

# Zing™ Test Carry-On VXP

Zing™ Test Carry-On VXP Technical Specifications	
Acquisition Unit Balance Measurements	Interfaces
<b>Amplitude Accuracy</b> +/- 2%	<ul style="list-style-type: none"> <li>• Magnetic Pickup/Photocell, 4 ea / Tachometer, 4 ea</li> <li>• Photoprobe (high speed), 2 ea / Velocimeter, 16 ea</li> <li>• Accelerometer, 26 ea / Accelerometer (charge), 6 ea</li> <li>• Discrete Signal I/O, 6 ea / Strobex, 1 ea / FasTrak™, 1 ea</li> <li>• Serial Interface, 3 ea / Cockpit Control Unit, 1 ea</li> <li>• PCMCIA Type 1, 2 Card Slot / USB</li> <li>• Internal aircraft databus interface slot</li> </ul>
<b>Phase Resolution</b> 1 degree	Physical
<b>Frequency Range</b> 180 to 60,000 RPM	
<b>Harmonics</b> 1 to 5	<b>Dimensions</b> 7.1 W x 4.6 H x 10.2 D (inches) 180 W x 117 H x 259 D (mm)
<b>Simultaneous Channels</b> 4 vib., 1 azimuth, 1 FasTrak™	<b>Weight</b> 6.5 lbs., 2.95 kg
<b>Vector Operations</b> A, (A+B)/2, (A-B)/2	<b>Power Requirement</b> 18 to 32 VDC
Track Measurements with FasTrak™	<b>Operating Temperature Range</b> -30 to +60°C
<b>Track Height Accuracy</b> +/- 2 mm	<b>Storage Temperature Range</b> -55 to +85°C Carry-On
<b>Lead Lag Accuracy</b> +/- 0.5 mm	VXP Display Unit
Spectrum	<b>Dimensions</b> 10.7 W x 1.9 H x 8.5 D (inches) 272 W x 48 H x 216 D (mm)
<b>Frequency Ranges</b> 0-20 Hz to 0-75 kHz	<b>Weight</b> 4.5 lbs., 2.0 kg
<b>Frequency Resolution</b> 400 to 51,200 lines	<b>Display</b> Color Active Matrix, Sunlight readable tablet PC
<b>Zoom</b> Yes	<b>Pointing Devices</b> Touch pad and touch screen
<b>Window Types</b> Flat-top, Hanning, Kaiser-Bessel, Uniform	<b>Disk Drive Capacity</b> 80 GB
<b>Simultaneous Channels</b> 4 vib., 1 azimuth	<b>Memory</b> 512 MB SDRAM
<b>Dynamic Range</b> >90 dB	<b>Interfaces</b> RS-232, USB, PCMCIA Type 1, 2
<b>Averaging</b> Linear, Peak hold	
Filters	
1 to 8 simultaneous filters (any combination of broadband and tracking filters allowed)	
Processing	
32 Bit Microprocessor (CPU) Digital Signal Processor (DSP) RISC based Time Processor Unit (TPU)	

Honeywell reserves the right to change specifications without notice. Centrino is trademark of the Intel Corp., Windows is a trademark of Microsoft Corp.

## Customer support

Honeywell is dedicated to supporting our customers' needs. Our worldwide customer service is available via phone, fax or e-mail. We can help your organization improve skills in component balancing, engine testing, rotor smoothing, troubleshooting, and data management. Training courses are provided for all Zing products at the user level and advanced fleet administration/analyst level. Of course, service includes equipment repairs and calibration, for which we have expert in-house teams. Honeywell International representatives support over 180 countries.



## The standard in aircraft vibration analysis and control



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# The standard in aircraft vibration analysis and control.

We deliver high performance and high reliability through component, sub-system, and platform-level solutions for existing and new military applications.

## Zing™ Test Carry-On VXP System Components

The Honeywell VXP System consists of the VXP Acquisition Unit (AU), VXP Display Unit (DU), software, and associated carry-on kit and sensors. The VXP System interfaces to vibration and tachometer sensors located throughout the aircraft and additionally to the optional FasTrak™ Optical Tracker for Main Rotor blade tracking. VXP software is divided into two major systems. The first is the Operational Program, which resides permanently in EPROM memory of the VXP AU and the second is the support software that resides on the VXP DU, such as VXP Display Program, Vib Review™ trending software, and the VibraLog™ advanced predictive maintenance software. All data is datetime stamped and can be correlated to other aircraft data systems (i.e., FDR / HFDM).

## Growth and Expansion

As platforms and technology continue to evolve, frequent changes to comply with these rapidly changing protocols, mandates and requirements are typically necessary. The VXP AU has been specifically designed to support technology upgrades as they occur, as has the DU's capability to support more robust and user-friendly ground support equipment and software tools.

