✓ BroadcastSafeFCX User Guide

Broadcast Legaliser For Apple Final Cut X and Motion 5

eyeheight

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User Manual Versions

Versions	Changes	Date	S/W Ver
1.0	First Version	31/07/2014	1.00
1.1	Version including floating license	30/03/2015	1.20

Introduction

This manual will guide you through the use of the Eyeheight BroadcastSafeFCX plug-in for Apple Final Cut X and Motion 5. Please note that the plug-in environment now requires Motion 5 so the user must have both FCPX and Motion 5 installed.

System Requirements

The system requirements are a simply computer with FCPX and Motion 5 installed. Refer to apple for the system requirements for FCPX and Motion 5 installation.

BroadcastSafeFCX components

BroadcastSafeFCX is a legaliser plug-in for Apple's Final Cut X

BroadcastLegalFCX

A professional broadcast video legaliser for broadcast safe technical compliance. This plug-in based on over a decade of development and innovation in broadcast legalisation and offering a simple to use and powerful legalisation solution.

Installation using web download

The web demo on the eyeheight website (www.eyeheight.com) is now the same as the full version and the latest software versions will be found here. We now recommend this as the main source of software updates.

Locate the directories "BroadcastSafeFCX" and "Eyeheight" within the download zip file.

In order to install BroadcastSafeFCX you need to be logged in as the Administrator and then follow these steps:

1. Using "Finder" copy the folder "BroadcastSafeFCX" into:
    (root)/Library/ Plug-ins/FxPlug/

2. Using "Finder" copy the folder "Eyeheight" into:
    (root) /Users/<actual user>/Movies/Motion Templates/Effects

3. Ensure that the White License dongle is in the USB port.

4. Run Motion 5 and in the Library tab click in "filters" you should find the Eyeheight directory. In here will be BroadcastLegal.

5. Run FCPX and locate the effects button. You should find an Eyeheight directory with the BroadcastSafe Legaliser in it. This is the published parameters from Motion. If this does not appear try publishing them manually. A short video is available on how to do this here:

It may take a little time to load depending on your internet connection speed.

If you have not purchased a white license USB dongle then the software will run in DEMO mode. This will enable a minute or two of legalisation for testing purposes before it times out.

Installation using USB dongle

!!IMPORTANT!!

The software comes installed on a USB stick which not only contains the software but is also the security dongle and must be inserted in a USB port on the machine you wish to run the software on. COPYING ONTO ANOTHER USB STICK WILL NOT TRANSFER THE LICENSE. Always use the USB stick supplied.

NOTE: If you have already evaluated BroadcastSafeFCX using the web demo available on our website (www.eyeheight.com) then you will not need to install from the USB stick, simply plug in the white USB dongle and you will be fully licensed.

The Flash Drive directory on the USB stick contains:

1. Eyeheight "BroadcastSafeFCX" folder which contains the plug-in for Motion 5 and Final CutX.
2. "Eyeheight" folder, which is the "Motion 5" published legaliser for FCPX
3. This BroadcastSafeFCX User Manual and a guide to file based legalisation.

In order to install BroadcastSafeFCX you need to be logged in as the Administrator and then follow these steps:

1. Using "Finder" copy the folder "BroadcastSafeFCX" into:
   (root)/Library/ Plug-ins/FxPlug/

2. Using "Finder" copy the folder "Eyeheight" into:
   (root) /Users/<actual user>/Movies/Motion Templates/Effects

3. Ensure that the White License dongle is in the USB port.

4. Run Motion 5 and in the Library tab click in "filters" you should find the Eyeheight directory. In here will be BroadcastLegal.

5. Run FCPX and locate the effects button. You should find an Eyeheight directory with the BroadcastSafe Legaliser in it. This is the published parameters from Motion. If this does not appear try publishing them manually. A short video is available on how to do this here:

   It may take a little time to load depending on your internet connection speed.

Installation using a software license

Installation using a software license means that your installation will be tied to the computer with the license. Unlike the USB dongle installation you cannot move this license from computer to computer.
For this installation simply download the FCPX plug-in demo on the eyeheight website, www.eyeheight.com and follow the instructions supplied. Running this will install the necessary software but on a limited (demo) license. To purchase the full software license please contact sales at Eyeheight Ltd. A software license version can be provided by email.

