

BroadcastSafeMC User Guide



Broadcast Legaliser
For Avid Media Composer.



eyeheight

The screenshot displays the Avid Media Composer interface with the BroadcastLegalAV V1.00 DEMO VERSION effect applied to a clip. The main window shows a multi-colored test pattern. The Effect Editor window is open, showing the effect's settings. The effect is currently set to 'EBU103+PAL'. The Effect Editor window is also open, showing the effect's settings. The effect is currently set to 'EBU103+PAL'. The Effect Editor window is also open, showing the effect's settings. The effect is currently set to 'EBU103+PAL'.

Effect Editor Settings:

- Effect: BroadcastLegalAV V1.00 DEMO VERSION
- Bypass:
- Selected Effect: EBU103+PAL
- Available Effects:
 - EBU103
 - EBU103 Extra Safe
 - 0%-100% RGB
 - PAL
 - NTSC
 - NTSC(No Setup)
 - EBU103+PAL
 - EBU103+NTSC
 - EBU103+NTSC(No Setup)
 - User Adjust

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User Manual Versions

| Versions | Changes | Date | S/W Ver |
|----------|---------------------------------------|------------|---------|
| 1.0 | First Version | 04/11/2013 | 1.00 |
| 1.1 | Network (Floating) License introduced | 13/3/2015 | 1.6 |

Introduction

This manual will guide you through the use of the Eyeheight BroadcastSafeMC plug-in suite for Avid Media Composer.

BroadcastSafeMC components

As the name suggests BroadcastSafeMC is a suite of plug-ins each designed to assist you in achieving technical compliance for your output. At present BroadcastSafeMC consists of:

1. **BroadcastLegalMC** - This is a full software based legaliser designed to meet worldwide technical compliance standards
2. **BroadcastEvaluateMC** - This is an accurate technical compliance indicator. This will indicate to the user which parts of a picture are technically non-compliant enabling the user to correct the situation manually.
3. **BroadcastSafeAreaMC** - These are sets of worldwide safe area markers as well as a centre and text height measurement markers.

Installation

The software can be installed directly from the eyeheight website. www.eyeheight.com. The software comes as a zip file and can be licensed by purchasing a USB license dongle enabling the software plug-in to be activated on any computer with the dongle inserted. Alternatively the software can be licensed using a software license file. The advantage of the license file is that the software can be delivered immediately but it is restricted to a single computer. We can also arrange temporary license files while the user awaits delivery of a USB dongle.

Web download installation

From June 2014 the web download (demo) is now the same as the full product download. To download unlicensed demo do the following:

Windows

1. Open the zip file.
2. Locate the BroadcastSafeMC directory in the WIN directory of the download.
3. Extract this to: \Program Files\Avid\Avid Media Composer\AVX2_Plug-ins\.
4. Run Avid Media Composer and in the Project Window->Effects tab you should find the Eyeheight directory. In here will be the plug-in suite. See Figure 1.
5. If the Eyeheight plug-in directory fails to appear in the effects list then you may not have Microsoft Visual Studio 2012 C++ Runtime installed. To install it follow this link <http://www.microsoft.com/en-us/download/details.aspx?id=30679#>
Hit Download and tick the boxes
VSU_4\vc redistrib_x64.exe
VSU_4\vc redistrib_x86.exe

Mac OSX

1. Open the zip file.
2. Locate the BroadcastSafeMC directory in the MAC directory of the download.
3. Using Finder copy the folder "BroadcastSafeMC" folder into /Library/Application Support/Avid/AVX2_Plug-ins/.
4. Run Avid Media Composer and in the Project Window->Effects tab you should find the Eyeheight directory. In here will be BroadcastLegalMC. See Figure 2.

Converting the Web Download to the full product

To convert the web download into the full purchased product we either send you a floating USB license dongle which will license the demo to the full product once inserted into the computer's USB port or we can arrange a fixed software license which will instantly update the product to the full version. Please contact Eyeheight sales for the full purchased option.

USB Dongle installation

!!IMPORTANT!!

The software comes installed on a USB stick which contains the software and manual but it 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.

