eZ-Rotate™ & eZ-Rotate*Plus*™

Rotating Machinery Vibration Analysis Software

Compatibility: ✔ WaveBook ✔ ZonicBook

eZ-Rotate™ Features

- **Order tracking with amplitude and phase**
- **Elementary torsional vibration analysis**
- **Comprehensive graphics: waterfalls, spectrograms, bode plots, cursors**
- **Acoustic, whole body and hand-arm weightings**
- **Sound replay of any time history**

eZ-Rotate*Plus*™ Features

- **Bearing, sideband, gearbox, and planetary gearbox cursors**
- **Order normalization and order zoom**
- **Advanced torsional analysis with high speed counters for windup, torque, transmission error, belt drive dynamics, and calibration for uneven spacing**
- **Envelope and Cepstrum analysis and phase demodulation**
- **RPM traces from waterfalls**
- **AC coupling and downsampling**

eZ-Rotate™ software provides comprehensive post-acquisition analysis of vibration data acquired from rotating machinery using IOtech's ZonicBook™ and WaveBook™ measurement hardware. eZ-Rotate™ makes it easy to view, analyze, and create reports on previously recorded data, including computed order tracking, waterfall graphs, contour plotting, and much more.

eZ-Rotate works seamlessly with Microsoft Office® documents, making it easy to copy plots and data directly into reports using Word® or Excel®. eZ-Rotate*Plus*™ offers all of the features of eZ-Rotate, plus advanced capabilities such as Cepstrum analysis, sideband cursors, bearing cursors, gear box and planetary gearbox cursors, and re-sampling to the angle domain to make sense of large families of harmonics such as those found in flawed bearings. Torsional analysis supports encoders and counters for non-contact measurements.

eZ-Rotate Capabilities

Displays. Time waveform, machine speed curve, waterfall, contour, spectrogram, and Bode plots of cursor amplitude or phase; overlay machine speed curves for speed profiling along a machine or line; zoom in and autoscale any plot; change the orientation of a waterfall plot

Cursors. Single or multiple independent cursors, X or Z axis tracking, time, spectrum number, RPM, or order tracking

Analysis

- Tachometer processing creates a smoothed machine speed curve from even noisy tachometer (pulse or DC) or encoder signals
- Waterfall Analysis creates a spectral waterfall plot of the data, that can also display the plot in order of running speed if there is a tachometer signal

Millstrum/Cepstrum analysis with two distinct families of harmonics

- Computed order tracking creates a Bode plot of the amplitude and phase of the data at each order as a function of time, RPM, and frequency by resampling at a constant shaft angle increment instead of a constant time interval
- Torsional analysis creates a spectral waterfall plot of the torsional vibration from a high-resolution tachometer or encoder signal
- A, B, and C weighting for acoustic analysis, whole body, and hand-arm weighting for comfort analysis
- Integration and differentiation display the results in acceleration, velocity, or displacement

Reporting

- Copy plots and data from eZ-Rotate*Plus* seamlessly into other Microsoft® program (such as Word®, Excel®, and PowerPoint®); data may be operated on in Excel
- Export data to MATLAB® and Universal File Format files, then export the entire channel of data, or extract a section of the data to speed analysis on just the part of interest
- Operating deflection shape analysis is available by exporting order-based data from eZ-Rotate*Plus* to ME scope

eZ-Rotate™ & eZ-Rotate*Plus*™

Specifications & Ordering Information

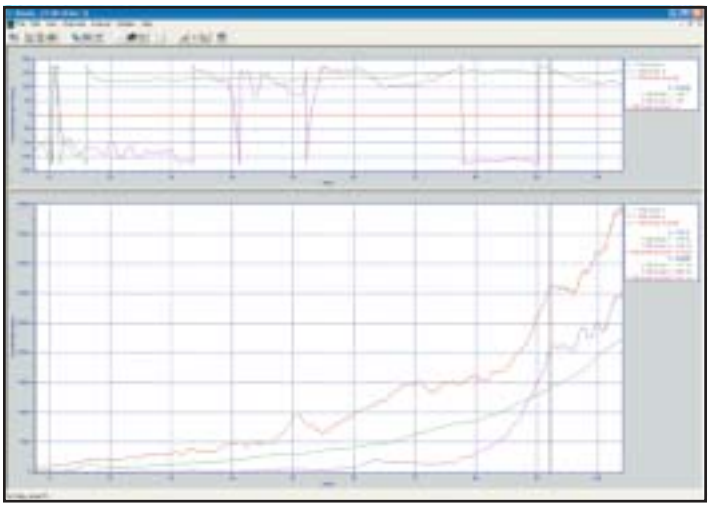
eZ-Rotate*Plus* Capabilities

eZ-Rotate*Plus* includes all of the capabilities of Rotate, plus the following features:

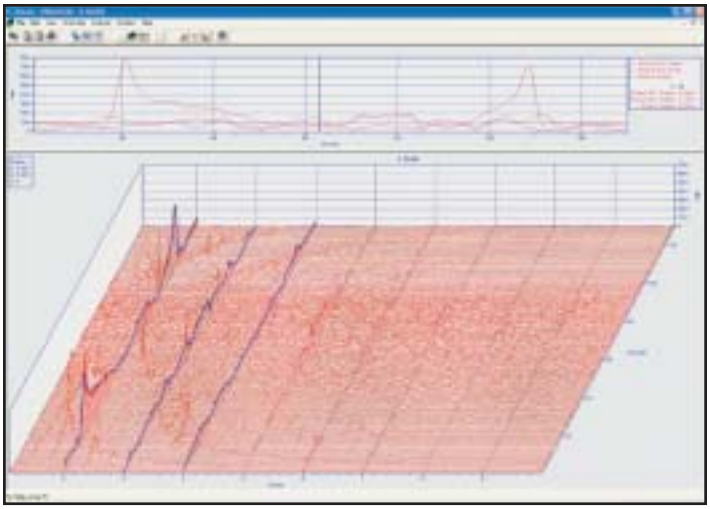
Cursors. Rolling-element bearing, harmonic, sideband, gearbox, and planetary gearbox cursors

Analysis

- RPM from waterfall analysis creates a smoothed machine speed curve from the data without a tachometer signal
- Order normalization cancels the effect of frequency smearing across spectral bins when the shaft speed is changing rapidly (high slew rate) by resampling triggered by tachometer speed, then zoom in on an order range with greatly enhanced resolution
- Millstrum analysis (Cepstrum) identifies families of harmonics and sidebands, particularly useful on noisy signals with low-amplitude harmonics or sidebands characteristic of early-stage bearing or gearbox defects
- Advanced torsional, torque, windup, belt dynamics, and slippage analysis
- Synchronous averaging, envelope detection, and phase demodulation



eZ-Rotate allows easy correlation and tracking of tachometer channel signal to other signals in the system



eZ-Rotate waterfall displays allow 3-D viewing of spectral data with powerful spectra cursoring and viewing features

Specifications

System Requirements

RAM: 32 MB of RAM (64 MB or more recommended)
Disk Space: 10 MB of hard disk space for program files (100 MB or more for data files recommended)
Hardware: Super VGA monitor and video card (17-inch monitor recommended), mouse, USB port

Ordering Information

Description	Part No.
Rotating equipment post-acquisition analysis software for the WaveBook and ZonicBook	eZ-Rotate
Rotating equipment post-acquisition analysis software for the ZonicBook and WaveBook with expanded functionality	eZ-RotatePlus

Related Products

Hardware

WaveBook p. 17
ZonicBook p. 59

Software

eZ-Analyst p. 63