USB Network Dongle (Floating License)

Eyeheight can provide a floating license model. In this case a USB dongle is attached to any computer on a users network. This computer must also run an application or service (called DinkeyServer.app) which contains the floating license server software. Normally the software runs on a server because the floating license software needs to run all the time. The dongle can be programmed with as many licenses as the user purchases. These will be allocated when any computer attempts to use the eyeheight BroadcastSafe product. When using a network license, the user can use the Drop License (Bypass) checkbox to Release the plug-in (See below). If the user releases the plug-in, the plug-in will assume bypass mode and allow that license to be used on another machine. PLEASE NOTE: BroadcastLegalFCPX for a floating network license cannot be downloaded from the web and is provided on the USB flash drive with the software on it.
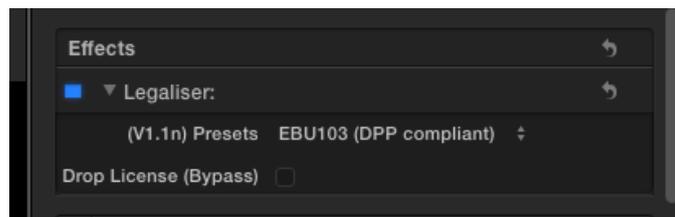
Figure 1 -Dropping a floating license (check Drop License-Bypass)

We have included details about running the server software (DinkeyServer - apologies for the name but this is a third party licensing system!) from the third party manual in Appendix 1. There are Mac and Win versions and you can mix Mac and Win Premiere Pro workstations on the same network.

Using BroadcastLegalFCX in Motion 5

The BroadcastLegalFCX plug-in will be found in the Library tab under filters, The Eyeheight directory with "BroadcastLegal" is shown as below. The BroadcastLegal plug-in should be dragged to the clip where it needs to be used.
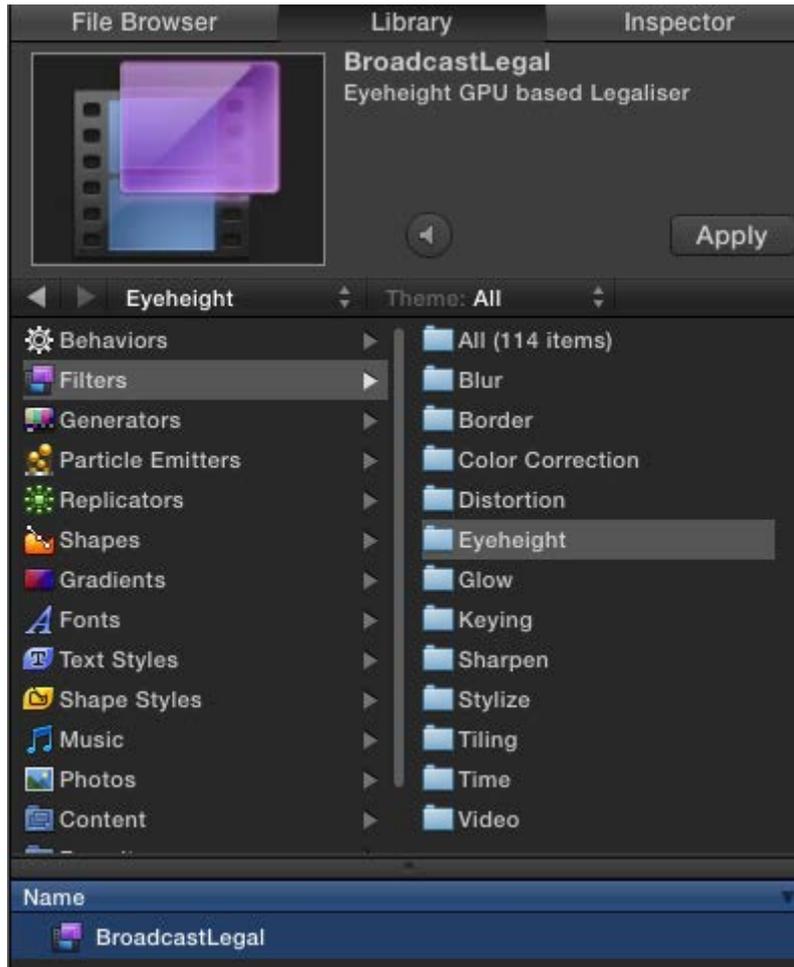
Figure 2: Eyeheight BroadcastSafeFCX

