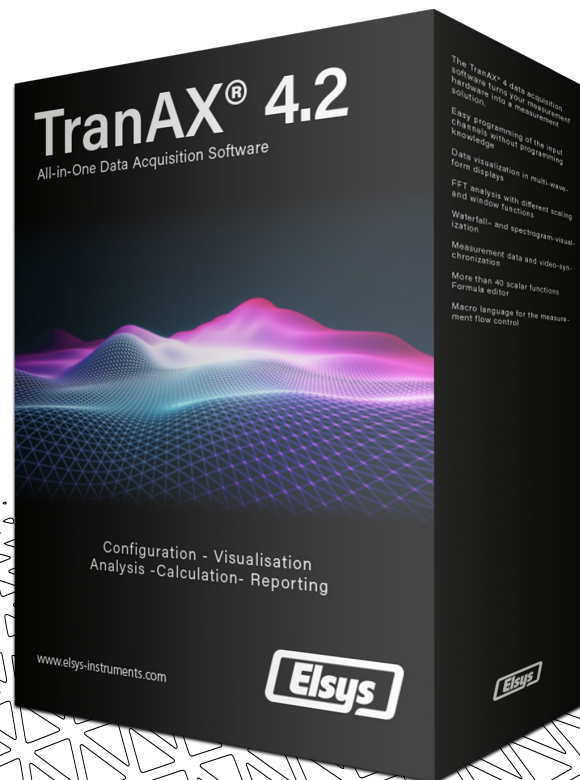# TranAX®

Data Acquisition Software

TranAX is the all-in-one data acquisition software from Elsys that transforms the measurement hardware into a measurement solution.

The input channels of the hardware are easily configured in the control panel. It forms the interface to the hardware.
Each input channel can be visualized in an individual waveform or grouped and compared with other channels. The waveform architecture is very powerful, allowing very large amounts of data to be visualized and analysed quickly.

Measurement Flow Control (MFC) is available for the automation of measurement sequences. This allows repetitive processes to be automated.

Measurement data can be evaluated using the formula editor. Create your own filter functions, search for events in measurement data or calculate scalar functions such as RMS or peak.

The documentation window can be used to present the data. Create report templates in which you can freely place curve displays, scalar tables as well as images and text.

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## Content

General Specification

Operating System	WIndows 10/11 64 Bit
Hardware Requirement	Intel i5 or equivalent, 8 GB RAM, Full-HD Display
Supported Hardware	TPCX, TPCE, TPCE-LE DAQ Cards TraNET EPC, TraNET PPC, TraNET FE
Licensing	TranAX LE - free, no activation needed TranAX Full - 2 activation (online/offline) per license
Waveform Types	Y-T, X-Y, FFT, Digital, Spectrogram, Waterfall
File Format	TPC5 (HDF5)
File Export	ASCII, CSV, Krenz, SEGY, DIAdem, WAV
File Import	ASCII, CSV, Krenz, SEGY, WAV, MP3
Video Integration	Video File import, Frame Rate Synchronization
Analysis	More than 40 scalar functions formula editor with more than 60 mathematics functions Python integration
Reporting	Documentation Waveform Report Generator from the formula editor
Automation	Measurement Flow Control (MFG) ActiveX / .NET Remote Interface
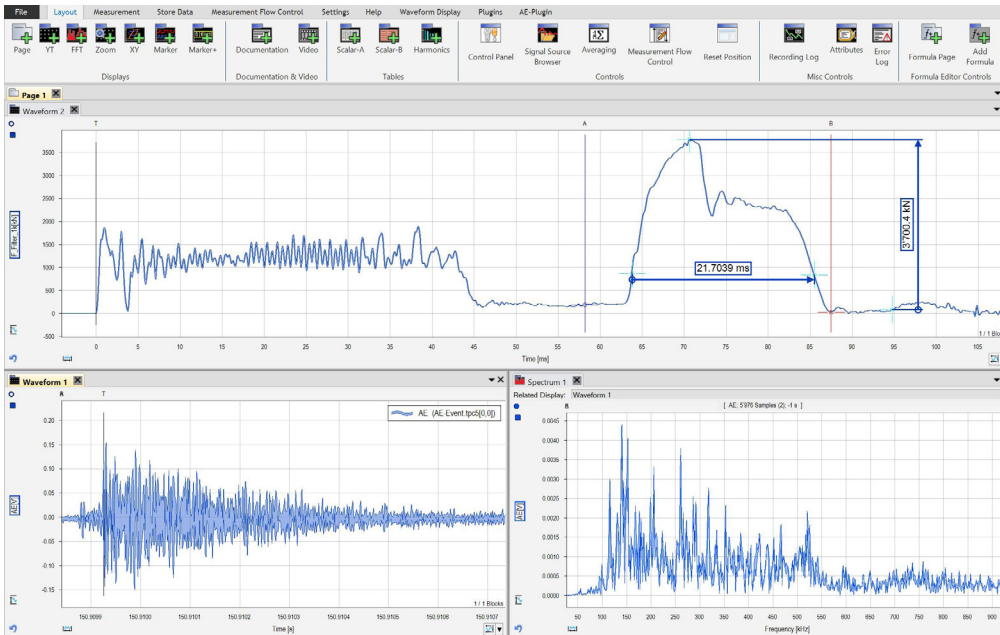
TranAX® Waveforms

