs for encoding and decoding video frames, image importers, image exporters, movie importers, movie exporters and low level data handlers. The result is that all OuickTime enabled applications can access media as easily as native QuickTime movies including still formats like DPX, Cineon, ARI and DNG sequences. This includes metadata, multitrack audio, multitrack video, time code, closed captioning and other tracks. All supported formats, including IPB MPEG transport streams and series of stills (that would normally require conversion) are directly supported available for editing in Apple, Adobe and many other third party products. For some applications, DirectShow or VFW provide the easiest or only interface for MediaReactor to file import. DirectShow allows player applications like Windows Media Player to access all the available file formats seamlessly. MediaReactor Workstation 32 also supports Adobe Creative Suite applications that run under 32 bits, including CS4 and earlier.

## Windows 64

The latest production tools tend to prefer operating as 64 bit applications. MediaReactor Workstation for Windows 64 provides interfaces to these applications. Assimilate Scratch and Scratch Labs are great examples of powerful programs running on Windows 64. Drastic provides the technology to Assimilate for their CSP plug in, and MediaReactor Workstation takes that interface to a whole new level. Providing a much wider set of file formats and codecs, MediaReactor Workstation allows Assimilate's software to access almost every production file type your workflow could need.

The latest Adobe Creative Suite products, CS5 and CS5.5, are also native 64 bit applications. MediaReactor Workstation provides both import and export plugins for all of Adobe's Creative Suite tools. The plugins provide all the advanced media support and even improve on Adobe formats like MOV and MXF.

The Windows 64 bit version of MediaReactor Workstation license also allows you to install and use the Windows 32 bit version, which is fully compatible and very useful, in Windows 64 (XP, Vista or 7).

# **Getting Set Up**

## Installation

Here is how to install MediaReactor Workstation. Attach a standard keyboard, mouse and VGA monitor to the system. Plug the system in and turn it on.

**IMPORTANT**! Log on as Administrator. If the user name and password entered do not extend Administrator privileges, MediaReactor Workstation will not install properly. If unsure as to what level of privilege the log-on provides, consult a System Administrator.

Confirm that any other programs are closed before starting this installation.

Make sure the system clock is properly set. Open the **Control Panel**, go to **Date/Time**. If the time is reset while running a duration-limited license, it may destroy the license.

**For Windows:** Double-click or run the executable MediaReactor Workstation installation file.

SetupMRWS\_Win64\_5\_#\_###.exe

Depending on your OS setup, you may need to allow the installer to run. Once you have done this, and selected the installer language, you will see a dialog similar to this:

😼 Setup - MediaReactor WorkStation x64	—		×
Select Destination Location Where should MediaReactor WorkStation x64 be installed?			Ð
Setup will install MediaReactor WorkStation x64 into the fol	owing f	folder.	
To continue, click Next. If you would like to select a different folder,	click Bro	owse.	
C:\Program Files\MediaReactor	В	rowse	
At least 398.9 MB of free disk space is required.			
Next	t >	Ca	ncel

The user will be prompted to move through each step of the install by pressing the "**next**" or "**finish**" button. Carefully read the instructions that are provided.

**Note**: When installing on a Windows 64 bit system make sure to install both the 32 bit and 64 bit versions if you are also running 32 bit applications.

For OS-X: Double click on the OS-X PKG installer:

SetupMRWS\_MacOS-X\_5\_#\_###

This should display a dialog similar to this:

	Welcome to the MediaReactor.ws Installer
<ul> <li>Introduction</li> <li>Destination Select</li> <li>Installation Type</li> <li>Installation</li> <li>Summary</li> </ul>	You will be guided through the steps necessary to install this software.
	Go Back Continue

Click Continue and carefully follow the instructions to install the software.

Upon install completion, MediaReactor Workstation will prompt the user to **Restart**. Agree to **Restart**.

# Where to find your files

## Windows

C:\Program Files\MediaReactor\ C:\ProgramData\Drastic\ Application specific plug in directories Links to applications are available under the Start menu, MediaReactor folder

# OS-X

/Applications/MediaReactor/ /Libraries/Frameworks/ DrasticDDR.framework Intel\_IPP.framework Application specific plug in directories

# Linux

/opt/mediareactor/ Application specific plug in directories

# License MediaReactor Workstation

Upon initial installation, Drastic software will run, albeit with specific demo limitations. To make use of the product's complete functionality the user will need to obtain a license for the software. Also, within a licensed program the user may wish to update the license, such as in cases where the application requires the addition of a licensable codec, or to add to or alter the capabilities of the existing install, to upgrade the version, or to add another Drastic software product to the system.

Here is how to license your installation of MediaReactor Workstation:

### **Licensing for Windows**

**MediaReactor Workstation** installs an application called **LicenseMR**, which is included in the program folder. This may be accessed (in Windows installs) via the Start menu, Program Files|<Drastic Software>|LicenseMR). Run **LicenseMR** and you will see the following interface:

Drastic Licens	ing		
	This program is currently unlicensed.		
User Name			
User Email			Generate
Site Code			Send
Site Key			
🗈 (	Remove Register	Folder	Close

- Type the user name into the **User Name** field.
- Type a valid email address into the **User Email** field. This is the email address at which the user will receive the required site key, so make sure it can be accessed by the operator of the system upon which the Drastic software is installed.

- Press the **Generate** button. This will populate the **Site Code** field with the site code. The site code is a seemingly random string of alphanumeric characters which will be used to generate the site key.
- If the system is set up with email, the user may press the Send button. This opens a new email addressed to Drastic with the site code in the body of the email. If the system is not set up with email, the user may copy (either select the site code and use a standard Copy command, or press the Copy button which is just to the right of the Site Code field) and paste (use a standard Paste command) the site code into a text file, and open the text file in a system that is set up with email. In this case, create a new email addressed to <u>authorization@drastictech.com</u>. it would be useful to type a quick explanation regarding which software is to be licensed, and the reason for the license request (such as demo, update license, add software etc.). Send the email.
- We will reply with an email containing another seemingly random string of alphanumeric characters - this will be the site key.
- Copy the site key from the email into the buffer, and paste it into the Site Key field, either using a standard paste command, or by pressing the Paste button (the button with the icon to the left of the Remove button).
- Press the **Register** button, and restart the software. This will update the license status and enable all the features supported by the requested license level.
- To view the folder in which the license is located, press the **Folder** button. This opens the folder containing the license, which may be useful in cases where the user may need to move or delete the license.
- The license may be removed simply be pressing the **Remove** button.
- Once the user is finished with the licensing process, they may press the **Close** button to close **Drastic Licensing** window.

Here is an image of the Drastic licensing application in a system that has a valid license for various Drastic products. The status of the license is displayed in the top field, with a list of all software and other components that have been licensed and are available for use.

Drastic Licensing	1	_ <b>D</b> _ X
	License has been validated for: - Drastic DDR Software - MediaReactor Software - MediaNXS - PreviewPro - CC 4K Camera Raw Device Contro - Cineform AVCi DNxHD JPEG-2000 - NXC	4
User Name	ABC	
User Email	abc@drastictech.com	Generate
Site Code		Send
Site Key		
	Remove Register Folder	Close

## Licensing for Linux and OS-X

### To access the site code using LicenseMR under Linux:

Open the command line and navigate to the opt/mediareactor directory i.e cd /opt/mediareactor areactor

Run the license application as a super user, i.e sudo ./licensemr4

After the application is opened, fill in your username and email and click on the Generate button. This will generate the site code which you will need to send to the authorization dept to issue a site key. Paste the key in the Site Key field and click on register to activate the license.

### To access the site code using LicenseMR under OS-X:

Go to Applications and open the MediaReactor folder. In that folder will be the LicenseMR application.

After the application is opened, fill in your username and email and click on the Generate button. This will generate the site code which you will need to send to the authorization dept to issue a site key. Paste the key in the Site Key field and click on register to activate the license.

### Through DDRSetup (Linux and OS-X):

There is a license app installed with MediaReactor called ddrsetup. On the command line go to its directory and type:

./ddrsetup -I -n "Your Name" -e "your.email@company.com"

In the command above, use the quotes.

Copy and paste the output and send it to authorization@drastictech.com. Drastic will reply with an email containing the Site Key.

# License MediaReactor Controls and Displays

Here is a close look at the License MediaReactor interface.

	insing	
8	This program is currently unlicensed.	
		[
User Nam	e	//
User Ema		Generate
Site Coo	e	Send
Site Ke	Y	
$\left \right\rangle$		$\rightarrow$

1	Paste button	Pressing the <b>Paste</b> button pastes the contents of the clipboard into the <b>Site Key</b> field.
2	Remove button	Pressing the <b>Remove</b> button deletes the existing license.
3	<b>Register</b> button	Pressing the <b>Register</b> button matches the <b>Site Key</b> with the <b>Site Code</b> , and provides a license if the combination is valid.
4	License Status field	Displays the current status of the license.
5	<b>User Name</b> field	In the license generation process, the user will need to enter a first and last name into this field.
6	<b>User Email</b> field	In the license generation process, the user will need to enter a valid email into this field. Note that the email provided to Drastic in this dialog will be the recipient of the <b>Site Key</b> , which is required to complete the license generation process.
7	Site Code field	This field displays the <b>Site Code</b> , if one has been generated.

8	<b>Generate</b> button	In the license generation process, once the user has entered a name and email, pressing the <b>Generate</b> button will populate the Site Code field.
9	Send button	If the system is set up with email, pressing the <b>Send</b> button creates an email containing the site code, addressed to <u>authorization@drastictech.com</u> .
10	Copy button	Pressing the <b>Copy</b> button copies the <b>Site Code</b> to the clipboard.
11	Site Key field	This field is where the user will paste the Site Key in order to proceed with the license generation process.
12	Folder button	Pressing this button opens the folder in which the license is contained.
13	Close button	Pressing this button closes LicenseMR.

# **Using MediaReactor Workstation**

MediaReactor Workstation is designed to provide direct, real time editing of non editor native formats for Adobe, Avid, Apple, Assimilate, and other QuickTime or DirectShow based products.

MediaReactor Workstation installs a series of plugins which allow editors to add media (which would normally have required a transcoding step) directly into their editing package, and use the media as if it were a natively understood format.

Additionally, MediaReactor Workstation provides the MR Lite interface, for user directed transcoding. This is an application which the user can start up independently, to select media and transcode it to their preferred format.

For specific applications there are also command line components available for use.

**NOTE:** When outputting Panasonic P2 formats, a CONTENTS and a series of subdirectories are created to contain the file – these are not created in the selected directory.

# ...with Adobe Premiere CC

To bring a file into Premiere for editing, select the menu **File | Import** or right click in the Project area and select **Import**.

Pr A	dobe F	Premier	e Pro CC 20	17 - C:\Us	ers\jan	nes\Docum	ients\A	dobe\Prei
File	Edit	Clip	Sequence	Marker	Title	Window	Help	
Sou	irce: (n	o clips)	Lun	netri Scope	es	Effect C	ontrols	Αι
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Pro	ject: RI	DD25	≡ Media	Browser		» 🕨		× Timelir
1	RDD	25.prpr	ој					00;00
2					R			
			11. Arris y 1888			*		
						Paste		
		-				New Bin		
				+++		New Searc	:h Bin	
D	TSync_	_1080p_	29_YCbCr	14:00		New Item		>
						View Hidd	len	
						Import		2
						Find		0

Adding files via the Media Browser area is also supported.

