Contents [hide]

Tektronix Kick Start Data Logger App User Guide

Tektronix

Simplifying Long-Term Reliability Testing with the KickStart Data Logger App

APPLICATION NOTE

Introduction

Data Acquisition (DAQ), or data logging, is a process of gathering and analyzing data from various physical phenomena. It plays a crucial role in engineering, scientific research, and industrial settings, enabling real-time monitoring and control of parameters such as temperature, pressure, and voltage. Data acquisition is essential for quality control, process optimization, and troubleshooting.

Data acquisition systems play a key role in reliability testing, allowing different stress conditions like temperature, salt spray, or vibration and their effects on a device to be monitored long term, making it possible to analyze any trends that form over time.

Software is an essential component to long-term datalogging. Because tests involving data acquisition can typically run for weeks, using software to automate the instrumentation and data collection is a necessity. The Kickstart Data Logger App makes automating long term data acquisition and analysis easy.

KickStart Software is compatible with the following Tektronix data acquisition systems: DAQ6510, 3706A, and 2750.

Figure 1: Tektronix DAQ System models 3706A, DAQ6510, and compatible switch cards.

Easy Data Acquisition with the KickStart Data Logger App

The KickStart Software Data Logger App allows you to quickly and easily set up data logging for reliability testing, as well as view, analyze, and export the resulting data from a single user interface without the need to code.

Figure 2: A Tektronix DAQ6510 monitoring components inside an environmental test chamber.

The following example application utilizes a DAQ6510 equipped with a 7700 Multiplexer Card to track the temperatures of different electrical components exposed to stressors

within an environmental test chamber.

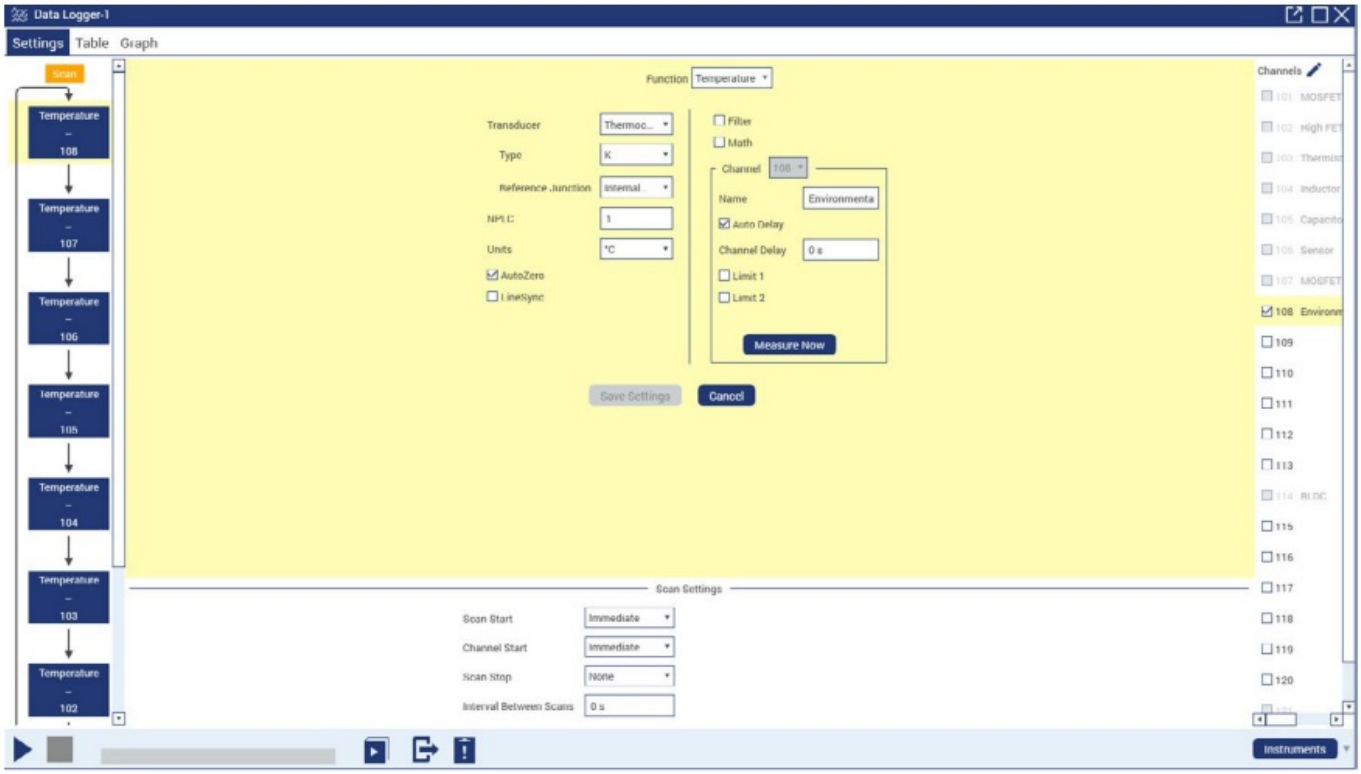


Figure 3: The KickStart Datalogger App Settings tab, configured to take infinite scans of eight channels taking temperature measurements.

