

THz time-domain spectrometer

- TDS10XX benchtop system for THz spectroscopy
- Spectral range up to 4 THz using fs fiber laser
- Nitrogen purge of sample compartment
- Additional ports for external fiber-coupled antennas

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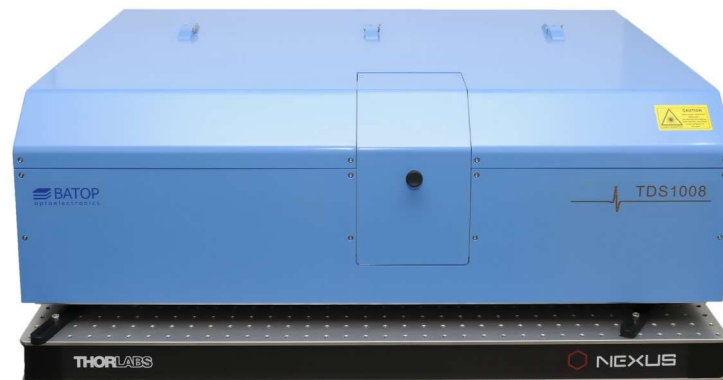
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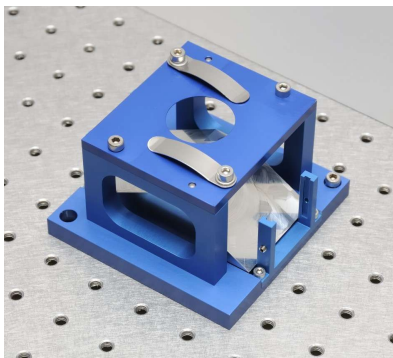


TDS10XX system includes:

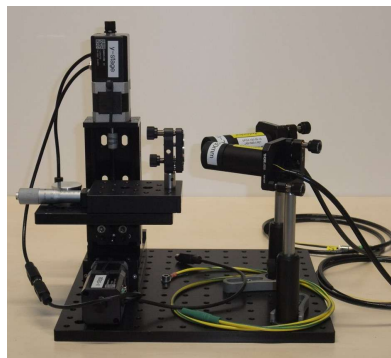
- Sample compartment for transmission or reflection measurements
- Linear stage for a maximum time delay of 650 ps (corresponds to a 2 GHz resolution)
- Pulse generator, signal amplification and lock-in detector integrated into one device
- Laptop with T3DS software for easy handling of the spectrometer and data management
- Internal sample compartment can be purged with nitrogen

Optional:

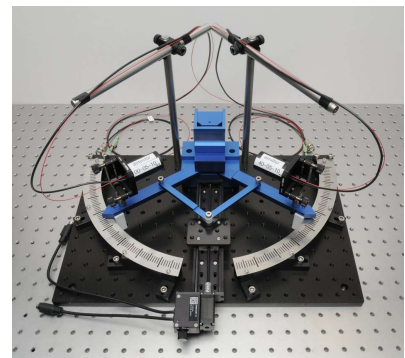
- SHR – Sample holder for reflection measurements (sample compartment)
- SHA – Sample holder for attenuated total reflection measurements (sample compartment)
- FSU – Fast scan unit for THz beam adjustment
- IU150 – Imaging Unit with imaging area of 150mm x 150mm
- T2T – Theta-2-Theta angular scanning unit for reflection measurements
- 2FCA – Set of 2 additional fiber coupled antennas