Adobe Premiere Pro CC 2017 - C:\Users\james\Documents\Adobe\Premiere Pro\11.0\RDD25.prproj File Edit Clip Sequence Marker Title Window Help > New Open Project... Ctrl+O Audio Clip Mixer: Sequence 01 Open Team Project (Beta)... Open Recent > Convert Premiere Clip Project... Close Project Ctrl+Shift+W Close Ctrl+W Save Ctrl+S Sequence 01 Ξ Save As... Ctrl+Shift+S 00;00;00;00 Ctrl+Alt+S ;00;00 Save a Copy... n Revert Sync Settings > F5 Capture... Batch Capture... F6 Link Media... Make Offline... Adobe Dynamic Link > Adobe Story 5 Import from Media Browser Ctrl+Alt+1 Import... Ctrl+I Import Batch List... Import Recent File > Ctrl+M Export > Media... 2 Batch List... Get Properties for > Title... Project Settings > Captions... Project Manager... Tape (DV/HDV)... Tape (Serial Device)... Exit Ctrl+Q EDL... OMF... Markers... Selection as Premiere Project... AAF... Final Cut Pro XML...

### To export a file from Premiere, select the menu **File | Export** $\rightarrow$ **Media**.



This loads the file into the dialog box.

Select the Format drop down to select the type. Set the settings and click the Export button.

# ...with Adobe After Effects CC

To bring a file into After Effects for editing, select the menu **File | Import** or right click in the Project area and select **Import**.

ile	Edit	Composition	Laver	Effect	Animation	View	Window	w Help		
iie	New	composition	Layer	Lifect	Animation	VIEW	> *		12 Sna	apping 🥂 🖻
	Open Open Open Brows	Project Team Project (E Recent se in Bridge	3eta)		Ctrl+Alt+	Ctrl+0 Shift+0	mp o	sition (none)	× 🔳 6	Footage 54a2f91a
	Close Close Save Save Increr Rever	Adobe Charact Project As nent and Save t	er Anim	ator	Ctrl+Alt+	Ctrl+W Ctrl+S Shift+S	>			
	Impo	rt					>	File	N	Ctrl+l
	Impor Export	rt Recent Foota <u>c</u> t	je				> >	Multiple Files From Libraries	3	Ctrl+Alt+I
	Add Fonts from Typekit Browse Add-ons						Adobe Premiere P Pro Import After I	Pro Project Effects		
	Adob	e Dynamic Link			>			Placeholder	vpe)	
	Find					Ctrl+F		Solid		

To Export a project via MediaReactor, select the File and Export menu

Ae A	dobe A	After Effects CC	2017 - C	:\Users\j	ames\Docun	nents\co	olourtests.	aep *
File	Edit	Composition	Layer	Effect	Animation	View	Window	Help
	New						> 🖈,	📃 🙏 🔽 🗖 Snapping 🗶 🔀
	Open	Project				Ctrl+0	<b>6</b> c	Composition 54a2f91a-e633-4d48-a1cd-42c94f69dc
	Open	Team Project (B	Beta)				-2501	
	Open	Recent					>	a-e6555-4048-81C0-42C941690C/e_HBK
	Brows	e in Bridge			Ctrl+Alt+	Shift+O		The second s
	Open	Adobe Charact	er Anim	ator				
	Close					Ctrl+W		
	Close	Project						
	Save					Ctrl+S		
	Save A	As					>	
	Increr	ment and Save			Ctrl+Alt+	Shift+S		
	Reven	t						
	Impo	t					>	
	Impo	t Recent Footag	je				>	
	Export	t					>	Add to Adobe Media Encoder Queue
	Add F	onts from Type	k <mark>it</mark>					Add to Render Queue
	Brows	e Add-ons						Adobe Premiere Pro Project
	Adob	e Dynamic Link					>	Composition As Text Template MAXON Cinema 4D Exporter
	Find					Ctrl+E		Contract of the second s

For more information on exporting, see the Premiere CC or Media Encoder CC sections of this manual.

# ...with Adobe Media Encoder CC

In Media Encoder, use the Media Browsers to find the file you want to convert.



Double click on the file to add it to the Queue. Click on the first drop down to select the output file type



Once you have selected the output file type, clicking on the Output link will bring up the Export settings dialog.

To export a file from Premiere, select the menu **File | Export**  $\rightarrow$  **Media**.

This loads the file into the dialog box.

Export Settings	– <b>–</b> X
Source Output	Export Settings
	Format: MOV QuickTime file (MR) ~
	Preset: Custom 🗸 📩 🏚 前
	Comments:
	Output Name: TE232-chroma.mov
	🖌 Export Video 🛛 🔽 Export Audio
	Summary     Output: \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
	4096x304, 60.00 [ps], 1.000 PAR, 00:00:004 48000 Hz, Stereo
	Source: Clip, TE232-chroma.cine
	No Audio
	Ffferte Video Aurlio Cantione Dublich
	Linets Traco Adalo Capitolis Fabian
	✓ Video codec group
•	Codec: ProResXQ 🗸
	✓ MediaReactor video param group
	Width: 4,096
	Height: 2,304
	Use Maximum Render Quality 📋 Use Previews
	Set Start Timecode 00:00:00:00
	Time Interpolation: Frame Sampling ~
05:23:15:42 Fit ~ 🔂 00:00:00:04	Estimated File Size: 7 M8
	Metadata Cancel
Source Range: Entire Clip Y	

Select the Format drop down to select the type. Adjust or confirm the settings and click the Export button.

# ...with Adobe Prelude CC

To bring a file into Prelude for logging, select the menu **File | Ingest** or double click in the Project area.

PL A	dobe P	Prelude CC	2018 - C:\U	sers\james\[	)ocum
File	Edit	Marker	Rough Cut	Window	Help
	New P	vroject		Ctrl+Alt+	N
	New T	leam Proje	ect		
	Open	Project		Ctrl+Shift+	0
	Open	Team Pro	ject		
	Open	Recent			>
	Close	Project		Ctrl+Shift+	w
	Save A	\s		Ctrl+Shift-	+S
	Revert	t			
	Close			Ctrl+	W
	Save N	vletadata a	as		
	Save F	Rough Cut	t as		
	Create	e Rough C	ut	Ctrl+	N
	Create	e Tag Tem	plate		
	Cloud	Metadata	3		>
	Ingest		2	Ctrl	+1
	Export	t	-0		>
	Link N	/ledia			
	Send t	to Premier	re Pro		
	Exit			Ctrl+	Q

This will bring up the ingest dialog



### Checking one or more of the files, and clicking ingest will bring the files into Prelude



Once it is imported into the project, double clicking on its icon will bring it up in the player and timeline.



Clicking on the clip in the project will also allow you to export it as another format

PL A	dobe Prelude CC	2018 - C:\Us	ers\james\[	ocum	ents\Adobe	\Prelude	\7.0\Projects\Un
File	Edit Marker	Rough Cut	Window	Help			
	New Project		Ctrl+Alt+	N			
	New Team Proje	ct					
	Open Project		Ctrl+Shift+	0			
	Open Team Proj	ect					1 of 1 It
	Open Recent			>		ρ	
	Close Project		Ctrl+Shift+	w			
	Save As		Ctrl+Shift	+S			
	Revert						
	Close		Ctrl+	w			
	Save Metadata a	s					
	Save Rough Cut	as					
	Create Rough Cu	ıt	Ctrl+	N			
	Create Tag Temp	late					
	Cloud Metadata			>			
	Ingest		Ctrl	+1			
	Export			>	Project		Ctrl+P
	Link Media				Media.		Ctrl+M
	Send to Premiere	e Pro			Marker	S	Ctrl+Alt+M
	Exit		Ctrl+	Q			

The export type can be chosen in the Export Media dialog

Export Media	×
Format:	
MXF Avid Native (MR)	
Preset:	
Separate Mono Tracks	
Output Destination:	
Browse for Location	
Output File Name: A009C010_110221_E52P.1727328.vrw	
OK Cancel	

# ...with Adobe Premiere CS5/6

To bring a file into Premiere for editing, select the menu **File | Import** (1) or right click in the Project area and select **Import** (2).

1 2		
Adobe Premiere Pro - C:\Users\iame	s\My Documents\Ado	he\Premiere
File Edit Project Clip Sequence	Marker Title Wind	dow Help
Project: Untitled × Resource Central		•≣ I
🖾 Untitled.orproj		2 Items
_Ω¬	In: All	<b></b>
Name La	pel  Frame	Rate
Clip_422_SQ.mxt	25.00	rps –
Sequence 01	29.97	fps
Paste		
New Bin		
New Item 🕨		
Import		
Find		
Find Faces		
		▶

Adding files via the Media Browser area is also supported.

To export a file from Premiere, select the menu **File | Export**  $\rightarrow$  **Media** (1).



This loads the file into the dialog box.

Export Settings	
Source Output	Export Settings     Format: Avid Native MXF (MR)     Preset: Custom     Comments: DNXHD 145     Output Name: Sequence 01_1.mxf     Export Video ✓ Export Audio Open in Device Control     Summary     Output: C:\Userts\Adobe\Premiere Pro\5.5\Sequence 01_1.mxf     1920x1080, 29.97 [fps], 1.0000 PAR     48000 Hz, 5.1     No Summary Available     Source: Sequence, Sequence 01     1920x1080 (1.0), 29.97 fps, Upper, 00;06;27;00     48000 Hz, Stereo
00;00;33;04   Ft • 00;06;27;00	Sample basic audio param group Sample Rate: 46000 Hz Channels: 5.1      Use Maximum Render Quality Use Previews Use Frame Blending Estimated File Size: 91883 MB Metadata Queue Export Cancel

Select the **Format** drop down (1) to select the type. Set the settings and click the **Export** button (2).

**NOTE:** Outputting via Adobe only supports 0, 2 or 6 channels of audio. Files with more than 6 channels of audio will be limited to one of those numbers.

# ...with Apple Final Cut Pro (Suite 3/7)

To bring a file into FCP for editing, go to the **File** menu and select **Import** (1). Alternately, right click on the bin and select **Import->Files** (2). Browse to the file and select it.

	Q				2			
🐔 Final Cut Pro	File	Edit V	/iew Mark	Modify	Sequence	e Effects	Tool	S
000		Br	owser: DT1080i	2997DF Full				
T1080i2997DF Full	ects							
Name Name		Duration	In	Out	Media Start	Media End	Tracks	G
1080_2398_10min_tc		00:00:32:02	01:04:28:22	01:05:00:23	01:00:00:00	01:09:59:23	1V, 8A	
AshTimeCode		00:00:00:36	01:00:01:39	01:00:02:14	01:00:00:00	01:00:05:06	1V, 2A	
Camera 2 First		00:00:00:19	Not Set	Not Set	01:00:00:28	01:00:00:46	1V, 2A	
First		00:00:07:19	Not Set	Not Set	01:00:55:08	01:01:03:02	1V, 8A	
EE Sequence 4		00:00:00;00	Not Set	Not Set	01:00:00;00	01:00:00;00	1V, 4A	
	Import Reveal Pr	oject in Finde		Files Folder				
	New Bin New Sequ	uence		Batch List Cinema Tools EDL	Telecine Log			
	Set Loggi	ing Bin		Glue Tools Cir	neon Sequence In	nport		
	✓ View as L View as S View as M View as L	ist Small Icons Medium Icons Large Icons		Glue Tools DP XML	X Sequence Impo	ort		
	✓ Only Sho Only Sho Show All	w Recomment w My Preferre Effects	ded Effects d Effects					
	Arrange Text Size		-					
	Paste							
	-							

To export a file from FCP, click on the sequence you want to export. Select the **File** menu (1), then **Export->Using QuickTime Conversion**... (2).

ile Edit View M	ark Mo	odify	Sequence	e Effects	Tools	
New	•	Full				
New Project	ΰжN		Madia David	Madia Fed	The second	Car
Open	жO	0.22	Media Start	Media End	Tracks	Got
Open Recent	•	2-14	01-00-00-00	01:00:05:06	11 24	
Close Window	жW		01:00:00:28	01:00:00:46	IV ZA	
Close Tab	^ W		01:00:55:08	01:01:03:02	1V 8A	
Close Other Tabs			01:00:00:00	01:00:00:35	1V 4A	
Close Project						
Save Project	₩S					
Save Project As	企業S					
Save All	₹₩S					
Revert Project						
Restore Project						
Import	•					
Share	Ω₩E			/	/	
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Send To	•	U	sing Quick	Time Conv	/ersion.	
Batch Export			ar Coundtr	ack		
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Reconnect Media		B	atch List			
Set Logging Bin		C	inema Too	ls Audio E	DL	
		C	inema Too	ls Change	List	
	^ M	C	inema Too	Is Film List	ts	
Open the **Format** list box and select the output type you want (1).