Figure 3 shows the KickStart Data Logger App Settings tab configured for a temperature scan of multiple different components over time, including MOSFETs, capacitors, inductors, and sensors, as well as monitoring the temperature of the environmental test chamber itself. Each device is assigned to its own channel that is labeled accordingly. For the purposes of this test, the “Scan Stop” setting has been set to None, so that the test runs infinitely. The intention of setting an infinite scan is so that the test can be stopped manually via the stop button as opposed to setting a specific timeframe for the test to end.

Once the Run button is clicked and the test begins, the DAQ6510 will automatically begin to take measurements and KickStart Software will collect the resulting data. This data can be monitored in the Table tab or Graph tab. **Figure 4** showcases the results of the temperature scan, where it is shown that the temperature of the devices under test rises as the temperature of the environmental chamber levels off after the initial heating phase.

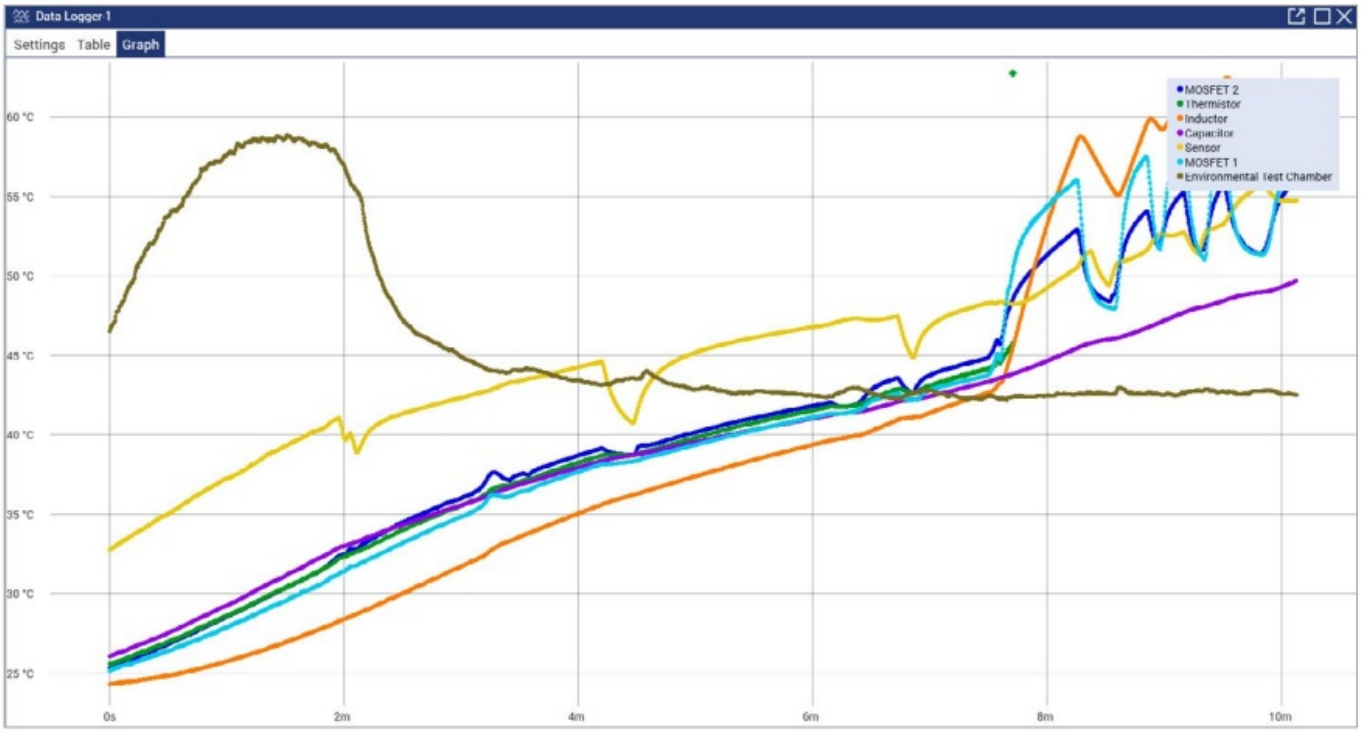


Figure 4: The KickStart Software Graph tab, showcasing the resultant data.

