



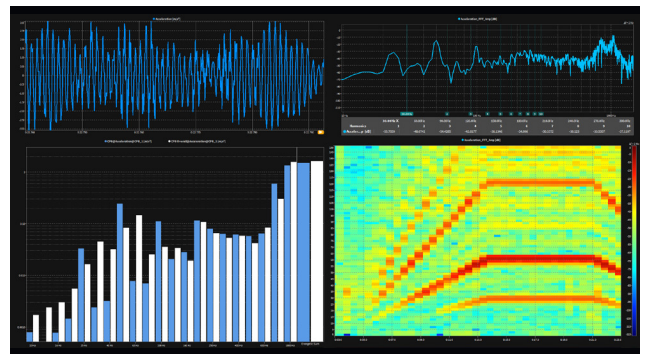
OXYGEN is your go-to software for data acquisition and analysis. It offers comprehensive frequency analysis options, in the Spectral, Order, and Cepstral domains, making it versatile for various applications.

1

FFT, STFT AND CPB ANALYSIS

Frequency domain analysis at its best! OXYGEN assists every application with its high flexibility and easy usage.

- > Freely selectable (not only 2^N) number of input samples or line resolution
- > Optional zero-padding for enhanced line resolution
- > Various windowing and scaling types selectable
- > Reference curves to visualize thresholds and warnings in the frequency domain
- > STFT to visualize spectral changes in time
- > CPB (according to EN 61260) with 1/1, 1/3, 1/12 octave resolution, total energetic sum and more



2

MODAL TEST



With OXYGEN's Modal Test option, analyze the frequency characteristics of a mechanical structure to determine resonances and damping.

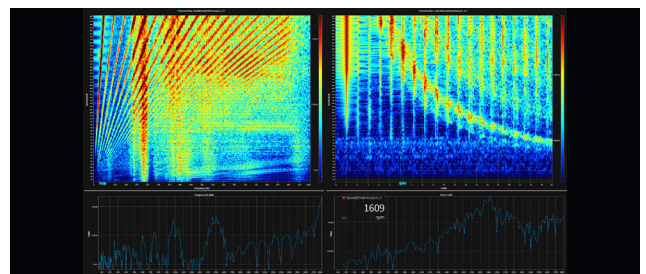
- > DUT excitation via modal hammer
- > SISO & SIMO tests with moving hammer and sensor
- > Calculate complex transfer functions, coherence of hits, and mode indicator functions
- > Interactive visualization options
- > Modal geometry creation / import / export
- > Modal shape animation and video export
- > SDOF Circle Fit – Numerical method to estimate the natural frequency and loss factor
- > Export data into *.uff and other formats for post-processing

3

ORDER ANALYSIS

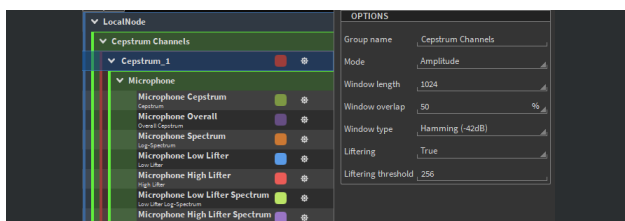
The order analysis module enables detailed analysis of frequency and order spectra relative to speed

- > Simultaneous frequency and order domain analysis
- > Smart resampling algorithm for accurate and fast results
- > Selectable speed ranges from 60 rpm to 100,000 rpm
- > Order resolution from 0.01 to 1, with up to 90 % overlapping
- > Order extraction of specific orders for further use in recorders or XY-instruments
- > Visualization of the resulting matrix in intensity diagrams



