

Welcome to noiseLAB Express 1.0

Basic Operation

Download and install the program. The program automatically unzips and installs. If you don't have a license code, you can run the program in demo mode for one 30 day period.

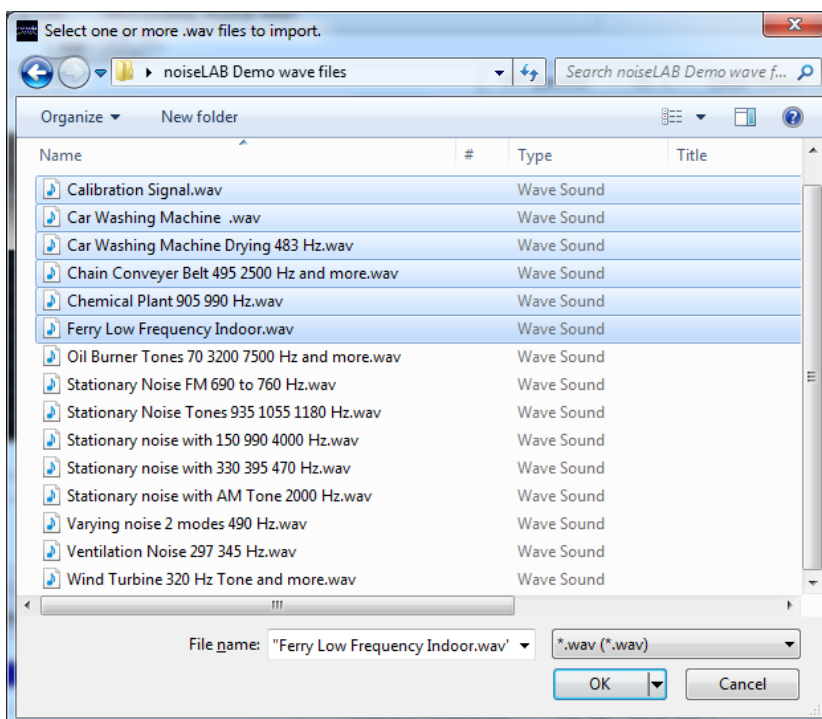
Several interesting demo files with stationary and time varying tones are placed in a folder on your desktop.

noiseLAB Express has the following workflow:

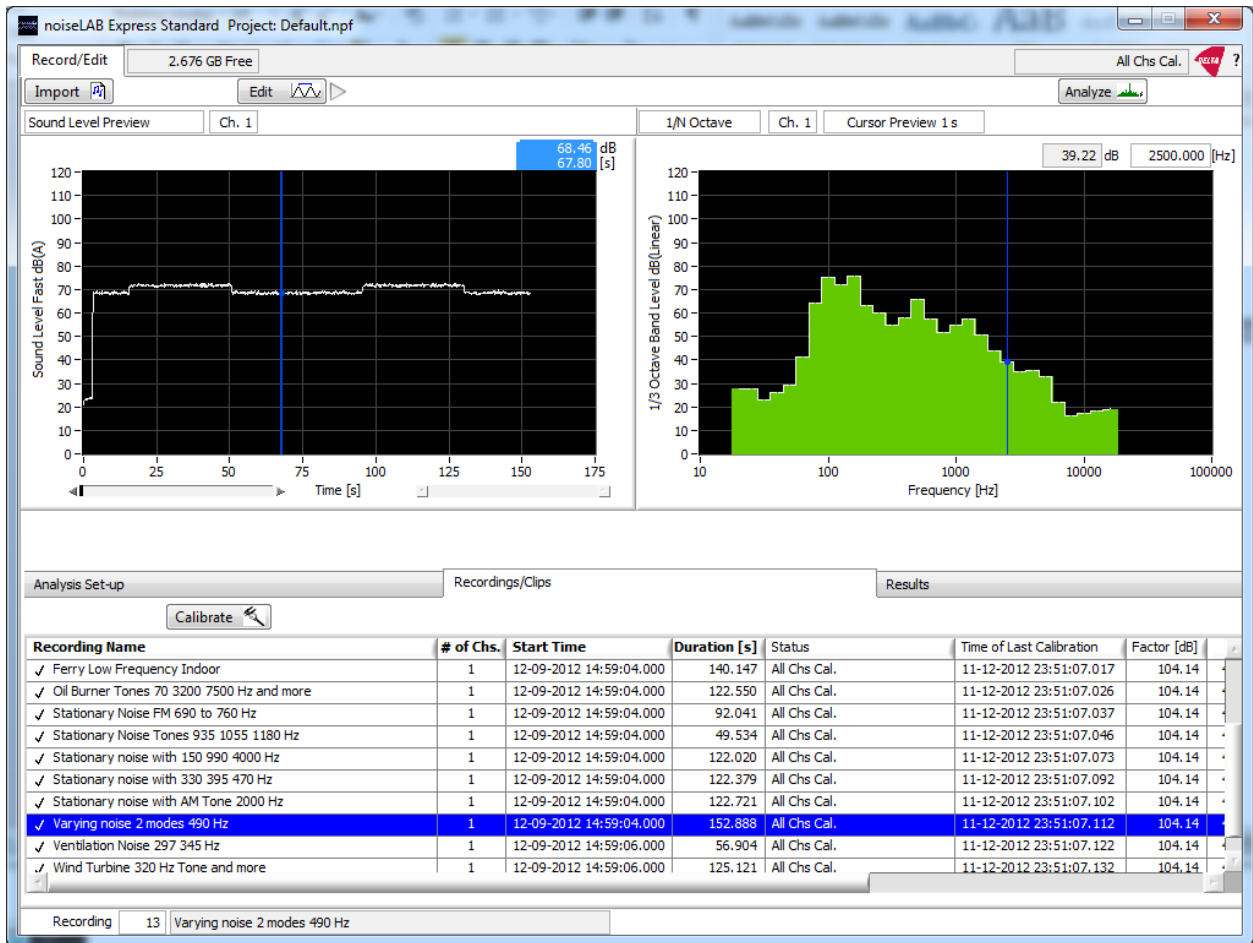
- Import .wav files: The imported wave files become "Recordings"
- Calibrate
- Analyze
- Save Results to Excel

