

SonicVizio-TR-S

Track Measurement and Analysis

Adding Value

A complete system designed for rail inspection that automatically detects and lists all track flaws in a single passage. Our smart software allows you to easily measure and assess defects.



Ultrasonic testing is the most reliable solution for finding and monitoring rail flaws, helping you to optimise rail replacement operations for better cost efficiency.

SonicVizio-TR-S uses high pitched waves to identify rail flaws such as internal cracks, squats, head checkings, corrosion and weld defects.

During inspection, 20 detection probes are constantly scanning the whole rail showing (and saving) both A-Scan and B-Scan views.

Its smart software provides automatic detection and listing of defects, all located through the GNSS and track localisation unit. Data from inspections is recorded, allowing analysis and assessment from the office and maintaining track traceability.

→ TECHNICAL FEATURES

Lightweight and robust

Designed for easy handling and maneuverability on the track, the device's carbon fibre construction ensures a high level of solidity while remaining lightweight.

Easy to maintain

Minimal day-to-day maintenance. Worn parts are all suppleable and easily replaceable with basic tools.

Widely applicable

Available for gauges ranging from 1000mm to 1668mm. Suitable for all types of rails, including grooved and vignole, whether new or worn, light or heavy.

Increased efficiency

Twice as efficient as single-rail inspection systems, equipped with 10 detection probes for each rail.

Compact and versatile

Clever and retractable design which can be folded down to 1000mm wide for transportation and handling, making it suitable for narrow areas.

Automatic detection

Automatically recognises and indexes defects into a list along with their locations and characteristics.

→ ADVANTAGES

- User-friendly interface and automatic defect detection feature make the software accessible to all operators in the field regardless of their ultrasonic or informatic skills.
- No heavy maintenance: all operations can be carried out by operators on site with just replacement parts and the manual.

- Retractable design allowing transportation into small utility vehicles and pick-up trucks.
- Easy exportation of raw data and PDF reports directly from the software which boasts extensive storage management capabilities.



→ COMPONENTS

1. Handle
2. Safety break
3. Water tanks
4. Rugged tablet 14 inches
5. Probes
6. UT Card 24-channels

→ SPECIFICATIONS

Overview

UT Smart Trolley

Weight	35 kg (without irrigation tank)
Operating temperature	-10 to 50°C
Gauge	1000 – 1668 mm
L x W x H	1786 x 1050 x 1071 mm
Tank capacity	40 l (approx. 10 km)

UT Probes

Number of detection angles	20
Number of detection crystals per rail	10
Specification	Special anti-wear probes and probe-brackets
Minimum detection wavelength	0.6 mm
Angles	40° / 70° / 0° TR / 40° / 70° - Rail axis -70°/+70° – Gauge corner -70°/+70° – Field corner
Frequency	4 MHz for 0° element 2.25 MHz for all except 0°
Maximum speed	7 km/h

→ MEASUREMENT



Internal Cracks



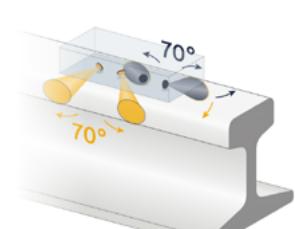
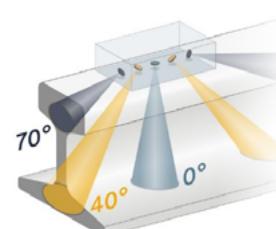
Head Checking



Squat



Shelling / Shaving



→ SOFTWARE

Pandrol SonicView UT Software is the perfect tool for efficient on-track inspection and flawless off-track analysis. Our smart software has been designed to make it easier to carry out ultrasonic testing of the rail. The user-friendly interface is accessible for all levels - operators, technicians and engineers.