The measurement curves can be displayed individually without any programming effort. Any number of curves can be displayed per waveform. The waveforms can in turn be arranged on a page.

The envelope curve algorithm running in the background calculates reduced data sets, allowing even very large files of several GB to be displayed quickly.
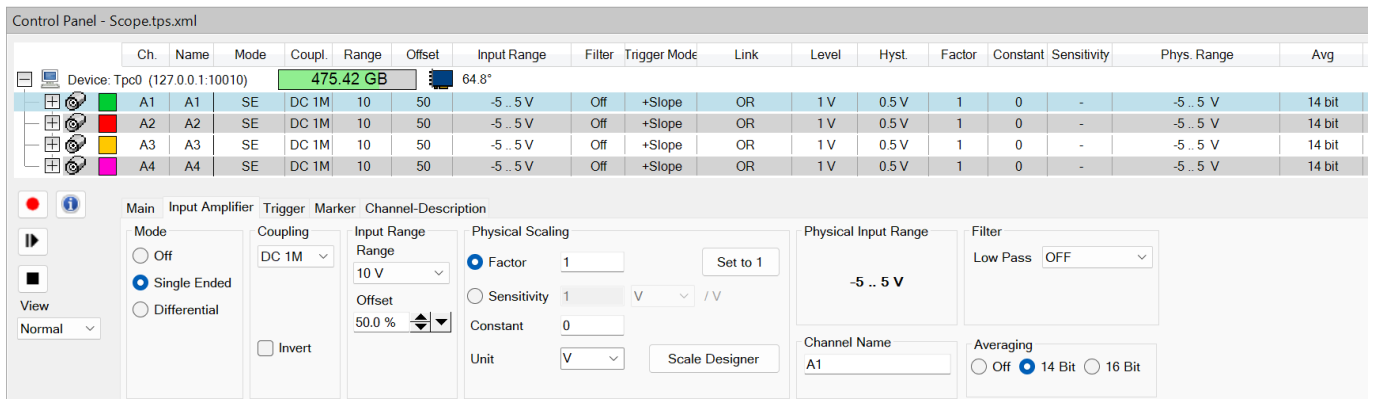
Control Panel

Easy and fast configuration of input channels and measurement settings in the control panel:

- Setting the input range per channel
- Input coupling (DC / AC / IEPE) configuration
- Trigger configuration
- Hardware filter configuration
- Measurement mode settings:
  Scope / Mulit-Block / Continuous / ECR
- Sampling rate and block length setting
- Channel labeling
- Channel scaling in physical units (e.g. Bar or mA)
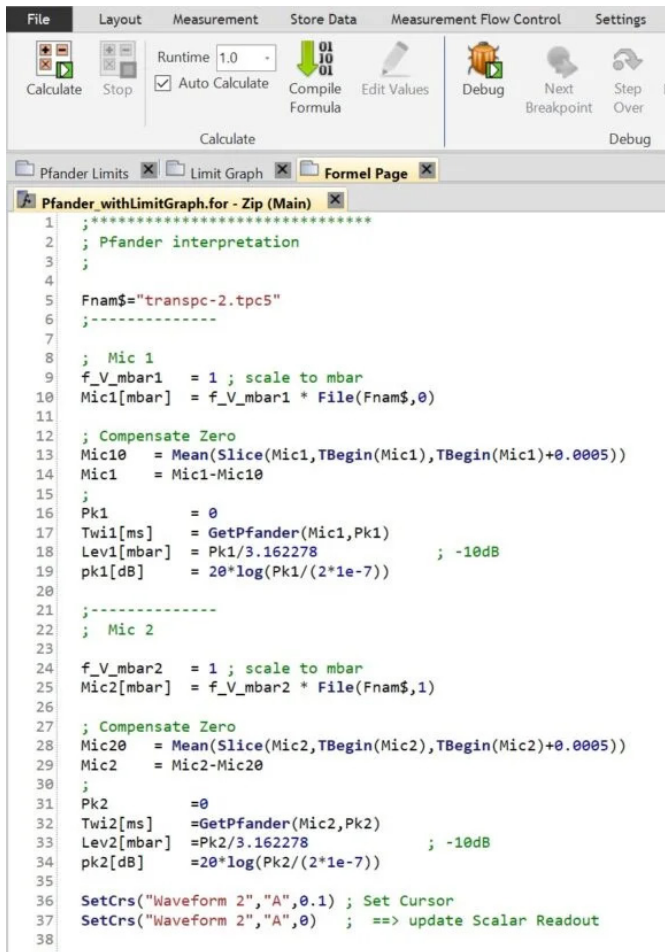
Post-Processing

Do you need your measurement data at a later date for post analysis? No problem with TranAX. Use the same software for the measurement and the analysis. Complex analysis and post processing of the data can be done in the powerful Formula Editor which is fully included in TranAX. More than 60 documented predefined functions for application specific calculations are already integrated and ready for use. Calculated measurement curves can be visualized directly in the Waveform displays.

During code development, a debug mode with step-by-step execution is available, which greatly simplifies troubleshooting.

The execution of the code can also be controlled via the measurement flow control, so the post-processing functions can be automated for series recordings.

As of version 4.2, Python code can also be executed directly in the formula editor.

Measurement Reports

Generating meaningful measurement reports can be time consuming. With the Documentation Page in TranAX 4 generating a report is done in just a few clicks. Use the known elements like the Waveform Display or Scalar Table and arrange them freely on a work sheet.
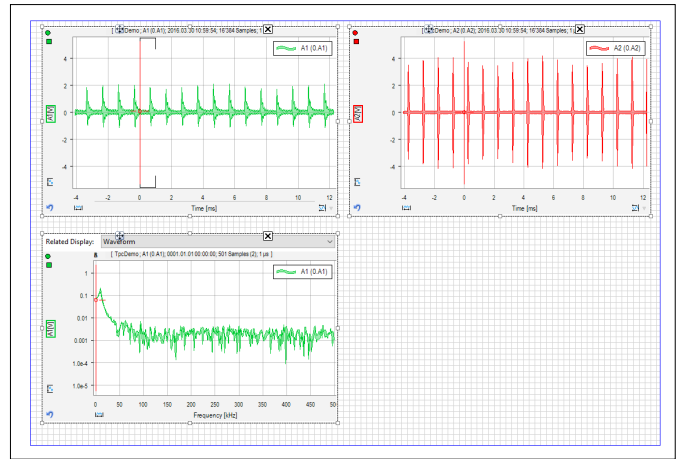

Measurement Flow Control

The measurement flow control is used to automate frequently used sequences.