Import:

Press the "Import" button and select the Calibration Signal and at least one other .wav file.



Working copies of your wave files created in separate folder but the original wave files are not modified or deleted.



Previewing your signals:

- The upper left-hand graph always shows the “Sound Level Preview”.
- Hover your mouse over the graph and hit H to center the cursor on the Graph.
- Listen to the signal using the “Play” button (Shortcut Space)
- Drag the blue cursor to Preview a one second block of the signal.
- “Scrub” the data by moving the blue cursor on the “Sound Level Preview” back and forth, and view the Octave Spectrum or FFT Spectrum on the right graph.
- Click in the Recording list to Preview other Recordings.

Calibration:

- Right Click on the Recording that contains a 1 kHz Calibration Tone.
- Place the Blue cursor in the “Preview Sound Level” graph on a stable part of the signal.
- Enter the sound level “Cal. Level” of your Calibrator.
- Click on one or more Recordings to Calibrate or select “All”
- Press “Apply”

Analysis Set-up Recordings/Clips

Exit Cal. Cal. Level dB All Recordings

Recording Name	# of Chs.	Start Time	Duration [s]
<input checked="" type="checkbox"/> Calibration Signal	1	12-09-2012 14:59:04.000	30.000
<input checked="" type="checkbox"/> Car Washing Machine	1	12-09-2012 14:59:04.000	136.346

- Note the little symbol to the left of each Recording now changes to a checkmark, indicating that the Recording is calibrated.

The screenshot shows the noiseLAB Express Standard software interface. The top section displays two graphs: 'Sound Level Fast dB(A)' on the left and 'Hanning FFT Spectrum dB(Linear)' on the right. The 'Sound Level Fast dB(A)' graph shows a peak at 93.80 dB at 13.95 seconds. The 'Hanning FFT Spectrum dB(Linear)' graph shows a peak at -25.87 dB at 0.000 Hz. Below the graphs is the 'Analysis Set-up' section, which includes a 'Calibrate' button and a table of recordings.

