

APT_RSA - RAIL SURFACE ANALYSER



APT-RSA on UIC54 rails

APPLICATION

- Rail roughness quantification
- Rail corrugation quantification
- Grinding quality testing
- Noise measurements and predictions

FEATURES

- Measures railhead vertical variation relative to a sliding reference with a length of 1 m as function of distance
- Complies with ISO 3095: 2005 (E)
- UNLIMITED measurement distance
- Light weight, self-contained guidance on track

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SPECIFICATIONS

Measurement transducers

- Dynamic range: $\pm 5000 \mu\text{m}$
- Transducer type: displacement (LVDT)
- Number of transducers: 3 (independently positioned over the rail head)
- Measurement noise floor: $0.1 \mu\text{m}$
- Encoder for position determination 128 pulses per rotation

Data processing

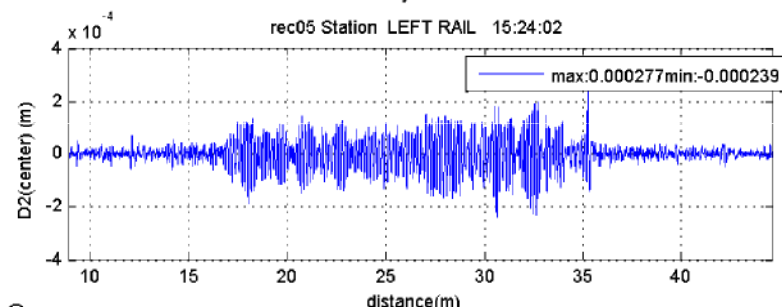
- Flexible software allowing data output in various forms
- Roughness spectra in: 1/3 octave bands narrow band PSD
- Colour maps
- RMS level versus distance, ...

Data acquisition

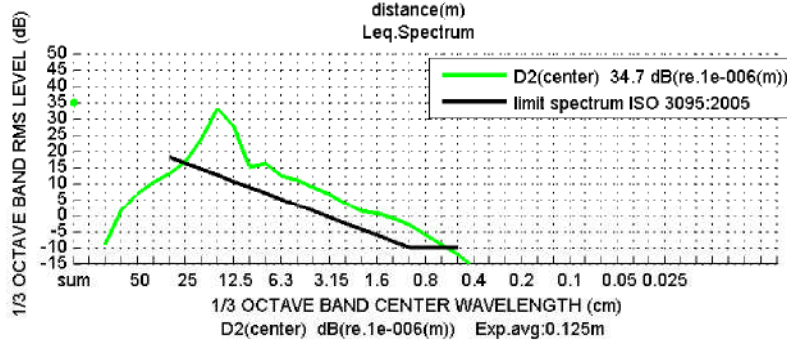
- Recording device: 4 channel simultaneous sampling – 16 bit A/D converter
- Resampling in post-processing at 1000 samples per meter
- Data storage: 1 Gigabyte memory
- 6 hours of measurements
- Download of data to laptop: USB-1

Transportation

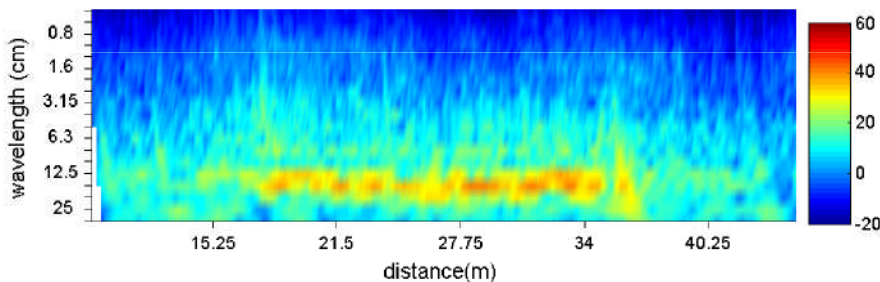
- Flight case: dimensions: $0.4 \times 0.4 \times 1.2 \text{ m}$ weight: $< 20 \text{ kg}$



Vertical displacement in m over rail distance



1/3 octave band roughness spectrum, amplitude in dB (re. $1 \mu\text{m}$) versus wavelength



Colour plot wavelength over rail distance, colour scale in dB (re. $1 \mu\text{m}$)