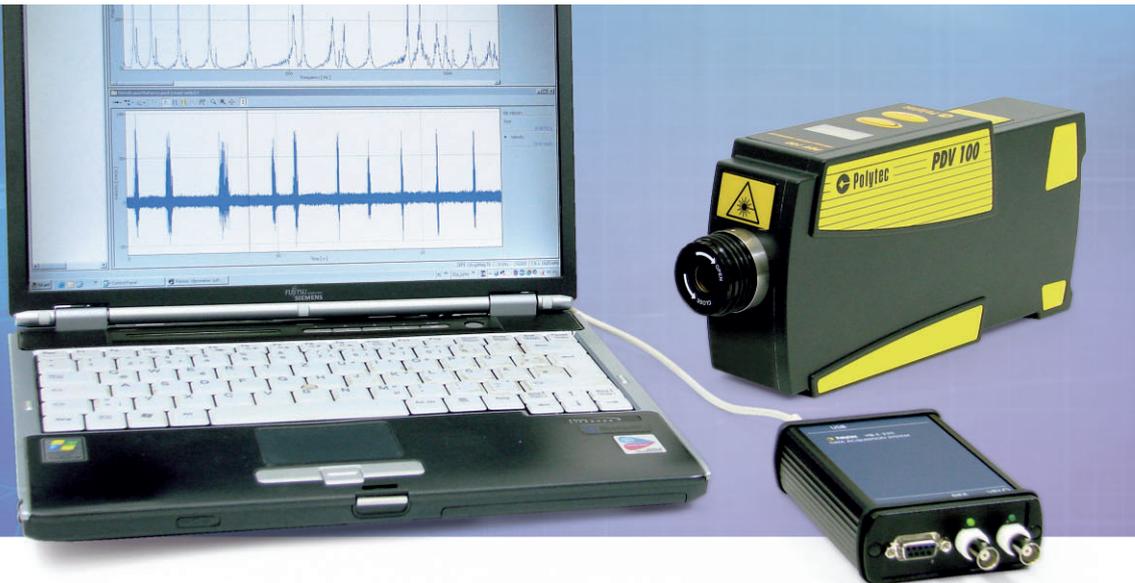


# VibSoft-20 USB-Based Data Acquisition



## Single Point Vibrometers

- OFV Series Vibrometers
- CLV Compact Laser Vibrometer
- IVS Industrial Sensors
- PDV-100 Portable Digital Vibrometer
- VibSoft Software

## A Simple and Powerful Solution for Single-point Vibration Measurement

Polytec provides a wide range of data acquisition systems specifically designed to monitor and record the output from Laser Vibrometers. VibSoft-20 is a powerful package comprising dual channel, USB-based data acquisition hardware and comprehensive software to enable precise and efficient data analysis. When combined with a standard notebook computer and a battery-powered Laser Vibrometer, VibSoft-20 becomes a portable vibration analysis lab offering integrated signal enhancement tools and vibration data visualization.

### VibSoft Gets Busy

Polytec's Laser Vibrometers are indispensable tools for mechanical engineers who must characterize structural dynamics in order to optimize product performance. Based on the laser-Doppler effect ([www.polytec.com/vib-university](http://www.polytec.com/vib-university)), these instruments are precise, non-contact, optical transducers that sense the frequency shift of back scattered laser light from a moving surface to determine the vibration velocity and displacement at a specific point on a test structure.

The VibSoft-20 package is a perfect companion to the Laser Vibrometer, enabling data acquisition, signal conditioning and vibration analysis. Within VibSoft-20 software, the user can access a comprehensive collection of high quality measurement features including a wide range of functions that are standard for FFT analyzers. Vibsoft-20 is designed to

work with single-point Laser Vibrometers in the acoustical frequency range up to 20 kHz including Polytec's PDV-100 Portable Digital Vibrometer. The USB 2.0 breakout box (VIB-E-220) provides for two acquisition channels (signal and reference) and is powered directly by the USB current supply, allowing easy integration in standard notebook computers. The reference channel supports the IEPE (ICP®) standard for third party sensors (i.e. piezo accelerometers).

### Performance of VibSoft-20

VibSoft-20 is a full featured FFT analyzer and time trace data recorder for up to 64 MSamples and 204,800 FFT lines (option). Standard features include 20 kHz signal and reference channels, IEPE power supply for third party sensors (e.g. force transducers) on reference channel, anti-aliasing filters, and DC and AC coupling.