Recording Name	# of Chs.	Start Time	Duration [s]	Status	Time of Last Calibration	Factor [dB]
<input checked="" type="checkbox"/> Calibration Signal	1	12-09-2012 14:59:04.000	30.000	All Chs Cal.	11-12-2012 17:45:09.028	101.89
<input checked="" type="checkbox"/> Car Washing Machine	1	12-09-2012 14:59:04.000	136.346	All Chs Cal.	11-12-2012 17:45:09.031	101.89
<input checked="" type="checkbox"/> Car Washing Machine Drying 483 Hz	1	12-09-2012 14:59:04.000	76.503	All Chs Cal.	11-12-2012 17:45:09.051	101.89
<input checked="" type="checkbox"/> Chain Conveyer Belt 495 2500 Hz and more - Copy	1	12-09-2012 14:59:04.000	72.645	All Chs Cal.	11-12-2012 17:45:09.064	101.89
<input checked="" type="checkbox"/> Chain Conveyer Belt 495 2500 Hz and more	1	12-09-2012 14:59:04.000	72.645	All Chs Cal.	11-12-2012 17:45:09.083	101.89
<input checked="" type="checkbox"/> Chemical Plant 905 990 Hz	1	12-09-2012 14:59:04.000	66.388	All Chs Cal.	11-12-2012 17:45:09.097	101.89
<input checked="" type="checkbox"/> Ferry Low Frequency Indoor	1	12-09-2012 14:59:04.000	140.147	All Chs Cal.	11-12-2012 17:45:09.120	101.89
<input checked="" type="checkbox"/> Oil Burner Tones 70 3200 7500 Hz and more	1	12-09-2012 14:59:04.000	122.550	All Chs Cal.	11-12-2012 17:45:09.143	101.89
<input checked="" type="checkbox"/> Stationary Noise FM 690 to 760 Hz - Copy	1	12-09-2012 14:59:04.000	92.041	All Chs Cal.	11-12-2012 17:45:09.158	101.89
<input checked="" type="checkbox"/> Stationary Noise FM 690 to 760 Hz	1	12-09-2012 14:59:04.000	92.041	All Chs Cal.	11-12-2012 17:45:09.171	101.89

Explore the right click options on the Recordings list on the lower half of the graph.

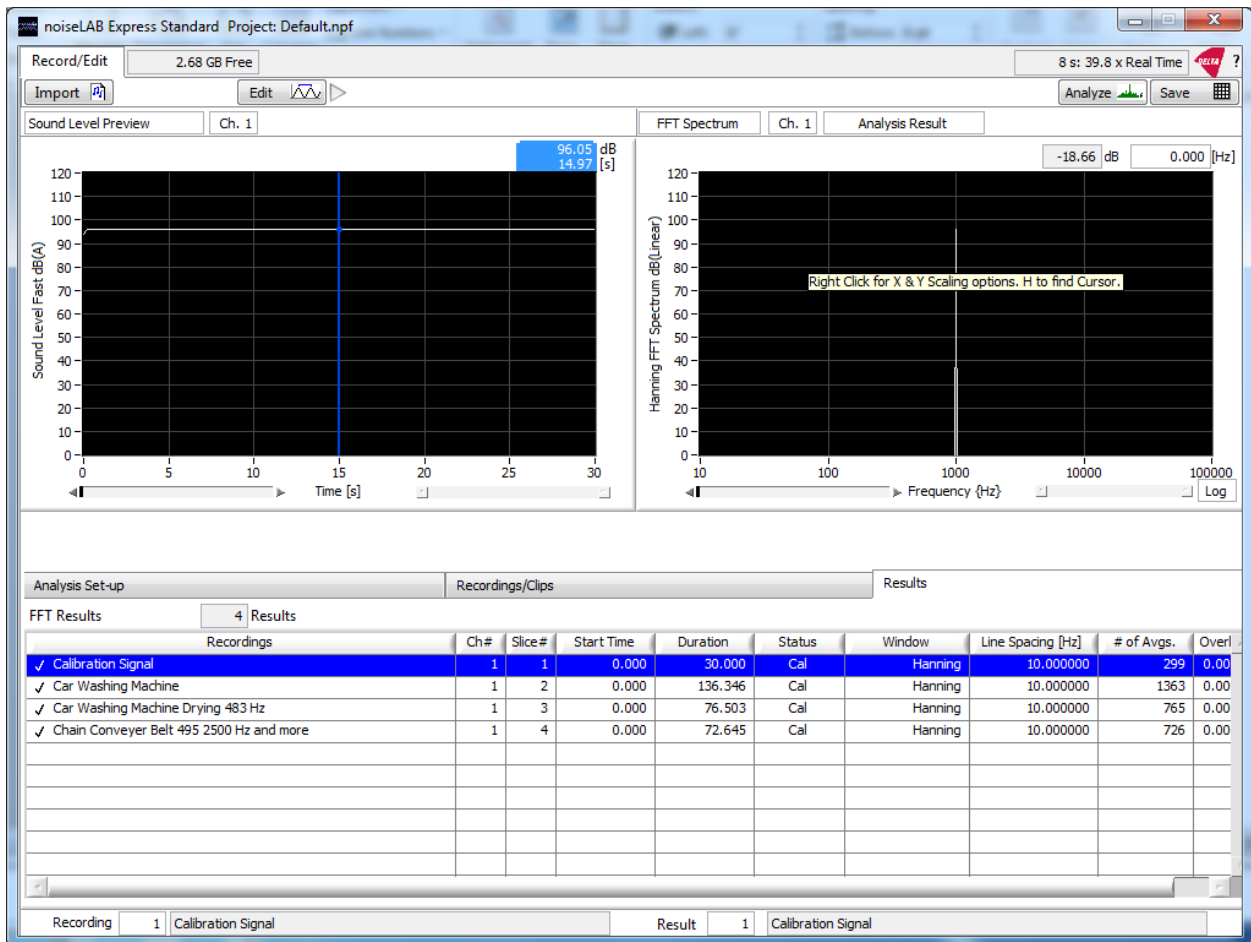
- Rename a Recording or Revert to the original name.
- Change the "Start Time" of the Recording.
- Add Annotation to the Recording
- Delete one or more selected Recordings. (your original wave files can always be imported again).

