

# ✓ AudioLoudnessSuite User Guide



VST, VST3, AAX, AU compatible plug-ins.  
Premiere Pro - Media Composer- FCPX

eyeheight

VST3

VST

The collage features several overlapping windows from the AudioLoudnessSuite software. At the top, a Premiere Pro window shows the 'Audio Clip Mixer' for 'Annie Lennox - Little Bird.mp3', displaying a multi-channel level meter with values ranging from -47 to +7 dB. Below it, an 'Audio Suite Window' shows a 'CorrectLoudnessWidget' with a 'True Pk' of -1.0 (dBu). In the center, an 'Audio Mixer' window displays a 'CorrectLoudnessWidget' with a 'True Pk' of -1.0 (dBu). At the bottom, a large 'Analyse Audio Pass' window shows a 'Loudness' of -10.4 (LKFS), a 'Target' of -23.0 (LKFS), and a 'True Pk' of -1.0 (dBu). Other windows show various analysis graphs, including 'Loudness (LKFS)' and 'Relative Loud Density' plots.

AU

AAX

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## User Manual Versions

Versions	Changes	Date	S/W Ver
1.0	First Version	23/3/2016	1.00

## Introduction

This manual will guide you through the use of the Eyeheight AudioLoudnessSuite plug-ins. These are currently available as VST-2, VST-3, AAX and AU plug-Ins. The primary targets for these plug-ins are Adobe Premiere Pro, Avid Media Composer and Apple FCPX non-linear editing platforms.

## AudioLoudnessSuite components

This consists at the time of writing, 2 plug-Ins

1. **AudioLoudnessMeter** – This Provides a comprehensive audio loudness monitoring system to EBU-R103-3 and A/85 standards.
2. **CorrectLoudnessWidget** – This provides a correction mechanism for an audio loudness target level. This currently is not available for FCPX.

## Installation

### Premiere Pro - Windows

Install AudioLoudMeter.vst3 into:

\Program Files\Common Files\VST3\AudioLoudnessMeter.vst3

Install CorrectLoudnessWidget.dll into:

\Program Files\Vstplugins\CorrectLoudnessWidget.dll

### Premiere Pro - Mac\*

Install AudioLoudMeter.vst3 into:

/Library/Audio/Plug-Ins/VST3/AudioLoudMeter.vst3

Install CorrectLoudnessWidget.vst into:

/Library/Audio/Plug-Ins/VST/AudioLoudMeter.component

### Media Composer - Windows

Please install AudioLoudMeter.aaxplugin into:

\Program Files\Common Files\Avid\Audio\Plug-Ins\AudioLoudMeter.aaxplugin

Please install CorrectLoudnessWidget.aaxplugin into:

\Program Files\Common Files\Avid\Audio\Plug-Ins\CorrectLoudnessWidget.aaxplugin

### Media Composer - Mac

Install AudioLoudMeter.aaxplugin into:

/Library/Application Support/Avid/Audio/Plug-Ins/AudioLoudMeter.aaxplugin

Install CorrectLoudnessWidget.aaxplugin into:

/Library/Application Support/Avid/Audio/Plug-Ins/CorrectLoudnessWidget.aaxplugin

### FCPX - Mac\*

FCPX uses audio component plug-in types. We advise just installing the AU file:

AudioLoudMeter.component in /Library/Audio/Plug-Ins/components/

\*

Please note that for a Macintosh computer the tilde ~ means the Home directory. This is accessible in Finder using the menu bar and selecting Go-> Home. If the Library folder is hidden, this is quite likely, then again use the Finder menu bar and select Go and then hold down the alt button which will reveal Library in the menu. Now select Library whilst holding down the alt button.

## About the Web Download

The Web download is a long use trial. We are allowing the use of this for 6 months until October 2016 for free. During this time we are very grateful for any feedback or new feature requests about the product which you can write on our new Wordpress website [www.eyeheight.com](http://www.eyeheight.com) as a comment about the product.

## AudioLoudMeter

This is a fully comprehensive Audio Loudness Metering system which incorporates evaluates mono, stereo and 5.1 surround. The main features are:

### Features

- 3 off bar graphs for Momentary, Short Term and Integrated loudness.
- 5 off bar graphs for individual loudness contributions, L, R, C, Ls and Rs.
- 5 off True Peak bar graphs using 8x oversampled audio. Peak LED indication.
- Audio loudness distribution histogram with Loudness Range measurement (LRA).
- Time scalable Loudness History graph.
- A/85 and EBU modes of operation.