Click the **Options** button to set the options.

	Compression:	DCP XYZ Encoded JPEG ‡
	S Image Size:	Best
	FPS:	Best ‡
< <	Data Rate:	19000
AVORITES	Quality:	1000
Desktop	📃 Enable LUT	
iames		
Applic	Audio Type:	Normal (internal + wave) +
Docum \	Audio Frequency:	Best +
Movies	Audio Bits:	24 Bits \$
MXF	Audio Ouality:	1023
fifo 📤		Cancel OK
Format: MXF	DCP JP2K (MR)	¢ Options
Use: Defa	ult Settings	\$

Set the name and add the correct extension (FCP will not do this for you). Click Save to export the sequence.

# ...with Assimilate Scratch/Lab

To bring a file into Assimilate Scratch/Lab, from the **TimeLine | Media** area, select **Load Shot**.

Q			2	2	
			Load Shot		
E   (IP RECOVERY)     f : (CDUID Drive)     N. () (Monetale)     N. () (Monetale)     V : ((Monetale)     V : ((Monetale))     Q : ((Monetale))     Q : ((Monetale))     S : (((Sin S-1)))     S : ((Sin S-1)))     V : ((Max)     V : ((Max))	Assimilatio     Arectification     Arectification     Association     Association     Association     Association     Association     Association     Association     Association     Media     resoluterAlistry	a 120p     a Ajaševito     a Ajaševito     a Asteritato     a Asteritato     a Asteritato     a Asteritato     a Asteritato     a Osfitamen     a cine	m: HD DVC Encoded     m: HD DVC Encoded     m: HD VAC Encoded     m: HD VAC Encoded     m: HT Heat Place - HO Stars     m: Latch     m: Latch     m: MASTERICHE/ AUGA     m: propriof.iden.com-     m: Habper	An Alexany samples  PG32     An Prenuit  PG42     An Public  PG42     An SumpleTion     AngleFishon     AngleFisherSamples  DT837  AD75-	, stip, 422 Jahunut tin tun cemin istip, 422 (50 met tin comin c
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V Sancord Edit (MRAME, Jahna, 2001, 2001) V Sancord Edit (MAVE, Jahna, 2001, 2001) V Sancord Edit (MAVE, 2001, 2001) Jahnas Contex Ann Rawi (TS-COO), AC248(194)		nu repro-2 nu repro-4 nu NTA * nu NDO-HMA,	ni Sony ni Sony-Videekark ni Sony AVTR 1 ni Sony HDCarr SR	OpenEXR (.exr) Targa (.lgat) Windows Bitmap (.bmp) Silicon Graphics (.sgl .ngb) Jacon 2000 (.ing) and .lgat	YUV (,yuv* y, y210) [P] HDR (.hdr) [P] DHDR (.hdr) [P] IPX ARC (.arc) [P]
	V:\/Hedia(#00F - WHL\Son	y HDCam SR\aja sony samp	leshclip_422_SQ.muf	QuickTime (.mov .mpH .avi) REDCODE ( r3d)	AVI (.avi) [P] CINE (.cine) [P] EIM (.fine) [P]
Meda			Cper	AMT AAF (.aaf) AMT MXF (.mxf)	AvidDS (.gen) [P] G0F 360 (.gef) [P]
				ARRI RAW (* ARI) [P] Drastic (Many) [P] AVC-HD (.m2ts .mts) [P]	264 (.264 .0264) [P] HDV (.hdv) [P] IHSS (.ihss) [P]
				AR1 (.an) [P] DNG (.dng) [P] DPX(C) (.dpx .cin) [P] TGA (.tga) [P]	Jaleo (.js) [P] Separate (.kma) [P] / MPEG (.mpg .vob etc) [P] MOV (.mov) [P]

The file browser (1) will contain all the compatible types. For types that are supported in Scratch and MediaReactor Workstation (e.g. Arri, MXF), select the **Drastic Many** file filter (2) to force the MediaReactor Workstation plugin to be used.

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	<b>(</b>		Cons	druct 1	·"	2			
Tray 🔹							H		
Output Media	Master-Output V:Assimilat/RenderConstruc Format: HD 1080-25 Filter: Unear 16 Bit (I) Tiff	t II Width Height RGB Lin	1920 1080	esseet squ Aspect Squ Scale Progressiv	uare 1:1 1.0000 e		l	Add Single Output Copy Selected Output Templates Din Template	
		Timecode Record-TC	11: 00:	07:54:14 00:00:00	Regenerat	9		New Template	Save

To export a file from Assimilate Scratch/Lab, from the **Output** area, press the **Add Single Output** button (1) to add a single node.

				9					
-		Con	etuct 1	2	Construct 1	Output	0 8688 1852		
			4	/				Search	Process
•								4	
Construct 1. Output			Construct 1. Output000000.5F				Add Single Output		
V:Assimilate:Render/Construc	t 1.Outputi						Copy Selected		
Format: HD 1080-25		1920	Aspect Square 1:1				Output Templates		
Filter: Lanczos			Scale 1.0000						
16 Bit (i) Tiff									
		11	:07:54:14 Regenerat				New Template		

Press the **Play** button (1) – it's the circle with an arrow in it - to go to the output page. Click the **Insert...** button (1) to open the Export Plugins window.



Use the **Export Plugins** window to select the output type from the **Drastic SPA Plugins** (1).



Adjust the parameters (1), and click the **Process Range** button (2) to export.

## ...with Autodesk Flame

Autodesk Flame users will already be familiar with how to open and work with a file in Flame. With MediaReactor properly installed and licensed, support for several new formats will be added. It is possible to confirm that the MediaReactor plugin is being used to open these files.

Open Flame, and press the MediaHub tab (1) at the bottom to view accessible media.



Clicking on the Media Hub displays the contents of the media folder (2).



Double clicking on a folder will display the contents of the folder. In this case the Cine folder (3) has been selected, and the clips in it are displayed.



Once the clips are shown as above, a further check can be performed.

Clicking on the clip picon (4) loads the clip and its metadata into the panel on the right (5).



If you open a clip that requires the MediaReactor plugin, and the plugin has been properly installed and licensed, you will see in the Clip Info tab, that the Format specifies the MediaReactor plugin is being used.

Clicking on the Metadata tab (6) should also display the MediaReactor version in the Video Track Information, if the clip was loaded using the MediaReactor plugin.

		6—	_
Al Desitop Libraries Basch – Tree: Name Clip: Name –	Browse for: Files Projects Archives		
Werkspace (ghgfh)	A En Bookmarks - Bill root		
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			11 Tiet Size 45 Proview
			Uncompressed / RAW
P Media Panel + 🔅 + 🗉 Ster 22			
4		MediaHub Timeline Batch	Save Undo 🖛 Redo 🖛 FLARE 🖛

This information also shows up with the clip Batch function. Click on the Batch tab (7).



Grab the Read File button (8), and 'drag' it onto the media area (9), then release the mouse ('drop' it).



This opens the Read Files window.

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Workquez (http://	
★ the last top       ★ A store     Matches/Ved.400mgs	
• II Settered I Colt	
★ C: Ubries: ■ intropy_lot_scripts	
w please torary in attempt	
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Navigate to the folder (10) and load the media as in the last example.

Click on the Viewing mode button (11).

This displays the available viewing modes.

#### Select Current Clip Node (12).



In this mode, the clip is loaded (13) and its clip info and metadata are displayed. Particularly, in the Format section of the Clip Info, MediaReactor (14) is specified.



# ...with Avid Media Composer 6 (Symphony, NewsCutter)

To bring a file into the editor:

	AvidAgain	1080i29 Bin			- 0	×
AvidAgain 1080(29 Bir	n x					0
Name	Creation Date	Duration	Drive	IN-OUT	Mark IN	
Untitled Sequence,01	2/25/2012 22:09:20	0.00				(11)
		New S	equence			1
		Go To	Capture I	Node		
		Choos	e Column	5		
		Set Bi	n Display	*		
		Get B	n inco			
		Select	Offline It	ems		
		Expor	t			
Cintilled •		Linkto	stock Fo	otage File(s)		
		Mode	AMAres	alutions		1
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Name Crea	tion Date	Creat	e Stereosi	copic dips		ł
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		Popul	ate 53D G	roup Names au		
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		What	e Thie?			

Right click on the bin and select the **Link to AMA File(s)...** menu (1) and select the file.

File Edit Bin Clip O	utput Specia	I Tools W
New Bin	Ctrl+N	
Open Bin	Ctrl+O	
New Script		Info
Close Bin	Ctrl+W	
Save Bin	Ctrl+S	
Save Bin Copy As		-
Page Setup		_
Print Bin	Ctrl+P	
Get Info	Ctrl+I	
Reveal File		-
Export		
Send To		_
Import		
Link to AMA Volume		
Link to AMA File(s)		
Link to Stock Footage File	e(s)	
Refresh Media Directorie	s	
Load Media Database		
Unmount		
Exit	Ctrl+O	-

The Link to AMA File(s) menu (1) is also available under the File menu (2).

If your source files are on a network drive, you need enable access to the network drives in Media Composer. Open a **Console** window (menu **Tools | Console**) and type 'alldrives' without the quotes and hit **Return**. This only needs to be done once.

# ...with Apple Compressor

To convert from a MediaReactor Workstation file: Create an output profile.



Drag the source file (2) on top of the output profile and drop it (1).

# ...with Apple Motion

To use a MediaReactor Workstation file in Motion, use the built in **File Browser** (1) to find and select the file.

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File Browser Lik	File Browser	
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	1	
1080_2398_10	1080_25_10mi	1080_25_10
1		A ANT
1040 3907 10	1040 2007	1040 2002
1000_2997_10	1000_1997_ndt	1000_2997_0
-		
1080(29.97 bit	525i 10min tr	625i 10min
	-	The
720p50_bars_t	720p5994.mov	AshTimeCod
	-	-
		1000
Audio Render F	Avid MediaFiles	Capture Scra
Audio Render F	Avid MediaFiles	Capture Sera
Audio Render F	Avid MediaFiles	Capture Sera
Audio Render F	Avid MediaFiles	Capture Scra DrasticSour

Supported files will appear as a picture of one of the frames (2) in the browser.

# ...with Adobe Media Encoder

To add a MediaReactor Workstation file:



Use the menu **File | Add** (1), or drag and drop the file on the application. Click on the **Format** (2) or **Preset** column link. This opens the **Export** window.

The **Export** window opens with the selected file loaded (1). The **Export** window provides various controls (2) to allow the user to set the type of file that will be created during the export process.



Once all the parameters have been sent the user can press the **OK** button to close the **Export Settings** window. The file will have been updated in the queue, with the parameters that will be used to create the new file displayed.

**NOTE:** Outputting via Adobe only supports 0, 2 or 6 channels of audio. Files with more than 6 channels of audio will be limited to one of those numbers.

## ...with QuickTime Player

To open a file in QuickTime Player (free or full version), select the **File | Open File** menu. In Windows it is necessary to set the file filter to all (\*.\*) to see non mov/avi files.

To export a file from QuickTime Player (requires full version), select the menu **File** | **Export...** In the export dialog, select the output type and options. Type in the file name and file extension.

When outputting a file in QuickTime, a 0k file is created in the directory which we do not use.

## ...with Windows Media Player

To open a file in Windows Media Player, select the **File | Open** menu, or drag and drop the file onto the Player

# Live Event Editing in FCP7, Premiere and MediaComposer

MediaReactor Workstation also provides advanced edit-while-recording of live events directly in your favorite editing software, when coupled with a live event compatible recorder.