Analysis:

- Select the desired analysis functions on the Analysis tab sheet. The upper left hand corner check box activates the selected analysis function. (These settings also apply the Preview functions on the right hand graph.)
- Select one or more Recordings and hit the “Analyze” Button.
- Wait for the result on the “Results” Tab.

Export:

- Export to Excel using the “Save” button.
- Select the desired Analysis function over the right hand graph.
 - The table below the graphs is exported to Excel.
 - For FFT analysis, two separate tables are exported.
 - The Result table below the graph
 - A table of all FFT spectral values.
- noiseLAB Express uses your PC’s settings for decimal point (comma or period)



When you click on a Result, the Corresponding Sound Level is shown on the left “Sound Level Preview” graph.

To make a new analysis, go back to the “Recordings/Clips” Tab and select the desired Recordings.

Note: Every time you make a new analysis, the old results are erased. You can always make a new analysis since your original waveforms are preserved.

Quick Tips for Graphs

- Right Click on any graph, and explore the Options and the associated shortcuts. Often it is useful to have the X Scale set to "Auto", but leave the Y scale with a fixed range.
- You can double click on the minimum and maximum values of the axes to enter new values.
- Each graph "remembers" its most important individual settings.
- Cursors can be set by dragging or by entering its X value. (Use the shortcut X to unzoom)
- The left horizontal bar under a graph can be clicked to zoom around the cursor. The right bar under the graph then can scroll the graph.
- Try the shortcuts F, W, and Q when hovering over a graph to change the graph size.
- For all numeric fields, you can place the cursor after a selected digit, and then use the up and down arrow keys to change its value.
- Even when showing a full size graph, you can use the numerical selectors below the graph to select the Recordings or Results.

