

For HP iPAQ hx2400 series and hx2700 series handheld computers

Windows Mobile®-based handheld instrument

for vibration data collection and analysis

Datastick[®] VSA-1225[™]

Vibration Spectrum Analyzer

Pocket sized, 10.5 ounces

Easy to learn, simple to operate

Unlimited storage capacity

Designed for data sharing

Waveforms up to 6400 points

FFTs up to 3200 lines

Touchscreen pan and zoom

Touchscreen cursor readouts

ISO or custom overall vibration alerts



www.datastick.com

The Datastick VSA-1225 puts vibration analysis into your hands. Affordably.

Vibration analysis is one of the most effective methods of increasing machine reliability and reducing downtime. So why don't more facilities take advantage of it? For many, it comes down to two barriers: high initial cost and lack of available expertise.

Datastick VSA-series Vibration Spectrum Analyzers smash both of those barriers.

VSA systems are priced for easy budget approval and the included training videos make it simple to get started quickly.

If you already have an expensive analyzer, you can prevent resource schedule conflicts and save money by using VSA systems for the routine tasks that take up 80% of your time. And you don't have to have an in-house vibration expert. You can send data to any

consultant you like because the included PC software, Datastick Reporting System, is based on Microsoft® Excel®. Anyone with Excel can view the data instantly.

The VSA-1225 Vibration Spectrum Analyzer systems consists of:

- VSA-1225 hardware module
- HP iPAQ hx2400 series handheld computer*
- Datastick Spectrum handheld software
- Datastick Manager handheld file-management software
- Datastick Review handheld data-comparison software
- Datastick Reporting System for VSA software for Windows PCs
- SD memory card, 128 MB or greater
- Quick-start training videos

VSA System Specifications

Channels: 1

A-to-D: 12 bit

Antialiasing Filter: 10th order hardware

Sensor Input: BNC, ICP®-compatible

Sensor Types Accepted: Accelerometer or velocity sensor

Input Impedance: 100 kOhm

Sensor Sensitivity: 100 mV/g nominal, adjustable from 10 mV/g to 10,000 mV/g

Sensor Power (for ICP-compatible sensors):
Selectable: ICP Power off/on, 5 V, 12 V, 18 V, 24 V; 2 mA, 5 mA, 10 mA, 20 mA, 25 mA

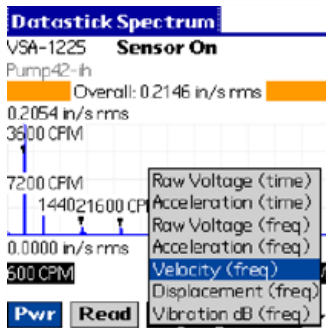
Maximum Input Levels (Selectable):

50 g, 20 g, 10 g, 5 g, 2 g, 1 g

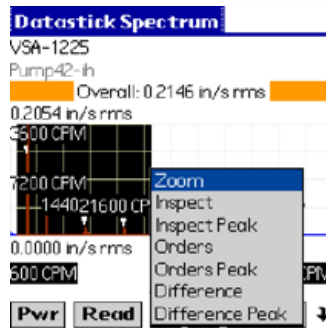
Dynamic Range:** 130 dB total; 65 dB/input range



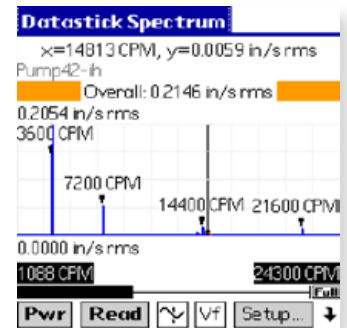
Datastick VSA-1225 Vibration Spectrum Analyzers are pocket-sized and weigh only 10.5 ounces (300 g)



Datastick Spectrum handheld software displays the spectrum (or waveform), peaks, overall vibration, colored alerts, and pop-up mode menu all on one high-res screen.