Windows

The Flash Drive directory on the USB stick contains:

1. Eyeheight "BroadcastSafeMC" folder containing the plug-in suite.
2. This BroadcastSafeMC User Manual.

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

1. Using Windows Explorer copy the folder "BroadcastSafeMC" folder into \Program Files\Avid\Avid Media Composer\AVX2_Plug-ins\.
2. Ensure that the White Licence dongle is in the USB port.
3. Run Avid Media Composer and in the Project Window->Effects tab you should find the Eyeheight directory. In here will be the plug-in suite. See Figure 1.
4. If the Eyeheight plug-in directory fails to appear in the effects list then you may not have Microsoft Visual Studio 2012 C++ Runtime installed. To install it follow this link <http://www.microsoft.com/en-us/download/details.aspx?id=30679#>
Hit Download and tick the boxes
VSU_4\vcredist_x64.exe
VSU_4\vcredist_x86.exe

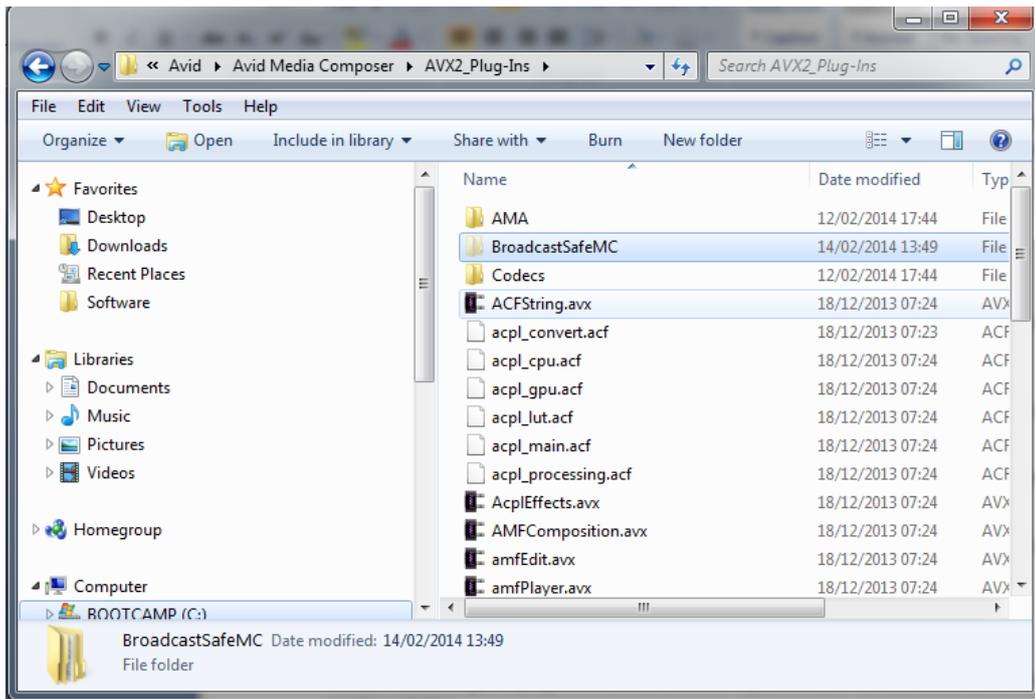


Figure 1 : Location of BroadcastSafeMC Directory (Windows)

Mac OSX

The Flash Drive directory on the USB stick contains:

1. Eyeheight “BroadcastSafeMC” folder, which is the BroadcastLegalMC plug-in for Avid Media Composer.
2. This BroadcastSafeMC User Manual.

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

5. Using Finder copy the folder “BroadcastSafeMC” folder into /Library/Application Support/Avid/AVX2_Plug-ins/.
6. Ensure that the White Licence dongle is in the USB port.
7. Run Avid Media Composer and in the Project Window->Effects tab you should find the Eyeheight directory. In here will be BroadcastLegalMC. See Figure 2.

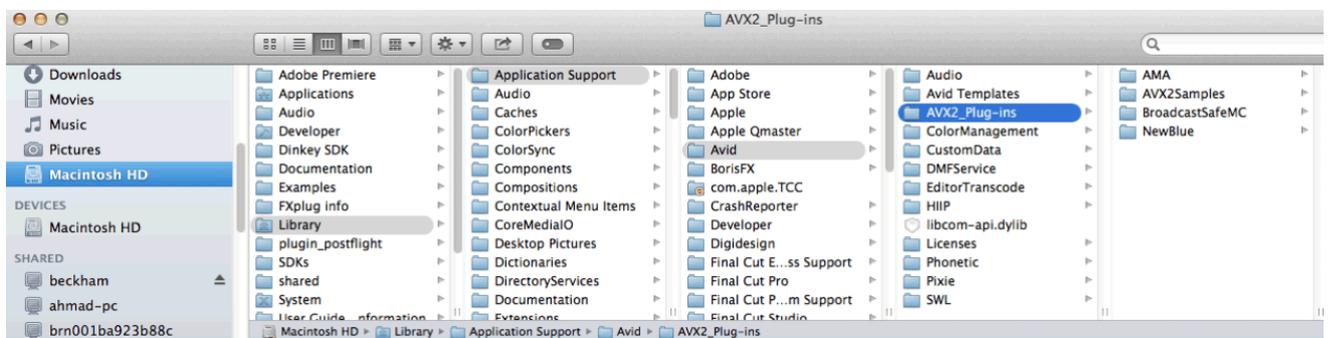


Figure 2 - File location of BroadcastSafeMC (Mac)