- Automatically save measurement data with automatic file name assignment.
- Automated loading of layout and hardware settings.
- Execution of external tools with the CALL command.
- Execution of formula calculations at a specific point in time
- Display instructions to the user
- Query variable inputs during the run
- Print PDF Reports after each measurement

Video Synchronization

Import your video recordings in TranAX and play them synchronous with the measurement curves. This adds much significance to your measurements. TranAX can import almost all popular video formats.
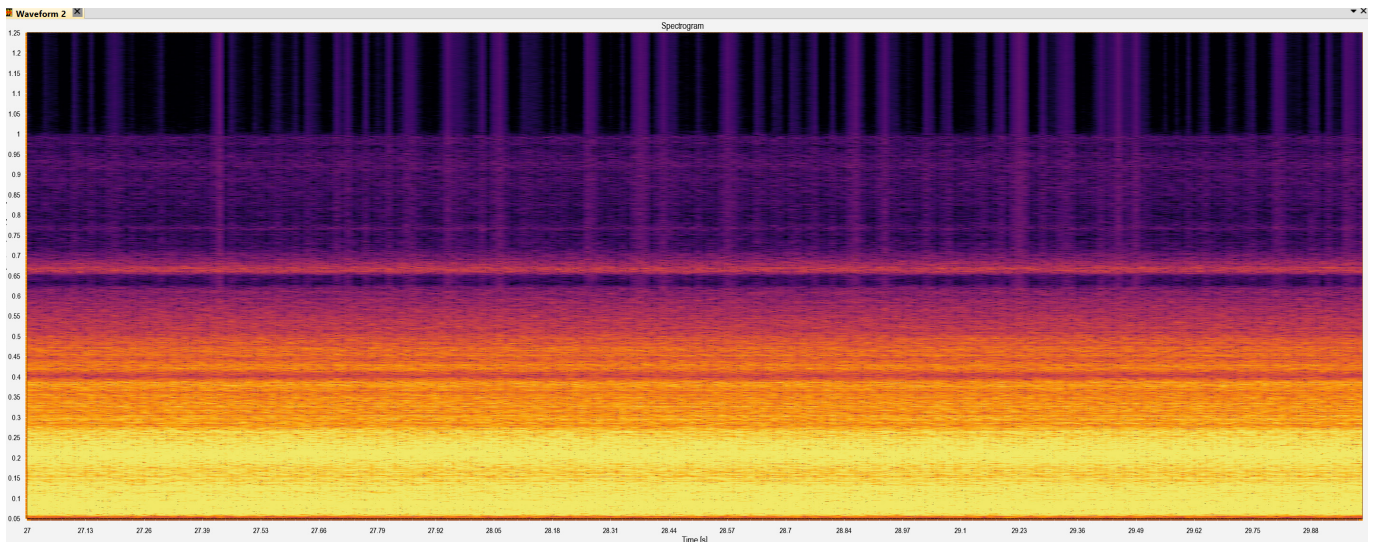
Spectrogram

Spectrograms show the spectral distribution of a signal over time. For this purpose, the time signal is divided into blocks from which the spectrum is then calculated using FFT. The Y-axis of the spectrogram is therefore the frequency and the color axis shows the intensity of the corresponding frequency within the analyzed block.
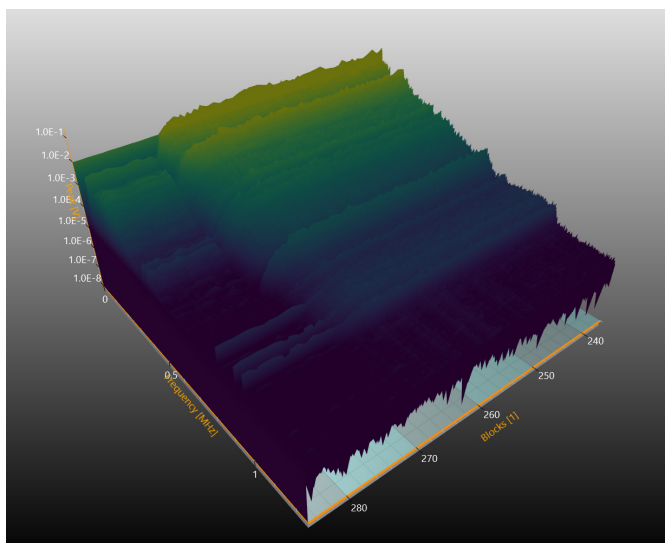
Waterfall Diagrams