The AudioLoudMeter plug-in appears as an audio effect which means that the audio streams pass through the AudioLoudMeter effect so that the measurements can be made and displayed but the same audio that goes in goes out again unaffected by the plug-in.

### AudioLoudmeter displays

The AudioLoudMeter is a comprehensive audio loudness measurement system fulfilling all EBU and A/85 recommendations.

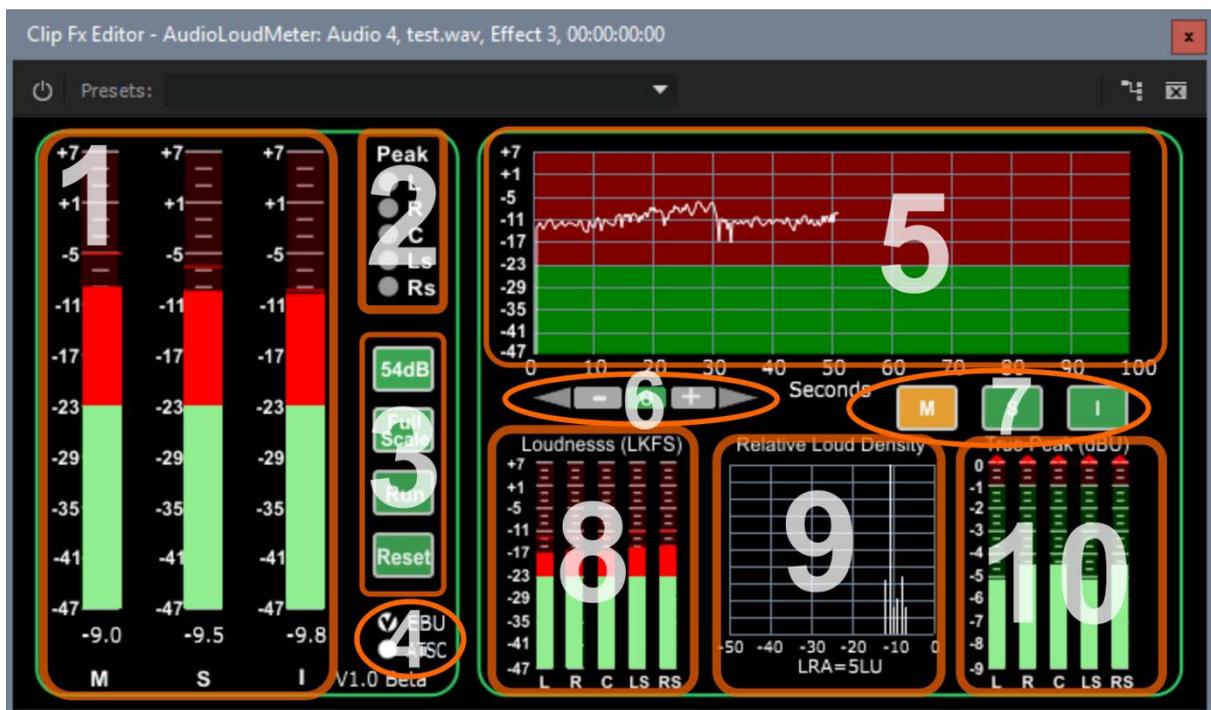


Figure 1 - AudioLoudMeter showing 5.1 Sections 1-10.

## 1-Overall Loudness Measurements.

### Bar graphs

These three bargraphs represent the overall loudness measurement of the clip. The 'M' bar graph shows the momentary loudness (measured over a 0.3 second interval). The 'S' bar graph shows the short term loudness (measured over a 3.0 second interval). The 'I' bar graph is the integrated loudness with absolute (-70dB) and relative (-10dB rel) gates applied. This represents the actual loudness figure for the whole clip up to the play head. The red section of the bar graph represents over and above the target loudness (-23LKFS for EBU and -24LKFS for ATSC A/85).

### Peak Indicators

Each bar graph has a peak indicator which latches onto the highest found value from the start of the audio to until the Reset button is pressed. If this value is off the scale a red arrow appears above the highest point of the bar graph.