Sample holder for reflection measurements



Imaging Unit in exemplary reflection setup

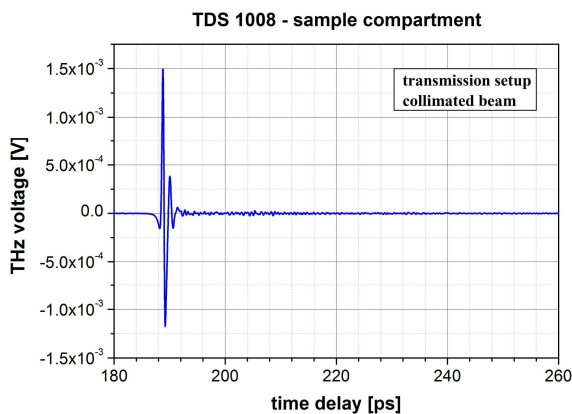


T2T angular scanning unit with automated positioning

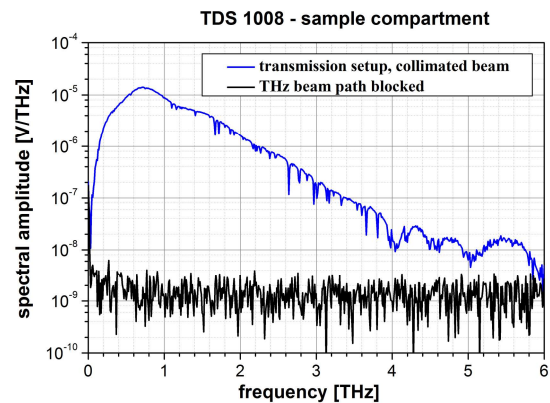
TDS specifications:

Spectrometer	Spectral region	Dynamic range
• TDS1008 (780 nm laser)	0.05 – 4.0 THz	≥ 85 dB
• TDS1010 (1060 nm laser)	0.05 – 3.0 THz	≥ 65 dB
• TDS1015 (1550 nm laser)	0.05 – 1.5 THz	≥ 65 dB
• Scan range	650 ps (2 GHz resolution)	
• THz beam diameter	22 mm (collimated beam) / 1 mm (focused beam)	
• Sample size	30 x 30 mm (collimated beam) / 10 x 10 mm (focused beam)	
• Supply voltage	100..240 VAC, 50 – 60 Hz	
• Spectrometer dimensions	60 cm x 60 cm x 30 cm or 90 cm x 60 cm x 30 cm	
• Spectrometer weight	60 – 100 kg, depending on chosen configuration	

Exemplary THz-spectrum:



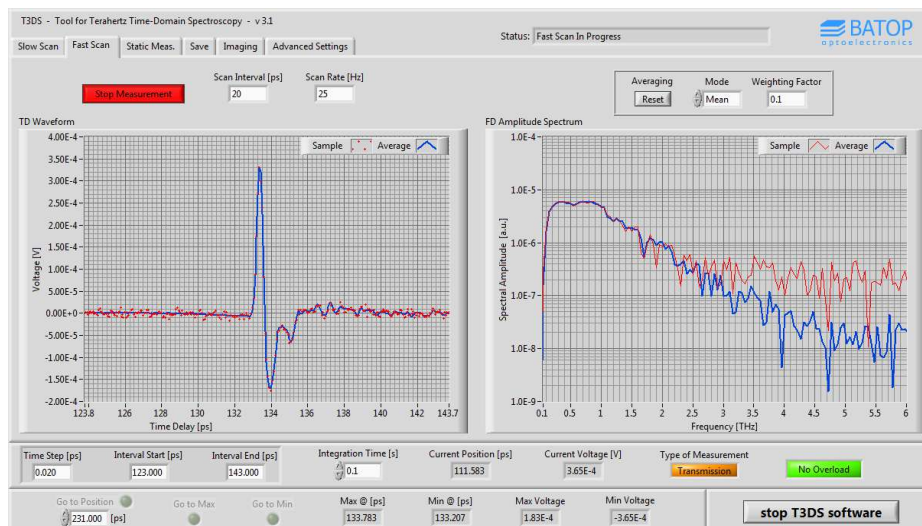
THz pulse for the sample compartment, nitrogen purge applied.



THz spectrum for the internal antennas with small absorption bands due to the air humidity.

T3DS software:

- Quick and easy configuration of the spectrometer setup and sampling parameters
- Separate measurements of baseline, reference and sample spectra
- Stepping measurement of THz signal for high signal-to-noise ratio
- Option for imaging or angular measurements included in software package



T3DS software during a fast scan measurement.