

# SKF Wireless MicroVibe

CMVL 4000-EN

*Safe solution to portable data collection and analysis*

The SKF Wireless MicroVibe in conjunction with an android tablet or smart phone provides the functionality of a portable data collector and analyzer.

This versatile and easy-to-use wireless tool identifies problems and assesses machine condition safely, quickly and easily.

## Features

- Reliable and fast wireless data collection (WiFi) from a safe distance
- Low cost, compact and lightweight
- Expert judgment criteria based on ISO vibration severity standard and SKF bearing condition evaluation
- FFT spectrum analysis enables user to pinpoint problems like unbalance, misalignment, bearing, rubs, etc.
- Multi-point automation for faster data collection with standard vibration measurements
- Envelope acceleration, acceleration, velocity and displacement in both FFT spectrum and time waveform displays
- Transfer machinery vibration data to a computer for trending and further analysis to the Data Management Software



## Power without complexity

A handy “quick-check” solution, based on the universal Android platform, SKF Wireless MicroVibe is simple to use. Built-in automatic functions virtually eliminate setup, while analytical displays and automatic judgment of machine vibration readings help users identify machine problems on the spot!

An advanced instrument for simplified vibration assessment.



## Multi-point automation saves time and improves reliability

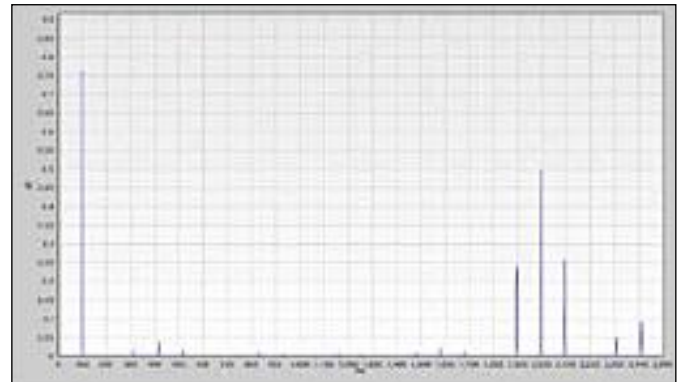
The SKF Wireless MicroVibe collects and displays overall vibration readings and automatically provides expert judgment of the measured velocity and overall enveloped acceleration levels, enabling immediate, accurate and reliable assessment of machine or bearing condition.

Automatically collect the most useful measurements for vibration analysis – acceleration, velocity, displacement and enveloped acceleration – simultaneously. SKF's multi-point automation saves time and enhances the power, accuracy and overall reliability of your decision making – giving you the information all in one view.



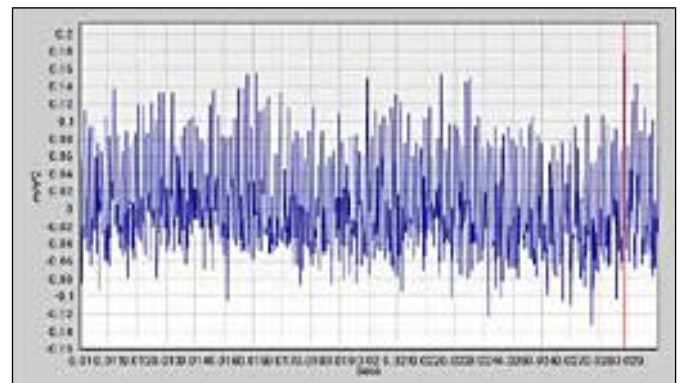
## FFT spectrum analysis capabilities

With pre-set measurements and user selectable FFT resolution up to 12 800 lines, selectable Fmax, and a 90 dB dynamic range, the SKF Wireless MicroVibe has what it takes to help you easily pinpoint impending machine problems. Cursor position readout with display zoom optimizes your analysis power. In addition, it automatically tabulates and displays the highest vibration peaks from a spectrum, making it easy to quickly identify signals indicative of specific machine problems, like misalignment, imbalance or bearing faults.



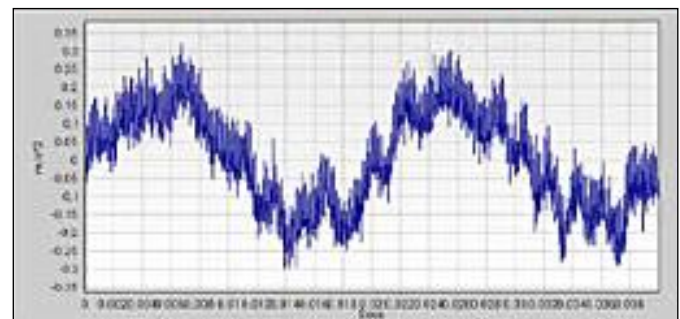
## Time waveform displays

Measure and store time waveform data with the capability to select measurement type and duration. Time waveform displays are available for acceleration, velocity, displacement or enveloped acceleration measurements.