### Digital read out.

A digital read out is also shown for each bar graph in LKFS

## 2-Peak indicators

There are momentary true peak indicators showing any audio channel that might exceed the selected standard (see 4- EBU/ATSC selection). For EBU this is -1dBu and for ATSC A/85 it is -2dBu. These will light up for a minimum of 0.1 second. These represent the 8x oversampled true peak values not the incoming sample values.

## 3-Metering Controls

These four buttons control the meter scales and the pause and reset states.

### 54/27dB button

This selects the scale range on all the loudness scales on the unit. It selects either 27 or 54dB. This is as per EBU recommendations for EBU mode.

### EBU/Full Scale

Whilst EBU mode is selected the unit selects EBU recommended scales and the unit behaves fully to EBU recommendations. Full scale allows more headroom at the cost of a higher low end scale.

### Run/Pause

When pause is selected the unit stops recording the audio.

### Reset

This clears all the audio history and starts again fresh. This needs to be done before performing Integrated loudness measurements or starting a new recording history.

## 4-EBU/ATSC

This selects between the European (EBU) or American Loudness standards. It changes the scale a little and accounts for the different true peak tolerance between the standards.

## 5-Loudness History Graph

The loudness history graph shows the loudness against time. This graph is effected by the scale changes in the Metering Controls (3) and also can be time scaled using the buttons in 'History Time Range Controls' (6). The 'M, S and I' buttons (7) also change the graph between representing momentary, short term and integrated loudness.

## 6- History Time Range Controls

This is a cluster of 5 buttons which change the time scale of the. From left to right:

### Left arrow

This moves the timescale forward in the graph scale increments.

### (-) button

This makes the time increments larger. It goes from 1s/5s/10s/0.5m/1m/2m/5m/10m/20m

### (0) button

This button latches. When it is green the history graph will adjust itself to ensure that the present time is always shown on the graph. It will do this moving the time scale.

### (+) button

This makes the time increments smaller. It goes from 20m/10m/5m/2m/1m/0.5m/10s/5s/1s

### Right arrow

This moves the timescale backward in the graph scale increments.

## 7- M, S and I buttons

This selects the metering type between 'M' Momentary loudness, 'S' Short term loudness and 'I' Integrated gated loudness. This effects the History Graph and the audio channel loudness graphs (L,R,C,Ls,Rs)

## 8- Individual channel loudness contributions

This shows the individual loudness contributions from the audio channels. L, R, C, Ls, Rs.

## 9- Relative loudness density and Loudness Range

This is a histogram of the relative loudness. It shows the contributions in the loudness range shown on the horizontal scale. From this graph the Loudness range figure is shown (LRA). Highly compressed audio will show a low loudness range.

## 10- True Peak bar graphs

This shows the 8x oversampled true peak measurement for each channel (L, R, C, Ls, Rs). It also indicates the latched true peak value with a red line. If the value goes over scale (indicating clipping at 0dBu) an arrow appears above the bar graph.

## CorrectLoudnessWidget

This widget is a loudness analysis and correction system. Its application very much depends on the host. For example it is used differently in Media Composer and Premiere Pro.

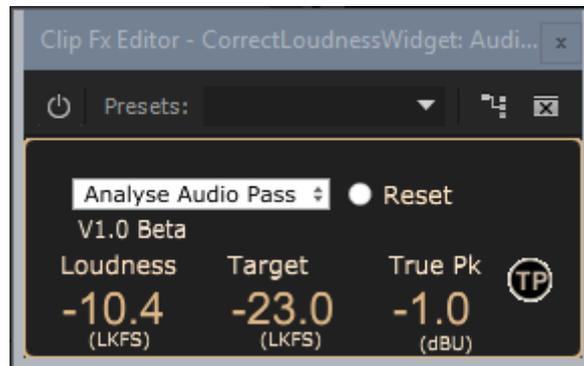


Figure 2 - CorrectLoudnessWidget UI

## Generic operation of the CorrectLoudnessWidget

The generic operation of the CorrectLoudnessWidget is much the same for any host. The sequence is as follows:

1. Press Reset to initialise the system.
2. Select 'Analyse Audio Pass' in the drop down box.
3. At this point you render the clip through the CorrectLoudnessWidget. How this is done depends on the host. The measured loudness will be displayed in the Loudness field.
4. Select the 'Adjust Level Pass' from the drop down box. This selects an appropriate gain to correct the audio clip to the target loudness level.
5. Again render the clip through the CorrectLoudnessWidget. How this is done depends on the host.