The plug-in UI will be visible as below. As shown the main selection is the drop down menu. In most cases selecting one of the preset options which should be familiar with broadcasters should fulfil most technical compliance specifications. Most of Europe uses the EBU-103 specification (The Digital Production Partnership, DPP also uses EBU-103). We provide EBU-103 option which is for high quality coding export such as Apple Pro-Res HQ and AVC intra 100. (Unfortunately any coding process which involves video compression does change the picture a little and can potentially make the content non compliant again!) For lower quality coding use EBU-103 Extra safe.
The safest options for each world sector is

USA	EBU-103+NTSC
Europe	EBU-103+PAL
Japan	EBU-103+NTSC (No Setup)

Figure 3: Safest Broadcast Legal options worldwide.
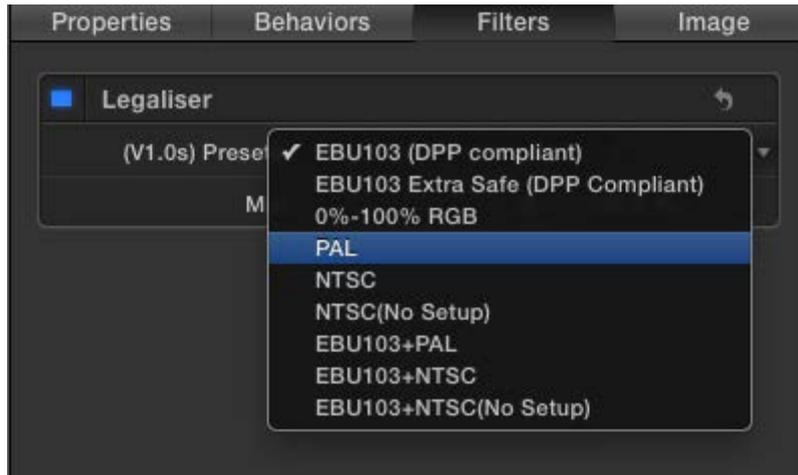
Figure 4: BroadcastLegal UI.

Using BroadcastLegal in FCPX

FCPX is somewhat different to FCP7. The plug-in parameters are exported or "Published" from Motion 5. In the case of the BroadcastSafe Legaliser you must publish the drop down preset list. Below is a screenshot from FCPX with the BroadcastLegal presets parameter export shown in the inspector and the effects library.

We have made a short video showing you how to publish our legaliser into FCPX. The QuickTime movie is here:

http://www.eyeheight.com/customer/HowtoPublishBS.mov

It may take a little time to load depending on your internet connection speed.

We also include in the download a pre-published version of broadcast safe. This is the folder "Eyeheight". Move this folder to <user>/Movies/Motion Templates/Effects. You can chose to use this instead of publishing the parameters yourself. It is however a good idea to know how to publish parameters in any case.

Figure 5: The BroadcastLegal Legaliser effect published in FCPX.

The best way to apply the legaliser.

