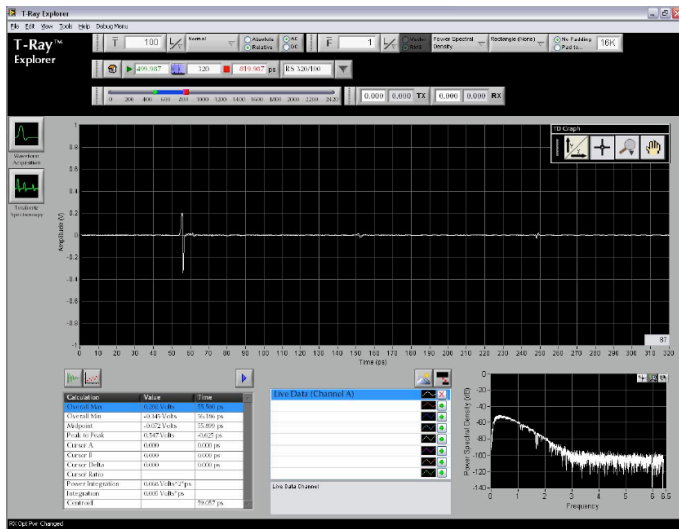


T-Ray® Explorer STE4000 Software (T-REX)

The T-REX software is a modular software system with a wide range of options for data collection and display. Software modules are provided for THz waveform acquisition and THz spectroscopy. Additional modules can be added to provide new features (e.g. imaging or computed tomography).

T-REX WAVEFORM ACQUISITION MODULE



The main windows of the waveform acquisition module provide a real time view of both the time domain waveform, and its spectral content.

Waveforms can be averaged to increase signal to noise, and a wide range of calculations performed on the waveform in real time. The spectral plot can display magnitude, phase, spectral density or power spectral density on a log or linear scale. The plots can exchange position to provide a detailed view of either domain.

APPLICATIONS

- Terahertz Time Domain Spectroscopy; solid, liquid, gas phase; polymorph discrimination; explosive detection
- Terahertz Imaging: high resolution (150 microns); high speed (800 pixels per second); THz CT imaging
- Art Conservation: identify construction; image through pottery; view previous repairs; non-destructive
- Security Research: baggage screening; personnel screening; shoe screening; anomaly detection

FEATURES

- Real time data collection
- Average in time and/or frequency
- Zoom and scale axes
- Log or linear plots
- Chart calculated parameters
- Save as text or binary files
- Collect data points in a time sequence
- Load saved waveforms and spectra

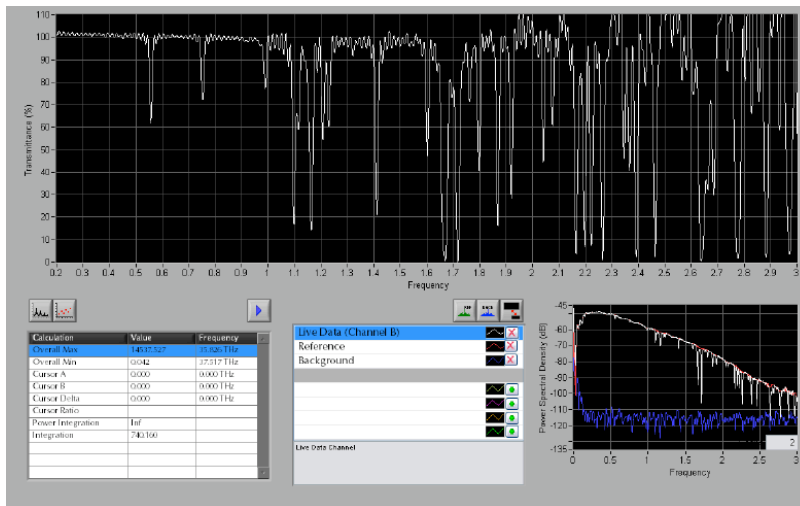
BENEFITS

- Quickly optimize data collection
- Optimize data collection to its intended use
- See the detail when needed
- Display in your desired units
- Track changes or optimize alignment
- Record data for future use and reporting
- Track long term evolution or trigger collection
- Compare data from earlier experiments

T-Ray® Explorer STE4000 Software (T-REX)

The spectroscopy module allows a reference waveform to be acquired and used to generate the absorbance or transmittance curves when a sample under test is put in place. The spectrum is calculated in real time. Previously acquired spectra can be displayed along with the live data.

T-REX SPECTROSCOPY MODULE



Regions of interest, digital filters, apodization functions and waveform extension (padding) can be performed in real time to improve the quality of the spectra. The region of interest can be locked to the result of a calculation (eg Overall Maximum) to allow for variation in sample position.

Time domain data and spectral data can be saved as text or binary files. The file header provides all information

relevant to the waveform acquisition. Averaging in the time domain and/or the frequency domain can be performed either as linear averages or running averages. Status screens and fault logs provide monitoring of the system health.

INCLUDED

- Waveform acquisition module
- Spectroscopy module
- Software manual

TYPICAL CONFIGURATION

- Terahertz Controller
- Umbilical pair (2, 5, 10, 30 m) and adapter
- Transmitter and Receiver
- Control computer

QUALITY VISION

As a leader in terahertz instrumentation, Advanced Photonix, Inc is committed to providing the highest quality ultrafast products on the market. This quality vision commits us to continually improving our product designs and manufacturing processes in order to ensure the highest level of customer satisfaction. The company maintains a stringent quality control program to ensure that all products meet or surpass customer requirements