



201.1




TFX-Lab

Software suite for acquisition, analysis and exploitation of trials

TFX-Lab is based of TFX-Prod software in order to extend information processing capabilities to each cycle ; such as manual part numbering, on line input of test parameters, superimposing multi-cycle graphs and displaying statistical indicators by test cases.

Ecosystem

TFX-Lab uses several applications provided in the package:

-  aDDa-V: used here for module and acquisition configuration, with possible manual processing of signals. Used here mainly for definition of list of signals to be measured.
-  acqu: synchronized acquisition in the background. The tdms version allows to take profit of the advanced buffer protocol for sampling rates up to 100Hz.
-  analysis: automatic analysis of the cycles recorded according to a predefined script.

TFX-Lab is based on the MySQL database engine (GPL license).



Optionally, there are modules for interfacing other measurement systems (thermal camera) or PLCs (ModBus protocol, opc-ua, Siemens ...). Specific developments are always possible.

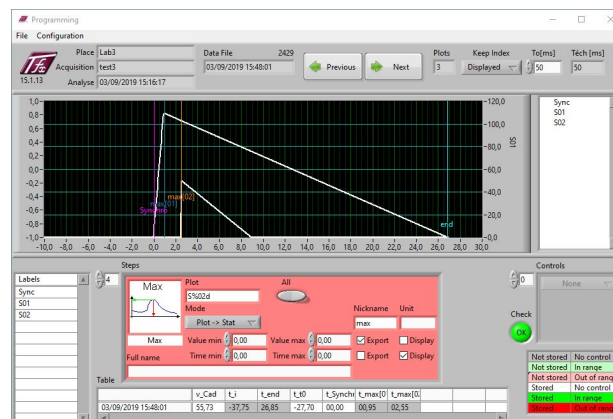


The data stored in the database can be exported at any time as a complete archive (for backup and transfer) and as native matrix tables XLSX for Excel.



Automatic analysis

All measured signals can be analyzed in order to extract automatically characteristic parameters (timings and values) for further statistical processing.



For this, users have an interface for programming a sequence based on analysis functions. For example, find a peak on one signal, then the corresponding value of another signal at the same time.

Signal processing functions allow to filter, derive, integrate, manipulate the signals by mathematical functions entered by the user. A baseline function is used to extract relevant information on multicomponent signals (for example on heat flux).

The extraction of characteristic parameters (value and / or time) is essentially performed with max / min functions with the possibility of working on relative extrema and absolute / relative thresholds.

Features

Production monitoring: TFX-Lab is built on the basis of TFX-Prod which allows to follow productions on different positions and different tools.



Traceability : each cycle can be identified by a unique autoincremented number, which can be modified at any time.

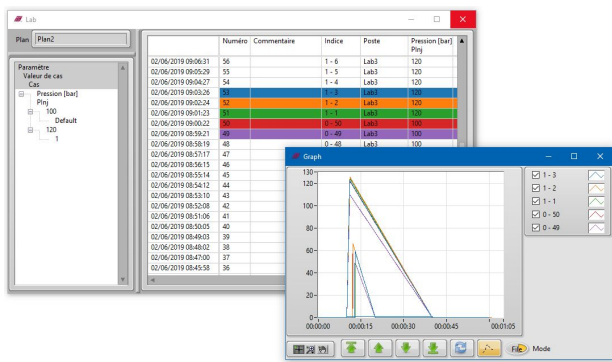
Follow-up of cases, entry of known parameters : the initial parameters and each modification can be entered at any time. The application automatically generates a test case number (set of unique parameters) and counts the number of cycles performed per case.

Enter comments : allows to enter any free observation for each cycle.

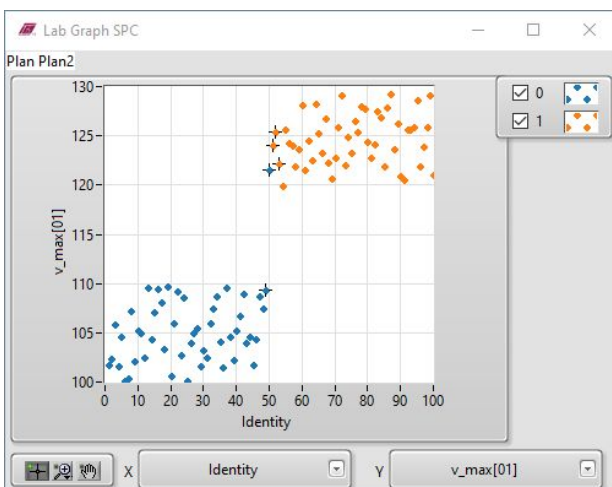
Controls and Results : Measurable information on each part produced (ratings, quality checks) can be entered to complete test data and allow for statistical analysis of results.

Follow-up of test plans : The collected data are grouped by test plans. It is also possible to generate a *posteriori* plans by importing data from several tests in order to compare them each other.

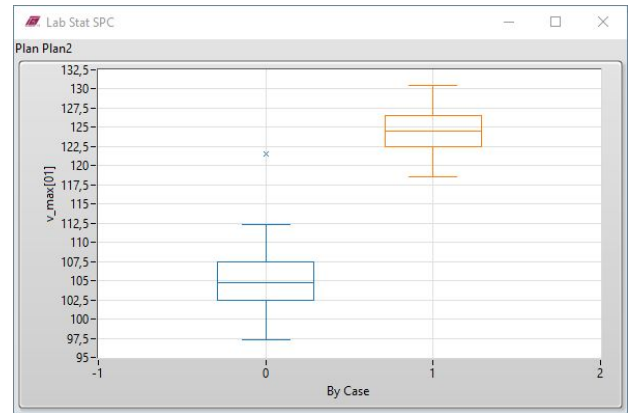
Graphic controls



Raw signals can be displayed in real time (scrolling mode), per cycle with possibility of superposition of several cycles identified by color.



The results of statistical analysis are presented as tables of graphs (type SPC with limit values if available) or graphs xy by point, the abscissa being time, cycle number, part index or any known parameter.



Boxplot statistics can be used to check any result depending on the test case in order to validate the relevance of the tests in progress.

Export

The signals are saved in individual time-stamped files (National Instruments tdms format or binary) and all other system information are stored in the database.

Export functions are provided to generate XLSX signal files and the complete matrix corresponding to a test plan.

Each graphic can be exported to the clipboard as an image to illustrate user reports.

A zip archive can be generated for backup or transfer to another machine for analysis.

Number Product

Code	Description
201.1	Software Suite TFX-Lab
201.1g108	Upgrade from aDDa-V
201.1g200	Upgrade from TFX