To take advantage of this huge time saver, set up your compatible recording device (Drastic DDR, MediaNXS or 3rd party systems like XOS Hurricane Replay), begin recording and load the various camera files directly into Media Composer, Premiere or Final Cut Pro 7. All material recorded at that point is immediately available for editing, and as new material is recorded it automatically becomes available on the editor. Simply edit as normal, building packages, melds, internet content or new packages during the show, rather than having to wait and work long after everyone else has gone home.

## IndieCam MOV File Reader Configuration

The IndieCam cameras are small, light, HD and 2K recording RAW bayer pattern cameras. They provide the raw data via HD-SDI by embedding it into a SMPTE standard signal that can be recorded by most uncompressed recorders.

The RAW data cannot be automatically detected because the type marked by the recorder is SMPTE YCbCr 10 (v210 in general). To use these files in Assimilate Scratch and MediaReactor, the system must be set up to re-label these files.

### **Overriding IndieCam MOV Files' FourCC**

The default fource (a four character code that describes the video format) in an MOV file will be 'v210'. This is the fource that describes the YCbCr 10 bit video that was captured from the HD-SDI output of the camera by the capture device. To have Assimilate Scratch or Lab properly interpret the raw data, it is necessary to override the fource with an IndieCam-specific fource.

To set this up, run DDRConfig from the MRWS (MediaReactor Workstation) installation:

DDR Config				
Internal External External Network	MediaReactor  Advanced  AutoProxy  Codecs  Codecs  Paths  PlugIns  PlugIns  PlugIns  Codex  DTAdvAudio  Codex  DTAdvAudio  DTAdvAudio  DTAdvAudio  DTHdrYuv  WaveStd  DTHdrYuv  DTMFOP1a  DTCine  DTDPSVelocity  DTSepChannels  DTWMFDirect  VVW	Setting         AllowMultiTrackAudio         DisableDirectRead         EnableAudioReadCache         FileExtendGranularity         ForceFirstPairStereo         IndieCamV210         MonoAudioTracks         RewriteAudioBuffered         RGB10IsLog         SDAspectRatio         SetFileSizeOnWrite         UseBufferedRW         0x56504349	Value           (0x00000000)           (0x00000000)           (0x0000000)           (0x0000000)           (0x56504349)           (0x0000000)           (0x0000000)           (0x00000000)           (0x00000000)           (0x0000000)           (0x00000000)           (0x00000000)           (0x00000000)           (0x00000000)           (0x00000000)           (0x00000000)	0 0 1 1 -1 0 1448100681 0 1 1 0 1 1 0 1 0 1 0 0 1 0 0 0 1 New Delete
Save .	As Default 🔹	Read Only Browse	Reload	Apply Close

Under the MediaReactor/PlugIns/QTMovie branch there will be an IndieCamV210 entry. If this is changed to one of the supported IndieCam types, then all v210 files will be interpreted as that type of IndieCam file. The possible types are

- INDIECAM\_POV ICPV IndieCam POV GBRG
  - o 0x56504349
- INDIECAM\_RGGB2K IC12 IndieCam RGGB 12bit-RAW
   0x32314349
- INDIECAM\_2KRAW IC2K IndieCam GBRG 2k-RAW
   0x4B324349
- INDIECAM\_2IN1RAW IC2X IndieCam GBRG 2in1-RAW
  - o 0x58324349

Setting the IndieCamV210 entry to the hex values above (when the edit box is in hex) will cause all v210 files to be interpreted as that type of IndieCam raw file. This means, (1) you cannot use standard v210 files and, (2) you cannot mix 2K and POV files on the same time-line, as one of them will be interpreted incorrectly.

# Multichannel Audio File Naming

Drastic products can support up to 16 mono (or 8 stereo pairs) of audio. There are file formats that are supported (like wave file extensible) that can contain all 16 channels in a single file, but these are not necessarily the most useful file types for production. In general, Drastic products prefer to store audio in a series of uncompressed, stereo files on disk in WAVE or AIFF format. Here are the primary types for these uncompressed stereo files:

AIFF 16 Bit Big Endian Stereo AIFF 20 Bit Big Endian Stereo AIFF 24 Bit Big Endian Stereo AIFF 32 Bit Big Endian Stereo WAVE 16 Bit Stereo WAVE 20 Bit Stereo WAVE 24 Bit Stereo WAVE 32 Bit Stereo WAVE 16 Bin Mono (for WMV/Matrox compatibilty)

Regardless of the file type, the audio files will always have the same naming conventions. For the examples below, the '.video' is the video source file. The '.wav' could equally be '.aiff' files.

BaseName.video (BaseName.avi, BaseName000001.dpx, etc) BaseName.wav (or BaseName.wav or BaseName.A12.wav) BaseName.A34.wav BaseName.A56.wav BaseName.A78.wav BaseName.A9A.wav (channels 9 and 10) BaseName.ABC.wav (channels 11 and 12) BaseName.ADE.wav (channels 13 and 14) BaseName.AFG.wav (channels 15 and 16)

If the video file is a series of stills, then the base name is everything before the numeric count. For example:
 BaseName\_000001.tga
 BaseName\_.wav
 BaseName\_.A34.wav

- The correct naming for a group of mono files is: BaseName.video BaseName.a1.wav BaseName.a2.wav BaseName.a3.wav BaseName.a4.wav BaseName.a5.wav BaseName.a6.wav BaseName.a7.wav BaseName.a8.wav BaseName.a9.wav BaseName.aa.wav (channel 10) BaseName.ab.wav (channel 11) BaseName.ac.wav (channel 12) BaseName.ad.wav (channel 13) BaseName.ae.wav (channel 14) BaseName.af.wav (channel 15) BaseName.ag.wav (channel 16)

Stereo pairs may be missing, but mono files may not. Any missing stereo channels will be filled with silence

There are a couple of other supported naming conventions which are there purely to support third party software packages. These include:

BaseName.video BaseName.aa.wav (one stereo pair only)

BaseName.video BaseName\_1.wav (dual mono files) BaseName\_2.wav (one stereo pair total)

BaseName.video BaseName.1.wav (dual mono files) BaseName.2.wav (one stereo pair total)

BaseName.video BaseName\_R.wav (dual mono files) BaseName\_L.wav (one stereo pair total)

BaseName.video BaseName.r.wav (dual mono files) BaseName.l.wav (one stereo pair total)

BaseName.video BaseName.wav (these are all mono wave files) BaseName\_A2.wav BaseName\_A3.wav BaseName\_A4.wav BaseName\_A5.wav BaseName\_A6.wav BaseName\_A7.wav BaseName\_A8.wav

BaseName.video audio12.wav audio34.wav audio56.wav audio78.wav BaseName.video default.wav

## **Closed Caption Format Support**

Drastic products generally support closed captions. Video I/O products can capture and play back closed caption information, depending on the capability of the software and the version. MediaReactor can convert closed caption formats along with the video and audio files.

Here is the list of closed caption formats supported by Drastic products:

- MPEG-2 'user' CC (read)
- MXF SMPTE 436 (read/write)
- MXF Avid embedded CC (read)
- MCC files side bar MacCaption/PC-Caption (read/write)
- SCC files side bar MacCaption/PC-Caption (read/write)
- MOV SD/HD CC tracks (read, and write with a special setup)

MediaReactor fully supports reading and writing the closed caption formats above. SCC and MCC are always written, along with other formats when available.

# Mac OS-X Enabling legacy codecs for more output choices in QuickTime 7.4 and greater

#### Symptoms

With QuickTime 7.4 or later installed, some older encoders (codecs) may appear to be missing export options in applications that export QuickTime files, such as Final Cut Pro or Compressor or from the export options in QuickTime Player Pro.

#### Resolution

Take the following steps to enable additional encoders: Choose Apple menu > System Preferences. Choose View > QuickTime. Click the Advanced button. Select the checkbox next to Show legacy encoders.

# Mac OS-X Using MediaReactor Workstation as a source reader for your own (or other) programs

MediaReactor Workstation provides a number of different ways to read supported file and compression types into your own programs. Here is a list of publicly available interfaces:

- **QuickTime Interface** MRWS provides a series of components to QuickTime including file readers, compressors, decompressors and low level data handlers that allow any program to read all the available formats through QuickTime as though they were normal MOV files
- **DTMediaRead Interface** This interface is a direct reader that requires an OEM agreement with Drastic.
- MkRefMov MRWS includes a command line program called MkRefMov (Make Reference Movie). This program can make a reference movie (a small pointer only movie) for most supported files that can be read by any program supporting QuickTime MOV files. This includes new programs like Final Cut Pro X that don't normally support formats like MXF variants from Omneon, Pinnacle, Grass Valley and Avid.

# Windows Using MediaReactor Workstation as a source reader for your own (or other) programs

MediaReactor Workstation provides a number of different ways to read supported file and compression types into your own programs. Here are a list of publicly available interfaces:

- **DirectShow** MRWS installs a DirectShow Filter called 'Drastic MediaReactor File Source'. This can be opened with any supported file to provide audio and video to a DirectShow filter graph
- **QuickTime Interface** MRWS provides a series of components to QuickTime including file readers, compressors, decompressors and low level data handlers that allow any program to read all the available formats through QuickTime as though they were normal MOV files

- **DTMediaRead Interface** This interface is a direct reader that requires an OEM agreement with Drastic. See the <u>DTMediaRead SDK page</u> for more information.
- MkRefMov MRWS includes a command line program called MkRefMov (Make Reference Movie). This program can make a reference movie (a small pointer only movie) for most supported files that can be read by any program supporting QuickTime MOV files. This includes new programs like Final Cut Pro X that don't normally support formats like MXF variants from Omneon, Pinnacle, Grass Valley and Avid.

# **OS Independent MkRefMov - Make Reference Movie**

Usage: ./mkrefmov -i <sourcefile> [-o <targetfile>]

- -i <sourcefile> File to be referenced.
- -o [targetfile] Optional, reference file name, otherwise it will use the source name with an mov extension

NOTE: Due to limitations in QuickTime, MkRefMov will not work properly with a series of still images. If you supply one, a full MOV will be created instead.

## AddTcMov - Add Time Code To An Existing QuickTime MOV

Usage: addtcmov -i <moviefile> -s <tcframe> -t <tctype> -r [reelname]

- -i <moviefile> QuickTime MOV to add tc track to
- -s <tcframe> Integer time code frame number of first frame in movie file.
- -t <tctype> Time code type
  - o 24 = 1
  - $\circ$  NonDropFrame = 2
  - $\circ$  DropFrame = 4
  - $\circ$  Pal = 8
  - $\circ$  50 = 16
  - o **59.94 = 32**
  - 59 special = 34 (not recommended)
  - o **60 = 64**
  - o **23.98 = 128**
  - 23.98 true = 132 (not recommended)
  - $\circ$  hundredths = 68
- -r <reelname> Reel name for file

## mkRtIndex - Make An rtin (Real Time Index) File

Usage: mkRtIndex <sourcefile> [-v]

NOTE: parameters must be in order

- <sourcefile> File to be indexed.
- -v Optional, verify rtIndex instead of create.

## MRMetaData - Extract a File's Metadata Information

Usage: mrmetadata.exe -i <sourcefile> -qx -j # -k <picon.jpg> -e # -c -n 1 -w <output.wav> -m <reference.mov>

- -i <sourcefile> File to be referenced.
- Optional parameters:
  - -q Quiet mode.