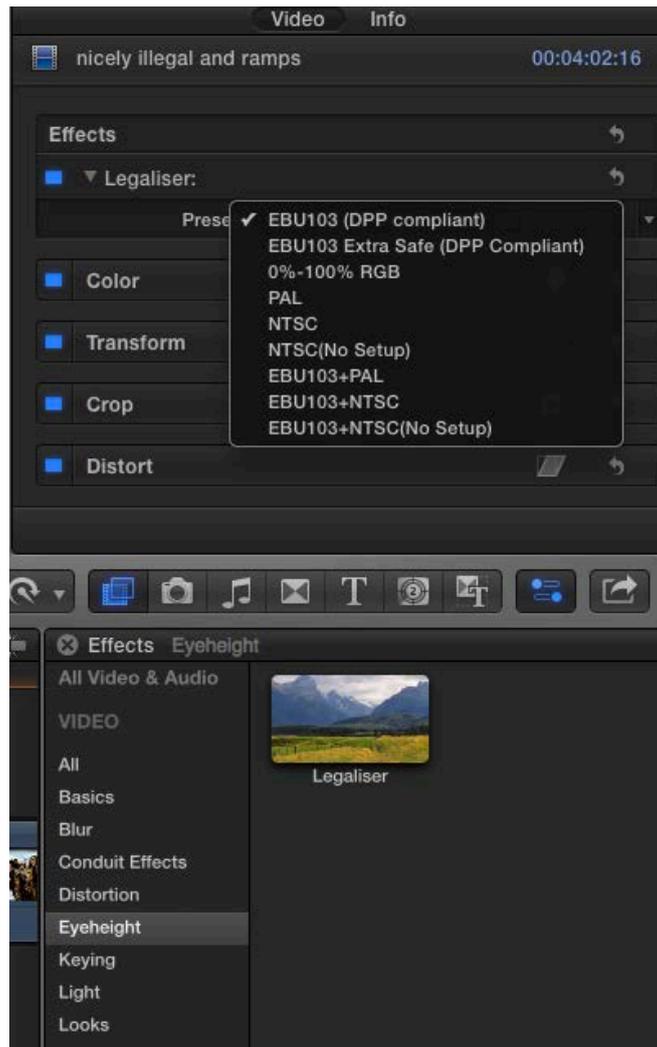The legaliser is not like a normal effect, in fact it is simply not an effect at all but a global procedure that must be applied to the WHOLE finished product. It cannot and must not be applied to a sequence clip by clip. For this reason we strongly suggest that the legaliser is not applied until your project is completely finished and ready for export. Then apply the effect as a TOPMOST adjustment layer on the WHOLE video clip. It is essential that no effect is applied after the video legaliser otherwise it will simply not work correctly. If you are not familiar with adjustment layers then please watch this excellent video on the subject.

http://www.fcp.co/final-cut-pro/tutorials/945-how-to-build-and-use-adjustment-layers-in-final-cut-pro-x

Using Advanced features of BroadcastLegalFCX

 If you have selected a set of parameters that you would like to use often or you simply want to reduce the options in the drop down list, this is easy. The parameters come from an XML file within the plug-in contents.
 You will need to use finder navigate to the plug-in:

(root)/Library/ Plug-ins/FxPlug/BroadcastLegal.fxplug

And then using finder on the Mac "ctrl click" the mouse and select "Show Package Contents" then navigate to /Contents/Resources and you will find the legalPresets.xml file. This is fully editable and clearly tagged with each preset preceding with a <legalPreset>. Here you can edit as much as required. Feel free to delete presets that you do not want to be visible and make up your own based on experimentation with the "User Adjust" preset.

For example, the following is a single user preset called "EBU extremely safe". This is the only visible preset.

The BroadcasLegalFCX plug-in does not currently support soft clipping so the "Knee" parameters are ignored.

```xml
<?xml version="1.0" ?>
<legalPresetsArray>
    <legalPreset>
    <name>EBU103 extremely safe</name>
    <legalisationMode>YRGB</legalisationMode>
    <compositeMode>PAL</compositeMode>
    <luminanceHighClip_IRE>99</luminanceHighClip_IRE>
    <luminanceHighKnee_IRE>94</luminanceHighKnee_IRE>
    <luminanceLowClip_IRE>0</luminanceLowClip_IRE>
    <luminanceLowKnee_IRE>0</luminanceLowKnee_IRE>
    <compositeHighClip_IRE>140</compositeHighClip_IRE>
    <compositeLowClip_IRE>-40</compositeLowClip_IRE>
    <rgbHighClip_IRE>100.5</rgbHighClip_IRE>
    <rgbHighKnee_IRE>95.5</rgbHighKnee_IRE>
    <rgbLowClip_IRE>-0.5</rgbLowClip_IRE>
    <rgbLowKnee_IRE>0</rgbLowKnee_IRE>
    </legalPreset>
</legalPresetsArray>
```

Appendix 1 - Floating Network License Software.