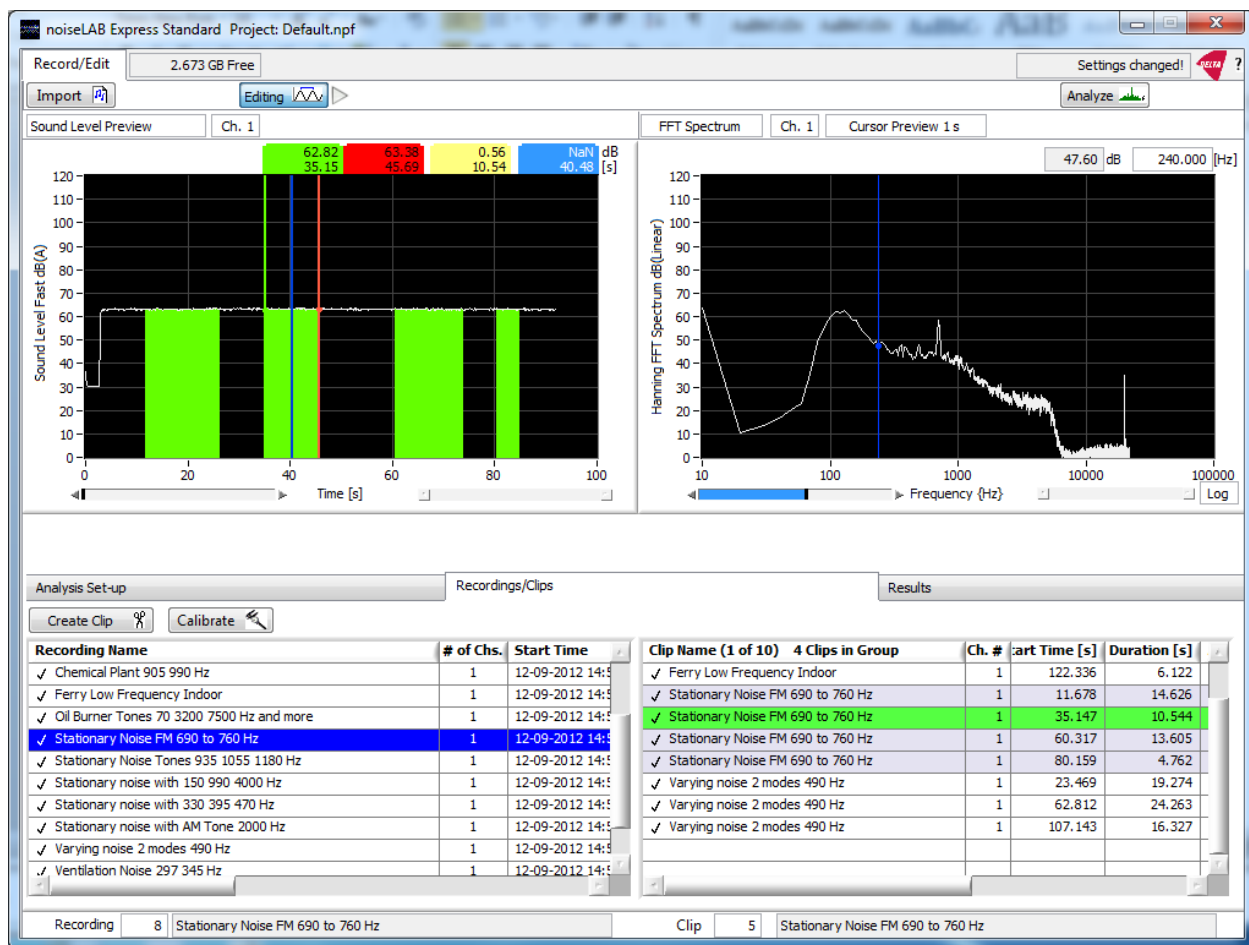
Editing

Press the “Edit” button to enter the “Editing” mode and create one or more “Clips” which are sections of a Recording.

The “Sound Level Preview” graph is your workspace which shows the Clips in the selected Recording.

You can create Clips in two different ways:

- Grab the Green cursor and place it at the beginning, and the Red Cursor at the end, and press “Create Clip”
- or
- Click/Drag/Release: Click the mouse on the starting point, hold down and drag, and release the mouse button at the end of the clip. (Make sure you do not click on an existing cursor when you click down)