The clip should now be at the correct target level.

## Target and True peak values.

These can be changed as appropriate. For EBU (Europe) the Target is -23.0 LKFS and the True Peak level is -1.0dBU. For ATSC A/85 (USA) the Target is -24.0 LKFS and the True Peak level is -2.0dBU. For ATSC A/85 (USA).

To change these values double click on the respective numeric values.

## Application of CorrectLoudnessWidget in Adobe Premiere Pro

Here we will describe the way that we apply the CorrectLoudnessWidget in Premiere Pro. We would be interested in our customer's feedback whilst we are offering free use of this product. We appreciate that expert editors may find better ways of applying the loudness correction system.

### Short Audio Track

For a short audio track you can do the following to correct to a Target Loudness:

1. Apply the CorrectLoudnessWidget effect to the audio track. Hit Reset and select and select 'Analyse Audio Pass'. You can also change the Target and True Peak settings if required by double clicking in the respective boxes (USA, A/85 ATSC is Target -24LKFS and True Peak -2dBu). Ensure that the track is immediately ready to play.

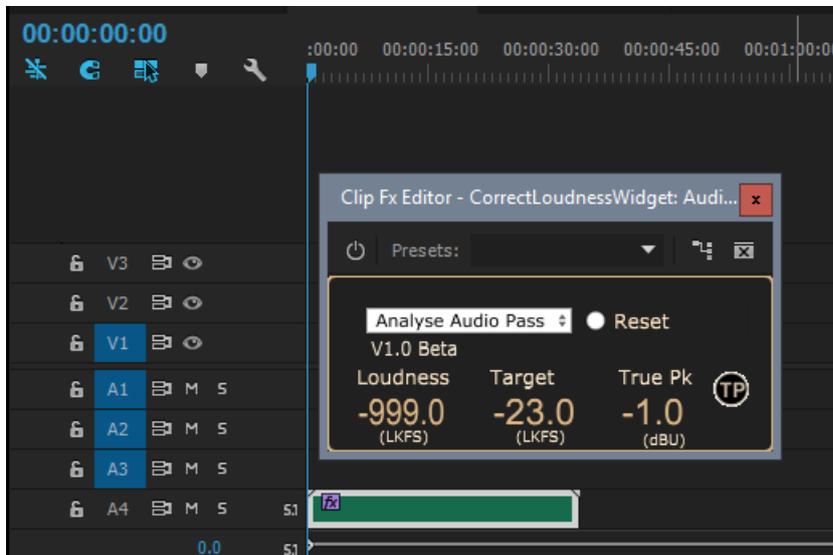


Figure 3 - Correcting a short audio clip.

2. Play the track through the CorrectLoudnessWidget effect. The measured loudness will be shown in the Loudness box. At the end of the clip the pass should change to 'Adjust Level Pass'

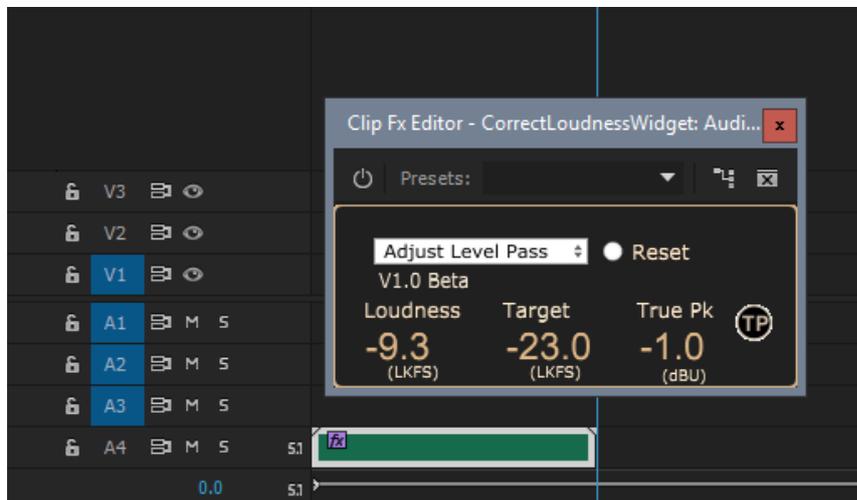


Figure 4 – Measured level in UI.

