

THz-TDS System Selection Guide

Finding the right solution for THz applications

Since the beginning of Menlo Systems' THz activities in 2007, our product portfolio of THz systems has been growing continuously. Starting at a conventional free space configuration based on a 780 nm laser, the development led over fiber coupled systems to high-speed scanning devices and OEM-integration capable compact one-box solutions. In equal measure the range of applications is being extended where the growing demands require either higher system complexity or modular and compact solutions. This selection guide is aimed to serve as an orientation in finding the right solution for THz applications.



Being an expert for femtosecond fiber lasers and stabilization technology, Menlo Systems integrates the proprietary and patented Menlo figure 9[®] technology lasers into its THz systems for highest reliability and robustness. All THz-TDS systems are complete and ready-to-use turnkey solutions, including the scanning device, system electronics, THz antennas and optics, PC and operation software. Various add-ons, e.g. for THz imaging, reflection measurements, or in-depth data analysis, are available. System installation and staff training on THz applications are performed in the customers' labs by our THz experts.

Systems' features in short

- broadband spectroscopy systems
- latest THz antenna technology
- Menlo Systems figure 9[®] laser technology
- mechanical or electronic scanning
- fiber coupled or free space systems
- complex scientific or compact industrial solutions

THz applications

- **THz-TDS:** broadband THz spectroscopy, chemical fingerprinting, material parameter characterization, THz optics characterization
- **THz imaging:** non-destructive testing, density or thickness profiling, defect detection, material quality characterization
- **Synchronized laser operation:** characterization of THz sources such as QCL or synchrotron radiation
- **Inline quality inspection**
- **Optical pump-THz probe spectroscopy:** charge carrier dynamics, THz plasmonics
- **High-speed THz-TDS** with large scanning range
- **THz standoff-detection**
- **THz comb applications**
- **Stand-alone fs laser applications**
- **Multichannel applications**
- **OEM system integration**

Quality Made in Germany

All our systems are manufactured in Germany. Each system undergoes a full qualification and is calibrated prior to shipment to guarantee best performance.



TERA K15 *Fiber Coupled THz-TDS System*

- Optomechanical delay unit
- Scientific turnkey system, easy to handle
- Compact T-Light laser platform
- Easy system customization

Top Seller for

- Time-domain THz spectroscopy
- THz imaging
- Real-time measurements
- Stand-alone fs laser applications
- Breadboard-mounting of add-ons for portability

TERA SYNC *Synchronizable Fiber Coupled THz-TDS System*

- Synchronizable laser on scientific platform
- Optomechanical delay unit
- Scientific turnkey system, easy to handle
- Additional optical outputs available
- Easy system customization

Scientific and Versatile for

- Time-domain THz spectroscopy
- Synchronization laser operation
- Optical Pump-THz probe spectroscopy
- Stand-alone fs laser applications
- Real-time measurements
- Breadboard-mounting of add-ons for portability
- THz imaging

TERA ASOPS *High-Speed Scanning Fiber Coupled THz-TDS System*

- System using ASOPS scanning technique with two fs-lasers
- Large scanning range
- Turnkey system with user friendly software
- Additional optical outputs available on demand
- Easy system customization

High-Speed Scanning for

- High-speed THz-TDS
- Large scanning range
- High-speed THz imaging
- THz standoff detection
- THz comb applications
- Real-time measurements
- Breadboard-mounting of add-ons for portability

TERA OSCAT *High-Speed Scanning Fiber Coupled THz-TDS System*

- System using Menlo Systems' patented OSCAT scanning technique
- Large programmable scanning range
- Scientific laser platform

- High-speed THz-TDS
- Large scanning range
- High-speed THz imaging
- THz standoff detection
- Real-time measurements
- Breadboard-mounting of add-ons for portability

TeraSmart *Compact Industry-Proven THz-TDS System*

- Compact and portable one-box-solution
- OEM-design ELMO laser platform
- Optomechanical delay unit

OEM Integration for

- Time-domain THz spectroscopy
- THz imaging
- Real-time measurements
- Multichannel fs laser applications
- OEM-integration capable

TERA K8 *Free-Space THz-TDS System based on 780 nm Laser*

- Optomechanical delay unit
- Scientific laser platform
- Flexible system platform supporting individual configuration

780 nm Free-Space Configuration for

- Time-domain THz spectroscopy
- THz imaging
- Stand-alone fs laser applications
- Optical pump-THz probe spectroscopy
- Breadboard-mounting of add-ons