### Features

- 2 channel, 20 kHz
- $\pm 10$  V input
- IEPE (ICP®) support for reference channel
- Up to 204,800 FFT lines
- Export filters and macro programming

### Benefits

- Notebook compatible for portable operation
- USB powered
- No driver installation required
- 64 MSamples continuous sampling

For signal conditioning, various digital filters as well as differentiation and integration of the raw signal are available. The performance of VibSoft can be greatly enhanced by adding appropriate options (see table). VibSoft-20 includes a Visual Basic® compatible scripting engine to implement automated process sequences such as:

- Carrying out a series of measurements
- Exporting data in specific target formats
- Customer-specific applications (e.g. generating dialog boxes)

VibSoft's extensive peak analysis capability is enhanced by a band cursor providing statistical parameters and harmonic oscillator curve fitting. VibSoft provides universal file (UFF) and ASCII

data export, as well as PolyFileAccess, a software component according to the Microsoft® COM standard, for third party software data access (e.g. MATLAB).

#### PDV-100 and VibSoft-20 – A Matching Pair

The PDV-100 Portable Digital Vibrometer is designed for field use. With a battery pack option, it works perfectly with VibSoft-20 on a notebook computer. The PDV-100 can be used for distances up to 30 m and is suitable for measurements on structures difficult to measure or access – indoors or outdoors, high or low to the ground. Set up with a tripod is fast and easy, yielding precise measurement results.

#### VibSoft-20 Technical Data

Acquisition bandwidth	20 kHz
No. of channels	2 (Signal and Reference)
Front end	VIB-E-220 USB Data Acquisition Unit
IEPE (ICP®) support	For reference channel
Included software features	Time and frequency domain analysis, 12,800 FFT lines; digital filtering, averaging, internal triggering; settings management, compatible with PSV Scanning Vibrometer Software; import and export filters (UFF, ASCII), Visual Basic® compatible scripting; remote control of vibrometer settings; PolyFileAccess interface for data access and application specific control; sample scripts for MATLAB, C++, .NET, Visual Basic®
Analog inputs	2 BNC inputs for analog signals; 2 simultaneously sampling ADCs; 24-bit resolution; sampling rate 48 kHz max.; Range input ±10 V max.; selectable IEPE (ICP®) supply, 4 mA/28 V; selectable AC or DC coupling; self adjusting anti-aliasing filter

Software Options	
Vib-S-FFTEExt	Allows calculation of extended amount of FFT lines Possible settings: 25,600 lines; 51,200 lines; 102,400 lines; 204,800 lines
VIB-S-ExpME	Binary data interface for data exchange with ME'scope software
VIB-S-SigPro	Polytec Signal Processor, the user interface to the powerful math library included in the VibSoft Software
VIB-S-VIDEO	Video option, for display of sample images of video camera equipped vibrometers (requires computer with DirectX 9.0c compatible graphics hardware and A-CON-VIDEO USB Video Converter)
VIB-S-SM-1	Software Maintenance. New releases of the software are provided free of charge for a period of 24 months from purchase (12 months are standard)
VibSoft-Desk	Analysis version of VibSoft-20 for offline analysis of data Available as single user or floating license

For more detailed information about general features and applications of VibSoft, please request or download the VibSoft Data Sheet from [www.polytec.com/vibsoft](http://www.polytec.com/vibsoft)

Windows® and Visual Basic® are registered trademarks of Microsoft Corp., ICP® is registered trademark of PCB, Inc.

#### Polytec GmbH (Germany)

Polytec-Platz 1-7  
76337 Walddbronn  
Tel. +49 7243 604-0  
info@polytec.de

#### Polytec France S.A.S.

Bâtiment Orion – 1<sup>er</sup> étage  
39, rue Louveau  
92320 Châtillon  
Tel. +33 1 496569-00  
info@polytec.fr

#### Polytec Ltd.

(Great Britain)  
Lambda House, Batford Mill  
Harpenden, Herts AL5 5BZ  
Tel. +44 1582 711670  
info@polytec-ltd.co.uk

#### Polytec Japan

Arena Tower, 13<sup>th</sup> floor  
3-1-9, Shinyokohama  
Kohoku-ku, Yokohama-shi  
Kanagawa, 222-0033  
Tel. +81 45 478-6980  
info@polytec.co.jp

#### Polytec, Inc. (USA)

North American Headquarters  
16400 Bake Parkway  
Suites 150 & 200  
Irvine, CA 92618  
Tel. +1 949 943-3033  
info@polytec.com

Central Office  
1046 Baker Road  
Dexter, MI 48130  
Tel. +1 734 253-9428

East Coast Office  
25 South Street, Suite A  
Hopkinton, MA 01748  
Tel. +1 508 417-1040

Polytec South-East Asia Pte Ltd  
Blk 4010 Ang Mo Kio Ave 10  
#06-06 TechPlace 1  
Singapore 569626  
Tel. +65 6451 0886  
info@polytec-sea.com