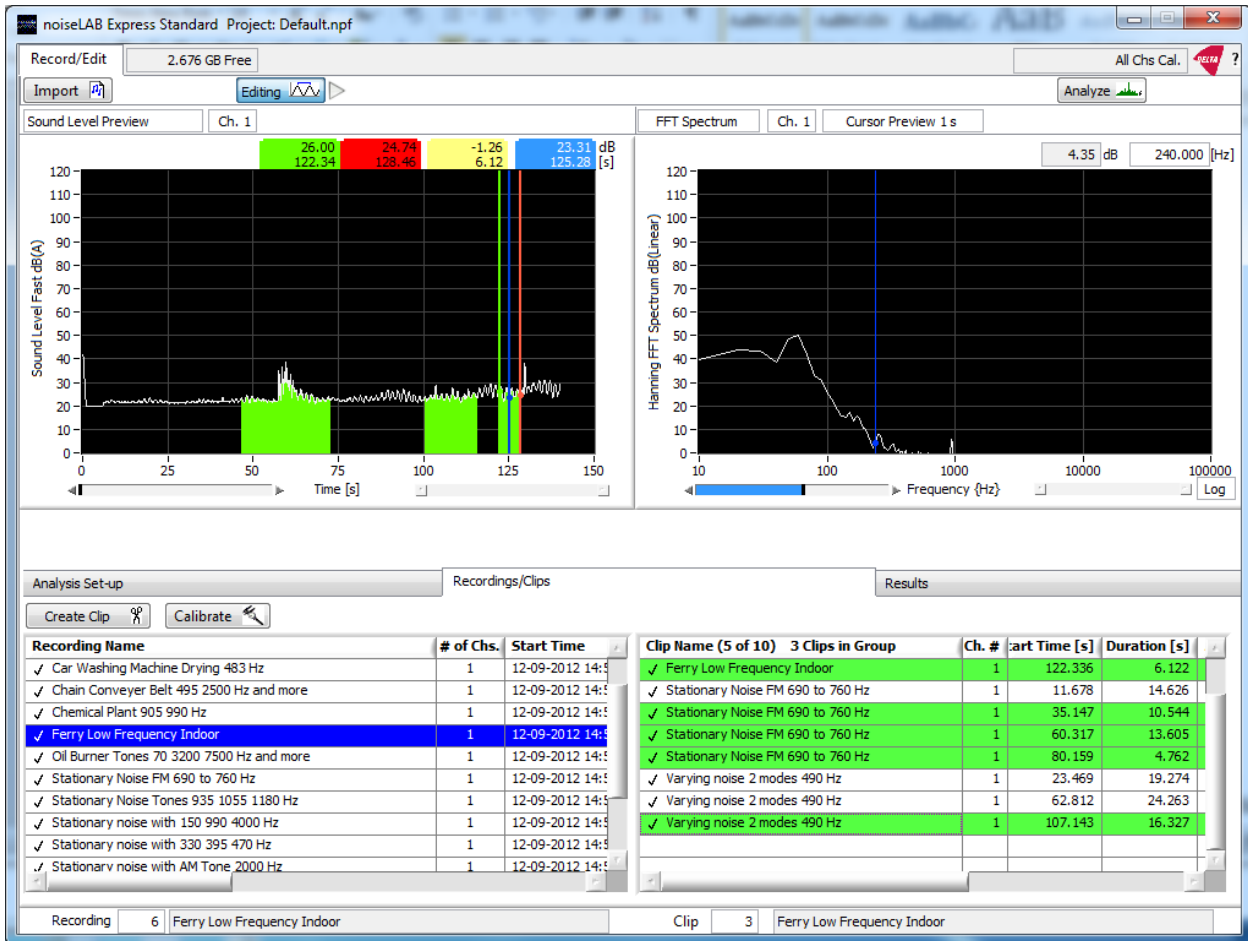
You can quickly create clips by using “Click/Drag/Release” with the mouse and the C shortcut to create the Clips

Click on the Clip List (right half of screen) to show the Clip position *preview* (Sound Level, FFT or Octave) on the right hand graph. The selected Clip is Green, its “parent” Recording on the left half is shown in dark blue. The Clip’s siblings (brothers and sisters) are shown in the Clip list in light Blue.

When you click on the Recordings list, the children (if any) Clips are shown in light blue in the Clips list and highlighted in Green on the Sound Level Preview Graph.

