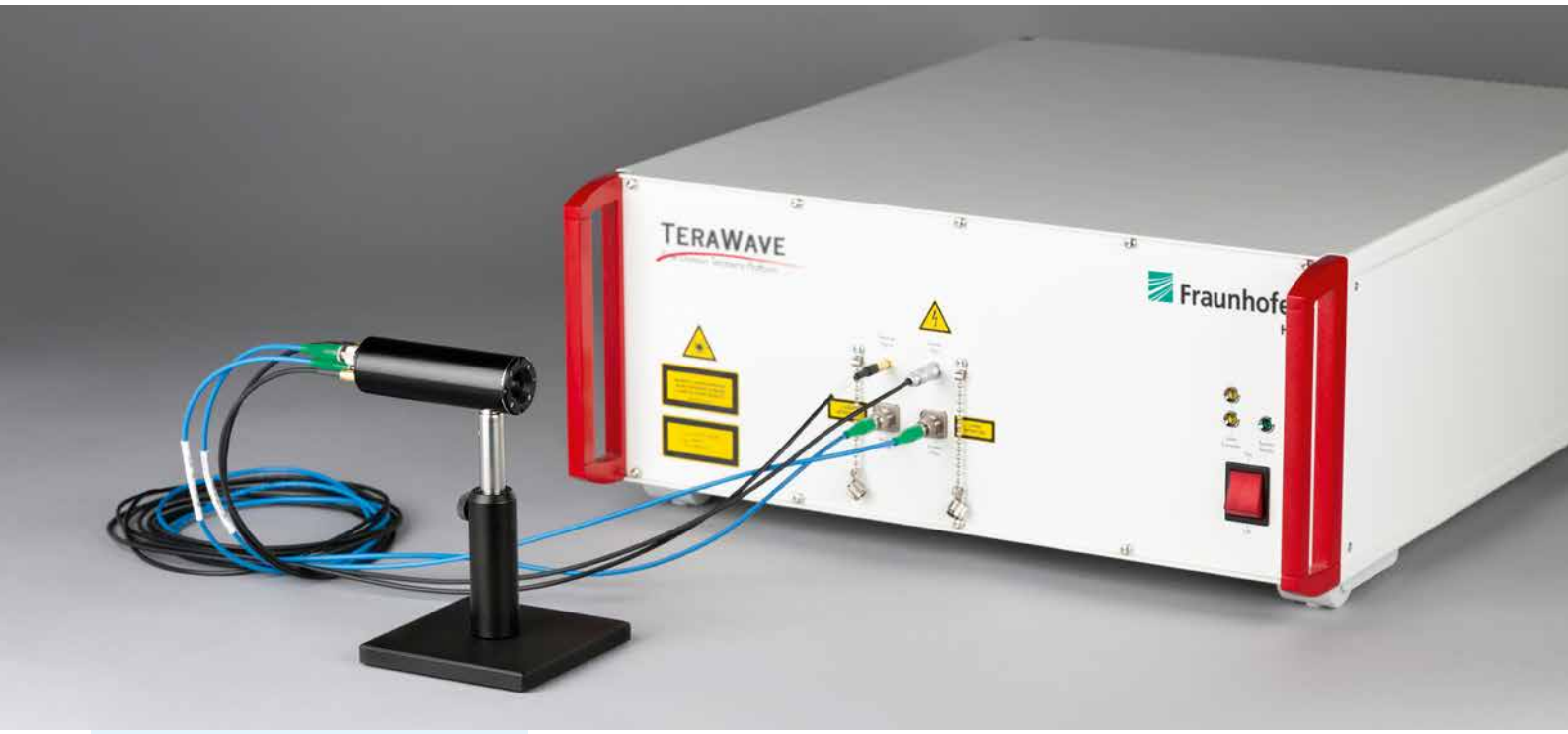
# TERAWAVE TIME DOMAIN SPECTROMETER

Fraunhofer
Heinrich Hertz Institute




## AT A GLANCE

All-fiber terahertz spectrometer operating at 1.5 µm optical wavelength

### Features

- Turnkey operation
- Full fiber coupling
- Custom fiber length
- Realtime data aquisition mode
- High power extension

### Applications

- High-bandwidth terahertz spectroscopy
- Industrial process control
- Non-contact coating film thickness measurement

### Technical background

Mobile THz systems for field operation: Robust and agile THz systems are the foundation for transferring THz technologies from research facilities to industrial environments. Our Time-Domain Spectrometer (TDS) is based on mature telecom components, all operating at an optical wavelength of 1.5 µm. Utilizing HHI's fiber-coupled emitter and detector modules, our THz system provides an unique combination of high flexibility and high performance. This allows us to adapt our THz system to your THz application.

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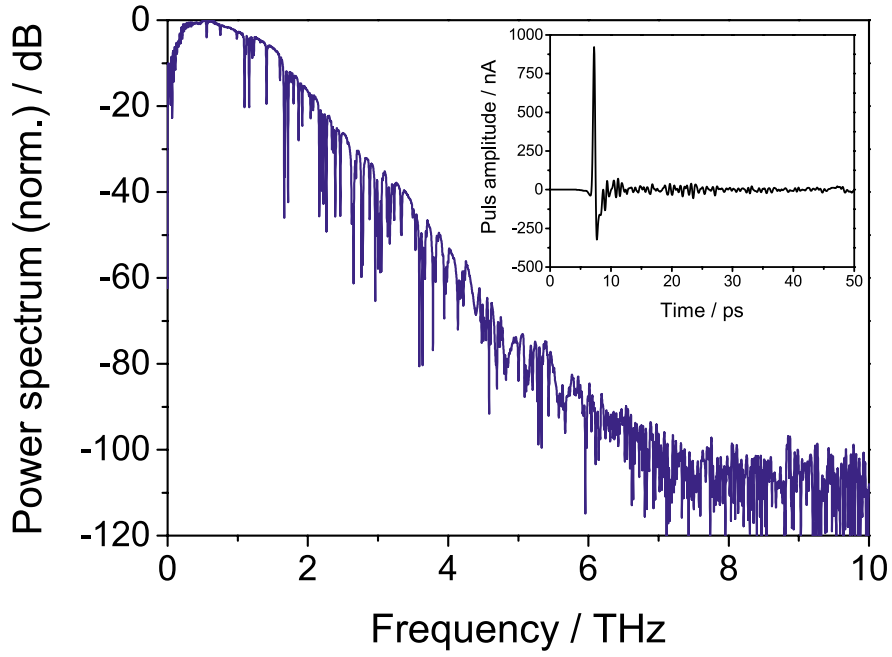


*Frequency spectrum recorded with HHI's THz modules. The inset shows the trace of the electrical THz pulse. The operating conditions are given in the specifications.*

## Specifications

- Average optical power 2 × 20 mW
- Optical pulse duration 100 fs
- Spectral range 0.1 - 6.0 THz
- Dynamic range (peak) > 95 dB
- Frequency resolution 5 GHz
- THz power (typ.) > 30 µW
- Aquisition rate up to 20 traces/s
- Size 48 × 40 × 20 $cm^3$
- Weight 16 kg
- Price starting from 100 000 Euro

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