

Freedom Data PC



The world's most rugged, battery powered instrument for Nondestructive Evaluation of civil infrastructures, geophysical engineering surveys, and general testing or data acquisition.

The Freedom Data PC system provides the user with unmatched flexibility for stress-wave based condition evaluation of concrete, masonry, asphalt, wood and other construction materials, as well as seismic testing of soil and rock and virtually any general test and or data acquisition measurement. By simply changing out the instrument modules in the two built-in bays, the user can quickly switch between compatible tests using any of the available NDE Methods, while using similar software for data acquisition and analysis.

Possible Add-ons

There are 12 add-on packages for NDT which can be used with the Freedom Data PC you can choose any combination of the 12 packages with purchase and can upgrade your Freedom Data PC at anytime with the purchase of a new add-on NDT packages. Please see the overleaf for full description of the add-on kits and their applications.

Features

- 8-10 Hour Life Internal Lithium Ion Rechargeable Batteries

- 14" Diagonal Backlit Screen (1366x768)
- Shock Mounted and Weather Resistant, Ruggedized Design and keyboard
- 10/100/1000MB LAN, USB, SVGA and Serial
- 3 x USB Ports
- SVGA port for external monitor
- Plug-In Multi-Channel Data/Source Modules
- National Instruments 1.25 MHz 16 channel PCI Data Acquisition Card Standard, Optional Cards Available
- Weight 10.5 kg Fully Loaded
- Windows XP or Windows 7 based low power 1.6Ghz Intel Atom Processor, 1GB DRAM
- 120 GB Hard Drive and External CD-RW [Larger available as an option]
- External 12 Volt Automotive Cigarette Lighter Adapter and switch mode AC adaptor

About PCTE

PCTE have over 30years experience in the measurement and testing of concrete. With experience in research, consulting and construction they are able to assist you in reviewing the issues and developing solutions. PCTE can provide more than just the equipment. They can provide leading technical support for your business.

Other Equipment

Most of the add on packages that are below can also be used with the NDE360 which is a smaller hand held device for quick and easy testing in the field. The Olson Instrument range also includes the CTG, and DAS as well as the resonance tester.

The full Proceq range of equipment is available for insitu non destructive concrete measurement, including Schmidt Hammers, Covermeters, Half Potentials, Resistivity, Ultrasonic's and Permeability.

We also supply Intelli-Rock maturity, temp and humidity logging systems, corrosion rate monitoring equipment, Ground Penetrating Radar.



PAPWORTHS CONSTRUCTION TESTING EQUIPMENT

Perth
West Perth
0408 034 668
Brisbane
Toowong
0419 477 715

Melbourne
Niddrie
0428 315 502
Sydney
Belrose
0418 381 709

www.pcte.com.au

Application		Method					Access															
Impact Echo 	Determine the thickness of a concrete element and/or locate/diagnose cracking, voids, honeycombing, delaminations etc		Impact Echo Scanning		Downhole/Crosshole Seismic		Ultrasonic Pulse Velocity	Surface Wave Testing (SASW-S)		Slab Impulse Response (SIR)												
	IE Test head taps the concrete creating a p-wave, reflections of which are picked up by the transducer and analysed.											Locate delaminations and shallow voids over a large area such as slabs, bridge decks, beams, pipes, etc.	Determine soil and rock material properties for, earthquake design analysis, site development and dynamic machine foundation design.	UPV is used to determine the strength and quality of concrete and also locating defects such as voids, honeycombing and cracking	SASW-S is used for determination of abutment depths of bridges, pavement system profiles (inc surface layer, base and sub-grade materials), condition assessments of concrete liners (tunnels)	The slab surface is struck with a calibrated hammer and the response collected by an adjacent receiver.	Only one side of the concrete element is required.					
	Access to only one side of the concrete element is required.											Access to only one side of the concrete element is required.	The CS and DS investigations require the drilling of 1, 2 or 3 bore holes spread 4m apart.	Submerged concrete elements. Most effective if two surfaces are accessible	Requires access to one side. The accessible surface should be at least 1.5 x the depth in question							
	Surface Wave Testing (SASW-G)											Crosshole Sonic Logging		Sonic Echo/ Impulse Response (SE/IR)		Parallel Seismic (PS)		Ultra-seismic (US)		Crosshole Tomography Software		
	The SASW test method is applied primarily to assess material stiffness and condition, and layer thickness of soil and rock features Surface waves are created by a hammer strike and collected by two accelerometer receivers that are side by side Requires access the surface. The surface should be at least 1.5 x the depth in question.											CSL tests are performed to check the integrity of newly placed drilled shafts, seal footings, and slurry or diaphragm walls The CSL test relies on propagation of ultrasonic waves between two or more access tubes filled with water to measure the velocity and signal strength of the propagated waves The testing can be performed on any concrete foundation provided two or more access tubes or core holes capable of holding water are present in the foundation	SE/IR tests are performed to evaluate the integrity and determine the length of deep foundations. The foundation top is struck by a hammer and the response of the foundation is monitored by a receiver.	PS is used to determine the lengths of deep foundations where the top is inaccessible, or they are long and slender. Also PS method provides data about the soil below the foundation.	US investigations can evaluate the integrity and find the length of foundations such as drilled shafts and driven or auger-cast piles. Shallow wall-shaped substructures such as an abutment or a wall pier of a bridge are also suitable.	Images of Voids/Soil Intrusions, Honeycomb, Cracks, Uncured or Weak Concrete in Beams, Columns, and Piers using Ultrasonic/Sonic Pulse Velocity measurements.	Velocities collected using the NDE 360 are fed into the software which allows for 2-D and 3-D displays of the internal make-up of concrete elements Access to all sides of the element is required to produce 3D images, whereas 2D images can be produced where access is limited.					
Geophysical Seismic Surface Wave Systems		Foundations Depth & Integrity Systems																				