## Store and recall measurements for trending and analysis

The data storage capacity is dependent upon the available memory of the android device used. Dedicated devices can store thousands of overall vibration signals, FFT spectrums and records of time waveform data for later recall. A search feature quickly retrieves specific collected measurement, and a "repeat measurement" feature let's you recall and repeat any measurement for more focused analysis or trending of a potential problem. Finally, a "recall data storage" list helps you keep track of and reference all collected data.

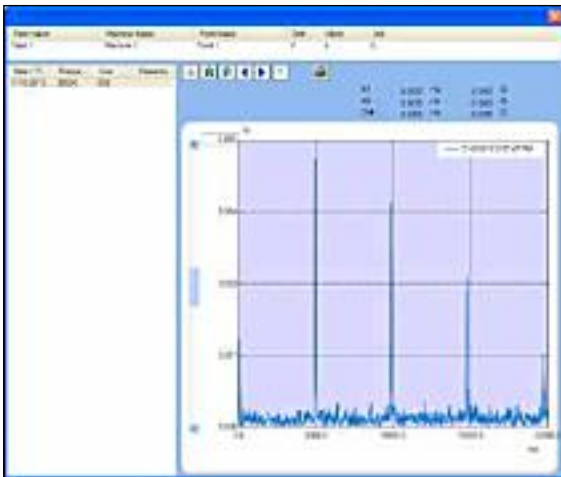


## Data management and software for your desktop computer

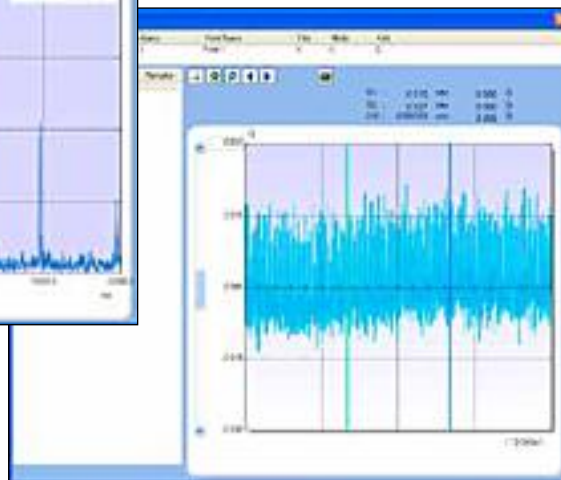
The SKF Wireless MicroVibe offers added functionality, including a software program for Windows 7 to extract, save, edit and display collected data. It is ideal for small route data collection.

Data may be uploaded to your desktop computer for further analysis and trending using the data management software. Once uploaded, vibration data, overall trends and spectra can be stored, trended, graphically displayed and even exported to Microsoft Excel.

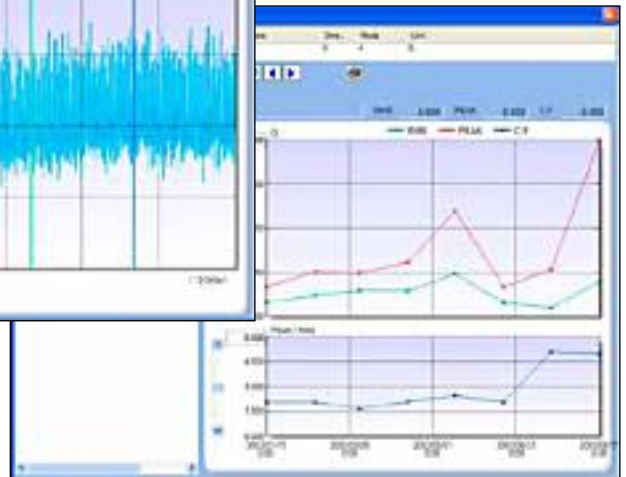
### SKF's data management software



*FFT spectrum analysis plot.*



*Waveform plot.*



*Trending and analysis plot.*

## Specifications

### Interface

- WiFi 802.11b/g, 128-bit WEP, WPA/WPA2 security
- Wireless communication mode: Infrastructure mode (point-to-point)

### Power

- Power supply: Two (2) each "AAA" NiMH rechargeable batteries, 1 100 mAh
- Power consumption: 150 mA (while taking data and use of WiFi)
- Battery life with one charge: 5 hours
- Universal charger
  - Input: 100 to 240 V 50/60 Hz 0.5A
  - Output: 5 V at 2.1 A

### Environmental

- Weight: 145 g (5.1 oz.)
- Dimensions:
  - Depth: 42 mm (1.62 in.)
  - Width: 40 mm (1.57 in.)
  - Height: 89 mm (3.50 in.)
- Operating temperature: 5 to 50 °C (40 to 120 °F), driven by the battery
- Humidity: 30 to 90%, non-condensing

### Sensor

- Piezoelectric (accelerometer)
- Sensitivity: 20 mV/g
- Sampling frequency: 76.8 kHz maximum
- A/D resolution: 16 bit