- -x Do NOT export metadata XMLS
- -j # Create a JPEG picon from frame #
- -k <picon.jpg> File name for JPEG picon frame
- $\circ$   $\,$  -e # Extract a JPEG picon for every # frame
- -c Extract closed captioning
- $\circ$  -n # First channel of source audio for the wave file (0,2,4)
- $_{\odot}~$  -w <output.wav> Extract audio to a wave file
- -m <reference.mov> Create a QuickTime reference file

## MRAnalyze - Use Standard PSNR/(MS)SSIM to Compare an Original and Converted File

mranalyze - Video/Audio analysis tool (www.drastic.tv)

Usage: mranalyze -a <source a> -b <source b> -q -p # -s # -m # -g # -f # -l # -x # -n # [-o <targetfile>]

- -a <source a> Original file.
- -b <source b> Compressed file.
- -q Quiet (no output) must be first argument.
- -p # PSNR type
- -s # SSIM type (0-Square, 1=Guassian)
- -m # MS-SSIM type
- -g # Global checks (0-none, 1-basic, 2-advanced)
- -f # First frame to check
- -I # Last frame to check
- -x # B source first frame to check
- -n # Next frame distance (def 1 = every frame)
- -o [targetfile] Optional, csv output name (or '-o i' to generate the file name)

# The MR Lite Interface

The MR Lite interface is installed with MediaReactor Workstation to provide user directed transcoding functionality. The user may select a file, set up the transcoding parameters, and create a new file which is a copy of the media in the original file, but in a new file type.

## **MR Lite Displays and Controls**

## Main interface

∕Settings Profil display pulld	e own		Configure button	Load button	Save button
MediaReactor Lite					
C:\Users\corey\App	Data (Roaming (Dr	astic\mrdefault.mrws		Source	Source button
Satting	Value	Description			Target button
Setung	value	Description			
File Type	2	MOV Apple QuickTime Movie file	container		
Codec ID	0x6D6A7062	fccName(bpjm) Description not	found.		
Width	720	Pixels			
Height	486	Pixels			
Bit Count	24	Bits			
Key Frame	1	Frames			
Data Rate	3200	KBytes / Sec			
Video Quality	10000	Amount		=	
Audio File Type	1	WAVE - Old Microsoft WAVE and	d Broadcast WAVE re	ad	
Audio Compression	0	Default			
Sample Rate	48000	Samples / Sec.			
Bits/Sample	16	Bits			
Audio Quality	320 Disabled	Amount			
Separate Audio	Disabled				
Audio Only	Disabled				
Dual Mono	Disabled				
Process Filter	Disabled	This are seen have an effect on th			
Filter Type	0	This process has no effect on th	ie video		
Filter Option	0				
Filter Option	0			-	
			Convert	Close	
		Con	vert	Close	

- **Settings display** All of the details about the type of media file that will be created in the transcode process are displayed in this field. Each setting displays a value and a comment if available.
- **Profile pulldown** displays the current configuration file, and allows the user to select from any profiles that have been saved into the default location.

- **Configure button** Pressing this button opens the **MediaReactor Settings** window, which allows the user to view and change the settings for the file that will be created in the transcoding process.
- **Load button** Pressing this button opens a browser which allows the user to navigate to and load a configuration file.
- **Save button** Pressing the **Save** button opens a browser which allows the user to save the current configuration in a location and with the name of the user's choice.
- **Source button** Pressing the **Source** button opens a browser which allows the user to navigate to and select a media file to transcode. Where a file has been selected, the field to the left of this button displays the selected file's file path.
- **Target button** Pressing the **Target** button opens a browser which allows the user to set the location in which the transcoded file will be saved.
- **Convert button** Pressing the **Convert** button begins the transcode, if one has been set up.
- Close button Pressing the Close button closes the application.

### Settings

Video Section	MediaReactor Se	ttings	-	and the second		×	
	Preset Profiles						Presets pulldown
	Distribution_Qua	ality_1				•	
	Video Settings						
	File Type	mov - Quid	kTime Movie fo	or 64 Bit		•	
	Codec ID	MPEG IMX	50 Mb/s for Av	vid		•	
Audio	Width	720	*	Height	512	×	
	Bit Depth	24	<u>*</u>	Data Rate	50000	-	
	Key Frame	1		Quality	10000		
	Audio Settinas						
		Senarate	e 🗌 Audio		l Mono		
	File Type	unaura old	Microsoft WA		1110110		
	Codec ID	Nave - Olu	MICLOSOLEWA	VE RIFT			
	Course Data	denaurit denaurit		Quelta	220		
Filter	Sample Rate	48000		Quality	320		
	Bits/Sample	16	*				
	Filter Settings						
	C Enable	HD->SD +	Afterburn Tim	ecode/Keycod	e	-	
		Value	Option			-	
		2	VITC Pos	ition		=	
		1	LTC Posi	tion			
		4	KEYCOD	E Position		-	
	2/3 Drop	Add	Remove	00::0:0	::00	Set	Accept button
							-
				Acce	pt Ca	ancel	
			-	-			Cancel

- **Video section** This section contains controls to set the type of video that will be created during the transcode process.
- **Audio section** This section contains controls to set the type of audio that will be created during the transcode process.
- **Filter section** This section contains controls to set any filters that will be applied to the media created during the transcode process. There are also controls to add or remove any 2/3 drop processing for specific Telecine applications.
- **Presets pulldown** This pulldown menu allows the user to select between profiles that have been preset, and displays the current preset, if one has been selected.
Accept button - Pressing the Accept button sets any changes the user has made into the current configuration, and closes the MediaReactor Settings window.
 Cancel button - Pressing the Cancel button closes the MediaReactor Settings window without changing the current configuration.



#### MediaReactor Settings – Video Section

**File Type pulldown** - Use this pulldown menu to select between available video file types for the transcoded file.

**Codec ID pulldown** - Use this pulldown menu to select between available video codecs for the transcoded file.

- **Width selector** Where the selected video type has adjustable width parameters, clicking the up and down arrows to the right of the **Width** field allows the user to adjust the width of the transcoded video by selecting between supported values.
- **Bit Depth selector** Where the selected video type has adjustable bit depth parameters, clicking the up and down arrows to the right of the **Bit Depth** field allows the user to adjust the bit depth of the transcoded video by selecting between supported values.
- **Key Frame selector** Where the selected video type has adjustable key frame parameters, clicking the up and down arrows to the right of the **Key Frame** field allows the user to adjust the key frame for the transcoded video by selecting another frame.
- **Height selector** Where the selected video type has adjustable height parameters, clicking the up and down arrows to the right of the **Height** field allows the user to adjust the height of the transcoded video by selecting between supported values.
- **Date Rate selector** Where the selected video type has adjustable data rate parameters, clicking the up and down arrows to the right of the **Data Rate** field allows the user to adjust the data rate of the transcoded video by selecting between supported values.
- **Quality selector** Where the selected video type has adjustable quality parameters, clicking the up and down arrows to the right of the **Quality** field allows the user to adjust the quality of the transcoded video by selecting between supported values.

MediaRea	actor Sett	tings – A	udio See	tion			Audio	Only
checkbox	Audio Settings						checkb	oniy
File Type pulldown		💟 Separate	🗹 Audio Onl	y 🔍 Dua	al Mono		Dual M checkb	lono box
Codec ID	File Type	wma - Window	/s Media Audio	Steaming I	Format	-		
pulldown	Codec ID	High definition	quality audio (	VBR) / Hig	gh definition qualit	tı ▼		
Sample Rate		48000	* *	Quality	320		Quality	,
selector		16	· · · · · · · · · · · · · · · · · · ·				selecto	ir
Bits/Sample Selector								

- **Separate checkbox** Select this checkbox to specify that the audio being created in the transcode process should be separate from the video.
- **File Type pulldown** Use this pulldown menu to select between available audio file types for the transcoded file.
- **Codec ID pulldown** Use this pulldown menu to select between available audio codecs for the transcoded file.
- **Sample Rate selector** Where the selected audio type has adjustable sample rate parameters, clicking the up and down arrows to the right of the **Sample Rate** field allows the user to adjust the sample rate of the audio in the transcoded video by selecting between supported values.
- **Bits/Sample selector** Where the selected audio type has adjustable bits per sample parameters, clicking the up and down arrows to the right of the **Bits/Sample** field allows the user to adjust the number of bits per sample for the audio in the transcoded video by selecting between supported values.
- **Audio Only checkbox** With the **Separate** checkbox selected, the user can select this checkbox to specify that no video file should be created during the transcode process.
- **Dual Mono checkbox** With the **Separate** checkbox selected, the user would be able to select this checkbox to specify that the separate audio file being created should provide two mono streams of audio.
- **Quality selector** Where the selected audio type has adjustable quality parameters, clicking the up and down arrows to the right of the **Quality** field allows the user to adjust the quality setting for the audio in the transcoded video by selecting between supported values.

#### **MediaReactor Settings – Filter Section**



1	Enable checkbox	Selecting this checkbox allows the user to apply a filter to the transcoded file.
2	<b>Filter</b> pulldown menu	Use the pulldown menu to select between available filters. Currently the following filters are available: Blend Fields, Burn-in Time Code/User bits, Deinterlace Blend, Deinterlace Interpolate, Duplicate Field 1, Duplicate Field 2, Flip Horizontal, Flip Vertical, HD->SD + Afterburn Timecode/Keycode, Invert Fields, Invert Temporal and Field Order, Invert Temporal Order.
3	<b>Filter Settings</b> field	Where a filter has values that can be adjusted, the values will be displayed in this field, and the user will be able to edit the value by clicking on the value and typing in a new value.

#### MediaReactor Settings – 2/3 Drop Section



1	2/3 Drop checkbox	Select the <b>2/3 Drop</b> checkbox to specify that either (a) a file has been created by a telecine and needs to have frames added to create a standard frame rate video, or (b) a telecine-derived video file which has had frames added needs to have those frames removed to return to a telecine frame rate.
2	Add button	Select the <b>Add</b> button to specify that frames will be added to create a standard frame rate video from a telecine-derived video file. Selecting this button de- selects the <b>Remove</b> button.
3	Remove button	Select the <b>Remove</b> button to specify that frames will be removed from a standard rate video file to create a telecine compatible video file. Selecting this button de- selects the <b>Add</b> button.
4	Time Code field	Where the user is removing frames from a standard rate video file created by adding frames to a telecine-derived video file, the user can set the "A" frame, which is typically an interpolated frame, by typing in the time code location of the "A" frame.

5 Set button Once the time code location of the "A" frame has been entered into the <b>Time Code</b> field, pressing the <b>Set</b>	button sets the time code into memory.	5	Set button	Once the time code location of the "A" frame has been entered into the <b>Time Code</b> field, pressing the <b>Set</b> button sets the time code into memory.
---	--	---	------------	---

# **MR Lite Basic Operation**

Here is how to select a media file, set up various parameters, and transcode the media file into another type of media file.

## Transcode a File

Run **MR Lite**. **MR Lite** resides by default in the MediaReactor install folder, and it may additionally have a shortcut placed in the Start menu, within Start/Programs/MediaReactor/ MediaReactor Lite.

### Select a Source File

Select the file you want to transcode:

Press the **Source** button to open the source file browser. Navigate to the location of the file you want to transcode and select it. Press the **Open** button. The browser will close and the network path of the selected file will appear in the **Source File** field.

### Select a Target Location

Select a folder to save the new file in:

Press the **Target** button to open the target location browser. Navigate to the location of the folder in which you would like the transcoded file to be saved. An option is available to create a new folder. Once the location has been properly selected, press the **OK** button.

#### Set the Transcoding Parameters

Determine the type of file you want to create:

Press the **Configure** button. This opens the **MediaReactor Settings** window.

#### **Video Settings**

Use the File Type pulldown menu to select the file type.

Use the **Codec ID** pulldown menu to select the codec.

Use the Width and Height selectors to set the frame size.

Use the **Bit Depth**, **Data Rate**, and **Quality** selectors to set up transcoding to file types that have adjustable resolution settings.

Use the **Key Frame** selector to set the key frame interval for transcoding to file types that require key frames to reconstruct interpolated frames.

