

LeakFinderRT

Accurate, Non-Invasive Windows-Based Leak Noise Correlator



DID YOU KNOW?
UP TO 50% OF WATER IS LOST THROUGH
AGING INFRASTRUCTURE

LeakFinderRT™

Expand your distribution main leak detection capabilities

Typically, leak noise correlators have been limited when it comes to accurately and efficiently pinpointing water leaks in transmission mains. Fortunately, LeakFinderRT™--Echologics' advanced Windows-based leak noise correlator--is helping municipalities to locate "quiet" narrow-band leaks on transmission mains comprised of a range of materials including:

- Ductile Iron
- Pre-Stressed Concrete Cylinder Pipe (PCCP)
- Plastic (PVC)
- Asbestos Cement (AC)

LeakFinderRT quickly and cost-effectively locates leaks that other correlators cannot; its enhanced correlation function accurately identifies narrow-band leak noise—making it ideal for PVC pipes, small leaks, multiple leak situations, and testing environments where there is high background noise.

Municipalities across North America, and in Europe, South Africa, Singapore and Australia are using LeakFinderRT to expand their leak detection programs to accurately and non-invasively detect leaks, prioritize water system repairs and improve water conservation—all without breaking ground or disrupting service.

Easy to Use

LeakFinderRT was designed specifically by acoustical engineers and perfected in the field to provide an accurate, non-invasive leak detection system that is easy to operate.

Anyone that has ever used Microsoft Windows can easily learn how to operate LeakfinderRT to expand or enhance their leak detection capabilities, especially when they take advantage of

Echologics' advanced leak detection training that can take any user from novice to leak-detection technician.

- Software operates on PC's running Microsoft Windows XP, Vista or W7
- No prior knowledge or experience required to operate
- Training programs and online tutorials available
- Simple input parameters required

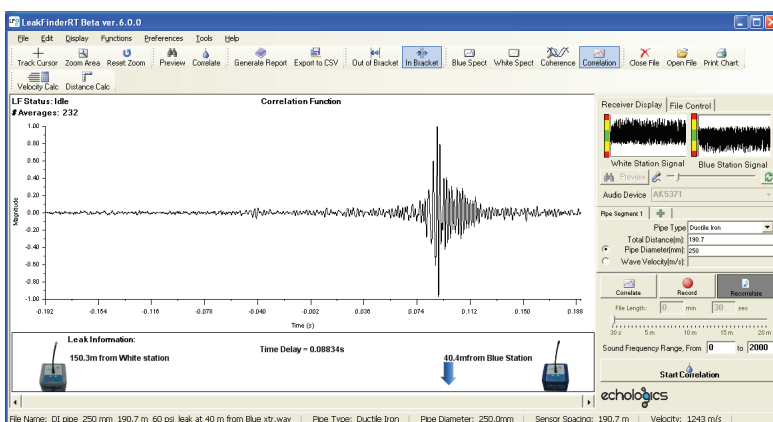
Advanced Signal Processing That Works

- Proven performance on a wide range of pipe types
- Exceptional low-frequency response for superior performance on PVC pipes
- Exceptional performance for small leaks on AC, Ductile Iron and PCCP pipes
- Enhanced and refined correlation functions that substantially improve peak resolution
- Leak location accuracy up to $\pm 4"$ (± 10 cm)
- Upgradeable to newer faster processing hardware

Workplace Durability

- Designed to be durable (impact, workplace, and waterproof)
- Live online product support available
- Off-site data/file analysis for more challenging leaks
- No-hassle extended warranty programs available
- Compact size and weight for excellent portability
- License exempt RF transmission frequencies (900 MHz or 433MHz)
- Low temperature-rated sensor cables
- Replacement equipment available to reduce downtime

THE MOST ADVANCED AND RELIABLE LEAK-NOISE CORRELATOR AVAILABLE



LeakFinderRT™ interface indicating leak position



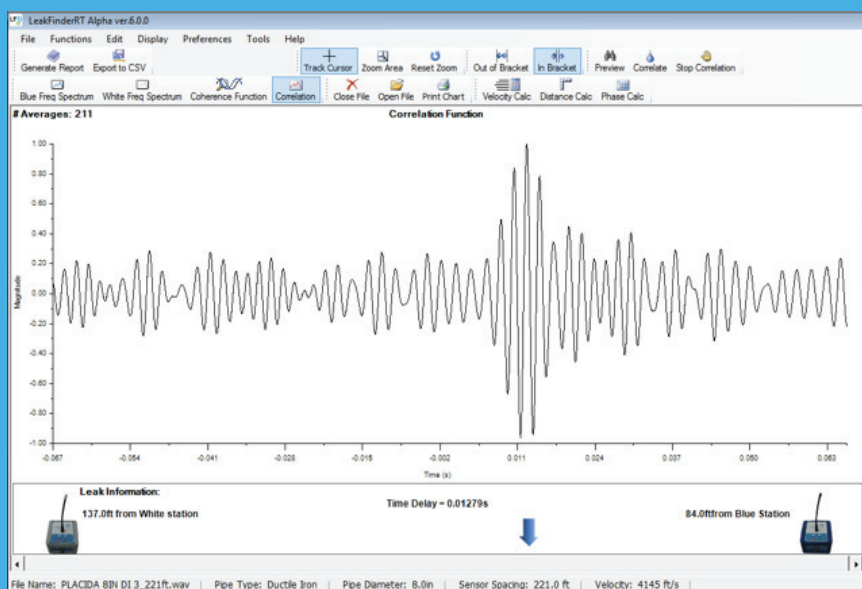
LeakFinderRT™ in use on a Toughbook™.