### Measurement

- Acceleration range: 50 g

- Frequency range:
  - Acceleration (A): 10 Hz to 30 kHz
  - Velocity (V): 10 Hz to 1 kHz
  - Displacement (D): 10 to 150 Hz
  - Enveloped Acceleration (E1): 5 to 100 Hz
  - Enveloped Acceleration (E2): 50 Hz to 1 kHz
  - Enveloped Acceleration (E3): 500 Hz to 10 kHz with Fmax of 5 kHz and 10 kHz
  - Enveloped Acceleration (E3)\*: 500 Hz to 5 kHz with Fmax of 1.0 kHz
  - Enveloped Acceleration (E4)\*: 5 to 20 kHz

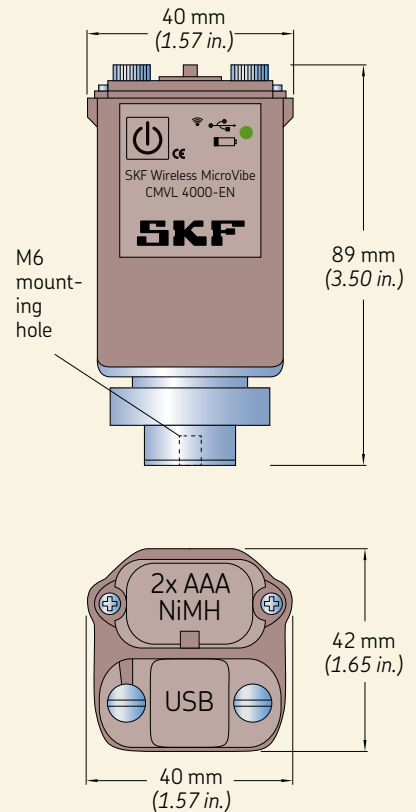
\* These frequencies vary from the standard filterbands used in the SKF Micrologs and SKF Multilog IMx.

- Sampling frequency:
  - A, E3, E4: 76,8 kHz
  - E1, E2, V, D: 38,4 kHz
- Aliasing frequency:
  - A, E3, E4: 20 kHz
  - E1, E2, V, D: 2 kHz
- Range (x100/20/5/1):
  - A: 0 to 1/5/20/100 g
  - E1, E2, E3, E4: 0 to 1/5/20/100 gE

### Signal processing

- Velocity (x100/20/5/1 range): 0 to 10/50/200/1 000 mm/s
- Displacement (x100/20/5/1 range): 0 to 50/250/1 000/5 000 µm
- FFT:
  - Lines of resolution: up to 12 800
  - Averaging: Stable (linear), exponential, peak hold 1/2/4/8 times
- Window: Hanning, Rectangular, Flat Top

### Dimensions



## Recommended Android Tablets

Highly recommended is the Nexus 7 series, with 7 inch LCD display.

The SKF Wireless MicroVibe application is verified to work with the following Android devices as shown in **Table 1**. (Please visit the device compatibility matrix in [skf.com/cm](http://skf.com/cm) [Tablets] for current devices).

Android Smartphones do communicate to the SKF Wireless MicroVibe sensor module. Taking vibration data is possible; however uploading the data into the data management software is not assured.



Table 1

### Devices verified to work with the SKF Wireless MicroVibe

Name	OS version	Supplier	Note
IdeaPad Tablet A1	2.3	Lenovo	7-inch
BizPad JT-H580VT	3.2	Panasonic	7-inch for business use; USB host function is available
Regza Tablet AT350/35D	3.2	Toshiba	7-inch
Nexus 7	4.2.2 and 4.2.3	ASUS	7-inch
HTC One (M7)	4.1.2	HTC	4.7-inch
CT704	4.0.4	iDeaUSA	7-inch

## Ordering information

### SKF Wireless MicroVibe kit (WITHOUT Tablet\*)

- **CMVL 4000-EN** SKF Wireless MicroVibe kit
  - Sensor module, one (1) each [CMVL 4000]
  - Probe (Stinger), one (1) each [CMAC 4020]
  - USB cable, sensor module to USB, one (1) each [CMAC 4015]
  - Universal USB power supply with four adapters, one (1) each [CMAC 4010]
  - Two bar magnet, 18.1 kg (40 lbs.), one (1) each [CMAC 4025]
  - Battery (rechargeable), standard NiMH (AAA size), two (2) each, [CMAC 4005]
  - CD: Data management software, mobile application, SKF User Manual, one (1) each [CMAC 4060]

\*NOTE: Necessary Android Tablets and Smartphones are not included and are not offered by SKF.

### Optional accessories

- Carrying case, with customizable form [CMAC 4035]



SKF Wireless MicroVibe CMVL 4000-EN turn-key package.



Carrying case dimensions  
(length × width × height):  
350 × 110 × 245 mm  
(13.8 × 4.3 × 9.6 in.).

**NOTE:** Necessary Android Tablets  
are not included and are  
not offered by SKF.

SKF Wireless MicroVibe CMAC 4035 carrying case with customizable foam.