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.exe - Win, or DinkeyServer.app - Mac) which contains the floating license 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 Bypass checkbox to Release the plug-in (See below). If the user releases the plug-in, the plug-in will enter "Demo Mode" and allow that license to be used on another machine. PLEASE NOTE: BroadcastSafeMC for a floating network license cannot be downloaded from the web and is provided on the USB flash drive with the software on it.

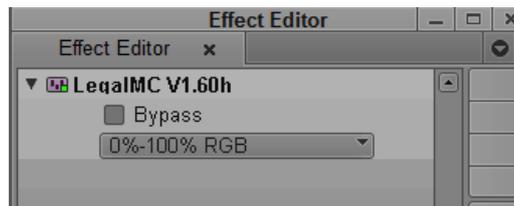


Figure 3 -Checking Bypass will release a license.

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 BroadcastLegalMC in Avid Media Composer

The BroadcastSafeMC plug-ins will be found in the Project Window->Effects tab under directory Eyeheight as shown below

The plug-in should be dragged to the clip where it needs to be viewed as per any Avid Media Composer effect.

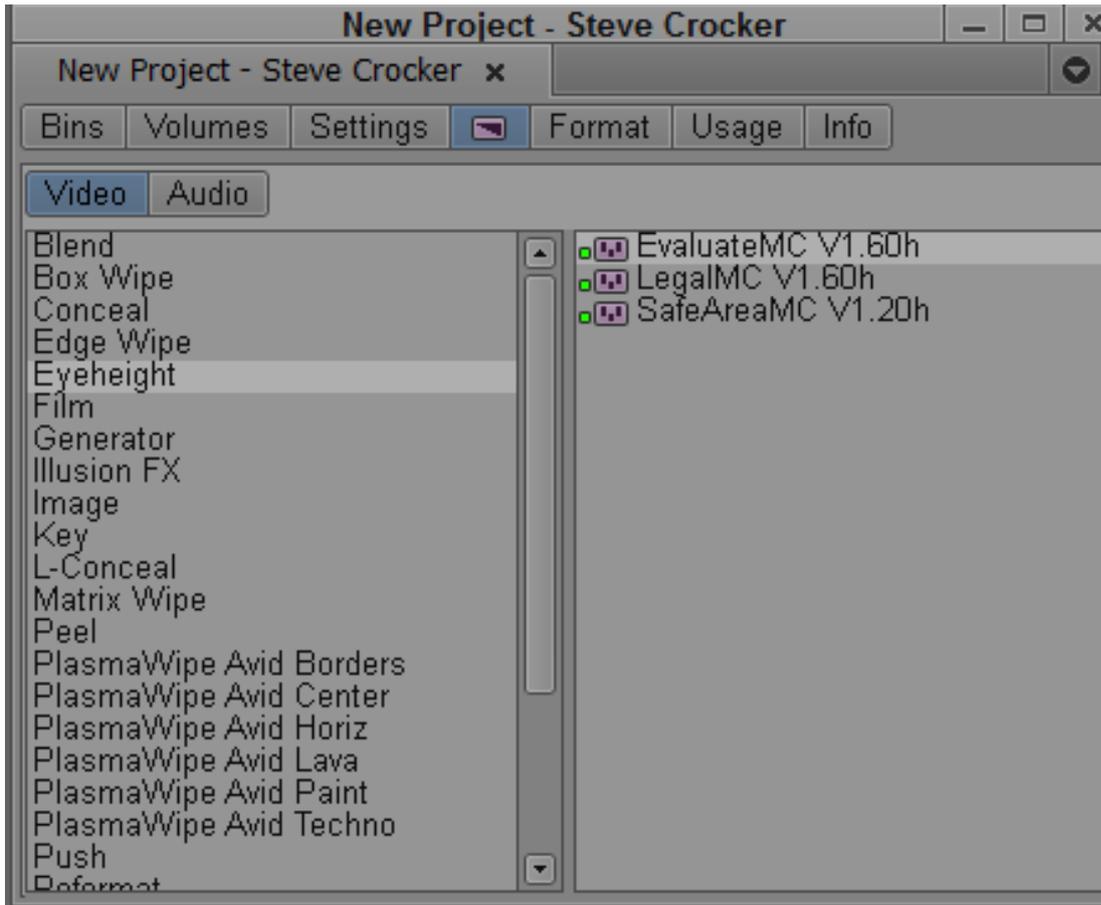


Figure 4: Eyeheight BroadcastSafeMC

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. We provide EBU-103 option which is for high quality coding export such as DNxHD185 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 5: Safest Broadcast Legal options worldwide.

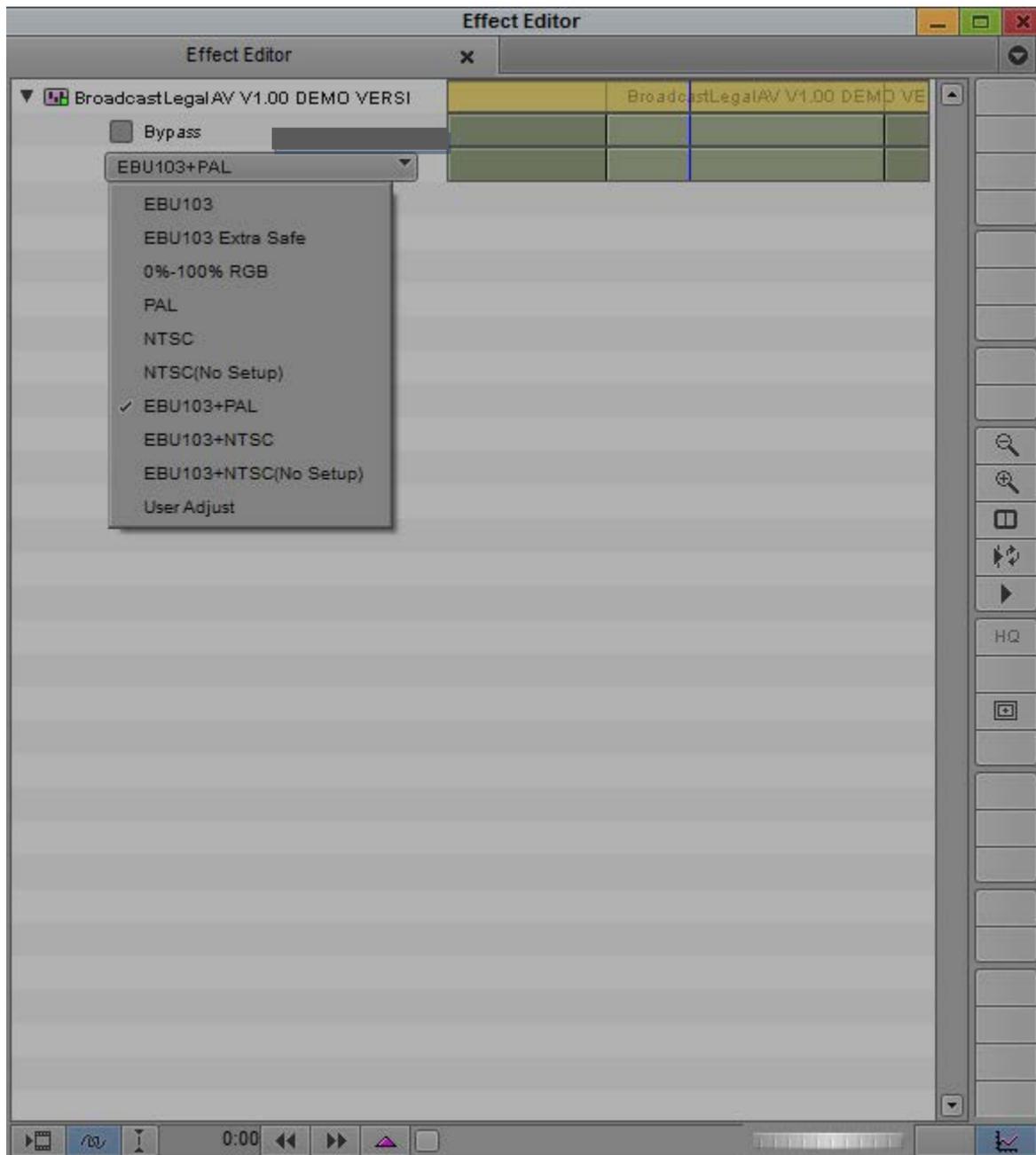


Figure 6: BroadcastLegal UI.

