



**Predictive  
Technology**

A **setco** Company

# Technology Platform Overview

iPAD DATA COLLECTOR

VIBRATION ANALYSIS - BALANCING

MACHINE CERTIFICATION - SHAFT LASER

***Precisely Monitor Your Spindles in Realtime to  
Avoid Costly Failures & Downtime***



# VIBRATION ANALYSIS



## VIBEPRO

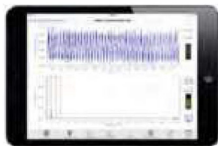
Is a vibration analyzer application that collects and analyzes vibration signals to the iPad. The application can be used either for single readings or doing full vibration analysis routes. Route data can be post-processed directly in VIBEPRO or in a myriad of apps available for other platforms including: Windows, Mac or through a web application that includes advanced algorithmic features.

## FEATURES

- Real Time Spectrum Analysis
- Single measurement reports with easy email sharing
- Recorded readings for post processing
- Route measurement trending built into VIBEPRO
- Import and export routes via VIBEPRO Cloud, Dropbox or email
- Automatic and manual markers on the spectrum
- Set RPM and bearing markers with multiples
- Full FFT Signature graph from 0 to 20kHz or 0 to 1.2 million CPM
- Spectrum Frequency Resolution from 0.17Hz to 10.77Hz
- Selectable Fmax of 22,050Hz, 11,025Hz, 5,512Hz and 2,756Hz
- Selectable number of samples of 4,096, 8,192, 16,384 and 32,768



### Single Measurement



Full Spectrum



Email/Printer Friendly C

### Route Data Collection



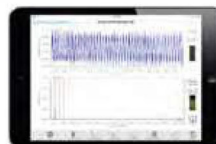
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### Post-Processing, Trending and Maintenance Records



View Plant Status



Review Past Readings V



iew Trending Data V



iew & Create Maintenance

# ONLINE TOOLS

THERMOPRO AND VIBEPRO



## OVERVIEW:

Online post-processing and reporting tools are available for VIBEPRO, VIBEPRO 8 and ThermoPro using our report manager. These tools create powerful reports on any internet connected computer. Companies in multiple locations can easily collaborate using these online tools. Learn more below.

## THERMOPRO ONLINE:

ThermoPro Online provides easy PDF reporting on any computer. Reports can be generated for an entire area, a single asset, or a single measurement. Trend charts are also available displaying trends on the highest recorded temperature, average and low temperatures. Viewable in Kelvin, Celsius or Fahrenheit.

## VIBEPRO ONLINE:

VIBEPRO Online provides an extensive collection of reporting and analysis tools. Reports are available at any place found in the VIBEPRO route hierarchy, which includes plant, machine, point, and individual measurement reports. VIBEPRO Online utilizes algorithms that allow you to focus on what really matters. VIBEPRO leverages our extensive knowledge in vibration analysis to inform users on the true health of their assets.

## ALGORITHM FEATURES:

**Coming Soon:** VIBEPRO Pulse: a custom vibration signature recognition algorithm developed by VIBEPRO brings a new fault detection technology not offered elsewhere. The fault detection algorithm will provide a good starting point for your technicians to fix the asset and return it back to normal vibration levels.

**VIBEPRO VibeMap:** a custom vibration degradation algorithm developed by VIBEPRO brings a new visualization tool to the health of a plant's assets. The larger the box the faster that asset is degrading. VIBEPRO VibeMap for the first time provides an accurate look at a plant's health. Green assets that are rapidly failing will show up well before an emergency repair is needed. VIBEPRO

VibeMap can also be a helpful tool to ensure thresholds are being properly setup.



## SHOP AND FIELD BALANCING BALANCEPRO



### DESCRIPTION:

BalancePro comes in two different versions; one for shop balancing and one for field balancing. Each app makes it easy to accomplish the balancing task at hand.

**Shop balancing options include:** single-plane and two-plane.

**Field balancing options include:** single-plane inbound, single-plane overhung, 2plane inbound, 2-plane overhung, and the single-plane 4-runs method.