3. Select the Adjust Level Pass (if not already selected) and reset the clip to the start. Playing this clip will now be at the correct loudness level. This can be checked adding the

## AudioLoudnessMeter.

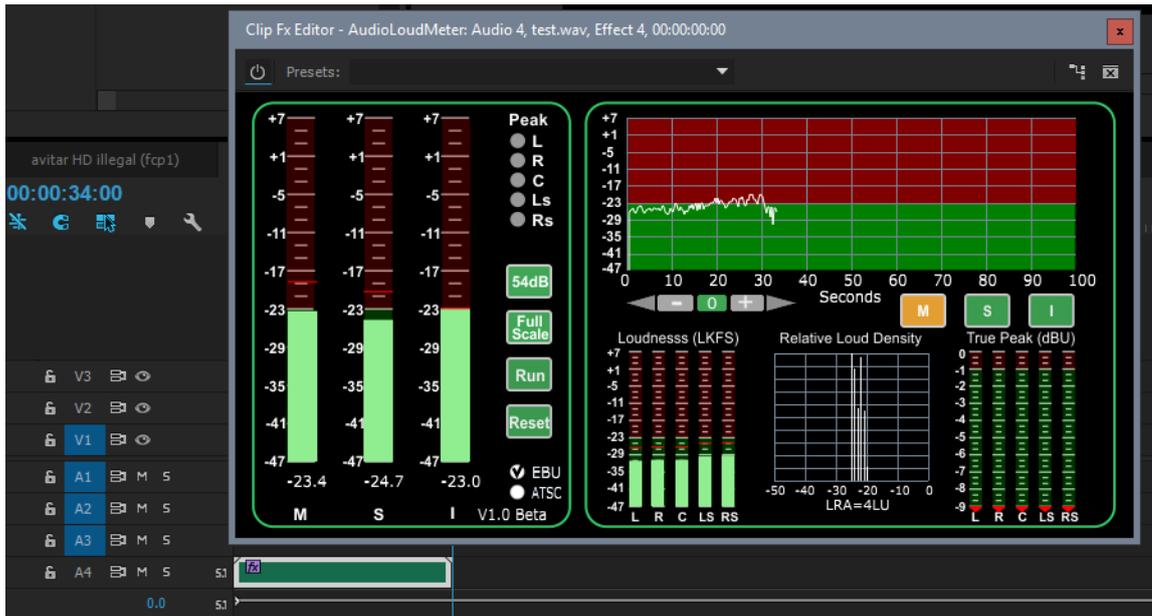


Figure 5 - Completed Levelled clip. The AudioLoudnessMeter reads -23LKFS after playing the clip.

## Long Audio Track

For a long audio track you can do the following to correct to a Target Loudness:

1. Apply the CorrectLoudnessWidget effect to the audio track. Hit Reset and select and select 'Analyse Audio Pass'. You can also change the Target and True Peak settings if required by double clicking in the respective boxes (USA, A/85 ATSC is Target -24LKFS and True Peak -2dBu). Ensure that the track is immediately ready to play.

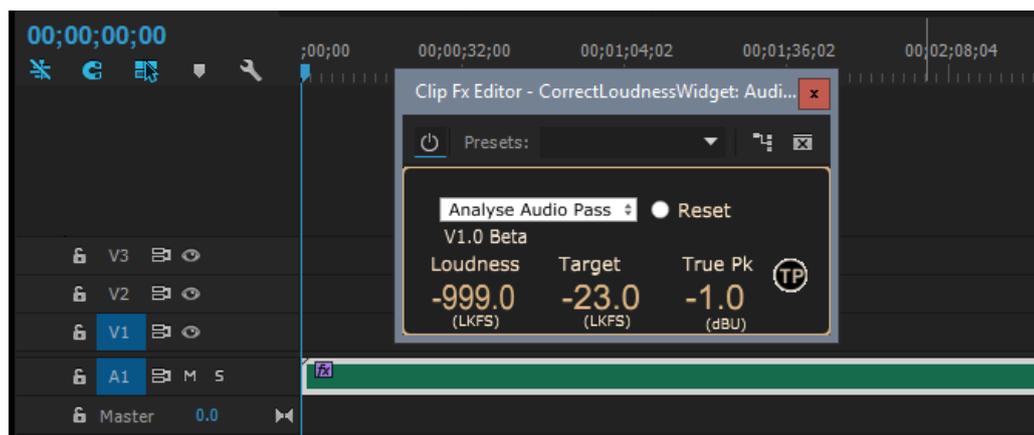


Figure 6 - Correcting a long audio clip.