Tips and Tricks

Select Multiple Channels

Hold down the shift key while selecting the first and last channel of the group to quickly select a group of channels so that the same settings can be applied to the entire group.

Figure 5: A group of scan channels that will all share the same measurement settings. Channels 101 and 110 were both selected while pressing the shift key,

causing all channels between 101 and 110 to be selected.

Edit Table Columns

Columns in the Table tab can be customized for readability and presentation. By expanding the arrow on the left side of the column label, channels in the Table tab can be renamed, hidden, or expanded to show the channel's specific timestamps.

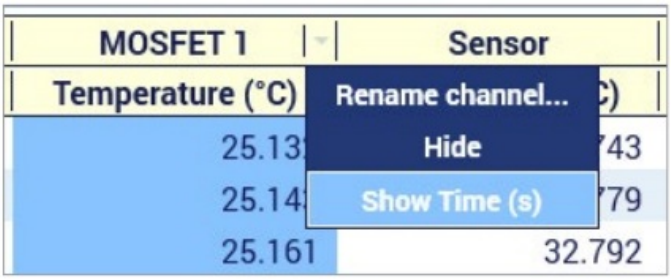


Figure 6: The KickStart Software Table tab with the column settings expanded.

By expanding the arrow on the left side of any Time column, the timestamp format can be changed to absolute time, relative time in seconds, or relative time in day/hour/minute/seconds format.

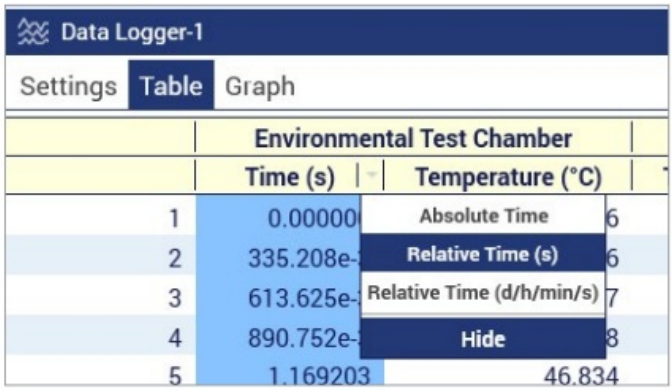
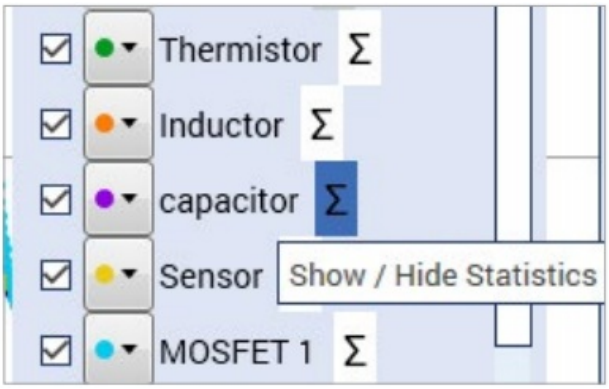


Figure 7: The KickStart Software Table tab with the time column settings expanded.

View Statistics

Statistics such as area under the curve and standard deviation can be viewed in the graph by mousing over the legend and clicking on the sigma symbol next to the selected trace.



Once statistics have been applied to a trace, they will appear in a box overlaid on the graph. The area beneath the selected trace will be filled in, representing the area under the curve measurement. By right-clicking on the graph, cursors can be applied, and any calculated statistics will instead be measured between those cursors.