The following is information regarding the floating license server from our third party license system.
The programs DinkeyServer.app (Mac) and DinkeyServer.exe (Win) are available here:

DinkeyServer.zip

Using DinkeyServer

The DinkeyServer Viewer
When DinkeyServer is running as an Application, it will display the DinkeyServer Viewer. This utility displays the status of DinkeyServer, the Product Codes it is serving and the network users currently connected to it. A DinkeyServer icon will appear in the Windows System Tray.
You can also open the server's log file using this utility. The log file records important events during the running of the server and may need to be viewed to diagnose problems.
When DinkeyServer is running as a Service, it will not display the viewer because Services cannot display Graphical User Interfaces (GUIs). However, you can still use the DinkeyServer Viewer by running DinkeyServer.exe with the /viewer command-line parameters.

Command-Line Parameters
DinkeyServer can accept several command-line parameters which control its behavior. These are as follows:

/s	Configures DinkeyServer to install/run as a Service (daemon).
/a	Configures DinkeyServer to run as an Application.
/q	Quiet mode. Only displays errors.
/u	Uninstalls the DinkeyServer Service and terminates the DinkeyServer viewer.
/t	Stops the DinkeyServer service and terminates the DinkeyServer viewer.
/showconfig	Displays the configuration information (e.g listen address, port). Linux only.
/viewer	Just display the DinkeyServer Viewer.
/logfile	Just open the DinkeyServer logfile.
/listen=IPADDRESS	Sets the IP Address on which DinkeyServer accepts connections (replace "IPADDRESS" with your chosen IP Address). You would only need to set this if your machine has more than one IP address.
/port=PORT	Sets the port on which DinkeyServer listens for connections (replace "PORT" with your chosen port number).
/?	Displays a help window documenting these command-line parameters.

Note: under Linux instead of using / for parameters you use – for short parameters and -- for longer parameters.
e.g.
–s and --viewer.

General Notes
Like any Service, DinkeyServer can be controlled through Windows Services Management (Control Panel | Administrative Tools | Services).
If you remove or add a dongle to the machine running DinkeyServer then you need to restart DinkeyServer in order for it to be detected.
If you have multiple network cards installed on your machine then the protected program may fail to automatically detect DinkeyServer (this can also be caused by virtualisation software, such as VMWare, installing "virtual" network adapters onto your system). In this case try disabling ones that don't connect to the LAN on which DinkeyServer runs.

Firewalls
Failure to correctly configure your firewall(s) could result in DinkeyServer being inaccessible by client machines.
☐ Your firewall must allow both TCP and UDP traffic through to DinkeyServer.
☐ Your firewall must allow DinkeyServer to accept incoming connections on the IP Address and Port that you chose when setting up DinkeyServer.
☐ Clients (your protected software) auto-detect DinkeyServer by performing a multicast to 239.255.219.183 and whichever port you configured DinkeyServer to listen on. Your firewall must not block traffic destined for this address/port.
☐Under Windows the listen address and port DinkeyServer is using can be found by choosing Server |

Server details from the viewer menu.

Like most server software, DinkeyServer accepts incoming connections by "listening" on a given IP Address and port. If the machine which runs DinkeyServer also runs firewall software (either the Windows Firewall or a third party firewall) then the firewall software will need to be explicitly told to allow the incoming connections to get through to DinkeyServer. i.e. you must add DinkeyServer as an exception to the firewall on the server (for Windows Firewall use Control Panel | Windows Firewall to do this).

Likewise, if a firewall exists on a machine between the machine running DinkeyServer and the client machines then this will need to be configured too.

Note – sometimes anti-virus programs can also include a firewall as part of the package.

Log File

DinkeyServer maintains its own log file in which it records various important events during its execution. While the server is running, all events are recorded to this log file rather than being displayed on-screen. The most common reason for needing to view the log file is to begin diagnosing a problem.

You can view the logfile by running DinkeyServer with the /logfile command-line parameter. Alternatively, you can view it from the DinkeyServer Viewer (Windows only).

For Windows, the logfile is actually stored on disk in the "All Users" profile under the DinkeyServer\<SDSN> directories (where <SDSN> is your Software Developer's Serial Number). For Mac OS X and Linux the logfile is stored in the <home>/.DinkeyServer/<SDSN> directory.