2. Right Click on the audio track and select 'Render and Replace'. This will, as said, render the clip as quickly as possible and then replace the clip with the rendered version. For the analyse audio pass the rendered clip is identical to the original clip. The effect simply measures the loudness and stores it away invisibly. The effect is also removed from the clip.

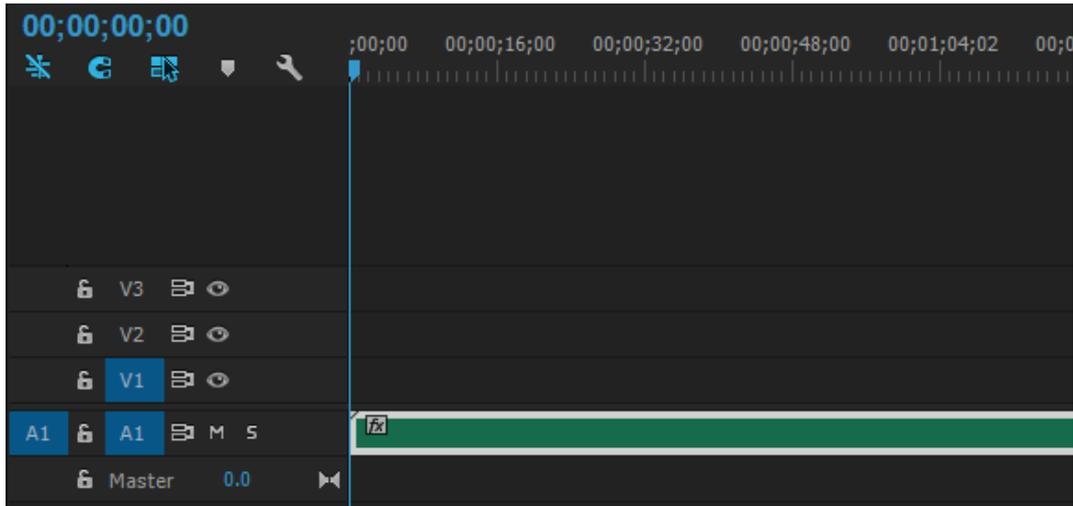


Figure 7– After ‘Render and Replace’ the effect is gone.