Waterfall diagrams work in a similar way to spectrograms. However, the intensity is not only displayed in color but also by an additional Z-axis. The view can be rotated on all axes to obtain the optimum viewing angle for the data.

File-Viewer (free)

With the file viewer you can easily visualize, convert or print TPC5 files. The tool is free and can be downloaded at www.elsys-instruments.com.
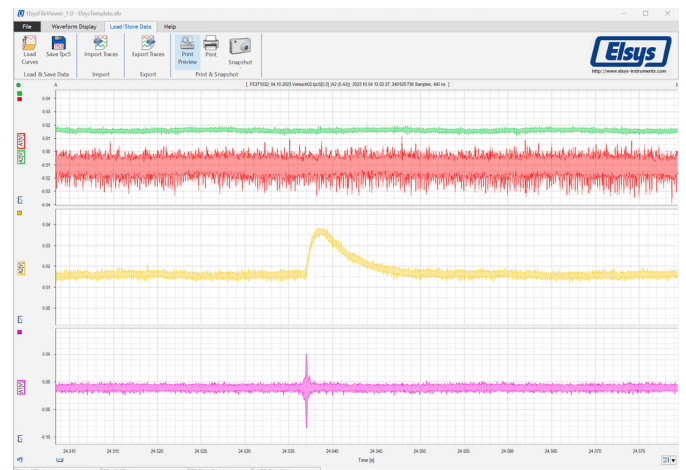
Licensing and Software Versions

TranAX is available as free light version (LE) and as Full version. After installing TranAX, a 30-Day Trial period is running which allows using the software with all its features as available in the full version. After the trial period, the software can be used either as LE-Version with some restrictions or a valid software license key is needed for activate all features for ever.

The following table shows the difference between TranAX LE and TranAX Full Version.

Feature	TranAX LE	TranAX Full
Supported Hardware	TPCX, TPCE, TPCE-LE, TraNET	TPCX, TPCE, TPCE-LE, TraNET
FFT Calculation	✘	✔
Documentation Page	✘	✔
XY Waveforms	✘	✔
Measurement Flow Clontrol (MFC)	✘	✔
Video Synchronization	✘	✔
Number of YT-Waveforms	1	unlimited
Number of Cursors	2	unlimited
Spectrogram, Waterfall Diagram	✘	✔
Averaging	✘	✔
Harmonic Analysis Table	✘	✔
Horizontal Cursors	✘	✔
Axis Description	predefined	customer specific
Number of Y-axis	1 per side	unlimited
Number of Areas per Waveform	4	unlimited
Number of Zoom Waveforms	1	unlimited
Number of Scope Waveforms	1	unlimited

Scalar Functions:
    Periodic Functions
    Power Analysis Functions
	
	limited
	limited
		
		✔
		✔

Scalar Result Marks on the Curves	✘	✔
Recording Logs	✘	✔
Snapshot	only bitmap export	bitmap and vector export

Formula Editor:
    Programming (if, else, …)
    Arrays
    Filter
    Autos Sequences
    Spectrum Functions
    Trigonometric Functions
    Debugger
	
	✘
	✘
	limited
	✘
	✘
	✘
	✘
		
		✔
		✔
		✔
		✔
		✔
		✔
		✔

License	no license needed	One Time Online Activation License needed
Available Options	none	ActiveX/COM Interface Report Generator File Import