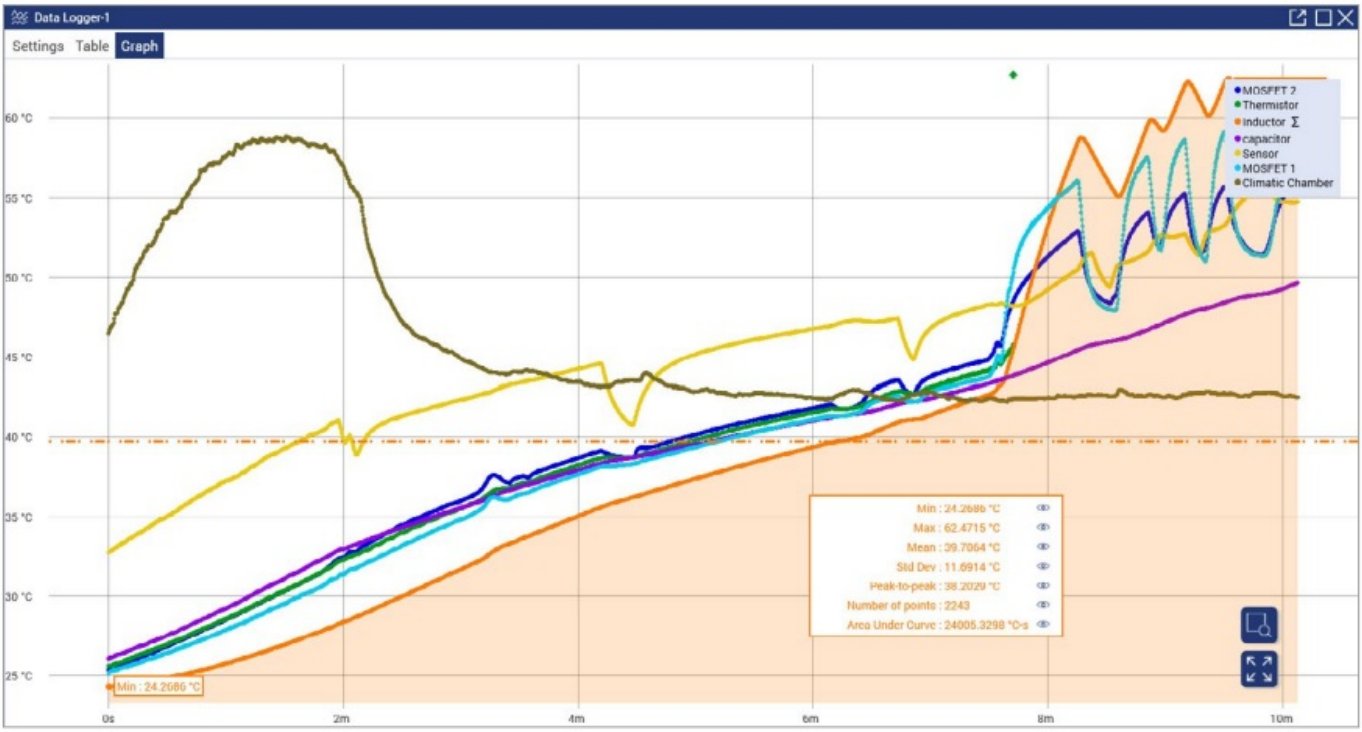


Figure 9: The graph with statistics applied to the Inductor trace.

Best Practices

When using the KickStart Data Logger App long term, there are several best practices that improve the software's performance and ensure that tests will run for days or weeks.

Turn Off Instrument Auto Discovery

To turn off instrument auto discovery, select the Instruments Tab and press the F12 key. This will cause the instrument auto discovery control to appear. Simply deselect the checkbox and KickStart Software will no longer automatically discover instruments on the network.

Figure 10: The KickStart Software Instrument Auto Discovery enablement checkbox that can be accessed by pressing the F12 key while viewing the Instruments Tab.

Turning off instrument auto discovery improves KickStart's long term performance by limiting the number of interactions between the instrument and the software. After closing the software, instrument auto discovery will be enabled again the next time KickStart is opened.

Turn On Auto Export

Auto export is a useful setting contained in the export data menu. When enabled, collected data will be automatically exported to a *.csv or *.xlsx file when a run has been completed. As of KickStart Software version 2.11.4, an additional "split files" setting can be enabled if auto export is turned on. This setting allows for data to be automatically exported after a specified period while the test is running.

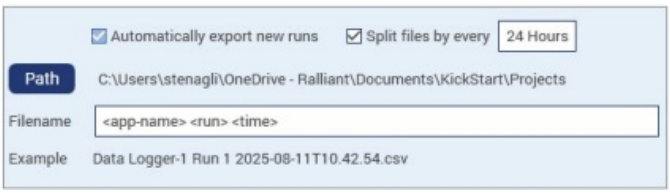


Figure 11: The KickStart Software data export menu with Auto Export and file splitting enabled.

Splitting the incoming data into separate files to be exported hourly, daily, or weekly is

quite useful for long term data logging applications. This method allows for better organization of data and avoids the creation of unreasonably large files.

