**User Interface Testing**

# **Selecting and Uploading a File**

When the executable file is opened, the interface will open to the below screen:

Graphical user interface, application, website

Description automatically generated

\*\*Note that the scaling of the users screen being at 175% or higher, may cause the buttons on the bottom of the window to not be visible. We have found that setting the scaling to below 125% produces the best results.

Clicking on the “Select a file” button will open the file explorer on the user’s computer and allow the user to browse their computer and select a file. As of now, wav, mp4, and flac file formats may be selected. When the select a file window opens, the filter is defaulted to the Wav file format. The user will need to adjust the filter on the select a file window if they wish to select a flac, or mp4 file.

After selecting a file, when the user clicks “open” or hits the enter key on their keyboard, the file will be read into the program.

Depending on the size of the file, after a few seconds(larger files will take longer – see the test file analysis at the end of this document),the user will then be presented with the following window:

Text

Description automatically generated with medium confidence

The file path of the selected file will be displayed. If the file path is long the end characters may get cut off.

The LUF value displayed will be the calculated LUFs value rounded to 1 decimal place of the uploaded sound file.

The True Peak value displayed will be the calculated true peak value rounded to 1 decimal place of the uploaded sound file.

The Sample Rate displayed will be the sample rate read off the uploaded file.

The number of channels displayed will be the number of channels read off the uploaded file:

Once the user closes out the above window, they will be able to select another file and start the process over again. They will not be able to interact with the Welcome window until they close the Select Report window.

If they close out the window erroneously at any point before generating a report, they will have to re-upload the file they wish to have analyzed.

## Possible Errors

### Not having Standards File

If the user does not have the standards file downloaded onto their device, (It will be included in folder within the executable zip file, so when downloading the executable, this should already be downloaded and in place. This would only be in the case that it got deleted or moved), when the main window opens, they will get the below error message and will not be able to interact with the main window:

Graphical user interface, text, application, email

Description automatically generated

Clicking “Ok” or closing the error message will result in the whole program closing.

Clicking “Create a new standards.db (empty) file” will create a new empty standards file. The user can then use the “Add Standards” feature to populate that file and proceed with the report they wish to get.

### Getting a LUFs/Peak Value of -99.9

An indication of a processing error when the file is read in, is if the displayed LUFs and Peak value is -99.9 as shown below.

Text

Description automatically generated

Other potential reasons for this appearing and fixes for them will be added as they are come across.

# **Selecting a Report**

The user may choose what platform(s) and standard(s) they wish to see on the exported report.

The user will not be able to interact with the Welcome window until any subsequent pop-up windows such as the Select report, view report, or any error windows are closed.

## Selecting a Platform

At this point if the user can select which platform(s) they would like to see if their file passes the standards of. The user can choose one, multiple, or all available platforms.

To choose which platform(s) their file is tested against, the user can interact with the list of available platforms. The user can scroll to see all platforms currently loaded into the program.

Text

Description automatically generated with medium confidence

Note that this list includes only the standards that are pre-entered. If the user adds/deletes any platforms they will be reflected in this list.

To select a platform, the user can click on the name of the platform they would like added to the report and it will be highlighted to indicate it was selected. If they wish to unselect it, they can click on the platform name again and it will no longer be highlighted. The user may select more than one platform.

To select all available platforms currently loaded into the program, the user can click the “All available Platforms” button. This has the same effect as clicking each platform from the list and hitting the “Select” button.

## Selecting a Standard

At this point the user can select which standard they would like their file compared against.

If the user does not change the standard, the default one is LUFs and Peak. If they wish to change the standard, they can click the arrow next to produce the below drop-down menu:

Graphical user interface, text, application, chat or text message

Description automatically generated

Clicking on any of these will cause “LUFs and Peak” to be replaced with the chosen standard.

## Generating the report

Once the user has selected the platform(s) and standard(s) they want, by hitting the “Select” button or enter key, the current platforms selected will now be used to generate the report. If a user clicks “Select All Platforms”, all of the platforms will be used to generate the report. Once one of these buttons or keys is selected, the following window will appear:

Text

Description automatically generated with medium confidence

It will once again show the calculated LUFs and True Peak values from the input file. It will also show the selected platforms and what their cutoff values are for the selected standards. Lastly, it will show how close the standard value from the input file is to the platform’s cutoff value.