4

CEPSTRAL ANALYSIS

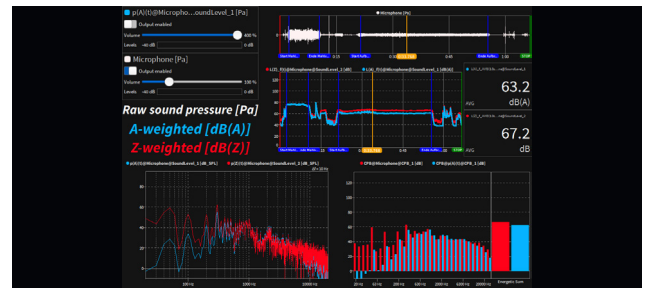


- > Cepstral analysis in OXYGEN provides advanced tools for audio and acoustic signal processing
- > Ideal for applications like vibration analysis and seismic echo characterization
- > Calculation of Amplitude, Power, or Complex Cepstrum
- > Signal visualization in the Quefrequency domain
- > Liftering signals into low and high Cepstrum

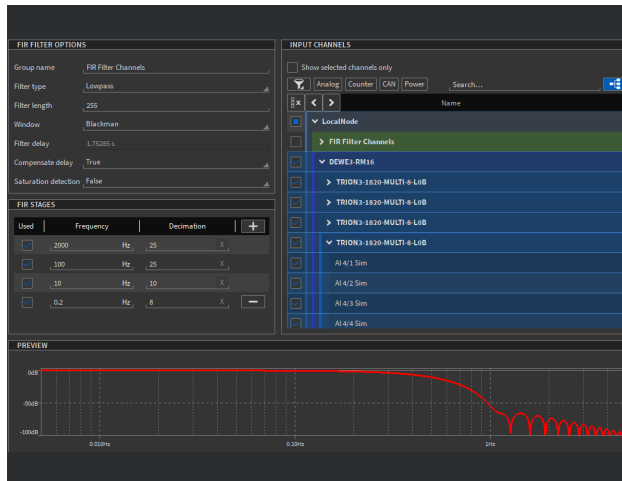
5 SOUND LEVEL

The sound level option provides online determination of the time-dependent sound pressure level, the energy equivalent sound pressure level, freely definable statistical sound pressure levels, and many more.

- > A-, B-, C-, D- and Z-frequency weighting (according to DIN EN 61672-1)
- > Fast, slow, and impulse time weighting (according to IEC 651)
- > Reference level for air (20 μ Pa) and water (1 μ Pa)
- > Overall and interval logging



6 IIR & FIR FILTERS



Different analyses and data sets require different filtering solutions. OXYGEN offers versatile filtering options with easily configurable IIR and FIR filters, suitable for various analysis needs.

- > Filter types:
 - > Lowpass, highpass, bandpass, bandstop
- > IIR filters:
 - > Choose between Bessel, Butterworth or Chebyshev (Type I & II) filter characteristic
 - > Selectable orders: 2nd, 4th 6th 8th or 10th
 - > Freely definable cut-off frequency
 - > Supports integration and differentiation
- > FIR filters
 - > Freely definable filter length and selectable window type
 - > Data decimation for efficient lowpass filtering
 - > Supports multistage filter design
 - > Automatic filter delay compensation

ADDITIONAL FEATURES

- > **Online and offline analysis:** Perform all calculations during data recording or later during review and post-processing.
- > **Exact frequency measurement** for dynamic time domain signals.
- > **Signal comparison:** Utilize auto-correlation, cross-correlation, and coherence to compare signals.
- > **Audio playback:** Built-in player for audible data review and anomaly detection.
- > **SDK** to extend OXYGEN with customized and user-defined processing algorithms.



Visit our website for further information

6 REASONS WHY CHOOSE DEWETRON

- 1. Unified hardware architecture:** One hardware architecture and file format for different applications and test scenarios to simplify your setup.
- 2. Extended warranty:** Enjoy our 5-year warranty, ensuring long-term reliability.
- 3. Accredited calibration services:** Benefit from ISO 17025-accredited calibration and adjustment services that guarantee accuracy and compliance.
- 4. Certified quality management:** Our ISO-certified quality management upholds the highest standards across all business processes.
- 5. Straightforward software licensing:** Our simple software license policy ensures ease of use and flexibility.
- 6. Dedicated local support:** Count on our highly responsive service team for personalized support and assistance.



DEWETRON

HEADQUARTERS
DEWETRON GmbH
Parking 4, 8074 Grambach
AUSTRIA

+43 (0) 316 3070-0
info@dewetron.com
www.dewetron.com