Slow Down the Test

When datalogging over a period of days or weeks, be mindful of how much data you want to generate in that timespan. Test speed has the greatest impact on memory usage. This is because continuously generating large amounts of data within a very short timeframe can create an imbalance between new data generation and old data discard, leading to data accumulation. Therefore, consider adding delays or increasing the interval between channel closures or scans to ensure that readings are taken at a reasonable rate.

Avoid Viewing the Graph Until the Test is Complete

Making sure to remain on the Settings Tab while a long-term test is running may improve performance for PCs with less processing power or RAM. Peaking at the Graph or Table Tab temporarily is permissible with some considerations.

The Table Tab operates in two states. One is with AutoScroll enabled, which continuously scrolls to display the latest data. The other is with AutoScroll disabled. Users can stop scrolling by clicking any data row, or switching to another tab will also disable AutoScroll. Disabling AutoScroll consumes less memory, but enabling auto-scroll should not cause significant issues. Of course, for long-term tests, the best practice is to switch to the Table Tab only when viewing data is necessary and return to the Settings Tab otherwise.

Regarding the Graph Tab, it also has two modes: a scrolling X-Axis mode, where the x-axis scrolls or remains static to display data within a specific time window, and an infinite X-Axis mode, where the x-axis displays all values starting from time zero. The scrolling X-Axis mode consumes less memory. Therefore, for long-running tests, the best practice is to only switch to the Graph Tab when viewing the data is necessary and to avoid staying in infinite X-Axis mode for very long periods. Whenever possible, use the scrolling X-Axis mode; the smaller the time window, the less memory it consumes. After viewing, switch back to the Settings Tab.

Conclusion

The KickStart Data Logger App streamlines the process of setting up, running, and analyzing long term reliability tests by providing a simple yet powerful interface for data acquisition. By automating measurement collection, enabling flexible configuration, and offering intuitive tools for data visualization and export, the software removes many of the barriers traditionally associated with long term datalogging. When combined with best practices such as optimizing performance settings, engineers and researchers alike can ensure reliable, continuous operation for days or even weeks. The KickStart Data Logger App empowers users to focus less on managing instrumentation and more on gaining meaningful insights from their data.

Contact Information:

Australia 1 800 709 465

Austria* 00800 2255 4835

Balkans, Israel, South Africa and other ISE Countries +41 52 675 3777

Belgium* 00800 2255 4835

Brazil +55 (11) 3530-8901

Canada 1 800 833 9200

Central East Europe / **Baltics** +41 52 675 3777

Central Europe / **Greece** +41 52 675 3777

Denmark +45 80 88 1401

Finland +41 52 675 3777

France* 00800 2255 4835

Germany* 00800 2255 4835

Hong Kong 400 820 5835

India 000 800 650 1835

Indonesia 007 803 601 5249

Italy 00800 2255 4835

Japan 81 (3) 6714 3086

Luxembourg +41 52 675 3777

Malaysia 1 800 22 55835

Mexico, Central/South America and Caribbean 52 (55) 88 69 35 25

Middle East, Asia, and North Africa +41 52 675 3777

The Netherlands* 00800 2255 4835

New Zealand 0800 800 238

Norway 800 16098

People's Republic of China 400 820 5835

Philippines 1 800 1601 0077

Poland +41 52 675 3777

Portugal 80 08 12370

Republic of Korea +82 2 565 1455

Russia / **CIS** +7 (495) 6647564

Singapore 800 6011 473

South Africa +41 52 675 3777

Spain* 00800 2255 4835

Sweden* 00800 2255 4835

Switzerland* 00800 2255 4835

Taiwan 886 (2) 2656 6688

Thailand 1 800 011 931

United Kingdom / **Ireland*** 00800 2255 4835

USA 1 800 833 9200

Vietnam 12060128

* **European toll-free number. If not accessible, call:** +41 52 675 3777

Rev. 02.2022

Find more valuable resources at TEK.COM

090425 1KW-74184-0

Documents / Resources

	Tektronix Kick Start Data Logger App [pdf] User Guide DAQ6510, 3706A, 2750, Kick Start Data Logger App, Start Data Logger App, Data Logger App, Logger App

References

- User Manual

Tektronix

2750, 3706A, DAQ6510, Data Logger App, Kick Start Data Logger App, Logger App, Start Data Logger App, Tektronix

Leave a comment

Your email address will not be published. Required fields are marked *

Comment *

Name

Email

Website

Save my name, email, and website in this browser for the next time I comment.

Post Comment

Search:

e.g. whirlpool wrf535swhz

Search