#### **Audio Settings**

- Use the **Sample Rate**, **Quality**, and **Bits/Sample** selectors to set up transcoding to file types that support adjustable audio resolution.
- The **Separate** checkbox is available for transcodes that require an audio file to be created outside of the context of the video file. Selecting the **Separate** checkbox activates the other controls in the **Audio Settings** section.
- If **Separate** has been selected, selecting the **Audio Only** checkbox will ignore the video in the source file and only create an audio file during the transcode.
- If **Separate** has been selected, selecting the **Dual Mono** checkbox will create two mono audio files during the transcode.
- If **Separate** has been selected, use the **File Type** pulldown menu to set the file type for the separate audio file that will be created during the transcode.
- If **Separate** has been selected, use the **Codec ID** pulldown menu to set the codec for the selected audio file type.

#### **Filter Settings**

Specific filter settings are additionally available for the transcoded file. One filter may be applied per transcode.

Select the **Filter** checkbox to activate the controls in the **Filter Settings** section. Use the pulldown menu to select the **Blend Fields** filter where the transcoded file should have both fields of a frame blended together.

- Use the pulldown menu to select the **Burnin Timecode/User Bits** filter where the transcoded file should display the time code and user bits over the transcoded video. The **TC-UB Display** values may be set to 2 for both time code and user bits, or to 1 for time code only. The **X Position** and **Y Position** values set the location on the image where the time code and possibly user bits will be displayed. The **Display Scale 1-4** value sets the size of the time code and possibly user bits that will be displayed.
- Use the pulldown menu to select the **Deinterlace Blend** filter where the source file is an interlaced type and the transcoded file should have these fields deinterlaced and blended. The **Edge** value may be set to determine how much blending should be applied to detected edges. The **Threshold** value may be set to determine the level at which blending will be applied.
- Use the pulldown menu to select the **Deinterlace Interpolate** filter where the source file is an interlaced type and the transcoded file should have these fields deinterlaced, and interpolated. The **Edge** value may be set to determine how much interpolation should be applied to detected edges. The **Threshold** value may be set to determine the level at which interpolation will be applied.
- Use the pulldown menu to select the **Duplicate Field 1** filter where the transcoded file should replace each field 2 with its associated field 1.
- Use the pulldown menu to select the **Duplicate Field 2** filter where the transcoded file should replace each field 1 with its associated field 2.
- Use the pulldown menu to select the **Flip Horizontal** filter where the transcoded file should be reversed left to right.
- Use the pulldown menu to select the **Flip Vertical** filter where the transcoded file should be reversed top to bottom.
- Use the pulldown menu to select the **HD->SD + Afterburn Timecode/Keycode** filter where the source file is an HD frame size and should be transcoded to standard definition, and additionally should have the time code and key code displayed over the image. The **VITC Position** value may be set to specify where in the sequence VITC will

be displayed, from 1 (at the top) to 4 (at the bottom). The **LTC Position** value may be set to specify where in the sequence LTC will be displayed, from 1 (at the top) to 4 (at the bottom). The **Keycode Position** value may be set to specify where in the sequence keycode will be displayed, from 1 (at the top) to 4 (at the bottom). The **Inkcode Position** value may be set to specify where in the sequence Inkcode will be displayed, from 1 (at the top) to 4 (at the bottom). The **Inkcode** 

from 1 (at the top) to 4 (at the bottom).

- Use the pulldown menu to select the **Invert Fields** filter where the transcoded file should have each field 2 first, followed by field 1.
- Use the pulldown menu to select the **Invert Temporal and Field Order** filter where the transcoded file should have each field 2 first, followed by field 1, and additionally should begin at the last frame and end at the first frame.
- Use the pulldown menu to select the **Invert Temporal Order** filter where the transcoded file should begin at the last frame and end at the first frame.

#### 2/3 Drop Settings

2/3 Drop Settings are available for telecine applications. Where a file has been created by a telecine at standard 24 fps frame rate, frames may be added to create a standard 30 fps frame rate file. Where a file has been created by a telecine and has had frames added to create a standard 30 fps frame rate file, the added frames may be removed.

Select the **2/3 Drop** checkbox to activate the controls in the **2/3 Drop Settings** section. Select **Add** if you need to add frames to a 24 fps telecine derived file to create a standard 30 fps frame rate file.

Select **Remove** if you need to remove added frames from a telecine derived file which has had frames added. In this case you will need to set the "A" Frame, or the first frame that has been added. To accomplish this, step through the file frame by frame (starting at the first frame) until a frame appears whose quality is noticeably lower than its neighboring frames – this will be the "A" Frame. Note the time code location of this frame and enter it into the time code field. Press the **Set** button to set this as the first added frame. Since frames are added in a predictable sequence, selecting the first "A" Frame reliably specifies all of the added frames.

#### **Accept Settings**

Once all of the configuration settings have been correctly set for the required transcode, press the **Accept** button. This closes the **MediaReactor Settings** window. Looking back at the main **MR Lite** interface, the user will see their specified values within the **Configuration Settings** field.

### **Begin the Transcode**

Press the **Convert** button to begin the transcode. A progress bar along the bottom of the window shows how the transcode is progressing. If desired, the user may stop the transcode by pressing the **Abort** button.

A checkbox is available to display the transcoded file during the transcode. Select the **Show Output** checkbox. This action displays frames from the current transcode over the **Configuration Settings** field. The current frame number and the total number of frames are displayed at the bottom left of this field. The time code location of the current frame is displayed at the bottom right of this field.

# **Configuration File Options**

The user may save their configuration settings as a file. This allows the user to save their most commonly used (or all of their) configurations as XML files for later use.

### **Save Configuration Settings**

Here is how to save the current configuration settings for use on other source files. Press the **Save** button. This opens a standard browser. Use the browser to navigate to and select a folder in which you would like to save the configuration. Enter a name for the configuration. Press the **Save** button.

### Load Configuration Settings

Configuration settings that were created and saved (or created elsewhere and loaded) with the current install of **MR Lite** will show up in the **Configuration Settings** pulldown menu at the top of the **MR Lite** interface. However if a configuration settings file has been created outside of this instance the user may still load it. Press the **Load** button. This opens a standard browser. Navigate to the location of the configuration settings XML file and select it. Press the **Open** button.

## **Close MR Lite**

Once all required transcodes have been completed, the user may close **MR Lite**. Press the **Close** button. The MR Lite interface will close.

MediaReactor and MediaReactor Workstation integrate tightly with installed operating systems and applications. This section has tips and tricks on getting the most out of MediaReactor and/or MediaReactor Workstation.

# **Command Line Utilities**

### mrcmd

mrcmd - Drastic MediaReactor Command Line Interface Build: 854 (c)opyright 1995-2018 Drastic Technologies Ltd. All rights reserved.

```
Usage: mrcmd [?] [-s#] [-e#] [-x#] [-y#] [-b#] [-q#] [-d#] [-k#] [-sm] [-r#] [-a#] [-c#]
[-p#] [-F<audiofiletype>] [-AV] [-f<filety
e>] [-v<codec>] [-n#] [-i#] [=P<profile>] <inputname> <ouputname>
[] = optional
Parameters:
```

-s#	= start frame (def: 0)								
-e#	= end frame (def: length of input)								
-t	= allow transcode stream (def: convert stream)								
-x#	Horizontal size >1 (def: same as input)								
-y#	E = Vertical size >1 (def: same as input)								
-b#	= Bit depth $8/16/24/32$ (def: optimal)								
-q <i>‡</i>	t = Video quality 010000 (def: highest)								
-d <i>‡</i>	E = Video data rate >=0 (def: highest)								
-k#	= Key frame distance (def: 15)								
-S	= Separate audio files (def: internal)								
-m	= Dual mono audio files (def: stereo, requires -s)								
-r#	= Audio frequency/rate (def: same as input)								
-a#	= Audio sample size 8/16 (def: same as input)								
-C#	= Audio channels 1/2/4/5/6/8 (def: same as input)								
-p#	E = Audio quality 010000 (def: highest)								
-i#	= Output video file ID (from codeclist.txt)								
-f<	filetype> = Output video file type - AVI/MOV/OMF (def: auto sense)								
-F<	filetype> = Output audio file type - WAV/AIF/AU (def: auto sense, requires -s)								
-V<	<pre>codec&gt; = Output video codec (text) - MMES/2yuv/DVSD (def: RGB</pre>								
uncompr	essed)								
-n <i>‡</i>	= Output video codec (numeric hex) - 88000001/1/a/f								
-A	= Disable audio output (def: depends on input)								
-V	= Disable video output (def: depends on input)								
-P<	<profile> = MediaReactor profile file path/name (optional)</profile>								
<ir< td=""><td>putname&gt; = Input file path/name (required)</td></ir<>	putname> = Input file path/name (required)								
<0	utputname> = Input file path/name (required)								
To get a list of all the file type available in the file codeclist tyt, use									
mr	cmd -all								

To get a list of the codecs for a file type, use mrcmd #

## mkrtindex

mkRtIndex - Make an rtin (RTIndex) file for a MOV, MXF, AVI, etc, by Drastic Technologies (www.drastic.tv)

Usage: mkRtIndex <sourcefile> [-v]

parameters must be in order

<sourcefile> File to be indexed.

-v Optional, verify rtIndex instead of create.

# addtcmov (windows 32 only)

addtcmov - Add a time code track to a QuickTime movie file, by Drastic Technologies (www.drastic.tv) Usage: addtcmov -i <moviefile> -s <tcframe> -t <tctype> -r [reelname] -i <moviefile> QuickTime MOV to add tc track to -s <tcframe> Integer time code frame number of first frame in movie file. -t <tctype> Time code type = 1 24 NonDropFrame = 2DropFrame = 4 Pal = 8 50 = 16 59.94 = 32 59 special = 34= 64 60 23.98 = 12823.98 true = 132hundredths = 68

-r <reelname> Reel name for file

# mkrefmov (windows 32 only)

mkRefMov - Make a QuickTime reference movie file for a GXF, MXF, AVI, etc, by Drastic Technologies (www.drastic.tv)

Usage: ./mkrefmov -i <sourcefile> [-o <targetfile>]

- -i <sourcefile> File to be referenced.
- -o [targetfile] Optional, reference file name.

### mrmetadata

mrmetadata - Extract metadata information from GXF, MXF, AVI, etc, by Drastic Technologies (www.drastic.tv) Build: 888

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Usage: mrmetadata.exe -i <sourcefile> -qx -j # -k <picon.jpg> -e # -c -n 1 -w <output.wav> -m <reference.mov>

-i <sourcefile> File to be referenced.

Optional paramaters:

-q Quiet mode.

-x Do NOT export metadata XMLS

-j # Create a JPEG picon from frame #

-k <picon.jpg> Filename for JPEG picon frame

-e # Extract a JPEG picon for every # frame

-c Extract closed captioning

-n # First channel of source audio for the wave file (0,2,4)

-w <output.wav> Extract audio to a wave file

-m <reference.mov> Create a QuickTime reference file

### mranalyze

mranalyze - Video/Audio analysis tool, by Drastic Technologies (www.drastic.tv)

Usage: ./mranalyze -a <source a> -b <source b> [-o <targetfile>]

- -a <source a> Original file.
- -b <source b> Compressed file.
- -q Quiet (no output) must be first argument.
- -p # PSNR type
- -s # SSIM type (0-Square, 1=Guassian)
- -m # MS-SSIM type
- -g # Global checks (0-none, 1-basic, 2-advanced)
- -o [targetfile] Optional, reference file name.

## mrfix

mrfix - Change metadata in media files, by Drastic Technologies (www.drastic.tv) Build: 888

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Usage: mrfix -i <sourcefile> -m c [per mode parameters] -i <sourcefile> File match string (e.g. \*.ari) -q Quiet, minimal print outs -t Test, and do not alter files -m <mode> What kind of file operation: a Arri file metadata update For mode details, specify the mode (e.g. mrfix -m a ?)