Seven cursor tools include Direct Zoom™, which lets you select an area of interest on the screen with the handheld's stylus, or with your finger, and zoom up to 64 x.



When zoomed in, a scroll bar lets you scroll left and right. The Inspect cursor tool (shown here at 14813 CPM) shows you the x and y values of any point you touch.

* Included in most packages; can be purchased separately.

The Datastick VSA-1225 puts vibration analysis into your hands. Easily.

Display:

Time Domain: Acceleration or voltage waveform with RMS and peak overall vibration

Frequency Domain: Acceleration, velocity, displacement, vibration dB, or voltage FFT spectrum; optional overall vibration

Maximum Frequencies (Selectable):

20, 10, 5, 4, 2, 1 kHz, 800, 500, 400, 200, 100, 50 Hz

FFT Resolution (Selectable): 3200, 1600, 800, 400 lines

Display Units: Hz or CPM; English or metric

FFT Windows: Rectangle (Uniform), Hanning, Hamming, Flattop, Blackman, Bartlett

Averaging: Linear or peak hold, 1, 2, 4, or 8 averages

Peak Detection: Up to 15 highest peaks

Cursors: Zoom/Pan, Inspect (any x-y value), Peak inspect (peak x-y values), Orders, Peak orders, Difference (between two points), Peak difference (between two peaks)

Alerts: Color-coded for ISO 10816-3 or user-specified levels

Route-inspection Capability: Reloadable configurations allow every test point to be uniquely named and exactly repeatable.

Power Supply: Internal 900 mA/h Li-ion battery; optional external 4800 mA/h Li-ion battery powers both the VSA module and the iPAQ handheld

Operating Time (Typical, internal battery):

8 hours continuous (Powering sensor at 24 V, 5 mA)

Dimensions (with HP iPAQ hx2400 series handheld computer):

5.75 x 3.125 x 1.875 in (146 x 79 x 48 mm)

Weight (with HP iPAQ hx2400 series handheld computer):

10.5 oz (300 g)

HP iPAQ hx2495 Handheld Specifications

CPU: Marvell 520 MHz ARM-based processor

Operating System: Windows Mobile® 5.0

Memory: Up to 128 MB user-accessible memory (holds up to 3000 spectra)

Unlimited Memory Expansion: Record directly to SD (Secure Digital) memory cards up to 2 GB each

Screen: 240 x 320 transfective color TFT touchscreen

Vibration Data Transfer to PC: Direct file transfer to PC via SD card

Power: Internal 1400 mA/h Li-ion battery, AC adapter

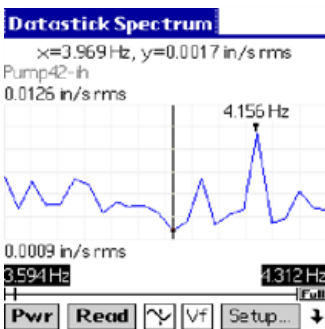
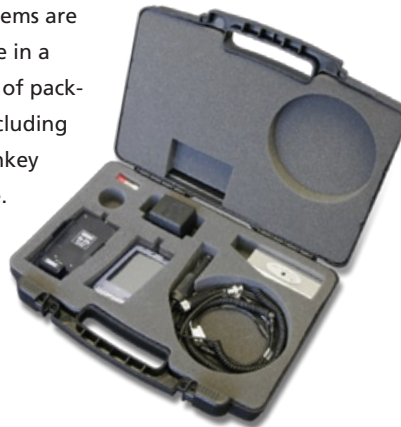
PC System Requirements

Windows XP or Windows Vista™ and Microsoft Office® 2003 or 2007 Microsoft Excel 2003 or 2007 standalone

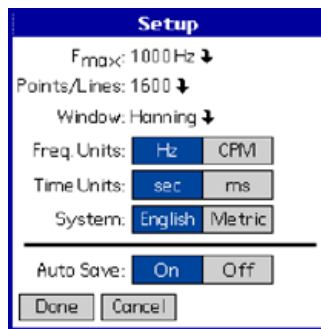


Optional RC-4 rugged enclosure provides protection from impacts and the elements. (VSA-1215 shown.)

