

# Press Release

December 15, 2016

## **TERA ASOPS High-Speed THz-TDS**

High-speed spectroscopic data sampling is an easy task when applying the ASynchronous Optical Sampling (ASOPS) technique, using two femtosecond lasers at a locked but slightly detuned pulse repetition rate. Each pulse pair cycle, the delay between the optical pump and probe pulses, respectively, is accumulated, resulting in a sweep with the duration of the entire inverse repetition rate. This well-established tool for optical ultrafast spectroscopy is now commercially available at Menlo Systems for Terahertz time-domain spectroscopy (THz-TDS). The novel TERA ASOPS is combining the ASOPS technology with the latest broadband THz devices into a turn-key THz-TDS system where scanning range and speed are no longer limited by mechanically moving parts. A detection window of 10 ns is available for measurements at a revolutionary high rate, while the spectral resolution is pushed into the region of hundreds of MHz.

The two ASOPS lasers, based on Menlo Systems' patented figure 9<sup>®</sup> mode locking technology for highest stability and reliability, provide the optical pulses for THz emission and detection. Fiber coupled high-power THz modules and high-transmission low-loss polymer optics guarantee broadband performance, easy alignment and long-term stability of the THz path. Despite its complexity, the TERA ASOPS is standing out due to user-friendly operation and measurement software. A fast TCP socket interface allows remote control and high-speed data transfer over network.

The range of applications for the TERA ASOPS can be hugely extended by simply adding laser output ports at 1560 and/or 780 nm wavelengths, turning the system into a stand-alone tool for ultrafast optical spectroscopy.

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Figure: Menlo Systems fiber coupled TERA ASOPS high-speed THz-TDS system

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## About Menlo Systems:

Precision in Photonics. Together we shape light.

Menlo Systems, a leading developer and global supplier of instrumentation for high-precision metrology, was founded in 2001 as a spin-off of the Max Planck Institute for Quantum Optics, with the foremost aim to commercialize optical measurement technologies and make it available to newly emerging application fields. Menlo Systems maintains a strong bond to co-founder Theodor W. Hänsch, who pioneered precision laser techniques.

Known for the Nobel Prize-winning optical frequency comb technology, the Munich-based company offers complete solutions based on ultrafast lasers and synchronization electronics and THz systems for applications in industry and research.