If the file would pass the platform’s standard, the number is green and positive indicating how much the given value can be increased and still pass the standard.

If the file would not pass the platform’s standard it is shown in red and is negative, indicating how much the given value would need to be increased to pass the platform’s standard.

If the file is “close to” (within a certain +/- value of) the standard it is shown in yellow (this margin is +/- 2 LUFs and +/- 0.5 dbfs for True Peak). Once again the value is positive indicating how much the value can still be increased by and pass the platform’s standard or negative indicating how much the value will need to be decreased by in order to pass the platform’s standard.

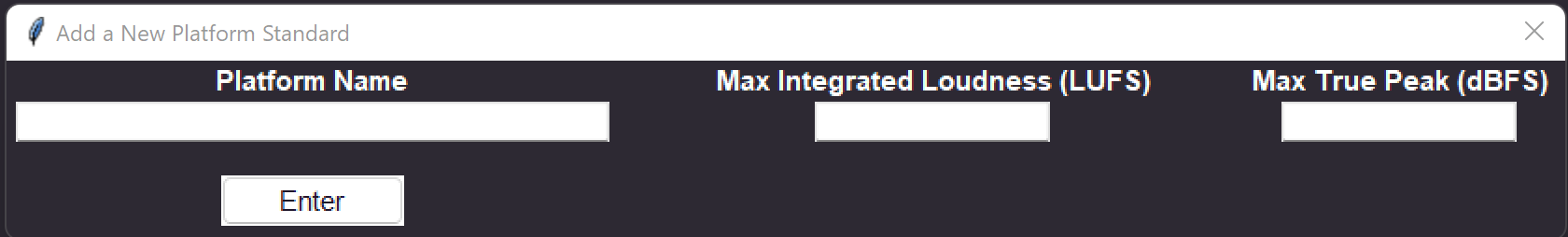
# **Adding/Modifying/Viewing Standard**

There are 3 additional buttons on the opening screen that allow users to interact with the known standards for given platforms.

After clicking on either of the 3 buttons, the user will not be able to interact with the Welcome window until any subsequent pop-up windows and/or any error windows are closed.

## Adding a standard

When a user clicks on the “Add a new platform” the following window appears:



This allows the user to input a platform name, the standard LUFs value for the platform, and the standard True Peak value for the platform.

When the user clicks the “Enter” button or the enter key on their keyboard the input platform and standard will be added to the existing list within the program and will be able to be selected by the user to be included in reports.

Any added standards will remain in the database until if/when they are deleted. Even if the program is closed and re-opened.

### Possible Errors

There are a few situations that could cause an error message in response to the input from the user. To remove the error windows the user can hit the x button or enter:

1. If the user enters the name of a platform whose standards are already in the program the below error message will appear and no additional standard will be added.

Graphical user interface, text, application, chat or text message

Description automatically generated

1. If the user enters an unrealistic value.
   1. If the user enters a positive LUFs or True Peak value or a non-numeric value without a negative sign in front of it, the following error message will appear:

Graphical user interface, text, application

Description automatically generated

* 1. If the user enters a value that is not numerical with a negative sign in front of it for the LUFs or True Peak value, the following error message will appear:

Graphical user interface, text, application

Description automatically generated

* 1. If the user does not enter a name for their new platform, they will get the below error message:

Graphical user interface, text, application

Description automatically generated

* 1. The user is able to enter a value for one or both the True Peak and LUFs standard. However, if the user enters neither standard, they will get the below error message:

Graphical user interface, text, application, chat or text message

Description automatically generated

## Modifying a standard

When a user clicks on the “Modify/Delete existing platform standards” the following window appears:

Graphical user interface, application

Description automatically generated

This allows the user to modify an existing platform’s standard LUFs value, and/or standard True Peak value or delete an existing standard.

### Selecting a Platform

If the user does not change the platform, the default one is the first platform on the list. If they wish to change which platform they are modifying, they can click the arrow to produce a drop-down menu similar to the one below:

Text

Description automatically generated

Again, note that this drop down includes only the standards that are pre-entered. If the user adds/deletes any platforms, they will be reflected in this drop down.