#### Arri Metadata

The Arri file metadata is specified in pairs, after the main parameters above. Each pair consists of the element that should be changed, and what it should be changed to. There are three types of data: U32 (a 32 bit integer number, e.g. 24), R32 (a floating point value, e.g. 1.223) and U8 (a string with a maximum size, e.g. "this is metadata"). When specifying strings, quote marks must be used if the string contains spaces. For FPS settings, they can be specified as simple frame rates (e.g. 24, 25, 30) or non integer frame rates by multiplying by 1000 (e.g. 23976, 29970).

WhiteBalance U32 GreenTintFactor R32 WhiteBalanceFactorR R32 WhiteBalanceFactorG R32 WhiteBalanceFactorB R32 WBAppliedInCameraFlag U32 ExposureIndex U32 BlackLevel U32 WhiteLevel U32 LookFile U8[32] SensorFps U32 (note: should match ProjectFPS) ProjectFps U32 (note: should match SensorFPS) CircleTake U32 ReelName U8[8] SceneName U8[16] TakeName U8[8] Director U8[32] DoP U8[32] ProductionName U8[32] Company U8[32] Notes U8[256] SoundFileName U8[32] SoundRollName U8[32] SceneFileName U8[32] TakeFileName U8[32]

#### Info U8[32]

Example command line:

mrfix -i V:\Test\\*.ari -m a SensorFPS 24 ProjectFPS 24 ExposureIndex 1200 WhiteBalanceFactorR 0.901 WhiteBalanceFactorG 1.0 WhiteBalanceFactorB 1.34 LookFile testlook.look Director "James L Brooks" Info "This is a line of information

# **Appendix - Drastic DT3D Stereo File**

The Drastic DT3D stereo file is an XML based re-director file that can merge two separate 'eye' files into a stereo pair, as well as adding audio and optional closed captioning.

DT3D Stereo File Format Drastic Technologies Ltd (c) Copyright 2005-2018, Drastic Technologies Ltd All Rights Reserved

\_\_\_\_\_

ntents:
Overview
File Format
Samples
Overview

The .dt3d 'stereo' file is a text based XML file that specifies two separate files as the left and right eyes of a stereo pair. These files do not have to have a particular naming convention, or even be of the same file type, but their internal compression must be the same. The stereo file reader will open both video files, and an optional set of audio files, and combine them for 3D use in videoQC, Drastic DDR, MediaNXS, MediaReactor and other Drastic products.

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=========	===========	
=========	=======================================	 =======================================
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=========	=======================================	
========	=========	
2. File Format		
=========	========	
=========	=========	

The file format is an ANSI or UTF-8 XML file using iso-8859-1 encoding. It has to use the file extension .dt3d to be recognized by the stereo reader plugin in Final Cut Pro, Premiere, Media Composer, etc. If you are only using Drastic or your own software, it can also use the .stereo extension. Extra information may encoded at any point in the file, but at minimum there must be a Stereo tag with at least two File<number> tags to specify the right and left eye files.

All stereo files start with the xml type specifier:

<?xml version="1.0" encoding="iso-8859-1" ?>

This is normally followed by a comment specifying the file's purpose and where the format document can be retrieved:

<!-- Drastic stereo file redirector -->

<!-- Documentation http://www.drastictech.com/stereofileformat.txt -->

All of the important information for the stereo reader is contained within a Stereo tag pair <Stereo>

</Stereo>

The stereo reader is designed to handle more than two video frames (eyes) per read, but for now it is only using two. Each file is enclosed in a File<number> tag pair. The numbering next to the File should be 0 and 1 for the left and right eyes:

```
<File0>
<!-- Left eye -->
</File0>
<File1>
<!-- Right eye -->
</File1>
```

within these tags are sub tags that specify where the video file is and any offset required to align the two eyes. A typical file tag area will look like this: <File0>

<!-- Optional directory, else current dir--> <Dir>C:\Optional</Dir> <!-- First file name --> <Name>test\_l.avi</Name> <!-- Offset in frames --> <Offset>22</Offset>

</File0>

<Dir> - Optional, contains the directory or folder in which the file resides. If it is not specified, it is assumed the file is in the same directory as the stereo file.

<Name> - Required, contains the actual file name and extension of the media file. For sequences, simply specify the first name in the sequence and the rest will be found automatically

<Offset> - Optional, if present it will be the frame in the media file that will be read as frame 0. All frames in the file will be offset by this amount. If it is not specified, it is set to 0

There is also an optional <AudioFile> tag that can be used to specify an arbitrary separate audio file to be read with the video files. This section has the same format as the File<num-

ber> sections. If it is not specified, then audio will be read from the first (File0/left eye) video file.

An MCC or SCC closed captioning file may also be specified in a <ClosedCaptions> tag, using the same <File> tag as the audio and video formats.

```
_____
_____
_______
3. Samples
_____
_____
-snip-----
<?xml version="1.0" encoding="iso-8859-1" ?>
<!-- Stereo file redirector -->
<!-- http://www.drastictech.com/stereofileformat.txt -->
<Stereo>
 <!-- First file -->
<File0>
  <!-- Optional directory, else current dir-->
 <Dir>C:\Optional</Dir>
 <!-- First file name -->
 <Name>test l.avi</Name>
 <!-- Offset in frames -->
  <Offset>22</Offset>
 </File0>
<File1>
 <!-- Optional directory, else current dir-->
 <Dir>C:\Optional</Dir>
 <!-- First file name -->
 <Name>test_r.avi</Name>
 <!-- Offset in frames -->
 <Offset>0</Offset>
</File1>
<!-- Optional audio file name. If not present then audio will be read from the first video file
-->
<AudioFile>
  <!-- Separate audio file name -->
  <Name>test.wav</wave>
</AudioFile>
</Stereo>
-snip-----
-snip-----
```

```
<?xml version="1.0" encoding="iso-8859-1" ?>
<!-- http://www.drastictech.com/stereofileformat.txt -->
<Stereo>
 <File0>
   <Name>test I.avi</Name>
 </File0>
 <File1>
  <Name>test_r.avi</Name>
 </File1>
 <AudioFile>
  <Name>test.wav</wave>
 </AudioFile>
</Stereo>
-snip-----
                 -----
-snip-----
                          ------
<?xml version="1.0" encoding="iso-8859-1" ?>
<!-- http://www.drastictech.com/stereofileformat.txt -->
<Stereo>
 <File0>
  <Name>test l.avi</Name>
 </File0>
 <File1>
   <Name>test r.avi</Name>
 </File1>
</Stereo>
-snip-----
-snip-----
<?xml version="1.0" encoding="iso-8859-1" ?>
<!-- Drastic Stereo file redirector -->
<!-- Documentation: http://www.drastictech.com/stereofileformat.txt -->
<Stereo>
 <!-- First/Left file -->
 <File0>
   <!-- First/Left file name -->
  <Name>T3D003013_Centre_fast_1080p60_l.yuv</Name>
  <!-- Offset in frames -->
   <Offset>0</Offset>
 </File0>
 <!-- Second/Right file -->
 <File1>
   <!-- Optional directory, else current dir-->
   <!-- <Dir>C:\Optional</Dir> -->
   <!-- Second/Right file name -->
   <Name>T3D003013_Centre_fast_1080p60_r.yuv</Name>
   <!-- Offset in frames -->
   <Offset>0</Offset>
 </File1>
  <!-- Base audio file name -->
```

```
<AudioFile>
<Name>../Audio_wav/T3a003y113_Centre_fast_act_unc.wav</Name>
</AudioFile>
<ClosedCaptions>
<Name>T3D003013_Centre_fast_1080p60_r.mcc</Name>
</ClosedCaptions>
</Stereo>
-snip------
```

# Appendix - Drastic DHDR/HDR YUV RAW Video Header Format

Drastic software can read many file formats which it does not natively understand. Formats that have a fixed video frame size and are logically organized can be described using the industry standard HDR text file format (NOTE: Not the still image HDR). This page describes the file format.

To do this a couple of basic criteria must be met:

- The frames within the stream or series of images, must be the same size.
- The frames must be in a supported compression format (see below)
- A header (.HDR/.STILLS) file must be created to describe the video

The HDR/.STILLS must be in the following format: HDR File Format Drastic Technologies Ltd. (c) Copyright 1995-2018, Drastic Technologies Ltd. All Rights Reserved

Contents:

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- 1. Overview
- 2. Settings
- 3. Calculations
- 4. Samples

====	====	===	===:	====	====	====	====		====	====	====	====	====	====
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1. Ove	rview													
====	====	===	====	====	:=									
====	====	===	====	====	==									

This document describes header (\*.dthdr/\*.hdr) file format for use with the Drastic Technologies dtx\_HdrYuv.d1x plug in for MediaReactor and QuickClip/VVW. This format has been in use for over 25 years in various forms as a \*.hdr. By default, Drastic software now writes and reads a \*.dthdr (as well as still reading the .hdr). The \*.dthdr is the same format with more capabilities including better audio, split long file and time code support. Herein are outlined the most common descriptors and their meanings as they have been standardized in our software. An updated version of this document is available at:

http://www.drastictech.com/hdrfileformat.txt

The basic concept of the HDR file is a text file that describes a simple video stream in which each frame is the same size, and its associated video and audio information. On disk, there will be 2 or more files, normally with the same starting name:

E:\TestRecord\Testing.dthdr E:\TestRecord\Testing.yuv E:\TestRecord\Testing.wav

In this example the yuv file contains all the captured frames (as opposed to individual numbered yuv files), the wav file contains the matched audio and the hdr file describes them as specified below. When loading these files into QuickClip or MediaReactor, the hdr file should be chosen to make sure all files are picked up properly. The basic format of the hdr file consists of a series of settings, each taking two text lines. The first line is the label and is always preceded by a percentage sign (%) and the second line is the value of the setting:

% Image Size (This line describes what the next line specifies) 486 720 (This contains the values - NTSC 720 x 486)

\_\_\_\_\_ \_\_\_\_\_ = = \_\_\_\_\_\_\_ 2. Settinas \_\_\_\_\_ % Color Format YUV420 This setting describes the format of the video frames within the file. The current possible formats are: yuv422 16 - 4:2:2 Planar YCbCr in I420 order, 16 bits per component yuv422 16le - Little endian 4:2:2 planar YCbCr in I420 order, 16 bits per component yvu422\_16 - 4:2:2 Planar YCbCr in YV12 order, 16 bits per component yvu422\_16le - Little endian 4:2:2 planar YCbCr in YV12 order, 16 bits per component yuv422 10 - 4:2:2 Planar YCbCr in I420 order, 10 bits per component in 16 bit container yuv422 10le - Little endian 4:2:2 planar YCbCr in I420 order, 10 bits per component in 16 bit container yvu422 10 - 4:2:2 Planar YCbCr in YV12 order, 10 bits per component in 16 bit container yvu422\_10le - Little endian 4:2:2 planar YCbCr in YV12 order, 10 bits per component in 16 bit container yuv422 12 - 4:2:2 Planar YCbCr in I420 order, 12 bits per component in 16 bit container