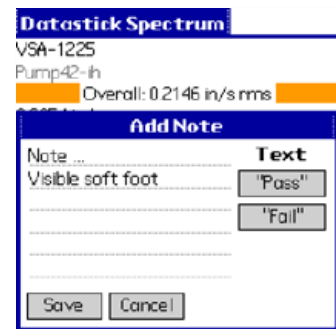
VSA systems are available in a number of packages, including this Turnkey package.



The VSA-1225's low noise floor is shown in this zoomed-in view. This 4.156 Hz, 0.0126 in/sec peak pops out of noise measured at 0.0017 in/sec at 3.969 Hz.



Datastick Spectrum is designed for fast, easy setup. The most frequently used settings are grouped into one window. Pop-up menus and buttons can be finger activated.



Direct observations are often even more important than numbers. That's why the Add Note dialog lets you attach a text note to any measurement and export it to the PC.

** Total dynamic range measured in overall vibration (RMS) from the top of the highest input range to the bottom of the lowest input range.

Vibration analysis with the convenience and versatility of Excel

Datastick Reporting System for VSA software breaks new ground for ease of reporting on your PC. It's built around the familiar framework of Microsoft Excel, so you spend less time learning the software and more time getting work done. And you can share your data and reports with anyone.

You start by copying your data to your PC via the removable SD memory card: pop the card out of the handheld computer and pop it into a card reader attached to your PC. Then click "Import." It's that easy.

Here's a quick tour:

- Home Screen:** The gateway to Datastick Reporting System. Vibration data files from the iPAQ handheld are sorted by date, time, and collection location. You can import all files or just the ones you choose.
- Tabular Display:** Imported files populate individual spreadsheets — one for each

inspection point. Future inspections of the same point are added to the same sheet to create a history.

- Graphing Tool:** Select the data you want, pick a style of graph, and click.
- FFT Spectrum Graph:** Cursor-point data display, auto- manual- or log scaling— all selectable by mouse or keyboard.
- Waveform Graph:** Offers the same tools as the FFT Spectrum Graph.
- Stacked Graphs:** Graphs align for fast historical comparison of up to four spectra.



- View Pallet for Graphs:** Navigation and frequency-span selection tools are always handy when you need them.
- Waterfall Graph:** Display any number of spectra in a waterfall. 3-D tools let you view from any angle.
- Tool Pallet:** Provides master controls for all of DRS. The Tool Pallet is always just a keystroke away.
- Trend Report:** Overall vibration trend reports are as easy as selecting the data and clicking the mouse.
- Exception Report:** DRS automatically finds level exceptions and produces comprehensive reports with a mouse click.

The collage includes the following screenshots:

- 1:** Home Screen showing file selection options.
- 2:** Tabular display of vibration data in an Excel spreadsheet.
- 3:** A dialog box for graph settings.
- 4:** Spectrum Readings graph showing frequency vs. amplitude.
- 5:** Waveform Graph showing a time-domain signal.
- 6:** Stacked Graphs showing multiple spectra for comparison.
- 7:** View Pallet for Graphs showing navigation and selection tools.
- 8:** Waterfall Graph showing a series of spectra.
- 9:** Tools pallet showing keyboard shortcuts like HOME, CTRL+H, VIEW, and F6/V5, CTRL+P.
- 10:** INSPECTION POINT TREND REPORT showing a line graph of values over time.
- 11:** EXCEPTION MEASUREMENTS table with columns for Inspection Point, Value, Units, Severity, and Date/Time.

Inspection Point	Value	Units	Severity	Date/Time
Fan1-1	0.25705	mm/sec	Critical	10/26/06 10:32:53
Fan1-2	0.25705	mm/sec	Critical	10/26/06 10:32:53
Fan1-3	0.25705	mm/sec	Critical	10/26/06 10:32:53



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