Clicking on any of these will cause the default platform to be replaced with the chosen platform.

### Changing LUFs/Peak

At this point the user can select how they wish to modify the standards for the selected platform.

If the user does not change the standard the default one is the Integrated Loudness (LUFs). If they wish to change the standard, they can click the arrow next to produce the below drop-down menu:

Graphical user interface, text, application, chat or text message

Description automatically generated

Clicking on any of these will cause “Integrated Loudness (LUFs)” to be replaced with the chosen selection.

Choosing “Integrated Loudness (LUFs)” or “True Peak (dBFS)” will require the user to input a new LUFs or True Peak value. The input by the user follows the same logic as discussed in the “Adding a Standard” section and is subject to receiving the same error messages if an inappropriate value is input.

A user cannot modify both the LUFs and True peak standards at the same time. If they wish to change both, they will have to change one, again choose “Modify/Delete existing standards”, and then change the other.

When the user clicks the “Enter” or the enter key on their keyboard the new LUFs or Peak value for the selected platform will be updated and reflected in any future comparisons/outputs.

### Deleting a Platform

Choosing “Delete Standard” and then clicking the “Enter” button will cause the selected platform and corresponding standard values to be removed from the available standards. This means they will no longer be able to be selected or included on any comparisons/outputs.

Any deleted standards will remain removed from the database until if/when they are added back in. Even if the program is closed and re-opened.

If all standards are deleted, clicking “Modify/Delete existing standards” will result in a blank window as there will be no existing standard to modify.

## Viewing existing standards

When a user clicks “View existing standards” the below window is opened:

Table

Description automatically generated

It lists the current list of standards that available to be selected and included in the comparisons/reports. Any platforms added/deleted by the user will be reflected here. If there are no platforms/standards currently in the program, only the headers will appear in the window.

# **Expected Results from Test Files:**

A number of test files of different sizes/channel numbers/frequency are available in the folder: /Users/leahsquiller/Documents/GitHub/SoundOff/SoundOff-seperate\_files\_classes/Testing/testfiles

When they are run through the software the expected results readout is as followed:

## For a One Channel 24-bit 48000 Hz Wave file:

Name of test file: “SineWave.wav”

Average time taken to process: 1.5 seconds

Expected information retrieved from program:

Graphical user interface, text, application

Description automatically generated

## For a One Channel 16-bit 22050 Hz Wave file:

Name of test file: “BabyElephantWalk60.wav”

Average time taken to process: 3 seconds

Expected information retrieved from program:

Text

Description automatically generated with medium confidence

## For a One Channel 8-bit 22257 Hz Wave file:

Name of test file: “taunt.wav”

Average time taken to process: 1.5 seconds

Expected information retrieved from program:

Graphical user interface, text, application

Description automatically generated

## For a Two Channel 24-bit 48000 Hz Flac file:

Name of test file: “2\_Channel\_24\_48\_minus6db.flac”

Average time taken to process: 1.5 seconds

Expected information retrieved from program:

Text

Description automatically generated

## For a Two Channel 24-bit 48000 Hz Wave file:

Name of test file: “2\_Channel\_24\_48\_minus6db.wav”

Average time taken to process: 2 seconds

Expected information retrieved from program:

Graphical user interface, text

Description automatically generated

## For a Two Channel 16-bit 44100 Hz Wave file:

Name of test file: “Adele.wav”

Average time taken to process: 15.5 seconds

Expected information retrieved from program:

Graphical user interface, text, application

Description automatically generated

## For a Two Channel 24-bit 44100 Hz mp4 file:

Name of test file: “2\_Channel\_24\_48\_minus6db.mp4”

Average time taken to process: 2.5 seconds

Expected information retrieved from program:

Graphical user interface, text

Description automatically generated

## For a Six Channel 24-bit 44100 Hz Wave file:

Name of test file: “6\_Channel\_White\_Noise.wav”

Average time taken to process: 3.5 seconds

Expected information retrieved from program:

Graphical user interface, text

Description automatically generated