yuv422 12le - Little endian 4:2:2 planar YCbCr in I420 order, 12 bits per component in 16 bit container yvu422\_12 - 4:2:2 Planar YCbCr in YV12 order, 12 bits per component in 16 bit container yvu422\_12le - Little endian 4:2:2 planar YCbCr in YV12 order, 12 bits per component in 16 bit container yuv422\_14 - 4:2:2 Planar YCbCr in I420 order, 14 bits per component in 16 bit container yuv422\_14le - Little endian 4:2:2 planar YCbCr in I420 order, 14 bits per component in 16 bit container yvu422\_14 - 4:2:2 Planar YCbCr in YV12 order, 14 bits per component in 16 bit container yvu422 14le - Little endian 4:2:2 planar YCbCr in YV12 order, 14 bits per component in 16 bit container yuv444 10 - 4:4:4 Planar YCbCr in I420 order, 10 bits per component in 16 bit container yuv444\_10le - Little endian 4:4:4 planar YCbCr in I420 order, 10 bits per component in 16 bit container yvu444 10 - 4:4:4 Planar YCbCr in YV12 order, 10 bits per component in 16 bit container yvu444\_10le - Little endian 4:4:4 planar YCbCr in YV12 order, 10 bits per component in 16 bit container yuv444\_12 - 4:4:4 Planar YCbCr in I420 order, 12 bits per component in 16 bit container yuv444 12le - Little endian 4:4:4 planar YCbCr in I420 order, 12 bits per component in 16 bit container yvu444 12 - 4:4:4 Planar YCbCr in YV12 order, 12 bits per component in 16 bit container yvu444\_12le - Little endian 4:4:4 planar YCbCr in YV12 order, 12 bits per component in 16 bit container yuv444 14 - 4:4:4 Planar YCbCr in I420 order, 14 bits per component in 16 bit container yuv444 14le - Little endian 4:4:4 planar YCbCr in I420 order, 14 bits per component in 16 bit container yvu444\_14 - 4:4:4 Planar YCbCr in YV12 order, 14 bits per component in 16 bit container yvu444\_14le - Little endian 4:4:4 planar YCbCr in YV12 order, 14 bits per component in 16 bit container YUV420 - Planar YCbCr in IYUV/I420 order (ST/Thompson/MPEG Groups) YV12 - Planar YCbCr in YV12 order YUV422P - Planar YCbCr with 4:2:2 sub sampling (Sony) YVU422P - Planar YCbCr with 4:2:2 sub sampling (chroma inverted) V210 - Interleaved 10 Bit YCbCr v210 format (standard Quick Clip 10 Bit YCbCr) YUV4224 10 - Interleaved 10 Bit YCbCr v210 format with alpha/key channel YUV4224 - Interleaved 8 Bit YCbCr yuv2/UYVY format with alpha/key channel YUV422\_fields - Separate fields of 4:2:2 YCbCr (Crescent) YUV422 - Interleaved 8 Bit YCbCr UYVY format (standard Quick Clip 8 Bit YCbCr) alias uyvy422 yuv422 16 - Interleaved 16 Bit YCbCr UYVY format yuv422 16le - Little endian interleaved 16 Bit YCbCr UYVY format UYVY422 - YUV 4:2:2 interleaved 8 bit packed as U Y V Y U Y V Y ... YUY2 16 - YUV 4:2:2 interleaved 16 bit packed as Y U Y V Y U Y V ... YUY2 16le - Little endian YUV 4:2:2 interleaved 16 bit packed as Y U Y V Y U Y V ... YUY2 - YUV 4:2:2 interleaved 8 bit packed as Y U Y V Y U Y V ... DPXRGBLEFILL - DPX 10 bit RGB, little endian, filled DPXRGBLE - DPX 10 bit RGB, little endian, padded DPXRGBFILL - DPX 10 bit RGB, big endian, filled

DPXRGB - DPX 10 bit RGB, big endian, padded

DPXABGRLEFILL - DPX 10 bit ABGR, little endian, filled DPXABGRLE - DPX 10 bit ABGR, little endian, padded DPXABGRFILL - DPX 10 bit ABGR, big endian, filled DPXABGR - DPX 10 bit ABGR, big endian, padded PRGB - 8 bit x 3 Planar RGB PRGBA - 8 bit x 4 Planar RGBA PBGR - 8 bit x 3 Planar BGR PABGR - 8 bit x 4 Planar ABGR PBGRA - 8 bit x 4 Planar BGRA PARGB - 8 bit x 4 Planar ARGB RGBA - 32 Bit Interleaved RGB (TIFF) ARGB - 32 Bit Interleaved RGB (Mac) BGRA - 32 Bit Interleaved RGB (Windows BMP/TGA) BGR - 24 Bit Interleaved RGB (Windows BMP/TGA) RGB - 24 Bit Interleaved RGB (TIFF) TIFF24 - 24 Bit Interleaved RGB TIFF ordering TIFF32 - 32 Bit TIFF (same as RGBA) FULLDUAL - 10 bit dual frame YCbCr (stereo) Grey - 8 bit grey/gray plane of video data alias Gray DVSD - DVSD 'dv/dif' stream 4:2:0 or 4:1:1 8 bit SD DV25 - DV25 'dv/dif' stream 4:2:0 8 bit SD DV50 - DVCPro 50 stream 4:2:2 8 bit SD alias avdv DV100 - DVCPro HD/DV-100 stream 4:2:2 8 bit HD alias avd1 AVCI100 - Panasonic AVCi 100 DNXHD - Avid DNxHD stream alsias av10, avd0~9 IMX30 - Sony IMX MPEG 30 Mbit stream 4:2:2 8 bit IMX40 - Sony IMX MPEG 40 Mbit stream 4:2:2 8 bit IMX50 - Sony IMX MPEG 50 Mbit stream 4:2:2 8 bit STEREO8 - Dual 8 bit YCbCr interleaved streams (one after another) STEREO10 - Dual 10 bit YCbCr interleaved streams (one after another) STEREO30 - Dual 10 bit RGB DPX interleaved streams (one after another) STEREO32 - Dual 8 bit BGRA (windows order) interleaved streams (one after another) stereo12bggr - Dual 12 bit raw bayer (one after another) stereo12rggb - Dual 12 bit raw bayer (one after another) stereo12gbrg - Dual 12 bit raw bayer (one after another) stereo12grbg - Dual 12 bit raw bayer (one after another) bggrbe12 - Bayer pattern, 12 bits per component packed big endian rggbbe12 - Bayer pattern, 12 bits per component packed big endian gbrgbe12 - Bayer pattern, 12 bits per component packed big endian grbgbe12 - Bayer pattern, 12 bits per component packed big endian bggr12 - Bayer pattern, 12 bits per component packed little endian rggb12 - Bayer pattern, 12 bits per component packed little endian gbrg12 - Bayer pattern, 12 bits per component packed little endian grbg12 - Bayer pattern, 12 bits per component packed little endian

ARRIBAYERDLRAW12 - ARRI dual link raw 12 bit bayer packed into YCbCr 10

\*\*\* DEPRECATED \*\* RGB\_10 - 30 Bit DPX/Cineon Ordering RGB\_10LE - 30 Bit little endian DPX/Cineon ordering

\*\*\* NOT AVAILABLE \*\*
n/a YUV411 - Interleaved YCbCr DV Order
n/a YUV411P - Planar YCbCr DV Order
n/a YUV410 - Interleaved YCbCr 4:1:0
n/a YUV410P - Planar YCbCr 4:1:0
n/a YUVA444 - Interleaved 8 bit YCbCrAlpha (Adobe)
n/a UYV444 - YUV 4:4:4 packed as U Y V U Y V ...
n/a MJPEG - Motion JPEG

-----

% Image Size (NbRows,NbCols)

486 720

The vertical and horizontal size of the video frame. Can be any size, but the following sizes are normal: 480x640, 480x704, 480x720, 486x720, 512x720, 576x704, 576x720, 608x720, 720x1280, 1080x1920, 1088x1920 (please note, the 'x' between the height and width is not supported. It must be a space in the hdr file)

\_\_\_\_\_

% Number of Fields per Image (optional)

2

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

% Number of Image 1800 The number of individual frames in a file. If this value is larger than the actual number of frames available, it will be corrected, so if you are unsure set it to a very large value (e.g. 4000000)

-----

% Frames per Second

29

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

23 - Means 23.98

- 24 Standard film
- 25 PAL/25p/50i
- 29 Means 29.97 NTSC/29.97p/59.94i
- 30 NTSC NDF/30p/60i
- 50 50p

59 - Means 59.94p (for 720p, 1080p, etc) 60 - Means 60p (for 720p, 1080p, etc) % Header Offset (optional) 0 How far into the file the series of video frames starts \_\_\_\_\_ % Video Alignment (optional) 512 Alignment of each frame within the stream. If the frames are back to back this value will be 1. It is normal to pad each frame to align it to a disk sector for higher speed reads and writes. This value is normally either 0 (which indicates 1), 512 (windows), 4096 (sgi), 16384 (js) \_\_\_\_\_ % Video Line Pitch (optional) 1440 The number of bytes in one line of video. Especially important for YCbCr 10 bit when frame size is 1280x720 or 2048x1080 \_\_\_\_\_ % Video Offset (optional) 0 How far into each frame, from the calculated start, the actual video starts \_\_\_\_\_ % Video Name (optional) ThisFile.YUV This is the name of the video file/stream associated with this header. Normally the video file has the same name as the hdr file, but with a .yuv extension. This allows the video name to be overridden to any file name. \_\_\_\_\_ % Audio Name (optional) ThisFile.Wav This is the name of an associated audio file. Normally OuickClip/MediaReactor looks for side bar wave or aiff files with the same name as the header file. This allows the audio file to be specified. \_\_\_\_\_ % Audio Format Stereo \_\_\_\_\_ % Audio Frequency 48000 \_\_\_\_\_

% Audio Block Align 4

-----

% Audio Bits Per Sample 24

-----

% Timecode (optional) 01:00:00:00 This is the time code value of the first frame. The time is assumed to run contiguously from this point.

\_\_\_\_\_

% Userbits (optional) BAADF00D This is the user bits returned for this stream. It is assumed it is the same for all video frames.

\_\_\_\_\_

% Start Frame (optional)

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

-----

% Max Segment (optional)

1296000

100

This specifies how long one segment of a multi segment record will be. Defaults to 12 hours (above is 12 hours in frames, NDF 30).

Please note, comments and other information may exist in the file, but if the file is re-written by QuickClip or VVW, then that information will be lost.

Total Frame Pixels = <% Image Size (NbRows,)> \* <% Image Size (,NbCols)>

```
(1)Frame Size = <size of video file> / <% Number of Image>
(2)Frame Size =
YUV420
        (<totalframepixels> + (<totalframepixels> / 2))
YUV411P
         (<totalframepixels> + (<totalframepixels> / 2))
YUV422P
         (<totalframepixels> * 2)
        (<totalframepixels> + (<totalframepixels> / 2))Order
YUV411
YUV422
        (<totalframepixels> * 2)
YUV422 10 (<totalframepixels> * 16 / 6)
YUVA444
         (< total frame pixels > * 4)
RGBA
      (<totalframepixels> * 4)
     (<totalframepixels> * 3)
RGB
        (< total frame pixels > * 4)
RGB 10
RGB 10LE (<totalframepixels> * 4)
*NOTE: 720x1280 in YUV422_10 is a special case. Please use a (1) calc for this
(1) Aligned Frame Size = <size of video file> / <% Number of Image>
(2) Aligned Frame Size = (((<Frame Size> + <% Video Alignment> - 1) / <% Video Align-
ment>) * <% Video Alignment>
*NOTE: Above math MUST be integer to work properly
Seek to a frame offset = <required frame number> * <Aligned Frame Size>
_____
_____
___
_______
_____
4.
   Samples
_____
_____
calendar_01.hdr
-snip-----
% Color Format (YUV420, YUV422, YUV422P, YUV422_10, RGB, RGBA)
YUV422P % Planar 422
% Image Size (NbRows, NbCols) (576 720, 486 720, 720 1280, 1080 1920)
576 720 % PAL Size
% Number of Fields per Image
1 % Both fields in single frame group
% Number of Image
12 % If greater then actual, reader will correct
% Frame per second
25 % PAL rate
                                                                95
```

%% Video Alignment %512 % no alignment %% Video Name % optional e:\calendar\_01.yuv % Audio Format %Stereo % none, should be way or aiff % timecode 00:00:00;00 D % userbits FFFFFFF % Start Frame 0 -snip----table\_tennis.hdr (mpeg test stream) -snip-----% Color Format YUV420 % Image Size (NbRows, NbCols) 288 352 % Number of Fields per Image 1 % Number of Image 250 % Frame per second 25 -snip-----

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# **Contact Technical Support**

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