Field Notes

The city of **San Juan Capistrano** had a problem familiar to many water systems' operators: a "quiet" leak that was seemingly impossible to fix as a result of fluctuating ground water levels combined with a lack of audible noise from available fire hydrants and valves.



Assisted by our engineer, the city located the leak during a LeakFinderRT training course. Exceptionally small, the leak was on a short fitting bracketed by rubber gaskets, making its correlation remarkable.



Greensboro, NC had a leak that had gone undetected for over 6 months, despite numerous tests conducted by several service providers and equipment vendors. Within an hour after his arrival, our sales engineer located the leak.

The leak was losing 35 gpm (132 LPM), enough water to supply the entire City for 2 days every year. Greensboro has subsequently purchased a LeakfinderRT, and we have added them to a growing list of happy clients.

Orillia, a town of 31,000 people in Ontario, is proactive when it comes to finding leaks. Echologics identified a major watermain leak in November 2007 while conducting a leak detection training course. Sensors were placed on two fire hydrants and a third hydrant was opened between them to simulate a leak. It's normally obvious where the "leak" is coming from, but in this case, the leak correlator heard water rushing "out of bracket" (beyond one of the test hydrants) that was so loud it over-powered the test leak.

Using Echologics' LeakFinderRT, the leak noise was correlated to within 12" of the actual leak, which was quite impressive given that the distance between sensors could not be accurately measured and the pipe was buried in a low-lying, marshy area. The crew was surprised to find a leak in the watermain blasting a large-diameter hole in a concrete sewer. The hole was so substantial,

about 2-3" in diameter, that it exposed the rebar. Once the leak was repaired, Ken Van Wyck, Orillia's Water and Sewer Superintendent, determined that the leak had been responsible for approximately 24,720ft³ (700m³) a day.

"Certainly when they got out to do the hands-on in the field they were very quick to pick off a leak that we weren't aware of," said Van Wyck, "I do like the Echologics product."



LeakFinderRT™



Basic System

- 2 high frequency sensors
- 2 wireless transmitters
- 2 low-frequency sensors - optional
- 1 two-channel wireless receiver
- 1 headphone set
- 1 AC battery-charger
- 1 USB cable

- 1 LeakFinderRT™ software installation CD
- Operating manual (on CD)
- Rugged waterproof Pelican carrying-case with a lifetime warranty
- 2-year limited warranty on hardware
- Available hardware protection plan covering extended warranty or accidental damage

Technical Specifications

Software

- Enhanced and traditional correlation function
- Correlation function calculated via Fast Fourier Transform (FFT)
- Indefinite noise averaging
- 25-microsecond minimum time resolution
- 0.1675 Hz minimum frequency resolution
- Automatic or manual selection of frequency range
- Propagation velocity calculator
- 10 different pipe materials
(more types can be added as per requirement)
- Mixed pipe sections
- Arbitrary leak noise playback speed
- Available in English, French, Chinese, Russian

Accelerometers

- High-sensitivity amplified piezoelectric sensing element
- 10' (3 m) cable having -40 - +194° F (-40 to +90° C) temperature rating
- 32-lb (14.5 kg) pull base magnet

Wireless System

- License exempt 900 MHz frequency band (433 MHz in Europe)
- Optional licensed 450 - 470 MHz radios (North America)
- Protective rubber boots for durability and shock resistance
- Automatic gain-controlled sensor amplifier
- Non-removable antennas
- Rechargeable high-capacity NiMH batteries
- Low-battery indicator
- Battery charge indicator
- Rugged aluminium case with rubber protective cover

- IP68 rating
- Foil switches
- Volume-controlled 3.5 mm stereo output
- 10 to 15 hours of operation on fully charged battery @ 68° F (20° C)
- 1600' (500 m) operating range (900 MHz),
- 1.2 mi (2 km) operating range (433 MHz systems)

USB A/D Converter

- 0.5 to 20,000 Hz frequency response (-3 dB @ .1 Hz)
- Uses the standard Windows driver
- User selectable in user software

Low Frequency Sensor

- Amplified sensor element
- Frequency response .5 to 3000Hz

Optional Components

- Piezoelectric-based hydrophones for large-diameter and PVC pipe applications
- Rugged or semi-rugged models available for notebook or tablet
- Extra cables
- Measuring wheel
- Laser rangefinder

Warranty

Two-year limited warranty. Warranty does not cover failure resulting from misuse, accident, modification, field maintenance and unsuitable physical or operating environment.

Mueller Co.

Echologics is now a division of **Mueller Co.**, the leader in water infrastructure products and services, and part of the **Mueller Water Products, Inc.** family, which manufactures and markets products and services that are used in the transmission and distribution of safe, clean drinking water and in water treatment facilities throughout North America. Water flows through, is controlled by or measured by the types of products we manufacture – valves, hydrants, ductile iron pipe, and AMR and AMI systems. With **Echologics**, we can now help municipalities rebuild North America's aging water infrastructure by identifying leaks, potential leaks and assessing the overall condition of their piping systems.



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