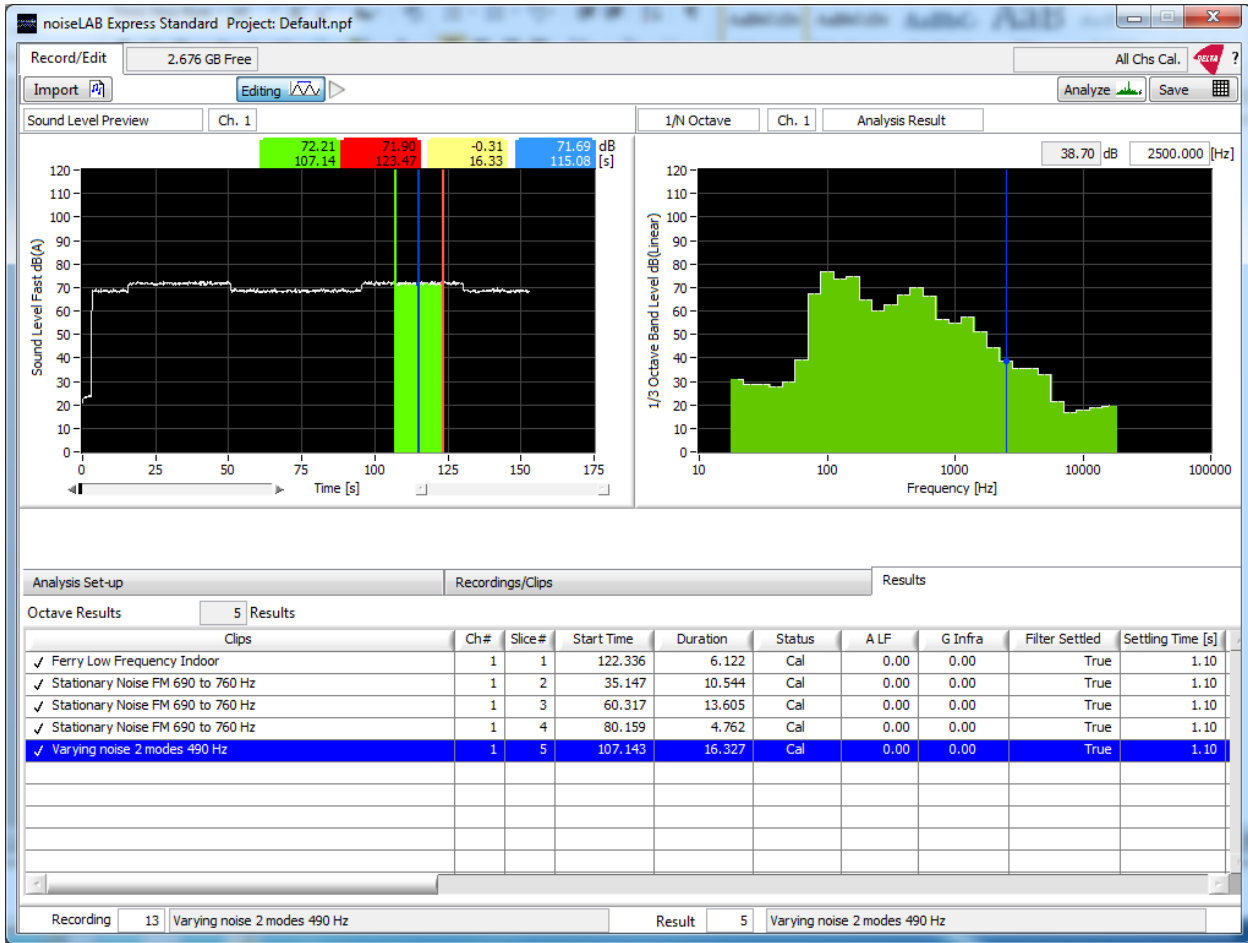
Analysis

Select one or more Clips and press “Analyze” and wait for the Results.



In Edit mode, you can only Analyze Clips, not Recordings.

When you Click on a Result, the corresponding position of the Clip is shown.



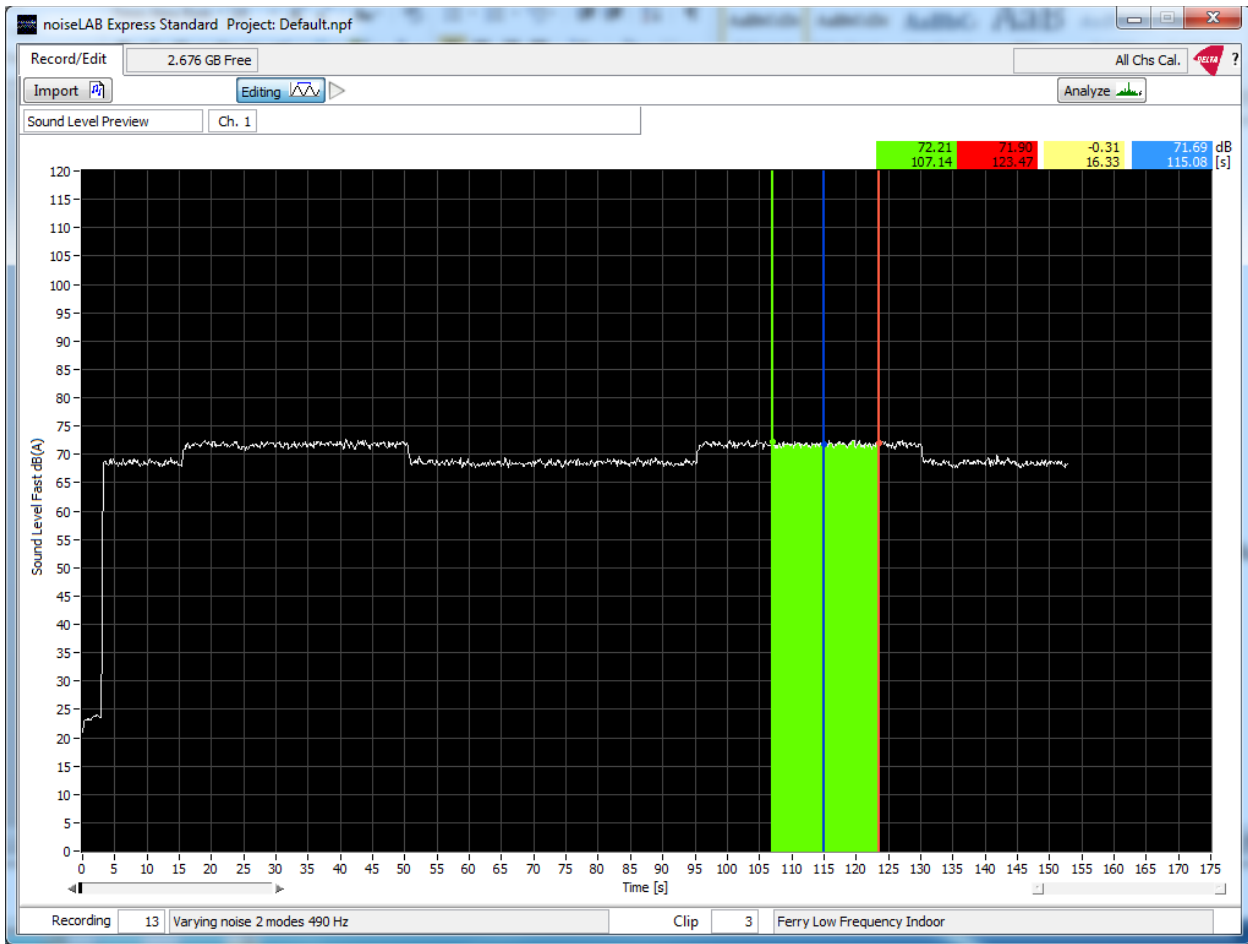
If you moved the Blue cursor on the “Sound Level Preview” graph, or Play the sound, the right hand graph will show the *preview* result. Switch back to the Analysis Result by selecting the field centered above the right hand graph.