## VIBERMS



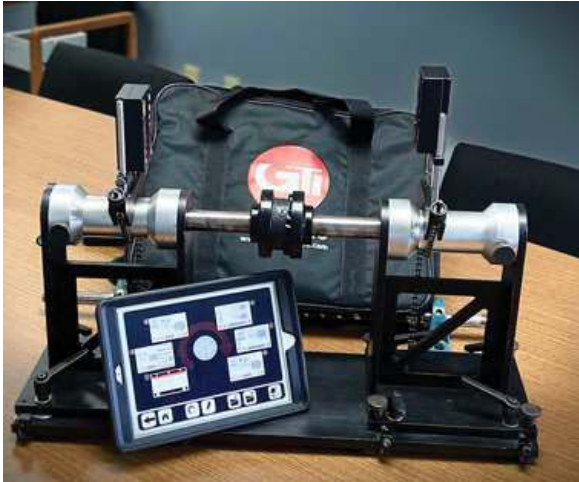
### DESCRIPTION:

#### Machine Certification

VibeRMS is a vibration meter app with machine certification features. Unique to VibeRMS is the build your own machine mode; which allows creation of an entire library of custom machines with custom names and measuring points. VibeRMS is a truly custom app; capable of providing detailed reports for any machine type.

This tool is perfect for those looking to certify machines according to ISO specifications.

## SHAFT LASER ALIGNMENT



The hardware and software combination from VIBEPRO perform quick alignment checks on machines.

Equipped with the VIBEPRO patented single-laser technology, and offering a high dependability system, VIBEPRO alignment tools deliver accurate and repeatable measurement results.

### KEY FEATURES:

- 3 Steps to Alignment
- Wireless Bluetooth Communication
- Active Clock Measurement
  - Soft Foot Test
- Advanced Reporting
- Vertical, Machine Train, Spacer Shaft



## THERMOGRAPHY THERMOPRO WITH FLIR ONE PRO

Thermography is now available in a much more convenient and pocket size format. ThermoPro and the FLIR One camera are supported on both the iPad and iPhone. ThermoPro is an application for managing and generating reports from thermal images captured with the FLIR One camera.

Edges mode enables reading of printed words on asset points, something no other thermal camera can do



### THERMOPRO SOFTWARE FEATURES:

- High/Low Temperature Live Display
- Instant Reporting with thermal image, GPS location, standard photo of asset, notes, and signature
- Custom Company Logo in Reports
- Email, print, open-in other apps, or save report in report manager in a single tap
- Custom Labels for Hierarchy Database
- Integrated Media Library for Saving Thermal Images
- Kelvin, Celsius and Fahrenheit temperature unit options
- FLIR One Battery Percentage Indicator

## WIRELESS MACHINE LEVEL 2 AXIS SENSOR FOR IPAD AND WINDOWS

### OVERVIEW:

VIBEPRO's Machine Level is a 2-axis precision digital level that simultaneously displays two-dimensional plane angles, simplifying and resolving the hurdles of taking angles 'one axis at a time'

### Specifications:

Measuring range:

Single-Axis from 0° ~ ±20.000°

Dual-Axis from 0° ~ ±10.000°

Resolution: 0.001° (≤18µm/M) (0.0002 in/Ft.)

Accuracy: ± 0.001° at 0° to 2.000°; ± 0.003° at other angles



## ULTRASONIC SENSOR FOR IPAD FOR LEAK DETECTION AND TESTING BEARING LUBRICATION



### OVERVIEW:

Ultrasonic Analyzer is a real-time spectrum, spectrogram, oscilloscope and octave RTA analyzer for your iPad. It provides a visual representation of many ultrasounds using a sampling rate up to 384kHz. The app can record, analyze and use slow down playback for sounds normally impossible to hear. The app can also analyze any imported audio file into a spectrogram context.

Ultrasonic is a great tool for doing bearing lubrication testing and detecting air leaks. The ultrasonic sensor plugs directly into the iPad's Lightning port. It is a highly directional sensor enabling very precise readings.

