



noiseLAB Pro

Powerful tools for Type 1 noise analysis

The screenshot displays the noiseLAB Pro software interface. The top section shows 'Record/Edit' with 66,254 GB Free and 'All Chs Cal.' status. Below this are 'Import' and 'Editing' buttons. The main interface is divided into two primary plots:

- Sound Level Fast dB(A):** A time-domain plot showing sound level over 175 seconds. Three green vertical bars highlight specific noise events. A table above the plot provides data for these events:

65.87	66.59	0.72	65.75
62.24	86.62	24.38	74.26
- FFT Spectrum:** A frequency-domain plot showing the Hanning FFT Spectrum dB(Linear) from 10 Hz to 100,000 Hz. A vertical cursor is positioned at 490.000 Hz, with a reading of 64.16 dB.

The bottom section contains 'Analysis Set-up' with 'Create Clip' and 'Calibrate' buttons. Below this are two tables:

Recording Name	# of Chs.	Start Time
✓ Varying noise 2 modes 490 Hz	1	12-09-2012 14:5
✓ Calibration Signal	1	12-09-2012 14:5
✓ Car Washing Machine	1	12-09-2012 14:5
✓ Car Washing Machine Drying 483 Hz	1	12-09-2012 14:5
✓ Chain Conveyor Belt 495 2500 Hz and more	1	12-09-2012 14:5
✓ Chemical Plant 905 990 Hz	1	12-09-2012 14:5
✓ Ferry Low Frequency Indoor	1	12-09-2012 14:5
✓ Oil Burner Tones 70 3200 7500 Hz and more	1	12-09-2012 14:5
⊗ 60 second extract	1	10-03-2013 19:5

Clip Name (1 of 3)	3 Clips in Group	Ch. #	Start Time [s]	Duration [s]
✓ Varying noise 2 modes 490 Hz		1	22.449	21.882
✓ Varying noise 2 modes 490 Hz		1	62.245	24.376
✓ Varying noise 2 modes 490 Hz		1	106.576	18.254

At the bottom, the current recording is '1 Varying noise 2 modes 490 Hz' and the selected clip is '2 Varying noise 2 modes 490 Hz'.

Introduction

noiseLAB Pro provides advanced, easy-to-use sound, vibration, and psychoacoustic analysis to Type 1 standards. For noise analysis, 1/1 to 1/24 octave analysis is provided along with FFT spectrum analysis with resolution from 1 Hz to 100 Hz. Also included is Sound Level (Z, A, B, C

weighting) with choice of integration time constant, Impulse, Peak, and statistical analysis, Leq and LE. In addition, noiseLAB also provides low frequency A weighting and Infrasound G weighting



Vibration Analysis

Vibration analysis is based on accelerometer signals, which with integration provides velocity and displacement in a variety of units, displayed with linear or logarithmic X and Y scales. Both Peak, Peak to Peak, and RMS (with selectable time constant) is available for vibration analysis.

Ensuring Quality with non-destructive editing

- Record or import sound files.
noiseLAB Pro provides a powerful front-end for sound recording, calibrating, and editing of multi-channel sound files. Signals may be recorded using National Instruments hardware or .wav files may be imported from external sound level meters or recorders.
- Audit and edit
The noiseLAB Editor lets you listen to or scrub sound files while viewing their spectra, and edit the files to only include relevant sounds. This ensures higher quality of measurements. The non-destructive editing also lets you go back at any time, adjust the edit, or make different analyses.

Time and Frequency Slice Analysis

Time Slice analysis lets you perform any analysis type in in user-defined slices, for example to see the 1/3 octave spectrum in 10 second intervals. In addition, by placing the cursor on any frequency spectrum component you can view its value as a function of time.

Psychoacoustics

The human impact of noise and vibration is a major new addition to noiseLAB. In addition to the ISO 1996 Tone Analysis, the classic sound quality metrics of harshness, roughness, loudness (stationary and time-varying), sharpness and fluctuation strength are also provided.

As a leader in psychoacoustic research, the tone analysis method (ISO 1996 Annex 3) was developed by DELTA, and is now supplemented by two new experimental metrics for wind turbines: the Pedersen method for low frequencies and the LeGarth method for swish analysis of wind turbines.

Additional Features

- Import of multi-channel recordings .wav recordings
- Automatic application of calibration settings from Svantek Instruments.
- Manual calibration by applying the value from an imported calibration tone to other recordings.

- User-friendly non-destructive editing of recordings.
- Multiple Clips per Recording
- Batch processing of unlimited number of clips and recordings.
- Analysis of any or all analysis functions in parallel.
- Sound playback and sound scrubbing: View FFT or Octave spectra as you “scrub” by moving the cursor.
- Export of results to Excel.
- Storage of time waveforms in .tdms format
- Fast, streamlined operation
- Multi-core enabled analysis for higher speed.
- Windows XP to Windows 7 compatible.

Benefits

Your sound files can be edited to select precisely the sound of interest. This gives more accurate measurements, and lets you perform additional analysis at a later time.

- No regrets: You can always go back, check for errors, or make new analyses.
- Wider range of analysis choices: You are only limited by the software on your PC. As new methods become available, you can apply them to existing files.
- Better documentation: If your measurement ever is challenged you can always go back to the original recordings for independent audit.
- Improved accuracy by automatic or manual calibration with associated time-stamping.
- Faster, more flexible analysis than most sound level meters or analyzers.
- Highly interactive editor lets you quickly see, hear and select the relevant signals by “scrubbing” the data.

Ordering information

noiseLAB Pro is available from DELTA or its distributors:

www.noiselab.dk

noiseLAB Pro is available in three editions with different functions and channel count. See the above link for more information.

Specifications subject to change without notice

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