Go back to the “Recordings/Clips” tab to create or delete more Clips and select these for analysis.

Explore the right click menu on the Clips List:

- Add annotation, rename or delete clips.
- To adjust the beginning and end of the Clip, move the Green and Red cursors on the “Sound Level Preview” graph, and then use the “Update Clip for Current Cursors”

You can also create clips in the Wide (W) or Full (F) mode of the “Sound Level Preview” graph. The numeric selectors below the graph let you navigate between Recordings and Clips, and the C shortcut lets you create Clips.



Additional functions:

Press the ? in the upper right hand corner for a quick help/shortcut guide.

Right click the ? mark for license entry, upgrade and support information.

Click the DELTA logo in the upper right hand corner to open the noiseLAB home page in your browser.

Right Click the DELTA logo to launch the TDMS data viewer for advanced browsing of sound or result files.
Close the TDMS viewer before making a new analysis.

Cheat Sheet

On install, we recommend loading all the demo files. You can also load demo files any time later.

Right click on the “Calibration Signal” Recording, to perform calibration.

Select one or more recordings and hit Analyze.

Right click on Graphs to discover autoscaling options, graph size and background colors.

Enter the Edit Mode to create one or more Clips for one or more Recordings.

Select one or more Clips to Analyze.

Tip strips will show up when you hover the mouse over most fields.

Learn the shortcuts for really fast operation:

Space for play start/stop

Creating Clips in Edit mode:

Cursor down, drag, release to select Clip range

C (Create Clip)

Arrow right/left to single step cursor.

Shift Arrow right/left to single step green cursor (on “Sound Level Preview” graph in Edit mode)

Control Arrow right/left to single step red cursor (on “Sound Level Preview” graph in Edit mode)

H to center all three cursors in Edit mode on “Sound Level Preview” graph.

H to center cursor on all other graphs.

Arrow up/down to Peak step cursor.

When hovering over a graph

W for wide graph display

F for full graph display

Q for Quarter Graph Display.

X for one time X autoscale

Y for one time Y autoscale

Manual Axes settings: enter desired min and max X and Y axis values as desired (Autoscale on the right click menu should be off)

Sound Playback (Space)

Edit Mode off:

Starts at the Blue cursor position

Edit Mode on

Select a Clip

Play starts at beginning of Clip

Volume

Carefully use the vertical slider to the right of the Sound Preview Graph. Distortion is shown by Red flashing. **Warning**, the slider covers a very large dynamic range, so you may blow your ears if not careful

Enjoy!

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