Vu-Con® System

NDT JAMES INSTRUMENTS
Non Destructive Test Equipment
Test Well. Build Well.

Impact Echo System for measuring the thickness and quality of concrete

Product Information

The **Vu-Con®** System provides the engineer with the sturdiest, most reliable system for impact echo analysis. No moving parts and implementation of the latest micro-computer technology has created a system that is both sophisticated and reliable. The unit comes with a 90 mm (3.5”) by 115 mm (4.5”) graphic display screen that is easily viewed in daylight. This allows rapid analysis of results in situ. It may store more than 200 individual tests with time and date indication.

The data is easily uploaded to a PC for inclusion in reports and data analysis. Data communication takes place via the RS-232 port and Windows compatible PC software. The unit allows the user to select sensitivity levels to adapt to varying conditions in the field.

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Features & Benefits

- Accurately determines concrete thickness without drilling cores or using similar destructive techniques.
- Quickly locates delaminations and voids in concrete slabs & structures where access is limited to a single side.
- Rugged design for field use.
- Rapid results within seconds at the jobsite.
- Large easy to view display for data analysis on site and in daylight.
- Data can be stored and uploaded to a PC for later analysis and inclusion in reports.
- Conforms to ASTM C-1383.

Applications

- Roads and Runways
- Retaining Walls
- Bridge Decks

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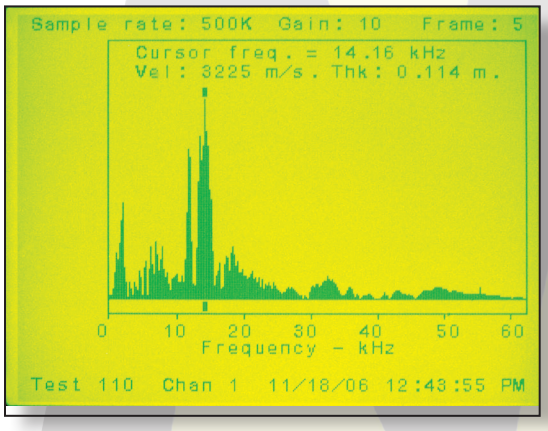
Theory of Impact Echo Method

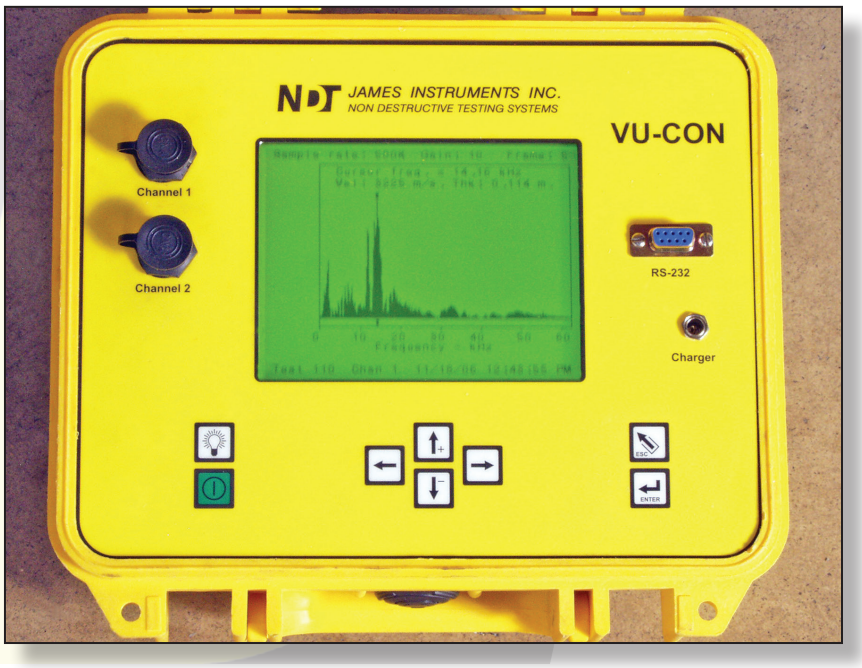
The James **Vu-Con®** System uses the impact echo method to evaluate concrete and masonry structures. The impact echo method is based on the use of impact generated stress waves that propagate through the material and are reflected by both the materials external surfaces and internal flaws.

This method can be used to make accurate non-destructive measurements of thickness in concrete slabs and plates, and to locate internal flaws such as honey combing, debonding and delaminations. It can measure thickness, locate cracks, voids and other defects in masonry structures where mortar bonds the masonry together. Finally, the impact echo method is not affected by the presence of steel reinforcing bars.

The method works by creating a short duration mechanical impact on the surface of the material under examination. This is typically performed by small steel balls that produce low frequency stress waves that propagate through the material and reflect off of other surfaces and internal flaws back to the surface used for testing (See diagram below) By recording and analyzing the vibration from the mechanical impact at the surface, thickness and other physical features (referred to in the preceding paragraph) can be determined. The advantage of using an impact rather than other more classic ultrasonic techniques is the low frequency and the long wave length of the stress waves that are produced. Low frequency stress waves treat concrete and masonry as a single elastic homogeneous material as they propagate through.



Graphic diplay screen is easily viewed in daylight



*The **Vu-Con® System** represents the latest technology in concrete ultrasonic analysis, allowing the engineer to see into the concrete surface.*

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Specifications

Instr. Weight:	6 lbs. (2.75Kg)
Ship Weight:	17 lbs. (7.7 Kg)
Dimensions:	4.5" x 8.5" x 10.5" (114.3mm x 223.5mm x 267mm)
Frequency Range:	0 - 50khz
Impactor Sizes:	6, 8, 10, 12, 14, & 16mm
Gain Selection:	0.1, 0.5, 1, 2.5, 5, 10, 25 & 50
Battery:	14.4 Volt. 4-8 hours continuous use
Display:	320 by 240; backlit for daylight use
Storage:	200 plus readings
Software:	Windows PC Compatible / USB Interface Required
Temperature:	0 - 50°C

Sales Number

V-V-100 Vu-Con® System

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