## Capabilities

All of the Zing products are focused on the collection, processing, and interpretation of data generated by the various components within an aircraft's drive train, including engines, gearboxes, shafts, fans, rotor systems, and other dynamic components. In all cases, vibration spectra can be viewed in the field at the engine, within the test cell or any other platform location. These data are collected and retained to allow for a more detailed analysis by any skilled technician.

## VXP Features

- Crisp, sunlight readable, active-matrix color display
- Easy to use touch screen interface
- Fast six channel simultaneous data acquisition
- Expanded Smart Chart™ capabilities for balancing and analysis procedures
- Comprehensive input capabilities with 48 vibration, 6 photocell/mag, FasTrak™ and accessory channels
- Portable, on-board, commercial and military configurations available
- Performance of 75 kHz frequency range, resolution to 51,200 lines and >90 dB dynamic range
- Instant feedback of maintenance actions with on-aircraft printer
- Clear on-screen help with graphics and troubleshooting procedures.

## System Components

The VXP System has two main components – the Display Unit (DU) hand held computer and the Acquisition Unit (AU). The VXP meets MIL Specs for environment and EMI. The fully ruggedized design means greater reliability and trouble free operation in the harshest flight line conditions. Additional EMI hardening for shipboard operation is available as an option.

## Acquisition Unit

The VXP Acquisition Unit acquires and processes signals from a wide range of sensor types. The Acquisition Unit uses the latest signal conditioning, digital signal processing (DSP) data conversion, and memory technologies. An expansion connector allows a quick single cable connection to pre-wired aircraft.

## Display Unit

The Display Unit is a ruggedized, portable Intel Centrino Duo™ computer. It displays menu selections, acquired data calculated solutions and other information. The internal disk drive provides vast data storage capacity. Bright clear displays and graphics are presented on a active-matrix display. The computer works with Windows application programs and standard PC peripherals.

## Accessories

The Carry-On VXP kit uses FasTrak™, velocimeters, and our other sensors, cables and accessories and also interfaces directly to a wide range of other sensors used in the industry.

## Smart Chart™ Software

As with Honeywell's previous generation of balancers/analyzers (such as the 8500 series), the VXP's AU data acquisition is straightforward and the DU's maintenance solutions are clear and unambiguous. The AU adds flexibility to data acquisition and

solution editing while DU's full-color graphics give excellent Track Trend Plots, Polar Plots and solution/option displays. Additionally, the DU shows all vibration limit exceedances, instantly.

## Monitor: The invisible crewman

Using its monitor function, the VXP AU acquires, processes and records data from sensors at prescribed intervals, all without user intervention. The recorded and processed data can be used for real-time flight crew information or downloaded for post-flight analysis. The VXP AU's large internal memory and optional PCMCIA memory card stores several days of typical flight data.

## Engine Vibration

The VXP performs engine acceleration and deceleration tests with unmatched flexibility, simplicity and accuracy. It implements broadband and narrow-band tracking filters using precise digital signal processing techniques. It's compatible with both high voltage tachometers and low voltage phonic wheels.

## Routes and Spectrum

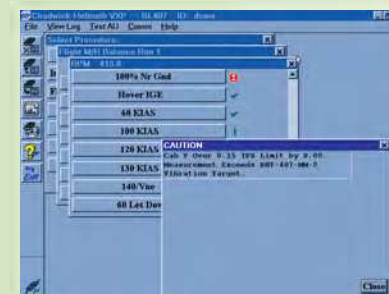
An aircraft "route" program in the VXP AU automates the vibration survey process and saves precious flight time. Go/No-Go limit checking is performed automatically and out of limit components are displayed to speed aircraft troubleshooting. With the VXP's



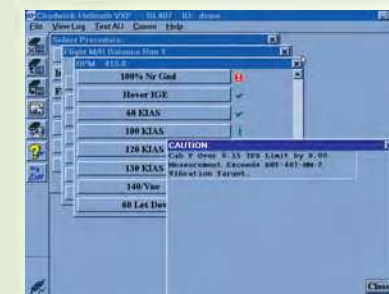
## Touch screens speed data entry

The heart of the VXP system is a ruggedized laptop PC, that hosts all of the software necessary to acquire data, perform vibration analysis and store the results.

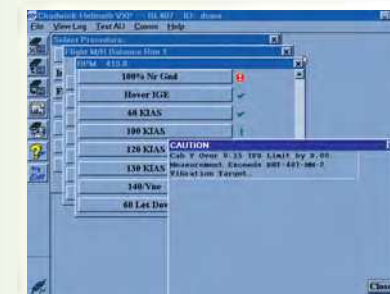
75 kHz frequency range and high resolution FFT's, gear and bearing vibrations can be analyzed to detect problems before costly failures occur. Complex aircraft surveys with multiple sensors are performed accurately and quickly.



Balance collection screen with alert shown



Use the Polar Plot to manually or automatically plot balance points



Spectral Plot lets you integrate and differentiate into any units...mils, IPS, g's, etc.