3. Re-apply the correctLoudnessWidgetEffect from the effects.

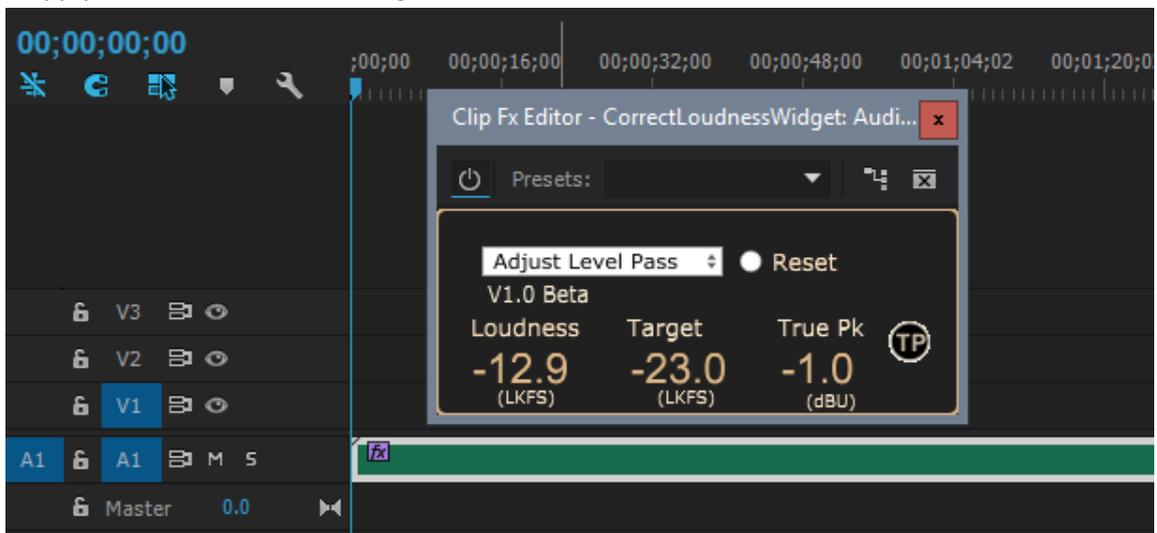


Figure 8 – When you re-apply the clip, the correctLoudnessWidget shows the measured loudness.

4. With the ‘Adjust Level Pass’ selected the clip will now render to the correct audio level. Again this can be proved using the audio level meter but on a longer clip this is a little time consuming.

## Application of CorrectLoudnessWidget in Avid Media Composer

Here we will describe the way that we apply the CorrectLoudnessWidget in Media Composer. We would be interested in our customer’s feedback whilst we are offering free use of this product. We appreciate that expert editors may find better ways of applying the loudness correction system.

1. Select Tools→AudioSuite. Select the appropriate CorrectLoudnessWidget as an audio effect in the drop-down. Click the large pink Plug-In icon to reveal the CorrectLoudnessWidget UI. On the correctLoudnessWidget click ‘Reset’ and select ‘Analyse Audio Pass’. You can also change the Target and True Peak settings if required by double clicking in the respective boxes (USA, A/85

ATSC is Target -24LKFS and True Peak -2dBU).

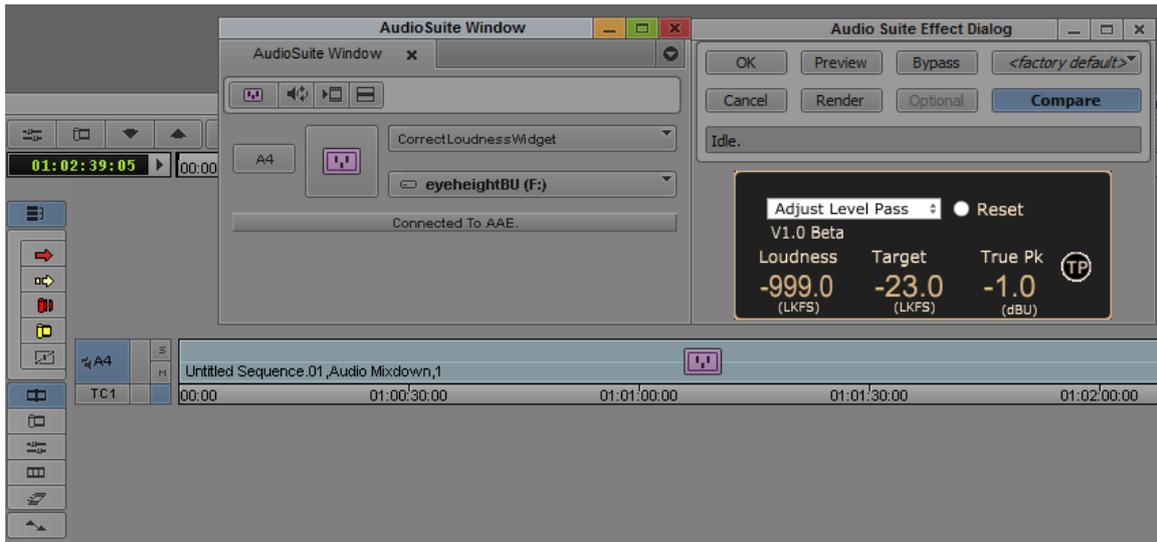


Figure 9 - Correcting an audio clip.

2. On the 'Audio Suite Effect Dialog' press 'Render' followed by 'OK'. Once the effect has rendered the UI will disappear.



Figure 10 – Measured level in UI.

3. Click the large pink Plug-In icon to reveal the CorrectLoudnessWidget UI again. You should see it appear with the measured loudness (Fig 10 shows -9.5 LFKS)
4. Select the 'Adjust Level Pass' on the CorrectLoudnessWidget UI then on the 'Audio Suite Effect Dialog' press 'Render' and then 'OK'. This will then render the clip to the target audio level.