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 on a blank TOPMOST video track on the WHOLE video clip. It is essential that no effect is applied after the video legaliser otherwise it will simply not work correctly.

Now BroadcastLegalMC will work correctly when rendering, exporting or scrubbing in real time.

Using Advanced features of BroadcastLegalMC - Windows

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 navigate to the XML preset file in the plug-in.

\Program Files\Avid\AVX2_Plug-ins\BroadcastSafeMC\BroadcastLegalMC

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.

Here is an example of some of the parameter code you will find in the XML file...

```
<?xml version="1.0" ?>
<legalPresetsArray>
  <legalPreset>
    <name>EBU103 extremely safe</name>
    <legalisationMode>YRGB</legalisationMode>
    <compositionMode>PAL</compositionMode>
    <luminanceHighClip_IRE>99</luminanceHighClip_IRE>
    <luminanceHighKnee_IRE>94</luminanceHighKnee_IRE>
    <luminanceLowClip_IRE>0</luminanceLowClip_IRE>
    <luminanceLowKnee_IRE>0</luminanceLowKnee_IRE>
    <compositionHighClip_IRE>140</compositionHighClip_IRE>
    <compositionLowClip_IRE>- 40</compositionLowClip_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>
```

You may notice that our presets are set "tighter" than the required specifications for EBU-R103 and PAL and NTSC. We have done this because in our experience the file codecs are not perfect and we allow a generous margin. The user is free to change this at their will but be warned on trying to get too close the specification limits.

Using BroadcastEvaluateMC in Avid Media Composer

The BroadcastEvaluateMC plug-in is a broadcast legal indicator plug-in. This plug-in has been optimised for accuracy and it will indicate any part of the picture that is out of technical compliance. This is most useful for manual correction of clips where artistic and colour integrity is of prime importance. An automatic legaliser such as BroadcastLegalMC will legalise the picture but not always in a way the user may want. The BroadcastEvaluateMC plug-in will indicate with NO safety margin, it is more like a QA test. It is wise to put 0.5-2% margin in depending on the coder used. Generally with Apple ProRes, ProRes(HQ) and AVC intra we recommend around 1% of margin.



Figure 7 - Screen shot of BroadcastEvaluateMC showing illegal parts of picture in red.

Below we show the UI for the above figure which is deliberately highly illegal to show off the plug-in.

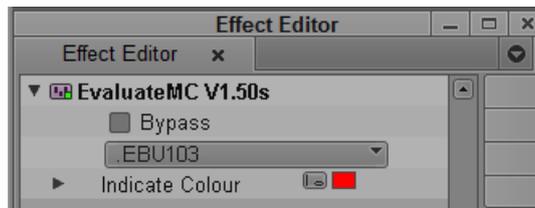


Figure 8 - BroadcastEvaluateMC settings for the above illegal picture

Using BroadcastSafeAreaMC in Avid Media Composer

The BroadcastSafeAreaMC plug-in will be found in the effects tab under directory eyeheight as shown below

The BroadcastSafeAreaMC plug-in should be dragged to the clip where it needs to be viewed as per any media composer effect..

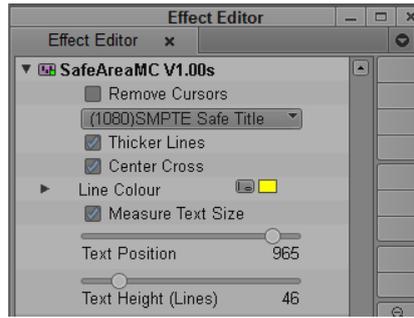


Figure 9 - UI for BroadcastSafeAreaMC

The plug-in UI will be visible as above. To select a pre-set safe area, simply use the drop-down menu and select. The safe areas will be selected according to the appropriate line standard and picture aspect. SMPTE, ARIB, EBU, ITU and DPP standards are included.

There are tick-box utilities for making the cursor lines thicker for clearer viewing on proxies, adding a centre cross hair and measuring text height (This is included for legislation regarding text height in commercials). The text height operation is clear when used and should be placed over the text in the picture using the two sliders, Text Position and Text Height. The line colour is configurable to aid cursor visibility.



Figure 10 - BroadcastSafeAreaMC Screenshot showing the above UI settings.

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 behaviour. 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 fire wall must allow both TCP and UDP traffic through to DinkeyServer.
- Your fire wall 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.