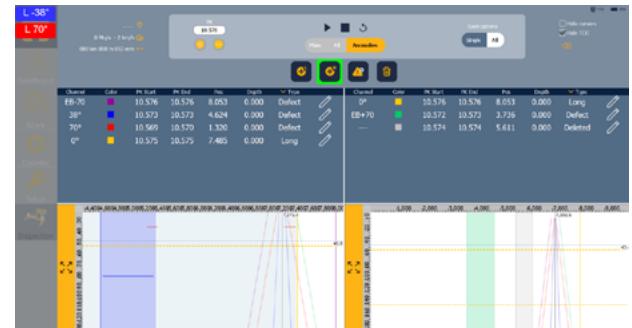
→ FIELD INTERFACE

- Comprehensive interface: A-Scan & B-Scan displays with both visual and audible alarms, fully customisable to suit both experienced users and beginners.
- Offers complete data recording with automatic defect detection, providing end-of-shift reports ensuring inspection documentation and traceability.
- Enables the creation of geolocated events or comments on the track.



→ OFFICE INTERFACE

- Post-inspection data analysis including visualising the entire inspection or just anomalies, creating new located defects and filling in with characterisation data.
- Provides cursor tool allowing measurement of all defect components with an automatic integrated calculator.
- Individual exportation of defect sheet to individually document each defect to be validated by the track manager.



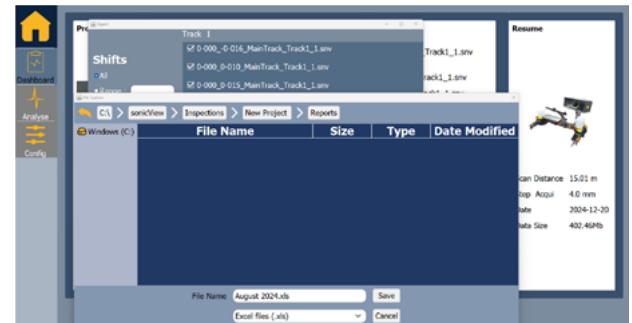
→ REPORTS

SonicView offers multiple export possibilities through all formats (.pdf, .csv, .xls, etc.) with filtering and sorting of data to fit user preferences and specifications with 3 different export types:

- Defect sheets: location, dimensions, codification, classification, etc.
- Reports: Line, Track, Week and Inspection reports
- Tabulated data: For global traceability and data-base management



Main menu



Export menu

SonicBox – Ultrasonic Testing Flaw Detector	
Parameter	Criteria
Connector	Lemo00
Data throughput	Up to 320 Mb/s through USB 3.0
Ultrasonic channels	16 or 24 (on demand)
Pulse Repetition Frequency (PRF)	100 Hz – 20 kHz
A-Scan display	RF / Rectified / Enveloppe
B-Scan display	Strip chart / Full B-Scan chart
Operating systems	Windows, Linux, Android
L x W x H	220 x 90 x 75 mm
Weight	0.800 kg
Bandwidth	0.8 to 20 MHz

Tablet	
Display	12.2 inches, 16:10, 1920 x 1200 p
Protection	Ruggedised – IP65
Autonomy	5 hrs / Hot-swappable batteries
Storage	512 GB

UT Acquisition system	
Data recording modes	Full / Defects only
Acquisition step	Down to 2 mm
Odometer resolution	5000 pts/tr

Measurement technology

The Ultrasonic Flaw Detector constitutes the heart of any ultrasonic testing equipment. Readapted from phased-array technology and simplified for railway needs, Pandrol SonicBox combines versatility and precision at lower cost and with greater accessibility.



Multi-angle detection enables identification with high precision of various types of rail defects, including head checks, squats, cracks, corrosion, break-outs, and machining errors.

Package including	
12.2" Tablet	1 x
Inspection & Analyse	
Unlimited SonicView Licence	1 x
SonicView Smart Software	1 x
Hot-swappable batteries	2 x
Spare parts package	1 x

Options & accessories	
Spare batteries	UTCOM001
Dual dock station – Battery charger	UTCOM002
Vertical defect probes	TRTRC213
Calibration block V1	CLIV1001
Calibration rail	RECAL001
Extra spare parts	UTSPA004
Manual probes	TRTRM001

Standard compliance

- EN 16729-1 and 3: Requirements for ultrasonic inspection and evaluation principles and for identifying internal and surface rail defects
- EN 13977: Safety requirements for mobile devices and trolley about construction and maintenance
- EN ISO 22232-1, 2 and 3: Characterisation and verification of ultrasonic testing equipment: Instruments, Probes, Combined equipment

Additional services are available upon request, including UT theory training, UT equipment training, and technical assistance contracts.