## WIRELESS DUAL-CHANNEL ACCELEROMETER FOR VIBRATION ANALYSIS AND BALANCING

The iPad Predictive Maintenance System is wireless with the dual channel wireless accelerometer. It is the only product of its kind to offer wireless balancing.

VIBEPRO-220 is a biaxial sensor that allows the user to measure in two axes without moving the sensor. It is the perfect solution for applications where the machine needs to be stopped between measurements or access is limited when the machine is running

An external measurement channel allows connection to a tachometer for balancing and absolute phase, a 2nd sensor for cross channel phase or a temperature sensor.

The accelerometer is IP67 rated for use in challenging environments.

The accelerometer works with all existing apps and existing VIBEPRO wireless receivers. It is just as reliable as a cabled connection, but without the hassle and safety issues.



**IBUMPTEST**



**PHASEPRO**



**PHASE-X**



**THERMOL2R**

# ADDITIONAL SPECIFICATIONS

## NEW IN VIBEPRO 8

- TWF collection and on-screen analysis
- FFT in Acceleration and integrated FFT in Velocity and Displacement
  - available on iPad and VIBEPRO Online
- TWF and Spectrum in same view
- High-frequency impact demodulation
  - available on iPad and VIBEPRO Online
- Selection of sample rate (Fmax) and number of samples (lines of resolution)
- Additional windowing options:
  - hemming, hamming and blackman
- Circular TWF plots for gearbox analysis
- Waterfall plot for selected measurements
- Vibration trending in acceleration/Velocity for RMS, Peak & Crest Factor Values
- Editing Functions in Route
  - Allows: deleting, duplication, and renaming route data
- Machine Point Library
- Change Sensors Quickly with Calibration Presets
- TWF Capture and Analysis

## ACCELEROMETER

- Excitation Voltage: 3 VDC
- Magnet Pull Force: 85 pound pull capacity
  - \*Custom Accelerometers Available Upon Request

## THERMOGRAPHY CAMERA

- Supports iPad 4 or later (Lightning connector required)
- Temperature Range: -4°F to 248°F (-20° to 120°C)
- Operating temperature: 32°F to 95°F (0°C to 35°C)
- Weight: 1.23 ounces, ~36.5 grams
- Dimensions: L 2.7 inches (68mm) x W 1.3 inch (34mm) x H 0.5 inches (14 mm)
- Battery capacity: 350 mAh
- Visible camera: VGA (used for FLIR® MSX® blending)
- Sensitivity: ability to detect temperature differences as small as 0.18° F (0.1 ° C)

## VIBEPRO SHAFT LASER

### App Data

- Video instructions of the alignment process
- Small, symmetric measuring units
- Universal shaft fixture with chains and magnets
- Freely movable on-screen view
- Requires only 20° +20° rotation of the shafts
- Easy to read combined alignment results
- Tolerance control indicating if alignment is within tolerance
- Photo documentation included in the report
- Instant on-screen signing of the reports
- Custom logotype in the report
- Sharing of the reports via e-mail, print-outs, or cloud services.

## TECHNICAL DATA

### System

- Measurement Range: Up to 10 feet
- Shaft Diameter w/chains: 0.8" to 17"
- Weight (including iPad): 7.3 lbs
- Case Dimensions: 12" x 11" x 4"

### Measuring Units

- Detector length: 0.8"
- Measuring Errors:  $\pm 1\%$  + one digit
- Resolution: 0.05 mils
- Inclinator Resolution: 0.1°
- Line Laser: Red 650 nm
- Laser Class: Safety Class 2
- Wireless Communication: Bluetooth LE
- Battery Life: 10 hours (continuous use)
- Charging Time (full): 4 hours
- Environmental Protection: IP65
- Material: Anodized aluminum, Acetal
- Weight: 7 oz
- Dimensions: 2.5" x 2.1" x 2"



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**[www.gtipredictive.com](http://www.gtipredictive.com)**

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